HISTORICAL RESOURCES EVALUATION REPORT
Caltrans Statewide Historic Bridge Inventory
2023 Update
1975-1984

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Cover Photo: New Melones Reservoir Bridge, State Route 49, Tuolumne County, 6/29/2022.
All photos by JRP, unless noted.

1. SUMMARY OF FINDINGS

JRP Historical Consulting, LLC (JRP) prepared this Historical Resources Evaluation Report (HRER) under contract with the California Department of Transportation (Caltrans) under the direction of the Caltrans Cultural Studies Office, Caltrans Headquarters, Sacramento. The purpose of this report is to identify and evaluate bridges and tunnels for National Register of Historic Places (NRHP), California Register of Historical Resources (CRHR), and California Historical Landmark (CHL) eligibility (for state-owned resources only) in order to facilitate compliance with Section 106 of the National Historic Preservation Act (Section 106) and its implementing regulations in Title 36 Code of Federal Regulations Part 800 (36 CFR 800), the California Environmental Quality Act (CEQA) and CEQA Guidelines Section 15064.5 and, for state-owned bridges and tunnels, California Public Resources Code 5024 (PRC 5024).

This report is the latest update to a series of state historic bridge inventory reports that began in 1984-1986. It considered more than 2,500 bridges and tunnels constructed between 1975 and 1984 for NRHP, CRHR, and CHL eligibility. This includes both state-owned and local agency bridges and tunnels. As with the previous state historic bridge inventories, the current study began with a screening process to identify those structures having potential historical significance that were individually surveyed, researched, and evaluated for NRHP, CRHR, and CHL eligibility. This process resulted in 23 bridges and tunnels individually evaluated on Department of Parks and Recreation (DPR) 523 forms.[1] Of these 23 structures, fifteen were found eligible for inclusion in the NRHP and CRHR and ten eligible as CHLs. The remaining eight were found not eligible for the NRHP or CRHR, nor as a CHL. Refer to **Appendix A** for maps showing the locations of all 23 evaluated bridges and tunnels and to **Appendix B** for the DPR 523 forms.

[1] Research conducted for this report identified the Warm Springs Creek Bridge, 20C0438, as being completed in 1973 rather than 1978 as it is listed in the Caltrans Historic Bridge Inventory. This structure is one of the 23 bridges being fully evaluated on DPR 523 forms.

2. PROJECT DESCRIPTION AND SCOPE OF SURVEY

Caltrans conducted the first comprehensive statewide historic bridge inventory in 1984-1986 that included all bridges that were built in or before 1936. Between 2003 and 2006, Caltrans prepared a series of update reports that revisited the bridges from the original survey and additional bridges and tunnels that had been constructed through 1959. In 2010, an update was undertaken to include all bridges and tunnels constructed between 1960 and 1964, and in 2015, the update addressed bridges and tunnels constructed between 1965 and 1974. Like the current report, the 2015 report covered a ten-year span because Caltrans guidance for Section 106 compliance calls for evaluation of built environment resources that are at least 45 years old to account for the time between environmental studies and start of construction, and to add efficiency to the historic bridge evaluation process.

The purpose of the historic bridge inventories is to streamline project compliance with Section 106 of the National Historic Preservation Act of 1966, as amended, by focusing on only those bridges that have the potential to be significant under the NRHP/CRHR/CHL criteria. Furthermore, this process aids in conclusions as to whether they should be considered as historical resources for the purposes of compliance with CEQA and CEQA Guidelines Section 15064.5(a). Eligibility determinations for state-owned structures also support compliance with California PRC Section 5024.

JRP conducted a screening process for bridges completed during the 1975-1984 period, which identified 23 bridges and tunnels to be individually surveyed and evaluated. Caltrans submitted the proposal regarding the screening process and bridges to be evaluated to the State Historic Preservation Officer (SHPO), who agreed with the proposed scope on February 16, 2022.

For its Historical Bridge Inventory, Caltrans assigns bridges and tunnels a historical significance status code known as Categories, of which there are five. Category 1 are bridges listed in the NRHP; Category 2 are bridges determined eligible for listing in the NRHP; Category 3 are bridges that may be eligible, but require evaluation; Category 4 are unevaluated bridges that have the potential to be part of a larger, potentially significant property, such as a historic district; and Category 5 is assigned to bridges that are not eligible for listing in the NRHP. The bridges considered for the present study are assigned one of these categories.

3. SCREENING PROCESS

A screening process was undertaken for the Caltrans Historic Bridge Inventory Update regarding bridges constructed on California highways and roads between 1975 and 1984. There are 2,540 bridges from this time period in the Caltrans bridge inventory, including both state-owned and local agency structures. The screening process established which structures were to be fully evaluated on DPR 523 forms under the NRHP and CRHR criteria. Bridges owned by the State of California (i.e., not local agency bridges) are also evaluated under CHL criteria. The remaining structures are either left as Category 4 structures (unevaluated) or determined to be Category 5 structures (ineligible for NRHP listing) in the Caltrans Historic Bridge Inventory. Research conducted as part of the screening process used a variety of sources. Chief among these sources were the Caltrans bridge database, all previous statewide bridge inventories and updates, and Caltrans' bridge and tunnel historic contexts. Additional research sources included journal articles, books, and online sources such as bridgehunter.com and bridgereports.com.

One bridge built between 1974 and 1984 was recently determined eligible for the NRHP and thus excluded from further study as part of the Historic Bridge Inventory Update. This is the Meridian Bridge (18 0008) that JRP Historical Consulting, LLC (JRP) evaluated in 2021 as part of a separate project. SHPO concurred with Caltrans determination of eligibility on September 2, 2021.[2]

<u>*Bridges on the Interstate Highway System*</u>

Initial screening eliminated bridges categorically exempt from survey. Among the several categories were bridges constructed as part of an interstate highway, which are subject to the *Exemption Regarding Historic Preservation Review Process for Effects to the Interstate Highway System* (*Federal Register* v.70, no.46, March 10, 2005) rendering them exempt from Section 106 evaluation nationwide. Interstate bridges included structures carrying an interstate highway, interstate on and off ramps, interstate to state route connector structures, and local roadway bridges over interstate highways. Remaining in the survey pool were connector bridges from state route freeways to interstates and bridges that carried state routes over interstates. JRP made one exception to the interstate screening criteria for the West Lilac Road Overcrossing (57 0870) in San Diego County over Interstate15 (I-15), which was evaluated because research revealed this bridge has distinctive design and aesthetic qualities, and thus a high potential for NRHP/CRHR eligibility. Screening of interstate bridges resulted in the elimination of 472 bridges from the pool of potential surveyed bridges, the largest single group of bridges eliminated from evaluation consideration. These bridges have been assigned a Category 5 status.

[2] Evaluation of the Meridian Bridge was in JRP Historical Consulting, LLC, "Delta Moveable Bridges Project, Sacramento, Yolo, Solano, and Sutter Counties, SAC-160 PM 5.86/L6.98/19.76/20.87, YOL-113 PM 22.02, YOL-275 PM 13.01, SOL-12 PM 26.24, SUT-20 PM 0.01," EA 03-4H9503, prepared for Caltrans, 2021.

Identifying Category 4 Bridges

There are various types of bridges that have been identified as Category 4 structures, meaning that they are left unevaluated for the NRHP / CRHR, or as possible CHLs, at this time. These bridges were eliminated from further study during the screening process because they have the potential to be contributors to larger historic properties, including possible historic districts.

Among the bridges identified as Category 4 structures during the initial screening process were those over linear water conveyance structures such as canals and aqueducts, as they could be historically significant for their association with the water conveyance structure or system they cross. These bridges were identified by searching the "Name" column of the Caltrans bridge database for the following words: canal, ditch, aqueduct, and lateral. The search identified 247 bridges that were eliminated from consideration. Similarly, railroad bridges over roadways, aka underpasses, were another bridge type associated with a linear resource eliminated from consideration. There were 47 bridges in this category.

Bridges owned by state agencies other than Caltrans, federal agencies, or mass transit agencies constitute another category eliminated during the initial screening process. The largest group in this category were 18 bridges owned by federal agencies, including seven by the Bureau of Indian Affairs, seven by the National Park Service, one by the U.S. Air Force, and three others by unnamed federal agencies. Another 16 bridges are owned by California State Parks. These bridges have been excluded from evaluation for the present study because their managing agencies have their own responsibilities for compliance with state and federal historic preservation laws. Finally, mass transit bridges accounted for 12 bridges, all owned by the San Diego Metropolitan Transit System and carrying light rail trains. Structures that are part of this light rail system should be evaluated as a part of a larger overall resource and evaluation is the responsibility of the owning agency. These 46 bridges have been assigned a Category 4 status.

Another group eliminated in the initial screening process were those associated with, or potentially associated with, a larger property. Many of these are pedestrian overcrossings (POC) that appear to be associated with adjacent properties, including schools, college campuses, shopping malls, parks, neighborhood path systems, and airports. These were eliminated because these structures are components or potential components of larger properties and may be contributing features of larger historic properties or a historic district. An example of this is Bridge 35C0150, a POC at San Francisco International Airport built in 1976. Other examples include the multiple pedestrian bridges over city streets in downtown Los Angeles that connect various buildings or adjacent public areas, such as the Temple Street POC (53C1337) built in 1975. There were 51 of these structures, all of which were assigned a Category 4 designation. Some POCs were not identified as Category 4 bridges because they did not appear to have association with properties other than the roadway they cross, functioning solely as pedestrian facilities associated with the roadway.

Identifying of Bridges Requiring Evaluation on DPR 523 Forms

From the pool of 1,676 remaining bridges, the secondary screening process determined which bridges to evaluate on DPR 523 forms. The bridges under consideration are listed by type on **Table 1**. Bridges chosen for evaluation had one or more of the following characteristics: long main spans or total length, distinctive example of a type, notable aesthetic qualities, the first or an early example of a new bridge type, featured a new advancement in bridge engineering, or are an unusual type or design. Information regarding these features and qualities was gleaned from the Caltrans bridge database; preliminary research in books, journal articles, and online sources, and by communications with Caltrans Cultural Studies Office staff and outreach to each Caltrans district office. Details regarding the screening process for bridge types are presented below.[3]

Bridges from the pool of 1,676 not chosen for individual evaluation do not have any of the above characteristics or are bridges that were identified as lacking historic integrity because of alterations. These were given a Category 5 (ineligible) status without individual evaluation. The screening methodology described above is consistent with the methodology used in the earlier statewide bridge inventories and updates. Screening for this report identified 23 structures to be individually evaluated for the NRHP / CRHR, as well as the CHL for state-owned bridges.

[3] As noted, research conducted for this report identified the Warm Springs Creek Bridge, 20C0438, as being completed in 1973 rather than 1978 as it is listed in the Caltrans Historic Bridge Inventory. This structure is one of the 23 bridges being fully evaluated on DPR 523 forms.

4. BRIDGE TYPES CONSTRUCTED BETWEEN 1975 AND 1984

Eight different bridge types make up 98.5 percent of the 1,676 bridges erected between 1975 and 1984 considered for possible evaluation. **Table 1** below gives the numbers and percentages of the different bridge types considered for evaluation constructed during the 1975-1984 period. Following the table are brief discussions of which bridges merited evaluation and the number of each type previously listed in, or found eligible for listing in the NRHP or CRHR.

Table 1. Bridge Types Considered for Evaluation

Bridge Type	Number of Bridges	Percentage of Total	Number Selected for Evaluation
Concrete, prestressed concrete, or concrete continuous box beam or box girder	575	34.3%	12
Concrete slab	438	26.1%	0
Concrete culvert (with bridge number)	281	16.8%	0
Concrete stringer, multi-beam, or girder	117	7.0%	1
Concrete T-beam	93	5.5%	1
Steel stringer, multi-beam, or girder	63	3.7%	1
Steel culvert (with bridge number)	50	3.0%	0
Wood stringer, beam, or girder	37	2.2%	0
Uncommon bridge types (e.g., truss, arch, steel box girder, and tunnel)	22	1.3%	8
Total	**1,676**	**100%**	23

Concrete Box Girder

Concrete box girder bridges are the most common bridge type constructed in the 1975-1984 period, comprising 34.3 percent of the 1,676 bridges in the potential survey pool. This type, including reinforced concrete and prestressed concrete structures, was also the most numerous bridge type in the previous bridge inventory update, making up 40 percent of over 5,000 bridges constructed between 1965 and 1974. The nature of this bridge type results in a high degree of visual similarity.

Some variation occurs in column designs, superstructure cross-section and profile, and concrete textures and finishes. Twelve of this type were selected for individual evaluation. Seven were chosen for their design and aesthetic qualities, five of which are POCs. The remaining five bridges were chosen for their length, two of these also for being exceptionally high bridges.

Presently, there are 25 concrete box girder bridges in California that are listed in or eligible for inclusion in the NRHP and CRHR. Of these, 13 are contributors to larger properties (such as the Arroyo Seco Parkway) and twelve are individually significant. The twelve individually significant bridges date from 1934 to 1971, with five being early examples of the type, built before World War II.

Concrete Slab

Concrete slab bridges are typically used for short bridges and spans, commonly carrying local roadways over small creeks. Construction of these types of bridges began in the 1910s and they are among the most numerous types in the state and continue to be built in large numbers. This type is also very simple in design and aesthetically modest. These factors have led to very few concrete slab bridges being evaluated in past bridge inventories and few found eligible for the NRHP and CRHR. In the 2015 historic bridge inventory update, for example, there were 887 concrete slab bridges in the potential survey pool, and none were chosen for individual evaluation. For these reasons, no concrete slab bridges were evaluated for the current study. Presently, there are 20 concrete slab bridges in the state that are either listed in or determined eligible for inclusion in the NRHP/CRHR. Only four of these are individually significant, with the other 16 being contributors to larger properties. Of the four individually eligible concrete slab bridges, the most recent dates to 1940.

Culverts (concrete and steel)

Culverts are ubiquitous on roadways in California and basic in design and engineering, and most do not have bridge numbers and are not included in the Caltrans bridge inventory. As such they have been considered to lack potential eligibility for the NRHP and CRHR in all past statewide bridge inventories and updates, as they are for the present study. There are only three culverts with bridge numbers in California that have been listed in or determined eligible for the NRHP and CRHR. Two are contributors to larger properties, and one is a masonry-faced steel culvert constructed in 1938.

Concrete Stringer, Beam, or Girder

Concrete stringer, beam, or girder bridges are usually limited to short or medium span lengths; long-span concrete bridges typically utilize box girder designs. Similar to concrete slab bridges, concrete girder bridges were first built in the 1910s, but provided more strength. Their modern design aesthetic and low-cost relative to steel made them popular after the end of World War II in 1945. Only five bridges of this type have been previously determined eligible for the NRHP and CRHR. Four are significant as early examples of the type, built from 1913 to 1915. The fifth is the

Hegenberger Road Overhead (33C0202) in Oakland, constructed in 1966 and significant for its engineering, aesthetics, and as the work of master bridge engineer, T.Y. Lin. For the present study, one of the 117 concrete stringer, beam, or girder bridges built between 1975 and 1984 appears to have any potential for meeting the NRHP or CRHR criteria. This is a POC (Bridge 55C0307) in the city of Fullerton, Orange County, which has murals painted on several sides and has the potential to be eligible for cultural and/or artistic value.

Concrete T-beam

Similar to concrete stringer, beam, and girder, construction of concrete T-beam bridges began in the 1910s and are also usually limited to short or medium span lengths. There currently are 60 concrete T-beam bridges in California that are either listed in or eligible for inclusion in the NRHP and CRHR. More than half of these are contributors to historic roads or other larger properties. Of the 23 individually listed or eligible T-beam bridges, only one was constructed after World War II – an early example of prestressed concrete construction, built in 1953. Most of the other individually listed or eligible T-beam bridges are significant as early examples of the type, built before 1918, or are highly ornamental bridges, constructed from the late 1920s to the early 1940s. One concrete T-beam bridge built between 1975 and 1984 appears to have potential for meeting the NRHP or CRHR criteria and was selected for individual evaluation. This is Bridge 53C1184, the Grand Avenue Viaduct in the Bunker Hill area of downtown Los Angeles, selected for its unique design that creates two levels of Grand Avenue for a span of two blocks.

Steel Stringer, Beam, and Girder

Steel stringer, beam, or girder bridges started being constructed in the early twentieth century and achieved the height of their popularity from the 1930s through the 1950s when they accounted for roughly 20 percent of new bridge construction in California. While built in lower numbers than concrete girders, steel girders offered the advantages of requiring no false-work and could be delivered on-site ready for assembly. The percentage of steel girder bridges declined in the 1960s owing to improvements in concrete bridge technology and design, and this type made up only 7 percent of the bridges constructed during the 1965-1974 period and 3.7 percent during the 1975-1984 period.

There currently are 29 bridges of this type in California that have been listed in or determined eligible for inclusion in the NRHP or CRHR. Of these, 20 are contributors to larger properties. Seven of the nine individually eligible bridges are significant as early examples of the type, dating to 1936 or earlier, the other two – both built in the early 1960s – meet the significance criteria for their span length. The 2015 historic bridge inventory update identified eleven steel girder bridges to evaluate based on length and/or aesthetics. None of these were found to meet the significance criteria. The present study has identified one bridge of this type to evaluate: the Antioch Bridge (28 0009) carrying State Route (SR) 160 over the San Joaquin River in Contra Costa County, chosen for its length. It may also have significance for its design clearance over the navigable channel below, instead of a movable type structure being built at this location.

Wood Stringer, Beam, or Girder

Wood stringer, beam, or girder bridges were popular during the early period of California statehood as wood was plentiful, and other building materials scarce. But by the early twentieth century, bridge builders increasingly opted for steel and concrete. There are 37 bridges of this type in the potential survey pool. Thirty-two are generally short spans over small waterways on secondary roads in rural areas, while the other five are all POC. There are currently no listed or eligible timber stringer, beam, or girder bridges in California. The only listed or eligible timber bridges in the state are trusses. In the 2015 historic bridge inventory update, none of the 38 timber stringer, beam, or girder bridges were evaluated and none of the 530 of this type considered in the 2004 historic bridge inventory update were evaluated. Similarly, none of the 37 in the current pool are being evaluated.

Uncommon Bridge Types

The bridges classified as "uncommon" in this report are those constructed in low numbers during the 1975-1984 period. This grouping includes 22 bridges representing eight bridge types (**Table 2**). Some of these types were once popular and common, but were seldom constructed by the mid-1970s because superior materials or technologies largely made them obsolete, such as steel thru trusses, while others became uncommon because circumstances were rare that called for their construction, such as tunnels. Each of the uncommon types is briefly discussed after the table.

Table 2. Uncommon Bridge Types 1975-1984

Bridge Type	Number of Bridges	Number Selected for Evaluation
Steel Thru Truss	8	0
Steel Multiple or Single Box Beam or Girder	5	2
Tunnel	3	3
Steel Deck Arch	2	0
Concrete Deck Arch	1	1
Wood Slab	1	0
Steel Deck Truss	1	1
Wood Thru Truss	1	1
Total	**22**	8

Steel Thru Truss

Steel thru truss bridges were built in large numbers in California beginning in the late nineteenth century and into the twentieth century. Their popularity dropped significantly after the 1950s. There are eight bridges of this type in the current potential survey pool. Three of these are typical, utilitarian POCs, none of which were chosen for evaluation. The remaining five are all short pony truss vehicle bridges in rural areas, the longest a two-span, 163-foot-long structure. The 2015 historic bridge inventory update evaluated all steel truss bridges in its survey pool because previous bridge inventories had evaluated all of this type, and because a high proportion of this type have been determined eligible for the NRHP and CRHR. However, the five steel pony thru truss bridges in the current potential survey pool are short, typical, and modest examples that hold no potential for significance for design, innovation, engineering, or aesthetics and none were chosen for evaluation.

Steel Multiple or Single Box Beam or Girder

This bridge type is a relatively recent bridge type, with the first example in California built in 1966. In the 2015 historic bridge inventory update, all three of the steel box girder bridges were selected for individual evaluation and all three were determined eligible for being a new bridge type. For the present study, there are five steel box beam or girder bridges in the potential survey pool, two of which were chosen for evaluation. One is the Dumbarton Bridge, the first long span steel box girder bridge built by Caltrans. The other is on SR 49 in Tuolumne County over the New Melones Reservoir. This bridge was chosen for its long span length (longest span is 549 feet) and for being one of the highest bridges in California. The three other steel box beam bridges are relatively short spans of typical design and unremarkable aesthetics.

Tunnels

There are three tunnels in the potential survey pool and all were selected for evaluation. These three tunnels are near each other on the same county road (Kanan Road/Kanan Dume Road) in the mountains above Malibu in Los Angeles County. This road has three sets of tunnels, each consisting of the northbound bore and a southbound bore. The 2015 historic bridge inventory evaluated one of the northbound bores (53C0899R). To complement that evaluation, the present study evaluates the southbound bore of this tunnel set (53C0899L), as well as two other southbound bores on this road.

Concrete Deck Arch

There is one concrete deck arch bridge in the potential survey pool and it was chosen for individual evaluation. This is a 250-foot-long open spandrel arch bridge over Myrtle Creek in Del Norte County (01 0007), chosen because it is a rare example of an open spandrel concrete arch bridge constructed during the 1975-1984 era when the type had largely become obsolete.

Steel Deck Arch

The Caltrans bridge database lists two bridges of this type constructed between 1975 and 1984. However, research revealed that both were steel culverts, thus, neither was selected for individual evaluation.

Wood Slab

The one wood slab bridge in the potential survey pool was not selected for individual evaluation as wood slab bridges represent basic engineering and lack the potential for significance. Currently, the only NRHP/CRHR-listed or eligible timber bridges in the state are timber truss bridges.

Steel Deck Truss

The Warm Springs Creek Bridge in Sonoma County (20C0438) is the only steel deck truss bridge in the current group of bridges. It was chosen for evaluation for its length, being the second longest steel deck truss in California.

Wood Thru Truss

The only wood thru truss bridge in the potential survey pool is a covered bridge in Butte County known as the Oregon Creek Gulch Bridge (12C0182) or the Oregon City Covered Bridge. Since covered timber truss bridges are a rare and potentially significant type, this bridge was selected for individual evaluation.

5. BRIDGES CHOSEN FOR INDIVIDUAL EVALUATION

Of the 2,540 structures in the Caltrans bridge inventory built between 1975 and 1984, 1,676 bridges were considered for possible evaluation following the initial screening process. From those, 23 bridges were identified for full evaluation on DPR 523 forms, as listed in **Table 3**. These structures have one or more of the following characteristics: long main spans or total length, distinctive example of a type, cultural importance, notable aesthetic qualities, or are a rare type or design. These bridges are evaluated under NRHP / CRHR criteria, and under CHL criteria for state-owned structures.

Table 3. Bridges Chosen For Individual Evaluation

Bridge Number	Caltrans District	County	Bridge Type	Reason For Evaluation
01 0007	1	Del Norte	Concrete Deck Arch	Rare Type
04 0221L 04 0221R	1	Humboldt	Concrete Box Girder	Span Length
12C0182	3	Butte	Wood Thru Truss – Covered	Rare Type
20C0438	4	Sonoma	Steel Deck Truss	Span Length; Total Length
21 0049	4	Napa	Concrete Box Girder	Span Length; Aesthetics
28 0009	4	Contra Costa	Steel Girder	Span Length; Aesthetics
29 0269	10	San Joaquin	Concrete Box Girder	Total Length
32 0040	10	Tuolumne	Steel Box Girder	Rare Type; Span Length; Height; Aesthetics
32C0076	10	Tuolumne	Concrete Box Girder	Span Length; Height; Aesthetics
34C0066	4	San Francisco	Concrete Box Girder POC	Aesthetics; Design
35 0038	4	San Mateo	Steel Box Girder	Span Length; Total Length
53 0068	7	Los Angeles	Concrete Box Girder POC	Aesthetics
53 2578	7	Los Angeles	Concrete Box Girder POC	Aesthetics
53 2579	7	Los Angeles	Concrete Box Girder POC	Aesthetics
53 2602	7	Los Angeles	Concrete Box Girder POC	Aesthetics

Bridge Number	Caltrans District	County	Bridge Type	Reason For Evaluation
53C0899L	7	Los Angeles	Tunnel	Rare Type
53C0900L	7	Los Angeles	Tunnel	Rare Type
53C0901L	7	Los Angeles	Tunnel	Rare Type
53C1184	7	Los Angeles	Concrete T-beam	Rare Design
55 0614	12	Orange	Concrete Box Girder	Aesthetics; Design
55C0307	12	Orange	Concrete Girder POC	Artistic/Cultural Value
57 0870	11	San Diego	Concrete Box Girder	Aesthetics; Design

6. RESEARCH AND FIELD METHODS

JRP conducted research to develop a historic context for bridges constructed during the 1975-1984 period and to determine the histories of the 23 individually evaluated structures, including their planning, construction, and subsequent alterations. Research was conducted at the Caltrans Transportation Library in Sacramento and the Los Angeles Public Library. JRP also accessed the Caltrans Bridge Inspection Records Information System (BIRIS) database, obtaining bridge inspection reports, photographs, and as-built plans. Another invaluable source was the Caltrans bridge database, which included an array of useful information. During the course of research, JRP contacted the individual Caltrans district offices that had survey bridges in their district to inquire if they had additional information. This effort resulted in historic photographs of a few bridges. Past Caltrans bridge inventory updates were also useful. Several online sources proved particularly useful for researching individual bridges, particularly historic newspapers and aerial photographs. JRP also utilized its extensive in-house library and archives, which included a variety of sources collected over the span of years conducting research on bridges.

JRP conducted fieldwork at each of the 23 evaluated bridges and tunnels during the spring and summer of 2022. Fieldwork consisted of taking photographs from a variety of angles to capture all parts of the bridges and notable details or aesthetic qualities. Field staff also took note of each structure’s materials, design, and noticeable alterations. However, conditions such as topography, orientation, fencing, or private property hampered efforts to see or photograph all elements of certain bridges.

7. PUBLIC OUTREACH

Public outreach for this report consisted of contacting the interested parties in each region of the 23 individually evaluated bridges, as well as statewide and national organizations to inform them of this effort to update the statewide historic bridge inventory and invite their comments. JRP mailed a total of 47 letters via U.S. Postal Service on March 24 and March 31, 2022, and sent follow-up emails. Interested parties included five state organizations, four national organizations, 19 cities and counties, and 19 local historical societies and preservation groups. Letters were sent to the following interested parties:

National

- National Society for the Preservation of Covered Bridges
- National Trust for Historic Preservation – Los Angeles Regional Office
- Historic Bridge Foundation
- HistoricBridges.org

State / Regional

- California Preservation Foundation
- California Historical Society
- Docomomo US- Northern California
- Docomomo US- Southern California
- Historical Society of Southern California

Local

- Butte County Public Works
- Butte County Historical Society
- Contra Costa County Public Works Department
- Contra Costa County Historical Landmarks Advisory Committee
- Contra Costa Historical Society
- Del Norte County Community Development Department
- Del Norte County Historical Society
- Fullerton Museum Center
- Humboldt County Department of Public Works
- Humboldt County Historical Society
- Los Angeles County Department of Public Works

- Los Angeles Conservancy
- Los Angeles County Historical Society
- Los Angeles City Historical Society
- Napa County Public Works Department
- Napa County Historical Society
- Napa County Landmarks
- Orange County Public Works
- Orange County Historical Commission
- Orange County Historical Society
- County of San Diego Planning & Development Services
- Save Our Heritage Organization – San Diego
- San Diego History Center
- City of San Diego Historical Resources Board
- San Francisco Planning
- San Francisco Historical Society
- San Joaquin County Historical Museum
- San Mateo County Department of Public Works
- San Mateo County Planning & Building Department
- San Mateo County Historical Association
- City of Santa Monica Community Development Department
- Santa Monica Conservancy
- Santa Monica History Museum
- Sonoma County Planning Division
- Sonoma County Historical Society
- City of Stockton Public Works Department
- City of Stockton Community Development Department
- Tuolumne County Department of Public Works
- Tuolumne County Historical Society

JRP received responses from several interested parties. The Historic Bridge Foundation and Humboldt County Department of Public Works both replied saying they had no comments. The Los Angeles Conservancy replied asking if JRP was "seeking additional bridges" in Los Angeles County in addition to those on the survey list. JRP replied that we were not. A few other interested parties replied to the follow-up emails simply to confirm receipt of the letter. These included the Napa County Public Works Department, City of Santa Monica Community Development Department, National Society for the Preservation of Covered Bridges, and the Del Norte County Historical Society. The letters to the Fullerton Museum Center and National Trust for Historic Preservation – Los Angeles Regional Office were returned to sender by U.S. Postal Service as undeliverable. The National Trust for Historic Preservation also notified JRP via email that they no longer have a San Francisco regional office and referred correspondence to the Los Angeles Regional Office email address. Another potential interested party – Bridgehunter.org – does not have a mailing address or email address, thus was not contacted. See Appendix C for copies of correspondence with interested parties.

8. HISTORICAL OVERVIEW

The historical overview herein provides general background and historic context for California's bridges built between 1975 and 1984. The following provides a general history of Caltrans' development during the subject period, along with a discussion regarding California's bridge aesthetics program that came to full maturation by the late 1970s. This overview also provides information regarding the one new bridge type built in California during the subject period, namely the cable-stay bridge, and discussions regarding the developing state-wide seismic safety program for bridges, start of the California Historic Bridge Inventory, and the preservation / revival of covered bridges in the state during the late 1970s and early 1980s.

8.1 Caltrans' Development 1975-1984

There are approximately 65 percent fewer bridges on California's highways and roads built between 1975 to 1984 than those built in the prior decade. Economic, social, and state governance changes, along with world events, all contributed to the deceleration of development on California's highway / roadway system, including a reduction in bridge building, before and during this period. By the mid-1970s, much of the state's freeway and roadway system planned in the twenty years following the end of World War II in 1945, including thousands of new bridges, was completed. Caltrans was established in 1973 to combine the work of the former Division of Highways with other transportation-related agencies to create a comprehensive transportation department that expanded its traditional focus on motor vehicles and highways to include mass transit and other modes of transportation. At the same time, wide-spread support for new freeways was dwindling with growing concerns about worsening air pollution and effects to the environment, along with social impacts to cities and neighborhoods, and funding for highways and bridges became scarcer. The State of California's financial support for the ambitious freeway system planned in the 1940s and 1950s had started to decline precipitously in the mid-1960s, and the oil embargo in 1973-74 accelerated the budget issues as gas tax revenue supporting highway and bridge funding shrank. These factors, along with rising inflation and economic recessions in the mid-1970s and early 1980s, increased costs for maintaining and improving California's highway system and its bridges.

The formation of Caltrans and policy shifts away from a freeway-centric transportation system in California during the early to mid-1970s brought the state's transportation policy in line with the financial realities for highway funding that had been waning for a decade. Rising costs and lagging revenue slowed freeway construction and fewer new lanes of highways were built in the state during late 1970s and early 1980s than were built in just 1967 alone, which was the height of freeway construction in California.[4] In the 1960s, 1970s, and 1980s, the cost of the state's freeway

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[4] David W. Jones and Brian D. Taylor, *Caltrans: The Changing of the Guard and the Challenge of Renewal*, Fall 1987; David W. Jones, Jr., *California's Freeway Era in Historical Perspective*, prepared for Caltrans (Berkeley, CA: University of California, Institute of Transportation Studies, 1989), 309; Caltrans and Women's Transportation Seminar, *50 Years of Freeways*, video produce for 50th anniversary of the opening of the Arroyo Seco Parkway,

system grew faster than inflation at the same time there was continued growth in vehicle travel, and within a short period of time fiscal stringencies had all but extinguished mass production of freeways in California. There was a general rise in construction and maintenance costs, along with increased urban/suburban land values that raised right-of-way acquisition costs, and environmental / community concerns that escalated administrative and planning costs. Highway construction expenditures in the 1970s had an average annual increase of 12.1 percent, which was well above the period's average inflation rate of 8.7 percent. Overall demand in California's economy for construction services, materials, and equipment, along with increased labor costs that resulted from unionization efforts, all contributed to rising construction and maintenance costs, the latter exacerbated by growing operational costs as aging highways, roads, and bridges required upkeep and improvements. Upscaling of freeway designs also contributed to rising costs. This was the result of increased uniform design standards, particularly for safety issues, higher required vehicle speeds that necessitated more right-of-way for wider highways, and demand for more freeway interchanges and related local road improvements in urban areas. Uniform design standards for minimum left bridge shoulder widths on freeways, for example, increased more than 150 percent between the standards set in 1955 with those in 1980.[5]

As costs for California's freeways, highways, and roads rose in the 1960s, 1970s, and 1980s, the state's highway revenue declined by two thirds. Both the State of California and the federal government had made enormous financial commitments to finance highways / freeways, with regular increases in fuel taxes and vehicle fees between 1947 and 1961 that led to a budget surplus in the late 1950s for freeway construction, but this did not continue, and little was done to alleviate the growing revenue shortfall. Governor Ronald Reagan (1967-1974) had pledged that no new taxes would be imposed. His successor Governor Jerry Brown (1975-1982) took a fiscally conservative approach in what he dubbed an "Era of Limits," and Governor George Deukmejian (1983-1991) returned to the stance of no new taxes. With growing public ambivalence towards further development of the state's freeway system and conclusions that more than enough freeways had already been built, many legislators were skeptical that additional revenue was needed. Gas and other highway taxes, however, were not indexed to rising costs, and the buying power of this revenue source eroded. California did not change its gas taxes (license taxes under the Motor Vehicle Fuel License Law) between 1963 and 1982 (and not again until 1990) except for two temporary increases in 1965 and 1969. Furthermore, California was also at a disadvantage regarding the federal highway funds it received because of the program's rural intercity focus and California was a relatively urbanized state with high levels of vehicle use. This made California one of the states that contributed more to federal highway revenues than it received in

December 31, 1991, available at Caltrans District 7 YouTube channel: https://www.youtube.com/watch?v=AEBnvVYu6wQ

[5] Brian D. Taylor, "Public Perceptions, Fiscal Realities, and Freeway Planning: The California Case," *APA Journal*, Winter 1995,44-51; Jones, *California's Freeway Era in Historical Perspective*, 250, 309, and 312-317; Alex Karner, "Multimodal Dreamin': California's Transportation Planning, 1967-1977," *Journal of Transport History*, June 2013, 42; "Interview with Gianturco," *Engineering News*, March 1980, 6.

appropriations. In addition, increased vehicle fuel efficiency during this period also depressed gas tax revenues. At the local level, the passage of Proposition 13 in 1978 capped property tax collection and lowered the ability of cities and counties to fund infrastructure projects.[6]

Impacts resulting from the oil embargo in 1973-74 compounded the dwindling revenue sources for highway and bridge funding in California. The Arab-Israeli War of 1973 led members of the Organization of Petroleum Exporting Countries (OPEC) to impose an oil embargo against the United States in retaliation for its support of Israel. The embargo led to gas shortages in the short term, contributed to the period's rising prices, and eventually stimulated demand for fuel economy standards on new vehicles, and the State of California was not prepared for the impact the oil embargo would have on the state's budget. Gas tax revenue in California declined as its percentage remained fixed at the same time drivers were forced to drive less and conserve fuel. At the time of the oil embargo, construction projects across California were abruptly halted, and Caltrans accelerated worker layoffs that had started a few years earlier.[7] Symbolic of the state's sudden cessation of its decades-long freeway expansion was the I-280 / I-680 / US101 freeway interchange in San Jose where a crisscross of bridges remained unfinished and disconnected from their approaches for five years. This led to San Jose Councilman Joe Colla's stunt in January 1976 where he was photographed with a car on top of the unfinished interchange as a way to pressure Caltrans to complete the structures. The Napa River Bridge on SR 29 was also completed during this time, but it was dubbed the "Bridge to Nowhere" because it took nearly four year for its approach highway segments to be built, finally opening in 1981.[8]

Creation of Caltrans and shifts in California's transportation policies and priorities that began moving beyond new freeway and roadway construction towards more multi-modal solutions came

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[6] Taylor, "Public Perceptions, Fiscal Realities," 47-51. Caltrans, *The History of Motor Vehicle Fuel Taxes in California*, 1983; Jeffrey Brown, *Statewide Transportation Planning in California: Past Experiences and Lessons for the Future*, Discussion Paper, California Transportation Futures Conference, November 13, 2000, 25 and 28; Jones, *California's Freeway Era in Historical Perspective*, 309-312; David E. Dowall and Jan Whittington, *Making Room for the Future: Rebuilding California's Infrastructure*, (San Francisco: Public Policy Institute of California, 2003), 1 and 14-15, and 17; Brown, *Statewide Transportation Planning in California*, 22, 28 and 34; Jones, *California's Freeway Era in Historical Perspective*, 250, 314.

[7] Taylor, "Public Perceptions, Fiscal Realities, 52; "Interview with Gianturco," 6; *Highway Recollections of William R. Green*, Oral History, Caltrans, June 1989, 30 and 47-49; Office of the Historian, U.S. Secretary of State, "Oil Embargo, 1973-1974," webpage *Milestones: 1969-1976 – Office of the Historian* (https://history.state.gov/milestones/1969-1976/oil-embargo, accessed October 2023).

[8] Scott Herhold, "The Story Behind Joe Colla's Famous 1976 Highway Stunt," *San Jose Mercury News*, October 16, 2013, A4; Joe Rodriguez, "San Jose's Infamous Monument to Nowhere Freeway Interchange Finally Named After Joe Colla," *San Jose Mercury News*, January 8, 2016; "Interview with Gianturco," 6; "State Legislation to Solve Southern Crossing Crisis," *Napa Valley Register*, October 17, 1975, 1; "Napa County, City Agree on South Crossing Plans," *Napa Valley Register*, September 22, 1976, 1; "South Crossing Signals Given Okay By Local Officials," *Napa Valley Register*, May 4, 1977, 1; "Finishing Touches on Southern Crossing," *Napa Valley Register*, October 12, 1977, 1; "Do Not Open Til…'79?," *Napa Valley Register*, November 29, 1977, 2; "Southern Crossing Dedicated," *Napa Valley Register*, May 28, 1981, 1; "The Southern Crossing – Its Really Open," *Napa Valley Register*, June 2, 1981, 1; "Southern Crossing Bridge Dedication This Thursday," *Napa Valley Register*, May 27, 1981, 5.

into wider view after Jerry Brown took office as governor in 1975 and he appointed Adrianna Gianturco as Caltrans' director the following year; a post she held until 1983. The governor and his administration expanded on the previous administration's efforts to address California's transportation issues that included growing opposition to new freeways and traffic that clogged urban freeways, which was causing air pollution and other environmental / social issues. While freeways had been widely viewed as the solution to the state's transportation issues in the 1950s, that perspective had shifted among many legislators and their constituents by the early 1970s. By the time Governor Brown came into office, the state's highway commission had stopped designating new freeway routes, many controversial segments of proposed freeway had been eliminated from consideration, and the program to land bank property by purchasing right-of-way for future freeway projects had been halted. Right-of-way acquisitions for proposed freeways slowed considerably from the high point of $200 million annually in 1967 to $10 million in 1977, and Caltrans abandoned the pretense that many freeways originally planned would ever be built. Layoffs of Caltrans engineers that had started in 1970 accelerated during the state's fiscal crisis in 1975 and 1976, reducing the engineering staff by a third. In addition, projects such as the conversion of lanes for HOV lanes on the Santa Monica Freeway (I-10) in Los Angeles, planned to help the state comply with the Federal Clean Air Act of 1974, received enormous push back from the public when it was introduced in 1976, delaying the implementation of other HOV lanes, including those on lanes added to some freeways.[9] The Brown administration developed the *California Transportation Plan* that was required under the law that created Caltrans. The plan contained goals, objectives, and policies against which alternative modes of transportation could be evaluated. It also proposed funding mechanisms that would have raised taxes. This plan was considered to be a significant transformation of transportation policy and the political feasibility of its proposals quickly came into question. Negativity towards HOV lanes and the plan's proposed funding methods likely muted the public's response to this plan following its release in October 1976, with some critics opposing the plan as "social engineering" meant to force Californians out of their cars and into mass transit. While the legislature never adopted the plan, some of the plans proposals were implemented such as efforts to increase carpooling and bus ridership.[10]

In the late 1970s and early 1980s, much of Caltrans' focus and leadership moved to maintaining and improving the existing freeway and roadway system in part to protect the public's investment in the system, particularly with the ever increasing vehicle miles traveled in California after the brief period following the oil embargo. In 1977, for example, Caltrans laid out priorities that identified seven times the funding needed for bridge reconstruction (for structurally inadequate bridges) over what had been recognized in 1974, while during the same period the identified need

[9] Brown, *Statewide Transportation Planning in California*, 23 and 34; Jones, *California's Freeway Era in Historical Perspective*, 313; Karner, "Multimodal Dreamin," 40 and 48.
[10] Karner, "Multimodal Dreamin," 47-49; "Interview with Gianturco," 6; Brown, *Statewide Transportation Planning in California*, 31.

for new highway construction decreased by more than half.[11] As Caltrans' goals became more immediate and the department pursued multimodal transportation goals and implemented statewide transportation planning efforts, regional planning agencies across the state gained support from business and environmental interests seeking more local control over transportation decisions. This led, in part, to the formation of the California Transportation Commission in 1977, which superseded the California Highway Commission and State Transportation Board, along with the devolution of more of the state's transportation authority to regional planning agencies, with multiple local governments raising sales taxes to fund transportation projects in the 1980s.[12]

Some fiscal stability returned to Caltrans' budgets in the early 1980s. An increase in the state's gas tax was enacted in 1983 and federal funding increased during this period. While there was more money, few large-scale projects had been planned and designed as the state had continued to largely focus on maintenance and improvements to the existing system. Bridge rehabilitation was identified as among Caltrans' highest priorities at the time, accounting for about one-third of all maintenance and improvement needs on the state's freeway / roadway system. This effort led to awarded bridge rehabilitation contracts and funding on such projects exceeding what had been initially planned. In 1984, Caltrans reorganized various divisions and essentially reconstituted much of the former Bridge Department that existed under the Division of Highways, which had been split up after Caltrans was established. The new Division of Structures had a more limited overall role within the state's transportation program, but continued to work on at least some parts of all major projects in the Caltrans districts and influenced on-going bridge programs for seismic safety and bridge aesthetics.[13]

8.2 Bridge Aesthetics 1975-1984

Engineers, transportation planners, architects, and others addressed the aesthetic design of bridges in various ways during the latter half of the twentieth century. As early as the Great Depression in the 1930s, it became evident to designers that aesthetically pleasing bridges did not have to have historical references and added ornamentation, and the extra expense inherent in such elements. By the 1950s and 1960s, like in other states across the United States, transportation agencies in California were constructing bridges without ornament or design references to historic architecture. This not only aligned with the design practices of the time dominated by Modern architecture, but also as a function of the economy of scale necessary to construct the great volume of bridges on freeways and local roadways at the time. Starting in the early 1960s and extending

[11] Caltrans, *An Estimate of existing state highway construction needs: as required by Section 1888.8 of the Streets and Highways Code*, April 15, 1977, 4-7 and C-2; "Interview with Gianturco," 6; Dowall and Whittington, *Making Room for the Future,"* 12 and 16; Brown, *Statewide Transportation Planning in California*, 34.

[12] Karner, "Multimodal Dreamin," 41 and 49-50; Brown, *Statewide Transportation Planning in California*, 35.

[13] Norman Root, *Annual Highway Program Accomplishments Report*, Caltrans, 1982-83, 2 and 44; Norman Root, *Accomplishments 1983-84 to 1986-87 California Highway Program*, California Division of Highways and Caltrans Office of Public Affairs, September 1, 1987, 1-3; Mary Hanel, *Annual Summary Report Compilation, Fiscal Year 1984-85*, Caltrans, 17 and 31; *Highway Recollections of Robert C. Cassano*, Oral History Interview with Donald W. Alden, Caltrans, April 16, 1998, 11-12 and 26-28.

for the next several decades, the Division of Highways, and later Caltrans, undertook a concerted effort to improve the aesthetic appearance of bridges in California. This also influenced city and county bridge building across the state.

By the period addressed in this study, 1975 to 1984, the process and procedures for incorporating aesthetic considerations into bridge design were well entrenched in California. As discussed herein, aesthetic bridge design had matured in California by the late 1970s and it remained part of the design process even as Caltrans addressed funding and staffing issues during this period.

8.2.1 Development of Bridge Aesthetics Program at Division of Highways / Caltrans

In the early 1960s, the Division of Highways began to hire and train architects in its Bridge Department to help improve the appearances of its bridges, and the Department began to encourage its bridge engineers to consider aesthetics in the design process. Initiation of this program is attributed to then Chief of Bridge Planning and Design Arthur L. Elliott (1911-2004), who at the time was also promoting improvements and efforts for highways aesthetics in general in the face of public concern about the state's expanding highway and freeway system.[14]

Elliott, who led the Division of Highways Bridge Department from 1953 until his retirement in 1973, considered the growing attention to bridge aesthetics in the 1960s to be a renaissance of the concept, rather than a novel scheme, as it continued into the Modern era the pursuit of aesthetically pleasing bridges similar to efforts made decades earlier. During the late nineteenth century and early twentieth century, many bridges in California and across the United States were designed and built with decorative elements and ornamentation because their designers wanted the structures to have a pleasing appearance. From the 1900s to the 1930s, some cities, like Los Angeles, instituted bridge programs that built structures as civic monuments influenced by the City Beautiful movement with bridges referencing historic architecture. Similar civic monument bridges were built in cities across the state. In the poor economic conditions of the Great Depression in the early 1930s, bridge engineers became very cautious about designing bridges, in most cases, which were anything other than the barest essential for safety and utilitarian design. This trend continued through the decade and into the period of stringencies during World War II

[14] Arthur L. Elliott, "Aesthetics of Highway Bridges," *Civil Engineering*, June 1968, 66; James E. Roberts, "Aesthetic Design Philosophy Utilized for California State," *Journal of Urban Planning and Development*, Vol. 118, No. 4, December 1992, 138; Arthur L. Elliott, "Esthetic Development of California's Bridges," presented at the April 14-18, 1980, ASCE Convention and Exposition, Portland, Oregon (Preprint 80-004), published in *Journal of Structural Engineering*, Vol. 109, No. 9, September 1983, paper no. 18240, 2159; Caltrans Transportation Library, Arthur L. Elliott "Aesthetics" folder. For example, Arthur L. Elliott, "What Does Aesthetics Mean in the Division of Highways, Phase I, Aesthetics Program, January 25, 1966," which appears to be a presentation given to Division of Highways personnel. Among the most prominent efforts to improve the appearance of highways across the country was the federal Highway Beautification Act of 1965, which was a tangible result of First Lady, Lady Bird Johnson's national campaign for beautification. This act was largely focused on regulating outdoor advertising, and while the law was later considered to have been flawed and ineffective, it indicates the period's rising concern regarding aesthetics caused by highway infrastructure. See Lewis L. Gould, "The Highway Beautification Act of 1965," *Lady Bird Johnson and the Environment* (University Press of Kansas, 2021), available online at : https://www.jstor.org/stable/j.ctv1p2gjzg.12 (accessed August 2022).

and the immediate post-war period. Bridge engineers that had their professional development during this almost twenty year period were strongly influenced by the restrictions on aesthetics, as they considered such efforts to be an improper expenditure of public funds. Faced with a culture of austerity, some bridge engineers understood that they needed to work with the basics of good design, and thus proportion, scale, and compatibility became paramount, rather than ornamentation. After the Great Depression and World War II, economics in California and elsewhere improved and there was interest in making bridges look better. In the design preferences of the time, "pasted-on decorations," like those used in the early twentieth century, were not acceptable and thus there was study and experimentation to discover what would improve the appearance of new bridges. Increased vehicle speeds on highways and development of rapid travel, such as jet airplanes, in the mid-twentieth century inspired changes in bridge design wherein light, airy, and dynamic feeling of movement were valued. This resulted in efforts to make bridge members as thin as possible and make bridges appear to flow across open spaces.[15]

By the late 1960s, California Division of Highway bridge designers were regularly working to improve bridge aesthetics. Aligning with the dominant architectural trends in Modernism of the period, bridge designers aspired to simplicity and pureness of structure, avoiding ornamentation, celebrating the beauty of structural form, and emphasizing ease of construction and economy of design. Slender structures on slender piers or columns with minimal number of elements, and continuous or steady long lines were among the features of the aesthetical ideal at the time. The simplicity of the first four-level freeway interchange in Los Angeles, completed in 1949 (at US 101 and SR 110), was touted in the 1960s as having high aesthetic value partly because it demonstrated much of the aesthetic ideal of the time with the complex design solved with only two main elements, solid slab roadway decks and tubular columns (**Photograph 1**).[16] By the early 1970s, the Division of Highways had designed and built multiple bridges that received awards celebrating their appearance, such as singular structures in dramatic settings like the Cold Spring Canyon Bridge (51 0037) built in 1963 on SR 154 in Santa Barbara County and the San Mateo Creek (Eugene Doran Memorial) Bridge (35 0199) built in 1967 on I-280 in San Mateo County, as well as freeway structures like the "Sutter Fort Viaduct" built in 1966 in Sacramento that now carries Capitol City Freeway / Business 80; McBean Parkway Overcrossing built over I-5 in 1968 in Santa Clarita, Los Angeles County; Junipero Serra Freeway (I-280) bridges built in the mid to late 1960s in San Mateo County; and Adams Avenue Overcrossing built in 1970 over I-805 (57 0619) in San Diego County.[17]

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[15] Stephen D. Mikesell, "The Los Angeles River Bridges: A Study in the Bridge as a Civic Monument," *Southern California Quarterly* (Summer 1986), 365-386; JRP Historical Consulting, *City of Los Angeles Monumental Bridge: 1900-1950*, prepared for Caltrans, May 2004; Elliott, "Esthetic Development of California's Bridges," 2159-2161 and 2163.
[16] Elliott, "Aesthetics of Highway Bridges," 65-66; Fritz Leonhardt, "Aesthetics of Bridge Design," *PCI Journal*, February 1968, 15-16, 21, and 31.
[17] W.S. Ludlow, "Aesthetics in Bridge Design," *Manual of Bridge Design Practice* (State of California: Bridge Department, 1971), 16-15 to 16-20. This chapter on bridge aesthetics was written in 1970.

Photograph 1: Four-Level Freeway Interchange in Los Angeles in the 1950s.[18]

Although its engineers did not necessarily identify their work as fitting into wider design trends of the period, the Bridge Department was working within the milieu of Modern architecture that dominated contemporary design during the mid to late twentieth century.[19] Modernism, as a broad architectural and design movement, emerged as the pre-eminent influence in architecture in the United States beginning in the 1930s and 1940s. In general, Modernism at this time can been understood as a cultural phenomenon and discourse of concepts and ideals based on a set of conventions and ideals that included reconciliation of the underlying principles of design with the progressive transition of contemporary society and culture. This included eschewing ornamentation and advocating for the use of new technologies, materials, and construction techniques in the pursuit of pure form and function, often within the context of design that encapsulated the potential for a positive future.[20] However, Arthur Elliott pointed out that the Modernist architecture axiom "form follows function" did not directly correlate with successful

[18] California Historical Society, courtesy University of Southern California Special Collections at https://doi.org/10.25549/chs-m2511

[19] JRP Historical Consulting, LLC, *Historical Resources Evaluation Report, Cold Spring Canyon Bridge (51 0037) Pedestrian Barrier Project, State Route 154, Santa Barbara County, California, 05-SB-154 PM 22.96, EA 05-0P910K,* prepared for Caltrans District 5, May 2007. Marvin A. Shulman, Raymond L. Whitaker, and George A. Hood, Jr. were key members of the Bridge Departments design team for the Cold Spring Canyon Bridge. Each was interviewed for the above-named HRER, and they did not identify that they were working in a "Modernist" aesthetic.

[20] Alan Colquhoun, *Modern Architecture* (Oxford: Oxford University Press, 2002), 9-11; Carole Rifkind, *A Field Guide to Contemporary American Architecture* (New York: Penguin Putnam, 2001); Sarah Williams Goldhagen, "Something to Talk About: Modernism, Discourse, Style," *Journal of the Society of Architectural Historians*, Vol. 64, Number 2, June 2005, 144-167; Adam Sharr, *Modern Architecture: A Very Short Introduction* (Oxford: Oxford University Press, 2018) 5-10.

bridge design, as a structurally efficient and safe bridge were not necessarily aesthetically pleasing. He noted that bridge elements designed to meet required standards could result in mismatched substructure (supports) and superstructure (deck / roadway) with an overall end product incompatible with its setting. The Division of Highway's 1971 *Manual of Bridge Design Practice* acknowledged that functional bridges may be structurally honest, but without aesthetic considerations such bridges could appear "tactless, unimaginative, and ugly."[21]

The early evolution of California's bridge aesthetics program coincided with the expansive use of prestressed concrete box girders, typically cast-in-place, for thousands of bridges across the state over the next few decades. As contractors learned to build prestressed concrete box girder bridges efficiently, they soon became among the least expensive bridges to construct, aided by the development of standard design details and specifications for column shapes, railings, and surface treatments that provided designers a large inventory of forms from which to choose without adding to construction costs. These efforts in California differed from states in the Midwest and Northeast where structural steel bridges were the dominant bridge type. While prior to World War II, structural steel and concrete were each used in roughly the same number of structures in California, this changed in subsequent decades with structural steel costing about 50% higher in the state than concrete by the 1980s.[22]

There came to be essentially two types of architectural treatment, those added to standard structures and those that united architecture and engineering. Dictated by cost and function criteria, treatments incorporated into standard structures could include the addition of grooves and textures, for example, while the rarer marriage of architecture and engineering could include shapes, proportion, scale of piers, abutments, and superstructure that varied from standard structures. Although Division of Highways / Caltrans policy was to design aesthetically pleasing structures, and sometime incorporated input from members of the public, there were also clear parameters that such efforts would not be unduly more expensive. In most cases, the shapes of structural elements were examined and changed to provide a more pleasing effect. Over time, a variety of standard aesthetically acceptable bridge columns, railings, and surface treatments were developed. This allowed for cost savings while achieving the goals of the aesthetics program. Cast-in-place concrete structures were particularly adaptable to this effort. These types of structures provided ease of construction, low cost, and seismic resistance at the same time as being well-suited for curved bridge alignments that required skewed piers and abutments, like in freeway connectors. Such structures could also be easily widened without disturbing their basic appearance. Efforts

[21] Elliott, "Esthetic Development of California's Bridges," 2163; Ludlow, "Aesthetics in Bridge Design," *Manual of Bridge Design Practice*, 1971, 16-15 to 16-22.
[22] Elliott, "Esthetic Development of California's Bridges," 2164; James E. Roberts, *Aesthetics and Economy in Complete Concrete Bridge Design*, California Department of Transportation, Office of Structures Design, 1986 (available at the Caltrans Transportation Library), 1 and 6; Roberts, *Aesthetics and Economy*, 1 and 3.

were made to use similar architectural treatments on all structures on a given route within a particular region.[23]

8.2.2 Making a Beautiful Bridge

In the 1960s, 1970s, 1980s, and later, the Bridge Department of the Division of Highways / Caltrans designed and built bridges with consideration of their aesthetic qualities, following general principles related to quality design that carefully analyzed proportions of bridges' structural and safety elements, attractive forms for the various bridge elements, compatibility of bridges within their setting, and consideration of current and future acceptance of the structures. The appearance of bridges was considered from both elevation and oblique views. Arthur Elliott declared that effort was not to "make a bridge beautiful," but rather to be "making a beautiful bridge," with designs conceived from the beginning to have a good appearance, and that bridge design aesthetics was equally important as function and safety in most locations.[24]

8.2.2.1 Proportion

Proportion in bridge design is the scale of bridge components, and the spaces between them, in relationship to one another, and this was considered crucial to making a structure appropriate in its setting. Appropriate size and scale between the length and height of structural elements, as well as their clearances and depths, was touted to avoid having substructures and superstructures that do not correlate well to each other. Designers were guided to avoid substructures that may have the appearance of being unable to appropriately support the superstructure with columns or bents that seem too thin to support the girders. Thus, proportion of columns to the overall structure was found to be essential to ensure an appropriate assemblage. Other considerations regarding proportion included the use of an odd number of spans rather than an even number of spans on longer bridges, and the span lengths varied with longer spans supported by longer piers. Elliott noted that psychological tests demonstrated that people often agreed on what comprises good and bad proportions. So, he argued, employing a term like "artistic proportions" for bridge design was not as abstract as it may seem. He further observed that mathematical ratios alone would not provide an adequate solution because the various components of a bridge have to look good together.[25]

The Napa River Bridge (Bridge 21 0049), for example, was completed in 1977 and admired at the time for its pleasing appearance because of its harmony of elements based on the proportions

[23] Elliot, "Esthetic Development of California Bridges," 2160; Roberts, "Aesthetic Design Philosophy," 138-141 and 155; Arthur L. Elliot, "Aesthetics in a Changing Economy," in *Meeting Preprint 2199* for American Society of Civil Engineers National Structural Engineering Meeting, April 22-26, 1974, Cincinnati, Ohio, 7-8.

[24] Arthur L. Elliott, "Creating a Beautiful Bridge," in Committee on General Structures, Subcommittee on Bridge Aesthetics, *Bridge Aesthetics Around the World*, (Washington D.C.: Transportation Research Board, National Research Council. 1991), 215-217; Elliott, "Esthetic Development of California's Bridges," 2162.

[25] Elliott, "Esthetic Development of California's Bridges," 2161 and 2165-216; Arthur Elliott, "What Makes a Bridge Beautiful," *Exploratorium Quarterly*, Vol. 11, No. 1, Spring 1987, 8-9; Elliott, "Creating a Beautiful Bridge," 221.

between span lengths and depth of girders, as well as height and size of piers, along with the negative spaces and solid masses (**Photograph 2**).[26]

Photograph 2: Napa River Bridge and Overhead (21 0049), camera facing southwest, 6/1/2022.

8.2.2.2 Attractive Forms

During the latter twentieth century, the Division of Highways Bridge Department / Caltrans Division of Structures advocated for attractive forms for bridges that had slender qualities, particularly for girders, columns / piers, and abutments. New standard railings and structures for overhead signs were also developed during this period with visual appearance taken into account. The Division of Highway's *Manual of Bridge Design Practice* from 1971, discussed further below, articulated these principles noting that designs of successful bridges expressed their function and structural qualities, along with unity and/or contrast of components, graceful curves, and sculpted /dynamic elements. Use of colors and textured surfaces were also among the qualities that could enhance designs. Simple, trim, and plain lines were considered more attractive than "contrived or contorted shapes."[27]

The design of girders was of particular focus, with various methods employed to minimize the appearance of their size and relative scale to the rest of a bridge, even as demand increased for longer spans, often on curved or skewed alignments. As the ancient Greeks had understood, girders

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[26] Roberts, *Aesthetics and Economy*, 7; Roberts, "Aesthetic Design Philosophy."

[27] Elliott, "Aesthetics of Highway Bridges," 65-66; Leonhardt, "Aesthetics of Bridge Design," 15-16, 21, and 31; Richard M. Barker and Jay A. Puckett, *Design of Highway Bridges: An LFRD Approach*, 3rd edition (Hoboken, NJ: John Wiley & Sons, Inc., 2013) Chapter 3; Arthur L. Elliott, "The Role of the Public Agency," in Adele Fleet Bacow and Kenneth E. Kruckmeyer, editors, *Bridge Design: Aesthetics and Development Technologies*, (Boston: Massachusetts Department of Public Works and Massachusetts Council of the Arts and Humanities, 1986), 31; Ludlow, "Aesthetics in Bridge Design," *Manual of Bridge Design Practice*, 1971, 16-15 to 16-22; Elliott, "Esthetic Development of California's Bridges," 2161.

had to be built with a convex curve, tapered in the middle, in order to appear straight because girders that are actually straight have a sagging appearance. The advent of prestressed concrete allowed designers to take a quarter or more out of the depth of girders, greatly helping superstructures look thinner and more graceful. To make the depth of the girder less discernible and improve the slenderness of their appearance, the sides of concrete box girders were sloped inward, which receded them into the shadow of the overhanging cantilevered bridge deck, some with deep outward-facing fascia beams beneath the railings. For some bridges, the bottom corners of box girders were also rounded at the bottom longitudinal edge, and there were some built with a continuous curve forming the so-called “bathtub” type girder, but this latter design proved to be more expensive and not much more effective than sloping the sides and curving the fillet edge (**Figure 1**). For multi-span bridges, attention was given to ensure that horizontal lines of the superstructure were continuous and not divided by piers. This was achieved with the caps of columns and bents embedded into the girder and/or inset from the edges of girders (also illustrated in **Figure 1**).[28]

A great amount of attention was also given to the design of columns, piers, and bents, particularly to taper the elements to enhance their slender qualities and diminish monotony for bridge supports. While standardized round concrete columns were found to be economical with contractors employing reusable forms for multiple projects, other shapes were also developed as standard types that could also be easily and inexpensively formed, adaptable for various heights. These included hexagon and octagon shapes (in section) that flared at the top (**Photograph 3**). Tapered columns with the smaller end at the base gave bridges a lighter feel. The Division of Highway / Caltrans also explored use of other shapes such as V, X, and “wishbone” forms, as well as the “golf tee” shape that was a round column with a flared top. Single piers were preferred over multiple stem piers. Various shapes were used for bents too (**Photograph 4**). The angle of bents was also used to enhance the dynamic feeling of bridges, leaning them towards the center of the span, some with slight curve that approximated an arch form, which was considered highly appealing.[29]

[28] Elliott, “Aesthetics of Highway Bridges,” 65-66; Elliott, “Esthetic Development of California’s Bridges,” 2163-2165 and 2169.
[29] Elliott, “Aesthetics of Highway Bridges,” 65-66; Elliott, “Esthetic Development of California’s Bridges,” 2164 and 2166; Elliott, “The Role of the Public Agency,” 28.

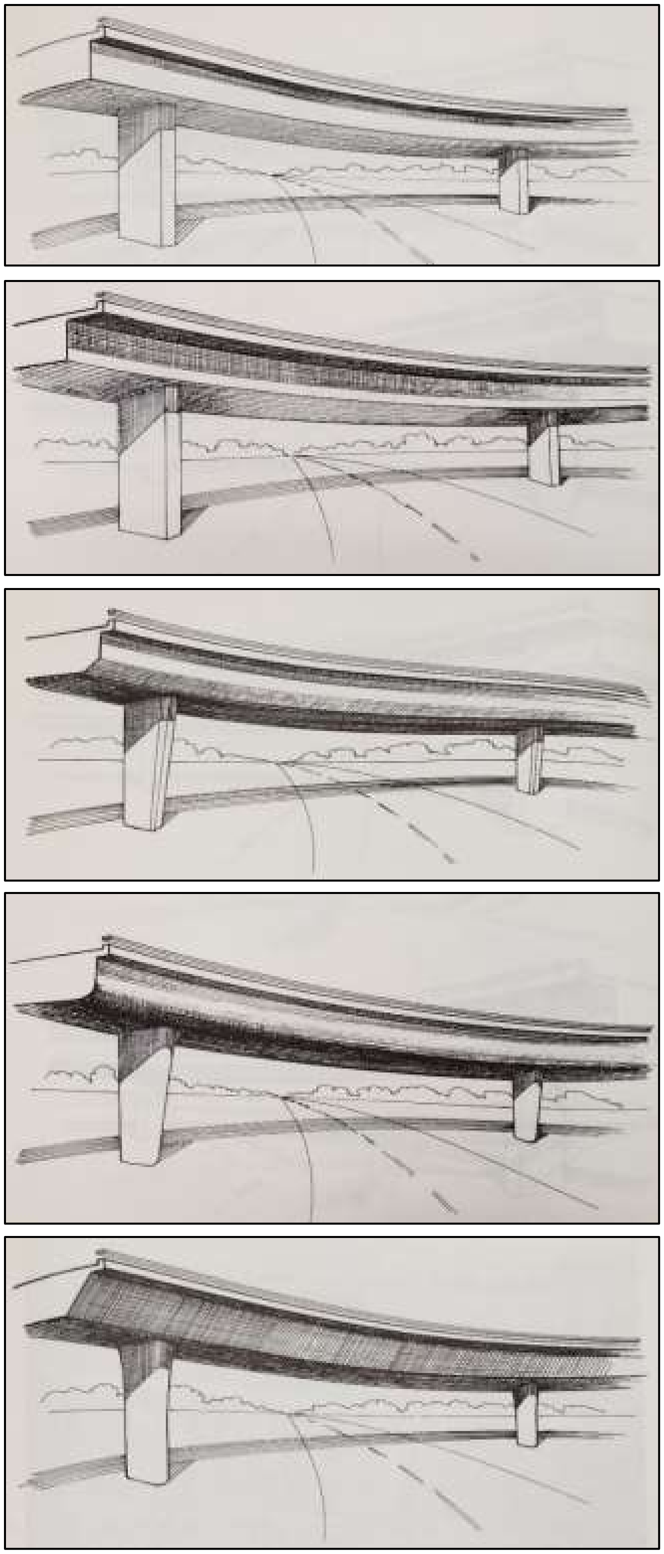

Figure 1: *Manual Bridge Design Practice*, “Aesthetics in Bridge Design,” (1971) 16-11 to 16-13, illustrating deeper appearing girder in top image compared with other designs with wider overhang creating shadow, chamfered or rounded bottom of girder, and sloping girder face that decrease the appearance of girder depth and creating more subdued appearance.

Photograph 3: Stockton Crosstown Viaduct, SR 4 over Sutter Street, camera facing west, 4/28/2022.

Photograph 4: Bents on Dumbarton Bridge, 8/17/2022, camera facing west.

Abutments, particularly for freeway overcrossings, were also designed to enhance openness and dynamic qualities of bridges. Abutment walls were designed to lean back, with much of their size hidden in the fill surrounding bridge approaches. In addition, the Division of Highway's *Manual of Bridge Design Practice* encouraged designers to help "accentuate the flow" of the freeway using dynamic sloping that included the face of abutments so that as motorists passed beneath a freeway overpass, the face of the abutment was sometimes sloped inward toward the center of the span(s) to enhance the roadway's sense of motion (**Figure 2**). Like the piers or girders, bridge abutments too were recessed below the roadway deck.[30]

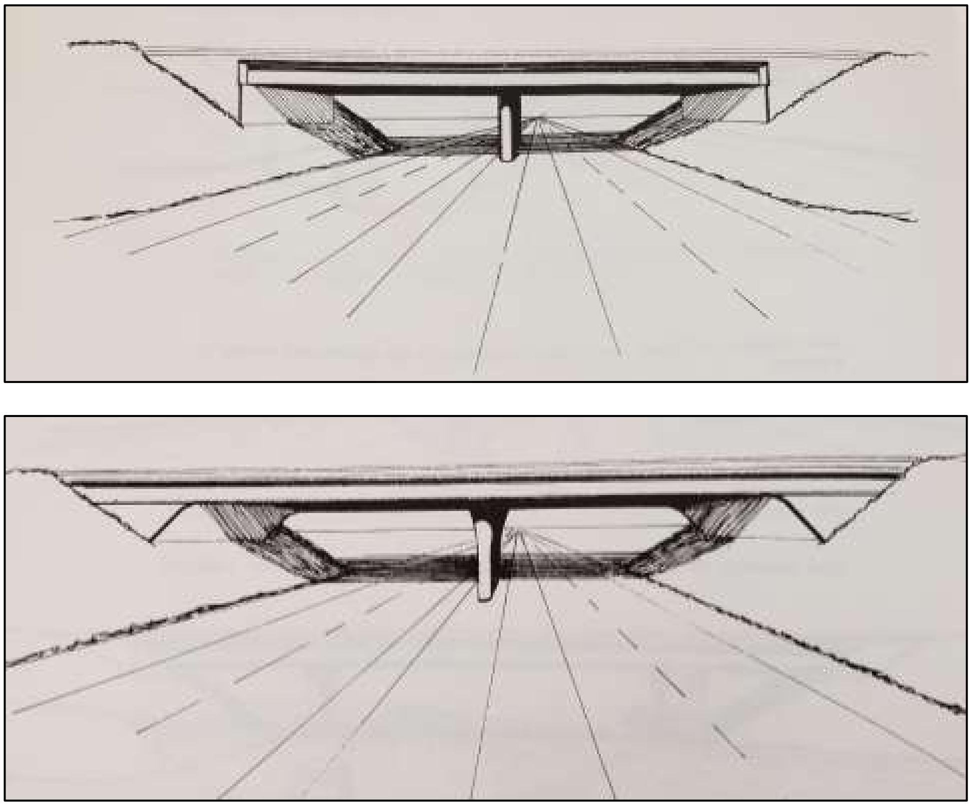

Figure 2: *Manual of Bridge Design Practice*, 16-6. The top image illustrates vertical lines that appear static and the bottom image illustrates dynamic sloping that is intended to "accentuate the flow" of the structure's appearance.

Surface treatments were increasingly employed to improve the attractiveness of concrete panels and large expanses of concrete, including applied facing material, abstract designs, and some murals. This was part of the effort to create contrast and texture, and consideration of how light and shadow could work with and on a structure. Textures were employed to soften hard appearances of concrete or to make some elements less dominant, particularly on smaller structures. Among the most common surface treatments was the corrugated washboard effect that could be readily seen by passing motorists. Texture was applied most often on abutments, columns, and railings. The brick-colored concrete inserts with exposed aggregate in the columns and railings of the Stockton Crosstown Viaduct on SR 4 (29 0269, built 1975) were intended to be "compatible with the brick buildings nearby," although this is not readily apparent along most of the viaduct (**Photograph 5**).[31]

[30] Elliott, "Esthetic Development of California's Bridges," 2164-2165 and 2169; Ludlow, "Aesthetics in Bridge Design," *Manual of Bridge Design Practice*, 1971, 16-6.
[31] Elliott, "Aesthetics of Highway Bridges," 65-66; Leonhardt, "Aesthetics of Bridge Design," 15-16, 21, and 31; Barker and Puckett, *Design of Highway* Bridges, Chapter 3; Elliott, "The Role of the Public Agency," 31; Roberts, "Aesthetic Design Philosophy," 155-156.

Photograph 5: Stockton Crosstown Viaduct, SR 4 at South San Joaquin Street, with St. Mary of the Assumption Catholic Church on the right, camera facing west, 4/28/2022.[32]

Arch bridges were built in California far less frequently during the 1960s, 1970s, and 1980s, than in previous decades, even though their form was (and still is) considered of high aesthetic value. Most arch bridges built in the latter half of the twentieth century in the state are open spandrel structures. The Myrtle Creek Bridge on SR 299 in Humboldt County (01 0007) (PM 7.09) is a concrete arch built in 1984 (**Photograph 6**). This is an unusual structure for its period. While concrete arches were built with some frequency in the early to mid-twentieth century, they were usually not an economical choice because they were more labor intensive and historically would have been built as cast in place structures with extensive falsework. Caltrans chose to build a concrete arch at this location, with input from various interested parties, because it was the most appropriate structure for its site, and the design was accomplished using precast segments, which were cast off site and erected and post-tensioned at the site without falsework. The deck was then cast in place. The West Lilac Road Overpass on I-15 (57 0870, built 1978) is another bridge from this period that has includes an arch, although it is technically a prestressed concrete box girder supported on a reinforced concrete two-cell box cellular arch (**Photograph 7**). Its design too was considered to be in harmony with its environment, deriving its size and scale from its surroundings. Spanning an eight-lane freeway in a deep cut, the structure is considered to be a well-proportioned concrete arch. This type was selected despite its increased cost over a standard girder that could have been built. The bridge designers were pleased with the end results that such that it justified the additional costs.[33] This bridge is similar

[32] St. Mary of the Assumption Catholic Church, at 219 East Washington Street, is listed in the Office of Historic Preservation Built Environment Resource Directory for San Joaquin County. Construction of the church began in 1861 and was completed in 1913. See also: St. Mary of the Assumption Catholic Church's website: https://www.stmaryschurchofstockton.org/history.html (accessed November 2023).

[33] Roberts, "Aesthetic Design Philosophy," 148 and 150.

to the East Gate Mall Road Bridge over I-805 (57 0762, built 1971), formerly known as the Old Miramar Road Overcrossing.

Another example where structures were considered to have an attractive form was at the I-380 / US 101 interchange in San Mateo County (eleven structures built in 1976) that included smooth rounded bottom flange that was intended to mirror the "sleek jet transports in evidence throughout the peninsula," and the railings on the structure were compatible with the railing design used on the parking structures at the nearby San Francisco Airport. For the Newport Bay Bridge carrying SR 1 over the inlet to Upper Newport Bay in Newport Beach, Orange County (55 0614, bult in 1981), the sculptured openings punched through the pier walls were intended to create a light open feeling, designed for viewers from the water (boaters) and the box girder superstructure was designed as thin as possible to not only allow for maximum clearance, but also enhance the overall smooth design and minimize the visual appearance of the approaches on the embankments (**Photograph 8**).[34]

Photograph 6: Myrtle Creek Bridge carrying US 199, camera facing southeast, 1985 soon after completion.[35]

[34] Roberts, "Aesthetic Design Philosophy," 155-158.
[35] "Myrtle Creek Bridge," *Prestressed Concrete Institute Journal* 30, no 6, (Nov-Dec 1985), 163.

Photograph 7: West Lilac Road Overpass on I-15, camera facing northwest, 4/5/2022.

Photograph 8: State Route 1 over North Arm of Newport Bay, camera facing west, 4/5/2022.

8.2.2.3 Compatibility

Compatibility was emphasized to improve how bridges fit into their surroundings. This depended on the nature of the structure and site with some bridges designed to blend with their setting and others to stand out. Elliott emphasized a bridge's compatibility was more important than its uniqueness of appearance, stating that "a properly designed structure has a sense of belonging in its particular location," noting that bridges that seem out of place are subject to criticism. As noted, this could happen if substructure and superstructure were mismatched. He further specified that bridges do not need to be fancy to be compatible, and that stark and simple bridges in a desert setting won prizes because they were well suited for their environment.[36] For steel bridges, colors, such as light brown and tan, were introduced to better integrate structures into their surroundings. An example of this is the Warm Springs Creek Bridge in Sonoma County (**Photograph 9**), which the U.S. Army Corps of Engineers (Army Corps) gave a distinguished design award in 1974, noting among its significant design qualities the bridge's tan colored steel that was designed to harmonize with its environment and "blend the bridge into the surrounding area."[37]

Photograph 9: Warm Springs Creek Bridge, Rockpile Road over Lake Sonoma in Sonoma County, 7/12/2022, camera facing west.

Elliot extolled the virtue of bridge design which exuded a feeling that the structure was conceived with care taking into account its appearance within its setting. While this could be a bridge that was highly noticeable, it could also sometimes be the bridge that motorists would not even notice because it does not attract attention to itself. Compatibility was also part of the effort when Caltrans designers worked with communities where a new bridge was being considered, sometimes starting with aesthetic considerations before structural designs.[38]

[36] Elliott, "Esthetic Development of California's Bridges," 2161 and 2163; Elliott, "Creating a Beautiful Bridge," 217.
[37] Elliott, "Aesthetics of Highway Bridges," 65-66; Leonhardt, "Aesthetics of Bridge Design," 15-16, 21, and 31; U.S. Army Corps of Engineer, *1974 U.S. Army Corps of Engineers Distinguished Design Awards*, available online (accessed February 2023), https://ceawards.erdc.dren.mil/archives/AwardsProgram/pdf/1974.pdf#view=Fit
[38] Elliott, "Creating a Beautiful Bridge," 217 and 219; Elliott, "The Role of the Public Agency," 21.

8.2.2.4 Current and Future Acceptance

Bridge engineers and other advocates for aesthetically pleasing bridges during the mid to late twentieth century asserted that the appearance of bridges was important for permanent structures that would be part of a locality for years, stressing that a bridge should be a pleasing addition to its local environment. Elliott contended that bridges should be equally pleasing to the people living with them when they are constructed and to people several decades hence. He warned bridge engineers to beware of seeking uniqueness over context in their designs, a critique he leveled at some architects where he found little consideration of how a building would be considered not only now but also in the future. Another factor for public acceptance of bridge was the concept of safety appearance, wherein a bridge would be designed to provide users the sense that the bridge has ample strength and stability, in part by giving attention to the quality of materials and workmanship in structures. For community acceptance, Caltrans sometimes emphasized working with local interest groups to assess aesthetic considerations even before considering structural issues.[39]

With input from local interested parties, Caltrans occasionally considered and designed images of people, animals, and objects in relief on the sides of bridges, as part of the aesthetic treatment. This was done to highlight specific qualities of a location and/or its history, and it was seen as part of the efforts for new bridges to be accepted into their community. One drawback to using this type of treatment is that it could be challenging for motorists to appreciate the design while traveling at a high rate of speed.[40]

Another treatment that provided some level of local acceptance was painted murals. Caltrans' general policy was to avoid installing murals itself in order to sidestep potential controversies of subject matter, but in some locations murals were painted by local artists and through local organization.[41] The most well-known example of murals painted on bridges are those in Chicano Park in Barrio Logan in San Diego situated under the Coronado Bridge's approach ramps to Interstate 5. The Chicano Park Monumental Murals, many of which were painted by master mural artists between 1973 and 1980, are a main feature of the park that was formed in response to community demonstrations, which were part of the wider Chicano Civil Rights Movement of the period. The park and its murals were designated a National Historic Landmark in 2016.[42] Another example of this is the Lemon Park POC (55C03070, built in 1977) in the Maple neighborhood of Fullerton in Orange County. To counter random graffiti that appeared on the bridge soon after its completion, the Fullerton City Council selected the Lemon Park POC for its mural program in 1978 and 1979. Muralist David Whalen oversaw the City's Neighborhood

[39] Elliott, "Esthetic Development of California's Bridges," 2162-2163 and 2170; Stewart Gloyd, "California – A Qualified Bridge Esthetics Case Study," *Concrete International*, Volume 16, No. 2, February 1994, 44; Elliott, "The Role of the Public Agency," 21.

[40] Roberts, *Aesthetics and Economy*, 8; Elliott, "The Role of the Public Agency," 32.

[41] Elliott, "The Role of the Public Agency," 32.

[42] Manuel Guadalupe Galaviz and Josie S. Talamantez, Chicano Park National Historic Landmark Nomination, August 7, 2015.

Youth Corps whose members chose the content and painted eight murals on the structure celebrating Mexican-American culture (**Photograph 10**).[43]

Photograph 10: Murals on Lemon Street POC, Fullerton, 4/5/2022.

8.2.3 Safety Issues: The Changed Visual Qualities of Bridges

The Division of Highways (and later Caltrans) aesthetic bridge program evolved in response to not only visual issues, but also through re-examination of safety concerns, and the advancement of structural bridge types and features. As the program progressed it became clear that safer bridges could also be those that had a more pleasing appearance. One prominent example was how abutments and supports for overcrossings were moved back or slanted outward from the roadway underneath. Railroad underpasses and early highway overcrossings / undercrossings (grade separations) were built with abutments and piers immediately adjacent to the lower roadway's traveling lanes (**Photograph 11**).

[43] "Fullerton Council Give OK to Campaign Against Graffiti," *Los Angeles Times,* October 10, 1978, 32; "Muralists Dab Way to Civic Beauty," *Los Angeles Times,* January 6, 1979, OC-A14; "Fullerton Council Votes More Anti-Graffiti Funds," *Los Angeles Times,* March 22, 1979, 54.

Photograph 11: Oceanside-Carlsbad Freeway in 1954, view facing north from Carlsbad with Jefferson Street Overcrossing in the foreground. This stretch of freeway became part of I-5 and the overcrossings were replaced with wider structures in 1970-1971 when the freeway was widened.[44]

These squared-off abutments and piers proved to be dangerous with vehicles striking bridges. In response, engineers designed abutments which slanted away from the roadway and moved columns / piers away from the roadway in order to improve safety. These improvements were found to not only be safer, but they also enhanced the aesthetic appeal of such bridges, helping facilitate an improved appearance of flow. Similarly, new bridges like freeway overcrossings / undercrossings were designed with columns that were tapered or more slender, which further opened up the space under a bridge that was visually appealing.[45]

8.2.1 Organizational Development

The procedures of California's bridge design aesthetics program within the Division of Highways, and later Caltrans, developed over time, including the incorporation of input and direction from specially trained architects within the Bridge Department. James Roberts (1930-2006) – long-time department bridge engineer during the 1950s, 1960s, and 1970s and Caltrans Chief Bridge Engineer in the 1980s (and later Caltrans Chief Deputy Director and Director of the Caltrans Engineering Service Center) – reported that incorporation of aesthetics became part of the "basic design philosophy" that was "taken for granted" as part of the Bridge Department's design of the state's highway bridges. The review of bridge aesthetics not only received relatively equal consideration to structural issues and project cost, but it was also started in the early stages of design before structural type selection was finalized.[46] Bridge models, sketches, and retouched photos were used to examine the potential appearance of various aesthetic design

[44] *California Highways and Public Works*, March-April 1954, 34.
[45] Elliot, "Esthetic Development of California Bridges," 2160; Roberts, "Aesthetic Design Philosophy, 138-141 and 155; Elliot, "Aesthetics in a Changing Economy," 7-8.
[46] Roberts, *Aesthetics and Economy,* 3, 5, and 6.

choices, and as noted herein, the department also took into greater account input from local community members for the design of new bridges. Important to achieving the department's aesthetic goals was a continuous educational program for staff and contractors. Contributing to the program's success was the centralized control of bridge design that improved consistency, with aesthetics incorporated into the process from top level management down to designers with directives, training, guidance, and support.[47]

The Division of Highways instituted various guidance for bridge engineers and their teams to standardize and regularize bridge aesthetics in the design process. The Division of Highway's 1971 *Manual of Bridge Design Practice* included an "Aesthetics in Bridge Design" section written the previous year, which explained the general principles of the highways department's bridge aesthetics program, providing illustrations, explanations, and pictorial examples. The Division's Bridge Department added this section when updating the manual from its previous edition published in 1963. By 1970, the Bridge Department put every bridge designed for the state's highway system through some level of aesthetic review prior to it entering structural design. The manual touted the "ecological" study conducted for each proposed bridge to assess potential impacts to the surrounding natural and built environments, as well as the "existing or future culture and inhabitants."[48] Consideration was also given to other extant bridges in the vicinity that have specific architectural treatment. The key instruction was to have bridges designed so that they would be aesthetically compatible with its location and route, not only of the bridge structure itself, but also treatments to details such as railings, medians, and pedestrian features. The chapter on aesthetics included a series of line drawings (see Figures 1 and 2) with observations and preferences regarding the outcome of various design choices. Component parts were to show unity and order, as well as have variety and contrast to relieve monotony. As noted herein, the technical means to reach such ends were not through ornamentation, but rather in the shaping and treatment of a bridge's component parts in order to provide the structure's form, line, space, light and shadow, texture, and color. Designers were also urged to take into account visual and safety concerns of local citizens, and the manual described the engineers and architects means for these efforts, which included site visits, ground and aerial photography, architectural renderings, photographic simulations, and models, many of which could be used in public meetings.[49] Even during the gas shortages and rising inflation of the 1970s, when aesthetics for bridges were seen by some as extraneous, Arthur Elliott advocated that aesthetics was part of the basic cost of a bridge, particularly considering that bridges were built to have long life spans that outlive short-term trends in the economy or artistic discernments. Encouraging bridge designers to consider what they were leaving for future generations, he promoted the concept that a bridge's appearance was as important as the structure's design features for load and safety, as well as it being compatible with its

[47] Elliott, "Esthetic Development of California's Bridges," 2172-2173; Gloyd, "California – A Qualified Bridge Esthetics Case Study," 45.
[48] Ludlow, "Aesthetics in Bridge Design," *Manual of Bridge Design Practice*, 1971, 16.3.
[49] Ludlow, "Aesthetics in Bridge Design," *Manual of Bridge Design Practice*, 1971, 16.3.

environment and for it to wear well with age. Part of the process also required designers to justify specific aesthetic enhancements so they would not detract from the structure's primary function or add significant costs. On the I-805 Mission Valley Viaduct at I-8 in San Diego, built in 1972, for example, the specialized concrete columns used in this complex structure were rationalized in the design because there was going to be sufficient repetition such that the contractor would be able to offset the costs associated with the project-specific forms used.[50]

The Division of Highway's chapter on aesthetics included some specific directions related to proportion of bridge components and a structure's overall character. The manual noted that bridges in natural settings look more "natural to the site" if they have odd numbers of spans of unequal, but proportional, length rather than even number of spans of equal length, which would look "too mechanical." In the same setting, the manual continued, a long single span may provide a more open feeling, but such a structure may result in a design that is "as imaginative as a plank." For freeway overpasses, the manual touted symmetrical even numbers of spans, declaring that odd numbers of spans "are prone to appear awkward." Also, for freeway overpasses, as noted above, the manual recommended dynamic sloping lines of the various elements to "accentuate the flow" of the freeway, whereas using vertical lines, such as at the abutments and in the piers would create a static appearance that would not accentuate the flow. The manual's line drawings and captions heightened the manual's messages with pronouncements declaring that "curving lines appear to give motion or flow" and that angular lines "slow down flow," or where "long haunches give grace to the structure," whereas short haunches "appear awkward and abrupt, detracting from continuity" of the bridge. Furthermore, the drawings helped illustrate why proportion between substructure and superstructure is important and how the overhang at the top of a bridge creating shadow on the face of the girder could subdue the visual impact of the bridge (as seen from the side, like traveling under a freeway underpass). They also promoted the Bridge Department's growing practice of using various design choices to make the girders of freeway overpasses appear slimmer by sloping, chamfering, or rounding the edges of the girder and employing piers that coordinate with each of those design choses.[51]

By the mid-1980s, the Aesthetics Unit of the Division of Structures at Caltrans was a twelve person unit that touted almost 400 prizes for beautiful bridges. Members of the Aesthetics Unit credited the expansive use of prestressed concrete as contributing to the ability for Caltrans to reduce the massing of most structures, so as to provide simplified and minimized structures that were considered appealing. They also considered textured finishes on concrete bridges to be desirable. One way to maintain continuity of bridges in a geographic area was to assign bridge architects to specific routes so that policy of similar architectural treatments on structures of a given route could be adequately implemented.[52]

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[50] Elliot, "Aesthetics in a Changing Economy;" Roberts, "Aesthetic Design Philosophy, 150 and 155.
[51] Ludlow, "Aesthetics in Bridge Design," *Manual of Bridge Design Practice*, 1971, 16-4 to 16-13.
[52] Gene Berthelsen, "Beauty and the Bridge," *Going Places*, November / December 1985, 15-19; Roberts, *Aesthetics and Economy*, 6.

Caltrans' 1981 *Bridge Planning and Design Manual* provided ample space on its Structure Type Selection form for considerations of "Previous Community Aesthetic or Ecological Commitments" and "Architectural Recommendations." The manual's discussion of each structure type included issues regarding "Appearance." For example, truss bridges were considered "Not desirable," whereas the appearance of conventional box girders was considered "Good from all directions. Conceals utilities, pipes and conduits," with prestressed box girders considered to be "Better than conventional box girder because of shallow depth." Furthermore, the manual included direct instruction to bridge engineers that the "Bridge Architect should be consulted on any questions of aesthetics."[53]

8.2.2 Caltrans Bridge Aesthetics Program in Late 1970s and Early 1980s

During the late twentieth century, bridge engineers and others from across the country and outside the United States praised efforts in California to design bridges with pleasing appearances, even as there was continued debate and dismay during that time regarding the lack of attention being given to bridge aesthetics in many states and elsewhere. In the twenty years Arthur Elliott led the Division of Highways Bridge Department, prior to his retirement in 1973, the agency built over 8,000 bridge and had more bridge design awards than any other state bridge department in the United States. In 1980, the U.S. Department of Transportation commended California as having "developed exceptionally beautiful systems for the design of overhead structures and elevated interchanges. Flowing concrete forms cantilever and perch on narrow columns as if 'floating.' They appear both graceful and strong."[54] California's development and extensive use of the prestressed concrete box girder bridge resulted in structures that were hailed for their simplicity in form and detail, appearance of safety, and priority given to finishes and trueness of lines. Bridge architect / engineer Frederick Gottemoeller noted that every public agency in charge of building bridges developed a policy regarding aesthetics, with some like California that developed overt practices which led to successful outcomes, and others that resulted from the apathy towards this issue which resulted in many utilitarian structures without consideration for appearances.[55]

By the 1990s, bridges aesthetics literature had developed an advocacy for bridge agencies to be more like California and address aesthetics as a legitimate public policy goal. Articles and book chapters about bridge aesthetics from the latter twentieth century encouraged design that corresponded with California's program, promoting strategies regarding the whole structure to combine efforts for structural, functional, economic, and visual considerations. While noting

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[53] Caltrans, *Bridge Planning and Design Manual, Volume III, Design Aids*, 1981, 10-2 to 10-7.

[54] Elliott, "The Role of the Public Agency," 17; Laijos Heder and Ellen Shoshke, *Aesthetics in Transportation: Guidelines for Incorporating Design, Art and Architecture into Transportation Facilities*, (Washington D.C.: U.S. Department of Transportation, November 1980) 93.

[55] Gloyd, "California – A Qualified Bridge Esthetics Case Study," 48; Frederick Gottemoeller, "Aesthetics and Engineering: Providing for Aesthetic Quality in Bridge Design," in Committee on General Structures, Subcommittee on Bridge Aesthetics, *Bridge Aesthetics Around the World*, (Washington D.C.: Transportation Research Board, National Research Council. 1991), 80, 84, and 86; "Frederick Gottemoeller Biography," online at http://www.bridgescape.net/principal/ (accessed September 2022).

the lack of education in this field in engineering programs, there was general consensus for aesthetically pleasing bridges that integrate structures with their surroundings through careful study and design, and use structurally expressive forms that support their loads in the most visually appealing manner. There was agreement that the bridge function and appearance were bounded together, and that some measure of guidelines would help bring to fruition more visually appealing bridges, while also accounting for bias among design professionals and avoidance of guidelines as formulaic. Advocates urged bridge designers to look beyond the technical and analytical of their work, taking into account issues such as proportion, order, unity, openness, and ornamentation along with function, safety, and economy. They noted that bridge designers of the period underestimate the impact bridges have on people who experience them on a daily basis. They encouraged engineers and bridge planners to develop opinions about what is, and what is not, attractive, comparing those viewpoints with others, including the public. They explained how good appearances do not equate to greater costs for bridges, and there were also suppliant messages explaining about what not to do, like avoiding the use multiple bridge structures, like mixing steel beams and concrete girder, on a single structure, for example.[56]

In 1980, and within the stated context of California's freeway era drawing to a close, Caltrans mounted an exhibit called "California Bridges" at the University Art Museum, University of California, Berkeley that showed how the department had "designed and built bridges to blend artistically and functionally with the multi-faceted geography of the state." Each bridge selected for the exhibit had been designed to not only address functional and structural needs, but also environmental and architectural considerations. The featured structures were touted as being "sensitive to the life-style and local culture of the community."[57] The exhibit featured 21 bridges, including well-known bridges such as the San Francisco-Oakland Bay Bridge and Bixby Arch on SR 1. It mostly featured bridges built within the previous 10 to 20 years, including several that had been recently built: the Archie Stevenot Bridge (32 0040, built in 1976), which carries SR 49 over New Melones Reservoir on the boundary of Tuolumne and Calaveras counties; California Incline Pedestrian Bridge (53 2579, built 1979) over SR 1 in Santa Monica, Los Angeles County (**Photograph 12**); and the Napa River Bridge (21 0049, built 1977) carrying SR 29 in Napa County. Caltrans clearly took pride in these bridges, highlighting the team approach to their design and construction. The exhibit also emphasized

[56] Gottemoeller, "Aesthetics and Engineering," 80-81 and 85; Martin P. Burke, Jr., "Bridge Aesthetics: World View," *Journal of Structural Engineering*, August 1995, 1252-1257; Paul C. Harbeson, "Architecture in Bridge Design," in Committee on General Structures, Subcommittee on Bridge Aesthetics, *Bridge Aesthetics Around the World*, (Washington D.C.: Transportation Research Board, National Research Council. 1991), 105-106 and 108-109. Gottemoeller reiterated many of these same points in his later book: Frederick Gottemoeller, *Bridgescape: The Art of Designing Bridges*, 2nd edition (Hoboken, NJ: John Wiley & Sons, Inc., 2004).

[57] Caltrans, "California Bridges," Exhibit at University of California, Berkeley Art Museum Theater Gallery, April through July 1980, exhibit catalog.

that the design of many of the bridges were the result of their bridge aesthetics program established in the early 1960s.[58]

Photograph 12: California Incline Pedestrian Overcrossing, State Route 1 in Santa Monica, camera facing south, 5/24/2022.

8.2.3 Appreciation of California's Bridge Aesthetics Program

In the mid-1990s, consultant engineer Stewart Gloyd (then Senior Engineering Manager at Parsons Brinkerhoff in Costa Mesa, California) provided a useful summary of Caltrans' bridge aesthetics program and the characteristics of designs resulting from the program. He praised Caltrans multi-level organizational efforts for not only addressing bridge aesthetics for special locations, but also for ordinary sites. The program's central control followed principles of proportion, simplicity, order, site harmony, and visual character to create aesthetically pleasing design. He demonstrated that the Caltrans designs also had a "safety appearance," wherein the feeling of comfort and safety was achieved when the bridge had the appearance of ample strength and stability, noting that the attention given to quality of materials and workmanship proved to be a power feature to support the visual appearance of a bridge. Overtime, consultants also learned the Caltrans bridge aesthetics values through job experience and special involvement with the Bridge Department's structure aesthetics group.[59] Consultants, as well as

[58] Caltrans, "California Bridges," Exhibit at University of California, Berkeley Art Museum Theater Gallery, April through July 1980, exhibit catalog.
[59] Gloyd, "California – A Qualified Bridge Esthetics Case Study," 44-46; Elliott, "The Role of the Public Agency," 34.

local agency bridge designers, often used Division of Highways / Caltrans structure types and standard bridge details that the state developed and refined during the mid to late twentieth century.[60]

To demonstrate the impact of California's bridge aesthetics program since the 1960s, Gloyd described three categories of bridges that had basic, enhanced, or special aesthetic qualities. Caltrans did not prescribe this organization, but these categories illustrate the standardization of the program over time and the relative increase in attention for bridges built at more important locations. A central factor in perceived success of the Caltrans program was the improved visual qualities of California bridges compared to other states with moderately small cost increases for those bridges that were given the greatest level of scrutiny for their appearance. Gloyd focused on the prestressed concrete box girder bridges, which had become, by far, the most common bridge type built in California in the latter half of the twentieth century.[61]

The basic California prestressed concrete box girder bridge had a continuous longitudinal flow over multiple spans emphasizing horizontality achieved by uniform girder depth that sloped transversely and piers/bents integrated with the girder. The appearance of the girder depth was made to look shallower by the roadway deck overhanging the girders, abutments, and wingwalls, and span lengths well proportioned. Abutments were also shallow and placed high on adjoining embankments with minimal vertical face. A feature of the design quality was in the high-quality plain finish concrete without coating, and clutter was minimized by placing all conduit and utilities inside the box girders. Bridge details included round, hexagonal, or octagonal shaped columns that were often elongated and flared / widened transversely at the top, as well as solid concrete barriers flanking the roadway with longitudinal recesses on the exterior face and drip grooves on the underside of the roadway and near the edge of surfaces to minimize water staining.[62] See **Photograph 13** for representative example of this basic design (without the pipe railing).

The enhanced California prestressed concrete box girder bridge was designed for structures at more important locations or particular routes. The designs for these bridges augmented qualities of the basic bridge design for typically no more than five percent increase in construction costs. The enhanced features included chamfering or rounding of the box girder's lower edges, recessed vertical panels or texture on column faces, and the face of abutments sloping inward towards the center of the spans. Other features included column tops that flared in both directions, not just transversely, and the use of pattern, color, and/or texture in recessed surfaces on concrete barriers, abutments, and wingwalls.[63] **Photograph 14** through **Photograph 17** illustrate bridges that have many, but not all, of the enhanced design's components.

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[60] Roberts, *Aesthetics and Economy*, 2.
[61] Gloyd, "California – A Qualified Bridge Esthetics Case Study," 46-48.
[62] Gloyd, "California – A Qualified Bridge Esthetics Case Study," 46-47.
[63] Gloyd, "California – A Qualified Bridge Esthetics Case Study," 47.

The special California prestressed concrete box girder bridge were those structures given the most additional architectural and structural design attention for locations that were either highly scenic or very important. These represented about one percent of the state's structures, typically costing ten to twenty percent higher in construction costs. Adding to the features of the basic and enhance bridge design, the special bridges could include variable depth (haunched) girders to emulate a more arched form, customized shapes and sizes of columns, abutments, and girder facias, bolder use of texture or color in barriers, columns, and abutments, and using sloped leg frames in columns or bents. Other bridge types were sometimes used for varying aesthetic qualities, like steel box girder, segmental concrete, or concrete arches, like the steel box girder New Melones Reservoir Bridge, also known as the Archie Stevenot Memorial Bridge (32 0040) on the Tuolumne / Calaveras counties boundary shown in **Photograph 18**.[64]

Photograph 13: County Road 29A over I-505, Bridge 22 0161, built in 1980 (9/28/2022). This is representative of multiple bridges on I-505 in Yolo and Solano counties constructed around the same time.

[64] Gloyd, "California – A Qualified Bridge Esthetics Case Study," 48.

Photograph 14: Marconi Avenue Overhead at Auburn Boulevard, Sacramento, Bridge 24C0012, built in 1984 (9/24/2022).

Photograph 15: Marconi Avenue Overhead, Bridge 24C0012, detail (9/24/2022).

Photograph 16: North Texas Street over Air Base Parkway (23C0072) in Fairfield, Solano County, built 1979 (3/16/2023).

Photograph 17: Railing of North Texas Street over Air Base Parkway (23C0072) in Fairfield, Solano County, built 1979 (3/16/2023).

Photograph 18: New Melones Reservoir Bridge / Archie Stevenot Memorial Bridge, 6/28/2023, camera facing southeast.

8.3 Cable-Stayed Bridges

The only new bridge design to debut in California during the 1975-1984 period was the cable-stayed bridge represented by a lone example, the Meridian Bridge (18 0008), constructed in 1977 which carries SR 20 over the Sacramento River in the small community of Meridian, Colusa County. In addition to being a cable-stayed bridge, the Meridian Bridge is also a swing bridge that pivots on a central pier to allow tall watercraft to pass on the river below. This bridge, however, is not being evaluated as part of this bridge inventory update report because it was evaluated by JRP 2021 for a different Caltrans project and determined eligible for the NRHP and CRHR with SHPO concurrence on September 2, 2021.[65]

The defining characteristic that distinguishes cable-stayed bridges from other bridge types is that the bridge load is carried by inclined cables radiating from a central tower or towers down to the superstructure at several points. The balancing effect of the equal deck sections hanging from both sides of a central tower functions to reduce the overall load carried by the cables. Cables are usually attached to the girders or beams that support the deck. Typical cable-stayed bridges have two towers with a central span and two end spans, the central span supported by stays from each tower (**Figure 3**). While the two-tower design is most common, many single-tower bridges have also been built. Cable-stayed bridges have two basic cable configurations: a radial or fan pattern, with cables emanating from a single point on the top of the towers and running to several points on the superstructure, the other is a parallel or harp pattern in which

[65] JRP Historical Consulting, LLC, "Delta Moveable Bridges Project, Sacramento, Yolo, Solano, and Sutter Counties, SAC-160 PM 5.86/L6.98/19.76/20.87, YOL-113 PM 22.02, YOL-275 PM 13.01, SOL-12 PM 26.24, SUT-20 PM 0.01," EA 03-4H9503, prepared for Caltrans, 2021.

cables are attached at different heights on the tower and then run parallel to different points on the superstructure. Another common variation in cable-stayed bridges is in tower design which can affect the cable pattern and the cable connection points on the superstructure as shown in **Figure 4**.[66]

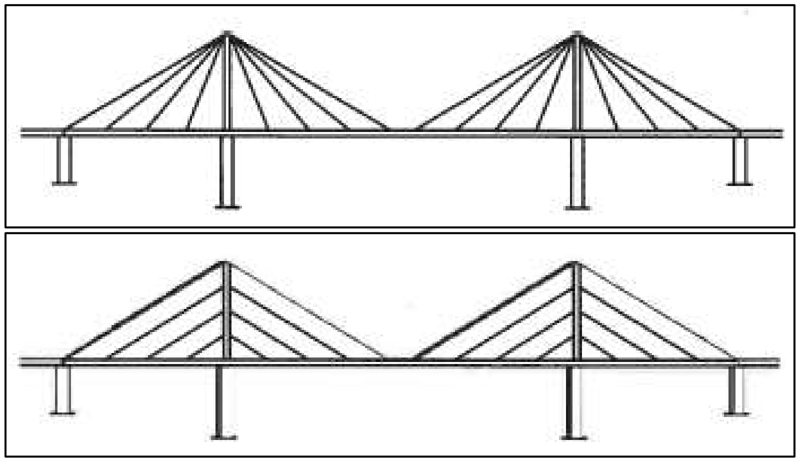

Figure 3: The two main cable configurations of cable-stayed bridges. On top, the radial design; on the bottom, the parallel design.[67]

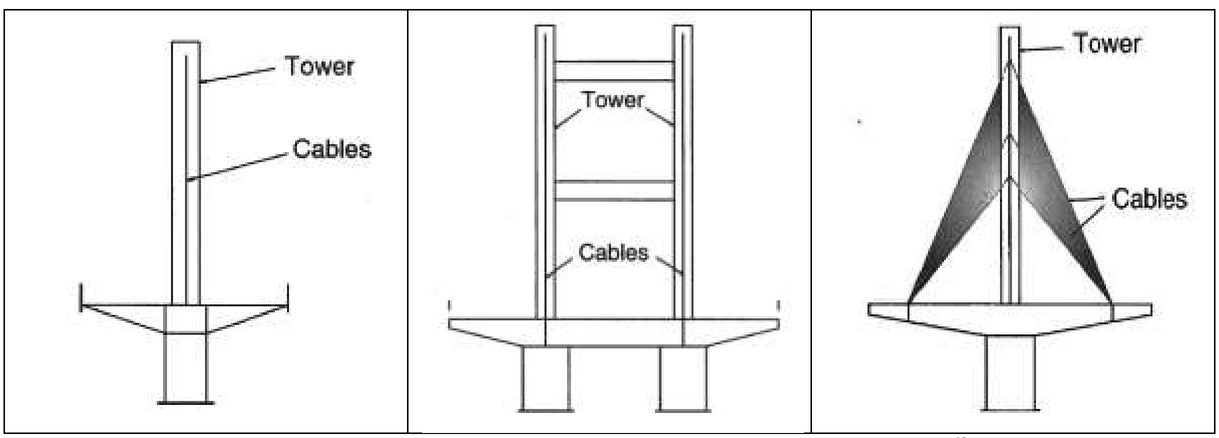

Figure 4: Illustrations of various tower and cable configurations.[68]

The first experiments building cable-stayed bridges occurred in Europe in the nineteenth century. These efforts, however, did not meet with success as all of these bridges collapsed within a few years of construction leading engineers to largely abandon experimenting with cable-stayed bridges for decades. While cable-stayed bridges were disregarded in the nineteenth century, another bridge type that used cables – suspension bridges – did become popular at this time and a few incorporated cable stays into their design to help reduce deflection. Suspension

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[66] Amy Nordrum, "Popular Cable-Stay Bridges Rise Across U.S. to Replace Crumbling Spans," *Scientific American* (January 22, 2015), accessed June 2020 at https://www.scientificamerican.com/article/popular-cable-stay-bridges-rise-across-u-s-to-replace-crumbling-spans/; Sukhen Chatterjee, *The Design of Modern Steel Bridges* (Oxford: Blackwell Science, 2003), 187-189; Narendra Taly, *Design of Modern Highway Bridges* (New York: McGraw-Hill, 1998), 69-70.
[67] Chatterjee, *The Design of Modern Steel Bridges*, 189.
[68] Chatterjee, *The Design of Modern Steel Bridges*, 189.

bridges are fundamentally different from cable-stayed bridges, having large primary cables strung between towers and secondary vertical cables running from the primary cable down to the support the superstructure. Not only is the cable configuration different, but, importantly, the load of suspension bridges is not borne by the cables, but ultimately by the anchorages at both ends of the bridge that anchor the primary cables. Some suspension bridges constructed in the United States that also use cable stays are the Cincinnati Bridge (1866) and the Brooklyn Bridge (1883).[69]

In the United States, the earliest cable-stayed bridges were a few short, single-lane bridges constructed in rural areas in the 1890s such the Sycamore Mills Bridge in Cheathan County, Tennessee. Several other small bridges built around this time utilized cable-stays in conjunction with suspension and truss designs to create hybrid bridges. A few more examples of hybrids or very small cable-stayed bridges were built between the 1890s and 1960s included several in Terrebonne Parish in Louisiana, which were also swing bridges, like the Meridian Bridge. Most of these utilize a hybrid cable-stayed / steel pony thru truss design, while the shortest are true cable-stayed. Some of these are still in use, others have been demolished or are closed to traffic.[70]

Interest in building true cable-stayed bridges resumed in the second half of the twentieth century in Europe owing to technological advances, particularly advancements in cable strength and cable pre-tensioning. The first of this generation was built in Sweden in 1955 and several others followed in the 1950s and 1960s, mostly in Germany. These early cable-stayed bridges were characterized by few cables with few connection points at the towers and deck. While becoming more common, widespread acceptance among engineers was gradual as problems regarding stability and strength persisted limited their application, and the design offered few advantages over other established types. A breakthrough came in the late 1960s with the advent of computers capable of sophisticated bridge engineering modeling, a technological advancement that enabled more accurate load and stress calculations. In practice, this resulted in a new "multi-cable" design that had multiple, smaller diameter cables attached to the tower and the superstructure at multiple, closely-spaced points. The innovation reduced the stiffness requirement of the girders and simplified the stay connections, resulting in less weight, less materials, lower cost, easier construction, and the ability to build longer bridges.[71]

[69] Taly, *Design of Modern Highway Bridges*, 41-42.

[70] Historic Bridge Foundation, "Bridgehunter," accessed October 2021 at https://bridgehunter.com/category/tag/cable-stayed/exhibit and http://bridgehunter.com/tn/cheatham/sycamore-mills; Texas Historical Commission, "Dale Bluff Bridge," accessed October 2021 at https://www.thc.texas.gov/preserve/historic-bridges-texas/suspension-bridges/bluff-dale-bridge.

[71] Taly, *Design of Modern Highway Bridges*, 41-42, 70-72; Chatterjee, *The Design of Modern Steel Bridges*, 25, 185-186; International Association for Bridge and Structural Engineering, *Cable Vibrations in Cable-Stayed Bridges* (Zurich, Switzerland: 2007), 5-8; Habib Tabatabi, *National Cooperative Highway Research Program, Synthesis 353: Inspection and Maintenance of Bridge Stay Cable Systems, A Synthesis of Highway Practice,* Prepared for the Transportation Research Board, Washington, D.C., 2005, 3-6; Nordrum, "Popular Cable-Stay Bridges," 2015.

The technological advances enabled by computers in the late 1960s prompted the construction of the first cable-stayed bridges on major roadways in the United States. The first two were in Alaska: the 1,255-foot-long Sitka Harbor Bridge in 1971 in Sitka, Alaska featuring a 149.9-foot main span, and the Captain William Moore Bridge in Skagway, Alaska, constructed in 1976 and closed in 2019 and restricted to pedestrian-only use. The Meridian Bridge followed in 1977 as the third cable-stayed bridge built on a major roadway in the United States and the first cable-stayed bridge constructed in California (**Photograph 19**, **Figure 5**). It is also recognized as the only cable-stayed swing bridge on a major roadway in the nation. Throughout the country, a few others were built in the 1970s and 1980s, but the number has risen dramatically since 1990 owing to continued technological advances. During the 1990s, this bridge type became among the most preferred for medium- and long-span crossings, largely due to cost effectiveness derived from a relatively short construction time, ease of construction, use of less materials, and lower costs. The design has also proved popular for its high aesthetic appeal that evokes modernity and elegance. By 2005, there were approximately 32 motor vehicle and four bicycle/pedestrian, cable-stayed bridges in the United States.[72]

Since the Meridian Bridge in 1977, only four more cable-stayed bridges have been built in California: the Sundial Bridge (2004), a bicycle/pedestrian bridge over the Sacramento River in Redding; the Don Burnett Bridge (2009), a bicycle/pedestrian bridge over I-280 in Sunnyvale; the Transbay Terminal Bus Ramp (2018), a non-public, bus-only ramp in San Francisco, and the Long Beach International Gateway (2020), which carries I-710 across the Back Channel, Long Beach Harbor. The latter is a monumental, landmark structure with a bridge deck 205 feet above the water and two 515-foot towers, making it the second-tallest cable-stayed bridge in the United States.[73]

[72] Taly, *Design of Modern Highway Bridges*, 71-72; International Association for Bridge and Structural Engineering, 5-8; Tabatabi, *National Cooperative Highway Research Program,* 3-6; Nordrum, "Popular Cable-Stay Bridges Rise Across U.S. to Replace Crumbling Spans," 2015; Historic Bridge Foundation, "Bridgehunter," accessed May 2021 at https://bridgehunter.com/ca/los-angeles/bh82979/ , https://bridgehunter.com/ca/los-angeles/bh82979/ , https://bridgehunter.com/category/tag/cable-stayed/exhibit and https://bridgehunter.com/ak/skagway-hoonah-angoon/1304/; Taly, *Design of Modern Highway* Bridges, 72.

[73] Tabatabi, *National Cooperative Highway Research Program,* 6; Port of Long Beach, "About the Bridge," accessed October 2021 at https://newgdbridge.com/about-the-bridge/; Historic Bridge Foundation, "Bridgehunter," accessed October 2021 at https://bridgehunter.com/category/tag/cable-stayed/exhibit.

Photograph 19: Meridian Bridge, camera facing northwest, 6/12/2020.

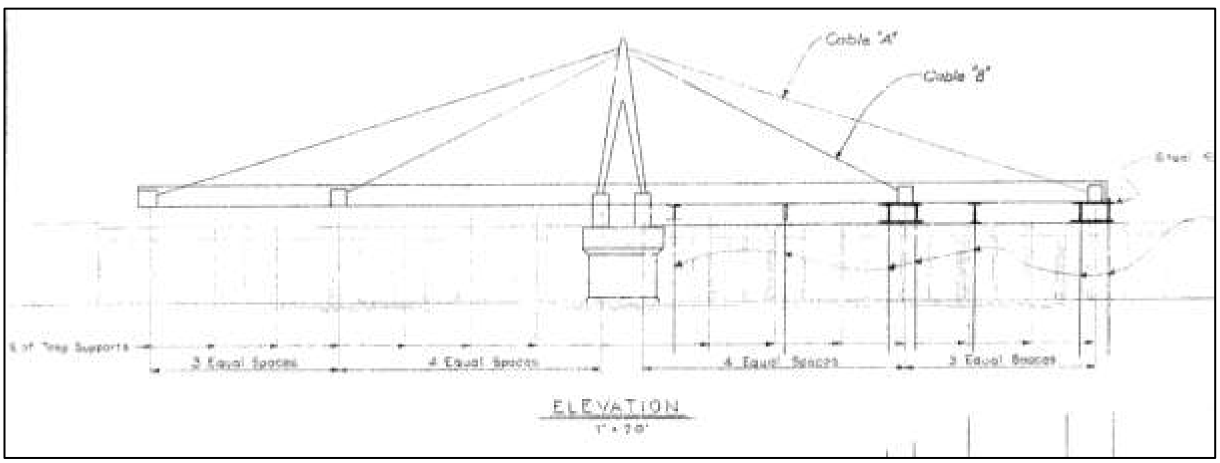

Figure 5: Meridian Bridge elevation drawing.[74]

8.4 California's Bridge Seismic Safety Program

By the mid-1970s, Caltrans' first in the nation program to address seismic safety concerns on the state's bridges was well underway following the February 1971 San Fernando / Sylmar Earthquake that damaged 67 bridges on five freeways, including two interchanges that were under construction at the time. Among the 64 deaths directly related to the earthquake, two men were crushed in a vehicle when a freeway overpass collapsed on to them. While the notable earthquake damage to bridges was along I-5, I-210, and SR 14 northwest of the San Fernando Valley between Sylmar and Santa Clarita in western Los Angeles County, the impact of the 6.6 magnitude earthquake was extensive and it led to a program to retrofit bridges across the state

[74] Caltrans, "Sacramento River Bridge at Meridian, Br. No. 18-08," As-Built Plans, Contract No. 03-050514, January 27, 1975.

and to new seismic design criteria so bridges could better withstand such events. All new bridges were reviewed under these criteria for seismic resistance. Furthermore, Caltrans' work on seismic bridge safety directly led to the comprehensive nation-wide guidance produced by the American Association of State Highway and Transportation Officials (AASHTO) that was first published in the early 1980s. As a direct result of the San Fernando Earthquake, thousands of bridges were examined for their seismic safety, and by 1985 roughly half of the identified bridges in earthquake-prone areas requiring upgrades had been retrofitted, implementing various methods to tie the superstructure of bridges together or to better connect superstructures to substructures with the goal of preventing catastrophic collapse.[75] Work on Caltrans' seismic safety program for bridges continued and expanded throughout the late twentieth century and continues today. Expansions of the seismic safety program were especially spurred by the effects of the Loma Prieta Earthquake in October 1989 and the Northridge Earthquake in January 1994.

8.5 Beginnings of the Caltrans Historic Bridge Inventory and Bridge Preservation

By the late 1970s, and particularly as a result of interest in historic preservation bolstered by the nation's bicentennial celebrations in 1976, historians and preservationists called for greater accounting of historic bridges across the country, and the initial phase of the historic bridge inventory in California began with recordation of notable old bridges on cards from the National Park Service's Historic American Engineering Record (HAER) program (**Figure 6**).[76] Caltrans organized its first thorough state-wide historic bridge inventory in the early 1980s, getting the multi-year study started in 1984, examining bridges that were more than (or soon to be) 50 years old at the time built in or before 1936.

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[75] California Division of Highways, "Highway Damage in San Fernando Earthquake," 369, and J. Penizen and R.W. Clough, "Damage to Highway Bridge Structures," 381-394 in *San Fernando, California Earthquake of 9 February 1971* (Sacramento, CA: California Division of Mines and Geology, Bulletin 196, 1975); H.S. Lew, E.V. Leyendecker, and R.D. Dikkers, *Engineering Aspects of the 1971 San Fernando Earthquake,* (Washington D.C.: National Bureau of Standards, 1971) 315-364; United States Geological Survey, "50 Years Later, an Earthquake's Legacy Continues," USGS website: https://www.usgs.gov/news/featured-story/disaster-helped-nation-prepare-future-earthquakes-remembering-san-fernando (accessed October 2023); Ray J. Zalinski, Senior Bridge Engineer, *California Department of Transportation Bridge Earthquake Retrofitting Program*, 1985; Guy D. Mancarti, *Progress and Techniques Used in Earthquake Retrofitting California Highway Bridges*, 198?; *Highway Recollections of James E. Roberts*, Oral history Interview with Donald W. Alden, Caltrans, April 22 and 26, 1999; *Highway Recollections of Robert C. Cassano*, Oral History Interview with Donald W. Alden, Caltrans, April 16, 1998, 16-20. Robert Cassano's 36 year career culminated as head of the Caltrans Division of Structures from 1984 to 1987; See: AASHTO, American Association of State Highway and Transportation Officials, Guide Specifications for Seismic Design of Highway Bridges (Washington D.C.: American Association of State Highway and Transportation Officials, 1983).

[76] Paul Israel, "Recording Bridges: HAER in California," *The Public Historian*, Vol. 1, No. 4 (Summer 1979). During this period the American Society of Civil Engineers designated older bridges as historic civil engineering landmarks. For example, see: American Society of Civil Engineers, History and Heritage Committee, *Historic Civil Engineering Landmarks of Sacramento and Northeastern California,* (Sacramento: Sacramento Section of the American Society of Civil Engineers, 1976). Various publications supported this growing interest in old bridge, such as T. Allan Comp and Donald Jackson, "Bridge Truss Types: A Guide to Dating and Identifying," American Association for State and Local History Technical Leaflet 95, History News, Vol. 32, No. 5, May 1977.

2. Industrial classification: BT&A:MOVE:Bascule 7 6 5 0

3. Priority: 8

4. Danger of demolition? (specify threat): Yes / No / Unknown

5. Date: 1923

7. Owner/admin: State of "alifornia

8. Name(s) of structure: Bridge #24-53 (Paintersville Bridge)

9. Owner's address: Dept. of Transportation, 1120 K St., Sacramento, CA 95814

10. State/County: C A — County name: Sacramento — City/vicinity: Paintersville

11. Street address (site): State Rt. 160 over Sacramento River at mp 20.96

14. UTM zone: 10 — Easting: 624450 — Northing: 4241925 — Quad name: Courtland

19. Condition: Excellent / Good / Fair / Deteriorated / Ruins / Unexposed / Altered / Destroyed / Demolished

15. Inventoried by: Carroll Pursell — Affiliation: UCSB/California Inventory — Date: August 2, 1979

17. Description and background history, including construction dates, historical dates, physical dimensions, materials, extant equipment, and important builders, engineers, etc.

This bridge has 5 spans of 120', 57', 226', 57', and 120', is 588' long and 19.2' wide. The approach spans are through Pratt steel trusses. The center span is a double leaf Strauss bascule lift. Reinforced concrete solid wall piers and seat abutments with curved wingwalls are used. The abutments are on concrete piles, the piers on timber piles. It was built in 1923 by Sacramento County. Plans for the moveable section were the same as for the Rio Vista bascule span. Concrete light posts have been removed. A plaque on the bridge reads: :Strauss Trunion Bascule Bridge. Board of Supervisors. 1923...Chas. W. Deterding Jr. County Engineer. The Strauss Bascule Bridge Company, Chicago Ill. Moore Dry-dock Company, Oakland California Manufacturers. Patented."

18. Original use — Present use — Adaptive use

19. References—historical references, personal contacts, and/or other:
Caltrans records, Bridge Maintenance Bokk 510.
Corps of Engineers, List of Bridges (1935)
Dept. of Transportation, List of Bridges (1975)

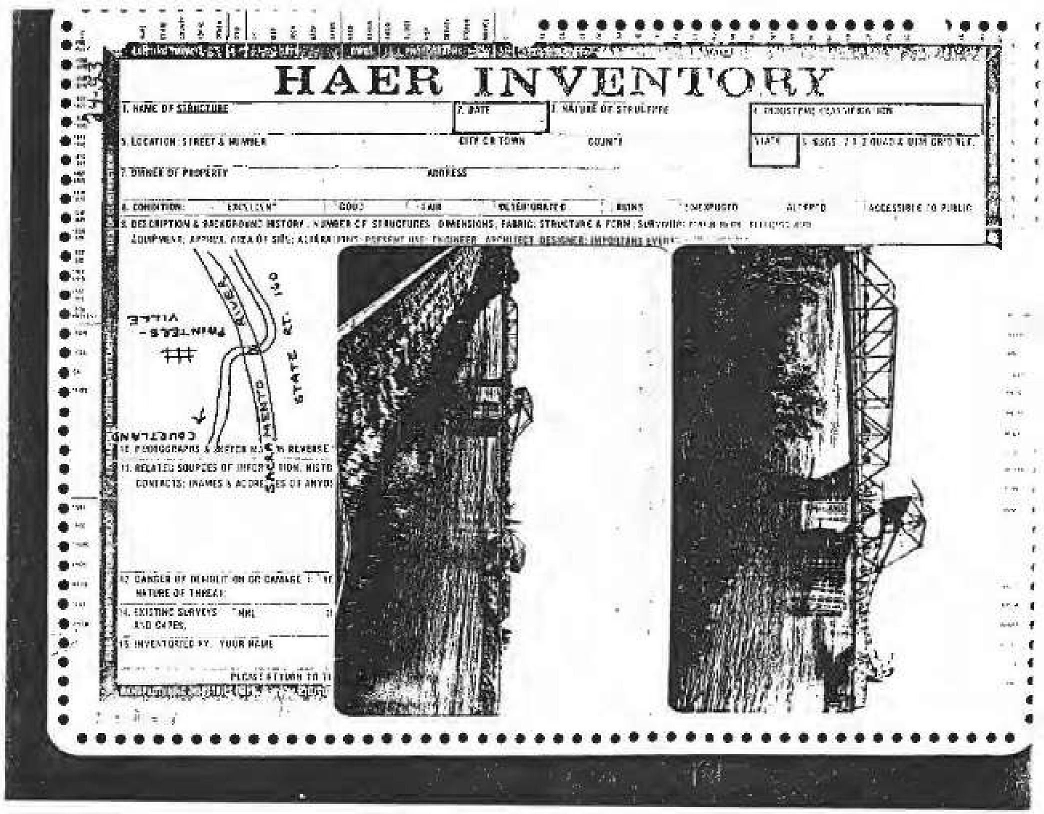


Figure 6: Survey of Paintersville Bridge in Sacramento County, 1979. California Historic Bridge Inventory on Historic American Engineering Record Inventory Forms.

This occurred, in part, because the California State Legislature had enacted PRC 5024 in 1980, which included requirements for state agencies to inventory their own buildings and structures for potential historic significance.[77] The urgency to inventory historic bridges also came from concerns about older bridges being demolished without recognition, particularly as federal funding had been specifically appropriated for bridge replacement. The U.S. Congress repeatedly added more money to the Special Bridge Replacement Program (SBRP) that had been enacted as part of the Federal-Aid Highway Act of 1970. In 1978, the Surface Transportation Assistance Act was enacted which changed the SBRP to the Highway Bridge Replacement and Rehabilitation Program (HBRRP). This program expanded the federal funding to also cover repair of bridges, not just outright replacement. Funding for the HBRRP was augmented in 1983, again in 1987, and through the 1990s.[78] The U.S. Department of Transportation noted this issue in its 1980 publication *Aesthetics in Transportation*, wherein it was stated that federal funding may be used to repair and restore historic bridges, highlighting that the "designs of the past often reveal an exceptional sensitivity to human scale and to their natural settings."[79] While the federal government encouraged replacement of old and unsafe bridges, Congress codified the interest in historic bridges in the Surface Transportation Act of 1987 declaring that reuse and rehabilitation of historic bridges was in the national interest. To grapple with these competing interests, FHWA encouraged states to conduct comprehensive surveys of historic bridges, and California, like many states at this time, undertook the survey to identify which old bridges on its system were historically significant and potentially worth preserving.[80]

Interest in bridge preservation during the 1970s and 1980s supported a more deliberate and systematic process for consideration of which structures were deemed worthy, particularly as a result of the regulations that evolved to implement Section 106 of the National Historic Preservation Act of 1966 and the Department of Transportation Act of 1966. Even though Section 106 implementing regulations were first established in 1979, it took some years for California historic bridges to be preserved and rehabilitated as a result of the new procedures. Early examples of bridge preservation in the state include work on rare nineteenth century structures, such as the high profile preservation and reconstruction of the Bidwell Bar Suspension Bridge in Butte County. This structure had been an early toll bridge across the Feather River, constructed in 1865, and it served as vehicle bridge until the 1950s. The State of California dismantled and stored the bridge in the 1960s when construction of Oroville Dam /

[77] California Public Resources Code 5024, added by Stats. 1980, Ch. 1101, Sec. 1. This was amended in 1992 to add PRC 5024.5, which included state agencies' responsibility regarding assessing effects of projects on their known historical resources.

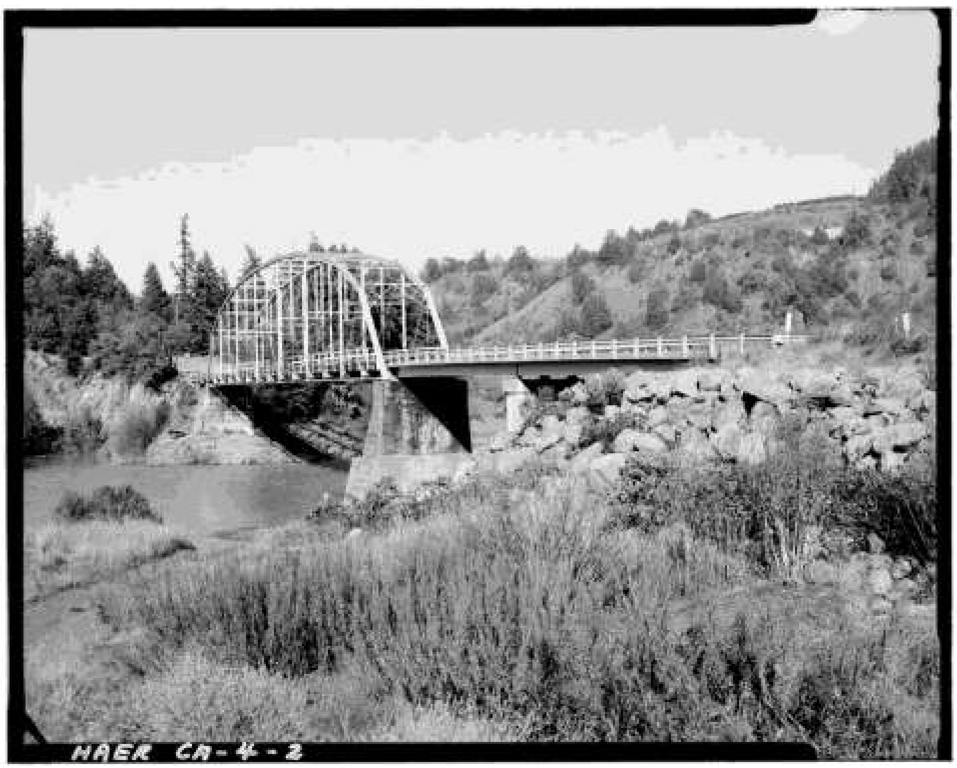
[78] Eno Center for Transportation History, "Timeline of Key Moments in Federal Bridge Policy," December 11, 2017, https://www.enotrans.org/article/timeline-key-moments-federal-bridge-policy/ (Accessed December 2021).

[79] Laijos Heder and Ellen Shoshke, *Aesthetics in Transportation: Guidelines for Incorporating Design, Art and Architecture into Transportation Facilities*, (Washington D.C.: U.S. Department of Transportation, November 1980) 93.

[80] Stephen D. Mikesell, *Historic Highway Bridges of California* (California Department of Transportation, 1990), 1 and 156.

Reservoir would have inundated the structure. It was rebuilt in the Bidwell Canyon Area of the Lake Oroville State Recreation Area and reopened for pedestrian use in July 1977.[81] News reports of the period relayed local preservationists, and others, bemoaning the loss of old bridges, such as Plumas County's replacement of the Red Bridge over the Middle Fork of the Feather River in 1975. The metal Parker through truss built in 1909, and located about 12 miles southeast of Quincy on Quincy-La Porte Road, was demolished and replaced with a concrete box girder structure (09C0004).[82]

Starting in 1979, some historic bridges in California were recorded under the HAER program as mitigation stipulated in Memoranda of Agreements per the Section 106 process. HAER CA-4 is the first bridge in California recorded under the NPS program, and it documented Moody Bridge, which was a 1908 Parker through truss carrying Sprowel Creek Road over the South Fork of Eel River in Garberville, Humboldt County (**Photograph 20**).



Photograph 20: Former Moody Bridge, Garberville, Humboldt County in 1979 prior to its demolition.[83]

[81] James Lenoff, "Lengthy Struggle to Save Bidwell Bar Bridge Ends," *Oroville Mercury Register*, 7/29/1977, 3; "The First to Cross," *Oroville Mercury Register*, 8/1/1977, 1; Stephen D. Mikesell, *Historic Highway Bridges of California* (California Department of Transportation, 1990) 143.

[82] "Feather River Will Lose Landmark Red Bridge," *Sacramento Bee*, 9/6/1975, A5.

[83] Historic American Engineering Record, "General Elevation View from the Southwest End of Moody Bridge," in Moody Bridge, Garberville, Humboldt County, California, 1979, HAER No. CAL,12-GARB.V,1-, by Susan Hope, accessed October 2023 at https://www.loc.gov/pictures/item/ca0180.photos.011192p/resource/.

The bridge was recorded in 1979 prior to its demolition. The replacement prestressed box girder bridge was completed in 1982. Between 1979 and 1984, at least eleven other bridges in California were recorded for the HAER program prior to their demolition.[84]

Some of California's historic bridges were retained during this period, usually for pedestrian and bicycle use with a new vehicle bridge built adjacent to the older structure. An early and rare example of this strategy had been the concrete arch bridge carrying the Ventura Freeway (SR 134) over Arroyo Seco in Pasadena built in 1953 (53 0166) upstream from the historic 1913 Colorado Street Bridge.[85] This type of treatment created a modern variation of an older ornate bridge, but examples of new bridges constructed adjacent to old bridges during the early 1980s did not follow this pattern. Examples from the early 1980s include the Table Mountain Boulevard Bridge over the Feather River (12C0221) in Oroville, Butte County, which is a prestressed box girder structure built in 1982 adjacent to the historic multi-span Parker through truss bridge constructed in 1907 (**Photograph 21**), and Iowa Hill Road Bridge over the North Fork of the American River (19C0176) near Colfax in Placer County, which is a concrete box girder structure built in 1984 adjacent to the historic 1928 steel suspension bridge. Both of these replacement bridges make their crossings on curved alignments that provide some room to appreciate the older neighbor, but on structures without any design references to the historic bridge. Another example is the double Parker through truss Stevinson Bridge over the Merced River in the George A. Hatfield State Recreation Area in Merced County that was saved for pedestrian use, next to which the county built a new concrete box girder on River Road in 1981 (39C0354). Local residents' petitions, fundraising, advocating to local law makers, and environmental laws were all cited as playing a part in saving the old bridge.[86]

[84] Susan L. Hope, "Historic American Engineering Record, Moody Bridge (4c-28)," 1979, HAER No. CAL,12-GARB.V,1, available at https://loc.gov/pictures/item/ca0180/ (accessed October 2023). Also see Wikipedia page "List of Bridges Documented by the Historic American Engineering Record in California" https://en.wikipedia.org/wiki/list_of_bridges_documented_by_the_historic_american_engineering_record_in_california (accessed June 2023).

[85] Mikesell, *Historic Highway Bridges of California*, 149; Thomas F. King, *Federal Planning and Historic Places: The Section 106 Process* (Walnut Creek, CA: AltaMira Press, 2000), 20; Elliott, "Esthetic Development of California's Bridges," 2169.

[86] Table Mountain Boulevard Bridge spanning Feather River in Oroville, California determined eligible for the NRHP, *Federal Register*, Vol. 44, No. 172, 9/4/1979, 51766. The Iowa Hill Road Bridge over the North Fork of the American River was formerly Bridge 19C0007, and it was determined eligible for the NRHP through the Section 106 process in 1986 (Reference FHWA860919Z); "Hatfield Bridge 'Not Saved Yet' Warns Merced Supervisor Wack," *West Side Index*, June 11, 1981, 1; "New $700,00 Span Opened; No State Decision on Old Bridge," *West Side Index*, October 15, 1981, 12.

Photograph 21: Table Mountain Boulevard over the Feather River, camera facing south, 8/21/2003.

8.6 Covered Bridges: Preservation and Revival

First built in California in the 1850s, wood truss covered bridges were once common in rural foothill and mountainous areas of the north and central coast, as well as the Sierra Nevada foothills. Wood became the material of choice for covered bridges as they were generally located in areas with an abundance of wood, and California in the nineteenth century had a shortage of iron or steel. Covered bridges had the added advantage of protecting the wood structure from the elements and the roof provided additional structural stability. These bridges built in nineteenth and early twentieth century California were generally one lane, Howe or Warren truss, had a plank deck, gable roof, partially, or completely enclosed sides, and vertical wood siding. It is not known how many existed during the peak era of covered bridge construction, but in 1938 University of California professor S. Griswold Morley published the first inventory of covered bridges, identifying 32 in the state, with Humboldt County having twelve, the most of any county in the state, and Siskiyou County ranking second with five.[87]

Morley's study identified 13 covered bridges built in the twentieth century, but during this period, covered bridges – and wood truss bridges generally – began to wane in popularity as steel and concrete became the preferred material for their durability, low maintenance, and the decreasing cost. Not only did the construction of new covered bridges decline, but the increased weight and size of motor vehicles and increased traffic volumes, vehicle sizes, and speeds led to the demolition and replacement of many covered bridges by new concrete and steel

[87] S. Griswold Morley, *Covered Bridges of California* (Berkeley: University of California Press, 1938), 1-6, 26, 27, 91, 92.

structures, which could better accommodate modern vehicle sizes and speeds. Owing to these factors, the construction of new covered bridges had ceased in California by 1940.[88]

As covered bridges fell out of favor with bridge builders in the 1920s and 1930s, there began a shift in the public perception of covered bridges in California and the United States from being utilitarian infrastructure of a bygone era to cultural symbols of the nation's heritage. In general, the remaining covered bridges of the time, often set in rural, pastoral landscapes, evoked feelings of nostalgia, and books like Morley's 1938 *Covered Bridges of California*, began appearing to record this disappearing resource and inspire preservationists. Artists joined in the nostalgia as covered bridges became the subjects of their work, and organizations and publications supporting the preservation of covered bridges formed. Media such as television, film, and advertisements started to feature covered bridges in the 1930s, 1940s, and 1950s to evoke sentimental emotions. State governments, such as Indiana and those in New England, for example, also began to formally support covered bridge preservation as early as the 1950s.[89]

In California, the covered bridge preservation movement emerged in the 1930s in response to the demolition and replacement of many covered bridges in the 1920s and 1930s by concrete and steel bridges. It appears the earliest preservation efforts occurred in Santa Cruz County in response to a plan to construct a new bridge over the San Lorenzo River in Felton in 1937 and bypass the Felton Covered Bridge, constructed in 1892. Concerns for the bridge's fate prompted a newspaper article in the *Santa Cruz Evening News* assuring citizens that the bridge would not be demolished. The article conveyed the importance of the bridge to the area and nascent covered bridge preservation movement generally, "A sentimental relic of an old and picturesque era, the old Felton covered bridge has endeared itself to countless Santa Cruz residents and has proved an attraction of historic interest to hundreds of motorists and other county visitors."[90]

The new bridge in Felton was completed in 1938 and immediately residents of the San Lorenzo Valley organized to preserve the bridge. Efforts began with a drive to make the bridge and adjacent property into a county park "so as to insure the protection of the old landmark for all time." Advocates for bridge restoration made little progress until after World War II when the San Lorenzo Valley Chamber of Commerce took up the cause, organizing fundraising for restoration. The group cited the bridge's historical importance, the rarity of covered bridges, and called the bridge "one of Santa Cruz county's greatest historical assets." In the early 1960s, bridge supporters had amassed sufficient money to begin restoration work consisting of re-roofing the structure and other repairs. The Felton Volunteer Firemen provided volunteer labor for the project. To provide ongoing funding, an annual pancake breakfast fundraiser was held

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[88] Morley, *Covered Bridges of California*, 1-6; JRP Historical Consulting, "Caltrans Historic Bridges Inventory Update: Timber Truss, Concrete Truss, and Suspension Bridges," 2004, 19-24; Duwadi, Sheila Rimal and Michael A. Ritter, "Timber Bridges in the United States," *Public Roads On-Line*, Winter 1997, accessed July 2022 at https://www.fhwa.dot.gov/publications/publicroads/97winter/p97wi32.cfm; Lola Bennett, Heritage Documentation Programs, National Parks Service, "Covered Bridges NHL Context Study," National Register Nomination Form, 2011, 23-25.

[89] Morley, *Covered Bridges of California*; Bennett, "Covered Bridges NHL Context Study," 24-25

[90] "Felton Covered Bridge Not To Be Destroyed," *Santa Cruz Evening News*, July 1, 1937, 1.

at the bridge for decades. Following flood damage in 1982, the bridge underwent a major renovation concluding in 1987. The project won several preservation awards including a National Preservation Award from the National Trust for Historic Preservation.[91]

Around the same time preservation efforts commenced on the Felton Covered Bridge in 1938, similar work was underway nearby in Santa Cruz County on the Glen Canyon Covered Bridge. The span, constructed in 1884, crossed Branciforte Creek and owing to a road widening and bridge replacement project, was threatened with demolition. Because the new bridge had to be located on the same site, leaving the bridge in place and bypassing it was not an option. Local citizens rallied to save the bridge by having it moved to a nearby park where it was installed crossing Branciforte Creek a short distance downstream. A newspaper article referred to the bridge as one of the "county's ancient landmarks" and a "relic of pioneer days."[92]

Another noteworthy covered bridge preservation effort of the post-war era was for the O'Byrne Ferry Bridge, built in 1862 over the Stanislaus River and spanning the Stanislaus – Calaveras county line. In the early 1950s, a project to build the Tulloch Dam on the river and create a reservoir that would inundate the bridge spurred historic preservation groups to save the structure by moving it to another location. The plan had the support of two local historical societies, the Native Sons of the Golden West, and the California State Parks Commission. While the relocation plan ultimately failed to materialize and the bridge was demolished, this effort further illustrates new appreciation for covered bridges and support for their preservation.[93]

Later examples of covered bridge preservation followed a similar pattern as those discussed above – a local, grass-roots response to a threat of demolition. In Butte County near Chico, a truck ran into the side of the Honey Run Covered Bridge in 1965, severely damaging the structure and forcing its closure. Lacking funds to repair the 1887 bridge for vehicular use, or maintain it as a historic site, the County made plans to demolish the bridge and build a new concrete structure upstream. Interested citizens immediately formed the Honey Run Covered Bridge Association to preserve and maintain the bridge. The group's first act was to buy the adjacent land from the County for future use as a public park and picnic grounds. The bridge remained under County ownership under an agreement that the Association would be responsible for maintenance. From its inception, the Association held annual pancake breakfast fundraisers and solicited donations to pay for bridge maintenance and restoration. In 1972, the Association had sufficient money to undertake the initial restoration of the bridge, which included repair of the damage from the 1965 truck collision, and to build the adjacent park

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[91] "Plan To Make Covered Bridge Area a Park," *Santa Cruz Evening News*, October 6, 1938, 7; "Restoration of Covered Bridge at Felton Valley Chamber Goal," *Santa Cruz Sentinel*, October 9, 1947, 9; "Planning Restoration of Felton's Covered Bridge," *Santa Cruz Sentinel*, September 1, 1949, 14; "Valley Chamber Members Elect New Directors; Discuss Plans to Repair Covered Bridge," *Santa Cruz Sentinel*, January 14, 1954, 1; "Letters to the Editor," *Los Gatos Times-Saratoga Observer*, June 8, 1964, 7; "Felton Bridge Project Wins Award," *Santa Cruz Sentinel*, November 18, 1988, 5.
[92] "Glen Canyon Covered Bridge In New Location," *Santa Cruz Evening News*, November 22, 1939, 20.
[93] Mikesell, *Historic Highway Bridges of California*, 143-144.

amenities. Like other covered bridges, the Honey Run Covered Bridge had become a tourist attraction and had been featured in an issue of *National Covered Bridge* magazine. In 1984-1985, the Association funded a major renovation consisting of the replacement of some structural components, flooring, and siding. County Department of Public Works laborers did much of the work on this project with the Association reimbursing the County. In 2018, the Camp Fire completely destroyed the Honey Run Covered Bridge, and the Association is currently embarked on a project to rebuild the bridge with the abutments and piers finished in 2020 and fundraising is ongoing to complete the work.[94]

In Stanislaus County, the Knights Ferry Covered Bridge, built in 1863, carried motor vehicle traffic over the Stanislaus River until 1981 when it was deemed structurally deficient by Caltrans and closed. At the time, it had the distinction of being the oldest and longest covered bridge in California at 330 feet, and as one of the last covered bridges still open to motor vehicles. While the closure of the bridge hastened discussion of its preservation, it had long been a tourist attraction and recognized as a historically important bridge. Efforts to formally designate the bridge surfaced in 1970 when a Stanislaus County Supervisor petitioned the district's U.S. congressional representative to have the bridge listed as a state or national landmark. The bridge's importance received substantial attention in 1974 as the Board of Supervisors discussed the threat of vandalism and arson to the bridge over the course of several meetings, eventually voting to install a fire hydrant and fire hose at the bridge. Official historic status came in 1975 when the bridge, along with several historic buildings in Knights Ferry, was listed in the NRHP as a contributor to the Knights Ferry Historic District.[95]

The story of the Knights Ferry bridge's eventual preservation and restoration was a cooperative effort between local residents, elected representatives, Caltrans, and the Army Corps. After closure of the bridge in 1981, local residents, historical societies, and the recently formed Knights Ferry Bridge Restoration Society, wanted the covered bridge rehabilitated and repaired so it could resume carrying vehicles. Caltrans and the Federal Highway Administration, however, rejected that idea, noting that even a repaired bridge would have inadequate width and height for emergency vehicles. Instead, plans proceeded to build a new bridge downstream, and

[94] "Nostalgia Goes Begging," *Paradise Post*, October 20, 1987, 7; "Bridge Over Bubbling Water," *Paradise Post*, August 5, 2000, 11, 12; "Honey Run Covered Bridge to Benefit From All-Day Event," *Chico Enterprise-Record*, May 10, 1967, 23; "Take It From Me," *Chico Enterprise-Record*, October 27, 1967, 13; "Benefit for Honey Run Bridge Set," *Chico Enterprise-Record*, May 6, 1976, 6; "Pancake Breakfast Sunday," *Chico Enterprise-Record*, June 3, 1982, 13; "Historic Covered Bridge Closed for Repairs," *Paradise Post*, September 25, 1984, 6; "Reconstruction Begins On Bridge," *Paradise Post*, October 2, 1984, 9; "Refurbishing Continues at Historic Bridge," *Paradise Post*, October 12, 1984, 7; "Something To Do This Weekend," *Chico Enterprise-Record*, January 24, 1985, 24; Honey Run Covered Bridge Association, "Rebuild the Bridge," accessed March 2023 at https://www.hrcoveredbridge.org/.

[95] "Seek Monument Status for KF Covered Bridge," *Oakdale Leader*, November 11, 1970, 8; "Supervisors Ponder Bridge Protection," *The Modesto Bee,* May 1, 1974, 37; "Hydrant Will Protect Covered Bridge," *The Modesto Bee,* April 16, 1975, 16; "Plan Delayed Again For New Knights Ferry Bridge," *Oakdale Leader*, August 3, 1977, 12; "Preserve State's Oldest Covered Bridge," *The Modesto Bee,* June 16, 1981, 11; "Closing of Bridge Stirs Uproar," *Los Angeles Times,* September 1, 1981, 7; California Office of Historic Preservation, Built Environment Resource Directory, accessed March 27, 2023.

conversations continued around how to fund the preservation and restoration of the old bridge. The Army Corps proved to be a pivotal player in this conversation as the agency was building the New Melones Dam upstream (which also resulted in Caltrans' construction of the very modern appearing New Melones Reservoir Bridge in SR 49) had agreed as part of the project to construct a series of parks and recreation areas along the Stanislaus River downstream of the dam. The Army Corps had marked the Knights Ferry site, including the bridge, a historic grist mill, and 90 acres of surrounding land as one of the parks very early on in the New Melones project. After a lengthy process to obtain funding that endured Reagan-era cuts to the Army Corps budget for recreational facilities, the Army Corps finally allocated money for the park and bridge restoration for the 1987-1988 fiscal year. Work concluded in 1989 and the Knights Ferry Covered Bridge re-opened for pedestrian and bicycle traffic as the centerpiece of the Knights Ferry Recreation Area.[96]

Related to the growing interest in the restoration and preservation of covered bridges through the second half of the twentieth century was the construction of two new covered bridges in California.[97] In 1967, Charles "Jim" Roscoe and Earl R. Biehn, two covered bridge enthusiasts, built the Jacoby Creek Bridge (Bridge 04C0124) in rural Humboldt County just outside of Arcata as part of a residential development they were building called the Brookwood Subdivision. Roscoe, the chair of the engineering department at Humboldt State University, designed the bridge based on plans from the Oregon State Highway Department. Roscoe and Biehn also undertook much of the actual construction of the bridge along with local construction firms. The pair cited aesthetics, marketing appeal, suitability with the rural setting, and the historic legacy of covered bridges in Humboldt County as reasons for their choice of a covered bridge. The completed bridge had a Howe truss, one-lane with a wood plank deck, board-and-batten siding, and open sides (**Photograph 22**). Humboldt County adopted the bridge into its road system in 1969.[98]

[96] "Closing of Bridge Stirs Uproar," *Los Angeles Times,* September 1, 1981, 7; "Preserve State's Oldest Covered Bridge," *The Modesto Bee,* June 16, 1981, 11; "The Old Knights Ferry Bridge to Become a Tourist Attraction," *Modesto Bee*, August 8, 1986, 21; "Knights Ferry Bridge Work On 1987-88 List," *Modesto Bee*, January 8, 1987, 13; "Vocal Cry to Rehab Bridge," *Oakdale Leader*, May 25, 1983, 1; "Knights Ferry Covered Bridge Closes For Repairs," *Modesto Bee*, January 6, 2023, A4.

[97] The bridge carrying Douglas Park Road over Sheep Pen Creek (Bridge 01C0022) near Hiouchi in Del Norte County, built in 1975, is a timber stringer bridge that has a gable roof over it. Bridge 01C0022 is not considered to be a covered bridge because it is not built in the traditional manner with a timber truss integrated into the housing with roof and sidewalls.

[98] JRP Historical Consulting, LLC, "Historical Resources Evaluation Report, Jacoby Creek Bridge Rehabilitation Project, Humboldt County, California," prepared for Humboldt County Department of Public Works and Caltrans, November 2016.

Photograph 22: Jacoby Creek Bridge, Humboldt County, 11/11/2015, camera facing east.

The Oregon Gulch Creek Covered Bridge (Bridge 12C0182) was built in 1983 by the Butte County Department of Public Works to replace a deteriorated bridge. The idea of building a covered bridge came from Clay Castleberry, the Butte County Public Works Director, who had a fondness for covered bridges and wanted to build one before he retired. The site was the location of Oregon City, a gold-rush era mining camp – now ghost town – located along the gulch that still had a nineteenth century schoolhouse maintained by the Butte County Historical Society. The history of Oregon City, presence of the schoolhouse, rural setting, and low traffic volume character of Oregon Gulch Road all factored into Castleberry's choice for a covered bridge at this location. In trying to muster support for the bridge, Castleberry argued that the bridge would "enhance the historical flavor of the Oroville area" and create a tourist attraction, noting that, "Covered bridges are not usual, and people come to see covered bridges." The bridge was completed in June 1983 at a cost of $42,000 funded by the County and private donations and utilizing donated materials and labor. The two-lane Warren Truss Oregon Gulch Creek Bridge was the first covered bridge built on a public road by a government agency in California since the 1930s (**Photograph 23**).[99]

[99] "Castleberry Hopes to Build Covered Bridge," *Oroville Mercury Register,* September 13, 1982, 3; "Supervisors Okay Plans for Bridge," *Oroville Mercury Register,* September 15, 1982, 3; "Insight," *Oroville Mercury Register,* May 22, 1982, 14; "Bridge is Dedicated," *Oroville Mercury Register,* July 11, 1983, 1; "Covered Bridge Done," *Oroville Mercury Register,* June 30, 1983, 1.

Photograph 23: Oregon Gulch Creek Bridge, Oregon City, Butte County, 3/2/2022, camera facing southeast.

9. EVALUATION CRITERIA

Bridges and tunnels in California typically are evaluated under two National Register / California Register criteria: NRHP Criterion A / CRHR Criterion 1, for important associations with local or regional history, the development of a transportation system, or economic growth, and NRHP Criterion C / CRHR Criterion 3, for significance relating to engineering, technological advancements, or aesthetic qualities, a distinctive example of a type or design, or the work of a master. Bridges are infrequently, if ever, evaluated as significant under Criteria B / 2 or D / 4. Important historic persons associated with bridges usually are involved with the bridge's design, thus are evaluated under Criteria C / 3 as the work of a master. Historic structures such as bridges are rarely eligible under Criteria D / 4 as important for their potential to yield information regarding historic construction materials or technologies. However, these are usually very old structures that were not built from plans or structures for which the plans have been lost. Bridges in California built during the 1975-1984 period are extremely well documented in plans, drawings, and literature, so the physical bridge itself is not a principal source of important information in this regard.[100]

Under NRHP Criterion A / CRHR Criterion 1, California highway / roadway bridges constructed between 1975 and 1984 have the potential to be significant if they are associated with important trends and/or events in transportation development, regional or local economic development, or community planning. Establishing this significance is done with certain principles in mind. Bridges, like other infrastructure, are inherently vital to the communities they serve as critical elements of city or regional planning and transportation, and the importance they have to communication and the distribution of people, goods, and services that facilitate development on both the local and regional levels. These common effects of bridge construction do not typically provide sufficient evidence to demonstrate how a structure may be deemed significant for its association within an important historic context; otherwise virtually any bridge would be historically significant. To be eligible for inclusion in the NRHP / CRHR resource types such as bridges and other similar infrastructure must have demonstrable importance directly related to important historic events and trends, with emphasis given to specific demand for such facilities and the effects the structure had on social, economic, commercial, and industrial developments locally, regionally, or nationally. In this way, bridges may be significant as physical manifestations of important transportation and community planning developments on the local, regional, state, or national level. For example, a bridge that was the first in its location and facilitated growth and development would be inherently more significant than subsequent bridges constructed at or near that location. The importance in this example is the initiation of a growth or development trend, rather than its continuation perpetuated by subsequent bridges.

[100] Much of this section was based on and excerpted from JRP Historical Consulting Services, "Roadway Bridges of California, 1936 to 1959: Historic Context Statement," prepared for Caltrans, 2003, 68-70.

Under NRHP Criterion C / CRHR Criterion 3, bridges and tunnels constructed between 1975 and 1984 have the potential to be significant for their importance within the field of bridge engineering and design. This significance derives from a bridge embodying distinctive characteristics of its type, period, or method of construction, or representing the work of a master engineer, designer, or builder. The historic significance of bridges within the field of bridge engineering and design has been studied in great detail in California and other states as a result of dozens of historic bridge inventories sponsored by the Federal Highway Administration since the 1970s. While bridge types and inventory methods varied from state to state, the many historic bridge inventories generally have established salient attributes that help define the significance of structures within the field of bridge engineering and design. These attributes are weighed in conjunction with evaluation of a bridge's type, period, or method of construction and its association with potentially significant engineers and/or builders:

- Rarity − the number of remaining examples of a bridge construction type;
- Innovative design techniques or use of construction methods that advanced the art and science of bridge engineering;
- Boldness of the engineering achievement − representing the measures taken to overcome imposing design and construction challenges related to load, stress, and other engineering and environmental complexities;
- Aesthetics − the visual quality achieved in a bridge's individual design or with its appropriateness within the natural or man-made setting.

In order to meet any NRHP / CRHR eligibility criteria, a bridge must have both historical significance, as outlined above, as well as historic integrity, which is the ability of a property to convey its significance. Loss of integrity, if sufficiently great, will overwhelm the historical significance a bridge may possess and render it ineligible. Integrity is determined through applying seven factors defined by National Register guidelines.[101] Those factors are location, design, setting, workmanship, materials, feeling, and association. To retain historic integrity a property must possess most of the seven aspects. Location and setting are associated with the relationship between the property and its physical environment. Design, materials, and workmanship relate to construction methods, engineering, and aesthetics. Feeling and association are the least objective of the seven criteria, pertaining to the overall ability of the property to convey a sense of the historical time and place in which it was constructed.

This study also applied the California Historical Landmarks (CHL) Criteria to those bridges and tunnels owned by the State of California. Resources eligible for the CHL must meet one of three criteria outlined in PRC Section 5031:

[101] National Park Service, *Bulletin 15: How to Apply the National Register Criteria for Evaluation* (Washington, D.C.: U.S. Department of the Interior, National Park Service, 1997), 44-49.

- The first, last, only, or most significant of its type in the state or within a large geographic region (Northern, Central, or Southern California).
- Associated with an individual or group having a profound influence on the history of California.
- A prototype of, or an outstanding example of, a period, style, architectural movement or construction or is one of the more notable works or the best surviving work in a region of a pioneer architect, designer or master builder.

10. CONCLUSIONS

JRP recorded and evaluated 23 bridges and tunnels using NRHP / CRHR and CHL significance and integrity criteria for this report. JRP concludes that fifteen of these bridges meet the criteria for eligibility in the NRHP and CRHR, and ten of these also meet the criteria for listing as a CHL. Therefore, fifteen bridges evaluated herein are historic properties under Section 106 of the NHPA and are historical resources for the purposes of CEQA, and ten are eligible as CHLs. These fifteen bridges have been assigned a Caltrans historical status designation of Category 2. The remaining eight of the 23 individually evaluated bridges and tunnels are not eligible for the NRHP, CRHR, or CHL, therefore are not historic properties under Section 106, are not historical resource for the purposes of CEQA, and are not eligible as CHLs. These eight bridges have been assigned a Caltrans historical status designation of Category 5. See the DPR 523 forms attached in **Appendix B** for complete NRHP / CRHR / CHL evaluations of the 23 individually documented bridges and tunnels.

Additionally, 2,517 resources were found to lack any potential historical significance based on the screening process outlined herein and were not formally surveyed and evaluated. These structures also are not eligible for the NRHP / CRHR / CHL, thus are not historic properties under Section 106, are not historical resource for the purposes of CEQA, and are not eligible as California Historical Landmarks. These 2,517 bridges have been assigned a Caltrans historical bridge status of Category 5.

The findings of this report are summarized as follows:

Table 4. Bridges Determined Eligible for the NRHP and CRHR

Bridge Number	Caltrans District	County	Bridge Type	Criterion; Reason	Period/Level of Significance
01 0007	1	Del Norte	Concrete Deck Arch	C/3; Rare Type / Aesthetics	1984 / State
12C0182	3	Butte	Wood Thru Truss – Covered	C/3; Rare Type	1983 / State
20C0438	4	Sonoma	Steel Deck Truss	C/3; Span Length / Aesthetics	1973 / State
21 0049	4	Napa	Concrete Box Girder	C/3; Length / Aesthetics	1977 / State
28 0009	4	Contra Costa	Steel Girder	C/3; Span Length	1978 / State
32 0040	10	Tuolumne	Steel Box Girder	C/3; Span Length / Height / Aesthetics	1976 / State
32C0076	10	Tuolumne	Concrete Box Girder	C/3; Span Length / Aesthetics	1979 / State
34C0066	4	San Francisco	Concrete Box Girder POC	C/3; Aesthetics	1977 / State
35 0038	4	San Mateo	Steel Box Girder	C/3; Span Length / Total Length	1982 / State
53 0068	7	Los Angeles	Concrete Box Girder POC	C/3; Aesthetics	1979 / State

Bridge Number	Caltrans District	County	Bridge Type	Criterion; Reason	Period/Level of Significance
53 2579	7	Los Angeles	Concrete Box Girder POC	C/3; Aesthetics	1979 / State
53 2602	7	Los Angeles	Concrete Box Girder POC	C/3; Aesthetics	1979 / State
55 0614	12	Orange	Concrete Box Girder	C/3; Aesthetics	1981 / State
55C0307	12	Orange	Concrete Girder POC	C/3; Artistic/Cultural Value	1979 / Local
57 0870	11	San Diego	Concrete Box Girder	C/3; Aesthetics	1978 / State

Table 5. Bridges Determined Eligible as a CHL

Bridge Number	Caltrans District	County	Bridge Type	Reason
01 0007	1	Del Norte	Concrete Deck Arch	Outstanding Example of a Type
21 0049	4	Napa	Concrete Box Girder	Outstanding Example of a Type / Aesthetics
28 0009	4	Contra Costa	Steel Girder	Outstanding Example of a Type
32 0040	10	Tuolumne	Steel Box Girder	Outstanding Example of a Type / Aesthetics
35 0038	4	San Mateo	Steel Box Girder	Outstanding Example of a Type / First of its Type
53 0068	7	Los Angeles	Concrete Box Girder POC	Outstanding Example of a Type / Aesthetics
53 2579	7	Los Angeles	Concrete Box Girder POC	Outstanding Example of a Type / Aesthetics
53 2602	7	Los Angeles	Concrete Box Girder POC	Outstanding Example of a Type / Aesthetics
55 0614	12	Orange	Concrete Box Girder	Outstanding Example of a Type / Aesthetics
57 0870	11	San Diego	Concrete Box Girder	Outstanding Example of a Type / Aesthetics

Table 6. Evaluated Bridges Determined Not Eligible for the NRHP/CRHR/CHL

Bridge Number	Caltrans District	County	Bridge Type
04 0221L 04 0221R	1	Humboldt	Concrete Box Girder
29 0269	10	San Joaquin	Concrete Box Girder
53 2578	7	Los Angeles	Concrete Box Girder POC

Bridge Number	Caltrans District	County	Bridge Type
53C0899L	7	Los Angeles	Tunnel
53C0900L	7	Los Angeles	Tunnel
53C0901L	7	Los Angeles	Tunnel
53C1184	7	Los Angeles	Concrete T-beam

11. PREPARERS' QUALIFICATIONS

JRP Principal Christopher McMorris (M.S., Historic Preservation, Columbia University) co-authored this report, conducted research, edited DPR 523 forms, and managed the project. Mr. McMorris has more than 25 years of experience and specializes in conducting historic resource studies for compliance with Section 106 of the National Historic Preservation Act and CEQA, as well as other historic preservation projects. His expertise in historic bridges includes work on dozens of projects to replace or rehabilitate bridges across California, and he was the JRP project manager for the firm's work on the Caltrans Historic Bridge Inventory Update in the early 2000s. Based on his level of education and experience, Mr. McMorris meets the United States Secretary of the Interior's Professional Qualification Standards under History and Architectural History (as defined in 36 CFR Part 61).

JRP Senior Architectural Historian Steven J. "Mel" Melvin (M.A., Public History, California State University, Sacramento) has more than 18 years of experience as a historian/architectural historian working on a variety of research and cultural resource management projects throughout California. Mr. Melvin co-authored this report, prepared DPR 523 forms, conducted research, and performed fieldwork. Mr. Melvin meets the United States Secretary of the Interior's Professional Qualification Standards (as defined in 36 CFR Part 61) under History and Architectural History.

Research Assistant Andrew Young (M.A., Public History, California State University, Sacramento – in-progress) and Research Assistant Abigail Lawton (M.A., Historic Preservation, Cornell University, Ithaca, N.Y., expected 2024) assisted with the preparation of this report.

Graphics Technician Rebecca Flores prepared the graphics utilized in this report and the DPR 523 forms.

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"View from beneath a four-level freeway interchange in downtown Los Angeles, ca.1950-1959." Courtesy of California Historical Society and University of Southern California Libraries, USC Digital Library at https://doi.org/10.25549/chs-m2511.

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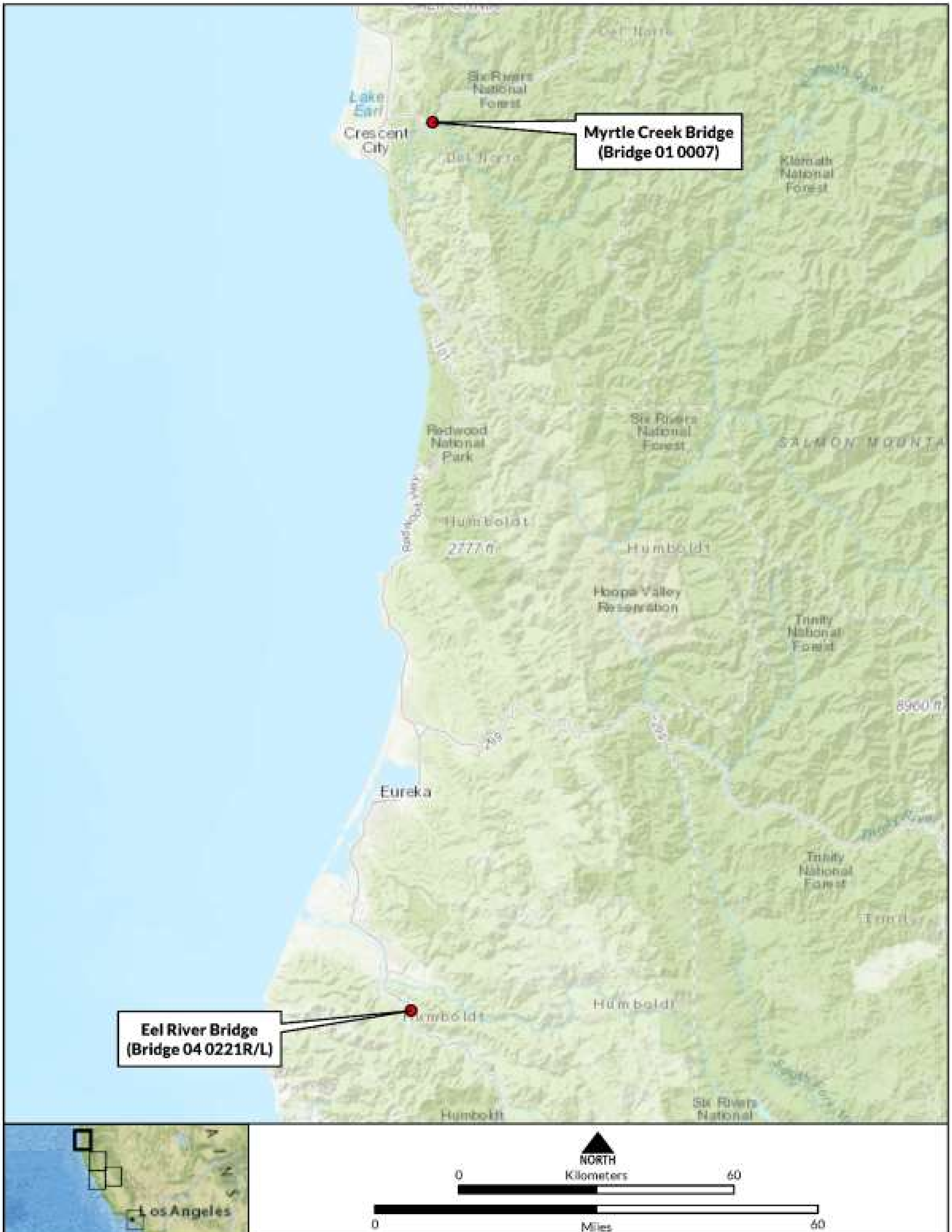
APPENDIX A

Bridge Location Maps



Myrtle Creek Bridge
(Bridge 01 0007)
Eel River Bridge
(Bridge 04 0221R/L)
Lake Earl
Crescent City
Six Rivers National Forest
Klamath National Forest
Redwood National Park
Humboldt
2777 ft
Hoopa Valley Reservation
Trinity National Forest
8960 ft
SALMON MOUNTA
Eureka
Los Angeles
NORTH
0
Kilometers
60
0
Miles
60

Tehama
8084 ft
6628 ft
Deer Creek
Black Butte Lake
7445 ft
Mendocino National Forest
Chico
Butte
Glenn
Lake Oroville
Oregon Gulch Creek Bridge
(Bridge 12C0182)
Yuba
Colusa
Lake
Yuba City
Clear Lake
Sacramento River
Sutter
Clearlake
SACRAMENTO VALLEY
MAYACMAS MOUNTAINS
Yolo
4710 ft
Russian River
Cache Creek
Woodland
Warm Springs Creek Bridge
(Bridge 20C0438)
Davis
Sonoma
Napa
Lake Berryessa
Los Angeles
NORTH
0
Kilometers
60
0
Miles
60


Napa River Bridge
(Bridge 21 0049)
Antioch Bridge
(Bridge 28 0009)
City College
Pedestrian Overcrossing
(Bridge 34C0066)
Dumbarton Bridge
(Bridge 35 0038)
Santa Rosa
Vacaville
Napa
Petaluma
Fairfield
Vallejo
San Rafael
Antioch
Concord
San
Francisco
Oakland
San Leandro
Livermore
San Mateo
Fremont
Redwood City
COASTAL RANGE
Sunnyvale
San Jose
Santa Clara
SANTA CRUZ MOUNTAINS
Santa Cruz
Gilroy
Watsonville
Los Angeles
NORTH
0
Kilometers
60
0
Miles
60

Parrots Ferry Bridge
(Bridge 32C0076)
New Melones Reservoir Bridge
(Bridge 32 0040)
Crosstown Freeway Viaduct
(Bridge 29 0269)
Roseville
Folsom Lake
El Dorado
Citrus Heights
Sacramento
Elk Grove
Amador
Stanislaus National Forest
Arnold
Calaveras
Strawberry
Lodi
Tuolumne
New Melones Lake
Stockton
San Joaquin
Don Pedro Reservoir
Tracy
SIERRA NEVA
Lake McClure
Tuolumne River
Modesto
Stanislaus
Mariposa
Turlock
Merced
Madera
Los Angeles
NORTH
0
Kilometers
60
0
Miles
60

Kanan Road
Southbound Tunnel
(Bridge 53C0901L)
Kanan Road
Southbound Tunnel
(Bridge 53C0900L)
Kanan Dume Road
Southbound Tunnel
(Bridge 53C0899L)
Grand Avenue Viaduct
(Bridge 53C1184)
Lemon Park
Pedestrian Overcrossing
(Bridge 55C0307)
Castellammare
Pedestrian
Overcrossing
(Bridge 53 0068)
Montana Avenue
Pedestrian Overcrossing
(Bridge 53 2602)
Broadway
Pedestrian Overcrossing
(Bridge 53 2578)
California Incline
Pedestrian Overcrossing
(Bridge 53 2579)
North Arm Newport Bay Bridge
(Bridge 55 0614)
West Lilac Road Overcrossing
(Bridge 57 0870)
Lancaster
Palmdale
Victorville
Simi Valley
Thousand Oaks
Santa Monica
Los Angeles
El Monte
West Covina
Rancho Cucamonga
Ontario
Redlands
Riverside
Highland
Redondo Beach
Anaheim
Corona
Long Beach
Santa Ana
Perris
Huntington Beach
Orange
Lake Forest
Rancho Santa Margarita
Mission Viejo
Laguna Niguel
Murrieta
San Clemente
Camp Pendleton Marine Corps Base
Oceanside
SAN GABRIEL MOUNTAINS
SANTA ANA MOUNTAINS
Angeles National Forest
California Aqueduct
Los Angeles River
Pomona Fwy
NORTH
Kilometers
0
60
Miles
0
60
Los Angeles

APPENDIX B

California Department of Parks and Recreation (DPR) 523 Forms

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 3S
Other Listings
Review Code Reviewer Date

 ***Resource Name or #** (Assigned by recorder): Bridge 01 0007

P1. Other Identifier: Myrtle Creek Bridge

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County**: Del Norte
and (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5′ Quad**: Hioucho **Date**: 2021 **T**:16N; **R**:1E; **Sec**: 10; Humboldt Meridian

c. Address: US Route 199 City: n/a Zip: n/a

d. UTM: (give more than one for large and/or linear resources) Zone: 10T; 412307.00 m E; 4628278.00 m N

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate)
The Myrtle Creek Bridge carries US Route (US) 199 over Myrtle Creek about 1.3 miles north of the unincorporated community of Hiouchi at post mile 7.09. The bridge is in Caltrans District 1.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

The Myrtle Creek Bridge is a seven-span open spandrel concrete arch bridge with a precast, reinforced concrete, open-spandrel main arch span 126 feet long and a total length of 250 feet (**Photographs 1-3**). Connecting the arch span and deck are eight two-column reinforced concrete bents (**Photographs 4 & 5**). Approach spans are on each side of the arch span. These are two cast-in-place, reinforced concrete slabs spans on the south end and four on the north end. The approach spans are also supported by reinforced concrete two-column bents (**Photograph 6**). At the ends of the bridge are concrete seat abutments. Its 35.5-foot-wide concrete deck carries two lanes of traffic and concrete barrier walls on each side (**Photographs 7**). The bridge is 75 feet above Myrtle Creek.

***P3b. Resource Attributes:** (List attributes and codes) HP19. Bridge

***P4. Resources Present:** ☐ Building ☒ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5b. Description of Photo: (View, date, accession#) **Photograph 1.** East elevation, camera facing northwest, June 14, 2022.

***P6. Date Constructed/Age and Sources:** ☒ Historic ☐ Prehistoric ☐ Both
1984 (Caltrans)

***P7. Owner and Address:**
State of California
Department of Transportation
1120 N Street
Sacramento, CA 95814

***P8. Recorded by:**
Steven J. "Mel" Melvin
JRP Historical Consulting, LLC
2850 Spafford Street
Davis, CA 95618

***P9. Date Recorded**: June 14, 2022

***P10. Survey Type:** (Describe)
Intensive

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") JRP Historical Consulting, LLC, "Historical Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2023 Update, 1975-1984," prepared for Caltrans, 2023.

***Attachments:** ☐ None ☐ Location Map ☐ Sketch Map ☒ Continuation Sheet ☒ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐Other (list)

***NRHP Status Code**: 3S
***Resource Name or #** (Assigned by recorder): Bridge 01 0007

B1. Historic Name: Myrtle Creek Bridge
B2. Common Name: Myrtle Creek Bridge
B3. Original Use: Bridge B4. Present Use: Bridge
***B5. Architectural Style**: Concrete Deck Arch
***B6. Construction History**: (Construction date, alteration, and date of alterations) Built in 1984; the only alterations have been routine maintenance.
***B7. Moved?** ☒ **No** ☐ **Yes** ☐ **Unknown** **Date:** ______ **Original Location:** ______
***B8. Related Features:** ___
B9. Architect: Caltrans (Steve McBride) b. Builder: Stach Construction Company
***B10. Significance: Theme**: Engineering / Design / Aesthetics **Area**: State
Period of Significance: 1984 **Property Type**: Bridge **Applicable Criteria**: C/3
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

The Myrtle Creek Bridge is eligible for listing in the National Register of Historic Places (NRHP) and the California Register of Historical Resources (CRHR). This property has been evaluated in accordance with Section 106 of the National Historic Preservation Act of 1966 (as amended) (54 U.S.C. 306108) and its implementing regulations (36 CFR Part 800) and Section 15064.5(a)(2)-(3) of the California Environmental Quality Act (CEQA) Guidelines, using the criteria outlined in Section 5024.1 of the California Public Resources Code (PRC). Additionally, the Myrtle Creek Bridge meets the California Historical Landmarks (CHL) Criteria as per PRC Section 5031 and it qualifies as a California Historical Landmark. (See Section B10 on Continuation Sheet.)

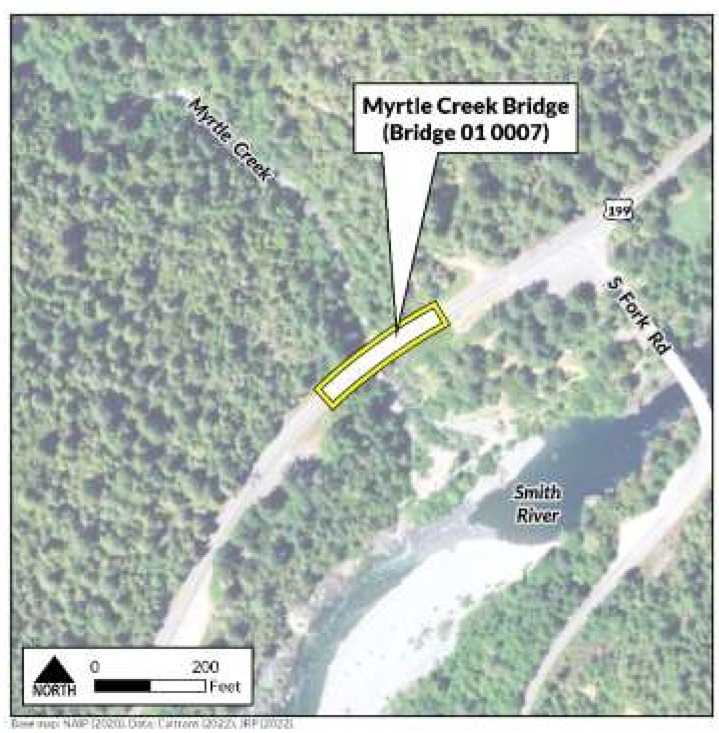
B11. Additional Resource Attributes: ______

***B12. References**: Caltrans Bridge Database; Caltrans Bridge Inspection Reports; Caltrans, Bridge As-Built Plans; Caltrans, Statewide Historic Bridge Inventory Updates; see also footnotes.

B13. Remarks:

***B14. Evaluator**: Steven J. "Mel" Melvin
***Date of Evaluation**: November 2023

(This space reserved for official comments.)



B10. Significance (continued):

Historic Context and Bridge History

Caltrans first proposed the Myrtle Creek Bridge in 1981 as part of a larger project that included replacing two other bridges (Smith River, Bridge 01 0009; Middle Fork Smith River, Bridge 01 0016) and curve corrections along a section of US 199. Caltrans noted that all three bridges were too narrow and in a deteriorated condition. The previous Myrtle Creek Bridge, constructed in 1937, was an almost identical concrete arch. Caltrans documented the status of the old bridge in a 1981 bridge inspection report wherein the bridge engineer noted the settling of the footings, concrete deterioration, and the narrow width of the old bridge. He went on to recommend replacing it with another concrete arch, stating that this type would "fit the topography well." Despite concrete arch bridges being largely obsolete by this time owning to their high cost, Caltrans opted for a precast concrete arch bridge at Myrtle Creek because it was the most appropriate structure for conditions at the site that included the steep ravine, natural scenic beauty, and the environmentally sensitive Myrtle Creek, which flows into the Smith River just below the bridge (**Plate 1**). Weighing in on the bridge design was the Sierra Club, which urged Caltrans to build a concrete arch bridge as the most aesthetically pleasing for the setting. Caltrans specifically chose to use precast arch ribs to reduce the amount of falsework erected in the ravine and its associated impact on the creek, and to avoid problems during the rainy season. Caltrans awarded the contract to Stach Construction Company of Grants Pass, Oregon in September 1982 and construction began with the pouring of the arch footings, abutments, approach span bents, and a single falsework tower for the 10-foot-wide center closure pour, the only falsework used on the project. Workers then set the arch rib segments into place, supported by the arch footings and the center falsework tower, followed by the cross-struts, bent columns, and deck, all cast-in-place. Deck construction utilized the spandrel and bent columns for support (**Plate 2** & **Plate 3**). The Morse Brothers Company manufactured the pre-cast arch ribs used in the bridge at their plant in Harrisburg, Oregon, each rib cast in two, 73-foot-long segments and trucked to the bridge site. The new bridge was completed in August 1984 and cost $715,000, about 25 percent more than an ordinary concrete box girder bridge would have cost.[1]

After its construction, Caltrans recognized the bridge for its design excellence, nominating the bridge in 1986 to the U.S. Department of Transportation's Excellence in Highway Design contest in the Major Highway Structures category. Caltrans nominated the bridge for its "innovation amid striking beauty" and because it "stands as a testimonial to the use of precast concrete." Caltrans noted that the use of precast segments "required minimal falsework, reduced the impact of construction on the Smith River, and opened up more vistas to the natural environment." According to Caltrans, the bridge met "all the aesthetic requirements of a unique region of the state."[2] The bridge was also featured on the cover and in an article of the January 1990 issue of *Minerals Today*, a bimonthly publication of the U.S. Bureau of Mines, Department of the Interior. [3]

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[1] "Public Hearing," *Eureka Times-Standard,* June 17, 1981, 10; Caltrans, "Structure Improvement Proposal – Myrtle Creek," April 6, 1981; "Myrtle Creek Bridge, 1-07" October 1, 1969, Folder: Myrtle Creek Bridge, Box: Bridges, Named, MO-MY, Caltrans Transportation Library; James E. Roberts, "Aesthetic Design Philosophy Utilized for California State Bridges," *Journal of Urban Planning and Development* 118, no. 4 (December 1992), 148; Steve McBride, Caltrans Division of Structures, "Myrtle Creek Arch Bridge," *Structure Notes* 1, no. 1 (July 1985), n.p.
[2] "The Best of California Highway Design," *Going Places* (May-June 1986), 20.
[3] "Bridge to the Future," *Minerals Today* (January 1990), 8, cover.

***Resource Name or #** (Assigned by recorder): Bridge 01 0007

***Recorded by**: S.J. "Mel" Melvin ***Date**: June 14, 2022 ☒Continuation ☐Update

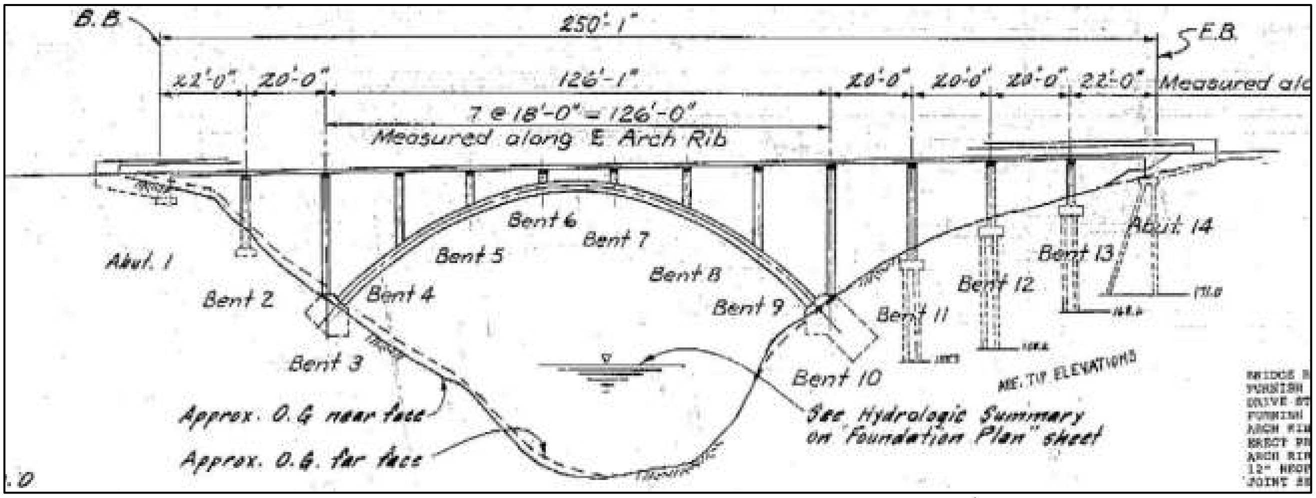

Plate 1. Elevation view from the original plans dated 1983.[4]

Plate 2. Photo from 1985 showing east elevation.[5]

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[4] Caltrans, "Myrtle Creek Bridge, General Plan," June 20, 1983.
[5] Caltrans, Bridge Inspection Report, Bridge 01 0007, March 27, 1985.

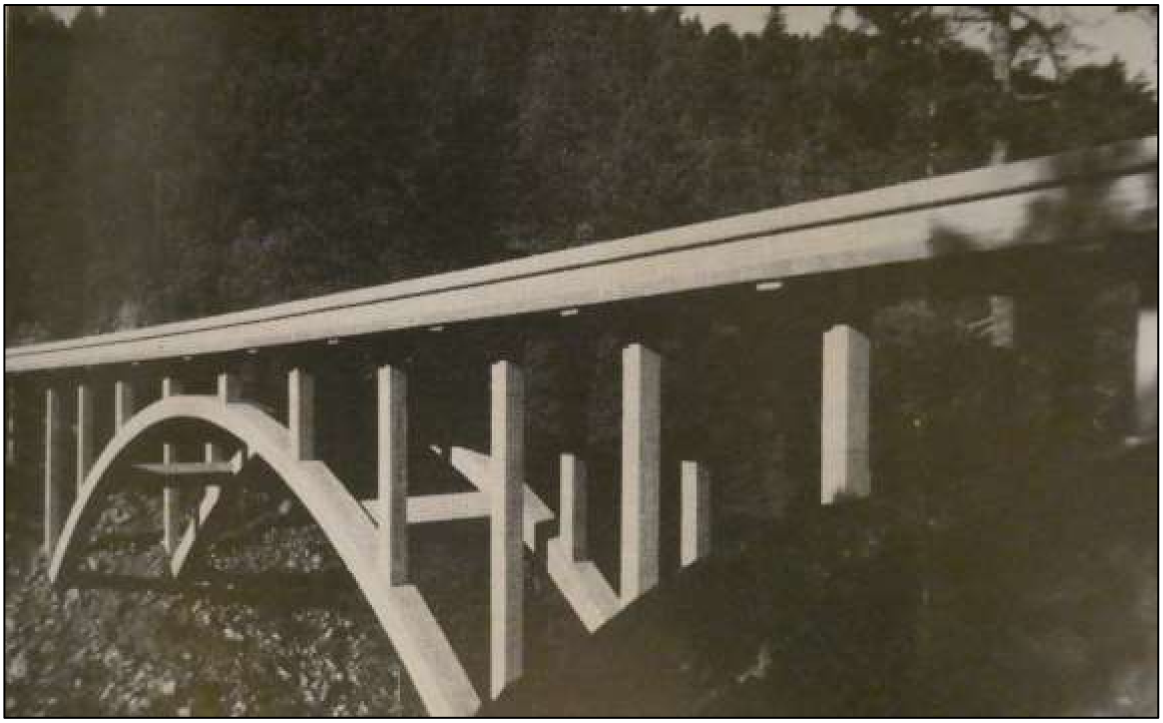

Plate 3. Oblique view of east elevation taken in 1985.[6]

Stach Construction Company of Grants Pass, Oregon was owned and operated by Henry G. Stach. Born in Portland, Oregon in 1927, Stach attended Oregon State College and began working in the lumber industry immediately thereafter. He was working as a contractor by 1953, initially doing general construction work and moving into bridge work within a few years. He began doing business as Stach Construction Company around 1961, receiving contracts from the Oregon State Highway Commission, the International Port of Coos Bay, and other organizations throughout the state as his operations expanded in the 1960s and 1970s. Some of the company's projects included construction of the Days Creek Bridge on the Tiller Trail Highway in 1963, the new Hellgate Bridge across Hellgate Canyon on the Rogue River in 1965, the Snake River Bridge at Ontario in 1965, the Highway 20 Willamette River bridge and Highway 34 Lake Creek and Calapooia River bridges at Albany in 1971, and steel bridges over the Yaquina River on the Eddyville-Blodgett Highway in 1980, all in Oregon. The last known project undertaken by Stach Construction Company was a large-scale renovation of the Charleston Industrial Annex at the Port of Coos Bay in 1987. The company was initially awarded the contract in November 1987, but it was never signed, and the company ended up forfeiting a bid bond in January 1988. The case went to litigation, but the complaint was eventually dismissed. The Oregon International Port of Coos Bay commission had been hesitant to award the contract to Stach Construction Company in the first place, due to rumors that the company was up for sale. Research did not find any further information on either Henry Stach or Stach Construction Company after this date.[7]

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[6] "Myrtle Creek Bridge," *Prestressed Concrete Institute Journal* 30, no 6, (Nov-Dec 1985), 163.
[7] "Courts," *Statesman-Journal* (Salem, Oregon), June 3, 1987, 2C; U.S. Selective Service System, *World War II Draft Registration Card*, Josephine County, Oregon, "Henry George Stach," Serial no. W255, 15 November 1945; "Miss Aldrich Sets Date," *Eugene Register-Guard*, August 2, 1953, 2D; United States Census, *Seventeenth Census of the United States—Population Schedule*, *1950*, Grants Pass, Josephine County, Oregon, Enumeration District 17-21, Sheet 22; "Pair to Live At Oakridge," *Eugene Register-Guard,* August 23, 1953, 4D; "Circle Bar Course To Build Clubhouse," *Eugene Register-Guard*, March 21, 1955, 3B; "Baxter, Cooper Installed Monday On School Board," *Eugene Register-Guard*, July 15, 1955, 11A; "Falls City Bridge Work Contract Let," *The Oregon Statesman*, March 7, 1958, 5; "County Gets Bids For Box Culvert," *The News-Review*, June 2, 1961, 2; "BPR Examines Bid on Cow Creek Span," *The News-Review*, May 29, 1963), 1; "$16 Million Bids Opened," *Albany Democrat-Herald*, October 9, 1963, 11; "Oregon 34, U.S. 20 Route Construction continues," *Albany Democrat-Herald*, September 2, 1971, 5; "Bids open on four projects," *The World* (Coos Bay, Ore.), September 5,

Concrete Arch Bridges

Concrete arch bridges in California became popular in the early 1900s as the technology of reinforced concrete improved. The era of concrete arch bridges proved brief, however, as the extensive wood falsework and manual pouring of concrete led to high costs. By the late 1930s, the concrete arch was in decline for use in bridges and very few were built after 1945 when designers shifted to more modern concrete types such as the reinforced concrete box girder and prestressed concrete girders. Of the hundreds of concrete arch bridges built on California roadways, only 14 were constructed in 1960 or later.[8]

Concrete arch bridges are classified in two forms: closed (or filled) spandrel arch and open spandrel arch. These types of bridges are also noted by their arch type, such as round, elliptical, and parabolic. A round or semi-circle arch is an arch forming a complete half circle. An elliptical arch is an arch with a curve that becomes tighter towards the crown. A parabolic arch is an arch that resembles the curved form of a parabola. Choice of arch type was both a function of structural requirements and aesthetic intent.[9] Open spandrel arch bridges differ from the closed spandrel arch in that the arch and the spandrel walls are constructed of individual members, joined together at critical junctures. The arch is made of separate arch rings, usually two, one at each side of the bridge. The arch rings were typically tied together with horizontal struts, with vertical columns connecting the arch rings to the deck. Concrete arch bridges can be further grouped into three categories depending on the location of the arches. Deck-arch bridges have the arch below the deck and make up almost all of the concrete arch bridges in California. The other two types are through, tied-arch bridges, with the arch entirely above the deck; and half through-arch in which part of the arch is below the deck, and part is above.[10]

Among the notable concrete arch bridges in California are the Bixby Creek Bridge (44 0019) in Monterey County, constructed in 1932. This open spandrel concrete arch is 714 feet in length with a 330-foot main span, making it the longest concrete arch bridge in the state. The Donner Summit Bridge (17C0052) in Nevada County is another excellent example of an open spandrel concrete arch. Constructed in 1924, it has a total length of 241 feet and a main span measuring 117 feet. Some concrete arch bridges are distinguished for their aesthetics, such as the North Gaffey Street Bridge in Los Angeles (53C0399), constructed in 1936 with Art Deco embellishments.[11]

The Myrtle Creek Bridge was designed and built during a period when bridge aesthetics had become a regular part of bridge design at Caltrans, particularly for prominent bridges and those with involvement of interest groups or members of the public. Caltrans' predecessor, the Division of Highways, began to integrate improved aesthetics into the state's bridge design procedures in the early 1960s with architects trained in bridge design providing input about the appearance of structures. The Division of Highways, and later Caltrans, developed its bridge aesthetics program to integrate it into the department's overall design philosophy that included educational programs for staff and contractors, along with additions to bridge design manuals that included instruction to have bridges designed so that they would be aesthetically compatible with their location. Bridge designers were encouraged to consider what they were leaving for future generations, which emphasized that a bridge's appearance was as important as the structure's design features for load and safety, as well as it being compatible with its environment and for it to wear well with age. Aligning with the dominant architectural trends in Modernism of the period, bridge designers aspired to simplicity and pureness of structure, avoiding ornamentation, celebrating the beauty of structural form, and emphasizing ease of construction and economy of design. Slender structures on slender piers or columns with minimal number of elements, and continuous or steady long lines were among the features of the aesthetical ideal at the time, for which the Division of Highways received various awards such as the steel arch Cold Spring Canyon Bridge on State Route 154 in Santa Barbara County, built in 1963. Although Division of Highways / Caltrans policy was to design aesthetically pleasing structures, and sometimes incorporated input from members of the public, there were also clear parameters that such

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1980, 14; Peter Allard, "Port reorganization budget draft due soon," *The World* (Coos Bay, Ore,), November 12, 1987, 5; "Firm forfeits bond in Joe Ney bridge work," *The World* (Coos Bay, Ore,), January 23, 1988, 2; "Courts," *Statesman-Journal* (Salem, Ore.), March 30, 1988, 2C; "Courts," *Statesman-Journal* (Salem, Ore.), December 16, 1988, 2C.

[8] JRP Historical Consulting, "Caltrans Historic Bridge Inventory Update: Concrete Arch Bridges," prepared for Caltrans, October 2004, 25, 28, 33; Caltrans, Historical Resources Evaluation Report, Statewide Historic Bridge Inventory: 2015 Update, 1965-1974, 9.

[9] JRP Historical Consulting, "Caltrans Historic Bridge Inventory Update: Concrete Arch Bridges," 25, 28.

[10] JRP Historical Consulting, "Caltrans Historic Bridge Inventory Update: Concrete Arch Bridges," 25, 28.

[11] JRP Historical Consulting, "Caltrans Historic Bridge Inventory Update: Concrete Arch Bridges," 20-21, 28, 30, 31.

efforts would not be unduly more expensive. During this period, Division of Highways and Caltrans bridge designers considered aesthetic qualities following general principles related to quality design that carefully analyzed proportions of bridges' structural and safety elements, attractive forms for the various bridge elements, compatibility of bridges within their setting, and consideration of current and future acceptance of the structures. Caltrans chose to build a concrete arch at the Myrtle Creek crossing because it was considered to be the most appropriate structure for its site, and its design was accomplished using precast segments to keep costs down and avoid impacts on the creek from falsework construction. Compatibility was emphasized to improve how bridges fit into their surroundings. This depended on the nature of the structure and site with some bridges designed to blend with their setting and others to stand out. Longtime Division of Highways Chief of Bridge Planning and Design Arthur L. Elliott, who led the Bridge Department from 1953 to 1973, emphasized a bridge's compatibility was more important than its uniqueness of appearance, stating that "a properly designed structure has a sense of belonging in its particular location," noting that bridges that seem out of place are subject to criticism. He further specified that bridges do not need to be fancy to be compatible, and that stark and simple bridges in a desert setting, for example, won prizes because they were well suited for their environment. Sometimes compatibility issues were considered prior to issues related to the structural design of a new bridge and there were various efforts during the 1970s and 1980s where Caltrans worked with interest groups to assess aesthetic considerations, such as the input Caltrans received from the Sierra Club and others for the design of the Myrtle Creek Bridge.[12]

NRHP / CRHR Significance Evaluation

The Myrtle Creek Bridge is not significant under NRHP Criterion A / CRHR Criterion 1 for an important association with significant events, trends, or patterns of development. The bridge was one of many highway improvements carried out in the late 1970s and early 1980s by Caltrans throughout California and in this region. This was also not the first bridge at this location and its construction did not initiate new patterns of development. Thus, the bridge is not important within the context of the development of the highway network, local growth and development, or any other trends or events at the national, state, or local level that would make it significant under this criterion.

Under NRHP Criterion B / CRHR Criterion 2, this bridge is not significant for an association with the lives of persons important to history. Research did not find that any individuals directly associated with this property have made demonstrably important contributions to history at the local, state, or national level.

Under NRHP Criterion C / CRHR Criterion 3, the Myrtle Creek Bridge is significant for its type, period, and method of construction for its aesthetic value derived from its open spandrel arch design that harmonizes with the natural surroundings. The bridge is not the work of a master and does not possess high artistic values. The bridge's importance of design comes from its graceful arches that rise from the high, steep slopes of the creek bank, framing the canyon. Additionally, the open spandrels allow for views of the landscape beyond. Caltrans deliberately chose an open spandrel concrete arch design with these aesthetic considerations in mind. The bridge is also noteworthy for its use of precast components that minimized the impacts of construction on the environment.

[12] Arthur L. Elliott, "Aesthetics of Highway Bridges," *Civil Engineering*, June 1968, 65-66; James E. Roberts, "Aesthetic Design Philosophy Utilized for California State," *Journal of Urban Planning and Development*, Vol. 118, No. 4, December 1992, 138-141, 148, and 155; Arthur L. Elliott, "Esthetic Development of California's Bridges," presented at the April 14-18, 1980, ASCE Convention and Exposition, Portland, Oregon (Preprint 80-004), published in *Journal of Structural Engineering*, Vol. 109, No. 9, September 1983, paper no. 18240, 2159-63 and 2172-73; W.S. Ludlow, "Aesthetics in Bridge Design," *Manual of Bridge Design Practice* (State of California: Bridge Department, 1971), 16.3; Arthur L. Elliot, "Aesthetics in a Changing Economy," in *Meeting Preprint 2199* for American Society of Civil Engineers National Structural Engineering Meeting, April 22-26, 1974, *Cincinnati*, Ohio; JRP Historical Consulting, LLC, *Historical Resources Evaluation Report, Cold Spring Canyon Bridge (51 0037) Pedestrian Barrier Project, State Route 154, Santa Barbara County, California, 05-SB-154 PM 22.96, EA 05-0P910K,* prepared for Caltrans District 5, May 2007; Arthur L. Elliott, "Creating a Beautiful Bridge," in Committee on General Structures, Subcommittee on Bridge Aesthetics, *Bridge Aesthetics Around the World*, (Washington D.C.: Transportation Research Board, National Research Council. 1991), 217; Arthur L. Elliott, "The Role of the Public Agency," in Adele Fleet Bacow and Kenneth E. Kruckmeyer, editors, *Bridge Design: Aesthetics and Development Technologies*, (Boston: Massachusetts Department of Public Works and Massachusetts Council of the Arts and Humanities, 1986), 21.

Under NRHP Criterion D / CRHR Criterion 4, this property is not a significant or likely source of important information about historic construction materials or technologies that is not otherwise available through documentary evidence.

The boundary of the property encompasses the entire bridge structure. The period of significance is 1984, the year the bridge was completed. It is significant at the state level. The character-defining features are the arch rib, bents, deck, and approach spans.

California Historical Landmark Evaluation

A property may be eligible for designation as a California Historical Landmark (CHL) if it meets one of three criteria: the first, last, or most significant of its type within the state or within a large geographic region (i.e., Northern California); is associated with an individual or group having a profound influence on the history of California; or is a prototype of, or an outstanding example of, a period, style, architectural movement or construction, or is an important work of a master architect or builder. Of these, the Myrtle Creek Bridge meets the CHL criteria as an outstanding example of a concrete arch bridge. It is therefore eligible for designation as a CHL.

Integrity

Research and field observations did not reveal any substantial alterations of this structure. The only known alterations have been routine maintenance. As such, the Myrtle Creek Bridge retains a high degree of integrity of materials, design, feeling, association, workmanship, setting, and location. Overall, the bridge has sufficient integrity to convey its historical significance.

Photographs (Continued):

Photograph 2: East elevation, camera facing west, June 14, 2022.

Photograph 3: East elevation, camera facing north, June 14, 2022.

Photograph 4: East elevation, camera facing northwest, June 14, 2022.

Photograph 5: Center of arch and soffit, camera facing northwest, June 14, 2022.

Photograph 6: North half of bridge arch, piers, and deck, camera facing north, June 14, 2022.

Photograph 7: Bridge deck, camera facing northeast, June 14, 2022.

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary # ______
HRI # ______
Trinomial ______
NRHP Status Code 6Z
Other Listings ______
Review Code ______ **Reviewer** ______ **Date** ______

 ***Resource Name or #** (Assigned by recorder): Bridge 04 0221R/L

P1. Other Identifier: Eel River Bridge; Eel River Bridge and Overhead; Albert S. Murphy Bridge (04 0221L) and Stanwood A. Murphy Bridge (04 0221R)

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County**: Humboldt
and (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad**: Scotia **Date**: 2021 **T**:1N; **R**:1W; **Sec**: 5; Humboldt Meridian

c. Address: US 101 City: Scotia / Rio Dell Zip: n/a

d. UTM: (give more than one for large and/or linear resources) Zone: 10T; 406967.00 m E; 4483052.00 m N

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate)
The Eel River Bridge carries US Route (US) 101 over the Eel River between the communities of Scotia and Rio Dell at post mile 51.99. The bridge is in Caltrans District 1.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

The Eel River Bridge and Overhead are two nearly identical parallel bridges carrying opposite lanes of traffic (**Photograph 1**). Both are six spans with five cast-in-place, prestressed concrete, single cell tapered box girder spans and one concrete slab approach span. The bridges have reinforced concrete seat abutments on steel piles and reinforced concrete single column piers that are hexagonal in plan(**Photographs 2 - 7**). The north piers are encased in steel. A tunnel carrying a single-lane private road is incorporated into the south abutment (**Photograph 8**). Bridge 04 0221R, the northbound span, is 1,427 feet in length with the longest span 299 feet, while Bridge 04 0221L, the southbound span, is 1,387 feet long and its longest span measures 310 feet. The width of both structures is 41 feet edge-to-edge / 39 feet curb-to-curb, with the deck cantilevered out from the box girder. Each bridge has a concrete deck carrying two lanes of traffic (**Photographs 9 - 10**). Along the sides of the deck is a concrete curb with a steel two-bar railing mounted on top. Embedded in the railing curb at the north end of the southbound span is a bronze plaque with a biography of Albert Stanwood Murphy, the namesake of the southbound span.

***P3b. Resource Attributes:** (List attributes and codes) HP19. Bridge

***P4. Resources Present:** ☐ Building ☒ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5b. Description of Photo: (View, date, accession#) **Photograph 1.** West elevation, camera facing east, June 15, 2022.

***P6. Date Constructed/Age and Sources:** ☒ Historic ☐ Prehistoric ☐ Both
1976 (Caltrans)

***P7. Owner and Address:**
State of California
Department of Transportation
1120 N Street
Sacramento, CA 95814

***P8. Recorded by:**
Steven J. "Mel" Melvin
JRP Historical Consulting, LLC
2850 Spafford Street
Davis, CA 95618

***P9. Date Recorded**: June 15, 2022

***P10. Survey Type:** (Describe)
Intensive

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") JRP Historical Consulting, LLC, "Historical Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2023 Update, 1975-1984," prepared for Caltrans, 2023.

***Attachments:** ☐ None ☐ Location Map ☐ Sketch Map ☒ Continuation Sheet ☒ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐Other (list) ______

***NRHP Status Code**: 6Z
***Resource Name or #** (Assigned by recorder): Bridge 04 0221R/L

B1. Historic Name: Eel River Bridge; Albert S. Murphy Bridge (04 0221L) and Stanwood A. Murphy Bridge (04 0221R)
B2. Common Name: Eel River Bridge; Albert S. Murphy Bridge (04 0221L) and Stanwood A. Murphy Bridge (04 0221R)
B3. Original Use: Bridge B4. Present Use: Bridge
***B5. Architectural Style**: Concrete Box Girder
***B6. Construction History**: (Construction date, alteration, and date of alterations) Built in 1976; no alterations except for routine maintenance and northern most piers have been jacketed at unknown date, likely as part of a seismic safety upgrade.
***B7. Moved?** ☒ **No** ☐ **Yes** ☐ **Unknown** **Date:** ____________ **Original Location:** ____________
***B8. Related Features:** ___
B9. Architect: Caltrans b. Builder: unknown
***B10. Significance: Theme**: n/a **Area**: n/a
Period of Significance: n/a **Property Type**: n/a **Applicable Criteria**: n/a
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

The Eel River Bridge and Overhead (Bridge 04 0221R and Bridge 04 0221L) is not eligible for listing in the National Register of Historic Places (NRHP) or the California Register of Historical Resources (CRHR). This property has been evaluated in accordance with Section 106 of the National Historic Preservation Act of 1966 (as amended) (54 U.S.C. 306108) and its implementing regulations (36 CFR Part 800) and Section 15064.5(a)(2)-(3) of the California Environmental Quality Act (CEQA) Guidelines, using the criteria outlined in Section 5024.1 of the California Public Resources Code (PRC). Additionally, the Eel River Bridge and Overhead does not meet the California Historical Landmarks (CHL) Criteria as per PRC Section 5031 and is not a California Historical Landmark. (See Section B10 on Continuation Sheet.)

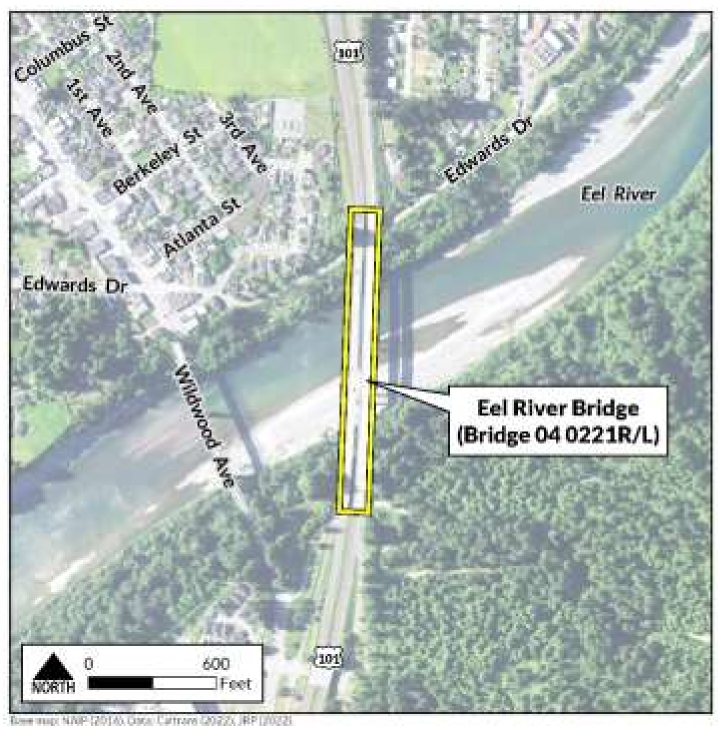
B11. Additional Resource Attributes: ____________

***B12. References**: Caltrans Bridge Database; Caltrans Bridge Inspection Reports; Caltrans, Bridge As-Built Plans; Caltrans, Statewide Historic Bridge Inventory Updates; *Eureka Times-Standard;* see also footnotes.

B13. Remarks:

***B14. Evaluator**: Steven J. "Mel" Melvin
***Date of Evaluation**: November 2023

(This space reserved for official comments.)



B10. Significance (continued):

Historic Context and Bridge History

The Eel River Bridges 04 0221R/L span the Eel River south of Rio Dell connecting Rio Dell and Scotia. Caltrans built the Eel River Bridges as part of a project to improve a 2.6-mile section of US 101 into a freeway that bypassed the central business district in Rio Dell. US 101 previously crossed the Eel River at this location on what is now the adjacent through cantilever truss bridge carrying State Route 283 / Wildwood Avenue (Bridge 04 0015, built in 1941) that replaced an earlier bridge at the same location. Caltrans divided the freeway project into three contracts: the Eel River Bridges (Bridges 04 0221R/L), another bridge over the Eel River north of Rio Dell (04 0016L), and the section of freeway connecting the two bridges. The first part of the project was the other bridge located north of Rio Dell, completed in 1974. Construction began on the two bridges documented on this form in 1973. The project experienced a setback in January 1974 when heavy rain from a storm sent torrents of water and debris down the Eel River, resulting in damage to the unfinished bridge, parts of which had to be completely reconstructed. Work resumed after the winter rains subsided and the $5.7 million bridges opened in 1976. In 1979, the California State Legislature passed a resolution naming the spans after Albert S. Murphy (Bridge 04 0221L) and Stanwood A. Murphy (Bridge 04 0221R). Albert S. Murphy and his son Stanwood A. Murphy were both presidents of the Pacific Lumber Company, a prominent Humboldt County lumber company based in Scotia.[1] The Eel River Bridges are concrete box girder bridges (Error! Reference source not found.). The first concrete box girder bridges in California were erected in the mid-1930s. The type was innovative for its design flexibility, helping to meet the growing demand for longer and wider bridges as well as skewed bridges that permitted straighter, more efficient, and safer roadways. The slender bridge profiles with harmonious proportions allowed engineers to achieve the modern design aesthetic thought to showcase transportation efficiency. Because they required less steel in their construction, concrete box girder bridges could also be erected at significant cost savings. Only a small number of concrete box girder bridges were built before World War II, but after the war their numbers rapidly increased. By 1965, there were more than 1,500 concrete box girder bridges in California. More than 3,200 of the type were built between 1965 and 1974, and more than 1,000 between 1975 and 1984.[2]

The bridges recorded and evaluated herein are examples of large single cell concrete box girders that were subject to basic aesthetic treatments that had become standard on bridges in California since the 1960s. The Division of Highways, and later Caltrans, undertook a concerted effort to improve the aesthetic appearance of bridges across the state with the department's 1971 M*anual of Bridge Design Practice* including detailed guidance on the topic. The treatments on the subject structures, which align with Modernist architectural trends that were dominant during this period, are like many concrete box girders built in California in the 1960s, 1970s, and 1980s. The bridges' continuous longitudinal flow over multiple spans emphasized the horizontality of the structures, which was achieved by uniform girder depth, column piers integrated into the girders, and well-proportioned span lengths. The appearance of the twelve foot tall girders were made to look shallower by the roadways overhanging the girders that sloped transversely. As typical of many California concrete box girders, the bridge was given a high-quality plain concrete finish without coating, and clutter was minimized by placing any conduits or utilities inside the box girders. The hexagonal column piers and longitudinal recesses of the railing bases provide some additional architectural qualities to the design. The aesthetic character of these structures followed Caltrans' centrally controlled program based on principles of proportion, simplicity, order, site harmony, and visual character to create aesthetically pleasing design, and appear to employ standard bridge details that the state had developed as part of its aesthetic program. Bridges with enhanced and special aesthetic treatments included those with chamfered or rounded box girders, haunched girders emulating arches, and

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[1] "Bridge Building All In Day's Work for Certain Eurekan," *Eureka Times-Standard,* August 16, 1972, 23; "South Humboldt Highway Projects Budgeted by State," *Eureka Times-Standard,* October 21, 1972, 1; "North Coast Keeps Close Watch on Storm, Rivers," *Eureka Times-Standard,* January 18, 1974, 1; "South Fork Span Bids Requested," *Eureka Times-Standard,* March 27, 1973, 2; "Bridge Will Be Dedicated," *Eureka Times-Standard,* July 1, 1976, 13; Muriel Dinsmore, "Bridges Dedicated to Dedicated Men," *Eureka Times-Standard,* September 21, 1979, 10.

[2] Myra L. Frank & Associated, "Caltrans Historic Bridge Inventory Update: Concrete Box Girder Bridges," prepared for Caltrans, August 2003, 5-11.

customizes shapes and sizes of columns, abutments, and girder fascia, along with textures panels on flared columns and abutments, and greater use of pattern, color, and texture in the designs.[3]

Some notable concrete box girder bridges in California include the Mulholland Drive Overcrossing (Bridge 53 0739) in Los Angeles, which held title to the longest main span of this bridge type at 235 feet from its construction in 1959 until 1974 when the Interstate 8 bridge over the Pine Valley Creek (Bridge 57 0692L/R) achieved a 450-foot main span. Several more long concrete box girders were built shortly thereafter. The Eel River Bridge north of Rio Dell (Bridge 04 0016L) was constructed in 1974 in Humboldt County and had a total length of 1,730 feet with a main span of 300 feet. The bridges recorded herein are of a similar size with Bridge 04 0221R being 1,427 feet in length with its longest span being 299 feet, and Bridge 04 0221L at 1,387 feet total long and its longest span measuring 310 feet. A few years later the Parrotts Ferry Bridge in Tuolumne County was completed in 1979 and had a 639.8-foot-long main span and a total length of 1,292.7 feet. The Napa River Bridge (Bridge 21 0049), erected in 1977, has the longest total length of any continuous concrete box girder span in California at 2,230 feet and its longest span measured 250 feet.[4]

Caltrans designed and built the Eel River Bridges 04 0221R/L during a period when consideration of bridge aesthetics had become entrenched in the agency's bridge design procedures. While most state-built bridges, and many local or consultant-designed bridges, received at least some attention to their overall appearance, more effort was placed on bridges in scenic or prominent locations. Caltrans' predecessor, the Division of Highways, began to integrate improved aesthetics into the state's bridge design procedures in the early 1960s with architects trained in bridge design providing input about the appearance of structures. The Division of Highways, and later Caltrans, integrated its bridge aesthetics program into the department's overall design philosophy that included additions to bridge design manuals with instructions regarding bridge aesthetics, as well as the development of standard features, such as columns, railings, and surface treatments, that met the aesthetic principles being promoted. Bridge designers were encouraged to consider what they were leaving for future generations, which emphasized that a bridge's appearance was as important as the structure's design features for load and safety. Aligning with the dominant architectural trends in Modernism of the period, bridge designers aspired to simplicity and pureness of structure, avoiding ornamentation, celebrating the beauty of structural form, and emphasizing ease of construction and economy of design. Slender structures on slender piers or columns with minimal number of elements, and continuous or steady long lines were among the features of the aesthetical paradigm at the time, for which the Division of Highways received various awards, including those for singular bridges such as the steel girder San Mateo Creek (Eugene Doran Memorial) Bridge (35 0199) built in 1967 on I-280 in San Mateo County that featured prominent sculpted concrete piers and the welded steel arch Cold Spring Canyon Bridge (51 0037) built in 1963 on SR 154 in Santa Barbara County. Although Division of Highways / Caltrans policy was to design aesthetically pleasing structures, and sometimes incorporated input from members of the public, there were also clear parameters that such efforts would not be unduly more expensive. During this period, Division of Highways and Caltrans bridge designers considered aesthetic qualities following general principles related to quality design that carefully analyzed proportions of bridges' structural and safety elements, attractive forms for the various bridge elements, compatibility of bridges within their setting, and consideration of current and future acceptance of the structures. The Caltrans program resulted in

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[3] Stewart Gloyd, "California – A Qualified Bridge Esthetics Case Study," *Concrete International*, Volume 16, No. 2, February 1994, 44-48; Arthur L. Elliott, "Aesthetics of Highway Bridges," *Civil Engineering*, June 1968, 65-66; W.S. Ludlow, "Aesthetics in Bridge Design," *Manual of Bridge Design Practice* (State of California: Bridge Department, 1971), 16-15 to 16-20; James E. Roberts, "Aesthetic Design Philosophy Utilized for California State," *Journal of Urban Planning and Development*, Vol. 118, No. 4, December 1992, 138; Arthur L. Elliott, "Esthetic Development of California's Bridges," presented at the April 14-18, 1980, ASCE Convention and Exposition, Portland, Oregon (Preprint 80-004), published in *Journal of Structural Engineering*, Vol. 109, No. 9, September 1983, paper no. 18240; Arthur L. Elliott, "The Role of the Public Agency," in Adele Fleet Bacow and Kenneth E. Kruckmeyer, editors, *Bridge Design: Aesthetics and Development Technologies*, (Boston: Massachusetts Department of Public Works and Massachusetts Council of the Arts and Humanities, 1986), 34; James E. Roberts, *Aesthetics and Economy in Complete Concrete Bridge Design*, California Department of Transportation, Office of Structures Design, 1986 (available at the Caltrans Transportation Library), 2.
[4] Caltrans, Historical Resources Evaluation Report, Statewide Historic Bridge Inventory: 2015 Update, 1965-1974, 21, and DPR 523 forms Bridge 40 0048, Bridge 04 0016L, Bridge 04 0155.

many bridges that incorporated basic aesthetic enhancements, as well as a smaller set of structures that included enhanced qualities and the few that had special aesthetic character.[5]

Caltrans designed the Eel River Bridges 04 0221R/L with what can be considered among the more basic elements to enhance the visual elements of a concrete box girder bridge. These elements are the tapered box girders, hexagonal piers, and wide cantilevered deck, all of which were common design features in many freeway bridges from the 1960s and 1970s.

NRHP / CRHR Significance Evaluation

The Eel River Bridges 04 0221R/L are not significant under NRHP Criterion A / CRHR Criterion 1 for an important association with significant events, trends, or patterns of development. The bridges were one of many highway improvements carried out in the late 1970s and early 1980s by Caltrans throughout California and in this region. They are also not the first bridge at this location and did not initiate new patterns of development. Thus, the bridges are not important within the context of the development of the highway network, local growth and development, or any other trends or events at the national, state, or local level that would make them significant under this criterion.

Under NRHP Criterion B / CRHR Criterion 2, the Eel River Bridges 04 0221R/L are not significant for an association with the lives of persons important to history. Research did not find that any individuals directly associated with this property have made demonstrably important contributions to history at the local, state, or national level.

The Eel River Bridges 04 0221R/L are not significant as an important example of a type, period, or method of construction, are not the works of a master, and do not possess high artistic value (Under NRHP Criterion C / CRHR Criterion 3). These two bridges are fairly typical examples of large concrete box girder construction for the period. By the time these bridges were built in 1976, the construction of concrete box girder bridges had become commonplace in California. The Eel River Bridges at 1,387 and 1,427 feet in total length and with long spans of 299 feet and 310 feet, respectively, are also not the longest bridges of this type, nor do they incorporate a significantly long span. The bridges are not significant for their aesthetic design. These bridges also are not the works of a master and do not possess high artistic value. Thus, these bridges do not meet this criterion.

Under NRHP Criterion D / CRHR Criterion 4, this property is not a significant or likely source of important information about historic construction materials or technologies that is not otherwise available through documentary evidence.

California Historical Landmark Evaluation

A property may be eligible for designation as a California Historical Landmark (CHL) if it meets one of three criteria: the first, last, or most significant of its type within the state or within a large geographic region (i.e., Northern California); is associated with an individual or group having a profound influence on the history of California; or is a prototype of, or an outstanding example of, a period, style, architectural movement or construction, or is an important work of a master architect or builder. For reasons discussed immediately above, the Eel River Bridges 04 0221R/L do not meet any of these criteria and are not California Historical Landmarks.

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[5] Arthur L. Elliott, "Aesthetics of Highway Bridges," *Civil Engineering*, June 1968, 65-66; James E. Roberts, "Aesthetic Design Philosophy Utilized for California State," *Journal of Urban Planning and Development*, Vol. 118, No. 4, December 1992, 138-141, 148, and 155; W.S. Ludlow, "Aesthetics in Bridge Design," *Manual of Bridge Design Practice* (State of California: Bridge Department, 1971), 16-3 and 16-15 to 16-20; Arthur L. Elliot, "Esthetic Development of California Bridges," presented at ASCE Convention and Exposition, Portland, Oregon, April 14-18, 1980, 2160; Arthur L. Elliot, "Aesthetics in a Changing Economy," in *Meeting Preprint 2199* for American Society of Civil Engineers National Structural Engineering Meeting, April 22-26, 1974, *Cincinnati*, Ohio, 7-8; JRP Historical Consulting, LLC, *Historical Resources Evaluation Report, Cold Spring Canyon Bridge (51 0037) Pedestrian Barrier Project, State Route 154, Santa Barbara County, California, 05-SB-154 PM 22.96, EA 05-0P910K,* prepared for Caltrans District 5, May 2007; James E. Roberts, *Aesthetics and Economy in Complete Concrete Bridge Design*, California Department of Transportation, Office of Structures Design, 1986, available at the Caltrans Transportation Library, 3, 5, and 6; Arthur L. Elliott, "Creating a Beautiful Bridge," in Committee on General Structures, Subcommittee on Bridge Aesthetics, *Bridge Aesthetics Around the World*, (Washington D.C.: Transportation Research Board, National Research Council. 1991), 215-217; Stewart Gloyd, "California – A Qualified Bridge Esthetics Case Study," *Concrete International*, Volume 16, No. 2, February 1994, 46-48.

Photographs (Continued):

Photograph 2: East elevation, camera facing southwest, June 15, 2022.

Photograph 3: Box girders and piers, camera facing southwest, June 15, 2022.

Photograph 4: Bridge soffit, camera facing south, June 15, 2022.

Photograph 5: Box girder / pier interface, camera facing south, June 15, 2022.

Photograph 6: Underside of bridge, camera facing north, June 15, 2022.

Photograph 7: North abutments, camera facing north, June 15, 2022.

Photograph 8: South abutment, camera facing northwest, June 15, 2022.

Photograph 9: Bridge deck, camera facing north, June 15, 2022.

Photograph 10: Bridge deck, camera facing south, June 15, 2022.

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Primary #
HRI #
Trinomial
NRHP Status Code 3S

Other Listings
Review Code Reviewer Date

 ***Resource Name or #** (Assigned by recorder): Bridge 12C0182

P1. Other Identifier: Oregon Gulch Creek Bridge

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County**: Butte
and (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad**: Oroville **Date**: 2018 **T**:20N; **R**:4E; **Sec**:16; Mount Diablo Meridian

c. Address: Oregon Gulch Road City: Oregon City Zip: n/a

d. UTM: (give more than one for large and/or linear resources) Zone: 10S; 626248.61 m E; 4383700.93 m N

e. Other Locational Data: The Oregon Gulch Creek Bridge carries Oregon Gulch Road over Oregon Gulch Creek in the community of Oregon City and approximately eight miles north of Oroville. The bridge is in Caltrans District 3.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

The Oregon Gulch Creek carries Oregon Gulch Road over Oregon Gulch in rural Butte County (**Photograph 1 & 2**). The bridge is a timber Warren thru-truss covered bridge 38.1 feet long, 21.3 feet wide curb-to-curb, with a 14-foot, three-inch vertical clearance. The timber truss system consists of 8 x 8-inch Douglas Fir timber members with diagonal metal eyebars. A wood plank guardrail is on both sides of the two-lane roadway through the bridge and extends slightly out past the portals. Covering the bridge is a low-pitched, corrugated metal gable roof with overhanging eaves and exposed rafter tails (**Photograph 3, 4, & 5**). Just below the north gable peak is a small sign reading "Welcome To Historic Oregon City." The walls have board-and-batten siding painted red with white trim around both end portals and the three side windows on each side. Supporting the bridge's orthotropic steel deck with asphalt surface are steel I-beam stringers that run between concrete abutments with concrete block corners, with a lateral steel support cross beam midway between the abutments (**Photograph 6 & 7**).

***P3b. Resource Attributes:** (List attributes and codes) HP19. Bridge

***P4. Resources Present:** ☐ Building ☒ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5b. Description of Photo: (View, date, accession#) **Photograph 1.** Camera facing northeast, March 2, 2022.

***P6. Date Constructed/Age and Sources:**
☒ Historic ☐ Prehistoric ☐ Both
1983 (Caltrans)

***P7. Owner and Address:**
Butte County
25 County Center Drive
Oroville, CA 95965

***P8. Recorded by:**
Steven J. "Mel" Melvin
JRP Historical Consulting, LLC
2850 Spafford Street
Davis, CA 95618

***P9. Date Recorded**: March 2, 2022

***P10. Survey Type:** (Describe)
Intensive

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") JRP Historical Consulting, LLC, "Historical Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2023 Update, 1975-1984," prepared for Caltrans, 2023.

***Attachments:** ☐ None ☐ Location Map ☐ Sketch Map ☒ Continuation Sheet ☒ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record
☐Other (list)

***NRHP Status Code**: 3S

***Resource Name or #** (Assigned by recorder): Bridge 12C0182

B1. Historic Name: Oregon Gulch Creek Bridge, Oregon City Covered Bridge
B2. Common Name: Oregon City Covered Bridge
B3. Original Use: Bridge B4. Present Use: Bridge
***B5. Architectural Style**: Timber Warren thru-truss covered bridge
***B6. Construction History**: (Construction date, alteration, and date of alterations) Built in 1983; no known alterations.
***B7. Moved?** ☒ **No** ☐ **Yes** ☐ **Unknown Date:** ______ **Original Location:** ______
***B8. Related Features:** ___
B9. Architect: Don Becker, Butte County Dept. of Public Works b. Builder: Butte County Dept. of Public Works
***B10. Significance: Theme**: Design / Aesthetics **Area**: State
Period of Significance: 1983 **Property Type**: Bridge **Applicable Criteria**: C/3
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

The Oregon Gulch Creek Bridge is eligible for listing in the National Register of Historic Places (NRHP) and the California Register of Historical Resources (CRHR). This property has been evaluated in accordance with Section 106 of the National Historic Preservation Act of 1966 (as amended) (54 U.S.C. 306108) and its implementing regulations (36 CFR Part 800) and Section 15064.5(a)(2)-(3) of the California Environmental Quality Act (CEQA) Guidelines, using the criteria outlined in Section 5024.1 of the California Public Resources Code (PRC). (See Section B10 on Continuation Sheet.)

Historic Context and Bridge History

The Oregon Gulch Creek Bridge was built in 1983 to replace a deteriorated bridge at the same location. The idea of building a covered bridge at this location came from Clay Castleberry, the Butte County Public Works Director. Castleberry had a fondness for covered bridges and it had been his "dream" to build one in Butte County. Castleberry is quoted as saying he had a "warm spot in [his] heart for covered bridges." In 1982, as Castleberry neared retirement, he identified this bridge replacement project Oregon Gulch Creek as an opportunity to build a covered bridge. (See Continuation Sheet.)

B11. Additional Resource Attributes: ______

***B12. References**: Caltrans Bridge Database; Caltrans Bridge Inspection Reports; Caltrans, Statewide Historic Bridge Inventory Updates; S. Griswold Morley, *Covered Bridges of California*, 1938; *Oroville Mercury Register*; see also footnotes.

B13. Remarks:

***B14. Evaluator**: Steven J. "Mel" Melvin
***Date of Evaluation**: November 2023

(This space reserved for official comments.)

B10. Significance (continued):

The site was the location of Oregon City, a gold-rush era mining camp – now ghost town – located along the gulch. All that remains of the settlement is the nearby Oregon City Schoolhouse, built in 1872, that is currently maintained by the Butte County Historical Society. The history of Oregon City, presence of the schoolhouse, rural setting, and low traffic volume character of Oregon Gulch Road all factored into Castleberry's choice of this location. In trying to muster support for the bridge, Castleberry argued that the bridge would "enhance the historical flavor of the Oroville area" and create a tourist attraction, noting that, "Covered bridges are not usual, and people come to see covered bridges."[1]

The bridge was completed in June 1983 at a cost of $42,000, a combination of $25,000 from Butte County and $17,000 in donated materials and cash. Among the companies donating material were Sierra Pacific Lumber, Louisiana-Pacific, Las Plumas Lumber, Cal Oak, and J.E. Bauer Paint Company. Over 100 people attended dedication ceremonies on July 9. The Oregon Gulch Creek Bridge was the first covered bridge built by a government agency on a public thoroughfare in California since the 1930s. The only other post-World War II covered bridge currently on a public roadway is the Jacoby Creek Bridge (Bridge 04C0124) in Humboldt County, constructed in 1967, but it was built by a private developer on a private road that Humboldt County adopted into its system in 1969. The Oregon Gulch Creek Bridge is also the only two-lane covered bridge in California. Butte County once had six covered bridges, but following the loss of the Honey Run Covered Bridge in the 2018 Camp Fire, the Oregon Gulch Bridge is the last to stand.[2]

The bridge designer, Donald Charles Becker was born in 1932 in Saskatchewan, Canada, and moved to California with his parents in 1946, before the family settled in Paradise in Butte County in 1947. He earned a Civil Engineering degree from Chico State University and moved back to Paradise shortly thereafter, where he lived for the rest of his life. During his 34-year career as a Civil Engineer with Butte County Public Works he designed and oversaw the construction of numerous county bridges. He died of cancer on August 5, 2014.[3]

The Oregon Gulch Bridge is a timber Warren thru-truss covered bridge. Historically, the most common truss types used in covered bridges were Burr, Howe, and Warren trusses. The Warren truss was overall one of the most common truss types built in California and was commonly used along California highways in the 1920s and 1930s, although most during this period were made of steel. Timber bridges were the earliest bridges built in California as it was typically the only available material. By the early twentieth century, engineers increasingly opted for steel and concrete bridges, but continued to construct timber bridges into the 1950s for small rural bridges on secondary roads. All covered bridges are timber thru-truss because this design enables the easy application of siding and a roof.[4]

First built in California in the 1850s, covered bridges were once common in the state, particularly in areas that received lots of precipitation as the roof protected the structure from decay caused by moisture. The state also lacked other building materials such as iron or steel at the time, but had an abundance of wood. By this time, truss technology and design was well developed and the addition of a roof gave covered bridges more stability. The covered bridges built in California in the nineteenth century

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[1] "Castleberry Hopes to Build Covered Bridge," *Oroville Mercury Register,* September 13, 1982, 3; "Supervisors Okay Plans for Bridge," *Oroville Mercury Register,* September 15, 1982, 3.

[2] "Insight," *Oroville Mercury Register,* May 22, 1982, 14; "Bridge is Dedicated," *Oroville Mercury Register,* July 11, 1983, 1; "Covered Bridge Done," *Oroville Mercury Register,* June 30, 1983, 1; JRP Historical Consulting, LLC, "Historical Resources Evaluation Report, Jacoby Creek Bridge Rehabilitation Project, Humboldt County, California," prepared for Humboldt County Department of Public Works and Caltrans, November 2016. Efforts are currently underway to rebuild the Honey Run Covered Bridge.

[3] Ancestry.com, *U.S., Obituary Collection, 1930-Current* [database on-line], (Lehi, UT: Ancestry.com Operations Inc, 2006); U.S. Census Bureau, *Seventeenth Census of the United States—Population Schedule*, California, Butte County, Kimshew, Enumeration District 4-56A, Sheet 13, Washington, D.C., 1950 (accessed via Ancestry.com); "Obituaries: Agathe Becker," Chico Enterprise-Record / Mercury-Register, April 9, 1997, 6B; R. L. Polk & Co., *1975 Paradise (Butte County, Calif.) City Directory* (El Monte, Calif.: R. L. Polk & Co., 1975), 15; "Donald Becker Obituary" ChicoER.com, published by *Chico Enterprise-Record* on August 9, 2014, https://www.legacy.com/us/obituaries/chicoer/name/donald-becker-obituary?id=17457354;

[4] JRP Historical Consulting, "Caltrans Historic Bridges Inventory Update: Timber Truss, Concrete Truss, and Suspension Bridges," prepared for Caltrans, April 2004, 19-23.

were generally one lane, Howe or Warren truss, plank deck, and had partially, or completely enclosed sides. These were largely located on back roads in the foothills and mountains of the coast and Sierra Nevada foothills. It is not known how many existed during the peak era of covered bridge construction. University of California professor S. Griswold Morley published the first inventory of covered bridges in California in 1938 and identified 32 covered bridges in the state. At that time, Humboldt County had twelve covered bridge, the most of any county in California. Morley's study identified one covered bridge in Butte County – the Honey Run Covered Bridge over Butte Creek (since destroyed by fire). Most covered bridges built in California during the nineteenth century and early twentieth century were unadorned structures with vertical wood siding and gable roofs, with some having partial of fully open sides.[5]

Beginning in the early twentieth century, covered bridges, and wood truss bridges began to wane in popularity and use. Steel and concrete structures became the preferred choice for new construction because of their durability and low maintenance, and the decreasing cost of steel and concrete relative to wood. Not only were fewer covered bridges being built, but many of those existing were being demolished and replaced by modern concrete and steel structures to accommodate the increased weight and size of motor vehicles and increased traffic volume.[6]

The 2004 Caltrans Historic Bridge Inventory Update that studied wood truss bridges, identified seven covered bridges in the state on public roadways built before 1960. Of these, five were built in the nineteenth century and had been either listed in the NRHP or determined eligible for listing in the NRHP. The other two were built in the 1930s and are not eligible for listing in the NRHP. Since 1960, two wood truss covered bridges have been built on public roadways.[7] As noted, herein, one is the Jacoby Creek Bridge (Bridge 04C0124) in Humboldt County, built in 1967 and the other is the Oregon Creek Gulch Bridge documented on this form.[8]

Bridge Aesthetics and Covered Bridges As Cultural Symbols

The aesthetics of the Oregon Creek Gulch Bridge are in great contrast with the general approach to bridge design in the latter half of the twentieth century. The visual character of many California's bridges during this period was often based on the Modern design aesthetic highlighting functionality and efficiency, and which avoided decoration. During the twentieth century, bridge design in California generally corresponded with architectural trends of various periods. By the mid-1930s, the architectural and design aesthetic for prominent new buildings and structures in California had started to shift away from the Beaux Arts and City Beautiful Neoclassicism of the early part of the century towards the aesthetic of the Moderne or International Modern styles that were more abstract, stripped-down, and unadorned. These styles were promoted as symbols of twentieth century technological progress and were a reaction to the perceived excesses of ornament adopted during the late nineteenth century and early twentieth century. As in many design fields during the mid-twentieth century, bridge engineers of the period sought to design structures that would not only be functional and efficient, but also represent the essence of their material, avoiding concealment and extraneous decoration for the simple and clean lines. These efforts were inherent in their work, and while engineers may have not overtly recognized their work as such, these values expressed many of the tenets of Modern-era design. Although one can see a shift in aesthetics and taste in mid-twentieth century bridge design, many bridges constructed during this period – particularly in the several decades following World War II – were designed for the greatest economy with less emphasis on the aesthetics of siting, formal expression, viewer and driver experience, or their place as civic monuments. Some of the innovations, and the economies achieved through their application, led to increased standardization of bridge design across the state and thus, in the eyes of critics, greater visual monotony. The result was a dual effect. Bridge standardization coincided with post-World War II aesthetic values that sought form to follow function, yet Modern design qualities were co-opted for mass production of bridges in the postwar period. The Division of Highways was aware that some

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[5] S. Griswold Morley, *Covered Bridges of California* (Berkeley: University of California Press, 1938), 1-6, 26, 27, 91, 92.
[6] Morley, *Covered Bridges of California*, 1-6.
[7] The bridge carrying Douglas Park Road over Sheep Pen Creek (Bridge 01C0022) near Hiouchi in Del Norte County, built in 1975, is a timber stringer bridge that has a gable roof over it. Bridge 01C0022 is not considered to be a covered bridge because it is not built in the traditional manner with a timber truss integrated into the housing with roof and sidewalls.
[8] JRP, "Caltrans Historic Bridges Inventory Update: Timber Truss, Concrete Truss, and Suspension Bridges," 23, 24, 36.

of its designs had aesthetic shortcomings and instituted a program during the 1960s to enhance the visual qualities of bridges in California. By the 1980s, this program had matured and become part of the state's standard practice for bridge design.[9]

By the post-World War II era, the construction of covered bridge had ceased in California. By some accounts up to 80 percent of the nation's covered bridges had disappeared from the landscape by the mid-twentieth century.[10]

Starting in the 1930s there began a shift in the perception of covered bridges in America. The structures changed in people's view from being utilitarian infrastructure of a bygone era to cultural symbols of the nation's heritage. In general, the remaining covered bridges of the time, often set in rural, pastoral landscapes, evoked feelings of nostalgia, and books like Morley's 1938 *Covered Bridges of California* began appearing to record and capture this disappearing resource. Artists too began to paint covered bridges, and organizations and publications supporting the preservation of covered bridges formed. Covered bridges also began to appear in popular culture in the 1930s, 1940s, and 1950s, as sentimental or romantic features of the American landscape. They were featured in advertisements and in films and television. In Indiana and New England states, for example, state governments encouraged preservation of covered bridges starting as early as the 1950s.[11]

In California, the covered bridge preservation movement emerged in the 1930s in response to the demolition and replacement of many covered bridges in the 1920s and 1930s by concrete and steel bridges. It appears the earliest preservation efforts occurred with the Felton Covered Bridge, constructed in 1892 in Santa Cruz County, which was threatened with demolition by construction of a new bridge. The new bridge in Felton was completed in 1938 and immediately residents of the San Lorenzo Valley organized to preserve the bridge and create an adjacent park. By the 1960s, bridge supporters had amassed sufficient money to begin restoration work.[12] Following flood damage in 1982, the bridge underwent a major renovation concluding in 1987. The project won several preservation awards including a National Preservation Award from the National Trust for Historic Preservation.[13] During the same period similar work was done to save the Glen Canyon Covered Bridge, also in Santa Cruz County and threatened with demolition. Preservationists saved the structure by moving it to a nearby park.[14] Some preservation efforts failed, such as the O'Byrne Ferry Bridge, built in 1862 over the Stanislaus River and spanning the Stanislaus – Calaveras county line. This structure was replaced in the 1950s when the relocation plan did not come to fruition.[15]

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[9] JRP Historical Consulting, LLC, "Historical Resources Evaluation Report for the Cold Spring Canyon Bridge, State Route 154, Santa Barbara County, California," prepared for Caltrans District 5, 2007, 26-27; Arthur L. Elliot, "Fifty Years of Freeway Structures," 1988, Bridges file, California Department of Transportation Library, Sacramento, 3-5 [Edited version of essay printed in *Going Places*, July-August 1989, 12-17], 2; Wilbur J. Watson, "Architectural Principles of Bridge Design," *Civil Engineering*, March 1938, 181 and 184; Aymar Embury II, "Esthetic Design of Steel Structures," *Civil Engineering*, April 1938, 262; Leonard C. Hollister, "The Modern Highway Bridge, as Expressed by Recent Designs of the California Division of Highways," *Roads and Streets*, October 1937, 45-50; Arthur L. Elliot, "Aesthetics of Highway Bridges," *Civil Engineering*, June 1968, 64-69.

[10] JRP Historical Consulting, "Caltrans Historic Bridges Inventory Update: Timber Truss, Concrete Truss, and Suspension Bridges," 19-24; Duwadi, Sheila Rimal and Michael A. Ritter, "Timber Bridges in the United States," *Public Roads On-Line*, Winter 1997, accessed July 2022 at https://www.fhwa.dot.gov/publications/publicroads/97winter/p97wi32.cfm; Lola Bennett, Heritage Documentation Programs, National Parks Service, "Covered Bridges NHL Context Study," National Register Nomination Form, 2011, 23-25.

[11] Morley, *Covered Bridges of California*; Bennett, "Covered Bridges NHL Context Study," 24-25

[12] "Felton Covered Bridge Not To Be Destroyed," *Santa Cruz Evening News*, July 1, 1937, 1; "Plan To Make Covered Bridge Area a Park," *Santa Cruz Evening News*, October 6, 1938, 7; "Restoration of Covered Bridge at Felton Valley Chamber Goal," *Santa Cruz Sentinel*, October 9, 1947, 9; "Planning Restoration of Felton's Covered Bridge," *Santa Cruz Sentinel*, September 1, 1949, 14; "Valley Chamber Members Elect New Directors; Discuss Plans to Repair Covered Bridge," *Santa Cruz Sentinel*, January 14, 1954, 1; "Letters to the Editor," *Los Gatos Times-Saratoga Observer*, June 8, 1964, 7; "Felton Bridge Project Wins Award," *Santa Cruz Sentinel*, November 18, 1988, 5..

[13] "Plan To Make Covered Bridge Area a Park," *Santa Cruz Evening News*, October 6, 1938, 7; "Restoration of Covered Bridge at Felton Valley Chamber Goal," *Santa Cruz Sentinel*, October 9, 1947, 9; "Planning Restoration of Felton's Covered Bridge," *Santa Cruz Sentinel*, September 1, 1949, 14; "Valley Chamber Members Elect New Directors; Discuss Plans to Repair Covered Bridge," *Santa Cruz Sentinel*, January 14, 1954, 1; "Letters to the Editor," *Los Gatos Times-Saratoga Observer*, June 8, 1964, 7; "Felton Bridge Project Wins Award," *Santa Cruz Sentinel*, November 18, 1988, 5..

[14] "Glen Canyon Covered Bridge In New Location," *Santa Cruz Evening News*, November 22, 1939, 20.

[15] Stephen D. Mikesell, *Historic Highway Bridges of California* (Sacramento: Caltrans, 1990), 143-144.

Later examples of covered bridge preservation followed a similar pattern with a local, grass-roots response to a threat of demolition. In Butte County near Chico, a truck ran into the side of the Honey Run Covered Bridge in 1965, severely damaging the structure and forcing its closure. Lacking funds to repair the 1887 bridge for vehicular use, or maintain it as a historic site, the County made plans to demolish the bridge and build a new concrete structure upstream. Interested citizens immediately formed the Honey Run Covered Bridge Association to preserve and maintain the bridge. In 1972, the Association had sufficient money to undertake the initial restoration of the bridge, which included repair of the damage from the 1965 truck collision, and to build the adjacent park amenities. Like other covered bridges, the Honey Run Covered Bridge had become a tourist attraction. In 1984-1985, the Association funded a major renovation consisting of the replacement of some structural components, flooring, and siding. In 2018, the Camp Fire completely destroyed the Honey Run Covered Bridge, and the Association is currently embarked on a project to rebuild the bridge with the abutments and piers finished in 2020 and fundraising is ongoing to complete the work.[16]

In Stanislaus County, the Knights Ferry Covered Bridge, built in 1863, carried motor vehicle traffic over the Stanislaus River until 1981 when it was deemed structurally deficient by Caltrans and closed. At the time, it had the distinction of being the oldest and longest covered bridge in California at 330 feet, and as one of the last covered bridges still open to motor vehicles. While the closure of the bridge hastened discussion of its preservation, it had long been a tourist attraction and recognized as a historically important bridge. The bridge's importance received substantial attention in 1974 as the Board of Supervisors discussed the threat of vandalism and arson to the bridge over the course of several meetings, eventually voting to install a fire hydrant and fire hose at the bridge. Official historic status came in 1975 when the bridge, along with several historic buildings in Knights Ferry, was listed in the National Register of Historic Places as a contributor to the Knights Ferry Historic District.[17] Eventual preservation and restoration of the Knights Ferry Covered Bridge was a cooperative effort between local residents, elected representatives, Caltrans, and the U.S. Army Corps of Engineers (Army Corps). Caltrans and the Federal Highway Administration rejected the idea that the bridge could be reopened for traffic, noting that even a repaired bridge would have inadequate width and height for emergency vehicles. Instead, plans proceeded to build a new bridge downstream, and plans continued for the preservation and restoration of the old bridge. The Army Corps proved to be a pivotal player in this effort, having identified the bridge, a historic grist mill and 90 acres of surrounding land as one of the parks planned as part of the New Melones dam and reservoir project built about 12 miles upstream. The Army Corps finally allocated money for the park and bridge restoration for the 1987-1988 fiscal year. Work concluded in 1989 and the Knights Ferry Covered Bridge re-opened for pedestrian and bicycle traffic as the centerpiece of the Knights Ferry Recreation Area.[18]

<u>*NRHP / CRHR Significance Evaluation*</u>

The Oregon Creek Gulch Bridge does not have important associations with significant historic events, patterns, or trends of development (NRHP Criterion A/CRHR Criterion 1). This bridge was one of many local roadway improvements carried out in the late 1970s and early 1980s in this region. This bridge replaced an earlier bridge at the same location and its construction

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[16] "Nostalgia Goes Begging," *Paradise Post*, October 20, 1987, 7; "Bridge Over Bubbling Water," *Paradise Post*, August 5, 2000, 11, 12; "Honey Run Covered Bridge to Benefit From All-Day Event," *Chico Enterprise-Record*, May 10, 1967, 23; "Take It From Me," *Chico Enterprise-Record*, October 27, 1967, 13; "Benefit for Honey Run Bridge Set," *Chico Enterprise-Record*, May 6, 1976, 6; "Pancake Breakfast Sunday," *Chico Enterprise-Record*, June 3, 1982, 13; "Historic Covered Bridge Closed for Repairs," *Paradise Post*, September 25, 1984, 6; "Reconstruction Begins On Bridge," *Paradise Post*, October 2, 1984, 9; "Refurbishing Continues at Historic Bridge," *Paradise Post*, October 12, 1984, 7; "Something To Do This Weekend," *Chico Enterprise-Record*, January 24, 1985, 24; Honey Run Covered Bridge Association, "Rebuild the Bridge," accessed March 2023 at https://www.hrcoveredbridge.org/.

[17] "Seek Monument Status for KF Covered Bridge," *Oakdale Leader*, November 11, 1970, 8; "Supervisors Ponder Bridge Protection," *The Modesto Bee,* May 1, 1974, 37; "Hydrant Will Protect Covered Bridge," *The Modesto Bee,* April 16, 1975, 16; "Plan Delayed Again For New Knights Ferry Bridge," *Oakdale Leader*, August 3, 1977, 12; "Preserve State's Oldest Covered Bridge," *The Modesto Bee,* June 16, 1981, 11; "Closing of Bridge Stirs Uproar," *Los Angeles Times,* September 1, 1981, 7; California Office of Historic Preservation, Built Environment Resource Directory, accessed March 27, 2023.

[18] "Closing of Bridge Stirs Uproar," *Los Angeles Times,* September 1, 1981, 7; "Preserve State's Oldest Covered Bridge," *The Modesto Bee,* June 16, 1981, 11; "The Old Knights Ferry Bridge to Become a Tourist Attraction," *Modesto Bee*, August 8, 1986, 21; "Knights Ferry Bridge Work On 1987-88 List," *Modesto Bee*, January 8, 1987, 13; "Vocal Cry to Rehab Bridge," *Oakdale Leader*, May 25, 1983, 1; "Knights Ferry Covered Bridge Closes For Repairs," *Modesto Bee*, January 6, 2023, A4.

did not initiate new patterns of development. Thus, the bridge is not important within the context of the development of the local roadway network, local growth and development, or any other trends or events at the national, state, or local level that would make it significant under this criterion.

Under NRHP Criterion B / CRHR Criterion 2, this structure is not significant for an association with the lives of persons important to history. Research did not find that any individuals directly associated with this property have made demonstrably important contributions to history at the local, state, or national level. While Clay Castleberry, the driving force behind constructing the bridge, served as the Butte County Public Works Director for many years, his achievements during his life do not rise to the level of a person important to history as defined by this criterion.

The Oregon Creek Gulch Bridge is significant under NRHP Criterion C and CRHR Criterion 3 as an important example of a late twentieth century wood truss covered bridge. The bridge is significant because it is a rare example of a covered bridge built during this time period that illustrates the transition of covered bridges from a mere practical structure to a symbol of American heritage. Butte County Public Works Director Clay Castleberry deliberately chose a covered bridge design over less expensive designs for its aesthetic and historic value, as well has his personal fondness for covered bridges and to attract visitors. This bridge is also unique in that it was built by a government agency on a public roadway, as opposed to the Jacoby Creek Bridge mentioned above, which was built by a private developer on a private road. The Oregon Creek Gulch Bridge represents an important variation of its bridge type illustrating the transition of covered bridges from practical and utilitarian infrastructure to cultural symbol.

The bridge's distinctive characteristics of type from its period are also based in the method of construction employed for the structure that contrasted with the way in which most bridges were built at the time. Most bridges built on state and county roadways similar to Oregon Gulch Creek Road during this period were utilitarian concrete or steel structures constructed for maximum economic efficiency. Standardized concrete and steel structures constructed of prefabricated materials, created with modern machinery to the greatest extent possible, their visual impact, if considered at all, was based on the Modern design aesthetic that highlighted functionality and efficiency, and which avoided decoration. In contrast, the Oregon Gulch Creek Bridge's construction employed on-site assembly using materials donated from a variety of local businesses.

The boundary of the historic property encompasses the entire bridge structure. The bridge is significant at the state level and the period of significance is 1983, the year the bridge was completed. The character-defining features are the wood truss members and wood framing, gable roof, board and batten walls, window openings, deck, railing, and paint scheme. The bridge's steel structure deck is not considered character defining.

Under NRHP Criterion D / CRHR Criterion 4, this property is not a significant or likely source of important information about historic construction materials or technologies that is not otherwise available through documentary evidence.

Integrity

Research and field observation did not reveal any substantial alterations to this structure. As such, the Oregon Gulch Creek Bridge retains a high degree of integrity of materials, design, feeling, association, workmanship, setting, and location. Overall, the bridge maintains sufficient integrity to convey its historical significance.

Photographs (Continued):

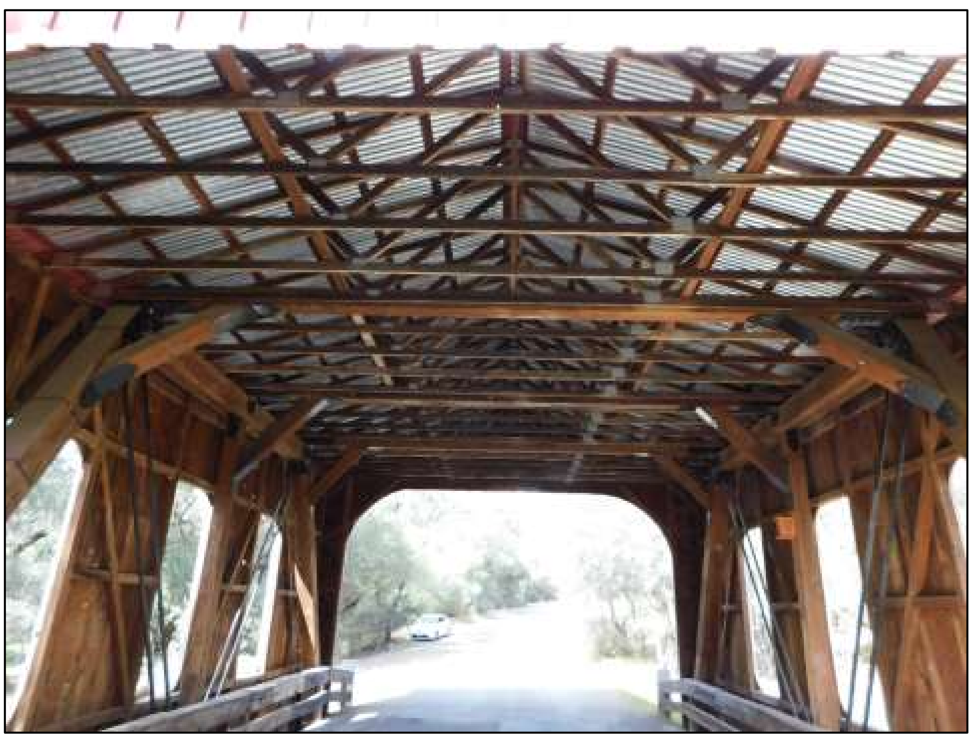
Photograph 2: North portal and west elevation, camera facing southeast, March 2, 2022.

Photograph 3: South portal, camera facing north, March 2, 2022.

***Resource Name or #** (Assigned by recorder): Bridge 12C0182

***Recorded by**: S.J. Melvin ***Date**: March 2, 2022 ☒Continuation ☐Update

Photograph 4: Truss system, camera facing northwest, March 2, 2022.



Photograph 5: Truss and roof structure, camera facing north, March 2, 2022.

***Resource Name or #** (Assigned by recorder): Bridge 12C0182

***Recorded by**: S.J. Melvin ***Date**: March 2, 2022 ☒Continuation ☐Update

Photograph 6: Steel stringers, cross-beam, decking, and north abutment, camera facing northeast, March 2, 2022.

Photograph 7: South abutment, camera facing southeast, March 2, 2022.

*Resource Name or # (Assigned by recorder): Bridge 20C0438

P1. Other Identifier: Warm Springs Creek Bridge

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County**: Sonoma

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad**: Warm Springs Dam **Date**: 2021 **T**:10N; **R**:10W; **Sec**:18; Mount Diablo Meridian

c. Address: Rockpile Road City: n/a Zip: n/a

d. UTM: (give more than one for large and/or linear resources) Zone: 10S; 498695.76 m E; 4285123.62 m N

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate)

The Warm Springs Creek Bridge carries Rockpile Road over the Warm Springs Creek arm of Lake Sonoma. It is about nine miles west of Geyserville. The bridge is in Caltrans District 4.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

The Warm Springs Creek Bridge is a five-span, steel, cantilevered deck truss on two single-column wall-type reinforced concrete piers (**Photograph 1**). The main section of the 1,788-foot-long bridge are the three cantilevered deck truss spans measuring 425.8 feet, 752 feet, and 422.9 feet, respectively (**Photographs 2 – 5**). The bridge's steel components are tan colored. At each end of the bridge are two concrete bin type abutments that support 93.5-foot-long reinforced concrete T-girder approach spans (**Photograph 6**). The concrete exterior sidewalls of the abutments have a coarse, ribbed finish. The reinforced concrete deck is on a steel stringer and floor beam system. Traffic is carried on a two-lane, 32-foot-wide roadway with five-foot shoulders and a five-foot concrete sidewalk on the north side (**Photograph 7**). On both sides of the bridge is a three-bar steel railing with chain link fence attached along the north side.

***P3b. Resource Attributes:** (List attributes and codes) HP19. Bridge

***P4. Resources Present:** ☐ Building ☒ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5b. Description of Photo: (View, date, accession#) **Photograph 1.** South elevation, camera facing northeast, July 12, 2022.

***P6. Date Constructed/Age and Sources:** ☒ Historic ☐ Prehistoric ☐ Both
1973 (*Santa Rosa Press-Democrat*)

***P7. Owner and Address:**
Sonoma County
2300 County Center Drive
Suite B 100
Santa Rosa, CA 95403

***P8. Recorded by:**
Steven J. "Mel" Melvin
JRP Historical Consulting, LLC
2850 Spafford Street
Davis, CA 95618

***P9. Date Recorded**: July 12, 2022

***P10. Survey Type:** (Describe)
Intensive

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") JRP Historical Consulting, LLC, "Historical Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2023 Update, 1975-1984," prepared for Caltrans, 2023.

***Attachments:** ☐ None ☐ Location Map ☐ Sketch Map ☒ Continuation Sheet ☒ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐Other (list) ___

BUILDING, STRUCTURE, AND OBJECT RECORD

***NRHP Status Code**: 3S

***Resource Name or #** (Assigned by recorder): Bridge 20C0438

B1. Historic Name: Warm Springs Creek Bridge

B2. Common Name: Warm Springs Creek Bridge

B3. Original Use: Bridge B4. Present Use: Bridge

***B5. Architectural Style**: Steel Cantilever Deck Truss

***B6. Construction History**: (Construction date, alteration, and date of alterations) Built in 1973; seismic retrofit in 1999 did not result in any substantial alteration to the structure.

***B7. Moved?** ☒ **No** ☐ **Yes** ☐ **Unknown** **Date:** ______ **Original Location:** ______

***B8. Related Features:** ___

B9. Architect: Tudor Engineering; U.S. Army Corps of Engineers

b. Builder: Piombo Corporation (substructure); Willamette-Western Corporation and Adams & Smith (superstructure)

***B10. Significance: Theme**: Engineering **Area**: State

Period of Significance: 1973 **Property Type**: Bridge **Applicable Criteria**: C/3

(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

The Warm Springs Creek Bridge is eligible for listing in the National Register of Historic Places (NRHP) and the California Register of Historical Resources (CRHR). This property has been evaluated in accordance with Section 106 of the National Historic Preservation Act of 1966 (as amended) (54 U.S.C. 306108) and its implementing regulations (36 CFR Part 800) and Section 15064.5(a)(2)-(3) of the California Environmental Quality Act (CEQA) Guidelines, using the criteria outlined in Section 5024.1 of the California Public Resources Code (PRC). (See Section B10 on Continuation Sheet.)

B11. Additional Resource Attributes: ______

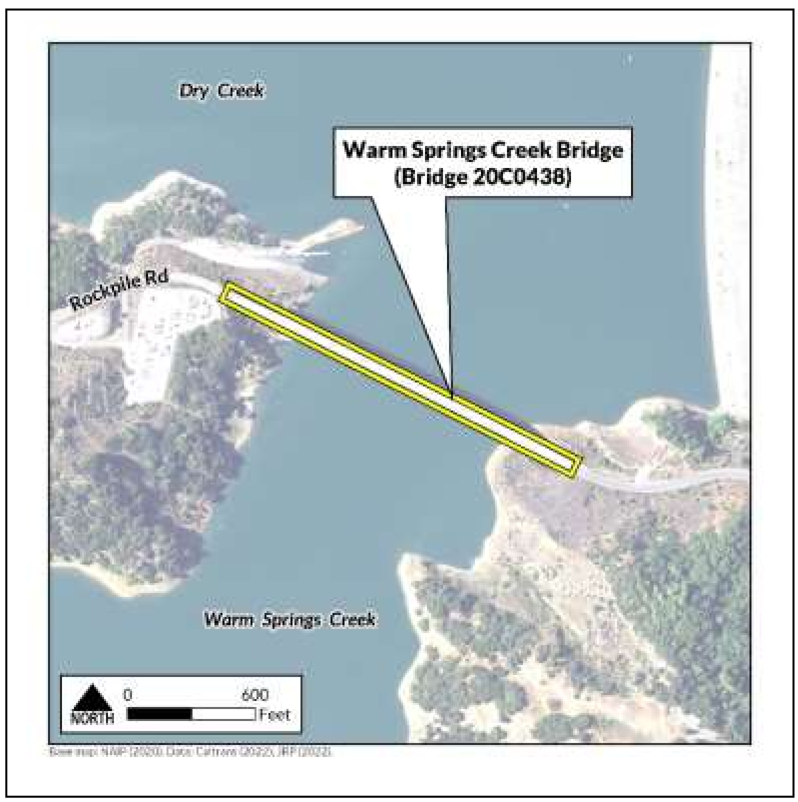
***B12. References**: Caltrans Bridge Database; Caltrans Bridge Inspection Reports; Caltrans, Bridge As-Built Plans; Caltrans, Statewide Historic Bridge Inventory Updates; *Santa Rosa Press-Democrat;* see also footnotes.

B13. Remarks:

***B14. Evaluator**: Steven J. "Mel" Melvin

***Date of Evaluation**: November 2023

(This space reserved for official comments.)



***Resource Name or #** (Assigned by recorder): Bridge 20C0438

***Recorded by**: S.J. "Mel" Melvin   ***Date**: July 12, 2022   ☒Continuation ☐Update

B10. Significance (continued):

Historic Context and Bridge History

The Warm Springs Creek Bridge crosses Lake Sonoma just upstream from the Warm Spring Creek Dam. The U.S. Army Corps of Engineers (Army Corps) initiated dam construction in 1967, a project to provide flood control, water supply, and recreation. Located at the confluence of Warm Springs Creek and Dry Creek, the dam inundated the deep valleys of both waterways, creating Lake Sonoma. The deep, wide lake required construction of the Warm Springs Creek Bridge to carry Rockpile Road over the lake. In June 1970, the Army Corps awarded the first contract of the bridge project to the Piombo Corporation for the relocation of Rockpile Road and construction the bridge abutments and piers. The Army Corps awarded the contract for the bridge superstructure to two companies: Willamette-Western Corporation and Adams & Smith in January 1971. The Army Corps with its consultant Tudor Engineering designed the bridge.[1]

Following completion of the abutments and piers, work began on the Warm Springs Creek Bridge superstructure in 1971. Construction of the superstructure entailed erecting cantilevered truss sections out in both directions from each pier (**Plate** 1). The final part of the Warm Springs Creek Bridge was a 900-ton, 470-foot section of the center span, which was constructed on the valley floor and lifted 260 feet into place with hoists in January 1973. The bridge opened for traffic soon thereafter. A little more than a year later, the bridge won the Chief of Engineers Award of Merit in the 1974 U.S. Army Chief of Engineers Annual Engineering Design Awards Program. The award noted the span lift operation was the largest lift of its type ever in California. The bridge spanned a high, dry valley until the Army Corps completed the Warm Springs Dam in 1983 and Lake Sonoma began to fill with water.[2]

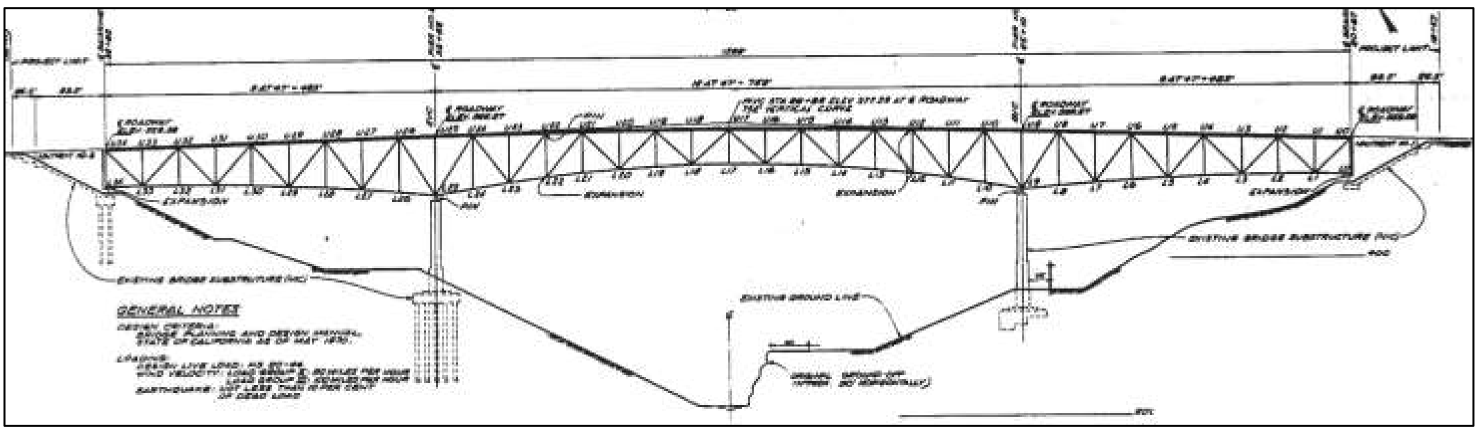


Plate 1. Bridge elevation from original as-built plans dated 1970.[3]

The project's consultant engineering firm, Tudor Engineering of San Francisco, was formed in 1950 by Ralph A. Tudor. Tudor had previously spent a number of years working as a consulting engineer for Caltrans, serving as a senior design engineer for the San Francisco-Oakland Bay Bridge and as a design engineer for the Martinez-Benicia Bridge and the Carquinez Bridge. Tudor Engineering also frequently served as a consultant for the cities of San Francisco, Berkeley, and Oakland, preparing

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[1] Art Volkerts, "And a Great Dam of the Future Gets a Start," *Santa Rosa Press-Democrat*, August 21, 1967, 4; "Bids Open," *Cloverdale Reveille*, April 30, 1970, 4; "$9 Million Approved for Empire Projects," *Santa Rosa Press-Democrat*, June 18, 1970, 1; "Warm Springs Bridge Contract Awarded," *Cloverdale Reveille*, January 7, 1971, 3; "1978 Completion Date Eyed At Warm Springs Damsite," *Cloverdale Reveille*, July 15, 1971, 1.

[2] "1978 Completion Date Eyed At Warm Springs Damsite," *Cloverdale Reveille*, July 15, 1971, 1; "Center Span Raised for Warm Springs Bridge," *Santa Rosa Press-Democrat*, January 17, 1973, 33; "Warm Springs Bridge," *Santa Rosa Press-Democrat*, November 12, 1974, 17; U.S. Army Corps of Engineer, *1974 U.S. Army Corps of Engineers Distinguished Design Awards*, available online (accessed February 2023), https://ceawards.erdc.dren.mil/archives/AwardsProgram/pdf/1974.pdf#view=Fit.

[3] Tudor Engineering and U.S. Army Corps of Engineers, "Warm Springs Creek Bridge – Superstructure – General Plan and Elevation," October 26, 1970.

feasibility studies for the tideland development in Berkley in 1955, and for siting the Oakland Coliseum in 1960. In 1962, Tudor Engineering was named as one of three firms awarded contracts for the initial construction of the Bay Area Rapid Transit (BART) system. For this project, these firms operated under the joint venture of Parsons-Brinkerhoff-Tudor-Bechtel. Ralph Tudor died suddenly of a heart attack on November 12, 1963, and Louis W. Riggs took over as president of Tudor Engineering in December. In addition to bridge work, Tudor Engineering consulted on large-scale irrigation projects, such as the Merced River project in 1964 for the Merced Irrigation District, and produced the conceptual engineering designs for the Linear Collider at the Stanford Linear Accelerator Center. In the mid-1960s, the firm conducted the seismic analysis for engineering the $77 million Salazar Bridge over the Tagus River in Lisbon, Portugal, which was the longest bridge in Europe and sixth longest in the world at the time of its construction in 1966. Robert N. Janopaul succeeded Riggs as president in the mid-1980s, and Thomas J. O'Neill took over in March of 1989. Later that year, Tudor Engineering became a subsidiary of Kaiser Engineering.[4]

The first contractor on the project, Piombo Construction Company, appears to have been formed in the mid-1940s, and in the 1940s and early 1950s, the company won bids for parking lot and roadway construction in and around San Francisco. The company gradually expanded, and in the 1950s began working on larger freeway projects throughout the state, including widening and constructing new overpasses and exchanges on various sections of the Bayshore Freeway. Freeway construction became the firm's specialty, although in the 1960s, Piombo also worked on hydroelectric projects, including road construction for PG&E's McCloud-Pit project in Shasta County in 1962, and work on the Oroville power plant as part of the State's Feather River Project in 1966-69, as a joint venture with Rothchild, Raffin & Weirick, Inc. After years of growth, the company had to downsize in the mid-1970s due to cutbacks in the state highway construction program by the Brown Administration. The firm is not known to have worked on any major projects in the 1980s and disappears from the public record in 1989.[5]

The Willamette-Western Corporation, who worked on the bridge superstructure, had its origins in the Portland Dredging Co. of Oregon, founded by Arthur A. Riedel, Sr. in 1930, which became the Willamette Tug & Barge Company in 1937. This company specialized in dredging and marine construction, such as berths, locks, and docks, and often worked with the Army Corps. Arthur Senior's son, Arthur A. Riedel, Jr., took over as president of the company after his father's death in 1957 and the name was changed to Willamette-Western Corporation in 1964. In 1979, the Willamette-Western Corporation reorganized as Riedel International, Inc., although Willamette-Western Corp continued as Riedel International's heavy construction division, building docks, piers, airports, dams, and other large civil works. Some of the major engineered structures built by Willamette-Western in California include three concrete wharves for the Oxnard Harbor District in Ventura County (1970-72), and the superstructure of the Auburn-Foresthill bridge in Placer County (1970-73). The company also worked on four oil tanker berths at Valdez, Alaska (1975-77), one of the largest contracts for marine oil terminals in the world, at the time, and the Itaipu Dam on the Paraná River on the border of Brazil and Paraguay (1978-84), which was the largest dam in the world when it was constructed. In December 1991, Willamette-Western Corp. filed for Chapter 11 bankruptcy.[6]

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[4] "Ralph Tudor, Engineer, Dies," *San Francisco Examiner*, November 14, 1963, 13; "Ralph Tudor Sworn In," *San Francisco Examiner*, April 1, 1953, 35; "Tideland Development Study Gets approval in Berkley," *San Francisco Examiner*, November 11, 1955, III-5; "Arena Would Seat 48,500," *San Francisco Examiner*, November 4, 1960, IV - 1; "First OK on Rapid Transit; 3 Firms Named," *San Francisco Examiner*, November 14, 1962, 1; "Business World," *San Francisco Examiner*, December 8, 1963, II-13; "$31,957,234 Bid for Merced River Project," *San Francisco Examiner*, June 26, 1964, 19; "Atomic Plans," *San Francisco Examiner*, January 7, 1986, C-1; "The Bridge That Breaks Records," *San Francisco Examiner*, August 21, 1966, 125, in *Chronicle Sunday Punch*, 5; "Movers & Shakers," *San Francisco Examiner*, March 21, 1989, C-2; "American Capital Research to Buy Tudor Engineering," *San Francisco Examiner*, September 20, 1989, C-2.

[5] "Low Bid for Muni Yard Job Reported," *San Francisco Examiner*, March 16, 1949, 7; "Cow Palace Parking Area to Be Fixed," *San Francisco Examiner*, January 6, 1950, 23; Al Lindsey, "Bayshore to Remain Open, Builder Pledges," *San Francisco Examiner*, November 9, 1953, 26; Bayshore Road Contract," *San Francisco Examiner*, November 6, 1956, 24; Ed Reynolds, "S.F., Bay Area Freeways Linked to State System," *San Francisco Examiner*, May 27, 1957, III-4; "PG&E Lets Pit River Contracts," *San Francisco Examiner*, October 26, 1962, 64; "2 S.F. Firms ow Bidders on Oroville Plant," *San Francisco Examiner*, August 11, 1966, 15; David Dietz, "Freeway builders in slump," *San Francisco Examiner*, November 30, 1975, C-10.

[6] "Corporation is changing," Coos Bay, Ore. *The World*, December 1, 1979, 18; U.S. Census Bureau, *Fifteenth Census of the United States—Population Schedule*, Oregon, Multnomah, Portland, Enumeration District 548, Sheet 9A, Washington, D.C., 1930 (accessed via

The other contractor to work on the superstructure, Adams & Smith, Inc., was established in 1965 in Richmond, CA by Harry Eugene Adams and Bernon Smith. Some of the company's first projects were the steel and concrete Dos Rios Bridge across the Eel River in Mendocino County, and placement of a highway bridge across the Camp Far West reservoir, connecting Placer and Yuba counties, both in 1966. After the Loma Prieta earthquake in 1989, Adams & Smith were the main contractors selected to repair the damage to the San Francisco-Oakland Bay Bridge. Around 1997, the company moved its headquarters to Utah, where Adams & Smith, Inc. still operates as an engineering construction firm specializing in the supply and erection of structural steel bridges, buildings, industrial facilities, heavy highway structures, and seismic retrofitting throughout the western United States.[7]

The Warm Springs Creek Bridge was built during the period when consideration for bridge aesthetics had become common in California, particularly for prominent structures. The California Division of Highways had instituted a program starting in the early 1960s to bring greater emphasis on bridge aesthetics into its design process following decades where most bridges in the state had been designed to only satisfy safety and utilitarian requirements. Aligning with the dominant architectural trends in Modernism of the period, with particular focus on concrete structures, bridge designers aspired to simplicity and pureness of structure, avoiding ornamentation, celebrating the beauty of structural form, and emphasizing ease of construction and economy of design. These efforts were also applied to steel structures, and the Division of Highways received awards for many prominent bridges including the steel arch Cold Spring Canyon Bridge (51 0037) built in 1963 on State Route 154 in Santa Barbara County. The Division of Highways, and later Caltrans, developed its bridge aesthetics program to integrate it into the department's overall design philosophy that included educational programs for staff and contractors, along with additions to bridge design manuals that included instruction to have bridges designed so that they would be aesthetically compatible with its location. Bridge designers were encouraged to consider what they are leaving for future generations, which emphasized that a bridge's appearance was as important as the structure's design features for load and safety, as well as it being compatible with its environment and for it to wear well with age. Overtime, consultants also learned the Caltrans bridge aesthetics values through job experience and special involvement with the Bridge Department's structure aesthetics group.[8]

In the 1960s, 1970s, 1980s, and later, the Bridge Department of the Division of Highways / Caltrans' process for considering bridge aesthetics followed general principles related to quality design that carefully analyzed proportions of bridges' structural and safety elements, attractive forms for the various bridge elements, compatibility of bridges within their setting, and consideration of current and future acceptance of structures. The state's process also influenced consultant-designed bridges

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Ancestry.com); U.S. Selective Service System, *World War II Draft Registration Card*, Multnomah, Oregon, "Arthur Albert Riedel," Serial no. U2788, 27 April 1942; "$499,999 Contract," Eugene, Ore. *Register-Guard*, March 28, 1952, 14A; "[Willamette Tug & Barge Co.]," *Medford Mail Tribune*, June 18, 1959, 1; "$4 Million Harbor Expansion Contracts Awarded 2 Firms," *Ventura County Star-Free Press*, May 5, 1970, B-6; "Hickle Announces Auburn Dam Pact," *Salinas California*, August 10, 1970, 17; "Bridge joining Wednesday," Roseville, Cali. *The Press-Tribune*, June 5, 1972, 1; "Portland firm wins job," Tacoma *News-Tribune*, October 7, 1974, B-14; "Oregon firm to work on largest dam," *Corvallis Gazette-Times*, June 13, 1978, 21; "Construction firm files for Chapter 11," Albany, OR. *Democrat-Herald*, December 7, 1991, 8.

[7] "Home" Adams & Smith, Inc., accessed November 2023, http://www.adamsandsmith.com/; "DEATHS: Adams, Harry Eugene," *Boston Globe*, October 11, 2015, B6; "Dos Rios Bridge Low Bidder Submits Bond," *Ukiah Daily Journal*, March 3, 1966, 3; "Bid Awarded For Camp Far West Bridge Job," Lincoln *News Messenger*, August 10, 1967, 1; "Another Napa firm involved in rebuilding of Bay Bridge," *Napa Register*, November 14, 1989, 2; "Your Views," San Pedro *News-Pilot*, June 17, 1997, A4.

[8] Arthur L. Elliott, "Aesthetics of Highway Bridges," *Civil Engineering*, June 1968, 65-66; James E. Roberts, "Aesthetic Design Philosophy Utilized for California State," *Journal of Urban Planning and Development*, Vol. 118, No. 4, December 1992, 138; Arthur L. Elliott, "Esthetic Development of California's Bridges," presented at the April 14-18, 1980, ASCE Convention and Exposition, Portland, Oregon (Preprint 80-004), published in *Journal of Structural Engineering*, Vol. 109, No. 9, September 1983, paper no. 18240, 2159-2163 and 2172-2173; JRP Historical Consulting, LLC, *Historical Resources Evaluation Report, Cold Spring Canyon Bridge (51 0037) Pedestrian Barrier Project, State Route 154, Santa Barbara County, California, 05-SB-154 PM 22.96, EA 05-0P910K,* prepared for Caltrans District 5, May 2007; W.S. Ludlow, "Aesthetics in Bridge Design," *Manual of Bridge Design Practice* (State of California: Bridge Department, 1971), 16.3; Arthur L. Elliot, "Aesthetics in a Changing Economy," in *Meeting Preprint 2199* for American Society of Civil Engineers National Structural Engineering Meeting, April 22-26, 1974, *Cincinnati*, Ohio; Arthur L. Elliott, "The Role of the Public Agency," in Adele Fleet Bacow and Kenneth E. Kruckmeyer, editors, *Bridge Design: Aesthetics and Development Technologies*, (Boston: Massachusetts Department of Public Works and Massachusetts Council of the Arts and Humanities, 1986), 34.

in the state.[9] Compatibility was emphasized to improve how bridges fit into their surroundings. This depended on the nature of the structure and site with some bridges designed to blend with their setting and others to stand out. Longtime Division of Highways Chief of Bridge Planning and Design Arthur L. Elliott, who led the Bridge Department from 1953 to 1973, emphasized a bridge's compatibility was more important than its uniqueness of appearance, stating that "a properly designed structure has a sense of belonging in its particular location," noting that bridges that seem out of place are subject to criticism. He further specified that bridges do not need to be fancy to be compatible, and that stark and simple bridges in a desert setting, for example, won prizes because they were well suited for their environment.[10] For steel bridges, colors, such as light brown and tan, were introduced to better integrate structures into their surroundings. The Warm Springs Creek Bridge is a prominent example of the use of colored steel. In its distinguished design award for the bridge in 1974, the Army Corps specifically noted the bridge's tan colored steel as being among the bridge's significant design qualities. The award emphasized that the bridge was designed to harmonize with its environment and "blend the bridge into the surrounding area."[11] The pronounced coarse, ribbed finish of the concrete abutments further integrates the bridge with its surrounding landscape, as an example of specialized features given to bridges in highly scenic locations where bolder concrete textures were sometimes employed.[12]

The Warm Springs Creek Bridge is a steel Warren cantilever deck truss structure. The Warren truss was one of the most common truss types built in California by the 1920s and 1930s. The majority of Warren trusses constructed in California were pony trusses, with later design variations utilized in the 1940s and 1950s including both vertical supports and polygonal top chords. Metal truss bridges became uncommon after the 1950s as steel bridges proved less cost-effective relative to concrete. The cantilever truss type is a particular type of truss construction bridge in which each span is constructed as a cantilever out from the piers and/or abutments. First built in the United States following the Civil War, the type gained popularity in the late nineteenth century and into the twentieth century. Cantilevered steel truss bridges offered distinct advantages over other bridge types as they can span long distances and require little or no falsework. The design makes cantilevered bridges suitable for spanning difficult terrain. Cantilever truss bridges continued to be built, albeit somewhat infrequently, in California through the 1950s. The largest cantilever truss bridges in California are the 1956 Richmond-San Rafael Bridge (28 0100) and the 1958 East Carquinez Bridge (23 0015R), both of which are through cantilever trusses with main spans greater than 1,000 feet. The largest deck truss variety is the Foresthill Bridge (19C0060), completed in 1972, with a main span of 862 feet and a total length of 2,428 feet. No prominent cantilever deck truss bridges were built in California after completion of the Warm Springs Creek Bridge.[13]

NRHP / CRHR Significance Evaluation

The Warm Springs Creek Bridge is not significant under NRHP Criterion A / CRHR Criterion 1 for an important association with significant events, trends, or patterns of development. The bridge was one of many roadway improvements carried out in the 1970s and early 1980s in this region and throughout California. The bridge did not initiate new patterns of development as it was built to carry a previously existing road over a reservoir created by construction of a new dam. Thus, the bridge is

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[9] Arthur L. Elliott, "Creating a Beautiful Bridge," in Committee on General Structures, Subcommittee on Bridge Aesthetics, *Bridge Aesthetics Around the World*, (Washington D.C.: Transportation Research Board, National Research Council. 1991), 215-217; James E. Roberts, *Aesthetics and Economy in Complete Concrete Bridge Design*, California Department of Transportation, Office of Structures Design, 1986 (available at the Caltrans Transportation Library), 2.

[10] Arthur L. Elliott, "Esthetic Development of California's Bridges," presented at the April 14-18, 1980, ASCE Convention and Exposition, Portland, Oregon (Preprint 80-004), published in *Journal of Structural Engineering*, Vol. 109, No. 9, September 1983, paper no. 18240, 2161 and 2163; Arthur L. Elliott, "Creating a Beautiful Bridge," in Committee on General Structures, Subcommittee on Bridge Aesthetics, *Bridge Aesthetics Around the World*, (Washington D.C.: Transportation Research Board, National Research Council. 1991), 217.

[11] Arthur L. Elliott, "Aesthetics of Highway Bridges," *Civil Engineering*, June 1968, 65-66; Fritz Leonhardt, "Aesthetics of Bridge Design," *PCI Journal*, February 1968, 15-16, 21, and 31; U.S. Army Corps of Engineer, *1974 U.S. Army Corps of Engineers Distinguished Design Awards*, available online (accessed February 2023), https://ceawards.erdc.dren.mil/archives/AwardsProgram/pdf/1974.pdf#view=Fit

[12] Stewart Gloyd, "California – A Qualified Bridge Esthetics Case Study," *Concrete International*, Volume 16, No. 2, February 1994, 48.

[13] Caltrans, "Historical Resources Evaluation Report, Statewide Historic Bridge Inventory: 2015 Update," 1965-1974, Foresthill Bridge (19C0060), DPR 523 form.

not important within the context of the development of the regional roadway network, local growth and development, or any other trends or events at the national, state, or local level that would make it significant under this criterion.

Under NRHP Criterion B / CRHR Criterion 2, this bridge is not significant for an association with the lives of persons important to history. Research did not find that any individuals directly associated with this property have made demonstrably important contributions to history at the local, state, or national level.

The Warm Springs Creek Bridge meets NRHP Criterion C / CRHR Criterion 3 as a significant for its type, period, and method of construction as an example of a steel cantilevered deck truss bridge, designed to be compatible within its environment. Completed in 1973, the bridge is significant for the length of its main span and for its construction methods. Measuring 753 feet, it is the second longest steel deck truss main span in California. The longest being the Foresthill Bridge (19C0060), with a main span of 862 feet, completed the previous year. The Warm Springs Creek Bridge is also significant for achieving the longest lift of a bridge section when workers hoisted a 470-foot section of the center span into place in 1973. A feat recognized by an award from the U.S. Army Chief of Engineers Annual Engineering Design Awards Program. Furthermore, as noted in its award citation, the bridge is also a prominent example of a steel bridge in California designed to integrate with its setting, which was one of the hallmarks of bridge aesthetics carried out in the state during the 1960s and 1970s.[14] The bridge is not the work of a master and does not possess high artistic values.

Under NRHP Criterion D / CRHR Criterion 4, this property is not a significant or likely source of important information about historic construction materials or technologies that is not otherwise available through documentary evidence.

The boundary of the property encompasses the entire bridge structure. The bridge is significant at the state level and the period of significance is 1973, the year the bridge was completed. The character-defining features are the steel deck truss superstructure, tan steel color of its steel components, piers, course and ribbed abutments, deck, and railings.

Integrity

The only alteration to this bridge besides routine maintenance was the 1999 seismic retrofit. The project retrofit did not result in any substantial visual change to the bridge, but entailed work at the interfaces between the superstructure and the piers and abutments, as well as strengthening of some of the truss members. These alterations are modest and the bridge retains a high degree of integrity of materials, design, feeling, and workmanship, and full integrity of location, setting, and association. Overall, the bridge maintains sufficient integrity to convey its historical significance.

[14] "Award Winner," *Modesto Bee,* November 27, 1979, 17.

***Recorded by**: S.J. "Mel" Melvin ***Date**: July 12, 2022 ☒Continuation ☐Update

Photographs (Continued):

Photograph 2: South elevation, camera facing northwest, July 12, 2022.

Photograph 3: North elevation, camera facing southwest, July 12, 2022.

Photograph 4: Main span, camera facing south, July 12, 2022.

Photograph 5: West pier and truss system from below, camera facing east, July 12, 2022.

Photograph 6: East abutment and approach span, camera facing southeast, July 12, 2022.

Photograph 7: Bridge deck, camera facing west, July 12, 2022.

PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 3S
Other Listings
Review Code Reviewer Date

***Resource Name or #** (Assigned by recorder): Bridge 21 0049

P1. Other Identifier: Napa River Bridge; Napa River Bridge and Overhead

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County**: Napa
and (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5′ Quad**: Cuttings Wharf **Date**: 2021 **T**:5N; **R**:4W; **Sec**: n/a ; Mount Diablo Meridian

c. Address: State Route 29 City: Napa Zip: n/a

d. UTM: (give more than one for large and/or linear resources) Zone: 10S; 562540.94 m E; 4233136.59 m N

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate)
The Napa River Bridge carries State Route (SR) 29 over the Napa River at post mile 6.99 just south of the city of Napa. The bridge is in Caltrans District 4.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

The Napa River Bridge is a two-cell, continuous segmental cantilever, prestressed, lightweight concrete box girder structure spanning 2,230 feet over the Napa River (**Photograph 1**). The bridge has 13 spans, the longest 250 feet, and is 100 feet above the river at its highest point (**Photographs 2 - 5**). The structure is supported by Y-shaped reinforced concrete piers and a reinforced concrete diaphragm type abutment at the east end, while a submerged seat abutment supports the west side (**Photographs 6 – 9**). The concrete deck is 62 feet wide between the curbs and has a total width of 68 feet (**Photograph 10**). It has four, 12-foot travel lanes and a seven-foot-wide shoulder. Concrete K-rail barriers run along each edge and the center of the roadway.

***P3b. Resource Attributes:** (List attributes and codes) HP19. Bridge

***P4. Resources Present:** ☐ Building ☒ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5b. Description of Photo: (View, date, accession#) **Photograph 1.** South elevation, camera facing northeast, June 1, 2022.

***P6. Date Constructed/Age and Sources:**
☒ Historic ☐ Prehistoric ☐ Both
1977 (Caltrans)

***P7. Owner and Address:**
State of California
Department of Transportation
1120 N Street
Sacramento, CA 95814

***P8. Recorded by:**
Steven J. "Mel" Melvin
JRP Historical Consulting, LLC
2850 Spafford Street
Davis, CA 95618

***P9. Date Recorded**: June 1, 2022

***P10. Survey Type:** (Describe)
Intensive

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") JRP Historical Consulting, LLC, "Historical Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2023 Update, 1975-1984," prepared for Caltrans, 2023.

***Attachments:** ☐ None ☐ Location Map ☐ Sketch Map ☒ Continuation Sheet ☒ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐Other (list)

***NRHP Status Code**: 3S
***Resource Name or #** (Assigned by recorder): Bridge 21 0049

B1. Historic Name: Napa River Bridge; Southern Crossing
B2. Common Name: Napa River Bridge; George F. Butler Bridge
B3. Original Use: Bridge B4. Present Use: Bridge
***B5. Architectural Style**: Concrete Box Girder
***B6. Construction History**: (Construction date, alteration, and date of alterations) Built in 1977; seismic retrofit in 1994 consisting of installing additional piles on the pier footings.
***B7. Moved?** ☒ **No** ☐ **Yes** ☐ **Unknown** **Date:** ______ **Original Location:** ______
***B8. Related Features:** ___
B9. Architect: Caltrans b. Builder: Guy F. Atkinson Company
***B10. Significance: Theme**: Design / Aesthetics **Area**: State
Period of Significance: 1977 **Property Type**: Bridge **Applicable Criteria**: C/3
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

The Napa River Bridge is eligible for listing in the National Register of Historic Places (NRHP) and the California Register of Historical Resources (CRHR). This property has been evaluated in accordance with Section 106 of the National Historic Preservation Act of 1966 (as amended) (54 U.S.C. 306108) and its implementing regulations (36 CFR Part 800) and Section 15064.5(a)(2)-(3) of the California Environmental Quality Act (CEQA) Guidelines, using the criteria outlined in Section 5024.1 of the California Public Resources Code (PRC). Additionally, the Napa River Bridge meets the California Historical Landmarks (CHL) Criteria as per PRC Section 5031 and qualifies as a California Historical Landmark. (See Section B10 on Continuation Sheet.)

B11. Additional Resource Attributes: ______

***B12. References**: Caltrans Bridge Database; Caltrans Bridge Inspection Reports; Caltrans, Bridge As-Built Plans; Caltrans, Statewide Historic Bridge Inventory Updates; Barker and Jay A. Puckett, *Design of Highway Bridges*, 2013; *Napa Valley Register;* see also footnotes.

B13. Remarks:

***B14. Evaluator**: Steven J. "Mel" Melvin
***Date of Evaluation**: November 2023

(This space reserved for official comments.)

B10. Significance (continued):

Historic Context and Bridge History

The impetus for building the Napa River Bridge was to relieve traffic congestion in the city of Napa. Prior to its construction, highway traffic flowed into Napa and over the river on the Imola Avenue Bridge, about 2.5 miles upriver from the current bridge. Initial planning efforts commenced in early 1974 with a meeting involving community members, Caltrans, the Metropolitan Transit Commission, government officials, and other interested parties that revealed overwhelming support for the bridge. Caltrans drew up plans for the project that proposed 4.8 miles of approach freeway on each side and put out a call for bids in October 1974. The bridge bid called for a four-lane bridge, 2,230 feet long, 68 feet wide, and with 100 feet of vertical clearance over the river. Guy F. Atkinson Company won the $24.7 million contract allocated as $10.9 million for the bridge and the remainder for the approach freeway. The project consisted of two phases: the bridge and the approach roadways. Work on the bridge began in December 1974 with construction of the piers followed by erecting falsework to support the forms for the concrete of the box girders pours. Pouring the concrete for the box girders proceeded in balanced cantilevered segments from the piers (**Plate 1** and **Plate 2**).[1]

In 1975, as bridge construction continued, Caltrans faced a budget shortfall that was the largely the result of declining gas tax revenues brought on by rising inflation and gas shortages from the 1973-74 oil embargo that the Organization of Petroleum Exporting Countries (OPEC) imposed on the United States in retaliation for its support of Israel. This led to the suspension of all proposed new highway construction throughout the state. While funding remained secure for the bridge, construction of the proposed approach freeways was put on hold indefinitely. The bridge was finished in November 1977, but lacking approach roads, could not be used, earning it the moniker, the "Bridge to Nowhere" (**Plate 3**), and making it one of the more publicized examples of the state's seemingly sudden halt to freeway construction at the time. As Caltrans' budget woes continued, the agency decided to abandon its plans for freeway style approach roads for the Napa River Bridge in an effort to reduce costs, and instead build signalized intersections at SR 221 and 121, east and west of the bridge, respectively. Work began on the approach roads in 1978 and concluded in May 1981; the bridge opening to traffic on June 2, 1981. The total cost of the project was $23.6 million. In 1991, the bridge was named the "George F. Butler Memorial Bridge" after a California Highway Patrol officer and Napa resident who was killed in the line of duty in 1986. In 1994, Caltrans installed additional piles on the pier footings as a seismic retrofit.[2]

The Napa River Bridge is a concrete box girder structure. The first concrete box girder bridges in California were erected in the mid-1930s. The structural type was innovative for its design flexibility, helping to meet the growing demand for longer and wider bridges as well as skewed bridges that permitted straighter, more efficient, and safer roadways. The slender bridge profiles with harmonious proportions allowed engineers to achieve the modern design aesthetic thought to showcase transportation efficiency. Because they required less steel in their construction, concrete box girder bridges could also be erected at significant cost savings. Only a small number of concrete box girder bridges were built before World War II, but after the end of the war in 1945 their numbers rapidly increased. By 1965, there were more than 1,500 concrete box girder

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[1] "Napans Voice Support of Southern Crossing," *Napa Valley Register*, February 6, 1974, 2; "Department of Transportation Notice to Contractors," *Napa Valley Register*, October 22, 1974, 19; "Construction of Southern Crossing Set," *Napa Valley Register*, October 22, 1974, 19; "State Legislation to Solve Southern Crossing Crisis," *Napa Valley Register*, October 17, 1975, 1.

[2] "State Legislation to Solve Southern Crossing Crisis," *Napa Valley Register*, October 17, 1975, 1; "Napa County, City Agree on South Crossing Plans," *Napa Valley Register*, September 22, 1976, 1; "South Crossing Signals Given Okay By Local Officials," *Napa Valley Register*, May 4, 1977, 1; "Finishing Touches on Southern Crossing," *Napa Valley Register*, October 12, 1977, 1; "Do Not Open Til…'79?," *Napa Valley Register*, November 29, 1977, 2; Brian D. Taylor, "Public Perceptions, Fiscal Realities, and Freeway Planning: The California Case," *APA Journal*, Winter 1995, 52; "Interview with Gianturco," *Engineering News*, March 1980, 6; *Highway Recollections of William R. Green*, Oral History, Caltrans, June 1989, 30 and 47-49; "Southern Crossing Dedicated," *Napa Valley Register*, May 28, 1981, 1; "The Southern Crossing – Its Really Open," *Napa Valley Register*, June 2, 1981, 1; "Southern Crossing Bridge Dedication This Thursday," *Napa Valley Register*, May 27, 1981, 5; "Southern Crossing Gets a New Name," *Napa Valley Register*, December 12, 1991, 2; John Eidinger, "South Napa M 6.0 Earthquake of August 24, 2014, 98.

bridges in California. More than 3,200 of the type were built between 1965 and 1974, and more than 1,000 between 1975 and 1984.[3]

Plate 1. Napa River Bridge showing the east end of the bridge under construction. In the foreground is the main span over the Napa River.[4]

[3] Myra L. Frank & Associated, "Caltrans Historic Bridge Inventory Update: Concrete Box Girder Bridges," prepared for Caltrans, August 2003, 5-11; John C. Ritner, "Bridges Produced by an Architectural Engineering Team," *Transportation Research Record 1044, Structures and Foundations* (Washington D.C.: Transportation Research Board National Research Council, 1985), 32, 33.
[4] Photo courtesy of Caltrans District 4.

Plate 2. Napa River Bridge under construction. This view is looking west from about mid-span.[5]

[5] Photo courtesy of Caltrans District 4.

Plate 3. Napa River Bridge shortly after its completion. Note the approach roads have not yet been built.[6]

Some notable concrete box girder bridges in California include the Mulholland Drive Overcrossing (Bridge 53 0739) in Los Angeles, which held title to the longest main span of this type at 235 feet from its construction in 1959 until 1974 when the Interstate 8 bridge over the Pine Valley Creek (Bridge 57 0692L/R) achieved a 450-foot main span. The Eel River Bridge (Bridge 04 0016L) constructed in 1974 in Humboldt County achieved a total length of 1,730 feet and main span of 300 feet. Five years later the Parrotts Ferry Bridge in Tuolumne County, completed in 1979, had a 639.8-foot-long main span and a total length of 1,292.7 feet. The Napa River Bridge (Bridge 21 0049) evaluated on this form has the longest total length of any continuous concrete box girder span in California at 2,230 feet.[7]

The bridge was built by the Guy F. Atkinson Company, which was founded in 1926 by Guy Frederick Atkinson in Oakland, California. In the 1930s, the firm was one of many to collaborate on construction of the Boulder (later Hoover) Dam in Nevada, and gained a reputation for building dams, at home and abroad. Some notable dam projects include the Grand Coulee Dam on the Columbia River in Washington state, the Hansen Dam in California, and the Mangla Dam in Pakistan, the world's largest hydroelectric project at the time of its dedication in 1968. In addition to their numerous international and domestic dam projects, the firm worked on large-scale, multi-million-dollar freeway contracts throughout California and across the country, building hundreds of miles of roads, ramps, interchanges, and bridges. Some notable bridge projects include the Talmadge Memorial Bridge in Savannah, Georgia completed in 1987 and the Maroon Creek Bridge in Aspen, Colorado completed in 2008. After the death of Guy Atkinson in 1968, the company continued to grow, until it was one of the largest construction firms in the United States toward the end of the twentieth century. However, as profits declined in the 1990s, the company

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[6] Richard M. Barker and Jay A. Puckett, *Design of Highway Bridges: An LRFD Approach*, (Hobokken, NJ: John Wiley & Sons, 2013), 14.
[7] Caltrans, Historical Resources Evaluation Report, Statewide Historic Bridge Inventory: 2015 Update, 1965-1974, 21, and DPR 523 forms Bridge 40 0048; Bridge 04 0016L; Bridge 04 0155.

filed for Chapter 11 bankruptcy in August 1997 and was bought out by Clark Construction Group Inc. of Maryland in 1998. As a subsidiary of Clark Construction, in the twenty-first century Atkinson Construction has continued to be a leading heavy-construction company within the United States.[8]

In addition to its length, the Napa River Bridge has also been recognized by bridge designers as an aesthetically noteworthy structure. The slender appearance of the superstructure enabled by the development and use of prestressed concrete for the box girders and the tall slender piers give the bridge a sleek, modern appearance. The bridge is also recognized for its harmonious design, that is, the proportionality between the span lengths and depth of girders, height and size of piers, the negative and positive spaces being in harmony with one another, and the structure's agreement with its surroundings. The Prestressed Concrete Institute (PCI) also honored the Napa River Bridge in 1978 as one of seven bridges receiving an award in PCI's annual awards program that honors buildings and structures that exhibit "excellence in design using precast, prestressed, and architectural precast concrete." In 1982, the bridge earned another award, this one a second place in the "Major Highway Structure Category," from the U.S. Department of Transportation.[9]

Recognition of the Napa River Bridge came during a period when consideration of bridge aesthetics had become entrenched in Caltrans' bridge design procedures. While most state-built bridges, and many local or consultant-designed bridges, received at least some attention to their overall appearance, more effort was placed on bridges in scenic or prominent locations such as the Napa River Bridge where specialized column shapes were employed, for example. Caltrans' predecessor, the Division of Highways, began to integrate improved aesthetics into the state's bridge design procedures in the early 1960s with architects trained in bridge design providing input about the appearance of structures. The Division of Highways, and later Caltrans, developed its bridge aesthetics program to integrate it into the department's overall design philosophy that included additions to bridge design manuals with instructions to have bridges designed so that they would be aesthetically compatible with their location. Bridge designers were encouraged to consider what they are leaving for future generations, which emphasized that a bridge's appearance was as important as the structure's design features for load and safety. Aligning with the dominant architectural trends in Modernism of the period, bridge designers aspired to simplicity and pureness of structure, avoiding ornamentation, celebrating the beauty of structural form, and emphasizing ease of construction and economy of design. Slender structures on slender piers or columns with minimal number of elements, and continuous or steady long lines were among the features of the aesthetical ideal at the time, for which the Division of Highways received various awards such as the steel girder San Mateo Creek (Eugene Doran Memorial) Bridge (35 0199) built in 1967 on I-280 in San Mateo County that featured prominent sculpted concrete piers. Although Division of Highways / Caltrans policy was to design aesthetically pleasing structures, and sometimes incorporated input from members of the public, there were also clear parameters that such efforts would not be unduly more expensive. During this period, Division of Highways and Caltrans bridge designers considered aesthetic qualities following general principles related to quality design that carefully analyzed proportions of bridges' structural and safety elements, attractive forms for the various bridge elements, compatibility of bridges within their setting, and consideration of current and future acceptance of the structures. Proportion related to the scale of a bridge's components relative to one another. Compatibility emphasized improvements on how bridges fit into their surroundings, which depended

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[8] "World Famed Dam Builder Is Dead at 93," Salem, Ore. *Statesman-Journal*, September 13, 1968, 7; "Guy Frederick Atkinson," Pacific Coast Architecture Database, accessed November 2023 at https://pcad.lib.washington.edu/person/3464/; "Santa Rosa Road Cost $3 Million," *The Napa Register*, June 14, 1956, 13; "Interstate 5's Widening OK'd in San Diego County," *Chico Enterprise-Record*, December 2, 1970, 8B; "It's official: Freeway 41 $27.6 million pact awarded," *The Fresno Bee*, June 17, 1980, D-1; J. Todd Foster, "Barge collision misses Choctawhatchee bridges," *Pensacola News Journal*, January 26, 1990, 1B; "Guy Atkinson earnings improve," *San Francisco Examiner*, August 14, 1990, B-4; "The State – Construction Services," *Los Angeles Times*, December 24, 1997, D2; "About Us – History," Atkinson Construction, accessed November 2023 at https://www.atkn.com/about-us.

[9] Richard M. Barker and Jay A. Puckett, *Design of Highway Bridges: An LRFD Approach*, (Hobokken, NJ: John Wiley & Sons, 2013), n.p; "16th Annual PCI Awards Program Winners," *Prestressed Concrete Institute Journal* 23, no 5 (Sep-Oct 1978), 44, 45, 62; John C. Ritner, "Bridges Produced by an Architectural Engineering Team," *Transportation Research Record 1044, Structures and Foundations* (Washington D.C.: Transportation Research Board National Research Council, 1985), 32, 33; James E. Roberts, *Aesthetics and Economy in Complete Concrete Bridge Design*, California Department of Transportation, Office of Structures Design, 1986 (available at the Caltrans Transportation Library), 7; James E. Roberts, "Aesthetic Design Philosophy Utilized for California State," *Journal of Urban Planning and Development*, Vol. 118, No. 4, December 1992, 150.

on the nature of the structure and site with some bridges designed to blend with their setting and others to stand out. Longtime Division of Highways Chief of Bridge Planning and Design Arthur L. Elliott, who led the Bridge Department from 1953 to 1973, stressed a bridge's compatibility was more important than its uniqueness of appearance, stating that "a properly designed structure has a sense of belonging in its particular location," noting that bridges that seem out of place are subject to criticism. He further specified that bridges do not need to be fancy to be compatible, with simple, trim, and plain lines, like those seen on the Napa River Bridge, considered more attractive than "contrived or contorted shapes." The Caltrans bridge aesthetics program resulted in many structures that incorporated basic aesthetic enhancements, as well as a smaller set of structures that included enhanced qualities and the few that had special aesthetic character.[10]

NRHP / CRHR Significance Evaluation

The Napa River Bridge is not significant under NRHP Criterion A / CRHR Criterion 1 for an important association with significant events, trends, or patterns of development. The bridge was one of many highway improvements carried out in the late 1970s and early 1980s by Caltrans throughout California and in this region. This bridge's construction did not allow access to new areas or initiate new patterns of development. Thus, the bridge is not important within the context of the development of the highway network, local growth and development, or any other trends or events at the national, state, or local level that would make it significant under this criterion. Under Criterion A / 1, the bridge is also associated with the slowdown of new highway and bridge construction undertaken by Caltrans during the 1970s owing to funding constraints. Following completion of the bridge in 1974, lack of funds delayed the start of construction of the approach roads until 1978, and completion until 1981. The Napa River Bridge, however, was merely one of the more visible and well-known examples of Caltrans' budget problems, but not historically important within the context of the funding crisis of the 1970s as it did nothing to affect the crisis.

Under NRHP Criterion B / CRHR Criterion 2, this bridge is not significant for an association with the lives of persons important to history. Research did not find that any individuals directly associated with this property have made demonstrably important contributions to history at the local, state, or national level. The bridge is named after George F. Butler, a California Highway Patrol officer and Napa resident who was killed in the line of duty, but Butler does not have any direct association with the bridge.

Under NRHP Criterion C / CRHR Criterion 3, the Napa River Bridge is significant for its type, period, and method of construction for its design and aesthetic value. The bridge's aesthetic value is derived from the slender appearance of the superstructure; tall, slender piers; the visual connection between the flared pier tops and arched girder spans; proportionality between the span lengths and depth of girders; and its harmony with its surroundings. Its design makes the bridge an excellent example of the Modern aesthetic in a bridge. The bridge is also significant under this criterion for being the longest concrete box girder bridge in California with a total length of 2,230 feet. The bridge does not qualify as the work of a master and it does not possess high artistic values.[11]

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[10] Arthur L. Elliott, "Aesthetics of Highway Bridges," *Civil Engineering*, June 1968, 66; James E. Roberts, "Aesthetic Design Philosophy Utilized for California State," *Journal of Urban Planning and Development*, Vol. 118, No. 4, December 1992, 138-141, 148, and 155; Arthur L. Elliott, "Esthetic Development of California's Bridges," presented at the April 14-18, 1980, ASCE Convention and Exposition, Portland, Oregon (Preprint 80-004), published in *Journal of Structural Engineering*, Vol. 109, No. 9, September 1983, paper no. 18240, 2159-63 and 2172-73; W.S. Ludlow, "Aesthetics in Bridge Design," *Manual of Bridge Design Practice* (State of California: Bridge Department, 1971), 16.3; Arthur L. Elliot, "Aesthetics in a Changing Economy," in *Meeting Preprint 2199* for American Society of Civil Engineers National Structural Engineering Meeting, April 22-26, 1974, *Cincinnati*, Ohio; JRP Historical Consulting, LLC, *Historical Resources Evaluation Report, Cold Spring Canyon Bridge (51 0037) Pedestrian Barrier Project, State Route 154, Santa Barbara County, California, 05-SB-154 PM 22.96, EA 05-0P910K,* prepared for Caltrans District 5, May 2007; Arthur L. Elliott, "Creating a Beautiful Bridge," in Committee on General Structures, Subcommittee on Bridge Aesthetics, *Bridge Aesthetics Around the World*, (Washington D.C.: Transportation Research Board, National Research Council. 1991), 217; Stewart Gloyd, "California – A Qualified Bridge Esthetics Case Study," *Concrete International*, Volume 16, No. 2, February 1994, 46-48.
[11] National Park Service, *National Register Bulletin 15: How to Apply the National Register Criteria for Evaluation* (Washington, D.C.: Department of the Interior, 1997), 17, 20.

Under NRHP Criterion D / CRHR Criterion 4, this property is not a significant or likely source of important information about historic construction materials or technologies that is not otherwise available through documentary evidence.

The boundary of the property encompasses the entire bridge structure. The period of significance is 1977, the year the bridge was completed. It is significant at the state level. The character-defining features are the piers, box girder superstructure, and deck.

California Historical Landmark Evaluation

A property may be eligible for designation as a California Historical Landmark (CHL) if it meets one of three criteria: the first, last, or most significant of its type within the state or within a large geographic region (i.e., Northern California); is associated with an individual or group having a profound influence on the history of California; or is a prototype of, or an outstanding example of, a period, style, architectural movement or construction, or is an important work of a master architect or builder. Of these, the Napa River Bridge meets the CHL Criteria as an outstanding example of a concrete box girder bridge and for its aesthetic design of its period. It is therefore eligible for designation as a CHL.

Integrity

Research and field observation revealed a seismic retrofit in 1994 consisting of installing additional piles on the pier footings to be the only alteration to the bridge except of routine maintenance. As such, it retains a high degree of integrity of materials, design, feeling, association, workmanship, setting, and location. Overall, the bridge maintains sufficient integrity to convey its historical significance.

Photographs (Continued):

Photograph 2: North elevation, camera facing southeast, June 1, 2022.

Photograph 3: South elevation, camera facing northeast, June 1, 2022.

Photograph 4: South elevation, camera facing northwest, June 1, 2022.

Photograph 5: Main span over Napa River, camera facing northwest, June 1, 2022.

Photograph 6: Pier and bridge soffit, camera facing west, June 1, 2022.

Photograph 7: West abutment, camera facing southwest, June 1, 2022.

Photograph 8: East abutment, camera facing southeast, June 1, 2022.

Photograph 9: Camera facing west from east abutment, June 1, 2022.

Photograph 10: Bridge deck, camera facing east, June 1, 2022.

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary # ______
HRI # ______
Trinomial ______
NRHP Status Code 3S
Other Listings ______
Review Code ______ Reviewer ______ Date ______

 ***Resource Name or #** (Assigned by recorder): Bridge 28 0009

P1. Other Identifier: Antioch Bridge; San Joaquin River Bridge
***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County**: Contra Costa / Sacramento
***b. USGS 7.5' Quad**: Antioch North **Date**: 2021 **T**:2N; **R**:2E; **Sec**: n/a; Mount Diablo Meridian
c. Address: State Route 160 City: Antioch Zip: n/a
d. UTM: (give more than one for large and/or linear resources) Zone: 10S; 609563.06 m E; 4209311.34 m N
e. Other Locational Data: The Antioch Bridge carries State Route (SR) 160 over the San Joaquin River at Antioch and connects Contra Costa and Sacramento counties. The bridge is at post mile 0.82 and in Caltrans District 4.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

The Antioch Bridge is 1.8 miles long with 70 spans. Spans 1 through 40 are composed of two continuous welded Cor-Ten weathering steel girders supported by reinforced concrete piers bents comprised of two columns topped by a concrete bent cap. The opening between the two columns is framed by a low-relief border that is slightly peaked on the bent cap (**Photograph 1 - 5**). The bents are set on concrete pier foundations that rise above the water line and have low-relief rectangular panels. The longest span is 460 feet in length. The bridge is 135 feet above the water at its highest point. Piers 12-31 have steel cross bracing between the piers. Spans 41-71 are reinforced concrete slabs on reinforced concrete piles (**Photograph 6**). The south abutment is a reinforced concrete seat type abutment, while the north abutment is a reinforced concrete diaphragm type (**Photograph 7**). The bridge's 38-foot-wide roadway cantilevers out about nine feet from the girders and carries two 12-foot lanes and 8-foot shoulders (**Photograph 8**). On each edge are concrete barrier walls topped by metal tube railing and a concrete median barrier runs along the centerline.

***P3b. Resource Attributes:** (List attributes and codes) HP19. Bridge
***P4. Resources Present:** ☐ Building ☒ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5b. Description of Photo: (View, date, accession#) **Photograph 1.** Camera facing northwest, April 28, 2022.

***P6. Date Constructed/Age and Sources:** ☒ Historic ☐ Prehistoric ☐ Both
1978 (Caltrans)

***P7. Owner and Address:**
State of California
Department of Transportation
1120 N Street
Sacramento, CA 95814

***P8. Recorded by:**
Steven J. "Mel" Melvin
JRP Historical Consulting, LLC
2850 Spafford Street
Davis, CA 95618

***P9. Date Recorded**: April 28, 2022

***P10. Survey Type:** (Describe)
Intensive

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") JRP Historical Consulting, LLC, "Historical Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2023 Update, 1975-1984," prepared for Caltrans, 2023.

***Attachments:** ☐ None ☐ Location Map ☐ Sketch Map ☒ Continuation Sheet ☒ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐Other (list) ______

BUILDING, STRUCTURE, AND OBJECT RECORD

***NRHP Status Code**: 3S

***Resource Name or #** (Assigned by recorder): Bridge 28 0009

B1. Historic Name: Antioch Bridge

B2. Common Name: Antioch Bridge

B3. Original Use: Bridge B4. Present Use: Bridge

***B5. Architectural Style**: Steel Girder

***B6. Construction History**: (Construction date, alteration, and date of alterations) Built in 1978; seismic retrofit in 2012 consisted of replacing elastomeric bearings, installing steel cross braces between piers 12-31; removing concrete walls on slab section of bridge; installing composite fiber jackets on the columns of concrete slab section.

***B7. Moved?** ☒ **No** ☐ **Yes** ☐ **Unknown** **Date:** ____________ **Original Location:** ____________

***B8. Related Features:** ___

B9. Architect: Caltrans b. Builder: Peter Kiewit & Sons

***B10. Significance: Theme**: Engineering **Area**: State

Period of Significance: 1978 **Property Type**: Bridge **Applicable Criteria**: C/3

(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

The Antioch Bridge is eligible for listing in the National Register of Historic Places (NRHP) and the California Register of Historical Resources (CRHR). This property has been evaluated in accordance with Section 106 of the National Historic Preservation Act of 1966 (as amended) (54 U.S.C. 306108) and its implementing regulations (36 CFR Part 800) and Section 15064.5(a)(2)-(3) of the California environmental Quality Act (CEQA) Guidelines, using the criteria outlined in Section 5024.1 of the California Public Resources Code (PRC). Additionally, the Antioch Bridge meets the California Historical Landmarks (CHL) Criteria as per PRC Section 5031 and qualifies as a California Historical Landmark. (See Section B10 on Continuation Sheet.)

B11. Additional Resource Attributes: ____________

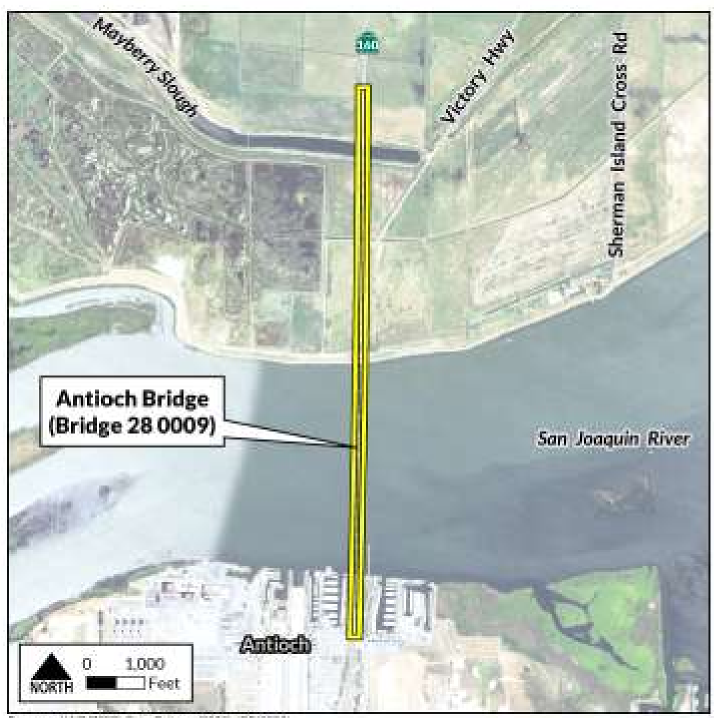
***B12. References**: Caltrans Bridge Database; Caltrans Bridge Inspection Reports; Caltrans, Bridge As-Built Plans; Caltrans, Statewide Historic Bridge Inventory Updates; *Sacramento Bee;* see also footnotes.

B13. Remarks:

***B14. Evaluator**: Steven J. "Mel" Melvin

***Date of Evaluation**: November 2023

(This space reserved for official comments.)



B10. Significance (continued):

Historic Context and Bridge History

The Antioch Bridge was completed in 1978, replacing a steel lift bridge constructed in 1926. By the 1970s, the former bridge had become inadequate to serve the volume of traffic it carried. Passing as it did over a busy waterway, the lift span was often raised, leading to long traffic delays. The bridge also had an extremely narrow, 21-foot-wide roadway with no shoulder, making for dangerous conditions. Adding to the bridge's problems were the freight ship collisions with the structure's support towers. This happened in 1958, 1963, and 1970, with each incident damaging the bridge, undermining its structural integrity, and causing long bridge closures for repair. The last collision occurred on September 4, 1970, when the SS Washington Bear struck the south lift span tower with the lift span in the up position, preventing the lift span from being lowered. For more than four months of closure, as state highway crews made repairs, motorists had to detour to either the Carquinez Bridge or Martinez Bridge. These several deficiencies led to a chorus of civic leaders, motorists, and politicians to call for a new bridge. Included in the list of advocates for a new bridge was the State Division of Highways, which in January 1972 submitted a formal recommendation to the state legislature to construct a new Antioch Bridge. Throughout 1972, legislation mandating a new bridge successfully made its way through the state legislature, championed by Senator John A. Nejedly of Walnut Creek. Funding was then secured from federal bridge replacement funds and state-issued bonds paid for by tolls collected from the Carquinez, Martinez, and Antioch bridges.[1]

Caltrans drafted design plans and put out a call for construction bids on April 14, 1976, and the $33.4 million contract was awarded to Peter Kiewit & Sons. The firm had its roots in Omaha, Nebraska, when brothers Peter and Andrew Kiewit formed the Kiewit Brothers masonry contracting company in 1884. Peter Kiewit, Sr., died in 1914, but his son, Peter, Jr., joined the firm around 1919 after completing a single year at Dartmouth College. Andrew Kiewit died in 1924, and Peter Jr. quickly became the head of the firm. Under his leadership, Kiewit & Sons Construction Company became one of the largest construction companies in the United States, undertaking thousands of projects, both domestic and international. The company built the Thule Air Force Base in Greenland, several large projects on the St. Lawrence Seaway, and Titan and Minuteman missile facilities in multiple states. It was involved with the construction of the Washington D.C. transit system, the New York City Rapid Transit system, and sections of the Alaska pipeline. Peter Kiewit, Jr., died in 1979, but the company continued to operate and expand through the end of the twentieth century and into the twenty-first. Kiewit Construction is still one of the largest construction and engineering organizations in the United States and is known for their work on all kinds of heavy-construction projects ranging from transportation systems to office buildings, industrial complexes, and factories, education and sports facilities to hotels and hospitals.[2]

Work got underway in the fall of 1976 on the new bridge on an alignment just west of the old bridge. The contractor used as many as 15 cranes for construction of the piers and superstructure, including five mounted on barges or ships. The largest of these vessels was the "Davy Crockett," a 450-foot-long World War II Liberty ship. The tallest piers at the main span raised the bridge to a height of 135 feet, tall enough to allow passage of large ships below. Piers were erected using 29-foot-tall hydraulic steel slipforms (**Plate 1**). Work proceeded through 1976 and 1977, and the bridge opening on November 5, 1978, more than two years ahead of schedule. Dedication events included opening the bridge for the public to walk across, a marching

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[1] "Antioch Bridge Will Reopen At 2 PM Monday," *Sacramento Bee,* January 16, 1971, 1; "New $25 Million Antioch Bridge Is Proposed," *Sacramento Bee,* January 19, 1972, 5; "New Antioch Bridge Wins Approval By Senate Vote," *Sacramento Bee,* July 12, 1972, 28; "Bill Proposes State Replace Antioch Span," *Sacramento Bee,* July 29, 1972, 30; "Antioch Bridge Should Be Replaced," *Sacramento Bee,* August 2, 1972, 20; "US Okays Funds For Replacing Antioch Bridge," *Sacramento Bee,* February 1, 1973, 2; "Caltrans Sets Bid Opening Date On New Antioch Bridge," *Sacramento Bee,* January 22, 1976, 15; "Public Notice No. 683," *Sacramento Bee,* June 26, 1976, 6.

[2] "Caltrans Sets Bid Opening Date On New Antioch Bridge," *Sacramento Bee,* January 22, 1976, 15; "Antioch Span: Bridge Work," *Sacramento Bee,* January 4, 1977, A3; "Our Story," Kiewit Corporation, accessed November 2023, https://www.kiewit.com/; "Peter Kiewit (Building Contractor)," Pacific Coast Architecture Database, accessed November 2023, https://pcad.lib.washington.edu/person/3287/; "Peter Kiewit, Resident of Omaha 27 Years, Dies," *The Omaha Daily News*, January 8, 1914, 1; "Omaha industrialist dies; wife formerly of Neenah," Appleton, Wis. *Post-Crescent*, November 4, 1979, C-7; "EMC trustee Kiewit succumbs at 79," *The Desert Sun*, November 5, 1979, 2; "Peter Kiewit Sons' Inc.," Bloomberg, accessed November 2023, https://www.bloomberg.com/profile/company/351642Z:US#xj4y7vzkg.

band, and attended by Senator John Nejedly, for whom the bridge was named (**Plate 2**). Unlike the old bridge, the new Antioch Bridge was not a lift span, had 12-foot lanes and 8-foot shoulders, and a 400-foot-wide navigation channel between piers allowed abundant room for ships to pass beneath. In 1984, the Antioch Bridge won one of the Federal Highway Administration's "Biennial Awards for Excellence," which recognized excellent design in highway facilities. The Antioch Bridge was "Judged Superior" as an "excellent example of positive visual impact and innovative structural design."[3] The recognition of the bridge's visual effect may have been, in part, a comparison to the old steel truss lift span bridge it replaced that was a considered at the time to be "spindly" and "creaky old," as well as a structural type which was undesirable in Caltrans' bridge aesthetics program.[4]

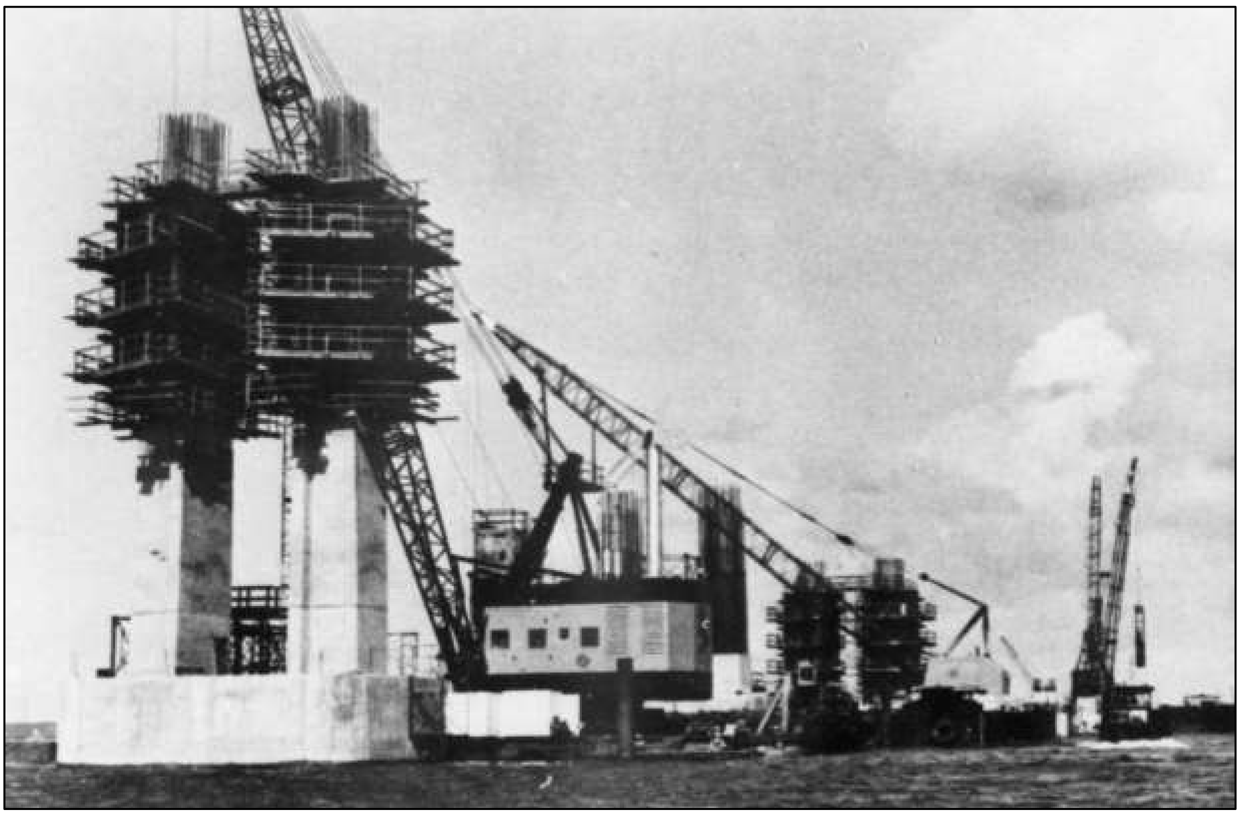

Plate 1. Erecting a pier using hydraulic steel slipforms in 1977.[5]

[3] "Antioch Span: Bridge Work," *Sacramento Bee,* January 4, 1977, A3; "New Antioch Bridge Due To Open," *Sacramento Bee,* September 21, 1978, 4; "Building a Better Bridge," *Sacramento Bee,* September 16, 1977, 11; "New Span Debuts," *Sacramento Bee,* November 6, 1978, 1; "Ceremony Marks New Span," *Sacramento Bee,* November 6, 1978, 6; "The Antioch Bridge," *Western Construction* 52, no. 6 (June 1977), 36, 37; "Slipforming Steel Bridge Construction," *Construction Methods and Equipment* 59, no. 10 (October 1977), 63-65; "Bridge Piers, Girders, Deck Go Up All At Once," *Engineering News-Record*, September 22, 1977, 54, 56; Robert Halligan, "Antioch Bridge," *The Fourword* (March 1988), 4, Folder: Antioch Bridge, Box: Antioch Bridge, Caltrans Transportation Library.
[4] Walt Wiley, "Antioch Bridge to Open," *Sacramento Bee*, September 21, 1978, 35; "Antioch: The Old, The New," *Sacramento Bee*, June 15, 1978, 3; Caltrans, *Bridge Planning and Design Manual, Volume III, Design Aids*, 1981, 10-2 to 10-7.
[5] "The Antioch Bridge," *Western Construction* 52, no. 6 (June 1977), 36.

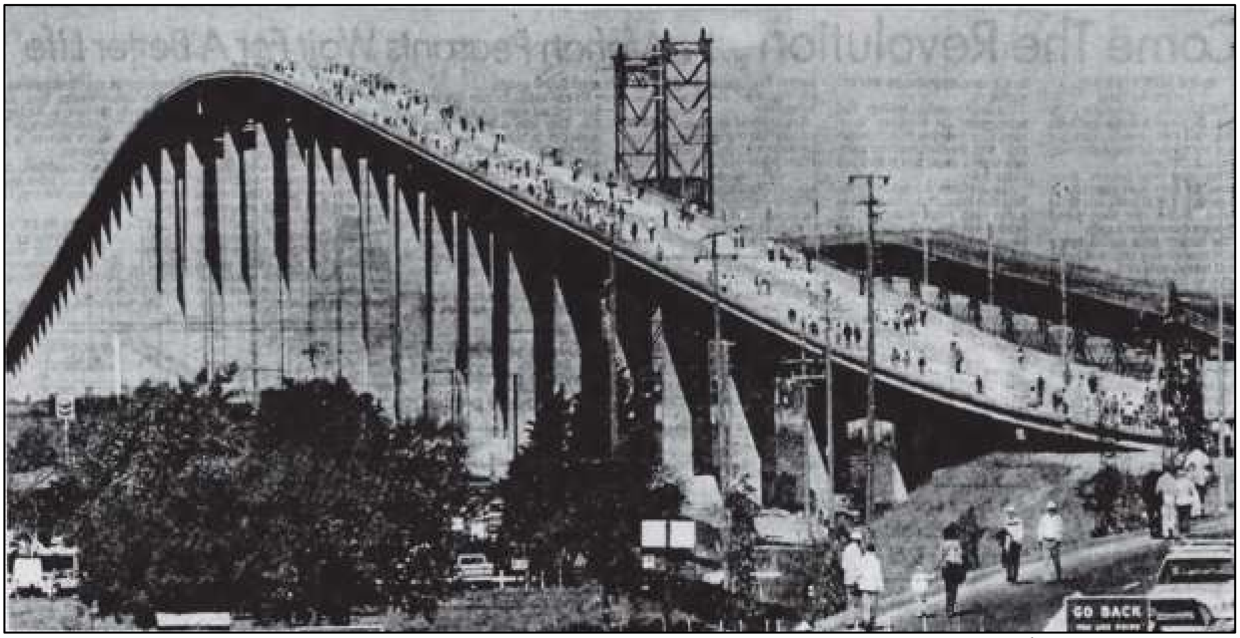

Plate 2. Antioch Bridge during the dedication ceremony, November 5, 1978.[6]

Steel girder bridges in California are far outnumbered by concrete bridges, yet are the second most common type in the state. Currently there are approximately 1,500 steel girder bridges in California, most built from the 1930s through the 1950s. After the 1950s, steel bridges proved less cost effective, and their popularity began to wane significantly. Between 1965 and 1974, the accounted for only 7 percent of the bridges built and 3.7 percent during the 1975-1984 period.[7]

A subset of steel girder bridges is the continuous welded steel type, which largely replaced the earlier riveted steel girder bridges. State bridge engineers first started experimenting with welding in bridge construction in the 1930s. Welded steel girders became common in the 1950s by which time the techniques had become refined, and the method was recognized as safe. By the 1960s, nearly any beam length could be fabricated. Welded steel girder bridges were lighter, cheaper, required less steel, had greater rigidity, and could be built with longer spans and that could carry greater loads. Lacking rivets and plates of earlier steel construction, many considered welded steel girder bridges to also be more aesthetically pleasing than other steel types. Also adding to the aesthetics of the bridge was the use of Cor-Ten steel for the girders. U.S. Steel Corporation innovated this type of steel in the 1960s. Also known as "weathering steel," Cor-Ten steel was intentionally formulated to rust, thereby forming a weatherproof brown patina surface that never needs painting. One of the earliest, if not the first, bridges in California to use Cor-Ten steel was the Mt. Aukum Road Bridge (Bridge 25C00027) over the Consumnes River in El Dorado County constructed in 1968.[8]

Among the more notable steel girder bridges in California that are: the Bradley Overhead on SR 140 in Merced (Bridge 39 0044, built in 1931), the first steel bridge in California to be constructed entirely with welded connections; the Whiskey Creek

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[6] "Ceremony Marks New Span," *Sacramento Bee,* November 6, 1978, 6.
[7] JRP Historical Consulting Services, "Historic Context Statement: Roadway Bridges of California: 1936-1959," prepared for Caltrans, January 2003, 37-40; Andrew Hope, Caltrans, "Caltrans Statewide Historic Bridge Inventory Update Survey and Evaluation of Common Bridge Types," November 2004, 1, 2-5; Caltrans, Historical Resources Evaluation Report, Statewide Historic Bridge Inventory: 2015 Update, 1965-1974, 6, and Eel River Bridge (04 0014) DPR 523 form.
[8] JRP Historical Consulting Services, "Historic Context Statement: Roadway Bridges of California: 1936-1959," prepared for Caltrans, January 2003, 37-40, 70; Caltrans, Historical Resources Evaluation Report, Statewide Historic Bridge Inventory: 2015 Update, 1965-1974, Eel River Bridge (04 0014) DPR 523 form; "Structure Will Utilize Unusual Steel Framing," *Sacramento Bee,* April 14, 1968, D14; "Steel Used for Barrier on Freeway," *Redwood City Tribune,* November 23, 1966, 9; "New Consumnes Bridge to Paint Itself," *Stockton Evening Record,* November 11, 1968, 14.

Bridge carrying SR 199 (Bridge 06 0096, built in 1961), with a 350-foot main span, the longest span in California at the time; the Interstate 280 bridge over San Mateo Creek (Bridge 35 0199, built in 1967), which surpassed the Whiskey Creek Bridge as the longest span at 360 feet; and the Don Pedro Reservoir SR 120 Bridge (Bridge 32 0018, built in 1971), with a main span of 350 feet.[9]

Caltrans designed and built the Antioch Bridge during a period when consideration of bridge aesthetics had become entrenched in the agency's bridge design procedures. While most state-built bridges, and many local or consultant-designed bridges, received at least some attention to their overall appearance, more effort was placed on bridges in scenic or prominent locations. Caltrans' predecessor, the Division of Highways, began to integrate improved aesthetics into the state's bridge design procedures in the early 1960s with architects trained in bridge design providing input about the appearance of structures. The Division of Highways, and later Caltrans, integrated its bridge aesthetics program into the department's overall design philosophy that included additions to bridge design manuals with instructions regarding bridge aesthetics, as well as the development of standard features, such as columns, railings, and surface treatments, which met the aesthetic principles being promoted. Bridge designers were encouraged to consider what they were leaving for future generations, which emphasized that a bridge's appearance was as important as the structure's design features for load and safety. Aligning with the dominant architectural trends in Modernism of the period, bridge designers aspired to simplicity and pureness of structure, avoiding ornamentation, celebrating the beauty of structural form, and emphasizing ease of construction and economy of design. Slender structures on slender piers or columns with minimal number of elements, and continuous or steady long lines were among the features of the aesthetical paradigm at the time, for which the Division of Highways received various awards, including those for the steel girder San Mateo Creek (Eugene Doran Memorial) Bridge (35 0199) built in 1967 on I-280 in San Mateo County that featured prominent sculpted concrete piers and the welded steel arch Cold Spring Canyon Bridge (51 0037) built in 1963 on SR 154 in Santa Barbara County. Although Division of Highways / Caltrans policy was to design aesthetically pleasing structures, and sometimes incorporated input from members of the public, there were also clear parameters that such efforts would not be unduly more expensive. During this period, Division of Highways and Caltrans bridge designers considered aesthetic qualities following general principles related to quality design that carefully analyzed proportions of bridges' structural and safety elements, attractive forms for the various bridge elements, compatibility of bridges within their setting, and consideration of current and future acceptance of the structures. The Caltrans program resulted in many bridges that incorporated basic aesthetic enhancements, as well as a smaller set of structures that included enhanced qualities and the few that had special aesthetic character.[10]

The Antioch Bridge's design included features that provided some enhancement to its aesthetic character. The choice to build a structure that would span the San Joaquin River for large ships, rather than replacing the bridge with another lift span, dictated the overall shape of the bridge that rose and descended from either shore, and the structure required large girders and piers. The depth of the large, brown-colored weathered steel girders that blended with the shadow created by the roadway it

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[9] JRP Historical Consulting Services, "Historic Context Statement: Roadway Bridges of California: 1936-1959," prepared for Caltrans, January 2003, 37-40; Andrew Hope, Caltrans, "Caltrans Statewide Historic Bridge Inventory Update Survey and Evaluation of Common Bridge Types," November 2004, 1, 2-5; Caltrans, Historical Resources Evaluation Report, Statewide Historic Bridge Inventory: 2015 Update, 1965-1974, Don Pedro Reservoir SR 120 Bridge (32 0018) DPR 523 form.

[10] Arthur L. Elliott, "Aesthetics of Highway Bridges," *Civil Engineering*, June 1968, 65-66; James E. Roberts, "Aesthetic Design Philosophy Utilized for California State," *Journal of Urban Planning and Development*, Vol. 118, No. 4, December 1992, 138-141, 148, and 155; W.S. Ludlow, "Aesthetics in Bridge Design," *Manual of Bridge Design Practice* (State of California: Bridge Department, 1971), 16.3; Arthur L. Elliot, "Aesthetics in a Changing Economy," in *Meeting Preprint 2199* for American Society of Civil Engineers National Structural Engineering Meeting, April 22-26, 1974, *Cincinnati*, Ohio, 7-8; California Division of Highways, *Bridge Design Practice,* 1970, 16-15 to 16-20; JRP Historical Consulting, LLC, *Historical Resources Evaluation Report, Cold Spring Canyon Bridge (51 0037) Pedestrian Barrier Project, State Route 154, Santa Barbara County, California, 05-SB-154 PM 22.96, EA 05-0P910K,* prepared for Caltrans District 5, May 2007; James E. Roberts, *Aesthetics and Economy in Complete Concrete Bridge Design*, California Department of Transportation, Office of Structures Design, 1986, available at the Caltrans Transportation Library, 3, 5, and 6; Arthur L. Elliott, "Creating a Beautiful Bridge," in Committee on General Structures, Subcommittee on Bridge Aesthetics, *Bridge Aesthetics Around the World*, (Washington D.C.: Transportation Research Board, National Research Council. 1991), 215-217; Stewart Gloyd, "California – A Qualified Bridge Esthetics Case Study," *Concrete International*, Volume 16, No. 2, February 1994, 46-48.

carried were made less discernable, for example, by employing the standard design of placing them under a wide cantilevered roadway on either side. This, along with the inset panel running the length of the railing exterior, improved the slenderness of the superstructure's overall appearance. The piers also received modest treatment that included pointed openings framed by wide boarders. The bridge's concrete received the standard smooth finish and no other surface treatments were employed.

NRHP / CRHR Significance Evaluation

The Antioch Bridge is not significant under NRHP Criterion A / CRHR Criterion 1 for an important association with significant events, trends, or patterns of development. The bridge was one of many highway improvements carried out in the late 1970s by Caltrans throughout California and in this region. It is also not the first bridge at this location and did not initiate new patterns of development. Thus, the bridge is not important within the context of the development of the highway network, local growth and development, or any other trends or events at the national, state, or local level that would make it significant under this criterion.

Under NRHP Criterion B / CRHR Criterion 2, this bridge is not significant for an association with the lives of persons important to history. Research did not find that any individuals directly associated with this property have made demonstrably important contributions to history at the local, state, or national level. The bridge is named after State Senator John A. Nejedly, who advocated for construction of the bridge and sponsored the legislation to do so through the state legislature. While Nejedly's efforts were important to the realization of the bridge, Nejedly's achievements over his career do not elevate him to the status of a person important to history.

The Antioch Bridge meets NRHP Criterion C / CRHR Criterion 3 as a significant example of a steel girder bridge and thus it embodies the distinctive characteristics of a type and method of construction from its period. Completed in 1978, the bridge is significant for the length of its longest span. Measuring 460 feet, it is the longest single span on a steel girder bridge in California. As noted above, the next longest steel girder bridge main spans are the Whiskey Creek Bridge at 350-foot main span, the Interstate 280 bridge over San Mateo Creek at 360 feet; and the Don Pedro Reservoir SR 120 Bridge (Bridge 32 0018, built in 1971), with a main span of 350 feet. The bridge is not significant for its visual appearance, as its modest aesthetic enhancements do not embody sufficient qualities that distinguish it within the context of bridges from its period at the local, state, or national level and it does not possess high artistic value. Furthermore, the Antioch Bridge is not the work of a master.

Under NRHP Criterion D / CRHR Criterion 4, this property is not a significant or likely source of important information about historic construction materials or technologies that is not otherwise available through documentary evidence.

The boundary of the historic property encompasses the entire bridge structure. The period of significance is 1978, the year the bridge was completed. It is significant at the state level. The character-defining features are the piers, steel girder section of the bridge, and the deck.

California Historical Landmark Evaluation

A property may be eligible for designation as a California Historical Landmark (CHL) if it meets one of three criteria: the first, last, or most significant of its type within the state or within a large geographic region (i.e., Northern California); is associated with an individual or group having a profound influence on the history of California; or is a prototype of, or an outstanding example of, a period, style, architectural movement or construction, or is an important work of a master architect or builder. Of these, the Antioch Bridge meets the CHL Criteria as an outstanding example of a steel girder bridge. It is therefore eligible for designation as a CHL.

Integrity

In addition to meeting the NRHP and CRHR significance criterion, the Antioch Bridge also retains a high degree of integrity. The main alteration to the bridge since its construction was a seismic retrofit in 2012 that consisted of replacing elastomeric bearings, installing steel cross braces between piers 12-31; removing concrete walls on slab section of bridge; and installing composite fiber jackets on the columns of concrete slab section. While these alterations have changed the bridge's appearance somewhat, they are relatively minor, not highly visible, and do not substantially alter the structure of the bridge or its historic appearance. Thus, the bridge retains a high degree of integrity of design, materials, and workmanship as well as complete integrity of location, setting, feeling, and association. Overall, the bridge maintains sufficient integrity to convey its historical significance.

Photographs (Continued):

Photograph 2: Central spans, camera facing northeast, April 28, 2022.

Photograph 3: Piers near the south end, camera facing northeast, April 28, 2022.

Photograph 4: Elevation view of span between Pier 9 and Pier 10, camera facing west, April 28, 2022.

Photograph 5: Southernmost pier, camera facing northeast, April 28, 2022.

Photograph 6: North end, camera facing south, April 28, 2022.

***Resource Name or #** (Assigned by recorder): Bridge 28 0009

***Recorded by**: S.J. "Mel" Melvin   ***Date**: April 28, 2022   ☒Continuation ☐Update

Photograph 7: South abutment, camera facing southwest, April 28, 2022.

Photograph 8: Bridge deck from north end, camera facing south, April 28, 2022.

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Z
Other Listings
Review Code Reviewer Date

***Resource Name or #** (Assigned by recorder): Bridge 29 0269

P1. Other Identifier: Crosstown Freeway Viaduct

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County**: San Joaquin
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad**: Stockton West **Date**: 2021 **T**: 1N; **R**: 6E; **Sec**: n/a; Mount Diablo Meridian
c. Address: State Route 4 City: Stockton Zip: n/a
d. UTM: (give more than one for large and/or linear resources) Zone: 10S; 650845.91 m E; 4201805.56 m N
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate)
The Crosstown Freeway Viaduct carries State Route (SR) 4 through Stockton from the Interstate 5 interchange to Union Street. The bridge is in Caltrans District 10.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)
The Crosstown Freeway Viaduct is an elevated freeway carrying SR 4 through Stockton (**Photograph 1**). Most of the spans are cast-in-place post-tensioned concrete box girder design. Six spans – those that cross over city streets – are precast, prestressed inverted T-girders. There are also several onramps and off ramps connecting with city streets (**Photographs 2 - 9**). The bridge is supported by flared reinforced concrete piers with octagonal cross sections and pebble aggregate finish on two of the sides (**Photographs 10 & 11**). The side elevations have the same pebble aggregate finish running along the fascia just below the railing and a course of decorative molded rectangles adorning the sloped girder sides. At each end of the bridge are reinforced concrete abutments; the walls of the west abutment also have molded rectangle designs (**Photographs 12 & 13**). Eight lanes run on the concrete deck that has a concrete center barrier wall, and low concrete walls at each edge with a single-bar metal railing mounted atop. The bridge is 4,367 feet long composed of 36 spans, nearly uniform in length, the longest are 130 feet.

***P3b. Resource Attributes:** (List attributes and codes) HP19. Bridge
***P4. Resources Present:** ☐ Building ☒ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5b. Description of Photo: (View, date, accession#) **Photograph 1.** South elevation, camera facing northeast, April 28, 2022.

***P6. Date Constructed/Age and Sources:** ☒ Historic ☐ Prehistoric ☐ Both
1975 / 1988 (Caltrans)

***P7. Owner and Address:**
State of California
Department of Transportation
1120 N Street
Sacramento, CA 95814

***P8. Recorded by:**
Steven J. "Mel" Melvin
JRP Historical Consulting, LLC
2850 Spafford Street
Davis, CA 95618

***P9. Date Recorded**: April 28, 2022

***P10. Survey Type:** (Describe)
Intensive

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") JRP Historical Consulting, LLC, "Historical Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2023 Update, 1975-1984," prepared for Caltrans, 2023.

***Attachments:** ☐ None ☐ Location Map ☐ Sketch Map ☒ Continuation Sheet ☒ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐Other (list)

***NRHP Status Code**: 6Z

***Resource Name or #** (Assigned by recorder): Bridge 29 0269

B1. Historic Name: Crosstown Freeway Viaduct
B2. Common Name: Crosstown Freeway
B3. Original Use: Bridge B4. Present Use: Bridge
***B5. Architectural Style**: Concrete Box Girder
***B6. Construction History**: (Construction date, alteration, and date of alterations) Section between Center Street and Stanislaus Street built in 1975; section between Stanislaus Street and Union Street built in 1988; no alterations except for routine maintenance.
***B7. Moved?** ☒ **No** ☐ **Yes** ☐ **Unknown** **Date:** ______ **Original Location:** ______
***B8. Related Features:** ___
B9. Architect: Caltrans b. Builder: unknown
***B10. Significance: Theme**: n/a **Area**: n/a
Period of Significance: n/a **Property Type**: n/a **Applicable Criteria**: n/a
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

The Crosstown Freeway Viaduct is not eligible for listing in the National Register of Historic Places (NRHP) or the California Register of Historical Resources (CRHR). This property has been evaluated in accordance with Section 106 of the National Historic Preservation Act of 1966 (as amended) (54 U.S.C. 306108) and its implementing regulations (36 CFR Part 800) and Section 15064.5(a)(2)-(3) of the California Environmental Quality Act (CEQA) Guidelines, using the criteria outlined in Section 5024.1 of the California Public Resources Code (PRC). Additionally, the Crosstown Freeway Viaduct does not meet the California Historical Landmarks (CHL) Criteria as per PRC Section 5031 and is not a California Historical Landmark. (See Section B10 on Continuation Sheet.)

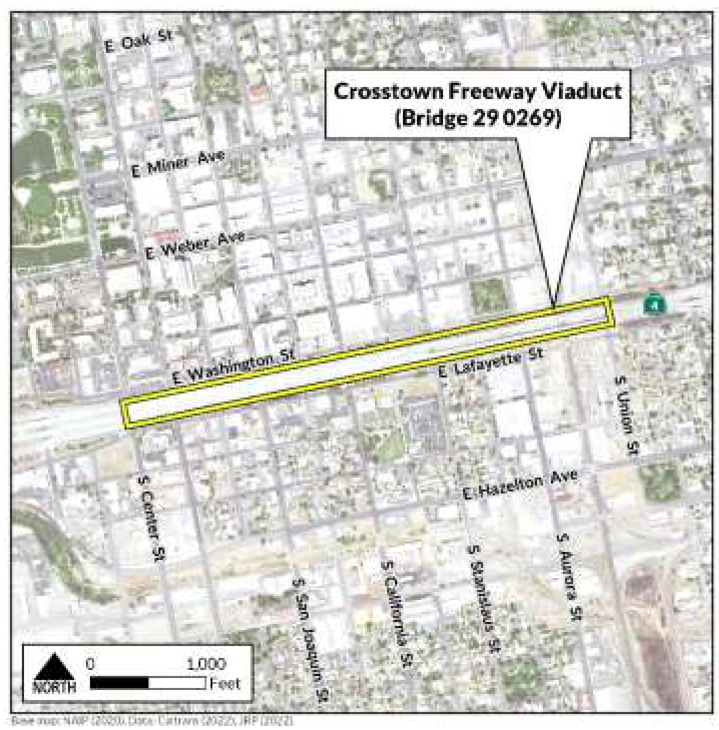
B11. Additional Resource Attributes: ______

***B12. References**: Caltrans Bridge Database; Caltrans Bridge Inspection Reports; Caltrans, Bridge As-Built Plans; Caltrans, Statewide Historic Bridge Inventory Updates; *Sacramento Bee;* see also footnotes.

B13. Remarks:

***B14. Evaluator**: Steven J. "Mel" Melvin
***Date of Evaluation**: November 2023

(This space reserved for official comments.)



B10. Significance (continued):

Historic Context and Bridge History

Construction of the Crosstown Freeway Viaduct was part of the Crosstown Freeway project, built to connect Interstate 5 (I-5) with State Route (SR) 99, the two major north-south freeways in the Central Valley. The freeway consists of the western viaduct section and an eastern section that runs in an excavated trench. This freeway had been under consideration as part of Stockton's Freeway Master Plan since the 1950s with the City of Stockton adopting the route in 1962, but it took until the early 1970s to settle on a design, for funding to become available, and for the I-5 interchange to be completed in 1972. The project came to fruition in part through the advocacy of local radio station owner Ort Lofthus.[1]

Orton "Ort" Julian Lofthus was born June 29, 1925, in Graceville, Minnesota and raised in Chippewa Falls, Wisconsin. After high school, he went to work at the Chippewa Falls Chamber of Commerce, before being drafted into the Navy in 1943 when the United States joined World War II. After the war, Lofthus attended the University of Washington where he got a degree in journalism and then began working as an advertising and business manager at a local newspaper. In September 1953, Lofthus and his wife, Sylvia Marie (nee Kingston), moved to Stockton so that Ort could take a job as general manager at a radio station owned by Sylvia's parents, KXOB. As soon as he moved to Stockton, Lofthus got involved in local causes, helping promote a Christmas party for a local Children's Home in December 1953. By 1955, he was serving as president of the San Joaquin County Chapter of the American Cancer Society, vice-president of the Stockton Advertising Club, and "tail twister" of the Lions Club. Lofthus's work in radio was just as prolific as his work in the community and he came to own the Stockton radio stations KJOY and KJAX, and co-founded Big Valley Cable, which was eventually sold to Comcast. He held many illustrious positions during his lifetime, including president of the Greater Stockton Chamber of Commerce and head of the California Broadcasters Association.[2]

The same year that Ort and Sylvia Lofthus moved to Stockton, 1953, the Stockton Freeway Master Plan proposed a freeway running east-west across town to connect SR 99 and I-5. He immediately saw the potential for such a freeway and began advocating for its construction, using his connections within the Chamber of Commerce and Downtown Merchants Association. After construction work was put on hold in 1975, Lofthus organized a pressure group called FOCUS (Finish Our Crosstown—United Stockton) in 1979 to keep the project from dying out. He used his radio stations and media contacts to advertise and generate public support for the freeway, and organized community events to keep the issue in the public eye. He frequently met with legislators, organized letter-writing campaigns, and insisted on gathering with city, county, and Caltrans

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[1] "Freeway Plan Stirs Dispute in Stockton," *Sacramento Bee*, March 6, 1963, 40; "Businessmen in Stockton Launch Campaign To Get Freeway Funds Unfrozen," *Sacramento Bee*, July 25, 1971, 3; "Open to Traffic," *Sacramento Bee*, October 1, 1972, 4; "Stockton Sues State Over Freeway," *Sacramento Bee*, August 31, 1979, 5; Gene Turner, "End of a long road: 40 years, $150 million," *Stockton Record*, September 12, 1993; Memo to Jim Drago, Director's Office, from District X, Sacramento, August 13, 1993 in San Joaquin County – Route 4 – Articles & Documents, Box 1, San Joaquin County – Route 4, Transportation Library and History Center, California Department of Transportation, Sacramento, California.

[2] U.S. Selective Service System, *World War II Draft Registration Card*, Chippewa, Wisconsin, "Orton Julian Lofthus," Serial no. W70, 29 June 1943; U.S. Census Bureau, *Fifteenth Census of the United States—Population Schedule*, Wisconsin, Chippewa County, Chippewa Falls, Enumeration District 9-13, Sheet 13B, Washington, D.C., 1930 (accessed via Ancestry.com); U.S. Census Bureau, *Sixteenth Census of the United States—Population Schedule*, Wisconsin, Chippewa County, Chippewa Falls, Enumeration District 9-13B, Sheet 1B, Washington, D.C., 1940 (accessed via Ancestry.com); Ben Irwin, "'He has acted on his commitment to make Stockton a better place': Ort Lofthus dies at 96," *The Record*, March 8, 2022, accessed November 2023, https://www.recordnet.com/story/news/2022/03/08/stockton-icon-ort-lofthus-dead-96/9433617002/; U.S. Census Bureau, *Seventeenth Census of the United States—Population Schedule*, Washington, King County, North Bend, Enumeration District 17-26, Sheet 71, Washington, D.C., 1950 (accessed via Ancestry.com); "Sylvia Lofthus Obituary," Recordnet.com, accessed November 2023, https://www.legacy.com/us/obituaries/recordnet/name/sylvia-lofthus-obituary?id=8632408; R. L. Polk & Co., *Polk's Stockton City Directory, Including Lodi (San Joaquin County, Calif.), 1953-54* (San Francisco, CA: R. L. Polk & Co., 1953), 337; "Cancer Society to Plan Year's Program," *Stockton Record*, September 24, 1955, 19; "Ad Club Elects Berg President," *Stockton Record*, May 28, 1955, 2; "Lions Club Seats New President," *Stockton Record*, June 15, 1955, 13; Ben Remington, "Ceremony Marks Start of $40-Million Int. 5 Link," *Stockton Record*, Jun 26, 1969, 11; "Boys Club Head at Round Table," Stockton Record, January 4, 1969, 18;

officials to discuss the Crosstown Freeway every two months. Funding for the project finally began again in 1986, and that year, the freeway was dedicated as the Ort Lofthus Freeway. Ort's work on the freeway began when he was 28, and he was 67 when it was completed in 1993. Ort J. Lofthus died on March 7, 2022.[3]

Work began on the first phase of the Crosstown Freeway Viaduct in June 1973, a seven-block section between South Center Street and Stanislaus Street. The new freeway bisected the portion of downtown Stockton that was part of the city's original plat and cut a swath of new elevated highway west to east between Washington and Lafayette streets requiring acquisition and demolition of many blocks of extant buildings. As this section neared completion in early 1975, Caltrans announced work would stop at Stanislaus Street due to lack of funding (**Plate 1**). The first section of the bridge opened in October 1975 at a cost of $9.1 million. However, fanfare for the opening was tempered by the stoppage of work on the overall freeway project as part of Caltrans' state-wide halt in freeway construction during the fiscal crisis of the period. The incomplete bridge and the overall short length of the new freeway quickly earned it the moniker the "Freeway to Nowhere." As time passed with no plan to resume work on the project, the City of Stockton mounted campaigns to finish the freeway including suing the State of California, collecting petition signatures, and lobbying the State Legislature. These battles continued as a lack of money for new highway construction delayed projects throughout California. Finally, in 1985, Caltrans allocated funding for the second phase of the freeway project, a section between Stanislaus Street to Wilson Way. This phase included completing the missing section of the Crosstown Freeway Viaduct between Stanislaus Way and Union Street, which was finished in 1988. Caltrans completed the Crosstown Freeway connecting I-5 and SR 99 in 1993.[4]

Plate 1. Photo from 1982 showing the I-5 / SR 4 interchange at the left and the abrupt end of the Crosstown Freeway Viaduct at Stanislaus Street at the right.[5]

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[3] Division of Highways, "Ort Lofthus and the Stockton Crosstown Freeway," 1993, courtesy of Caltrans; "Ort Lofthus" Recordnet.com, posted March 11, 2022, https://www.recordnet.com/obituaries/p0197934

[4] "I-5, Stockton Freeway Projects Delayed By Highway Fund Lack," *Sacramento Bee*, February 9, 1975, 3; "Stockton Sets Freeway Project," *Sacramento Bee*, June 25, 1973, 13; "New $9.1 Million Freeway Link to Open In Stockton," *Sacramento Bee*, October 7, 1975, 13; , 13; "Crosstown Completion Sought," *Sacramento Bee*, May 3, 1979, 7; "Stockton Sues State Over Freeway," *Sacramento Bee*, August 31, 1979, 5; "Unfinished Forever?," *Sacramento Bee*, November 18, 1982, 9; "Second Part of Stockton Freeway OK'd," *Sacramento Bee*, July 26, 1985, 23; "Concrete Columns Being Poured for Crosstown Freeway," *Sacramento Bee*, June 2, 1986, 1; "Stockton Gets New Freeway Link," *Sacramento Bee*, October 21, 1993, 5; "Stockton To Get Shortcut," *Sacramento Bee*, September 7, 1993, 12; Memo to Jim Drago, Director's Office, from District X, Sacramento, August 13, 1993 in San Joaquin County – Route 4 – Articles & Documents, Box 1, San Joaquin County – Route 4, Transportation Library and History Center, California Department of Transportation, Sacramento, California..

[5] "Unfinished Forever?," *Sacramento Bee*, November 18, 1982, 9.

In 1976, the Prestressed Concrete Institute (PCI) named the Crosstown Freeway Viaduct one of 19 winners of an award given for "achievement in aesthetic expression, function, and economy" in the use of prestressed and/or precast concrete. The PCI recognized the Crosstown Freeway Viaduct for its aesthetic qualities stating that "Its composition of rather short units does not disturb the attractive fascia slope, and the parapet walls and specially-precast exterior girders are striking. The design is economical." A later journal article published in 1992 authored by the Caltrans Division of Structures Chief also discussed the aesthetic enhancements of the bridge, specifically the pebble aggregate sides of the piers and railing walls, and the molded rectangles on the girder sides. In this article, the bridge was used as an example to illustrate what could be done to enhance the aesthetic appeal of a bridge without detracting from its primary function or adding significant cost.[6]

The Crosstown Freeway Viaduct is a concrete box girder bridge. The first concrete box girder bridges in California were erected in the mid-1930s. The type was innovative for its design flexibility, helping to meet the growing demand for longer and wider bridges as well as skewed bridges that permitted straighter, more efficient, and safer roadways. The slender bridge profiles with harmonious proportions allowed engineers to achieve the modern design aesthetic thought to showcase transportation efficiency. Because they required less steel in their construction, concrete box girder bridges could also be erected at significant cost savings. Only a small number of concrete box girder bridges were built before World War II, but after the war their numbers rapidly increased. By 1965, there were more than 1,500 concrete box girder bridges in California. More than 3,200 of the type were built between 1965 and 1974, and more than 1,000 between 1975 and 1984.[7]

Some notable concrete box girder bridges in California include the Mulholland Drive Overcrossing (Bridge 53 0739) in Los Angeles, which held title to the longest main span at 235 feet from its construction in 1959 until 1974 when the Interstate 8 bridge over the Pine Valley Creek (Bridge 57 0692L/R) achieved a 450-foot main span. The Eel River Bridge north of Rio Dell (Bridge 04 0016L) constructed in 1974 in Humboldt County achieved a total length of 1,730 feet and main span of 300 feet. The Parrotts Ferry Bridge in Tuolumne County, completed in 1979, had a 639.8-foot-long main span and a total length of 1,292.7 feet. The Napa River Bridge (Bridge 21 0049), erected in 1977, has the longest total length of any continuous concrete box girder span in California at 2,230 feet. The latter two bridges were noted for their aesthetic design. While the Crosstown Freeway Viaduct is 4,367 feet, its concrete box girder sections are interrupted by inverted concrete T-girder spans over the city streets.[8]

Caltrans designed and built the Crosstown Freeway Viaduct during a period when consideration of bridge aesthetics had become entrenched in the agency's bridge design procedures. While most state-built bridges, and many local or consultant-designed bridges, received at least some attention to their overall appearance, more effort was placed on bridges in scenic or prominent locations. Caltrans' predecessor, the Division of Highways, began to integrate improved aesthetics into the state's bridge design procedures in the early 1960s with architects trained in bridge design providing input about the appearance of structures. The Division of Highways, and later Caltrans, integrated its bridge aesthetics program into the department's overall design philosophy that included additions to bridge design manuals with instructions regarding bridge aesthetics, as well as the development of standard features, such as columns, railings, and surface treatments, which met the aesthetic principles being promoted. There came to be essentially two types of architectural treatment, those added to standard structures and those that united architecture and engineering. Dictated by cost and function criteria, treatments incorporated into standard structures could include the addition of grooves and textures, for example, while the rarer marriage of architecture and engineering could include shapes, proportion, scale of piers, abutments, and superstructure that varied from standard structures. Bridge designers were encouraged to consider what they were leaving for future generations, which emphasized that a bridge's appearance was as important as the structure's design features for load and safety. Aligning with the dominant architectural trends in Modernism of the period, bridge designers aspired to simplicity and pureness of structure, avoiding ornamentation, celebrating the beauty of structural form, and emphasizing ease of construction and economy of design. Slender structures on slender piers

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6 "Announce PCI 14th Annual Awards Winners," *Modern Concrete* 40, no. 9 (January 1977), 60; James E. Roberts, "Aesthetic Design Philosophy Utilized for California State Bridges," *Journal of Urban Planning and Development* 118, no. 4 (December 1992), 158, 162.
7 Myra L. Frank & Associated, "Caltrans Historic Bridge Inventory Update: Concrete Box Girder Bridges," prepared for Caltrans, August 2003, 5-11.
8 Caltrans, Historical Resources Evaluation Report, Statewide Historic Bridge Inventory: 2015 Update 1965-1974, 21 and DPR 523 forms Bridge 40 0048; Bridge 04 0016L; Bridge 04 0155.

or columns with minimal number of elements, and continuous or steady long lines were among the features of the aesthetical paradigm at the time, for which the Division of Highways received various awards, including those for singular bridges such as the steel girder San Mateo Creek (Eugene Doran Memorial) Bridge (35 0199) built in 1967 on I-280 in San Mateo County that featured prominent sculpted concrete piers and the welded steel arch Cold Spring Canyon Bridge (51 0037) built in 1963 on SR 154 in Santa Barbara County. Although Division of Highways / Caltrans policy was to design aesthetically pleasing structures, and sometimes incorporated input from members of the public, there were also clear parameters that such efforts would not be unduly more expensive. During this period, Division of Highways and Caltrans bridge designers considered aesthetic qualities following general principles related to quality design that carefully analyzed proportions of bridges' structural and safety elements, attractive forms for the various bridge elements, compatibility of bridges within their setting, and consideration of current and future acceptance of the structures. The Caltrans program resulted in many bridges that incorporated basic aesthetic enhancements, as well as a smaller set of structures that included enhanced qualities and the few that had special aesthetic character.[9]

Caltrans designed the Crosstown Freeway Viaduct with various enhanced visual elements on an otherwise standard box girder / inverted T-girder raised highway. The enhancements are the pattern of molded rectangles on the slanted box girders / inverted T-girders that extend on to the west end abutment, flared octagonal piers with pebble aggregate insets, and pebble aggregate fascia. While Caltrans received some praise for the structure's aesthetic design at the time, perhaps in comparison to other viaducts with utilitarian designs, the overall outcome of the Crosstown Freeway Viaduct is restrained. The pebble aggregate, for example, that was intended to be compatible with nearby brick buildings, appears unsuccessful in this effort as its texture and color do not blend with the limited older building stock adjacent to the freeway corridor.

NRHP / CRHR Significance Evaluation

The Crosstown Freeway Viaduct is not significant under NRHP Criterion A / CRHR Criterion 1 for an important association with significant events, trends, or patterns of development. The bridge was one of many highway improvements carried out in the late 1970s and early 1980s by Caltrans throughout California and in this region. This elevated freeway through an already developed urban area did not initiate new patterns of development, though it likely disturbed older patterns of movement and commerce in downtown Stockton similar to urban freeways in many cities across California and the country. Thus, the bridge is not important within the context of the development of the highway network, or local growth and development. Under Criterion A / 1, the bridge is also associated with community efforts urging Caltrans to finish construction of the bridge following completion of the first section in 1975. While community members did engage in activities calling for completion of the viaduct, the degree to which these actions had an effect, if any, cannot be definitively established. The ten year pause in construction suggests community pressure was not particularly effective, and that other factors, such as availability of funds to build the structure, were primary. Caltrans also wanted to finish the bridge and as soon as the department's budget crises eased in the mid-1980s and money became available, construction resumed on the viaduct, and it was completed in 1988. Thus, the Crosstown Freeway Viaduct is not significant under this criterion for an association with community efforts to complete the bridge.

[9] Arthur L. Elliott, "Aesthetics of Highway Bridges," *Civil Engineering*, June 1968, 65-66; James E. Roberts, "Aesthetic Design Philosophy Utilized for California State," *Journal of Urban Planning and Development*, Vol. 118, No. 4, December 1992, 138-141, 148, and 155; W.S. Ludlow, "Aesthetics in Bridge Design," *Manual of Bridge Design Practice* (State of California: Bridge Department, 1971), 16-3 and 16-15 to 16-20; Arthur L. Elliot, "Esthetic Development of California Bridges," presented at ASCE Convention and Exposition, Portland, Oregon, April 14-18, 1980, 2160; Arthur L. Elliot, "Aesthetics in a Changing Economy," in *Meeting Preprint 2199* for American Society of Civil Engineers National Structural Engineering Meeting, April 22-26, 1974, *Cincinnati*, Ohio, 7-8; JRP Historical Consulting, LLC, *Historical Resources Evaluation Report, Cold Spring Canyon Bridge (51 0037) Pedestrian Barrier Project, State Route 154, Santa Barbara County, California, 05-SB-154 PM 22.96, EA 05-0P910K,* prepared for Caltrans District 5, May 2007; James E. Roberts, *Aesthetics and Economy in Complete Concrete Bridge Design*, California Department of Transportation, Office of Structures Design, 1986, available at the Caltrans Transportation Library, 3, 5, and 6; Arthur L. Elliott, "Creating a Beautiful Bridge," in Committee on General Structures, Subcommittee on Bridge Aesthetics, *Bridge Aesthetics Around the World* (Washington D.C.: Transportation Research Board, National Research Council. 1991), 215-217; Stewart Gloyd, "California – A Qualified Bridge Esthetics Case Study," *Concrete International*, Volume 16, No. 2, February 1994, 46-48.

Under NRHP Criterion B / CRHR Criterion 2, the Crosstown Freeway Viaduct is not significant for an association with the lives of persons important to history. Ort Loftus was a prominent Stockton businessman, philanthropist, and community organizer who advocated for the completion of the Crosstown Freeway Viaduct. While Loftus clearly made a sustained effort pushing for completion of the viaduct, the City of Stockton and others also played a role. Additionally, it is not clear that any of the various tactics had any effect on Caltrans during the ten years between the end of the first phase and resumption of construction. Rather, it seems that construction resumed when Caltrans' budget crisis finally began to ease in the mid-1980s. Thus, the Crosstown Freeway Viaduct is not significant under this criterion for an association with Ort Loftus or any other person.

The Crosstown Freeway Viaduct is not significant as an important example of a type, period, or method of construction, nor is it the work of a master, or possess high artistic values (Under NRHP Criterion C / CRHR Criterion 3). This bridge is a typical example of concrete box girder construction for the period with some visual enhancements. By the time this bridge was built in 1975, the construction of concrete box girder bridges had become commonplace in California. The Crosstown Freeway Viaduct does have a long total length of 4,367 feet, but the concrete box girder sections are interrupted throughout by inverted concrete T-girder spans. The longest continuous section of concrete box girder is 1,805 feet, but this includes part of the 1975 bridge and part of the 1988 bridge. Of the 1975 section – which has a total length of 2,794 feet – the longest concrete box girder section is 768 feet. Throughout the entirety of the bridge, the longest single concrete box girder span is 130 feet. The Crosstown Freeway Viaduct is also not significant for its aesthetics. The bridge has some aesthetic embellishments that were intended to make it more attractive, namely the pebble aggregate finish on the railing walls and two sides of the octagonal piers, and the molded rectangles on the girder sides and west abutment. While the aesthetic appeal of these features was recognized soon after the bridge's completion, these features are simple and minor exterior decorations that are insufficient when considering the overall aesthetics of the entire bridge to make the bridge significant for its aesthetics under this criterion. Thus, the Crosstown Freeway Viaduct is not significant for its type, engineering, design, or length. It is also not the work of a master and does not possess high artistic value.

Under NRHP Criterion D / CRHR Criterion 4, this property is not a significant or likely source of important information about historic construction materials or technologies that is not otherwise available through documentary evidence.

California Historical Landmark Evaluation

A property may be eligible for designation as a California Historical Landmark (CHL) if it meets one of three criteria: the first, last, or most significant of its type within the state or within a large geographic region (i.e., Northern California); is associated with an individual or group having a profound influence on the history of California; or is a prototype of, or an outstanding example of, a period, style, architectural movement or construction, or is an important work of a master architect or builder. For reasons discussed immediately above, the Crosstown Freeway Viaduct does not meet any of these criteria and is not a California Historical Landmark.

Photographs (Continued):

Photograph 2: North elevation, camera facing west, April 28, 2022.

Photograph 3: South elevation, camera facing northwest, April 28, 2022.

Photograph 4: Soffit of inverted T-girder span at South Sutter Street, camera facing west, April 28, 2022.

Photograph 5: South elevation at Stanislaus Street, camera facing north west, April 28, 2022.

Photograph 6: Stanislaus Street undercrossing, camera facing north, April 28, 2022.

Photograph 7: El Dorado Street undercrossing with eastbound onramp, camera facing northeast, April 28, 2022.

Photograph 8: Bridge at Stanislaus Street showing the end of the original 1975 section, camera facing west, April 28, 2022.

Photograph 9: South elevation of 1988 section, camera facing northwest, April 28, 2022.

Photograph 10: Soffit and piers of 1988 section, camera facing west, April 28, 2022.

Photograph 11: Soffit and pier, camera facing east, April 28, 2022.

Photograph 12: West abutment, camera facing northwest, April 28, 2022.

Photograph 13: East abutment, camera facing northeast, April 28, 2022.

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary # ______
HRI # ______
Trinomial ______
NRHP Status Code 3S

Other Listings ______
Review Code ______ Reviewer ______ Date ______

 ***Resource Name or #** (Assigned by recorder): Bridge 32 0040

P1. Other Identifier: New Melones Reservoir Bridge, Stanislaus River Bridge, Archie Stevenot Memorial Bridge

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County**: Tuolumne & Calaveras

***b. USGS 7.5′ Quad**: Columbia **Date**: 2018 **T**:2N; **R**:13E; **Sec**: 25; Mount Diablo Meridian

Quad: Angels Camp **Date**: 2018 **T**:2N; **R**:13E; **Sec**: 25; Mount Diablo Meridian

c. Address: State Route 49 City: Near Columbia Zip: n/a

d. UTM: (give more than one for large and/or linear resources) Zone: 10S; 719483.89 m E; 4209228.86 m N

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate)

Bridge 32 0040 carries State Route (SR) 49 over the New Melones Reservoir/Stanislaus River at post mile 27.28. It is also about four miles downstream from the Parrots Ferry Bridge. The bridge is in Caltrans District 10.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

The New Melones Reservoir Bridge is a two-girder, continuous steel box girder structure that is 2,250 feet long, consisting of six spans, the longest span measuring 549 feet (**Photographs 1 – 3**). The bridge is supported by rectangular reinforced concrete piers that taper and narrow from bottom to top (**Photographs 4 – 5**). The tallest pier is about 450 feet in height. The tops of the piers attach directly to the haunched steel box girders that arc down at the end of each span. At each end, the bridge is anchored to reinforced concrete seat abutments (**Photograph 6**). The spans carry of a reinforced concrete deck 42 feet wide with a 40-foot-wide curb-to-curb width carrying two lanes and shoulders paved with asphalt (**Photograph 7**). On both sides of the deck are two-bar steel railings mounted on concrete curbs.

***P3b. Resource Attributes:** (List attributes and codes) HP19. Bridge

***P4. Resources Present:** ☐ Building ☒ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5b. Description of Photo: (View, date, accession#) **Photograph 1.** North elevation, camera facing southeast, June 28, 2022.

***P6. Date Constructed/Age and Sources:** ☒ Historic ☐ Prehistoric ☐ Both

1976 (Caltrans)

***P7. Owner and Address:**

State of California
Department of Transportation
1120 N Street
Sacramento, CA 95814

***P8. Recorded by:**

Steven J. "Mel" Melvin
JRP Historical Consulting, LLC
2850 Spafford Street
Davis, CA 95618

***P9. Date Recorded**: June 28, 2022

***P10. Survey Type:** (Describe) Intensive

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") JRP Historical Consulting, LLC, "Historical Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2023 Update, 1975-1984," prepared for Caltrans, 2023.

***Attachments:** ☐ None ☐ Location Map ☐ Sketch Map ☒ Continuation Sheet ☒ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐Other (list) ______

***NRHP Status Code**: 3S

***Resource Name or #** (Assigned by recorder): Bridge 32 0040

B1. Historic Name: New Melones Reservoir Bridge, Stanislaus River Bridge, Archie Stevenot Memorial Bridge

B2. Common Name: New Melones Reservoir Bridge, Stanislaus River Bridge, Archie Stevenot Memorial Bridge

B3. Original Use: Bridge B4. Present Use: Bridge

***B5. Architectural Style**: Steel Box Girder

***B6. Construction History**: (Construction date, alteration, and date of alterations) Built in 1976; no known alterations.

***B7. Moved?** ☒ **No** ☐ **Yes** ☐ **Unknown** **Date:** ______ **Original Location:** ______

***B8. Related Features:** ___

B9. Architect: Caltrans b. Builder: Hensel Phelps Corporation

***B10. Significance: Theme**: Engineering **Area**: State

Period of Significance: 1976 **Property Type**: Bridge **Applicable Criteria**: C/3

(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

The New Melones Reservoir Bridge is eligible for listing in the National Register of Historic Places (NRHP), California Register of Historical Resources (CRHR), and as a California Historical Landmark (CHL). This property has been evaluated in accordance with Section 106 of the National Historic Preservation Act of 1966 (as amended) (54 U.S.C. 306108) and its implementing regulations (36 CFR Part 800); Section 15064.5(a)(2)-(3) of the California Environmental Quality Act (CEQA) Guidelines, using the criteria outlined in Section 5024.1 of the California Public Resources Code (PRC); and in accordance with the CHL Criteria as per PRC Section 5031. (See Section B10 on Continuation Sheet.)

B11. Additional Resource Attributes: ______

***B12. References**: Caltrans Bridge Database; Caltrans Bridge Inspection Reports; Caltrans, As-Built Plans; Caltrans, Statewide Historic Bridge Inventory Updates; *Sacramento Bee; Modesto Bee;* see also footnotes.

B13. Remarks:

***B14. Evaluator**: Steven J. "Mel" Melvin

***Date of Evaluation**: November 2023

(This space reserved for official comments.)

B10. Significance (continued):

Historic Context and Bridge History

The New Melones Reservoir Bridge (Bridge 32 0040) carries SR 49 over New Melones Reservoir and the flooded canyon of the Stanislaus River. Construction of the New Melones Dam and filling of the associated reservoir required building the new bridge as the reservoir inundated the previous SR 49 bridge. The U.S. Army Corps of Engineers was the lead agency for the New Melones Dam project, while Caltrans was in charge of the bridge project. Work on the New Melones Reservoir Bridge began in April 1973 based on plans prepared by Caltrans. Hensel Phelps Corporation of Burlingame served as general contractor and Kaiser Steel Company fabricated the box girders.[1]

Initial phases of the project entailed erecting the concrete piers, the tallest 405 feet tall, and constructing the abutments. The twin steel box girder superstructure consisted of 126 separate box girder sections averaging 50 feet in length and welded together. Each girder required more than 200 welds for a total of approximately 25,000 welds for the entire bridge, most done by hand. The two spans between the south abutment and Pier 3 and between the north abutment and Pier 6 were built by cantilevering from the abutments and piers and by using falsework to support the sections as they were welded in place. Erecting the three spans between Piers 3 and 6 (spans 3, 4, and 5) utilized a different method. Because of the height of these spans, the cost, and to avoid building falsework in the riverbed, the contractor determined that building falsework up to the bridge height was impractical. Spans 3 and 5 were welded together on low falsework platforms and lifted into place using hoists on the cantilevered section of the completed bridge. Span 5 weighed 1,175-tons and measured 345 feet long, while Span 3 weighed 975-tons and was 344 feet long (**Plate 1**). Hensel Phelps used a different method for constructing Span 4, the main span. The contractor constructed a pair of steel tracks that cantilevered out from the base of Pier 4 over the river below with the suspended ends of the tracks supported by cables hanging from the completed bridge sections above. At the base of Pier 4, steel girder sections were welded together and, when competed, pushed out onto the tracks to make room for welding another section (**Plate 2**). This process continued until the entire 255-foot-long center section of the main span was completed. Jacking rods attached to the end of the span and hoists attached to the finished cantilevered bridge sections above then slowly lifted the span into place. Lifting these massive sections was a slow and meticulous process, the center section requiring four days to get into place (**Plate 3**). This section, marking the bridges highest point, was about 450 feet above the river. Completion of the $14.5 million bridge in late 1976 exceeded the projected original deadline by about a year, largely because Caltrans rejected many of the welds on the steel box girders done by Kaiser Steel Company, which had to be re-welded.[2]

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[1] "Last Stevenot Bridge Section Will Be Lifted," *Modesto Bee,* April 12, 1976, 65; "Bridging The Gap," *Modesto Bee,* April 15, 1976, 1; "Taking Shape At $6,667 A Foot," *Sacramento Bee*, June 23, 1975, 7; "Stevenot Bridge Ceremony Set," *Sacramento Bee,* April 2, 1973, 13; Bryce White, "Towering Archie Stevenot Bridge Awaits Its Debut," *Modesto Bee,* July 25, 1976, 42.

[2] Julian Fein, "Bridge Falls Further Behind Schedule," *Modesto Bee,* n.d., Folder: Archie Stevenot Bridge, Box: Bridges, Named, AL-AR, Caltrans Transportation Library; "Steel Girders Span Canyon," *Western Construction* (December 1974), 37-39; "Last Stevenot Bridge Section Will Be Lifted," *Modesto Bee,* April 12, 1976, 65; "Bridging The Gap," *Modesto Bee,* April 15, 1976, 1; "Taking Shape At $6,667 A Foot," *Sacramento Bee*, June 23, 1975, 7; "Stevenot Bridge Ceremony Set," *Sacramento Bee,* April 2, 1973, 13; Bryce White, "Towering Archie Stevenot Bridge Awaits Its Debut," *Modesto Bee,* July 25, 1976, 42; "Span Lifting: A Day For The Job Watchers," *Modesto Bee,* January 13, 1976, 14; Caltrans, "Stanislaus River Bridge (New Melones), General Plan," May 8, 1972; "First Jacked Span is Prelude 400-ft.," *Engineering News-Record,* August 14, 1975, 16, 17; "Box Girder Span Grows Out From Riverbank and is Lifted 400 ft.," Engineering News-Record, May 27, 1976, 22, 23; "First Jacked Span is Prelude 400 ft. Lift Next Year.," Engineering News-Record, August 14, 1975, 16, 17.

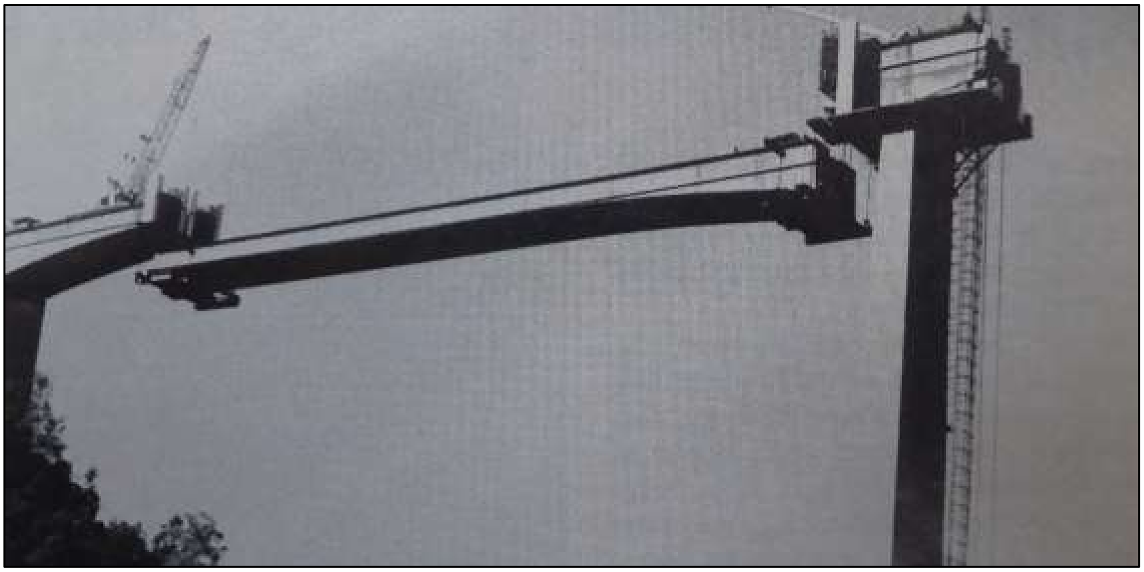


Plate 1. A 975-ton, 344-foot section between Piers 3 and 4 lifted into place in August 1975.[3]

Plate 2. The center section of the main span being fabricated at the base of Pier 4.[4]

[3] "First Jacked Span is Prelude 400-ft.," *Engineering News-Record,* August 14, 1975, 16, 17; "Steel Girders Span Canyon," *Western Construction* (December 1974), 37-39.
[4] "Box Girder Span Grows Out From Riverbank and is Lifted 400 ft.," Engineering News-Record, May 27, 1976, 22, 23.

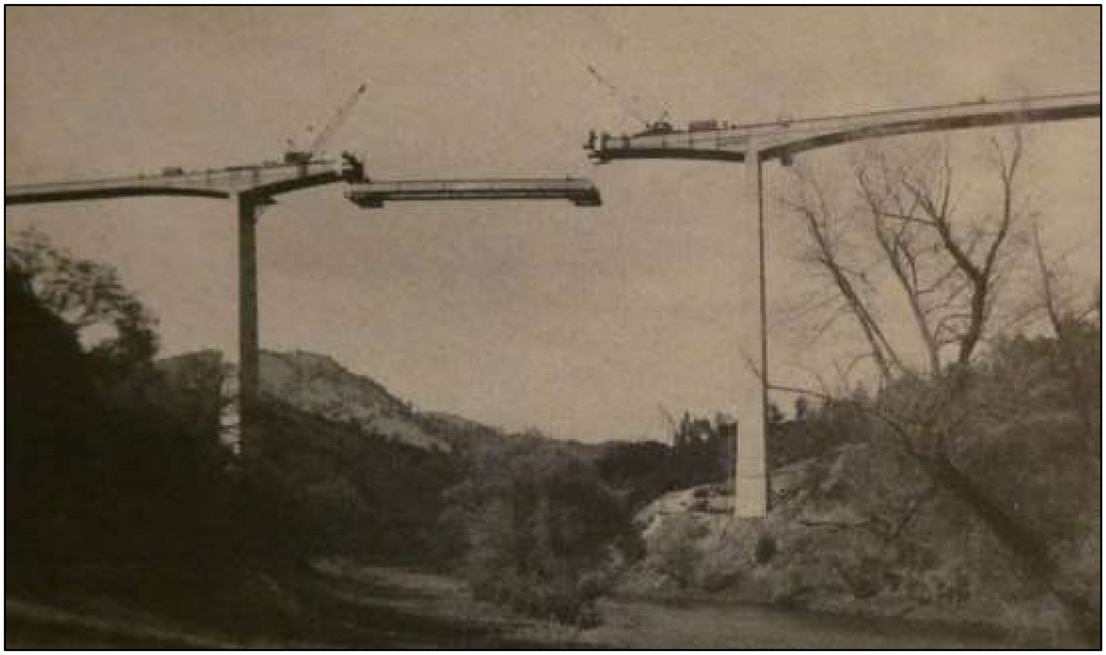


Plate 3. The 890-ton, 257-foot center section of the main span hoisted 376 feet into place in April 1976.[5]

On November 22, 1976, dedication ceremonies officially opened the new bridge and christened it the Archie Stevenot Memorial Bridge (**Plate 4**). Stevenot was a resident of nearby Carson Hill and life-long promoter of SR 49. He founded the Mother Lode Highway Association in 1919 to push the state to adopt SR 49 as a state highway and continued to advocate for Highway 49 improvements and tourism throughout his life. He passed away in 1968. The complete bridge measures 2,250 feet long with six spans, the longest of which is 549 feet, the longest single span on a steel box girder bridge in California. At about 450 feet from the original riverbed and with its tallest pier measuring 405 feet, the bridge is also among the tallest bridges in California. Caltrans designers considered the appearance and proportionality of the bridge during conditions when the reservoir was full, resulting in a thin girder profile and thin, tapered columns. After construction, the bridge earned widespread recognition for its design. In 1976, the bridge won second place in the James F. Lincoln Arc Welding Foundation Design of Welded Structures competition. In 1977, the bridge won first prize in the Federal Highway Administration's "The Highway and Its Environment" contest in the "Outstanding Major Highway Structural Feature" category. In 1978, the American Institute of Steel Construction (AISC) awarded the bridge its annual "Prize Bridge" in the Long Span category award. The AISC presents this award in recognition of imaginative and aesthetic use of fabricated steel in bridge construction with one juror comparing the graceful structure to bridges in the Swiss Alps, a possible comparison to contemporary bridges designed by Christian Menn or early to mid-twentieth century bridges designed by Robert Maillart. Finally, in 1981, the bridge won a Federal Highway Administration's "Design for Transportation" award in recognition of design excellence. In addition, Caltrans featured the bridge in its 1980 exhibit called "California Bridges" at the University Art Museum, University of California, Berkeley that showed how the department had "designed and built bridges to blend artistically and functionally with the multi-faceted geography of the state." Each of the 21 bridges selected for the exhibit had been designed to not only address functional and structural needs, but also environmental and architectural considerations.[6] The New Melones Reservoir

[5] "Box Girder Span Grows Out From Riverbank and is Lifted 400 ft.," Engineering News-Record, May 27, 1976, 22, 23.
[6] Julian Fein, "Dedication of New Route 49 Stevenot Bridge Draws 2,000," *Modesto Bee,* November 23, 1976, 14; Bryce White, "Towering Archie Stevenot Bridge Awaits Its Debut," *Modesto Bee,* July 25, 1976, 42; "Caltrans Projects Win Design Awards," *Modesto Bee,* September 18, 1981, 14; Caltrans, "Stevenot Bridge Wins Award," *Newsletter 136,* December 7, 1978, Folder: Archie Stevenot Bridge, Box: Bridges, Named, AL-AR, Caltrans Transportation Library; BridgeReports.com: National Bridge Inventory Data, accessed March 2022 at http://bridgereports.com/1046211; Eric Sakowski, HighestBridges.com, accessed March 2022 at http://www.highestbridges.com/wiki/index.php?title=Archie_Stevenot_Bridge; Caltrans bridge inventory database; US Department of

Bridge's haunched girder design is similar to the Parrot Ferry Bridge, which was built upstream also as a result of the New Melones Dam project.

Plate 4. New Melones Reservoir Bridge in 1978, before the New Melones Reservoir filled. The old SR 49 bridge is in the foreground.[7]

The contractor on the project, Hensel Phelps Construction Co., was founded by Abel Hensel Phelps in 1937 in Greeley, Colorado. Initially, the firm focused on home building and remodeling, but moved into commercial projects around 1945. Abel Phelps retired as President of the company in 1957, installing his son, Joseph, as his successor, who quickly incorporated the company that same year. In 1967, the firm opened its first branch office in Burlingame, California and one of this branch's early projects was the concrete box girder Moccasin Creek Bridge in 1971, on State Route 120 in Moccasin, Tuolumne County (32 0039). A year later, in 1972, this branch office was awarded the contract for the New Melones Reservoir Bridge. The company continued to grow and expand throughout the twentieth century, introducing a wider variety of services and expanding their reach by working on projects across the country. Although the company has worked on international projects, Hensel Phelps mostly serves customers in the United States, where it continues to be one of the country's largest providers of construction and engineering services.[8]

Transportation, "News: The Highway and Its Environment Contest Winners Announced," November 3, 1977, 1-3; John C. Ritner, "Bridges Produced by an Architectural Engineering Team," *Transportation Research Record 1044, Structures and Foundations* (Washington D.C.: Transportation Research Board National Research Council, 1985), 31; Caltrans, "California Bridges," Exhibit at University of California, Berkeley Art Museum Theater Gallery, April through July 1980, exhibit catalog..

[7] "Archie Stevenot Bridge," May 4, 1978, Photo No. C-6555-2, Folder: Archie Stevenot Bridge, Color Photographs, Box: Bridges, Named, AL-AR, Caltrans Transportation Library.

[8] "Hensel Phelps Construction Company (Partnership)," Pacific Coast Architecture Database, accessed November 2023, https://pcad.lib.washington.edu/firm/2318/; "Proceedings of Board of Commissioners," *The Poudre Valley*, vol. 48, no. 22, August 30, 1945, 9; "Hensel Phelps – General Contractors," *The Windsor Beacon*, vol. 52, no. 45, February 2, 1950, 7; "Abel Hensel Phelps (Building Contractor)," Pacific Coast Architecture Database, accessed November 2023, https://pcad.lib.washington.edu/person/3082/; "History," Hensel Phelps, accessed November 2023, https://www.henselphelps.com/the-hensel-phelps-way/history/; "TID Keeps Land Tax At $1.10," *The Modesto Bee*, September 28, 1971, B-2; "Low Bids on 15 Highway Projects Are Released," *Golden Cost News*, September 14, 1972, 2; "Hensel Phelps Construction Co," Bloomberg, accessed November 2023, https://www.bloomberg.com/profile/company/3043363Z:US#xj4y7vzkg.

The New Melones Reservoir Bridge is a steel box girder structure, a bridge type defined by the hollow steel boxes that comprise the superstructure. Steel box girder bridges are a relatively new and rare bridge type in California. Of the nearly 25,000 bridges across the state, there are only 21 steel box girder bridges. The first was the Indian Creek Bridge (02C0147), erected in 1966 in Siskiyou County. This small bridge is 203 feet long and has six small steel box girders, rather than a smaller number of larger boxes which later became more common for the type. Other early bridges of this type include a pair of bridges (28C0315 and 28C0316) erected in 1968 carrying part of the Bay Area Rapid Transit (BART) tracks 104 feet over MacDonald Avenue in Richmond. In southern California, the matching pair of Queens Way Bridges (53C0551L & 53C0551LR) over the Los Angeles River in Long Beach were built in 1969. They each are 1,310 feet long with a 500-foot main span.[9]

Steel box girder bridges have several advantages to other structure types. The most important advantage is that the design provided high torsional stiffness, generally ranging 100 to 1,000 times torsionally superior to I-shaped girders. This advantage makes them ideal for curved structures which require higher torsional stiffness. Other advantages are their enclosed form reduces the number of places for debris to collect, and the steel girders create a smooth, sleek appearance. Despite these advantages, the high cost of steel has kept the number of steel box girder bridges low, with only five constructed during the 1975-1984 period.[10]

Recognition of the New Melones Reservoir Bridge came during a period when consideration of bridge aesthetics had become entrenched in Caltrans' bridge design procedures. While most state-built bridges, and many local or consultant-designed bridges, received at least some attention to their overall appearance, more effort was placed on bridges in scenic or prominent locations such as the New Melones Reservoir Bridge, for example. Caltrans' predecessor, the Division of Highways, began to integrate improved aesthetics into the state's bridge design procedures in the early 1960s with architects trained in bridge design providing input about the appearance of structures. The Division of Highways, and later Caltrans, developed its bridge aesthetics program to integrate it into the department's overall design philosophy that included additions to bridge design manuals with instructions to have bridges designed so that they would be aesthetically compatible with their location, as well as the development of standard features, such as columns, railings, and surface treatments, that met the aesthetic principles being promoted. There came to be essentially two types of architectural treatment, those added to standard structures and those that united architecture and engineering. Dictated by cost and function criteria, treatments incorporated into standard structures could include the addition of grooves and textures, for example, while the rarer marriage of architecture and engineering could include shapes, proportion, scale of piers, abutments, and superstructure that varied from standard structures. Bridge designers were encouraged to consider what they are leaving for future generations, which emphasized that a bridge's appearance was as important as the structure's design features for load and safety. Aligning with the dominant architectural trends in Modernism of the period, bridge designers aspired to simplicity and pureness of structure, avoiding ornamentation, celebrating the beauty of structural form, and emphasizing ease of construction and economy of design. Slender structures on slender piers or columns with minimal number of elements, and continuous or steady long lines were among the features of the aesthetical ideal at the time, for which the Division of Highways received various awards such as for the steel girder San Mateo Creek (Eugene Doran Memorial) Bridge (35 0199) built in 1967 on I-280 in San Mateo County that featured prominent sculpted concrete piers and the welded steel arch Cold Spring Canyon Bridge (51 0037) built in 1963 on SR 154 in Santa Barbara County. Although Division of Highways / Caltrans policy was to design aesthetically pleasing structures, and sometimes incorporated input from members of the public, there were also clear parameters that such efforts would not be unduly more expensive. During this period, Division of Highways and Caltrans bridge designers considered aesthetic qualities following general principles related to quality design that carefully analyzed proportions of bridges' structural and safety elements, attractive forms for the various bridge elements, compatibility of bridges within their setting, and consideration of current and future acceptance of the structures. Proportion related to the scale of a bridge's components relative to one another. Compatibility emphasized improvements on how bridges fit into their surroundings, which depended on the nature of the structure and site with some bridges designed to blend with their setting and others to stand out. Longtime Division of Highways Chief of Bridge Planning and Design Arthur L. Elliott, who led the Bridge Department from 1953 to 1973, stressed a bridge's compatibility was more important than its uniqueness of appearance, stating that "a properly designed structure has

[9] Caltrans, Historical Resources Evaluation Report, Statewide Historic Bridge Inventory: 2015 Update, 1965-1974, 18-19.
[10] Caltrans Statewide Historic Bridge Inventory: 2015 Update, 1965-1974, 18-19.

a sense of belonging in its particular location," noting that bridges that seem out of place are subject to criticism. He further specified that bridges do not need to be fancy to be compatible, with simple, trim, and plain lines, like those seen on the New Melones Reservoir Bridge, considered more attractive than "contrived or contorted shapes." The Caltrans bridge aesthetics program resulted in many structures that incorporated basic aesthetic enhancements, as well as a smaller set of structures that included enhanced qualities and the few that had special aesthetic character.[11]

NRHP / CRHR Significance Evaluation

The New Melones Reservoir Bridge is not significant under NRHP Criterion A / CRHR Criterion 1 for an important association with significant events, trends, or patterns of development. The bridge was one of many highway improvements carried out in the late 1970s and early 1980s by Caltrans throughout California and in the region. It is also not the first bridge at this location and did not initiate new patterns of development. Thus, the bridge is not important within the context of the development of the highway network, local growth and development, or any other trends or events at the national, state, or local level that would make it significant under this criterion.

Under NRHP Criterion B / CRHR Criterion 2, this property is not significant for an association with the lives of persons important to history. Research did not find that any individuals directly associated with this property have made demonstrably important contributions to history at the local, state, or national level. The bridge is named after Archie Stevenot, a local promoter of SR 49 who died in 1968 and did not have an association with the bridge.

The New Melones Reservoir Bridge meets NRHP Criterion C / CRHR Criterion 3 for its type, period, and method of construction as a significant example of a steel box girder bridge and its aesthetic achievement, but it is not the work of a mater and it does not possess high artistic value. Completed in 1976, the bridge is significant for the length of its longest span. Measuring 549 feet, it is the longest single span on a steel box girder bridge in California. It is also significant for its height, its tallest pier, at 400 feet, is second only to the Foresthill Bridge (Bridge 19C0060), with its tallest pier measuring 403 feet. The overall height of about 450 feet from the original riverbed also makes it among the tallest bridges in California.[12] The bridge is also among the limited number of bridges in the state from its period with special aesthetic character that makes it an excellent example of the Modern aesthetic in a bridge. Compatible within its setting, the bridge's design represents the union of engineering and architecture with its simplicity and pureness of structure that celebrates the beauty of structural form and emphasizes its economy of design. The bridge is a slender structure on slender piers with minimal number of elements, and has continuous long lines and repeated arches formed by the haunched girders that are among the features of Caltrans aesthetical paradigm of the period.

[11] Arthur L. Elliott, "Aesthetics of Highway Bridges," *Civil Engineering*, June 1968, 66; James E. Roberts, "Aesthetic Design Philosophy Utilized for California State," *Journal of Urban Planning and Development*, Vol. 118, No. 4, December 1992, 138-141, 148, and 155; Arthur L. Elliott, "Esthetic Development of California's Bridges," presented at the April 14-18, 1980, ASCE Convention and Exposition, Portland, Oregon (Preprint 80-004), published in *Journal of Structural Engineering*, Vol. 109, No. 9, September 1983, paper no. 18240, 2159-63 and 2172-73; W.S. Ludlow, "Aesthetics in Bridge Design," *Manual of Bridge Design Practice* (State of California: Bridge Department, 1971), 16.3; Arthur L. Elliot, "Aesthetics in a Changing Economy," in *Meeting Preprint 2199* for American Society of Civil Engineers National Structural Engineering Meeting, April 22-26, 1974, *Cincinnati*, Ohio; JRP Historical Consulting, LLC, *Historical Resources Evaluation Report, Cold Spring Canyon Bridge (51 0037) Pedestrian Barrier Project, State Route 154, Santa Barbara County, California, 05-SB-154 PM 22.96, EA 05-0P910K,* prepared for Caltrans District 5, May 2007; James E. Roberts, *Aesthetics and Economy in Complete Concrete Bridge Design*, California Department of Transportation, Office of Structures Design, 1986, available at the Caltrans Transportation Library, 3, 5, and 6; Arthur L. Elliott, "Creating a Beautiful Bridge," in Committee on General Structures, Subcommittee on Bridge Aesthetics, *Bridge Aesthetics Around the World*, (Washington D.C.: Transportation Research Board, National Research Council. 1991), 217; Stewart Gloyd, "California – A Qualified Bridge Esthetics Case Study," *Concrete International*, Volume 16, No. 2, February 1994, 46-48.

[12] BridgeReports.com: National Bridge Inventory Data, accessed March 2022 at http://bridgereports.com/1046211; Eric Sakowski, HighestBridges.com, accessed March 2022 at http://www.highestbridges.com/wiki/index.php?title=Archie_Stevenot_Bridge; Caltrans bridge inventory database.

Under NRHP Criterion D / CRHR Criterion 4, this property is not a significant or likely source of important information about historic construction materials or technologies that is not otherwise available through documentary evidence.

The boundary of the historic property encompasses the entire bridge structure. The period of significance is 1976, the year the bridge was completed. It is significant at the state level. The character-defining features are the piers, steel box girders, deck, and railing.

California Historical Landmark Evaluation

A property may be eligible for designation as a California Historical Landmark (CHL) if it meets one of three criteria: the first, last, or most significant of its type within the state or within a large geographic region (i.e., Northern California); is associated with an individual or group having a profound influence on the history of California; or is a prototype of, or an outstanding example of, a period, style, architectural movement or construction, or is an important work of a master architect or builder. Of these, the New Melones Reservoir Bridge meets the CHL Criteria as an outstanding example of a steel box girder bridge and for its aesthetic design. It is therefore eligible for designation as a CHL.

Integrity

Research and field observation did not reveal any alterations to this bridge besides routine maintenance. As such, it retains a high degree of integrity of materials, design, feeling, association, workmanship, setting, and location. Overall, the bridge maintains sufficient integrity to convey its historical significance.

Photographs (Continued):

Photograph 2: South elevation, camera facing northwest, June 28, 2022.

Photograph 3: North elevation, camera facing southwest, June 28, 2022.

Photograph 4: North elevation, camera facing southwest, June 28, 2022.

Photograph 5: Piers and soffit, camera facing northwest, June 28, 2022.

Photograph 6: West abutment, camera facing west, June 28, 2022.

Photograph 7: Bridge deck, camera facing northwest, June 28, 2022.

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary # ______
HRI # ______
Trinomial ______
NRHP Status Code 3S

Other Listings ______
Review Code ______ Reviewer ______ Date ______

 ***Resource Name or #** (Assigned by recorder): Bridge 32C0076

P1. Other Identifier: Parrots Ferry Bridge

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County**: Tuolumne & Calaveras

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad**: Columbia **Date**: 2021 **T**: 2N; **R**: 14E; **Sec**: 8; Mount Diablo Meridian

c. Address: Parrots Ferry Road City: near Columbia Zip: n/a

d. UTM: (give more than one for large and/or linear resources) Zone: 10S; 723416.46 m E; 4213148.52 m N

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate)

The Parrots Ferry Bridge carries Parrots Ferry Road over the Stanislaus River/New Melones Reservoir. The bridge is four miles south of the State Route (SR) 4 / Parrots Ferry Road intersection in Vallecito and about four miles upstream from the New Melones Reservoir Bridge carrying SR 49. The bridge is in Caltrans District 10.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

The Parrots Ferry Bridge is a continuous three-span, cast-in-place, single-cell, post-tensioned, lightweight concrete box girder bridge (**Photographs 1 – 3**). It is 1,292.7 feet long with a 639.8-foot-long main span. Its two lanes of traffic are carried on a 32.2-foot-wide deck (curb to curb), with a 40.4-foot outside edge width. The bridge is supported by two square, tapered, reinforced concrete piers 340 feet tall (**Photograph 4**). The haunched concrete box girders are deepest at the piers, and taper to very shallow at the bridge midpoint and near the concrete abutments (**Photograph 5**). The haunching gives the lower part of the superstructure a subtle arch, above which is an inset panel across the structure on both sides beneath the railings. On the north edge of the deck is a concrete K-rail barrier topped by a two-bar steel railing (**Photograph 6**). On the south side is another K-rail barrier separating the roadway from a sidewalk that has a steel pedestrian railing with vertical balusters.

***P3b. Resource Attributes:** (List attributes and codes) HP19. Bridge

***P4. Resources Present:** ☐ Building ☒ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5b. Description of Photo: (View, date, accession#) **Photograph 1.** North elevation, camera facing southwest, June 28, 2022.

***P6. Date Constructed/Age and Sources:** ☒ Historic ☐ Prehistoric ☐ Both
1979 (*Sacramento Bee*)

***P7. Owner and Address:**
Tuolumne County
2 South Green Street
Sonora, CA 95370

***P8. Recorded by:**
Steven J. "Mel" Melvin
JRP Historical Consulting, LLC
2850 Spafford Street
Davis, CA 95618

***P9. Date Recorded**: June 28, 2022

***P10. Survey Type:** (Describe)
Intensive

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") JRP Historical Consulting, LLC, "Historical Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2023 Update, 1975-1984," prepared for Caltrans, 2023.

***Attachments:** ☐ None ☐ Location Map ☐ Sketch Map ☒ Continuation Sheet ☒ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐Other (list) ______

***NRHP Status Code**: 3S
***Resource Name or #** (Assigned by recorder): Bridge 32C0076

B1. Historic Name: Parrots Ferry Bridge
B2. Common Name: Parrots Ferry Bridge
B3. Original Use: Bridge B4. Present Use: Bridge
***B5. Architectural Style**: Concrete Box Girder
***B6. Construction History**: (Construction date, alteration, and date of alterations) Built in 1979; post-tensioning of main span in 1993.
***B7. Moved?** ☒ **No** ☐ **Yes** ☐ **Unknown** **Date:** ______ **Original Location:** ______
***B8. Related Features:** ___
B9. Architect: Howard, Needles, Tammen & Bergendoff b. Builder: S.J. Groves & Sons
***B10. Significance: Theme**: Engineering **Area**: State
Period of Significance: 1976 **Property Type**: Bridge **Applicable Criteria**: C/3
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

The Parrots Ferry Bridge is eligible for listing in the National Register of Historic Places (NRHP) and the California Register of Historical Resources (CRHR). This property has been evaluated in accordance with Section 106 of the National Historic Preservation Act of 1966 (as amended) (54 U.S.C. 306108) and its implementing regulations (36 CFR Part 800) and Section 15064.5(a)(2)-(3) of the California Environmental Quality (CEQA) Guidelines, using the criteria outlined in Section 5024.1 of the California Public Resources Code (PRC). (See Section B10 on Continuation Sheet.)

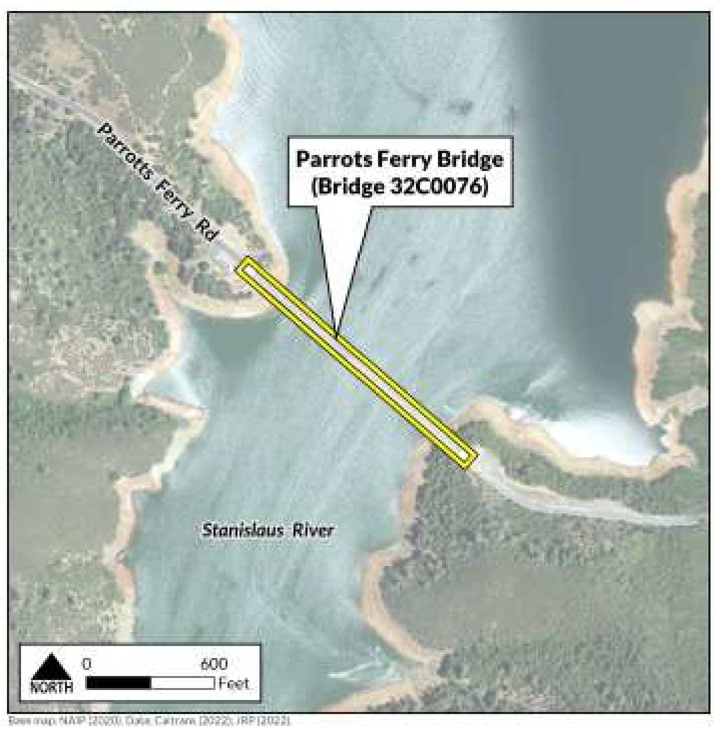
B11. Additional Resource Attributes: ______

***B12. References**: Caltrans Bridge Database; Caltrans Bridge Inspection Reports; Caltrans, Bridge As-Built Plans; Caltrans, Statewide Historic Bridge Inventory Updates; *Modesto Bee;* see also footnotes.

B13. Remarks:

***B14. Evaluator**: Steven J. "Mel" Melvin
***Date of Evaluation**: November 2023

(This space reserved for official comments.)



***Resource Name or #** (Assigned by recorder): Bridge 32C0076

***Recorded by**: S.J. Melvin ***Date**: June 28, 2022 ☒Continuation ☐Update

B10. Significance (continued):

Historic Context and Bridge History

The New Melones Dam project and filling of the associated reservoir necessitated construction of the Parrotts Ferry Bridge as the reservoir would inundate the former Parrotts Ferry Bridge over the Stanislaus River, located about one-half mile downstream from the new bridge. The New Melones Dam project was a U.S. Army Corps of Engineers (Army Corps) undertaking, and the Army Corps oversaw construction of the new bridge. In February 1977, it awarded a $10,172,092 contract for bridge construction to S.J. Groves & Sons Company of El Cajon, California. The company built the bridge on designs by the firm of Howard, Needles, Tammen & Bergendoff of Seattle, Washington (**Plate 1**). The firm T.Y. Lin International, of San Francisco, California, was a design consultant on the project. Work on the bridge got underway in March 1977 with the two, 340-foot tall concrete piers completed by August 1978 and work on the concrete box girder spans just beginning. Crews continued pouring sections of the spans through 1978 and into 1979, building balanced cantilevers out from both sides of the two piers (**Plate 2** and **Plate 3**). The box girders were poured using form travellers working at each end of the cantilever. Each form traveller poured one 16.5-foot-long segment per week. Concrete reached the forms by pumping from ground level, a distance that reached as much as 270 vertical feet and 100 horizontal feet. At the time, this was a notable distance to pump concrete. The center and final sections were in place by late February and the bridge opened for traffic in May 1979. The completed bridge was 350 feet above the river, 1,293 feet long, and had a 640-foot-long central span, at the time the longest individual span of any bridge in the U.S. The Parrotts Ferry Bridge also is regarded as the first segmental concrete box girder bridge in the U.S. to use lightweight concrete. In November 1979, the Parrotts Ferry Bridge won a Special Jury Award from the Prestressed Concrete Institute for having the longest segmental concrete box girder span in the U.S. Also that year, the Army Corps gave the structure an Award of Merit as part of its 14th Design and Environmental Awards Program, citing it as the longest segmental cantilever span and longest lightweight concrete span in the country, as well as noting its compatibility within its site. The bridge adopted the name of the former bridge, named after Thomas H. Parrott, who operated a ferry at this location on the Stanislaus River between 1860 and 1903.[1]

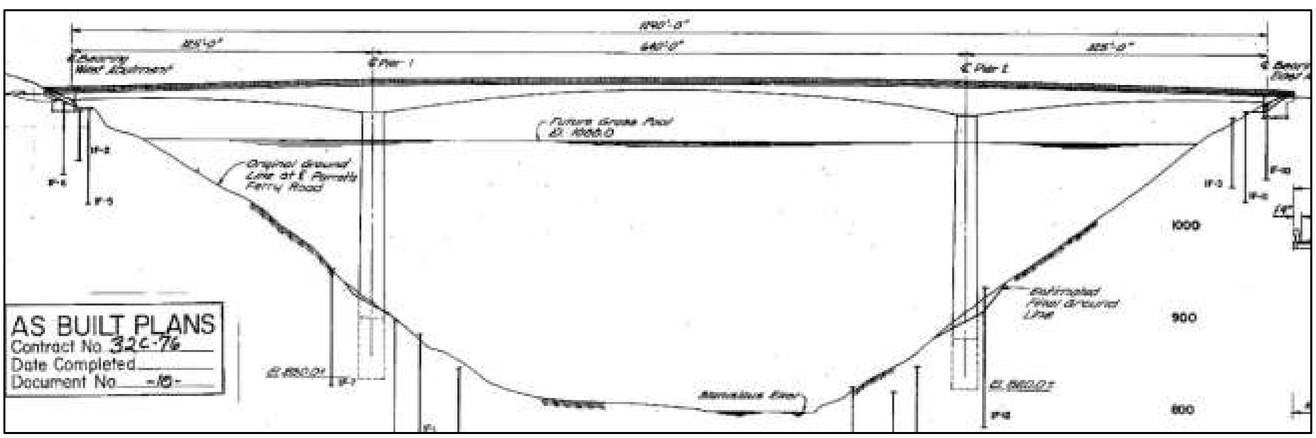


Plate 1. Bridge elevation from original plans dated 1976.[2]

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[1] "$10.1 Million Pact Awarded For Bridge," *Modesto Bee,* February 18, 1977, 5; "Up and Across," *Modesto Bee,* August 31, 1978, 22; "Ceremony Today For New Bridge," *Modesto Bee,* May 10, 1979, 10; "Parrott's Ferry Bridge May Set Record," *Modesto Bee,* October 29, 1975, 12; "Award Winner," *Modesto Bee,* November 27, 1979, 17; Eric Sakowski, HighestBridges.com, accessed March 2022 at http://www.highestbridges.com/wiki/index.php?title=Parrotts_Ferry_Bridge; "Bridge Nears Completion," *Modesto Bee,* February 26, 1979, 5; BridgeReports.com: National Bridge Inventory Data, accessed March 2022 at http://bridgereports.com/1046279; Caltrans, Bridge Inspection Report, June 26, 2020; "Lightweight Concrete Pumped to New Heights," *Highway & Heavy Construction,* February 26, 1979, 5; George Weddell and Paul Kavanaugh, "Parrotts Ferry Bridge, Pioneer in Lightweight, Pumped Concrete," *Civil Engineering* 50, no. 6 (June 1980), 83; U.S. Army Corps of Engineers, Office of the Chief of Engineers, *14th Design and Environmental Awards Program*, (Washington, D.C.: U.S. Government Printing Office, June 1980) 14-15.

[2] Howard, Needles, Tammen & Bergendoff, "Parrotts Ferry Road Relocation, Parrotts Ferry Bridge, General Plan and Elevation," November 12, 1976.

Plate 2. Parrotts Ferry Bridge under construction in 1979.[3]

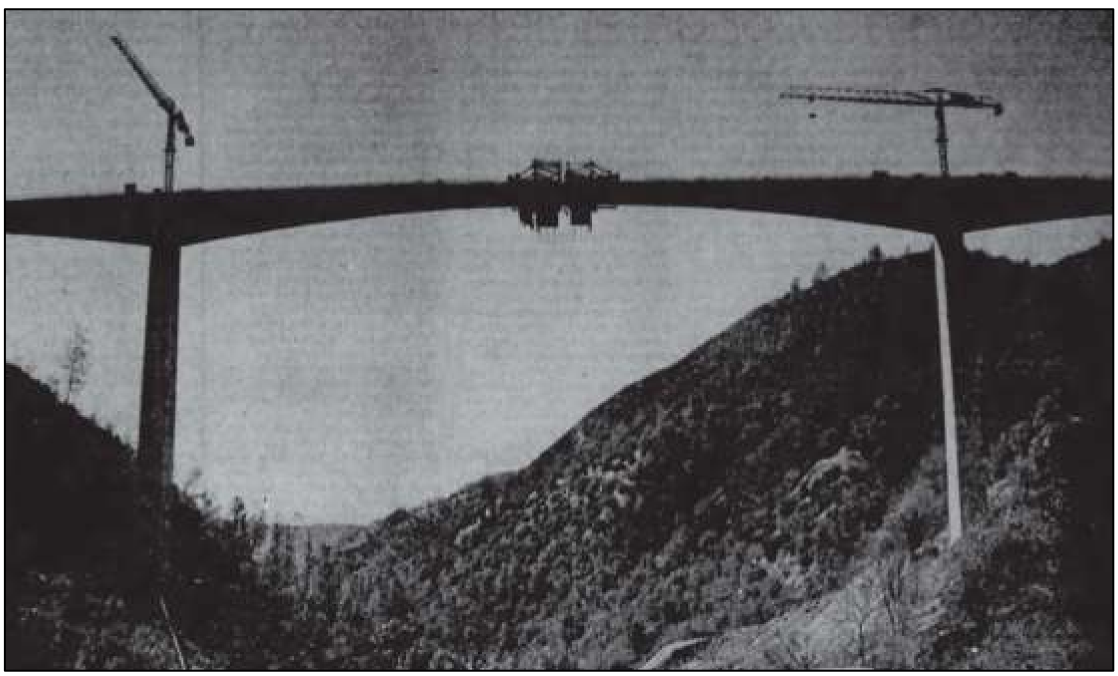

Plate 3. Parrotts Ferry Bridge main span nearing completion in 1979.[4]

[3] "Lightweight Concrete Pumped to New Heights," *Highway & Heavy Construction,* February 26, 1979, 5.
[4] "Bridge Nears Completion," *Modesto Bee,* February 26, 1979, 5.

Shortly after completion of the bridge, the center of the structure began to sag. Engineers attributed this to the curing of the lightweight concrete used in the structure. The problem became an issue between the Army Corps and the two counties on either side of the bridge – Calaveras and Tuolumne, the county line falling in the center of the bridge. Under the original agreement, the Army Corps would pay for construction of the bridge and upon completion, the two counties would take over ownership and maintenance. However, when the bridge was finished in May 1979, the counties noticed some minor construction problems, and a short while later noticed the center span sagging. Not wanting to pay for the repairs, or be potentially liable should the bridge fail, the counties refused to accept the bridge. The Army Corps insisted that the sagging did not compromise the structural integrity of the bridge and continued to press the counties to take the bridge, but they did not. So, as the two parties argued over ownership and maintenance, nothing was done for years, and the bridge continued to sag. In 1992, the parties came to an agreement by which the Army Corps would fix the sag and upon completion of the repair, the counties would accept ownership of the bridge. By the time the $1.3 million project began in early 1993, the center of the bridge had dropped about 13 inches. Repair work entailed post-tensioning the sagging section with steel cables running inside the hollow concrete box girders and pulled taut to a combined force of 845,000 pounds. The Army Corps completed the project in the summer of 1993 and possession of the bridge transferred to the counties.[5]

Howard, Needles, Tammen & Bergendoff (HNTB) was an established and acclaimed architectural and engineering firm by the time it designed the new Parrots Ferry Bridge. Ernest Emmanuel Howard, Enoch Ray Needles, Henry C. Tammen, and Ruben Bergendoff organized the firm in 1941 in Kansas City, Missouri, as the successor to the engineering firm of Harrington, Howard and Ash, formed in 1914. HNTB specialized in transportation, bridges, aviation, architecture, urban design and planning, environmental engineering, water and construction services. They became renowned for their work in the field of transportation design, creating roadways, airport runways and bridges. In the realm of engineered structures, HNTB worked on many notable projects throughout the United States and abroad, including a 35-mile-long "superhighway" in Texas connecting Dallas and Fort Worth (modern U.S. 30), a six-mile-long bridge connecting Rio de Janerio, Brazil with Niteroi across the Guanabara Bay, and the award-winning Highway 23 bridge spanning the Arkansas River in Ozark, Arkansas. In 1975, HNTB merged with another Kansas City-based architectural firm, Kivett and Myers, to form an architectural design firm focused on sports venues. In 1982, HNTB purchased the Boston-based rail transportation consulting firm, Thomas K. Dyer, Inc., founded in 1963 by rail engineer Thomas Keane Dyer. The company reorganized in 1993, becoming the "HNTB Corporation," which includes subsidiaries such as HNTB Architecture, Inc. Today, the HNTB Corporation has offices in thirty states, plus the District of Columbia, and is one of the leading architectural, engineering, and planning firms in the nation.[6]

The contractor on the project, S.J. Groves & Sons Company, was founded in 1905 in Minneapolis, Minnesota by Stephen Jasper Groves and his sons, Frank M., and Clarence Groves. Under Stephen's leadership, the company became known for building miles of highways in Minnesota, Wisconsin, and Michigan. When Stephen J. Groves died in 1921, Frank M. Groves became president of the firm. During the fifty years that Frank led the company it grew from a relatively small regional operation into a one of the largest heavy-construction firms in the United States, known for its work on both domestic and international projects, such as the Mangla Dam in West Pakistan, locks for the New Richmond Dam in Ohio, irrigation canals in Reynosa, Mexico, and water reservoirs in Caracas, Venezuela. When Frank M. Groves passed away in August 1971, just a few months after his brother, Clarence, his son, Franklin N. Groves, succeeded him as president. Under Franklin's guidance, the company continued to grow, holding its place as one of the top ten largest highway, bridge, and dam contractors in the nation and becoming the Army Corps' number one contractor. Some of the major engineered structures built by the company in California include the Carley V. Porter tunnel in the Tehachapi mountains for the California Aqueduct, and the Interstate 8 bridge over Pine Valley Creek in San Diego County, the first long-span, pre-stressed concrete box girder bridge in California

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[5] "Creeping Up On Bridge's Sag," *Modesto Bee,* February 10, 1993, 17; "Corps, Counties Try to Bridge Gap," *Modesto Bee,* May 11, 1992, 13; "Parrotts Ferry Bridge May Finally Lose Its Droop," *Modesto Bee,* November 1, 1990, 1.

[6] "Howard Needles Tammen and Bergendoff (HNTB) (Partnership)," Pacific Coast Architecture Database, accessed November 2023, https://pcad.lib.washington.edu/firm/2565/; "Texas' First Toll Road Takes Shape," *Stockton Record*, July 12, 1956, 19; "Summer Start Is Planned On New Rio Span," *Sacramento Bee*, January 28, 1968, E3; "Bridges Win Design Awards," Kansas City Star, October 4, 1970, 2E; "HNTB: Locations," HNTB, accessed November 2023, https://www.hntb.com/locations/; "HNTB Corporation," AIA Kansas City, accessed November 2023, https://www.aiakc.org/firm/detail/hntb-corporation;

and the United States, completed in 1974. Franklin N. Groves passed away in 2018 and the S.J. Groves & Sons company appears to have ceased operations in the twenty-first century, but the exact circumstances of its closure could not be identified.[7]

The Parrots Ferry Bridge is a concrete box girder bridge. The first concrete box girder bridges in California were erected in the mid-1930s. The structural type was innovative for its design flexibility, helping to meet the growing demand for longer and wider bridges as well as skewed bridges that permitted straighter, more efficient, and safer roadways. The slender bridge profiles with harmonious proportions allowed engineers to achieve the modern design aesthetic thought to showcase transportation efficiency. Because they required less steel in their construction, concrete box girder bridges could also be erected at significant cost savings. Only a small number of concrete box girder bridges were built before World War II, however after the war their numbers increased quickly. By 1965, there were more than 1,500 concrete box girder bridges in California. More than 3,200 of the type were built between 1965 and 1974, and more than 1,000 between 1975 and 1984. The longest concrete box girder span in California prior to construction of the Parrotts Ferry Bridge (640-foot main span) was the Interstate 8 bridge over Pine Valley Creek (57 0692L/R) constructed in 1974 that had a 450-foot main span.[8] The Parrotts Ferry Bridge has a similar haunched girder design as the larger New Melones Reservoir Bridge on SR 49 built a few years earlier that was also the result of the New Melones Dam project.

Recognition of the Parrotts Ferry Bridge came during a period when consideration of bridge aesthetics had become entrenched in Caltrans' bridge design procedures, which influenced local government and consultant designed bridges in the state. While most state-built bridges, and many local or consultant-designed bridges, received at least some attention to their overall appearance, more effort was placed on bridges in scenic or prominent locations such as the Parrotts Ferry Bridge, for example. Caltrans' predecessor, the Division of Highways, began to integrate improved aesthetics into the state's bridge design procedures in the early 1960s with architects trained in bridge design providing input about the appearance of structures. The Division of Highways, and later Caltrans, developed its bridge aesthetics program to integrate it into the department's overall design philosophy that included additions to bridge design manuals with instructions to have bridges designed so that they would be aesthetically compatible with their location, as well as the development of standard features, such as columns, railings, and surface treatments, that met the aesthetic principles being promoted. There came to be essentially two types of architectural treatment, those added to standard structures and those that united architecture and engineering. Dictated by cost and function criteria, treatments incorporated into standard structures could include the addition of grooves and textures, for example, while the rarer marriage of architecture and engineering could include shapes, proportion, scale of piers, abutments, and superstructure that varied from standard structures. Bridge designers were encouraged to consider what they are leaving for future generations, which emphasized that a bridge's appearance was as important as the structure's design features for load and safety. Aligning with the dominant architectural trends in Modernism of the period, bridge designers aspired to simplicity and pureness of structure, avoiding ornamentation, celebrating the beauty of structural form, and emphasizing ease of construction and economy of design. Slender structures on slender piers or columns with minimal number of elements, and continuous or steady long lines were among the features of the aesthetical ideal at the time, for which the Division of Highways received various awards such as for the steel girder San Mateo Creek (Eugene Doran Memorial) Bridge (35 0199) built in 1967 on I-280 in San Mateo County that featured prominent sculpted concrete piers and the steel arch Cold Spring Canyon

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[7] "S.J. Groves, Builder of Highways, Dead," *Minneapolis Morning Tribune*, December 9, 1921, 17; "Stephen Jasper Groves," Find A Grave, added November 11, 2011, https://www.findagrave.com/memorial/80277972/stephen-jasper-groves; "Founder of city road-building company dies," *The Minneapolis Star*, January 2, 1971, 7A; "Frank M. Groves, 84, dies; headed city construction firm," *The Minneapolis Star*, August 11, 1971, 13A; "Groves & Sones Company Has $100 Million In Contracts Under Way," *The La Crosse Tribune*, November 11, 1962, 4; Bob Rankin, "Work Progresses On New Richmond Dam," Cincinnati Enquirer, July 14, 1959, 4-B; Beverly Kees, "First Midwesterner to Win Construction Prize Is City Man, *The Minneapolis Star*, November 6, 1967, 9B; "Venezuela Awards Contracts in City," *Minneapolis Morning Tribune*, March 25, 1944, 10; Ralph Thornton, "Contractor built his domain from a hobby horse," *Minneapolis Star and Tribune*, April 30, 1982, 4D; "REMEMBERING: Groves, Franklin N.," Minneapolis *Star Tribune*, February 18, 2018, B12; "3 Firms to Build State Tunnel," *San Francisco Examiner*, August 5, 1965, 8; "Low Bid for Big Tunnel Bore Is Over $33-Million," *The Tracy Press*, July 26, 1965, 7; "Bridge construction set," Escondido *Daily Times-Advocate*, February 21, 1972, A-4; "State Sets Plans For Highest Bridge," *The Fresno Bee*, February 27, 1972, A15.

[8] Myra L. Frank & Associated, "Caltrans Historic Bridge Inventory Update: Concrete Box Girder Bridges," prepared for Caltrans, August 2003, 5-11; Caltrans, Historical Resources Evaluation Report, Statewide Historic Bridge Inventory: 2015 Update, 1965-1974, 21.

Bridge (51 0037) built in 1963 on SR 154 in Santa Barbara County. During this period, Division of Highways and Caltrans bridge designers considered aesthetic qualities following general principles related to quality design that carefully analyzed proportions of bridges' structural and safety elements, attractive forms for the various bridge elements, compatibility of bridges within their setting, and consideration of current and future acceptance of the structures. This in turn affected the output of non-state bridges in California. Proportion related to the scale of a bridge's components relative to one another. Compatibility emphasized improvements on how bridges fit into their surroundings, which depended on the nature of the structure and site with some bridges designed to blend with their setting and others to stand out. Longtime Division of Highways Chief of Bridge Planning and Design Arthur L. Elliott, who led the Bridge Department from 1953 to 1973, stressed a bridge's compatibility was more important than its uniqueness of appearance, stating that "a properly designed structure has a sense of belonging in its particular location," noting that bridges that seem out of place are subject to criticism. He further specified that bridges do not need to be fancy to be compatible, with simple, trim, and plain lines, like those seen on the Parrotts Ferry Bridge, considered more attractive than "contrived or contorted shapes." The Caltrans bridge aesthetics program resulted in many structures that incorporated basic aesthetic enhancements, as well as a smaller set of structures that included enhanced qualities and the few that had special aesthetic character.[9]

NRHP / CRHR Significance Evaluation

The Parrotts Ferry Bridge is not significant under NRHP Criterion A / CRHR Criterion 1 for an important association with significant events, trends, or patterns of development. The bridge was one of many roadway improvements carried out in the late 1970s and early 1980s in this region and throughout California. It is also not the first bridge at this location and did not initiate new patterns of development. Thus, the bridge is not important within the context of the development of the regional roadway network, local growth and development, or any other trends or events at the national, state, or local level that would make it significant under this criterion.

Under NRHP Criterion B / CRHR Criterion 2, this bridge is not significant for an association with the lives of persons important to history. Research did not find that any individuals directly associated with this property have made demonstrably important contributions to history at the local, state, or national level.

The Parrotts Ferry Bridge meets NRHP Criterion C / CRHR Criterion 3 for its type, period, and method of construction as a significant example of a concrete box girder bridge. Completed in 1979, the bridge is significant for the length of its longest span. Measuring 640 feet, it was the longest individual concrete box girder span in California and the U.S. when completed.[10] The bridge is also among the few structures of its period with special aesthetic character that makes it an excellent example of the Modern aesthetic in a bridge. Compatible within its setting, the bridge's design represents the union of engineering and architecture with its simplicity and pureness of structure that celebrates the beauty of structural form and emphasizes its economy of design. The bridge is a slender structure on slender piers with minimal number of elements, and has continuous long lines and repeated arches formed by the haunched girders that are among the features of the aesthetical paradigm of the

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[9] Arthur L. Elliott, "Aesthetics of Highway Bridges," *Civil Engineering*, June 1968, 66; James E. Roberts, "Aesthetic Design Philosophy Utilized for California State," *Journal of Urban Planning and Development*, Vol. 118, No. 4, December 1992, 138-141, 148, and 155; Arthur L. Elliott, "Esthetic Development of California's Bridges," presented at the April 14-18, 1980, ASCE Convention and Exposition, Portland, Oregon (Preprint 80-004), published in *Journal of Structural Engineering*, Vol. 109, No. 9, September 1983, paper no. 18240, 2159-63 and 2172-73; W.S. Ludlow, "Aesthetics in Bridge Design," *Manual of Bridge Design Practice* (State of California: Bridge Department, 1971), 16.3; Arthur L. Elliot, "Aesthetics in a Changing Economy," in *Meeting Preprint 2199* for American Society of Civil Engineers National Structural Engineering Meeting, April 22-26, 1974, *Cincinnati*, Ohio; JRP Historical Consulting, LLC, *Historical Resources Evaluation Report, Cold Spring Canyon Bridge (51 0037) Pedestrian Barrier Project, State Route 154, Santa Barbara County, California, 05-SB-154 PM 22.96, EA 05-0P910K,* prepared for Caltrans District 5, May 2007; James E. Roberts, *Aesthetics and Economy in Complete Concrete Bridge Design*, California Department of Transportation, Office of Structures Design, 1986, available at the Caltrans Transportation Library, 3, 5, and 6; Arthur L. Elliott, "Creating a Beautiful Bridge," in Committee on General Structures, Subcommittee on Bridge Aesthetics, *Bridge Aesthetics Around the World*, (Washington D.C.: Transportation Research Board, National Research Council. 1991), 217; Stewart Gloyd, "California – A Qualified Bridge Esthetics Case Study," *Concrete International*, Volume 16, No. 2, February 1994, 46-48.

[10] "Award Winner," *Modesto Bee,* November 27, 1979, 17.

period. Although the firm of T.Y. Lin International was a design consultant on the project, the firm was not the engineer of record and there is no indication that T.Y. Lin (1912-2003), who has previously been found to be a master engineer, had much, if any, direct responsibility for this structure's design. Thus, the bridge also does not meet this criterion as the work of a master or for exhibiting high artistic value.

Under NRHP Criterion D / CRHR Criterion 4, this property is not a significant or likely source of important information about historic construction materials or technologies that is not otherwise available through documentary evidence.

The boundary of the property encompasses the entire bridge structure. The period of significance is 1979, the year the bridge was completed. It is significant at the state level. The character-defining features are the concrete piers, box girders, deck, and railing.

Integrity

The only alteration to this bridge besides routine maintenance was the 1993 project to shore up the sag in the center of the span. Most of this repair work was inside the box girders and not visible except for two steel braces under the center section four small steel plates on each side. Despite these alterations, the bridge retains a high degree of integrity of materials, design, feeling, and workmanship, and full integrity of location, setting, and association. Overall, the bridge maintains sufficient integrity to convey its historical significance.

Photographs (Continued):

Photograph 2: South elevation, camera facing northeast, June 28, 2022.

Photograph 3: North elevation, camera facing west, June 28, 2022.

Photograph 4: West pier and soffit, camera facing southeast, June 28, 2022.

Photograph 5: West abutment, camera facing south, June 28, 2022.

Photograph 6: Bridge deck from east end, camera facing northwest, June 28, 2022.

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary # ______
HRI # ______
Trinomial ______
NRHP Status Code 3S

Other Listings ______
Review Code ______ Reviewer ______ Date ______

 ***Resource Name or #** (Assigned by recorder): Bridge 34C0066

P1. Other Identifier: City College Pedestrian Overcrossing (POC)

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County**: San Francisco

***b. USGS 7.5′ Quad**: San Francisco **Date**: 2021 **T**: 2S; **R**: 5W; **Sec**: n/a; Mount Diablo Meridian

c. Address: n/a City: San Francisco Zip: n/a

d. UTM: (give more than one for large and/or linear resources) Zone: 10S; 548362.61 m E; 4175222.68 m N

e. Other Locational Data: The City College POC crosses Ocean Avenue with the south end on Geneva Avenue and the north end on the San Francisco City College campus. The bridge is in Caltrans District 4.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

The City College POC is a 227-foot, 4-inch-long, four span concrete box girder pedestrian bridge over Ocean Avenue (**Photograph 1 & 2**). Both ends touch down on low hills, the south end on the Geneva Avenue sidewalk, and the north end on the City College campus. The bridge crosses over three motor-vehicle lanes and two Muni light-rail tracks in the center of the street. Supporting the structure are three thin concrete slope-leg bents that resemble upside-down V's (**Photographs 3 – 5**). Concrete steps are attached to both slopes of two of the three bents to provide access to the two Muni passenger islands. These two bents with steps have small, secondary lower arch bents to provide additional support. The stairways and the bridge are lined with a metal railing with thin vertical balusters painted blue. The third bent at the south end does not have steps or the secondary lower bents (**Photograph 6**). All of the bents have a smooth, concrete finish with flat tops and a concave, rounded shape on the lower sides (**Photographs 7 & 8**). Similarly, the bridge superstructure has a concave, rounded underside and a flat top carrying a 10-foot-wide deck (**Photograph 9**). At both ends are concrete abutments embedded in the hillsides (**Photographs 10 & 11**).

***P3b. Resource Attributes:** (List attributes and codes) HP19. Bridge

***P4. Resources Present:** ☐ Building ☒ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5b. Description of Photo: (View, date, accession#) **Photograph 1.** Camera facing west, July 6, 2022.

***P6. Date Constructed/Age and Sources:** ☒ Historic ☐ Prehistoric ☐ Both
1977 (Caltrans)

***P7. Owner and Address:**
County of San Francisco
1 Dr. Carlton B. Goodlett Place
San Francisco, CA 94102

***P8. Recorded by:**
Steven J. "Mel" Melvin
JRP Historical Consulting, LLC
2850 Spafford Street
Davis, CA 95618

***P9. Date Recorded**: July 6, 2022

***P10. Survey Type:** (Describe)
Intensive

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") JRP Historical Consulting, LLC, "Historical Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2023 Update, 1975-1984," prepared for Caltrans, 2023.

***Attachments:** ☐ None ☐ Location Map ☐ Sketch Map ☒ Continuation Sheet ☒ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record
☐Other (list) ______

***NRHP Status Code**: 3S

***Resource Name or #** (Assigned by recorder): Bridge 34C0066

B1. Historic Name: City College POC
B2. Common Name: City College POC
B3. Original Use: Bridge B4. Present Use: Bridge
***B5. Architectural Style**: Concrete Box Girder; Modern
***B6. Construction History**: (Construction date, alteration, and date of alterations) Built in 1977; no known alterations.
***B7. Moved?** ☒ **No** ☐ **Yes** ☐ **Unknown** **Date:** ______ **Original Location:** ______
***B8. Related Features:** ___
B9. Architect: City and County of San Francisco Department of Public Works (designer)
b. Builder: City and County of San Francisco Department of Public Works
***B10. Significance: Theme**: Design / Aesthetics **Area**: State
Period of Significance: 1977 **Property Type**: Bridge **Applicable Criteria**: C/3
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

The City College POC is eligible for listing in the National Register of Historic Places (NRHP) or the California Register of Historical Resources (CRHR). This property has been evaluated in accordance with Section 106 of the National Historic Preservation Act of 1966 (as amended) (54 U.S.C. 306108) and its implementing regulations (36 CFR Part 800) and Section 15064.5(a)(2)-(3) of the California Environmental Quality Act (CEQA) Guidelines, using the criteria outlined in Section 5024.1 of the California Public Resources Code (PRC). (See Section B10 on Continuation Sheet.)

B11. Additional Resource Attributes: ______

***B12. References**: Caltrans Bridge Database; Caltrans Bridge Inspection Reports; Caltrans, Bridge As-Built Plans; Caltrans, Statewide Historic Bridge Inventory Updates; CCSF Department of Public Works Annual Reports; *San Francisco Chronicle; San Francisco Examiner;* see also footnotes.

B13. Remarks:

***B14. Evaluator**: Steven J. "Mel" Melvin
***Date of Evaluation**: November 2023

(This space reserved for official comments.)

B10. Significance (continued):

Historic Context and Bridge History

The City and County of San Francisco (CCSF) built the City College POC in 1977 to provide a safe pedestrian crossing over Ocean Avenue between Geneva Avenue and the City College campus, and for pedestrians using the Muni light rail, which ran on an exclusive right-of-way in the center of Ocean Avenue. The bridge achieved the latter objective by incorporating stairways to the Muni loading islands into the sloped bents of the bridge (**Plate 1 & Plate 2**). The pedestrian overpass was part of a larger project paid for mostly by Federal Aid Urban System Program funding. This program provided up to 83 percent funding for street and transit improvements. Other elements of this project included constructing an exclusive Muni right-of-way in the center of Ocean Avenue, Muni loading islands on Ocean Avenue, widening of Ocean Avenue, traffic control and lane reconfiguration of the Geneva Avenue, Ocean Avenue, Frida Kahlo Way intersection (just west of the bridge), following extension of Geneva Avenue to Ocean Avenue in the late 1960s / early 1970s. The bridge element of the project cost $200,000 and was built on plans drafted by the CCSF Department of Public Works, Bureau of Engineering. At the time, the bridge was the longest ever built by the CCSF.[1]

Plate 1. City College POC under construction in October 1977, view facing north.[2]

[1] City and County of San Francisco, Department of Public Works, "Annual Report of the Department of Public Works, 1977-1978," June 30, 1978, 16; "Notice of Public Hearing," *San Francisco Examiner*, April 16, 1975, 50; City and County of San Francisco, Department of Public Works, "Annual Report of the Department of Public Works, 1976-1977," June 30, 1977, 10-12; City and County of San Francisco, Department of Public Works, "Annual Report of the Department of Public Works, 1974-1975," June 30, 1975, 16; "Report From the Beats," *San Francisco Chronicle*, September 16, 1973, 27; City and County of San Francisco, Department of Public Works, "Ocean Ave. and Phelan Ave. Rechannelization and Track Reconstruction," August 22, 1975; Aerial Photographs 1956, 1968, and 1980s, historicaerials.com (accessed November 2023).
[2] Caltrans, Bridge Report, Bridge 34C0066, October 27, 1977.

Plate 2. City College POC looking east on Ocean Avenue in July 1981.[3]

In addition to practicalities, aesthetics was of high importance to CCSF designers. The bent on the south end mimicked those that carried the stairs to achieve symmetry. Specifications called for white cement for both the bridge structure and the exposed aggregate retaining wall on the north side of Ocean Avenue. An annual report of the CCSF Department of Public Works called the structure "architecturally stunning", and the San Francisco Art Commission approved the design with commendation.[4]

The City College POC is a concrete box girder bridge. The first concrete box girder bridges in California were erected in the mid-1930s. The structural type was innovative for its design flexibility, helping to meet the growing demand for longer and wider bridges as well as skewed bridges that permitted straighter, more efficient, and safer roadways. The slender bridge profiles with harmonious proportions allowed engineers to achieve the modern design aesthetic thought to showcase transportation efficiency. Because they required less steel in their construction, concrete box girder bridges could also be erected at significant cost savings. Only a small number of concrete box girder bridges were built before World War II, however after the war their numbers increased quickly. By 1965, there were more than 1,500 concrete box girder bridges in California. More than 3,200 of the type were built between 1965 and 1974, and more than 1,000 between 1975 and 1984.[5]

Some notable concrete box girder bridges in California include the Mulholland Drive Overcrossing (Bridge 53 0739) in Los Angeles, which held title to the longest main span at 235 feet from its construction in 1959 until 1974 when the Interstate 8 bridge over the Pine Valley Creek (Bridge 57 0692L/R) achieved a 450-foot main span. The Eel River Bridge (Bridge 04 0016L) constructed in 1974 in Humboldt County achieved a total length of 1,730 feet and main span of 300 feet. Five years later the Parrotts Ferry Bridge in Tuolumne County, constructed in 1979, had a 639.8-foot-long main span and a total length

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[3] Caltrans, Supplementary Bridge Report, Bridge 34C0066, July 15, 1981.
[4] City and County of San Francisco, Department of Public Works, "Annual Report of the Department of Public Works, 1976-1977," June 30, 1977, 10-12; City and County of San Francisco, Department of Public Works, "Annual Report of the Department of Public Works, 1977-1978," June 30, 1978, 16.
[5] Myra L. Frank & Associated, "Caltrans Historic Bridge Inventory Update: Concrete Box Girder Bridges," prepared for Caltrans, August 2003, 5-11.

of 1,292.7 feet. The Napa River Bridge (Bridge 21 0049), erected in 1977, has the longest total length of any continuous concrete box girder span in California at 2,230 feet.[6]

There are multiple concrete box girder POCs in San Francisco built from the late 1950s to the 1970s. These include the Romain Street POC over Market Street (34C0033) built in Eureka Valley in 1958, Clarendon Avenue POC (34C0069) in Forest Knolls, built 1962, Roanoke POC over San Jose Avenue (34C0014), built in 1963, multiple POCs over I-280 built in 1963 and 1964, Lippard Street POC over Bosworth Street (34C0017) built in Glen Park in 1965, Webster Street POC over Geary Boulevard (34C0043), built in 1966, Harkness Avenue POC at US101 (34 0031), built in 1970, Gilman Avenue POC (34C0071) in the Bret Harte neighborhood, built in 1970, Miraloma Street POC over Portola Drive built in Foresthill Extension in 1971, and Hampshire Road POC over Cesar Chavez Street (Army Street) just west of US 101, built in 1972. There were other concrete box girder POCs in the city that have been demolished in recent years. These include the enclosed pedestrian bridge that spanned Hayes Street near Polk Street, which connected two California State Automobile Association buildings until 2015, the structures over Jamestown Avenue and Harney Way near Candlestick Park, which were removed ca. 2017 a few years after the demolition of Candlestick Park, and the Steiner Street POC that crossed over Geary Boulevard and was removed in 2020. While some of these other POCs have (or had) aesthetic qualities like curved or spiral ramps, or the haunched girders on the Webster Street, Gilman Avenue, and Hampshire Road POCs, none have similar geometric qualities of the thin slope-leg bents, concave girders, and rounded corners like the City College POC.

The design and construction of the City College POC occurred during a period when consideration of bridge aesthetics had become entrenched in Caltrans' bridge design procedures, which influenced local government and consultant designed bridges in the state. In general most state-built bridges, and many local or consultant-designed bridges, received at least some attention to their overall appearance, but more effort was placed on bridges in scenic or prominent locations. Caltrans' predecessor, the Division of Highways, began to integrate improved aesthetics into the state's bridge design procedures in the early 1960s with architects trained in bridge design providing input about the appearance of structures. The Division of Highways, and later Caltrans, developed its bridge aesthetics program to integrate it into the department's overall design philosophy that included additions to bridge design manuals with instructions to have bridges designed so that they would be aesthetically compatible with their location, as well as the development of standard features, such as columns, railings, and surface treatments, that met the aesthetic principles being promoted. Bridge designers were encouraged to consider what they are leaving for future generations, which emphasized that a bridge's appearance was as important as the structure's design features for load and safety. Aligning with the dominant architectural trends in Modernism of the period, bridge designers aspired to simplicity and pureness of structure, avoiding ornamentation, celebrating the beauty of structural form, and emphasizing ease of construction and economy of design. Slender structures on slender piers or columns with minimal number of elements, and continuous or steady long lines were among the features of the aesthetical ideal at the time. The Caltrans bridge aesthetics program, and its influence across the state, resulted in many structures that incorporated basic aesthetic enhancements, as well as a smaller set of structures that included enhanced qualities and the few that had special aesthetic character.[7]

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[6] Caltrans, Historical Resources Evaluation Report, Statewide Historic Bridge Inventory: 2015 Update 1965-1974, 21; DPR 523 forms Bridge 40 0048; Bridge 04 0016L; Bridge 04 0155.

[7] Arthur L. Elliott, "Aesthetics of Highway Bridges," *Civil Engineering*, June 1968, 66; James E. Roberts, "Aesthetic Design Philosophy Utilized for California State," *Journal of Urban Planning and Development*, Vol. 118, No. 4, December 1992, 138-141, 148, and 155; Arthur L. Elliott, "Esthetic Development of California's Bridges," presented at the April 14-18, 1980, ASCE Convention and Exposition, Portland, Oregon (Preprint 80-004), published in *Journal of Structural Engineering*, Vol. 109, No. 9, September 1983, paper no. 18240, 2159-63 and 2172-73; W.S. Ludlow, "Aesthetics in Bridge Design," *Manual of Bridge Design Practice* (State of California: Bridge Department, 1971), 16.3; Arthur L. Elliot, "Aesthetics in a Changing Economy," in *Meeting Preprint 2199* for American Society of Civil Engineers National Structural Engineering Meeting, April 22-26, 1974, *Cincinnati*, Ohio; JRP Historical Consulting, LLC, *Historical Resources Evaluation Report, Cold Spring Canyon Bridge (51 0037) Pedestrian Barrier Project, State Route 154, Santa Barbara County, California, 05-SB-154 PM 22.96, EA 05-0P910K,* prepared for Caltrans District 5, May 2007; James E. Roberts, *Aesthetics and Economy in Complete Concrete Bridge Design*, California Department of Transportation, Office of Structures Design, 1986, available at the Caltrans Transportation Library, 3, 5, and 6; Arthur L. Elliott, "Creating a Beautiful Bridge," in Committee on General Structures, Subcommittee on Bridge Aesthetics, *Bridge Aesthetics Around the World*, (Washington D.C.: Transportation Research Board, National Research Council.

NRHP / CRHR Significance Evaluation

The City College POC is not significant under NRHP Criterion A / CRHR Criterion 1 for an important association with significant events, trends, or patterns of development. The bridge was one of many roadway improvements carried out in the late 1970s and early 1980s by the CCSF Department of Public Works, and construction of pedestrian overcrossings was commonplace in San Francisco by the time this one was built in 1977. This bridge also did not initiate new patterns of development or alter existing trends. Thus, the bridge is not important within the context of the development of San Francisco's pedestrian infrastructure, local growth and development, or any other trends or events at the national, state, or local level that would make it significant under this criterion.

Under NRHP Criterion B / CRHR Criterion 2, this property is not significant for an association with the lives of persons important to history. Research did not find that any individuals directly associated with this property have made demonstrably important contributions to history at the local, state, or national level.

The City College POC meets NRHP Criterion C / CRHR Criterion 3 for its type, period, and method of construction because of its aesthetic value. While most pedestrian overcrossings are largely utilitarian in design, the designers of the City College POC achieved an architecturally distinctive bridge that is an excellent example of Modernism in a bridge form. What sets the City College POC apart from other pedestrian overcrossing are its three thin and graceful sloped-leg bent supports. These are constructed of smooth concrete with concave, rounded corners. The bents appear like upside-down V's with the two bents carrying the stairs having smaller V-shapes at the bottom providing further bracing. The concrete box girder superstructure emulates the design of the bents with its concave, rounded soffit. The thin, concrete stair treads attached to two of the arches and thin metal railing further contribute to the Modern aesthetic. The City College POC is does not meet this criterion as the work of a master, for its bridge engineering as it is particularly long, high, or representative of engineering innovation, or for possessing high artistic values.

Under NRHP Criterion D / CRHR Criterion 4, this property is not a significant or likely source of important information about historic construction materials or technologies that is not otherwise available through documentary evidence.

The boundary of the historic property encompasses the entire bridge structure. The period of significance is 1977, the year the bridge was completed. It is significant at the state level. The character-defining features are the bridge superstructure, deck, railing, slope-leg bents, and stairways.

Integrity

Neither research nor field observation revealed any substantial alterations to this bridge, thus it retains integrity of location, setting, materials, workmanship, feeling, association, and design. Overall, the bridge maintains sufficient integrity to convey its historical significance.

1991), 217; Stewart Gloyd, "California – A Qualified Bridge Esthetics Case Study," *Concrete International*, Volume 16, No. 2, February 1994, 46-48.

Photographs (Continued):

Photograph 2: West elevation, camera facing east, July 6, 2022.

Photograph 3: Oblique view, camera facing southeast, July 6, 2022.

Photograph 4: Oblique view, camera facing northeast, July 6, 2022.

Photograph 5: Center stairway, camera facing southeast, July 6, 2022.

Photograph 6: Oblique view, camera facing northwest, July 6, 2022.

Photograph 7: Soffit and stairways, camera facing north, July 6, 2022.

Photograph 8: Soffit and stairways, camera facing south, July 6, 2022.

Photograph 9: Bridge deck, camera facing south, July 6, 2022.

Photograph 10: South abutment, camera facing south, July 6, 2022.

Photograph 11: North abutment, northeast, July 6, 2022.

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 3S

Other Listings
Review Code Reviewer Date

***Resource Name or #** (Assigned by recorder): Bridge 35 0038

P1. Other Identifier: Dumbarton Bridge
***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County**: San Mateo/Alameda
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad**: Newark **Date**: 2018 **T**:5S; **R**:2W; **Sec**: n/a; Mount Diablo Meridian
c. Address: State Route 84 City: Menlo Park/Fremont Zip: n/a
d. UTM: (give more than one for large and/or linear resources) Zone: 10S; 577643.95 m E; 4151152.12 m N
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate)
The Dumbarton Bridge carries State Route (SR) 84 over San Francisco Bay between the cities of in Fremont in Alameda County and Menlo Park in San Mateo County at post mile 29.25. It is the southern most of the five bridges that cross San Francisco Bay. The bridge is in Caltrans District 4.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)
The Dumbarton Bridge is 8,600 feet (1.63 miles) long, running generally east/west over San Francisco Bay (**Photographs 1 – 3**). The main, central section steel box girder section is comprised of 15 spans made up of three five-span continuous units totaling 3,150 feet (**Photographs 4 – 6**). The superstructure of this section has a concrete deck on a continuous, twin, trapezoidal steel box girder, each girder with three web plates, three top flange plates, and one bottom flange plate. The longest single span of this section between Piers 23 and 24 is 339 feet and rises to 85 feet above the main shipping channel. This central section is supported by a series of concrete pier bents comprised of two hexagonal cross-section columns that angle out from the base to form a V-shape, elevated concrete footings, and concrete caps. (See Continuation Sheet.)

***P3b. Resource Attributes:** (List attributes and codes) HP19. Bridge
***P4. Resources Present:** ☐ Building ☒ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5b. Description of Photo: (View, date, accession#) **Photograph 1.** North elevation, camera facing southeast, August 17, 2022.

***P6. Date Constructed/Age and Sources:** ☒ Historic ☐ Prehistoric ☐ Both
1982 (*Oakland Tribune*)

***P7. Owner and Address:**
State of California
Department of Transportation
1120 N Street
Sacramento, CA 95814

***P8. Recorded by:**
Steven J. "Mel" Melvin
JRP Historical Consulting, LLC
2850 Spafford Street
Davis, CA 95618

***P9. Date Recorded**: August 17, 2022

***P10. Survey Type:** (Describe)
Intensive

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") JRP Historical Consulting, LLC, "Historical Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2023 Update, 1975-1984," prepared for Caltrans, 2023.
***Attachments:** ☐ None ☐ Location Map ☐ Sketch Map ☒ Continuation Sheet ☒ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐Other (list)

BUILDING, STRUCTURE, AND OBJECT RECORD

***NRHP Status Code**: 3S

***Resource Name or #** (Assigned by recorder): Bridge 35 0038

B1. Historic Name: Dumbarton Bridge
B2. Common Name: Dumbarton Bridge
B3. Original Use: Bridge B4. Present Use: Bridge
***B5. Architectural Style**: Steel Box Girder
***B6. Construction History**: (Construction date, alteration, and date of alterations) Built in 1982; alterations: repair and improvement of two pier fenders in 1993 and 2001; seismic retrofit in 2013; stairway, interpretive signs, benches on west end built ca. 2012 - 2015.
***B7. Moved?** ☒ No ☐ Yes ☐ Unknown **Date:** ________ **Original Location:** ________
***B8. Related Features:** ___
B9. Architect: Caltrans b. Builder: Guy F. Atkinson Company
***B10. Significance: Theme**: Engineering **Area**: State
Period of Significance: 1982 **Property Type**: Bridge **Applicable Criteria**: C/3
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

The Dumbarton Bridge is eligible for listing in the National Register of Historic Places (NRHP), California Register of Historical Resources (CRHR), and as a California Historical Landmark (CHL). This property has been evaluated in accordance with Section 106 of the National Historic Preservation Act of 1966 (as amended) (54 U.S.C. 306108) and its implementing regulations (36 CFR Part 800); Section 15064.5(a)(2)-(3) of the California Environmental Quality Act (CEQA) Guidelines, using the criteria outlined in Section 5024.1 of the California Public Resources Code (PRC); and in accordance with the CHL Criteria as per PRC Section 5031. (See Section B10 on Continuation Sheet.)

B11. Additional Resource Attributes: ________

***B12. References**: Caltrans Bridge Database; Caltrans Bridge Inspection Reports; Caltrans, As-Built Plans; Caltrans, Statewide Historic Bridge Inventory Updates; *San Francisco Examiner; San Francisco Chronicle; Oakland Tribune;* see also footnotes.

B13. Remarks:

***B14. Evaluator**: Steven J. "Mel" Melvin
***Date of Evaluation**: November 2023

(This space reserved for official comments.)

P3a. Description (continued):

On each side of the central steel box girder span are approach spans comprised of 15 spans on the west side totaling 2,200 feet and 13 spans on the east side totaling 1,950 feet. These spans have a trapezoidal concrete box girder superstructure and the same concrete pier design as the central section (**Photographs 7 & 8**). The final sections are the two trestle approach sections at each end, both comprised of 21 spans 650 feet long (**Photograph 9**). The trestle sections have a flat concrete slab deck supported by 20-inch square concrete pile bents, concrete abutments, and concrete pier walls that enclose these sections of the bridge. Non-original concrete bent supports have been added along the sides of the trestle section as a seismic retrofit. At both ends of the bridge, a vehicle undercrossing goes through the trestle section (**Photograph 10**). The east undercrossing is one-lane, while the west undercrossing is two lanes. Inside each undercrossing are metal roll-up doors and metal personnel doors that access for storage / equipment rooms. Near the undercrossings on both sides are small parking lots for anglers, birdwatchers, and hikers. Next to the west undercrossing is a modern concrete stairway between the parking lot and the bridge sidewalk, benches, and interpretive signs (**Photograph 11**).

The bridge carries six lanes of traffic on a concrete deck that cantilevers out over the girders and measures a total of 85 feet wide edge-to-edge, and 70 feet curb-to-curb (**Photograph 12**). The concrete deck has low concrete walls running along the centerline and both edges. Another low concrete wall separates the eastbound travel lanes from the pedestrian/bicycle path on the south edge of the bridge. The outermost concrete wall along the path is topped by a metal railing with vertical V-shaped members that mimic the bridge piers. Also along the outer concrete wall are metal lampposts.

B10. Significance (continued):

<u>*Historic Context and Bridge History*</u>

The first Dumbarton Bridge, formerly located just south of the current bridge, was a two-lane steel thru-truss bridge with a central lift span built in 1927 as the first bridge over San Francisco Bay. The idea to build a new bridge germinated in the late 1960s in response to the old bridge's deteriorated condition, high accident rate, lift-span caused delays, and its inability to handle the increased traffic volume. After several years, the idea turned into action with construction of the new bridge beginning in 1978 (**Plate 1 & Plate 2**). Caltrans engineers designed the bridge and let the construction contract to Guy F. Atkinson Company. A seismic analysis of ground conditions that showed severe lateral force in the event of an earthquake led engineers to choose the lightest superstructure design for the central spans: steel box girder design with a lightweight concrete deck. Keeping the superstructure weight low would reduce the inertial forces and swaying movement of the bridge during an earthquake. Other seismic-related design elements include a highly flexible pile design and constructing the bridge with as few joints as possible to reduce the risk of girders slipping off the piers. The steel plates for the box girders were welded together into 200-foot sections at a location in Vallejo and shipped by barge to the site where a crane lifted them into place.[1]

Although projected to be completed by 1981, the project experienced a variety of delays and cost overruns attributed to inflation, environmental settlements, and unanticipated engineering problems. The bridge portion of the project was done in early 1982, but heavy rain delayed completion of the approach roads and the bridge opening. Work continued through the summer and Caltrans dedicated the span on October 3, 1982. Ceremonies included a speech by Governor Jerry Brown, yacht parade under the bridge, running race, and a bicycle ride. Three days after the dedication, the bridge was opened to traffic. When completed, the final cost of the project totaled about $180 million, $57 million for the bridge and the remainder for right-of-way acquisition, construction of approach roads and the toll plaza, and demolition of the old bridge. The project required 93,000 cubic yards of concrete, 14,200 tons of steel, and 22 miles of piling. The Dumbarton Bridge is a multi-component bridge measuring 8,600 feet (1.63 miles) with a 3,150-foot steel box girder central section featuring a 339-foot main span. Originally built with four lanes and a pedestrian/bicycle lane, Caltrans crews painted a third lane in each direction

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[1] "The Newest Bridge on the Bay Replaces the Oldest," *San Francisco Examiner,* October 3, 1982, 65; "Dumbarton Bridge To Open," *San Francisco Chronicle,* September 30, 1982, 4; "Dumbarton Bridge Opening Stalled," *Oakland Tribune,* April 1, 1982, 1; Craig Staats and Ruud Van der Veer, "Dumbarton Bridge Will Open Sunday," *Oakland Tribune,* October 1, 1982, 19; "Dumbarton Bridge On Schedule for Next Year's Opening Date," *Oakland Tribune,* September 18, 1980, 88; Charles Seim, "The Design and Construction of the Dumbarton Bridge," ca. 1980, Folder: Dumbarton Bridge, Box: Bridges, Named, DR-DU, Caltrans Transportation Library.

in 1989 to help accommodate increased traffic due to the temporary closure of the Bay Bridge following damage from the Loma Prieta earthquake. The Dumbarton Bridge underwent a seismic retrofit in 2013.[2]

Plate 1. East section of bridge under construction.[3]

Plate 2. East concrete girder section under construction.[4]

The bridge builder, the Guy F. Atkinson Company, was founded in 1926 by Guy Frederick Atkinson in Oakland, California. In the 1930s, the firm was one of many to collaborate on construction of the Boulder (later Hoover) Dam in Nevada, and gained a reputation for building dams, at home and abroad. Some notable dam projects include the Grand Coulee Dam on the Columbia River in Washington state, the Hansen Dam in California, and the Mangla Dam in Pakistan, the world's largest hydroelectric project at the time of its dedication in 1968. In addition to their numerous international and domestic dam projects, the firm worked on large-scale, multi-million-dollar freeway contracts throughout California and across the country,

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[2] "The Newest Bridge on the Bay Replaces the Oldest," *San Francisco Examiner,* October 3, 1982, 65; "Dumbarton Bridge To Open," *San Francisco Chronicle,* September 30, 1982, 4; "Dumbarton Bridge Opening Stalled," *Oakland Tribune,* April 1, 1982, 1; Craig Staats and Ruud Van der Veer, "Dumbarton Bridge Will Open Sunday," *Oakland Tribune,* October 1, 1982, 19; "Dumbarton Bridge On Schedule for Next Year's Opening Date," *Oakland Tribune,* September 18, 1980, 88; "Dumbarton Bond Issue Urged," *Oakland Tribune,* August 1, 1980, 16; "Dumbarton Bridge Cost Spirals Up," *Oakland Tribune,* March 13, 1980, 21; "New Bridge Opens For Traffic Today," *San Francisco Chronicle,* October 6, 1982, 3; Craig Staats and Ruud Van der Veer, "Dumbarton Bridge Will Open Sunday," *Oakland Tribune,* October 1, 1982, 19; Metropolitan Transit Commission, "Dumbarton Bridge," accessed October 2021 at https://mtc.ca.gov/operations/programs-projects/bridges/dumbarton-bridge; Caltrans, "Dumbarton Bridge Replacement [plans]," January 30, 1978.

[3] Courtesy of Caltrans District 4.

[4] Courtesy of Caltrans District 4.

building hundreds of miles of roads, ramps, interchanges, and bridges. Some notable bridge projects included the Talmadge Memorial Bridge in Savannah, Georgia completed in 1987 and the Maroon Creek Bridge in Aspen, Colorado completed in 2008. After the death of Guy Atkinson in 1968, the company continued to grow, until it was one of the largest construction firms in the United States toward the end of the twentieth century. However, as profits declined in the 1990s, the company filed for Chapter 11 bankruptcy in August 1997 and was bought out by Clark Construction Group Inc. of Maryland in 1998. As a subsidiary of Clark Construction, in the twenty-first century Atkinson Construction has continued to be a leading heavy-construction company within the United States.[5]

Steel box girder bridges, such as the Dumbarton Bridge, are a relatively new and rare bridge type in California. Of the nearly 25,000 bridges across the state, there are only 21 steel box girder bridges. The first was the Indian Creek Bridge (02C0147), erected in 1966 in Siskiyou County. This small bridge is 203 feet long and has six small steel box girders, rather than a smaller number of larger boxes which later became more common for the type. Other early bridges of this type include a pair of bridges (28C0315 and 28C0316) erected in 1968 carrying part of the Bay Area Rapid Transit (BART) tracks 104 feet over MacDonald Avenue in Richmond, Alameda County. In southern California, the matching pair of Queens Way Bridges (53C0551L & 53C0551LR) over the Los Angeles River in Long Beach were built in 1969. They each are 1,310 feet long with a 500-foot main span.[6] Steel box girder bridges have several advantages to other structure types. The most important advantage is that the design provided high torsional stiffness, generally ranging 100 to 1,000 times torsionally superior to I-shaped girders. This advantage makes them ideal for curved structures which require higher torsional stiffness. Other advantages are their enclosed form reduces the number of places for debris to collect, and the steel girders create a smooth, sleek appearance. Despite these advantages, the high cost of steel has kept the number of steel box girder bridges low, with only five constructed during the 1975-1984 period.[7]

Design and construction of the Dumbarton Bridge came during a period when consideration of bridge aesthetics had become entrenched in Caltrans' bridge design procedures. While most state-built bridges, and many local or consultant-designed bridges, received at least some attention to their overall appearance, more effort was placed on bridges in scenic or prominent locations. Caltrans' predecessor, the Division of Highways, began to integrate improved aesthetics into the state's bridge design procedures in the early 1960s with architects trained in bridge design providing input about the appearance of structures. The Division of Highways, and later Caltrans, developed its bridge aesthetics program to integrate it into the department's overall design philosophy that included additions to bridge design manuals with instructions to have bridges designed so that they would be aesthetically compatible with their location, as well as the development of standard features, such as columns, railings, and surface treatments, that met the aesthetic principles being promoted. Aligning with the dominant architectural trends in Modernism of the period, bridge designers aspired to simplicity and pureness of structure, avoiding ornamentation, celebrating the beauty of structural form, and emphasizing ease of construction and economy of design. Slender structures on slender piers or columns with minimal number of elements, and continuous or steady long lines were among the features of the aesthetical ideal at the time, for which the Division of Highways received various awards such as for the steel girder San Mateo Creek (Eugene Doran Memorial) Bridge (35 0199) built in 1967 on I-280 in San Mateo County that featured prominent sculpted concrete piers and the steel arch Cold Spring Canyon Bridge (51 0037) built in 1963 on SR 154 in Santa Barbara County. Although Division of Highways / Caltrans policy was to design aesthetically pleasing structures, and sometimes incorporated input from members of the public or other interested parties, there were also clear parameters that such efforts would not be unduly more expensive. During this period, Division of Highways and Caltrans bridge designers considered aesthetic qualities following general principles related to quality design that carefully analyzed proportions of bridges'

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5 "World Famed Dam Builder Is Dead at 93," *Statesman-Journal* [Salem, Ore.], September 13, 1968, 7; "Guy Frederick Atkinson," Pacific Coast Architecture Database, accessed November 2023, https://pcad.lib.washington.edu/person/3464/; "Santa Rosa Road Cost $3 Million," *The Napa Register*, June 14, 1956, 13; "Interstate 5's Widening OK'd in San Diego County," *Chico Enterprise-Record*, December 2, 1970, 8B; "It's official: Freeway 41 $27.6 million pact awarded," *The Fresno Bee*, June 17, 1980, D-1; J. Todd Foster, "Barge collision misses Choctawhatchee bridges," *Pensacola News Journal*, January 26, 1990, 1B; "Guy Atkinson earnings improve," *San Francisco Examiner*, August 14, 1990, B-4; "The State – Construction Services," *Los Angeles Times*, December 24, 1997, D2; "About Us – History," Atkinson Construction, accessed November 2023, https://www.atkn.com/about-us.
6 Caltrans, "Historical Resources Evaluation Report, Statewide Historic Bridge Inventory: 2015 Update," 1965-1974, 18-19.
7 Caltrans Statewide Historic Bridge Inventory: 2015 Update, 1965-1974, 18-19.

structural and safety elements, attractive forms for the various bridge elements, compatibility of bridges within their setting, and consideration of current and future acceptance of the structures. The Caltrans bridge aesthetics program resulted in many structures that incorporated basic aesthetic enhancements, as well as a smaller set of structures that included enhanced qualities and the few that had special aesthetic character.[8]

NRHP / CRHR Significance Evaluation

The Dumbarton Bridge is not significant under NRHP Criterion A / CRHR Criterion 1 for an important association with significant events, trends, or patterns of development. The bridge was one of many highway improvements carried out in the late 1970s and early 1980s by Caltrans throughout California and in the region. It is also not the first bridge at this location and did not initiate new patterns of development. Thus, the bridge is not important within the context of the development of the highway network, local growth and development, or any other trends or events at the national, state, or local level that would make it significant under this criterion.

Under NRHP Criterion B / CRHR Criterion 2, this property is not significant for an association with the lives of persons important to history. Research did not find that any individuals directly associated with this property have made demonstrably important contributions to history at the local, state, or national level. The bridge is named after Dumbarton Point, a point along the east shore of San Francisco Bay near the bridge.

The Dumbarton Bridge meets NRHP Criterion C / CRHR Criterion 3 because it is significant for its type, period, and method of construction as an important example of a steel box girder bridge. With its 3,150-foot steel box girder central section featuring a 339-foot main span, the Dumbarton Bridge was the first long-span steel box girder bridge built by Caltrans. While other long-span bridges utilizing steel box girder superstructures such as the San Mateo-Hayward Bridge (Bridge 35 0054; 1967) and the San Diego-Coronado Bay Bridge (Bridge 57 0857; 1969) preceded the Dumbarton Bridge, these two bridges incorporated steel box girders into an overall orthotropic bridge design and are classified by Caltrans as orthotropic bridges. Thus, the Dumbarton Bridge is the first true long-span steel box girder bridge.[9] The bridge is not significant for its aesthetic value. Besides the standard sloping girders and cantilevered deck, the bridge's aesthetic enhancements are limited to the V-shaped pier bents, the shape of which is echoed in the bridge railing. In addition, the bridge is not the work of a master and does not possess high artistic values.

Under NRHP Criterion D / CRHR Criterion 4, this property is not a significant or likely source of important information about historic construction materials or technologies that is not otherwise available through documentary evidence.

The boundary of the property encompasses the entire bridge structure, from the west abutment in San Mateo County to the east abutment in Alameda County. The historic property does not include the toll plaza, which is physically separate from the bridge structure and is not related to the bridge's significance in engineering. The period of significance is 1982, the year

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[8] Arthur L. Elliott, "Aesthetics of Highway Bridges," *Civil Engineering*, June 1968, 66; James E. Roberts, "Aesthetic Design Philosophy Utilized for California State," *Journal of Urban Planning and Development*, Vol. 118, No. 4, December 1992, 138-141, 148, and 155; Arthur L. Elliott, "Esthetic Development of California's Bridges," presented at the April 14-18, 1980, ASCE Convention and Exposition, Portland, Oregon (Preprint 80-004), published in *Journal of Structural Engineering*, Vol. 109, No. 9, September 1983, paper no. 18240, 2159-63 and 2172-73; W.S. Ludlow, "Aesthetics in Bridge Design," *Manual of Bridge Design Practice* (State of California: Bridge Department, 1971), 16.3; Arthur L. Elliot, "Aesthetics in a Changing Economy," in *Meeting Preprint 2199* for American Society of Civil Engineers National Structural Engineering Meeting, April 22-26, 1974, *Cincinnati*, Ohio; JRP Historical Consulting, LLC, *Historical Resources Evaluation Report, Cold Spring Canyon Bridge (51 0037) Pedestrian Barrier Project, State Route 154, Santa Barbara County, California, 05-SB-154 PM 22.96, EA 05-0P910K,* prepared for Caltrans District 5, May 2007; James E. Roberts, *Aesthetics and Economy in Complete Concrete Bridge Design*, California Department of Transportation, Office of Structures Design, 1986, available at the Caltrans Transportation Library, 3, 5, and 6; Arthur L. Elliott, "Creating a Beautiful Bridge," in Committee on General Structures, Subcommittee on Bridge Aesthetics, *Bridge Aesthetics Around the World*, (Washington D.C.: Transportation Research Board, National Research Council. 1991), 217; Stewart Gloyd, "California – A Qualified Bridge Esthetics Case Study," *Concrete International*, Volume 16, No. 2, February 1994, 46-48.

[9] Caltrans Statewide Historic Bridge Inventory: 2015 Update, 1965-1974, 17, 19.

construction was completed. It is significant at the state level. The character-defining features are the steel box girders, concrete box girders, concrete piers, elevated concrete footings, trestle sections, bridge deck, and railing.

California Historical Landmark Evaluation

A property may be eligible for designation as a California Historical Landmark (CHL) if it meets one of three criteria: the first, last, or most significant of its type within the state or within a large geographic region (i.e., Northern California); is associated with an individual or group having a profound influence on the history of California; or is a prototype of, or an outstanding example of, a period, style, architectural movement or construction, or is an important work of a master architect or builder. Of these, the Dumbarton Bridge meets the CHL Criteria as an outstanding example of a steel box girder bridge and the first of its type in the state. It is therefore eligible for designation as a CHL.

Integrity

In addition to meeting the NRHP and CRHR significance criterion, the Dumbarton Bridge also retains a high degree of integrity. The main alteration to the bridge since its construction was a seismic retrofit in 2013. The retrofit on the main span included the replacement of bearings; installation of new steel cross frames inside steel box girders at Piers 16 and 31; strengthening of existing steel cross frames in steel box girders at each pier; a hinge retrofit; and replacement of deck joints at Piers 16 and 31. Work on the piers entailed the expansion and strengthening of pier caps in order to accommodate new isolator bearings at Piers 16 to 31; strengthening of columns to bent cap connections for joint shear with prestressed concrete bolsters installed on the sides of the existing bent caps at Piers 16 to 31; retrofitting of bent caps to accommodate friction pendulum isolation bearings Piers 16 to 31; the addition of concrete frames as backwall seats at Piers 1 and 44; strengthening of pile caps by providing negative moment reinforcing through one foot of additional reinforced concrete on top of the footings of Piers 17 to 30; and strengthening of existing slabs of east and west trestle structures with four-foot diameter cast-in-drilled-hole piles on both sides of selected bents.[10] Another alteration project were repairs and improvements to some of the pier fenders on Piers 23 and 24 in 1993 and 2001. This entailed replacing the original timber fenders with plastic sheathing reinforced with steel I-beams.[11]

With respect to historic integrity, these alterations are relatively minor, not highly visible, and do not substantially alter the structure of the bridge or its historic appearance. Thus, the bridge retains a high degree of integrity of design, materials, and workmanship as well as complete integrity of location, setting, feeling, and association. Overall, the bridge maintains sufficient integrity to convey its historical significance.

[10] Caltrans, Bridge Inspection Report, "Dumbarton Bridge, Bridge No. 35 0038," November 30, 2021; Center for Engineering Strong Motion Data, Information for Strong-Motion Station, San Francisco Bay - Dumbarton Bridge, CGS - CSMIP Station 58596, accessed January 2022 at https://www.strongmotioncenter.org/cgi-bin/CESMD/stationhtml.pl?stationID=CE58596&network=CGS.
[11] Caltrans, Bridge Inspection Report, "Dumbarton Bridge, Bridge No. 35 0038," November 30, 2021.

Photographs (Continued):

Photograph 2: North elevation showing steel box girder section, camera facing southeast, August 17, 2022.

Photograph 3: South elevation, camera facing northeast, August 17, 2022.

Photograph 4: East end of steel box girder section, camera facing southwest, August 17, 2022.

Photograph 5: Center of steel box girder section showing the main span and the shipping channel in the left-center of the frame (between the two piers with fenders attached to the foundations), camera facing west, August 17, 2022.

Photograph 6: Photo showing bent cap / steel box girder interface, camera facing west, August 17, 2022.

Photograph 7: East concrete girder section, camera facing northeast, August 17, 2022.

Photograph 8: View from west end, camera facing northeast, August 17, 2022.

Photograph 9: East trestle section, camera facing northeast, August 17, 2022.

Photograph 10: Undercrossing through west trestle section, camera facing north, August 17, 2022.

Photograph 11: Modern stairway, benches, and interpretive signs on west trestle section, camera facing northwest, August 17, 2022.

***Resource Name or #** (Assigned by recorder): Bridge 35 0038

***Recorded by**: S.J. Melvin ***Date**: August 17, 2022 ☒Continuation ☐Update

Photograph 12: Bridge deck, camera facing northeast, August 17, 2022.

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 3S
Other Listings
Review Code **Reviewer** **Date**

 ***Resource Name or #** (Assigned by recorder): Bridge 53 0068

P1. Other Identifier: Castellammare Pedestrian Overcrossing (POC)

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County**: Los Angeles
and (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad**: Topanga **Date**: 2018 **T**: 1S; **R**: 16W; **Sec**: n/a; San Bernardino Meridian

c. Address: n/a City: n/a Zip: n/a

d. UTM: (give more than one for large and/or linear resources) Zone: 11S; 355968.97 m E; 3767694.23 m N

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate)
The Castellammare POC carries pedestrians over State Route (SR) 1 between the community of Castellammare and Castle Rock Beach on the Pacific Ocean. The bridge is located at post mile 39.62. The bridge is in Caltrans District 7.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

The Castellammare POC is a cast-in-place, prestressed concrete, single-cell box girder pedestrian bridge with a reinforced concrete seated abutment on the north end and a reinforced concrete diaphragm abutment on the south end (**Photographs 1 - 2**). The bridge is comprised of a main span 111 feet long with concave sides and three reinforced concrete and landing spans on the south end for a total length of 192 feet. At the north end of the bridge, a pre-existing stairway leads up to Castellammare Drive and another down to SR 1 (**Photograph 3)**. At the south end, an octagonal concrete pier supports the bridge, and two other shorter piers support the stairway landings (**Photographs 4 - 7**). Four of the eight sides of these piers, the sides of the stairway, and sides of the box girder span are decorated with pebble veneer inset panels. (See Continuation Sheet.)

***P3b. Resource Attributes:** (List attributes and codes) HP19. Bridge

***P4. Resources Present:** ☐ Building ☒ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5b. Description of Photo: (View, date, accession#) **Photograph 1.** Camera facing west, May 17, 2022.

***P6. Date Constructed/Age and Sources:** ☒ Historic ☐ Prehistoric ☐ Both
1979 (Caltrans)

***P7. Owner and Address:**
State of California
Department of Transportation
1120 N Street
Sacramento, CA 95814

***P8. Recorded by:**
Steven J. "Mel" Melvin
JRP Historical Consulting, LLC
2850 Spafford Street
Davis, CA 95618

***P9. Date Recorded**: May 17, 2022

***P10. Survey Type:** (Describe)
Intensive

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") JRP Historical Consulting, LLC, "Historical Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2023 Update, 1975-1984," prepared for Caltrans, 2023.

***Attachments:** ☐ None ☐ Location Map ☐ Sketch Map ☒ Continuation Sheet ☒ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐Other (list)

***NRHP Status Code**: 3S
***Resource Name or #** (Assigned by recorder): Bridge 53 0068

B1. Historic Name: Castellammare POC
B2. Common Name: Castellammare POC
B3. Original Use: Bridge B4. Present Use: Bridge
***B5. Architectural Style**: Concrete Box Girder
***B6. Construction History**: (Construction date, alteration, and date of alterations) Built in 1979; no known alterations except routine maintenance.
***B7. Moved?** ☒ **No** ☐ **Yes** ☐ **Unknown** **Date:** ____ **Original Location:** ____
***B8. Related Features:** ___
B9. Architect: Caltrans b. Builder: Brutoco Engineering & Construction
***B10. Significance: Theme**: Design / Aesthetics **Area**: State
Period of Significance: 1978 **Property Type**: Bridge **Applicable Criteria**: C/3
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

The Castellammare POC is eligible for listing in the National Register of Historic Places (NRHP) and the California Register of Historical Resources (CRHR). This property has been evaluated in accordance with Section 106 of the National Historic Preservation Act of 1966 (as amended) (54 U.S.C. 306108) and its implementing regulations (36 CFR Part 800) and Section 15064.5(a)(2)-(3) of the California Environmental Quality Act (CEQA) Guidelines, using the criteria outlined in Section 5024.1 of the California Public Resources Code (PRC). Additionally, the Castellammare POC meets the California Historical Landmarks (CHL) Criteria as per PRC Section 5031 and is a California Historical Landmark. (See Section B10 on Continuation Sheet.)

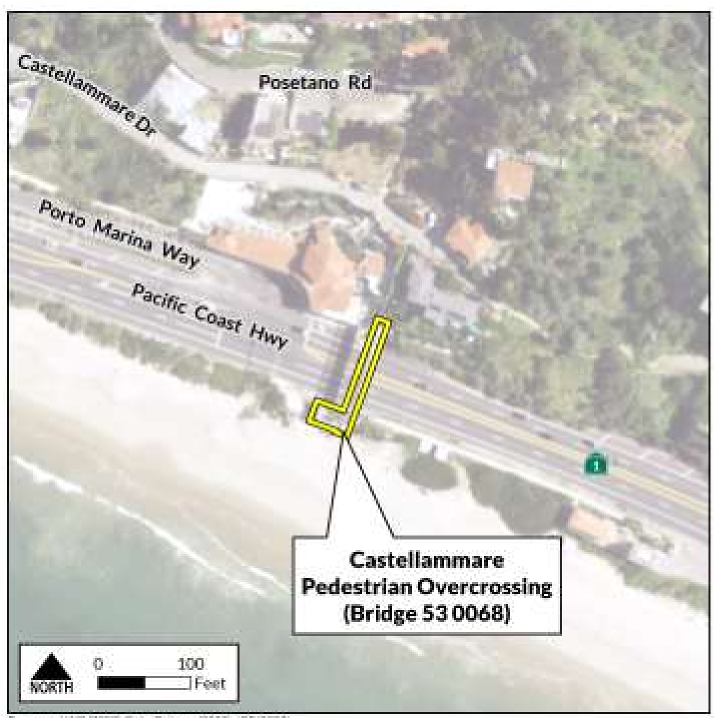
B11. Additional Resource Attributes: ____

***B12. References**: Caltrans Bridge Database; Caltrans Bridge Inspection Reports; Caltrans, Bridge As-Built Plans; Caltrans, Statewide Historic Bridge Inventory Updates; *Los Angeles Times;* see also footnotes.

B13. Remarks:

***B14. Evaluator**: Steven J. "Mel" Melvin
***Date of Evaluation**: November 2023

(This space reserved for official comments.)



P3a. Description (continued):

The concrete bridge deck has an outside width of ten feet and on both sides is a metal picket railing with tubular handrail that continues along the south stairway (**Photograph 8**). A chain link fence is attached to the pickets on the section of the bridge over the roadway. This section is also decorated with evenly-spaced faux adobe block pillars and roof tiles along the top of the metal framing.

B10. Significance (continued):

Historic Context and Bridge History

Caltrans first proposed constructing the current Castellammare POC as part of a larger project in the early 1970s to improve a 5.5 mile segment of the Pacific Coast Highway (PCH; SR 1) between the R. W. McClure Tunnel in Santa Monica, adjacent to the Santa Monica Pier, and Topanga Canyon Boulevard, just east of Malibu. The McClure Tunnel marks the south end of this section of the PCH that follows the coast. The project called for the widening of the PCH from four lanes to six lanes, installing a center left turn lane, new signals at several intersections, plus the construction of four pedestrian overcrossings over the highway, including the Castellammare POC in Pacific Palisades, as well as at Montana Avenue, California Incline, and Broadway in Santa Monica.[1]

The project garnered input from a variety of interested parties including the Santa Monica City Council, Santa Monica Chamber of Commerce, the Santa Monica Bay Area Transportation Committee, California Coastal Commission, and local residents. The local branch of the California Coastal Commission approved the project in July 1973, but a formal objection to the design of the pedestrian overcrossings by local members of the public forced an appeal to the State California Coastal Commission. One local resident derisively mocked the appearance of the initial overcrossing designs put forth by Caltrans as “coal chutes.” The State California Coastal Commission agreed and rejected the overcrossing designs purely on aesthetics and required Caltrans to redesign the bridges. This was the first time the commission denied a project purely on aesthetic grounds. Among other stakeholders, Caltrans received input on the Castellammare POC design from the Los Angeles County Parks Department and a grade school competition. Interestingly, the pebbles used for the aggregate veneer came from a beach in Mexico.[2] Unlike the Modern style POCs that the project built in Santa Monica, the Castellammare POC took is architectural cues from the POC it was replacing, with its stone faced abutments flanking the highway, as well as from the adjacent historic 1928 Spanish Colonial Revival commercial building, with its red tile roof, that was once home to a café operated by actress Thelma Todd and movie producer Ronald West.[3]

Caltrans completed the roadway improvement components of this project by the summer of 1974, but construction of the pedestrian overcrossings was delayed as Caltrans worked on new designs for the structures. Construction began on the four new overcrossings in 1978, undertaken by the firm of Brutoco Engineering & Construction and costing $1.2 million. At the time construction started, there were two overcrossings of the PCH in Santa Monica accessible to pedestrians. One was Colorado Avenue, which crossed over the McClure Tunnel and carried vehicles and pedestrians directly onto the Santa Monica Pier, and the other was at Arizona Avenue, where a still-extant pedestrian overcrossing built in 1935 – the Palisades POC (53

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[1] “Public Notice of Request for Design Approval,” *Los Angeles Times,* November 19, 1971, H2; “Ruling Expected in Six Weeks on Coast Highway,” *Los Angeles Times,* April 1, 1971, WS1; “News in Brief – Coast Highway,” *Los Angeles Times,* March 2, 1972, WS8; “Decision Near on Widening of Coast Highway,” *Los Angeles Times,* September 6, 1973, WS1, 4.
[2] “Social Values to Influence Its Decisions, Coastal Board Hints,” *Los Angeles Times,* November 29, 1973, 3C; James E. Roberts, “Aesthetic Design Philosophy Utilized for California State Bridges,” *Journal of Urban Planning and Development* 118, no. 4 (December 1992), 154, 155; John C. Ritner, “Bridges Produced by an Architectural Engineering Team,” *Transportation Research Record 1044, Structures and Foundations* (Washington D.C.: Transportation Research Board National Research Council, 1985), 34.
[3] Pacific Palisades Historical Society, “Thelma Todd’s Sidewalk Café 1928,” available on Pacific Palisades Historical Society website, https://www.pacificpalisadeshistory.org/thelma-todds-sidewalk-caf (accessed November 2023).

0388) – connected Palisades Park with the beach. Caltrans completed the Castellammare POC in 1979. The new structure replaced a pedestrian overcrossing at the same location built in 1926 (**Plate 1, Plate 2**).[4]

Plate 1. Photo of the old Castellammare POC constructed in 1926.[5]

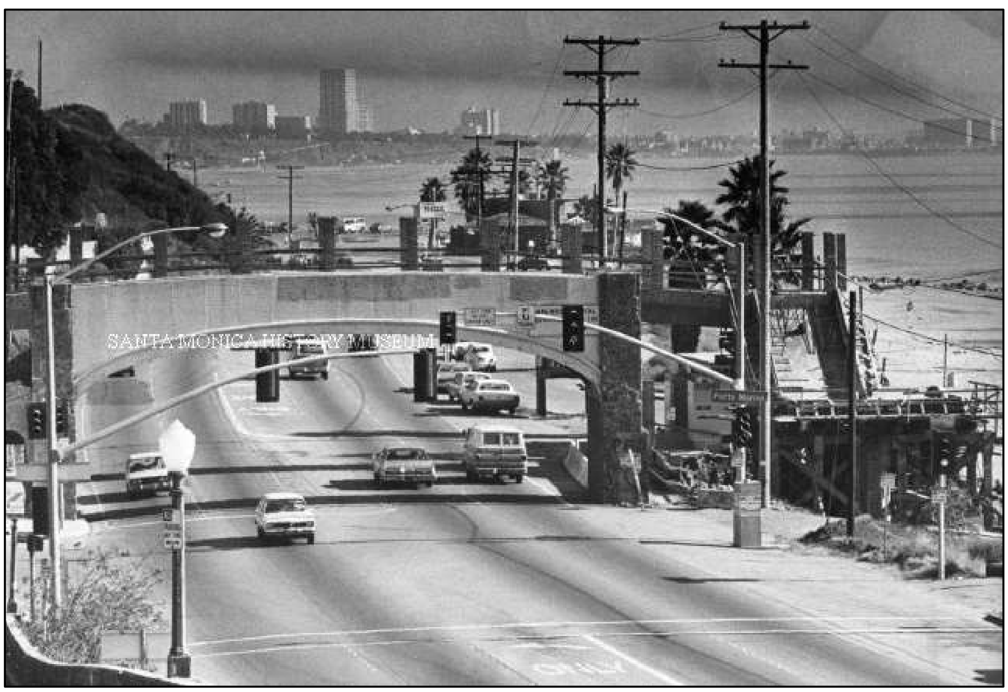

Plate 2. Photo of Castellammare POC under construction in December 1978. The previous pedestrian overcrossing is in the foreground.[6]

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[4] "4 Overcrossings Will Be Built in S.M.," *Los Angeles Times,* January 19, 1978, WS4; "Completion Due on Coast Highway Job by Early Summer," *Los Angeles Times,* March 10, 1974, WS1.
[5] "Roosevelt Highway & Porto Marina Way," January 9, 1946, Pedestrian Structures, Box 1, Los Angeles County, Caltrans Transportation Library.
[6] "Pedestrian Bridge at Porto Marina Way and Pacific Coast Highway," December 15, 1978, Photo No. 1998.1.1240, Santa Monica History Museum Collection.

The Brutoco Engineering & Construction Company was founded in 1967. Early projects included the construction of drainage infrastructure, such as storm drains and lining creek channels, but by the late-1970s and early-1980s the company was being awarded contracts to construct numerous bridges in Los Angeles, San Bernardino, and Riverside counties. Specific projects included the Arrow Route and Foothill Boulevard bridge crossings over Cucamonga Creek, and the Deer Creek, Ontario and Rancho Cucamonga bridges, all in San Bernardino County. In the 1980s and 1990s the company was known for specializing in highway and street construction.[7]

The Castellammare POC is a concrete box girder bridge (**Plate 3**), the first of which were erected in the mid-1930s in California. The highly flexible design enabled the construction of longer and wider bridges, as well as skewed bridges that permitted straighter, more efficient, and safer roadways. The slender bridge profiles with harmonious proportions allowed engineers to achieve the modern design aesthetic thought to showcase transportation efficiency. Because they required less steel in their construction, concrete box girder bridges could also be erected at significant cost savings. Only a small number of concrete box girder bridges were built before World War II, but after the war their numbers rapidly increased. By 1965, there were more than 1,500 concrete box girder bridges in California. More than 3,200 of the type were built between 1965 and 1974, and more than 1,000 between 1975 and 1984.[8]

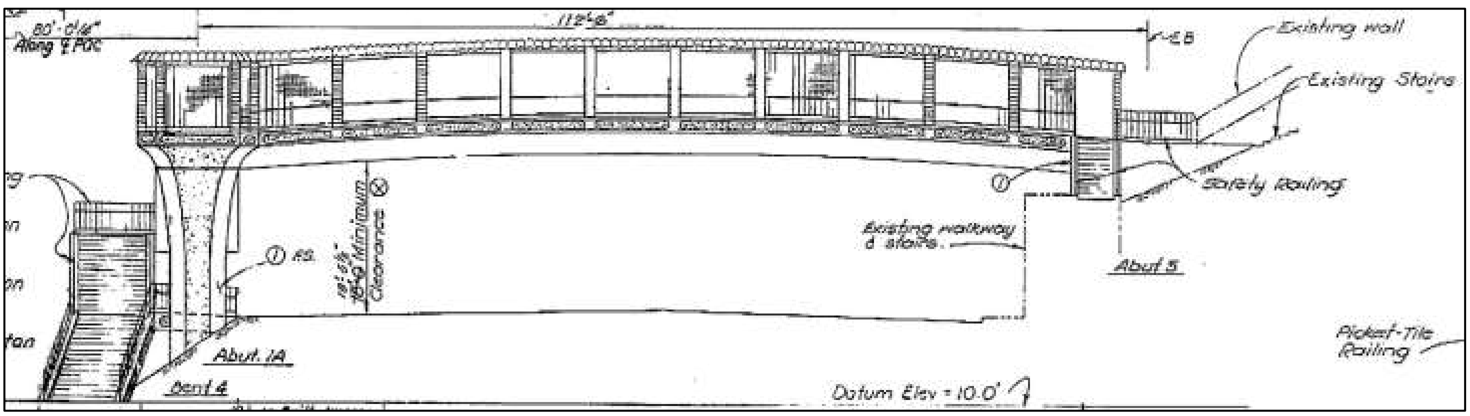

Plate 3. Bridge elevation from original plans dated 1977.[9]

Some notable concrete box girder bridges in California include the Mulholland Drive Overcrossing (Bridge 53 0739) in Los Angeles, which held title to the longest main span at 235 feet from its construction in 1959 until 1974 when the Interstate 8 bridge over the Pine Valley Creek (Bridge 57 0692L/R) achieved a 450-foot main span. The Eel River Bridge (Bridge 04 0016L) constructed in 1974 in Humboldt County achieved a total length of 1,730 feet and main span of 300 feet. Five years later the Parrotts Ferry Bridge in Tuolumne County, constructed in 1979, had a 639.8-foot-long main span and a total length of 1,292.7 feet. The Napa River Bridge (Bridge 21 0049), erected in 1977, has the longest total length of any continuous concrete box girder span in California at 2,230 feet. The latter two examples are also notable for their aesthetic design.[10] There are many concrete box girder POCs in Los Angeles County, many of which are of utilitarian design, such as several built around the same time as the Castellammare POC. These include the Meadowgrove Avenue POC over I-210 (53 2232) in La

[7] "Brutoco Engineering & Construction Inc.," Bloomberg, accessed November 2023, https://www.bloomberg.com/profile/company/7338290Z:US#xj4y7vzkg; "[Legal Advertisement]," San Bernardino *The Sun*, July 29, 1968, A-6; "[Legal Advertisement]," San Bernardino *The Sun*, January 6, 1969, B-6; "[Legal Advertisement]," San Bernardino *The Sun*, March 12, 1979, B-9; "[Legal Advertisement]," San Bernardino *The Sun*, September 1, 1980, D-3; "[Public Notice – No. 2443]," *Desert Sun*, May 16, 1996, E8.

[8] Myra L. Frank & Associated, "Caltrans Historic Bridge Inventory Update: Concrete Box Girder Bridges," prepared for Caltrans, August 2003, 5-11.

[9] Caltrans, "Castellammare Pedestrian Overcrossing – General Plan [as-built plans]," August 29, 1977.

[10] Caltrans, Historical Resources Evaluation Report, Statewide Historic Bridge Inventory: 2015 Update 1965-1974, 21 and DPR 523 forms Bridge 40 0048; Bridge 04 0016L; Bridge 04 0155.

Cañada Flintridge, built in 1974, Greenwood Avenue POC over I-5 (53 0803) in Commerce, built in 1978, and Etiwanda Avenue POC over SR 118 (53 2511) in Northridge, built in 1980.

Design and construction of the Castellammare POC came during a period when consideration of bridge aesthetics had become entrenched in Caltrans' bridge design procedures. While most state-built bridges, and many local or consultant-designed bridges, received at least some attention to their overall appearance, more effort was placed on bridges in scenic or prominent locations such as the POCs built along the PCH / SR 1, for example. Caltrans' predecessor, the Division of Highways, began to integrate improved aesthetics into the state's bridge design procedures in the early 1960s with architects trained in bridge design providing input about the appearance of structures. The Division of Highways, and later Caltrans, developed its bridge aesthetics program to integrate it into the department's overall design philosophy that included additions to bridge design manuals with instructions to have bridges designed so that they would be aesthetically compatible with their location, as well as the development of standard features, such as columns, railings, and surface treatments, that met the aesthetic principles being promoted. Bridge designers were encouraged to consider what they are leaving for future generations, which emphasized that a bridge's appearance was as important as the structure's design features for load and safety. Aligning with the dominant architectural trends in Modernism of the period, bridge designers usually aspired to simplicity and pureness of structure, avoiding ornamentation, celebrating the beauty of structural form, and emphasizing ease of construction and economy of design. Slender structures on slender piers or columns with minimal number of elements, and continuous or steady long lines were among the features of the aesthetical ideal at the time, for which the Division of Highways received various awards such as concrete box girder Junipero Serra Freeway (I-280) bridges built in the mid to late 1960s in San Mateo County and Adams Avenue Overcrossing built in 1970 over I-805 (57 0619) in San Diego County. Although Division of Highways / Caltrans policy was to design aesthetically pleasing structures, and sometimes incorporated input from members of the public or other interested parties, there were also clear parameters that such efforts would not be unduly more expensive. During this period, Division of Highways and Caltrans bridge designers considered aesthetic qualities following general principles related to quality design that carefully analyzed proportions of bridges' structural and safety elements, attractive forms for the various bridge elements, compatibility of bridges within their setting, and consideration of current and future acceptance of the structures. Proportion related to the scale of a bridge's components relative to one another. Compatibility emphasized improvements on how bridges fit into their surroundings, which depended on the nature of the structure and site with some bridges designed to blend with their setting and others to stand out. The attractiveness of a bridge could also be enhanced by the use of colors and textures, like that used on the Castellammare POC. The Caltrans bridge aesthetics program resulted in many structures that incorporated basic aesthetic enhancements, as well as a smaller set of structures that included enhanced qualities and the few that had special aesthetic character.[11]

The Castellammare POC's aesthetic character is distinctive among bridges from its period and this derives from not only the pebble inset panels, red tile, and faux adobe block pillars, but also from the concave shaped main box girder and the octagonal columns on the beach side of the bridge.

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[11] Arthur L. Elliott, "Aesthetics of Highway Bridges," *Civil Engineering*, June 1968, 66; James E. Roberts, "Aesthetic Design Philosophy Utilized for California State," *Journal of Urban Planning and Development*, Vol. 118, No. 4, December 1992, 138-141, 148, and 155; Arthur L. Elliott, "Esthetic Development of California's Bridges," presented at the April 14-18, 1980, ASCE Convention and Exposition, Portland, Oregon (Preprint 80-004), published in *Journal of Structural Engineering*, Vol. 109, No. 9, September 1983, paper no. 18240, 2159-63 and 2172-73; W.S. Ludlow, "Aesthetics in Bridge Design," *Manual of Bridge Design Practice* (State of California: Bridge Department, 1971), 16.3; Arthur L. Elliot, "Aesthetics in a Changing Economy," in *Meeting Preprint 2199* for American Society of Civil Engineers National Structural Engineering Meeting, April 22-26, 1974, *Cincinnati*, Ohio; JRP Historical Consulting, LLC, *Historical Resources Evaluation Report, Cold Spring Canyon Bridge (51 0037) Pedestrian Barrier Project, State Route 154, Santa Barbara County, California, 05-SB-154 PM 22.96, EA 05-0P910K,* prepared for Caltrans District 5, May 2007; James E. Roberts, *Aesthetics and Economy in Complete Concrete Bridge Design*, California Department of Transportation, Office of Structures Design, 1986, available at the Caltrans Transportation Library, 3, 5, and 6; Arthur L. Elliott, "Creating a Beautiful Bridge," in Committee on General Structures, Subcommittee on Bridge Aesthetics, *Bridge Aesthetics Around the World*, (Washington D.C.: Transportation Research Board, National Research Council. 1991), 217; Stewart Gloyd, "California – A Qualified Bridge Esthetics Case Study," *Concrete International*, Volume 16, No. 2, February 1994, 46-48.

NRHP / CRHR Significance Evaluation

The Castellammare POC is not significant under NRHP Criterion A / CRHR Criterion 1 for an important association with significant events, trends, or patterns of development. The bridge was one of many highway improvements carried out in the late 1970s and early 1980s by Caltrans throughout California and in this region. It represents a typical safety and accessibility improvement. The Castellammare POC was not the first pedestrian overcrossing at this location, but replaced an existing overcrossing built in 1926. Thus, the bridge did not open up a previously inaccessible beach.

Under NRHP Criterion B / CRHR Criterion 2, this bridge is not significant for an association with the lives of persons important to history. Research did not find that any individuals directly associated with this property have made demonstrably important contributions to history at the local, state, or national level.

Under NRHP Criterion C / CRHR Criterion 3, the Castellammare POC is significant for its type, period, and method of construction for its design and aesthetic character, but it is not significant as the work of a master or for possessing high artistic values. The bridge's aesthetic value is derived from the decorative elements incorporated into the bridge to make it more attractive and blend in with the local architecture and the stone masonry retaining wall on Porto Marina Way, which intersects with SR 1 at the overcrossing. The Castellammare POC design also appears to be an intentional attempt to achieve an aesthetic similar to the previous overcrossing that also had stone masonry elements. The decorative features are the pebble veneer inset panels, the faux adobe block pillars, and roof tiles along the walkway, as well as the concave main span box girder and the octagonal columns on the beach side of the structure. These features make the Castellammare POC an aesthetically distinct pedestrian overcrossing and eligible under NRHP Criterion C / CRHR Criterion 3.

Under NRHP Criterion D / CRHR Criterion 4, this property is not a significant or likely source of important information about historic construction materials or technologies that is not otherwise available through documentary evidence.

The boundary of the property encompasses the entire bridge structure and all of its elements between the end of the stairway on the south and the abutment on the north end. The period of significance is 1979, the year the bridge was completed. It is significant at the state level. The character-defining features are the piers, south stairs, box girder superstructure, deck, railing, pebble veneer inset panels, the faux adobe block pillars, and red roof tiles.

California Historical Landmark Evaluation

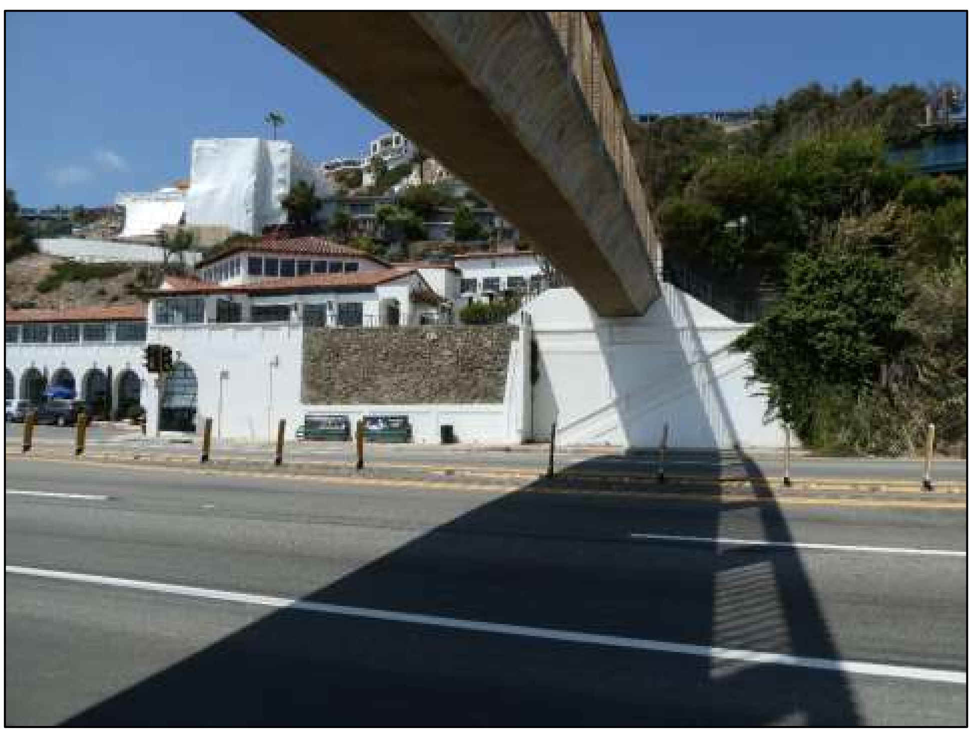
A property may be eligible for designation as a California Historical Landmark (CHL) if it meets one of three criteria: the first, last, or most significant of its type within the state or within a large geographic region (i.e., Southern California); is associated with an individual or group having a profound influence on the history of California; or is a prototype of, or an outstanding example of, a period, style, architectural movement or construction, or is an important work of a master architect or builder. Of these, the Castellammare POC meets the CHL Criteria because of its decorative aesthetic features that make it a distinctive example of a pedestrian overcrossing. It is therefore eligible for designation as a CHL.

Integrity

This bridge does not appear to have any alterations besides routine maintenance. As such, this bridge retains a high degree of integrity of materials, design, and workmanship, feeling, association, setting, and location. Overall, the bridge maintains sufficient integrity to convey its historical significance.

Photographs (Continued):

Photograph 2: West elevation, camera facing east, May 17, 2022.



Photograph 3: Soffit and north end of bridge, camera facing north, May 17, 2022.

Photograph 4: South stairs, camera facing north, May 17, 2022.

Photograph 5: South stairs, camera facing north, May 17, 2022.

Photograph 6: South stairs, camera facing east, May 17, 2022.

Photograph 7: West elevation, camera facing northeast, May 17, 2022.

Photograph 8: Bridge deck, camera facing north, May 17, 2022.

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary # ______
HRI # ______
Trinomial ______
NRHP Status Code 6Z
Other Listings ______
Review Code ______ Reviewer ______ Date ______

 ***Resource Name or #** (Assigned by recorder): Bridge 53 2578

P1. Other Identifier: Broadway Pedestrian Overcrossing (POC)

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County**: Los Angeles
and (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad**: Topanga **Date**: 2018 **T**:2S; **R**:15W; **Sec**: n/a; San Bernardino Meridian

c. Address: n/a City: Santa Monica Zip: n/a

d. UTM: (give more than one for large and/or linear resources) Zone: 11S; 361695.49 m E; 3764593.09 m N

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate)
The Broadway POC carries pedestrians over State Route (SR) 1 between Palisades Park and Santa Monica Beach at post mile 35.39. The bridge is in Caltrans District 7.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

The Broadway POC is a cast-in-place, prestressed concrete, single-cell box girder pedestrian bridge with reinforced concrete diaphragm abutments (**Photographs 1 - 4**). The bridge is comprised of one 143-foot-long span that has a clearance of 18.2 feet over SR 1. The east end connects with a stairway that ascends the bluff to Palisades Park, while on the west end the bridge transitions into a concrete stairway built into the west abutment that touches down in a parking lot for Santa Monica Beach (**Photographs 5 - 6**). The box girder arcs over the highway with haunched ends. A veneer of brick in herringbone pattern decorates both sides of the truncated obtuse triangle shaped west abutment. The walkway is ten feet wide and projects out over the girder, on top of which are tall, metal-framed chain-link fencing and tubular metal handrails on both sides (**Photograph 7**).

***P3b. Resource Attributes:** (List attributes and codes) HP19. Bridge

***P4. Resources Present:** ☐ Building ☒ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5b. Description of Photo: (View, date, accession#) **Photograph 1.** South elevation, camera facing north, May 16, 2022.

***P6. Date Constructed/Age and Sources:** ☒ Historic ☐ Prehistoric ☐ Both
1979 (Caltrans)

***P7. Owner and Address:**
State of California
Department of Transportation
1120 N Street
Sacramento, CA 95814

***P8. Recorded by:**
Steven J. "Mel" Melvin
JRP Historical Consulting, LLC
2850 Spafford Street
Davis, CA 95618

***P9. Date Recorded**: May 16, 2022

***P10. Survey Type:** (Describe)
Intensive

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") JRP Historical Consulting, LLC, "Historical Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2023 Update, 1975-1984," prepared for Caltrans, 2023.

***Attachments:** ☐ None ☐ Location Map ☐ Sketch Map ☒ Continuation Sheet ☒ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐Other (list) ______

***NRHP Status Code**: 6Z

***Resource Name or #** (Assigned by recorder): Bridge 53 2578

B1. Historic Name: Broadway POC
B2. Common Name: Broadway POC
B3. Original Use: Bridge B4. Present Use: Bridge
***B5. Architectural Style**: Concrete Box Girder
***B6. Construction History**: (Construction date, alteration, and date of alterations) Built in 1979; the brick veneer on the west abutment has been painted over, date unknown.
***B7. Moved?** ☒ **No** ☐ **Yes** ☐ **Unknown Date:** ________ **Original Location:** ________
***B8. Related Features:** ___
B9. Architect: Caltrans b. Builder: Brutoco Engineering & Construction
***B10. Significance: Theme**: n/a **Area**: n/a
Period of Significance: n/a **Property Type**: n/a **Applicable Criteria**: n/a
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

The Broadway POC is not eligible for listing in the National Register of Historic Places (NRHP) or the California Register of Historical Resources (CRHR). This property has been evaluated in accordance with Section 106 of the National Historic Preservation Act of 1966 (as amended) (54 U.S.C. 306108) and its implementing regulations (36 CFR Part 800) and Section 15064.5(a)(2)-(3) of the California Environmental Quality Act (CEQA) Guidelines, using the criteria outlined in Section 5024.1 of the California Public Resources Code (PRC). Additionally, the Broadway POC does not meet the California Historical Landmarks (CHL) Criteria as per PRC Section 5031 and is not a California Historical Landmark. (See Section B10 on Continuation Sheet.)

B11. Additional Resource Attributes: ________

***B12. References**: Caltrans Bridge Database; Caltrans Bridge Inspection Reports; Caltrans, Bridge As-Built Plans; Caltrans, Statewide Historic Bridge Inventory Updates; *Los Angeles Times;* see also footnotes.

B13. Remarks:

***B14. Evaluator**: Steven J. “Mel” Melvin
***Date of Evaluation**: November 2023

(This space reserved for official comments.)

B10. Significance (continued):

Historic Context and Bridge History

Caltrans first proposed constructing the Broadway POC as part of a larger project in the early 1970s to improve the Pacific Coast Highway (PCH; SR 1) between the R. W. McClure Tunnel in Santa Monica, adjacent to the Santa Monica Pier, and Topanga Canyon Boulevard, just east of Malibu. The McClure Tunnel marks the south end of this section of the PCH that follows the coast. The project called for the widening of the PCH from four lanes to six lanes, installing a center left turn lane, new signals at several intersections, plus the construction of four pedestrian overcrossings over the highway, including the Broadway POC, as well as at California Incline and Montana Avenue in Santa Monica, and at Porto Marina Way in the community of Castellammare in Pacific Palisades.[1]

The project garnered input from a variety of interested parties including the Santa Monica City Council, Santa Monica Chamber of Commerce, the Santa Monica Bay Area Transportation Committee, California Coastal Commission, and local residents. The local branch of the California Coastal Commission approved the project in July 1973, but a formal objection to the design of the pedestrian overcrossings by local interested parties forced an appeal to the State California Coastal Commission. One local resident derisively mocked the appearance of the initial overcrossing designs put forth by Caltrans as "coal chutes." The State California Coastal Commission agreed and rejected the overcrossing designs purely on aesthetics and required Caltrans to redesign the bridges. This was the first time the commission denied a project purely on aesthetic grounds.[2]

Caltrans completed the roadway improvement components of this project by the summer of 1974, but construction of the pedestrian overcrossings was delayed as Caltrans worked on new designs for the structures. Construction began on the four new overcrossings in 1978, undertaken by the firm of Brutoco Engineering & Construction and costing $1.2 million. At the time construction started, there were two overcrossings of the PCH in Santa Monica accessible to pedestrians. One was Colorado Avenue, which crossed over the McClure Tunnel and carried vehicles and pedestrians directly onto the Santa Monica Pier, and the other was at Arizona Avenue, where a still-extant pedestrian overcrossing built in 1935 – the Palisades POC (53 0388) – connected Palisades Park with the beach. The Broadway POC was finished in 1979 and its west end touches down in a parking lot at the beach, while the east end connects with a stairway leading to Palisades Park and Ocean Avenue at Broadway (**Plate 1** and **Plate 2**). In 1982, the U.S. Department of Transportation awarded the three pedestrian bridges in Santa Monica constructed for this project – Broadway, Montana Avenue, and California Incline – third place in the Intermodal Facilities Category.[3]

The Brutoco Engineering & Construction Company was founded in 1967. Early projects included the construction of drainage infrastructure, such as storm drains and lining creek channels, but by the late-1970s and early-1980s the company was being awarded contracts to construct numerous bridges in Los Angeles, San Bernardino, and Riverside counties. Specific projects included the Arrow Route and Foothill Boulevard bridge crossings over Cucamonga Creek, and the Deer Creek, Ontario and Rancho Cucamonga bridges, all in San Bernardino County. In the 1980s and 1990s the company was known for specializing in highway and street construction.[4]

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[2] "Social Values to Influence Its Decisions, Coastal Board Hints," *Los Angeles Times,* November 29, 1973, 3C; James E. Roberts, "Aesthetic Design Philosophy Utilized for California State Bridges," *Journal of Urban Planning and Development* 118, no. 4 (December 1992), 154, 155.

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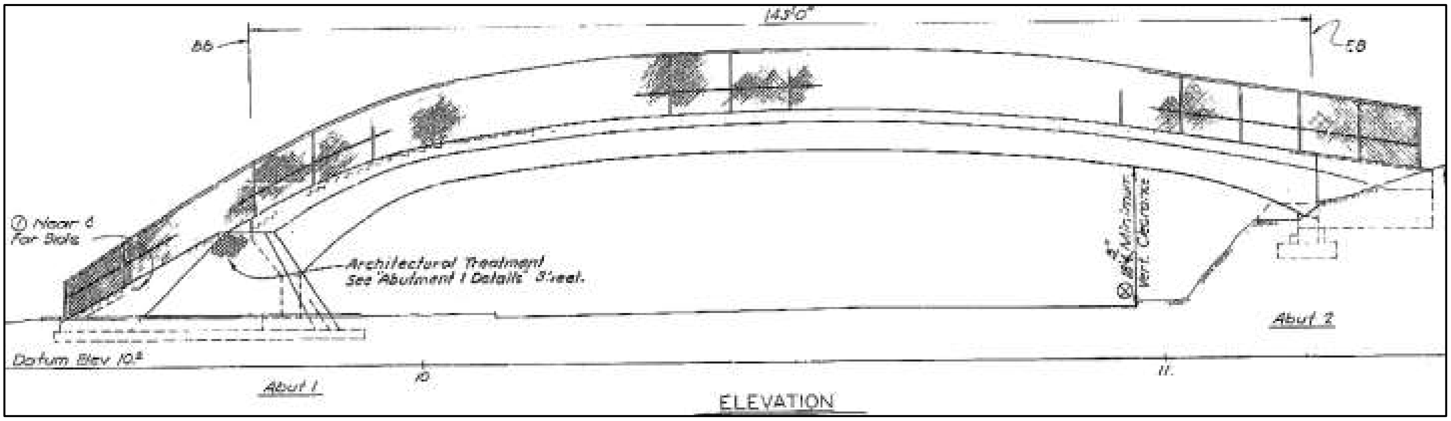

Plate 1. Bridge elevation from original plans dated 1977.[5]

Plate 2. Photo of Broadway POC in 1979, the year of its completion.[6]

The Broadway POC is a concrete box girder bridge. The first of this type were erected in the mid-1930s in California. The type was innovative for its design flexibility, helping to meet the growing demand for longer and wider bridges as well as skewed bridges that permitted straighter, more efficient, and safer roadways. The slender bridge profiles with harmonious proportions allowed engineers to achieve the modern design aesthetic thought to showcase transportation efficiency. Because they required less steel in their construction, concrete box girder bridges could also be erected at significant cost savings. Only a small number of concrete box girder bridges were built before World War II, but after the war their numbers rapidly

March 12, 1979, B-9; “[Legal Advertisement],” San Bernardino *The Sun*, September 1, 1980, D-3; “[Public Notice – No. 2443],” *Desert Sun*, May 16, 1996, E8.

5 Caltrans, “Broadway Pedestrian Overcrossing – General Plan [as-built plans],” August 29, 1977.

6 “Pedestrian Bridge from Palisades Park to Santa Monica Beach,” April 5, 1979, Photo No. 1998.1.1236, Santa Monica History Museum Collection.

increased. By 1965, there were more than 1,500 concrete box girder bridges in California. More than 3,200 of the type were built between 1965 and 1974, and more than 1,000 between 1975 and 1984.[7]

Some notable concrete box girder bridges in California include the Mulholland Drive Overcrossing (Bridge 53 0739) in Los Angeles, which held title to the longest main span at 235 feet from its construction in 1959 until 1974 when the Interstate 8 bridge over the Pine Valley Creek (Bridge 57 0692L/R) achieved a 450-foot main span. The Eel River Bridge (Bridge 04 0016L) constructed in 1974 in Humboldt County achieved a total length of 1,730 feet and main span of 300 feet. Five years later the Parrotts Ferry Bridge in Tuolumne County, constructed in 1979, had a 639.8-foot-long main span and a total length of 1,292.7 feet. The Napa River Bridge (Bridge 21 0049), erected in 1977, has the longest total length of any continuous concrete box girder span in California at 2,230 feet.[8] The latter two examples are also notable for their aesthetic design. There are many concrete box girder POCs in Los Angeles County, many of which are of utilitarian design, such as several built around the same time as the Broadway POC. These include the Meadowgrove Avenue POC over I-210 (53 2232) in La Cañada Flintridge, built in 1974, Greenwood Avenue POC over I-5 (53 0803) in Commerce, built in 1978, and Etiwanda Avenue POC over SR 118 (53 2511) in Northridge, built in 1980.

Design and construction of the Broadway POC came during a period when consideration of bridge aesthetics had become entrenched in Caltrans' bridge design procedures. While most state-built bridges, and many local or consultant-designed bridges, received at least some attention to their overall appearance, more effort was placed on bridges in scenic or prominent locations such as the POCs built along the PCH / SR 1, for example. Caltrans' predecessor, the Division of Highways, began to integrate improved aesthetics into the state's bridge design procedures in the early 1960s with architects trained in bridge design providing input about the appearance of structures. The Division of Highways, and later Caltrans, developed its bridge aesthetics program to integrate it into the department's overall design philosophy that included additions to bridge design manuals with instructions to have bridges designed so that they would be aesthetically compatible with their location, as well as the development of standard features, such as columns, railings, and surface treatments, that met the aesthetic principles being promoted. Bridge designers were encouraged to consider what they are leaving for future generations, which emphasized that a bridge's appearance was as important as the structure's design features for load and safety. Aligning with the dominant architectural trends in Modernism of the period, bridge designers aspired to simplicity and pureness of structure, avoiding ornamentation, celebrating the beauty of structural form, and emphasizing ease of construction and economy of design. Slender structures on slender piers or columns with minimal number of elements, and continuous or steady long lines were among the features of the aesthetical ideal at the time, for which the Division of Highways received various awards such as concrete box girder Junipero Serra Freeway (I-280) bridges built in the mid to late 1960s in San Mateo County and Adams Avenue Overcrossing built in 1970 over I-805 (57 0619) in San Diego County. Although Division of Highways / Caltrans policy was to design aesthetically pleasing structures, and sometimes incorporated input from members of the public or other interested parties, there were also clear parameters that such efforts would not be unduly more expensive. During this period, Division of Highways and Caltrans bridge designers considered aesthetic qualities following general principles related to quality design that carefully analyzed proportions of bridges' structural and safety elements, attractive forms for the various bridge elements, compatibility of bridges within their setting, and consideration of current and future acceptance of the structures. Proportion related to the scale of a bridge's components relative to one another. Compatibility emphasized improvements on how bridges fit into their surroundings, which depended on the nature of the structure and site with some bridges designed to blend with their setting and others to stand out. The Caltrans bridge aesthetics program resulted in many structures that incorporated basic aesthetic enhancements, as well as a smaller set of structures that included enhanced qualities and the few that had special aesthetic character.[9]

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[7] Myra L. Frank & Associated, "Caltrans Historic Bridge Inventory Update: Concrete Box Girder Bridges," prepared for Caltrans, August 2003, 5-11.
[8] Caltrans, Historical Resources Evaluation Report, Statewide Historic Bridge Inventory: 2015 Update 1965-1974, 21 and DPR 523 forms Bridge 40 0048; Bridge 04 0016L; Bridge 04 0155.
[9] Arthur L. Elliott, "Aesthetics of Highway Bridges," *Civil Engineering*, June 1968, 66; James E. Roberts, "Aesthetic Design Philosophy Utilized for California State," *Journal of Urban Planning and Development*, Vol. 118, No. 4, December 1992, 138-141, 148, and 155; Arthur L. Elliott, "Esthetic Development of California's Bridges," presented at the April 14-18, 1980, ASCE Convention and Exposition,

Along with the Broadway POC's idiosyncratic stairs built into the west abutment, this structure's aesthetic enhancements are limited to the arched box girder with haunched ends and features of the beach side abutment, which has herringbone brick veneer detail that originally contrasted with the bridge's unpainted smooth concrete and the truncated obtuse triangle shape of the abutment.

NRHP / CRHR Significance Evaluation

The Broadway POC is not significant under NRHP Criterion A / CRHR Criterion 1 for an important association with significant events, trends, or patterns of development. The bridge was one of many highway improvements carried out in the late 1970s and early 1980s by Caltrans throughout California and in this region. It represents a typical safety and accessibility improvement. The Broadway POC was not the first pedestrian overcrossing between Santa Monica and the beach, as it was preceded by two other nearby crossings of the PCH. Previously, pedestrians could also cross the highway via crosswalks at street level. Thus, the bridge did not open up a previously inaccessible beach, but instead, it increased convenience, safety, and facilitated traffic flow on the PCH, as cars no longer had to stop for pedestrians.

Under NRHP Criterion B / CRHR Criterion 2, this bridge is not significant for an association with the lives of persons important to history. Research did not find that any individuals directly associated with this property have made demonstrably important contributions to history at the local, state, or national level.

The Broadway POC is not significant as an important example of a type, period, or method of construction, is not the work of a master, and does not possess high artistic value (Under NRHP Criterion C / CRHR Criterion 3). This bridge is a concrete box girder structures, a type of bridge construction extremely common by this time. At 143 feet, this bridge also is not among the longest concrete box girder bridges in the state. The Broadway POC also is not distinctive for its aesthetics. As discussed in the above historic context, the early designs of the four pedestrian overcrossings on the PCH constructed in 1979 were modified to be more aesthetically pleasing. While Caltrans built aesthetically distinctive overcrossings at California Incline, Montana Avenue, and Castellammare, the Broadway POC is not aesthetically notable. It has limited aesthetic enhancements to an otherwise simple concrete box girder bridge. The brick veneer at the west abutment has also been painted, decreasing the impact of this decorative embellishment. Thus, the Broadway POC does not meet this criterion.

Under NRHP Criterion D / CRHR Criterion 4, this property is not a significant or likely source of important information about historic construction materials or technologies that is not otherwise available through documentary evidence.

California Historical Landmark Evaluation

A property may be eligible for designation as a California Historical Landmark (CHL) if it meets one of three criteria: the first, last, or most significant of its type within the state or within a large geographic region (i.e., Southern California); is associated with an individual or group having a profound influence on the history of California; or is a prototype of, or an outstanding example of, a period, style, architectural movement or construction, or is an important work of a master architect or builder. The Broadway POC does not meet any of the CHL Criteria and is not eligible for designation as a CHL.

Portland, Oregon (Preprint 80-004), published in *Journal of Structural Engineering*, Vol. 109, No. 9, September 1983, paper no. 18240, 2159-63 and 2172-73; W.S. Ludlow, "Aesthetics in Bridge Design," *Manual of Bridge Design Practice* (State of California: Bridge Department, 1971), 16.3; Arthur L. Elliot, "Aesthetics in a Changing Economy," in *Meeting Preprint 2199* for American Society of Civil Engineers National Structural Engineering Meeting, April 22-26, 1974, *Cincinnati*, Ohio; JRP Historical Consulting, LLC, *Historical Resources Evaluation Report, Cold Spring Canyon Bridge (51 0037) Pedestrian Barrier Project, State Route 154, Santa Barbara County, California, 05-SB-154 PM 22.96, EA 05-0P910K,* prepared for Caltrans District 5, May 2007; James E. Roberts, *Aesthetics and Economy in Complete Concrete Bridge Design*, California Department of Transportation, Office of Structures Design, 1986, available at the Caltrans Transportation Library, 3, 5, and 6; Arthur L. Elliott, "Creating a Beautiful Bridge," in Committee on General Structures, Subcommittee on Bridge Aesthetics, *Bridge Aesthetics Around the World*, (Washington D.C.: Transportation Research Board, National Research Council. 1991), 217; Stewart Gloyd, "California – A Qualified Bridge Esthetics Case Study," *Concrete International*, Volume 16, No. 2, February 1994, 46-48.

Photographs (Continued):

Photograph 2: North elevation, camera facing southeast, May 16, 2022.

Photograph 3: North elevation, camera facing southwest, May 16, 2022.

Photograph 4: Soffit and east abutment, camera facing east, May 16, 2022.

Photograph 5: West abutment, camera facing south, May 16, 2022.

Photograph 6: West stairs, camera facing east, May 16, 2022.

Photograph 7: Bridge deck, camera facing west, May 16, 2022.

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary # ____________
HRI # ____________
Trinomial ____________
NRHP Status Code 3S

Other Listings ____________
Review Code ______ Reviewer ____________ Date ______

 ***Resource Name or #** (Assigned by recorder): Bridge 53 2579

P1. Other Identifier: California Incline Pedestrian Overcrossing (POC)

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County**: Los Angeles

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad**: Topanga **Date**: 2018 **T**:2S; **R**:16W; **Sec**: n/a; San Bernardino Meridian

c. Address: n/a City: Santa Monica Zip: n/a

d. UTM: (give more than one for large and/or linear resources) Zone: 11S; 360967.53 m E; 3765345.15 m N

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate)

The California Incline POC carries pedestrians over State Route (SR) 1 between California Incline / Palisades Park and Santa Monica Beach at post mile 36.04. The bridge is in Caltrans District 7.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

The California Incline POC is a continuous, cast-in-place, prestressed concrete, two-cell box girder pedestrian bridge with a reinforced concrete diaphragm abutment on the east and reinforced concrete columns supporting a spiral ramp on the west end (**Photographs 1 - 5**). The main span girder has a slight arc over the highway and its east end connects with a concrete ramp that leads to a sidewalk along a local road, California Incline; the west end touches down in a parking lot for Santa Monica Beach. The bridge has three spans totaling 239 feet and 18.5 feet of clearance over SR 1. The two piers supporting the ramp on the west end are joined to each other and have a sweeping, oblong U-shape and exposed aggregate finish on one side (**Photographs 6 - 8**). The walkway is 7.4 feet wide and the bridge section has a tall, metal, framed picket railing with tightly spaced vertical pickets with curved top bar and fencing attached, while the remainder of the structure has a standard picket railing (**Photograph 9**).

***P3b. Resource Attributes:** (List attributes and codes) HP19. Bridge

***P4. Resources Present:** ☐ Building ☒ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5b. Description of Photo: (View, date, accession#) **Photograph 1.** North elevation, camera facing south, May 16, 2022.

***P6. Date Constructed/Age and Sources:** ☒ Historic ☐ Prehistoric ☐ Both
1979 (Caltrans)

***P7. Owner and Address:**
State of California
Department of Transportation
1120 N Street
Sacramento, CA 95814

***P8. Recorded by:**
Steven J. "Mel" Melvin
JRP Historical Consulting, LLC
2850 Spafford Street
Davis, CA 95618

***P9. Date Recorded**: May 16, 2022

***P10. Survey Type:** (Describe)
Intensive

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") JRP Historical Consulting, LLC, "Historical Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2023 Update, 1975-1984," prepared for Caltrans, 2023.

***Attachments:** ☐ None ☐ Location Map ☐ Sketch Map ☒ Continuation Sheet ☒ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐Other (list) ____________

***NRHP Status Code**: 3S
***Resource Name or #** (Assigned by recorder): Bridge 53 2579

B1. Historic Name: California Incline POC
B2. Common Name: California Incline POC
B3. Original Use: Bridge B4. Present Use: Bridge
***B5. Architectural Style**: Concrete Box Girder
***B6. Construction History**: (Construction date, alteration, and date of alterations) Built in 1979; no known alterations.
***B7. Moved?** ☒ **No** ☐ **Yes** ☐ **Unknown** **Date:** ______ **Original Location:** ______
***B8. Related Features:** ___
B9. Architect: Caltrans b. Builder: Brutoco Engineering & Construction
***B10. Significance: Theme**: Design / Aesthetics **Area**: State
Period of Significance: 1978 **Property Type**: Bridge **Applicable Criteria**: C/3
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

The California Incline POC is eligible for listing in the National Register of Historic Places (NRHP) and the California Register of Historical Resources (CRHR). This property has been evaluated in accordance with Section 106 of the National Historic Preservation Act of 1966 (as amended) (54 U.S.C. 306108) and its implementing regulations (36 CFR Part 800) and Section 15064.5(a)(2)-(3) of the California Environmental Quality Act (CEQA) Guidelines, using the criteria outlined in Section 5024.1 of the California Public Resources Code (PRC). Additionally, the California Incline POC meets the California Historical Landmarks (CHL) Criteria as per PRC Section 5031 and is a California Historical Landmark. (See Section B10 on Continuation Sheet.)

B11. Additional Resource Attributes: ______

***B12. References**: Caltrans Bridge Database; Caltrans Bridge Inspection Reports; Caltrans, Bridge As-Built Plans; Caltrans, Statewide Historic Bridge Inventory Updates; *Los Angeles Times;* see also footnotes.

B13. Remarks:

***B14. Evaluator**: Steven J. “Mel” Melvin
***Date of Evaluation**: November 2023

(This space reserved for official comments.)

B10. Significance (continued):

Historic Context and Bridge History

Caltrans first proposed constructing the California Incline POC as part of a larger project in the early 1970s to improve the Pacific Coast Highway (PCH; SR 1) between the R. W. McClure Tunnel in Santa Monica, adjacent to the Santa Monica Pier, and Topanga Canyon Boulevard, just east of Malibu. The McClure Tunnel marks the south end of this section of the PCH that follows the coast. The project called for the widening of the PCH from four lanes to six lanes, installing a center left turn lane, new signals at several intersections, plus the construction of four pedestrian overcrossings over the highway, including the California Incline POC, as well as at Montana Avenue and Broadway in Santa Monica, and at Porto Marina Way in the community of Castellammare in Pacific Palisades.[1]

The project garnered input from a variety of interested parties including the Santa Monica City Council, Santa Monica Chamber of Commerce, the Santa Monica Bay Area Transportation Committee, California Coastal Commission, and local residents. The local branch of the California Coastal Commission approved the project in July 1973, but a formal objection to the design of the pedestrian overcrossings by local interested parties forced an appeal to the State California Coastal Commission. One local resident derisively mocked the appearance of the initial overcrossing designs put forth by Caltrans as "coal chutes." The State California Coastal Commission agreed and rejected the overcrossing designs purely on aesthetics and required Caltrans to redesign the bridges. This was the first time the commission denied a project purely on aesthetic grounds.[2]

Caltrans completed the roadway improvement components of this project by the summer of 1974, but construction of the pedestrian overcrossings was delayed as Caltrans worked on new designs for the structures. Construction began on the four new overcrossings in 1978, undertaken by the firm of Brutoco Engineering & Construction and costing $1.2 million. At the time construction started, there were two overcrossings of the PCH in Santa Monica accessible to pedestrians. One was Colorado Avenue, which crossed over the McClure Tunnel and carried vehicles and pedestrians directly onto the Santa Monica Pier, and the other was at Arizona Avenue, where a still-extant pedestrian overcrossing built in 1935 – the Palisades POC (53 0388) – connected Palisades Park with the beach. The California Incline POC was finished in 1979 and its west end touches down in a parking lot at the beach, while the east end connects a local road called California Incline that traverses the steep bluff between the beach and the Santa Monica Street grid (**Plate 1** and **Plate 2**). Near the east end of the California Incline POC, the new pedestrian overcrossing over California Incline connects with a long stairway on the bluff leading to Palisades Park and Ocean Avenue. In 1982, the U.S. Department of Transportation awarded the three pedestrian bridges in Santa Monica constructed for this project – California Incline, Montana Avenue, and Broadway – third place in the Intermodal Facilities Category. The Montana Avenue POC is of a nearly identical design to the California Incline POC.[3]

The Brutoco Engineering & Construction Company was founded in 1967. Early projects included the construction of drainage infrastructure, such as storm drains and lining creek channels, but by the late-1970s and early-1980s the company was being awarded contracts to construct numerous bridges in Los Angeles, San Bernardino, and Riverside counties. Specific projects included the Arrow Route and Foothill Boulevard bridge crossings over Cucamonga Creek, and the Deer Creek, Ontario and

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[1] "Public Notice of Request for Design Approval," *Los Angeles Times,* November 19, 1971, H2; "Ruling Expected in Six Weeks on Coast Highway," *Los Angeles Times,* April 1, 1971, WS1; "News in Brief – Coast Highway," *Los Angeles Times,* March 2, 1972, WS8; "Decision Near on Widening of Coast Highway," *Los Angeles Times,* September 6, 1973, WS1, 4.

[2] "Social Values to Influence Its Decisions, Coastal Board Hints," *Los Angeles Times,* November 29, 1973, 3C; James E. Roberts, "Aesthetic Design Philosophy Utilized for California State Bridges," *Journal of Urban Planning and Development* 118, no. 4 (December 1992), 154, 155.

[3] "4 Overcrossings Will Be Built in S.M.," *Los Angeles Times,* January 19, 1978, WS4; "Completion Due on Coast Highway Job by Early Summer," *Los Angeles Times,* March 10, 1974, WS1; John C. Ritner, "Bridges Produced by an Architectural Engineering Team," *Transportation Research Record 1044, Structures and Foundations* (Washington D.C.: Transportation Research Board National Research Council, 1985), 31.

Rancho Cucamonga bridges, all in San Bernardino County. In the 1980s and 1990s the company was known for specializing in highway and street construction.[4]

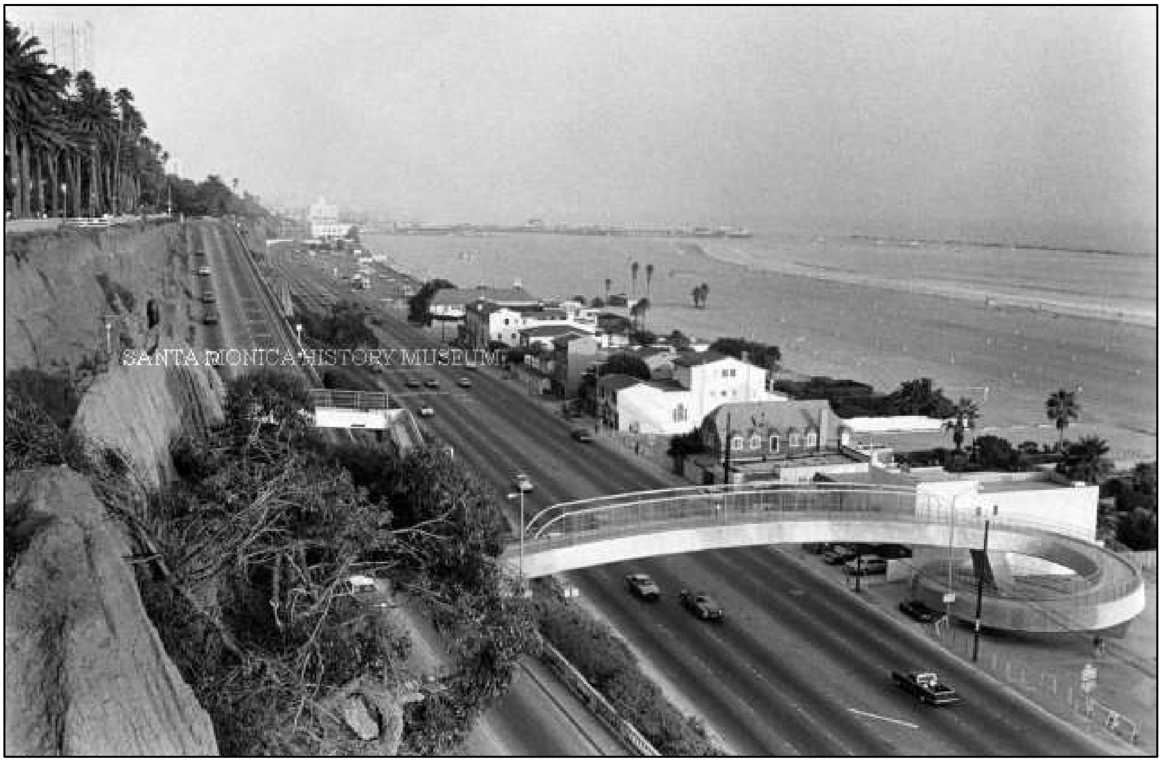

Plate 1. Photo of California Incline POC in 1980, one year after its completion.[5]

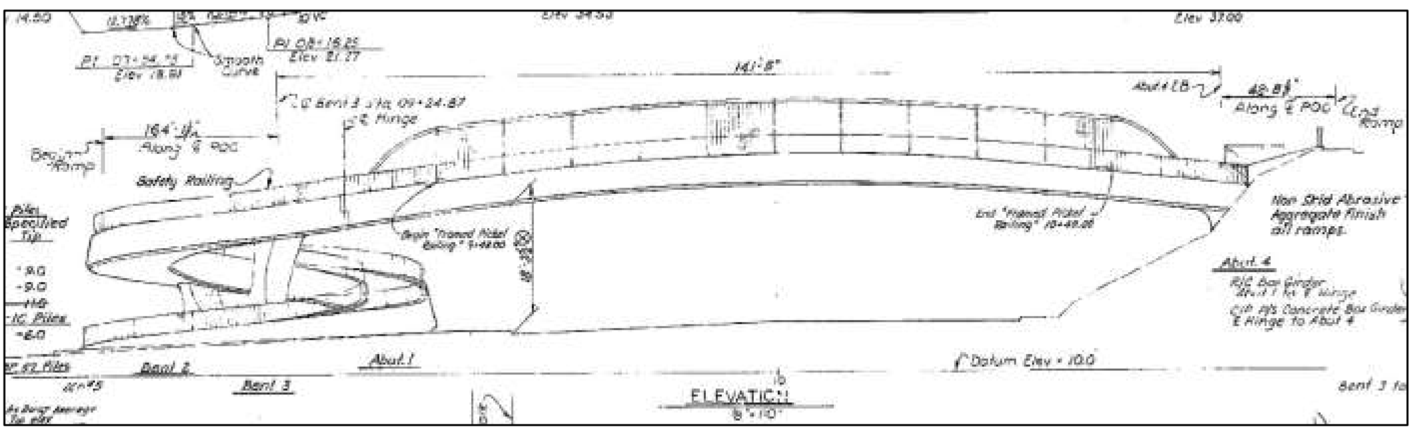

Plate 2. Bridge elevation from original plans dated 1977.[6]

[4] "Brutoco Engineering & Construction Inc.," Bloomberg, accessed November 2023, https://www.bloomberg.com/profile/company/7338290Z:US#xj4y7vzkg; "[Legal Advertisement]," San Bernardino *The Sun*, July 29, 1968, A-6; "[Legal Advertisement]," San Bernardino *The Sun*, January 6, 1969, B-6; "[Legal Advertisement]," San Bernardino *The Sun*, March 12, 1979, B-9; "[Legal Advertisement]," San Bernardino *The Sun*, September 1, 1980, D-3; "[Public Notice – No. 2443]," *Desert Sun*, May 16, 1996, E8.

[5] "Pedestrian Bridge at the California Incline," August 16, 1980, Photo No. 1998.1.1252, Santa Monica History Museum Collection.

[6] Caltrans, "California Incline Pedestrian Overcrossing [as-built plans]," August 29, 1977.

The California Incline POC is a concrete box girder bridge. The first of this type were erected in the mid-1930s in California. The type was innovative for its design flexibility, helping to meet the growing demand for longer and wider bridges as well as skewed bridges that permitted straighter, more efficient, and safer roadways. The slender bridge profiles with harmonious proportions allowed engineers to achieve the modern design aesthetic thought to showcase transportation efficiency. Because they required less steel in their construction, concrete box girder bridges could also be erected at significant cost savings. Only a small number of concrete box girder bridges were built before World War II, but after the war their numbers rapidly increased. By 1965, there were more than 1,500 concrete box girder bridges in California. More than 3,200 of the type were built between 1965 and 1974, and more than 1,000 between 1975 and 1984.[7]

Some notable concrete box girder bridges in California include the Mulholland Drive Overcrossing (Bridge 53 0739) in Los Angeles, which held title to the longest main span at 235 feet from its construction in 1959 until 1974 when the Interstate 8 bridge over the Pine Valley Creek (Bridge 57 0692L/R) achieved a 450-foot main span. The Eel River Bridge (Bridge 04 0016L) constructed in 1974 in Humboldt County achieved a total length of 1,730 feet and main span of 300 feet. Five years later the Parrotts Ferry Bridge in Tuolumne County, constructed in 1979, had a 639.8-foot-long main span and a total length of 1,292.7 feet. The Napa River Bridge (Bridge 21 0049), erected in 1977, has the longest total length of any continuous concrete box girder span in California at 2,230 feet.[8] The latter two examples are also notable for their aesthetic design. There are many concrete box girder POCs in Los Angeles County, many of which are of utilitarian design, such as several built around the same time as the California Incline POC. These include the Meadowgrove Avenue POC over I-210 (53 2232) in La Cañada Flintridge, built in 1974, Greenwood Avenue POC over I-5 (53 0803) in Commerce, built in 1978, and Etiwanda Avenue POC over SR 118 (53 2511) in Northridge, built in 1980. Until 2015-2016 the adjacent POC over California Incline, built in 1957, was also a similar concrete girder utilitarian structure, referred to as the Idaho Avenue POC (partly visible in **Photograph 1**), replaced now with a swooping design clearly inspired by the California Incline POC over the PCH.[9]

Design and construction of the California Incline POC came during a period when consideration of bridge aesthetics had become entrenched in Caltrans' bridge design procedures. While most state-built bridges, and many local or consultant-designed bridges, received at least some attention to their overall appearance, more effort was placed on bridges in scenic or prominent locations such as the POCs built along the PCH / SR 1, for example. Caltrans' predecessor, the Division of Highways, began to integrate improved aesthetics into the state's bridge design procedures in the early 1960s with architects trained in bridge design providing input about the appearance of structures. The Division of Highways, and later Caltrans, developed its bridge aesthetics program to integrate it into the department's overall design philosophy that included additions to bridge design manuals with instructions to have bridges designed so that they would be aesthetically compatible with their location, as well as the development of standard features, such as columns, railings, and surface treatments, that met the aesthetic principles being promoted. Bridge designers were encouraged to consider what they are leaving for future generations, which emphasized that a bridge's appearance was as important as the structure's design features for load and safety. Aligning with the dominant architectural trends in Modernism of the period, bridge designers aspired to simplicity and pureness of structure, avoiding ornamentation, celebrating the beauty of structural form, and emphasizing ease of construction and economy of design. Slender structures on slender piers or columns with minimal number of elements, and continuous or steady long lines were among the features of the aesthetical ideal at the time, for which the Division of Highways received various awards such as concrete box girder Junipero Serra Freeway (I-280) bridges built in the mid to late 1960s in San Mateo County and Adams Avenue Overcrossing built in 1970 over I-805 (57 0619) in San Diego County. There came to be essentially two types of architectural treatment, those added to standard structures and those that united architecture and engineering.

[7] Myra L. Frank & Associated, "Caltrans Historic Bridge Inventory Update: Concrete Box Girder Bridges," prepared for Caltrans, August 2003, 5-11.

[8] Caltrans, Historical Resources Evaluation Report, Statewide Historic Bridge Inventory: 2015 Update 1965-1974, 21 and DPR 523 forms Bridge 40 0048; Bridge 04 0016L; Bridge 04 0155.

[9] TYLin International, "California Incline Bridge and Idaho Avenue Pedestrian Overcrossing Now Open in Santa Monica, California," Project Completions website: https://www.tylin.com/news/california-incline-bridge-and-idaho-avenue-pedestrian-overcrossing-now-open-santa-monica, October 24, 2016 (accessed November 2023); Parul Dubey, "Idaho Avenue Pedestrian Overcrossing," *Informed Infrastructure*, June 19, 2017 available online at https://informedinfrastructure.com/weekly-project/idaho-avenue-pedestrian-overcrossing/ (accessed November 2023).

Dictated by cost and function criteria, treatments incorporated into standard structures could include the addition of grooves and textures, for example, while the rarer marriage of architecture and engineering could include shapes, proportion, scale of piers, abutments, and superstructure that varied from standard structures. Although Division of Highways / Caltrans policy was to design aesthetically pleasing structures, and sometimes incorporated input from members of the public or other interested parties, there were also clear parameters that such efforts would not be unduly more expensive. During this period, Division of Highways and Caltrans bridge designers considered aesthetic qualities following general principles related to quality design that carefully analyzed proportions of bridges' structural and safety elements, attractive forms for the various bridge elements, compatibility of bridges within their setting, and consideration of current and future acceptance of the structures. The Caltrans bridge aesthetics program resulted in many structures that incorporated basic aesthetic enhancements, as well as a smaller set of structures that included enhanced qualities and the few that had special aesthetic character.[10]

NRHP / CRHR Significance Evaluation

The California Incline POC is not significant under NRHP Criterion A / CRHR Criterion 1 for an important association with significant events, trends, or patterns of development. The bridge was one of many highway improvements carried out in the late 1970s and early 1980s by Caltrans throughout California and in this region. It represents a typical safety and accessibility improvement. The California Incline POC was not the first pedestrian overcrossing between Santa Monica and the beach, as it was preceded by two other nearby crossings of the PCH. Previously, pedestrians could also cross the highway via crosswalks at street level. Thus, the bridge did not open up a previously inaccessible beach, but instead, it increased convenience, safety, and facilitated traffic flow on the PCH, as cars no longer had to stop for pedestrians.

Under NRHP Criterion B / CRHR Criterion 2, this bridge is not significant for an association with the lives of persons important to history. Research did not find that any individuals directly associated with this property have made demonstrably important contributions to history at the local, state, or national level.

Under NRHP Criterion C / CRHR Criterion 3, the California Incline POC is significant for its type, period, and method of construction for its design and aesthetic character, but it is not significant as the work of a master or for possessing high artistic values. The bridge's aesthetic value is derived from the slender appearance and smooth, curving lines. The bridge is an excellent example of the union of architecture and engineering sought during the period's efforts to enhance the appearance of bridges, celebrating the beauty of structural form. This is done with careful consideration of the proportion of the bridge's components, along with the sweeping curved lines of the main girder and west end oblong U-shape supports, functioning as two piers, with finishing touches such as the curved top rail of the railing picket fence and the exposed aggregate finish visible in the middle of the west end spiral ramp, which is compact and gracefully turns about one full circle between the ground and the bridge deck. The curve and sharp lines of the pier structure complement the spiral ramp it supports. When taken as a whole, the California Incline POC is an excellent example of the Modern aesthetic in a pedestrian overcrossing.

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[10] Arthur L. Elliott, "Aesthetics of Highway Bridges," *Civil Engineering*, June 1968, 66; James E. Roberts, "Aesthetic Design Philosophy Utilized for California State," *Journal of Urban Planning and Development*, Vol. 118, No. 4, December 1992, 138-141, 148, and 155; Arthur L. Elliott, "Esthetic Development of California's Bridges," presented at the April 14-18, 1980, ASCE Convention and Exposition, Portland, Oregon (Preprint 80-004), published in *Journal of Structural Engineering*, Vol. 109, No. 9, September 1983, paper no. 18240, 2159-63 and 2172-73; W.S. Ludlow, "Aesthetics in Bridge Design," *Manual of Bridge Design Practice* (State of California: Bridge Department, 1971), 16.3; Arthur L. Elliot, "Aesthetics in a Changing Economy," in *Meeting Preprint 2199* for American Society of Civil Engineers National Structural Engineering Meeting, April 22-26, 1974, *Cincinnati*, Ohio; JRP Historical Consulting, LLC, *Historical Resources Evaluation Report, Cold Spring Canyon Bridge (51 0037) Pedestrian Barrier Project, State Route 154, Santa Barbara County, California, 05-SB-154 PM 22.96, EA 05-0P910K,* prepared for Caltrans District 5, May 2007; James E. Roberts, *Aesthetics and Economy in Complete Concrete Bridge Design*, California Department of Transportation, Office of Structures Design, 1986, available at the Caltrans Transportation Library, 3, 5, and 6; Arthur L. Elliott, "Creating a Beautiful Bridge," in Committee on General Structures, Subcommittee on Bridge Aesthetics, *Bridge Aesthetics Around the World*, (Washington D.C.: Transportation Research Board, National Research Council. 1991), 217; Stewart Gloyd, "California – A Qualified Bridge Esthetics Case Study," *Concrete International*, Volume 16, No. 2, February 1994, 46-48.

Under NRHP Criterion D / CRHR Criterion 4, this property is not a significant or likely source of important information about historic construction materials or technologies that is not otherwise available through documentary evidence.

The boundary of the property encompasses the entire bridge structure and all of its elements between the end of the spiral ramp on the west to the end of the ramp on the east end at California Incline. The period of significance is 1979, the year the bridge was completed. It is significant at the state level. The character-defining features are the piers, spiral ramp, box girder superstructure, deck, and railing.

California Historical Landmark Evaluation

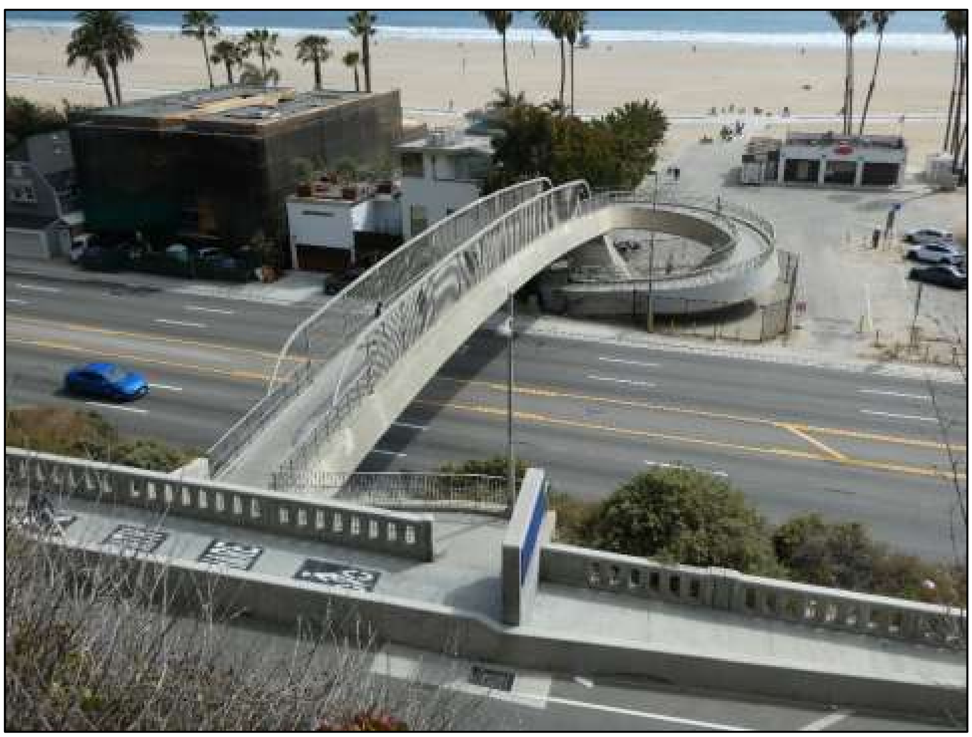
A property may be eligible for designation as a California Historical Landmark (CHL) if it meets one of three criteria: the first, last, or most significant of its type within the state or within a large geographic region (i.e., Southern California); is associated with an individual or group having a profound influence on the history of California; or is a prototype of, or an outstanding example of, a period, style, architectural movement or construction, or is an important work of a master architect or builder. Of these, the California Incline POC meets the CHL Criteria as an outstanding example of a Modern style pedestrian overcrossing. It is therefore eligible for designation as a CHL.

Integrity

This bridge does not appear to have any alterations besides routine maintenance. As such, this bridge retains a high degree of integrity of materials, design, and workmanship, feeling, association, setting, and location. Overall, the bridge maintains sufficient integrity to convey its historical significance.

Photographs (Continued):

Photograph 2: North elevation, camera facing southwest, May 16, 2022.



Photograph 3: North elevation, camera facing southwest, May 16, 2022.

Photograph 4: South elevation, camera facing north, May 16, 2022.

Photograph 5: Soffit and east abutment, camera facing east, May 16, 2022.

***Recorded by**: S.J. "Mel" Melvin ***Date**: May 16, 2022 ☒Continuation ☐Update

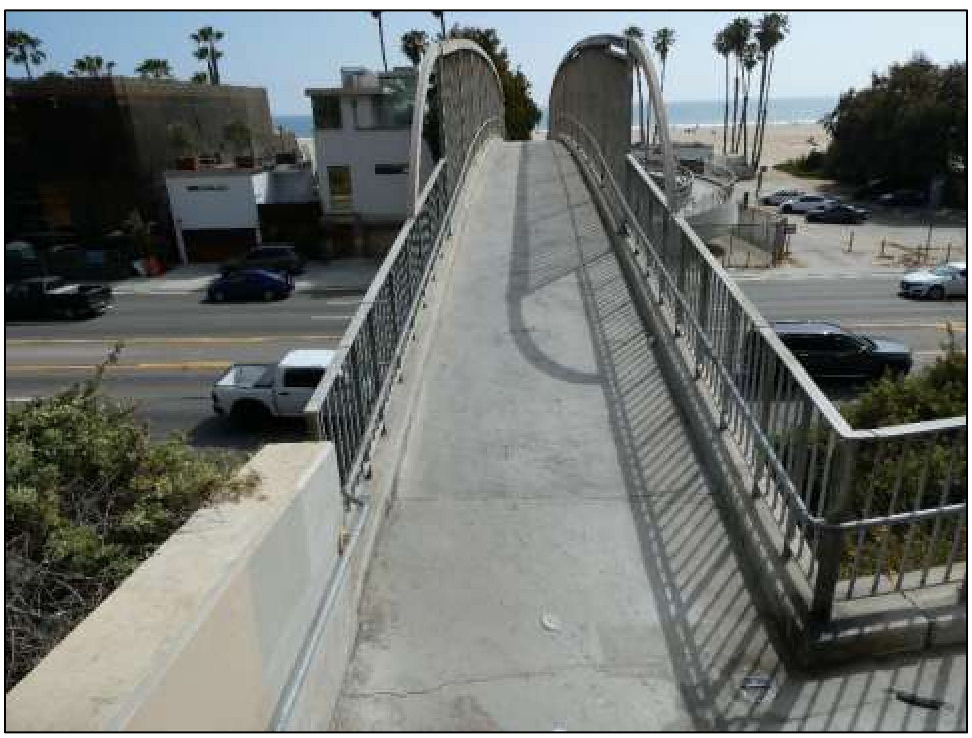
Photograph 6: Spiral ramp on west end, camera facing east, May 16, 2022.

Photograph 7: Ramp and ramp piers, camera facing northwest, May 16, 2022.

***Resource Name or #** (Assigned by recorder): Bridge 53 2579

***Recorded by**: S.J. "Mel" Melvin   ***Date**: May 16, 2022   ☒Continuation ☐Update

Photograph 8: Spiral ramp and piers, camera facing west, May 16, 2022.



Photograph 9: Deck, camera facing west, May 16, 2022.

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary # ____
HRI # ____
Trinomial ____
NRHP Status Code 3S

Other Listings ____
Review Code ____ Reviewer ____ Date ____

 ***Resource Name or #** (Assigned by recorder): Bridge 53 2602

P1. Other Identifier: Montana Avenue Pedestrian Overcrossing (POC)

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County**: Los Angeles

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad**: Topanga **Date**: 2018 **T**:2S; **R**:16W; **Sec**: n/a; San Bernardino Meridian

c. Address: n/a City: Santa Monica Zip: n/a

d. UTM: (give more than one for large and/or linear resources) Zone: 11S; 360761.99 m E; 3765545.78 m N

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate)

The Montana Avenue POC carries pedestrians over State Route (SR) 1 between Palisades Park and Santa Monica Beach at post mile 36.25. The bridge is in Caltrans District 7.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

The Montana Avenue POC is a continuous, cast-in-place, prestressed concrete, two-cell box girder pedestrian bridge with a reinforced concrete seated abutment on the east end, a flared octagonal plan reinforced concrete column supporting the span on the east side of the highway, and reinforced concrete columns supporting a spiral stairway on the west end (**Photographs 1 - 3**). At the east end, a long wood stairway ascends the bluff to Palisades Park, while the west end touches down in a parking lot for Santa Monica Beach. The bridge has four spans totaling 298 feet and 19 feet of clearance over the roadway. The two piers supporting the ramp on the west end are joined and have a sweeping, oblong U-shape and a smooth finish (**Photographs 4 - 6**). The outside width of the deck is 9.5 feet and the bridge section has a tall, metal, arched frame picket railing with tightly spaced vertical pickets and fencing attached, while the remainder of the structure has a standard picket railing (**Photographs 7 – 8**).

***P3b. Resource Attributes:** (List attributes and codes) HP19. Bridge

***P4. Resources Present:** ☐ Building ☒ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5b. Description of Photo: (View, date, accession#) **Photograph 1.** South elevation, camera facing north, May 16, 2022.

***P6. Date Constructed/Age and Sources:** ☒ Historic ☐ Prehistoric ☐ Both
1979 (Caltrans)

***P7. Owner and Address:**
State of California
Department of Transportation
1120 N Street
Sacramento, CA 95814

***P8. Recorded by:**
Steven J. "Mel" Melvin
JRP Historical Consulting, LLC
2850 Spafford Street
Davis, CA 95618

***P9. Date Recorded**: May 16, 2022

***P10. Survey Type:** (Describe)
Intensive

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") JRP Historical Consulting, LLC, "Historical Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2023 Update, 1975-1984," prepared for Caltrans, 2023.

***Attachments:** ☐ None ☐ Location Map ☐ Sketch Map ☒ Continuation Sheet ☒ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐Other (list) ____

***NRHP Status Code**: 3S

***Resource Name or #** (Assigned by recorder): Bridge 53 2602

B1. Historic Name: Montana Avenue POC

B2. Common Name: Montana Avenue POC

B3. Original Use: Bridge B4. Present Use: Bridge

***B5. Architectural Style**: Concrete Box Girder

***B6. Construction History**: (Construction date, alteration, and date of alterations) Built in 1979; no known alterations.

***B7. Moved?** ☒ **No** ☐ **Yes** ☐ **Unknown** **Date:** ______ **Original Location:** ______

***B8. Related Features:** ___

B9. Architect: Caltrans b. Builder: Brutoco Engineering & Construction

***B10. Significance: Theme**: Design / Aesthetics **Area**: State

Period of Significance: 1978 **Property Type**: Bridge **Applicable Criteria**: C/3

(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

The Montana Avenue POC is eligible for listing in the National Register of Historic Places (NRHP) and the California Register of Historical Resources (CRHR). This property has been evaluated in accordance with Section 106 of the National Historic Preservation Act of 1966 (as amended) (54 U.S.C. 306108) and its implementing regulations (36 CFR Part 800) and Section 15064.5(a)(2)-(3) of the California Environmental Quality Act (CEQA) Guidelines, using the criteria outlined in Section 5024.1 of the California Public Resources Code (PRC). Additionally, the Montana Avenue POC meets the California Historical Landmarks (CHL) Criteria as per PRC Section 5031 and is a California Historical Landmark. (See Section B10 on Continuation Sheet.)

B11. Additional Resource Attributes: ______

***B12. References**: Caltrans Bridge Database; Caltrans Bridge Inspection Reports; Caltrans, Bridge As-Built Plans; Caltrans, Statewide Historic Bridge Inventory Updates; *Los Angeles Times;* see also footnotes.

B13. Remarks:

***B14. Evaluator**: Steven J. "Mel" Melvin

***Date of Evaluation**: November 2023

(This space reserved for official comments.)

B10. Significance (continued):

Historic Context and Bridge History

Caltrans first proposed constructing the Montana Avenue POC as part of a larger project in the early 1970s to improve the Pacific Coast Highway (PCH; SR 1) between the R. W. McClure Tunnel in Santa Monica, adjacent to the Santa Monica Pier, and Topanga Canyon Boulevard, just east of Malibu. The McClure Tunnel marks the south end of this section of the PCH that follows the coast. The project called for the widening of the PCH from four lanes to six lanes, installing a center left turn lane, new signals at several intersections, plus the construction of four pedestrian overcrossings over the highway, including the Montana Avenue POC, as well as at California Incline and Broadway in Santa Monica, and at Porto Marina Way in the community of Castellammare in Pacific Palisades.[1]

The project garnered input from a variety of interested parties including the Santa Monica City Council, Santa Monica Chamber of Commerce, the Santa Monica Bay Area Transportation Committee, California Coastal Commission, and local residents. The local branch of the California Coastal Commission approved the project in July 1973, but a formal objection to the design of the pedestrian overcrossings by local interested parties forced an appeal to the State California Coastal Commission. One local resident derisively mocked the appearance of the initial overcrossing designs put forth by Caltrans as "coal chutes." The State California Coastal Commission agreed and rejected the overcrossing designs purely on aesthetics and required Caltrans to redesign the bridges. This was the first time the commission denied a project purely on aesthetic grounds.[2]

Caltrans completed the roadway improvement components of this project by the summer of 1974, but construction of the pedestrian overcrossings was delayed as Caltrans worked on new designs for the structures. Construction began on the four new overcrossings in 1978, undertaken by the firm of Brutoco Engineering & Construction and costing $1.2 million. At the time construction started, there were two overcrossings of the PCH in Santa Monica accessible to pedestrians. One was Colorado Avenue, which crossed over the McClure Tunnel and carried vehicles and pedestrians directly onto the Santa Monica Pier, and the other was at Arizona Avenue, where a still-extant pedestrian overcrossing built in 1935 – the Palisades POC (53 0388) – connected Palisades Park with the beach. The Montana Avenue POC, which has a similar design to the California Incline POC, was finished in 1979 and its west end touches down in a parking lot at the beach, while the east end connects with a stairway leading up the bluff to Palisades Park and terminating roughly at the intersection of Ocean Avenue and Montana Avenue in Santa Monica. In 1982, the U.S. Department of Transportation awarded the three pedestrian bridges in Santa Monica constructed for this project – Montana Avenue, California Incline, and Broadway – third place in the Intermodal Facilities Category.[3]

The Brutoco Engineering & Construction Company was founded in 1967. Early projects included the construction of drainage infrastructure, such as storm drains and lining creek channels, but by the late-1970s and early-1980s the company was being awarded contracts to construct numerous bridges in Los Angeles, San Bernardino, and Riverside counties. Specific projects included the Arrow Route and Foothill Boulevard bridge crossings over Cucamonga Creek, and the Deer Creek, Ontario and Rancho Cucamonga bridges, all in San Bernardino County. In the 1980s and 1990s the company was known for specializing in highway and street construction.[4]

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[1] "Public Notice of Request for Design Approval," *Los Angeles Times,* November 19, 1971, H2; "Ruling Expected in Six Weeks on Coast Highway," *Los Angeles Times,* April 1, 1971, WS1; "News in Brief – Coast Highway," *Los Angeles Times,* March 2, 1972, WS8; "Decision Near on Widening of Coast Highway," *Los Angeles Times,* September 6, 1973, WS1, 4.

[2] "Social Values to Influence Its Decisions, Coastal Board Hints," *Los Angeles Times,* November 29, 1973, 3C; James E. Roberts, "Aesthetic Design Philosophy Utilized for California State Bridges," *Journal of Urban Planning and Development* 118, no. 4 (December 1992), 154, 155.

[3] "4 Overcrossings Will Be Built in S.M.," *Los Angeles Times,* January 19, 1978, WS4; "Completion Due on Coast Highway Job by Early Summer," *Los Angeles Times,* March 10, 1974, WS1; John C. Ritner, "Bridges Produced by an Architectural Engineering Team," *Transportation Research Record 1044, Structures and Foundations* (Washington D.C.: Transportation Research Board National Research Council, 1985), 33.

[4] "Brutoco Engineering & Construction Inc.," Bloomberg, accessed November 2023, https://www.bloomberg.com/profile/company/7338290Z:US#xj4y7vzkg; "[Legal Advertisement]," San Bernardino *The Sun*, July 29,

The Montana Avenue POC is a concrete box girder bridge (**Plate 1**). The first concrete box girder bridges in California were erected in the mid-1930s. The type was innovative for its design flexibility, helping to meet the growing demand for longer and wider bridges as well as skewed bridges that permitted straighter, more efficient, and safer roadways. The slender bridge profiles with harmonious proportions allowed engineers to achieve the modern design aesthetic thought to showcase transportation efficiency. Because they required less steel in their construction, concrete box girder bridges could also be erected at significant cost savings. Only a small number of concrete box girder bridges were built before World War II, but after the war their numbers rapidly increased. By 1965, there were more than 1,500 concrete box girder bridges in California. More than 3,200 of the type were built between 1965 and 1974, and more than 1,000 between 1975 and 1984.[5]

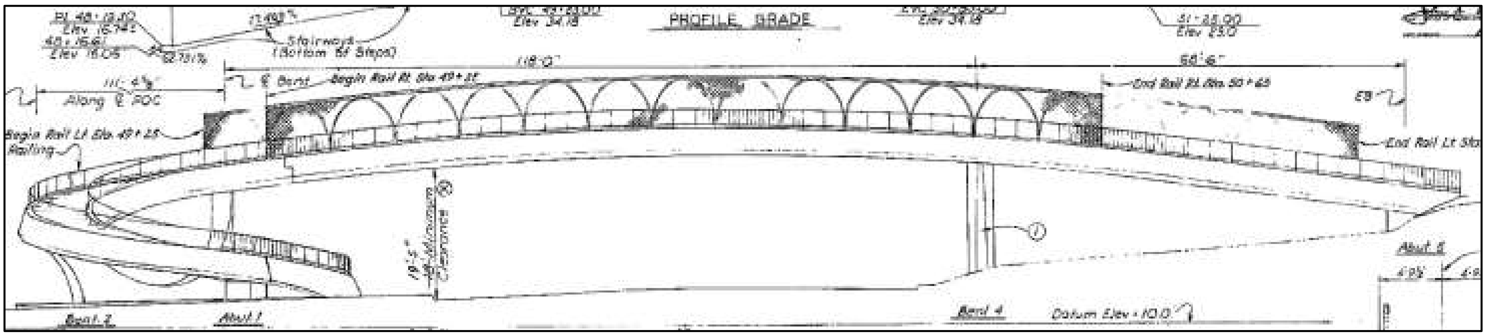

Plate 1. Bridge elevation from original plans dated 1977.[6]

Some notable concrete box girder bridges in California include the Mulholland Drive Overcrossing (Bridge 53 0739) in Los Angeles, which held title to the longest main span at 235 feet from its construction in 1959 until 1974 when the Interstate 8 bridge over the Pine Valley Creek (Bridge 57 0692L/R) achieved a 450-foot main span. The Eel River Bridge (Bridge 04 0016L) constructed in 1974 in Humboldt County achieved a total length of 1,730 feet and main span of 300 feet. Five years later the Parrotts Ferry Bridge in Tuolumne County, constructed in 1979, had a 639.8-foot-long main span and a total length of 1,292.7 feet. The Napa River Bridge (Bridge 21 0049), erected in 1977, has the longest total length of any continuous concrete box girder span in California at 2,230 feet.[7] The latter two examples are also notable for their aesthetic design. There are many concrete box girder POCs in Los Angeles County, many of which are of utilitarian design, such as several built around the same time as the Montana Avenue POC. These include the Meadowgrove Avenue POC over I-210 (53 2232) in La Cañada Flintridge, built in 1974, Greenwood Avenue POC over I-5 (53 0803) in Commerce, built in 1978, and Etiwanda Avenue POC over SR 118 (53 2511) in Northridge, built in 1980.

Design and construction of the Montana Avenue POC came during a period when consideration of bridge aesthetics had become entrenched in Caltrans' bridge design procedures. While most state-built bridges, and many local or consultant-designed bridges, received at least some attention to their overall appearance, more effort was placed on bridges in scenic or prominent locations such as the POCs built along the PCH / SR 1, for example. Caltrans' predecessor, the Division of Highways, began to integrate improved aesthetics into the state's bridge design procedures in the early 1960s with architects trained in bridge design providing input about the appearance of structures. The Division of Highways, and later Caltrans, developed its bridge aesthetics program to integrate it into the department's overall design philosophy that included additions to bridge design manuals with instructions to have bridges designed so that they would be aesthetically compatible with their

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1968, A-6; "[Legal Advertisement]," San Bernardino *The Sun*, January 6, 1969, B-6; "[Legal Advertisement]," San Bernardino *The Sun*, March 12, 1979, B-9; "[Legal Advertisement]," San Bernardino *The Sun*, September 1, 1980, D-3; "[Public Notice – No. 2443]," *Desert Sun*, May 16, 1996, E8.

[5] Myra L. Frank & Associated, "Caltrans Historic Bridge Inventory Update: Concrete Box Girder Bridges," prepared for Caltrans, August 2003, 5-11.

[6] Caltrans, "Montana Avenue Pedestrian Overcrossing – General Plan [as-built plans]," August 29, 1977.

[7] Caltrans, Historical Resources Evaluation Report, Statewide Historic Bridge Inventory: 2015 Update 1965-1974, 21 and DPR 523 forms Bridge 40 0048; Bridge 04 0016L; Bridge 04 0155.

location, as well as the development of standard features, such as columns, railings, and surface treatments, that met the aesthetic principles being promoted. Bridge designers were encouraged to consider what they are leaving for future generations, which emphasized that a bridge's appearance was as important as the structure's design features for load and safety. Aligning with the dominant architectural trends in Modernism of the period, bridge designers aspired to simplicity and pureness of structure, avoiding ornamentation, celebrating the beauty of structural form, and emphasizing ease of construction and economy of design. Slender structures on slender piers or columns with minimal number of elements, and continuous or steady long lines were among the features of the aesthetical ideal at the time, for which the Division of Highways received various awards such as concrete box girder Junipero Serra Freeway (I-280) bridges built in the mid to late 1960s in San Mateo County and Adams Avenue Overcrossing built in 1970 over I-805 (57 0619) in San Diego County. There came to be essentially two types of architectural treatment, those added to standard structures and those that united architecture and engineering. Dictated by cost and function criteria, treatments incorporated into standard structures could include the addition of grooves and textures, for example, while the rarer marriage of architecture and engineering could include shapes, proportion, scale of piers, abutments, and superstructure that varied from standard structures. Although Division of Highways / Caltrans policy was to design aesthetically pleasing structures, and sometimes incorporated input from members of the public or other interested parties, there were also clear parameters that such efforts would not be unduly more expensive. During this period, Division of Highways and Caltrans bridge designers considered aesthetic qualities following general principles related to quality design that carefully analyzed proportions of bridges' structural and safety elements, attractive forms for the various bridge elements, compatibility of bridges within their setting, and consideration of current and future acceptance of the structures. The Caltrans bridge aesthetics program resulted in many structures that incorporated basic aesthetic enhancements, as well as a smaller set of structures that included enhanced qualities and the few that had special aesthetic character.[8]

NRHP / CRHR Significance Evaluation

The Montana Avenue POC is not significant under NRHP Criterion A / CRHR Criterion 1 for an important association with significant events, trends, or patterns of development. The bridge was one of many highway improvements carried out in the late 1970s and early 1980s by Caltrans throughout California and in this region. It represents a typical safety and accessibility improvement. The Montana Avenue POC was not the first pedestrian overcrossing between Santa Monica and the beach, as it was preceded by two other nearby crossings of the PCH. Previously, pedestrians could also cross the highway via crosswalks at street level. Thus, the bridge did not open up a previously inaccessible beach, but instead, it increased convenience, safety, and facilitated traffic flow on the PCH, as cars no longer had to stop for pedestrians.

Under NRHP Criterion B / CRHR Criterion 2, this bridge is not significant for an association with the lives of persons important to history. Research did not find that any individuals directly associated with this property have made demonstrably important contributions to history at the local, state, or national level.

Under NRHP Criterion C / CRHR Criterion 3, the Montana Avenue POC is significant for its type, period, and method of construction for its design and aesthetic character, but it is not significant as the work of a master or for possessing high artistic

[8] Arthur L. Elliott, "Aesthetics of Highway Bridges," *Civil Engineering*, June 1968, 66; James E. Roberts, "Aesthetic Design Philosophy Utilized for California State," *Journal of Urban Planning and Development*, Vol. 118, No. 4, December 1992, 138-141, 148, and 155; Arthur L. Elliott, "Esthetic Development of California's Bridges," presented at the April 14-18, 1980, ASCE Convention and Exposition, Portland, Oregon (Preprint 80-004), published in *Journal of Structural Engineering*, Vol. 109, No. 9, September 1983, paper no. 18240, 2159-63 and 2172-73; W.S. Ludlow, "Aesthetics in Bridge Design," *Manual of Bridge Design Practice* (State of California: Bridge Department, 1971), 16.3; Arthur L. Elliot, "Aesthetics in a Changing Economy," in *Meeting Preprint 2199* for American Society of Civil Engineers National Structural Engineering Meeting, April 22-26, 1974, *Cincinnati*, Ohio; JRP Historical Consulting, LLC, *Historical Resources Evaluation Report, Cold Spring Canyon Bridge (51 0037) Pedestrian Barrier Project, State Route 154, Santa Barbara County, California, 05-SB-154 PM 22.96, EA 05-0P910K,* prepared for Caltrans District 5, May 2007; James E. Roberts, *Aesthetics and Economy in Complete Concrete Bridge Design*, California Department of Transportation, Office of Structures Design, 1986, available at the Caltrans Transportation Library, 3, 5, and 6; Arthur L. Elliott, "Creating a Beautiful Bridge," in Committee on General Structures, Subcommittee on Bridge Aesthetics, *Bridge Aesthetics Around the World*, (Washington D.C.: Transportation Research Board, National Research Council. 1991), 217; Stewart Gloyd, "California – A Qualified Bridge Esthetics Case Study," *Concrete International*, Volume 16, No. 2, February 1994, 46-48.

values. The bridge's aesthetic value is derived from the slender appearance and smooth, curving lines. The feature that particularly heightens the aesthetic quality of this bridge is the spiral ramp on the west end. The bridge is an excellent example of the union of architecture and engineering sought during the period's efforts to enhance the appearance of bridges, celebrating the beauty of structural form. This is done with careful consideration of the proportion of the bridge's components, along with the sweeping curved lines of the main girder and west end oblong U-shape supports, functioning as two piers, with finishing touches such east side pier, which includes tapered facets, and the west end spiral ramp, which is compact and gracefully turns almost a full circle between the ground and the bridge deck. The curve and sharp lines of the pier structure perfectly complement the spiral ramp it supports. When taken as a whole, the Montana Avenue POC, while slightly less dramatic than the similarly designed California Incline POC, is an excellent example of the Modern aesthetic in a pedestrian overcrossing.

Under NRHP Criterion D / CRHR Criterion 4, this property is not a significant or likely source of important information about historic construction materials or technologies that is not otherwise available through documentary evidence.

The boundary of the property encompasses the entire bridge structure and all of its elements between the end of the spiral ramp on the west and the abutment on the east end. The period of significance is 1979, the year the bridge was completed. It is significant at the state level. The character-defining features are the piers, spiral ramp, box girder superstructure, deck, and railing.

California Historical Landmark Evaluation

A property may be eligible for designation as a California Historical Landmark (CHL) if it meets one of three criteria: the first, last, or most significant of its type within the state or within a large geographic region (i.e., Southern California); is associated with an individual or group having a profound influence on the history of California; or is a prototype of, or an outstanding example of, a period, style, architectural movement or construction, or is an important work of a master architect or builder. Of these, the Montana Avenue POC meets the CHL Criteria as an outstanding example of a Modern style pedestrian overcrossing. It is therefore eligible for designation as a CHL.

Integrity

This bridge does not appear to have any alterations besides routine maintenance. As such, this bridge retains a high degree of integrity of materials, design, and workmanship, feeling, association, setting, and location. Overall, the bridge maintains sufficient integrity to convey its historical significance.

***Resource Name or #** (Assigned by recorder): Bridge 53 2602

***Recorded by**: S.J. "Mel" Melvin ***Date**: May 16, 2022 ☒Continuation ☐Update

Photographs (Continued):

Photograph 2: North elevation, camera facing southeast, May 16, 2022.

Photograph 3: Soffit and east pier, camera facing east, May 16, 2022.

***Resource Name or #** (Assigned by recorder): Bridge 53 2602

***Recorded by**: S.J. "Mel" Melvin *__Date__: May 16, 2022 ☒Continuation ☐Update

Photograph 4: Spiral stairway and piers, camera facing east, May 16, 2022.

Photograph 5: Spiral stairway, camera facing southwest, May 16, 2022.

Photograph 6: Spiral stairway piers, camera facing south, May 16, 2022.

Photograph 7: South elevation, camera facing west, May 16, 2022.

Photograph 8: Deck, camera facing west, May 16, 2022.

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary # ______
HRI # ______
Trinomial ______
NRHP Status Code 6Z
Other Listings ______
Review Code ______ **Reviewer** ______ **Date** ______

 ***Resource Name or #** (Assigned by recorder): Bridge 53C0899L

P1. Other Identifier: Kanan Dume Road Southbound Tunnel No. 1
***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County**: Los Angeles
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad**: Point Dume **Date**: 2021 **T**:1S; **R**:18W; **Sec**: 19; San Bernardino Meridian
c. Address: n/a City: n/a Zip: n/a
d. UTM: (give more than one for large and/or linear resources) Zone: 11S; 332631.38 m E; 3771751.82 m N
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate)
This tunnel is the southbound tunnel on Kanan Dume Road 4.3 miles north of State Route (SR) 1 north of Malibu. It is in Caltrans District 7.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)
The Kanan Dume Road Southbound Tunnel No. 1 is 525 feet long and carries one lane of southbound traffic (**Photograph 1 & 2**). At its widest, the tunnel measures 32.3 feet and includes a concrete roadway, curbs, and sidewalk on one side. The arched interior of the tunnel is lined with ribbed steel panels joined to arched steel ribs (**Photograph 3**). At each side, the steel lining meets gunite concrete walls about 5 feet high that make up the lower part of the tunnel walls. At the apex of the tunnel, a row of lamps attached to a metal bar runs from end to end. The tunnel has a minimum vertical clearance of 15 feet. Both portals are faced with a stepped stone masonry wall that continues to surround an adjacent tunnel of similar design that carries northbound traffic. Between the two south portals is a steel personnel door recessed in the stone masonry wall (**Photograph 4**). Slightly protruding stones frame the door opening and form a small arch on the top. Metal beam guardrail lines the roadway both approaching and leaving the tunnel.

***P3b. Resource Attributes:** (List attributes and codes) HP19. Bridge (Tunnel)
***P4. Resources Present:** ☐ Building ☒ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5b. Description of Photo: (View, date, accession#) **Photograph 1.** North portal, camera facing south, May 17, 2022.

***P6. Date Constructed/Age and Sources:** ☒ Historic ☐ Prehistoric ☐ Both
1983 (Caltrans)

***P7. Owner and Address:**
Los Angeles County
500 West Temple St.
Los Angeles, CA 90012

***P8. Recorded by:**
Steven J. "Mel" Melvin
JRP Historical Consulting, LLC
2850 Spafford Street
Davis, CA 95618

***P9. Date Recorded**: May 17, 2022

***P10. Survey Type:** (Describe)
Intensive

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") JRP Historical Consulting, LLC, "Historical Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2023 Update, 1975-1984," prepared for Caltrans, 2023.
***Attachments:** ☐ None ☐ Location Map ☐ Sketch Map ☒ Continuation Sheet ☒ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐Other (list) ______

***NRHP Status Code**: 6Z
***Resource Name or #** (Assigned by recorder): Bridge 53C0899L

B1. Historic Name: Kanan Dume Road Southbound Tunnel No. 1
B2. Common Name: Kanan Dume Road Southbound Tunnel No. 1
B3. Original Use: Tunnel B4. Present Use: Tunnel
***B5. Architectural Style**: Tunnel
***B6. Construction History**: (Construction date, alteration, and date of alterations) Built in 1983; no known alterations.
***B7. Moved?** ☒ **No** ☐ **Yes** ☐ **Unknown** **Date:** ______ **Original Location:** ______
***B8. Related Features:** ___
B9. Architect: unknown b. Builder: unknown
***B10. Significance: Theme**: n/a **Area**: n/a
Period of Significance: n/a **Property Type**: n/a **Applicable Criteria**: n/a
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

The Kanan Dume Road Southbound Tunnel No. 1 is not eligible for listing in the National Register of Historic Places (NRHP) or the California Register of Historical Resources (CRHR). This property has been evaluated in accordance with Section 106 of the National Historic Preservation Act of 1966 (as amended) (54 U.S.C. 306108) and its implementing regulations (36 CFR Part 800) and Section 15064.5(a)(2)-(3) of the California Environmental Quality Act (CEQA) Guidelines, using the criteria outlined in Section 5024.1 of the California Public Resources Code (PRC). (See Section B10 on Continuation Sheet.)

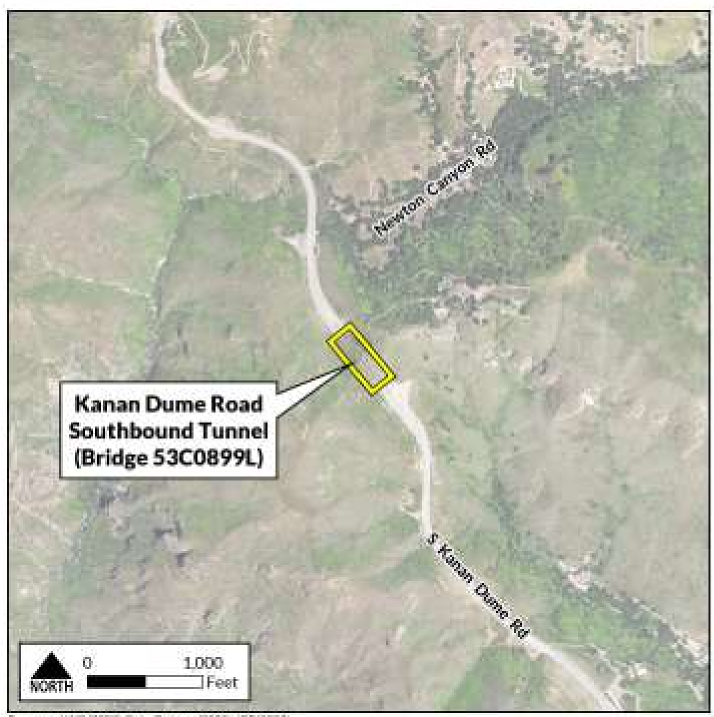
B11. Additional Resource Attributes: ______

***B12. References**: Caltrans, Statewide Historic Bridge Inventory, 2015; *Los Angeles Times;* Jessica B. Feldman (Myra L. Frank & Associates, Inc.), David Lemon (Caltrans), and Andrew Hope (Caltrans), "Caltrans Statewide Historic Bridge Inventory Update: Tunnels," 2006; see also footnotes.

B13. Remarks:

***B14. Evaluator**: Steven J. "Mel" Melvin
***Date of Evaluation**: November 2023

(This space reserved for official comments.)



B10. Significance (continued):

Historic Context and Bridge History

Kanan Dume Road / Kanan Road is a steep and winding road through the mountains north of Malibu.[1] The road was constructed gradually in sections by the County of Los Angeles between 1958 and 1974. The road quickly became a popular route between the San Fernando Valley and the beaches along the Pacific Coast Highway. The first of the tunnels built on the road were the three current two-lane northbound bores built between 1968 and 1974 that originally carried both northbound and southbound traffic. The combination of the high traffic volume and the steep, winding road, led to a high incidence of vehicle crashes and earned Kanan Dume Road the reputation as one of the most dangerous roads in Los Angeles County. These conditions prompted the county to construct separate southbound bores to compliment the three existing tunnels on the road, including the Kanan Dume Road Southbound Tunnel No. 1 evaluated on this form, along with other safety improvements on the road. The county finished Kanan Dume Road Southbound Tunnel No. 1 in 1983, making it the last of the three southbound bores to be built on the road, completed nine years after the adjacent northbound tunnel at this location. The County of Los Angeles has assigned the three tunnels on this road numbers 1 through 3, south to north.[2]

The Kanan Dume Road Southbound Tunnel No. 1 is one of four roadway tunnels constructed in the State of California during the 1975-1984 period, and one of 66 built in 1984 or earlier. Roadway tunnel construction in California began in the early 1900s, with most of the pre-1930 tunnels built by cities as part of their urban transportation network. The period of the most tunnel construction was the 1930s when 23 tunnels were built, most of these by the Division of Highways on state highways. Ten more tunnels were built in the early 1950s, the second most productive tunnel construction era, by state, city, and county agencies. The majority of tunnel construction up to the 1990s has been concentrated in the greater Los Angeles region and the greater San Francisco Bay region, which combined account for 83 percent of the tunnels in the state.[3]

The Kanan Dume Road Southbound Tunnel No. 1 is a bore type tunnel, by far the most common type of tunnel in California followed by cut-and-fill and precast concrete tube tunnels, of which there are very few. Bore tunnels are constructed by excavating through a hillside or mountain. Bore tunnels typically have an arched shape and can be either lined or unlined. Lining varies from concrete, tile applied to concrete, or steel. The longest bore tunnel is the Wawona Tunnel in Yosemite National Park measuring 4,236 feet in length. The second and third longest tunnels are Bore No. 1 and Bore No. 3 of the Caldecott Tunnel in Alameda County, measuring 3,615 feet and 3,609 feet, respectively.[4]

NRHP / CRHR Significance Evaluation

The Kanan Dume Road Southbound Tunnel No. 1 is not significant under NRHP Criterion A / CRHR Criterion 1 for an important association with significant events, trends, or patterns of development. The tunnel was one of many roadway improvements carried out during this period by the County of Los Angeles. This structure is not the first tunnel at this location and did not initiate new patterns of development. Thus, the tunnel is not important within the context of the development of the regional roadway network, local growth and development, or any other trends or events at the national, state, or local level that would make it significant under this criterion.

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[1] The name of the road changes from Kanan Dume Road to Kanan Road north of the Mulholland Highway.
[2] "Malibu," *Los Angeles Times*, October 15, 1981, WSA2; "Conejo," *Los Angeles Times*, August 5, 1982, V2; "County Seeks Construction Bids for Kanan Tunnel, Roadwork," *Los Angeles Times*, June 12, 1983, WS4; "County to Pay $2.5 Million in Kanan Road Crash ," *Los Angeles Times*, August 17, 1985, 4.
[3] Caltrans, "Historical Resources Evaluation Report, Statewide Historic Bridge Inventory: 2015 Update," Kanan Dume Road Northbound Tunnel #1 DPR 523 form; Jessica B. Feldman (Myra L. Frank & Associates, Inc.), David Lemon (Caltrans), and Andrew Hope (Caltrans), "Caltrans Statewide Historic Bridge Inventory Update: Tunnels," 2006, 3-7.
[4] Caltrans, "Historical Resources Evaluation Report, Statewide Historic Bridge Inventory: 2015 Update," Kanan Dume Road Northbound Tunnel #1 DPR 523 form; Jessica B. Feldman (Myra L. Frank & Associates, Inc.), David Lemon (Caltrans), and Andrew Hope (Caltrans), "Caltrans Statewide Historic Bridge Inventory Update: Tunnels," 2006, 3-7.

Under NRHP Criterion B / CRHR Criterion 2, the Kanan Dume Road Southbound Tunnel No. 1 is not significant for an association with the lives of persons important to history. Research did not find that any individuals directly associated with this property have made demonstrably important contributions to history at the local, state, or national level.

The Kanan Dume Road Southbound Tunnel No. 1 is not significant as an important example of a type, period, or method of construction, as the work of a master, or for possessing high artistic values (Under NRHP Criterion C / CRHR Criterion 3). This tunnel is a typical example of a bore type tunnel in a mountainous area. It is of typical design, materials, and workmanship. Built in 1983, the tunnel does not represent an early example of a tunnel, and at 525 feet long, it is not among the longest tunnels in the state. Additionally, the use of stone masonry to adorn tunnel portals was common by this time, integrating with the surrounding landscape and similar to the adjacent northbound tunnel, and the execution of stone masonry on this tunnel is modest and lacks high artistic value. Thus, the Kanan Dume Road Southbound Tunnel No. 1 is not significant for its type, engineering, design, or length. Research also did not find that the tunnel is the work of a master.

Under NRHP Criterion D / CRHR Criterion 4, this property is not a significant or likely source of important information about historic construction materials or technologies that is not otherwise available through documentary evidence.

Photographs (Continued):

Photograph 2: South portal, camera facing north, May 17, 2022.

Photograph 3: Tunnel interior, camera facing south, May 17, 2022.

Photograph 4: South portals, southbound tunnel on left, camera facing north, May 17, 2022.

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Z
Other Listings
Review Code Reviewer Date

 ***Resource Name or #** (Assigned by recorder): Bridge 53C0900L

P1. Other Identifier: Kanan Road Southbound Tunnel No. 2

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County**: Los Angeles
and (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad**: Point Dume **Date**: 2021 **T**:1S; **R**:18W; **Sec**: 6; San Bernardino Meridian

c. Address: Kanan Road City: n/a Zip: n/a

d. UTM: (give more than one for large and/or linear resources) Zone: 11S; 333096.55 m E; 3775331.06 m N

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate)
This tunnel is the southbound tunnel on Kanan Road 0.7 miles north of Mulholland Highway and north of Malibu. It is in Caltrans District 7.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)
Kanan Road Southbound Tunnel No. 2 is 874 feet long and carries one lane of southbound traffic (**Photograph 1 & 2**). At its widest, the tunnel measures 32.8 feet and includes a concrete roadway, curbs, and sidewalk on one side. The arched interior of the tunnel is lined with ribbed steel panels joined to arched steel ribs (**Photograph 3**). At each side, the steel lining meets gunite concrete walls about 5 feet high that make up the lower part of the tunnel walls. At the apex of the tunnel, a row of lamps attached to a metal bar runs from end to end. The tunnel has a minimum vertical clearance of 15 feet. Both portals are faced with a stepped stone masonry wall that continues to surround an adjacent tunnel of similar design that carries northbound traffic. Between the two north portals is a steel personnel door recessed in the stone masonry wall (**Photograph 4**). Metal beam guardrail lines the roadway both approaching and leaving the tunnel.

***P3b. Resource Attributes:** (List attributes and codes) HP19. Bridge (Tunnel)

***P4. Resources Present:** ☐ Building ☒ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5b. Description of Photo: (View, date, accession#) **Photograph 1.** North portal, camera facing west, May 17, 2022.

***P6. Date Constructed/Age and Sources:** ☒ Historic ☐ Prehistoric ☐ Both
1982 (*Los Angeles Times*)

***P7. Owner and Address:**
Los Angeles County
500 W. Temple St.
Los Angeles, CA 90012

***P8. Recorded by:**
Steven J. "Mel" Melvin
JRP Historical Consulting, LLC
2850 Spafford Street
Davis, CA 95618

***P9. Date Recorded**: May 17, 2022

***P10. Survey Type:** (Describe)
Intensive

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") JRP Historical Consulting, LLC, "Historical Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2023 Update, 1975-1984," prepared for Caltrans, 2023.

***Attachments:** ☐ None ☐ Location Map ☐ Sketch Map ☒ Continuation Sheet ☒ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐Other (list)

***NRHP Status Code**: 6Z
***Resource Name or #** (Assigned by recorder): Bridge 53C0900L

B1. Historic Name: Kanan Dume Road Southbound Tunnel No. 2
B2. Common Name: Kanan Dume Road Southbound Tunnel No. 2
B3. Original Use: Tunnel B4. Present Use: Tunnel
***B5. Architectural Style**: Tunnel
***B6. Construction History**: (Construction date, alteration, and date of alterations) Built in 1982; no known alterations.
***B7. Moved?** ☒ **No** ☐ **Yes** ☐ **Unknown** **Date:** ______ **Original Location:** ______
***B8. Related Features:** ___
B9. Architect: unknown b. Builder: unknown
***B10. Significance: Theme**: n/a **Area**: n/a
Period of Significance: n/a **Property Type**: n/a **Applicable Criteria**: n/a
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

The Kanan Dume Road Southbound Tunnel No. 2 is not eligible for listing in the National Register of Historic Places (NRHP) or the California Register of Historical Resources (CRHR). This property has been evaluated in accordance with Section 106 of the National Historic Preservation Act of 1966 (as amended) (54 U.S.C. 306108) and its implementing regulations (36 CFR Part 800) and Section 15064.5(a)(2)-(3) of the California Environmental Quality Act (CEQA) Guidelines, using the criteria outlined in Section 5024.1 of the California Public Resources Code (PRC). (See Section B10 on Continuation Sheet.)

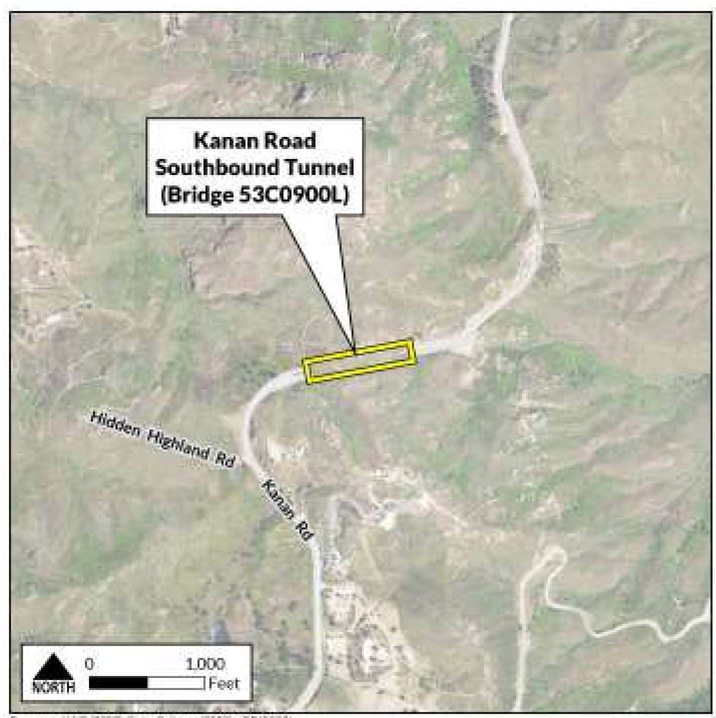
B11. Additional Resource Attributes: ______

***B12. References**: Caltrans, Statewide Historic Bridge Inventory, 2015; *Los Angeles Times;* Jessica B. Feldman (Myra L. Frank & Associates, Inc.), David Lemon (Caltrans), and Andrew Hope (Caltrans), "Caltrans Statewide Historic Bridge Inventory Update: Tunnels," 2006; see also footnotes.

B13. Remarks:

***B14. Evaluator**: Steven J. "Mel" Melvin
***Date of Evaluation**: November 2023

(This space reserved for official comments.)



B10. Significance (continued):

Historic Context and Bridge History

Kanan Dume Road / Kanan Road is a steep and winding road through the mountains north of Malibu.[1] The road was constructed gradually in sections by the County of Los Angeles between 1958 and 1974. The road quickly became a popular route between the San Fernando Valley and the beaches along the Pacific Coast Highway. The first of the tunnels built on the road were the three current two-lane northbound bores built between 1968 and 1974 that originally carried both northbound and southbound traffic. The combination of the high traffic volume and the steep, winding road, led to a high incidence of vehicle crashes and earned Kanan Dume Road the reputation as one of the most dangerous roads in Los Angeles County. These conditions prompted the county to construct separate southbound bores to compliment the three existing tunnels on the road, including the Kanan Dume Road Southbound Tunnel No. 2 evaluated on this form, along with other safety improvements on the road. The county finished Kanan Dume Road Southbound Tunnel No. 2 in 1982, 14 years after the adjacent northbound tunnel at this location, making it the second of the three southbound bores to be built on the road. The County of Los Angeles has assigned the three tunnels on this road numbers 1 through 3, south to north.[2]

The Kanan Dume Road Southbound Tunnel No. 2 is one of four roadway tunnels constructed in the State of California during the 1975-1984 period, and one of 66 built in 1984 or earlier. Roadway tunnel construction in California began in the early 1900s, with most of the pre-1930 tunnels built by cities as part of their urban transportation network. The period of the most tunnel construction was the 1930s when 23 tunnels were built, most of these by the Division of Highways on state highways. Ten more tunnels were built in the early 1950s, the second most productive tunnel construction era, by state, city, and county agencies. The majority of tunnel construction up to the 1990s has been concentrated in the greater Los Angeles region and the greater San Francisco Bay region, which combined account for 83 percent of the tunnels in the state.[3]

The Kanan Dume Road Southbound Tunnel No. 2 is a bore type tunnel, by far the most common type of tunnel in California followed by cut-and-fill and precast concrete tube tunnels, of which there are very few. Bore tunnels are constructed by excavating through a hillside or mountain. Bore tunnels typically have an arched shape and can be either lined or unlined. Lining varies from concrete, tile applied to concrete, or steel. The longest bore tunnel is the Wawona Tunnel in Yosemite National Park measuring 4,236 feet in length. The second and third longest tunnels are Bore No. 1 and Bore No. 3 of the Caldecott Tunnel in Alameda County, measuring 3,615 feet and 3,609 feet, respectively.[4]

NRHP / CRHR Significance Evaluation

The Kanan Dume Road Southbound Tunnel No. 2 is not significant under NRHP Criterion A / CRHR Criterion 1 for an important association with significant events, trends, or patterns of development. The tunnel was one of many roadway improvements carried out during this period by the County of Los Angeles. This structure is not the first tunnel at this location and did not initiate new patterns of development. Thus, the tunnel is not important within the context of the development of the regional roadway network, local growth and development, or any other trends or events at the national, state, or local level that would make it significant under this criterion.

[1] The name of the road changes from Kanan Dume Road to Kanan Road north of the Mulholland Highway.
[2] "Malibu," *Los Angeles Times*, October 15, 1981, WSA2; "Conejo," *Los Angeles Times*, August 5, 1982, V2; "County Seeks Construction Bids for Kanan Tunnel, Roadwork," *Los Angeles Times*, June 12, 1983, WS4; "County to Pay $2.5 Million in Kanan Road Crash ," *Los Angeles Times*, August 17, 1985, 4.
[3] Caltrans, "Historical Resources Evaluation Report, Statewide Historic Bridge Inventory: 2015 Update," Kanan Dume Road Northbound Tunnel #1 DPR 523 form; Jessica B. Feldman (Myra L. Frank & Associates, Inc.), David Lemon (Caltrans), and Andrew Hope (Caltrans), "Caltrans Statewide Historic Bridge Inventory Update: Tunnels," 2006, 3-7.
[4] Caltrans, "Historical Resources Evaluation Report, Statewide Historic Bridge Inventory: 2015 Update," Kanan Dume Road Northbound Tunnel #1 DPR 523 form; Jessica B. Feldman (Myra L. Frank & Associates, Inc.), David Lemon (Caltrans), and Andrew Hope (Caltrans), "Caltrans Statewide Historic Bridge Inventory Update: Tunnels," 2006, 3-7.

Under NRHP Criterion B / CRHR Criterion 2, the Kanan Dume Road Southbound Tunnel No. 2 is not significant for an association with the lives of persons important to history. Research did not find that any individuals directly associated with this property have made demonstrably important contributions to history at the local, state, or national level.

The Kanan Dume Road Southbound Tunnel No. 2 is not significant as an important example of a type, period, or method of construction, as the work of a master, or for possessing high artistic values (Under NRHP Criterion C / CRHR Criterion 3). This tunnel is a typical example of a bore type tunnel in a mountainous area. It is of typical design, materials, and workmanship. Built in 1982, the tunnel does not represent an early example of a tunnel, and at 874 feet long, it is not among the longest tunnels in the state. Additionally, the use of stone masonry to adorn tunnel portals was common by this time, integrating with the adjacent landscape and matching the adjacent northbound tunnel, and the execution of stone masonry on this tunnel is modest and lacks high artistic value. Thus, the Kanan Dume Road Southbound Tunnel No. 2 is not significant for its type, engineering, design, or length. Research also did not find that the tunnel is the work of a master.

Under NRHP Criterion D / CRHR Criterion 4, this property is not a significant or likely source of important information about historic construction materials or technologies that is not otherwise available through documentary evidence.

Photographs (Continued):

Photograph 2: South portal, camera facing east, May 17, 2022.

Photograph 3: Tunnel interior, camera facing east, May 17, 2022.

Photograph 4: South portals, southbound lane on left, camera facing east, May 17, 2022.

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary # ____________
HRI # ____________
Trinomial ____________
NRHP Status Code 6Z
Other Listings ____________
Review Code ______ Reviewer ____________ Date ______

 ***Resource Name or #** (Assigned by recorder): Bridge 53C0901L

P1. Other Identifier: Kanan Road Southbound Tunnel No. 3

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County**: Los Angeles
and (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5′ Quad**: Point Dume **Date**: 2021 **T**:1S; **R**:18W; **Sec**: 6; San Bernardino Meridian

c. Address: Kanan Road City: n/a Zip: n/a

d. UTM: (give more than one for large and/or linear resources) Zone: 11S; 333582.29 m E; 3775676.61 m N

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate)
This tunnel is the southbound tunnel on Kanan Road 1.5 miles north of Mulholland Highway and north of Malibu. It is in Caltrans District 7.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

Kanan Road Southbound Tunnel No. 3 is 395 feet long and carries one lane of southbound traffic (**Photographs 1 & 2**). At its widest, the tunnel measures 32.5 feet and includes a concrete roadway, curbs, and sidewalk on one side. The arched interior of the tunnel is lined with ribbed steel panels joined to arched steel ribs (**Photograph 3**). At each side, the steel lining meets gunite concrete walls about 5 feet high that make up the lower part of the tunnel walls. At the apex of the tunnel, a row of lamps attached to a metal bar runs from end to end. The tunnel has a minimum vertical clearance of 14.5 feet. Both portals are faced with a stepped stone masonry wall. The adjacent northbound tunnel is of similar design (**Photograph 4**). Metal beam guardrail lines the roadway both approaching and leaving the tunnel.

***P3b. Resource Attributes:** (List attributes and codes) HP19. Bridge (Tunnel)

***P4. Resources Present:** ☐ Building ☒ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5b. Description of Photo: (View, date, accession#) **Photograph 1.** North portal, camera facing southeast, May 17, 2022.

***P6. Date Constructed/Age and Sources:**
☒ Historic ☐ Prehistoric ☐ Both
1975 (date stamp)

***P7. Owner and Address:**
Los Angeles County
500 W. Temple St.
Los Angeles, CA 90012

***P8. Recorded by:**
Steven J. "Mel" Melvin
JRP Historical Consulting, LLC
2850 Spafford Street
Davis, CA 95618

***P9. Date Recorded**: May 17, 2022

***P10. Survey Type:** (Describe)
Intensive

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") JRP Historical Consulting, LLC, "Historical Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2023 Update, 1975-1984," prepared for Caltrans, 2023.

***Attachments:** ☐ None ☐ Location Map ☐ Sketch Map ☒ Continuation Sheet ☒ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record
☐Other (list) ____________

***NRHP Status Code**: 6Z

***Resource Name or #** (Assigned by recorder): Bridge 53C0901L

B1. Historic Name: Kanan Road Southbound Tunnel No. 3
B2. Common Name: Kanan Road Southbound Tunnel No. 3
B3. Original Use: Tunnel B4. Present Use: Tunnel
***B5. Architectural Style**: Tunnel
***B6. Construction History**: (Construction date, alteration, and date of alterations) Built in 1975; no known alterations.
***B7. Moved?** ☒ **No** ☐ **Yes** ☐ **Unknown** **Date:** ______ **Original Location:** ______
***B8. Related Features:** ___
B9. Architect: unknown b. Builder: unknown
***B10. Significance: Theme**: n/a **Area**: n/a
Period of Significance: n/a **Property Type**: n/a **Applicable Criteria**: n/a
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

The Kanan Dume Road Southbound Tunnel No. 3 is not eligible for listing in the National Register of Historic Places (NRHP) or the California Register of Historical Resources (CRHR). This property has been evaluated in accordance with Section 106 of the National Historic Preservation Act of 1966 (as amended) (54 U.S.C. 306108) and its implementing regulations (36 CFR Part 800) and Section 15064.5(a)(2)-(3) of the California Environmental Quality Act (CEQA) Guidelines, using the criteria outlined in Section 5024.1 of the California Public Resources Code (PRC). (See Section B10 on Continuation Sheet.)

B11. Additional Resource Attributes: ______

***B12. References**: Caltrans, Statewide Historic Bridge Inventory, 2015; *Los Angeles Times;* Jessica B. Feldman (Myra L. Frank & Associates, Inc.), David Lemon (Caltrans), and Andrew Hope (Caltrans), "Caltrans Statewide Historic Bridge Inventory Update: Tunnels," 2006; see also footnotes.

B13. Remarks:

***B14. Evaluator**: Steven J. "Mel" Melvin
***Date of Evaluation**: November 2023

(This space reserved for official comments.)

B10. Significance (continued):

Historic Context and Bridge History

Kanan Dume Road / Kanan Road is a steep and winding road through the mountains north of Malibu.[1] The road was constructed gradually in sections by the County of Los Angeles between 1958 and 1974. The road quickly became a popular route between the San Fernando Valley and the beaches along the Pacific Coast Highway. The first of the tunnels built on the road were the three current two-lane northbound bores built between 1968 and 1974 that originally carried both northbound and southbound traffic. The combination of the high traffic volume and the steep, winding road, led to a high incidence of vehicle crashes and earned Kanan Dume Road the reputation as one of the most dangerous roads in Los Angeles County. These conditions prompted the county to construct separate southbound bores to compliment the three existing tunnels on the road, including the Kanan Dume Road Southbound Tunnel No. 3 evaluated on this form, along with other safety improvements on the road. The county finished Kanan Dume Road Southbound Tunnel No. 3 in 1975, the first of the three southbound bores to be built on the road, completed seven after the adjacent northbound tunnel at this location. The County of Los Angeles has assigned the three tunnels on this road numbers 1 through 3, south to north.[2]

The Kanan Dume Road Southbound Tunnel No. 3 is one of four roadway tunnels constructed in the State of California during the 1975-1984 period, and one of 66 built in 1984 or earlier. Roadway tunnel construction in California began in the early 1900s, with most of the pre-1930 tunnels built by cities as part of their urban transportation network. The period of the most tunnel construction was the 1930s when 23 tunnels were built, most of these by the Division of Highways on state highways. Ten more tunnels were built in the early 1950s, the second most productive tunnel construction era, by state, city, and county agencies. The majority of tunnel construction up to the 1990s has been concentrated in the greater Los Angeles region and the greater San Francisco Bay region, which combined account for 83 percent of the tunnels in the state.[3]

The Kanan Dume Road Southbound Tunnel No. 3 is a bore type tunnel, by far the most common type of tunnel in California followed by cut-and-fill and precast concrete tube tunnels, of which there are very few. Bore tunnels are constructed by excavating through a hillside or mountain. Bore tunnels typically have an arched shape and can be either lined or unlined. Lining varies from concrete, tile applied to concrete, or steel. The longest bore tunnel is the Wawona Tunnel in Yosemite National Park measuring 4,236 feet in length. The second and third longest tunnels are Bore No. 1 and Bore No. 3 of the Caldecott Tunnel in Alameda County, measuring 3,615 feet and 3,609 feet, respectively.[4]

NRHP / CRHR Significance Evaluation

The Kanan Dume Road Southbound Tunnel No. 3 is not significant under NRHP Criterion A / CRHR Criterion 1 for an important association with significant events, trends, or patterns of development. The tunnel was one of many roadway improvements carried out during this period by the County of Los Angeles. This structure is not the first tunnel at this location and did not initiate new patterns of development. Thus, the tunnel is not important within the context of the development of the regional roadway network, local growth and development, or any other trends or events at the national, state, or local level that would make it significant under this criterion.

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[1] The name of the road changes from Kanan Dume Road to Kanan Road north of the Mulholland Highway.
[2] "Malibu," *Los Angeles Times*, October 15, 1981, WSA2; "Conejo," *Los Angeles Times*, August 5, 1982, V2; "County Seeks Construction Bids for Kanan Tunnel, Roadwork," *Los Angeles Times*, June 12, 1983, WS4; "County to Pay $2.5 Million in Kanan Road Crash ," *Los Angeles Times*, August 17, 1985, 4.
[3] Caltrans, "Historical Resources Evaluation Report, Statewide Historic Bridge Inventory: 2015 Update," Kanan Dume Road Northbound Tunnel #1 DPR 523 form; Jessica B. Feldman (Myra L. Frank & Associates, Inc.), David Lemon (Caltrans), and Andrew Hope (Caltrans), "Caltrans Statewide Historic Bridge Inventory Update: Tunnels," 2006, 3-7.
[4] Caltrans, "Historical Resources Evaluation Report, Statewide Historic Bridge Inventory: 2015 Update," Kanan Dume Road Northbound Tunnel #1 DPR 523 form; Jessica B. Feldman (Myra L. Frank & Associates, Inc.), David Lemon (Caltrans), and Andrew Hope (Caltrans), "Caltrans Statewide Historic Bridge Inventory Update: Tunnels," 2006, 3-7.

Under NRHP Criterion B / CRHR Criterion 2, the Kanan Dume Road Southbound Tunnel No. 3 is not significant for an association with the lives of persons important to history. Research did not find that any individuals directly associated with this property have made demonstrably important contributions to history at the local, state, or national level.

The Kanan Dume Road Southbound Tunnel No. 3 is not significant as an important example of a type, period, or method of construction, as the work of a master, or for possessing high artistic values (Under NRHP Criterion C / CRHR Criterion 3). This tunnel is a typical example of a bore type tunnel in a mountainous area. It is of typical design, materials, and workmanship. Built in 1983, the tunnel does not represent an early example of a tunnel, and at 525 feet long, it is not among the longest tunnels in the state. Additionally, the use of stone masonry to adorn tunnel portals was common by this time, integrating with the adjacent landscape and similar to the adjacent northbound tunnel, and the execution of stone masonry on this tunnel is modest and lacks high artistic value. Thus, the Kanan Dume Road Southbound Tunnel No. 3 is not significant for its type, engineering, design, or length. Research also did not find that the tunnel is the work of a master.

Under NRHP Criterion D / CRHR Criterion 4, this property is not a significant or likely source of important information about historic construction materials or technologies that is not otherwise available through documentary evidence.

Photographs (Continued):

Photograph 2: South portal, camera facing northeast, May 17, 2022.

***Resource Name or #** (Assigned by recorder): Bridge 53C0901L

***Recorded by**: S.J. "Mel" Melvin ***Date**: May 17, 2022 ☒Continuation ☐Update

Photograph 3: Tunnel interior, camera facing southeast, May 17, 2022.

Photograph 4: North portals, southbound lane on right, camera facing southeast, May 17, 2022.

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary # ______
HRI # ______
Trinomial ______
NRHP Status Code 6Z; 7N

Other Listings ______
Review Code ______ **Reviewer** ______ **Date** ______

 ***Resource Name or #** (Assigned by recorder): Bridge 53C1184

P1. Other Identifier: Grand Avenue Viaduct

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County**: Los Angeles
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad**: Hollywood **Date**: 2018 **T**:1S; **R**:13W; **Sec**: n/a; San Bernardino Meridian
c. Address: Grand Avenue City: Los Angeles Zip: n/a
d. UTM: (give more than one for large and/or linear resources) Zone: 11S; 384523.66 m E; 3768740.34 m N
e. Other Locational Data: The Grand Avenue Viaduct runs between 2nd Street and 4th Street in downtown Los Angeles. The bridge is in Caltrans District 7.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

The Grand Avenue Viaduct is an 18-span, reinforced concrete T-beam bridge supported by reinforced concrete flared piers and concrete abutments (**Photograph 1**). It is 1,575 feet long, with the longest span 131 feet. The bridge spans Grand Avenue between just north of 2nd Street and 4th Street, creating a lower level of Grand Avenue the length of the bridge. Through traffic is carried on the viaduct deck, while the lower level provided access to loading docks and parking garages of the buildings on Grand Avenue. The bridge has two, approximately one-half-block long sections of open median providing light and ventilation to the lower level, each with tapered sides and ringed by two-bar tube aluminum railings at street level. Near 4th Street, a crosswalk cuts through one of these open medians. The bridge deck carries an asphalt paved four-lane roadway with on-street parking and sidewalks (**Photographs 3 – 8**). It is 65.6 feet wide curb-to-curb and has a total width of 110 feet. The sidewalks have streetlamps, tree wells, bike racks, bus stops, and other minor infrastructure typical of an urban sidewalk (**Photographs 9 – 11**). (See Continuation Sheet.)

***P3b. Resource Attributes:** (List attributes and codes) HP19. Bridge
***P4. Resources Present:** ☐ Building ☒ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5b. Description of Photo: (View, date, accession#) **Photograph 1.** Bridge at General Kosciuszko Way, camera facing southwest, May 18, 2022.

***P6. Date Constructed/Age and Sources:** ☒ Historic ☐ Prehistoric ☐ Both
1974 (*Los Angeles Times*)

***P7. Owner and Address:**
Los Angeles County
500 W. Temple St.
Los Angeles, CA 90012

***P8. Recorded by:**
Steven J. "Mel" Melvin
JRP Historical Consulting, LLC
2850 Spafford Street
Davis, CA 95618

***P9. Date Recorded**: May 18, 2022

***P10. Survey Type:** (Describe)
Intensive

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") JRP Historical Consulting, LLC, "Historical Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2023 Update, 1975-1984," prepared for Caltrans, 2023.

***Attachments:** ☐ None ☐ Location Map ☐ Sketch Map ☒ Continuation Sheet ☒ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐Other (list) ______

***NRHP Status Code**: 6Z;7N

***Resource Name or #** (Assigned by recorder): Bridge 53C1184

B1. Historic Name: Grand Avenue Viaduct

B2. Common Name: Grand Avenue Viaduct

B3. Original Use: Bridge B4. Present Use: Bridge

***B5. Architectural Style**: Concrete T-beam

***B6. Construction History**: (Construction date, alteration, and date of alterations) Built in 1974; lengthened 410 feet in 1996; removal of bridge railings along both sides as adjacent buildings were constructed; installation of multiple minor features on the sidewalks such as trees, bus stop shelters, bike racks, newspaper boxes, parking meters, signs, etc.; replacement of original sidewalk; crosswalk cutting through open median between 3rd Street and 4th Street; lights on some of the streetlamps replaced, all dates unknown; seismic retrofit in 2010 consisted of work on the hinges, joint seals, and expansion joints

***B7. Moved?** ☒ **No** ☐ **Yes** ☐ **Unknown** **Date:** ____ **Original Location:** ____

***B8. Related Features:** ___

B9. Architect: Daniel, Mann, Johnson, and Mendenhall/ John C. Sandberg b. Builder: unknown

***B10. Significance: Theme**: Urban Development **Area**: Los Angeles

Period of Significance: n/a **Property Type**: Bridge **Applicable Criteria**: A/1

(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

The Grand Avenue Viaduct is not eligible for listing in the National Register of Historic Places (NRHP) or the California Register of Historical Resources (CRHR). This property has been evaluated in accordance with Section 106 of the National Historic Preservation Act of 1966 (as amended) (54 U.S.C. 306108) and its implementing regulations (36 CFR Part 800) and Section 15064.5(a)(2)-(3) of the California Environmental Quality Act (CEQA) Guidelines, using the criteria outlined in Section 5024.1 of the California Public Resources Code (PRC). (See Section B10 on Continuation Sheet.)

B11. Additional Resource Attributes: ____

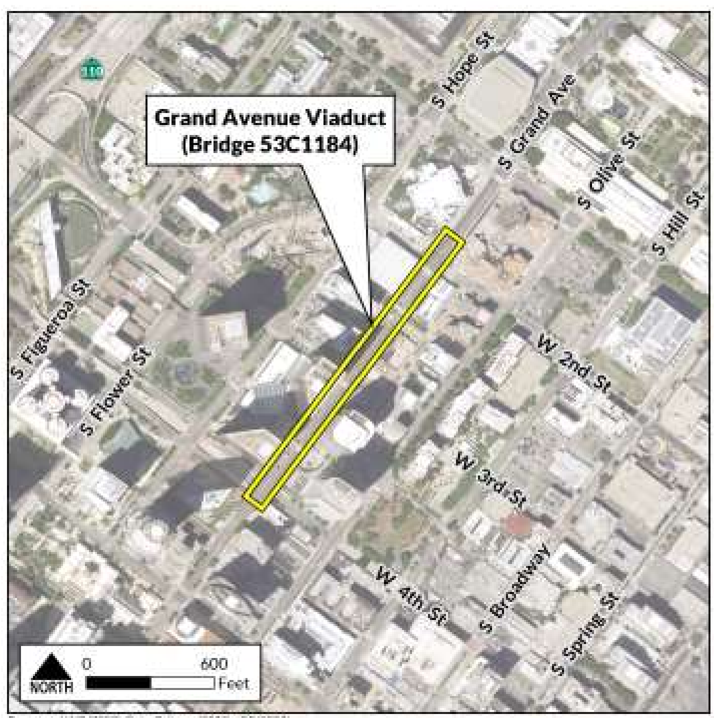
***B12. References**: Caltrans Bridge Database; Caltrans Bridge Inspection Reports; Caltrans, Bridge As-Built Plans; Los Angeles Community Redevelopment Agency, "Redevelopment Plan for the Bunker Hill Redevelopment Project 1B," 1958; Los Angeles Community Redevelopment Agency, "Bunker Hill Redevelopment Project Biennial Report," 1988; *Los Angeles Times;* see also footnotes.

B13. Remarks:

***B14. Evaluator**: Steven J. "Mel" Melvin

***Date of Evaluation**: November 2023

(This space reserved for official comments.)



P3a. Description (continued):

Under the viaduct is the lower level of Grand Avenue (**Photographs 12 – 20**). It is a four-lane, asphalt paved roadway that runs from just north of 2nd Street to 4th Street. It is accessed by General Kosciuszko Way and 4th Street, both of which cross under the viaduct. The lower level roadway runs between the viaduct piers, and on each side are concrete sidewalks. It is illuminated by lights mounted on the concrete girders, and by natural light shining through the open medians of the viaduct. Along the roadway, adjacent to the viaduct, are the walls of the Grand Avenue buildings and their loading docks and parking garage entrances.

B10. Significance (continued):

Historic Context and Bridge History

In 1959, the Los Angeles City Council adopted the Bunker Hill Urban Renewal Project (hereafter Bunker Hill Redevelopment Project), which called for the redevelopment of the Bunker Hill, a neighborhood on the west edge of downtown.[1] To administer the project, the City established the Community Redevelopment Agency (CRA). The 30-block, 133-acre redevelopment area was bounded by 1st Street, Hill Street, the Harbor Freeway (State Route 110), and an irregular line between 5th Street and 4th Street. It was one of the largest downtown redevelopment projects in the United States at the time. The California Redevelopment Law of 1945 and the Federal Housing Acts of 1946 and 1949 enabled the project to come into being by empowering municipalities to declare certain areas of central cities to be "blighted" and "slums" and acquire ownership of property in these areas through purchase, eminent domain, or condemnation. Following the identification of a redevelopment area, cities would evict residents and businesses, raze all buildings, make infrastructure improvements, and sell the property to developers who were obligated to construct buildings in accordance with the redevelopment master plan.[2]

Following the adoption of the Bunker Hill Redevelopment Project and some delays related to litigation, property acquisitions, and evictions, demolition of buildings in the project area began in early 1961 and concluded in 1969. This process resulted in 285 properties acquired by the CRA, 396 buildings demolished, and the cleared land subdivided into 25 parcels. The CRA then proceeded to construct new streets, sewers, water mains, and electrical infrastructure in preparation for new development.[3]

The original redevelopment plan drafted in 1958 did not call for the construction of the Grand Avenue Viaduct. The viaduct became part of the project after amendments to the plan in 1968 and 1970, which reimagined Grand Avenue between 1st Street and 4th Street as the focus of the project featuring several high-rise buildings housing offices, hotels, restaurants, apartments, condominiums, and retail. Planners determined that constructing the one-and-a-half-block-long, two-level Grand Avenue Viaduct would facilitate traffic flow and create a pleasant pedestrian experience by channeling the loading dock and parking garage traffic of these large, high-occupancy buildings to the lower level, while through traffic passed on the upper level – the viaduct.[4]

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[1] The project was originally the Bunker Hill Urban Renewal Project. The name changed to the Bunker Hill Redevelopment Project in 1968. This name will be used throughout for the sake of uniformity.

[2] Los Angeles Community Redevelopment Agency, "Redevelopment Plan for the Bunker Hill Redevelopment Project 1B," 1958, passim; Los Angeles Community Redevelopment Agency, "Bunker Hill Redevelopment Project Area: Implementation Plan, FY 2010 – January 1, 2012," December 17, 2009, 1-2; Stephen Jones, "The Bunker Hill Story: Welfare, Redevelopment, and Housing Crisis in Postwar Los Angeles" (MA thesis, City University of New York, 2017), 1-13, 41-42; "Bunker Hill: Years of Study, Little Building," *Los Angeles Times,* October 4, 1970, B1.

[3] Los Angeles Community Redevelopment Agency, "Bunker Hill Redevelopment Project Biennial Report, 1986-1988," November 1988, 2; "Target for Bunker Hill Completion Is 10 Years," *Los Angeles Times,* March 10, 1969, C1.

[4] "Timeline: How Bunker Hill Transformed Los Angeles and Grand Avenue," *Los Angeles Times,* May 22, 2019; "Target for Bunker Hill Completion Is 10 Years," *Los Angeles Times,* March 10, 1969, C1; "Garage Pillars Now Holding Up Progress," *Los Angeles Times,* February 6, 1972, B1; Jones, "The Bunker Hill Story," 1-13, 41-42; Los Angeles Community Redevelopment Agency, "Bunker Hill Redevelopment Project Biennial Report, 1986-1988," November 1988, 2; "Bunker Hill: Years of Study, Little Building," *Los Angeles Times,* October 4, 1970, B1; Los Angeles Community Redevelopment Agency, "Redevelopment Plan for the Bunker Hill Redevelopment Project 1B," 1958, passim; "Useless Bunker Hill Pillars To Be Torn Out," *Los Angeles Times,* September 20, 1972, A3.

Grand Avenue Viaduct construction started in September 1972 as part of the overall improvement of Grand Avenue between 1st Street and 5th Street. Work began with site preparation that included removal of the existing roadway, demolition of a bridge over 4th Street, and the excavation of the hill along Grand Avenue to reduce its elevation by 35 feet. The original viaduct, designed by the firm of Daniel, Mann, Johnson & Mendenhall, spanned one and a half blocks between 2nd Place (currently General Kosciuszko Way) and 4th Street. The redesigned Grand Avenue, including the viaduct, opened for traffic on December 2, 1974. The Grand Avenue improvement element of the redevelopment project, inclusive of the viaduct, had an estimated cost of $5 million. At this time, none of the parcels between 1st Street and 4th Street had been developed and only 56 percent of the overall Bunker Hill Redevelopment land had been sold (**Plate 1**).[5]

Plate 1. Grand Avenue in 1982 looking south from 1st Street. Note that all of the lots between 1st Street and 4th Street are still vacant. In the foreground is a modular, temporary parking structure between 1st Street and 2nd Street.[6]

[5] "Useless Bunker Hill Pillars To Be Torn Out," *Los Angeles Times,* September 20, 1972, A3; "Target for Bunker Hill Completion Is 10 Years," *Los Angeles Times,* March 10, 1969, C1; Daniel, Mann, Johnson & Mendenhall, "Plan of Bridge, Retaining Walls, and Utility Room in Grand Avenue from Second Place to Fourth Street [as-built plans], April 8, 1972; Teledyne Geotronics, Aerial Photograph, April 5, 1971, Photo No. 2755-18-30; Teledyne Geotronics, Aerial Photograph, 1973, Photo No. 7300-20-30; "Grand Avenue Will Reopen," *Los Angeles Times,* November 28, 1974, 33; "A Different Way of Life Downtown," *Los Angeles Times,* October 12, 1975, 95.
[6] Roy Hankey, "Grand Avenue Between 4th and 5th," 1982, Roy Hankey Collection, Los Angeles Public Library Photo Collection, Photo No. 68741.

Once completed, the Grand Avenue Viaduct crossed over a barren landscape of large, empty lots on both sides (**Plate 2**). Unlike its current appearance, the viaduct looked like a typical bridge. It had robust, tubular, three-bar railings on both sides, sidewalks, and streetlamps (**Plate 3** & **Plate 4**). The look of the bridge changed slowly over time as developers constructed buildings on the empty lots along it. The first being the Crocker Center, now called the Wells Fargo Center, on the west side of Grand Avenue between 3rd Street and 4th Street in 1984. Development along the viaduct, and Grand Avenue generally, proceeded slowly in the following years. By 1988, only the Wells Fargo Center, Museum of Contemporary Art, and one of two planned towers of the California Plaza complex had been built. A report by the CRA issued that year observed that while substantial progress had been made on the Bunker Hill Redevelopment Project, "much remains to be done," as evidenced by the many vacant parcels on Grand Avenue between 1st Street and 4th Street (**Plate 5**). As development proceeded on the parcels adjacent to the viaduct, each project resulted in alterations to the viaduct. The main pedestrian access level of the buildings from Grand Avenue was at the level of the viaduct deck. Thus, the plazas and sidewalks of the buildings abutted the viaduct sidewalks, and with each building constructed, a section of viaduct railing was removed. And as building construction proceeded, the viaduct became entirely enveloped by buildings. Large plazas were also built over General Kosciuszko Way and 3rd Street along the viaduct. The only section of the viaduct that currently retains its original appearance is the section crossing over 4th Street. Other alterations to the viaduct include the replacement of most of the sidewalks, installation of tree wells with metal grates and brick surrounds, and the replacement of some streetlamp lights with LED lamps.[7]

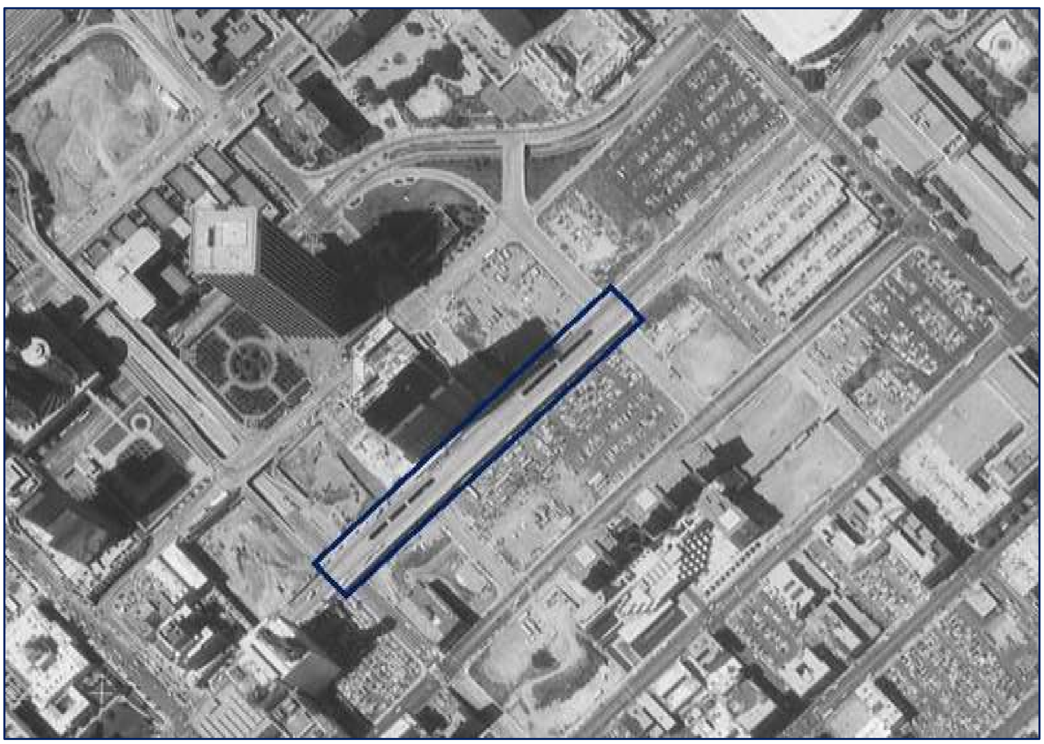

Plate 2. This ca. 1981 photo shows Grand Avenue, the added purple rectangle outlines the Grand Avenue Viaduct with 4th Street crossing at the lower left of the rectangle. The tall building adjacent to the viaduct is the first tower of the Wells Fargo Center, under construction.[8]

[7] Roy Hankey, "Grand Avenue Between 4th and 5th," 1982, Roy Hankey Collection, Los Angeles Public Library Photo Collection, Photo No. 68741; "Grand Avenue Toward 4th Street," [ca. 1983], Security Pacific National Bank Collection, Los Angeles Public Library Photo Collection, Photo No. 68178; Los Angeles Community Redevelopment Agency, "Bunker Hill Redevelopment Project Biennial Report, 1986-1988," November 1988, 7, 11, 17.
[8] Teledyne Geotronics, Aerial Photograph, 1981, Photo No. TG-3800-18-30.

Plate 3. Grand Avenue Viaduct circa 1983 looking south from the north abutment. The tall building in the center is the Wells Fargo Center under construction.[9]

In 1994, a section of Grand Avenue between 1st Street and 3rd Street, including part of the viaduct, closed for the construction of a northern extension of the viaduct and a parking garage for the proposed Walt Disney Concert Hall on the west side of Grand Avenue between 1st Street and 2nd Street. Completed in 1996, the new section of the viaduct between General Kosciuszko Way and a point 131 feet north of 2nd Street added 410 feet to the original 1,164-foot long structure. The parking garage, paid for by the County of Los Angeles, was also finished by 1996, but the Disney Concert Hall, delayed by funding issues, had not yet broken ground and was not finished until 2003. Development along the Grand Avenue Viaduct continued slowly in the following years with The Broad modern art museum at 2nd Street and a residential high-rise at General Kosciuszko Way both completed in 2015, and The Grand, a high-rise hotel, residential, and retail complex across from the Disney Concert Hall opening in 2022.[10]

[9] "Grand Avenue Toward 4th Street," [ca. 1983], Security Pacific National Bank Collection, Los Angeles Public Library Photo Collection, Photo No. 68178.
[10] "Section of Grand Avenue To Be Closed Several Months," *Los Angeles Times,* October 29, 1994, B2; "Report Offers Design Changes To Try To Save Disney Hall," *Los Angeles Times,* March 5, 1995, WVB15; Dubon & Associates, "Grand Avenue Bridge Extension [as-built plans]," December 4, 1992.

Plate 4. Grand Avenue Viaduct in 1980 looking north from the south abutment.[11]

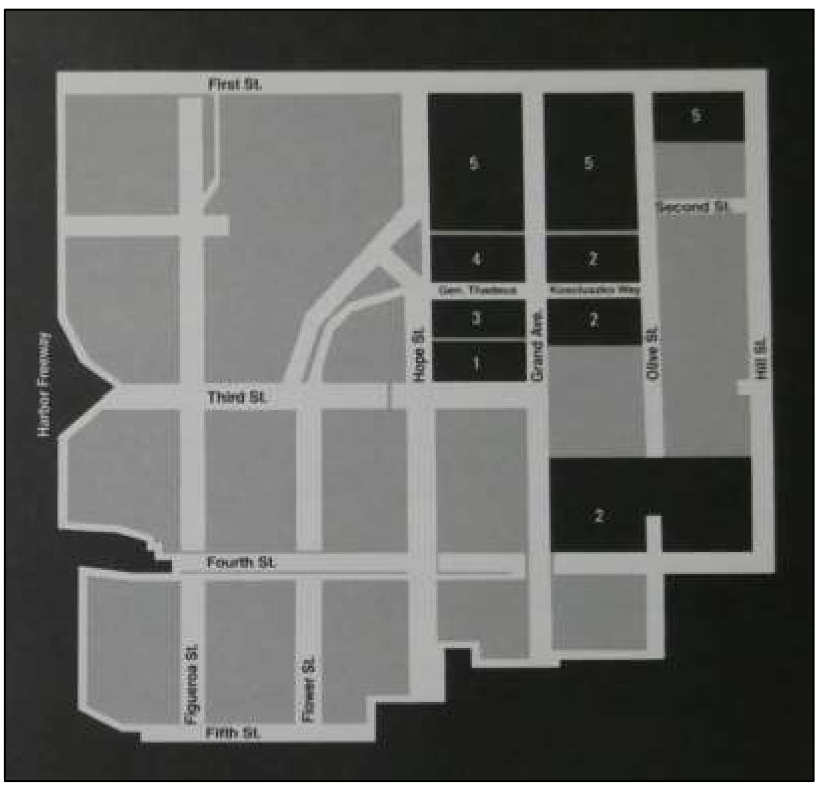

Plate 5. Map dated 1988 showing the undeveloped parcels shaded black.[12]

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[11] William Reagh, "Grand Street Looking North," 1980, William Reagh Collection, Los Angeles Public Library Photo Collection, Photo No. 17522.
[12] "Grand Avenue Toward 4th Street," [ca. 1983], Security Pacific National Bank Collection, Los Angeles Public Library Photo Collection, Photo No. 68178.

The firm of Daniel, Mann, Johnson, and Mendenhall (DMJM) that designed the Grand Avenue Viaduct was an established and acclaimed architectural and engineering firm by the time it designed the viaduct. Founders Phillip J. Daniel, Arthur E. Mann, and Kenneth Johnson organized the firm in Santa Monica in 1946 and later added Irvan Mendenhall to the partnership. In its early years, the firm specialized in schools, but soon branched out to all types of buildings, large infrastructure projects, and preparing planning documents. The firm grew rapidly and became one of southern California's largest full-service design and engineering firms by the 1960s. By 1970, DMJM had 14 offices across the United States and had designed projects in 32 countries around the globe. The Grand Avenue Viaduct was designed by an engineer at the firm, John C. Sandberg. In 1984, Ashland Oil, Incorporated purchased DMJM and held it until 1990 when it sold the company to AECOM. In the realm of engineered structures, DMJM built a number of notable projects in California including the City of Los Angeles Van Nuys Water Reclamation Plant, Downtown Los Angeles Third Street Tunnel Extension, Douglas Missile & Space System Center at Huntington Beach, and the Sepulveda Basin Water Reclamation Plant.[13]

The Grand Avenue Viaduct is a concrete T-beam structure. This type of bridge is regarded by Caltrans as a common bridge type, with over 3,000 in the state. The type emerged in the early twentieth century and reached its height of popularity between 1915 and 1930. By the 1960s, the concrete T-beam had been replaced by concrete box girder and steel girder bridges, and very few were built. Concrete T-beam bridges listed in the NRHP, or are that are eligible for listing in the NRHP are very early examples, long spans, those that are part of historic districts or roadways, and those with notable aesthetic qualities.[14]

NRHP / CRHR Significance Evaluation

Under NRHP Criterion A / CRHR Criterion 1 the Grand Avenue Viaduct has potential significance for an important association with the Bunker Hill Redevelopment Project. However, as discussed in the above historic context, the Bunker Hill Redevelopment Project has continued up until recent times, with several buildings on Grand Avenue built after 1988, including four in the 2000s. Therefore, any potential period of significance for the viaduct in association with the redevelopment project would end in the 2000s, a timeframe beyond the general 45-year-old cutoff used by Caltrans to evaluate properties. NRHP guidelines do allow for the evaluation of properties less than 50 years old if they are of "exceptional importance," but the Grand Avenue Viaduct does not attain this extraordinarily high status. While the Grand Avenue Viaduct has the potential for normal importance within the context of the redevelopment project, it does not attain the level of "exceptional importance" as it was not essential to the realization of the overall project, or of Grand Avenue's development. The design of the viaduct contributes to the vehicle and pedestrian circulation patterns within the redevelopment project, by providing ease of egress and ingress for vehicles accessing loading dock and parking garages, but the buildings adjacent to the viaduct and the overall redevelopment project could have been built without the viaduct, thus the viaduct is not exceptionally important.[15]

The Grand Avenue Viaduct is not eligible for the NRHP / CRHR to an earlier period of significance dating to the viaduct's completion in 1974 because it no longer has integrity to that date. From 1974 to 1985, only the Wells Fargo Center had been built along the viaduct and several vacant or under construction parcels remained. As itemized in Section B6 and shown in the photographs above, construction of the buildings along the viaduct required substantial and numerous alterations to the viaduct that have degraded the integrity of design, materials, workmanship, feeling, and setting, that it no longer has any resemblance to the structure built in 1974, or even to the structure as it existed in 1985, and no longer conveys significance to that period.

It is recommended that the evaluation of the Grand Avenue Viaduct be revisited when sufficient time has passed to assess its historical significance relative to the completion of development along this section of Grand Avenue and the overall Bunker Hill Redevelopment Project.

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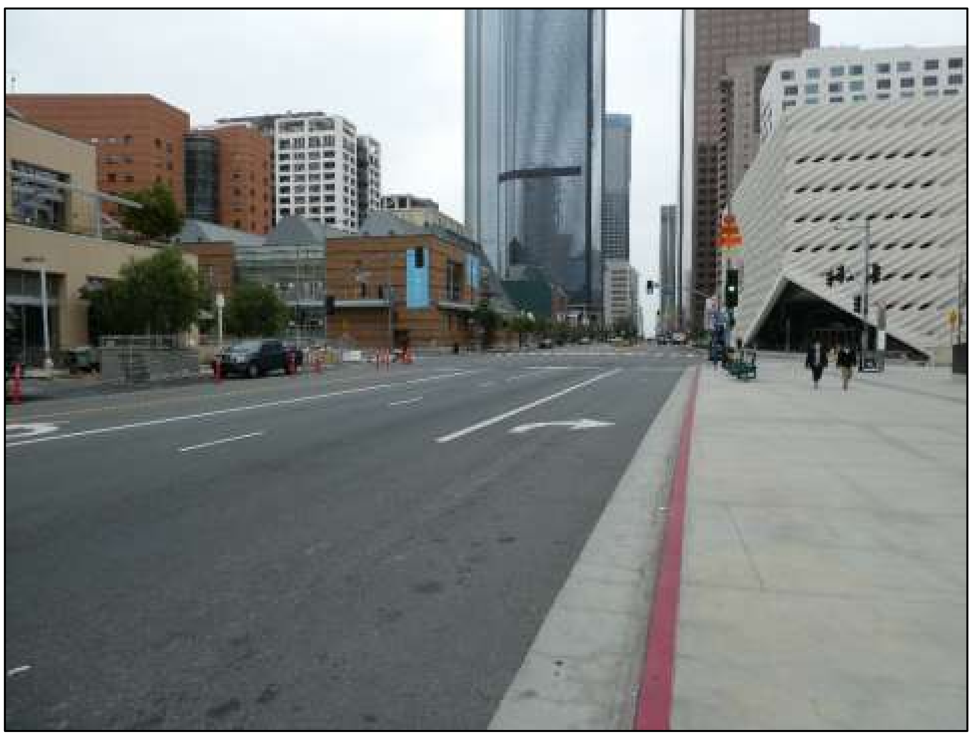
[13] "Alan Michelson," Pacific Coast Architectural Database, accessed May 2022 at https://pcad.lib.washington.edu/firm/99/ ; Tom Cameron, "Firm Creates Wide Variety of Projects," *Los Angeles Times*, July 26, 1964, M1; "$955,000 in Contracts Let for Water Plants," *Los Angeles Times*, January 5, 1971, SF7.
[14] Andrew Hope, Caltrans, "Caltrans Statewide Historic Bridge Inventory Update: Survey and Evaluation of Common Bridge Types, November 2004, 7-9.
[15] National Park Service, "How to Apply the National Register Criteria for Evaluation," *National Register Bulletin 15* (Washington: National Park Service, 1997), 25, 41-43; National Park Service, "Guidelines for Evaluating and Nominating Properties That Have Achieved Significance Within the Last Fifty Years," *National Register Bulletin No. 22* (Washington: National Park Service, 1996).

The Grand Avenue Viaduct is not significant under NRHP Criterion B / CRHR Criterion 2 for an association with the lives of persons important to history. Research did not find that any individuals directly associated with this property have made demonstrably important contributions to history at the local, state, or national level.

The Grand Avenue Viaduct is not significant as an important example of a type, period, or method of construction, nor is it the work of a master, or possess high artistic values (Under NRHP Criterion C / CRHR Criterion 3). This bridge a typical and late example of concrete T-beam type bridge, with modest aesthetic features limited to the flared piers, tapered light well openings, and tubular railings. By the time this bridge was built in 1974, this bridge type had been around for decades and had largely fallen out of favor among bridge engineers. In addition to not being an early or unique example of the type, the Grand Avenue Viaduct is not distinguished for its aesthetic qualities or its length. Research also found that the bridge is not the work of a master. While the firm DMJM was a distinguished firm, this bridge was not one of its more notable works, furthermore, it was designed by a junior member of the firm at the time, John C. Sandberg, who research determined does not rise to the level of a master engineer.

Under NRHP Criterion D / CRHR Criterion 4, this property is not a significant or likely source of important information about historic construction materials or technologies that is not otherwise available through documentary evidence.

Photographs (Continued):

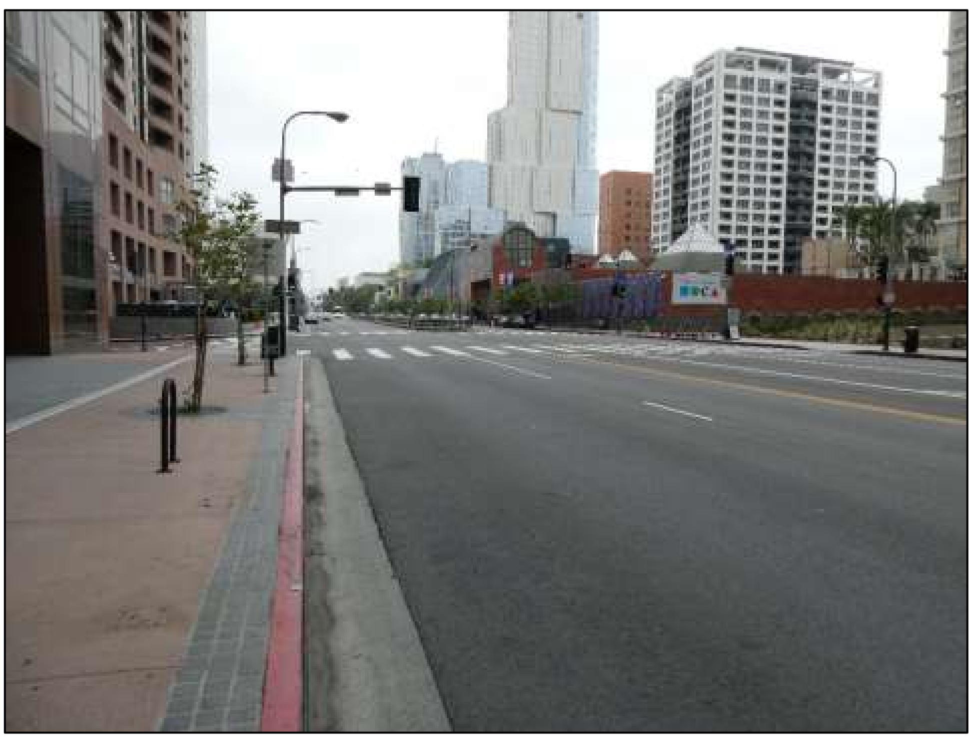


Photograph 2: North end of viaduct near 2nd Street, camera facing southwest, May 18, 2022.

***Resource Name or #** (Assigned by recorder): Bridge 53C1184

***Recorded by**: S.J. "Mel" Melvin *__Date__: May 18, 2022 ☒Continuation ☐Update

Photograph 3: Viaduct at 3rd Street, camera facing southwest, May 18, 2022.



Photograph 4: Viaduct at 3rd Street, camera facing northeast, May 18, 2022.

Photograph 5: South end of viaduct at 4th Street, camera facing northeast, May 18, 2022.

Photograph 6: Median at 3rd Street, camera facing north, May 18, 2022.

***Resource Name or #** (Assigned by recorder): Bridge 53C1184

***Recorded by**: S.J. "Mel" Melvin *__Date__: May 18, 2022 ☒Continuation ☐Update

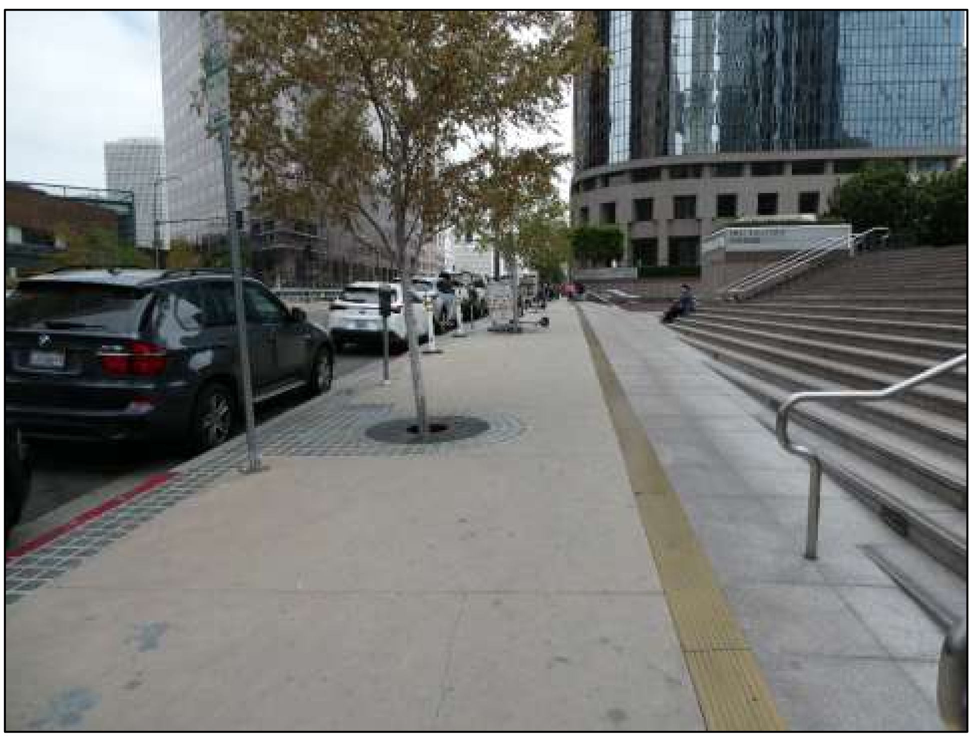
Photograph 7: Pedestrian crossing cut through median between 3rd Street and 4th Street, camera facing northwest, May 18, 2022.

Photograph 8: View of lower level through open median, camera facing southwest, May 18, 2022.

***Resource Name or #** (Assigned by recorder): Bridge 53C1184

***Recorded by**: S.J. "Mel" Melvin ***Date**: May 18, 2022 ☒Continuation ☐Update

Photograph 9: Steel cover plate on sidewalk defines the edge of the viaduct, camera facing southwest, May 18, 2022.

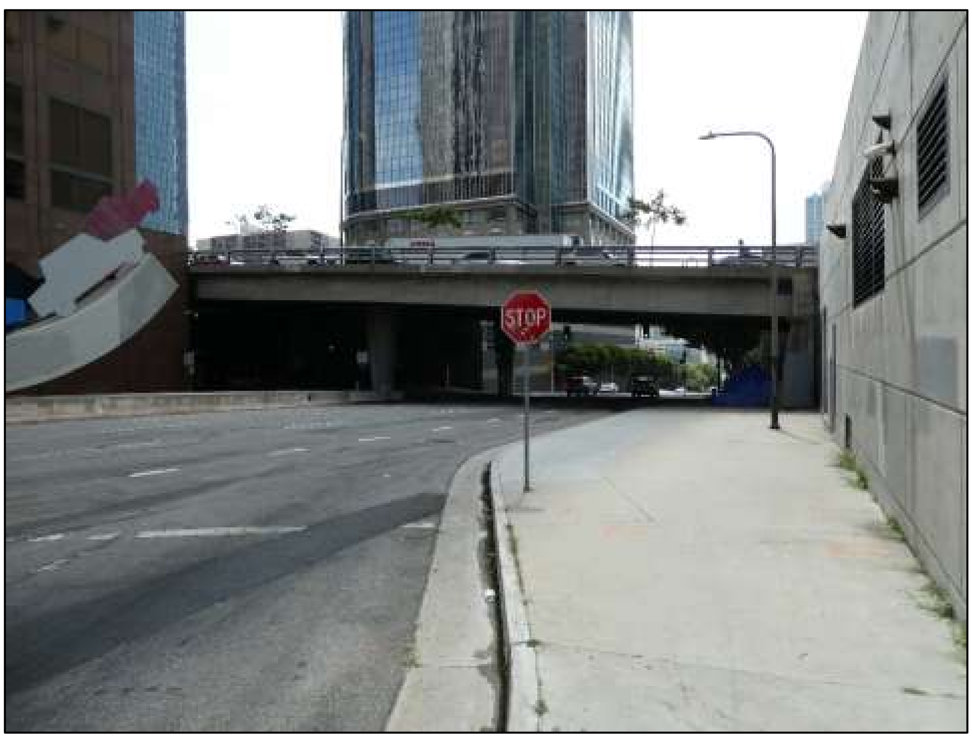


Photograph 10: Sidewalk and tree planters between 3rd Street and 4th Street, camera facing northeast, May 18, 2022.

***Resource Name or #** (Assigned by recorder): Bridge 53C1184

***Recorded by**: S.J. "Mel" Melvin ***Date**: May 18, 2022 ☒Continuation ☐Update

Photograph 11: Streetlamp on viaduct, camera facing south, May 18, 2022.

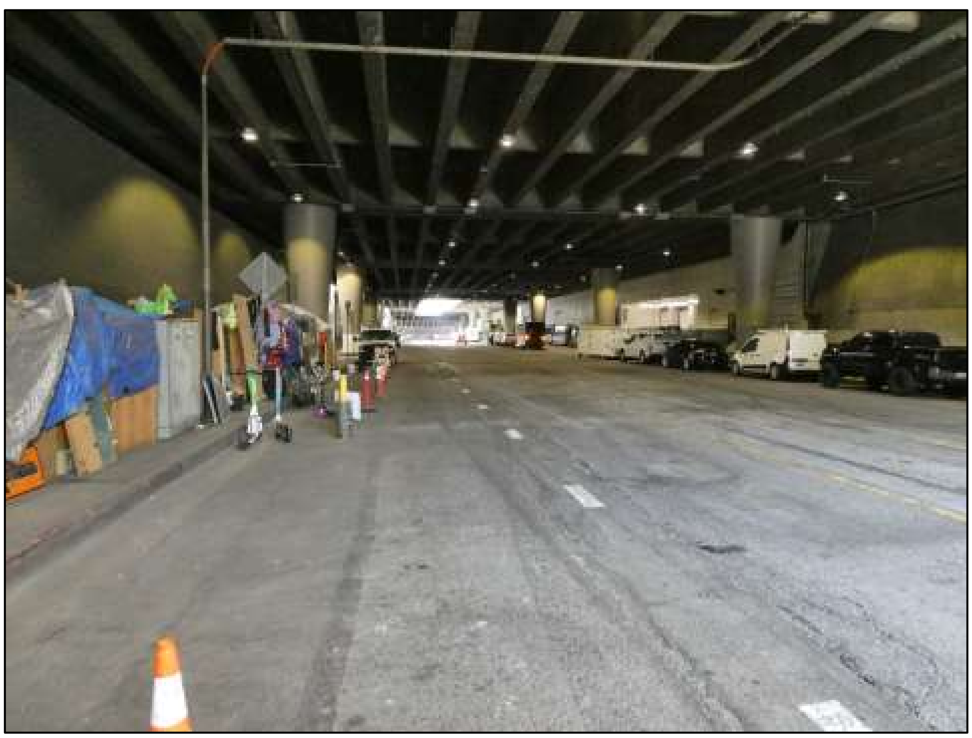


Photograph 12: Viaduct passing over 4th Street, camera facing southeast, May 18, 2022.

Photograph 13: South abutment at 4th Street, camera facing southeast, May 18, 2022.

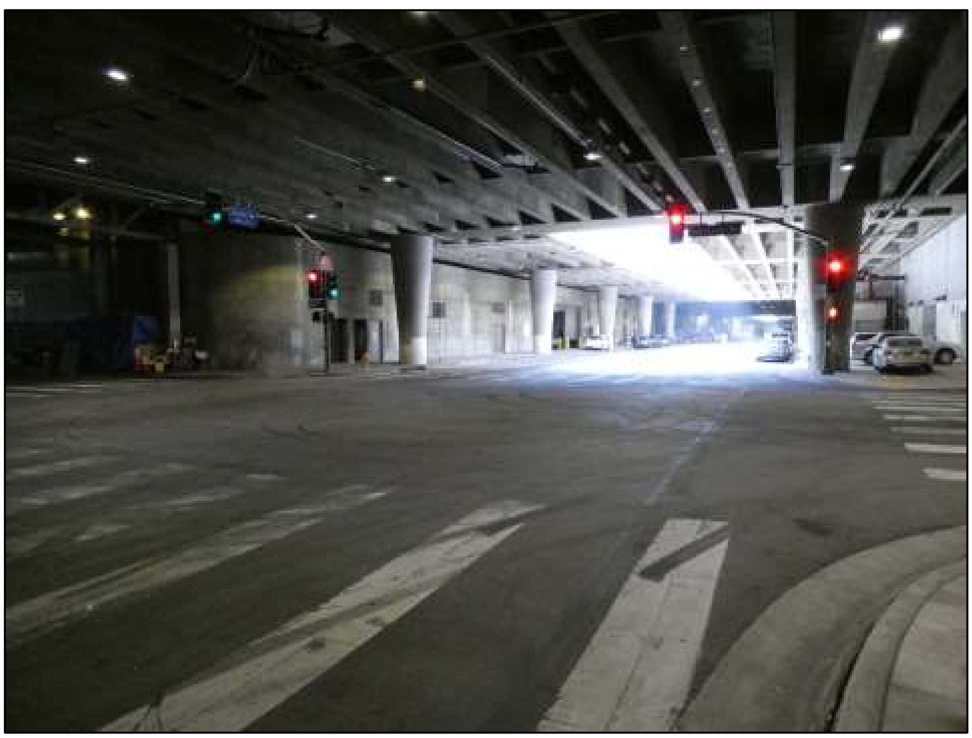
Photograph 14: Lower level at 4th Street, camera facing northeast, May 18, 2022.

Photograph 15: Lower level, camera facing north, May 18, 2022.



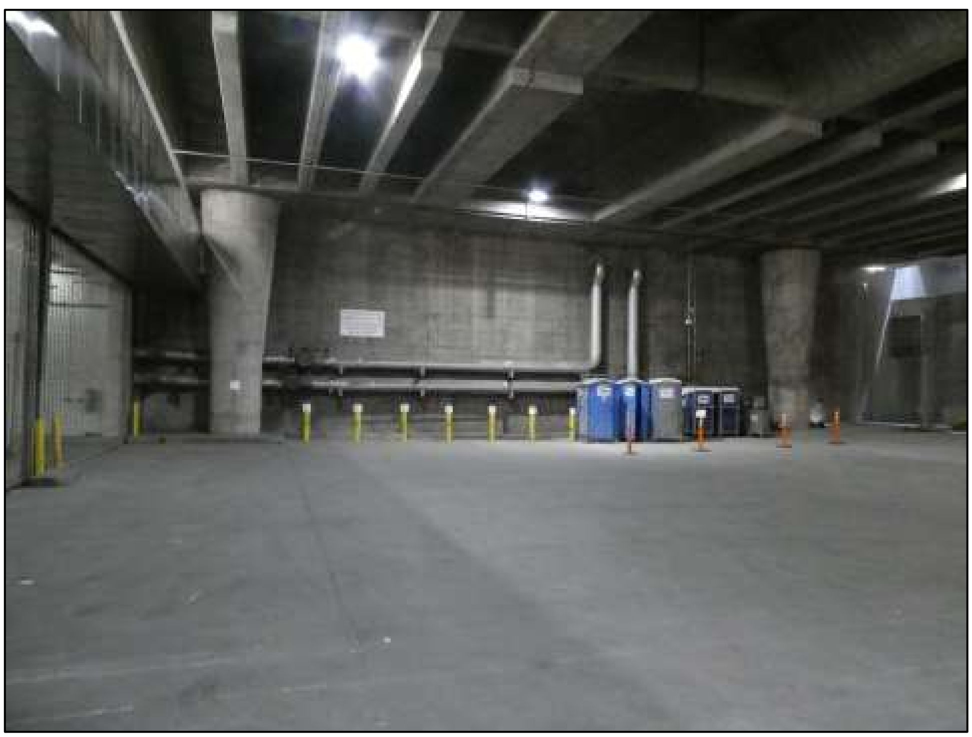
Photograph 16: Lower level, camera facing southwest, May 18, 2022.

Photograph 17: Lower level, camera facing northeast, May 18, 2022.



Photograph 18: Lower level from General Kosciuszko Way, camera facing southwest, May 18, 2022.

Photograph 19: Lower level from General Kosciuszko Way, camera facing northeast, May 18, 2022.



Photograph 20: North abutment, camera facing northeast, May 18, 2022.

PRIMARY RECORD

Primary # ____
HRI # ____
Trinomial ____
NRHP Status Code 3S

Other Listings ____
Review Code ____ Reviewer ____ Date ____

***Resource Name or #** (Assigned by recorder): Bridge 55 0614

P1. Other Identifier: North Arm Newport Bay Bridge

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County**: Orange

and (P2b and P2c or P2d. Attach Location Map as necessary.)

***b. USGS 7.5′ Quad**: Newport Beach **Date**: 2021 **T**:6S; **R**:10W; **Sec**: n/a; San Bernardino Meridian

c. Address: State Route 1 City: Newport Beach Zip: n/a

d. UTM: (give more than one for large and/or linear resources) Zone: 11S; 416055.85 m E; 3720039.77 m N

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate)

The North Arm Newport Bay Bridge carries State Route (SR) 1 over the north arm of Newport Bay in Newport Beach. The bridge is in Caltrans District 12.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

The North Arm Newport Bay Bridge (hereafter Newport Bay Bridge) is a continuous cast-in-place, prestressed concrete, 12-cell box girder bridge with eight-spans (**Photographs 1 & 2**). The bridge's girders have sloping exterior faces and are supported by reinforced concrete piers – five window type and two solid at either end (**Photographs 3, 4, & 5**). The window piers have beveled sides and the inside of the window openings are also beveled. Reinforced concrete seat abutments support both ends of the span (**Photograph 6**). The abutments are on concrete piles, while the piers are on steel shell, concrete filled piles. The bridge is 840 feet, with the center three spans all 120 feet long. Outside width of the deck, which cantilevers out from the girder edges, is 116 feet and the 98-foot-wide inside width carries seven motor vehicle lanes, bike lanes, and sidewalks on both sides (**Photograph 7**). Along the edge of the sidewalk is a concrete barrier, with inset panels on the exterior facing fascia, topped by a steel railing. The bridge has 20 feet of clearance above the water and a 100-foot-wide boat channel. On the west end, a bike path passes under the bridge between the abutment and Pier 8, the southern section of which is a short separate concrete slab bridge (**Photograph 8**).

***P3b. Resource Attributes:** (List attributes and codes) HP19. Bridge

***P4. Resources Present:** ☐ Building ☒ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5b. Description of Photo: (View, date, accession#) **Photograph 1.** South elevation, camera facing northwest, April 5, 2022.

***P6. Date Constructed/Age and Sources:** ☒ Historic ☐ Prehistoric ☐ Both
1981 (Caltrans)

***P7. Owner and Address:**
State of California
Department of Transportation
1120 N Street
Sacramento, CA 95814

***P8. Recorded by:**
Steven J. "Mel" Melvin
JRP Historical Consulting, LLC
2850 Spafford Street
Davis, CA 95618

***P9. Date Recorded**: April 5, 2022.

***P10. Survey Type:** (Describe)
Intensive

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") JRP Historical Consulting, LLC, "Historical Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2023 Update, 1975-1984," prepared for Caltrans, 2023.

***Attachments:** ☐ None ☐ Location Map ☐ Sketch Map ☒ Continuation Sheet ☒ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐Other (list) ____

***NRHP Status Code**: 3S

***Resource Name or #** (Assigned by recorder): Bridge 55 0614

B1. Historic Name: Newport Bay Bridge; Upper Newport Bay Bridge
B2. Common Name: Newport Bay Bridge
B3. Original Use: Bridge B4. Present Use: Bridge
***B5. Architectural Style**: Concrete Box Girder
***B6. Construction History**: (Construction date, alteration, and date of alterations) Built in 1981; spall on east nose of Pier 4 patched, ca. 2020; repair of concrete on slope of north abutment, ca. 2020.
***B7. Moved?** ☒ **No** ☐ **Yes** ☐ **Unknown Date:** ______ **Original Location:** ______
***B8. Related Features:** ___
B9. Architect: Caltrans b. Builder: Kasler Corporation
***B10. Significance: Theme**: Design / Aesthetics **Area**: State
Period of Significance: 1981 **Property Type**: Bridge **Applicable Criteria**: C/3
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

The Newport Bay Bridge is eligible for listing in the National Register of Historic Places (NRHP) and the California Register of Historical Resources (CRHR). This property has been evaluated in accordance with Section 106 of the National Historic Preservation Act of 1966 (as amended) (54 U.S.C. 306108) and its implementing regulations (36 CFR Part 800) and Section 15064.5(a)(2)-(3) of the California Environmental Quality Act (CEQA) Guidelines, using the criteria outlined in Section 5024.1 of the California Public Resources Code (PRC). Additionally, this bridge meets the California Historical Landmarks (CHL) Criteria as per PRC Section 5031 and is a California Historical Landmark. (See Section B10 on Continuation Sheet.)

B11. Additional Resource Attributes: ______

***B12. References**: Caltrans Bridge Database; Caltrans Bridge Inspection Reports; Caltrans, Bridge As-Built Plans; Caltrans, Statewide Historic Bridge Inventory Updates; *The Register* (Orange County)*; Los Angeles Times; s*ee also footnotes.

B13. Remarks:

***B14. Evaluator**: Steven J. "Mel" Melvin
***Date of Evaluation**: November 2023

(This space reserved for official comments.)

B10. Significance (continued):

Historic Context and Bridge History

The Newport Bay Bridge replaced an existing bridge at the same location, built in 1932. By the early 1970s, the old, four-lane bridge was in poor condition, could not handle the increasing traffic loads, and its 13.5-foot clearance above the water inhibited passage of all but the smallest vessels under the structure. In 1975, Caltrans put forth a proposal to replace the bridge and began soliciting public comment on alternatives and procuring the necessary approvals from the U.S. Coast Guard and California Coastal Commission. Local residents, represented by a group called the Bridge Action Team, heartily supported and advocated for construction of a new bridge. After several years to get all of the necessary approvals, arrange funding, and settle on a design, in January 1980, Caltrans opened contract bidding on the project, won by the Kasler Corporation of San Bernardino in February with a low bid of $8,930,000.[1]

The Kasler Corporation formed in 1961, after the dissolution of the Fredericksen & Kasler (F & K) partnership following the sudden death of partner and general manager, C.E. "Jack" Kasler, in June 1961. F & K had been a major contractor in California for fifteen years prior, with its headquarters in Sacramento, but under the leadership of R. E. "Jeff" Kasler, Jack's son, Kasler Corp. relocated its headquarters to Fontana in San Bernardino County. The new Kasler Corp. took over F & K's open contracts, including the construction of six miles of freeway, including overpasses and bridges, that extended US 99 east of Redlands. F & K had specialized in the heavy construction of military railroad lines, freeways, missile launching facilities, airfields, etc., and Kasler Corp. continued the same practice. Between 1961 and 1991, the company completed $2.4 billion in heavy construction projects that included freeways, bridges, and runways, mostly in California. Both firms worked on multi-million-dollar contracts at Vandenberg Air Force Base to build airfields, launching facilities, and the space shuttle launch pad. In 1976, Caltrans awarded Kalser Corp. a $11.9 million contract to construct a 100-foot-high bridge over Chevy Chase Drive in the San Rafael Hills, part of a larger project to extend S.R. 2. Jeff Kasler died on January 1, 1992 and in 1993, Kasler Corp. was taken over by the Montana-based Washington Contractors Group Inc.[2]

The design of the Newport Bay Bridge is attributable to both aesthetic and practical considerations. Located on a harbor replete with yachts and small pleasure craft and adjacent to upscale residential areas in the harbor, aesthetics from the viewpoint of boaters and residents was important. Caltrans designed a thin and sleek superstructure to allow the maximum navigation clearance while keeping the approach embankments as low as possible to minimize their visual impact. The narrow cross section, smooth finish, beveled edges, and window openings further the thin, sleek, light, and airy appearance of the bridge. On the practical side, Caltrans had to design a curved bridge to avoid two sewage force mains buried under the bay. Another challenge was managing the high traffic counts on SR 1 during construction. To keep traffic flowing, Caltrans built the north half first so that vehicles could be diverted off the old bridge and onto the new bridge (**Plate 1**). This allowed for construction of the south half of the bridge, which could not be completed until the old bridge was closed. Work began in early 1980 with the north half of the bridge opening in October 1981, and the bridge fully opened in December 1981. The final cost of the bridge was $9.4 million with funding coming from the state, Federal Highway Administration, and local governments. In 1984, the bridge won an award from the Post-Tensioning Institute, and in 1992, the Caltrans Division of Structures Chief,

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[1] "Bid Opening Set For Bridge Over Bay Channel," *Los Angeles Times*, January 2, 1980, 24; "San Bernardino Firm Wins Bid," *The Register* (Orange County), February 27, 1980, 69; "Notice of Public Hearing," *The Register* (Orange County), July 25, 1975, 56; "Bridge Plan Hits Setback," *The Register* (Orange County), May 11, 1977, 18; "Coast Panel Oks Plans for New Newport Bay Bridge," *The Register* (Orange County), July 12, 1977, 45; "Coast Highway Bridge Plan May Not Get Federal Cash," *The Register* (Orange County), August 18, 1976, 23; "Newport Bay Bridge Alternatives Mulled By State," *The Register* (Orange County), April 1, 1975, 13.

[2] "Kasler Corp. Plans Valley Contracting Headquarters," San Bernardino Co. *The Sun-Telegram*, September 3, 1962, 16; Charles Palmer, "Freeway Job Continues Ahead of Schedule," San Bernardino Co. *The Sun-Telegram*, February 18, 1962, B-4; John Whitehair, "'Jeff' Kasler, builder of Southland highways, dies at 66," San Bernardino Co. *Sun-Telegram*, January 3, 1992, 1; Don Snyder, "Final Project Scheduled on Freeway Link," Los Angeles Times, G-1; Alexei Barrionuevo, "Road Builder Kasler Agrees to Takeover," *Los Angeles Times*, February 17, 1993, D3; "About Us - History," The Washington Companies, accessed November 2023, https://www.washingtoncompanies.com/about-us/.

James E. Roberts, authored an article on the topic of bridge aesthetics wherein he called the Newport Bay Bridge among the most striking and beautiful concrete bridges in California.[3]

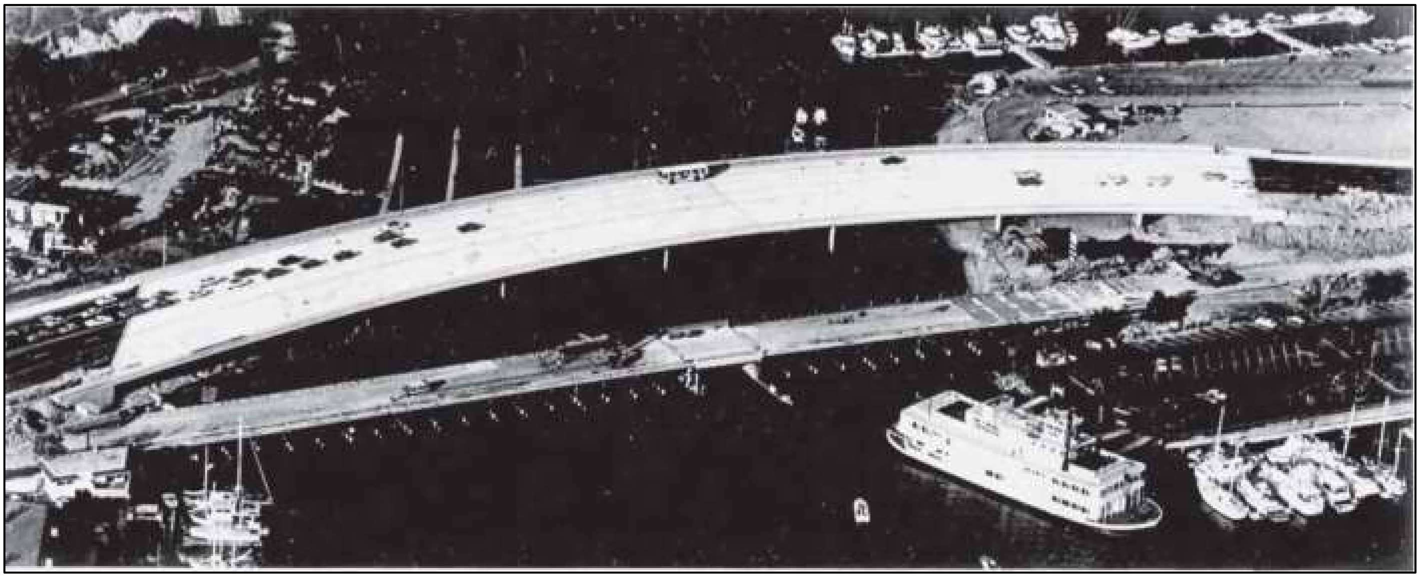

Plate 1. The nearly completed Newport Bay Bridge in November 1981. The former bridge is in the foreground.[4]

The Newport Bay Bridge is a concrete box girder bridge (**Plate 2**). The first concrete box girder bridges in California were erected in the mid-1930s. The type was innovative for its design flexibility, helping to meet the growing demand for longer and wider bridges as well as skewed bridges that permitted straighter, more efficient, and safer roadways. The slender bridge profiles with harmonious proportions allowed engineers to achieve the modern design aesthetic thought to showcase transportation efficiency. Because they required less steel in their construction, concrete box girder bridges could also be erected at significant cost savings. Only a small number of concrete box girder bridges were built before World War II, but after the war their numbers rapidly increased. By 1965, there were more than 1,500 concrete box girder bridges in California. More than 3,200 of the type were built between 1965 and 1974, and more than 1,000 between 1975 and 1984.[5]

Some notable concrete box girder bridges in California include the Mulholland Drive Overcrossing (Bridge 53 0739) in Los Angeles, which held title to the longest main span at 235 feet from its construction in 1959 until 1974 when the Interstate 8 bridge over the Pine Valley Creek (Bridge 57 0692L/R) achieved a 450-foot main span. The Eel River Bridge (Bridge 04 0016L) constructed in 1974 in Humboldt County achieved a total length of 1,730 feet and main span of 300 feet. Five years later the Parrotts Ferry Bridge in Tuolumne County, constructed in 1979, had a 639.8-foot-long main span and a total length

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[3] "Upper Bay Bridge Expected to Be Completed in December," *Los Angeles Times*, September 26, 1981, 23; "Newport Bay Bridge," *The Register* (Orange County), October 8, 1981, 29; "Open For Business," *Los Angeles Times*, November 7, 1981, 21; Caltrans, Bridge Inspection Reports, various years; Caltrans, "North Arm Newport Bay Bridge," As-built plans, November 20, 1979; U.S. Department of Transportation, "Transportation: Current Literature," 60, Nos. 21-22, November 1-15, 1981, 30; "Newport Bay Bridge Nears Completion," *Public Works* (October 1981), 53; James E. Roberts, "Aesthetic Design Philosophy Utilized for California State Bridges," *Journal of Urban Planning and Development* 118, no. 4 (December 1992), 158, 162; Steve McBride, Caltrans Division of Structures, "Myrtle Creek Arch Bridge," *Structure Notes* 1, no. 1 (July 1985), n.p.
[4] "Open For Business," *Los Angeles Times*, November 7, 1981, 21.
[5] Myra L. Frank & Associated, "Caltrans Historic Bridge Inventory Update: Concrete Box Girder Bridges," prepared for Caltrans, August 2003, 5-11.

of 1,292.7 feet. The Napa River Bridge (Bridge 21 0049), erected in 1977, has the longest total length of any continuous concrete box girder span in California at 2,230 feet.[6] The latter two bridges were noted for their aesthetic designs.

Design and construction of the Newport Bay Bridge came during a period when consideration of bridge aesthetics had become entrenched in Caltrans' bridge design procedures. While most state-built bridges, and many local or consultant-designed bridges, received at least some attention to their overall appearance, more effort was placed on bridges in scenic or prominent locations such as the Newport Bay Bridge, for example. Caltrans' predecessor, the Division of Highways, began to integrate improved aesthetics into the state's bridge design procedures in the early 1960s with architects trained in bridge design providing input about the appearance of structures. The Division of Highways, and later Caltrans, developed its bridge aesthetics program to integrate it into the department's overall design philosophy that included additions to bridge design manuals with instructions to have bridges designed so that they would be aesthetically compatible with their location, as well as the development of standard features, such as columns, railings, and surface treatments, that met the aesthetic principles being promoted. Bridge designers were encouraged to consider what they are leaving for future generations, which emphasized that a bridge's appearance was as important as the structure's design features for load and safety. Aligning with the dominant architectural trends in Modernism of the period, bridge designers aspired to simplicity and pureness of structure, avoiding ornamentation, celebrating the beauty of structural form, and emphasizing ease of construction and economy of design. Slender structures on slender piers or columns with minimal number of elements, and continuous or steady long lines were among the features of the aesthetical ideal at the time, for which the Division of Highways received various awards such as concrete box girder Junipero Serra Freeway (I-280) bridges built in the mid to late 1960s in San Mateo County and Adams Avenue Overcrossing built in 1970 over I-805 (57 0619) in San Diego County. There came to be essentially two types of architectural treatment, those added to standard structures and those that united architecture and engineering. Dictated by cost and function criteria, treatments incorporated into standard structures could include the addition of grooves and textures, for example, while the rarer marriage of architecture and engineering could include shapes, proportion, scale of piers, abutments, and superstructure that varied from standard structures. Although Division of Highways / Caltrans policy was to design aesthetically pleasing structures, and sometimes incorporated input from members of the public or other interested parties, there were also clear parameters that such efforts would not be unduly more expensive. During this period, Division of Highways and Caltrans bridge designers considered aesthetic qualities following general principles related to quality design that carefully analyzed proportions of bridges' structural and safety elements, attractive forms for the various bridge elements, compatibility of bridges within their setting, and consideration of current and future acceptance of the structures. The Caltrans bridge aesthetics program resulted in many structures that incorporated basic aesthetic enhancements, as well as a smaller set of structures that included enhanced qualities and the few that had special aesthetic character.[7]

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[6] Caltrans, Historical Resources Evaluation Report, Statewide Historic Bridge Inventory: 2015 Update 1965-1974, 21 and DPR 523 forms Bridge 40 0048; Bridge 04 0016L; Bridge 04 0155.

[7] Arthur L. Elliott, "Aesthetics of Highway Bridges," *Civil Engineering*, June 1968, 66; James E. Roberts, "Aesthetic Design Philosophy Utilized for California State," *Journal of Urban Planning and Development*, Vol. 118, No. 4, December 1992, 138-141, 148, and 155; Arthur L. Elliott, "Esthetic Development of California's Bridges," presented at the April 14-18, 1980, ASCE Convention and Exposition, Portland, Oregon (Preprint 80-004), published in *Journal of Structural Engineering*, Vol. 109, No. 9, September 1983, paper no. 18240, 2159-63 and 2172-73; W.S. Ludlow, "Aesthetics in Bridge Design," *Manual of Bridge Design Practice* (State of California: Bridge Department, 1971), 16.3; Arthur L. Elliot, "Aesthetics in a Changing Economy," in *Meeting Preprint 2199* for American Society of Civil Engineers National Structural Engineering Meeting, April 22-26, 1974, *Cincinnati*, Ohio; JRP Historical Consulting, LLC, *Historical Resources Evaluation Report, Cold Spring Canyon Bridge (51 0037) Pedestrian Barrier Project, State Route 154, Santa Barbara County, California, 05-SB-154 PM 22.96, EA 05-0P910K,* prepared for Caltrans District 5, May 2007; James E. Roberts, *Aesthetics and Economy in Complete Concrete Bridge Design*, California Department of Transportation, Office of Structures Design, 1986, available at the Caltrans Transportation Library, 3, 5, and 6; Arthur L. Elliott, "Creating a Beautiful Bridge," in Committee on General Structures, Subcommittee on Bridge Aesthetics, *Bridge Aesthetics Around the World*, (Washington D.C.: Transportation Research Board, National Research Council. 1991), 217; Stewart Gloyd, "California – A Qualified Bridge Esthetics Case Study," *Concrete International*, Volume 16, No. 2, February 1994, 46-48.

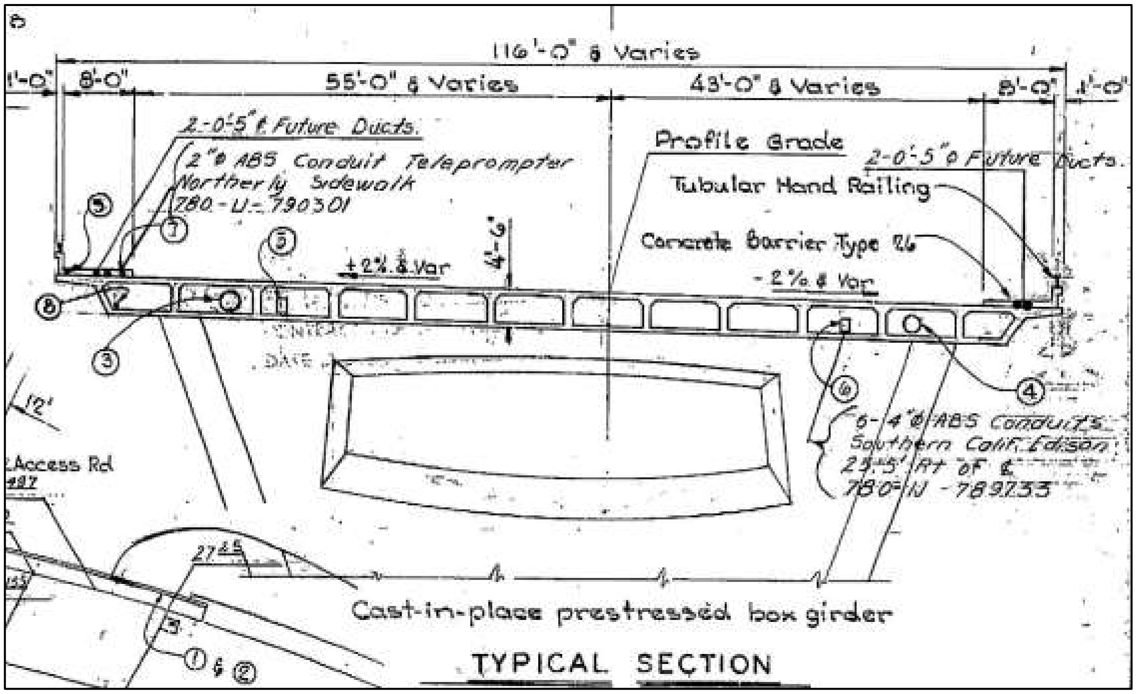

Plate 2. Typical bridge section from original plans dated 1979.[8]

NRHP / CRHR Significance Evaluation

The Newport Bay Bridge is not significant under NRHP Criterion A / CRHR Criterion 1 for an important association with significant events, trends, or patterns of development. The bridge was one of many highway improvements carried out in the late 1970s and early 1980s by Caltrans throughout California and in this region. It is also not the first bridge at this location and did not initiate new patterns of development. Thus, the bridge is not important within the context of the development of the highway network, local growth and development, or any other trends or events at the national, state, or local level that would make it significant under this criterion.

Under NRHP Criterion B / CRHR Criterion 2, this bridge is not significant for an association with the lives of persons important to history. Research did not find that any individuals directly associated with this property have made demonstrably important contributions to history at the local, state, or national level.

Under NRHP Criterion C / CRHR Criterion 3, the Newport Bay Bridge is significant for its type, period, and method of construction for its design and aesthetic character, but it is not significant as the work of a master or for possessing high artistic values. The bridge's aesthetic value is derived from its graceful horizontal curve, shallow superstructure cross section, smooth concrete finish, and window type piers. The curving superstructure gives the bridge a sleek, low-profile, and light appearance, while the piers express both a sleek sturdiness and a light openness in their window type design and beveled edges. While the sloping girders, cantilevered deck, and inset panels on the fascia are like many bridges of its period, the design of the piers add a special aesthetic enhancement to the bridge that is rare for its type in California. Thus, the Newport Bay Bridge is an excellent example of a bridge designed in the Modern aesthetic from the time in which it was built.

Under NRHP Criterion D / CRHR Criterion 4, this property is not a significant or likely source of important information about historic construction materials or technologies that is not otherwise available through documentary evidence.

[8] Caltrans, "North Arm Newport Bay Bridge, General Plan," November 20, 1979.

The boundary of the property encompasses the entire bridge structure. The period of significance is 1981, the year the bridge was completed. It is significant at the state level. The character-defining features are the piers, box girders, curving superstructure, deck, and railing.

California Historical Landmark Evaluation

A property may be eligible for designation as a California Historical Landmark (CHL) if it meets one of three criteria: the first, last, or most significant of its type within the state or within a large geographic region (i.e., Southern California); is associated with an individual or group having a profound influence on the history of California; or is a prototype of, or an outstanding example of, a period, style, architectural movement or construction, or is an important work of a master architect or builder. Of these, the Newport Bay Bridge meets the CHL Criteria as an outstanding example of a bridge designed in the Modern aesthetic. It is therefore eligible for designation as a CHL.

Integrity

Research and field observation did not reveal any alterations to this bridge except for routine maintenance such as repairing minor cracks and spalls, and repairing the concrete slope on the west abutment. As such, it retains a high degree of integrity of materials, design, feeling, association, workmanship, setting, and location. Overall, the bridge maintains sufficient integrity to convey its historical significance.

Photographs (Continued):

Photograph 2: North elevation, camera facing southeast, April 5, 2022.

Photograph 3: North elevation, camera facing southeast, April 5, 2022.

Photograph 4: Piers and soffit, camera facing west, April 5, 2022.

***Recorded by**: S.J. "Mel" Melvin
***Date**: April 5, 2022
☒Continuation ☐Update

Photograph 5: South elevation, camera facing east, April 5, 2022.

Photograph 6: West abutment, camera facing west, April 5, 2022.

Photograph 7: Deck, camera facing west, April 5, 2022.

Photograph 8: Bike path bridge, camera facing east, April 5, 2022.

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary # ______
HRI # ______
Trinomial ______
NRHP Status Code 3S

Other Listings ______
Review Code ______ Reviewer ______ Date ______

 ***Resource Name or #** (Assigned by recorder): Bridge 55C0307

P1. Other Identifier: Lemon Park Pedestrian Overcrossing (POC)

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County**: Orange

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad**: Anaheim **Date**: 2018 **T**:3S; **R**:10W; **Sec**: n/a; San Bernardino Meridian

c. Address: n/a City: Fullerton Zip: n/a

d. UTM: (give more than one for large and/or linear resources) Zone: 11S; 414911.99 m E; 3747503.06 m N

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate)

The Lemon Park POC crosses Lemon Street between Lemon Park and East Elm Street in Fullerton. The bridge is in Caltrans District 12.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

The Lemon Park POC is a cast-in-place reinforced concrete channel girder pedestrian bridge over Lemon Street (**Photograph 1**). The two-span structure is supported by three concrete piers, one on each end and one in the center. On each side are two-part concrete stairways with concrete balustrades and concrete piers supporting the mid-way landing (**Photograph 2**). The stairways and bridge are covered by chain-link fencing that is attached to the balustrade and arches over the top of the walkway and stairs. The spans carry a six-foot-wide deck (**Photograph 3**). Under the bridge pass four lanes of traffic with a 17-foot, 10-inch clearance. On the two side piers and the landing piers are eight murals depicting Mexican-American culture (**Photographs 4-13**). The bridge is near the Fullerton city limits and on the west stairway balustrade facing southbound traffic is painted, "Come Back Soon" and on the east stairway balustrade facing northbound traffic, "The Town I Live In."

***P3b. Resource Attributes:** (List attributes and codes) HP19. Bridge

***P4. Resources Present:** ☐ Building ☒ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5b. Description of Photo: (View, date, accession#) **Photograph 1.** Camera facing northwest, April 5, 2022.

***P6. Date Constructed/Age and Sources:** ☒ Historic ☐ Prehistoric ☐ Both
1977 (Caltrans)

***P7. Owner and Address:**
City of Fullerton
303 West Commonwealth Avenue
Fullerton, CA 92832

***P8. Recorded by:**
Steven J. "Mel" Melvin
JRP Historical Consulting, LLC
2850 Spafford Street
Davis, CA 95618

***P9. Date Recorded**: April 5, 2022

***P10. Survey Type:** (Describe)
Intensive

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") JRP Historical Consulting, LLC, "Historical Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2023 Update, 1975-1984," prepared for Caltrans, 2023.

***Attachments:** ☐ None ☐ Location Map ☐ Sketch Map ☒ Continuation Sheet ☒ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐Other (list) ______

***NRHP Status Code**: 3S

***Resource Name or #** (Assigned by recorder): Bridge 55C0307

B1. Historic Name: Lemon Park POC
B2. Common Name: Lemon Park POC
B3. Original Use: Bridge B4. Present Use: Bridge
***B5. Architectural Style**: Concrete Girder
***B6. Construction History**: (Construction date, alteration, and date of alterations) Built in 1977; the murals were restored in 1998; no other known alterations.
***B7. Moved?** ☒ **No** ☐ **Yes** ☐ **Unknown Date:** ____________ **Original Location:** ____________
***B8. Related Features:** ___
B9. Architect: McClean & Schultz (bridge designer); b. Builder: H.B. Lew
***B10. Significance: Theme**: Cultural Heritage **Area**: Fullerton
Period of Significance: 1977 **Property Type**: Bridge/Mural **Applicable Criteria**: C/3
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

The Lemon Park POC is eligible for listing in the National Register of Historic Places (NRHP) and the California Register of Historical Resources (CRHR). This property has been evaluated in accordance with Section 106 of the National Historic Preservation Act of 1966 (as amended) (54 U.S.C. 306108) and its implementing regulations (36 CFR Part 800) and Section 15064.5(a)(2)-(3) of the California Environmental Quality Act (CEQA) Guidelines, using the criteria outlined in Section 5024.1 of the California Public Resources Code (PRC). (See Section B10 on Continuation Sheet.)

B11. Additional Resource Attributes: ____________

***B12. References**: Caltrans Bridge Database; Caltrans Bridge Inspection Reports; Caltrans, Bridge As-Built Plans; Caltrans, Statewide Historic Bridge Inventory Updates; *Los Angeles Times;* see also footnotes.

B13. Remarks:

***B14. Evaluator**: Steven J. "Mel" Melvin
***Date of Evaluation**: November 2023

(This space reserved for official comments.)

B10. Significance (continued):

Historic Context and Bridge History

The City of Fullerton built the Lemon Park POC to connect Lemon Park with the neighborhoods on the east side of Lemon Street, a busy north/south thoroughfare. The project began in July 1976 with the Fullerton City Council letting a $57,720 construction contract to the H.B. Lew Company of Los Angeles. The company completed the bridge in 1977. In the following months, the bridge's flat, concrete surfaces and its high visibility attracted graffiti. This graffiti on the bridge at other locations in Fullerton was considered unsightly, which prompted the Fullerton City Council in October 1978 to approve $8,600 in federal housing and community development funds towards an anti-graffiti program focused on the Maple area of the city. Lemon Park is in the Maple area and the first project was to paint murals on the Lemon Park POC. The City's Neighborhood Youth Corps administered the program and hired mural artist David Whalen to oversee the project, while the murals were painted by youth in the Maple area comprised of volunteers and high school students paid $2.90 per hour for their work (**Plate 1**). Although Whalen supervised, the youth chose the content and design of the murals. Pleased with the early results of the project, in March 1979, the City Council approved an additional $5,888 in federal funds for the project. The eight murals were completed in 1979 and all depict Mexican-American culture.[1]

The design and construction of the Lemon Park POC occurred during a period when consideration of bridge aesthetics had become entrenched in Caltrans' bridge design procedures, which influenced local government and consultant designed bridges in the state. In general, most state-built bridges, and many local or consultant-designed bridges, received at least some attention to their overall appearance, but more effort was placed on bridges in scenic or prominent locations. Caltrans' predecessor, the Division of Highways, began to integrate improved aesthetics into the state's bridge design procedures in the early 1960s with architects trained in bridge design providing input about the appearance of structures. The Division of Highways, and later Caltrans, developed its bridge aesthetics program to integrate it into the department's overall design philosophy that included additions to bridge design manuals with instructions to have bridges designed so that they would be aesthetically compatible with their location, as well as the development of standard features, such as columns, railings, and surface treatments, that met the aesthetic principles being promoted. Aligning with the dominant architectural trends in Modernism of the period, bridge designers aspired to simplicity and pureness of structure, avoiding ornamentation, celebrating the beauty of structural form, and emphasizing ease of construction and economy of design. Slender structures on slender piers or columns with minimal number of elements, and continuous or steady long lines were among the features of the aesthetical ideal at the time. The Caltrans bridge aesthetics program, and its influence across the state, resulted in many structures that incorporated basic aesthetic enhancements, as well as a smaller set of structures that included enhanced qualities and the few that had special aesthetic character.[2]

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[1] "Bridge Contract," *Los Angeles Times,* July 18, 1976, 3; "Fullerton Council Give OK to Campaign Against Graffiti," *Los Angeles Times,* October 10, 1978, 32; "Muralists Dab Way to Civic Beauty," *Los Angeles Times,* January 6, 1979, OC-A14; "Fullerton Council Votes More Anti-Graffiti Funds," *Los Angeles Times,* March 22, 1979, 54.

[2] Arthur L. Elliott, "Aesthetics of Highway Bridges," *Civil Engineering*, June 1968, 66; James E. Roberts, "Aesthetic Design Philosophy Utilized for California State," *Journal of Urban Planning and Development*, Vol. 118, No. 4, December 1992, 138-141, 148, and 155; Arthur L. Elliott, "Esthetic Development of California's Bridges," presented at the April 14-18, 1980, ASCE Convention and Exposition, Portland, Oregon (Preprint 80-004), published in *Journal of Structural Engineering*, Vol. 109, No. 9, September 1983, paper no. 18240, 2159-63 and 2172-73; W.S. Ludlow, "Aesthetics in Bridge Design," *Manual of Bridge Design Practice* (State of California: Bridge Department, 1971), 16.3; Arthur L. Elliot, "Aesthetics in a Changing Economy," in *Meeting Preprint 2199* for American Society of Civil Engineers National Structural Engineering Meeting, April 22-26, 1974, *Cincinnati*, Ohio; JRP Historical Consulting, LLC, *Historical Resources Evaluation Report, Cold Spring Canyon Bridge (51 0037) Pedestrian Barrier Project, State Route 154, Santa Barbara County, California, 05-SB-154 PM 22.96, EA 05-0P910K,* prepared for Caltrans District 5, May 2007; James E. Roberts, *Aesthetics and Economy in Complete Concrete Bridge Design*, California Department of Transportation, Office of Structures Design, 1986, available at the Caltrans Transportation Library, 3, 5, and 6; Arthur L. Elliott, "Creating a Beautiful Bridge," in Committee on General Structures, Subcommittee on Bridge Aesthetics, *Bridge Aesthetics Around the World*, (Washington D.C.: Transportation Research Board, National Research Council. 1991), 217; Stewart Gloyd, "California – A Qualified Bridge Esthetics Case Study," *Concrete International*, Volume 16, No. 2, February 1994, 46-48.

During the mid to late twentieth century, bridge engineers and other advocates for aesthetically pleasing asserted that the appearance of bridges was important for permanent structures that would be part of a locality for years, stressing that bridges should be a pleasing addition to their local environment. Surface treatments were increasingly employed to improve the attractiveness of concrete panels and large expanses of concrete, including applied facing material, abstract designs, and some murals, the latter added to aid in the acceptance of the structure in a community. Caltrans' general policy was to avoid installing murals itself in order to sidestep potential controversies of subject matter, but in some locations, like at the Lemon Park POC, murals were painted by local artists and through local organization. The most well-known example of murals painted on bridges in California are those in Chicano Park in Barrio Logan in San Diego situated under the Coronado Bridge's approach ramps to Interstate 5. The Chicano Park Monumental Murals, many of which were painted by master mural artists between 1973 and 1980, are a main feature of the park that was formed in response to community demonstrations, which were part of the wider Chicano Civil Rights Movement of the period. The park and its murals were designated a National Historic Landmark in 2016.[3]

Plate 1. Artists paint one of the murals on the Lemon Park POC in January 1979.[4]

[3] Elliott, "Esthetic Development of California's Bridges," 2162-2163 and 2170; Elliott, "Aesthetics of Highway Bridges," 65-66; Fritz Leonhardt, "Aesthetics of Bridge Design," *PCI Journal*, February 1968, 15-16, 21, and 31; Richard M. Barker and Jay A. Puckett, *Design of Highway Bridges: An LFRD Approach*, 3rd edition (Hoboken, NJ: John Wiley & Sons, Inc., 2013) Chapter 3; Arthur L. Elliott, "The Role of the Public Agency," in Adele Fleet Bacow and Kenneth E. Kruckmeyer, editors, *Bridge Design: Aesthetics and Development Technologies*, (Boston: Massachusetts Department of Public Works and Massachusetts Council of the Arts and Humanities, 1986), 31-32; Manuel Guadalupe Galaviz and Josie S. Talamantez, Chicano Park National Historic Landmark Nomination, August 7, 2015.
[4] "Muralists Dab Way to Civic Beauty," *Los Angeles Times,* January 6, 1979, OC-A14.

During the decades after the Lemon Park POC was built in Fullerton, the structure's murals gained importance in the local community for celebrating Mexican-American history, culture, and traditions. Recognizing the value of the murals, the City of Fullerton funded the restoration of the murals in 1998 by local muralist Emigdio Vasquez, Sr., known as the "Godfather of Chicano Art." Ten years later, the murals came under threat when a Fullerton City Council member proposed in a City Council meeting that the city paint over the murals, arguing, along with other critics, that the images depicted in the murals had associations with gangs. The prospect of losing the murals energized neighborhood residents to the murals' defense, with one person stating the murals were "part of our memories, our tradition." Emigdio Vasquez, Jr., also a muralist, defended the importance of the Lemon Park POC murals, noting they depicted "cultural, iconic pride." Supporters ultimately won the day, and the City Council voted down the proposal to paint over the murals. The Lemon Park POC murals are considered among the City's important public art pieces and the City remains firmly committed to the murals with the City Public Art Committee and the Fullerton Museum Center currently spearheading restoration efforts.[5]

The construction contractor for the bridge, How Bing Lew, known professionally as H. B. Lew, was born in Canton (now Guangzhou), China in 1922 and appears to have emigrated to the United States when he was a child. Before joining the military in 1942, he worked for the Douglas Aircraft Corporation in Santa Monica. In 1961, H. B. Lew was a project engineer for the California Division of Highways, working on a 12-mile section of the San Diego Freeway between West Los Angeles and the San Fernando Valley. In 1968, Oscar K. Kringlen of Arcadia and H. B. Lew of Los Angeles formed a general engineering contracting business, Kringlen-Lew Construction, headquartered in Cucamonga, California. This partnership appears to have ended around 1972, but during those few years the firm is known to have worked on three freeway contracts in southern California, widening existing roads and bridges, and constructing new ones along multiple sections of Interstate 5 in San Diego County, and the Route 154 expressway in Santa Barbara County, also lining Santa Monica Creek in Los Angeles County as part of a watershed project. After the dissolution of the Kringlen-Lew partnership, H.B. Lew appears to have established a new firm in conjunction with Martin E. Roe, a contractor Kringlen-Lew previously collaborated with. This new company, H.B. Lew-Roe Construction Corporation, worked on the Kanan Road freeway bridge widening project in Agoura Hills in 1980-1981 and worked on projects for the Los Angeles County Flood Control District in 1981. Lew may have been connected with Lew Construction in the late-1980s, but this could not be substantiated. How Bing Lew died in August 1996.[6] Research did not find any information on McClean & Schultz, the firm that designed the bridge.

Structurally, the Lemon Park POC is a concrete girder type bridge. Concrete girder bridges were first built around 1910 and grew to be a popular bridge type through the 1920s. Concrete girder bridges had a modern design aesthetic and low-cost relative to steel. The popularity of the type declined somewhat in the 1930s, but continued to make up roughly 20 percent of the bridges constructed in California through the 1950s. Numbers decreased in the 1960s as concrete box girder bridges gained

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[5] City of Fullerton, "Public Art – Art Projects – Lemon Park Murals," accessed March 2022 at https://www.cityoffullerton.com/government/departments/fullerton-museum/public-art/art-projects/lemon-park-murals. Barbara Giasone, "Mural at Center of Controversy," *Orange County Register,* April 16, 2008; City of Fullerton, "Public Art – Art Restoration," accessed March 2022 at https://www.cityoffullerton.com/government/departments/fullerton-museum/public-art#ad-image-0; Fullerton Museum Center, "Public Art," accessed March 2022 at https://fullertonmuseum.com/publicart; Joseph Pimentel, "Murals a Legacy Project for Both Son and City," *Anaheim Bulletin*, April 27, 2017, 1.

[6] U.S. Selective Service System, *World War II Registration Card*, Los Angeles, California, "How Bing Lew," Serial no. N240, 30 June 1942;Howard Gingold, "12-Mi. Link of Freeway Tough Job," *Los Angeles Times*, February 26, 1961, F-2; "[CERTIFICATE OF USE OF FICTITIOUS FIRM NAME]," *Montclair Tribune*, May 1, 1968, 18; "Contract let on 3 road projects," Escondido *Daily Times-Advocate*, August 22, 1968, A-9; "Roads taking shape," *Home Buyer's Guide* in Escondido *Daily Times-Advocate*, May 18, 1969, 29; King Merrill, "Memo Pad: Valley Highway Projects," *Santa Ynez Valley News*, August 27, 1970, 16A; "Progress report on channels," *Carpinteria Herald*, July 13, 1972, 4; "L.A. contractors low bidders on Kanan bridge," Thousand Oaks *News Chronicle*, May 27, 1980, 1; John Green, "County OKs project," Newhall *The Signal*, vol. 70, no. 169, October 12, 1988, 1; "Obituaries/Funeral Announcements: Lew, How Bing," *Los Angeles Times*, August 23, 1996, A30.

popularity. Nevertheless, a fair number of concrete girder bridges continued to be built for short or medium span lengths; long-span concrete bridges typically utilize box girder designs.[7]

NRHP / CRHR Significance Evaluation

The Lemon Park POC is not significant under NRHP Criterion A / CRHR Criterion 1 for an important association with significant events, trends, or patterns of development. Construction of pedestrian overcrossings in urban areas was commonplace by the time this one was built in 1977 and its construction is not significant within the context of such roadway improvements. Construction of this bridge also did not fundamentally alter development trends, but rather made it more convenient and safer for pedestrians to cross a busy street. Thus, the bridge is not important within the context of pedestrian roadway improvements, local growth and development, or any other trends or events at the national, state, or local level that would make it significant under this criterion.

Under NRHP Criterion B / CRHR Criterion 2, this property is not significant for an association with the lives of persons important to history. Research did not find that any individuals directly associated with this property have made demonstrably important contributions to history at the local, state, or national level.

The Lemon Park POC meets NRHP Criterion C / CRHR Criterion 3 for its murals that possess high artistic value. According to National Register Bulletin 38, a property "containing artwork valued by a group for traditional cultural reasons…may be viewed as having high artistic value from the standpoint of the group." The Lemon Park POC contains eight murals important to the tradition, culture, and history of the local Fullerton Mexican-American community. Their importance has been demonstrated through the past and ongoing investment in maintaining the murals, and the community's adamant support for the murals when they were threatened. These murals have high artistic value from the standpoint of the local Mexican-American community as they are important in maintaining the community's sense of identity, history, and culture.[8] The murals are not the work of a master. The murals were designed and painted by high school students and youth volunteers, none of whom were revealed to be master artists. Muralist David Whalen oversaw the project, but did not paint any of the murals. Furthermore, research on Whalen did not reveal that he was a master artist. The bridge structure itself does not meet this criterion as it is a typical and unremarkable concrete girder bridge that lacks distinction for its engineering and bridge design, with basic aesthetic enhancements such as the slender piers. The walkway and stairs are of common design and materials, and the bridge is not exceptionally long or high. Structurally, the bridge also is not significant as the work of a master.

Under NRHP Criterion D / CRHR Criterion 4, this property is not a significant or likely source of important information about historic construction materials or technologies that is not otherwise available through documentary evidence.

The boundary of the property encompasses the entire bridge structure. The property is significant at the local level, its period of significance is 1979, the year the murals were completed. The character-defining features of the historic property are those elements of the bridge that contain the murals and the murals themselves.

Integrity

Research did not find that there have been any structural alterations to this bridge. In 1998, the murals were restored by a professional muralist to their original state. While the condition of some murals have deteriorated since 1998, this property retains a high degree of integrity of materials, design, feeling, association, workmanship, setting, and location. Overall, the bridge maintains sufficient integrity to convey its historical significance.

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[7] JRP Historical Consulting Services, "Roadway Bridges of California, 1936 to 1959: Historic Context Statement," prepared for Caltrans, 2003, 49; Andrew Hope (Caltrans), "Caltrans Statewide Historic Bridge Inventory Update Survey and Evaluation of Common Bridge Types, November 2004, 7, 8.

[8] National Park Service, *National Register Bulletin 38, Guidelines for Evaluating and Documenting Traditional Cultural Properties* (Washington: NPS, 1990, revised 1992, 1998), 12.

Photographs (Continued):

Photograph 3: Camera facing south, April 5, 2022.

Photograph 4: West stairs, camera facing south, April 5, 2022.

Photograph 5: Bridge deck, camera facing east, April 5, 2022.

Photograph 6: Mural under west stairway, camera facing north, April 5, 2022.

***Recorded by**: S.J. "Mel" Melvin ***Date**: April 5, 2022 ☒Continuation ☐Update

Photograph 7: Mural on west side of west pier, camera facing northeast, April 5, 2022.

Photograph 8: Mural on west side of east pier, camera facing east, April 5, 2022.

Photograph 9: Mural on north side of west stairway, camera facing south, April 5, 2022.

Photograph 10: Mural on south side of east stairway, camera facing north, April 5, 2022.

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # ___
HRI # ___
Trinomial ___

***Resource Name or #** (Assigned by recorder): Bridge 55C0307

***Recorded by**: S.J. "Mel" Melvin *__Date__: April 5, 2022 ☒Continuation ☐Update

Photograph 11: Mural on east side of west pier, camera facing west, April 5, 2022.

Photograph 12: Mural on east side of east pier, camera facing west, April 5, 2022.

***Recorded by**: S.J. "Mel" Melvin ***Date**: April 5, 2022 ☒Continuation ☐Update

Photograph 13: Mural under east stairway, camera facing southeast, April 5, 2022.

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary # ___
HRI # ___
Trinomial ___
NRHP Status Code 3S

Other Listings ___
Review Code ___ Reviewer ___ Date ___

 ***Resource Name or #** (Assigned by recorder): Bridge 57 0870

P1. Other Identifier: West Lilac Road Overcrossing

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County**: San Diego

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad**: Bonsall **Date**: 2018 **T**: 10S; **R**: 2W; **Sec**: 13; San Bernardino Meridian

c. Address: West Lilac Road City: n/a Zip: n/a

d. UTM: (give more than one for large and/or linear resources) Zone: 11S; 486036.71 m E; 3684594.18 m N

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate)

The West Lilac Road Overcrossing carries West Lilac Road over Interstate 15 (I-15) at post mile 44.24, in northwest San Diego County. The bridge is in Caltrans District 11.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

The West Lilac Road Overcrossing is a continuous, three-span, four-cell, cast-in-place, prestressed concrete box girder bridge (**Photographs 1 & 2**). It is supported by a reinforced concrete two-cell box cellular arch that narrows as it approaches the ground and has beveled edges that taper as they rise (**Photographs 3 - 8**). Arch foundations are on spread footings as is the west abutment, while the east abutment is on concrete piles (**Photographs 9 & 10**). At the abutments, the ends of the girders are flanked by triangular brackets. The bridge is 695 feet long, with the longest span 235 feet. Its outside width is 43.5 feet and its curb-to-curb width is 40 feet. The girders have sloping sides, above which are fascia with a long inset panel on both sides of the bridge and the deck, which cantilevers out over the girder. The bridge carries two lanes and does not have sidewalks (**Photograph 11**). On both sides of West Lilac Road are concrete barriers with a cathedral style chain link fence mounted on top. The bridge's concrete has a smooth surface, and the structure has a maximum clearance of 150 feet above the freeway.

***P3b. Resource Attributes:** (List attributes and codes) HP19. Bridge

***P4. Resources Present:** ☐ Building ☒ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5b. Description of Photo: (View, date, accession#) **Photograph 1.** Camera facing north, April 5, 2022.

***P6. Date Constructed/Age and Sources:** ☒ Historic ☐ Prehistoric ☐ Both
1978 (Caltrans)

***P7. Owner and Address:**
State of California
Department of Transportation
1120 N Street
Sacramento, CA 95814

***P8. Recorded by:**
Steven J. "Mel" Melvin
JRP Historical Consulting, LLC
2850 Spafford Street
Davis, CA 95618

***P9. Date Recorded**: April 5, 2022; May 19, 2022

***P10. Survey Type:** (Describe) Intensive

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") JRP Historical Consulting, LLC, "Historical Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2023 Update, 1975-1984," prepared for Caltrans, 2023.

***Attachments:** ☐ None ☐ Location Map ☐ Sketch Map ☒ Continuation Sheet ☒ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐Other (list) ___

***NRHP Status Code**: 3S
***Resource Name or #** (Assigned by recorder): Bridge 57 0870

B1. Historic Name: West Lilac Road Overcrossing
B2. Common Name: West Lilac Road Bridge; Walter F. Maxwell Memorial Bridge
B3. Original Use: Bridge B4. Present Use: Bridge
***B5. Architectural Style**: Concrete Box Girder / Concrete Arch
***B6. Construction History**: (Construction date, alteration, and date of alterations) Built in 1978; no known alterations except for routine maintenance.
***B7. Moved?** ☒ **No** ☐ **Yes** ☐ **Unknown Date:** ____________ **Original Location:** ____________
***B8. Related Features:** ___
B9. Architect: Caltrans b. Builder: W.F. Maxwell Company
***B10. Significance: Theme**: Design / Aesthetics **Area**: State
Period of Significance: 1978 **Property Type**: Bridge **Applicable Criteria**: C/3
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

The West Lilac Road Overcrossing is eligible for listing in the National Register of Historic Places (NRHP) and the California Register of Historical Resources (CRHR). This property has been evaluated in accordance with Section 106 of the National Historic Preservation Act of 1966 (as amended) (54 U.S.C. 306108) and its implementing regulations (36 CFR Part 800) and Section 15064.5(a)(2)-(3) of the California Environmental Quality Act (CEQA) Guidelines, using the criteria outlined in Section 5024.1 of the California Public Resources Code (PRC). Additionally, this bridge meets the California Historical Landmarks (CHL) Criteria as per PRC Section 5031 and is a California Historical Landmark. (See Section B10 on Continuation Sheet.)

B11. Additional Resource Attributes: ____________

***B12. References**: Caltrans Bridge Database; Caltrans Bridge Inspection Reports; Caltrans, Bridge As-Built Plans; Caltrans, Statewide Historic Bridge Inventory Updates; *Escondido Times-Advocate; Los Angeles Times;* see also footnotes.

B13. Remarks:

***B14. Evaluator**: Steven J. "Mel" Melvin
***Date of Evaluation**: November 2023

(This space reserved for official comments.)

B10. Significance (continued):

Historic Context and Bridge History

The West Lilac Road Overcrossing was built in 1978 as part of a project to construct a section of Interstate 15 (I-15). At the time, a long gap existed in I-15 between Temecula and Escondido and traffic ran on US 395, a two-lane highway between these two cities. In the vicinity of West Lilac Road, US 395 took a circuitous course through steep terrain, leading Caltrans to route the new freeway along a flatter and straighter new right-of-way that cut through the steep hills. The deep, excavated cut at West Lilac Road provided the conditions to build a visually striking bridge and Caltrans, at the urging of District 11 staff, took the opportunity to do just that. Caltrans engineers Fred G. Michaels and John Suwada, and Caltrans bridge architect William Wells, chose the design despite costing 15 percent more than a standard concrete box girder bridge based on aesthetic appeal and the conditions of the site. Wells said that using piers instead of an arch would have disrupted the bridge's visual proportions. Not only did the arch design make for a beautiful bridge, but the steep walls of the cut made an arch bridge the logical choice from an engineering standpoint. Work on the bridge began in July 1976 and concluded in May 1978 (**Plate 1**). It was built at a cost of $1.5 million by W.F. Maxwell Company. The freeway under the bridge opened for traffic in 1980. After completion of the bridge, it won two design awards: one from the Portland Cement Association in 1978 and the other from the Prestressed Concrete Institute in 1979. The bridge is named the Walter F. Maxwell Memorial Bridge after the founder of the firm that built the structure.[1] The bridge is similar to the Eastgate Mall Overcrossing, formally the Old Miramar Road Bridge (57 0762), built in 1971 over I-805 in Sorrento Valley, San Diego County.

Plate 1. West Lilac Road Overcrossing shortly after it was built.[2]

[1] "Caltrans Head Vows I-15 Work," *Escondido Times-Advocate,* August 8, 1978, 1; Caroline Lemke, "Crossing Over to the Other Side," *Los Angeles Times, North County Focus*, June 27, 1991, 3; "New Stretch of 1-15 to Open North of Escondido," *Los Angeles Times*, February 7, 1980, 28; "Lilac Road Bridge Garners Second Laud," *Escondido Times-Advocate,* November 12, 1979, 32; Christine Robbins, "The Bridges of San Diego County: The Art of Civil Engineering," *The Journal of San Diego History*, 62, no. 1 (Winter 2016), 25; J. Harry Jones, "Many Honored on Northern Highways," *San Diego Union Tribune,* April 25, 2015; Richard M. Barker and Jay A. Puckett, *Design of Highway Bridges: An LRFD Approach*, 3rd edition (Hobokken, NJ: John Wiley & Sons, 2013), 43; James E. Roberts, "Aesthetic Design Philosophy Utilized for California State Bridges," *Journal of Urban Planning and Development* 118, no. 4 (December 1992), 150; John C. Ritner, "Bridges Produced by an Architectural Engineering Team," *Transportation Research Record 1044, Structures and Foundations* (Washington D.C.: Transportation Research Board National Research Council, 1985), 36.
[2] Richard M. Barker and Jay A. Puckett, *Design of Highway Bridges: An LRFD Approach*, 3rd edition (Hobokken, NJ: John Wiley & Sons, 2013), 43.

The W.F. Maxwell Company, the firm that built the West Lilac Overcrossing, was formed by Walter Francis Maxwell around 1947 in Fontana, California. Before starting his own firm, Maxwell served as resident engineer for the New York State Division of Highways from 1930-39, San Francisco district area engineer for the U.S. Army Corps of Engineers (Army Corps) from 1940-42, and Battalion Commander for the Army Corps from 1943-46. The W. F. Maxwell Company won numerous multi-million-dollar contracts from the California Division of Highways (Caltrans predecessor) in the greater Los Angeles region to construct hundreds of miles of freeway, including major segments of the Hollywood, Harbor, San Bernardino and Barstow freeways. The firm also frequently worked on freeways in San Diego County, San Bernardino County, and other parts of southern California, as well as sections of I-80 in Nevada. Walter F. Maxwell died on November 28, 1980 in San Diego. The firm appears to have remained active up to 1982, but research did not find any further information after this date. Maxwell was a prominent member of the Associated General Contractors of America, having served as both the president of the Southern California chapter, and chairman of the national highway and heavy engineering division, during his career. The Lilac Road Overpass was renamed in his honor by the California Legislature in 1981.[3]

The main structure of the West Lilac Road Overcrossing is a concrete box girder bridge (**Plate 2**). The first concrete box girder bridges in California were erected in the mid-1930s. The type was innovative for its design flexibility, helping to meet the growing demand for longer and wider bridges as well as skewed bridges that permitted straighter, more efficient, and safer roadways. The slender bridge profiles with harmonious proportions allowed engineers to achieve the modern design aesthetic thought to showcase transportation efficiency. Because they required less steel in their construction, concrete box girder bridges could also be erected at significant cost savings. Only a small number of concrete box girder bridges were built before World War II, but after the war their numbers rapidly increased. By 1965, there were more than 1,500 concrete box girder bridges in California. More than 3,200 of the type were built between 1965 and 1974, and more than 1,000 between 1975 and 1984.[4] Some notable concrete box girder bridges in California include the Mulholland Drive Overcrossing (Bridge 53 0739) in Los Angeles, which held title to the longest main span at 235 feet from its construction in 1959 until 1974 when the Interstate 8 bridge over the Pine Valley Creek (Bridge 57 0692L/R) achieved a 450-foot main span. The Eel River Bridge (Bridge 04 0016L) constructed in 1974 in Humboldt County achieved a total length of 1,730 feet and main span of 300 feet. Five years later the Parrotts Ferry Bridge in Tuolumne County, constructed in 1979, had a 639.8-foot-long main span and a total length of 1,292.7 feet. The Napa River Bridge (Bridge 21 0049), erected in 1977, has the longest total length of any continuous concrete box girder span in California at 2,230 feet.[5] The latter two are noted for their aesthetic designs.

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[3] "Record Concrete Pour Made on Freeway Span," *Los Angeles Times*, October 19, 1950, II-13; U.S. Selective Service System, *World War II Draft Registration Card*, Albany, New York, "Walter Francis Maxwell," Serial no. 334, 16 October 1940; "Bids Are Opened on New Unit of Freeway," *The Colton Courier*, July 9, 1952, 3; Justia US Law, accessed November 2023, https://law.justia.com/cases/federal/appellate-courts/F2/297/554/457492/; "W.F. Maxwell to Head Unit of Builders," *Los Angeles Times*, April 1, 1962, J-5; Karl Breckenridge, "Interstate-80 history: Picking up the roadkill," *Reno Gazette-Journal*, October 14, 2007, 3B; State of California, *California Death Index, 1940-1997,* accessed via Ancestry.com; "Low bidder for highway contract," *Reno Gazette-Journal*, March 5 1982, 2C; Nancy Ray, "Train-Moving Plan Can't Get on Track," *Los Angeles Times*, October 2, 1982, II-1, II-6; Gig Conaughton, "Overpass one of Fallbrook's secret beauties," *The Californian* [Riverside County], April 10, 2000, A-1, A-4.

[4] Myra L. Frank & Associated, "Caltrans Historic Bridge Inventory Update: Concrete Box Girder Bridges," prepared for Caltrans, August 2003, 5-11.

[5] Caltrans, Historical Resources Evaluation Report, Statewide Historic Bridge Inventory: 2015 Update 1965-1974, 21 and DPR 523 forms Bridge 40 0048; Bridge 04 0016L; Bridge 04 0155.

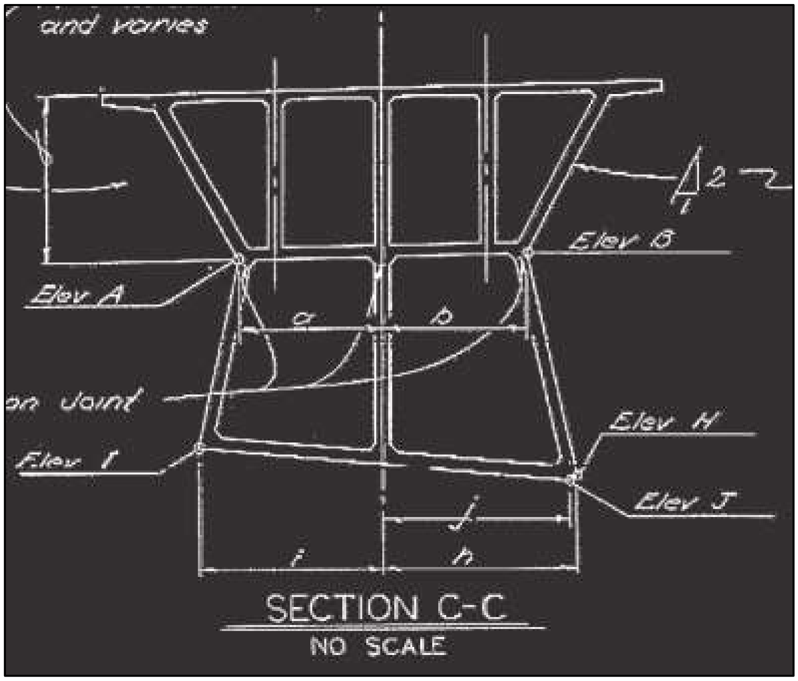

Plate 2. Original bridge plans dated 1976 showing a cross section where the superstructure and arch come together. Note the four-cell box girder superstructure and the two-cell box arch.[6]

The West Lilac Road Overcrossing is also a concrete arch bridge, similar to the design of the Eastgate Mall Overcrossing, formally the Old Miramar Road Bridge (57 0762), built in 1971 over I-805. Concrete arch bridges became popular in California in the early 1900s as the technology of reinforced concrete improved. Its popularity was aided in California by the scarcity and high cost of steel relative to the abundance of less expensive high-quality cement. The era of concrete arch bridges proved brief, however, as the extensive wood falsework and manual pouring of concrete required led to high costs. By the late 1930s, use of concrete arches was in decline and very few were built after 1945 as designers shifted to more modern concrete types such as the reinforced concrete box girder and prestressed concrete girders. The decline of concrete arch bridges in the last half of the twentieth century makes the West Lilac Road Overcrossing one of the few constructed during this period.[7]

The design and construction of the West Lilac Road Overcrossing came during a period when consideration of bridge aesthetics had become entrenched in Caltrans' bridge design procedures. While most state-built bridges, and many local or consultant-designed bridges, received at least some attention to their overall appearance, more effort was placed on bridges in scenic or prominent locations such as the West Lilac Road Overcrossing, for example. The Division of Highways, began to integrate improved aesthetics into the state's bridge design procedures in the early 1960s with architects trained in bridge design providing input about the appearance of structures. The Division of Highways, and later Caltrans, developed its bridge aesthetics program to integrate it into the department's overall design philosophy that included additions to bridge design manuals with instructions to have bridges designed so that they would be aesthetically compatible with their location, as well as the development of standard features, such as columns, railings, and surface treatments, that met the aesthetic principles being promoted. There came to be essentially two types of architectural treatment, those added to standard structures and those that united architecture and engineering. Dictated by cost and function criteria, treatments incorporated into standard structures could include the addition of grooves and textures, for example, while the rarer marriage of architecture and engineering could include shapes, proportion, scale of piers, abutments, and superstructure that varied from standard structures. Bridge designers

[6] Caltrans, "Lilac Road Overcrossing, Geometrics No. 1," As-built plans, March 15, 1976.
[7] JRP Historic Consulting, "Caltrans Historic Bridge Inventory Update: Concrete Arch Bridges," prepared for Caltrans, October 2004, 25, 28, 33.

were encouraged to consider what they are leaving for future generations, which emphasized that a bridge's appearance was as important as the structure's design features for load and safety. Aligning with the dominant architectural trends in Modernism of the period, bridge designers aspired to simplicity and pureness of structure, avoiding ornamentation, celebrating the beauty of structural form, and emphasizing ease of construction and economy of design. Slender structures on slender piers or columns with minimal number of elements, and continuous or steady long lines were among the features of the aesthetical ideal at the time, for which the Division of Highways received various awards such as for the steel girder San Mateo Creek (Eugene Doran Memorial) Bridge (35 0199) built in 1967 on I-280 in San Mateo County that featured prominent sculpted concrete piers, the steel arch Cold Spring Canyon Bridge (51 0037) built in 1963 on SR 154 in Santa Barbara County, concrete box girder Junipero Serra Freeway (I-280) bridges built in the mid to late 1960s in San Mateo County, the concrete box girder Adams Avenue Overcrossing built in 1970 over I-805 (57 0619) in San Diego County, and the concrete box girder / concrete arch Eastgate Mall Overcrossing, formally the Old Miramar Road Bridge (57 0762), built in 1971 over I-805 in San Diego County. Although Division of Highways / Caltrans policy was to design aesthetically pleasing structures, and sometimes incorporated input from members of the public, there were also clear parameters that such efforts would not be unduly more expensive. During this period, Division of Highways and Caltrans bridge designers considered aesthetic qualities following general principles related to quality design that carefully analyzed proportions of bridges' structural and safety elements, attractive forms for the various bridge elements, compatibility of bridges within their setting, and consideration of current and future acceptance of the structures. Proportion related to the scale of a bridge's components relative to one another. Compatibility emphasized improvements on how bridges fit into their surroundings, which depended on the nature of the structure and site with some bridges designed to blend with their setting and others to stand out. Longtime Division of Highways Chief of Bridge Planning and Design Arthur L. Elliott, who led the Bridge Department from 1953 to 1973, stressed a bridge's compatibility was more important than its uniqueness of appearance, stating that "a properly designed structure has a sense of belonging in its particular location," noting that bridges that seem out of place are subject to criticism. He further specified that bridges do not need to be fancy to be compatible, with simple, trim, and plain lines, like those seen on the West Lilac Overcrossing, considered more attractive than "contrived or contorted shapes." The Caltrans bridge aesthetics program resulted in many structures that incorporated basic aesthetic enhancements, as well as a smaller set of structures that included enhanced qualities and the few that had special aesthetic character.[8]

NRHP / CRHR Significance Evaluation

The West Lilac Road Overcrossing is not significant under NRHP Criterion A / CRHR Criterion 1 for an important association with significant events, trends, or patterns of development. Built as part of an interstate highway project, this bridge was one of many highway improvements carried out in the late 1970s and early 1980s by Caltrans throughout California and in this region. West Lilac Road existed before construction of this bridge and this bridge did not initiate new patterns of development. Thus, the bridge is not important within the context of the development of the highway network, local growth and development, or any other trends or events at the national, state, or local level that would make it significant under this criterion.

[8] Arthur L. Elliott, "Aesthetics of Highway Bridges," *Civil Engineering*, June 1968, 66; James E. Roberts, "Aesthetic Design Philosophy Utilized for California State," *Journal of Urban Planning and Development*, Vol. 118, No. 4, December 1992, 138-141, 148, and 155; Arthur L. Elliott, "Esthetic Development of California's Bridges," presented at the April 14-18, 1980, ASCE Convention and Exposition, Portland, Oregon (Preprint 80-004), published in *Journal of Structural Engineering*, Vol. 109, No. 9, September 1983, paper no. 18240, 2159-63 and 2172-73; W.S. Ludlow, "Aesthetics in Bridge Design," *Manual of Bridge Design Practice* (State of California: Bridge Department, 1971), 16.3; Arthur L. Elliot, "Aesthetics in a Changing Economy," in *Meeting Preprint 2199* for American Society of Civil Engineers National Structural Engineering Meeting, April 22-26, 1974, *Cincinnati*, Ohio; JRP Historical Consulting, LLC, *Historical Resources Evaluation Report, Cold Spring Canyon Bridge (51 0037) Pedestrian Barrier Project, State Route 154, Santa Barbara County, California, 05-SB-154 PM 22.96, EA 05-0P910K,* prepared for Caltrans District 5, May 2007; James E. Roberts, *Aesthetics and Economy in Complete Concrete Bridge Design*, California Department of Transportation, Office of Structures Design, 1986, available at the Caltrans Transportation Library, 3, 5, and 6; Caltrans, Statewide Historic Bridge Inventory: 2015 Update, DPR 523 form Bridge 57 0762; Arthur L. Elliott, "Creating a Beautiful Bridge," in Committee on General Structures, Subcommittee on Bridge Aesthetics, *Bridge Aesthetics Around the World*, (Washington D.C.: Transportation Research Board, National Research Council. 1991), 217; Stewart Gloyd, "California – A Qualified Bridge Esthetics Case Study," *Concrete International*, Volume 16, No. 2, February 1994, 46-48.

Under NRHP Criterion B / CRHR Criterion 2, this bridge is not significant for an association with the lives of persons important to history. Research did not find that any individuals directly associated with this property have made demonstrably important contributions to history at the local, state, or national level. The bridge was named in honor of Walter F. Maxwell, the founder of the construction firm that built the bridge. The firm is credited with building around 570 bridges in southern California. Maxwell died in 1980 at the age of 71. Although the W.F. Maxwell Company built this bridge, research did not reveal that Walter F. Maxwell was directly associated with constructing the bridge.

Under NRHP Criterion C / CRHR Criterion 3, the West Lilac Road Overcrossing is significant for its type, period, and method of construction for its design and aesthetic character, but it is not the work of a master and does not possess high artistic values. The bridge's aesthetic value is derived from its arches, sleek appearance, smooth concrete finish, and harmonious relationship with its surroundings. The bridge is among the limited number of bridges in the state from its period with special visual character that makes it an excellent example of the Modern aesthetic in a bridge. The bridge's design represents the union of engineering and architecture with its simplicity and pureness of structure that celebrates the beauty of structural form and emphasizes its economy of design. The bridge is a slender structure on slender supports with minimal number of elements, and has continuous long lines accentuated by the wide arch form that elevates the structure to the aesthetical paradigm of the period. The bridge is also notable as one of the few bridges employing a concrete arch design to be built in the last half of the twentieth century. As noted above, the bridge has received design awards from the Portland Cement Association and the Prestressed Concrete Institute and its aesthetic value has been noted in newspapers, *The Journal of San Diego History*, and in the book, *Design of Highway Bridges* by Richard M. Barker and Jay A. Puckett.

Under NRHP Criterion D / CRHR Criterion 4, this property is not a significant or likely source of important information about historic construction materials or technologies that is not otherwise available through documentary evidence.

The boundary of the property encompasses the entire bridge structure. The period of significance is 1978, the year the bridge was completed. It is significant at the state level. The character-defining features are the arches, box girder superstructure, deck, and railing.

California Historical Landmark Evaluation

A property may be eligible for designation as a California Historical Landmark (CHL) if it meets one of three criteria: the first, last, or most significant of its type within the state or within a large geographic region (i.e., Southern California); is associated with an individual or group having a profound influence on the history of California; or is a prototype of, or an outstanding example of, a period, style, architectural movement or construction, or is an important work of a master architect or builder. Of these, the West Lilac Road Overcrossing meets the CHL Criteria as an outstanding example of a bridge designed in the Modern aesthetic. It is therefore eligible for designation as a CHL.

Integrity

Research and field observation did not reveal any alterations to this bridge except for routine maintenance such as repairing minor cracks and spalls. As such, it retains a high degree of integrity of materials, design, feeling, association, workmanship, setting, and location. Overall, the bridge maintains sufficient integrity to convey its historical significance.

Photographs (Continued):

Photograph 2: North elevation, camera facing south, April 5, 2022.

Photograph 3: South elevation, camera facing northwest, April 5, 2022.

***Resource Name or #** (Assigned by recorder): Bridge 57 0870

***Recorded by**: S.J. "Mel" Melvin *__Date__: April 5, 2022; May 19, 2022 ☒Continuation ☐Update

Photograph 4: South elevation, camera facing northwest, April 5, 2022.

Photograph 5: South elevation, camera facing west, April 5, 2022.

Photograph 6: Soffit, camera facing northwest, May 19, 2022.

Photograph 7: Soffit, camera facing west, May 19, 2022.

Photograph 8: East end of bridge, camera facing northwest, April 5, 2022.

Photograph 9: East end of bridge, camera facing southeast, May 19, 2022.

Photograph 10: West end of bridge, camera facing northwest, May 19, 2022.

Photograph 11: Deck, camera facing northwest, April 5, 2022.

APPENDIX C

Interested Parties Correspondence

JRP Historical Consulting LLC
2850 Spafford St, Davis, CA 95618 • (530) 757-2521 • jrphistorical.com

R. Meta Bunse
President · Historian

Christopher D. McMorris
Vice President · Architectural Historian

Bryan T. Larson
Partner · Historian

Scott A. Miltenberger
Partner · Historian

COMMUNICATION LOG

Project: Caltrans Historic Bridge Inventory Update 2023

Project No.: Agreement No. 43A0415 / Task Order No. 4

Client: Caltrans

Prepared By: Steven J. "Mel" Melvin, Architectural Historian, JRP Historical Consulting, LLC

Interested Party	Communication
National	
National Society for the Preservation of Covered Bridges 535 Second New Hampshire Turnpike Hillsboro, New Hampshire 03244 nspcb@yahoo.com	• Initial letter sent via USPS March 24, 2022. • Follow-up email sent March 29, 2022. • Acknowledged receipt of email on March 29, 2022. • Original letter sent via USPS March 31, 2022 with attachment.
National Trust Regional Office Los Angeles Field Office Attn: Chris Morris 700 South Flower Street, Suite 1100 Los Angeles, California 90017 cmorris@savingplaces.org	• Initial letter sent via USPS March 24, 2022. • Follow-up email sent March 29, 2022. • Original letter sent via USPS March 31, 2022 with attachment.
Historic Bridge Foundation Kitty Henderson, Executive Director 1500 Payne Ave Austin Texas 78757 512-407-8898 kitty@historicbridgefoundation.com	• Initial letter sent via USPS March 24, 2022. • Follow-up email sent March 29, 2022. • Original letter sent via USPS March 31, 2022 with attachment. • HBF replied via email on March 29, 2022 saying they had no comments.
HistoricBridges.org webmaster@historicbridges.org	• Email sent March 29, 2022.
State/Region	
California Preservation Foundation 101 The Embarcadero #120 San Francisco, CA 94105 cpf@californiapreservation.org	• Initial letter sent via USPS March 24, 2022. • Follow-up email sent March 29, 2022. • Original letter sent via USPS March 31, 2022 with attachment.

California Historical Society 678 Mission Street San Francisco CA 94105 info@calhist.org	• Initial letter sent via USPS March 24, 2022. • Follow-up email sent March 29, 2022. • Original letter sent via USPS March 31, 2022 with attachment.
Docomomo US- Northern California 33 Topaz Way San Francisco, CA 94131 info@docomomo-noca.org	• Initial letter sent via USPS March 24, 2022. • Follow-up email sent March 29, 2022. • Original letter sent via USPS March 31, 2022 with attachment.
Docomomo US- Southern California Docomomo-socal.org docomomosocal@gmail.com	• Email sent March 29, 2022.
Historical Society of Southern California PO Box 50019 Long Beach, CA 90815 hssc@thehssc.org	• Initial letter sent via USPS March 24, 2022. • Follow-up email sent March 29, 2022. • Original letter sent via USPS March 31, 2022 with attachment.
Local	
Butte County Public Works 7 County Center Dr. Oroville, CA 95965 530-538-7681	• Initial letter sent via USPS March 24, 2022. • Original letter sent via USPS March 31, 2022 with attachment.
Butte County Historical Society P.O. Box 2195 Oroville, CA 95965 530-533-9418 buttehistory@sbcglobal.net	• Initial letter sent via USPS March 24, 2022. • Follow-up email sent March 29, 2022. • Original letter sent via USPS March 31, 2022 with attachment.
Contra Costa County Public Works Department 255 Glacier Dr. Martinez, CA 94553 925-313-2000 admin@pw.cccounty.us	• Initial letter sent via USPS March 24, 2022. • Follow-up email sent March 29, 2022. • Original letter sent via USPS March 31, 2022 with attachment.
Contra Costa County Historical Landmarks Advisory Committee Attn: Dominique Vogelpohl, Planner 30 Muir Road Martinez, CA 94553 925-674-7888 dominique.vogelpohl@dcd.cccounty.us	• Initial letter sent via USPS March 24, 2022. • Follow-up email sent March 29, 2022. • Original letter sent via USPS March 31, 2022 with attachment.
Contra Costa Historical Society 724 Escobar St. Martinez, CA 94553 Phone: 925-229-1042 info@cocohistory.org	• Initial letter sent via USPS March 24, 2022. • Follow-up email sent March 29, 2022. • Original letter sent via USPS March 31, 2022 with attachment.

Del Norte County Community Development Department Heidi Kunstal, Director 981 H St. Suite 110 Crescent City, CA 95531 707-464-7254	• Initial letter sent via USPS March 24, 2022. • Original letter sent via USPS March 31, 2022 with attachment.
Del Norte County Historical Society 577 H St. Crescent City, CA 95531 707-464-3922 manager@delnortehistory.org	• Initial letter sent via USPS March 24, 2022. • Follow-up email sent March 29, 2022. • Acknowledged receipt of email on March 30, 2022. • Original letter sent via USPS March 31, 2022 with attachment.
Fullerton Museum Center 301 North Pomona Avenue Fullerton, California 92832 info@fullertonmuseum.com	• Initial letter sent via USPS March 24, 2022. • Follow-up email sent March 29, 2022. • Original letter sent via USPS March 31, 2022 with attachment.
Humboldt County Department of Public Works Attn.: Andrew Bundschuh 1106 2nd St. Eureka, CA 95501 707-445-7741 abundschuh@co.humboldt.ca.us	• Initial letter sent via USPS March 24, 2022. • Follow-up email sent March 29, 2022. • Original letter sent via USPS March 31, 2022 with attachment. • HCDPW replied via email on March 29, 2022 saying they had no comment.
Humboldt County Historical Society 703 8th St. Eureka, California 95501 707-445-4342 info@humboldthistory.org	• Initial letter sent via USPS March 24, 2022. • Follow-up email sent March 29, 2022. • Original letter sent via USPS March 31, 2022 with attachment.
Los Angeles County Department of Public Works Transportation Division, Bridges 900 S. Fremont Ave. Alhambra, CA 91803 626-458-5100	• Initial letter sent via USPS March 24, 2022. • Original letter sent via USPS March 31, 2022 with attachment.
Los Angeles Conservancy 523 W. Sixth St., Suite 826 Los Angeles, CA 90014 213-623-2489 info@laconservancy.org	• Initial letter sent via USPS March 24, 2022. • Follow-up email sent March 29, 2022. • Original letter sent via USPS March 31, 2022 with attachment. • LAC replied via email on March 30, 2022 asking if JRP was "seeking additional bridges" in LA County. JRP replied that we were not.

Los Angeles County Historical Society P.O. Box 862311 Los Angeles, CA 90086 info@lacountyhistoricalsociety.com	• Initial letter sent via USPS March 24, 2022. • Follow-up email sent March 29, 2022. • Original letter sent via USPS March 31, 2022 with attachment.
Los Angeles City Historical Society P.O. Box 862311 Los Angeles, CA 90086 info@lacityhistory.org	• Initial letter sent via USPS March 24, 2022. • Follow-up email sent March 29, 2022. • Original letter sent via USPS March 31, 2022 with attachment.
Napa County Public Works Department 1195 Third St. #101 Napa, CA 94559 707-253-4351 Danielle Goshert Danielle.Goshert@countyofnapa.org	• Initial letter sent via USPS March 24, 2022. • Follow-up email with bridge list sent March 28, 2022 to Danielle Goshert. • Original letter sent via USPS March 31, 2022 with attachment. • NCPWD replied on March 28 to confirm receipt of letter and its forward to the Napa County Roads Commissioner.
Napa County Historical Society 1219 First St. Napa, CA 94558 707-224-1739 info@napahistory.org	• Initial letter sent via USPS March 24, 2022. • Follow-up email sent March 29, 2022. • Original letter sent via USPS March 31, 2022 with attachment.
Napa County Landmarks 1754 2nd Street, Suite E Napa, CA 94559 707-255-1836 info@napacountylandmarks.org	• Initial letter sent via USPS March 24, 2022. • Follow-up email sent March 29, 2022. • Original letter sent via USPS March 31, 2022 with attachment.
Orange County Public Works 601 N. Ross St. Santa Ana, CA 92701 714-667-8800 https://ocpublicworks.com/contact	• Initial letter sent via USPS March 24, 2022. • Follow-up email sent March 29, 2022. • Original letter sent via USPS March 31, 2022 with attachment.
Orange County Historical Commission 211 West Santa Ana Blvd. Santa Ana, CA 92701 714-973-6606 OCHC@occr.ocgov.com	• Initial letter sent via USPS March 24, 2022. • Follow-up email sent March 29, 2022. • Original letter sent via USPS March 31, 2022 with attachment.
Orange County Historical Society 3101 W. Harvard St. Santa Ana, CA 92704 714-540-0404 ext. 226 info@orangecountyhistory.org	• Initial letter sent via USPS March 24, 2022. • Follow-up email sent March 29, 2022. • Original letter sent via USPS March 31, 2022 with attachment.

County of San Diego Planning & Development Services Attn: Historic Site Board 5510 Overland Ave San Diego, CA 92123 Sean.Oberbauer@sdcounty.ca.gov	• Initial letter sent via USPS March 24, 2022. • Follow-up email sent March 29, 2022. • Original letter sent via USPS March 31, 2022 with attachment.
Save Our Heritage Organization PO Box 80788 San Diego CA 92138 619-297-9327 sohosandiego@aol.com	• Initial letter sent via USPS March 24, 2022. • Follow-up email sent March 29, 2022. • Original letter sent via USPS March 31, 2022 with attachment.
San Diego History Center 1649 El Prado, Suite 3 San Diego, CA 92101 619-232-6203 info@sandiegohistory.org	• Initial letter sent via USPS March 24, 2022. • Follow-up email sent March 29, 2022. • Original letter sent via USPS March 31, 2022 with attachment.
City of San Diego Historical Resources Board Attn: Anna McPherson 1222 First Ave, 5th floor San Diego, CA 92101 619-446-5276 amcpherson@sandiego.gov	• Initial letter sent via USPS March 24, 2022. • Follow-up email sent March 29, 2022. • Original letter sent via USPS March 31, 2022 with attachment.
San Francisco Planning Attn: Historic Preservation Commission 49 South Van Ness Ave. San Francisco, CA 94103 628-652-7589 jonas.ionin@sfgov.org	• Initial letter sent via USPS March 24, 2022. • Follow-up email sent March 29, 2022. • Original letter sent via USPS March 31, 2022 with attachment.
San Francisco Historical Society P.O. Box 420470 San Francisco, CA 94142 415-537-1105 info@sfhistory.org	• Initial letter sent via USPS March 24, 2022. • Follow-up email sent March 29, 2022. • Original letter sent via USPS March 31, 2022 with attachment.
San Joaquin County Historical Museum 11793 Micke Grove Road Lodi, CA 95240 209-331-2055 info@sanjoaquinhistory.org	• Initial letter sent via USPS March 24, 2022. • Follow-up email sent March 29, 2022. • Original letter sent via USPS March 31, 2022 with attachment.
San Mateo County Department of Public Works 555 County Center Fifth Floor Redwood City, CA 94063 650-363-4100 DPW_info@smcgov.org	• Initial letter sent via USPS March 24, 2022. • Follow-up email sent March 29, 2022. • Original letter sent via USPS March 31, 2022 with attachment.

San Mateo County Planning & Building Department Attn: Kanoa Kelley / Historical Resources Advisory Board 455 County Center Redwood City, CA 94063 650-363-1837 kkelley@smcgov.org	• Initial letter sent via USPS March 24, 2022. • Follow-up email sent March 29, 2022. • Original letter sent via USPS March 31, 2022 with attachment.
San Mateo County Historical Association 2200 Broadway Redwood City, CA 94063 650-299-0104 info@historysmc.org	• Initial letter sent via USPS March 24, 2022. • Follow-up email sent March 29, 2022. • Original letter sent via USPS March 31, 2022 with attachment.
City of Santa Monica Community Development Department Attn: Landmarks Commission 1685 Main St. Santa Monica, CA 90401 310-458-2275 planning@smgov.net	• Initial letter sent via USPS March 24, 2022. • Follow-up email sent March 29, 2022. • Follow-up email with bridge list sent March 30, 2022 to Wendy Radwan at Wendy.Radwan@santamonica.gov. • Original letter sent via USPS March 31, 2022 with attachment.
Santa Monica Conservancy P.O. Box 653 Santa Monica, CA 90406 310-496-3146 info@smconservancy.org	• Initial letter sent via USPS March 24, 2022. • Follow-up email sent March 29, 2022. • Original letter sent via USPS March 31, 2022 with attachment.
Santa Monica History Museum P.O. Box 3059 Santa Monica, CA 90408 310-395-2290 info@santamonicahistory.org	• Initial letter sent via USPS March 24, 2022. • Follow-up email sent March 29, 2022. • Original letter sent via USPS March 31, 2022 with attachment.
Sonoma County Planning Division Permit and Resource Management Department Attn: Eric Gage / Landmarks Commission 2550 Ventura Avenue Santa Rosa, CA 95403 707-565-1391 LandmarksCommission@sonoma-county.org	• Initial letter sent via USPS March 24, 2022. • Follow-up email sent March 29, 2022. • Original letter sent via USPS March 31, 2022 with attachment.
Sonoma County Historical Society P.O. Box 1373 Santa Rosa, CA 95402 https://www.sonomacountyhistory.org/historic-sites	• Initial letter sent via USPS March 24, 2022. • Follow-up email sent March 29, 2022. • Original letter sent via USPS March 31, 2022 with attachment.
City of Stockton Public Works Department 22 E. Weber Ave. # 301 Stockton, CA 95202 209-937-8411	• Initial letter sent via USPS March 24, 2022. • Original letter sent via USPS March 31, 2022 with attachment.

City of Stockton Community Development Department Attn: Stephanie Ocasio / Cultural Heritage Board 425 N. El Dorado St. Stockton, CA 95202 209-937-8444	• Initial letter sent via USPS March 24, 2022. • Original letter sent via USPS March 31, 2022 with attachment.
Tuolumne County Department of Public Works Attn: Quincy Yaley / Historic Preservation Review Commission 2 South Green St. Sonora, CA 95370 209-533-5633 qyaley@co.tuolumne.ca.us	• Initial letter sent via USPS March 24, 2022. • Follow-up email sent March 29, 2022. • Original letter sent via USPS March 31, 2022 with attachment.
Tuolumne County Historical Society 158 Bradford St. Sonora, CA 95370 209-532-1317 info@tchistory.org	• Initial letter sent via USPS March 24, 2022. • Follow-up email sent March 29, 2022. • Original letter sent via USPS March 31, 2022 with attachment.

California Department of Transportation

DIVISION OF ENVIRONMENTAL ANALYSIS
1120 N STREET
P.O. BOX 942874
SACRAMENTO, CA 94274-0001
PHONE (916) 203-1128
FAX (916) 653-7757
TTY (916) 653-4086

March 31, 2022

Subject: Update of Caltrans Historic Bridge Inventory for Bridges Built from 1975-1984

To Whom It May Concern:

The California Department of Transportation (Caltrans) is currently updating its Statewide Historic Bridge Inventory in order to comply with both state and federal environmental laws that affect cultural resources. Caltrans is looking at bridges that will soon be 50 years of age, those built between 1975 and 1984. At this time, Caltrans is requesting comments from interested parties. Attached is a list of bridges being considered for historic significance, listed first by Caltrans district then by county.

Caltrans completed the first comprehensive statewide historic bridge survey in 1986-88 and included all bridges that were at least 50 years old at that time. In 2003-2006 Caltrans carried out the first comprehensive update to that survey and included the original survey bridges as well as the additional bridges that had been constructed through 1959. A small update conducted in 2010 included all bridges constructed from 1960 through 1964, and another update in 2015 covered bridges built between 1965 and 1974. Caltrans guidance calls for evaluation of properties that are at least 45 years old to account for the time between environmental studies and start of construction when the bridges will be 50 years old – the threshold for National Register of Historic Places (National Register) evaluation. The current survey will include bridges built from 1975-1984 to provide additional efficiency in preparing for the next decade.

As with the previous surveys, Caltrans is taking a programmatic approach to manage the sheer number of bridges in each survey update. Caltrans conducted a screening process for bridges constructed during the 1975-1984 period and identified 23 potentially significant bridges to be individually surveyed and evaluated, to which the State Historic Preservation Officer (SHPO) agreed in February 2022.

Caltrans proposes that the current update of the Statewide Historic Bridge Inventory will be a single survey/evaluation report that includes the 23 potentially significant bridges built from 1975-1984. These bridges would be treated as meeting the 50-year rule of thumb for National Register eligibility, without requiring exceptional significance. Contextual information compiled for the previous surveys will be used for the bridges and will be updated as needed.

The remaining 1975-1984 bridges would not be individually evaluated but would be given a default status code of Caltrans Category 5 (ineligible for the National Register of Historic Places and the California Register of Historical Resources). This would be consistent with the Caltrans' methodology for previous bridge inventory updates.

If you have comments or questions, please contact Janice Calpo at janice.calpo@dot.ca.gov or (916) 995-3385. Thank you.

Sincerely,

Jody L. Brown

JODY L. BROWN
Chief
Cultural Studies Office
Division of Environmental Analysis

Attachment: List of Bridges

cc: JHupp- CSO; JCalpo- CSO

List of Bridges Chosen For Evaluation

Caltrans District	County	Bridge Number	Bridge Name	Location	Bridge Type	Year Built	Reason For Evaluation
1	Del Norte	01 0007	Myrtle Creek Bridge	SR 199 PM 7.09	Concrete Deck Arch	1984	Rare Type
1	Humboldt	04 0221L 04 0221R	Eel Rive21030r BOH	SR 101 PM L51.99 PM R51.99	Concrete Box Girder	1976	Span Length
3	Butte	12C0182	Oregon Gulch Creek Bridge	0.6 miles S. of Cherokee Rd.	Wood Thru Truss – Covered	1983	Rare Type
4	Sonoma	20C0438	Warm Springs Creek Br.	3.5 miles Junction of Dutcher Creek Rd	Steel Deck Truss	1978	Span Length; Total Length
4	Napa	21 0049	Napa River BOH	SR 29 PM R6.99	Concrete Box Girder	1977	Span Length; Aesthetics
4	Contra Costa	28 0009	San Joaquin River Bridge	SR 160 PM 0.82	Steel Girder	1978	Span Length; Aesthetics
4	San Francisco	34C0066	City College POC	Over Ocean Avenue, San Francisco	Concrete Box Girder POC	1977	Aesthetics; Design
4	San Mateo	35 0038	Dumbarton Bridge	SR 84 PM R29.25	Steel Box Girder	1981	Span Length; Total Length
7	Los Angeles	53 0068	Castellammare POC	SR 1 PM 39.62	Concrete Box Girder POC	1979	Aesthetics
7	Los Angeles	53 2578	Broadway POC	SR 1 PM 35.39	Concrete Box Girder POC	1979	Aesthetics
7	Los Angeles	53 2579	California Incline POC	SR 1 PM 36.04	Concrete Box Girder POC	1979	Aesthetics
7	Los Angeles	53 2602	Montana Ave. POC	SR 1 PM 36.25	Concrete Box Girder POC	1979	Aesthetics
7	Los Angeles	53C0899L	Kanan Dume Rd. Tunnel	Kagen Dume Rd. SB	Tunnel	1983	Rare Type

Caltrans District	County	Bridge Number	Bridge Name	Location	Bridge Type	Year Built	Reason For Evaluation
7	Los Angeles	53C0900L	Kanan Rd. Tunnel	Kagen Rd. SB	Tunnel	1983	Rare Type
7	Los Angeles	53C0901L	Kanan Rd. Tunnel	Kagan Rd SB	Tunnel	1978	Rare Type
7	Los Angeles	53C1184	Grand Ave Viaduct	4th St. at Kosciuszko Way	Concrete T-beam	1975	Rare Design
10	San Joaquin	29 0269	Crosstown Freeway Viaduct	04 PM R16.62	Concrete Box Girder	1975	Total Length
10	Tuolumne	32 0040	New Melones Reservoir (Archie Stevenot Memorial Bridge)	SR 49 PM R27.28	Steel Box Girder	1976	Rare Type; Span Length; Height; Aesthetics
10	Tuolumne	32C0076	New Melones Reservoir (Parrott's Ferry Bridge)	4 miles south of Route 4	Concrete Box Girder	1978	Span Length; Height; Aesthetics
11	San Diego	57 0870	West Lilac Rd. OC	SR 15 PM R44.24	Concrete Box Girder	1978	Aesthetics; Design
12	Orange	55 0614	North Arm Newport Bay Bridge	SR 1 PM R18.22	Concrete Box Girder	1981	Aesthetics; Design
12	Orange	55C0307	Lemon St. POC	0.3 miles n. of Orangethorpe Ave.	Concrete Girder POC	1977	Artistic/Cultural Value

Responses

Mel Melvin

From: Kitty Henderson <kitty@historicbridgefoundation.com>
Sent: Tuesday, March 29, 2022 4:30 PM
To: Mel Melvin
Subject: Re: historic bridge inventory

I just received the letter because it was sent to the wrong address. It also did not include the list of bridges as stated in the letter. Reviewing the list you sent, the majority of the bridges are not of historic age. We have no comments on the list.

Kitty Henderson
Executive Director
Historic Bridge Foundation
1500 Payne Ave
Austin, Texas 78757
512 585 1814

> On Mar 29, 2022, at 4:35 PM, Mel Melvin <MMelvin@jrphistorical.com> wrote:
>
> Good Afternoon,
>
> On March 24, 2022, Caltrans sent you a letter regarding a current project to update the Caltrans Statewide Historic Bridge Inventory. The letter is part of Caltrans' efforts to solicit any comments or questions from interested parties. Please find the letter attached and the list of bridges being evaluated. Thank you.
>
> Mel Melvin
>
> <HBF.pdf><Letter Attachment_List of Bridges.pdf>

Mel Melvin

From:	Bundschuh, Andrew <ABundschuh@co.humboldt.ca.us>
Sent:	Tuesday, March 29, 2022 3:22 PM
To:	Mel Melvin
Subject:	RE: historic bridge inventory

Thanks Mel... the bridge listed in Humboldt is a Caltrans bridge... nothing the County owns/maintains.

Andrew

From: Mel Melvin <MMelvin@jrphistorical.com>
Sent: Tuesday, March 29, 2022 2:54 PM
To: Bundschuh, Andrew <ABundschuh@co.humboldt.ca.us>
Subject: historic bridge inventory

Caution: This email was sent from an EXTERNAL source. Please take care when clicking links or opening attachments.

Good Afternoon,

On March 24, 2022, Caltrans sent you a letter regarding a current project to update the Caltrans Statewide Historic Bridge Inventory. You were sent a letter because one or more of the bridges being evaluated for historical significance is in your county. The letter is part of Caltrans' efforts to solicit any comments or questions from interested parties. Please find the letter attached and the list of bridges being evaluated. Thank you.

Mel Melvin

Steven J. "Mel" Melvin | Staff Historian
(530) 757-2521, ext. 112 (office) | (916) 708-5597 (mobile) | jrphistorical.com
JRP Historical Consulting LLC

Mel Melvin

From: Mel Melvin
Sent: Wednesday, March 30, 2022 1:08 PM
To: Erik Van Breene
Subject: RE: historic bridge inventory

Hi Erik,

No, we are not seeking additional bridges in Los Angeles County.

Thanks,
Mel

From: Erik Van Breene <vanbreene@laconservancy.org>
Sent: Wednesday, March 30, 2022 12:19 PM
To: Mel Melvin <MMelvin@jrphistorical.com>
Subject: RE: historic bridge inventory

Hi Melvin,

Thanks for contacting us. Are you seeking additional bridges in Los Angeles County?

Best,
Erik

From: Mel Melvin <MMelvin@jrphistorical.com>
Sent: Tuesday, March 29, 2022 2:55 PM
To: Reception <info@laconservancy.org>
Subject: historic bridge inventory

Good Afternoon,

On March 24, 2022, Caltrans sent you a letter regarding a current project to update the Caltrans Statewide Historic Bridge Inventory. You were sent a letter because one or more of the bridges being evaluated for historical significance is in your county. The letter is part of Caltrans' efforts to solicit any comments or questions from interested parties. Please find the letter attached and the list of bridges being evaluated. Thank you.

Mel Melvin

Steven J. "Mel" Melvin | Staff Historian
(530) 757-2521, ext. 112 (office) | (916) 708-5597 (mobile) | jrphistorical.com
JRP Historical Consulting LLC

Mel Melvin

From: Goshert, Danielle <Danielle.Goshert@countyofnapa.org>
Sent: Monday, March 28, 2022 1:32 PM
To: Calpo, Janice C@DOT
Cc: Mel Melvin
Subject: RE: Caltrans Historic Bridge Inventory letter

Thank you both. Mel forwarded the attachment to me and I have submitted it to our Roads Commissioner.

Danielle Goshert, LS
County Surveyor
(707) 259-8380

Napa County Department of Public Works
1195 Third Street, Room 101
Napa, CA 94559

From: Calpo, Janice C@DOT <janice.calpo@dot.ca.gov>
Sent: Monday, March 28, 2022 1:30 PM
To: Goshert, Danielle <Danielle.Goshert@countyofnapa.org>
Cc: Mel Melvin <MMelvin@jrphistorical.com>
Subject: Re: Caltrans Historic Bridge Inventory letter

[External Email - Use Caution]
Hello again, Danielle -

Mel just got back to me to say it turns out all the letters went out without attachments - very glad you alerted us! He will be overseeing the resending of the letters, including the attachments this time.

-Janice

From: Calpo, Janice C@DOT <janice.calpo@dot.ca.gov>
Sent: Monday, March 28, 2022 12:14 PM
To: Goshert, Danielle <Danielle.Goshert@countyofnapa.org>
Cc: Mel Melvin <MMelvin@jrphistorical.com>
Subject: Re: Caltrans Historic Bridge Inventory letter

Hello Danielle -

Thank you so much for letting me know! I am going to cc Mel here, who sent out the letters, so he can re-attach whatever was supposed to be there.

-Janice

Janice Catlin Calpo
Principal Architectural Historian
Cultural Studies Office

Division of Environmental Analysis
California Department of Transportation
1120 N Street, MS 27
Sacramento, CA 95814
916 995-3385

From: Goshert, Danielle <Danielle.Goshert@countyofnapa.org>
Sent: Monday, March 28, 2022 11:36 AM
To: Calpo, Janice C@DOT <janice.calpo@dot.ca.gov>
Subject: re: Caltrans Historic Bridge Inventory letter

EXTERNAL EMAIL. Links/attachments may not be safe.

Good afternoon, Janice.

Napa County Department of Public Works is in receipt of the letter dated March 24, 2022 regarding the Caltrans Historic Bridge Inventory. Unfortunately, the attachment 'List of Bridges' was not included with this mailing. Can you please forward a copy of this list?

Thank you,

Danielle Goshert, LS
County Surveyor
(707) 259-8380

Napa County Department of Public Works
1195 Third Street, Room 101
Napa, CA 94559