PREFACE TO:

2015 CALTRANS STATEWIDE HISTORIC BRIDGE INVENTORY UPDATE

Caltrans completed its Statewide Historic Bridge Inventory Update to include bridges constructed between 1965 and 1974, and submitted its findings to SHPO in 2015. SHPO concurred with Caltrans findings except in the case of four bridges, where determinations of eligibility were deferred pending further studies. Three of those bridges (53 2639, 53C0556, 53C1560) were pedestrian overcrossings, where SHPO suggested that context specific to that bridge type could be further developed in conjunction with future projects. The fourth bridge (32 0018) was part of a potential historic district being evaluated at the time, with findings to be forwarded to SHPO upon completion.

The following document is the original document submitted by Caltrans to SHPO, with notes added afterward to reflect the status of the four bridges where determinations of eligibility remain deferred, and are not concurred by SHPO at this time. Those four bridges are considered Category 4, Historic significance not determined.

HISTORICAL RESOURCES EVALUATION REPORT
CALTRANS STATEWIDE HISTORIC BRIDGE INVENTORY: 2015 UPDATE

1965-1974

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OCTOBER 2015

Historical Resources Evaluation Report
Caltrans Statewide Historic Bridge Inventory: 2015 Update

1965-1974

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Cover photograph: photo 8651 Old Miramar Road Bridge No. 57-762 (8 December 1971). Source: Caltrans Library and History Center.

Acknowledgements

This document is the result of a unique cooperation between the California Department of Transportation (Caltrans) Division of Environmental Analysis, Cultural Studies Office (CSO) in Sacramento and the Division of Environmental Planning and Engineering, Office of Cultural Resource Studies (OCRS) in District 4. In 2013, former Chief of CSO Anmarie Medin recognized the need to update the existing the Statewide Historic Bridge Inventory as a new batch of structures were on the cusp of reaching 50 years of age since the completion of the last iteration of the survey. Through an agreement between Ms. Medin and Elizabeth (Lissa) McKee, Chief of OCRS (retired), District 4 architectural historians completed the research, analysis and drafting the report, with field survey and other support from CSO architectural historians.

The body of this document was written by Noah M. Stewart, Senior Environmental Planner, with early help from Andy Hope, Associate Environmental Planner (Architectural History). Helen Blackmore, Associate Environmental Planner (Architectural History), and Lauren Clementino, Associate Environmental Planner (Architectural History), along with Mr. Stewart completed the associated DPR523 forms. Helen also read early drafts and served as a second set of eyes making sure the numbers added up and the details were correct.

Much of the fieldwork was completed by Janice Calpo, Associate Environmental Planner (Architectural History), of CSO. Helen Blackmore, Lindsay Hartman, Associate Environmental Planner (Archaeology), Trevor Platt, Associate Environmental Planner (Archaeology) and Noah Stewart supplemented the fieldwork. Ms. Calpo edited the documents. Kelly Hobbs, Janice Calpo and Gloria Scott provided peer review comments that improved the clarity and accuracy of this document.

To all those who assisted in the production of this document - thank you! Anmarie and Lissa deserve special gratitude for allowing the freedom to complete such work and also putting up with stretched deadlines. Rudy Calpo must also be called out for recognition in going above and beyond the call of duty, supporting the field work and photography. Finally, many thanks to the Caltrans Transportation Library and History Center, particularly Deborah Cismowski, History Librarian, and Shubhangi Kelekar, Technical Reference Librarian, who were especially helpful in tracking down vintage engineering documents and helping answer obscure technical questions.

This work is dedicated to our friend and colleague Andy Hope who recently retired from civil service after a long career with the State of California. Andy was instrumental in completing earlier versions of the Statewide Historic Bridge Inventory. He was also responsible for the pioneering context statement on tract housing in California, 1945-1973, among his many other good works. His intellect, professionalism and sense of humor will continue to serve as an example to Caltrans architectural historians for years to come.

I. Summary of Findings

There are over 26,000 bridges on Californias highways and local roadways. These structures play a critical role in moving goods and people around the state. The California Department of Transportation (Caltrans) is responsible for bridge inspection on both the state and locally owned bridges as well as maintenance of the bridges owned by the state. In order to streamline various environmental regulations protecting historic resources, including Section 106 of the National Historic Preservation Act of 1966, National Environmental Policy Act (NEPA), California Environmental Quality Act (CEQA) and California Public Resources Code 5024, Caltrans periodically conducts statewide surveys in order to identify historic bridges. This study considers bridges erected between 1965 and 1974. It builds upon, and adds to, the previously completed Statewide Historic Bridge Inventory.

Driven by suburban development, increased interstate commerce and national security requirements, Californias highway system exploded in size after W orld War II. More than 7,000 highway bridges were built in California from 1965 to 1974. As with the previous Statewide Historic Bridge Inventories, the current update took a programmatic approach to the inventory in order to manage the sheer number of structures built from 1965 to 1974. Between August 2013 and May 2014, Caltrans conducted a screening process in order to identify those bridges constructed during the period of study that had the potential to be historic.

Of the more than 7,000 bridges built between 1965 and 1974, 47 were individually surveyed and analyzed to determine if they were eligible for inclusion on the National Register of Historic Places (National Register) or if they appeared eligible for inclusion on the California Register of Historical Resources (California Register). Eleven bridges were found eligible for inclusion on the National Register and appear eligible for inclusion on the California Register. Thirty-four bridges were found not eligible for inclusion on the National Register and do not appear eligible for inclusion on the California Register.

II. Project Description and Scope of Survey

Caltrans conducted the first comprehensive Statewide Historic Bridge Inventory in 1986-1988, and included all bridges that were at least 50 years old at that time. The first update to that inventory was carried out in 2003-2006, and included the original survey bridges as well as the additional bridges that had been constructed through 1959. A small update was conducted in 2010, and included all bridges constructed from 1960 through 1964. Because 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, bridges constructed from 1965 to 1969 are now nearing the threshold for National Register evaluation. Extending the inventory to include bridges built between 1970 and 1974 resulted in an additional efficiency in preparing for the likelihood of potential historic bridges in the coming decade.

The purpose of this task was to streamline project compliance with Section 106 of the National Historic Preservation Act of 1966, as amended, by focusing staff energy on only those bridges that had the potential to be significant under the National Register criteria and to determine whether they should be considered historical resources for the purposes of compliance with the California Environmental Quality Act (CEQA). Eligibility determinations for state-owned structures will also support compliance with California Public Resources Code (PRC) Section 5024.

As with the previous inventories, which this project builds on, the current update took a programmatic approach to the inventory in order to manage the sheer number of bridges built between 1965 and 1974. Caltrans initially conducted a screening process for structures completed during the 1965-1969 period, which identified 28 bridges to be individually surveyed and evaluated. The State Historic Preservation Officer (SHPO) agreed with the proposed scope on August 20, 2013. In 2014, to achieve efficiency and prepare for the likelihood of potential historic bridges in the next decade, Caltrans applied the same screening process to bridges constructed from 1970-1974, resulting in an additional 22 bridges to be individually surveyed and evaluated. On May 27, 2014, the SHPO agreed with extending the inventory update to bridges built between 1965 and 1974.

During the course of producing this document two bridges slated for evaluation were removed from consideration. The Gerald Desmond Bridge (53C0065) is slated for replacement with the project in active construction. The San Mateo-Hayward Bridge (35 0054) was evaluated separately and found eligible for inclusion on the National Register. As a result, both bridges were removed from consideration herein, leaving 48 structures to be individually evaluated. Based on research and ground truthing in the field a small number of i naccuracies in the data caused this number to be slightly altered during the course of this study. In the end, a total of 47 bridges were identified as having potential to be significant under National Register and California Register criteria.

III. Research Methods and Screening Process

Research focused on established bridge and tunnel contexts and evaluation guidelines previously prepared by Caltrans. Additional research sources included reports from Caltrans Bridge Inspection Records Information System (BIRIS); as-built drawings; correspondence, building and contract information; and articles found in California Highways and Public Works, Engineering News Record, and other engineering journals. Additional contextual research was conducted for three new bridge types Orth otropic Steel Deck, Steel Box Girder, and Segmental Concrete Box Girder the first of their type constructed during the late 1960s and early 1970s.

Caltrans completed a screening of more than 7,000 structures built between 1965 and 1974, to identify those that appeared to possess possible significance. Screening identified structures that had the potential to meet the National Register Criteria for evaluation based on their age, size, innovations, or aesthetics. Caltrans screening identif ied a small number of structures that appeared to possess possible significance, while Caltrans found that the majority of bridges during this period are ineligible for listing in the National or California Register Criteria. Bridge designs were highly standardized by this period. Just six different bridge types make up more than 98 percent of the more than 7,000 bridges erected between 1965 and 1974.

Caltrans maintains the California Historical Bridge Inventory with its own historic bridge status codes for each bridge, which are called Categories. Following screening and evaluation, each bridge is assigned to Categories 1-5. Category 1 bridges are listed in the National Register; Category 2 bridges are eligible for listing; Category 3 bridges may be eligible for listing; Category 4 bridges are unevaluated; and Category 5 bridges are not eligible for listing.

As this was the era of major interstate freeway construction, about one-third of these bridges were built as part of the interstate system. Structures constructed as part of the interstate system, including entrance and exit ramps, with the exception of six historic bridges, which are exempt from Section 106 consideration nationwide (bridges constructed to carry roads or railroads over an interstate highway are not treated as part of the interstate exemption). After excluding the interstate freeway bridges, approximately 5,300 bridges remained to be considered for National Register eligibility.

Because interstate structures are exempted from Section 106, as well as this study, there is the possibility that some bridges that have the potential to be eligible for the National Register, and thus subject to PRC 5024, may have been excluded from individual review. Several such bridges were identified during the current study including the two early orthotropic deck bridges, Ulatis Creek Bridge (23 0052R) and I-680 interchange bridge (33 0371G); Pine Valley Creek Bridge (57 0692R/L), the first cast-in-place segmental concrete box girder built in the country; as well as the aesthetically interesting San Mateo Creek Bridge/Eugene A. Doran Memorial Bridge (35 0199). These bridges, and other structures like them, which are located on the interstate system and were identified as having the potential to be eligible for the National Register during the course of the completion of this study, were given a Category 4 (unevaluated) status in this update of the Statewide Historic Bridge Inventory. These structures will need to be evaluated for the National Register on a project-by-project basis.

Also excluded from evaluation in this survey are 36 bridges owned by state agencies other than Caltrans or by other federal agencies. About half of these are in state parks, with the remainder in National Parks Service, on U.S. Forest Service lands, University of California campuses, or other state or federal lands. These bridges are excluded from evaluation because their managing agencies have their own responsibilities for compliance with the state and federal historic preservation laws. These 36 bridges were given a Category 4 (unevaluated) status in this update of the Statewide Historic Bridge Inventory.

Much of the Bay Area Rapid Transit (BART) system was constructed in the late 1960s and early 1970s; Caltrans bri dge database includes 88 bridges and two tunnels constructed in the 1965-1974 period that carry BART tracks. These structures are excluded from evaluation because the

BART system should be evaluated for National Register eligibility as a whole. These structures were given a Category 4 status.

Twenty-four additional properties with Caltrans bridge numbers were given a Category 4 status. These include 18 potential contributors to the California Aqueduct, two pedestrian bridges within a governmental complex in downtown Los Angeles (one connecting two buildings), one pedestrian bridge that is a potential contributor to a historic district and one pedestrian bridge connecting two buildings within an industrial complex. Additionally, one ferry boat in Solano County and one building (spanning a roadway tunnel) were given a Category 4 status.

Excluding the bridges described above resulted in a total of 5,110 bridges constructed during the 1965-1974 period. All of these were included in an initial screening to identify those bridges that appear to have some potential for National Register eligibility. Screening identified 48 structures to be individually evaluated for the National Register, and for CEQA purposes, the California Register. Because of inaccuracies in the data, this number was slightly altered during the course of this study based on research and ground truthing in the field. In the end, a total of 47 bridges were identified as having potential to be significant under National Register and California Register criteria (see Table 3).

These represent distinctive examples of their types, the first examples of new bridge types, and bridges types for which all, or nearly all, of the extant examples were individually evaluated in the previous statewide surveys (such as truss bridges, suspension bridges, and tunnels). The remaining bridges are typical, undistinguished examples of common types or bridges that lack integrity due to post-1969 alterations. These were given a Category 5 (ineligible) status without individual evaluation. This screening methodology is consistent with the methodology used in the three earlier statewide bridge surveys, undertaken in 1986-88, 2003-2006, and 2010.

Bridge Types

Bridge designs were highly standardized by the 1965-1974 period. Just six different bridge types make up more than 98 percent of the 5,110 bridges considered for National Register and California Register eligibility. The table below gives the numbers and percentages of the different bridge types seen in this period. Each type is discussed in more detail in Table 1.

Table 1: Bridges considered for National Register eligibility

Bridge type	Number of bridges	Percent of total	Selected for evaluation
A. Concrete box girder	2,062	40.35%	10
B. Concrete slab	887	17.36%	0
C. Culvert (concrete or steel)	833	16.30%	0
D. Concrete T-beam	541	10.59%	0
E. Steel stringer, beam, or girder	362	7.08%	11
F. Conc. stringer, beam, or girder	355	6.95%	1
G. Uncommon bridge types	70	1.37%	25
Total	**5,110**	**100.0%**	**47**

A. Concrete box girder bridges are the most common bridge type constructed in the 1965-1974 period, making up more than two-fifths of the 5,110 bridges examined. These bridges exhibit a high degree of similarity. There is some variety in column designs, including wall piers, single-column bents, and columns with splayed arms. A variety of concrete textures and finishes are also seen on bridge columns. Most of the box girder superstructures are square, with vertical side walls, but a few examples have inward-sloping side walls and rounded bottom corners, giving the girders a lighter and more streamlined appearance. Most of these variations were not considered to be significant. Ten bridges of this type were selected for individual evaluation: four for their unusual column design, one for its distinctive form and five because their span lengths.

   Presently, there are 22 concrete box girder bridges in California that are listed or eligible for inclusion in the National Register. Of these, 13 are contributors to larger properties (such as the Arroyo Seco Parkway) and nine are individually significant. The nine individually significant bridges date from 1934 to 1961, with five being early examples of the type, built before World War II.

B. Concrete slab bridges are widely used where the required spans are so short that the box girder type is not necessary. Their design and construction was routine by the late 1960s and early 1970s, and no concrete slab bridges from this period were identified as potentially significant. At present, there are 20 concrete slab bridges in the state that are either listed in or determined eligible for inclusion in the National Register and are either included in or meet the criteria for inclusion in the California Register. Only four of these are individually significant, with the other 16 being contributors to larger properties. Of the four individually eligible slab bridges, the most recent dates to 1940.

C. Culverts are treated as inherently not significant, as was the case in the earlier statewide bridge inventories. As with concrete slabs, the design of culverts was routine by the late 1960s and no examples from this period have any potential to possess technical or aesthetic significance. Currently, there are only three culverts in California that are listed in or have been determined eligible for the National Register and the California Register. Two are contributors to larger properties, and one is a masonry-faced steel culvert constructed in 1938.

D. Concrete T-beam bridges, like concrete slabs, were built where only short to medium span lengths were required. Long-span concrete bridges constructed in the late 1960s generally are box girders. None of the concrete T-beam bridges examined appear to have any potential for meeting National or California Register eligibility criteria.

   There currently are 60 concrete T-beam bridges in California that are either listed in or eligible for inclusion in the National Register or that meet California Register eligibility criteria. 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.

E. Steel stringer, beam, or girder bridges were constructed throughout California in the late 1960s, but make up a higher proportion of all new bridges in the northern one-third of the state. Long-span steel bridges may be significant under National Register criterion C and California Register Criterion 3, as engineering accomplishments and as distinctive examples of modern bridge aesthetics. Eleven long-span steel girder bridges were selected for individual evaluation. Nine of these are located between Sacramento and the Oregon border, with one in Kern County and one in San Joaquin County. A relatively large number of examples of this bridge type were chosen for individual evaluation because of the difficulty of making distinctions among these bridges without more detailed survey and analysis.

   There currently are 29 bridges of this type in California that have been listed or determined eligible for inclusion in the National Register or have been listed in or determined to meet the eligibility criteria for listing in the California Register. Of these, 20 are contributors to larger properties, including historic roads and railroads. Seven of the nine individually eligible examples date to 1936 or earlier. The other two examples are long-span steel girder structures built in the early 1960s.

F. Concrete stringer, beam, or girder bridges, including precast concrete beams and girders as well as cast-in-place concrete structures, are generally similar in size to concrete T-beam bridges. Only one bridge of this type was selected for individual evaluation for its unusual column design. Only four bridges of this type previously have been determined eligible for National Register listing and that meet the California Register eligibility criteria. All four are early examples of the type, built from 1913 to 1915.

G. Uncommon bridge types, as shown in Table 1, a total of 70 bridges are included in this category. The group includes the 14 different bridge types shown below in Table 2. Each type is briefly discussed following the table. Additionally, while the bridges in this survey are classified as a single type, during the era under study, bridges became increasingly complex. As a result, often times a single bridge may be constructed of multiple bridge types used together to form a cohesive unit. For the purposes of the survey, those multi-part bridges are listed by their most important type. However within the individual evaluation the entire structure is considered and each component described. Twenty-five bridges were selected for evaluation.

Table 2: Uncommon bridge types

Bridge type	Number of bridges	Selected for evaluation
1. Timber stringer, beam, or girder	38	0
2. Tunnel	7	7
3. Steel box girder	3	3
4. Steel truss	6	6
5. Concrete arch	3	0
6. Metal arch	3	2
7. Orthotropic	1	1
8. Steel suspension	2	2
9. Concrete channel beam	1	0
10. Concrete other	1	0
11. Timber truss	1	1
12. Bascule	1	1
13. Wood arch	1	1
14. Concrete Segmental Box girder	1	1
Total	**70**	**25**

1. The 38 timber bridges are all stringer or laminated wood beam structures. None of these were considered potentially significant. There are currently no listed or eligible timber stringer or beam bridges in California (the only listed or eligible timber bridges in the state are trusses).
2. Seven of the tunnels were selected for individual evaluation, since tunnels are an uncommon property type in California. The two tunnels not selected for individual evaluation is part of the Bay Area Rapid Transit (BART) system should be evaluated for National and California Register eligibility as a whole, as described above.
3. The steel box girder is a new bridge type, with the first example in California built in 1966. All three of the steel box girder bridges were selected for individual evaluation. In addition to these three bridges, there are also two steel box girder BART bridges constructed in this period, which were excluded from evaluation as explained above.

4. All five of the steel trusses were selected for individual evaluation. Previous surveys included every extant example of this bridge type, since a high proportion of Californias steel truss bridges have been determined eligible for National Register listing and meet the California Register eligibility criteria and that meet California Register eligibility criteria.
5. None of the three concrete arch bridges were selected for individual evaluation. The concrete arch was a largely obsolete bridge type by the 1960s. Of the nearly 300 extant concrete arch bridges in California, only 14 were constructed in 1960 or later. Of the concrete arches determined eligible for National Register listing, the most recent dates to 1947. Of the three concrete arch bridges constructed in the 1965-1974 period, two are small structures that are not significant as compared to earlier and larger examples of the type, and the other was substantially altered in the 1990s and lacks integrity.
6. Two of the three metal arch bridges were selected for individual evaluation, as this is an uncommon and significant bridge type in California. The one bridge not selected for evaluation is currently being replaced.
7. The only steel orthotropic deck bridge was selected for individual evaluation. This was a new bridge type in the late 1960s, with the states first example constructed in 1967.
8. Both of the suspension bridges were selected for individual evaluation, as this is an uncommon and significant bridge type in California.
9. The concrete channel beam was not selected for individual evaluation. Although this is an uncommon bridge type in California, all of the extant examples are small bridges that lack technical or aesthetic significance.
10. The bridge listed as other in Caltrans bridge database is a pedestrian overcrossing that has no potential to meet National Register criterion C or California Register criterion 3. It was not selected for individual evaluation.
11. The timber truss bridge was selected for individual evaluation, as this is a rare and significant bridge type in California. However, the timber truss is also an obsolete bridge type by the 1960s. Of the listed and eligible timber trusses in California, the most recent dates to 1922.
12. The one bascule bridge was selected for individual evaluation as it is an uncommon and significant bridge type in California.
13. The one wooden arch bridge was selected for individual evaluation as it is an uncommon bridge type.
14. Concrete segmental box girder was a new bridge type that was developed during the early 1970s. The evaluated bridge is the first example constructed in California. Only five other examples of this bridge type exist in the state: three built in the 1990s and the two skyway viaducts sections of the newly-opened East Span of the Oakland Bay Bridge.

Table 3: Bridges chosen for individual evaluation

Bridge No.	County	District	Type	Reason for inclusion
02C0147	Siskiyou	2	steel box girder	new bridge type
02 0156	Siskiyou	2	steel girder	long span
02 0157	Siskiyou	2	concrete girder	long span

Bridge No.	County	District	Type	Reason for inclusion
04 0014	Humboldt	1	steel girder	long span; aesthetics
04 0016L	Humboldt	1	concrete box girder	long span
04 0069	Humboldt	1	steel suspension	rare & significant type
04 0155	Humboldt	1	concrete box girder	long span
04 0225	Humboldt	1	metal arch	rare & significant type
04C0124	Humboldt	1	timber truss	rare type
04C0236	Humboldt	1	steel girder	long span; aesthetics
09C0148	Plumas	2	steel truss	significant type
10C0005	Mendocino	1	steel girder	long span; aesthetics
12 0184	Butte	3	steel girder	long span; aesthetics
12 0188	Butte	3	steel suspension	rare & significant type
12C0199	Butte	3	steel truss	significant type
17 0077	Nevada	3	concrete box girder	design/aesthetics
19 0077	Placer	3	concrete box girder	long span
19C0060	Placer	3	steel truss	long span; aesthetics
24 0004L	Sacramento	3	steel girder	long span; aesthetics
24 0004R	Sacramento	3	steel girder	long span; aesthetics
25C0065	El Dorado	3	conc. seg. box girder	new bridge type
28 0015L	Contra Costa	4	tunnel	significant type
29 0203	San Joaquin	10	steel girder	long span
32 0018	Tuolumne	10	steel girder	long span
33C0147	Alameda	4	steel bascule	significant type
33C0202	Alameda	4	concrete girder	design/aesthetics
35 0173L	San Mateo	4	tunnel	significant type
35 0246F	San Mateo	4	tunnel	significant type
36C0102	Santa Cruz	5	concrete box girder	long span; aesthetics
38C0170	Stanislaus	10	steel truss	significant type
40 0048	Mariposa	10	concrete box girder	long span
44C0064	Monterey	5	tunnel	significant type
50 0279	Kern	6	steel girder	long span; aesthetics
53C0551L	Los Angeles	7	steel box girder	new bridge type
53C0551R	Los Angeles	7	steel box girder	new bridge type
53C0556	Los Angeles	7	metal arch	rare & significant type
53C0899R	Los Angeles	7	tunnel	significant type
53C0900R	Los Angeles	7	tunnel	significant type
53C0901R	Los Angeles	7	tunnel	significant type
53C1560	Los Angeles	7	wooden arch	rare type
53 2639	Los Angeles	7	steel truss	significant type
54C0192	San Bernardino	8	steel truss	significant type

Bridge No.	County	District	Type	Reason for inclusion
57 0619	San Diego	11	concrete box girder	design/aesthetics
57 0676	San Diego	11	concrete box girder	design/aesthetics
57 0678	San Diego	11	concrete box girder	design/aesthetics
57 0762	San Diego	11	concrete box girder	design/aesthetics
57 0857	San Diego	11	orthotropic deck	new bridge type

Following screening Caltrans staff completed field surveys of the 47 bridges. Field survey found that these structures generally retained good integrity, however historical research clarified that many did not possess sufficient engineering, aesthetic, or historical significance based on comparative analysis using the established historic contexts. Based on the Caltrans screening process, Caltrans staff did not formally evaluate the remaining structures from this period because they lacked significance and are not eligible for inclusion in the National Register and do not meet California Register eligibility criteria.

IV. Public Participation

In mid-November and early December 2014, Caltrans sent letters to the various public agencies and the historical societies of each region in which a bridge to be individually evaluated is located, informing them of the statewide bridge inventory update and inviting their comments. A total of 47 letters were sent, including those to one state agency, eight cities, 13 counties and 25 historical societies and preservation groups. The following organizations were contacted:

Agencies

- Alameda County Public Works Agency
- Butte County Public Works
- California Department of Water Resources Division of Engineering
- City of Long Beach Department of Public Works
- City of Los Angeles Department of Public Works
- City of Placerville City Engineer
- City of Pomona Public Works Department
- City of Redlands Municipal Utilities / Public Works Commission
- City of Santa Cruz Transportation and Public Works Commission
- City of Whittier Department of Public Works
- El Dorado County Transportation Division
- Humboldt County Department of Public Works
- Mendocino County Department of Transportation
- Monterey City Public Works
- Monterey County Public Works
- Los Angeles County Department of Public Works

- Placer County Public Works
- Plumas County Department of Public Works
- Santa Barbara County Public Works Department
- Santa Cruz County Department of Public Works
- Siskiyou County Department of Public Works
- Stanislaus County Public Works

Interest Groups

- Alameda County Historical Society
- Associated Historical Societies of Los Angeles County
- Butte County Historical Society
- Bridgehunter.com
- California Historical Society
- California Preservation Foundation
- El Dorado County Historical Society/Fountain & Tallman Museum
- Historic Bridge Foundation
- HistoricBridges.org
- Humboldt County Historical Society
- Los Angeles City Historical Society
- Los Angeles Conservancy
- Mendocino County Historical Society
- Monterey County Historical Society
- National Society for the Preservation of Covered Bridges
- National Trust Regional Office - Los Angeles Field Office
- National Trust Regional Office - San Francisco Field Office
- Placer County Historical Society
- Plumas County Historical Society
- Plumas County Museum
- San Bernardino County Historical Society
- San Pedro Bay Historical Society
- Santa Barbara Historical Museum
- Save Our Heritage Organisation
- Siskiyou County Historical Society

Caltrans received responses from two groups: the El Dorado County Historical Society/Fountain & Tallman Museum and HistoricBridges.org. On November 29, 2014, the El Dorado County Historical Society/Fountain & Tallman Museum responded by letter noting that the museum was unable to locate Bridge 25C0065, the one bridge in its area that was to be evaluated individually. Caltrans responded on December 23, 2014, by providing additional information regarding the bridge as well as a photograph. The webmaster for HistoricBridges.org responded on November 19, 2014, that the list in general seems to cover the structure types that are rare and dwindling in population (from this or any time period) including trusses, arches, suspension, and movable types. No other responses were received.

V. Registration Guidelines[1]

Driven by suburban development, increased interstate commerce and national security requirements, Californias freeway system exploded in size after World War II. With the signing of the Federal-Aid Highway Act of 1956, the Division of Highways had the funding necessary to upgrade various highways to full freeway status. A significant portion of states freeways were completed during the 1965-1974 time period. This required the construction of thousands of grade separations across the state. As a result, the number of new bridges grew in direct relation to the miles paved. Because of the tremendous need for bridges, designers relied heavily on standardized bridge plans. By far the favored bridge type in post-war California was the concrete box girder, accounting for nearly half the bridges built. A significant portion of states freeway s were completed during the 1965-1974 time period. As the decades passed, right-of-way issues and aesthetic considerations pushed designers to incorporate innovative approaches to solving engineering problems. In order to meet the challenges, three new bridge technologies, the orthotropic steel deck, steel box girder and segmental concrete box girder, were added to the bridge engineers repertoire during the mid 1960s to early 1970s.

Bridges in California typically are evaluated as significant under two National Register criteria: Criterion A (and Criterion 1), for their role in local or regional history, especially their contribution as links within the transportation system, and Criterion C (and Criterion 3), relating to significance in the field of engineering. Bridges are infrequently, if ever, evaluated as significant under Criteria B or D. Important historic persons associated with bridges usually are involved with bridge design, thus making the bridges significant under the work of a master clause of Criterion C (and Criterion 3). Historic structures, such as bridges, occasionally can be recognized for the important information they yield, or might yield, regarding historic construction materials or technologies, thus making them significant under Criterion D. Bridges in California built during this period, however, are extremely well documented, so they are not themselves principal sources of important information in this regard.

Under National Register Criterion A and California Register Criterion 1, California highway bridges constructed between 1965 and 1974 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 fact is done with certain principles in mind. Bridges, like other infrastructure, are inherently vital to communities as they are critical elements of city or regional planning, and they considerably impact communication

[1] Much of this section was excerpted from JRP Historical Consulting Services, *Roadway Bridges of California, 1936 to 1959: Historic Context Statement* (Sacramento, CA: California Department of Transportation, 2003).

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 with an important historic context; otherwise virtually any bridge would be shown to be important in this way. To be eligible for inclusion in the National Register or to meet the eligibility criteria for the California Register, resource types such as bridges and other 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. In this analysis, for example, a bridge that is the first in its location would be inherently more significant than one that is the second or third constructed at that location.

Under National Register Criterion C (and California Register Criterion 3), California highway bridges constructed between 1965 and 1974 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 during the 1970s, 1980s, and 1990s. While bridge types and inventory methods varied from state to state, the many historic bridge inventories generally have established salient attributes that help define significance of structures within the field of bridge engineering and design. These attributes are as follows:

- 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.

These attributes are weighed in conjunction with evaluation of a bridges type, period, or method of construction and its association with potentially significant engineers and/or builders. In order to meet National or California eligibility criteria, a bridge must have both historical or engineering significance as well as historic integrity. 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.[2] Those factors are location, design, setting, workmanship, materials, feeling, and association.
The following section provides guidelines for identifying and evaluating bridge types and construction methods that were either new or innovative during the period 1965 to 1974: orthotropic steel deck, steel box girder and segmental concrete box girder. As these are issues of bridge engineering and design, this guidance will be useful in addressing significance under National Register Criterion C and California Register Criterion 3.

VI. Historic Overview of New Bridge Types

Typically new bridge types and construction methods have specific time periods in which they were developed, initially implemented, and used in wider application. They all represent a bridge engineering innovation that permitted longer spans, greater loads, quicker construction, and/or cost savings. Many also resulted in bridges with new aesthetic qualities. As is true with any resource type, many bridges are associated with the new or innovative bridge types and construction techniques of the period, but not all are or will meet National or California Register eligibility criteria.

Orthotropic Steel Deck

An orthotropic steel deck consists of a thin steel deck plate stiffened by the addition of ribs, or channels, running longitudinally (in the direction of the decks span) on the decks underside. Rather than a full structural system, orthotropic steel deck bridges incorporate an orthotropic deck in conjunction within another superstructure arrangement. The orthotropic steel deck works to improve certain aspects of the chosen superstructure. They are most often used in combination with plate girder or box girder bridges, but also have been incorporated into truss, suspension and cable-stayed bridges.[3] The orthotropic steel deck bridge is a rare bridge type in California. Of the nearly 25,000 bridges in the state, only eight bridges are classified as orthotropic steel deck. There are a few other bridges that utilize orthotropic steel decks; however, they are classified as different types. Four of the eight examples were erected in the late 1960s; the other examples were built in the 1990s. Two of the four orthotropic deck bridges dating to the 1965-1974 period are evaluated as part of the current effort.

The major advantage of the orthotropic deck is that it acts as an integral part of the overall structural system, rather than simply being dead load (the weight of the structure itself) that needs to be transferred to the floor beams, girders, and ultimately to the piers and foundations. The orthotropic deck acts as the top flange of a steel beam or box girder. As the deck is much larger than the top flange of a typical beam or girder, it contributes significantly to the strength of the bridge superstructure and therefore its ability to span longer distances. A bridge

[2] As policy, Caltrans uses the National Register integrity guidelines when assessing integrity for meeting California Register eligibility criteria as well.
[3] Federal Highway Administration, *Steel Bridge Design Handbook: Bridge Deck Design*, by Brandon Chavel, Publication No. FHWA-IF-12-052 Vol. 17 (Washington, D.C., 2012), 28.

superstructure of monolithic reinforced concrete acts in a similar way, but achieving the same effect with steel results in a much lighter structure. The substantial reduction in dead load allows for longer spans and in turn reduces the required size and strength of the piers and foundations, resulting in the use of less material overall and therefore lower cost. The cost savings, however, are partially offset by the cost of fabrication of the orthotropic deck, due to the extensive welding required. The additional strength provided by the orthotropic deck also allows for a shallower superstructure depth and therefore long spans with very slender profiles.[4] This slender profile, with the roadway seemingly carried on a thin ribbon of steel, was (and remains) a much admired quality in modern bridge design.

There are two basic rib systems used with orthotropic steel decks; one uses a series of evenly spaced, three-sided steel channels welded to the decks underside, and the other uses one of many forms of I-beam on the underside. In both cases the top flanges of the beams/channels are integrated with the steel deck, increasing the decks stiffness, and effectively tying the beams/channels into one unit. A thin layer of asphalt or concrete is applied on the top of the deck to provide a smooth driving surface (see Figure 1.)[5]

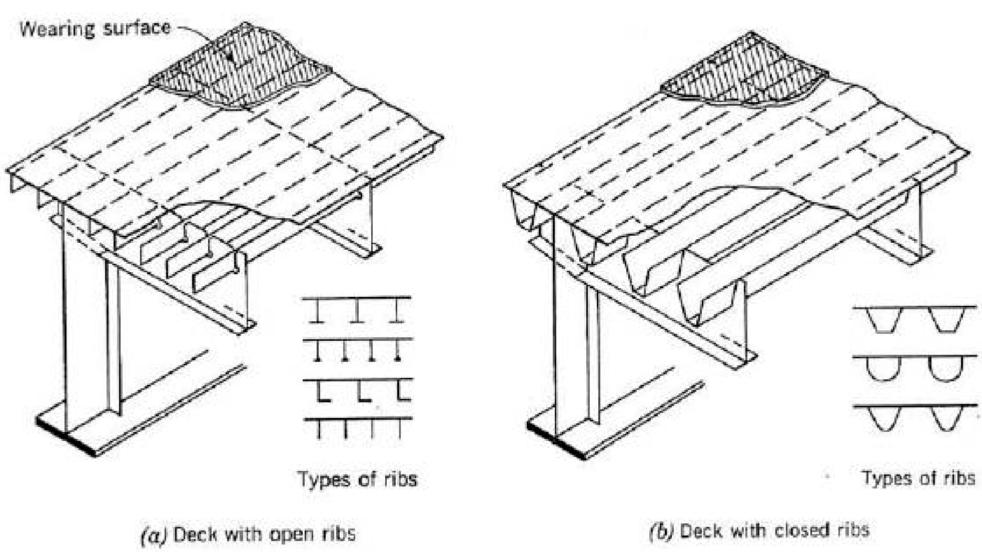

Figure 1. Typical orthotropic deck types. Source: Steel Bridge Design Handbook: Bridge Deck Design (taken from AISC 16).

The modern orthotropic steel deck bridge has its origin in experiments undertaken in the 1930s by engineers working with the American Institute of Steel Construction who attempted to reduce dead weight on highway bridges. They called the system battle -deck flooring because it was

[4] M.S. Troitsky, *Orthotropic Bridges: Theory and Design,* (Cleveland, OH: James F. Lincoln Arc Welding Foundation, 1967) 21-26 and *Design Manual for Orthotropic Steel Plate Deck Bridges*, New York: American Institute of Steel Construction, 1963, 1-2.

[5] Federal Highway Administration, *Steel Bridge Design Handbook*, and *Design Manual for Orthotropic Steel Plate Deck Bridges*, 1-2.

hoped to be as strong as a battleship. Several scale models were built and tested under various loads; ultimately it was found that, while somewhat successful, the new system did not function as hoped. It was, however, found to be an effective deck system for moveable bridges as well as replacement decks for existing bridges.[6]

At the same time the Americans were testing the battle-deck system, German engineers were working on similar experiments with steel plate decks stiffened in both directions with shallow ribbed grid-work. Because of the significant labor costs in welding ribs to the deck, it was realized that steel decks were best used on long-span bridges. The first steel plate deck bridge, the Kurpfalz Bridge over the Neckar River in Mannheim, Germany, was built in 1950. German engineers continued to modify the steel deck scheme throughout the 1950s, altering the design to one that more closely resembles those of current day. By 1960, at least 40 steel deck bridges had been built around Germany. It was not until 1964 that the first such bridge was completed in North America: the Port Mann Bridge in Vancouver, Canada.[7]

When preparing their designs for their first orthotropic steel deck bridge, California bridge engineers looked to Germany for their engineering experience with the technology. E. R. Foley, Chief of the Division of Bay Toll Crossings, traveled to West Germany in the spring of 1964 to consult with that countrys leading experts on the design of orthotropic deck bridges, and to have those German experts review the design for the San Mateo-Hayward Bridge (35 0054).[8] The first orthotropic steel deck bridge built in California is a rather simple bridge, located within the I-580 and I-680 interchange, in Alameda County, near the City of Dublin, California . The four span bridge (33 0371G), which was completed in 1965, has two spans of 75 feet and two of 85 feet. It was designed with two completely different rib and deck systems as well as two different wearing surfaces. The Division of Highways (the precursor agency of the Department of Transportation) constructed the bridge as an experiment to check the accuracy of the design software as well as deck wearing surfaces.[9] A second experimental bridge, in actuality just the two outside lanes of a wider bridge, Ulatis Creek Bridge (23 0052R), was constructed by the Division of Bay Toll Crossings in 1966, again, to test as a deck wearing surfaces. This bridge was a five span bridge, each span measuring 26 feet. What was learned at these two bridges was used in the design and construction of much larger structures: the 1967 San Mateo-Hayward and the 1969 San Diego-Coronado (57 0857) Bridges.

When it opened in 1967, the 750-foot main span of the San Mateo-Hayward Bridge was the longest bridge span in California that was not a suspension or cantilever truss structure, and it retains that distinction to the present. It was also the longest steel girder span in the United States

[6] Alfred R. Mangus, *The California Orthotropic Steel Bridges 1964-2004* (manuscript on file at the California Department of Transportation Library and History center, 2004), 1.

[7] Troitsky, *Design Manual for Orthotropic Steel Plate Deck Bridges*, 3-5.

[8] San Mateo -Hayward Bridge, *California Highways and Public Works*, September-October 1964, 65 and San Mateo-Hayward Bridge, *San Francisco Chronicle*, 6 May 1964, 22.

[9] Mangus, Alfred R. and California Department of Public Works, *Surfacing California's First Orthotropic Deck Plate Bridge*, ed. B. Gunderson, (Sacramento, CA: Division of Highways, Bridge Department 1967), 2.

in the mid-1960s.[10] The bridges orthotropic deck was one of the earliest uses of this new technology in the country, and the 5,500-foot length of the orthotropic deck made it one of the worlds largest applications of this technology at the time. In 1968, the new bridge received the Outstanding Civil Engineering Achievement Award from the American Society of Civil Engineers.[11] More recently, the original concrete deck of the Golden Gate Bridge was replaced by a steel orthotropic deck, which significantly reduced the dead load of the superstructure supported by the suspension cables. The new East Span of the San Francisco Oakland Bay Bridge also incorporated orthotropic steel deck technology. Today California is home to nearly half of all the orthotropic deck bridges in the country, more than any other state.[12]

Steel Box Girder

Steel box girder bridges are configured with hollow box-shaped beams, either in U or trapezoidal-shaped section(s), as the superstructure. Bridges can be as simple as a single girder span, but often incorporate multiple boxes tied together. The fabricated girders are composed of a bottom flange, two webs and two top flanges, creating a box or open cell configuration (see Figure 2). Typically, the steel box is matched with a concrete deck closing the cell section to form a continuous unit. For longer spans orthotropic decks are often used. The ends of individual box girders are closed with a solid-plate diaphragm. As needed, internal arrangements may include struts and diagonals, acting as a type of truss work, as well as solid plate diaphragms as vertical stiffeners. [13]

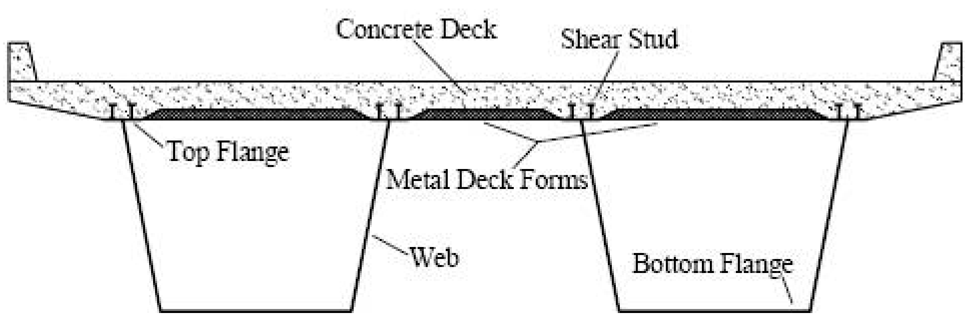

Figure 2. Typical Cross Section of Trapezoidal Box Girder System. Source: Design Guidelines for Steel Trapezoidal Box girder Systems.

Steel box girder bridges have several advantages to other structure types. The smooth girder shape provides a sleek appearance much admired in modern bridge design. Because the superstructure is enclosed, there are few places for debris to collect, lowering maintenance

[10] Building the Bays New Bridge, *San Francisco Chronicle*, 27 October 1965, 4.
[11] San Mateo Bridge Gets an Award, *San Francisco Chronicle*, 17 July 1968, 6.
[12] There are approximately 50 orthotropic deck bridges in the US, of those California maintains 17, see Alfred R. Mangus, *Orthotropic Bridges in the U.S.A. Built from 1960 to 2003* (2004), http://orthotropic-bridge.org/2004BridgePages/Pages/USA.htm (accessed October 2014).
[13] Texas Department of Transportation, *Design Guidelines for Steel Trapezoidal Box Girder Systems*, by Todd Helwig, Joseph Yura, Reagan Herman, Eric Williamson, and Dawei Li, 2007, 2-3.

requirements. Most importantly, particularly in areas of constrained right of way, steel box girders are ideal for use in curved structures because of their strong torsional stiffness. They generally range 100 to 1000 times torsionally superior than an equivalent I-shaped section. The downside of steel box girder bridges is the high expense of steel.[14]

The cellular, box-shaped superstructure design has its roots in the work of the French engineer Eugène Freyssinet, who pioneered the concrete box girder during the 1920s. The earliest examples of concrete box girder structures in the United States date to the 1930s. Advances in higher strength steels and welding technologies developed during the 1940s allowed engineers to experiment with similar designs in steel in the 1950s. Because of the need to rebuild quickly following World War II, many of the earliest steel box girder bridges are found in Europe, England in particular. The first example erected in the United States was in 1951, across the Snoqualmie River about twenty miles east of Seattle, Washington. While steel box girder bridges have several advantages over concrete, be that aesthetically or as more efficient use of structural steel, they are also expensive. Early on some transportation departments had concerns about the ability to inspect the girders as well as potential problems with deck replacement. Because of this, steel box girder bridges were not universally accepted across the United States.[15]

There are relatively few steel box girder bridges in California. Of the 25,000 bridges across the state there are only 16 with a steel box girder superstructure. The earliest example is a medium span over Indian Creek, within the community of Happy Camp, in Siskiyou County. Indian Creek Bridge (2C0147) was completed in 1966; the superstructure is composed of six fairly small steel box girders, rather than a smaller number of larger boxes, which became the more common steel box girder design in California. That same year the Klamath River Bridge (04 0069) also was completed using a combination of steel box girder superstructure and a suspended span. Other early bridges of this type include a pair (28C0315 and 28C0316) erected in 1968, over MacDonald Avenue, in Richmond, as part of the Bay Area Rapid Transit system (BART).[16] Three other steel box girder bridges were built in the late 1960s and early 1970s. Two of these were evaluated as part of this effort. Of the remaining six, three were constructed in the 1980s, two in the 1990s and the most recent, the Self Anchored Suspension span of the San Francisco-Oakland Bay Bridge (33 0025), which opened in 2013. The 1981 Dumbarton Bridge (35 0038), crossing the San Francisco Bay and connecting Fremont with Menlo Park, was the first long span steel box girder bridge built by the California Department of Transportation.

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[14] *Design Guidelines for Steel Trapezoidal Box Girder Systems*, 1.

[15] *Design Guidelines for Steel Trapezoidal Box Girder System;* Jessica B. Feldman, Myra L. Frank & Associates, Inc., *Caltrans Historic Bridges Inventory Update: Concrete Box Girder Bridges* , with revisions by Andy Hope, Sacramento, CA: California Department of Transportation 2004, 5-6; and AASHTO/NBSA Steel Bridge Collaboration, *G 13.1 Guidelines for Steel Girder Bridge Analysis*. (Washington, D.C.: AASHTO/NSBA Steel Bridge Collaboration, 2011), .2-1.

[16] The BART bridges were not evaluated as part of this effort because the BART system as a whole should be evaluated for its eligibility for inclusion in the National and California Registers.

Segmental Concrete Box Girder

Segmental concrete box girder bridges are structures composed of a number of short box units attached together, end on end, and post-tensioned to complete the superstructure (see Figure 3). In cross-section they are similar to the standard concrete box girder. It is in their construction methodology that they most differ. Rather than being composed of a complete box for the length of the span, the distance crossed is made up of multiple transverse segments strung together with cables, the joints bonded with concrete or high-strength epoxy.[17]

Such bridges can be precast or cast-in-place. Precasting industrializes the process allowing for easy quality control as well as reuse of the formwork. Surface finishing can be performed at ground level rather than on scaffolding on site. Segments are cast in short sections easing transportation over distances. The units also permit rapid assembly and with limited disruption of the traffic below. Segmental concrete box girder bridges can be erected via cantilevering and do not require falsework or centering, which is particularly helpful when environmental factors under the span complicate accessibility.

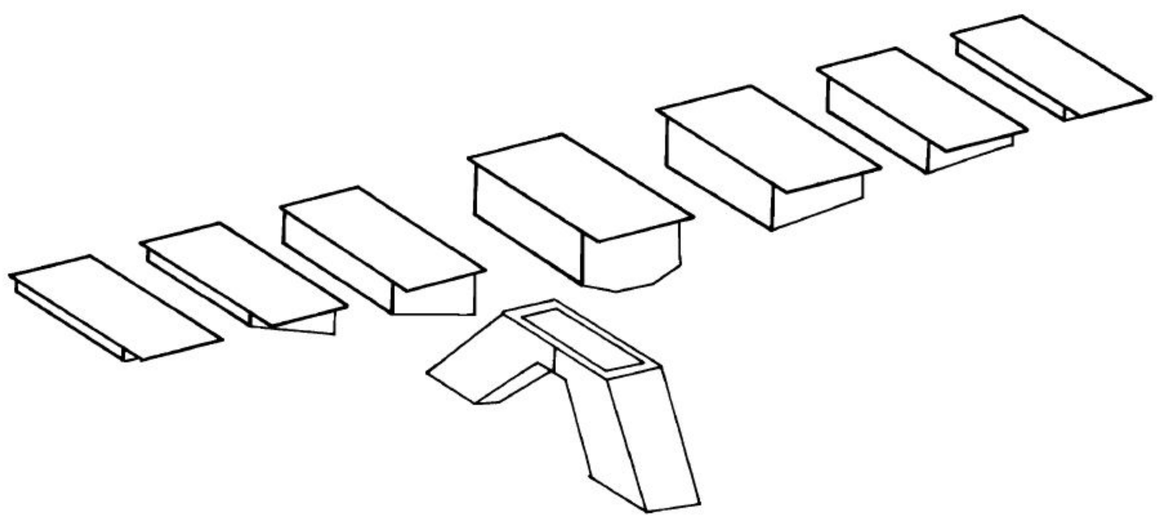

Figure 3. Typical Pattern for a Segmental Box Girder Superstructure. Source: Long Span Prestressed Concrete Bridges of Segmental Construction: State of the Art.

The cast-in-place construction method removes the need for transportation required with precasting complete beams, but necessitates the erection of formwork onsite. Forms are connected to the previously installed segment followed by the installation of reinforcing steel and concrete. Unlike precast segments, cast-in-place construction allows for continuous

[17] Charles Redfield, Chuck Seim and T.Y. Lin, Segmental Construction for Concrete and Steel Bridges that Incorporate Posttensioning, in *Segmental and System Bridge Construction; Concrete Box Girder Design* (Washington D.C.: Transportation Research Board, 1982), 18.

reinforcement in the superstructure. Like precast components, cast-in-place segments can be constructed rapidly using cantilever methods and without falsework.

The earliest segmental concrete box girder bridges were constructed in the 1950s. However, because they are most economical when used for longer spans, they found limited early success in freeway applications. Most of the early interstate bridges in California were short or medium span structures, and as a result, segmental concrete box girder bridges could not compete with the more economical standardized concrete box girder designs. In 1967, however, a special American Association of State Highway Officials (AASHO) Traffic Safety Committee called for the elimination of bridge piers placed adjacent to the outside shoulders of highways. As a result of this policy, during the 1960s there was increasing demand for longer bridges, and segmental concrete box girders were the primary choice of many state transportation departments.[18]

As with concrete box girder construction, Eugène Freyssinet also pioneered the modern use of precast segmental design. The Luzancy Bridge over the Marne River, France, was the first bridge constructed using precast segmental construction techniques, built between 1941 and 1946 (completed following World War II). Although not a segmental box girder bridge, the techniques established there led the way for their development. Completed in 1962, Jean Muller, a protégé of Freyssinet, designed the first true segmental concrete box girder bridge for the Choisy-le-Roi Bridge, north of Paris, over the River Seine. The John F. Kennedy Memorial Causeway in Corpus Christi, Texas, finished in 1973, was the first such bridge erected in the United States.[19]

California designers were quick to employ segmental concrete box girder construction, particularly the cast-in-place variety. As early as 1969, the Division of Highways was planning the Pine Valley Creek Bridge (57 0692R/L), 40 miles east of San Diego. When completed in 1974, it was the first cast-in-place cantilevered segmental concrete box girder bridge in the U.S. The structure, which consisted of two parallel trapezoidal box girders, was also likely the longest box girder span in the country with a main span of 450 feet and a total length of 1716 feet. Site restrictions, economics and ecological considerations influenced the design. Building the bridge segment by segment, and cantilevering construction of the superstructure from the piers, allowed contractors to erect the structure with limited work from the canyon floor some 300 feet below the deck. The result was protection of sensitive habitat and cost savings. [20]

[18] G. C. Lacey and J. E. Breen, *Long Span Prestressed Concrete Bridges of Segmental Construction: State of the Art*, (Austin, TX: Center for Highway Research, 1969), 1.

[19] The JFK Memorial Causeway utilized precast segmental concrete box girder construction. K. Koseki and J. E. Breen, *Exploratory Study of Shear Strength of Joints for Precast Segmental Bridges* (Austin, TX: Center for Highway Research, 1983), 1; Jean M. Muller, "Aesthetics and Concrete Segmental Bridges," in *Bridge Aesthetics Around the World* (Washington, D.C: Transportation Research Board, National Research Council, 1991) 18-19; and Post-Tensioning Institute, Post-Tensioning Manual (Phoenix, AZ: Post-Tensioning Institute, 1987), 30-33.

[20] Juan A. Murillo, "Modern Bridge Construction and Engineering Services," from *Managing Innovation: Cases from the Services Industries*, eds. Bruce R. Guile, James Brian Quinn (Washington, D.C.: National Academies, 1988), 170; Walter Podolny Jr. and Jean M. Muller, *Construction and Design of Prestressed Concrete Segmental Bridges* (New York: John Wiley & Sons, 1982), 27; and Post-Tensioning Institute, 34.

There is one other bridge classified as a precast segmental concrete box girder structure: the Schnell School Road Underpass (25C0065), erected by the City of Placerville in 1970 to support a rail line, supposedly the oldest in California. However, rather than the transverse unit type that defines the bridge type, the span was composed of four individual longitudinal precast segments ganged together to form a single box girder. This design is most similar to the early designs of Freyssinet, rather than those of Muller. While it was constructed in segments at an offsite facility, it was not completed in the way that defined the bridge type. It is more closely associated with earlier concrete prestressed and box girder designs.

Segmental construction has steadily increased since the completion of the John F. Kennedy Memorial Causeway and the Pine Valley Creek Bridge. The cast-in-place variety is the most common type in the state. While the benefits of precast segmental construction are many, there has been trepidation utilizing them in seismic zones such as California. No precast segmental concrete box girder bridges were identified as having been constructed within 1965-1974 period. Several such bridges recently have been erected in California including the 2009 South Fork Eel River Bridge (10 0299), the 2009 Folsom Dam Bridge (no number), and the skyway of the San Francisco-Oakland Bay Bridge (33 0025) and Devils Slide Bridges (35 0331R/L) , both opened in 2013.

VII. Conclusion

Of the 47 structures identified for individual evaluation, Caltrans has concluded that 11 are eligible for inclusion in the National Register and appear eligible for inclusion on the California Register. Appendix A contains the DPR 523 forms for these bridges. Caltrans has assigned the 11 bridges listed below a Caltrans National Register status designation of Category 2 (determined eligible for the National Register) in the Statewide Historic Bridge Inventory.

Table 4: Bridges determined eligible for the National Register and meet California Register eligibility criteria

Bridge Number	County	District	Bridge Type	Criterion; Reason	Period/Level of Significance
02C0147	Siskiyou	2	Steel box girder	C/3; New bridge type	1966/State
04 0069	Humboldt	1	Steel suspension	C/3; rare & significant type	1966/State
04 0155	Humboldt	1	Concrete box girder	C/3; long span	1969/State
19C0060	Placer	3	Steel Truss	C/3; significant type	1972/State
33C0147	Alameda	4	Steel bascule	C/3; significant type	1974/State

33C0202	Alameda	4	Concrete girder	C/3; design/ aesthetics	1966/State
Bridge Number	County	District	Bridge Type	Criterion; Reason	Period/Level of Significance
53C0551L	Los Angeles	7	Steel box girder	C/3; new bridge type	1969/State
53C0551R	Los Angeles	7	Steel box girder	C/3; new bridge type	1969/State
57 0619	San Diego	11	Concrete box girder	C/3; design/ aesthetics	1970/State
57 0762	San Diego	11	Concrete box girder	C/3; design/ aesthetics	1971/State
57 0857	San Diego	11	Orthotropic deck	C/3; new bridge type	1969/State

Two structures, bridges 12 0188 and 12C0199, were identified as part of a larger property that has the potential to be eligible for inclusion on the National Register as well as the California Register. Caltrans concluded that both of these bridges are not individually significant under any of the National Register or California Register criteria; however they may contribute the Oroville Dam Project, a larger resource that appears to have the potential significance under both National Register Criteria A and C of the National Register and California Register Criteria 1 and 3. A determination of eligibility for the larger resource is outside the scope of this survey. Appendix B contains the DPR 523 forms for these structures. Caltrans has assigned these bridges a Caltrans National Register status designation of Category 4 (status undetermined, requires further research) in the Statewide Historic Bridge Inventory. They are listed below:

Table 5: Individually ineligible bridges that are part of the potentially significant Oroville Dam

Bridge No.	County	District	Bridge Type
12 0188	Butte	3	steel suspension
12C0199	Butte	3	steel truss

Caltrans has determined that the 34 bridges listed in Table 6 below are not eligible for inclusion in the National Register and do not appear eligible for inclusion in the California Register under any criteria. Appendix C contains the DPR 523 forms for these structures. Caltrans has assigned these bridges a Caltrans National Register status designation of Category 5 (determined not eligible for the National Register) in the Statewide Historic Bridge Inventory.

Table 6: Bridges determined ineligible for the National Register and do not meet California Register eligibility criteria

Bridge No.	County	District	Bridge Type
02 0156	Siskiyou	2	steel girder
02 0157	Siskiyou	2	concrete girder
04 0014	Humboldt	1	steel girder
04 0016L	Humboldt	1	concrete box girder
04 0225	Humboldt	1	metal arch
04C0124	Humboldt	1	timber truss
04C0236	Humboldt	1	steel girder
09C0148	Plumas	2	steel truss
10C0005	Mendocino	1	steel girder
12 0184	Butte	3	steel girder
17 0077	Nevada	3	concrete box girder
19 0077	Placer	3	concrete box girder
24 0004L	Sacramento	3	steel girder
24 0004R	Sacramento	3	steel girder
25C0065	El Dorado	3	conc. seg. box girder
28 0015L	Contra Costa	4	tunnel
29 0203	San Joaquin	10	steel girder
32 0018	Tuolumne	10	steel girder
35 0173L	San Mateo	4	tunnel
35 0246F	San Mateo	4	tunnel
36C0102	Santa Cruz	5	concrete box girder
38C0170	Stanislaus	10	steel truss
40 0048	Mariposa	10	concrete box girder
44C0064	Monterey	5	tunnel
50 0279	Kern	6	steel girder
53C0556	Los Angeles	7	metal arch

Bridge No.	County	District	Bridge Type
53C0899R	Los Angeles	7	tunnel
53C0900R	Los Angeles	7	tunnel
53C0901R	Los Angeles	7	tunnel
53C1560	Los Angeles	7	wooden arch
53 2639	Los Angeles	7	steel truss
54C0192	San Bernardino	8	steel truss
57 0676	San Diego	11	concrete box girder
57 0678	San Diego	11	concrete box girder

VIII. Preparers Qualif ications

Qualifications of all Caltrans Professionally Qualified Staff (PQS) are on file with the Cultural Studies Office, Division of Environmental Analysis, Caltrans.

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Attachments:

DPR 523 Forms

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code Reviewer Date

 ***Resource Name or #** Bridge 02 0156

P1. Other Identifier: Klamath River Bridge (Lyle H. Davis Memorial Bridge)

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County:** Siskiyou
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad:** Bark Shanty Gulch **Date:** **T** ; **R** ; **¼ of** **¼ of Sec** **;** M.D. **B.M.**
c. Address: n/a City: Zip:
d. UTM: Zone: 10 ; mE/ mN (G.P.S.)
e. Other Locational Data: Elevation:
The Klamath River Bridge is located in Siskiyou County on State Route 96 at post mile 5.08.

***P3a. Description:**
The Klamath River Bridge (a.k.a. Lyle H. Davis Memorial Bridge) is located in Siskiyou County on US 96, a route that runs through both the Klamath and Six Rivers National Forests, in the Pacific Coast Ranges. The bridge carries one lane of traffic in each direction. Bridge 02 0156 is a long span steel girder structure, 904 feet in length that crosses the Klamath River at a skew of 99 degrees. The bridge has four spans with the main span measuring 225 feet in length. (See Continuation Sheet, page 3)

***P3b. Resource Attributes:** HP 19. Bridge
***P4. Resources Present:** ☐Building ☒Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5a. Photo or Drawing

P5b. Description of Photo:
View looking north,
June 4, 2014

***P6. Date Constructed/Age and Sources:** ☒Historic ☐Prehistoric ☐Both
1970, Caltrans Bridge Files

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

***P8. Recorded by:**
Janice Calpo
Dept. of Transportation
1120 N Street
Sacramento, CA 95814

***P9. Date Recorded:**
October 1, 2014

***P10. Survey Type:**
Intensive

***P11. Report Citation:**
Helen Blackmore, Janice Calpo, Lauren Clementino and Noah M. Stewart with contributions from Andy Hope, *Historic Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2015 Update* (California Department of Transportation, Sacramento, 2015).

***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):

Primary #
HRI#

BUILDING, STRUCTURE, AND OBJECT RECORD

*NRHP Status

***Resource Name or #** Bridge 02 0156

B1. Historic Name:

B2. Common Name: Klamath River Bridge (Lyle H. Davis Memorial Bridge)

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

***B5. Architectural Style:** Modern

***B6. Construction History:**

The bridge was built in 1970, and in 1990 new guard railing was installed at all four corners of the bridge at its approaches. The old Type 9-11 curved end sections were replaced with a concrete end post.

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

***B8. Related Features:**

B9a. Architect: E. G. Klein, Bridge Department, California Division of Highways

b. Builder: Dillingham Construction Corp.

***B10. Significance: Theme:** N/A **Area:** N/A

Period of Significance: N/A **Property Type:** N/A **Applicable Criteria:** N/A

The Klamath River Bridge was constructed by Dillingham Construction Corp. It was one of the many highway improvements carried out during the late 1960s and 1970s. Bridge 02-0156 is not significant under National Register of Historic Places (National Register) Criterion A or California Register of Historical Resources (California Register) Criterion 1 for its association with the development of the highway network through the region. In addition, the bridge is not associated with other events that would make it significant at the national, state, or local level under National Register Criterion A or California Register Criterion 1. The bridge was dedicated to Lyle H. Davis in 1974, who died March 13, 1974, operating heavy equipment while pioneering a new road on Route 96 near Windy Point between Orleans and Somes Bar. Lyle H. Davis did not make a significant contribution to history at the local, state, or national level. Klamath River Bridge it is not associated with the lives of persons significant in the past and is not significant under National Register Criterion B or California Register Criterion 2.

This structure is one of over 500 bridges of its type constructed between 1965 and 1974. Prior to this, there were more than 1,800 steel girder bridges in the State of California. The fabrication, transportation, and erection of large steel girder bridges was not a significant achievement in the state by the time the Klamath River Bridge was constructed in 1970. By the early 1970s, only 10% of all new bridges in the state were erected in steel. Steel girder bridges had their heyday in the 1930s, when they accounted for one third of bridges constructed. (See Continuation Sheet, page 3)

B11. Additional Resource Attributes:

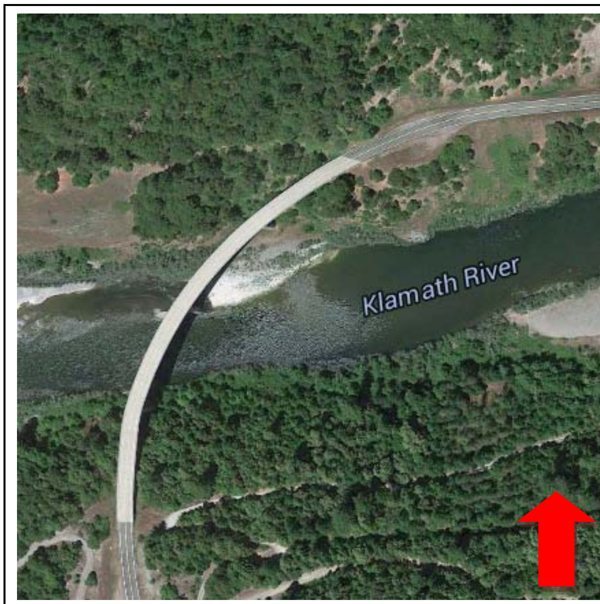
***B12. References:** (See Continuation Sheet, page 3)

B13. Remarks:

***B14. Evaluator:**
Helen Blackmore
California Department of Transportation

***Date of Evaluation:**
October 1, 2014

(This space reserved for official comments.)



***P3a. Description (continued):**

By the 1950s, steel girder bridge construction had dropped to 20% of new bridges erected throughout the state. As postwar traffic demands required wider roads, steel bridges proved less cost effective and the majority of new bridges were constructed in concrete.

The two continuous four-span curved welded steel plate girders have a composite cast in place reinforced concrete deck on seat abutments and reinforced concrete single column piers. Abutment 1 is founded on driven steel H-piles, bents 2 and 4 are on a reinforced concrete pile shaft, bent 3 and abutment 5 are on cast- in-drilled-hole reinforced concrete piles. The superstructure has a hinge on each side of the cap of bent 3 with a single steel finger deck joint centered over the bent cap. The girders are on rocker bearings at the abutments, while the bent caps are on elastomeric bearing pads at the piers. The two lane bridge has Type 9-11 railing.

B10. Significance (continued):

By the 1960s, nearly any beam length could be fabricated and assembled on-site and long steel beams, such as those used in the Klamath River Bridge, were not considered a significant technological achievement. Bridge 02-0156 is a fairly typical example of steel girder construction for this period. It is not one of the larger examples of this type and it does not incorporate a significantly long main span. Whiskey Creek Bridge held title to the longest main span of 350 feet in length from its initial construction in 1961 until 1967, when a bridge carrying Interstate 280 over San Mateo Creek achieved a 360 foot main span. The Klamath River Bridge with a total length of 904 feet and main span of 225 feet in length is not significant as a work of civil engineering. The Klamath River Bridge is not significant under National Register Criterion C or California Register Criterion 3. Its construction was typical for the 1960s and 1970s, and was not a significant work of civil engineering.

Bridge 02-0156 was erected as a typical transportation improvement project of the period and is not associated with events that have made a significant contribution to the broad patterns of history at the national, state, or local level and, therefore is not significant under National Register Criterion A or California Register Criterion 1. It is not associated with the lives of significant persons in history at the national, state, or local level and is not significant under National Register Criterion B or California Register Criterion 2. Bridge 02-0156 does not embody the distinctive characteristics of a steel girder bridge construction, does not represent the work of a master and does not possess high artistic values. Further, it does not represent a significant and distinguishable entity whose components may lack individual distinction. The Klamath River Bridge is not significant under National Register Criterion C or California Register Criterion 3. The bridge has not yielded and is not likely to yield information important in history at the national, state, or local level and is not significant under National Register Criterion D or California Register Criterion 4. Bridge 02-0156 is not eligible for inclusion on the National Register or the California Register.

***B12. References:**

"An Architect Concentrates on Aesthetics in Bridge Design." *Pacific Builder & Engineer* 64, no. 4 (April 1958): 86-87.California Division of Highways. "As Built Plans – Bridge 02 0156." 1967.

Caltrans Bridge Inspection Report: September 20, 2012.

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Mead & Hunt. *Historic Resource Evaluation Report – Caltrans Statewide Historic Bridge Inventory: 2010 Update*. California Department of Transportation, 2010.

P5b. Photographs (continued):

View looking south, June 4, 2014

Oblique view of the east side of the bridge from the deck at Pier 2, June 4, 2014

View looking west, downstream of the bridge, June 4, 2014

View of the superstructure in Span 4 from the terrain adjacent to Abutment 5, June 4, 2014

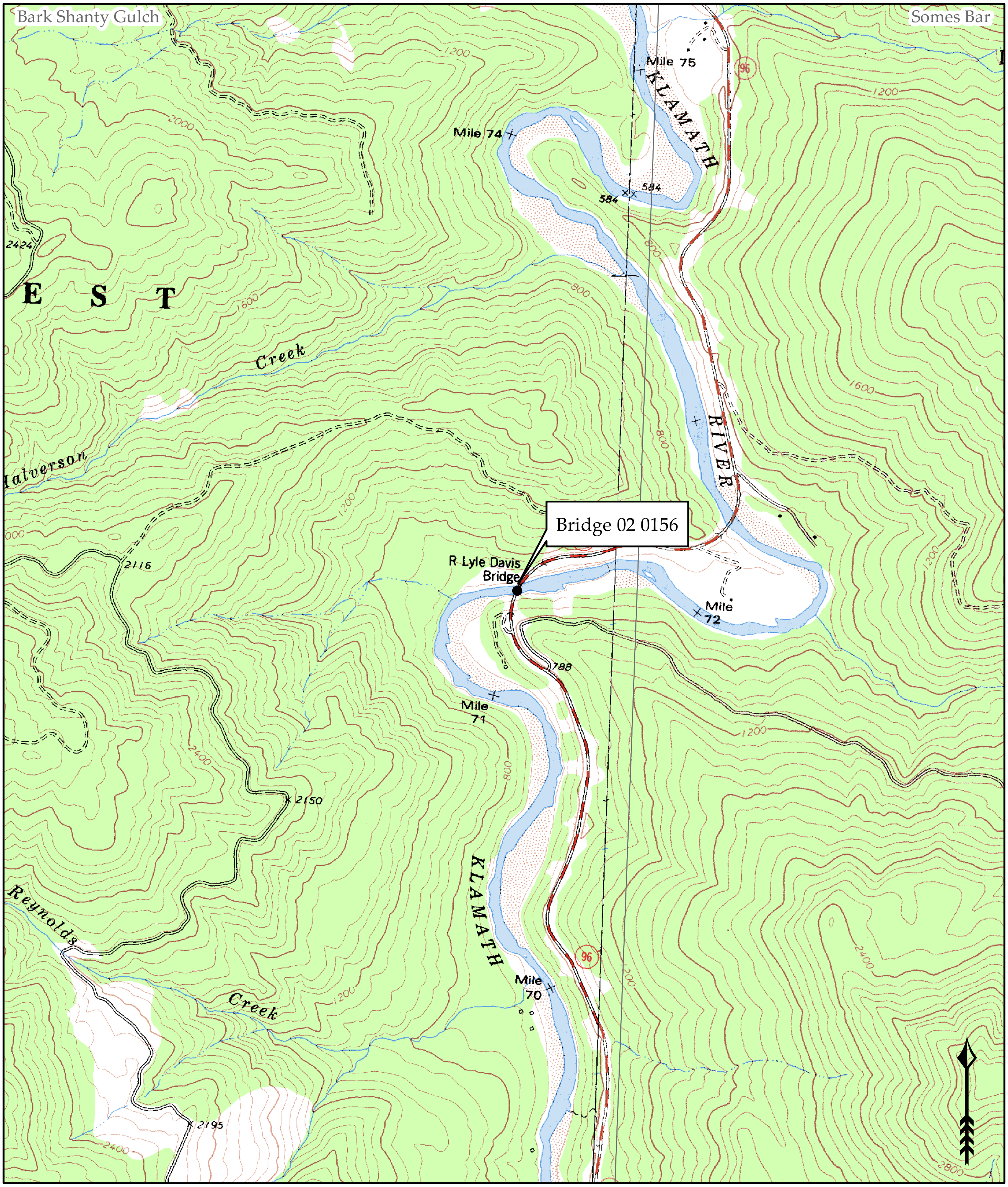
State of California The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary #
HRI#
Trinomial

***Resource Name or #:** Bridge 02 0156

***Map Name:** Bark Shanty Gulch ***Scale:** 1:24,000 ***Date of Map:** 1974



DPR 523J (1/95) *Required information

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

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code | Reviewer | Date

 *Resource Name or # Bridge 02 0157

P1. Other Identifier: Klamath River Bridge

***P2. Location:** ☐ Not for Publication ☒ Unrestricted ***a. County:** Siskiyou
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad:** Somes Bar **Date:** **T** ; **R** ; **¼ of** **¼ of Sec** **;** M.D. **B.M.**
c. Address: n/a City: Zip:
d. UTM: Zone: 10 ; mE/ mN (G.P.S.)
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Elevation:
The Klamath River Bridge is located in Siskiyou County on State Route 96 at post mile 5.57, 5 miles north of Somes Bar.

***P3a. Description:**
The Klamath River Bridge carries two lanes of State Route 96 over the Klamath River. Bridge 02 0157 is a long span steel girder structure, 906 feet in length, that crosses the Klamath River at a skew of 21 degrees. The continuous 5-span curved welded steel plate girders have a composite concrete deck, covered with thin asphalt concrete overlay, on seat abutments and concrete single column piers. The columns are spherical and with an indentation on the north side approximately half way up, which thins the columns and makes them more visually interesting. The center of Span 3 is suspended. The girders are on rocker bearings at the abutments, while the bent caps are on elastorneric bearing pads at the piers. The two lane bridge has type 9-11 railing on both sides of the roadway.

***P3b. Resource Attributes:** HP 19. Bridge
***P4. Resources Present:** ☐Building ☒Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5a. Photo or Drawing

P5b. Description of Photo:
View looking north
June 4, 2014

***P6. Date Constructed/Age and Sources:** ☒Historic ☐Prehistoric ☐Both
1970, Caltrans Bridge Files

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

***P8. Recorded by:**
Janice Calpo
Dept. of Transportation
1120 N Street
Sacramento, CA 95814

***P9. Date Recorded:**
June 4, 2014

***P10. Survey Type:**
Intensive

***P11. Report Citation:** Helen Blackmore, Janice Calpo, Lauren Clementino and Noah M. Stewart with contributions from Andy Hope, *Historic Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2015 Update* (California Department of Transportation, Sacramento, 2015).

***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

*Resource Name or # Bridge 02 0157

B1. Historic Name:
B2. Common Name: Klamath River Bridge
B3. Original Use: Bridge **B4. Present Use:** Bridge
***B5. Architectural Style:**
***B6. Construction History:**

The Klamath River Bridge was built in 1970. Since its construction the bridge has undergone minor maintenance, including: seal replacement on the north abutment (1973); and, chip seal applied to the deck surface (1987, 1989). In 1990, new approach guard railing was installed; the Type 9-11 end sections were replaced with concrete railing end posts.

***B7. Moved?** ☒No ☐Yes ☐Unknown **Date:** **Original Location:**
***B8. Related Features:**

The bridge is located on State Route 96.

B9a. Architect: E. G. Klein, Bridge Department, California Division of Highways b. Builder:
***B10. Significance: Theme:** N/A **Area:** N/A
Period of Significance: N/A **Property Type:** N/A **Applicable Criteria:** N/A

The Klamath River Bridge was constructed by California Division of Highways. It was one of the many highway improvements carried out during the late 1960s and 1970s. Bridge 02 0157 is not significant under National Register of Historic Places (National Register) Criterion A or California Register of Historical Resources (California Register) Criterion 1 for its association with the development of the highway network through the region. In addition, the bridge is not associated with other events at the national, state, or local level that would make it significant under National Register Criterion A or California Register Criterion 1. It is not associated with a person who made a significant contribution to history at the local, state, or national level, therefore it is not significant under National Register Criterion B or California Register Criterion 2.

This structure is one of over 500 bridges of its type constructed between 1965 and 1974. Prior to this, there were more than 1,800 steel girder bridges in the State of California. The fabrication, transportation, and erection of large steel girder bridges was not a significant achievement in the state by the time the Klamath River Bridge was constructed in 1970. By the early 1970s, only 10% of all new bridges in the state were erected in steel. Steel girder bridges had their heyday in the 1930s, when they accounted for one third of bridges constructed. (See Continuation Sheet, page 3)

B11. Additional Resource Attributes:
***B12. References:** (See Continuation Sheet, page 3)
B13. Remarks:

***B14. Evaluator:**
Helen Blackmore
California Department of Transportation

***Date of Evaluation:**
October 1, 2014

(This space reserved for official comments.)

B10. Significance (continued):

By the 1960s, nearly any beam length could be fabricated and assembled on-site and long steel beams, such as those used in the Klamath River Bridge were not considered a significant technological achievement. Bridge 02 0157 is a fairly typical example of steel girder construction for this period. It is not one of the larger examples of this type and it does not incorporate a significantly long main span. Whiskey Creek Bridge held title to the longest main span of 350 feet in length from its initial construction in 1961 until 1967, when a bridge carrying Interstate 280 over San Mateo Creek achieved a 360 foot main span. The Klamath River Bridge with a total length of 904 feet and main span of 225 feet in length is not significant as a work of civil engineering. Its construction was typical for the 1960s and 1970s, and was not a significant work of civil engineering. The Klamath River Bridge is not significant at the national, state, or local level under National Register Criterion C or California Register Criterion 3.

Bridge 02-0157 was erected as a typical transportation improvement project of the period and the bridge is not associated with events that have made a significant contribution to the broad patterns of history at the national, state, or local level and, therefore is not significant under National Register Criterion A or California Register Criterion 1. It is not associated with the lives of significant persons in our history at the national, state, or local level and is not significant under National Register Criterion B or California Register Criterion 2. Bridge 02 0157 does not embody the distinctive characteristics of a steel girder bridge construction, does not represent the work of a master and does not possess high artistic values. Further, it does not represent a significant and distinguishable entity whose components may lack individual distinction. The Klamath River Bridge is not significant under National Register Criterion C or California Register Criterion 3. The bridge has not yielded and is not likely to yield information important in history at the national, state, or local level and is not significant under National Register Criterion D or California Register Criterion 4. Bridge 02 0157 is not eligible for inclusion on the National Register or the California Register.

***B12. References (continued):**

"An Architect Concentrates on Aesthetics in Bridge Design." *Pacific Builder & Engineer* 64, no. 4 (April 1958): 86-87.

California Division of Highways. "As Built Plans – Bridge 02 0157." 1967.

Caltrans Bridge Inspection Report: September 20, 2012

Hope, Andrew. *Caltrans Statewide Historic Bridge Inventory Update – Survey and Evaluation of Common Bridge Types*. Californian Department of Transportation, November 2004.

Mead & Hunt. *Historic Resource Evaluation Report – Caltrans Statewide Historic Bridge Inventory: 2010 Update*. California Department of Transportation, 2010.

State of California — The Resources Agency DEPARTMENT OF PARKS AND RECREATION **CONTINUATION SHEET**	Primary # HRI# Trinomial

 ***Resource Name or #** Bridge 02 0157

***Recorded by:** Janice Calpo ***Date:** October 1, 2014 ☒ **Continuation** ☐ **Update**

P5b. Photographs (continued):

View looking south, June 4, 2014.

View looking southwest, June 4, 2014.

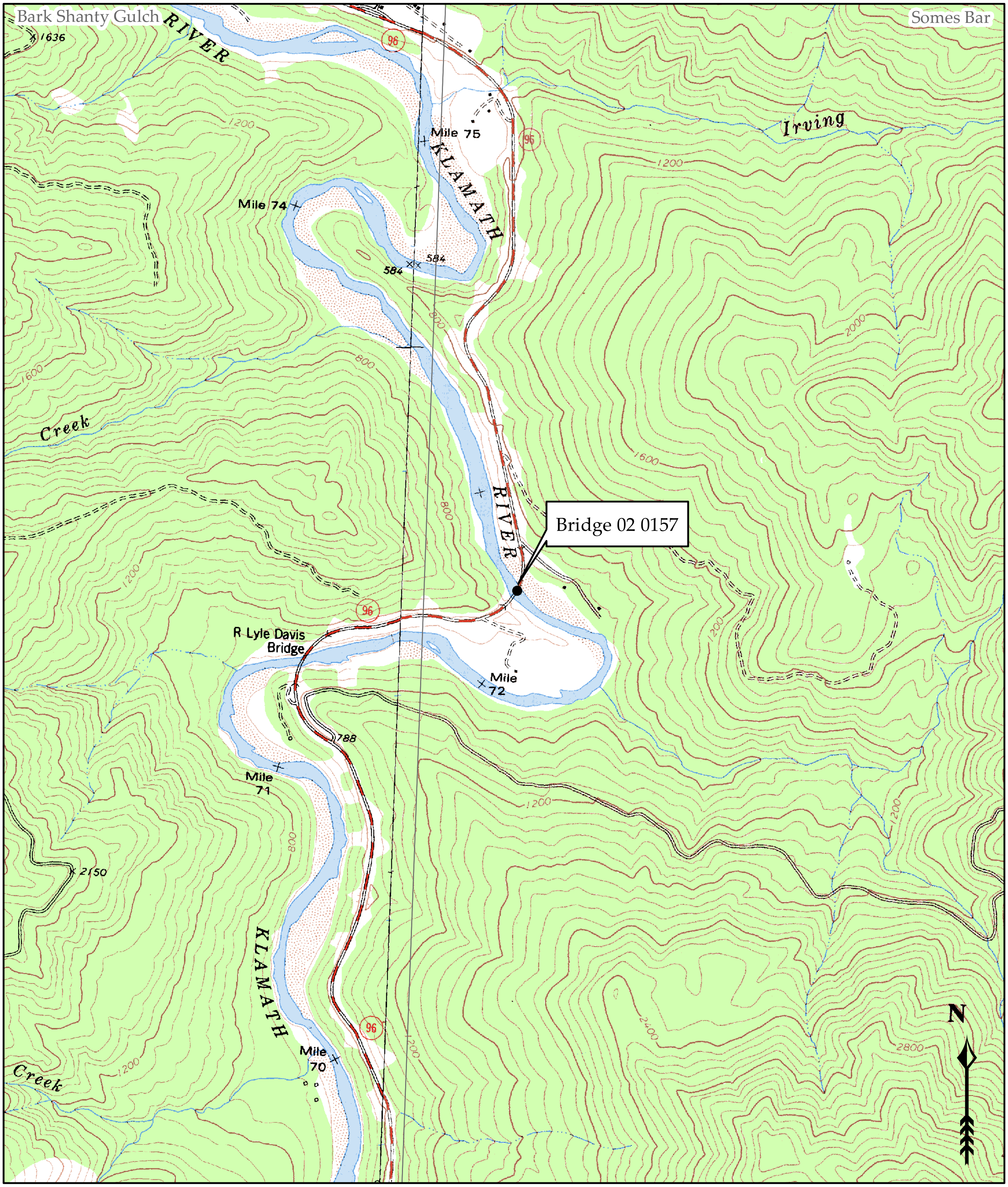
State of California The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary #
HRI#
Trinomial

***Resource Name or #:** Bridge 02 0157

***Map Name:** Somes Bar ***Scale:** 1:24,000 ***Date of Map:** 1979



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

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code | Reviewer | Date

***Resource Name or #:** Bridge 02C0147

P1. Other Identifier: Indian Creek Bridge

***P2. Location:** ☐ Not for Publication ☒ Unrestricted ***a. County:** Siskiyou
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad:** Happy Camp **Date:** **T** ; **R** ; **¼ of** **¼ of Sec** **;** M.D. **B.M.**
c. Address: n/a City: Zip:
d. UTM: Zone: 10 ; mE/ mN (G.P.S.)
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Elevation:
Second Avenue at Indian Creek Road

***P3a. Description:**
Bridge 02C0147 is a steel box girder structure that carries Second Avenue, within the community of Happy Camp, over Indian Creek. It supports two lanes of traffic and a pedestrian walkway on the southern side. The bridge is 203 feet long with three spans. The central span is 78 feet in length. The superstructure is composed of six continuous composite welded steel box girders. These box girders are unique in their design. Rather than a single larger box, six smaller boxes were used, with a top and bottom flange, to achieve a very narrow profile. The substructure is two solid pier walls within the creek bed and cantilever seat abutments at the approaches. The piers and abutment 4 (east) are on spread footings, while abutment 1 (west) is on steel piles. Bridge railings are Type 1, a combination of concrete stemwall and horizontal metal tube. A chain link fence and railing protect pedestrians along the south elevation.

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

P5a. Photo or Drawing

P5b. Description of Photo:
View looking south,
June 4, 2014

***P6. Date Constructed/Age and Sources:** ☒Historic ☐Prehistoric ☐Both
1966, Caltrans Bridge Files

***P7. Owner and Address:**
Siskiyou County
311 4th Street, #204
Yreka, CA 96097

***P8. Recorded by:**
Janice Calpo,
Dept. of Transportation
1120 N Street
Sacramento, CA 95818

***P9. Date Recorded:**
October 1, 201

***P10. Survey Type:**
Intensive

***P11. Report Citation:** Helen Blackmore, Janice Calpo, Lauren Clementino and Noah M. Stewart with contributions from Andy Hope, *Historic Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2015 Update* (California Department of Transportation, Sacramento, 2015).

***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):

Primary #
HRI#

BUILDING, STRUCTURE, AND OBJECT RECORD

*NRHP Status

***Resource Name or #** Bridge 02C0147

B1. Historic Name: Indian Creek Bridge
B2. Common Name: Indian Creek Bridge
B3. Original Use: Bridge **B4. Present Use:** Bridge
***B5. Architectural Style:** Modern
***B6. Construction History:**

The Indian Creek Bridge was built in 1966 and relinquished to Siskiyou County later that year. The bridge has undergone minor maintenance since its construction, including spall repair (1992).

***B7. Moved?** ☒No ☐Yes ☐Unknown **Date:** **Original Location:**
***B8. Related Features:**

The Indian Creek Bridge is located on Second Avenue over the Indian Creek.

B9a. Architect: California Division of Highways, Bridge Dept., Design Section **b. Builder**: Hughes & Ladd, Inc.
***B10. Significance: Theme:** Engineering **Area:** State
Period of Significance: 1966 **Property Type:** Structure **Applicable Criteria:** C

The Indian Creek Bridge was constructed in 1966 by the California Division of Highways as part of State Route 96. Soon after the bridge was finished, having completed a bypass around Happy Camp, the section of Highway 96 passing through town was relinquished, including the bridge, to Siskiyou County. Bridge 02C0147 is not significant under National Register of Historic Places (National Register) Criterion A or California Register of Historical Resources (California Register) Criterion 1 for its association with the development of the highway network through the region. Additionally, the bridge is not associated with other events at the national, state, and local level that would make it significant under National Register Criterion A or California Register Criterion 1. Indian Creek Bridge is not associated with the lives of persons significant in our past at the national, state, or local level, and therefore is not significant under National Register Criterion B or California Register Criterion 2.

This structure is one of only 16 bridges of its type in the state and is the first of its kind to be erected. The earliest examples of box girder structures in the United States date to the 1930s and were composed of concrete rather than steel. Advances in higher strength steels and welding technologies developed during the 1940s allowed engineers to experiment with similar designs in steel in the 1950s. The first steel box girder bridge erected in the United States was in 1951, in Washington state. Indian Creek Bridge was completed in 1966; the superstructure is composed of six fairly shallow steel box girders, rather than a smaller number of larger boxes, which became the more common steel box girder design in California. Only five other steel box girder bridges were built in the (see Continuation Sheet, page 3)

B11. Additional Resource Attributes:
***B12. References:** (see Continuation Sheet, page 3)
B13. Remarks:
***B14. Evaluator:**
Noah Stewart
California Department of Transportation

***Date of Evaluation:**
October 1, 2014

(Sketch Map with north arrow required.)

(This space reserved for official comments.)

B10. Significance (continued):

late 1960s and early 1970s. Indian Creek Bridge (02C0147) is significant under National Register Criterion C and California Register Criterion 3 as it embodies the distinctive characteristics of early steel box girder bridge design in California and was the first steel box girder bridge erected in the state. Additionally, its superstructure design is unique being composed of six fairly shallow steel box girders, which allowed the designers to achieve the slender profile appreciated by engineers of the era. It is a sleek design that was both economical to construct and attractive to the observer. The bridge is a significant example of a steel box girder structure exhibiting mid-twentieth-century aesthetics applied to a bridge design and significant under National Register Criterion C and California Register Criterion 3.

Bridge 02C0147was erected as a typical transportation improvement project of the period and the bridge is not associated with events that have made a significant contribution to the broad patterns of history at the national, state, or local levels, and therefore is not significant under National Register Criterion A or California Register Criterion 1. It is not associated with the lives of significant persons in history at the national, state, or local levels and therefore is not significant under National Register Criterion B or California Register Criterion 2. Bridge 02C0147 does embody the distinctive characteristics of steel box girder construction. Indian Creek Bridge is significant under National Register Criterion C and California Register Criterion 3. The bridge has not yielded and is not likely to yield information important in history at the national, state, or local level and is not significant under National Register Criterion D or California Register Criterion 4.

Bridge 02C0147 is eligible for inclusion in the National Register under Criterion C and the California Register under Criterion 3 and maintains a high degree of integrity. It is located in the place where it was constructed and retains its integrity of location. The design has not been altered in any significant way since its completion; Indian Creek Bridge posses its integrity of design. The setting has changed little since the bridge's construction and, as such, bridge 02C0147 retains its integrity of setting. Like its integrity of design, because there have been no significant alterations to bridge 02C0147, it maintains its integrity of materials as well as workmanship, appearing to be the work of modern engineers. Integrity of feeling, the expression of the aesthetic or historic sense of a particular period of time, is also retained. Indian Creek Bridge is not associated with an important historic event or person at the national, state, or local level, therefore integrity of association is not applicable to this historic property.

***B12. References:**

California Division of Highways. "As Built Plans – Bridge 02C0147," 1972.

Caltrans Bridge Inspection Report: August 21, 2013.

Hope, Andrew. *Caltrans Statewide Historic Bridge Inventory Update – Survey and Evaluation of Common Bridge Types*. Californian Department of Transportation, November 2004.

Mead & Hunt. Historic Resource Evaluation Report – *Caltrans Statewide Historic Bridge Inventory: 2010 Update.* California Department of Transportation, 2010.

***Resource Name or #** Bridge 02C0147

***Recorded by:** Janice Calpo ***Date:** October 1, 2014 ☒ **Continuation** ☐ **Update**

P5b. Photographs (continued):

Underside of Bridge 02C0147, looking west, June 4, 2014

Roadway view of Bridge 02C0147, looking west, June 4, 2014

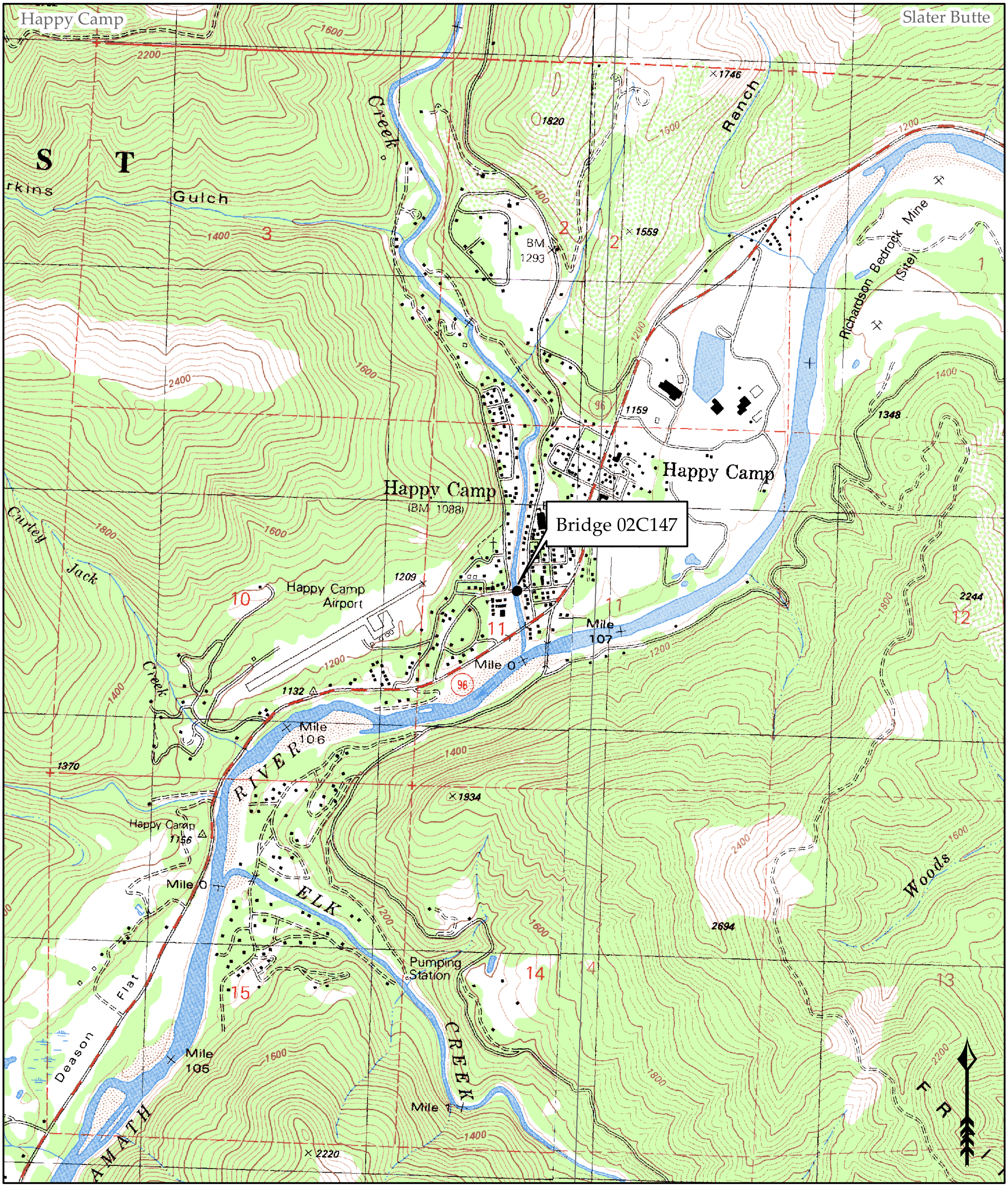
State of California The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary #
HRI#
Trinomial

 ***Resource Name or #:** Bridge 02C0147

***Map Name:** Happy Camp ***Scale:** 1:24,000 ***Date of Map:** 1980



State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code **Reviewer** **Date**

 ***Resource Name or #:** Bridge 04 0014

P1. Other Identifier: Eel River Bridge and Overhead (Richard Fleischer Memorial Bridge)

***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:** **T** ; **R** ; **¼ of** **¼ of Sec** ; M.D. **B.M.**

c. Address: n/a City: Zip:

d. UTM: Zone: 10 ; mE/ mN (G.P.S.)

e. Other Locational Data: Elevation:

The Eel River Bridge and Overhead is located in Humboldt County on State Route 101 at post mile 48.69.

***P3a. Description:**

The Eel River Bridge carries State Route 101 over the Eel River. It is a long span steel girder structure, 1020 feet in length. The bridge has 5 spans with the main span measuring 280 feet. It has simple spans (Spans 1 and 5) and four continuous composite welded steel plate girders (in Spans 2, 3, 4) with a reinforced concrete deck. The steel girders widen to hunches where connected to the columns which are on reinforced seat abutments and reinforced hollow piers. All piers are on steel piles except Pier 5, which is on a spread footing. The four lane bridge has Type 1 railing.

***P3b. Resource Attributes:** HP 19. Bridge

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

P5a. Photo or Drawing

P5b. Description of Photo:
View looking southwest
June 4, 2014

***P6. Date Constructed/Age and Sources:** ☒Historic ☐Prehistoric ☐Both
1965, Caltrans Bridge Files

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

***P8. Recorded by:**
Janice Calpo
Dept. of Transportation
1120 N Street
Sacramento, CA 95814

***P9. Date Recorded:**
October 1, 2104

***P10. Survey Type:**
Intensive

***P11. Report Citation:** Helen Blackmore, Janice Calpo, Lauren Clementino and Noah M. Stewart with contributions from Andy Hope, *Historic Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2015 Update* (California Department of Transportation, Sacramento, 2015).

***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**

***Resource Name or #** Bridge 04 0014

B1. Historic Name:
B2. Common Name: Eel River Bridge and Overhead (Richard Fleischer Memorial Bridge)
B3. Original Use: Bridge **B4. Present Use:** Bridge
***B5. Architectural Style:**
***B6. Construction History:**

Bridge 04 0014 was built in 1965 and replaced the original 1916 steel truss bridge and 1960 Bridge 14 0014L, the latter of which was damaged by flooding in 1964. Bridge 04 0014 is in the location of 14 0014L, which was parallel to the 1916 truss and removed entirely in 1966. Since its construction in 1965 the bridge has undergone minor maintenance, including: installation of new support brackets to support the ends of the pipe railing (1967); and repairing the deck spall (1971). Further, a new bridge approach guard railing was placed on the north end of the structure (1979). In 1992, work was completed to repair damage caused by an earthquake, the repairs included: cross frames and lateral bracing and the restrainer cables were retensioned.

***B7. Moved?** ☒No ☐Yes ☐Unknown **Date:** **Original Location:**
***B8. Related Features:**

B9a. Architect: P.N. Olson, Bridge Department, California Division of Highways **b. Builder:** Fruin-Colnon
***B10. Significance: Theme:** N/A **Area:** N/A
Period of Significance: N/A **Property Type:** N/A **Applicable Criteria:** N/A

The Eel River Bridge and Overhead was constructed by Fruin-Colnon to replace the existing damaged bridge (04 0014L) at the same location. Bridge 04 0014 is not significant under National Register of Historic Places (National Register) Criterion A or California Register of Historical Resources (California Register) Criterion 1 for its association with the development of the highway network through the region. In addition, the bridge is not associated with other events on the national, state, and local level that would make it significant under National Register Criterion A or California Register 1. The original Bridge 04 0014L was named by the Senate after Richard Fleisher who died in 1962. Fleischer was a realtor and civic leader who was the organizer of the Humboldt County Crab Feed head annually in Sacramento for the California Highway Commission and the State Department of Public works, and his name was passed on to Bridge 04 0014. While Fleischer was important in Humboldt County, he was not directly involved with the construction of Bridge 04 0014. The bridge is not directly associated with a person who made a significant contribution to history at the local, state, or national level, and it is not significant under National Register Criterion B or California Register Criterion 2. (See Continuation Sheet, page 3)

B11. Additional Resource Attributes:

***B12. References:** (See Continuation Sheet, page 3).
B13. Remarks:

***B14. Evaluator:**
Helen Blackmore
California Department of Transportation

***Date of Evaluation:**
October 1, 2014

(This space reserved for official comments.)

B10. Significance (continued):

This structure is one of over 500 bridges of its type constructed between 1965 and 1974. Prior to this, there were more than 1,800 steel girder bridges in the State of California. The fabrication, transportation, and erection of large steel girder bridges was not a significant achievement in the state by the time the Eel River Bridge and Overhead was constructed in 1965. By the early 1970s, only 10% of all new bridges in the state were erected in steel. Steel girder bridges had their heyday in the 1930s, when they accounted for one third of bridges constructed. By the 1950s, steel girder bridge construction had dropped to 20% of new bridges erected throughout the state. As postwar traffic demands required wider roads, steel bridges proved less cost effective and the majority of new bridges were constructed in concrete.

By the 1960s, nearly any beam length could be fabricated and assembled on-site and long steel beams, such as those used in 1965, were not considered a significant technological achievement. Bridge 04 0014 is a fairly typical example of steel girder construction for this period. It is not one of the larger examples of this type and it does not incorporate a significantly long main span. Whiskey Creek Bridge held title to the longest main span of 350 feet in length from its initial construction in 1961 until 1967, after which a bridge carrying Interstate 280 over San Mateo Creek achieved a 360 foot main span. The Eel River Bridge, with a total length of 1020 feet and main span of 280 feet in length, is not significant as a work of civil engineering, and was typical for the 1960s and 1970. The Eel River Bridge and Overhead was awarded the "Most Beautiful Bridge" Award in the category of medium span, low clearance bridges by the American Institute of Steel Construction for the year 1967. While the bridge was deemed notable for its aesthetics when compared to other bridges erected that year, it does not stand out when compared to bridges of this type. Therefore, Bridge 04 0014 is not significant under National Register Criterion C or California Register Criterion 3.

Bridge 04 0014 was erected as a typical transportation improvement project of the period and the bridge is not associated with events that have made a significant contribution to the broad patterns of history at the national, state, and local level, and therefore is not significant under National Register Criterion A or California Register Criterion 1. It is not associated with the lives of significant persons in history at the national, state, or local level and is therefore not significant under National Register Criterion B or California Register Criterion 2. Bridge 04 0014 does not embody the distinctive characteristics of a steel girder bridge construction, does not represent the work of a master and does not possess high artistic values. Further, it does not represent a significant and distinguishable entity whose components may lack individual distinction. Therefore, the Eel River Bridge and Overhead is not significant under National Register Criterion C or California Register Criterion 3. The bridge has not yielded and is not likely to yield information important in history at the national, state, or local level and is therefore not significant under National Register Criterion D or California Register Criterion 4. Bridge 04 0014 is not eligible for inclusion on the National Register or California Register.

***B12. References (continued):**

"An Architect Concentrates on Aesthetics in Bridge Design." *Pacific Builder & Engineer* 64, no. 4 (April 1958): 86-87.

California Division of Highways. "As Built Plans – Bridge 02 0157." 1967.

Caltrans Bridge Inspection Report: December 19, 2013

Hope, Andrew. *Caltrans Statewide Historic Bridge Inventory Update – Survey and Evaluation of Common Bridge Types*. Californian Department of Transportation, November 2004.

Mead & Hunt. *Historic Resource Evaluation Report – Caltrans Statewide Historic Bridge Inventory: 2010 Update*. California Department of Transportation, 2010.

***Resource Name or #** Bridge 04 0014

***Recorded by:** Janice Calpo ***Date:** October 1, 2014 ☒ **Continuation** ☐ **Update**

P5b. Photographs (continued):

View looking south, June 4, 2014.

View looking southeast, June 4 2014.

***Resource Name or #** Bridge 04 0014

***Recorded by:** Janice Calpo ***Date:** October 1, 2014 ☒ **Continuation** ☐ **Update**

View looking southwest, July 29, 2009.

View looking north, ca. 1965.

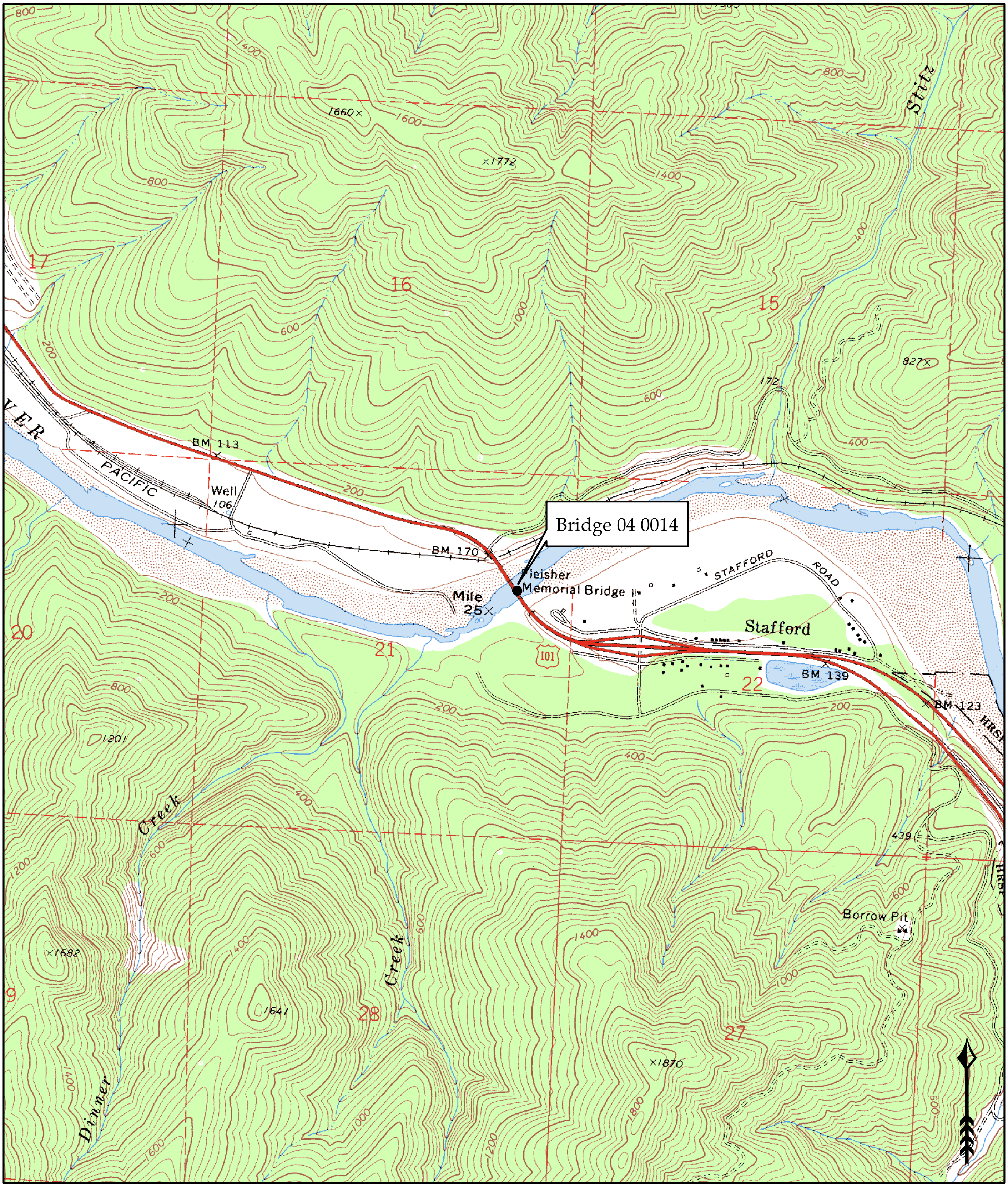
Primary #
HRI#

LOCATION MAP

Trinomial

***Resource Name or #:** Bridge 04 0014

***Map Name:** Scotia ***Scale:** 1:24,000 ***Date of Map:** 1970



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

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code   Reviewer   Date

***Resource Name or #:** Bridge 04 0016L

P1. Other Identifier: Eel River Bridge (Nello J Barsanti Memorial Bridge)

***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:** Hydesville **Date:** **T** ; **R** ; **¼ of** **¼ of Sec** **;** M.D. **B.M.**
c. Address: n/a City: Rio Dell Zip:
d. UTM: Zone: 10 ; mE/ mN (G.P.S.)
e. Other Locational Data: Elevation:
The Eel River Bridge is located in Humboldt County on State Route 101 at post mile 53.97.

***P3a. Description:**
The bridge is part of U.S. Route 101 and crosses the Eel River just north of the town Rio Dell, and south of Eureka. Bridge 04 0016L is a long span concrete box-girder structure, 1730 feet in length and carries two lanes in the southbound direction. The bridge has seven spans with the main span measuring 300 feet in length. It has a continuous CIP PS box girder on single 10 foot octagonal, hollow core reinforced concrete columns and reinforced concrete "L" abutments. Columns are on 11 foot diameter reinforced concrete shafts; abutments are on steel piles. The two lane bridge has type 9-11 railing.

***P3b. Resource Attributes:** HP 19. Bridge
***P4. Resources Present:** ☐Building ☒Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5a. Photo or Drawing

P5b. Description of Photo:
View looking southwest
June 6, 2014

***P6. Date Constructed/Age and Sources:** ☒Historic ☐Prehistoric ☐Both
1974, Caltrans Bridge Files

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

***P8. Recorded by:**
Janice Calpo
Dept. of Transportation
1120 N Street
Sacramento, CA 95814

***P9. Date Recorded:**
October 1, 2014

***P10. Survey Type:**
Intensive

***P11. Report Citation:**
Helen Blackmore, Janice Calpo, Lauren Clementino and Noah M. Stewart with contributions from Andy Hope, *Historic Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2015 Update* (California Department of Transportation, Sacramento, 2015).

***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):

Primary #
HRI#

BUILDING, STRUCTURE, AND OBJECT RECORD

*NRHP Status

***Resource Name or #** Bridge 04 0016L

B1. Historic Name:
B2. Common Name: Eel River Bridge
B3. Original Use: Bridge **B4. Present Use:** Bridge
***B5. Architectural Style:** Modern
***B6. Construction History:**

The bridge was built in 1974. Cracked shear blocks and hinges were replaced in 1993, at this time the AC ramps at the approaches were also rebuilt.

***B7. Moved?** ☒No ☐Yes ☐Unknown **Date:** **Original Location:**
***B8. Related Features:**

The bridge is along U.S. Route 101, which also carries the historic segment of the Redwood Highway through Humboldt County.

B9a. Architect: P. N. Olorn, Bridge Department, California Division of Highways **b. Builder:**
***B10. Significance: Theme:** N/A **Area:** N/A
Period of Significance: N/A **Property Type:** N/A **Applicable Criteria:** N/A

The Eel River Bridge was one of the many highway improvements carried out during the late 1960s and early 1970s. It is not significant under National Register of Historic Places (National Register) Criterion A or California Register of Historical Resources (California Register) Criterion 1 for its association with the development of the highway network through the region. In addition, the bridge is not associated with other events at the national, state, or local level that would make it significant under National Register Criterion A or California Register Criterion 1. The bridge was named after Nello J. Barsanti (1916-1976) who was a lifetime resident of the Scotia-Rio Dell area, community leader, education advocate and member of the Fortuna Unified High School Board of Trustees. The bridge was dedicated in 1977. While Barsanti was an influential community leader and advocate, the bridge itself is not directly associated with his life or community work. Therefore, it is concluded that the Eel River Bridge is not associated with a person who made a significant contribution to history at the local, state, or national level, and it is not significant under National Register Criterion B or California Register Criterion 2.

The first concrete box girder bridge in California was erected in 1938. 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. (See Continuation Sheet, page 3)

B11. Additional Resource Attributes:
***B12. References:** (See Continuation Sheet, page 3).
B13. Remarks:
***B14. Evaluator:**
Helen Blackmore
California Department of Transportation

***Date of Evaluation:** October 27, 2014

(This space reserved for official comments.)

***Recorded by:** Janice Calpo ***Date:** October 1, 2014 ☒ **Continuation** ☐ **Update**

B10. Significance (continued):

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 bridges in California. More than 3,200 of the type were built between 1965 and 1974.

Bridge 04 0016L is a fairly typical example of concrete box construction for the period. The fabrication, transportation, and erection of large concrete box bridges were not a significant achievement in the state by the time the Eel River Bridge was constructed in 1974. It is not one of the larger examples of this type and it does not incorporate a significantly long main span. The Mulholland Drive Overcrossing (53 0739) in Los Angeles held title to the longest main span of 235 feet in length from its initial construction in 1959 until 1974 when the Interstate 8 bridge over the Pine Valley Creek (57 0692L/R) achieved a 450 foot main span. The Eel River Bridge, with a total length of 1,730 feet and main span of 300 feet in length, is not significant as a work of civil engineering. Its construction is typical for the 1960s and 1970s and is not a significant work of civil engineering and it does not stand out with regard to modern bridge aesthetics. Bridge 04-0016L is not significant under National Register Criterion C or California Register Criterion 3.

Bridge 04 0016L was erected as a typical transportation improvement project of the period and the bridge is not associated with events that have made a significant contribution to the broad patterns of history at the national, state, or local level, and therefore is not significant under National Register Criterion A or California Register Criterion 1. It is not associated with the lives of significant persons in history at the national, state, or local level and is not significant under National Register Criterion B or California Register Criterion 2. Bridge 04 0016L does not embody the distinctive characteristics of concrete box bridge construction, does not represent the work of a master and does not possess high Modern aesthetic value. Further, it does not represent a significant and distinguishable entity whose components may lack individual distinction. The Eel River Bridge is not significant under National Register Criterion C or California Register Criterion 3. The bridge has not yielded and is not likely to yield information important in history at the national, state, or local level and is not significant under National Register Criterion D or California Register Criterion 4. Bridge 04 0016L is not eligible for inclusion on the National Register or the California Register.

***B12. References:**

"An Architect Concentrates on the Aesthetics in Bridge Design." *Pacific Builder & Engineer* 64, no. 4 (Apr 1958): 86-7.
California Division of Highways. "As Built Plans – Bridge 04 0016L." 1971.

Caltrans Bridge Inspection Report: September 26, 2013

Hope, Andrew. *Caltrans Statewide Historic Bridge Inventory Update – Survey and Evaluation of Common Bridge Types.* California Department of Transport, November 2004.

JRP Historical Consulting Services. *Historic Context Statement – Roadway Bridges of California: 1936-1959.* Prepared for State of California Department of Transportation, n.p., January 2003.

Myra L. Frank & Associates. *Caltrans' Historic Bridge Inventory Update: Concrete Box Girder Bridges*. n.p., August 2003. With revisions made by Andrew Hope, California Department of Transportation, April 2004.

Stuzinski, S. H. "Some Examples of Box Girder Bridges in California." *The Structural Engineer* 8, no. 41 (August 1963): 253-257.

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary #
HRI#
Trinomial

Page 4 of 6 ***Resource Name or #** Bridge 04 0016L

***Recorded by:** Janice Calpo ***Date:** October 1, 2014 ☒ **Continuation** ☐ **Update**

P5b. Photographs (continued):

Detail looking southwest, June 6, 2014

Roadway looking southeast, June 6, 2014

***Resource Name or #** Bridge 04 0016L

***Recorded by:** Janice Calpo

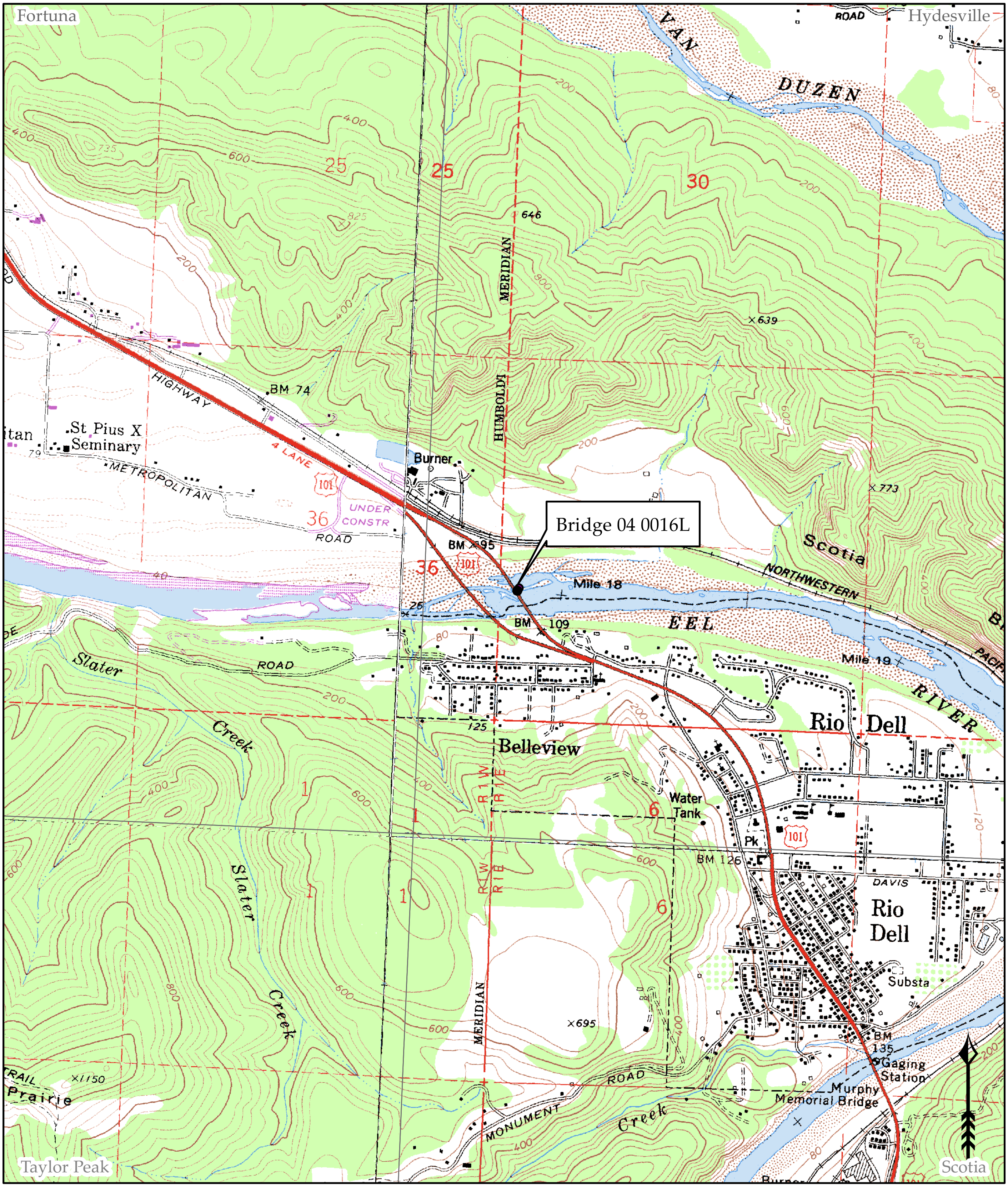
***Date:** October 1, 2014 ☒ **Continuation** ☐ **Update**

Roadway looking northwest, June 6, 2014

LOCATION MAP

***Resource Name or #:** Bridge 04 0016L

***Map Name:** Hydesville ***Scale:** 1:24,000 ***Date of Map:** 1979



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

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code | Reviewer | Date

 *Resource Name or #: Bridge 04 0069

P1. Other Identifier: Klamath River Bridge

***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:** Orleans **Date:** **T** ; **R** ; **¼ of** **¼ of Sec** ; M.D. **B.M.**
c. Address: n/a City: Zip:
d. UTM: Zone: 10 ; mE/ mN (G.P.S.)
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Elevation:
The Klamath River Bridge is located in Humboldt County on State Route 96 at post mile 38.57.

***P3a. Description:**
Bridge 04 0069 is a steel suspension structure, 768 feet in length, that carries two lanes of traffic over the Klamath River. It has a reinforced concrete deck on a continuous, composite, welded steel box girder with steel floor trusses. It was designed with an aerodynamic wing cross-section shape to be more stable than previous bridges located and destroyed by floods at this site. The floor trusses are supported by steel suspenders from the main steel suspension cables on reinforced concrete towers. The tapered towers are laterally connected by elegant Gothic aches which rise from midway from the deck to the top of the top. These arches are tied to the top of the tower by a downward slopping beam. The towers are connected beneath the roadway by concrete bents. The bents are slimmer than the towers and unobtrusive to the overall Gothic Revival style of the bridge. (See Continuation Sheet, page 3).

***P3b. Resource Attributes:** HP 19. Bridge
***P4. Resources Present:** ☐Building ☒Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5a. Photo or Drawing

P5b. Description of Photo:
View, looking northwest
June 4, 2014

***P6. Date Constructed/Age and Sources:** ☒Historic ☐Prehistoric ☐Both
1966, Caltrans Bridge Files

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

***P8. Recorded by:**
Janice Calpo
Dept. of Transportation
1120 N Street
Sacramento, CA 95814

***P9. Date Recorded:**
October 1, 2014

***P10. Survey Type:**
Intensive

***P11. Report Citation:**
Helen Blackmore, Janice Calpo, Lauren Clementino and Noah M. Stewart with contributions from Andy Hope, *Historic Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2015 Update* (California Department of Transportation, Sacramento, 2015).

***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):

Primary #
HRI#

BUILDING, STRUCTURE, AND OBJECT RECORD

*NRHP Status

*Resource Name or # Bridge 04 0069

B1. Historic Name:

B2. Common Name: Klamath River Bridge

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

***B5. Architectural Style:**

***B6. Construction History:**

The bridge was built in 1966, to replace the seventh structure located at the site. All previous bridges were washed away during major floods. Since its construction it has undergone minor maintenance work, including: steel access doors placed at each abutment (1977); seal coat added to deck (1985); and methacrylate applied to deck (1991).

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

***B8. Related Features:**

B9a. Architect: Ostap Bender, Division of Highways **b. Builder:** Murphy Pacific Corp.

***B10. Significance: Theme:** Architecture & Engineering **Area:** Humbodt

Period of Significance: 1966 **Property Type:** Structure **Applicable Criteria:** C

The Klamath River Bridge was constructed by Murphy Pacific Corp. to replace the bridge previously located at the site. It was one of the many highway improvements carried out during the late 1960s and early 1970s. It is not significant under National Register of Historic Places (National Register) Criterion A or California Register of Historical Resources Criterion 1 for its association with the development of the highway network through the region. In addition, the bridge is not associated with other events at the national, state, or local level that would make it significant under National Register Criterion A or California Register Criterion 1. It is not associated with a person who made a significant contribution to history at the local, state, or national level, and therefore is not significant under National Register Criterion B or California Register Criterion 2.

Suspension bridges are relatively rare in California. The technology dates to the gold rush period, during which it was often used to bridge mountainous canyon terrain leading to the goldfields, where suspended bridges could hang above swiftly moving rivers. Following the innovative period during the early twentieth century bridge building technology transitioned to a reliance on a new building material: concrete. Increasingly, material, construction costs, as well as site suitability and local preferences dictated bridge design. Suspension bridges were among the well-established designs available to counties for construction in remote areas where light traffic did not require a more substantial structure. (See Continuation Sheet, page 3).

B11. Additional Resource Attributes: (List attributes and codes)

***B12. References:** (See Continuation Sheet, page 3).

B13. Remarks:

***B14. Evaluator:**
Helen Blackmore
California Department of Transportation

***Date of Evaluation:**
January 6, 2015

(This space reserved for official comments.)

***P3a. Description (continued):**

The towers are atop spread footings and anchored into steel grillage anchorages embedded in reinforced concrete. Reinforced concrete seat abutments are on reinforced concrete shafts. The two lane bridge has type 16 railing.

B10. Significance (continued):

While California has no major suspension bridges from the earliest period, the lessons learned from that era helped guide construction of two of the world's most successful suspension bridge, the Golden Gate Bridge, completed in 1936, and the west span of the San Francisco-Oakland Bay Bridge (SFOBB), also finished in 1936. These two structures represent California's largest suspension bridges and were constructed during an era of major public works in the 1930s. Both bridges were previously determined eligible for listing in the National Register. Few such structures were built though, as they were relatively expensive, especially as other bridge types became increasingly affordable during the mid-twentieth century. There are currently 13 suspension bridges in California; five of which are eligible or in the National Register. Two suspension bridges constructed between 1965 and 1974, and two more prior to 2003.

The fabrication and erection of suspension bridges are almost always a significant achievement due to the nature of the construction method. Suspension spans require high amounts of engineering to construct, given that they often cross large spans. The six of the seven longest bridges in California are all suspension spans; the longest being the Golden Gate Bridge (27 0052), with a main span of 4,200 feet. The Klamath River Bridge is the 27th longest spanning bridge in the state, which does not make it significant as a feat of civil engineering. However, the steel box girder structure of the bridge was a new bridge type at the time of its construction. Bridge 04 0069 was designed using an aerodynamic wing cross-section shape. The superstructure was influenced by the British Severn Orthotropic Box girder design. Steel box girder bridges were only first utilized in California in 1966 for the Indian Creek Bridge (2C0147) in Siskiyou County, the same year the Klamath River Bridge was built, making it the second constructed in the state of only 16 erected.

The earliest examples of box girder structures in the United States date to the 1930s and were composed of concrete rather than steel. Advances in higher strength steels and welding technologies developed during the 1940s allowed engineers to experiment with similar designs in steel in the 1950s. The first steel box girder bridge erected in the United States was in 1951, in Washington state. Indian Creek Bridge was completed in 1966; the superstructure is composed of six fairly shallow steel box girders, rather than a smaller number of larger boxes, which became the more common steel box girder design in California. Only five other steel box girder bridges were built in the late 1960s and early 1970s. Indian Creek Bridge (02C0147) is significant under National Register Criterion C and California Register Criterion 3 as it embodies the distinctive characteristics of early steel box girder bridge design in California and was the first steel box girder bridge erected in the state. Additionally, its superstructure design is unique, being composed of six fairly shallow steel box girders, which allowed the designers to achieve the slender profile appreciated by engineers of the era. It is a sleek design that was both economical to construct and attractive to the observer – a significant example of a steel box girder structure exhibiting mid-twentieth-century aesthetics applied to a bridge design. The Klamath River Bridge a rare combination of two structural forms in California; the suspension bridge and a steel box girder. Further, effort was made to construct the bridge in an aesthetically pleasing way, utilizing the Gothic arches to connect the towers. The steel box girder substructure also allowed for a thin deck profile. The Klamath River Bridge is significant under National Register Criterion C and California Register Criterion 3.

Bridge 04 0069 retains integrity in all seven aspects. The bridge has not been moved and retains integrity of location. The setting and feeling have been unaltered, retaining those two aspects. The association of the bridge has been unchanged. The design, materials and workmanship of the bridge has been retained through only minor maintenance to the bridge. The Klamath River Bridge retains high integrity.

Bridge 04 0069 was erected as a typical transportation improvement project of the period and it is not associated with events that have made a significant contribution to the broad patterns of history at the national, state, and local level, and therefore is not significant under National Register Criterion A or California Register Criterion 1. It is not associated with the lives of significant persons in history at the national, state, or local level and therefore is not significant under National Register Criterion B or California Register Criterion 2. Bridge 04 0069 does embody the distinctive characteristics of suspension bridge construction, and does possess high Modern aesthetic value. Further, it does represent a significant and distinguishable entity whose components retain individual distinction. The Klamath River Bridge is significant under National Register Criterion C and California Register 3. The bridge has not yielded and is not likely to yield information important in history at the national, state, or local level and is not significant under National Register Criterion D or California Register Criterion 4. Bridge 04 0069 is eligible for inclusion on the National Register and California Register.

***B12. References (continued):**

"An Architect Concentrates on the Aesthetics in Bridge Design." *Pacific Builder & Engineer* 64, no. 4 (Apr 1958): 86-7. California Division of Highways. "As Built Plans – Bridge 04 0069." 1965.

Caltrans Bridge Inspection Report: September 11, 2012.

Hope, Andrew. *Caltrans Statewide Historic Bridge Inventory Update – Survey and Evaluation of Common Bridge Types.* California Department of Transport, November 2004.

Huang, Carl, Copelan, Craig, Maggenti, Ric and Magnus, Alfred R. "Award Winning Bridges in California Owned and Designed by Caltrans." *Structures Congress 2011.* New York, N. Y.: American Society of Civil Engineers, 2011. 2971-2982.

JRP Historical Consulting Services. *Historic Context Statement – Roadway Bridges of California: 1936-1959.* Prepared for

State of California Department of Transportation, n.p., January 2003.

Scott, Richard. *In the Wake of Tacoma: Suspension Bridges and the Quest for Aerodynamic Stability.* New York, N.Y: American Society of Civil Engineers, 2001.

***Resource Name or #** Bridge 04 0069
***Recorded by:** Janice Calpo
***Date:** October 1, 2014 ☒ **Continuation** ☐ **Update**

P5b. Photographs (continued):


View looking east, June 4, 2014

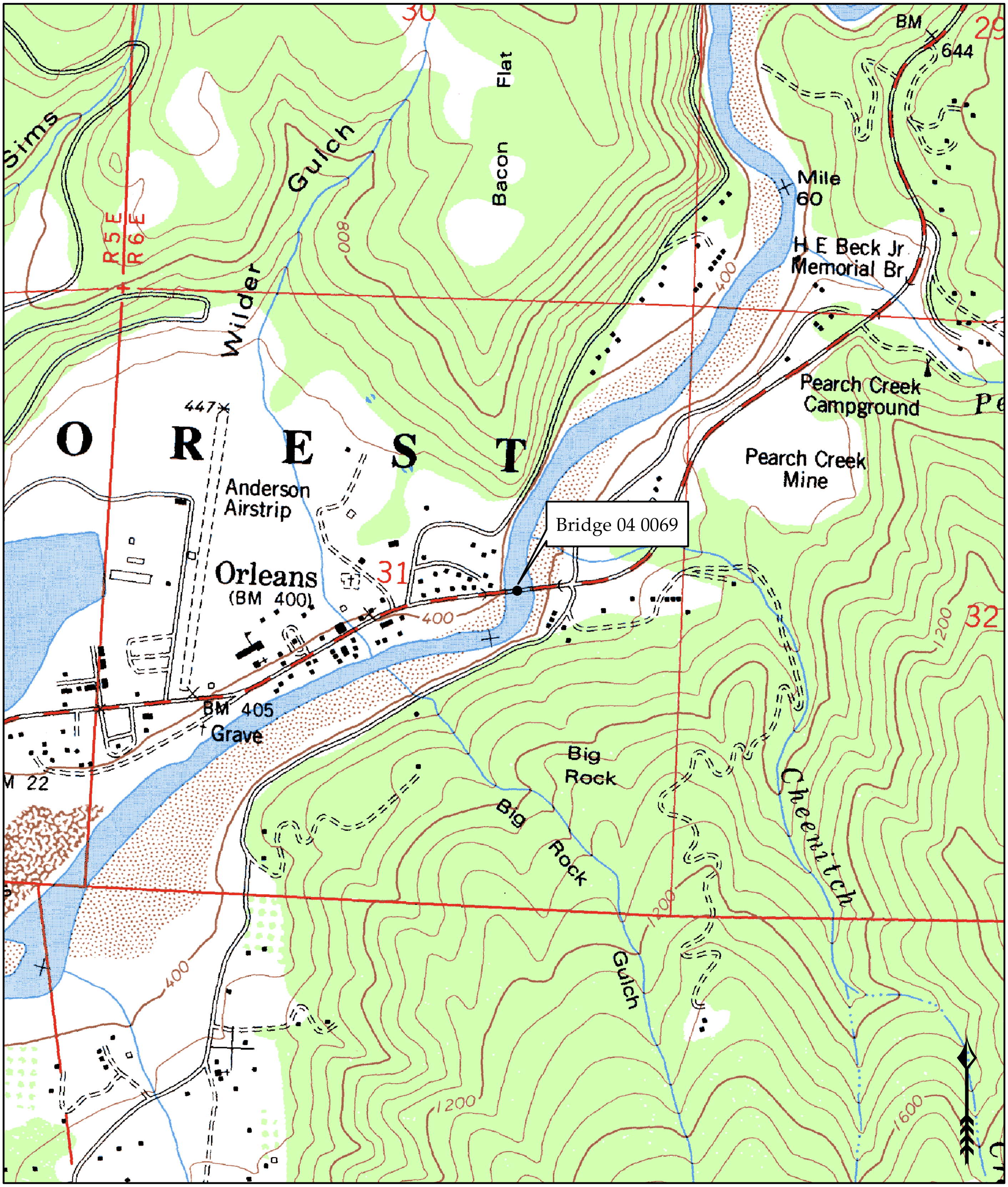

View looking north, June 4, 2014

State of California The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LOCATION MAP

Primary #
HRI#
Trinomial

*Resource Name or #: Bridge 04 0069

*Map Name: Orleans *Scale: 1:24,000 *Date of Map: 1978



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

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code   Reviewer   Date

*Resource Name or # Bridge 04 0155

P1. Other Identifier: South Fork Eel River Bridge (Mal Coombs Memorial Bridge)

***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:** Gaberville   **Date:**   **T** ; **R** ; **¼ of** **¼ of Sec** ; M.D. **B.M.**
c. Address: n/a   City: Zip:
d. UTM: Zone: 10 ;   mE/   mN (G.P.S.)
e. Other Locational Data: Elevation:
The South Folk Eel River Bridge is located on State Route 101, at post mile 7.87.

***P3a. Description:**
Bridge 04 0155 is a long span concrete box girder structure, 713 feet in length, that crosses the South Fork Eel River at a skew of 30 degrees. The bridge has three spans with the main span measuring 270 feet in length. The three span continuous prestressed box girder has sloping sides and cellular abutments. The sides meet the columns with angular hunches, giving the bridge a rustic aesthetic. The columns are also angular and have a vertically rusticated concrete finish on the long sides. Abutment 1 is on steel piles and Abutment 4 is on spread footings as are the solid wall piers. The four lane bridge has type 9 railing, with no pedestrian sidewalks. There is also a rusticated concrete barrier on the abutments of the bridge.

***P3b. Resource Attributes:** HP 19. Bridge
***P4. Resources Present:** ☐Building ☒Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5a. Photo or Drawing

P5b. Description of Photo: (View, date, accession #)
View, looking west
June 6, 2014

***P6. Date Constructed/Age and Sources:** ☒Historic ☐Prehistoric ☐Both
1969, Caltrans Bridge Files

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

***P8. Recorded by:**
Janice Calpo
Dept. of Transportation
1120 N Street
Sacramento, CA 95814

***P9. Date Recorded:**
October 1, 2014

***P10. Survey Type:**
Intensive

***P11. Report Citation:**
Helen Blackmore, Janice Calpo, Lauren Clementino and Noah M. Stewart with contributions from Andy Hope, *Historic Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2015 Update* (California Department of Transportation, Sacramento, 2015).

***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**

***Resource Name or #** Bridge 04 0155

B1. Historic Name:
B2. Common Name: South Fork Eel River Bridge (Mal Coombs Memorial Bridge)
B3. Original Use: Bridge **B4. Present Use:** Bridge
***B5. Architectural Style:** Modern
***B6. Construction History:**
The bridge was built in 1969. The bridge has only undergone minor maintenance since its construction, including; sealing of joints and the patching of the median slab in Abutment 1 (1970).

***B7. Moved?** ☒No ☐Yes ☐Unknown **Date:** **Original Location:**
***B8. Related Features:**

B9a. Architect: P. N. Olson, Bridge Department, California Division of Highways **b. Builder:**
***B10. Significance: Theme:** Engineering **Area:** Humboldt County
Period of Significance: 1969 **Property Type:** Bridge **Applicable Criteria:** C

The South Folk Eel River Bridge was constructed by Gibbons & Reed Co. and Hughes & Ladd as part of the many highway improvements carried out during the late 1960s and early 1970s. It is not significant under National Register of Historic Places (National Register) Criterion A or California Register of Historical Resources (California Register) Criterion 1 for its association with the development of the highway network through the region. In addition, the bridge is not associated with other events that would make it significant under National Register Criterion A or California Register Criterion 1.

The bridge became associated with Mal Coombs when it was posthumously dedicated to him in 1984, for his contributions to the local community. Coombs started the Coombs Lumber Company, in 1948. Coombs continued expanding the family business and by the mid-1950s the company was diversified and split amongst his children to include: East Branch Logging Company, Coombs Lumber Company and Piery Manufacturing Company, providing large numbers of jobs for the local community and county. Coombs was not only significant for his continually growing business which again diversified to include tree farms in the 1980s, but he also served as Board Chairman and trustee for the Southern Humboldt Unified School District, and spearheaded many fundraising campaigns for the high school and community sports. (See Continuation Sheet, page 3)

B11. Additional Resource Attributes:

***B12. References:** (See Continuation Sheet, page 3)
B13. Remarks:

***B14. Evaluator:**
Helen Blackmore
California Department of Transportation

***Date of Evaluation:**
October 1, 2014

(This space reserved for official comments.)

B10. Significance (continued):

Further, Coombs served on a variety of boards, including but not limited to, the West Coast Lumber Inspection Bureau, Richmond Forest Products Lab and Humboldt State University. While Mal Coombs is a significant person to the local area, he does not have a direct association with the bridge and therefore Bridge 04 0155 is not significant under National Register Criterion B or California Register Criterion 2.

The first concrete box girder bridge in California was erected in 1938. 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. And 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 bridges in California. More than 3,200 of the type built between 1965 and 1974.

Bridge 04 0155 is not a typical example of concrete box construction for the period. While the fabrication, transportation, and erection of large concrete box bridges was not a significant achievement in the state by the time the South Fork Eel River Bridge was constructed in 1968. The bridge was the longest continuous prestressed bridge in the United States at the time of its opening, therefore making it a significant work of civil engineering. Previously, the Mulholland Drive Overcrossing (53 0739) in Los Angeles held title to the longest main span of 235 feet in length from its initial construction in 1959, until 1974 when the Interstate 8 bridge over the Pine Valley Creek (57 0692L/R) achieved a 450 foot main span. The South Fork Eel River Bridge, with a total length of 713 feet and a main span of 270 feet in length, is a significant work of civil engineering for the time. The bridge also stands out aesthetically, with its rustic style incorporating rusticated concrete with angular hunches, mimicking its rocky setting above the river. Bridge 04 0155 is significant under National Register Criterion C and California Register Criterion 3.

Bridge 04 0155 was erected as a typical transportation improvement project of the period and the bridge is not associated with events that have made a significant contribution to the broad patterns of history, therefore it is not significant under National Register Criterion A or California Register Criterion 1. It is not associated with the lives of significant persons in history and is not significant under National Register Criterion B or California Register Criterion 2. Bridge 04 0155 does embody the distinctive characteristics of a concrete box bridge construction and possess high Modern aesthetic value. The South Fork Eel River Bridge is significant under National Register Criterion C and California Register Criterion 3. The bridge has not yielded and is not likely to yield information important in history and is not significant under National Register Criterion D or California Register Criterion 4. The Mal Coombs Memorial Bridge retains all aspects of integrity: material, design, feeling, location, association, workmanship and setting. Bridge 04 0155 is eligible for inclusion on the National Register and California Register.

***B12. References:**

"An Architect Concentrates on the Aesthetics in Bridge Design." *Pacific Builder & Engineer* 64, no. 4 (Apr 1958): 86-7.

California Division of Highways. "As Built Plans – Bridge 04 0155." 1967.

Caltrans Bridge Inspection Report: August 30, 2012

Hope, Andrew. *Caltrans Statewide Historic Bridge Inventory Update – Survey and Evaluation of Common Bridge Types.* California Department of Transport, November 2004.

JRP Historical Consulting Services. *Historic Context Statement – Roadway Bridges of California: 1936-1959.* Prepared for State of California Department of Transportation, n.p., January 2003.

Myra L. Frank & Associates. *Caltrans' Historic Bridge Inventory Update: Concrete Box Girder Bridges*. n.p., August 2003. With revisions made by Andrew Hope, California Department of Transportation, April 2004.

Stuzinski, S. H. "Some Examples of Box Girder Bridges in California." *The Structural Engineer* 8, no. 41 (August 1963): 253-257.

Wade, Jack. "Logging on the East Branch – The Story of the Coombs Lumber Company." *Roots of Motive Power, Inc. Newsletter* 26, no. 2 August 2008.

P5b. Photographs (continued):

Detail looking south, June 6, 2014

***Resource Name or #** Bridge 04 0155

***Recorded by:** Janice Calpo

***Date:** October 1, 2014 ☒ **Continuation** ☐ **Update**

Memorial Plaque on bridge, June 6, 2014

Rusticated concrete northeast abutment, June 6, 2014

View looking west, June 6, 2014

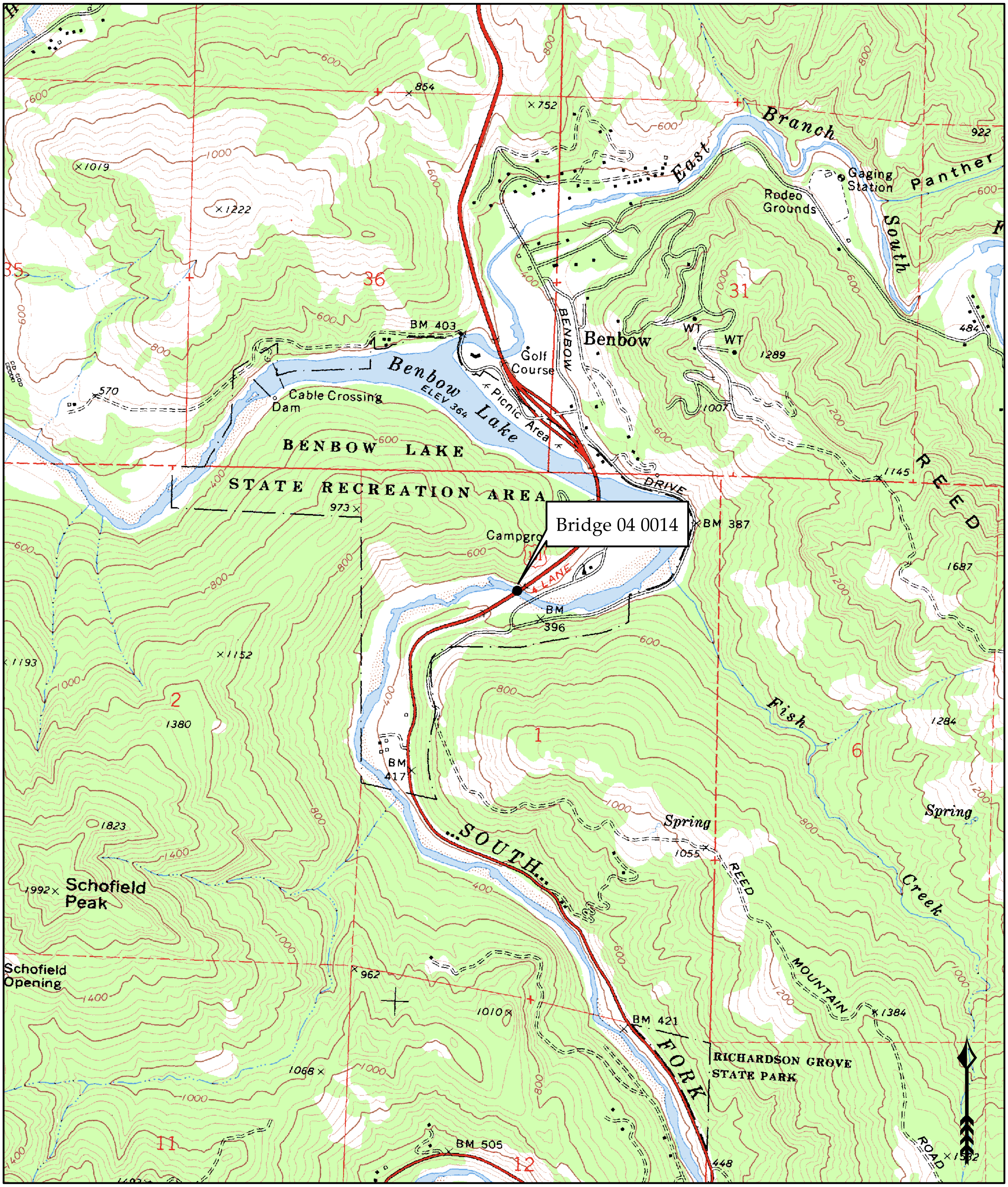
View of northern column with vertically rusticated concrete, June 6, 2014

LOCATION MAP

Primary #
HRI#
Trinomial

***Resource Name or #:** Bridge 04 0155

***Map Name:** Gaberville ***Scale:** 1:24,000 ***Date of Map:** 1970



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

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code Reviewer Date

***Resource Name or #:** Bridge 04 0225

P1. Other Identifier: Bluff Creek Bridge

***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:** Weitchpec **Date:** **T** ; **R** ; **¼ of** **¼ of Sec** **;** M.D. **B.M.**

c. Address: n/a City: Zip:

d. UTM: Zone: 10 ; mE/ mN (G.P.S.)

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

The Bluff Creek Bridge is located in Humboldt County on State Route 96 at post mile 28.91.

***P3a. Description:**

The bridge is part of the State Route 96; the highway segment on which the bridge is located is known as the Bigfoot Highway. It is a steel arch structure, 400 feet in length with a main span of 270 feet, that crosses the Bluff Creek. It has a steel, two hinged, open spandrel arch with single span steel girders (4) at the approach span and at each end. Reinforced concrete open end seat abutments are on steel piles at Abutment 1 and spread footings for the arch and Abutment 4. The two lane bridge has steel tubular railing.

***P3b. Resource Attributes:** HP 19. Bridge

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

P5a. Photo or Drawing

P5b. Description of Photo:
View looking east
June 5, 2014

***P6. ate Constructed/Age and Sources:** ☒Historic
☐Prehistoric ☐Both
1967, Caltrans Bridge Files

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

***P8. Recorded by:**
Janice Calpo
Dept. of Transportation
1120 N Street
Sacramento, CA 95814

***P9. Date Recorded:**
October 1, 2014

***P10. Survey Type:**
Intensive

***P11. Report Citation:**
Helen Blackmore, Janice Calpo, Lauren Clementino and Noah M. Stewart with contributions from Andy Hope, *Historic Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2015 Update* (California Department of Transportation, Sacramento, 2015).

***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**

***Resource Name or #** Bridge 04 0225

B1. Historic Name:
B2. Common Name: Bluff Creek Bridge
B3. Original Use: Bridge **B4. Present Use:** Bridge
***B5. Architectural Style:**
***B6. Construction History:**
The bridge was built in 1967. Since then it has undergone minor maintenance work including: damage to the 5th rail post corrected (1970); expansion joint repair (1979); and deck surface treated with chip seal (1987).

***B7. Moved?** ☒No ☐Yes ☐Unknown **Date:** **Original Location:**
***B8. Related Features:**

B9a. Architect: D. M. G. Bureau of Public Roads **b. Builder:** Thomas Construction Co.
***B10. Significance: Theme:** N/A **Area:** N/A
Period of Significance: N/A **Property Type:** N/A **Applicable Criteria:** N/A
The Bluff Creek Bridge was constructed by Thomas Construction Co. for the Bureau of Public Roads. It was one of the many highway improvements carried out during the late 1960s and early 1970s. It is not significant under National Register of Historic Places (National Register) Criterion A or California Register of Historical Resources (California Register) Criterion 1 for its association with the development of the highway network through the region. In addition, the bridge is not associated with other events that would make it significant under National Register Criterion A or California Register Criterion 1. It is not associated with a person who made a significant contribution to history at the local, state, or national level, and it is not significant under National Register Criterion B or California Register Criterion 2.

Steel arch bridges are rare in California. Generally, metal arches were more difficult and expensive to fabricate and construct than metal truss bridges, and as the twentieth century progressed bridge designers and builders found other bridge types to be more economical and easier to build. During the early period of motor vehicle traffic in the state, steel arches were among the various metal bridges used to effectively and economically provide safe crossing. In some circumstances the arch form was chosen for aesthetic reasons, invoking the Classical architecture popular during the early twentieth century. Environmental circumstances also made the form the best design solution for a setting where reinforced concrete was not economically feasible. Steel arches are built with parallel arches and support members, constructed both as in-deck and through forms. (See Continuation Sheet, page 3).

B11. Additional Resource Attributes:

***B12. References:** (See Continuation Sheet, page 3).
B13. Remarks:

***B14. Evaluator:**
Helen Blackmore
California Department of Transportation

***Date of Evaluation:**
October 1, 2014

(This space reserved for official comments.)

B10. Significance (continued):

There are two distinct steel arch designs found in California: Spandrel-braced arch and solid-ribbed arch. Spandrel-braced arches have webbed triangular members like trusses, but with a rounded bottom chord that forms an arch. They are built in deck form with spandrel columns and lateral braces. There are four historic spandrel-braced metal arches in operation in California. Solid-ribbed arches have plate girder beams cast in a curved form. The deck is supported by metal posts or suspenders attached to the arch form. There are only three solid ribbed arches in operation in California. The Division of Highways, and later Caltrans, continued to sparingly use this bridge type, yet sometimes to great effect, for example, Cold Spring Canyon Bridge on State Route 154 in Santa Barbara County (51 0037) built in 1963.

Bridge 04 0225 is a fairly typical example of steel arch construction. The fabrication, transportation, and erection of steel arch bridges was not a significant achievement in the state by the time the Bluff Creek Bridge was constructed in 1967. The largest steel arch span bridge is the Cold Springs Canyon Bridge (51 0037), built in 1963, has a main span of 700 feet and a full span of 1218 feet. Previous to this, the North Folk of Feather River Bridge (12 0038) held the record for longest main span at 350 feet spanning a total distance of 684 feet, which was built in 1932. Since the construction of these two bridges the Gerald Desmond Bridge (53C0065), built in 1968, achieved a main span of 527 feet and spanned a total distance of 5143 feet with 48 spans of various types. Bridge 04 0225 is typical of a steel arch bridge erected in the 1960s and 1970s and is not a significant work of civil engineering nor does it stand out with regard to modern bridge aesthetics. Bluff Creek Bridge is not significant under National Register Criterion C or California Register Criterion 3.

Bridge 04 0225 was erected as a typical transportation improvement project of the period and it is not associated with events that have made a significant contribution to the broad patterns of history, therefore it is not significant under National Register Criterion A or California Register Criterion 1. It is not associated with the lives of significant persons in history and is not significant under National Register Criterion B or California Register Criterion 2. Bridge 04 0225 does not embody the distinctive characteristics of a steel arch bridge construction, and does not represent the work of a master, and does not possess high Modern aesthetic value. Further, it does not represent a significant and distinguishable entity whose components may lack individual distinction. The Bluff Creek Bridge is not significant under National Register Criterion C or California Register Criterion 3. The bridge has not yielded and is not likely to yield information important in history and is not significant under National Register Criterion D or California Criterion 4. Bridge 04 0225 is not eligible for inclusion on the National Register or California Register.

***B12. References (continued):**

"An Architect Concentrates on the Aesthetics in Bridge Design." *Pacific Builder & Engineer* 64, no. 4 (Apr 1958): 86-7.

California Division of Highways. "As Built Plans – Bridge 04 0225." 1966.

Caltrans Bridge Inspection Report: September 11, 2012

Hope, Andrew. *Caltrans Statewide Historic Bridge Inventory Update – Survey and Evaluation of Common Bridge Types.* California Department of Transport, November 2004.

JRP Historical Consulting Services. *Historic Context Statement – Roadway Bridges of California: 1936-1959.* Prepared for State of California Department of Transportation, n.p., September 2004.

***Resource Name or # (Assigned by recorder)** Bridge 04 0225

***Recorded by:** Janice Calpo

***Date:** October 1, 2014 ☒ **Continuation** ☐ **Update**

P5b. Photographs (continued):

Detail, looking east, June 5, 2014.

View looking southwest, June 5, 2014.

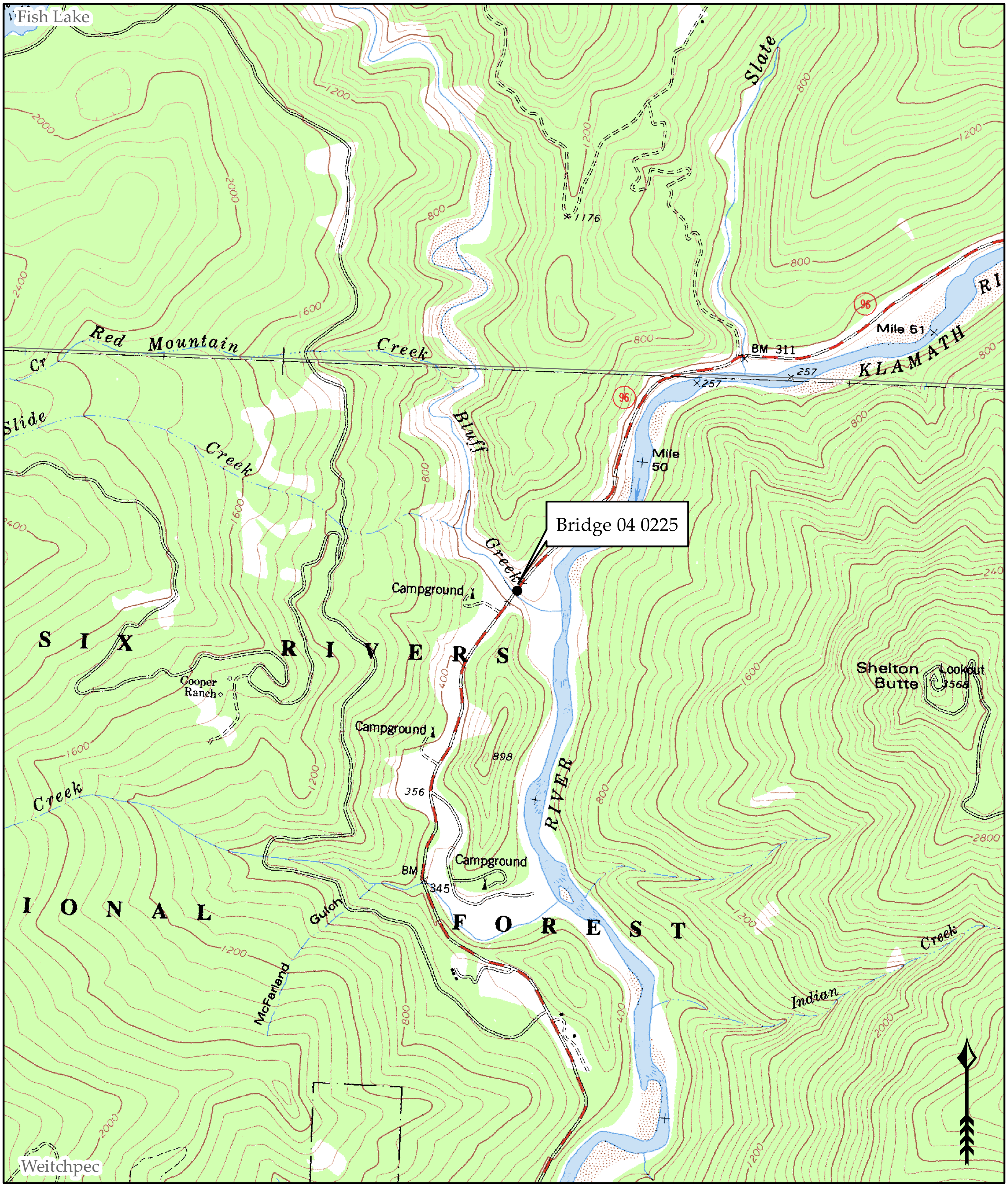
Roadway view looking southwest, June 5, 2014.

State of California The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LOCATION MAP

Primary #
HRI#
Trinomial

 ***Resource Name or #:** Bridge 04 0225

***Map Name:** Weitchpec ***Scale:** 1:24,000 ***Date of Map:** 1979



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

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code | Reviewer | Date

 *Resource Name or #: Bridge 04C0124

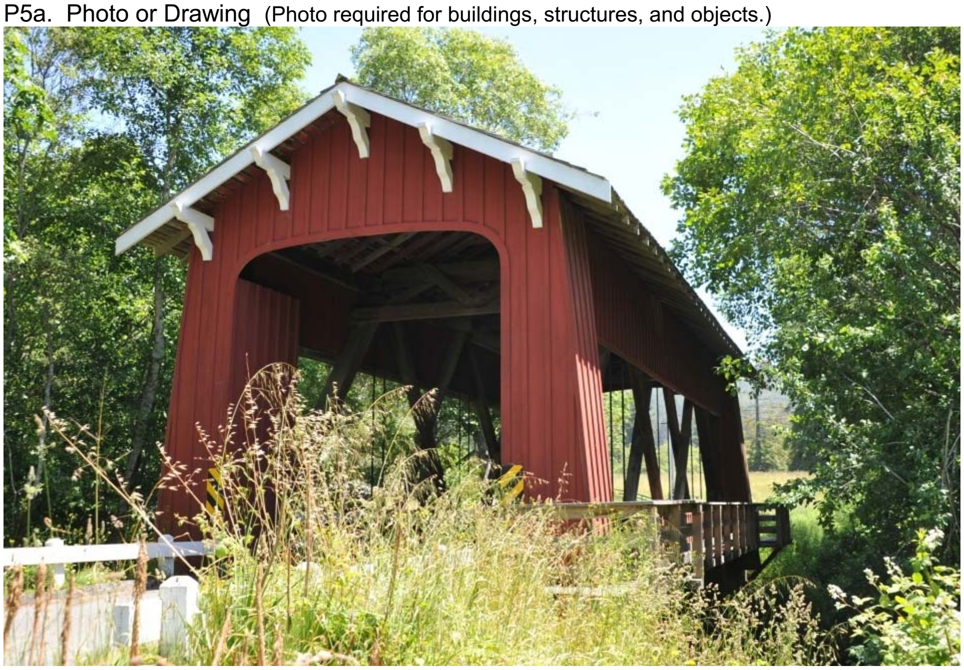
P1. Other Identifier: Brookwood Bridge or Jacoby Creek Bridge

***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:** Arcata South **Date:** T ; R ; ¼ of ¼ of Sec ; M.D. B.M.
c. Address: n/a City: Zip:
d. UTM: Zone: 10 ; mE/ mN (G.P.S.)
e. Other Locational Data: Elevation:
On Brookwood Drive 0.1 mile south of Jacoby Creek Road in Humboldt County

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)
The Brookwood Bridge (04C0124) is located on Brookwood Drive over Jacoby Creek. The bridge is a single-span covered Howe timber through truss built on reinforced concrete abutments supported by spread footings. It is 68 feet in length and 20.8 feet in width. The bridge has one 13.7 foot wide traffic lane on a wood plank deck with timber guard railings on either side. A three foot wide pedestrian walkway with wood posts and railings runs along the exterior of the south side of the bridge. The truss is covered by a gabled wood shake roof which is supported by four corner posts and board and batten walls. The side walls (on the north and south) have large openings which expose the truss within.

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

P5a. Photo or Drawing (Photo required for buildings, structures, and objects.)



P5b. Description of Photo: (View, date, accession #)
View, looking east
June 5, 2014

***P6. Date Constructed/Age and Sources:** ■Historic ☐Prehistoric ☐Both
1967, Caltrans Bridge Files

***P7. Owner and Address:**
Humboldt County
825 5th St.
Eureka, CA 95501

***P8. Recorded by:** (Name, affiliation, and address)
Janice Calpo,
Dept. of Transportation
1120 N Street
Sacramento, CA 95814

***P9. Date Recorded:**
October 1, 2014

***P10. Survey Type:**
Intensive

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.")
Helen Blackmore, Janice Calpo, Lauren Clementino and Noah M. Stewart with contributions from Andy Hope, *Historic Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2015 Update* (California Department of Transportation, Sacramento, 2015).

***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):

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

Primary #
HRI#

BUILDING, STRUCTURE, AND OBJECT RECORD

***NRHP Status** 6Z

***Resource Name or #** (Assigned by recorder) Bridge 04C0124

B1. Historic Name:

B2. Common Name: Brookwood Bridge or Jacoby Creek Bridge

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

***B5. Architectural Style:** Covered Howe timber through truss

***B6. Construction History:**

The Brookwood Bridge was constructed with private finances by Brookwood Subdividers in 1967. Humboldt County accepted jurisdiction of the Brookwood Bridge and Brookwood Drive in 1969.

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

***B8. Related Features:**

None.

B9a. Architect: Charles Roscoe **b. Builder:** Brookwood Subdividers

***B10. Significance: Theme:** Engineering **Area:** Humboldt County

Period of Significance: 1967 **Property Type:** Structure **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 Brookwood Bridge was constructed by Brookwood Subdividers as part of the Brookwood Subdivision. The Brookwood Bridge and the road it carries, Brookwood Drive, were turned over to Humboldt County to be added to the public road system in 1969. The Brookwood Bridge is not associated with the development of the highway network through the region and is not associated with other events that would make it significant under National Register of Historic Places (National Register) Criterion A or California Register of Historical Resources (California Register) Criterion 1. It is not associated with a person who made a significant contribution to history at the local, state, or national level, and it is not significant under National Register Criterion B or California Register Criterion 2.

Patented in 1840, the Howe truss become one of the most commonly used truss types in nineteenth century bridge construction. William Howe, a Massachusetts carpenter, added substantial strength to the timber truss by employing an iron rod that connected the opposing vertices of the A-frames of the wooden diagonals to maintain the rigidity of the truss. Covered bridges were constructed with walls and a roof to protect the truss timbers from the elements. Most were built in rural areas which had an abundance of wood. While the majority of these bridges were constructed prior to World War II, communities have infrequently continued to build them to recapture the romance of times gone by. (See Continuation Sheet.)

B11. Additional Resource Attributes: (List attributes and codes)

***B12. References:**

See Continuation Sheet.

B13. Remarks:

***B14. Evaluator:**

Lauren Clementino

***Date of Evaluation:**

November 24, 2014

(This space reserved for official comments.)

***Recorded by:** Janice Calpo ***Date:** October 1, 2014 ■ Continuation □ Update

B10. Significance (continued):

Although covered bridges throughout the country were typically built using the Burr, Howe, and Warren trusses, California's existing covered bridges all have Howe trusses. There are a total of seven covered bridges on public roads in California; the Brookwood Bridge is the only one within the current survey population.

Although the Brookwood Bridge is a rare covered timber truss, it is a late example and at the time of its construction timber trusses had been an obsolete bridge type for several decades. Its span length of 68 feet is comparable to other timber truss bridges. The Brookwood Bridge does not represent a significant innovation in bridge engineering or display a significant variation within an established bridge type. Although covered timber truss bridges are an intrinsically aesthetic bridge type, the Brookwood Bridge does not possess significant or distinctive detailing. The Brookwood Bridge is not significant as a work of civil engineering or for aesthetic value.

The houses in the Brookwood Subdivision were constructed in a mix of architectural styles, with the majority being Ranch style houses, over the course of several decades. These modern houses contrast with the antiquated design of the Brookwood Bridge. While evaluation of the Brookwood Subdivision as a historic district is outside the scope of the current survey, it does not appear that there is enough unification or cohesion within the subdivision to form a district. The Brookwood Bridge is not significant as a part of a district associated with the Brookwood Subdivision and is not significant under National Register Criterion C or California Register Criterion 3.

The Brookwood Bridge is not associated with events that have made a significant contribution to the broad patterns of history and is not significant under National Register Criterion A or California Criterion 1. It is not associated with the lives of significant persons in history and is not significant under National Register Criterion B or California Register Criterion 2. The Brookwood Bridge does not embody distinctive characteristics of covered timber truss construction, does not represent the work of a master, and does not possess high artistic values. Further, it does not represent a significant and distinguishable entity whose components may lack individual distinction. The Brookwood Bridge is not significant under National Register Criterion C or California Register Criterion 3. The bridge has not yielded and is not likely to yield information important in history and is not significant under National Register Criterion D or California Register Criterion 4. The Brookwood Bridge is not eligible for inclusion on the National Register or California Register.

B12. References:

Harrison, Carol. "The Covered Bridges of Humboldt County: Builders reminisce on 40th anniversary of completion of Brookwood Bridge." *Eureka Times-Standard.* November 24, 2009.

JRP Historical Consulting. *Caltrans Historic Bridges Inventory Update: Timber Truss, Concrete Truss, and Suspension Bridges*. Prepared for the California Department of Transportation Environmental Program, n.p., April 2004.

JRP Historical Consulting Services. *Historic Context Statement - Roadway Bridges of California: 1936-1959*. Prepared for State of California Department of Transportation, n.p., January 2003.

Lee, Ali. "Meet You At Brookwood Covered Bridge." *The Arcata Eye*. May 1, 2013. http://www.arcataeye.com/2013/05/ali-lee-meet-you-at-brookwood-covered-bridge/.

Scott-Goforth, Grant. "Bridging the Divide: Bayside residents are concerned the county will replace a quaint Jacoby Creek bridge."*The North Coast Journal.* May 9, 2013. http://www.northcoastjournal.com/humboldt/bridging-the-divide/Content?oid=2247899.

Scott-Goforth, Grant. "Brookwood Covered Bridge Saved, For Now." *The North Coast Journal.* December 3, 2013. http://www.northcoastjournal.com/Blogthing/archives/2013/12/03/brookwood-covered-bridge-saved-for-now.

P5b. Photographs (continued):

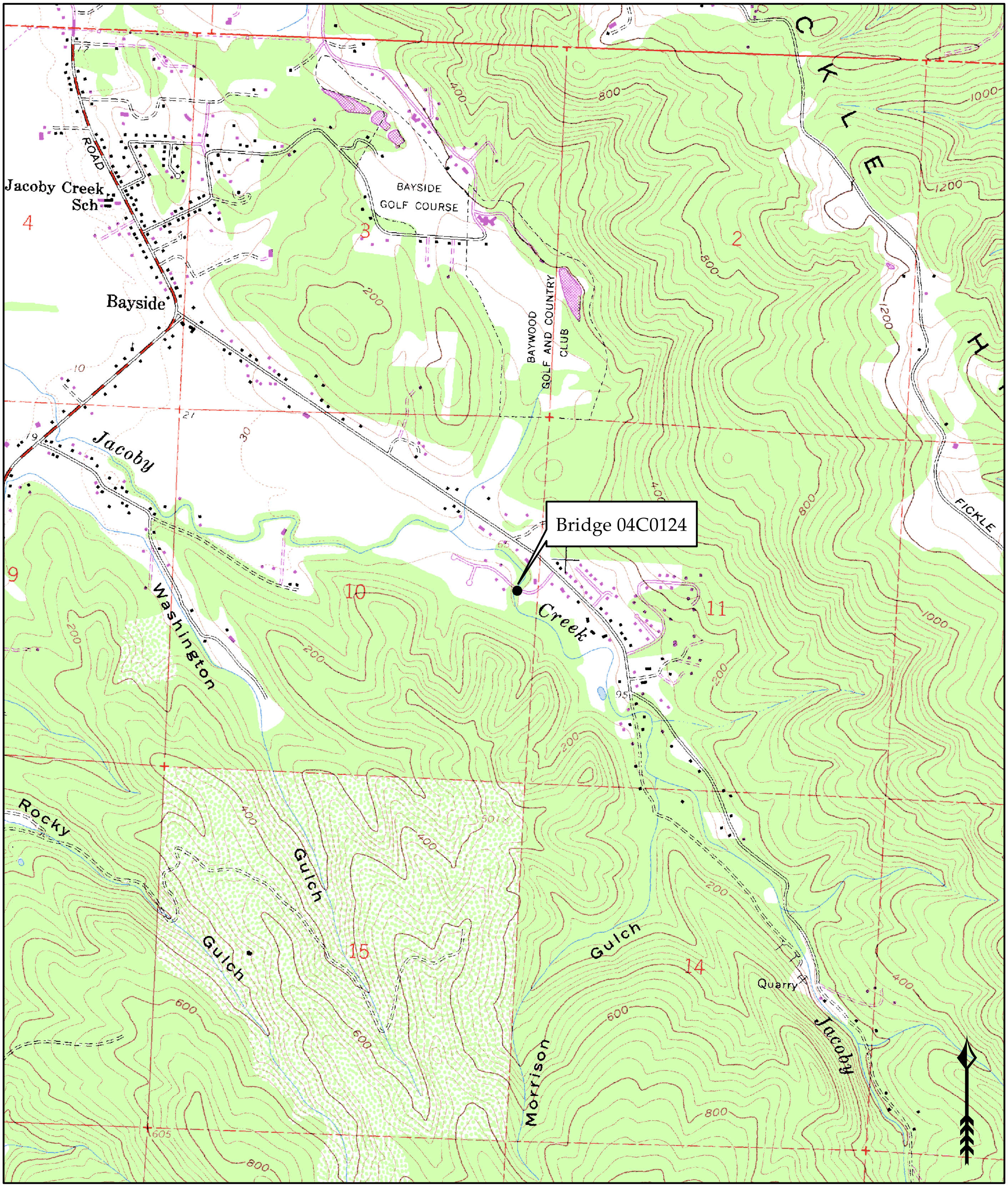
Detail, looking south (June 5, 2014)

Detail, looking northeast (June 5, 2014)

State of California The Resources Agency DEPARTMENT OF PARKS AND RECREATION **LOCATION MAP**	Primary # HRI# Trinomial

 ***Resource Name or #:** Bridge 04C0124

***Map Name:** Arcata South ***Scale:** 1:24,000 ***Date of Map:** 1959



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

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code Reviewer Date

 *Resource Name or # Bridge 04C0236

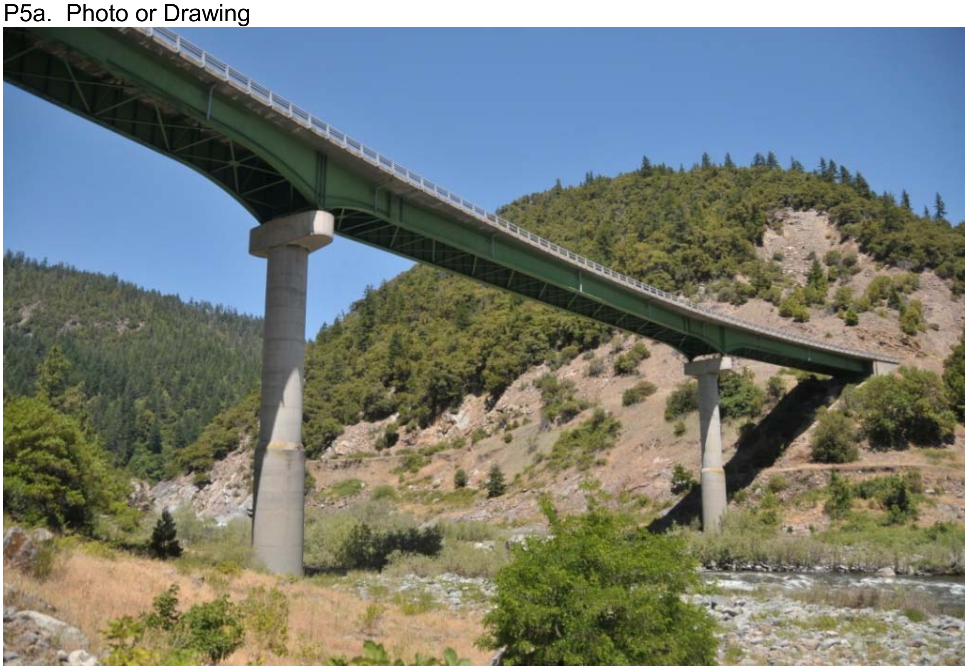
P1. Other Identifier: Klamath River Bridge

***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:** Somes Bar **Date:** **T** ; **R** ; **¼ of** **¼ of Sec** **;** M.D. **B.M.**
c. Address: n/a City: Zip:
d. UTM: Zone: 10 ; mE/ mN (G.P.S.)
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Elevation:
The Klamath River Bridge is located on Ishi Pishi Road 0.5 miles southwest of State Route 96.

***P3a. Description:**
The Klamath River Bridge is located on Ishi Pishi Road, at the confluence of the Klamath River and the Salmon River, west of Somes Bar in Humboldt County. Bridge 04C0236 is a long span steel girder structure, 664 feet in length that crosses the Klamath River. The bridge has three spans with the main span measuring 258 feet. Simple and continuous composite welded steel plate girders have a cast in place reinforced concrete deck on reinforced concrete seat abutments with circular reinforced concrete single column bents, all on spread footings. Span 3 has a drop-in portion. The two lane bridge has metal beam guard railing with pipe railing on steel "T" sections.

***P3b. Resource Attributes:** HP 19. Bridge
***P4. Resources Present:** ☐Building ☒Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5a. Photo or Drawing



P5b. Description of Photo:
View looking northwest,
June 4, 2014

***P6. Date Constructed/Age and Sources:** ☒Historic ☐Prehistoric ☐Both
1967, Caltrans Bridge Files

***P7. Owner and Address:**
Humboldt County
825 5th St.
Eureka, CA 95501

***P8. Recorded by:**
Janice Calpo
Dept. of Transportation
1120 N Street
Sacramento, CA 95814

***P9. Date Recorded:**
October 1, 2014

***P10. Survey Type:**
Intensive

***P11. Report Citation:** Helen Blackmore, Janice Calpo, Lauren Clementino and Noah M. Stewart with contributions from Andy Hope, *Historic Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2015 Update* (California Department of Transportation, Sacramento, 2015).

***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**

***Resource Name or #** Bridge 04C0236

B1. Historic Name:

B2. Common Name: Klamath River Bridge

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

***B5. Architectural Style:** Modern

***B6. Construction History:**
The bridge was construction in 1967 to replace the suspension bridge that was destroyed in the Dec. 1964 flood.

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

***B8. Related Features:**

B9a. Architect: Neil P. Richards and Assoc. for Humboldt County **b. Builder:** Hughes & Ladd

***B10. Significance: Theme:** N/A **Area:** N/A

Period of Significance: N/A **Property Type:** N/A **Applicable Criteria:** N/A

The Klamath River Bridge was constructed by Hughes & Ladd of Redding, CA to replace the bridge that was at the same site, which was destroyed in December 1964 by a flood. It was one of the many highway improvements carried out during the late 1960s and 1970s. Bridge 04C0236 is not significant under National Register of Historic Places (National Register) Criterion A or California Register of Historical Resources (California Register) Criterion 1 for its association with the development of the highway network through the region. In addition, the bridge is not associated with other events that would make it significant under National Register Criterion A or California Register Criterion 1. It is not associated with a person who made a significant contribution to history at the local, state, or national level, and it is not significant under National Register Criterion B or California Register Criterion 2.

This structure is one of over 500 bridges of its type constructed between 1965 and 1974. Prior to this, there were more than 1,800 steel girder bridges in the State of California. The fabrication, transportation, and erection of large steel girder bridges was not a significant achievement in the state by the time the Klamath River Bridge was constructed in 1967. By the early 1970s, only 10% of all new bridges in the state were erected in steel. Steel girder bridges had their heyday in the 1930s, when they accounted for one third of bridges constructed. By the 1950s, steel girder bridge construction had dropped to 20% of new bridges erected throughout the state. As postwar traffic demands required wider roads, steel bridges proved less cost effective and the majority of new bridges were constructed in concrete.
(See Continuation Sheet, page 3)

B11. Additional Resource Attributes:

***B12. References:** (See Continuation Sheet, page 3)

B13. Remarks:

***B14. Evaluator:**
Helen Blackmore
California Department of Transportation

***Date of Evaluation:**
October 1, 2014

(This space reserved for official comments.)

B10. Significance (continued):

By the 1960s, nearly any beam length could be fabricated and assembled on-site and long steel beams. Those used in the Klamath River Bridge were not considered a significant technological achievement. Bridge 04C0236 is a fairly typical example of steel girder construction for this period. It is not one of the larger examples of this type and it does not incorporate a significantly long main span. Whiskey Creek Bridge held title to the longest main span of 350 feet in length from its initial construction in 1961 until 1967, when a bridge carrying Interstate 280 over San Mateo Creek achieved a 360 foot main span. The Klamath River Bridge with a total length of 664 feet and main span of 240 feet in length is not significant as a work of civil engineering. The Klamath River Bridge is not significant under National Register Criterion C or California Register Criterion 3. Its construction was typical for the 1960s and 1970s, and was not a significant work of civil engineering.

Bridge 02C0236 was erected as a typical transportation improvement project of the period and the bridge is not associated with events that have made a significant contribution to the broad patterns of history, therefore it is not significant under National Register Criterion A or California Register Criterion 1. It is not associated with the lives of significant persons in history and is not significant under National Register Criterion B or California Register Criterion 2. Bridge 02C0236 does not embody the distinctive characteristics of a steel girder bridge construction, does not represent the work of a master and does not possess high artistic value. Further, it does not represent a significant and distinguishable entity whose components may lack individual distinction. The Klamath River Bridge is not significant under National Register Criterion C or National Register Criterion 3. The bridge has not yielded and is not likely to yield information important in history and is not significant under National Register Criterion D or California Register Criterion 4. Bridge 02C0236 is not eligible for inclusion on the National Register or California Register.

***B12. References:**

"An Architect Concentrates on Aesthetics in Bridge Design." *Pacific Builder & Engineer* 64, np. 4 (April 1958): 86-87.

California Division of Highways. "As Built Plans – Bridge 04C0236, 1965.

Caltrans Bridge Inspection Report: April 22, 2014.

Hope, Andrew. *Caltrans Statewide Historic Bridge Inventory Update – Survey and Evaluation of Common Bridge Types*. Californian Department of Transportation, November 2004.

Mead & Hunt. *Historic Resource Evaluation Report – Caltrans Statewide Historic Bridge Inventory: 2010 Update*. California Department of Transportation, 2010.

***Resource Name or #** Bridge 04C0236

***Recorded by:** Janice Calpo ***Date:** October 1, 2014 ☒ **Continuation** ☐ **Update**

P5b. Photographs (continued):

Detail of southern bent connector looking northwest, June 4, 2014

Detail of southern bent looking west, June 4, 2014

***Resource Name or #** Bridge 04C0236

***Recorded by:** Janice Calpo ***Date:** October 1, 2014 ☒ **Continuation** ☐ **Update**

Two steel girders with welded gussel plates looking south, June 4, 2014

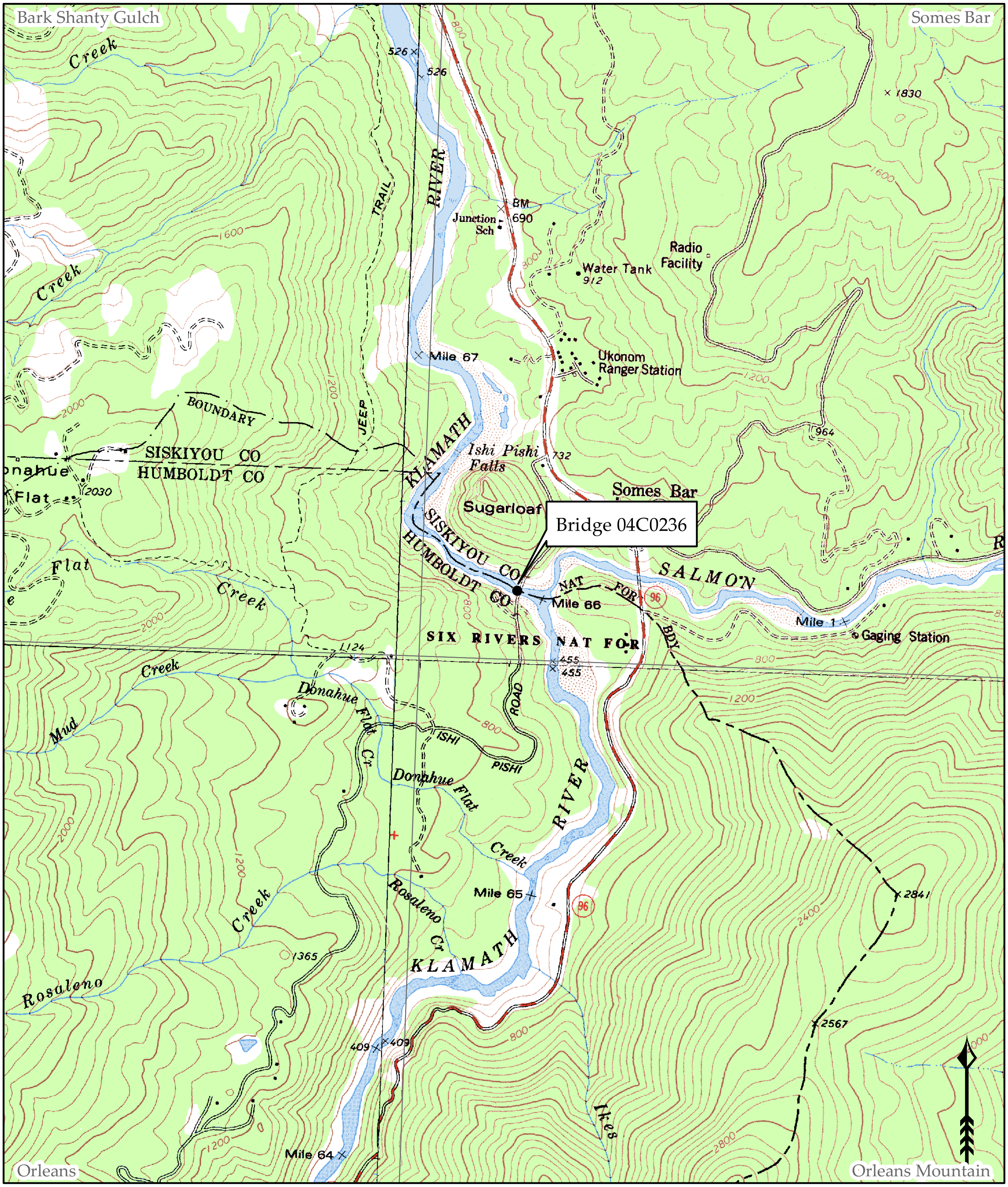
Primary #
HRI#

LOCATION MAP

Trinomial

***Resource Name or #:** Bridge 04C0236

***Map Name:** Somes Bar ***Scale:** 1:24,000 ***Date of Map:** 1979



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

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code Reviewer Date

***Resource Name or #:** Bridge 09C0148

P1. Other Identifier: Spanish Creek Bridge

***P2. Location:** ☐ **Not for Publication** ■ **Unrestricted** ***a. County:** Plumas
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad:** Meadow Valley **Date:** **T** ; **R** ; **¼ of** **¼ of Sec** **;** M.D. **B.M.**
c. Address: n/a City: Zip:
d. UTM: Zone: 10 ; mE/ mN (G.P.S.)
e. Other Locational Data: Elevation:
On Gopher Hill Landfill Road approximately 200 feet north of Bucks Lake Road, Plumas County.

***P3a. Description:**
The Spanish Creek Bridge (09C0148) is a single span steel pony truss structure 81 feet in length that crosses Spanish Creek. The riveted steel pony truss is 80 feet in length and has seven rolled steel stringers on rolled steel floor beams. It has a corrugated steel deck with an asphaltic concrete overlay. The bridge is founded on steel pile and cap bent type abutments. The approach fills are retained by vertical precast concrete slabs that are tied back by cable stays to the ground. The one lane bridge has metal guard railing on steel posts. The guard railing separates the roadway from narrow pedestrian walkways on steel grates on either side of the truss.

***P3b. Resource Attributes:** HP 19. Bridge
***P4. Resources Present:** ☐Building ■Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5a. Photo or Drawing (Photo required for buildings, structures, and objects.)

P5b. Description of Photo:
View looking west
June 3, 2014

***P6. Date Constructed/Age and Sources:** ■Historic
☐Prehistoric ☐Both
1969, Caltrans Bridge Files

***P7. Owner and Address:**
Plumas County
1834 E. Main St.
Quincy, CA 95971

***P8. Recorded by:**
Janice Calpo
Dept. of Transportation
1120 N Street
Sacramento, CA 95814

***P9. Date Recorded:**
October 1, 2014

***P10. Survey Type:**
Intensive

***P11. Report Citation:** Helen Blackmore, Janice Calpo, Lauren Clementino and Noah M. Stewart with contributions from Andy Hope, *Historic Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2015 Update* (California Department of Transportation, Sacramento, 2015).

***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):

Primary #
HRI#

BUILDING, STRUCTURE, AND OBJECT RECORD

***NRHP Status** 6Z

***Resource Name or #** Bridge 09C0148

B1. Historic Name:
B2. Common Name: Spanish Creek Bridge
B3. Original Use: Bridge B4. Present Use: Bridge
***B5. Architectural Style:** Steel Warren pony truss
***B6. Construction History:**

The truss was salvaged from an earlier bridge (9C0021) and was moved to the current location and founded on new abutments in 1969. It is estimated in Caltrans records that the truss was constructed for the earlier bridge in the 1930s. The bridge was once two lanes but was limited to one lane for safety reasons in 1986. The original floor structure and deck of the bridge were timber and were replaced with a steel floor structure and corrugated steel decking in 1988.

***B7. Moved?** ☐**No** ■**Yes** ☐**Unknown** **Date:** 1969 **Original Location:** Bridge 9C0021
***B8. Related Features:**
None.

B9a. 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

The Spanish Creek Bridge (09C0148) was constructed in 1969 by Plumas County as a local transportation improvement project. The Spanish Creek Bridge is not significant under National Register of Historic Places (National Register) Criterion A or California Register of Historical Resources (California Register) Criterion 1 for association with the development of the highway network through the region. In addition, the bridge is not associated with other events that would make it significant under National Register Criterion A or California Register Criterion 1. It is not associated with a person who made a significant contribution to history at the local, state, or national level, and it is not significant under National Register Criterion B or California Register Criterion 2.

This structure is one of six metal truss bridges constructed between 1965 and 1974. There are 315 metal truss bridges in California (excluding moveable and steel arch bridges, many of which are also trusses). This bridge type was once common in California, but the number of new metal truss bridges constructed in the state dropped off substantially after the 1950s. As postwar traffic demands required wider roads, steel bridges proved less cost effective and the majority of new bridges were constructed in concrete. By the early 1970s, only 10% of all new bridges in the state were erected in steel. (See Continuation Sheet 3)

B11. Additional Resource Attributes: (List attributes and codes)

***B12. References:** (See Continuation Sheet 3)
B13. Remarks:

***B14. Evaluator:**
Lauren Clementino
California Department of Transportation

***Date of Evaluation:**
November 17, 2014

B10. Significance (continued):
The fabrication, transportation, and erection of metal truss bridges were not significant achievements in the state by the time the Spanish Creek Bridge was constructed in 1969.

The Spanish Creek Bridge is a Warren pony truss structure. The Warren truss was one of the most common truss types built in the state. California and many other states had developed standard designs for truss bridges by the 1920s and the Warren truss was commonly used along California highways in the 1920s and 1930s. Due to limited access to concrete plants and equipment in rural areas, it was often economical to relocate dismantled trusses rather than erect new bridges, which was likely the case for the Spanish Creek Bridge. Although the truss of the Spanish Creek Bridge dates from the 1930s it was salvaged from an earlier bridge and moved to the current location in 1969, thus suffering a loss of integrity of location and setting. The majority of Warren trusses constructed in California were pony trusses; later design variations with vertical supports and polygonal top chords were utilized in the 1940s through the 1950s. The typical range of highway Warren truss bridge span lengths is between 40 and 500 feet. The overall length of 81 feet and single span of 80 feet in length for the Spanish Creek Bridge are not notable when compared to other Warren truss bridges in California. The Spanish Creek Bridge was constructed after the Warren was already an established truss type in California and does not represent a significant innovation in bridge engineering or display a significant variation within an established bridge type. The Spanish Creek Bridge does not display any decorative features or significant architectural details. The Spanish Creek Bridge is not significant as a work of civil engineering or for aesthetic value and is not significant under National Register Criterion C or California Register Criterion 3.

The Spanish Creek Bridge was erected as a typical transportation improvement project of the period and the bridge is not associated with events that have made a significant contribution to the broad patterns of history, therefore it is not significant under National Register Criterion A or California Register Criterion 1. It is not associated with the lives of significant persons in history and is not significant under National Register Criterion B or California Register Criterion 2. The Spanish Creek Bridge is not a distinctive example of metal truss bridge construction. It does not represent the work of a master and does not possess high artistic value. Further, it does not represent a significant and distinguishable entity whose components may lack individual distinction. The Spanish Creek Bridge is not significant under National Register Criterion C or California Register Criterion 3. The bridge has not yielded and is not likely to yield information important in history and is not significant under National Register Criterion D or California Register Criterion 4. The Spanish Creek Bridge is not eligible for inclusion on the National Register or California Register.

B12. References (continued):
Department of Transportation. Bridge Inspection Reports for Bridge Number 09C0148. August 23, 1979 to September 9, 2014.

JRP Historical Consulting. *Caltrans Historic Bridges Inventory Update: Metal Truss, Movable, and Steel Arch Bridges*. Prepared for the California Department of Transportation Environmental Program, n.p., September 2004 (revised).

JRP Historical Consulting Services. *Historic Context Statement - Roadway Bridges of California: 1936-1959*. Prepared for State of California Department of Transportation, n.p., January 2003.

(This space reserved for official comments.)

P5b. Photographs (continued):

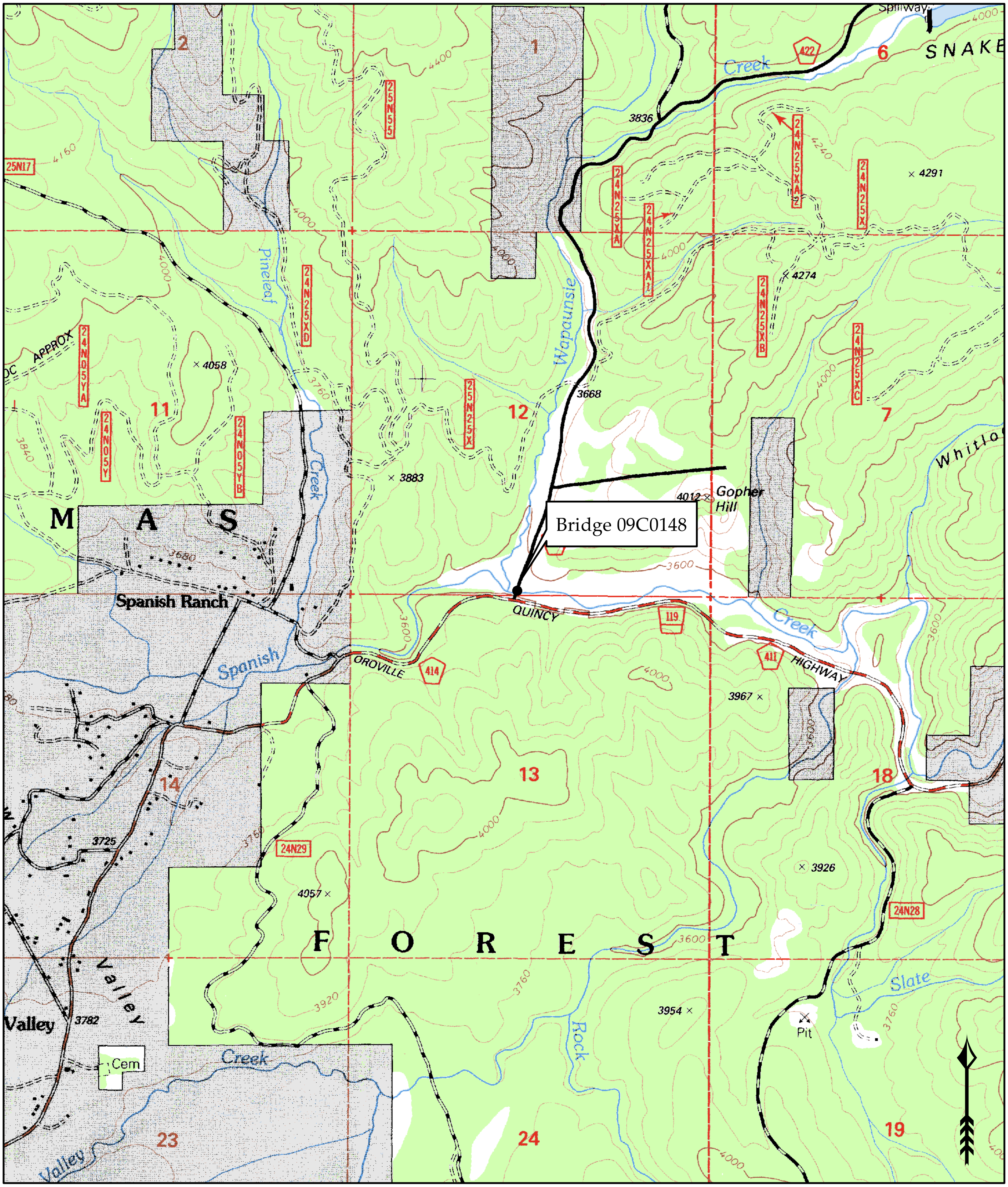
View, looking north (June 2, 2014)

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LOCATION MAP

Primary #
HRI#
Trinomial

***Resource Name or #:** Bridge 09C0148

***Map Name:** Meadow Valley ***Scale:** 1:24,000 ***Date of Map:** 1980



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

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code | Reviewer | Date

*Resource Name or # Bridge 10C0005

P1. Other Identifier: Eel River Bridge and Overhead

***P2. Location:** ☐ Not for Publication ☒ Unrestricted ***a. County:** Mendocino
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad:** Dos Rios **Date:** **T** ; **R** ; **¼ of** **¼ of Sec** **;** M.D. **B.M.**
c. Address: n/a City: Zip:
d. UTM: Zone: 10 ; mE/ mN (G.P.S.)
e. Other Locational Data: Elevation:
The Eel River Bridge and Overhead is located on Dos Rios Road 0.5 miles northwest of State Route 162.

***P3a. Description:**
The Eel River Bridge is located on the outskirts of Dos Rios, a small town on the Middle Fork of the Eel River. Bridge 10C0005 is a long span steel girder structure, 624 feet in length that crosses the Eel River. The bridge has three spans with the main span measuring 240 feet in length. It has a reinforced concrete slab in Spans 1 and 2 and non-composite reinforced concrete deck on two continuous welded steel plate girders in Spans 3 to 5, the middle span is suspended. Spans 6 and 7 is non-composite reinforced concrete deck on simply-supported rolled steel beams. Span 8 has a composite reinforced concrete deck on four simply-supported welded steel plate girders. (See Continuation Sheet, page 3)

***P3b. Resource Attributes:** HP 19. Bridge
***P4. Resources Present:** ☐Building ☒Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5a. Photo or Drawing

P5b. Description of Photo:
View looking north,
June 4, 2014

***P6. Date Constructed/Age and Sources:** ☒Historic ☐Prehistoric ☐Both
1966, Caltrans Bridge Files

***P7. Owner and Address:**
Mendocino County
501 Low Gap Road
Ukiah, CA 95482

***P8. Recorded by:**
Janice Calpo
Dept. of Transportation
1120 N Street
Sacramento, CA 95814

***P9. Date Recorded:**
October 1, 2014

***P10. Survey Type:**
Intensive

***P11. Report Citation:** Helen Blackmore, Janice Calpo, Lauren Clementino and Noah M. Stewart with contributions from Andy Hope, *Historic Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2015 Update* (California Department of Transportation, Sacramento, 2015).

***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):

Primary #
HRI#

BUILDING, STRUCTURE, AND OBJECT RECORD

***NRHP Status**

***Resource Name or #** Bridge 10C0005

B1. Historic Name:
B2. Common Name: Eel River Bridge & Overhead
B3. Original Use: Bridge **B4. Present Use:** Bridge
***B5. Architectural Style:** Modern
***B6. Construction History:**
The bridge was built in 1966 to replace the original truss structure that was destroyed in Dec. 1964 by a flood.

***B7. Moved?** ☒No ☐Yes ☐Unknown **Date:** **Original Location:**
***B8. Related Features:**

B9a. Architect: Donald T. Morton, Consulting Bridge Engineer **b. Builder:**
***B10. Significance: Theme:** N/A **Area:** N/A
Period of Significance: N/A **Property Type:** N/A **Applicable Criteria:** N/A

The Eel River Bridge & Overhead was constructed by Mendocino County to replace the original bridge that was destroyed by a flood two years before, in December 1964. It was one of the many highway improvements carried out during the late 1960s and 1970s. Bridge 10C0005 is not significant under National Register of Historic Places (National Register) Criterion A or California Register of Historical Resources (California Register) Criterion 1 for its association with the development of the highway network through the region. In addition, the bridge is not associated with other events that would make it significant under National Register Criterion A or California Register Criterion 1. It is not associated with a person who made a significant contribution to history at the local, state, or national level, therefore it is not significant under National Register Criterion B or California Register Criterion 2.

This structure is one of over 500 bridges of its type constructed between 1965 and 1974. Prior to this, there were more than 1,800 steel girder bridges in the State of California. The fabrication, transportation, and erection of large steel girder bridges was not a significant achievement in the state by the time the Eel River Bridge & Overhead was constructed in 1966. By the early 1970s, only 10% of all new bridges in the state were erected in steel. Steel girder bridges had their heyday in the 1930s, when they accounted for one third of bridges constructed. By the 1950s, steel girder bridge construction had dropped to 20% of new bridges erected throughout the state. As postwar traffic demands required wider roads, steel bridges proved less cost effective and the majority of new bridges were constructed in concrete. (See Continuation Sheet, page 3)

B11. Additional Resource Attributes:

***B12. References:** (See Continuation Sheet, page 3).

B13. Remarks:

***B14. Evaluator:**
Helen Blackmore
California Department of Transportation

***Date of Evaluation:**
October 1, 2014

(This space reserved for official comments.)

***P3a. Description:**

The substructures are reinforced concrete abutments, bents and piers on steel piles, except that Abutment 1, Bent 2 and Abutment 9 are on spread footings. The two lane bridge has metal beam guardrail on W6 Type railing with 50 x 50 angle top rails.

B10. Significance (continued):

By the 1960s, nearly any beam length could be fabricated and assembled on-site and long steel beams, such as those used in Eel River Bridge & Overhead, were not considered a significant technological achievement. Bridge 10C0005 is a fairly typical example of steel girder construction for this period. It is not one of the larger examples of this type and it does not incorporate a significantly long main span. Whiskey Creek Bridge held title to the longest main span of 350 feet in length from its initial construction in 1961 until 1967, when a bridge carrying Interstate 280 over San Mateo Creek achieved a 360 foot main span. The Eel River Bridge & Overhead, with a total length of 624 feet and main span of 240 feet in length, is not significant as a work of civil engineering. Bridge 10C0005 is not significant under National Register Criterion C or California Register Criterion 3.

Bridge 10C0005 was erected as a typical transportation improvement project of the period and the bridge is not associated with events that have made a significant contribution to the broad patterns of our history and is not significant under National Register Criterion A or California Register Criterion 1. It is not associated with the lives of significant persons in our history and is not significant under National Register Criterion B or California Register Criterion 2. Eel River Bridge & Overhead does not embody the distinctive characteristics of a steel girder bridge construction, does not represent the work of a master and does not possess high artistic values. Further, it does not represent a significant and distinguishable entity whose components may lack individual distinction. The Eel River Bridge & Overhead is not significant under National Register Criterion C or California Register Criterion 3. The bridge has not yielded and is not likely to yield information important in history and is not significant under National Register Criterion D or California Register Criterion 4. Bridge 10C0005 is not eligible for inclusion on the National Register or California Register.

***B12. References:**

"An Architect Concentrates on Aesthetics in Bridge Design." *Pacific Builder & Engineer* 64, np. 4 (April 1958): 86-87.

California Division of Highways. "As Built Plans – Bridge 10C0005, 1965.

Caltrans Bridge Inspection Report: April 27, 2012.

Hope, Andrew. *Caltrans Statewide Historic Bridge Inventory Update – Survey and Evaluation of Common Bridge Types*. Californian Department of Transportation, November 2004.

Mead & Hunt. *Historic Resource Evaluation Report – Caltrans Statewide Historic Bridge Inventory: 2010 Update*. California Department of Transportation, 2010.

P5b. Photographs (continued):

Detail looking north, June 4, 2014

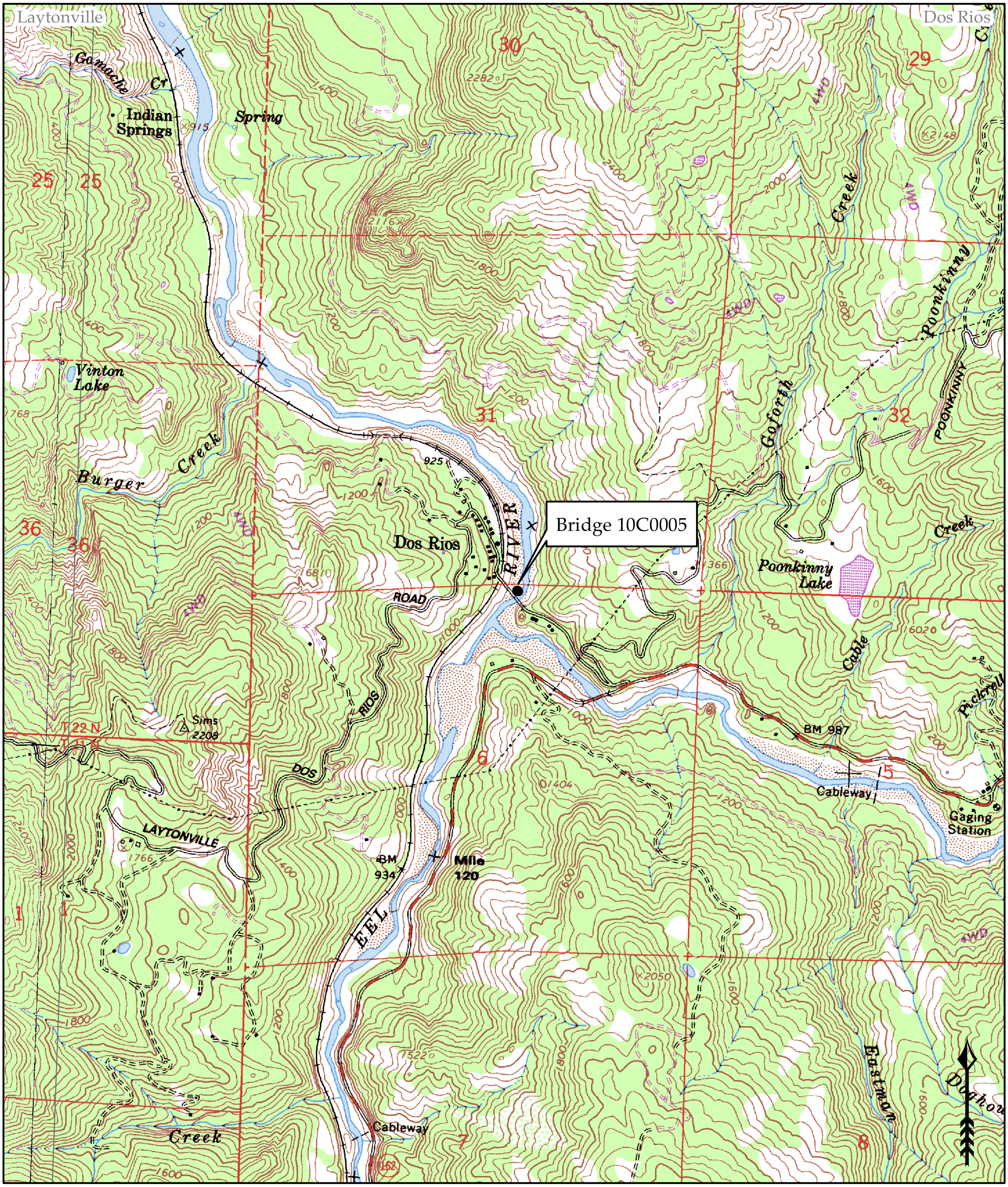
Soffit of Span 4 looking at Pier 5, facing northwest, June 4, 2014

State of California The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LOCATION MAP

Primary #
HRI#
Trinomial

***Resource Name or #:** 10C0005

***Map Name:** Dos Rios ***Scale:** 1:24,000 ***Date of Map:** 1967



DPR 523J (1/95)

*Required information

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

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code   Reviewer   Date

    ***Resource Name or #** Bridge 12 0184

P1. Other Identifier: Canyon 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 Dam   **Date:**   **T** ; **R** ; **¼ of** **¼ of Sec** **;** M.D. **B.M.**
c. Address: n/a   City: Zip:
d. UTM: Zone: 10 **;**   mE/   mN (G.P.S.)
e. Other Locational Data: Elevation:
Canyon Creek Bridge is located in Butte County on State Route 162 at postmile 29.96.

***P3a. Description:**
The bridge crosses Canyon Creek within the Forman Creek Recreation Area on the Olive/Oroville Quincy Highway, U.S. Route 162. Bridge 12 0184 is a long span steel girder structure, 780 feet in length. The bridge has four spans with the main span measuring 250 feet in length. Spans 1 – 3 have two continuous welded steel girders, while Span 4 has two simple welded steel girders. The deck for all spans is reinforced concrete. Reinforced concrete piers are anchored to rock and reinforced concrete closed end cantilever abutments are on spread footings. The two lane bridge has Type 2 railing.

***P3b. Resource Attributes:** HP 19. Bridge
***P4. Resources Present:** ☐Building ☒Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates,

P5a. Photo or Drawing

***P5b. Description of Photo:** View looking north, June 3, 2014
***P6. Date Constructed/Age and Sources:** ☒Historic ☐Prehistoric ☐Both
1967, Caltrans Bridge Files
***P7. Owner and Address:**
State of California
Dept. of Transportation
1120 N Street
Sacramento, CA 95814
***P8. Recorded by:**
Janice Calpo
Dept. of Transportation
1120 N Street
Sacramento, CA 95814
***P9. Date Recorded:** October 1, 2014
***P10. Survey Type:** Intensive

***P11. Report Citation:** Helen Blackmore, Janice Calpo, Lauren Clementino and Noah M. Stewart with contributions from Andy Hope, *Historic Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2015 Update* (California Department of Transportation, Sacramento, 2015).

***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**

***Resource Name or #** Bridge 12 0184

B1. Historic Name:
B2. Common Name: Canyon Creek Bridge
B3. Original Use: Bridge **B4. Present Use:** Bridge
***B5. Architectural Style:**
***B6. Construction History:**
The bridge was built in 1967.

***B7. Moved?** ☒No ☐Yes ☐Unknown **Date:** **Original Location:**
***B8. Related Features:**

B9a. Architect: C. H. Darby of Porter, OBrien & Armstrong **b. Builder:** Piombo Construction Co.
***B10. Significance: Theme:** N/A **Area:** N/A
Period of Significance: N/A **Property Type:** N/A **Applicable Criteria:** N/A

The Canyon Creek Bridge was constructed by Piombo Construction Co. It was one of the many highway improvements carried out during the late 1960s and 1970s. Bridge 12 0184 is not significant under National Register of Historic Places (National Register) Criterion A or California Register of Historical Resources (California Register) Criterion 1 for its association with the development of the highway network through the region. In addition, the bridge is not associated with other events that would make it significant under National Register Criterion A or California Register Criterion 1. It is not associated with a person who made a significant contribution to history at the local, state, or national level, and it is not significant under National Register Criterion B or California Register Criterion 2.

This structure is one of over 500 bridges of its type constructed between 1965 and 1974. Prior to this, there were more than 1,800 steel girder bridges in the State of California. The fabrication, transportation, and erection of large steel girder bridges was not a significant achievement in the state by the time the Canyon Creek Bridge was constructed in 1967. By the early 1970s, only 10% of all new bridges in the state were erected in steel. Steel girder bridges had their heyday in the 1930s, when they accounted for one third of bridges constructed. By the 1950s, steel girder bridge construction had dropped to 20% of new bridges erected throughout the state. As postwar traffic demands required wider roads, steel bridges proved less cost effective and the majority of new bridges were constructed in concrete.
(See Continuation Sheet, page 3)

B11. Additional Resource Attributes:

***B12. References:** (See Continuation Sheet, page 3)

B13. Remarks:

***B14. Evaluator:**
Helen Blackmore
California Department of Transportation

***Date of Evaluation:**
October 1, 2014

(This space reserved for official comments.)

B10. Significance (continued):

By the 1960s, nearly any beam length could be fabricated and assembled on-site and long steel beams, such as those used in the Canyon Creek Bridge, were not considered a significant technological achievement. Bridge 12 0184 is a fairly typical example of steel girder construction for this period. It is not one of the larger examples of this type and it does not incorporate a significantly long main span. Whiskey Creek Bridge held title to the longest main span of 350 feet in length from its initial construction in 1961 until 1967, when a bridge carrying Interstate 280 over San Mateo Creek achieved a 360 foot main span. The Canyon Creek Bridge with a total length of 780 feet and main span of 250 feet in length is not significant as a work of civil engineering. The Canyon Creek Bridge is not significant under National Register Criterion C or California Register Criterion 3. Its construction was typical for the 1960s and 1970s, and was not a significant work of civil engineering.

Bridge 12 0184 was erected as a typical transportation improvement project of the period and the bridge is not associated with events that have made a significant contribution to the broad patterns of history, therefore it is not significant under National Register Criterion A or California Register Criterion 1. It is not associated with the lives of significant persons in history and is not significant under National Register Criterion B or California Register Criterion 2. Bridge 12 0184 does not embody the distinctive characteristics of a steel girder bridge construction, does not represent the work of a master and does not possess high artistic values. Further, it does not represent a significant and distinguishable entity whose components may lack individual distinction. The Canyon Creek Bridge is not significant under National Register Criterion C or California Register Criterion 3. The bridge has not yielded and is not likely to yield information important in history and is not significant under National Register Criterion D or California Register Criterion 4. Bridge 12 0184 is not eligible for inclusion on the National Register or California Register.

***B12. References:**

"An Architect Concentrates on Aesthetics in Bridge Design." *Pacific Builder & Engineer* 64, np. 4 (April 1958): 86-87.

California Division of Highways. "As Built Plans – Bridge 12 0184, 1965.

Caltrans Bridge Inspection Report: August 18, 2012.

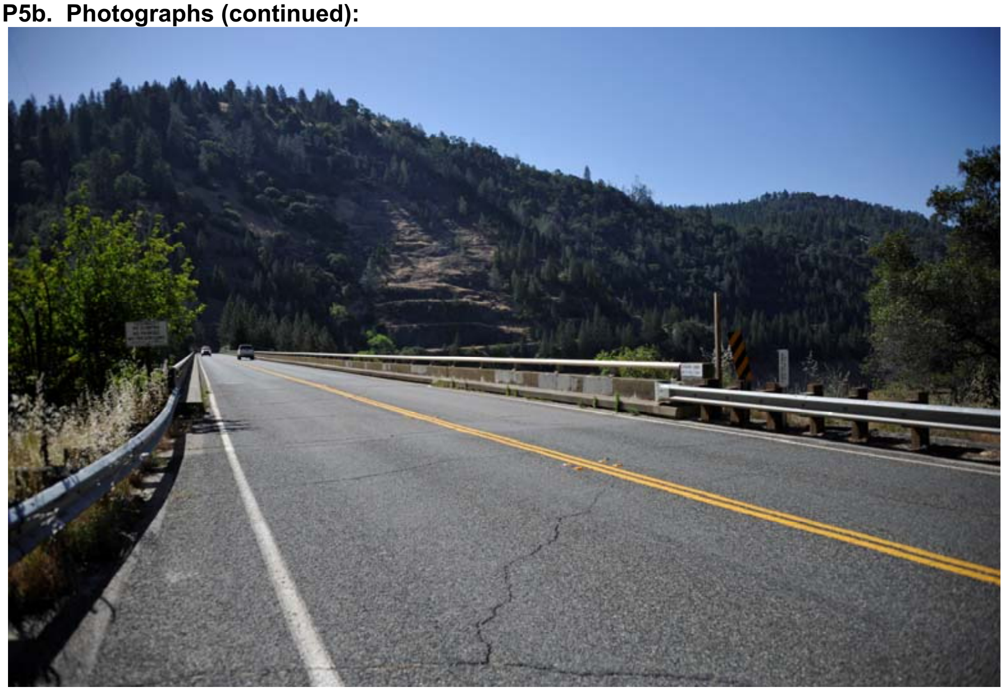
Hope, Andrew. *Caltrans Statewide Historic Bridge Inventory Update – Survey and Evaluation of Common Bridge Types*. Californian Department of Transportation, November 2004.

Mead & Hunt. *Historic Resource Evaluation Report – Caltrans Statewide Historic Bridge Inventory: 2010 Update*. California Department of Transportation, 2010.

***Resource Name or #** Bridge 12 0184

***Recorded by:** Janice Calpo ***Date:** October 1, 2014 ☒ **Continuation** ☐ **Update**

P5b. Photographs (continued):



View looking southeast, June 3, 2014

View looking south, June 3, 2014

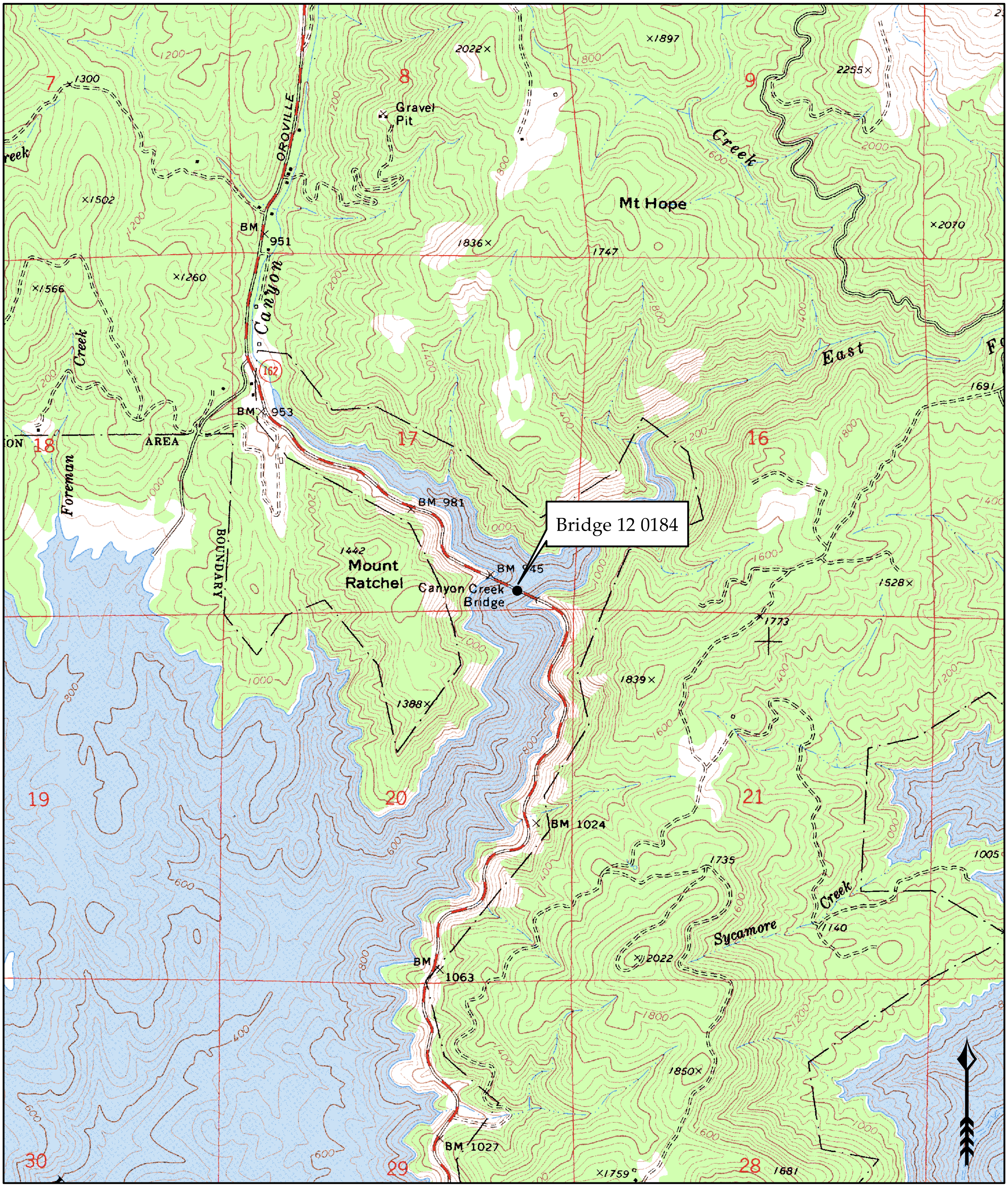
State of California The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary #
HRI#
Trinomial

 *Resource Name or #: 12 0184

*Map Name: Oroville Dam *Scale: 1:24,000 *Date of Map: 1970



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

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code | Reviewer | Date

 ***Resource Name or #:** Bridge 12 0188

P1. Other Identifier: Lake Oroville (Middle Fork Feather River) 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 Dam **Date:** **T** ; **R** ; **¼ of** **¼ of Sec** ; M.D. **B.M.**
c. Address: n/a City: Zip:
d. UTM: Zone: 10 ; mE/ mN (G.P.S.)
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Elevation:
Bridge 12 0188 is located in Butte County on State Route 162 at postmile 26.87.

***P3a. Description:**
Bridge 12 0188 is a steel suspension structure, 1791 feet in length, that crosses the Middle Fork Feather River at Lake Oroville. It has a steel stiffening truss suspension cable in Span 5 with steel towers at Piers 5 and 6 measuring 1,107 feet in length. Girder approach spans (4) are steel welded composite in Spans 1 through 4 and 6 through 8. Reinforced concrete deck and piers and reinforced concrete abutments have reinforced concrete wingwalls, all on spread footings. The slender steel towers are connected transversely by two steel beam sections; their shape references Art Deco style with diagonal beam rising up to be bracketed by transverse beams at the top and bottom reminiscent of the chevrons of Art Deco. Chevrons are also shown in the truss work of the bridge deck. Further, there are oval cutouts in the top transverse, making the structure appear less imposing. (See Continuation Sheet, page 3).

***P3b. Resource Attributes:** HP 19. Bridge
***P4. Resources Present:** ☐Building ☒Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5a. Photo or Drawing

P5b. Description of Photo:
View looking north
June 2, 2014

***P6. Date Constructed/Age and Sources:** ☒Historic ☐Prehistoric ☐Both
1965, Caltrans Bridge Files

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

***P8. Recorded by:**
Janice Calpo
Dept. of Transportation
1120 N Street
Sacramento, CA 95814

***P9. Date Recorded:**
October 1, 2014

***P10. Survey Type:**
Intensive

***P11. Report Citation:**
Helen Blackmore, Janice Calpo, Lauren Clementino and Noah M. Stewart with contributions from Andy Hope, *Historic Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2015 Update* (California Department of Transportation, Sacramento, 2015).

***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

***Resource Name or # (Assigned by recorder)**

***Resource Name or #** Bridge 12 0188

B1. Historic Name:

B2. Common Name Lake Oroville (Middle Fork Feather River) Bridge

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

***B5. Architectural Style:**

***B6. Construction History:**

The bridge was built in 1965. While the bridge was constructed by the Department of Water Resources, its inspection was agreed to be carried out by the Division of Highways, in 1966 and reaffirmed in 1971, with the County fulfilling any maintenance requirements. In June 1971, the Division of Highways acquired the easement across the bridge, thus assuming all responsibility for the bridge. Since its construction the bridge has undergone minor maintenance, including: the installation of additional wire rope hand rails along the top of top strut on each tower (1970); replacement of damaged barrier rail posts (1972); approach to the metal beam guardrail at four ends was upgraded and attached to end posts (1983); and resealed deck expansion joints (1987).

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

***B8. Related Features:**

The bridge is located on State Route 162 over Lake Oroville and the Middle Fork of the Feather River.

B9a. Architect: Dept. of Water Resources **b. Builder:** Dept. of Water Resources

***B10. Significance: Theme:** N/A **Area:** N/A

Period of Significance: N/A **Property Type:** N/A **Applicable Criteria:** N/A

The Lake Oroville Bridge was constructed by the Department of Water Resources as part of the Oroville Dam project. Construction on the dam started in 1961, with completion in 1968. The dam is an earth fill embankment structure on the Feather River, east of the city of Oroville, California. It is the tallest dam of its type in the U.S., measuring 770 feet high. It is also the nation's largest state-built water and power development. The dam was installed to help supply water to farmers and residents of the San Joaquin Valley and Southern California. It also generates hydroelectricity and provides flood control. Generation of electricity began in 1968, following the completion of the Edward Hyatt Pump-Generating Plant, which at the time was the country's largest underground power station. The dam required the relocation of both Highway 70 and the Union Pacific Railroad, which earlier ran along Feather River Canyon, causing the need to construct the Lake Oroville Bridge.

The dam does not appear to have previously been considered for National Register of Historic Places (National Register) or California Register of Historical Resources (California Register) eligibility, likely because it is not yet 50 years of age (See Continuation Sheet, page 3).

B11. Additional Resource Attributes:

***B12. References:** (See Continuation Sheet, page 4).

B13. Remarks:

***B14. Evaluator:**
Helen Blackmore
California Department of Transportation

***Date of Evaluation: October** 1, 2014

(This space reserved for official comments.)

*Resource Name or # Bridge 12 0188

*Recorded by: Janice Calpo *Date: October 1, 2014 ☒ Continuation ☐ Update

*** P3a. Description (continued):**

The beams are located at thirds up the tower. The suspension cable has concrete wedge cable anchors. Type S railing is next to the traffic with picket railing along the sidewalk of this two lane bridge.

*** B10. Significance (continued):**

It does however appear to have the potential to be significant under Criterion A of the National Register and Criterion 1 of the California Register for its association with the development of California's water supply. Any evaluation of the Oroville Dam project under Criterion A and Criterion 1 should include the dam as well as its appurtenant features, such as the Lake Oroville Bridge. Oroville Dam project also appears have the potential to be significant for the National Register under Criterion C and California Register under Criterion 3 for its engineering achievements. Related features such as Bridge 12 0188 may contribute to the significance of the dam project. A determination of eligibility for the dam project, and its appurtenant facilities, is outside the scope of this survey. Individually, the Lake Oroville Bridge is not significant for the National Register Criterion A or California Register Criterion 1 for its association with the development of the highway network through the region. It is not associated with a person who made a significant contribution to history at the local, state, or national level, and it is not significant under National Register Criterion B or California Register Criterion 2.

Suspension bridges are relatively rare in California. The technology dates to the gold rush period, during which it was often used to bridge mountainous canyon terrain leading to the gold fields, where suspended bridges could hang above swiftly moving rivers. Following the innovative period, during the early twentieth century bridge building technology transitioned to a reliance on a new building material: concrete. Increasingly, material, construction costs, as well as site suitability and local preferences, dictated bridge design. Suspension bridges were among the well-established designs available to counties for construction in remote areas where light traffic did not require a more substantial structure.

While California has no major suspension bridges from the earliest period, the lessons learned from that era helped guide construction of two of the world's most successful suspension bridges, the Golden Gate Bridge, completed in 1936, and the west span of the San Francisco-Oakland Bay Bridge (SFOBB), also finished in 1936. These two structures represent California's largest suspension bridges and were constructed during an era of major public works in the 1930s. Both bridges were previously determined eligible for listing in the National Register. Few such structures were built though, as they were relatively expensive, especially as other bridge types became increasingly affordable during the mid-twentieth century. There are currently 13 suspension bridges in California; five of which are eligible or in the National Register. Two suspension bridges constructed between 1965 and 1974, and two more prior to 2003.

The fabrication and erection of suspension bridges are almost always a significant achievement due to the nature of the construction method. Suspension spans require high amounts of engineering to construct, given that they often cross large spans. The six of the seven longest bridges in California are all suspension spans; the longest being the Golden Gate Bridge (27 0052), with a main span of 4,200 feet. The Lake Oroville Bridge has a main span of 1,108 feet in length making it the seventh longest spanning bridge in the state. While this is an impressive feat, five of the six longest spanning bridges are suspension spans that are longer and thus this span length does not make it significant as a feat of civil engineering. Although the bridge has simplistic Art Deco motifs, these minor details do not form a bridge of high Modern aesthetic value. Bridge 12 0188 is not significant under National Register Criterion C or California Register Criterion 3.

Lake Oroville Bridge was erected as part of the larger Oroville Dam project, which appears to have the potential to be significant under National Register Criterion A and California Register Criterion 1, for its association with the development of California's water supply, as well as Criterion C and Criterion 3 for its engineering achievements. Related features such as Bridge 12 0188 may contribute to the significance of the dam project. A determination of eligibility for the dam project is outside the scope of this survey.

***Resource Name or #** Bridge 12 0188

***Recorded by:** Janice Calpo ***Date:** October 1, 2014 ☒ **Continuation** ☐ **Update**

As an individual resource, evaluated independent of the larger Oroville Dam project, Bridge 12 0188 is not associated with events that have made a significant contribution to the broad patterns of history and therefore is not significant under National Register Criterion A or California Register Criterion 1. It is not associated with the lives of significant persons in history and is not significant under National Register Criterion B or California Register Criterion 2. Bridge 12 0188 does not embody the distinctive characteristics of suspension bridge construction, and does not possess high Modern aesthetic value. The Lake Oroville Bridge is not significant under National Register Criterion C or California Register Criterion 3. The bridge has not yielded and is not likely to yield information important in history and is not significant under National Register Criterion D or California Register Criterion 4. Bridge 12 0188 individually is not eligible for inclusion on the National Register or California Register.

***B12. References (continued):**

"An Architect Concentrates on the Aesthetics in Bridge Design." *Pacific Builder & Engineer* 64, no. 4 (Apr 1958): 86-7.

California Division of Highways. "As Built Plans – Bridge 12 0188." 1965.

Caltrans Bridge Inspection Report: August 21, 2013.

"Dam Hydropower and Reservoir Statistics." Denver, CO: United States Society on Dams. Accessed on January 13, 014 from www.usssdams.org.

"Oroville Facilities Complex." Oakland CA: California Department of Water Resources. Accessed on January 13, 2015 from www.water.ca.gov.

Hope, Andrew. *Caltrans Statewide Historic Bridge Inventory Update – Survey and Evaluation of Common Bridge Types.* California Department of Transport, November 2004.

JRP Historical Consulting Services. *Historic Context Statement – Roadway Bridges of California: 1936-1959.* Prepared for

State of California Department of Transportation, n.p., January 2003.

Stahl, Frank L. and Christopher P. Gagnon, *Cable Corrosion in Bridges and Other Structures*. New York, N.Y.: American Society of Civil Engineers, 1996.

Page 5 of 7 ***Resource Name or #** Bridge 12 0188
***Recorded by:** Janice Calpo ***Date:** October 1, 2014 ☒ **Continuation** ☐ **Update**

P5b. Photographs (continued):

Roadview looking north, June 2, 2014

Tower view looking north, June 2, 2014

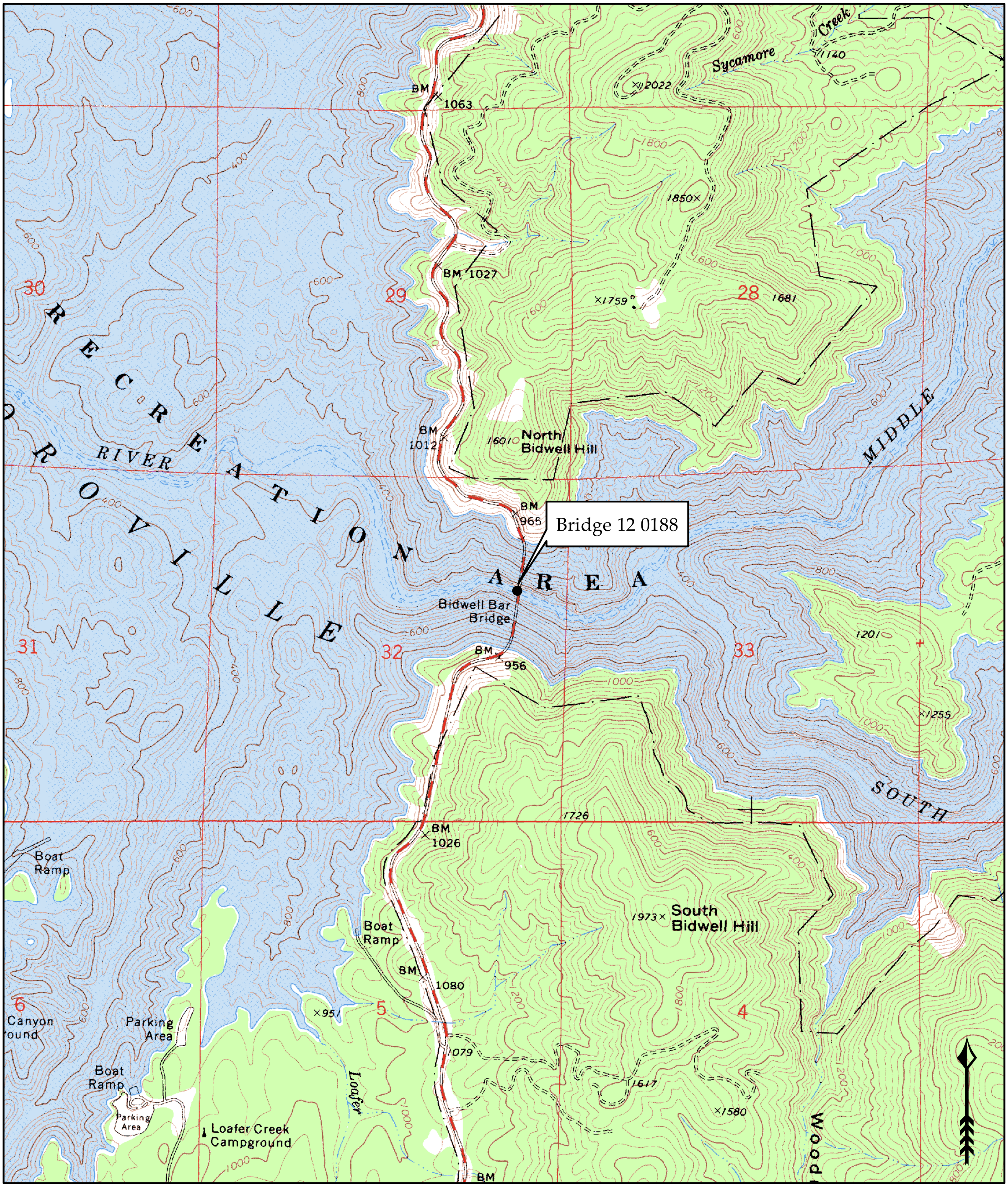
 ***Resource Name or #** Bridge 12 0188
***Recorded by:** Janice Calpo ***Date:** October 1, 2014 ☒ **Continuation** ☐ **Update**


View looking south, June 2, 2104

State of California The Resources Agency DEPARTMENT OF PARKS AND RECREATION	Primary # HRI#
LOCATION MAP	Trinomial

***Resource Name or #:** 12 0188

***Map Name:** Oroville Dam ***Scale:** 1:24,000 ***Date of Map:** 1970



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

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code | Reviewer | Date

Page 1 **of** 6 | ***Resource Name or #:** Bridge 12C0199

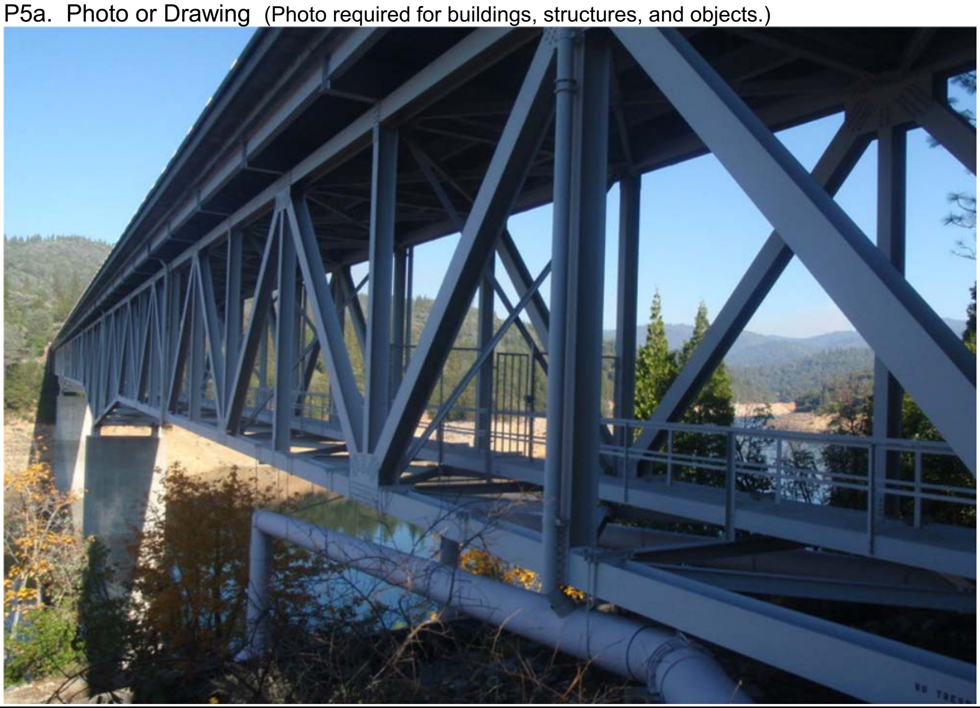
P1. Other Identifier: Enterprise Bridge or South Fork Feather River Bridge

***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:** Forbestown **Date:** **T** ; **R** ; **¼ of** **¼ of Sec** **;** M.D. **B.M.**
c. Address: n/a City: Zip:
d. UTM: Zone: 10 ; mE/ mN (G.P.S.)
e. Other Locational Data: Elevation:
On Lumpkin Road three miles north of Forbestown Road, Butte County

***P3a. Description:**
The Enterprise Bridge (12C0199) is a steel cantilevered Warren truss structure that crosses the South Fork Feather River to the east of Lake Oroville. The truss has three spans over two reinforced concrete cellular piers founded on casted-in-drilled-hole (CIDH) concrete pilings. The bridge has a reinforced concrete deck and continuous slab enclosed abutments on CIDH pile bents with abutment end walls on CIDH piles and spread footings. The central span is 440 feet in length and the spans on either side are 308 feet in length. The overall length of the bridge is 1175 feet, including the abutments. The road over the bridge is two lanes with a roadway width of 28 feet between concrete curbs and Type 2 railing. There are no pedestrian walkways.

***P3b. Resource Attributes:** HP 19. Bridge
***P4. Resources Present:** ☐Building ■Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5a. Photo or Drawing (Photo required for buildings, structures, and objects.)



P5b. Description of Photo: (View, date, accession #)
Side view, looking northeast
November 16, 2011

***P6. Date Constructed/Age and Sources:** ■Historic ☐Prehistoric ☐Both
1967, Caltrans Bridge Files

***P7. Owner and Address:**
Butte County
7 County Center Dr.
Oroville, CA 95965

***P8. Recorded by:** (Name, affiliation, and address)
Janice Calpo
Dept. of Transportation
1120 N Street
Sacramento, CA 95814

***P9. Date Recorded:**
June 2, 2014

***P10. Survey Type:**
Intensive

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.")
Helen Blackmore, Janice Calpo, Lauren Clementino and Noah M. Stewart with contributions from Andy Hope, *Historic Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2015 Update* (California Department of Transportation, Sacramento, 2015).

***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**

***Resource Name or #** Bridge 12C0199

B1. Historic Name:
B2. Common Name: Enterprise Bridge or South Fork Feather River Bridge
B3. Original Use: Bridge **B4. Present Use:** Bridge
***B5. Architectural Style:** Steel Warren cantilever deck truss
***B6. Construction History:** (Construction date, alterations, and date of alterations)
The bridge was constructed in 1967 and has only undergone minor and routine maintenance since that time.
***B7. Moved?** ■No ☐Yes ☐Unknown **Date:** **Original Location:**
***B8. Related Features:**
Oroville Dam and Lake Oroville.

B9a. Architect: **b. Builder:**
***B10. Significance: Theme:** N/A **Area:** N/A
Period of Significance: N/A **Property Type:** N/A **Applicable Criteria:** N/A

The Enterprise Bridge (12C0199) was constructed by the California Department of Water Resources in association with the Oroville Dam project. Construction on the dam started in 1961, with completion in 1968. The dam is an earth fill embankment structure on the Feather River, east of the city of Oroville, California. It is the tallest dam of its type in the U.S., measuring 770 feet high. It is also the nation's largest state-built water and power development. The dam was installed to help supply water to farmers and residents of the San Joaquin Valley and Southern California. It also generates hydroelectricity and provides flood control. Generation of electricity began in 1968, following the completion of the Edward Hyatt Pump-Generating Plant, which at the time was the country's largest underground power station.

The dam does not appear to have previously been considered for National Register of Historic Places (National Register) or California Register of Historical Resources (California Register) eligibility, likely because it is not yet 50 years of age. It does however appear to have the potential to be significant under Criterion A of the National Register and Criterion 1 of the California Register for its association with the development of California's water supply. Any evaluation of the Oroville Dam project under Criterion A and Criterion 1 should include the dam as well as its appurtenant features, such as the Enterprise Bridge. The Oroville Dam project also appears to have the potential to be significant for the National Register under Criterion C and Criterion 3 for its engineering achievements. Related features such as the Enterprise Bridge may contribute to the significance of the dam project. A determination of eligibility for the dam project, and its appurtenant facilities, is outside the scope of this survey. (See Continuation Sheet.)

B11. Additional Resource Attributes:
***B12. References:**
See Continuation Sheet.
B13. Remarks:
***B14. Evaluator:**
Lauren Clementino
***Date of Evaluation:**
November 17, 2014.

(This space reserved for official comments.)

B10. Significance (continued):

Individually, the Enterprise Bridge is not significant under National Register Criterion A or California Register Criterion 1 for its association with the development of the highway network through the region. It is not associated with a person who made a significant contribution to history at the local, state, or national level, and it is not significant under National Register Criterion B or California Register Criterion 2.

This structure is one of six metal truss bridges constructed between 1965 and 1974. There are 315 metal truss bridges in California (excluding moveable and steel arch bridges, many of which are also trusses). This bridge type was once common in California, but the number of new metal truss bridges constructed in the state dropped off substantially after the 1950s. As postwar traffic demands required wider roads, steel bridges proved less cost effective and the majority of new bridges were constructed in concrete. By the early 1970s, only 10% of all new bridges in the state were erected in steel. The fabrication, transportation, and erection of metal truss bridges were not a significant achievement in the state by the time the Enterprise Bridge was constructed in 1967.

The Enterprise Bridge is a Warren cantilever deck truss. The Warren truss was one of the most common truss types built in California. California and many other states had developed standard designs for truss bridges by the 1920s and the Warren truss was commonly used along California highways in the 1920s and 1930s. The majority of Warren trusses constructed in California were pony trusses; later design variations with vertical supports and polygonal top chords were utilized in the 1940s through the 1950s. The typical range of highway Warren truss bridge span lengths is between 40 and 500 feet.

Longer spans were achieved using cantilever trusses. Cantilever metal truss bridges were first constructed in the United States following the Civil War, first with iron and later with steel. Cantilever truss bridges provide a distinct advantage by permitting a long uninterrupted span created by the two opposing trusses meeting without a center support. Cantilever truss bridges continued to be built, albeit somewhat infrequently, in California into the 1970s. Only two cantilever truss bridges were constructed during the period from 1965-1974. 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 varieties are the Foresthill Bridge (19C0060), with a main span of 862 feet, and the Warm Springs Creek Bridge (20C0438) in Sonoma County with a main span of 753 feet. The Enterprise Bridge, a deck truss with a main span of 440 feet, is not notable when compared to other cantilever truss bridges in California. The Enterprise Bridge was constructed after the cantilever truss was an established type in California and does not represent a significant innovation in bridge engineering or display a significant variation within an established bridge type. The Enterprise Bridge does not display any decorative features or significant architectural details. The Enterprise Bridge is not significant as a work of civil engineering or for aesthetic value and is therefore not significant under National Register Criterion C or California Register Criterion 3.

The Enterprise Bridge was erected as part of the larger Oroville Dam project, which appears to have the potential to be significant under Criterion A and Criterion 1 for its association with the development of California's water supply, as well as Criterion C and Criterion 3 for its engineering achievements. Related features such as the Enterprise Bridge may contribute to the significance of the dam project. A determination of eligibility for the dam project is outside the scope of this survey.

As an individual resource, evaluated independent of the larger Oroville Dam project, the Enterprise Bridge is not associated with events that have made a significant contribution to the broad patterns of history and is not significant under National Register Criterion A or California Register Criterion 1. It is not associated with the lives of significant persons in history and is not significant under National Register Criterion B or National Register Criterion 2. The Enterprise Bridge is not a distinctive example of metal truss bridge construction does not represent the work of a master and does not possess high artistic values. Further, it does not represent a significant and distinguishable entity whose components may lack individual distinction. The Enterprise Bridge is not significant under National Register Criterion C or California Register Criterion 3. The bridge has not yielded and is not likely to yield information important in history and is not significant under National Register Criterion D or National Register Criterion 4. The Enterprise Bridge individually is not eligible for inclusion on the National Register or California Register.

B12. References (continued):

"Dam Hydropower and Reservoir Statistics." Denver, CO: United States Society on Dams. Accessed on January 13, 2014 from www.usssdams.org.

Department of Transportation. Bridge Inspection Reports for Bridge Number 12C0199. November 16, 1967 to November 13, 2013.

JRP Historical Consulting. *Caltrans Historic Bridges Inventory Update: Metal Truss, Movable, and Steel Arch Bridges*. Prepared for the California Department of Transportation Environmental Program, n.p., September 2004 (revised).

JRP Historical Consulting Services. *Historic Context Statement - Roadway Bridges of California: 1936-1959*. Prepared for State of California Department of Transportation, n.p., January 2003.

"Oroville Facilities Complex." Oakland CA: California Department of Water Resources. Accessed on January 13, 2015 from www.water.ca.gov.

P5b. Photographs (continued):

Deck view, looking north (June 2, 2014)

***Resource Name or #** (Assigned by recorder) Bridge 09C0148

***Recorded by:** Janice Calpo ***Date:** October 1, 2014 ■ Continuation ☐ Update

Underside view, looking north (July 23, 2013)

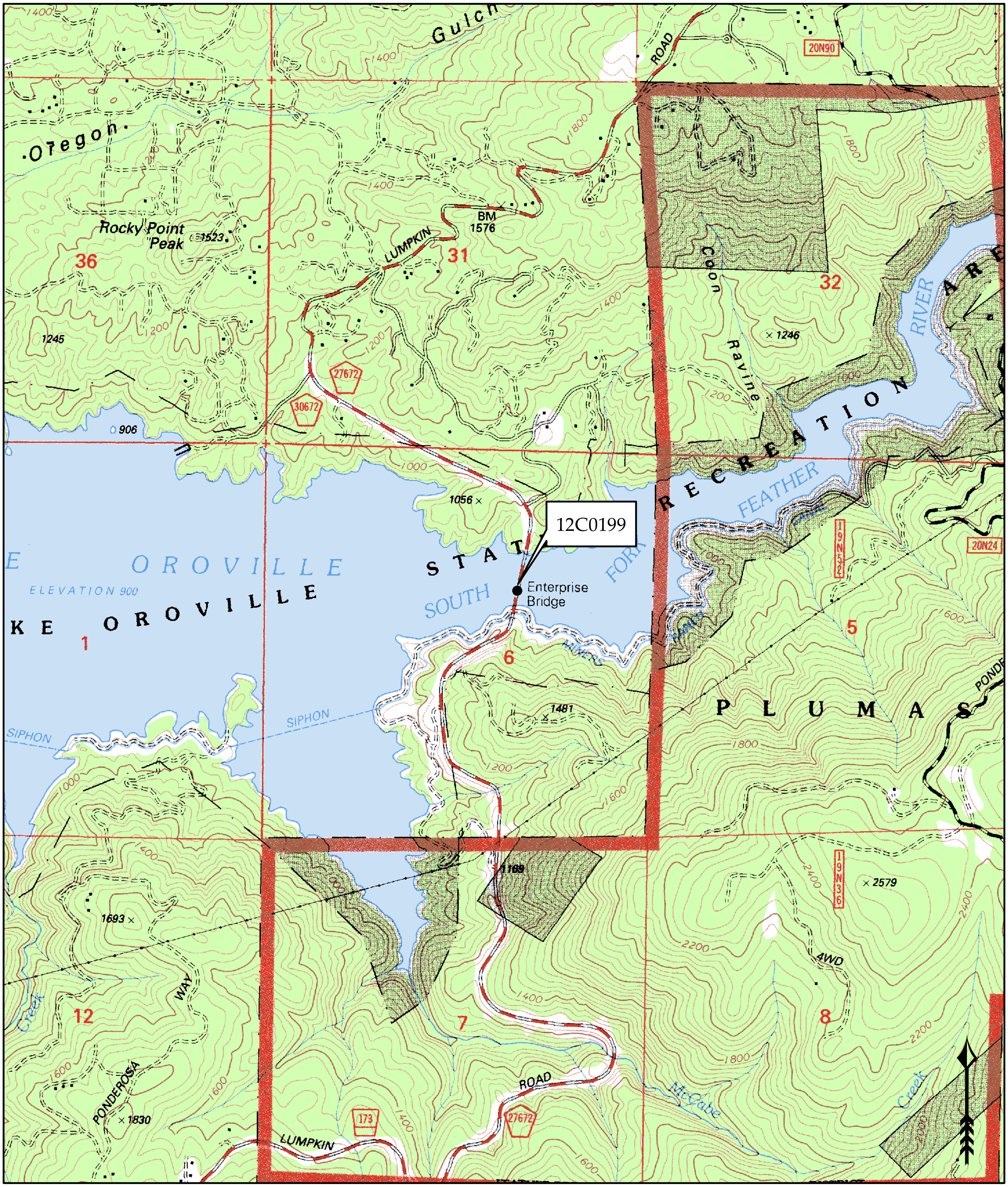
Underside view, looking north (July 23, 2013)

Primary #
HRI#
Trinomial

LOCATION MAP

***Resource Name or #:** 12C0199

***Map Name:** Forbestown ***Scale:** 1:24,000 ***Date of Map:** 1970



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

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code **Reviewer** **Date**

 ***Resource Name or #:** Bridge 17 0077

P1. Other Identifier: Banner Lava Cap Road Overcrossing
***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County:** Nevada
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad:** **Date:** **T** ; **R** ; **¼ of** **¼ of Sec** **;** M.D. **B.M.**
c. Address: n/a City: Zip:
d. UTM: Zone: 10 ; mE/ mN (G.P.S.)
e. Other Locational Data: Elevation:
Banner Lava Cap Road Overcrossing is located in Nevada County on State Route 20 at postmile 15.41.

***P3a. Description:**
Bridge 17 0077 is a concrete box structure, 308 feet in length, separating Banner Lava Cap Road from State Route 20. Banner Lava Cap Road is a two lane local road with a sidewalk on the north side. The bridge has four spans with the main span measuring 94 feet in length. The reinforced concrete continuous box girder (4 cell) spans have reinforced concrete two-column bents, with reinforced concrete open-end diaphragm abutments. The abutments and bent 4 are on steel piles, other bents are on spread footings. The column bents are in a modern style containing three main structural features; there are two sections that make up either half (left and right) of the "X" shape, which is reinforced at the intersection by a third rectangular concrete section. The two lane overcrossing has Type S railing on the north side, protecting the pedestrian sidewalk and Type 1 railing on the south side, both with chain link fence.
***P3b. Resource Attributes:** HP 19. Bridge
***P4. Resources Present:** ☐Building ☒Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5a. Photo or Drawing

P5b. Description of Photo:
View looking south
June 2, 2014
***P6. Date Constructed/Age and Sources:** ☒Historic ☐Prehistoric ☐Both
1967, Caltrans Bridge Files
***P7. Owner and Address:**
State of California
Dept. of Transportation
1120 N Street
Sacramento, CA 95814
***P8. Recorded by:**
Janice Calpo
Dept. of Transportation
1120 N Street
Sacramento, CA 95814
***P9. Date Recorded:**
October 1, 2014
***P10. Survey Type:** Intensive

***P11. Report Citation:**
Helen Blackmore, Janice Calpo, Lauren Clementino and Noah M. Stewart with contributions from Andy Hope, *Historic Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2015 Update* (California Department of Transportation, Sacramento, 2015).
***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):

Primary #
HRI#

BUILDING, STRUCTURE, AND OBJECT RECORD

*NRHP Status

*Resource Name or # Bridge 17 0077

B1. Historic Name:
B2. Common Name: Banner Lava Cap Road Overcrossing
B3. Original Use: Bridge
B4. Present Use: Bridge
***B5. Architectural Style:** Modern
***B6. Construction History:**
The overcrossing was built in 1967.
***B7. Moved?** ☒No ☐Yes ☐Unknown **Date:** **Original Location:**
***B8. Related Features:**
The bridge is located on the local road Banner Lava Cap Road, which crosses over State Route 20.

B9a. Architect: O. Bender, Bridge Department
b. Builder:
***B10. Significance: Theme:** N/A
Area: N/A
Period of Significance: N/A **Property Type:** N/A **Applicable Criteria:** N/A

The Banner Lava Cap Road Overcrossing was constructed by Granite Construction Co. It was one of the many highway improvements carried out during the late 1960s and early 1970s. It is not significant under National Register of Historic Places (National Register) Criterion A or California Register of Historical Resources (California Register) Criterion 1 for its association with the development of the highway network through the region. In addition, the overcrossing is not associated with other events that would make it significant under National Register Criterion A and California Criterion 1. It is not associated with a person who made a significant contribution to history at the local, state, or national level, and it is not significant under National Register Criterion B or California Register Criterion 2.

The first concrete box girder bridge in California was erected in 1938. 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. And 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 bridges in California. More than 3,200 of the type built between 1965 and 1974. (See Continuation Sheet, page 3)

B11. Additional Resource Attributes:
***B12. References:** (See Continuation Sheet, page 3).

B13. Remarks:

***B14. Evaluator:**
Helen Blackmore
California Department of Transportation

***Date of Evaluation:**
October 1, 2014

(This space reserved for official comments.)

*Required information

***Recorded by:** Janice Calpo ***Date:** October 1, 2014 ☒ **Continuation** ☐ **Update**

B10. Significance (continued):

Bridge 17 0077 is a fairly typical example of concrete box construction for the period. The fabrication, transportation, and erection of large concrete box bridges was not a significant achievement in the state by the time the Banner Lava Cap Road Overcrossing was constructed in 1967. It is not one of the larger examples of this type and it does not incorporate a significantly long main span. The Mulholland Drive Overcrossing (53 0739) in Los Angeles held title to the longest main span of 235 feet in length from its initial construction in 1959 until 1974 when the Interstate 8 bridge over the Pine Valley Creek (57 0692L/R) achieved a 450 foot main span. The Banner Lava Cap Road Overcrossing with a total length of 308 feet and main span of 94 feet in length is not significant as a work of civil engineering. Its construction is typical for the 1960s and 1970s and is not a significant work of civil engineering nor does it stand out with regard to modern bridge aesthetics. Bridge 17 0077 is not significant under National Register Criterion C or California Register Criterion 3.

Bridge 17 0077 was erected as a typical transportation improvement project of the period and the bridge is not associated with events that have made a significant contribution to the broad patterns of history, therefore it is not significant under National Register Criterion A or California Register Criterion 1. It is not associated with the lives of significant persons in history and is not significant under National Register Criterion B or California Register Criterion 2. Bridge 17 0077 does not embody the distinctive characteristics of a concrete box bridge construction, does not represent the work of a master and does not possess high Modern aesthetic value. Further, it does not represent a significant and distinguishable entity whose components may lack individual distinction. The Banner Lava Cap Road Overcrossing is not significant under National Register Criterion C or California Register Criterion 3. The bridge has not yielded and is not likely to yield information important in history and is not significant under National Register Criterion D or California Register Criterion 4. Bridge 17 0077 is not eligible for inclusion on the National Register or California Register.

***B12. References:**

"An Architect Concentrates on the Aesthetics in Bridge Design." *Pacific Builder & Engineer* 64, no. 4 (Apr 1958): 86-7.

California Division of Highways. "As Built Plans – Bridge 17 0077." 1964.

Caltrans Bridge Inspection Report: August 16, 2012.

Hope, Andrew. *Caltrans Statewide Historic Bridge Inventory Update – Survey and Evaluation of Common Bridge Types.* California Department of Transport, November 2004.

JRP Historical Consulting Services. *Historic Context Statement – Roadway Bridges of California: 1936-1959.* Prepared for State of California Department of Transportation, n.p., January 2003.

Myra L. Frank & Associates. *Caltrans' Historic Bridge Inventory Update: Concrete Box Girder Bridges*. n.p., August 2003. With revisions made by Andrew Hope, California Department of Transportation, April 2004.

Stuzinski, S. H. "Some Examples of Box Girder Bridges in California." *The Structural Engineer* 8, no. 41 (August 1963): 253-257.

*Recorded by: Janice Calpo *Date: October 1, 2014 ☒ Continuation ☐ Update

P5b. Photographs (continued):

Roadway looking west, June 2, 2014

Central column looking north, June 2, 2014

***Resource Name or #** Bridge 17 0077

***Recorded by:** Janice Calpo ***Date:** October 1, 2014 ☒ **Continuation** ☐ **Update**

View of abutment 1 looking west, June 2, 2014

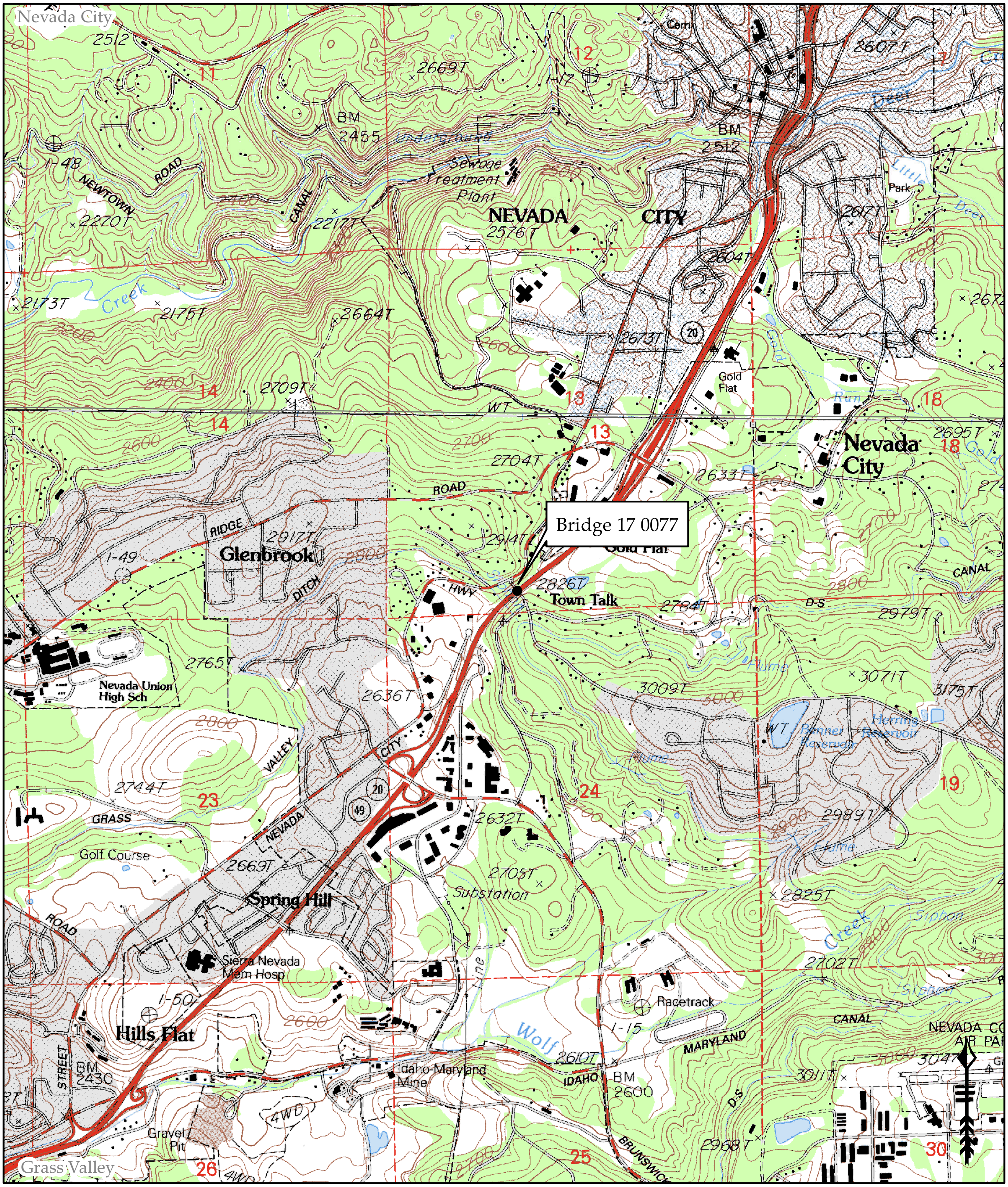
State of California The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary #
HRI#
Trinomial

***Resource Name or #:** 17 0077

***Map Name:** Grass Valley ***Scale:** 1:24,000 ***Date of Map:** 1995



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

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code Reviewer Date

 *Resource Name or #: Bridge 19 0077

P1. Other Identifier: South Roseville Overcrossing

***P2. Location:** ☐ Not for Publication ☒ Unrestricted ***a. County:** Placer
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad:** Citrus Heights **Date:** **T** ; **R** ; **¼ of** **¼ of Sec** ; M.D. **B.M.**
c. Address: n/a City: Roseville Zip:
d. UTM: Zone: 10 ; mE/ mN (G.P.S.)
e. Other Locational Data: Elevation:
The South Roseville Overcrossing is located in Placer County on Interstate 80 at post mile 0.27.

***P3a. Description:**
The overcrossing carries two lanes of traffic in either direction along Riverside Ave, in Roseville northeast of Sacramento. Bridge 19 0077 is a long span concrete box-girder structure, 500 feet in length, which crosses over 11 lanes of traffic on Interstate 80, at a skew of 49 degrees. The bridge has two spans with the main span measuring 243 feet in length. The continuous cast in place prestressed concrete box girder spans have a reinforced concrete 3-column bent on spread footings and reinforced concrete closed end backfilled counterfort abutments on concrete cast in drilled hole piles. The concrete horizontal profile is in a parabolic shape, widening at the hunches above the 3-column bents, in a modern style. (See Continuation Sheet, page 3)

***P3b. Resource Attributes:** HP 19. Bridge
***P4. Resources Present:** ☐Building ☒Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5a. Photo or Drawing

P5b. Description of Photo:
View looking north
June 2, 2014

***P6. Date Constructed/Age and Sources:** ☒Historic ☐Prehistoric ☐Both
1973, Caltrans Bridge Files

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

***P8. Recorded by:**
Janice Calpo,
Dept. of Transportation
1120 N Street
Sacramento, CA 95814

***P9. Date Recorded:**
October 1, 2014

***P10. Survey Type:**
Intensive

***P11. Report Citation:**
Helen Blackmore, Janice Calpo, Lauren Clementino and Noah M. Stewart with contributions from Andy Hope, *Historic Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2015 Update* (California Department of Transportation, Sacramento, 2015).

***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):

Primary #
HRI#

BUILDING, STRUCTURE, AND OBJECT RECORD

*NRHP Status

*Resource Name or # Bridge 19 0077

B1. Historic Name:
B2. Common Name: South Roseville Overcrossing
B3. Original Use: Bridge B4. Present Use: Bridge
*B5. Architectural Style: Modern
*B6. Construction History:
The overcrossing was built in 1973. The deck was overlaid with a concrete riding surface in 2011.

*B7. Moved? ☒No ☐Yes ☐Unknown Date: Original Location:
*B8. Related Features:
The overcrossing is located on Riverside Ave. over Interstate 80.

B9a. Architect: b. Builder:
*B10. Significance: Theme: N/A Area: N/A
Period of Significance: N/A Property Type: N/A Applicable Criteria: N/A

The South Roseville Overcrossing was one of the many highway improvements carried out during the late 1960s and early 1970s. It is not significant under National Register of Historic Places (National Register) Criterion A or California Register of Historical Resources (California Register) Criterion 1 for its association with the development of the highway network through the region. In addition, the bridge is not associated with other events that would make it significant under National Register Criterion A or California Register Criterion 1. It is not associated with a person who made a significant contribution to history at the local, state, or national level, and it is not significant under National Register Criterion B or California Register Criterion 2.

The first concrete box girder bridge in California was erected in 1938. 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. And 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 bridges in California. More than 3,200 of the type built between 1965 and 1974. (See Continuation Sheet, page 3)

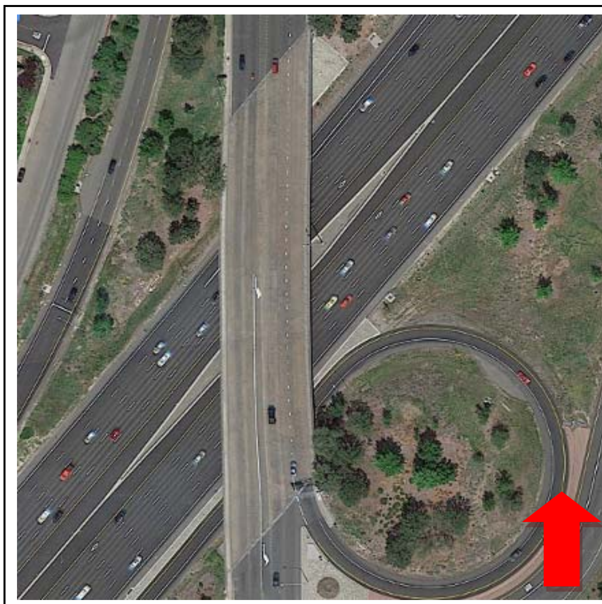
B11. Additional Resource Attributes: (List attributes and codes)

*B12. References: (See Continuation Sheet, page 3)
B13. Remarks:

*B14. Evaluator:
Helen Blackmore
California Department of Transportation

*Date of Evaluation:
October 1, 2014

(This space reserved for official comments.)



***P3a. Description:**
Vertically, the concrete is stepped twice, widening at the top and creating slimming lines the length of the span, complementing the corner grooves in the columns. The six lane bridge has type 12 railing with chain link fence protecting the pedestrian sidewalk on either side of the roadway.

B10. Significance (continued):
Bridge 19 0077 is a fairly typical example of concrete box construction for the period. The fabrication, transportation, and erection of large concrete box bridges were not a significant achievement in the state by the time the South Roseville Overcrossing was constructed in 1973. It is not one of the larger examples of this type and it does not incorporate a significantly long main span. The Mulholland Drive Overcrossing (53 0739) in Los Angeles held title to the longest main span of 235 feet in length from its initial construction in 1959 until 1974 when the Interstate 8 bridge over the Pine Valley Creek (57 0692L/R) achieved a 450 foot main span. The South Roseville Overcrossing, with a total length of 500 feet and main span of 243 feet in length, is not significant as a work of civil engineering. Its construction is typical for the 1960s and 1970s and is not a significant work of civil engineering nor does it stand out with regard to modern bridge aesthetics. Bridge 19 0077 is not significant under National Register Criterion C or California Register Criterion 3.

The bridge has not yielded and is not likely to yield information important in history and is not significant under National Register Criterion D or California Register Criterion 4.

Bridge 19 0077 was erected as a typical transportation improvement project of the period and the bridge is not associated with events that have made a significant contribution to the broad patterns of history and is not significant under National Register Criterion A or California Register Criterion 1. It is not associated with the lives of significant persons in history and is not significant under National Register Criterion B or California Register Criterion 2. Bridge 19 0077 does not embody the distinctive characteristics of a concrete box bridge construction, does not represent the work of a master and does not possess high Modern aesthetic value. Further, it does not represent a significant and distinguishable entity whose components may lack individual distinction. The South Roseville Overcrossing is not significant under National Register Criterion C or California Register Criterion 3. The bridge has not yielded and is not likely to yield information important in history and is not significant under National Register Criterion D or California Register Criterion 4. Bridge 19 0077 is not eligible for inclusion on the National Register or California Register.

***B12. References:**
"An Architect Concentrates on the Aesthetics in Bridge Design." *Pacific Builder & Engineer* 64, no. 4 (Apr 1958): 86-7.

California Division of Highways. "As Built Plans – Bridge 19 0077." 1970.

Caltrans Bridge Inspection Report: November 7, 2013

Hope, Andrew. *Caltrans Statewide Historic Bridge Inventory Update – Survey and Evaluation of Common Bridge Types.* California Department of Transport, November 2004.

JRP Historical Consulting Services. *Historic Context Statement – Roadway Bridges of California: 1936-1959.* Prepared for State of California Department of Transportation, n.p., January 2003.

Myra L. Frank & Associates. *Caltrans' Historic Bridge Inventory Update: Concrete Box Girder Bridges*. n.p., August 2003. With revisions made by Andrew Hope, California Department of Transportation, April 2004.

Stuzinski, S. H. "Some Examples of Box Girder Bridges in California." *The Structural Engineer* 8, no. 41 (August 1963): 253-257.

***Resource Name or #** Bridge 19 0077

***Recorded by:** Janice Calpo ***Date:** October 1, 2014 ☒ **Continuation** ☐ **Update**

P5b. Photographs (continued):

View looking southwest, June 2, 2014

Overcrossing roadway looking north, June 2, 2014

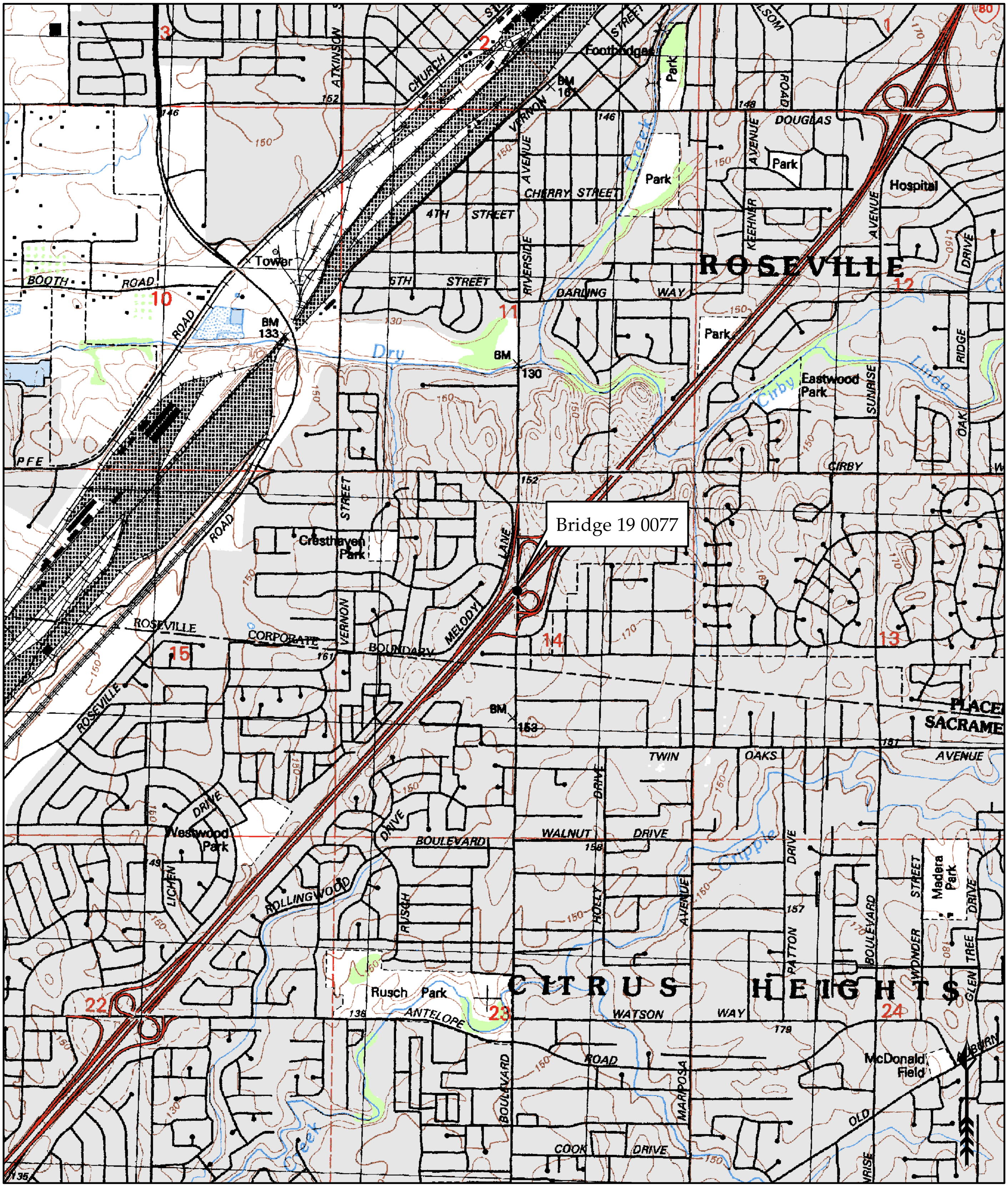
State of California The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary #
HRI#
Trinomial

 ***Resource Name or #:** 19 0077

***Map Name:** Citrus Heights ***Scale:** 1:24,000 ***Date of Map:** 1975



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

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code Reviewer Date

 ***Resource Name or #:** Bridge 19C0060

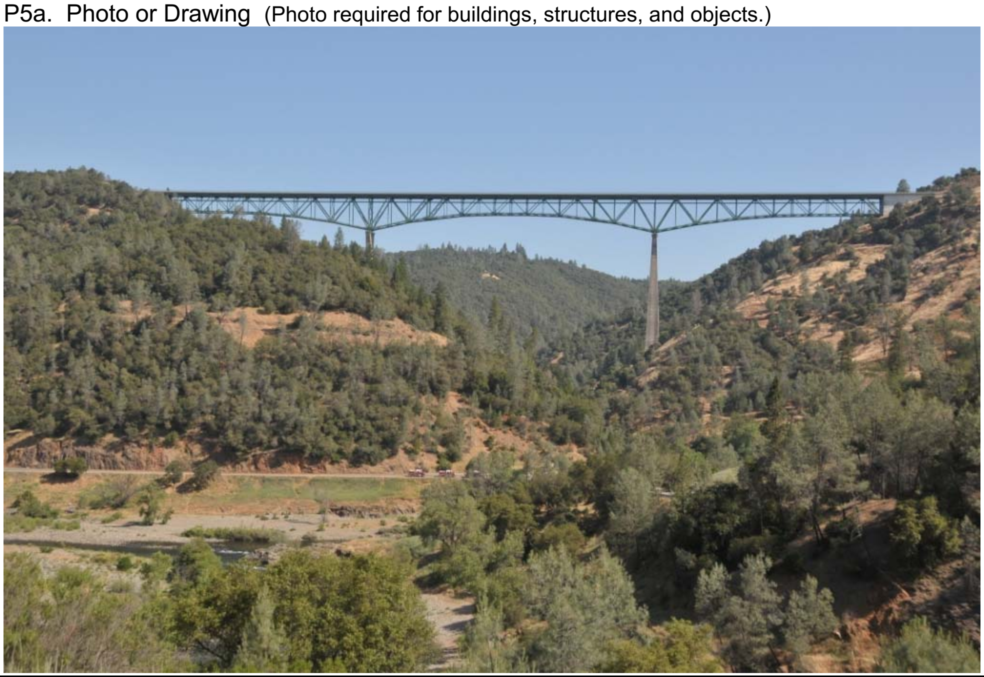
P1. Other Identifier: Foresthill Bridge or North Fork American River Bridge

***P2. Location:** ☐ **Not for Publication** ■ **Unrestricted** ***a. County:** Placer
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad:** Auburn **Date:** **T** ; **R** ; **¼ of** **¼ of Sec** **;** M.D. **B.M.**
c. Address: n/a City: Zip:
d. UTM: Zone: 10 ; mE/ mN (G.P.S.)
e. Other Locational Data: Elevation:
In Placer County on the Auburn-Foresthill Road east of I-80

***P3a. Description:**
The Foresthill Bridge (19C0060) is a steel Warren cantilever deck truss structure that crosses the North Fork American River at a skew of 27 degrees. The cast-in-place (CIP) reinforced concrete deck is set on a continuous composite welded and rolled steel stringers. The stringers are on welded steel floor beams which are on continuous welded steel deck truss supported by reinforced concrete bin type abutments and reinforced concrete piers. All piers are on spread footings. The bridge has three spans—the central span is suspended. The central span of the bridge is 862 feet in length and the spans on either side are 639 feet in length. The total length of the bridge is 2,428 feet and the total width is 75 feet. The two lane bridge has concrete barrier and metal rails.

***P3b. Resource Attributes:** HP 19. Bridge
***P4. Resources Present:** ☐Building ■Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5a. Photo or Drawing (Photo required for buildings, structures, and objects.)



P5b. Description of Photo: (View, date, accession #)
View, looking north
June 2, 2014

***P6. Date Constructed/Age and Sources:** ■Historic ☐Prehistoric ☐Both
1972, Caltrans Bridge Files

***P7. Owner and Address:**
Placer County
3091 County Center Drive
Auburn, CA 95603

***P8. Recorded by:** (Name, affiliation, and address)
Janice Calpo
Dept. of Transportation
1120 N Street
Sacramento, CA 95814

***P9. Date Recorded:**
October 1, 2014

***P10. Survey Type:**
Intensive

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.")
Helen Blackmore, Janice Calpo, Lauren Clementino and Noah M. Stewart with contributions from Andy Hope, *Historic Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2015 Update* (California Department of Transportation, Sacramento, 2015).

***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** 2

***Resource Name or #** (Assigned by recorder) Bridge 19C0060

B1. Historic Name:
B2. Common Name: Foresthill Bridge or North Fork American River Bridge
B3. Original Use: Bridge **B4. Present Use:** Bridge
***B5. Architectural Style:** Steel Warren cantilever deck truss
***B6. Construction History:**

The bridge was constructed in 1972. A large seismic retrofit project which also included replacing the bridge deck, upgrading the pedestrian railings, and repainting the bridge was completed in April 2014. The original bridge deck had a 16.75 foot gap between the two travel lanes which opened to the truss below. The new deck is solid across to accommodate wider travel lanes and the possibility of a third travel lane or passing lane in the future. The new pedestrian railings were raised to 6.5 feet in height (the original were 4 feet) to meet new safety standards.

***B7. Moved?** ■No ☐Yes ☐Unknown **Date:** **Original Location:**
***B8. Related Features:**
None.

B9a. Architect: Unknown **b. Builder:** Unknown
***B10. Significance: Theme:** Engineering **Area:** Placer County
Period of Significance: 1972 **Property Type:** Structure **Applicable Criteria:** C
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

The Foresthill Bridge was constructed by the United States Bureau of Reclamation as part of the Auburn Dam project. The Foresthill Bridge and realigned Auburn-Foresthill Road were intended to replace Highway 49 and the old Auburn-Foresthill Road which would be covered in water by the planned Auburn Reservoir. However, the Auburn Dam project was halted due to seismic safety concerns following the August 1, 1975 earthquake near the Oroville Dam. The Foresthill Bridge is not significant under National Register of Historic Places (National Register) Criterion A or California Register of Historical Resources (California Register) Criterion 1 for association with the Auburn Dam as the Auburn Dam project was never completed. The bridge is not associated with highway improvements and is not significant under National Register Criterion A or California Register Criterion 1 for association with the development of the highway network through the region. In addition, the bridge is not associated with other events that would make it significant under National Register Criterion A or California Register Criterion 1. It is not associated with a person who made a significant contribution to history at the local, state, or national level, and it is not significant under National Register Criterion B or California Register Criterion 2. (See Continuation Sheet.)

B11. Additional Resource Attributes:

***B12. References:**
See Continuation Sheet.

B13. Remarks:

***B14. Evaluator:**
Lauren Clementino

***Date of Evaluation:** November 17, 2014

(This space reserved for official comments.)

*Recorded by: Janice Calpo *Date: October 1, 2014 ■ Continuation ☐ Update

B10. Significance (continued):

This structure is one of six metal truss bridges constructed between 1965 and 1974. There are 315 metal truss bridges in California (excluding moveable and steel arch bridges, many of which are also trusses). This bridge type was once common in California, but the number of new metal truss bridges constructed in the state dropped off substantially after the 1950s. As postwar traffic demands required wider roads, steel bridges proved less cost effective and the majority of new bridges were constructed in concrete. By the early 1970s, only 10% of all new bridges in the state were erected in steel. The fabrication, transportation, and erection of metal truss bridges were not a significant achievement in the state by the time the Foresthill Bridge was constructed in 1972.

The Foresthill Bridge is a Warren cantilever deck truss. The Warren truss was one of the most common truss types built in California. California and many other states had developed standard designs for truss bridges by the 1920s and the Warren truss was commonly used along California highways in the 1920s and 1930s. The majority of Warren trusses constructed in California were pony trusses; later design variations with vertical supports and polygonal top chords were utilized in the 1940s through the 1950s. The typical range of highway Warren truss bridge span lengths is between 40 and 500 feet.

Longer spans were achieved using cantilever trusses. Metal cantilever truss bridges were first constructed in the United States following the Civil War, first with iron and later with steel. Cantilever truss bridges provide a distinct advantage by permitting a long uninterrupted span, created by the two opposing trusses meeting without a center support. Cantilever truss bridges continued to be built, albeit somewhat infrequently, in California into the 1970s. Only two cantilever truss bridges were constructed during the period from 1965-1974. The main span of the Foresthill Bridge is the third longest among cantilever truss bridges in California. 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 varieties are the Foresthill Bridge, with a main span of 862 feet, and the Warm Springs Creek Bridge (20C0438) in Sonoma County with a main span of 753 feet.

The Foresthill Bridge was constructed at a great height to allow for clearance over the Auburn Reservoir once the Auburn Dam was constructed. The dam was never constructed and the Foresthill Bridge towers above the North Fork of the American River below. At a height of 730 feet, measured from the North Fork American River to the top of the bridge deck, it is the highest bridge in California and the fourth highest in the United States.

A large seismic retrofit project was completed in April 2014. The most conspicuous alterations to the Foresthill Bridge through this project (those which could impact the integrity of the bridge) included replacing the bridge deck and the pedestrian railings. The original bridge deck had a gap between the two travel lanes which opened to the truss below while the new deck is solid across. The new pedestrian railings are 6.5 feet in height (higher than the original were 4 feet). These alterations impact the integrity of the bridge's design and materials. However, as the bridge derives its significance from its engineering value as a long span cantilever truss and the tallest bridge in the state, alterations to the bridge deck and pedestrian railings are minor impacts which do not detract from the qualities which qualify the bridge for listing on the National Register. The Foresthill Bridge retains sufficient integrity of design, materials, workmanship, setting, location, feeling, and association to convey its significance under National Register Criterion C and California Register Criterion 3.

The Foresthill Bridge is not associated with events that have made a significant contribution to the broad patterns of history and is not significant under National Register Criterion A or California Register Criterion 1. It is not associated with the lives of significant persons in history and is not significant under National Register Criterion B or California Register Criterion 2. The bridge has not yielded and is not likely to yield information important in history and is not significant under National Register Criterion D or California Register Criterion 4.

The Foresthill Bridge is a distinctive example of metal truss bridge construction and is significant under National Register Criterion C and California Register Criterion 3. It retains sufficient integrity of design, materials, workmanship, setting, location, feeling, and association to convey its significance under National Register Criterion C and California Register Criterion 3. The Foresthill Bridge is eligible for inclusion on the National Register and California Register.

B12. References (continued):

Bizjak, Tony. "Foresthill Bridge to undergo major upgrades." The Sacramento Bee. August 7, 2010.

Department of Transportation. Bridge Inspection Reports for Bridge 19C0060. July 30, 1976 to August 28, 2012.

JRP Historical Consulting. *Caltrans Historic Bridges Inventory Update: Metal Truss, Movable, and Steel Arch Bridges*. Prepared for the California Department of Transportation Environmental Program, n.p., September 2004 (revised).

JRP Historical Consulting Services. *Historic Context Statement - Roadway Bridges of California: 1936-1959*. Prepared for State of California Department of Transportation, n.p., January 2003.

Thomson, Gus. "$70-million retrofit? Local span similar to Minnesota structure that collapsed two years ago." Auburn Journal. September 22, 2009.

Thomson, Gus. "Caltrans gets its way on new Foresthill Bridge railing height." Auburn Journal. September 13, 2010.

Thomson, Gus. "Foresthill Bridge losing its stature to China spans." Auburn Journal. January 21, 2010. http://www.auburnjournal.com/article/media-life-foresthill-bridge-losing-its-stature-china-spans

Thomson, Gus. "Higher Foresthill Bridge railings decrease trash dumping, allow expanded cleanup." Auburn Journal. September 19, 2014. http://www.auburnjournal.com/article/9/18/14/higher-foresthill-bridge-railings-decrease-trash-dumping-allow-expanded-cleanup

Thomson, Gus. "New law puts Auburn's Foresthill Bridge suicide prevention in focus: Golden Gate, Placer County spans ID'd by legislator as tragic targets of jumpers." Auburn Journal. October 15, 2013. http://www.auburnjournal.com/article/new-law-puts-auburn%E2%80%99s-foresthill-bridge-suicide-prevention-focus

Thomson, Gus. "Placer County marking completion of Foresthill Bridge work: $74 million project was started in January 2011 and includes a new paint job." Auburn Journal. April 8, 2014. http://www.auburnjournal.com/article/placer-county-marking-completion-foresthill-bridge-work

Thomson, Gus. "Sky-high retrofit: $71 million overhaul for Placer County's Foresthill Bridge." Auburn Journal. February 10, 2010. http://www.auburnjournal.com/article/sky-high-retrofit-71-million-overhaul-placer-county%E2%80%99s-foresthill-bridge

Wiley, Walt. "High bridge rates low in official view." The Sacramento Bee. March 22, 1986.

Wilson, Wayne. "Placer jumps to lure movies: Modifies law on 'flight' from bridge." The Sacramento Bee. June 13, 1995.

***Resource Name or #** (Assigned by recorder) Bridge 19C0060

P5b. Photographs (continued):

Detail, looking north (June 2, 2014)

Bridge deck, looking west (June 2, 2014)

State of California The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

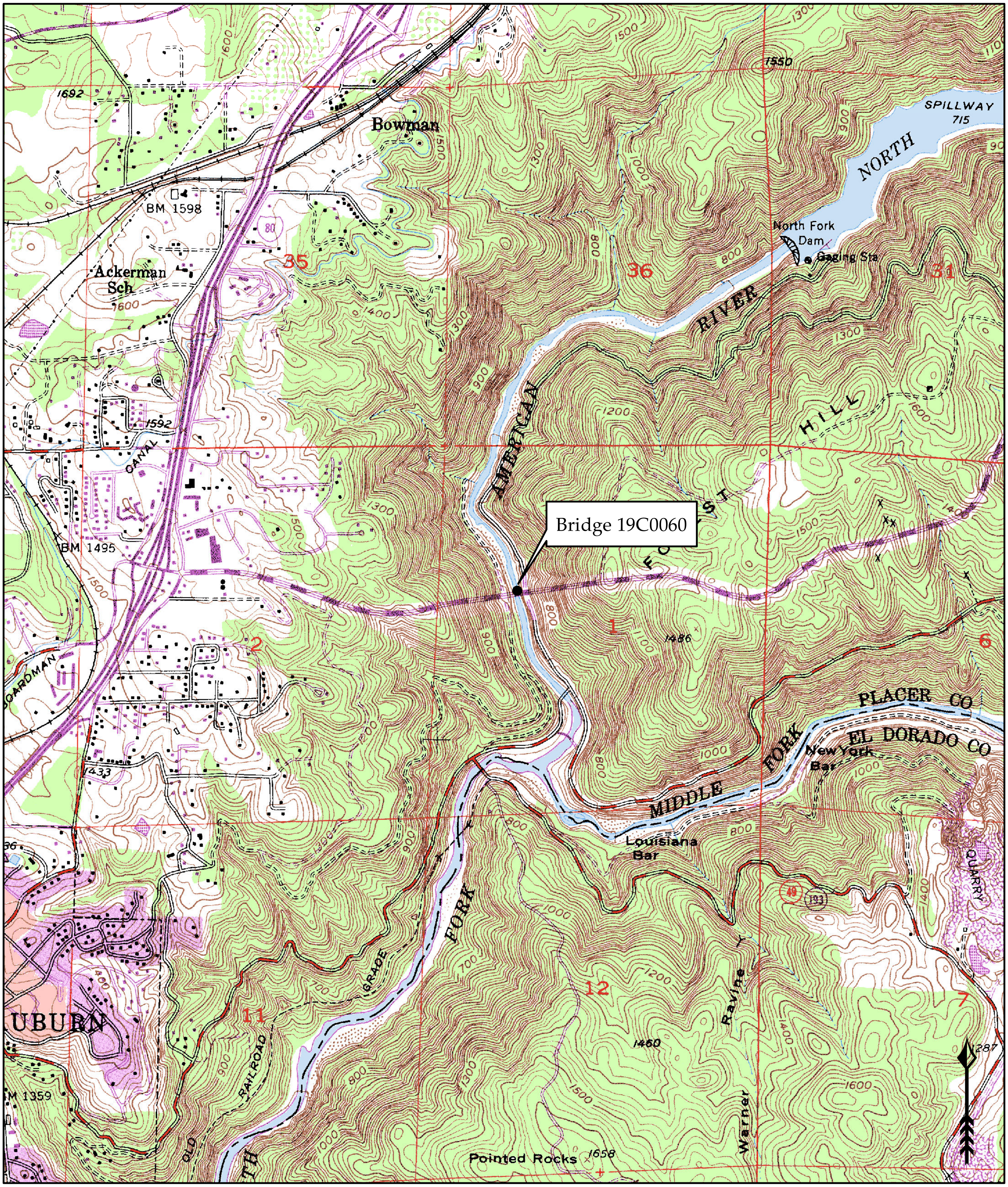
Primary #
HRI#
Trinomial

***Resource Name or #:** 19C0060

***Map Name:** Auburn

***Scale:** 1:24,000

***Date of Map:** 1975



*Required information

State of California — The Resources Agency DEPARTMENT OF PARKS AND RECREATION **PRIMARY RECORD**	Primary # HRI # Trinomial NRHP Status Code
Other Listings Review Code Reviewer	Date

 *Resource Name or #: Bridge 24 0004L&R

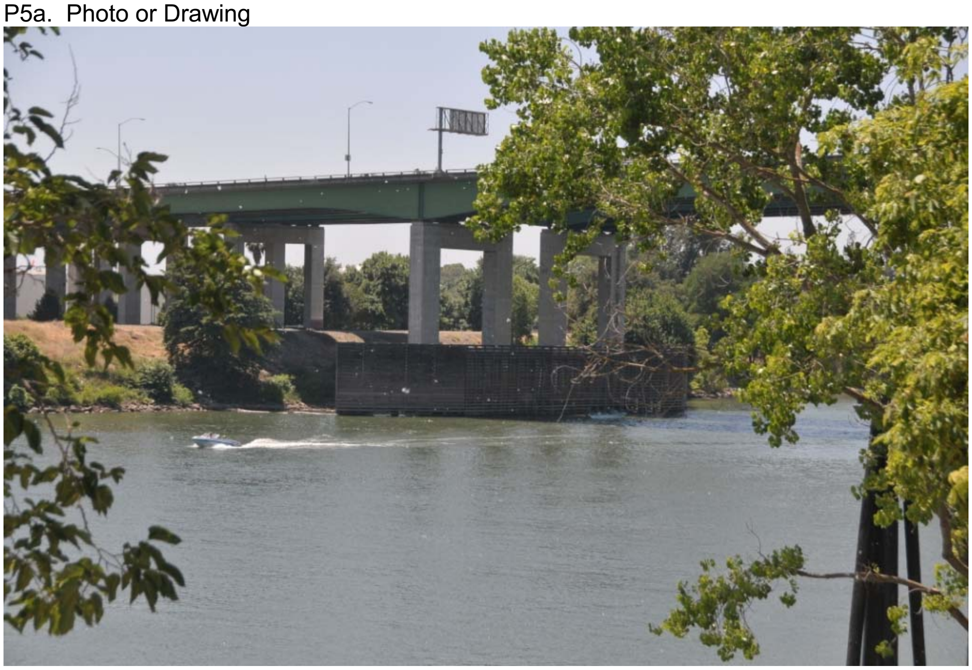
P1. Other Identifier: Sacramento River Viaduct/ Pioneer Memorial Bridge

***P2. Location:** ☐ Not for Publication ☒ Unrestricted ***a. County:** Sacramento
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad:** West Sacramento **Date:** **T** ; **R** ; **¼ of** **¼ of Sec** ; M.D. **B.M.**
c. Address: n/a City: Sacramento Zip:
d. UTM: Zone: 10 ; mE/ mN (G.P.S.)
e. Other Locational Data: Elevation:
The Sacramento River Viaduct is located in Sacramento County on US Route 50 at post mile 0.01 in Sacramento.

***P3a. Description:**
The bridges, left and right, cross the Sacramento River as well as various city streets, railroads and State Highway 99. Bridges 24 0004L&R are long span steel girder structures, each 6360 feet in length, crossing the Sacramento River Viaduct side by side at a skew of 99 degrees. Both bridges have 39 spans with the main span measuring 275 feet in length and are 3 lanes wide. Bridges 24 0004L&R have steel welded composite girder spans, simple and continuous, with reinforced concrete continuous slab spans, that have 1, 2, 3, and 4 column reinforced concrete bents on concrete piles, closed end cellular abutments, open end seat abutments, and closed end-backfilled cantilever abutments all on concrete piles. The piers are on timber piles.

***P3b. Resource Attributes:** HP 19. Bridge
***P4. Resources Present:** ☐Building ☒Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates,)

P5a. Photo or Drawing



P5b. Description of Photo:
View looking north,
June 1, 2014
***P6. Date Constructed/Age and Sources:** ☒Historic ☐Prehistoric ☐Both
1966, Caltrans Bridge Files
***P7. Owner and Address:**
State of California
Dept. of Transportation
1120 N Street
Sacramento, CA 95814
***P8. Recorded by:**
Janice Calpo,
Dept. of Transportation
1120 N Street
Sacramento, CA 95814
***P9. Date Recorded:**
October 1, 2014

***P11. Report Citation:** Helen Blackmore, Janice Calpo, Lauren Clementino and Noah M. Stewart with contributions from Andy Hope, *Historic Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2015 Update* (California Department of Transportation, Sacramento, 2015).

***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**

***Resource Name or #** Bridges 24 0004L&R

B1. Historic Name:
B2. Common Name: Sacramento River Viaduct
B3. Original Use: Bridge B4. Present Use: Bridge
***B5. Architectural Style:** Modern
***B6. Construction History:**
The bridge was built in phases during the years; 1964 (substructure), 1966 (superstructure).

***B7. Moved?** ☒No ☐Yes ☐Unknown **Date:** **Original Location:**
***B8. Related Features:**

B9a. Architect: J. T. Hall, Bridge Department, California Division of Highways
b. Builder: Fruin-Colnon Construction Co. and Le Boeuf Dougherty Contracting Co.
***B10. Significance: Theme:** N/A **Area:** N/A
Period of Significance: N/A **Property Type:** N/A **Applicable Criteria:** N/A

The substructure of the Sacramento River Viaduct was constructed by Fruin-Colnon Construction Co. and Le Boeuf Dougherty Contracting Co. with the Superstructure contractor being Kaiser Steel Corp. It was one of the many highway improvements carried out during the late 1960s and 1970s. Bridges 24 0004 L&R are not significant under National Register of Historic Places (National Register) Criterion A or California Register of Historical Resources (California Register) Criterion 1 for their association with the development of the highway network through the region. In addition, the bridges are not associated with other events that would make them significant under National Register Criterion A or California Register Criterion 1. They are not associated with a person who made a significant contribution to history at the local, state, or national level, and are not significant under National Register Criterion B or California Register Criterion 2.

This structures are two of over 500 bridges of the type constructed between 1965 and 1974. Prior to this, there were more than 1,800 steel girder bridges in the State of California. The fabrication, transportation, and erection of large steel girder bridges was not a significant achievement in the state by the time the Sacramento River Viaduct was constructed in 1966. By the early 1970s, only 10% of all new bridges in the state were erected in steel. Steel girder bridges had their heyday in the 1930s, when they accounted for one third of bridges constructed. By the 1950s, steel girder bridge construction had dropped to 20% of new bridges erected throughout the state. As postwar traffic demands required wider roads, steel bridges proved less cost effective and the majority of new bridges were constructed in concrete. (See Continuation Sheet, page 3)

B11. Additional Resource Attributes: (List attributes and codes)

***B12. References:** (See Continuation Sheet, page 3)
B13. Remarks:

***B14. Evaluator:**
Helen Blackmore
California Department of Transportation

***Date of Evaluation:**
October 1, 2014

(This space reserved for official comments.)

B10. Significance (continued):

By the 1960s, nearly any beam length could be fabricated and assembled on-site and long steel beams. Because of this those used in the Sacramento River Viaduct were not considered a significant technological achievement at the time. Bridges 24 0004L&R are fairly typical examples of steel girder construction for this period. They are not one of the larger examples of this type and do not incorporate a significantly long main span. Whiskey Creek Bridge held title to the longest main span of 350 feet in length from its initial construction in 1961 until 1967, when a bridge carrying Interstate 280 over San Mateo Creek achieved a 360 foot main span. The Sacramento River Viaduct with a total length of 6360 feet and main spans of 275 feet in length are not significant as a work of civil engineering. The Sacramento River Viaduct is not significant under National Register Criterion C or California Register Criterion 3. Its construction was typical for the 1960s and 1970s, and was not a significant work of civil engineering.

Bridge 24 0004L&R were erected as typical transportation improvement projects of the period and the bridges are not associated with events that have made a significant contribution to the broad patterns of history, therefore are not significant under National Register Criterion A or California Register Criterion 1. They are not associated with the lives of significant persons in history and are not significant under National Register Criterion B or California Register Criterion 2. Bridges 24 0004L&R do not embody the distinctive characteristics of a steel girder bridge construction, and do not represent the work of a master, and do not possess high artistic values. Further, they do not represent a significant and distinguishable entity whose components may lack individual distinction. The Sacramento River Viaduct is not significant under National Register Criterion C or California Register Criterion 3. The bridges have not yielded and are not likely to yield information important in history and are not significant under National Register Criterion D or California Register Criterion 4. Bridges 24 0004L&R are not eligible for inclusion on the National Register or California Register.

***B12. References:**

An Architect Concentrates on Aesthetics in Bridge Design. *Pacific Builder & Engineer* 64, np. 4 (April 1958): 86-87.

California Division of Highways. A s Built Plans Bridge 24 0004L, 1962.

Caltrans Bridge Inspection Report: October 24, 2013

Hope, Andrew. *Caltrans Statewide Historic Bridge Inventory Update Survey and Evaluation of Common Bridge Types*. Californian Department of Transportation, November 2004.

Mead & Hunt. *Historic Resource Evaluation Report Caltrans St atewide Historic Bridge Inventory: 2010 Update*. California Department of Transportation, 2010.

***Resource Name or #** (Assigned by recorder) Bridges 24 0004L&R

***Recorded by:** Janice Calpo ***Date:** October 1, 2014 ☒ **Continuation** ☐ **Update**

P5b. Photographs (continued):

View looking southwest, June 1, 2014

View looking south, June 1, 2014

View looking northwest, June 1, 2014

Detail looking northwest, June 1, 2014

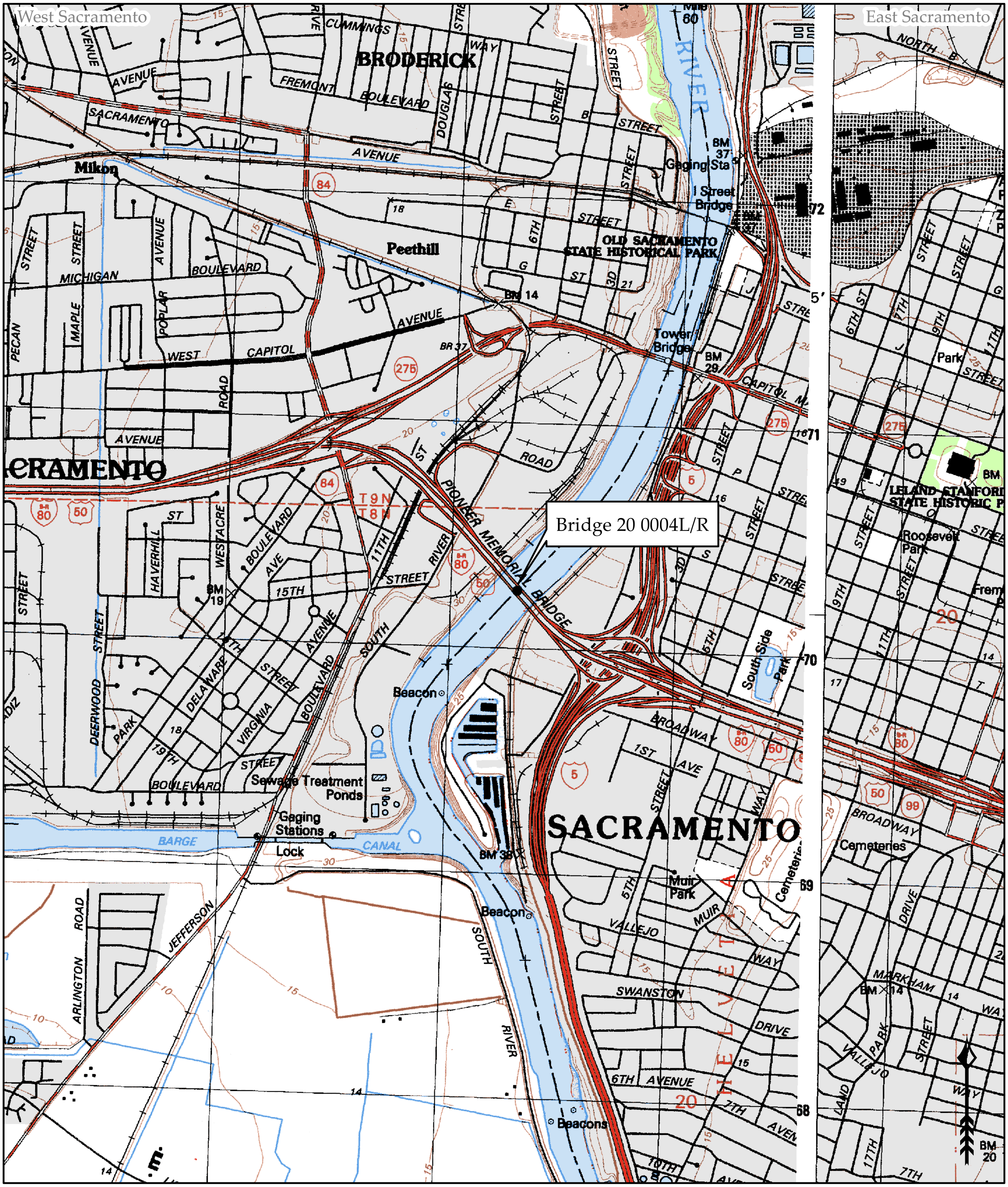
State of California The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary #
HRI#
Trinomial

***Resource Name or #:** 20 0004L/R

***Map Name:** West Sacramento ***Scale:** 1:24,000 ***Date of Map:** 1992



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

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code Reviewer Date

***Resource Name or #:** Bridge 25C0065

P1. Other Identifier: Pedestrian path over Schnell School Road

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

***b. USGS 7.5' Quad:** Placerville **Date:** **T** ; **R** ; **¼ of** **¼ of Sec** **;** M.D. **B.M.**

c. Address: n/a City: Placerville Zip:

d. UTM: Zone: 10 ; mE/ mN (G.P.S.)

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Elevation:
03-ED-831-0-PLCR

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)
Bridge 25C0065 is a segmental precast concrete box girder structure with a 62 foot single span carrying a two lane pedestrian path over Schnell School Road. It has four reinforced Portland concrete box girders units running longitudinally, supported by cantilevered abutment walls. Each girder was composed of eight precast concrete boxes that were plant manufactured and assembled, post-tensioned and then erected onsite. The four complete concrete box girders were hoisted individually onto the abutments, the tie rods tightened and the beam grouted together to form a single unit. The exterior profile of the abutments are composed of reinforced concrete crib walls. The original galvanized steel tube handrail has been replaced with chainlink fence.

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

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

P5a. Photo or Drawing (Photo required for buildings, structures, and objects.)

P5b. Description of Photo: (View, date, accession #)
View, facing north

***P6. Date Constructed/Age and Sources:** ☒Historic ☐Prehistoric ☐Both
1974-1975, The Mountain Democrat Times, 9 Jan 1975

***P7. Owner and Address:**
City of Placerville
310 Center Street
Placerville, CA 95667

***P8. Recorded by:** (Name, affiliation, and address)
Janice Calpo
Dept. of Transportation
1120 N Street
Sacramento, CA 95814

***P9. Date Recorded:**
August 31, 2014

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

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.")
Helen Blackmore, Janice Calpo, Lauren Clementino and Noah M. Stewart with contributions from Andy Hope, *Historic Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2015 Update* (California Department of Transportation, Sacramento, 2015).

***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

*Resource Name or # (Assigned by recorder) Bridge 25C0065

B1. Historic Name: Grade Separation Structure 18-7.4B/Schnell School Road Underpass

B2. Common Name: Pedestrian path over Schnell School Road

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

***B5. Architectural Style:** Modern

***B6. Construction History:** (Construction date, alterations, and date of alterations)

Built 1974-1975 (Caltrans inaccurately reports the bridge having been built in 1970) , railroad tracks removed by 1989, as of 1993 the structure supported a paved pedestrian path, pipe railing handrail removed and a chain link fence erected at a point before 2000.

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

*B8. Related Features: Originally constructed for the Camino, Placerville and Lake Tahoe Railroad – the rail alignment in the immediate vicinity has been converted to a pedestrian path.

B9a. Architect: The Murray-McCormick Environmental Group   b. Builder: Hunsaker 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.)

Bridge 25C0065 was built by the City of Placerville for the Camino, Placerville and Lake Tahoe Railroad to replace a previously existing trestle crossing to the south. As the area north of Highway 50 developed, the old wooden trestle became a bottleneck for vehicles using Schnell School Road. The City opened bids for the construction contract in early 1974. By January 1975, the bridge was open for rail traffic. (See Continuation Sheet, page 3)

B11. Additional Resource Attributes: (List attributes and codes)

***B12. References:**

Caltrans Bridge Inspection Report: January 20, 2011

Bridge Beams, *The Mountain Democrat and Placerville Times*, 1 August 1974, A2.

Bridge Construction, *The Mountain Democrat and Placerville Times*, 8 August 1974, 1.

City Seeks Bids for Schnell School Underpass Project, *The Mountain Democrat and Placerville Times*, 28 February 1974, A2.

Concrete Bridge Replaces Wooden Trestle on Schell School Road, *The Mountain Democrat and Placerville Times*, 9 January 1975, E4.

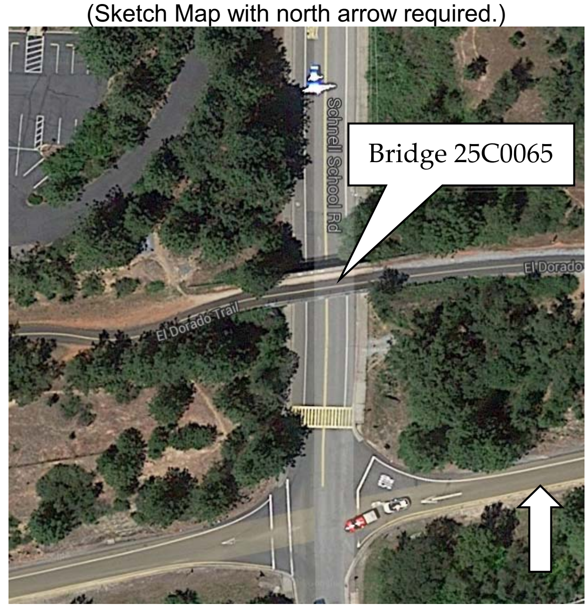
B13. Remarks:

***B14. Evaluator:**
Noah Stewart
Dept. of Transportation

***Date of Evaluation:** October 1, 2014

(This space reserved for official comments.)

(Sketch Map with north arrow required.)



***Recorded by:** Janice Calpo & Noah Stewart ***Date:** October 1, 2014 ☒ **Continuation** ☐ **Update**

B10. Significance (continued):

The Camino, Placerville and Lake Tahoe Railroad was a private rail line used for hauling wood products from the El Dorado National Forest to Placerville, which were then taken to market via the Southern Pacific Railroad. The line began in 1903 and lasted until 1986, when it was abandoned. The tracks were removed from the bridge by 1989, and as of 1993, the bridge supported a pedestrian path as it does today. In the immediate area little, if anything, remains of the Placerville and Lake Tahoe Railroad.

Bridge 25C0065 is not significant under National Register of Historic Places (National Register) Criterion A or California Register of Historical Resources (California Register) Criterion 1 for its association with the development of the region. The existing bridge replaced an earlier structure that was erected as part of a railroad alignment. Little, if anything, remains of the railroad within the immediate area. In addition, the bridge is not associated with other events that would make it significant under National Register Criterion A or California Register Criterion 1. It is not associated with a person who made a significant contribution to history at the local, state, or national level, and it is not significant under National Register Criterion B or California Register Criterion 2.

While the bridge is identified in Caltrans records as a precast segmental concrete box girder structure, rather than the short box unit form that defines the bridge type, the span was composed of four individual longitudinal precast segments ganged together to form a single box girder. Each beam was comprised of eight segments bonded together and post-tensioned. Following manufacture each of the four beams were transported to the project site and hoisted into place. While it was constructed in segments at an offsite facility, it was not completed in the way that defined the bridge type. Sections of each beam were precast and then bonded together at the factory to form a single beam. The is more closely associated with earlier concrete prestressed and box girder designs and is similar to the early designs of Eugène Freyssinet, rather than those of Jean Muller, which define the bridge type. The pedestrian path bridge over Schnell School Road does not represent a significant innovation in bridge engineering or display a significant variation and it does not display any decorative features or significant architectural details. Bridge 25C0065 is not significant as a work of civil engineering or for aesthetic value and is not significant under National Register Criterion C or California Register Criterion 3.

The pedestrian path bridge over Schnell School Road was erected as a typical transportation improvement project of the period and the bridge is not associated with events that have made a significant contribution to the broad patterns of history and is not significant under National Register Criterion A or California Register Criterion 1. It is not associated with the lives of significant persons in history and is not significant under National Register Criterion B or California Register Criterion 2. The bridge is not a distinctive example of precast segmental concrete box girder construction, does not represent the work of a master and does not possess high artistic values. Further, it does not represent a significant and distinguishable entity whose components may lack individual distinction. Bridge 25C0065 is not significant under National Register Criterion C or California Register Criterion 3 and it has not yielded and is not likely to yield information important in history and is not significant under National Register Criterion D or California Register Criterion 4. Bridge 25C0065 is not eligible for inclusion on the National Register or California Register.

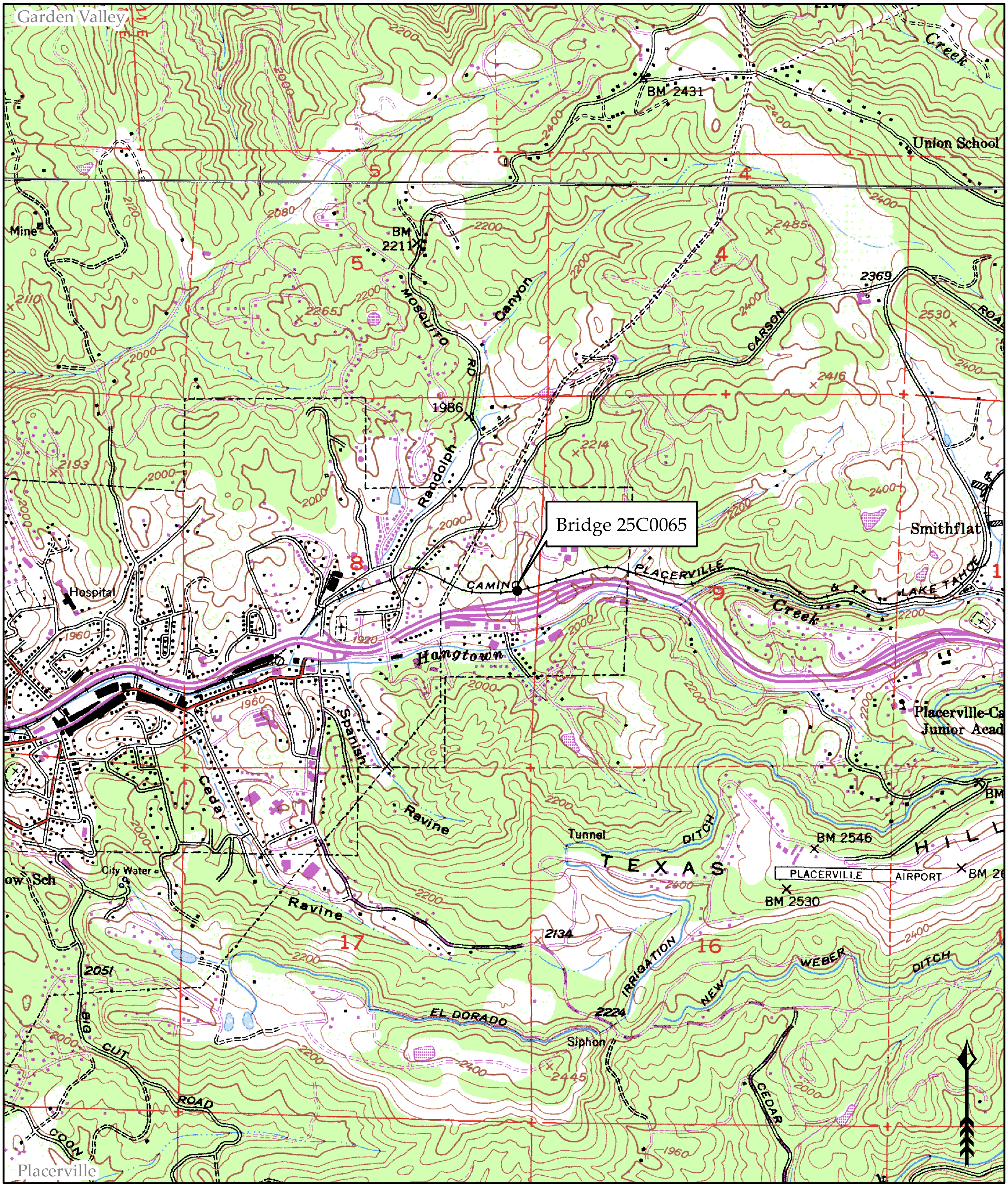
State of California The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary #
HRI#
Trinomial

 ***Resource Name or #:** 25C0065

***Map Name:** Placerville ***Scale:** 1:24,000 ***Date of Map:** 1950



State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code Reviewer Date

 ***Resource Name or #:** Bridge 28 0015L

P1. Other Identifier: Caldecott Tunnel Bore 3

***P2. Location:** ☐ Not for Publication ☒ Unrestricted ***a. County:** Alameda
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad:** East Oakland **Date:** **T** ; **R** ; **¼ of** **¼ of Sec** **;** M.D. **B.M.**
c. Address: n/a City: Oakland Zip:
d. UTM: Zone: 10 ; mE/ mN (G.P.S.)
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Elevation:
The Caldecott Tunnel Bore 3 is located on State Route 24 at post mile 0.01 in Oakland.

***P3a. Description:**
The Caldecott Tunnel Bore 3 is a two lane, reinforced concrete arch tunnel, 3,371 feet in length that passes through the Oakland-Berkeley Hills at the end of the Temescal Canyon. The tunnel is a bore tunnel carrying two lanes of traffic along State Route 24 west bound, north of the original two bores (28 0015R and 28 0015). The west tunnel portal mimics the Art Deco styling of Bores 1 and 2, although on a smaller scale and in a more crude manner. The portal designers incorporated vertical lines with chevrons present in the details of Bores 1 and 2. The bas relief delineating is painted purple, emphasizing the details. There are three step concrete retaining walls on either side of the roadway leading to the portal, increasing in size towards the entrance.

***P3b. Resource Attributes:** HP 19. Bridge
***P4. Resources Present:** ☐Building ☒Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5a. Photo or Drawing

P5b. Description of Photo:
View looking west
November 10, 2014

***P6. Date Constructed/Age and Sources:** ☒Historic ☐Prehistoric ☐Both
1965, Caltrans Bridge Files

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

***P8. Recorded by:**
Helen Blackmore
Dept. of Transportation
111 Grand Ave
Oakland, CA 94612

***P9. Date Recorded:**
November 14, 2014

***P10. Survey Type:**
Intensive

***P11. Report Citation:** Helen Blackmore, Janice Calpo, Lauren Clementino and Noah M. Stewart with contributions from Andy Hope, *Historic Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2015 Update* (California Department of Transportation, Sacramento, 2015).

***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):

State of California — The Resources Agency **DEPARTMENT OF PARKS AND RECREATION** **CONTINUATION SHEET**	**Primary #** **HRI#** **Trinomial**

 ***Resource Name or # (Assigned by recorder)**

***Resource Name or #** Bridge 28 0015L

B1. Historic Name:

B2. Common Name: Caldecott Tunnel Bore 3

B3. Original Use: Tunnel B4. Present Use: Tunnel

***B5. Architectural Style:**

***B6. Construction History:**

The tunnel was constructed in 1965. It has undergone minor maintenance, including: grinding of pavement (1969); removal of ceiling tile (1975); maintenance on to ventilation fans (1978); and an 8-inch water line replaced (1985). In 1982, an accident occurred in the tunnel causing damage to the ceiling and walls; work repairing this was completed in 1987. Further maintenance occurred including: tile replacement, cracks in roadway sealed and light replacement (1995); and right side curb patched (2001).

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

***B8. Related Features:**

The Caldecott Tunnel Bore 3 is located on westbound State Route 24. There are three other two lane tunnels that make up the Caldecott Tunnel system: The original two bores, built in the 1930s, carry the eastbound traffic and Bores 3 and 4 each carry two lanes of westbound traffic.

B9a. Architect: W. A. Chesney, bridge Department, California Division of Highways b. Builder:

***B10. Significance: Theme:** N/A **Area:** N/A

Period of Significance: N/A **Property Type:** N/A **Applicable Criteria:** N/A

The Caldecott Tunnel Bore 3 was one of the many highway improvements carried out during the late 1960s and 1970s. Bridge 28 0015L is not significant under National Register of Historic Places (National Register) Criterion A or California Register of Historical Resources (California Register) Criterion 1 for its association with the development of the highway network through the region. In addition, the tunnel is not associated with other events that would make it significant under National Register Criterion A or California Register Criterion 1. It is not associated with a person who made a significant contribution to history at the local, state, or national level, and it is not significant under National Register Criterion B or California Register Criterion 2. (See Continuation Sheet, page 3).

B11. Additional Resource Attributes:

***B12. References:** (See Continuation Sheet, page 3)

B13. Remarks:

***B14. Evaluator:**

Helen Blackmore

California Department of Transportation

***Date of Evaluation:**

November 14, 2014

(This space reserved for official comments.)

***Resource Name or #**Bridge 28 0015L

***Recorded by:** Helen Blackmore ***Date:** November 14, 2014 ☒ **Continuation** ☐ **Update**

***P3a. Description (continued):**

The exit to the tunnel on the east is equal in massing to that of Bores 1 and 2, but does not have the Art Deco detailing. The concrete façade is divided by five extrusive vertical concrete features. There is a four step concrete retaining wall on the right side of the portal. The tunnel is lined with white tiles, with the left sidewalk of 4 foot and 2 foot 6 inches on the right. There are interior square light boxes, and ventilation in the ceiling.

B10. Significance (continued):

This structure is one of nine tunnels constructed between 1965 and 1974. Prior to this, there were 53 in the State of California. Tunnel building was not a significant achievement in the state by the time the Caldecott Tunnel Bore 3 was constructed in 1965. By 1965, the construction of tunnels was in decline as those needed for city improvements or to replace roads skirting around mountains had been constructed to align with current roadways. There were two periods when the majority of tunnels were constructed in California: the first period during the 1930s, specifically 1930-32 and 1935-38, when 23 tunnels were built during the era of national public works projects. The second major period was during the early 1950s, when ten of the state's roadway tunnels were built. The majority of tunnel construction occurred in Los Angeles, Ventura, and Orange Counties, containing 46 percent of tunnels built prior to 1999. Bay Area tunnels in the Counties of Marin, Contra Costa, Alameda, San Francisco and San Mateo account for 37 percent.

Most of the state's tunnels were constructed by boring through hillsides or mountains. However, during the period 1965-1974, bore tunnels accounted for four of the nine tunnels constructed with cut-and-cover making up the other five. There is a third type of tunnel not constructed during this period, built of precast concrete tube sections. The bore tunnels are constructed by the excavation of earth and rock. Most have an arched, concrete lined interior, partially lined or unlined with light colored tiles making the interior brighter and easier to clean. The use of white tiles to line the tunnel is not significant to the constructed of the Caldecott Tunnel Bore 3. The longest bore tunnel in California is the Wawona Tunnel in Yosemite National Park measuring 4,236 feet in length, second and third longest tunnels are Bores 1 and 3 of the Caldecott Tunnel. Bore 1 measures 3,615 feet; and Bore 2, 3,609 feet. While the first two bores of the Caldecott Tunnel are eligible for their length, by the time that bore 3 was constructed in, 1965 the length of tunnel, whilst not an easy undertaking was not a considerable feat of civil engineering. Thus the Caldecott Tunnel Bore 3, measuring 3,371 feet in length, was not a significant achievement of civil engineering in 1965. Further, the use of Art Deco decoration to adorn the entrance portal is not aesthetically significant. Caldecott Tunnel Bore 3 is not significant under National Register Criterion C or California Register Criterion 3.

The Caldecott Tunnel Bore 3 was erected as a typical transportation improvement project of the period and the bridge is not associated with events that have made a significant contribution to the broad patterns of history and is not significant under National Register Criterion A or California Register Criterion 1. It is not associated with the lives of significant persons in history and is not significant under National Register Criterion B or California Register Criterion 2. Bridge 28 0015L does not embody the distinctive characteristics of a tunnel construction, does not represent the work of a master, and does not possess high artistic values. Further, it does not represent a significant and distinguishable entity whose components may lack individual distinction. The Caldecott Tunnel Bore 3 is not significant under National Register Criterion C or California Register Criterion 3. The tunnel has not yielded and is not likely to yield information important in history and is not significant under National Register Criterion D or California Register Criterion 4. Caldecott Tunnel Bore 3, Bridge 28 0015L, is not eligible for inclusion on the National Register or California Register.

*Recorded by: Helen Blackmore *Date: November 14, 2014 ☒ Continuation ☐ Update

***B12. References (continued):**

California Division of Highways. "As Built Plans – Bridge 28 0015L." 1960.

Caltrans Bridge Inspection Report: June 27, 2014

Feldman, Jessica B. *Caltrans Statewide Historic Bridge Inventory Update – Tunnels*. Revisions by David Lemon and Andrew Hope. (Sacramento, California: California Department of Transportation, Sacramento, 2006).

JRP Historical Consulting Services. *Historic Context Statement – Roadway Bridges of California: 1936-1959.* Prepared for State of California Department of Transportation, n.p., January 2003.

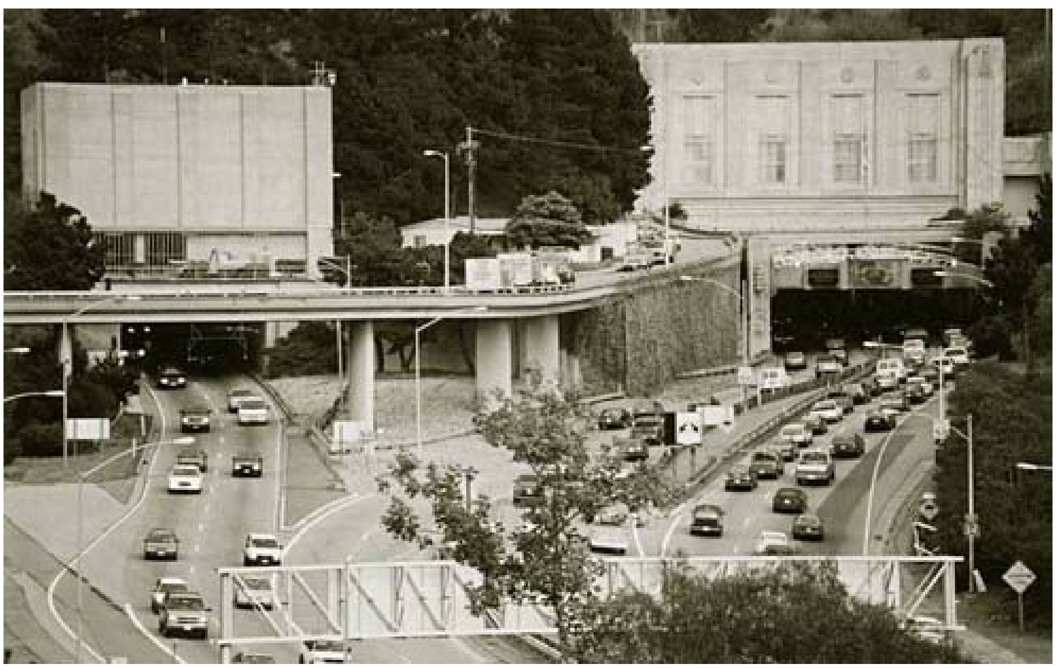
Mead & Hunt. *Historical Resources Evaluation Report – Caltrans Statewide Historic Bridge Inventory: 2010 Update*. (Sacramento, California: California Department of Transportation, Sacramento, 2010).

P5b. Photographs (continued):

View looking east between Call Boxes 9 and 10, October 5, 2009.

*Recorded by: Helen Blackmore *Date: November 14, 2014 ☒ Continuation ☐ Update

View of the western portal looking east, May 2011.



View of the western portals for Bore 1 (far right), Bore 2 (adjacent to Bore 1), and Bore 3 (left), from http://www.mtc.ca.gov/library/caldecott/ date unknown.

State of California The Resources Agency DEPARTMENT OF PARKS AND RECREATION	Primary # HRI#
LOCATION MAP	Trinomial

Page 6 of 6 ***Resource Name or #:** 28 0015L

***Map Name:** East Oakland ***Scale:** 1:24,000 ***Date of Map:** 1959

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

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code **Reviewer** **Date**

 ***Resource Name or #** Bridge 29 0203

P1. Other Identifier: Old US 50 Overcrossing

***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:** Tracy **Date:** **T** ; **R** ; **¼ of** **¼ of Sec** **;** M.D. **B.M.**
c. Address: n/a City: Zip:
d. UTM: Zone: 10 ; mE/ mN (G.P.S.)
e. Other Locational Data: Elevation:
The Old US 50 Overcrossing is located in San Joaquin County on Interstate 205 at post mile 3.37.

***P3a. Description:**
The overcrossing is located at State Route 205/West 11th Ave where it joins Interstate 205, west of Tracy, in San Joaquin County. Bridge 29 0203 is a one lane long span steel girder overcrossing, 408 feet in length, and carries Old US Highway 50 over State Route 205, at a skew of 54 degrees. The overcrossing has two spans with the main span measuring 200 feet in length. The structure has three continuous span welded composite steel girders with a reinforced concrete deck on three reinforced concrete column bents and reinforced concrete open end seat abutments and "U" wingwalls on piles. The railing is standard Type 9.

***P3b. Resource Attributes:** HP 19. Bridge
***P4. Resources Present:** ☐Building ☒Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc)

P5a. Photo or Drawing

P5b. Description of Photo:
View looking west,
October 30, 2014

***P6. Date Constructed/Age and Sources:** ☒Historic ☐Prehistoric ☐Both
1970, Caltrans Bridge Files

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

***P8. Recorded by:**
Helen Blackmore
Dept. of Transportation
111 Grand Ave
Oakland, CA 94612

***P9. Date Recorded:**
October 30, 2014

***P10. Survey Type:**
Intensive

***P11. Report Citation:** Helen Blackmore, Janice Calpo, Lauren Clementino and Noah M. Stewart with contributions from Andy Hope, *Historic Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2015 Update* (California Department of Transportation, Sacramento, 2015).

***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**

***Resource Name or #** Bridge 29 0203

B1. Historic Name:

B2. Common Name: Old US 50 Overcrossing

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

***B5. Architectural Style:** Modern

***B6. Construction History:**

The bridge was built in 1970.

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

***B8. Related Features:**

B9a. Architect: Geo. Inengaga, Bridge Department, California Division of Highways

b. Builder: Gordon H. Ball Inc

***B10. Significance: Theme:** N/A **Area:** N/A

Period of Significance: N/A **Property Type:** N/A **Applicable Criteria:** N/A

The Old US 50 Overcrossing was constructed by Gordon H. Ball Inc., of Danville, California. It was one of the many highway improvements carried out during the late 1960s and 1970s. Bridge 29 0203 is not significant under National Register of Historic Places (National Register) Criterion A or California Register of Historical Resources (California Register) Criterion 1 for its association with the development of the highway network through the region. In addition, the bridge is not associated with other events that would make it significant under National Register of Criterion A or California Register Criterion 1. It is not associated with a person who made a significant contribution to history at the local, state, or national level, and it is not significant under National Register Criterion B or California Register Criterion 2.

This structure is one of over 500 bridges of its type constructed between 1965 and 1974. Prior to this, there were more than 1,800 steel girder bridges in the State of California. The fabrication, transportation, and erection of large steel girder bridges was not a significant achievement in the state by the time the Old US 50 Overcrossing was constructed in 1970. By the early 1970s, only 10% of all new bridges in the state were erected in steel. Steel girder bridges had their heyday in the 1930s, when they accounted for one third of bridges constructed. By the 1950s, steel girder bridge construction had dropped to 20% of new bridges erected throughout the state. As postwar traffic demands required wider roads, steel bridges proved less cost effective and the majority of new bridges were constructed in concrete.
(See Continuation Sheet, page 3)

B11. Additional Resource Attributes:

***B12. References:** (See Continuation Sheet, page 3)

B13. Remarks:

***B14. Evaluator:**
Helen Blackmore
California Department of Transportation

***Date of Evaluation:**
October 1, 2014

(This space reserved for official comments.)

B10. Significance (continued):

By the 1960s, nearly any beam length could be fabricated and assembled on-site and long steel beams, such as those used in Old US 50 Overcrossing, and was not considered a significant technological achievement. Bridge 29 0203 is a fairly typical example of steel girder construction for this period. It is not one of the larger examples of this type and it does not incorporate a significantly long main span. Whiskey Creek Bridge held title to the longest main span of 350 feet in length from its initial construction in 1961 until 1967, when a bridge carrying Interstate 280 over San Mateo Creek achieved a 360 foot main span. The 29 0203 bridge with a total length of 408 feet and main span of 200 feet in length is not significant as a work of civil engineering. The Old US 50 Overcrossing is not significant under National Register Criterion C or California Register Criterion 3. Its construction was typical for the 1960s and 1970s, and was not a significant work of civil engineering.

Bridge 29 0203 was erected as a typical transportation improvement project of the period and the bridge is not associated with events that have made a significant contribution to the broad patterns of history and is not significant under National Register Criterion A or California Register Criterion 1. It is not associated with the lives of significant persons in history and is not significant under National Register Criterion B or California Register Criterion 2. Bridge 29 0203 does not embody the distinctive characteristics of steel girder bridge construction, does not represent the work of a master, and does not possess high artistic values. Further, it does not represent a significant and distinguishable entity whose components may lack individual distinction. The Old US 50 Overcrossing is not significant under National Register Criterion C or California Register Criterion 3. The bridge has not yielded and is not likely to yield information important in history and is not significant under National Register Criterion D or California Register Criterion 4. Bridge 29 0203 is not eligible for inclusion on the National Register or California Register.

***B12. References:**

An Architect Concentrates on Aesthetics in Bridge Design. *Pacific Builder & Engineer* 64, np. 4 (April 1958): 86-87.

California Division of Highways. A s Built Plans Bridge 29 0203, 1967.

Caltrans Bridge Inspection Report: March 25, 2014

Hope, Andrew. *Caltrans Statewide Historic Bridge Inventory Update Survey and Evaluation of Common Bridge Types*. Californian Department of Transportation, November 2004.

Mead & Hunt. *Historic Resource Evaluation Report Caltrans St atewide Historic Bridge Inventory: 2010 Update*. California Department of Transportation, 2010.

P5b. Photographs (continued):

View looking east, October 30, 2014

View looking north, October 30, 2014

***Resource Name or #** Bridge 29 0203

***Recorded by:** Helen Blackmore ***Date:** October 30, 2014 ☒ **Continuation** ☐ **Update**

View of southern abutment, October 30, 2014

Roadway looking southwest, October 30, 2014

 ***Resource Name or #** Bridge 29 0203

***Recorded by:** Helen Blackmore ***Date:** October 30, 2014 ☒ **Continuation** ☐ **Update**

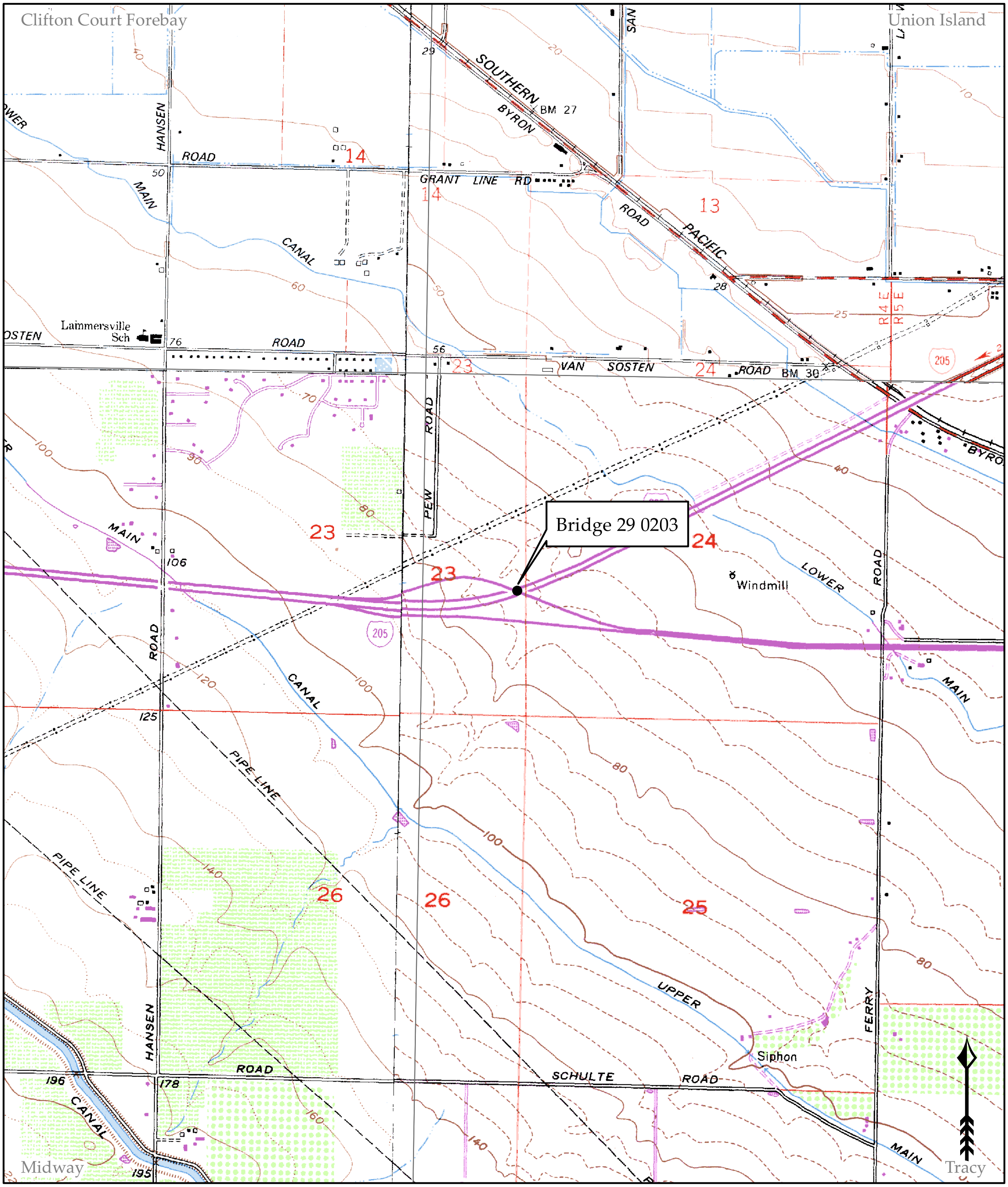
View of roadway looking northeast, October 30, 2014

State of California The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LOCATION MAP

Primary #
HRI#
Trinomial

***Resource Name or #:** 29 0203

***Map Name:** Tracy ***Scale:** 1:24,000 ***Date of Map:** 1955



This attached DPR for Bridge #32 0018 is the original form submitted to SHPO as part of the Statewide Historic Bridge Inventory Update for bridges constructed between 1965 and 1974. The final SHPO consensus, not reflected in this form, is that status is deferred pending further studies that may be part of future projects; therefore, "Historic significance not determined," or Caltrans Category 4, is the determination as of this writing. Caltrans Structures Maintenance List of Historic Significance (online) will reflect the most current status.

State of California — The Resou
DEPARTMENT OF PARKS AND F

PRIMARY RECORD

 ***Resource Name or #** Bridge 32 0018

P1. Other Identifier: Don Pedro Reservoir State Route (SR) 120 Crossing

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County:** Tuolumne
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad:** Chinese Camp **Date:** **T** ; **R** ; **¼ of** **¼ of Sec** **;** M.D. **B.M.**
c. Address: n/a City: Zip:
d. UTM: Zone: 10 ; mE/ mN (G.P.S.)
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Elevation:
The Don Pedro Reservoir carries State Route 120 in Tuolumne County, at post mile 19.61.

***P3a. Description:**
The Don Pedro Reservoir Crossing carries two lanes of traffic on State Route 120. Bridge 32 0018 is a long span steel girder structure, 1391 feet in length, with a main span of 350 feet. Six composite welded steel plate girder (two girders per span) spans have a lightweight cast in place reinforced concrete deck. The steel girders are continuous over all the bents with two hinges in Span 4. The abutments are reinforced concrete seats founded on spread footings and the bents are single reinforced concrete mined columns, are a capped Y shape. The roadway is placed on the southern half of the bents creating an unfinished appearance; this design is unlike other bridge of its type. The two lane bridge has type 9-11 railing.

***P3b. Resource Attributes:** HP 19. Bridge
***P4. Resources Present:** ☐Building ☒Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5a. Photo or Drawing

P5b. Description of Photo:
View, looking north
August 20, 2014

***P6. Date Constructed/Age and Sources:** ☒Historic ☐Prehistoric ☐Both
1971, Caltrans Bridge Files

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

***P8. Recorded by:**
Janice Calpo
Dept. of Transportation
1120 N Street
Sacramento, CA 95814

***P9. Date Recorded:**
October 1, 2014

***P10. Survey Type:**
Intensive

***P11. Report Citation:** Helen Blackmore, Janice Calpo, Lauren Clementino and Noah M. Stewart with contributions from Andy Hope, *Historic Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2015 Update* (California Department of Transportation, Sacramento, 2015).

***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**

***Resource Name or #** Bridge 32 0018

B1. Historic Name:
B2. Common Name: Don Pedro Reservoir SR 120 Crossing
B3. Original Use: Bridge B4. Present Use: Bridge
***B5. Architectural Style:**
***B6. Construction History:**

The bridge was built 1971. Since its construction the bridge has only undergone maintenance, including: deck patching (1981, 1993, 1997, 2010); and straightening of left girder flange and gouges in the right girder flange (1984).

***B7. Moved?** ☒**No** ☐**Yes** ☐**Unknown** **Date:** **Original Location:**
***B8. Related Features:**

B9a. Architect: R. A. Dokken, Bridge Department, California Division of Highways
b. Builder: Peter Kiewit Sons Co.
***B10. Significance: Theme:** N/A **Area:** N/A
Period of Significance: N/A **Property Type:** N/A **Applicable Criteria:** N/A

The Don Pedro Reservoir SR 120 Crossing Bridge was constructed by Peter Kiewit Sons' Co. as part of one of the many highway improvements carried out during the late 1960s and 1970s. Bridge 32 0018 is not significant under National Register of Historic Places (National Register) Criterion A or California Register of Historical Resources (California Register) Criterion 1 for its association with the development of the highway network through the region. In addition, the bridge is not associated with other events that would make it significant under National Register of Criterion A or California Register Criterion 1.

The bridge was named for James E. Roberts in 2007 after his death in 2006. Roberts served the Department of Transportation (Caltrans) as a structural engineer for a half century. He also served in Korea in 1953, where he repaired damaged bridges after the war ended. Roberts reached the position of Chief Bridge Engineer and was instrumental in the developing the seismic performance requirements for bridges after the 1989 Loma Prieta Earthquake. Further, he established the Bridge Design Academy and was instrumental in creating opportunities for women to be promoted within the field of engineering. However, Roberts was not directly associated with the Don Pedro Reservoir Bridge during design or construction and thus the bridge is not directly associated with a person who made a significant contribution to history at the local, state, or national level; therefore it is not significant under National Register Criterion B or California Register Criterion 2. (See Continuation Sheet, page 3).

B11. Additional Resource Attributes:

***B12. References:** (See Continuation Sheet, page 3).
B13. Remarks:

***B14. Evaluator:**
Helen Blackmore
California Department of Transportation

***Date of Evaluation:**
November 24, 2014

(This space reserved for official comments.)

***Resource Name or #** Bridge 32 0018

***Recorded by:** Janice Calpo ***Date:** October 1, 2014 ☒ **Continuation** ☐ **Update**

B10. Significance (continued):

This structure is one of over 500 bridges of its type constructed between 1965 and 1974. Prior to this, there were more than 1,800 steel girder bridges in the State of California. The fabrication, transportation, and erection of large steel girder bridges was not a significant achievement in the state by the time the Don Pedro Reservoir SR 120 Crossing Bridge was constructed in 1971. By the early 1970s, only 10% of all new bridges in the state were erected in steel. Steel girder bridges had their heyday in the 1930s, when they accounted for one third of bridges constructed in California. By the 1950s, steel girder bridge construction had dropped to 20% of new bridges erected throughout the state. As postwar traffic demands required wider roads, steel bridges proved less cost effective and the majority of new bridges were constructed in concrete.

By the 1960s, nearly any beam length could be fabricated and assembled on-site and long steel beams, such as those used in 1971, were not considered a significant technological achievement. Bridge 32 0018 is a fairly typical example of steel girder construction for this period. It is not one of the larger examples of this type and it does not incorporate a significantly long main span. Whiskey Creek Bridge held title to the longest main span of 350 feet in length from its initial construction in 1961 until 1967, when a bridge carrying Interstate 280 over San Mateo Creek was built in 1967 and achieved a 360 foot main span. The Don Pedro Reservoir SR 120 Crossing Bridge with a total length of 1391 feet and main span of 350 feet in length is not significant as a work of civil engineering by the 1971. Bridge 32 0018 is not significant under National Register Criterion C or California Register Criterion 3. Its construction was typical for the 1960s and 1970s.

Bridge 32 0018 was erected as a typical transportation improvement project of the period and the bridge is not associated with events that have made a significant contribution to the broad patterns of history and is not significant under National Register Criterion A or California Register Criterion 1. It is not associated with the lives of significant persons in history and is not significant under National Register Criterion B or California Register Criterion 2. Bridge 32 0018 does not embody the distinctive characteristics of steel girder bridge construction, does not represent the work of a master, and does not possess high artistic values. Further, it does not represent a significant and distinguishable entity whose components may lack individual distinction. The Don Pedro Reservoir SR 120 Crossing Bridge is not significant under National Register Criterion C or California Register Criterion 3. The bridge has not yielded and is not likely to yield information important in history and is not significant under National Register Criterion D or California Register Criterion 4. Bridge 32 0018 is not eligible for inclusion on the National Register or California Register.

***B12. References (continued):**

An Architect Concentrates on Aesthetics in Bridge Design. *Pacific Builder & Engineer* 64, np. 4 (April 1958): 86-87.

California Division of Highways. A s Built Plans Bridge 32 0018, 1968.

Caltrans Bridge Inspection Report: October 8, 2013.

Faigin, Daniel P. State Route 120. *California Highways*. Accessed on November 24, 2004 from www.cahighways.org

Hope, Andrew. *Caltrans Statewide Historic Bridge Inventory Update Survey and Evaluation of Common Bridge Types*. Californian Department of Transportation, November 2004.

Mead & Hunt. *Historic Resource Evaluation Report Caltrans St atewide Historic Bridge Inventory: 2010 Update*. California Department of Transportation, 2010.

State of California — The Resources Agency DEPARTMENT OF PARKS AND RECREATION **CONTINUATION SHEET**	Primary # HRI# Trinomial

Page 4 of 6 ***Resource Name or #** Bridge 32 0018

***Recorded by:** Janice Calpo ***Date:** October 1, 2014 ☒ **Continuation** ☐ **Update**

P5b. Photographs (continued):

Detail looking north, August 20, 2014

View looking northwest, August 20, 2014

***Resource Name or #** Bridge 32 0018

***Recorded by:** Janice Calpo ***Date:** October 1, 2014 ☒ **Continuation** ☐ **Update**

View looking east, August 20, 2014.

View looking southwest, August 20, 2014.

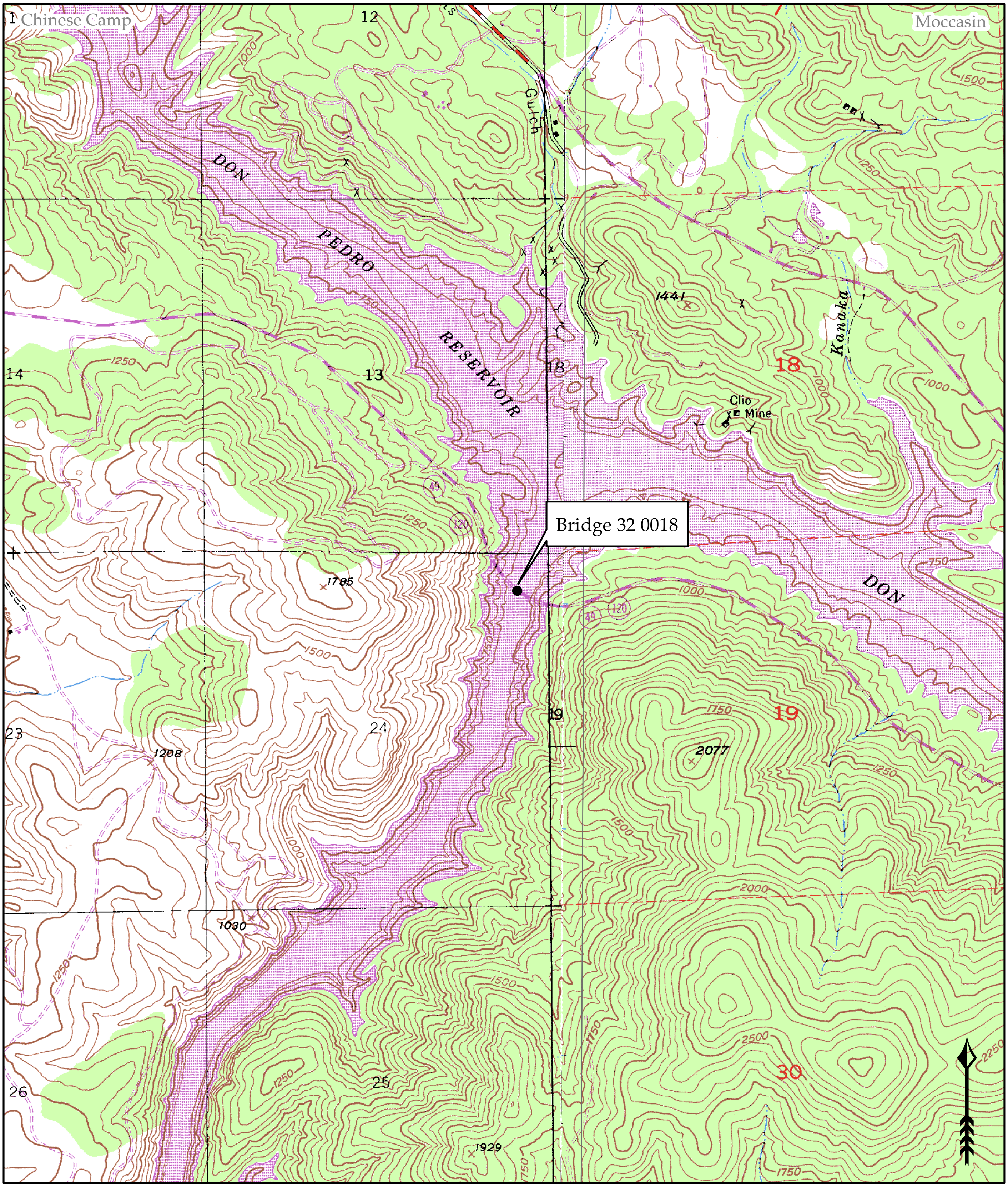
State of California The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary #
HRI#
Trinomial

***Resource Name or #:** 32 0018

***Map Name:** Chinese Camp ***Scale:** 1:24,000 ***Date of Map:** 1948



*Resource Name or #: Bridge 33C0147

P1. Other Identifier: Oakland Estuary Bridge (Miller Sweeney Bridge/Fruitvale Avenue Bridge)

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

***b. USGS 7.5' Quad:** East Oakland **Date:** **T** ; **R** ; **¼ of** **¼ of Sec** **;** M.D. **B.M.**

c. Address: n/a City: Alameda Zip:

d. UTM: Zone: 10 ; mE/ mN (G.P.S.)

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

The Oakland Estuary Bridge is located on Fruitvale Avenue, 0.3 miles south of Interstate 880. The bridge carries traffic to Alameda Island over the Tidal Canal connecting the San Leandro Bay to the south, and the Brooklyn Basin to the north, which links to the San Francisco Bay.

***P3a. Description:**

The Oakland Estuary Bridge carries two lanes of traffic in both directions. Bridge 33C0147 is a single leaf steel bascule bridge, 394 feet in length that crosses the Oakland Estuary at a skew of three degrees. The steel girder (9) structure has reinforced concrete deck approach spans (1 and 2), the a main span (3) is an orthotropic deck single leaf bascule, supported with a steel box (4 cells) in the first part of the span; and steel girders for the second half of the span length. There are eight precast concrete/prestressed concrete "I" girders in Spans 4 and 5. All piers are on spread footings. The four lane bridge has steel railings with sidewalks on both sides. The bridge is parallel to a railway vertical lift bridge which is no longer in use.

***P3b. Resource Attributes:** HP 19. Bridge

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

P5a. Photo or Drawing

P5b. Description of Photo:
View looking north
November 10, 2014

***P6. Date Constructed/Age and Sources:** ☒Historic ☐Prehistoric ☐Both
1974, Caltrans Bridge Files

***P7. Owner and Address:**
Alameda County
399 Elmhurst St
Hayward, CA 94544

***P8. Recorded by:**
Helen Blackmore
Dept. of Transportation
111 Grand Ave
Oakland, CA 94612

***P9. Date Recorded:**
November 20, 2014

***P10. Survey Type:**
Intensive

***P11. Report Citation:**

Helen Blackmore, Janice Calpo, Lauren Clementino and Noah M. Stewart with contributions from Andy Hope, *Historic Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2015 Update* (California Department of Transportation, Sacramento, 2015).

***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):

Primary #
HRI#

BUILDING, STRUCTURE, AND OBJECT RECORD

*NRHP Status

*Resource Name or # Bridge 33C0147

B1. Historic Name:
B2. Common Name: Oakland Estuary Bridge (Miller Sweeney Bridge/Fruitvale Avenue Bridge)
B3. Original Use: Bridge **B4. Present Use:** Bridge
***B5. Architectural Style:**
***B6. Construction History:**

The Oakland Estuary Bridge was built in 1974. Since its construction the bridge has undergone maintenance in 1989 after the Loma Prieta Earthquake, and in 1991 after a barge collided with the bridge, including: repair to the saw tooth detail joint between the bascule section and the fixed plate (1990); and bolt replacement (1991).

***B7. Moved?** ☒No ☐Yes ☐Unknown **Date:** **Original Location:**
***B8. Related Features:**

B9a. Architect: McGreary, Koretsky International Corp. **b. Builder:** Hensell Phelps Construction Co.
***B10. Significance: Theme:** Engineering **Area:** State
Period of Significance: 1974 **Property Type:** Structure **Applicable Criteria:** C

The Oakland Estuary Bridge was constructed for the US Army Corps of Engineers in return for permission and right-of-way to dredge the channel between San Antonio Creek and the San Leandro Bay. The general contractor was Hensell Phelps Construction Co. and steel fabrication and erection was handled by Kaiser Steel Corp. Bridge 33C0147 is not significant under National Register of Historic Places (National Register) Criterion A or California Register of Historical Resources (California Register) Criterion 1 for its association with the development of the highway network through the region. In addition, the bridge is not associated with other events that would make it significant under National Register Criterion A or California Register Criterion 1. The bridge was turned over to Alameda County in 1975 and named Miller Sweeney, after two local legislators who promoted the funding of the bridge. Congressman George P. Miller and Supervisor Leland W. Sweeney do not have direct association with the bridge. Bridge 33C0147 is not directly associated with a person or persons who made a significant contribution to history at the local, state, or national level, and it is not significant under National Register Criterion B or California Register Criterion 2.

Early forms of bascule (drawbridge) bridges were first constructed in Europe during the first half of the nineteenth century, but modern bascules were not developed until the 1880s. In the United States the first bascule bridges were constructed in Chicago in 1893. (See continuation sheet, page 3).

B11. Additional Resource Attributes:

***B12. References:** (See continuation sheet, page 3).
B13. Remarks:

***B14. Evaluator:**
Helen Blackmore
California Department of Transportation

***Date of Evaluation:**
October 1, 2014

(This space reserved for official comments.)

B10. Significance (continued):

They gained popularity in California in the early twentieth century, featuring a hinge, or a trunion that pulls the movable span upward and inward, thereby allowing vessels to pass through an unobstructed waterway. Bascules do not need a central pier, thus allowing the waterway to be unobstructed. There are currently 38 moveable bridge in California; 16 bascule bridges, 16 swing bridges, and 6 lift bridges. Bascule bridges only occur around the Bay Area and the Sacramento River Delta in Alameda, Sacramento, San Francisco, San Joaquin, Sonoma, and Yolo counties. The other moveable bridge types are also located in the aforementioned counties as well as Contra Costa, Los Angeles, Napa, San Diego and Sutter Counties; only two of 38 moveable bridges occur outside of the combined Bay Area and Sacramento River Delta. The distribution of moveable bridges across the state is not far reaching, thus the Oakland Estuary Bridge is not unique with regard to its type, located in part of the state where such bridges are common, however, its construction type of bascule with orthotropic deck is unique to the state and rare nationwide.

Orthotropic steel decks consist of a thin steel deck plate stiffened by the addition of ribs, or channels, running longitudinally (in the direction of the deck's span) on the deck's underside, this is incorporated into the superstructure. In the case of the Oakland Estuary Bridge the orthotropic deck allows for the bridge to have a narrow profile, whilst retaining rigidity when being raised. Of the nearly 25,000 bridges in California, only 16 bridges are classified as orthotropic steel deck, four of which were built in the 1960s. The Oakland Estuary Bridge was constructed in 1974, and the remaining bridges were constructed in the 1990s. Orthotropic decks are usually used to span large distances and reduce the number of spans required. The Oakland Estuary Bridge only spans 396 feet, with the orthotropic deck spanning 128 feet in comparison to the larger decks spanning 500 feet. However, these long spans are not used for moveable bridges, which makes the Oakland Estuary Bridge unique in the state. Further, in 1974, the bridge won the American Institute of Steel Construction award for "Most Beautiful Bridge – Moveable Span," in recognition of its sleek appearance created by the use of the orthotropic deck. Given the small number of movable bridges in the state and the new technology of the orthotropic deck the Oakland Estuary Bridge combines an old construction model with new techniques. Bridge 33C0147 is eligible for the National Register under Criterion C and California Register Criterion 3 as a unique example of bridge construction.

Bridge 33C0147 was erected as a typical transportation improvement project of the period and the bridge is not associated with events that have made a significant contribution to the broad patterns of history and is not significant under National Register Criterion A or California Register Criterion 1. It is not associated with the lives of significant persons in history and is not significant under National Register Criterion B or California Register Criterion 2. Bridge 33C0147 is a unique example of a steel bascule bridge with an orthotropic deck in California, and thus is significant under National Register Criterion C and California Register Criterion 3. The bridge has not yielded and is not likely to yield information important in history and is not significant under National Register Criterion D or California Register Criterion 4. Bridge 33C0147 also retains high degree of integrity in its design, feeling, location, association, workmanship, and setting with only minor changes in materials, where the bridge was repaired. Bridge 33C0147 is eligible for inclusion on the National Register at the state level and the California Register.

***B12. References (continued):**

Alameda County Drawbridges. "Miller-Sweeney Bridge." Alameda County Drawbridges. Accessed on November 20, 2014 from http://home.comcast.net/~kenseq/bridges/miller.html

Alameda County Public Works Agency. "Miller Sweeney Bridge." Alameda County Public Works Agency. Accessed on November 20, 2014 from www.acgov.org

AISC, "Moveable bridge category Miller-Sweeney Bridge - McCreary Koretsky International Inc." AISC Prize Bridges, American Institute of Steel Construction, (Chicago IL, 1974).

"An Architect Concentrates on the Aesthetics in Bridge Design." *Pacific Builder & Engineer* 64, no. 4 (Apr 1958): 86-7.

Caltrans Bridge Inspection Report: September 10, 2013.

California Division of Highways. "As Built Plans – Bridge 33C0147." 1971.

Hope, Andrew. *Caltrans Statewide Historic Bridge Inventory Update – Survey and Evaluation of Common Bridge Types.* California Department of Transport, November 2004.

JRP Historical Consulting Services. *Historic Context Statement – Roadway Bridges of California: 1936-1959.* Prepared for State of California Department of Transportation, n.p., January 2003.

Mangus, Alfred, R. "Existing Movable Bridges Utilizing Orthotropic Bridge Decks: Performance/Construction/Maintenance or Structural Elements."Written for the Heavy Bridge Symposium, Nov 8, 9, 10 2000 in Lake Buena Vista, Florida, 2000.

----- "2008 International Orthotropic Bridge Conference – The Bus Tour." (Sacramento, CA: International Orthotropic Bridge Conference, 2008).

Ucovich, Ron "How come the Webster Street Tube has no name?" *The Alameda Museum Quarterly Newsletter* 51. No. 3, Fall 2009.

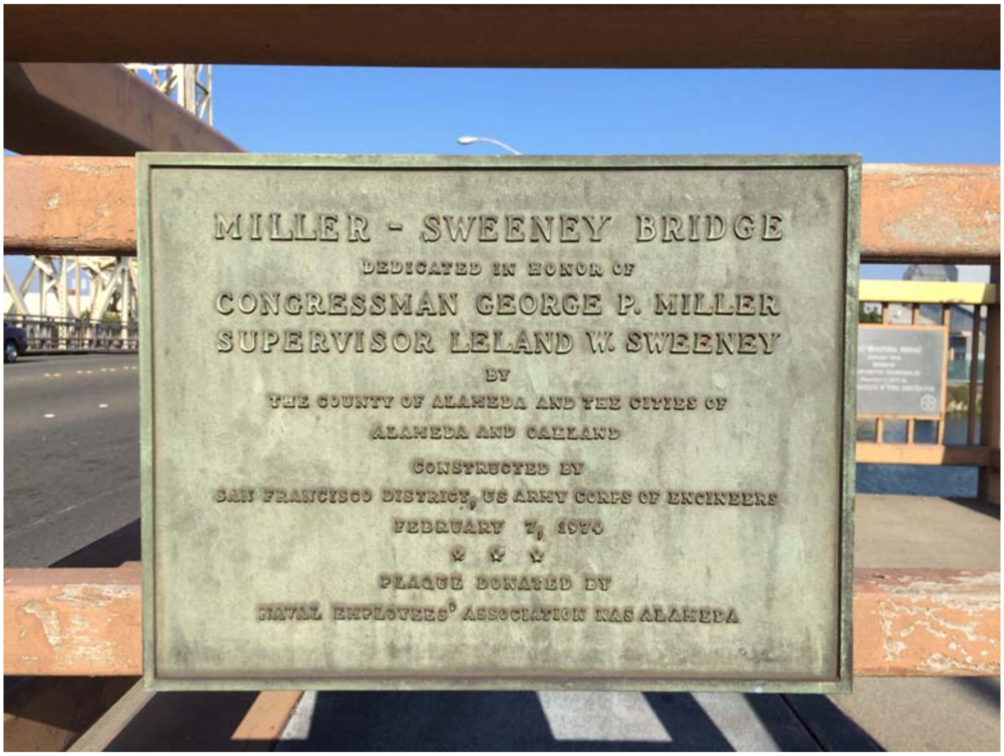
P5b. Photographs (continued):

View looking northwest, date unknown.


View looking southeast, November 10, 2014.


View looking east, November 10, 2014.

***Recorded by:** Helen Blackmore ***Date:** November 20, 2014 ☒ **Continuation** ☐ **Update**



Plaque, November 10, 2014.

"Most Beautiful Bridge" Plaque, November 10, 2014.

View looking west, November 10, 2104.

View of abutements 2 and 3 looking north, November 10, 2104.

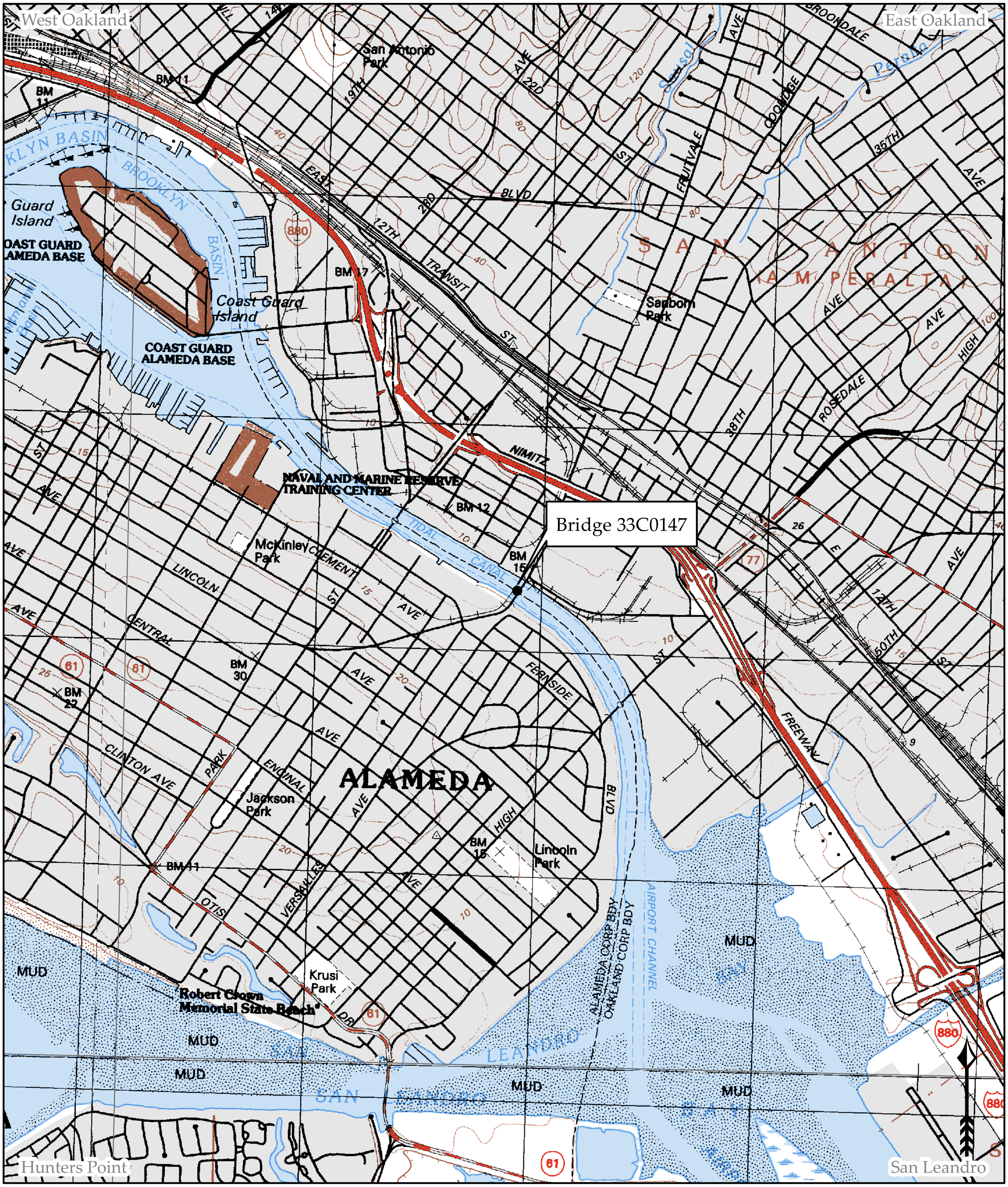
State of California   The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary #
HRI#
Trinomial

***Resource Name or #:** 33C0147

***Map Name:** East Oakland ***Scale:** 1:24,000 ***Date of Map:** 1959



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

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code Reviewer Date

 *Resource Name or # Bridge 33C0202

P1. Other Identifier: Hegenberger Road Overhead

***P2. Location:** ☐ Not for Publication ☒ Unrestricted ***a. County:** Alameda
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad:** East Oakland **Date:** **T** ; **R** ; **¼ of** **¼ of Sec** ; M.D. **B.M.**
c. Address: n/a City: Oakland Zip:
d. UTM: Zone: 10 ; mE/ mN (G.P.S.)
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Elevation:
Hegenberger Road Overhead is located in Alameda County on Hegenberger Road, 0.4 miles south of 66th Avenue.

***P3a. Description:**
The Hegenberger Road Overhead is a pre-cast concrete, inverted U section structure (also known as waffle construction). It is 899 feet in length with a main span of 290 feet. The bridge crosses over the Union Pacific Railroad and BART tracks at San Leandro Street at a skew of 45 degrees. It has continuous, inverted pre-cast concrete inverted U sections, post- tensioned with cables running laterally and longitudinally, these cables are grouted to fill the spaces and make a continuous piece that forms the waffle construction and appearance on the underside of the bridge. Open end cantilever abutment seats and two open arch piers with two parallel bents and two solid piers allow for slimmer bents and more light under the bridge. (See Continuation Sheet, page 3).

***P3b. Resource Attributes:** HP. 19 Bridge
***P4. Resources Present:** ☐Building ☒Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5a. Photo or Drawing

P5b. Description of Photo:
View looking east
November 26, 2012

***P6. Date Constructed/Age and Sources:** ☒Historic ☐Prehistoric ☐Both
1966, Caltrans Bridge Files

***P7. Owner and Address:**
City of Oakland
Public Works Agency
250 Frank H Owaga Plaza
Oakland CA, 94612

***P8. Recorded by:**
Helen Blackmore
Dept. of Transportation
111 Grand Avenue
Oakland, CA 94612

***P9. Date Recorded:**
November 24, 2014

***P10. Survey Type:**
Intensive

***P11. Report Citation:** Helen Blackmore, Janice Calpo, Lauren Clementino and Noah M. Stewart with contributions from Andy Hope, *Historic Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2015 Update* (California Department of Transportation, Sacramento, 2015).

***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):

Primary #
HRI#

BUILDING, STRUCTURE, AND OBJECT RECORD

***NRHP Status**

***Resource Name or #** Bridge 33C0202

B1. Historic Name:
B2. Common Name: Hegenberger Road Overhead
B3. Original Use: Bridge **B4. Present Use:** Bridge
***B5. Architectural Style:**
***B6. Construction History:**

The Hegenberger Road Overhead was built in 1966. Since its construction the bridge has only undergone minor maintenance, including the reinforcement of spalls in the top deck (2001). The bridge underwent a seismic retrofit in 2012, which increased the width and depth of both columns at piers 4 and 5.

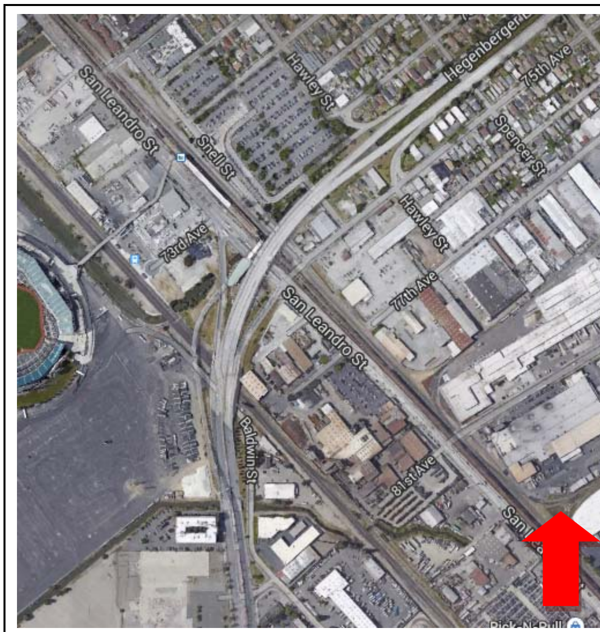
***B7. Moved?** ☒**No** ☐**Yes** ☐**Unknown** **Date:** **Original Location:**
***B8. Related Features:**

The bridge is located on Hegenberger Road over the Union Pacific Railroad and the BART tracks.

B9a. Architect: Tung-Yen Lin **b. Builder:**
***B10. Significance: Theme:** Engineering **Area:** Alameda County
Period of Significance: 1966 **Property Type:** Structure **Applicable Criteria:** C

The Hegenberger Road Overhead was constructed as one of the many highway improvements carried out during the late 1960s and early 1970s. It is not significant under National Register of Historic Places (National Register) Criterion A or California Register of Historical Resources (California Register) Criterion 1 for its association with the development of the highway network through the region. In addition, the bridge is not associated with other events that would make it significant under National Register Criterion A or California Register Criterion 1. The bridge was designed by Tung-Yen Lin (T. Y. Lin), an engineer credited with standardizing the practical use of prestressed concrete originally designed by Eugene Freyssinet of France. He is also known for his emphasis on the structural aesthetics aspect of engineering, regardless of a project's economic limitations. T. Y. Lin is a world renowned engineer and personally designed the innovative waffle construction of the Hegenberger Bridge. Thus, the bridge is directly associated with a person who made a significant contribution to history at the national level as his contributions to the use of precast concrete influenced construction across the country. However, it is more apt to consider the bridge a work of a master under National Register Criterion C and California Register Criterion 3 rather than under National Register Criterion B and California Register Criterion 2. Thus bridge 33C0202 is not significant under National Register Criterion B or California Register Criterion 2.

The first concrete girder bridge in California was erected in 1911. The structural type was innovative for its design flexibility, helping to meet the growing demand for short, (See Continuation Sheet, page 3).



B11. Additional Resource Attributes:
***B12. References:** **(See Continuation Sheet, page 4).**
B13. Remarks:
***B14. Evaluator:**
Helen Blackmore
California Department of Transportation
***Date of Evaluation:**
November 24, 2014

(This space reserved for official comments.)

***P3a. Description (continued):**

Bents 2 and 3 carry a spread V shaped arch on octagonal piers. The piers have since been seismically retrofitted, with the piers being tied together, and further concrete support was added to the V shaped arches on either side of the original pier, making for a bulky appearance. Bents 1 and 4 are a hunched design in concrete on octagonal columns. The underside of the deck utilizes a honeycomb structure to lighten the appearance and give the bridge deck a slender profile. The bridge carries six lanes of traffic and has a concrete railing (Type 1111).

B10. Significance (continued):

wide 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. And because they required less steel in their construction, concrete girder bridges could also be erected at significant cost savings. Only a small number of concrete girder bridges were built before World War II, however after the war their numbers increased. By 1965, there were 161 concrete girder bridges in California.

The Hegenberger Road Overhead with a total length of 899 feet and main span of 290 feet in length. It is the first example of post-tensioned concrete girder construction with a waffle concrete design. While the fabrication, transportation, and erection of large concrete girder bridges were not a significant achievement in the state by the time the bridge was constructed in 1966, use of the combination of precast waffle panels and Y-shaped piers is important. The waffle concrete design was an important evolution in post-tensioned concrete construction. It changed highway bridge construction and was useful in many other applications where it has become a common method for structural floor construction, particularly in highrise buildings. The slumped Y arches also demonstrate the effort to create an aesthetically pleasing bridge. However, these arches have been altered through a seismic upgrade. The columns were original not connected and sat on slender octagonal bases. This was changed in 2012 when additional support was added, widening the column bases and connecting the two piers at piers 4 and 5. These changes do not detract from the significance of the distinctive characteristic of the waffle construction and the slender arches and piers are still discernable within the bridge construction. Hegenberger Road Overhead is significant under National Register Criterion C and California Register Criterion 3 for its civil engineering and aesthetics. It is also the work of a master, T. Y. Lin, who personally came up with the new design. Bridge 33C0202 is significant under National Register Criterion C and California Register Criterion 3.

The Hegenberger Road Overhead retains high integrity in the aspects of location, association, and setting as the bridge has not been moved or substantially altered. However, the integrity of design and workmanship has been impacted by the seismic retrofit and alterations to the two pairs of columns at piers 4 and 5 of the bridge. These two aspects now only retain moderate integrity, as the original design is still evident and has not been removed but reinforced with additional concrete structures, which creates a less refined column shape. Further, the aspect of material has been somewhat impacted as additional concrete was added during the retrofit but the material was concordant with the bridge's original materials, and no historic fabric was removed, thus it retains moderate integrity in material. As the bridge is such a large structure, with minor alteration, Bridge 33C0202 retains moderate integrity overall.

Bridge 33C0202 was erected as a typical transportation improvement project of the period and the bridge is not associated with events that have made a significant contribution to the broad patterns of history and is not significant under National Register Criterion A or California Criterion 1. It is not associated with the lives of significant persons in history and is not significant under National Register Criterion B or California Register Criterion 2. Bridge 33C0202 does embody the distinctive characteristics of a concrete box bridge construction, and does represent the work of a master, and does possess high Modern aesthetic value. Further, it does represent a significant and distinguishable entity whose components that have individual distinction. The Hegenberger Road Overhead is significant under

National Register Criterion C and California Register Criterion 3. The bridge has not yielded and is not likely to yield information important in history and is not significant under National Register Criterion D or California Register Criterion 4. Bridge 33C0202 is eligible for inclusion on the National Register and California Register with state significance in the design of bridges, and retains moderate integrity.

***B12. References (continued):**

"An Architect Concentrates on the Aesthetics in Bridge Design." *Pacific Builder & Engineer* 64, no. 4 (Apr 1958): 86-7.

Bridge Photo of the Day. "Alameda County, California Bridges: Hegenberger Road OH across the UPRR (1). June 14, 2014. Accessed on January 5, 2015 from www.bphod.com.

California Division of Highways. "As Built Plans – Bridge 33C0202." 1967.

Caltrans Bridge Inspection Report: November 26, 2012.

Hope, Andrew. *Caltrans Statewide Historic Bridge Inventory Update – Survey and Evaluation of Common Bridge Types.* California Department of Transport, November 2004.

JRP Historical Consulting Services. *Historic Context Statement – Roadway Bridges of California: 1936-1959.* Prepared for State of California Department of Transportation, n.p., January 2003.

Lin, T. Y. " The Father of Prestressed Concrete 1 : Teaching Engineers, Bridging Rivers and Borders, 1931 to 1999." An oral history conducted in 1999 by Eleanor Swent, Regional Oral History Office, The Bancroft Library, University of California, Berkeley, 2001.

Lin, T. Y., Felix Kulka, and Y. C. Yang. "Post-Tensioned Waffle and Multispan Cantilever System with Y-Pier Composing the Hegenberger Overpass." *Special Publication* 23. 1969. International Concrete Abstracts Portal. 495-506.

Lucko, Gunnar. "The Construction Process of Segmental Bridges." *Bridge Engineering* Handbook. Edited by Chen W. F. and Duan Lian. London, U.K.: CRC Press LLC, 1999.

Myra L. Frank & Associates. *Caltrans' Historic Bridge Inventory Update: Concrete Box Girder Bridges*. n.p., August 2003. With revisions made by Andrew Hope, California Department of Transportation, April 2004.

Stuzinski, S. H. "Some Examples of Box Girder Bridges in California." *The Structural Engineer* 8, no. 41 (August 1963): 253-257.

Yang, Sarah. "T.Y. Lin, world renowned structural engineer, dies at age 91." Press Release, *UC Berkeley News*, November 18, 2003.

***Resource Name or #** Bridge 33C0202

***Recorded by:** Helen Blackmore   ***Date:** November 24, 2014   ☒ **Continuation** ☐ **Update**

P5b. Photographs (continued):

View looking north, November 10, 2014

View looking northwest or western abutment, November 10, 2014

View of Roadway looking east, November 10, 2014.

Hegenberger Road Overhead, June 2014 from Bridge Photo of the Day, before seismic retrofit.

***Resource Name or #** Bridge 33C0202

***Recorded by:** Helen Blackmore

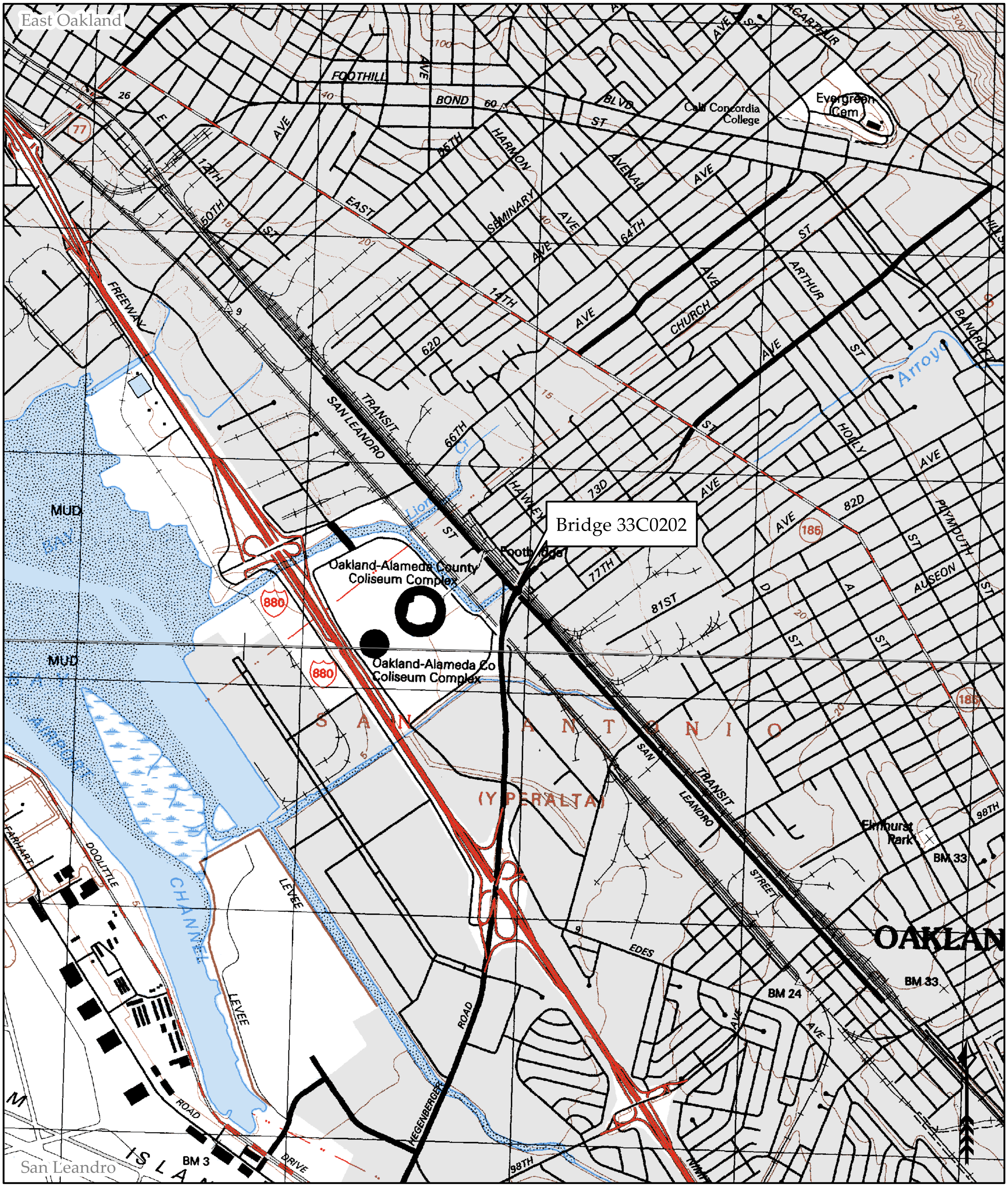
***Date:** November 24, 2014 ☒ **Continuation** ☐ **Update**

Hegenberger Road Overhead, June 2014 from Bridge Photo of the Day, after seismic retrofit.

State of California The Resources Agency DEPARTMENT OF PARKS AND RECREATION	Primary # HRI#
LOCATION MAP	Trinomial

 ***Resource Name or #:** 33C0202

***Map Name:** East Oakland ***Scale:** 1:24,000 ***Date of Map:** 1959



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

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code **Reviewer** **Date**

 ***Resource Name or #** Bridge 35 0054

P1. Other Identifier: San Mateo-Hayward Bridge

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County:** San Mateo and Alameda
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad:** San Mateo and Redwood Point **Date:** **T** ; **R** ; **¼ of** **¼ of Sec** **;** M.D. **B.M.**
c. Address: n/a City: Oakland Zip:
d. UTM: Zone: 10 ; mE/ mN (G.P.S.)
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Elevation:
State Route 92, from postmile 14.44 in San Mateo County to approximate postmile 2.4 in Alameda County.

***P3a. Description:**
The San Mateo-Hayward Bridge crosses the southern portion of San Francisco Bay from Foster City in San Mateo County to the vicinity of Hayward in Alameda County. The 80-foot wide roadway carries six lanes of traffic. The total length of the bridge is 35,746 feet, or approximately 6¾ miles, making it one of the longest bridges in the world. There are three segments to the bridge: a short approach segment over land at the west end, the highrise segment (approximately 1.8 miles in length), and a trestle segment at the east end (approximately 4.8 miles in length). At the east end of the bridge is a toll plaza and ancillary buildings, constructed on earth fill amid the salt ponds at the East Bay shoreline. (See Continuation Sheet, page 3)

***P3b. Resource Attributes:** HP. 19 Bridge
***P4. Resources Present:** ☐Building ☒Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5a. Photo or Drawing

P5b. Description of Photo:
Caltrans archival photo, unknown date.

***P6. Date Constructed/Age and Sources:** ☒Historic ☐Prehistoric ☐Both
1967, Caltrans Bridge Files

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

***P8. Recorded by:**
Andrew Hope
Dept. of Transportation
111 Grand Avenue
Oakland, CA 94612

***P9. Date Recorded:**
December 2012, updated October 2014

***P10. Survey Type:**
Intensive

***P11. Report Citation:** Helen Blackmore, Janice Calpo, Lauren Clementino and Noah M. Stewart with contributions from Andy Hope, *Historic Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2015 Update* (California Department of Transportation, Sacramento, 2015).

***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):

Primary #
HRI#

BUILDING, STRUCTURE, AND OBJECT RECORD

*NRHP Status

*Resource Name or # Bridge 35 0054

B1. Historic Name:
B2. Common Name: San Mateo-Hayward Bridge
B3. Original Use: Bridge **B4. Present Use:** Bridge
***B5. Architectural Style:** Modern
***B6. Construction History:** Construction was underway by 1961 and the bridge opened in 1967. Caltrans carried out a major seismic retrofit project in the late 1990s, and the east trestle segment was widened from four lanes to six in 2002. See the discussion of integrity on page 10 for additional formation on alterations to the bridge.

***B7. Moved?** ☒No ☐Yes ☐Unknown **Date:** **Original Location:**
***B8. Related Features:**
There is a toll plaza a short distance from the east end of the bridge, constructed on earth fill. The toll plaza is outside of the historic property boundary. The historic property includes only the bridge structure itself.
B9a. Architect: Bay Toll Crossings Division, California Department of Public Works and William Stephen Allen, San Francisco (architectural consultant)
b. Builder: Pomeroy-Gerwick-Steers (highrise segment, substructure); Murphy Pacific Bridge Bldrs. (highrise segment, superstructure)
***B10. Significance: Theme:** Engineering **Area:** California
Period of Significance: 1967 **Property Type:** Structure **Applicable Criteria:** C

The original San Mateo-Hayward Bridge

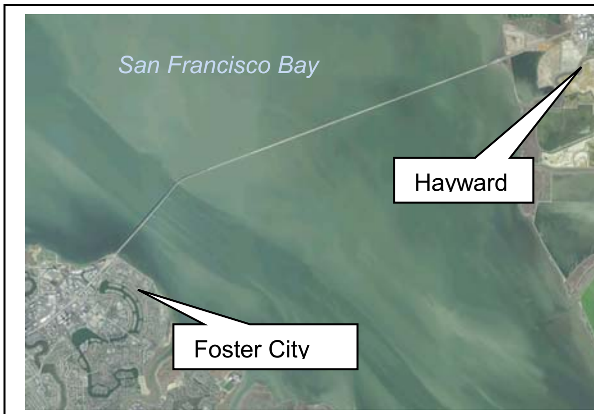
The first San Mateo-Hayward Bridge opened in 1929. It was a two-lane structure without the rise in elevation of the current bridge, remaining just a short distance above the water for its entire length. Most of the bridge consisted of a trestle structure, but there were five through-truss spans of 300 feet each near the bridge's western end. The middle span of the truss segment was a lift span that could be raised to allow ships to pass between the northern and southern portions of San Francisco Bay. Figure 5 shows the 1929 truss bridge with the 1967 bridge rendered in. (See Continuation Sheet, page 10)

B11. Additional Resource Attributes:

***B12. References:** (See Continuation Sheet, page 7).
B13. Remarks:

***B14. Evaluator:**
Andrew Hope, edited by Noah Stewart
California Department of Transportation

***Date of Evaluation:**
December 2012, updated October 2014



(This space reserved for official comments.)

*P3a. Description (continued):

Bents 2 and 3 carry a spread V shaped arch on octagonal piers. The piers have since been seismically retrofitted, with the piers being tied together, and further concrete support was added to the V shaped arches on either side of the original pier, making for a bulky appearance. Bents 1 and 4 are a hunched design in concrete on octagonal columns. The underside of the deck utilizes a honeycomb structure to lighten the appearance and give the bridge deck a slender profile. The bridge carries six lanes of traffic and has a concrete railing (Type 1111).

B10. Significance (continued):

The 1929 bridge was constructed as a privately-owned toll bridge (as were the original Dumbarton, Carquinez, and Antioch bridges). The State of California acquired the bridge in 1951 for $6 million.[1] With only two lanes and frequent delays caused by the need to raise the lift span, the bridge was clearly inadequate to accommodate traffic growth in the Bay Area in the decades following World War II. In the early 1960s, the lift span had to be raised six to twelve times daily, sometimes causing traffic to back up for more than three miles.[2]

<u>Selecting a design for the new bridge</u>

By 1961, construction was underway on the eastern trestle segment of the replacement bridge. In the fall of that year, the State Toll Bridge Authority approved a design for the highrise segment of the new bridge, which would carry the roadway high enough above the water that ships could pass underneath without the need for a moveable span. The design called for a double-deck bridge with three traffic lanes on each deck, carried by a truss structure with a 750-foot cantilever span over the ship channel. As shown in Figure 6 on page 10, the proposed design is similar to the double-deck truss structures on the eastern portion of the San Francisco-Oakland Bay Bridge (completed in 1936) and the Richmond-San Rafael Bridge (completed in 1956).

The cantilever truss design was a logical choice, given the need for a long span over the ship channel. At that time, there were only six bridges in California with spans of 750 feet or greater, including four cantilever truss structures (the two mentioned above and the 1927 and 1958 Carquinez bridges) and two suspension bridges (the Bay Bridge west span and the Golden Gate Bridge). No other bridge types had been attempted for such long spans in California, although there were some steel arches in the United States and a few concrete arches in Europe with spans of 750 feet or greater. The Cold Springs Canyon Bridge in Santa Barbara County, completed in 1963, is still the largest steel arch in the state with a span of 700 feet. In contrast, the longest concrete arch spans in the state are only 320 feet, while the longest steel girder span constructed by the early 1960s was 350 feet. The longest concrete box-girder span, completed in 1959, was a comparatively short 235 feet. The state's bridge engineers therefore had a limited range of options for the new San Mateo-Hayward Bridge, unless they were willing to take a chance on a more experimental design.

On September 15, 1961, the *San Francisco Chronicle* announced the Toll Bridge Authority's decision to build a double-deck truss for the highrise segment of the bridge. The following month, the *Chronicle* published a three-part critical essay by Allan Temko, the paper's architecture critic. Temko called the design "another monumental catastrophe" comparable to the "visual disaster" of the recently completed Richmond-San Rafael Bridge.[3] He proclaimed that the proposed bridge "timidly adheres to conventional steel-truss construction that belongs to the pre-World War I era," adding that the design "could have been built 50 or 60 years ago."[4] An additional criticism leveled at the design is that the double-deck configuration deprives the boxed-in motorists on the lower deck of the striking view from high

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[1] "State Buys Spans," *California Highways and Public Works*, September-October 1951, 11.
[2] "State Orders High Bridge at San Mateo," *San Francisco Chronicle*, September 15, 1961, 1/1.
[3] Allan Temko, "Rip van Winkle Bridge Threatens the Bay," *San Francisco Chronicle*, October 16, 1961, 1/3. Also "Let's Build a Splendid Bridge," October 17, 1961, 1/4, and "The Way to Build a Bridge," October 18, 1961, 1/3.
[4] Temko, October 16, 1961.

above the bay. Temko called for a reconsideration of the design in favor of an alternative that would embody "majestic grace and exhilarating strength," and that would carry the six lanes side-by-side rather than one above the other.[5] He did not advocate a particular alternative design, but the third installment of his critical essay gave considerable attention to the possibilities of prestressed concrete.

The day following the third installment of Temko's critical essay, the *Chronicle* cited support for reconsideration of the bridge design from prominent Bay Area architects Gardner Dailey and William Wurser (who was then the Dean of the Department of Environmental Design at U.C. Berkeley). Also expressing support for Temko's view was the famous writer and architecture critic Lewis Mumford, who at that time was a visiting professor at Berkeley.[6] Shortly thereafter, the Northern California chapter of the American Institute of Architects passed a resolution calling for a different bridge design.[7] The *Chronicle* also received a letter to the editor praising Temko's articles from the prominent Bay Area landscape architect Lawrence Halprin.[8] The public controversy over the proposed bridge design prefigured a similar controversy more than three decades later, over the design of the replacement eastern span of the San Francisco-Oakland Bay Bridge.

With portions of the bridge already under construction, the Toll Bridge Authority reacted quickly to the controversy. On October 25, 1961, Governor Edmund G. Brown, who headed the five-member Authority, called for the construction of a "really splendid and beautiful bridge." He also insisted that "I won't have anything more around here like the Richmond-San Rafael Bridge."[9] At a public hearing in San Francisco in early December, the Toll Bridge Authority presented five alternative designs for the highrise segment of the bridge, in addition to the previously approved steel truss design. These included two steel arch designs, a prestressed concrete bridge, a self-anchored suspension span, and one alternative described as "an advanced concept used on a span over the Fraser River in western Canada."[10] This was a reference to the Port Mann Bridge in Vancouver, British Columbia, then under construction, which was to be the first orthotropic deck bridge in the Americas.[11] At the public hearing, the Toll Bridge Authority expressed unanimous (although unofficial) preference for the orthotropic deck design. This was confirmed in late January 1962, when the Authority gave formal approval to the steel orthotropic deck and box-girder design.[12] The Authority also retained San Francisco architect William Stephen Allen, a partner in the firm of Anshen and Allen, to consult on design and aesthetic matters.[13]

<u>The steel orthotropic deck</u>

An orthotropic deck is a steel deck that has been stiffened by the addition of ribs or channels on the underside. The ribs or channels run in the direction of the deck's span, typically between floor beams. The section drawing below shows a typical orthotropic deck on a small bridge. The thin steel deck has a series of evenly spaced, three-sided steel

channels welded to the underside to increase the deck's stiffness. In this example, a pair of steel I-beams carry the deck and floor beams. The top flanges of the two beams are integral with the orthotropic deck. A thin layer of asphalt

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[5] Temko, October 16, 1961.
[6] "Criticism of Planning for New Bay Span Praised," *San Francisco Chronicle*, October 19, 1961, 4/1.
[7] "Architects Ask Better Bridge Plan," *San Francisco Chronicle*, October 20, 1961, 1/5.
[8] *San Francisco Chronicle*, October 27, 1961, 32/3.
[9] "Brown Pledges a 'Splendid' New Bridge," *San Francisco Chronicle*, October 26, 1961, 1/1.
[10] "Hayward Bridge Design Hearing," *San Francisco Chronicle*, December 2, 1961, 4/5.
[11] No author, *Design Manual for Orthotropic Steel Plate Deck Bridges* (New York: American Institute of Steel Construction, 1963), 4-5.
[12] "San Mateo-Hayward Bridge Design is Approved," *California Highways and Public Works*, January- February 1962, 61.
[13] "San Mateo-Hayward Bridge Design is Approved.

or concrete installed on the top of the deck provides the roadway surface. In the case of the San Mateo-Hayward Bridge, the orthotropic deck has vertical ribs 9" deep and spaced 15" apart. The ribs run in the direction of the bridge spans, parallel to the box-girders. The deck is integral with the top flange of the bridge's two steel box-girders.

The advantage of the orthotropic deck is that it acts as an integral part of the overall structural system, rather than simply being additional dead load (the weight of the structure itself) that needs to be transferred to the floor beams, girders, and ultimately to the piers and foundations. The orthotropic deck acts as the top flange of the steel beam or box-girder. Since the deck is much larger than the top flange of a typical beam or girder, it contributes significantly to the strength of the bridge superstructure and therefore its ability to span longer distances. A bridge superstructure of monolithic reinforced concrete acts in a similar way, but achieving the same effect with steel results in a much lighter structure. The substantial reduction in dead load allows for longer spans and in turn reduces the required size and strength of the piers and foundations, resulting in the use of less material overall and therefore lower cost. (However, the cost savings is partially offset by the cost of fabrication of the orthotropic deck, due to the extensive welding required.) The additional strength provided by the orthotropic deck also allows for a shallower superstructure depth and therefore long spans with very slender profiles.[14] This slender profile, with the roadway seemingly carried on a thin ribbon of steel, was (and remains) a much admired quality in modern bridge design.

The orthotropic deck was originally developed in the Federal Republic of Germany (West Germany) in the years following World War II. With many bridges to rebuild and a shortage of steel, engineers searched for new bridge designs that would use steel more efficiently. The first orthotropic deck bridge opened in West Germany in 1950, and by 1960 there were at least 40 such bridges in that country and a few in other European countries.[15] E. R. Foley, Chief of the Division of Bay Toll Crossings within the State's Department of Public Works, traveled to West Germany in the spring of 1964 to consult with that country's leading experts on the design of orthotropic deck bridges, and to have those German experts review the design for the San Mateo-Hayward Bridge.[16]

The San Mateo-Hayward Bridge opened to traffic in October of 1967. The State then demolished most of the 1929 bridge. However, San Mateo County purchased the west trestle segment of the old bridge from the State in 1969, for $10, for use as a public fishing pier.[17] The 4,000-foot long trestle/pier is extant, but is no longer open to the public due to its deteriorated condition.

<u>Significance of the San Mateo-Hayward Bridge</u>

The first orthotropic steel deck bridge built in California is a rather simple bridge, located within the I-580 and I-680 interchange, in Alameda County, near the City of Dublin, California . The four span bridge (33 0371G), which was completed in 1965, has two spans of 75 feet and two of 85 feet. It was designed with two completely different rib and deck systems as well as two different wearing surfaces. The Division of Highways (the precursor agency of the Department of Transportation) constructed the bridge as an experiment to check the accuracy of the design software

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[14] M.S. Troitsky, *Orthotropic Bridges: Theory and Design* (Cleveland: James F. Lincoln Arc Welding Foundation, 1967), 21-26 and *Design Manual for Orthotropic Steel Plate Deck Bridges,* 1-29.
[15] Troitsky, 1 and *Design Manual for Orthotropic Steel Plate Deck Bridges*, 3-5.
[16] "San Mateo-Hayward Bridge," *California Highways and Public Works*, September-October 1964, 65 and "San Mateo-Hayward Bridge," *San Francisco Chronicle*, May 6, 1964, 22/2.
[17] "Mateo Span Sold – Now Fishing Pier," *San Francisco Chronicle*, April 27, 1969, 3/3.

***Recorded by:** Andrew Hope, edited by Noah Stewart
***Date:** December 2012, edited October 2014 ☒ **Continuation** ☐ **Update**

as well as deck wearing surfaces.[18] A second experimental bridge, in actuality just the two outside lanes of a wider bridge, Ulatis Creek Bridge (23 0052R), was constructed by the Division of Bay Toll Crossings in 1966, again, to test as a deck wearing surfaces. This bridge was a five span bridge, each span measuring 26 feet. What was learned at these two bridges was used in the design and construction of much larger structures: the 1967 San Mateo-Hayward (35 0054) and the 1969 San Diego-Coronado (57 0857) Bridges.

The San Diego-Coronado Bridge opened in 1969 as the second large orthotropic deck bridge in California. This bridge has main spans of 660 feet. More recently, the original concrete deck of the Golden Gate Bridge was replaced by a steel orthotropic deck, which significantly reduced the dead load of the superstructure supported by the suspension cables. When it opened in 1967, the 750-foot main span of the San Mateo-Hayward Bridge was the longest bridge span in California that was not a suspension or cantilever truss structure, and it retains that distinction to the present. It was also the longest steel girder span in the United States in the mid-1960s.[19] The bridge's orthotropic deck was one of the earliest uses of this new technology in the country, and the 5,500-foot length of the orthotropic deck made it one of the world's largest applications of this technology at the time. In 1968, the new bridge received the Outstanding Civil Engineering Achievement Award from the American Society of Civil Engineers.[20]

The San Mateo-Hayward Bridge meets National Register of Historic Places (National Register) Criterion C at the state level of significance, and thus the California Register of Historical Resources (California Register) Criterion 3, as an early and outstanding example of a steel orthotropic deck bridge. The period of significance is 1967, the year construction was completed.

The boundary of the property encompasses the entire 6.8-mile long 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, has been altered since the opening of the bridge, and is not related to the bridge's significance in engineering. In addition, the historic property does not include the remnant portion of the 1929 bridge or the electrical transmission line that parallels the bridge just to the south.

Integrity

The two major alterations to the bridge since 1967 include extensive seismic retrofit work undertaken in the late 1990s and widening of the east trestle segment from four to six lanes that was completed in 2002. The seismic retrofit work included strengthening of the piers, bents, and superstructure of the highrise segment. This included enlarging the spandrel beams that link the tops of the paired piers at each pier location, wrapping the concrete columns of the bents in elliptical casings, and enlarging the bent caps. This work visibly enlarged the substructure's concrete components, and changed the shape of the concrete columns from rectangular to elliptical, but the substructure retains its original overall form and no new piers or bents were added. The steel bents were reinforced internally, as were the steel box girders of the superstructure.

Widening of the trestle segment doubled the width of this portion of the structure by adding a new three-lane westbound roadway on the north side of the existing structure. The original four-lane structure was then converted to a three-lane eastbound roadway, with wider shoulders on both sides of the travel lanes. The railing on the north side of the original structure thus became part of the median barrier of the widened trestle, backed up to a new median barrier on the westbound side. As part of the widening, the westbound vehicle pullouts were removed, while the original vehicle pullouts on the south side remain.

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[18] Mangus, Alfred R. and California Department of Public Works, *Surfacing California's First Orthotropic Deck Plate Bridge*, ed. B. Gunderson, (Sacramento, CA: Division of Highways, Bridge Department 1967), 2.
[19] "Building the Bay's New Bridge," *San Francisco Chronicle*, October 27, 1965, 4/2.
[20] "San Mateo Bridge Gets an Award," *San Francisco Chronicle*, July 17, 1968, 6/1.

The original lighting consisted of linear, tube-like fixtures mounted atop the median barrier and outer railings, approximately at eye level to motorists. The present lighting, installed in the late 1970s, consists of tall gooseneck light poles, with two-arm poles installed on the median barrier in the highrise segment and single-arm poles installed on the outer railings in the east trestle and west approach segments. The elongated fixtures at the ends of the pole arms are more recent than the late 1970s, replacing the more rounded earlier fixtures. (It is also possible that the poles themselves have been replaced since the late 1970s.) The protective fenders at piers 19 and 20, flanking the ship channel, were reconstructed in 2001.

The highrise segment of the bridge, which includes the steel box-girder and orthotropic deck structure that are the basis of the bridge's significance, retains its original median barrier and outer railings. It appears essentially as originally built in the 1960s, except for alterations resulting from the seismic retrofit project and replacement of the original lighting. Overall, the bridge retains sufficient integrity of design and materials to be eligible for National Register and California Register listing.

***B12. References (continued):**

Articles in *California Highways and Public Works*:

Sept.-Oct. 1951: "State Buys Spans," 11 (no author).

Jan.-Feb. 1962: "San Mateo-Hayward Bridge Design is Approved," 61 (no author).

Jan.-Feb. 1963: Raab, Norman, "San Mateo-Hayward Bridge," 25-31.

Sept.-Oct. 1964, "San Mateo-Hayward Bridge," 65 (no author).

Articles in the *San Francisco Chronicle*:

Sept. 15, 1961: "State Orders High Bridge at San Mateo," 1/1.

Oct. 16, 1961: Temko, Allan, "Rip van Winkle Bridge Threatens the Bay," 1/3.

Oct. 17, 1961: Temko, Allan, "Let's Build a Splendid Bridge!," 1/4.

Oct. 18, 1961: Temko, Allan, "The Way to Build a Bridge," 1/3.

Oct. 19, 1961: "Criticism of Planning for New Bay Span Praised," 4/1.

Oct. 20, 1961: "Architects Ask Better Bridge Plan," 1/5.

Oct. 26, 1961: "Brown Pledges a 'Splendid' New Bridge" 1/1.

Oct. 27, 1961: "Both Splendor and Economy" editorial, 32/1.

Oct. 27, 1961: Letter to the Editor from Lawrence Halprin.

Dec. 2, 1961: "Hayward Bridge Design Hearing," 4/5.

Dec. 7, 1961: "State Scraps 'Rip Van Winkle' Bridge Design," 1/1.

Dec. 29, 1961: "Top Designer for New Bridge," 5/4.

Jan. 26, 1962: "State Okays 'Graceful' New Bridge," 1/2.

May 6, 1964: "San Mateo-Hayward Bridge," 22/2.

Oct. 27, 1965: "Building the Bay's New Bridge," 4/2.

Oct. 16, 1967: "A Musical March to Open Bridge," 38/8.

July 17, 1968: "San Mateo Bridge Gets An Award," 6/1.

Apr. 27, 1969: "Mateo Span Sold – Now Fishing Pier," 3/3.

Other sources:

Caltrans Library and History Center, Caltrans Headquarters, Sacramento. Historic photos and archival material.

Design Manual for Orthotropic Steel Plate Deck Bridges. New York: American Institute of Steel Construction, 1963.

Troitsky, M. S. *Orthotropic Bridges: Theory and Design.* Cleveland: James F. Lincoln Arc Welding Foundation, 1967.

P5b. Photographs (continued):

Figure 2: The 1967 San Mateo-Hayward Bridge under construction. A crane on a barge is lifting one of the box-girder segments into position atop the steel bents. The photo is taken from the 1929 bridge. (Caltrans Library and History Center, Sacramento.)

***Recorded by:** Andrew Hope, edited by Noah Stewart

***Date:** December 2012, edited October 2014 ☒ **Continuation** ☐ **Update**

Figure 3: The 1967 San Mateo-Hayward Bridge, with the 1929 bridge at right. (Caltrans Library and History Center, Sacramento.)

Figure 4: View from below the central span of the highrise segment, showing the two box girders, Floor beams, and a suspended catwalk between the box-girders. The 1929 bridge is at left. (Caltrans Library and History Center, Sacramento.)

Figure 5: The truss segment of the original 1929 bridge, with the 1967 bridge rendered in. (Caltrans Library and History Center, Sacramento.)

Figure 6: Double-deck truss structure proposed in 1961 for the highrise segment of the San Mateo-Hayward Bridge. (Caltrans Library and History Center, Sacramento).

***Recorded by:** Andrew Hope, edited by Noah Stewart

***Date:** December 2012, edited October 2014 ☒ **Continuation** ☐ **Update**

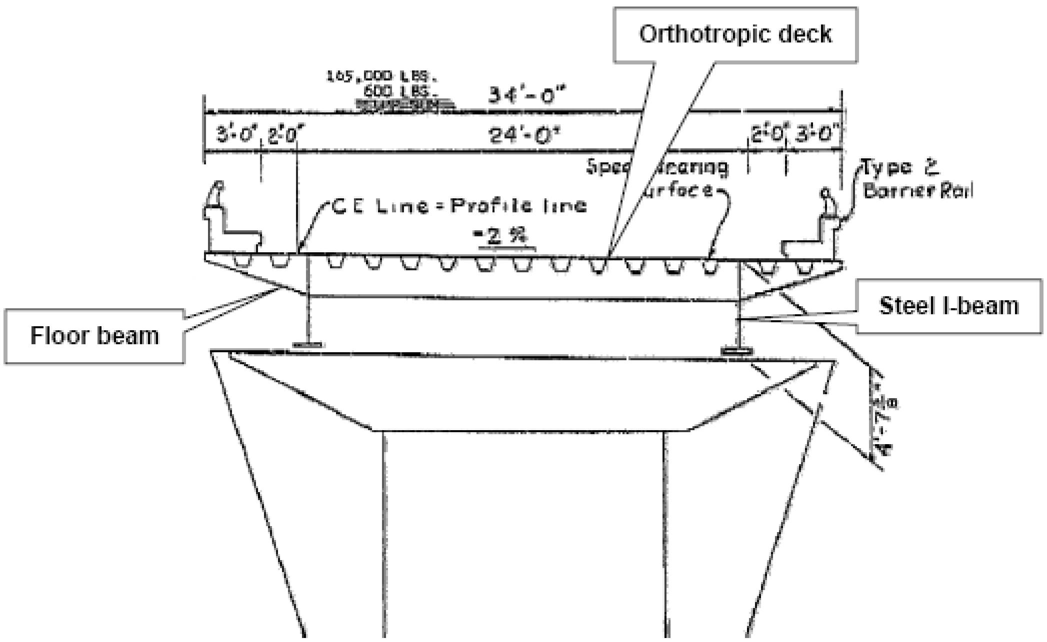


Figure 7: Diagram of the Orthotropic Deck system.

State of California The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LOCATION MAP

Primary #
HRI#
Trinomial

***Resource Name or #:** 35 0054

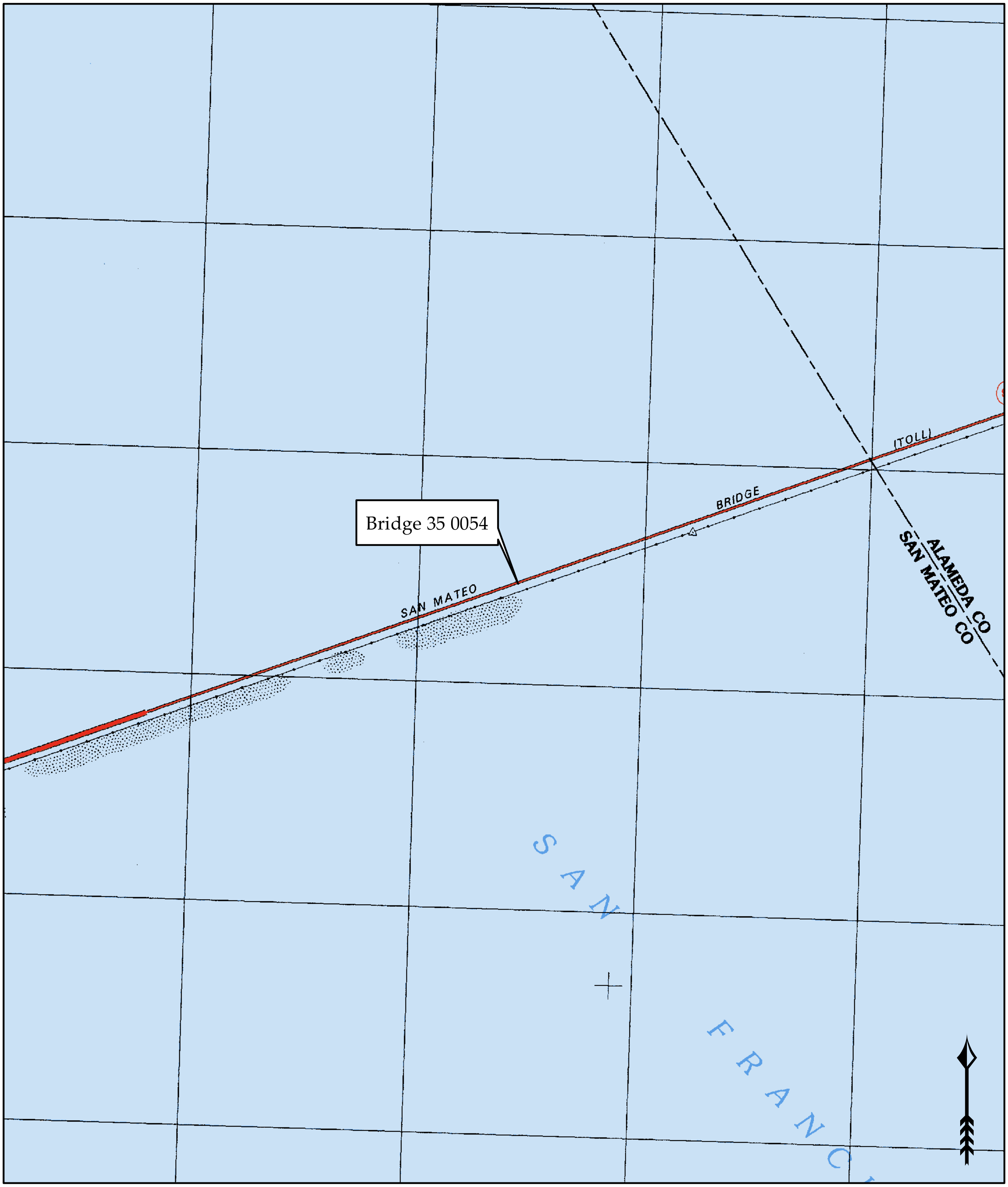
***Map Name:** San Mateo, Redwood Point ***Scale:** 1:24,000 ***Date of Map:** 1993

State of California The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LOCATION MAP

Primary #
HRI#
Trinomial

***Resource Name or #:** 35 0054

***Map Name:** Redwood Point ***Scale:** 1:24,000 ***Date of Map:** 1993



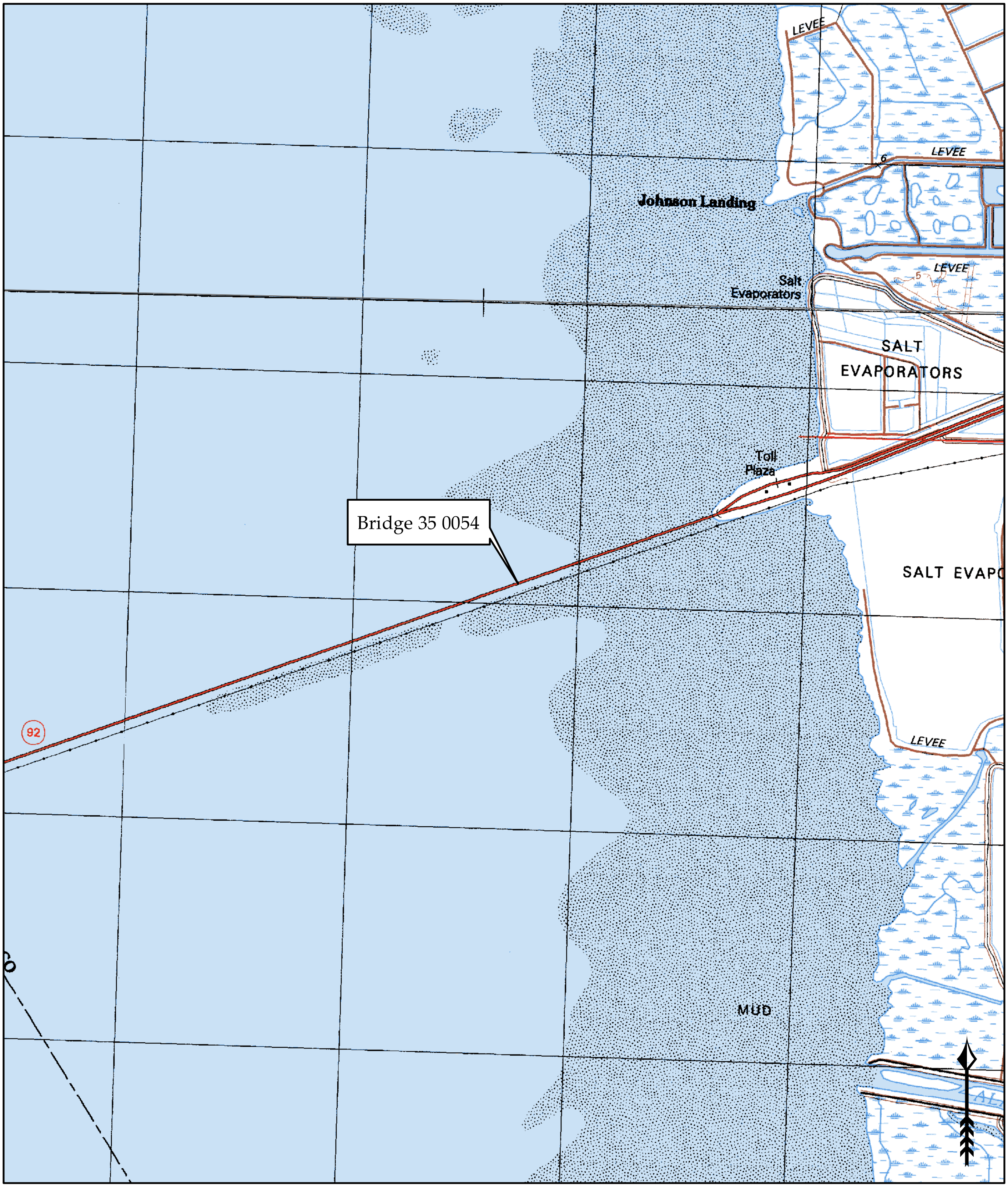
State of California The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary #
HRI#
Trinomial

 ***Resource Name or #:** 35 0054

***Map Name:** Redwood Point ***Scale:** 1:24,000 ***Date of Map:** 1993



PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code | Reviewer | Date

***Resource Name or #** Bridge 35 0173L

P1. Other Identifier: State Route 1/280 Separation

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

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

***b. USGS 7.5' Quad:** South San Francisco **Date:** **T** ; **R** ; **¼ of** **¼ of Sec** **;** M.D. **B.M.**

c. Address: n/a City: Daly City Zip:

d. UTM: Zone: 10 ; mE/ mN (G.P.S.)

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

The State Route 1/280 Separation is located in San Mateo County on State Route 1 at post mile 48.36 in Daly City.

***P3a. Description:**

The tunnel carries three lanes of traffic in both the southbound and northbound directions on State Route 1, underneath John Daly Boulevard, and over Interstate 280. The cut and cover tunnel is 56 feet in length with a curb to curb width of 98 feet. The single span cast in place concrete box girder (91 cells) reaches over the cut and cover section, under six feet of fill on reinforced concrete strutted abutments with spread footings. The portals have unadorned concrete facades. The tunnel has painted sides and ceiling on which are two lines of square luminaries.

***P3b. Resource Attributes:** HP 19. Bridge

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

P5a. Photo or Drawing

P5b. Description of Photo:
View looking south,
July 24, 2013

***P6. Date Constructed/Age and Sources:** ☒Historic ☐Prehistoric ☐Both
1965, Caltrans Bridge Files

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

***P8. Recorded by:**
Helen Blackmore
Dept. of Transportation
111 Grand Ave
Oakland, CA 94612

***P9. Date Recorded:**
November 17, 2014

***P10. Survey Type:**
Intensive

***P11. Report Citation:** Helen Blackmore, Janice Calpo, Lauren Clementino and Noah M. Stewart with contributions from Andy Hope, *Historic Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2015 Update* (California Department of Transportation, Sacramento, 2015).

***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):

***Resource Name or # (Assigned by recorder)**

***Resource Name or #** Bridge 35 0173L

B1. Historic Name:

B2. Common Name: Route 1/280 Separation

B3. Original Use: Tunnel **B4. Present Use:** Tunnel

***B5. Architectural Style:**

***B6. Construction History:**

The tunnel was constructed in 1965. It underwent a safety upgrade in 1980, which included the addition of a reinforced concrete median barrier rail. The only other work that has occurred on this tunnel is the placement of signage showing the tunnel's clearance and the replacement of luminaries.

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

***B8. Related Features:**

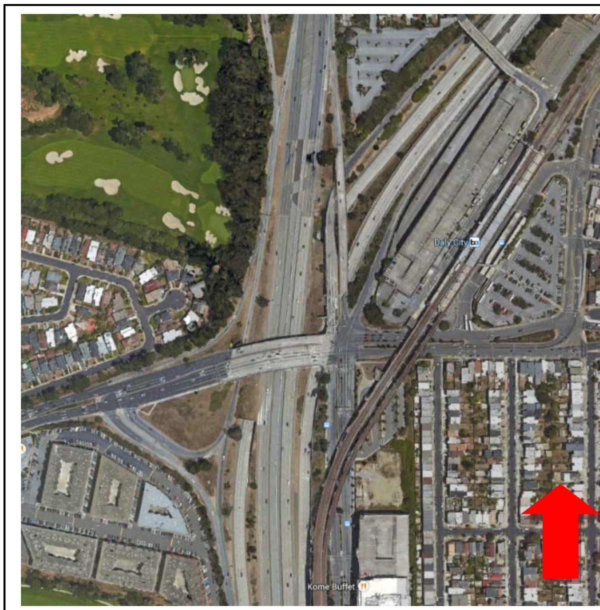
B9a. Architect: G. M. Low, Bridge Department, Division of Highways **b. Builder:** Peter Kewit Sons' Company

***B10. Significance: Theme:** N/A **Area:** N/A

Period of Significance: N/A **Property Type:** N/A **Applicable Criteria:** N/A

The 1/280 Separation was constructed by Peter Kewit Sons' Company as part of one of the many highway improvements carried out during the late 1960s and 1970s. Bridge 35 0173L is not significant under National Register of Historic Places (National Register) Criterion A or California Register of Historical Resources (California Register) Criterion 1 for its association with the development of the highway network through the region. In addition, the tunnel is not associated with other events that would make it significant under National Register Criterion A or California Register Criterion 1. It is not associated with a person who made a significant contribution to history at the local, state, or national level, and it is not significant under National Register Criterion B or California Register Criterion 2.

This structure is one of nine tunnels constructed between 1965 and 1974. Prior to this, there were 53 in the State of California. Tunnel building was not a significant achievement in the California by the time the Route 1/280 Separation was constructed. By 1965 the construction of tunnels was in decline as those needed for city improvements or to replace roads skirting around mountains had been constructed to align with current roadways. There were two periods when the majority of tunnels were constructed in California: the first period during the 1930s, specifically 1930-32 and 1935-38, when 23 tunnels were built during the era of national public works projects. (See Continuation Sheet, page 3)



B11. Additional Resource Attributes:

***B12. References:** (See Continuation Sheet, page 3).

B13. Remarks:

***B14. Evaluator:**
Helen Blackmore
California Department of Transportation

***Date of Evaluation:** November 14, 2014

***Resource Name or #** Bridge 35 0173L

***Recorded by:** Helen Blackmore ***Date:** November 14, 2014 ☒ **Continuation** ☐ **Update**

B10. Significance (continued):

The second major period was during the early 1950s, when ten of the state's roadway tunnels were built. The majority of tunnel construction occurs in Los Angeles, Ventura, and Orange Counties containing 46 percent of tunnels built prior to 1999. Bay Area tunnels in the Counties of Marin, Contra Costa, Alameda, San Francisco and San Mateo account for 37 percent.

Several of the shortest tunnels in California were constructed as passages through berms carrying railroads or roadways utilizing the cut and cover method of construction. During this period cut and cover tunnels accounted for five of the nine tunnels constructed, while bore tunnels accounting for the other four. There is a third type of tunnel not seen in this period constructed of precast concrete tube sections. Cut and cover tunnels are similar to concrete arch bridges or culverts but are classified as tunnels simply because they span roadways rather than waterways, and their length between portals is greater than the width of arch span. Cut and cover tunnels are generally constructed at the same time as the berms that they pass through. The first cut and cover tunnel was the McClure Tunnel in Santa Monica (53 0008), constructed in 1935. By the 1960s the construction of cut and cover tunnels was not a significant achievement aligned with the construction of the berm, and thus the Route 1/280 Separation is not significant under National Register Criterion C or California Register Criterion 3. Further, the use of no style to adorn the entrance of the tunnel is not aesthetically significant under National Register Criterion C or California Register Criterion 3.

The Route 1/280 Separation was erected as a typical transportation improvement project of the period and the bridge is not associated with events that have made a significant contribution to the broad patterns of history and is not significant under National Register Criterion A or California Register Criterion 1. It is not associated with the lives of persons significant in history and is not significant under National Register Criterion B or California Register Criterion 2. Bridge 35 0173L does not embody the distinctive characteristics of a steel girder bridge construction, does not represent the work of a master, and does not possess high artistic value. Further, it does not represent a significant and distinguishable entity whose components may lack individual distinction. State Route 1/280 Separation is not significant under National Register Criterion C or California Register Criterion 3. The tunnel has not yielded and is not likely to yield information important in history and is not significant under National Register Criterion D or California Register Criterion 4. Bridge 35 0173L is not eligible for inclusion on the National Register or California Register.

***B12. References (continued):**

California Division of Highways. "As Built Plans – Bridge 35 0173L." 1963.

Caltrans Bridge Inspection Report: July 24, 2014

Feldman, Jessica B. *Caltrans Statewide Historic Bridge Inventory Update – Tunnels*. Revisions by David Lemon and Andrew Hope. (Sacramento, California: California Department of Transportation, Sacramento, 2006).

JRP Historical Consulting Services. *Historic Context Statement – Roadway Bridges of California: 1936-1959.* Prepared for State of California Department of Transportation, n.p., January 2003.

Mead & Hunt. *Historical Resources Evaluation Report – Caltrans Statewide Historic Bridge Inventory: 2010 Update*. (Sacramento, California: California Department of Transportation, Sacramento, 2010).

(This space reserved for official comments.)

Primary #
HRI#
Trinomial

 ***Resource Name or #** Bridge 35 0173L

***Recorded by:** Helen Blackmore ***Date:** November 14, 2014 ☒ **Continuation** ☐ **Update**

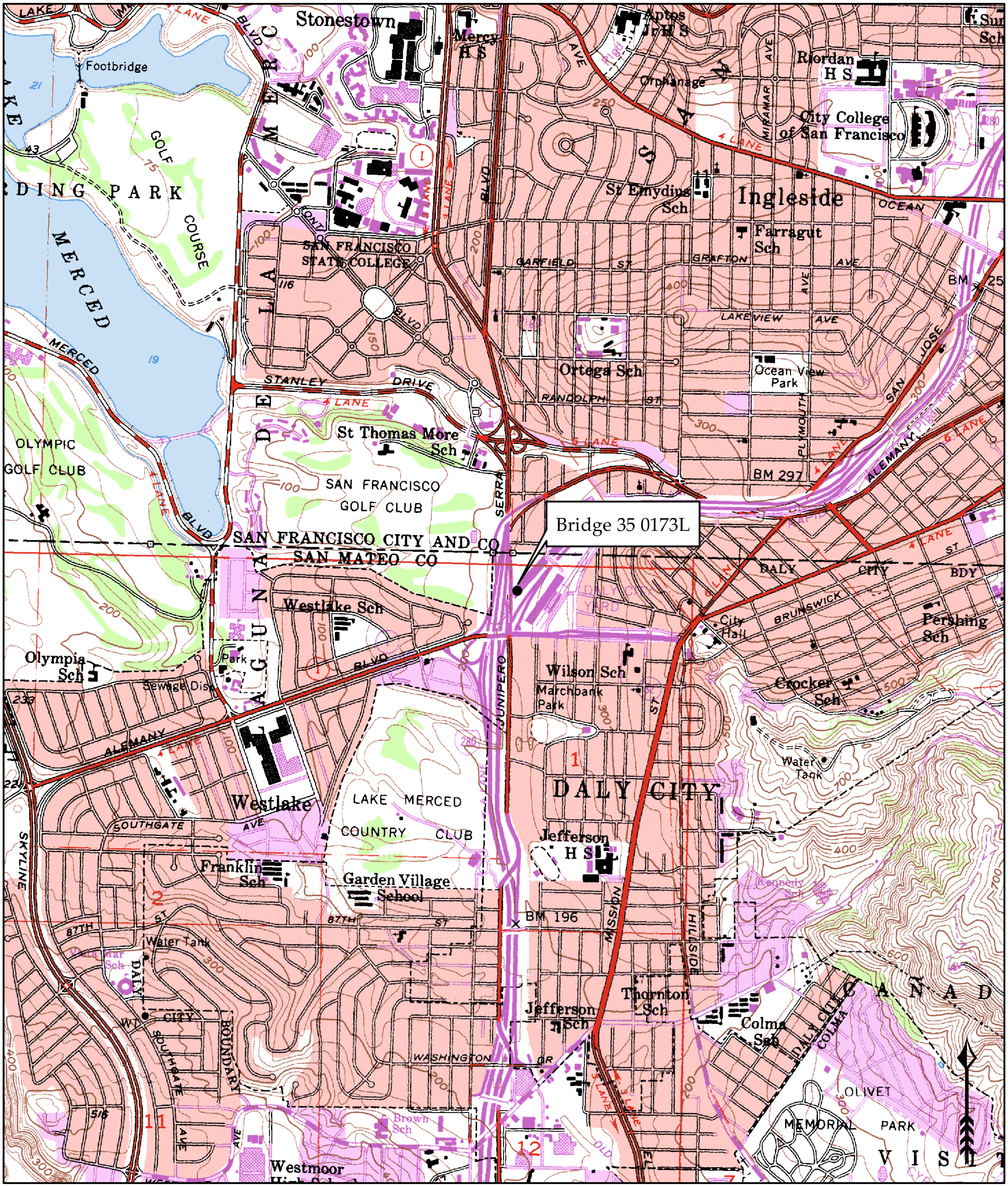
P5b. Photographs (continued):

View of southbound south portal on Interstate 280, July 24 2013.

View of roadway northbound Route 1 on top of buried bridge, July 24 2013.

***Resource Name or #:** 35 0173L

***Map Name:** South San Francisco ***Scale:** 1:24,000 ***Date of Map:** 1978



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

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code   Reviewer   Date

***Resource Name or #:** Bridge 35 0246F

P1. Other Identifier: W92-S280 Connector Undercrossing

***P2. Location:** ☐ Not for Publication ☒ Unrestricted   ***a. County:** San Mateo
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad:** San Mateo **Date:** **T** ; **R** ; **¼ of** **¼ of Sec** **;** M.D. **B.M.**
c. Address: n/a City: Zip:
d. UTM: Zone: 10 ; mE/ mN (G.P.S.)
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Elevation:

The W92-S280 Connector Undercrossing is located in San Mateo County State Route 92(SR-92) at postmile 7.36 at its intersection with Interstate 280 (I-280). Bridge 35 0246F connects westbound SR-92 with southbound I-280.

***P3a. Description:**
The W92-S280 Undercrossing is a cut and cover tunnel linking the westbound State Route 92 with the southbound Interstate 280. Bridge 35 0246F is a tunnel undercrossing connector, 49 feet in length, carrying six lanes of Interstate 280 over the southbound two lanes of State Route 92. The reinforced concrete box girder (2 cell) structure is under about 33 feet of fill, with abutments founded partly on spread footings and partly on steel piles. The entrance portal is flanked on the north side by a quarter basin spaced fan with vertical line rustication. Interior lighting is located above either lane, in square housings. The walls and ceiling are faced with white tile. This tunnel has three other built resources associated with it: two ventilation towers and a pumphouse. (See Continuation Sheet, page 3)

***P3b. Resource Attributes:** HP 19. Bridge
***P4. Resources Present:** ☐Building ☒Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5a. Photo or Drawing

P5b. Description of Photo:
View looking southwest
October 14, 2014

***P6. Date Constructed/Age and Sources:** ☒Historic ☐Prehistoric ☐Both
1973, Caltrans Bridge Files

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

***P8. Recorded by:**
Noah M. Stewart
Dept. of Transportation
111 Grand Avenue
Oakland, CA 94612

***P9. Date Recorded:**
November 17, 2014

***P10. Survey Type:**
Intensive

***P11. Report Citation:** Helen Blackmore, Janice Calpo, Lauren Clementino and Noah M. Stewart with contributions from Andy Hope, *Historic Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2015 Update* (California Department of Transportation, Sacramento, 2015).

***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):

Primary #
HRI#

BUILDING, STRUCTURE, AND OBJECT RECORD

*NRHP Status

*Resource Name or # Bridge 35 0246F

B1. Historic Name:

B2. Common Name: W92-S280 Connector Undercrossing

B3. Original Use: Undercrossing B4. Present Use: Undercrossing

***B5. Architectural Style:**

***B6. Construction History:** (Construction date, alterations, and date of alterations)

The W92-S280 Connector Undercrossing was built 1973. The tunnel has only received minor maintenance, including: light replacement (1992); tile replacement (1996); and, new concrete pavement was placed on the roadway inside the tunnel (2002).

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

***B8. Related Features:**

The tunnel carries SR-92 under I-280. There are two ventilation towers and pumphouse associated with the tunnel.

B9a. Architect: Friedman, Bridge Department, Division of Highways **b. Builder:**

***B10. Significance: Theme:** N/A **Area:** N/A

Period of Significance: N/A **Property Type:** N/A **Applicable Criteria:** N/A

The W92-S280 Connector Undercrossing was constructed as one of the many highway improvements carried out during the late 1960s and 1970s. Bridge 35 0246F is not significant under National Register of Historic Places (National Register) Criterion A or the California Register of Historical Resources (California Register) Criterion 1 for its association with the development of the highway network through the region. In addition, the tunnel is not associated with other events that would make it significant under National Register Criterion A or California Register Criterion 1. It is not associated with a person who made a significant contribution to history at the local, state, or national level, and it is not significant under National Register Criterion B or California Register Criterion 2.

This structure is one of nine tunnels constructed between 1965 and 1974. Prior to this, there were 53 in the State of California. The tunnel building was not a significant achievement in the state by the time the W92-S280 Connector Undercrossing was constructed in 1973. By 1965 the construction of tunnels was in decline as those needed for city improvements or to replace roads skirting around mountains had been constructed to align with current roadways. There were two periods when the majority of tunnels were constructed in California: the first period during the 1930s, specifically 1930-32 and 1935-38, when 23 tunnels were built during the era of public works projects nationally. (See Continuation Sheet, page 3)

B11. Additional Resource Attributes:

***B12. References:** (See Continuation Sheet, page 4).

B13. Remarks:

***B14. Evaluator:**
Helen Blackmore
California Department of Transportation

***Date of Evaluation:**
November 17, 2014

(This space reserved for official comments.)

***P3a. Description (continued):**

The two ventilation towers are located southeast of the tunnel entrance, approximately half way through the tunnel, within the entrance loop of S92-N280. They are modern is shape and industrial in appearance. Their foundations are concrete and raised two feet above ground level. There are four one-over-one ribbon windows on all four sides; and the roof is curved steel curving downwards on the north and south sides, with vertical sides on the east and west.

The pumphouse is in a modern style with a rectangular footprint and a flat roof, which slopes downwards at the eaves. The building is accessed from the northbound State Route 92, and the northbound W92-N280 connector. It was constructed in brick with large pin holed, corrugated entrances on the south and west sides. Adjacent to this structure is a small electrical transformer that is fenced off with chain link, which has been backed with thick corrugated white plastic.

B10. Significance (continued):

The second major period was during the early 1950s, when ten of the state's roadway tunnels were built. The majority of tunnel construction occurred in Los Angeles, Ventura, and Orange Counties, containing 46 percent of tunnels built prior to 1999. Bay Area tunnels in the Counties of Marin, Contra Costa, Alameda, San Francisco and San Mateo accounted for 37 percent.

Several of the shortest tunnels in California were constructed as passages through berms carrying railroads or roadways utilizing the cut and cover method of construction. During this period cut and cover tunnels accounted for five of the nine tunnels constructed, with bore tunnels accounting for the other four. There is a third type of tunnel not seen during this period, constructed of precast concrete tube sections. Cut and cover tunnels are similar to concrete arch bridges or culverts but are classified as tunnels simply because they span roadways rather than waterways, and their length between portals is greater than the width of arch span. Cut and cover tunnels are generally constructed at the same time as the berms that they pass through. The first cut and cover tunnel was the McClure Tunnel in Santa Monica (53 0008), constructed in 1935. By the 1960s the construction of cut and cover tunnels was not a significant achievement at the time. The use of rusticated concrete finishing to adorn the entrance of the tunnel is not aesthetically significant under Criterion C. W92-S280 Connector Undercrossing is not significant under National Register Criterion C or California Register Criterion 3.

The W92-S280 Connector Undercrossing was erected as a typical transportation improvement project of the period and the tunnel is not associated with events that have made a significant contribution to the broad patterns of history and is not significant under National Register Criterion A or California Register Criterion 1. It is not associated with the lives of significant persons in history and is not significant under National Register Criterion B or California Register Criterion 2. Bridge 35 0246F does not embody the distinctive characteristics of tunnel construction, does not represent the work of a master, and does not possess high artistic values. Further, it does not represent a significant and distinguishable entity whose components may lack individual distinction. The W92-S280 Connector Undercrossing is not significant under National Register Criterion C or California Register Criterion 3. The tunnel has not yielded and is not likely to yield information important in history and is not significant under National Register Criterion D or California Register Criterion 4. Bridge 35 0246F is not eligible for inclusion on the National Register or California Register.

***B12. References (continued):**

California Division of Highways. "As Built Plans – Bridge 35 0246F." 1971.

Caltrans Bridge Inspection Report: April, 15, 2014.

Feldman, Jessica B. *Caltrans Statewide Historic Bridge Inventory Update – Tunnels*. Revisions by David Lemon and Andrew Hope. (Sacramento, California: California Department of Transportation, Sacramento, 2006).

JRP Historical Consulting Services. *Historic Context Statement – Roadway Bridges of California: 1936-1959.* Prepared for State of California Department of Transportation, n.p., January 2003.

Mead & Hunt. *Historical Resources Evaluation Report – Caltrans Statewide Historic Bridge Inventory: 2010 Update*. (Sacramento, California: California Department of Transportation, Sacramento, 2010).

P5b. Photographs (continued):

South portal, looking north, October 13, 2010.

Ventilation towers, view looking north, October 14, 2014.

Pump house building, view looking north, January 2014.

Primary #
HRI#

LOCATION MAP

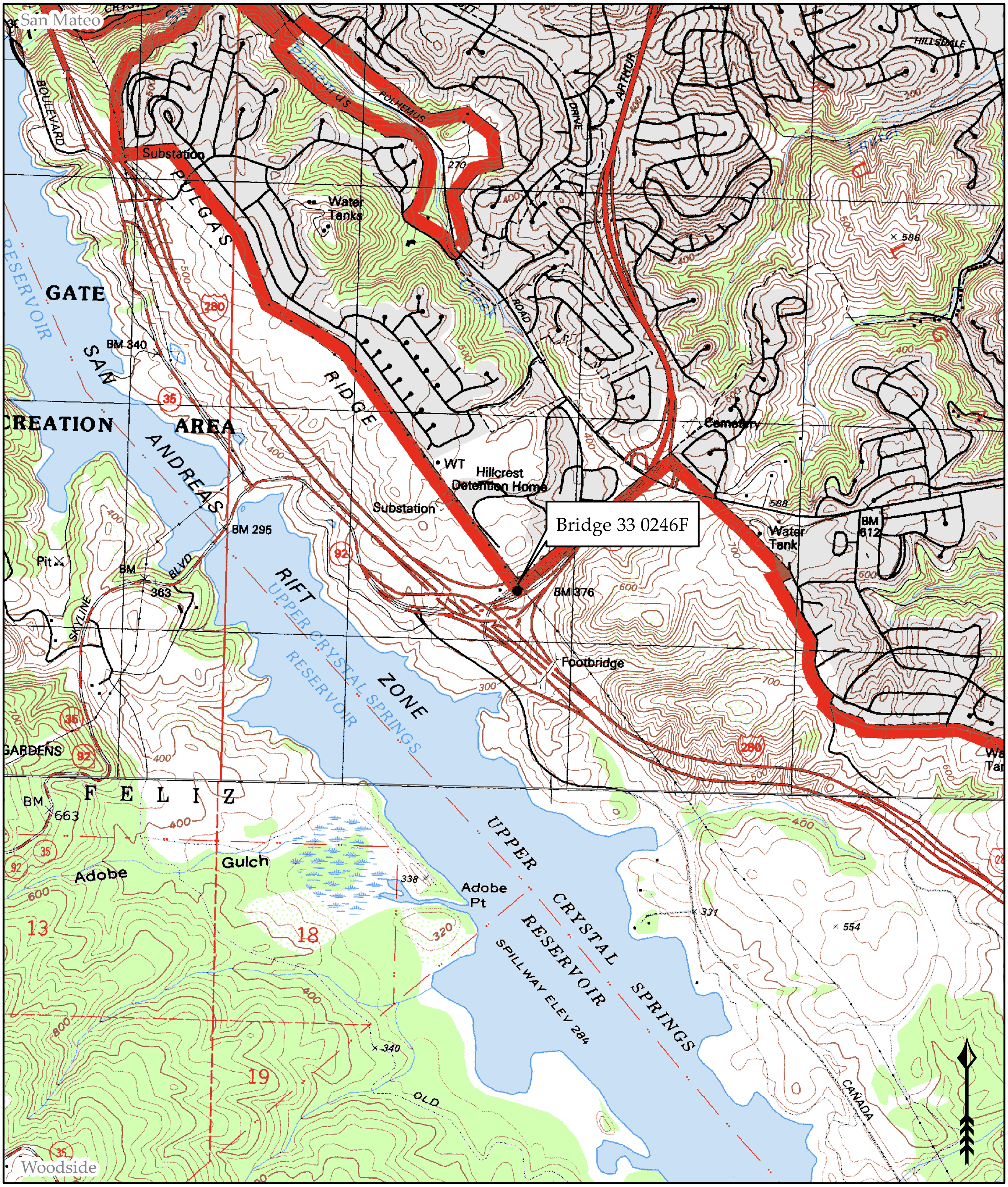
Trinomial

*Resource Name or #: 33 0246F

*Map Name: San Mateo

*Scale: 1:24,000

*Date of Map: 1993



*Required information

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

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code Reviewer Date

 ***Resource Name or #:** Bridge 36C0102

P1. Other Identifier: San Lorenzo River Bridge

***P2. Location:** ☐ Not for Publication ☒ Unrestricted ***a. County:** Santa Cruz
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad:** Santa Cruz **Date:** **T** ; **R** ; **¼ of** **¼ of Sec** **;** M.D. **B.M.**
c. Address: n/a City: Santa Cruz Zip:
d. UTM: Zone: 10 ; mE/ mN (G.P.S.)
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Elevation:
The San Lorenzo River Bridge is located on Laurel Street 0.8 miles east of State Route 1, in Santa Cruz.

***P3a. Description:**
The San Lorenzo River Bridge carries two lanes of traffic in both east and west directions as well as a right turn lane for west bound traffic over the San Lorenzo River, at a skew of 25 degrees. The bridge is a concrete box girder structure, 335 feet in length, with a main span of 170 feet in length. It has a reinforced concrete continuous box (11 cell) girder with cantilevered end spans and a precast and prestressed concrete "I" girder suspended center span. The reinforced concrete wall piers are elegantly stepped into a plunging Y shape as it meets the water. The reinforced concrete diaphragm abutments are all on reinforced concrete piles. The bridge has modified Type 27 railing; the columns with indented panels have stepped tapered bases, and new Victorian style lamp posts have been placed on top of the columns.

***P3b. Resource Attributes:** HP. 19 Bridge
***P4. Resources Present:** ☐Building ☒Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5a. Photo or Drawing

P5b. Description of Photo:
View looking north
October 6, 2011

***P6. Date Constructed/Age and Sources:** ☒Historic ☐Prehistoric ☐Both
1968, Caltrans Bridge Files

***P7. Owner and Address:**
City of Santa Cruz
Public Works
809 Center Street
Santa Cruz, CA 95060

***P8. Recorded by:**
Helen Blackmore
Dept. of Transportation
111 Grand Avenue
Oakland, CA 94612

***P9. Date Recorded:**
November 24, 2014

***P10. Survey Type:**
Intensive

***P11. Report Citation:** Helen Blackmore, Janice Calpo, Lauren Clementino and Noah M. Stewart with contributions from Andy Hope, *Historic Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2015 Update* (California Department of Transportation, Sacramento, 2015).

***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**

***Resource Name or #** Bridge 36C0102

B1. Historic Name:

B2. Common Name: San Lorenzo River Bridge

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

***B5. Architectural Style:**

***B6. Construction History:**

The San Lorenzo River Bridge was built in 1968. The bridge has undergone substantial work since its construction, including: concrete approach built up to match the deck elevation (1976); and, the approach pavement was patched (1996). Later in 1996, the Water Street Bridge Rehabilitation Project involved the removal and replacement of the northern half of the bridge, which was comprised of two older concrete arch bridges that had been constructed in 1908 and 1914; and an earthquake retrofit of the southern portion. The northern side was designed to match the aesthetics of the southern half of the bridge, which was constructed in 1968. These improvements were designed by Boyle Engineering Corporation with construction by RGW Construction, Inc. Further, a seismic retrofit that included compaction grouting, pier confinement and abutment confinement was completed 2002-2006.

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

***B8. Related Features:**

The bridge is carries Water Street over the San Lorenzo River.

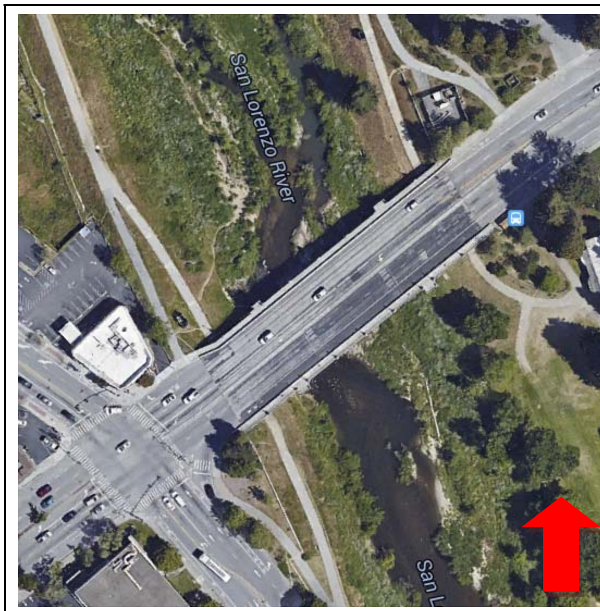
B9a. Architect: George S. Nolte, Inc. Bridge Department, California Division of Highways **b. Builder:**

***B10. Significance: Theme:** N/A **Area:** N/A

Period of Significance: N/A **Property Type:** N/A **Applicable Criteria:** N/A

The San Lorenzo River Bridge was constructed by the City of Santa Cruz as one of the many highway improvements carried out during the late 1960s and early 1970s. It is not significant under National Register of Historic Places (National Register) Criterion A or California Register of Historical Resources (California Register) Criterion 1 for its association with the development of the highway network through the region. In addition, the bridge is not associated with other events that would make it significant under National Register Criterion A or California Register Criterion 1. It is not associated with a person who made a significant contribution to history at the local, state, or national level, and it is not significant under National Register Criterion B or California Register Criterion 2.

The first concrete box girder bridge in California was erected in 1938. 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. (See Continuation Sheet, page 3)



B11. Additional Resource Attributes:

***B12. References:** (See Continuation Sheet, page 3)

B13. Remarks:

***B14. Evaluator:**

Helen Blackmore & Noah Stewart
California Department of Transportation

***Date of Evaluation:**

November 24, 2014

(This space reserved for official comments.)

***Resource Name or #** Bridge 36C0102

***Recorded by:** Helen Blackmore ***Date:** November 24, 2014 ☒ **Continuation** ☐ **Update**

B10. Significance (continued):

The slender bridge profiles with harmonious proportions allowed engineers to achieve the modern design aesthetic thought to showcase transportation efficiency. And 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 bridges in California. More than 3,200 of the type built between 1965 and 1974.

Bridge 36C0102 is a fairly typical example of concrete box construction for the period. The fabrication, transportation, and erection of large concrete box bridges was not a significant achievement in the state by the time the San Lorenzo River Bridge was constructed in 1968. It is not one of the larger examples of this type and it does not incorporate a significantly long main span. The Mulholland Drive Overcrossing (53 0739) in Los Angeles held title to the longest main span of 235 feet in length from its initial construction in 1959 until 1974 when the Interstate 8 bridge over the Pine Valley Creek (57 0692L/R) achieved a 450 foot main span. The San Lorenzo River Bridge, with a total length of 335 feet and main span of 170 feet in length is not significant as a work of civil engineering. Its construction is typical for the 1960s and 1970s and is not a significant work of civil engineering nor does it stand out with regard to modern bridge aesthetics. While, the designer of the bridge sought to create an aesthetically pleasing bridge with tapered stepped columns, the addition of the columns and the changes to the railing means the bridge has lost integrity in its design, as well as the large number of changes due to the seismic retrofit in 1996, causing the bridge to loose integrity in two other critical aspects; workmanship and materials. Bridge 36C0102 is not significant under National Register Criterion C or California Register Criterion 3.

Bridge 36C0102 was erected as a typical transportation improvement project of the period and the bridge is not associated with events that have made a significant contribution to the broad patterns of history and is not significant under National Register Criterion A or California Register Criterion 1. It is not associated with the lives of significant persons in history and is not significant under National Register Criterion B or California Register Criterion 2. Bridge 36C0102 does not embody the distinctive characteristics of concrete box bridge construction, does not represent the work of a master, and does not possess high Modern aesthetic value. Further, it does not represent a significant and distinguishable entity whose components may lack individual distinction. The San Lorenzo River Bridge is not significant under National Register Criterion C or California Register Criterion 3. The bridge has not yielded and is not likely to yield information important in history and is not significant under National Register Criterion D or California Criterion 4. Bridge 36C0102 is not eligible for inclusion on the National Register or California Register.

***B12. References (continued):**

"An Architect Concentrates on the Aesthetics in Bridge Design." *Pacific Builder & Engineer* 64, no. 4 (Apr 1958): 86-7.

California Division of Highways. "As Built Plans – Bridge 36C0102." 1971.

Caltrans Bridge Inspection Report: September 24, 2013

City of Santa Cruz. "Water Street Bridge Fact Sheet." *City of Santa Cruz Green Focus.* Accessed on November 26, 2014 from http://www.cityofsantacruz.com/.

Hope, Andrew. *Caltrans Statewide Historic Bridge Inventory Update – Survey and Evaluation of Common Bridge Types.* California Department of Transport, November 2004.

JRP Historical Consulting Services. *Historic Context Statement – Roadway Bridges of California: 1936-1959.* Prepared for State of California Department of Transportation, n.p., January 2003.

Myra L. Frank & Associates. *Caltrans' Historic Bridge Inventory Update: Concrete Box Girder Bridges*. n.p., August 2003. With revisions made by Andrew Hope, California Department of Transportation, April 2004.

Stuzinski, S. H. "Some Examples of Box Girder Bridges in California." *The Structural Engineer* 8, no. 41 (August 1963): 253-257.

P5b. Photographs (continued):

View of Roadway looking east, October 6, 2011.


Aesthetic stepping at the top of the Pier 3, August 24, 2013.


Aesthetic Stepping at the bottom of Pier 3, August 24, 2013.

State of California The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary #
HRI#
Trinomial

***Resource Name or #:** 36C0102

***Map Name:** Santa Cruz ***Scale:** 1:24,000 ***Date of Map:** 1954

State of California — The Resources Agency DEPARTMENT OF PARKS AND RECREATION **PRIMARY RECORD**	Primary # HRI # Trinomial NRHP Status Code	
Other Listings Review Code	Reviewer	Date

 ***Resource Name or #:** Bridge 38C0170

P1. Other Identifier: Gallup Creek Bridge

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County:** Stanislaus
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad:** **Date:** **T** ; **R** ; **¼ of** **¼ of Sec** **;** M.D. **B.M.**
c. Address: n/a City: Zip:
d. UTM: Zone: 10 ; mE/ mN (G.P.S.)
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Elevation:
Copperstown Road, 2.8 miles northwest of La Grange Road

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)
The Gallup Creek Bridge (38C0170) is a steel Pratt pony truss structure that crosses Gallup Creek. It is 83.3 feet in total length with a single span of 80 feet. The bridge has a total width of 20.2 feet with a roadway width of 20 feet. It has a riveted and bolted steel truss with corrugated metal bridge deck planks on steel stringers and steel floor beams. The deck has an asphaltic concrete (AC) overlay and is covered in gravel. The bridge is founded on reinforced concrete closed end wall abutments. The one lane bridge has metal guard railings that are bolted to the truss. There are no pedestrian walkways.

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

P5a. Photo or Drawing (Photo required for buildings, structures, and objects.)

P5b. Description of Photo: (View, date, accession #)
View, looking northwest

***P6. Date Constructed/Age and Sources:** ☒Historic ☐Prehistoric ☐Both
1965, Caltrans Bridge Files

***P7. Owner and Address:**
Stanislaus County
Public Works
1716 Morgan Road
Modesto CA 95358

***P8. Recorded by:** (Name, affiliation, and address)
Janice Calpo, Caltrans
Architectural Historian
1120 N Street
Sacramento, CA 95818

***P9. Date Recorded:**
August 20, 2014

***P10. Survey Type:** (Describe)
Intensive, Statewide Bridge Update

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.")
Helen Blackmore, Janice Calpo, Lauren Clementino and Noah M. Stewart with contributions from Andy Hope, *Historic Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2015 Update* (California Department of Transportation, Sacramento, 2015).

***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):

Primary #
HRI#

BUILDING, STRUCTURE, AND OBJECT RECORD

***NRHP Status**

***Resource Name or #** (Assigned by recorder) Bridge 38C0170

B1. Historic Name:
B2. Common Name: Gallup Creek Bridge B3. Original Use: Bridge B4. Present Use: Bridge
***B5. Architectural Style:**
***B6. Construction History:** (Construction date, alterations, and date of alterations)
Caltrans bridge records state that the truss of the bridge appears to have been moved from another location to this site and reassembled in 1965. Bridge records estimate that the steel truss members and floor beams date from 1905 to 1936 and the steel stringers date from after 1936.
***B7. Moved?** ☐**No** ■**Yes** ☐**Unknown** **Date:** 1965 **Original Location:** Unknown
***B8. Related Features:**
The Gallup Creek Bridge is located on Copperstown Road.

B9a. 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
The Gallup Creek Bridge (38C0170) was moved to the site and reconstructed in 1965 by Stanislaus County as a local transportation improvement project. The Gallup Creek Bridge is not significant under National Register of Historic Places (National Register) Criterion A or California Register of Historical Resources (California Register) Criterion 1 for association with the development of the highway network through the region. In addition, the bridge is not associated with other events that would make it significant under National Register Criterion A or California Register Criterion 1. It is not associated with a person who made a significant contribution to history at the local, state, or national level, and it is not significant under National Register Criterion B or California Register Criterion 2.

This structure is one of six metal truss bridges constructed between 1965 and 1974. There are 315 metal truss bridges in California (excluding moveable and steel arch bridges, many of which are also trusses). This bridge type was once common in California, but the number of new metal truss bridges constructed in the state dropped off substantially after the 1950s. As postwar traffic demands required wider roads, steel bridges proved less cost effective and the majority of new bridges were constructed in concrete. By the early 1970s, only 10% of all new bridges in the state were erected in steel. The fabrication, transportation, and erection of metal truss bridges were not a significant achievement in the state by the time the Gallup Creek Bridge was constructed in 1965. (See Continuation Sheet 3)

B11. Additional Resource Attributes: (List attributes and codes)

***B12. References:**
Caltrans Bridge Inspection Report: October 10, 20134

B13. Remarks:

***B14. Evaluator:**
Noah Stewart & Lauren Clementino
Caltrans Architectural Historians

***Date of Evaluation:**

(This space reserved for official comments.)

*Required information

***Recorded by:** Janice Calpo & Noah Stewart ***Date:** October 1, 2014 ☒ **Continuation** ☐ **Update**

B10. Significance (continued):

The Gallup Creek Bridge is a Pratt pony truss with a single span of 80 feet. The Pratt is one of the most common truss types that remain from the early to mid-twentieth century in California. The Pratt truss was patented by Thomas Pratt in 1844 and was distinctive for its vertical compression members and diagonal tension members. Standard designs for truss bridges were readily used through many states by the 1920s, including California. Due to limited access to concrete plants and equipment in rural areas, it was often economical to relocate dismantled trusses rather than erect new bridges, which was likely the case for the Gallup Creek Bridge. Although the truss of the Gallup Creek Bridge dates from the 1930s, it was salvaged from an earlier bridge and moved to the current location in 1965, thus suffering a loss of integrity of location and setting. The Gallup Creek Bridge is a basic Pratt pony truss and was constructed well after the Pratt was an established truss type in California. The bridge is a relatively typical example of a common bridge type and does not represent a significant innovation in bridge engineering or display a significant variation within an established bridge type. Its span length of 80 feet is comparable to other Pratt truss bridges and it does not display any decorative features or significant architectural details. The Gallup Creek Bridge is not significant as a work of civil engineering or for aesthetic value and is not significant under National Register Criterion C or California Register Criterion 3.

The Gallup Creek Bridge was erected as a typical transportation improvement project of the period and is not associated with events that have made a significant contribution to the broad patterns of history and is not significant under National Register Criterion A or California Register Criterion 1. It is not associated with the lives of significant persons in history and is not significant under National Register Criterion B or California Register Criterion 2. The Gallup Creek Bridge is not a distinctive example of metal truss bridge construction, does not represent the work of a master, and does not possess high artistic values. Further, it does not represent a significant and distinguishable entity whose components may lack individual distinction. The Gallup Creek Bridge is not significant under National Register Criterion C or California Register Criterion 3. The bridge has not yielded and is not likely to yield information important in history and is not significant under National Register Criterion D or California Register Criterion 4. The Gallup Creek Bridge is not eligible for inclusion on the National Register or California Register.

B12. References (continued):

Department of Transportation. Bridge Inspection Reports for Bridge Number 38C0170. April 10, 1980 to October 10, 2013.

JRP Historical Consulting. *Caltrans Historic Bridges Inventory Update: Metal Truss, Movable, and Steel Arch Bridges*. Prepared for the California Department of Transportation Environmental Program, n.p., September 2004 (revised).

JRP Historical Consulting Services. *Historic Context Statement - Roadway Bridges of California: 1936-1959*. Prepared for State of California Department of Transportation, n.p., January 2003.

P5b. Photographs (continued):

View, looking northwest (August 20, 2014)

View, looking west (August 20, 2014)

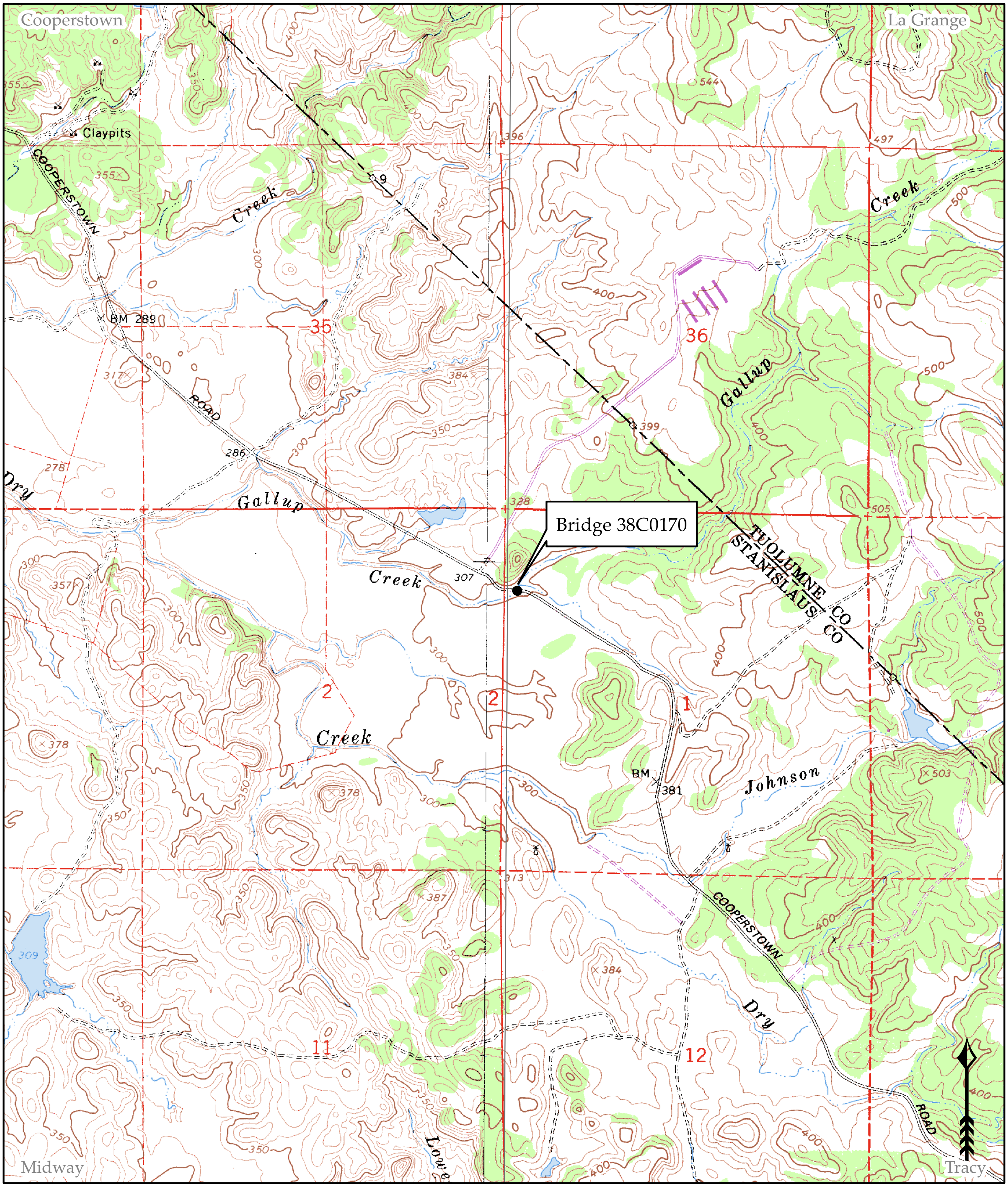
Primary #
HRI#

LOCATION MAP

Trinomial

***Resource Name or #:** 38C0170

***Map Name:** La Grange ***Scale:** 1:24,000 ***Date of Map:** 1962



 *Required information

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

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code | Reviewer | Date

 *Resource Name or # Bridge 40 0048

P1. Other Identifier: East Fork Chowchilla River Bridge

***P2. Location:** ☐ Not for Publication ☒ Unrestricted ***a. County:** Mariposa
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad:** **Date:** **T** ; **R** ; **¼ of** **¼ of Sec** ; M.D. **B.M.**
c. Address: n/a City: Zip:
d. UTM: Zone: 10 ; mE/ mN (G.P.S.)
e. Other Locational Data: Elevation:

The East Fork Chowchilla River Bridge is located in Mariposa County on State Route 49 at postmile 2.87.

***P3a. Description:**

The bridge carries the State Route 49 over the East Folk of the Chowchilla River, and the local Kembrel Road, north of Ahwahee, in Maripose County. Bridge 40 0048 is a long span concrete box-girder structure, 720 feet in length. The bridge has three spans with the main span measuring 300 feet in length. It has continuous cast-in-place (CIP) prestressed box girder (three cells) on reinforced concrete single column bents on spread footings. The concrete box girder is tapered from the roadway, decreasing in width to the bent. The bent column is a slender organic form beginning in a tight arc at the underside of the box girder and tapering toward the ground. Reinforced concrete seat abutments have "U" wingwalls on steel piles. The two lane bridge has type 9-11 railing.

***P3b. Resource Attributes:** HP 19. Bridge
***P4. Resources Present:** ☐Building ☒Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5a. Photo or Drawing

P5b. Description of Photo:
View looking north
August 20, 2014

***P6. Date Constructed/Age and Sources:** ☒Historic ☐Prehistoric ☐Both
1972, Caltrans Bridge Files

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

***P8. Recorded by:**
Janice Calpo
Dept. of Transportation
1120 N Street
Sacramento, CA 95814

***P9. Date Recorded:**
October 1, 2014

***P10. Survey Type:**
Intensive

***P11. Report Citation:**
Helen Blackmore, Janice Calpo, Lauren Clementino and Noah M. Stewart with contributions from Andy Hope, *Historic Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2015 Update* (California Department of Transportation, Sacramento, 2015).

***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**

***Resource Name or #** Bridge 40 0048

B1. Historic Name:
B2. Common Name: East Fork Chowchilla River Bridge
B3. Original Use: Bridge **B4. Present Use:** Bridge
***B5. Architectural Style:** Modern
***B6. Construction History:**
The bridge was built in 1972. In 1985 the metal bean guard rail was replaced.

***B7. Moved?** ☒No ☐Yes ☐Unknown **Date:** **Original Location:**
***B8. Related Features:**
The bridge is located on State Route 49.

B9a. Architect: D. Hopkins, Bridge Department, California Division of Highways
b. Builder: Eastco and H & L
***B10. Significance: Theme:** N/A **Area:** N/A
Period of Significance: N/A **Property Type:** N/A **Applicable Criteria:** N/A

The East Fork Chowchilla River Bridge was constructed by Eastco and H & L, of Redding, California. It was one of the many highway improvements carried out during the late 1960s and early 1970s. It is not significant under National Register of Historic Places (National Register) Criterion A or California Register of Historical Resources (California Register) Criterion 1 for its association with the development of the highway network through the region. In addition, the bridge is not associated with other events that would make it significant under National Register of Criterion A or California Register Criterion 1. It is not associated with a person who made a significant contribution to history at the local, state, or national level, and it is not significant under National Register Criterion B or California Register Criterion 2.

The first concrete box girder bridge in California was erected in 1938. 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 bridges in California. More than 3,200 of the type built between 1965 and 1974. (See Continuation Sheet, page 3)

B11. Additional Resource Attributes:

***B12. References:** (See Continuation Sheet, page 3)
B13. Remarks:

***B14. Evaluator:**
Helen Blackmore
California Department of Transportation
***Date of Evaluation:**
October 1, 2014

(This space reserved for official comments.)

B10. Significance (continued):

Bridge 40 0048 is a fairly typical example of concrete box construction for the period. The fabrication, transportation, and erection of large concrete box bridges was not a significant achievement in the state by the time the East Fork Chowchilla River Bridge was constructed in 1972. It is not one of the larger examples of this type and it does not incorporate a significantly long main span. The Mulholland Drive Overcrossing (53 0739) in Los Angeles held title to the longest main span of 235 feet in length from its initial construction in 1959 until 1974 when the Interstate 8 bridge over the Pine Valley Creek (57 0692L/R) achieved a 450 foot main span. The East Fork Chowchilla River Bridge with a total length of 720 feet and main span of 300 feet in length is not significant as a work of civil engineering. Its construction is typical for the 1960s and 1970s and is not a significant work of civil engineering nor does it standout with regards to modern bridge aesthetics. Bridge 40 0048 is not significant under National Register Criterion C or California Register Criterion 3.

Bridge 40 0048 was erected as a typical transportation improvement project of the period and the bridge is not associated with events that have made a significant contribution to the broad patterns of history and is not significant under National Register Criterion A or California Register Criterion 1. It is not associated with the lives of significant persons in history and is not significant under National Register Criterion B or California Register Criterion 2. Bridge 40 0048 does not embody the distinctive characteristics of a concrete box bridge construction, does not represent the work of a master, and does not possess high Modern aesthetic value. Further, it does not represent a significant and distinguishable entity whose components may lack individual distinction. The East Fork Chowchilla River Bridge is not significant under National Register Criterion C or California Register Criterion 3. The bridge has not yielded and is not likely to yield information important in history and is not significant under National Register Criterion D or California Register Criterion 4. Bridge 40 0048 is not eligible for inclusion on the National Register or California Register.

***B12. References:**

"An Architect Concentrates on the Aesthetics in Bridge Design." *Pacific Builder & Engineer* 64, no. 4 (Apr 1958): 86-7.

California Division of Highways. "As Built Plans – Bridge 40 0048." 1970.

Caltrans Bridge Inspection Report: October 17, 2012.

Hope, Andrew. *Caltrans Statewide Historic Bridge Inventory Update – Survey and Evaluation of Common Bridge Types.* California Department of Transport, November 2004.

JRP Historical Consulting Services. *Historic Context Statement – Roadway Bridges of California: 1936-1959.* Prepared for State of California Department of Transportation, n.p., January 2003.

Myra L. Frank & Associates. *Caltrans' Historic Bridge Inventory Update: Concrete Box Girder Bridges*. n.p., August 2003. With revisions made by Andrew Hope, California Department of Transportation, April 2004.

Stuzinski, S. H. "Some Examples of Box Girder Bridges in California." *The Structural Engineer* 8, no. 41 (August 1963): 253-257.

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary #
HRI#
Trinomial

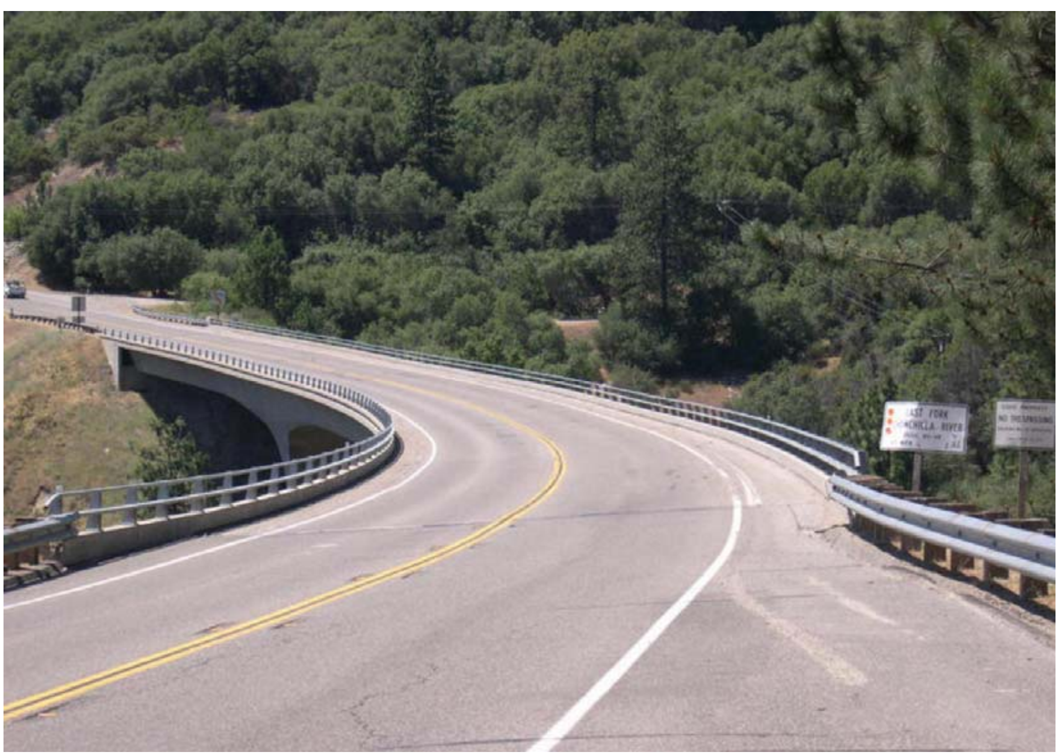
***Resource Name or #** Bridge 40 0048

***Recorded by:** Janice Calpo

***Date:** October 1, 2014 ☒ **Continuation** ☐ **Update**

P5b. Photographs (continued):

View looking northwest, July 10, 2006



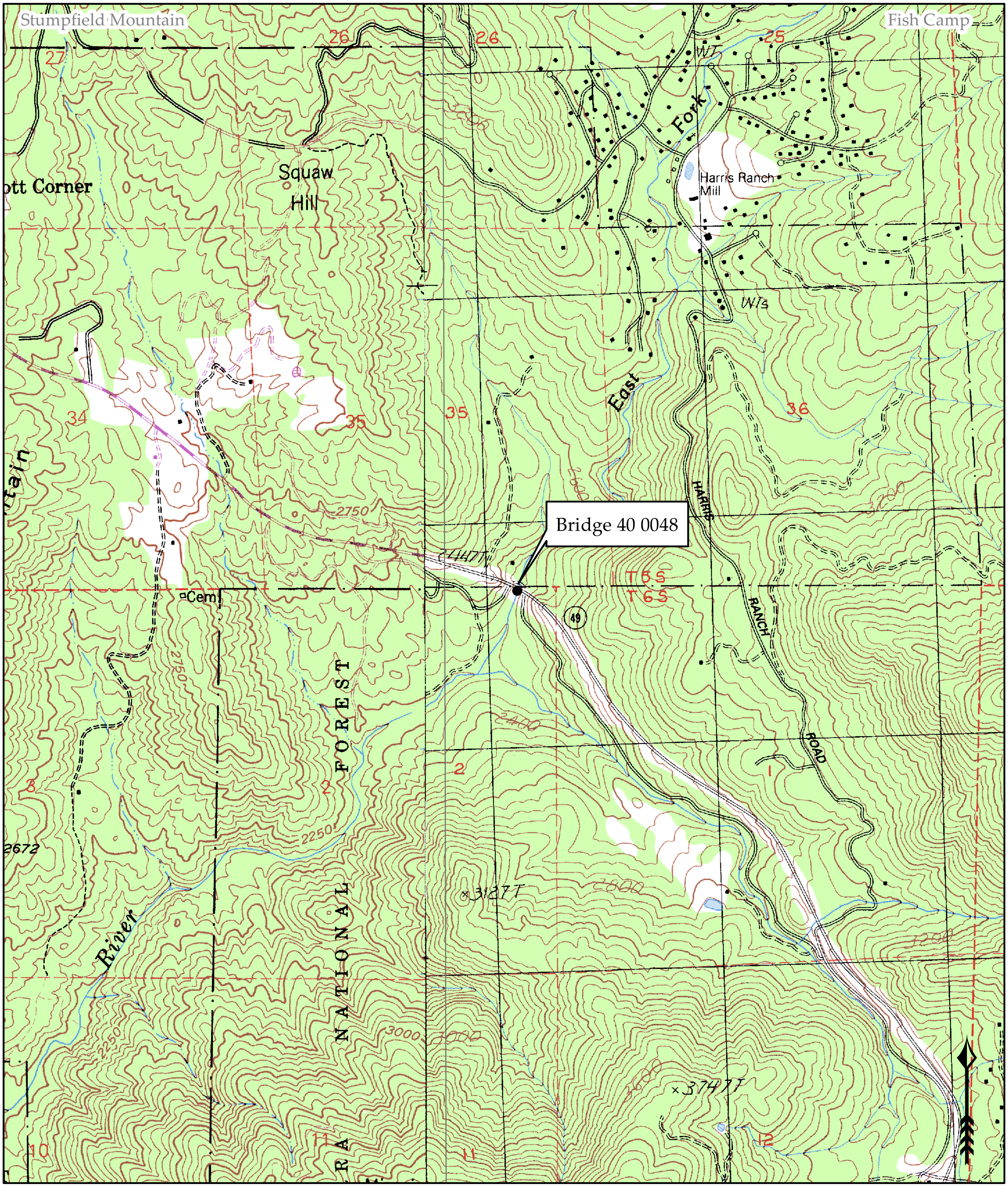
Roadway looking northwest, July 10, 2006

State of California The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LOCATION MAP

Primary #
HRI#
Trinomial

***Resource Name or #:** 40 0048

***Map Name:** Fish Camp ***Scale:** 1:24,000 ***Date of Map:** 1990



DPR 523J (1/95) *Required information

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

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code **Reviewer** **Date**

 ***Resource Name or #:** Bridge 44C0064

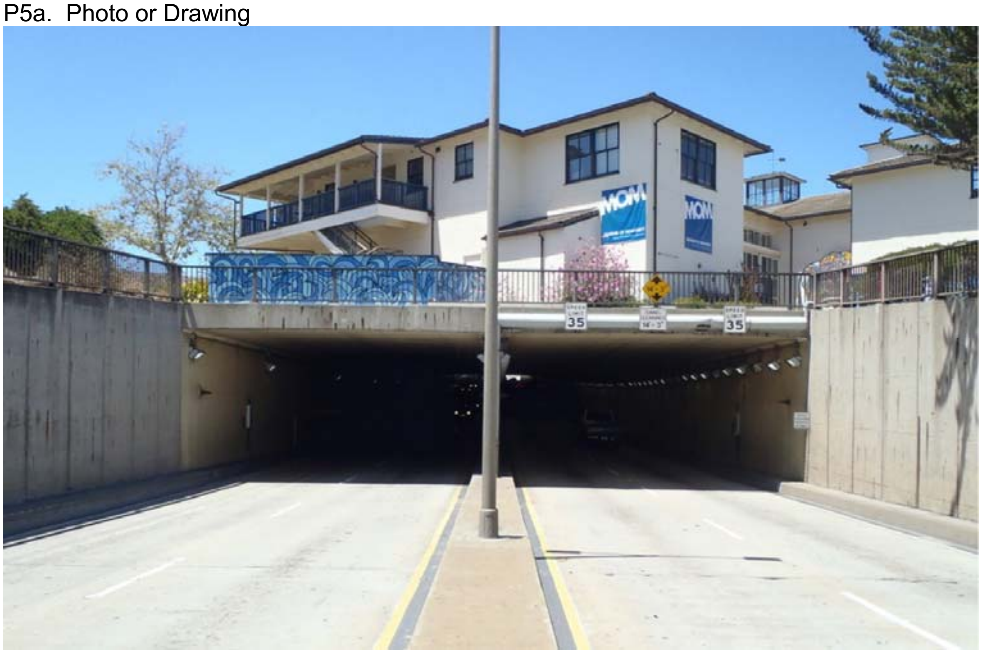
P1. Other Identifier: Custom House Tunnel (Lighthouse Avenue)

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County:** Monterey
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad:** Monterey **Date:** **T** ; **R** ; **¼ of** **¼ of Sec** **;** M.D. **B.M.**
c. Address: n/a City: Monterey Zip:
d. UTM: Zone: 10 ; mE/ mN (G.P.S.)
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Elevation:
The Custom House Tunnel is located on Lighthouse Avenue in Monterey.

***P3a. Description:**
The Custom House Tunnel is a cut and cover tunnel carrying Lighthouse Avenue beneath the Museum of Monterey and Monterey State Historic Park along with a new commercial development. Bridge 44C0064, the “Custom House” tunnel, is a depressed roadway, 997 feet in length, within a cast in place cut and cover reinforced concrete frame. Fill depth varies between two and 10 feet. The four lane tunnel has metal picket bridge rails attached to the top of the frame at each exterior edge. Both the north and south portals are unadorned and have a smooth concrete finish. The interior of the tunnel is lined with white tiles on the walls and ceiling and there are square box lights running on both sides of the tunnel walls in both directions of travel.

***P3b. Resource Attributes:** HP 19. Bridge
***P4. Resources Present:** ☐Building ☒Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5a. Photo or Drawing



P5b. Description of Photo:
View looking northwest,
June 20, 2012

***P6. Date Constructed/Age and Sources:** ☒Historic ☐Prehistoric ☐Both
1968, Caltrans Bridge Files

***P7. Owner and Address:**
City of Monterey
580 Pacific Street
Monterey, CA 93940

***P8. Recorded by:**
Helen Blackmore
Dept. of Transportation
111 Grand Avenue
Oakland, CA 94623

***P9. Date Recorded:**
October 1, 2014

***P10. Survey Type:**
Intensive

***P11. Report Citation:** Helen Blackmore, Janice Calpo, Lauren Clementino and Noah M. Stewart with contributions from Andy Hope, *Historic Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2015 Update* (California Department of Transportation, Sacramento, 2015).

***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):

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
Primary #
HRI#

BUILDING, STRUCTURE, AND OBJECT RECORD

***NRHP Status**

***Resource Name or #** Bridge 44C0064

B1. Historic Name:
B2. Common Name: Custom House Tunnel (Lighthouse Avenue)
B3. Original Use: Tunnel **B4. Present Use:** Tunnel
***B5. Architectural Style:**
***B6. Construction History:**

The Custom House Tunnel was built 1968. The tunnel has only undergone minor maintenance since its construction, including: the potholes being patched (1993).

***B7. Moved?** ☒No ☐Yes ☐Unknown **Date:** **Original Location:**
***B8. Related Features:**

The tunnel is located on Lighthouse Avenue and travels beneath the Museum of Monterey and Monterey State Historic Park along a new commercial development in Monterey.

B9a. Architect: Sverdruo-Parcel Inc. **b. Builder:**
***B10. Significance: Theme:** N/A **Area:** N/A
Period of Significance: N/A **Property Type:** N/A **Applicable Criteria:** N/A

The Custom House Tunnel was constructed as part of Monterey's urban renewal project. It was one of the many highway improvements carried out during the late 1960s and 1970s. The tunnel is not significant under National Register of Historic Places (National Register) Criterion A or California Register of Historical Resources (California Register) Criterion 1 for its association with the development of the highway network through the region. In addition, the tunnel is not associated with other events that would make it significant under National Register Criterion A or California Register Criterion 1. It is not associated with a person who made a significant contribution to history at the local, state, or national level, and it is not significant under National Register Criterion B or California Register Criterion 2.

This structure is one of nine tunnels constructed between 1965 and 1974. Prior to this, there were 53 in the State of California. Tunnel building was not a significant achievement in California by the time the Custom House Tunnel was constructed in 1968. By 1965 the construction of tunnels was in decline as those needed for city improvements or to replace roads skirting around mountains had been constructed to align with current roadways. There were two periods when the majority of tunnels were constructed in California: the first period during the 1930s, specifically 1930-32 and 1935-38, when 23 tunnels were built during the era of public works projects nationally. (See Continuation Sheet, page 3)

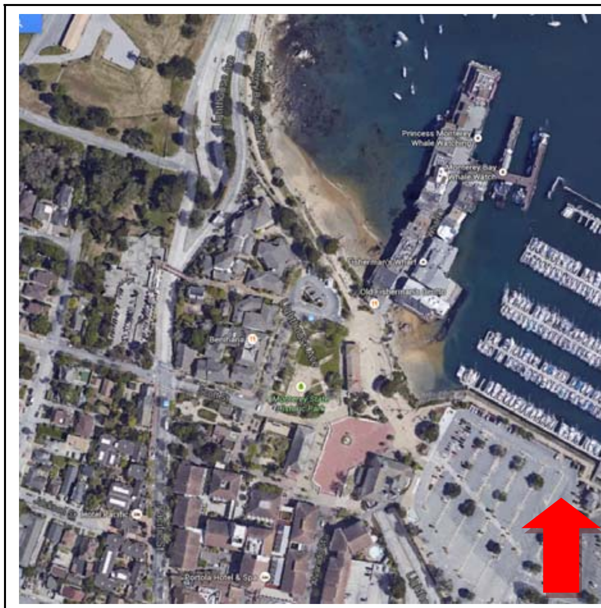
B11. Additional Resource Attributes:

***B12. References:** (See Continuation Sheet, page 3).
B13. Remarks:

***B14. Evaluator:**
Helen Blackmore
California Department of Transportation

***Date of Evaluation:**
October 1, 2014

(This space reserved for official comments.)



B10. Significance (continued):

The second major period was during the early 1950s, when ten of the state's roadway tunnels were built. The majority of tunnel construction occurred in Los Angeles, Ventura, and Orange Counties, containing 46 percent of tunnels built prior to 1999. Bay Area tunnels in the Counties of Marin, Contra Costa, Alameda, San Francisco and San Mateo account for 37 percent.

Several of the shortest tunnels in California were constructed as passages through berms carrying railroads or roadways utilizing the cut and cover method of construction. During this period cut and cover tunnels accounted for five of the nine tunnels constructed with bore tunnels accounting for the other four. There is a third type of tunnel not seen in this period constructed of precast concrete tube sections. Cut and cover tunnels are similar to concrete arch bridges or culverts but are classified as tunnels simply because they span roadways rather than waterways and their length between portals is greater than the width of the arch span. Cut and cover tunnels are generally constructed at the same time as the berms that they pass through. The first cut and cover tunnel was the McClure Tunnel in Santa Monica (53 0008), constructed in 1935. By the 1960s the construction of cut and cover tunnels was not a significant achievement. Further, the use of smooth finished concrete to adorn the entrance of the tunnel is not aesthetically significant. The Custom House Tunnel is not significant under National Register Criterion C or California Register Criterion 3.

The Custom House Tunnel was erected as a typical transportation improvement project of the period and the tunnel is not associated with events that have made a significant contribution to the broad patterns of history and is not significant under National Register Criterion A or California Register Criterion 1. It is not associated with the lives of significant persons in history and is not significant under National Register Criterion B or California Register Criterion 2. Bridge 44C0064 does not embody the distinctive characteristics of tunnel construction, does not represent the work of a master, and it does not possess high artistic values. Further, it does not represent a significant and distinguishable entity whose components may lack individual distinction. The Custom House Tunnel is not significant under National Register Criterion C or California Register Criterion 3. The tunnel has not yielded and is not likely to yield information important in history and is not significant under National Register Criterion D or California Register Criterion 4. Bridge 44C0064 is not eligible for inclusion on the National Register or California Register.

***B12. References (continued):**

Caltrans Bridge Inspection Report: April, 15, 2014.

Feldman, Jessica B. *Caltrans Statewide Historic Bridge Inventory Update – Tunnels*. Revisions by David Lemon and Andrew Hope. (Sacramento, California: California Department of Transportation, Sacramento, 2006).

JRP Historical Consulting Services. *Historic Context Statement – Roadway Bridges of California: 1936-1959.* Prepared for State of California Department of Transportation, n.p., January 2003.

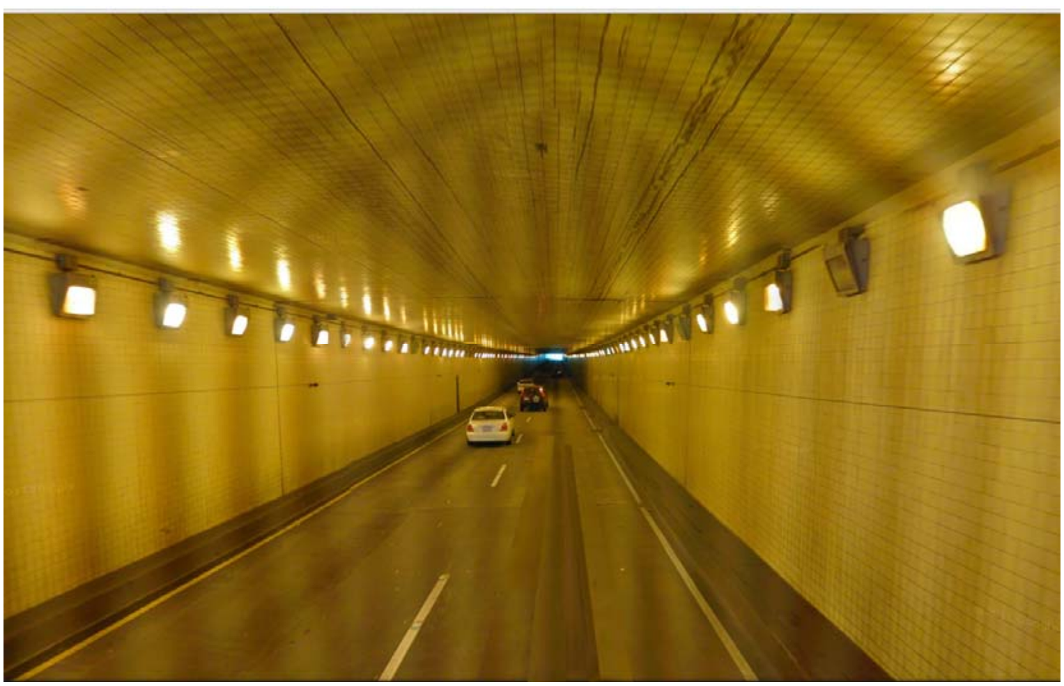
Mead & Hunt. *Historical Resources Evaluation Report – Caltrans Statewide Historic Bridge Inventory: 2010 Update*. (Sacramento, California: California Department of Transportation, Sacramento, 2010).

***Resource Name or #** Bridge 44C0064

***Recorded by:** Helen Blackmore ***Date:** October 1, 2014 ☒ **Continuation** ☐ **Update**

P5b. Photographs (continued):

North Portal, view facing south, June 20, 2012.



Northbound tunnel, view facing north, June 2011.

***Resource Name or #** Bridge 44C0064

***Recorded by:** Helen Blackmore ***Date:** October 1, 2014 ☒ **Continuation** ☐ **Update**

View looking northeast from Pacific street connecting to Lighthouse Avenue northbound, June 20, 2013.

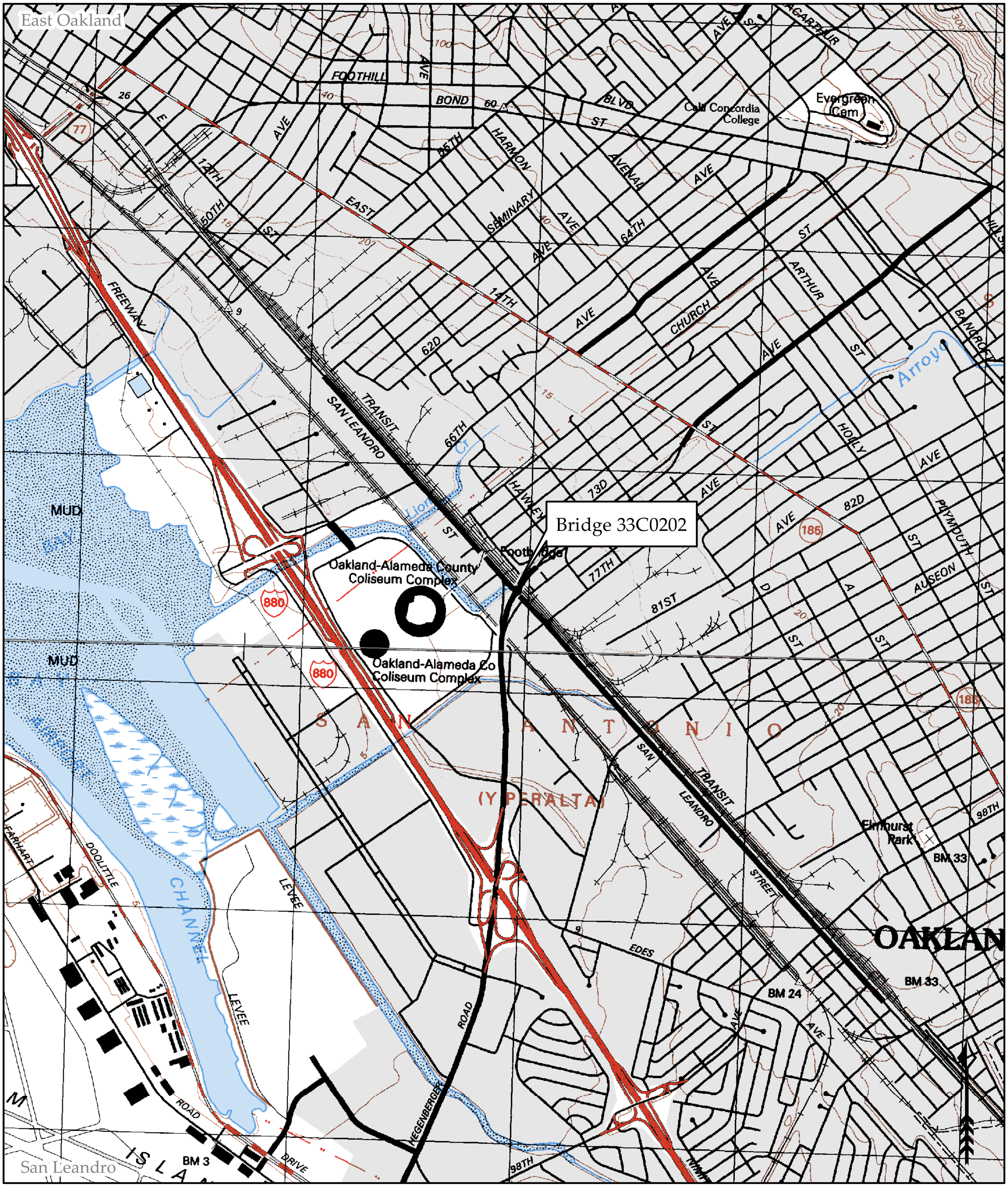
State of California The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary #
HRI#
Trinomial

 ***Resource Name or #:** 33C0202

***Map Name:** East Oakland ***Scale:** 1:24,000 ***Date of Map:** 1959



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

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code Reviewer Date

***Resource Name or #** Bridge 50 0279

P1. Other Identifier: Kern River Bridge

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County:** Kern
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad:** Miracle Hot Spring **Date:** **T** ; **R** ; **¼ of** **¼ of Sec** **;** M.D. **B.M.**
c. Address: n/a City: Zip:
d. UTM: Zone: 10 ; mE/ mN (G.P.S.)
e. Other Locational Data: Elevation:
The Kern River Bridge is located in Kern County on State Route 178 at postmile 38.84.

***P3a. Description:**
Bridge 50 0279 is a long span steel girder structure, 470 feet in length that crosses the Kern River. The bridge has three spans with the main span measuring 200 feet in length. It has four welded steel girders, continuous over bents with a simple suspended section in Span 2. The bridge is supported on two reinforced concrete column bents and open end seat abutments founded on spread footings. The four lane bridge has Type 11 railing.

***P3b. Resource Attributes:** HP 19. Bridge
***P4. Resources Present:** ☐Building ☒Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc

P5a. Photo or Drawing

P5b. Description of Photo:
View looking north,
June 20, 2014

***P6. Date Constructed/Age and Sources:** ☒Historic ☐Prehistoric ☐Both
1968, Caltrans Bridge Files

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

***P8. Recorded by:**
Janice Calpo
Dept. of Transportation
1120 N Street
Sacramento, CA 95814

***P9. Date Recorded:**
October 1, 2014

***P10. Survey Type:** Intensive

***P11. Report Citation:**
Helen Blackmore, Janice Calpo, Lauren Clementino and Noah M. Stewart with contributions from Andy Hope, *Historic Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2015 Update* (California Department of Transportation, Sacramento, 2015).

***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):

Primary #
HRI#

BUILDING, STRUCTURE, AND OBJECT RECORD

*NRHP Status

*Resource Name or # Bridge 50 0279

B1. Historic Name:
B2. Common Name: Kern River Bridge
B3. Original Use: Bridge **B4. Present Use:** Bridge
***B5. Architectural Style:** Modern
***B6. Construction History:**
The bridge was built in 1968. The deck was replaced in with a Protectorwrap preformed membrane and 3 of AC; and the Type 9 railings were removed and replaced by Type 11 railings, in 1975.

***B7. Moved?** ☒No ☐Yes ☐Unknown **Date:** **Original Location:**
***B8. Related Features:**

B9a. Architect: Tom L. Pollock, Bridge Department, California Division of Highways
b. Builder: Oberg Construction Corporation
***B10. Significance: Theme:** N/A **Area:** N/A
Period of Significance: N/A **Property Type:** N/A **Applicable Criteria:** N/A

The Kern River Bridge was constructed by Oberg Construction Corporation. It was one of the many highway improvements carried out during the late 1960s and 1970s. Bridge 50 0279 is not significant under National Register of Historic Places (National Register) Criterion A or California Register of Historical Resources (California Register) Criterion 1 for its association with the development of the highway network through the region. In addition, the bridge is not associated with other events that would make it significant under National Register Criterion A or California Register Criterion 1. It is not associated with a person who made a significant contribution to history at the local, state, or national level, and it is not significant under National Register Criterion B or California Register Criterion 2.

This structure is one of over 500 bridges of its type constructed between 1965 and 1974. Prior to this, there were more than 1,800 steel girder bridges in the State of California. The fabrication, transportation, and erection of large steel girder bridges was not a significant achievement in the state by the time the Kerns River Bridge was constructed in 1968. By the early 1970s, only 10% of all new bridges in the state were erected in steel. Steel girder bridges had their heyday in the 1930s, when they accounted for one third of bridges constructed. By the 1950s, steel girder bridge construction had dropped to 20% of new bridges erected throughout the state. As postwar traffic demands required wider roads, steel bridges proved less cost effective and the majority of new bridges were constructed in concrete. (See Continuation Sheet, page 3)

B11. Additional Resource Attributes:
***B12. References:** (See Continuation Sheet, page 3)

B13. Remarks:

***B14. Evaluator:**
Helen Blackmore
California Department of Transportation

***Date of Evaluation:**
October 1, 2014

(This space reserved for official comments.)

B10. Significance (continued):

By the 1960s, nearly any beam length could be fabricated and assembled on-site and long steel beams, such as those used in Kern River Bridge, were not considered a significant technological achievement. Bridge 50 0279 is a fairly typical example of steel girder construction for this period. It is not one of the larger examples of this type and it does not incorporate a significantly long main span. Whiskey Creek Bridge held title to the longest main span of 350 feet in length from its initial construction in 1961 until 1967, when a bridge carrying Interstate 280 over San Mateo Creek achieved a 360 foot main span. The Kern River Bridge with a total length of 470 feet and main span of 200 feet in length is not significant as a work of civil engineering. Bridge 50 0279 is not significant under National Register Criterion C or California Register Criterion 3. Its construction was typical for the 1960s and 1970s, and was not a significant work of civil engineering.

Bridge 50 0279 was erected as a typical transportation improvement project of the period and the bridge is not associated with events that have made a significant contribution to the broad patterns of history and is not significant under National Register Criterion A or California Register Criterion 1. It is not associated with the lives of significant persons in history and is not significant under National Register Criterion B or California Register Criterion 2. Bridge 50 0279 does not embody the distinctive characteristics of a steel girder bridge construction, does not represent the work of a master, and it does not possess high artistic values. Further, it does not represent a significant and distinguishable entity whose components may lack individual distinction. The Kern River Bridge is not significant under National Register Criterion C or California Register Criterion 3. The bridge has not yielded and is not likely to yield information important in history and is not significant under National Register Criterion D or California Register Criterion 4. Bridge 50 0279 is not eligible for inclusion on the National Register or California Register.

***B12. References:**

"An Architect Concentrates on Aesthetics in Bridge Design." *Pacific Builder & Engineer* 64, np. 4 (April 1958): 86-87.

California Division of Highways. "As Built Plans – Bridge 50 0279, 1966.

Caltrans Bridge Inspection Report: November 29, 2012

Hope, Andrew. *Caltrans Statewide Historic Bridge Inventory Update – Survey and Evaluation of Common Bridge Types*. Californian Department of Transportation, November 2004.

Mead & Hunt. *Historic Resource Evaluation Report – Caltrans Statewide Historic Bridge Inventory: 2010 Update*. California Department of Transportation, 2010.

***Resource Name or #** Bridge 50 0279

***Recorded by:** Janice Calpo
***Date:** October 1, 2014 ☒ **Continuation** ☐ **Update**

P5b. Photographs (continued):

View looking north, June 20, 2014

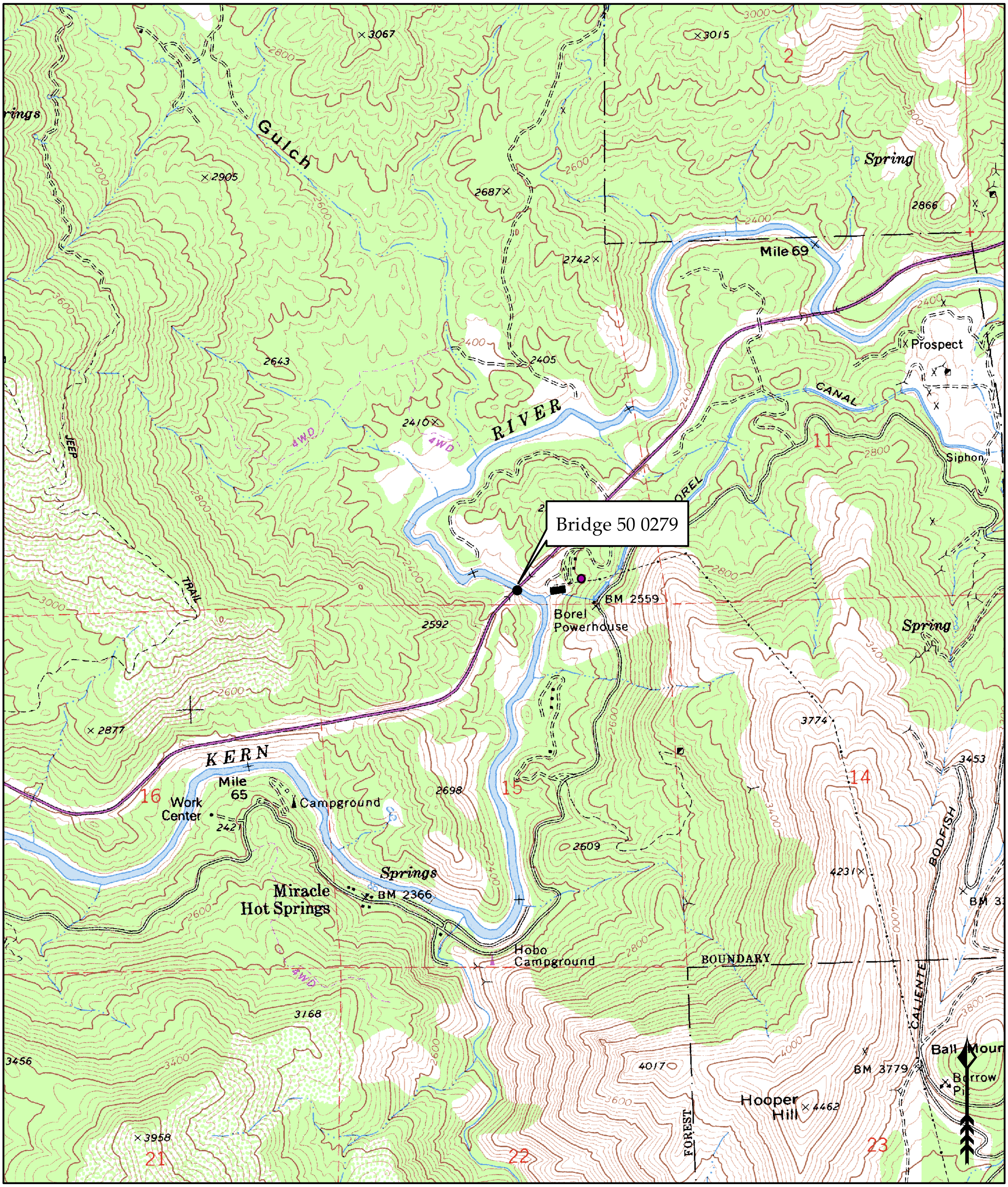
View looking south, June 20, 2014

Underside view of superstructure and deck looking north, June 20, 2014

State of California The Resources Agency DEPARTMENT OF PARKS AND RECREATION **LOCATION MAP**	Primary # HRI# Trinomial

 ***Resource Name or #:** 50 0279

***Map Name:** Miracle Hot Spring ***Scale:** 1:24,000 ***Date of Map:** 1972



This attached DPR for Bridge #53 2639 is the original form submitted to SHPO as part of the Statewide Historic Bridge Inventory Update for bridges constructed between 1965 and 1974. The final SHPO consensus, not reflected in this form, is that status is deferred pending further studies that may be part of future projects; therefore, "Historic significance not determined," or Caltrans Category 4, is the determination as of this writing. Caltrans Structures Maintenance List of Historic Significance (online) will reflect the most current status.

State of California — The Resour
DEPARTMENT OF PARKS AND R

PRIMARY RECORD

***Resource Name or #:** Bridge 53 2369

P1. Other Identifier: State College Pedestrian Overcrossing

***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:** Los Angeles **Date:** **T** ; **R** ; **¼ of** **¼ of Sec** **;** M.D. **B.M.**
c. Address: n/a City: Los Angeles Zip:
d. UTM: Zone: 10 ; mE/ mN (G.P.S.)
e. Other Locational Data:
Over State Route (SR) 10 at post mile C21.25, in Los Angeles County

***P3a. Description:**
The State College Pedestrian Overcrossing (53 2369) is a welded steel Vierendeel through truss structure that serves as a pedestrian walkway over State Route 10 from the California State University, Los Angeles (Cal State LA) Metrolink and Busway Station to Cal State LA. It has a single span of 127 feet with a total length of 128 feet and a total width of 9.3 feet. The bridge deck is composed of cast-in-place reinforced concrete on corrugated steel and rolled steel floor beams. Reinforced concrete columns on spread footings support the structure. There are vertical columns along the walkway, connecting to the top cord. Chain link railing lines the structure.

***P3b. Resource Attributes:** HP 19. Bridge
***P4. Resources Present:** ☐Building ■Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5a. Photo or Drawing

P5b. Description of Photo:
View, looking west
June 23, 2014

***P6. Date Constructed/Age and Sources:** ■Historic ☐Prehistoric ☐Both
1974, Caltrans Bridge Files

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

***P8. Recorded by:**
Janice Calpo
Dept. of Transportation
1120 N Street
Sacramento, CA 95814

***P9. Date Recorded:**
October 1, 2014

***P10. Survey Type:**
Intensive

***P11. Report Citation:** Helen Blackmore, Janice Calpo, Lauren Clementino and Noah M. Stewart with contributions from Andy Hope, *Historic Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2015 Update* (California Department of Transportation, Sacramento, 2015).

***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** 6Z

***Resource Name or #** Bridge 53 2369

B1. Historic Name:

B2. Common Name: State College Pedestrian Overcrossing

B3. Original Use: Pedestrian Overcrossing B4. Present Use: Pedestrian Overcrossing

***B5. Architectural Style:** Steel Vierendeel through truss

***B6. Construction History:**

The bridge was constructed in 1974. A seismic retrofit was completed in 1997, which included column isolation and abutment retrofit (cast-in-drilled-hole piles and shear keys).

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

***B8. Related Features:**

The bridge is located over State Route 10.

B9a. Architect: Kaiser Engineers/DMJM **b. Builder: Unknown**

***B10. Significance: Theme:** N/A **Area:** N/A

Period of Significance: N/A **Property Type:** N/A **Applicable Criteria:** N/A

The State College Pedestrian Overcrossing (53 2369) was constructed by the Southern California Rapid Transit District to connect the San Bernardino Busway University Station and Cal State LA. It was one of the many highway improvements carried out during the late 1960s and 1970s. The State College Pedestrian Overcrossing is not significant under National Register of Historic Places (National Register) Criterion A or California Register of Historical Resources (California Register) Criterion 1 for its association with the development of the highway network through the region. In addition, the bridge is not associated with other events that would make it significant under National Register Criterion A or California Register Criterion 1. It is not associated with a person who made a significant contribution to history at the local, state, or national level, and it is not significant under National Register Criterion B or California Register Criterion 2.

This structure is one of six metal truss bridges constructed between 1965 and 1974. There are 315 metal truss bridges in California (excluding moveable and steel arch bridges, many of which are also trusses). This bridge type was once common in California, but the number of new metal truss bridges constructed in the state dropped off substantially after the 1950s. As postwar traffic demands required wider roads, steel bridges proved less cost effective and the majority of new bridges were constructed in concrete. By the early 1970s, only 10% of all new bridges in the state were erected in steel. (See Continuation Sheet 3)

B11. Additional Resource Attributes:

***B12. References:**

See Continuation Sheet 3

B13. Remarks:

***B14. Evaluator:**

Lauren Clementino
California Department of Transportation

***Date of Evaluation:**

November 17, 2014

(This space reserved for official comments.)

B10. Significance (continued):

The fabrication, transportation, and erection of metal truss bridges were not significant achievements in the state by the time the State College Pedestrian Overcrossing was constructed in 1974.

The State College Pedestrian Overcrossing (53 2369) is a Vierendeel through truss with a single span of 127 feet. Developed in 1896 by Belgian engineer Arthur Vierendeel, the Vierendeel truss is characterized by the absence of diagonals. The Vierendeel truss replaces diagonal rods with rigid vertical members, giving it a distinctive look. Although the Vierendeel truss uses less steel than trusses with diagonal members, thus providing a cost savings, its application is limited to short span bridges. The Vierendeel truss never became popular in the state or the nation. The Army Corps of Engineers used the truss type for three bridges in Glendale, California on city streets over a flood control channel in 1937. The three Glendale Vierendeel trusses and the State College Pedestrian Overcrossing are unique among California bridges and are likely among the only bridges of their type in the United States. Although the State College Pedestrian Overcrossing is a rare truss type it is a late example of an unpopular type and does not represent a significant innovation in bridge engineering or display a significant variation. The State College Pedestrian Overcrossing does not display any decorative features or significant architectural details. The State College Pedestrian Overcrossing is not significant as a work of civil engineering or for aesthetic value and is not significant under National Register Criterion C or California Register Criterion 3.

The State College Pedestrian Overcrossing was erected as a typical transportation improvement project of the period and the bridge is not associated with events that have made a significant contribution to the broad patterns of history and is not significant under National Register Criterion A or California Register Criterion 1. It is not associated with the lives of significant persons in history and is not significant under National Register Criterion B or California Register Criterion 2. The State College Pedestrian Overcrossing is not a distinctive example of metal truss bridge construction, does not represent the work of a master, and does not possess high artistic values. Further, it does not represent a significant and distinguishable entity whose components may lack individual distinction. The State College Pedestrian Overcrossing is not significant under National Register Criterion C or California Register Criterion 3. The bridge has not yielded and is not likely to yield information important in history and is not significant under National Register Criterion D or California Register Criterion 4. The State College Pedestrian Overcrossing is not eligible for inclusion on the National Register or California Register.

B12. References (continued):

Condit, Carl W. *American Building: Materials and Techniques from the Beginning of the Colonial Settlements to the Present*. Chicago: The University of Chicago Press, 1968.

Department of Transportation. Bridge Inspection Reports for Bridge Number 53 2639. May 7, 1975 to July 8, 2013.

JRP Historical Consulting. *Caltrans Historic Bridges Inventory Update: Metal Truss, Movable, and Steel Arch Bridges*. Prepared for the California Department of Transportation Environmental Program, n.p., September 2004 (revised).

JRP Historical Consulting Services. *Historic Context Statement - Roadway Bridges of California: 1936-1959*. Prepared for State of California Department of Transportation, n.p., January 2003.

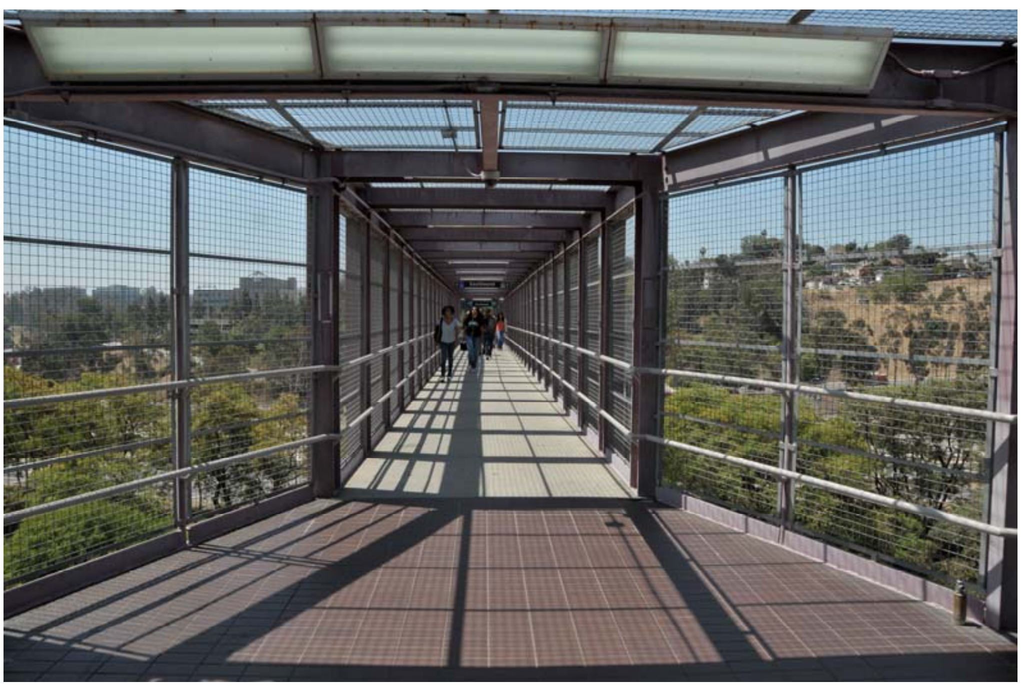
State of California — The Resources Agency **DEPARTMENT OF PARKS AND RECREATION** **CONTINUATION SHEET**	**Primary #** **HRI#** **Trinomial**

 ***Resource Name or #** Bridge 53 2369

***Recorded by:** Janice Calpo ***Date:** October 1, 2014 ■ Continuation ☐ Update

P5b. Photographs (continued):

View, looking south (June 23, 2014)



View, looking south (June 23, 2014)

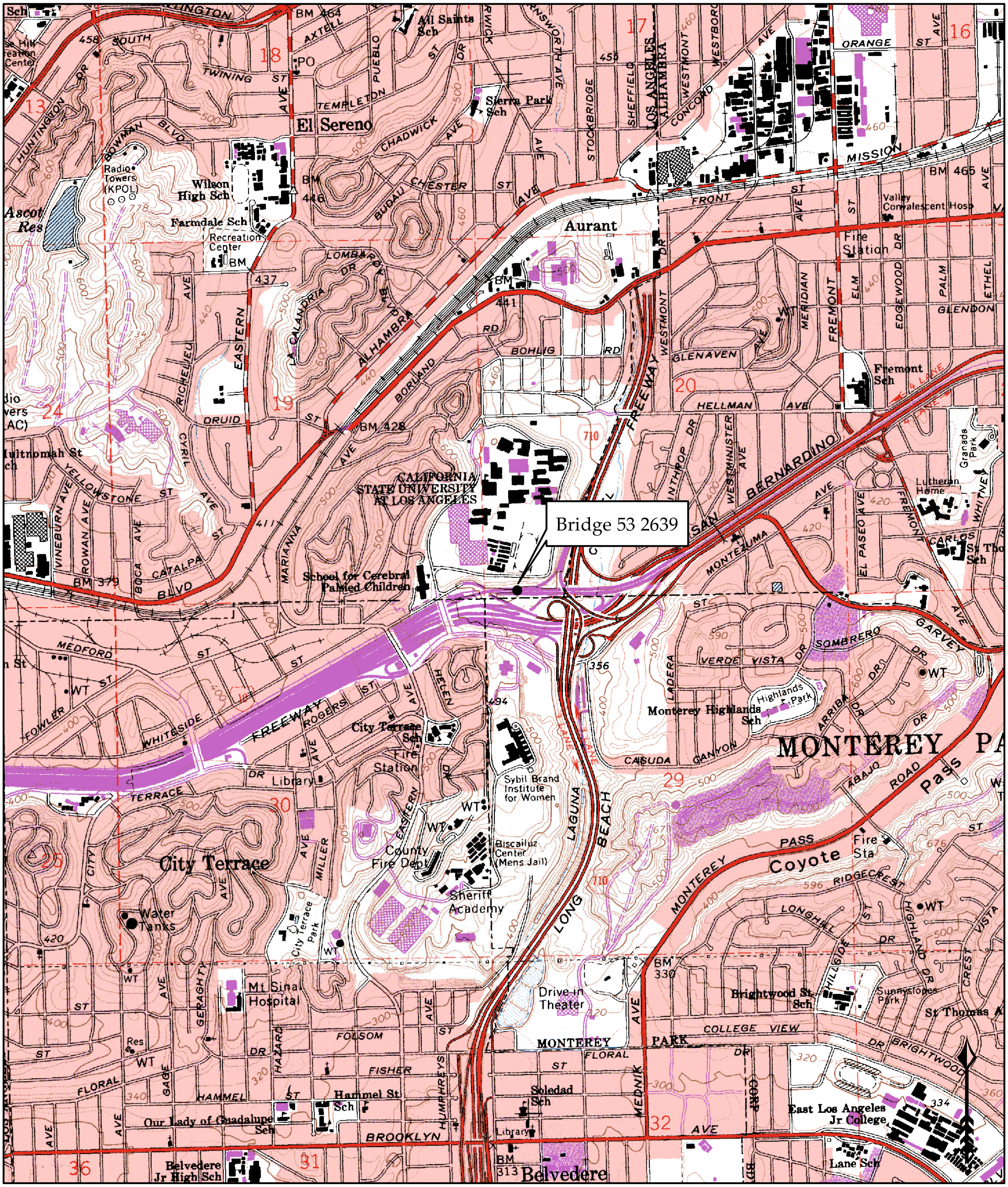
State of California The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary #
HRI#
Trinomial

***Resource Name or #:** 53 2639

***Map Name:** Los Angeles ***Scale:** 1:24,000 ***Date of Map:** 1975



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

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code Reviewer Date

 *Resource Name or #: Bridges 53C0551L&R

P1. Other Identifier: Queensway Drive Bridges/ Los Angeles River Bridges

***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:** Long Beach **Date:** **T** ; **R** ; **¼ of** **¼ of Sec** **;** M.D. **B.M.**
c. Address: n/a City: Long Beach Zip:
d. UTM: Zone: 10 ; mE/ mN (G.P.S.)
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Elevation:
Queens Way Drive 0.6 miles south of Ocean Boulevard, Long Beach, California

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

Bridges 53C0551L and 53C0551R are nearly identical three span welded steel box girder structures (single cell) with orthotropic decks. They are located in the City of Long Beach and cross the Los Angles River. The bridges are 1,329 feet in length, with a 500 foot central span flanked by 350 foot spans. Their center spans are cantilevered over piers with a suspended middle section. The structures are seated on reinforced concrete pier wall abutments on reinforced precast pile footing foundations above the water level and two cellular reinforced concrete piers on pile caps with prestressed reinforced concrete bearing piles. The bridges have two single end spans composed of cast in place (see Continuation Sheet)

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

P5a. Photo or Drawing (Photo required for buildings, structures, and objects.)

P5b. Description of Photo:
View looking west
June 30, 2014

***P6. Date Constructed/Age and Sources:** ☒Historic ☐Prehistoric ☐Both
1969, Caltrans Bridge Files

***P7. Owner and Address:**
City of Long Beach
333 West Ocean Blvd
Long Beach, CA 90802

***P8. Recorded by:**
Janice Calpo
Dept. of Transportation
1120 N Street
Sacramento, CA 95814

***P9. Date Recorded:**
October 1, 2014

***P10. Survey Type:**
Intensive

***P11. Report Citation:** Helen Blackmore, Janice Calpo, Lauren Clementino and Noah M. Stewart with contributions from Andy Hope, *Historic Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2015 Update* (California Department of Transportation, Sacramento, 2015).

***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):

Primary #
HRI#

BUILDING, STRUCTURE, AND OBJECT RECORD

*NRHP Status

*Resource Name or # (Assigned by recorder) Bridges 53C0551L&R

B1. Historic Name: Magnolia Avenue Bridges
B2. Common Name: Queensway Drive Bridges
B3. Original Use: Bridge **B4. Present Use:** Bridge
***B5. Architectural Style:** Modern
***B6. Construction History:** (Construction date, alterations, and date of alterations) Built 1969. Routine maintenance over the years, but no major alterations.
***B7. Moved?** ☒No ☐Yes ☐Unknown **Date:** **Original Location:**
***B8. Related Features:** N/A
B9a. Architect: M. A. Nishkian & Co. (Consulting Engineers) and John K. Minasian (Structural Engineer)
b. Builder: Murphy Pacific Corp. (general contractor, responsible for the superstructure and steel fabricator) and Guy F. Atkinson Co. (substructure)
***B10. Significance: Theme:** Engineering **Area:** State
Period of Significance: 1969 **Property Type:** Structure **Applicable Criteria:** C
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

Bridges 53C0551L and 53C0551R, which cross the Los Angeles River, were built by the City of Long Beach to connect the Port of Long Beach to the Citys downtown. At the time the Port was experiencing significant growth; Piers J and F were completed and containerization operations had begun at Pier G, the first such facility at the Port. Queensway Drive Bridges were tied to the expansion of the southern section of the Port as well as the development of the Citys Queensway Bay waterfront development project. The bridges would also provide connection from downtown Long Beach to the Queen Mary, the former luxury cruise liner docked in Long Beach Harbor as a tourism attraction and hotel.

The bridges were designed by M. A. Nishkian & Co., as the consulting engineers, and John K. Minasian, as the structural engineer. Both M. A. Nishkian & Co. and Minasian were important in the field of engineering during the mid-twentieth century. M. A. Nishkian & Co. was a Long Beach based engineering organization run by Martin A. Nishkian. The firm practiced general engineering and was responsible for many important works in the Los Angeles region as well as throughout California and the West. The firm designed many large scale central heating and cooling works, including plants for the Los Angeles Civic Center, and the Miramar Naval Air Station, as well as the California State Capitol Complex. M. A. Nishkian & Co. designed a jet fuel storage underground (See Continuation Sheet)

B11. Additional Resource Attributes: (List attributes and codes)

***B12. References:**
Caltrans Bridge Inspection Report: February 12, 2013

B13. Remarks:

***B14. Evaluator:**
Noah Stewart
California Department of Transportation

***Date of Evaluation:**
October 1, 2014

(Sketch Map with north arrow required.)

(This space reserved for official comments.)

***P3a. Description:** reinforced concrete T-beams supported by reinforced concrete closed end cellular bin abutments seated on Portland concrete and reinforced concrete bearing pile foundations. 53C0551L (southbound) supports three lanes of traffic while 53C0551R (northbound) carries two lanes of vehicle traffic and a pedestrian path. The pedestrian and automobile lanes on 53C0551R are separated by modified K-rail, while both bridges have Type E concrete and steel tube railing with aluminum pickets.

B10. Significance (continued): tanks and a 20,000 foot distribution system for the Naval Air Station San Diego as well as a $12 million gas compressor station in Needles. M. A. Nishkian & Co. was also retained by the Atomic Energy Commission to prepare plans for additions to the material reactor site at the National Reactor Testing Station in Idaho Falls, Idaho. Closer to home, the engineers planned the Long Beach Municipal Gas Department Compressor Plant and most significantly, the world's largest water flooding project to halt land subsidence at Long Beach Harbor caused by oil extraction at Wilmington.

John K. Minasian was a structural engineer who specialized in the design of towers and other large engineering works. He designed more than 80 towers throughout the country during his career. His more important projects include launch towers for the Atlas and Saturn missiles at Cape Kennedy, missile test stands at Edwards Air Force Base, and missile gantries at Cape Canaveral, as well as two television towers on Mount Wilson, Los Angeles County. He is, however, most famous for his work on the Seattle Space Needle, built for the 1962 World's Fair. One three men responsible for the structure's design, Minasian was the chief consulting engineer responsible for the structural design of the tower.

The Queensway Drive Bridges is a combination of steel box girder and orthotropic deck construction. Of the few steel box girder bridges in California, this arrangement is all the more rare. Originally orthotropic deck bridges were built with steel girders, however soon it was realized that the steel box girder-orthotropic deck was not only torsionaly stronger than the steel girder version, it was also less expensive to construct. Steel box superstructures can be combined with reinforced concrete deck systems and can also be used in suspension spans.

Early steel box girder bridges constructed in California illustrate the system's flexibility. The first such bridge, Indian Creek Bridge (02C0147), was erected in 1966 and had a concrete deck supported by six fairly small steel box girders, rather than a smaller number of larger boxes which later became more common for the type. That same year, the Klamath River Bridge (04 0069) was completed using a combination steel box girder superstructure and suspended span. Other early bridges of this type include a pair (28C0315 and 28C0316) erected in 1968, over MacDonald Avenue, in Richmond, as part of the Bay Area Rapid Transit system (BART). The San Mateo-Hayward Bridge, which opened to traffic in 1967, was the first major orthotropic deck bridge in the United States and featured a steel box girder superstructure for its 750 foot main span. Like the San Mateo-Hayward Bridge, the main span of the San Diego-Coronado Bay Bridge, which opened in 1969, incorporated a steel box girder and orthotropic deck system. The San Diego-Coronado Bay Bridge stretched technology by using cantivered construction to achieve two main spans with a length of 600 feet each.

The Queensway Drive Bridges were completed in late 1969, the same year as the San Diego-Coronado Bay Bridge. Unlike the two earlier long span bridges (San Mateo-Hayward and the San Diego-Coronado Bay Bridges), the superstructures of both Queensway Drive Bridges were entirely steel box girder with orthotropic deck construction (both earlier bridges consisted of steel box girder and orthotropic deck main spans, but also included other superstructure and deck systems for their approaches). The three span Queensway Drive Bridges each feature 500 foot central spans flanked on either side by 350 foot spans. Their center spans are cantilevered over piers with a suspended middle section. While not the longest steel box girder bridges at the time they were erected, they were quite elegant in profile. The steel box girder and orthotropic deck superstructure configuration allowed the designers to achieve long clear spans with relatively shallow profiles and the sleek appearance much admired in modern bridge design. To this end, in 1971, the bridges won a prize from the American Institute of Steel Construction for best long span.

The Queensway Drive Bridges were two of the many highway improvements carried out during the late 1960s and early 1970s. They are not significant under National Register of Historic Places (National Register) Criterion A or California Register of Historical Resources (California Register) Criterion 1 for their association with the development of the highway network through the region. While the bridges were associated with the growth of the Port, waterfront development and expansion of the tourist industry in Long Beach, construction of the bridges were not the

cause of this expansion. Rather, the bridges were part of a well-organized, large-scale development plan for the City's waterfront. Therefore, the bridges are not associated with events that would make them significant under National Register Criterion A or California Register Criterion 1.

The Queensway Drive Bridges were designed by M. A. Nishkian & Co. and John K. Minasian, both of whom were important in the field of engineering during the mid-twentieth century. Although the bridges are associated with two prominent engineers, the connection between the bridges and their designers is more appropriately considered under National Register Criterion C and California Register Criterion 3 as the work of a master rather than under Criteria B and 2. Bridges 53C0551L and 53C0551R were not associated with a person who made a significant contribution to history. The Queensway Drive Bridges are not significant under National Register Criterion B or California Register Criterion 2.

Steel box girder bridges are relatively rare in California. The combination steel box girder and orthotropic deck are even more unusual. Both technologies date to the post-World War II period. The system creates a torsionaly strong bridge that is extremely efficient. While the combination is less expensive than the earlier steel girder and orthotropic deck system, as steel costs escalated and major contractors invested in equipment dedicated to concrete construction, steel bridges were only erected in unique circumstances. Nishkian & Co. and John K. Minasian chose the design for the Queensway Drive Bridges because the conditions made the system the most aesthetically pleasing and cost effective solution. The Queensway Drive Bridges are significant under National Register Criterion C and California Register Criterion 3 as early long span steel box girder bridges with orthotropic decks as well as for their sleek modern bridge aesthetic. As far as the bridge designers, Nishkian & Co. and John K. Minasian, they were important in the field of engineering during the mid-twentieth century, however neither were known as bridge specialists. Research has yet to identify other bridges designed by either of the two. Because of this, the bridges do not represent the work of a master. Additionally, they do not represent a significant and distinguishable entity whose components may lack individual distinction.

The bridge has not yielded and is not likely to yield information important in history and is not significant under National Register Criterion D and California Register Criterion 4.

Bridges 53C0551L and 53C0551R retain all seven aspects of integrity. They have not been moved and retain integrity of location. The setting and feeling have been unaltered. The association of the bridge has been unchanged. The design, materials and workmanship of the bridges have been retained, having had only minor maintenance over the years. The Queensway Drive Bridges retain high integrity.

Bridges 53C0551L and 53C0551R were erected as a typical transportation improvement project of the period and they are not associated with events that have made a significant contribution to the broad patterns of history and are not significant under National Register Criterion A and California Register Criterion 1. They are not associated with the lives of significant persons in history and are not significant under National Register Criterion B or California Register Criterion 2. The Queensway Drive Bridges embody the distinctive characteristics of steel box bridge with orthotropic deck construction and possess high Modern aesthetic value. Bridges 53C0551L and 53C0551R are significant under National Register Criterion C and California Register Criterion 3. The bridges have not yielded and are not likely to yield information important in history and are not significant under National Register Criterion D or California Register Criterion 4. Additionally, the Queensway Drive Bridges retain high integrity. Bridges 53C0551L and 53C0551R are eligible for inclusion on the National Register and California Register.

P5b. Photographs (continued):

View looking west, June 30, 2014

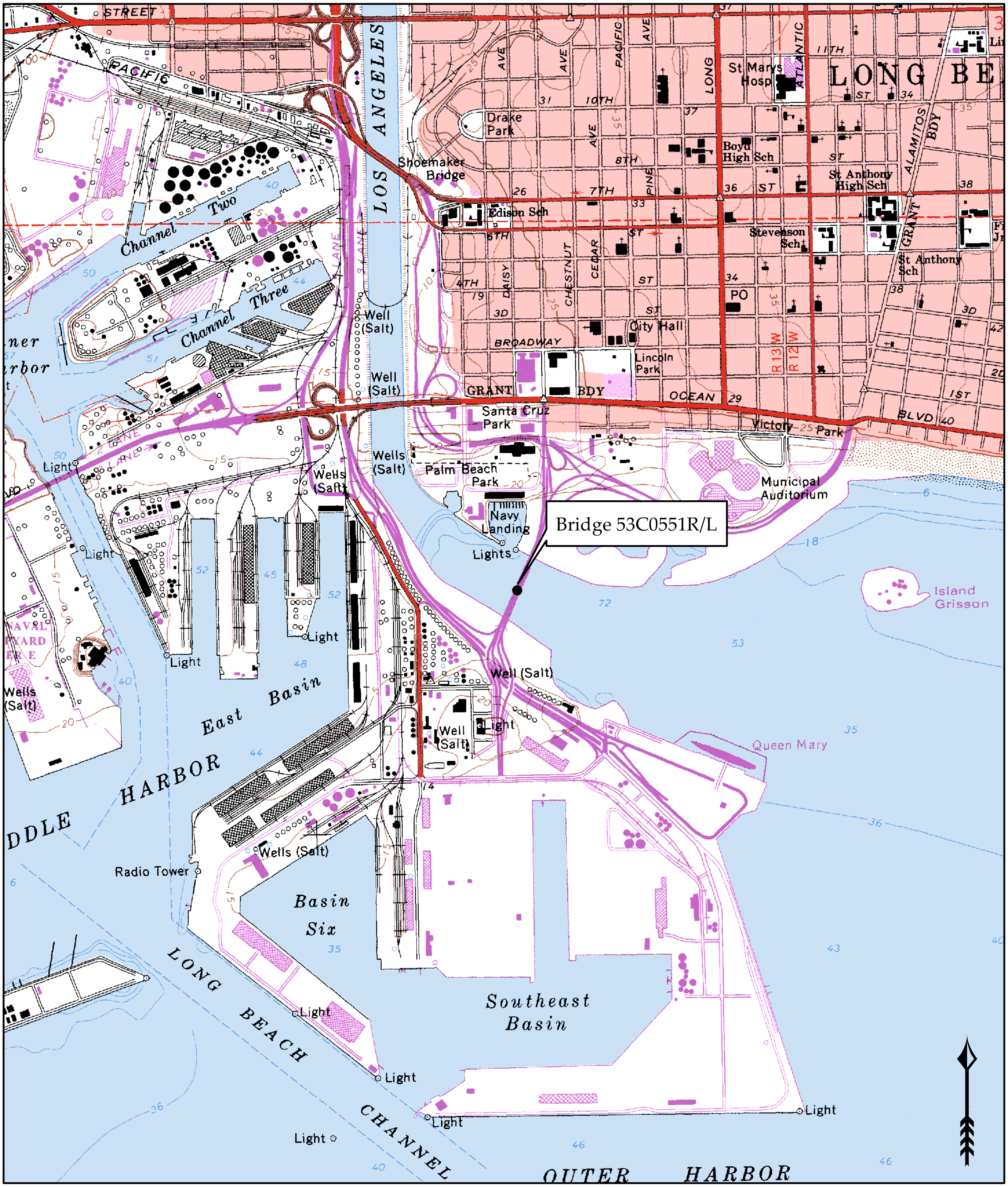
Detail looking south, June 30, 2014

State of California The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LOCATION MAP

Primary #
HRI#
Trinomial

***Resource Name or #:** 53C0551R/L

***Map Name:** Long Beach ***Scale:** 1:24,000 ***Date of Map:** 1964



State of California — The Resou
DEPARTMENT OF PARKS AND I
PRIMARY RECORD

This attached DPR for Bridge #53C0556 is the original form submitted to SHPO as part of the Statewide Historic Bridge Inventory Update for bridges constructed between 1965 and 1974. The final SHPO consensus, not reflected in this form, is that status is deferred pending further studies that may be part of future projects; therefore, "Historic significance not determined," or Caltrans Category 4, is the determination as of this writing. Caltrans Structures Maintenance List of Historic Significance (online) will reflect the most current status.

 ***Resource Name or #:** Bridge 53C0556

P1. Other Identifier: Rebecca Lopez Pedestrian Overcrossing

***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:** San Dimas **Date:** **T** ; **R** ; **¼ of** **¼ of Sec** **;** M.D. **B.M.**
c. Address: n/a City: Pomona Zip:
d. UTM: Zone: 10 ; mE/ mN (G.P.S.)
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Elevation:

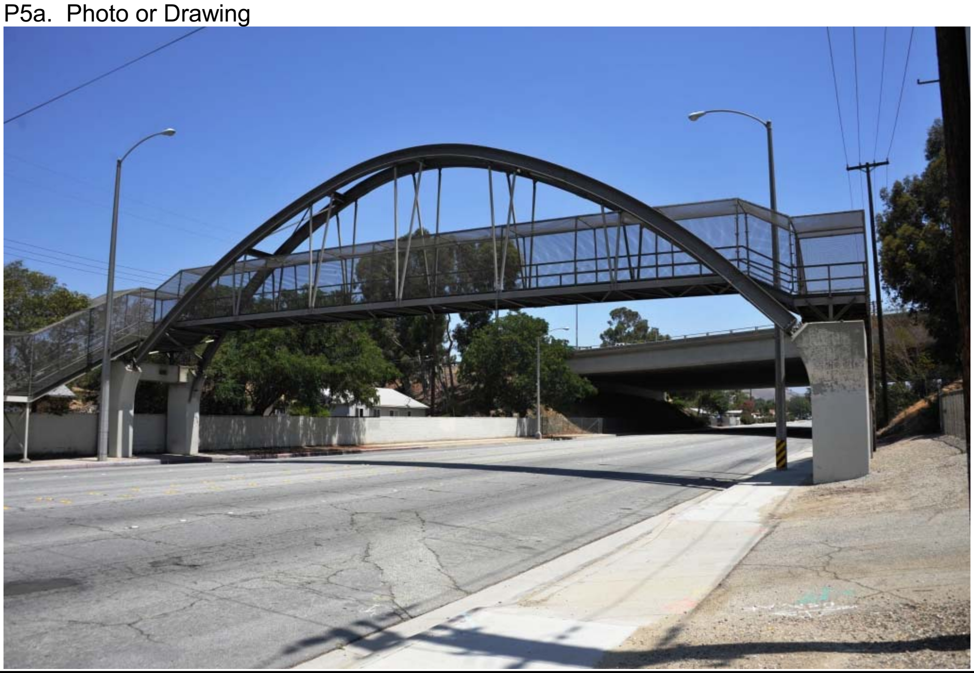
The Rebecca Lopez Pedestrian Overcrossing crosses Valley Boulevard 150 feet west of Orange Freeway in Pomona, Los Angeles County.

***P3a. Description:**

Bridge 53C0556 is the Rebecca Lopez Pedestrian Overcrossing, which is an aluminum arch structure 161 feet in length over Valley Boulevard, within the City of Pomona. The structure has an aluminum deck truss on reinforced concrete abutments with precast concrete piles. The concrete abutments are comprised of two columns bents, with a horizontal concrete connector at the top. The top portion of the abutement is curved at the same degree as the arch above, allowing for a continuous flow from arch to abutment. The two parabolic arches spanning the road become closer together at the top of the arch and spread out where they meet the concrete abutment. There are transverse braces connecting the arches. Vertical posts connect the arches and the suspended pedestrian deck. The walkway is encased in a wire mesh with stepped entrances to the north and south sides of the road.

***P3b. Resource Attributes:** HP 19. Bridge
***P4. Resources Present:** ☐Building ☒Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5a. Photo or Drawing



P5b. Description of Photo: View looking south June 23, 2014

***P6. Date Constructed/Age and Sources:** ☒Historic ☐Prehistoric ☐Both
1974, Caltrans Bridge Files

***P7. Owner and Address:**
City of Pomona
505 South Garey Avenue
Pomona
CA 91766

***P8. Recorded by:**
Helen Blackmore
Dept. of Transportation
111 Grand Ave
Oakland, CA 94612

***P9. Date Recorded:**
December 30, 2014

***P10. Survey Type:**
Intensive

***P11. Report Citation:**

Helen Blackmore, Janice Calpo, Lauren Clementino and Noah M. Stewart with contributions from Andy Hope, *Historic Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2015 Update* (California Department of Transportation, Sacramento, 2015).

***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

*Resource Name or # Bridge 53C0556

B1. Historic Name:
B2. Common Name: Rebecca Lopez Pedestrian Overcrossing
B3. Original Use: Bridge **B4. Present Use:** Bridge
***B5. Architectural Style:**
***B6. Construction History:**
The bridge was built in 1974. Since construction the overcrossing has undergone minor maintenance including: roadway cracks repaired (1982). In 1996, new handrails were installed on the lower part of the north and south staircases.

***B7. Moved?** ☒No ☐Yes ☐Unknown **Date:** **Original Location:**
***B8. Related Features:**

B9a. Architect: Reynolds Metal Co. **b. Builder:** Modern Alloys, Inc.
***B10. Significance: Theme:** **Area:**
Period of Significance: Property Type: Applicable Criteria:
The Rebecca Lopez Pedestrian Overcrossing was erected by the City of Pomona; constructed by Reynolds Metal Co. and installed by Modern Alloys, Inc. It is not significant under National Register of Historic Places (National Register) Criterion A or California Register of Historical Resources (California Register) Criterion 1 for its association with the development of the highway network through the region. In addition, the bridge is not associated with other events that would make it significant under National Register Criterion A or California Register Criterion 1. The bridge was named for Rebecca Lopez who was five years old when she was killed while using a crosswalk in May 1973, at the site where the overcrossing now stands. She was using the crosswalk to get to Kellogg Elementary School, and after her death the city constructed the pedestrian overcrossing, which was dedicated to her on March 23, 1974, shortly after its completion. While Rebecca's death is tragic, she did not make a significant contribution to history at the local, state, or national level, and thus the overcrossing is not significant for an association with a person who contributed to history under National Register Criterion B or California Register Criterion 2.

Aluminum arch bridges are rare in California when considering only state and city bridges. However, they are likely prolific in number for private bridges. Generally, metal arches are more difficult and expensive to fabricate and construct than metal truss bridges, and as the twentieth century progressed bridge designers and builders found other bridge types to be more economical and easier to build. (See Continuation Sheet, page 3).

B11. Additional Resource Attributes:

***B12. References:** (See Continuation Sheet, page 3).
B13. Remarks:

***B14. Evaluator:**
Helen Blackmore
California Department of Transportation

***Date of Evaluation:**
December 30, 2014

(This space reserved for official comments.)

B10. Significance (continued):

During the early period of motor vehicle traffic in the state, steel arches were among the various metal bridges used to effectively and economically provide safe crossing.

Whereas steel arches are relatively cheap to construct in comparison to aluminum arches, they are also heavier and often require more maintenance. In some circumstances the arch form was chosen for aesthetic reasons, invoking the Classical architecture popular during the early twentieth century. Environmental circumstances also made the from the best design solution for a setting, where reinforced concrete was not economically feasible. Aluminum arches are built with parallel arches and support members, constructed both as in-deck and through forms. The practice of using aluminum bridges can be traced to 1933, when the deck of the Smithfield Street Bridge in Pittsburgh, Pennsylvania, was replaced with an aluminum deck. This significantly lightened and increased its live-load capacity. The first full aluminum bridge in North America was erected in Arvida, Canada, over the Saguenay River in 1950. It was (and still is) a 290 feet long, arch bridge.

In the 1960s and 1970s, aluminum alloys were among the materials considered for the construction of new bridges. In addition to its natural advantages, aluminum was seriously considered for bridges in part because of the long lead times to obtain steel during that period. However, given the cost of aluminum in relation to steel, and the higher complexity of engineering for aluminum to retain structural integrity; this bridge type was more commonly used for shorter spans. Aluminum bridges were and are relatively easy to construct and transport, and often the bridges would be prefabricated and transported around the country often from private use, such as pontoon bridges on jetties. Further, the most common type of aluminum bridge is a truss, the arch system is more complex and thus more rare.

Bridge 53C0556 is a fairly typical example of aluminum arch construction. The fabrication, transportation, and erection of aluminum arch bridges were not a significant achievement in the state by the time the Rebecca Lopez Pedestrian Overcrossing was constructed in 1974. While the bridge is of a rare type and construction material, the systems used to construct the bridge was relatively simple, and when compared to other metal arch bridges seemingly unimpressive and architecturally non-distinctive. Bridge 53C0556 is typical of an aluminum arch bridge erected in the 1960s and 1970s and is not a significant work of civil engineering nor does it stand out with regard to modern bridge aesthetics. Bridge 53C0556 is not significant under National Register Criterion C or California Register Criterion 3.

Bridge 53C0556 was erected as a typical transportation improvement project of the period and it is not associated with events that have made a significant contribution to the broad patterns of history and is not significant under National Register Criterion A or California Register Criterion 1. It is not associated with the lives of significant persons in history and is not significant under National Register Criterion B or California Register Criterion 2. Bridge 53C0556 does not embody the distinctive characteristics of an aluminum arch bridge construction, does not represent the work of a master, and does not possess high Modern aesthetic value. Further, it does not represent a significant and distinguishable entity whose components may lack individual distinction. The Rebecca Lopez Pedestrian Overcrossing is not significant under National Register Criterion C or California Register Criterion 3. The bridge has not yielded and is not likely to yield information important in history and is not significant under National Register Criterion D or California Register Criterion 4. Bridge 53C0556 is not eligible for inclusion on the National Register or California Register.

***B12. References (continued):**

Alumatter. "Case Study: Aluminum Bridges." Accessed on December 30, 2014 from www.Aluminium.matter.org.uk.

"Aluminum Bridge over Datten-Hamm-Kanal celebrates its 50th birthday." *GDA Artikeldienst* 29, April 2006.

American Association of State Highway Officials. *Proceedings, Convention Group Meetings, Papers and Discussions* 54. American Association of State Highway Officials, 1968.

Perrin A. *Better Roads* 37 November 1967. 14.

Caltrans Bridge Inspection Report: January 28, 2014.

Cannon, Phyllis. "Children help dedicate new bridge to classmate, 5, killed at crosswalk." *Progress Bulletin*, March 23, 1974. 1.

Das, Subodh K. and J. Gilbert Kaufman. "Aluminum Alloys for Bridges and Bridge Decks." *Aluminum Alloys for Transportation, Packaging, Aerospace, and Other Applications*. Edited by Subodh K. Das and Weimin Yin, The Minerals, Metals & Materials Society, 2007.

Gillies, Clayton T. "Replacing wooden-box culverts with aluminum arch culverts: two case studies." *Advantage* 6, No. 15, June 2005.

Grant, Arthur Hastings and Harold Sinley Buttenheim. *The American City*, 85. Pittsfield, MA:Buttenheim Publishing Corp., 1970.

Jacobs, David and Anthony E. Neville. *Bridges, Canals & Tunnels.* Princeton, N.J.: American Heritage Pub. Co., 1968.

Kassler, Elizabeth Bauer. *The Architecture of Bridges*. New York, N.Y.: Museum of Modern Art, 1950.

Overman, Michael. *Roads, Bridges and Tunnels: modern approaches to road engineering.* London: Aldus Books, 1968.

"Progress on World's First Aluminum Bridge." *Canadian Trasnportation* 52, 1949. 457.

Walbridge, Scott and Alexandre de la Chevotiere. "Opportunities for the use of Aluminum in Vehicular Bridge Construction." Montreal, QC: MAADI Group, June 2012.

***Resource Name or # (Assigned by recorder)** Bridge 53C0556

***Recorded by:** Helen Blackmore ***Date:** December 30, 2014 ☒ **Continuation** ☐ **Update**

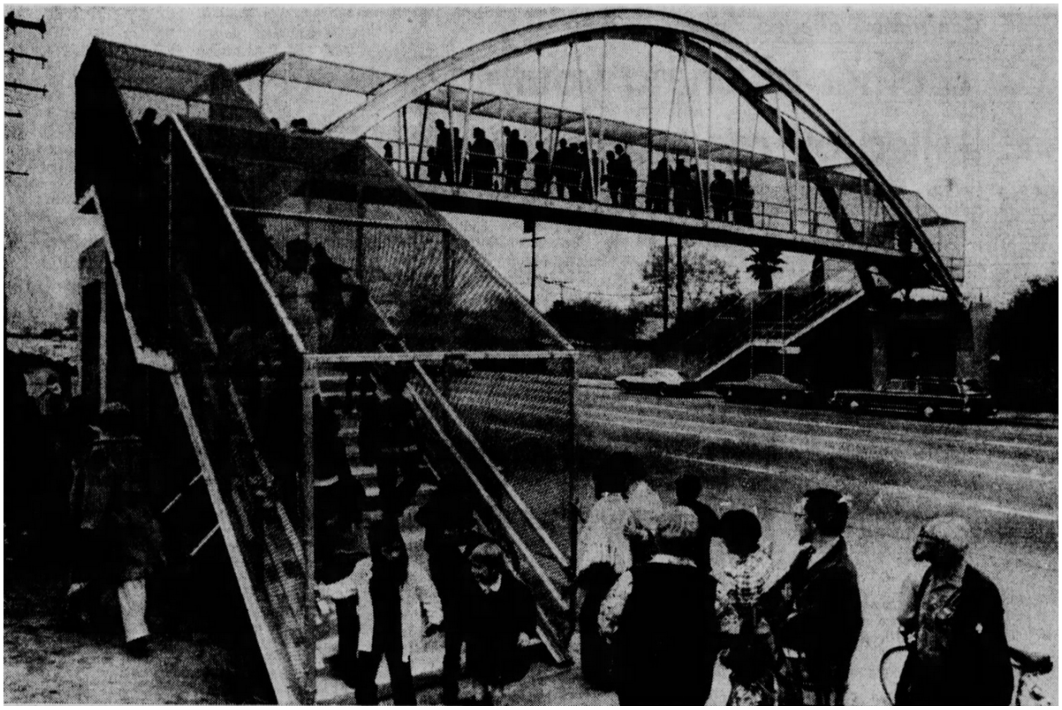
P5b. Photographs (continued):

Detail looking south, June 23, 2014

Detail of eastern abutement southern column, June 23, 2014

Detail of arch looking south, June 23, 2014

View looking northeast, June 23, 2014

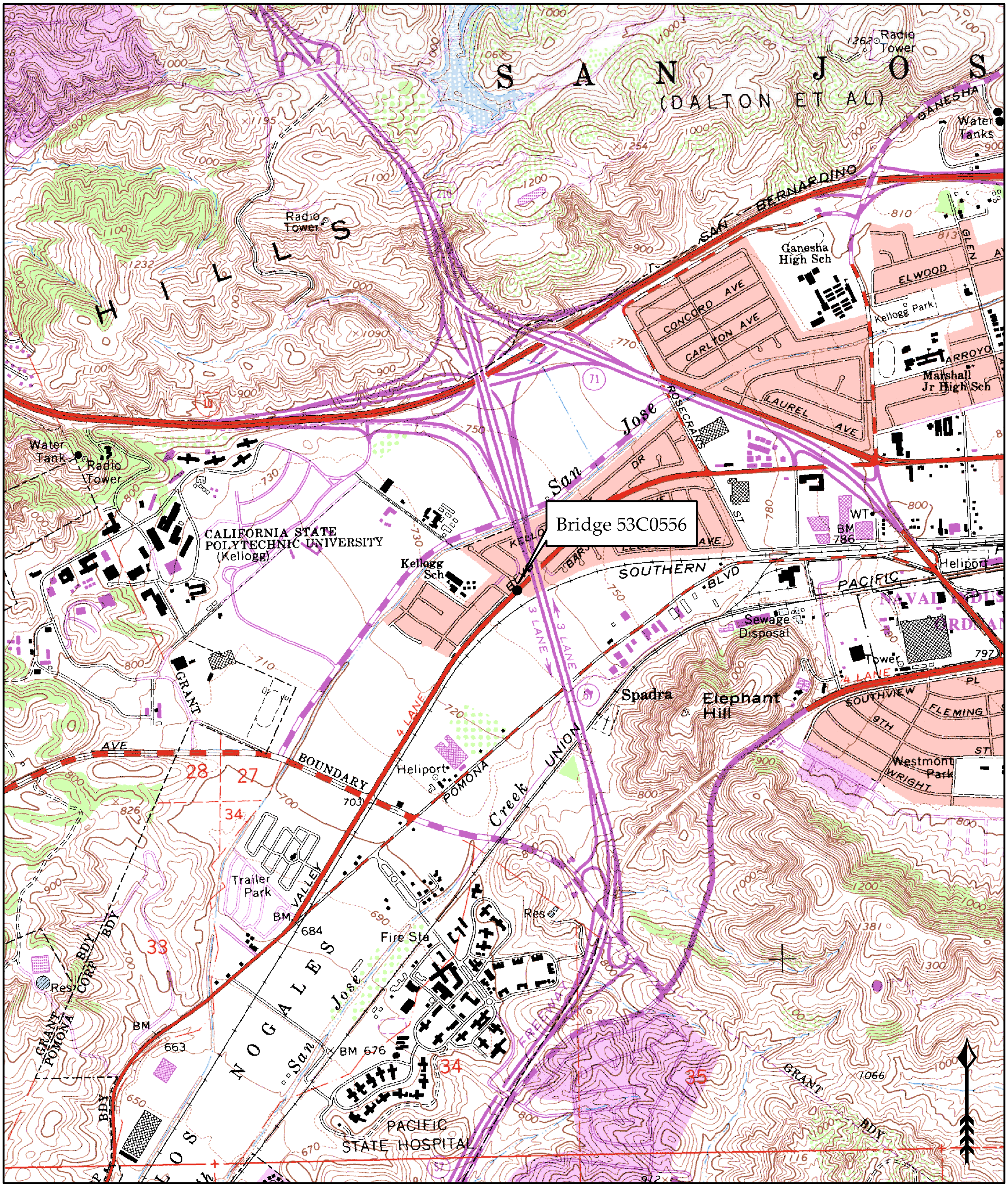


Photograph from the dedication ceremony with children from Kellogg Elementary School, from *Progress Bulletin*, March 23, 1974, page 1.

State of California The Resources Agency DEPARTMENT OF PARKS AND RECREATION	Primary # HRI#
LOCATION MAP	Trinomial

 ***Resource Name or #:** 53C0556

***Map Name:** San Dimas ***Scale:** 1:24,000 ***Date of Map:** 1966



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

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code **Reviewer** **Date**

 ***Resource Name or #:** Bridge 53C0899R

P1. Other Identifier: Kanan Dume Road Northbound Tunnel #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:** **T** ; **R** ; **¼ of** **¼ of Sec** **;** M.D. **B.M.**
c. Address: n/a City: city Zip:
d. UTM: Zone: 10 ; mE/ mN (G.P.S.)
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Elevation:

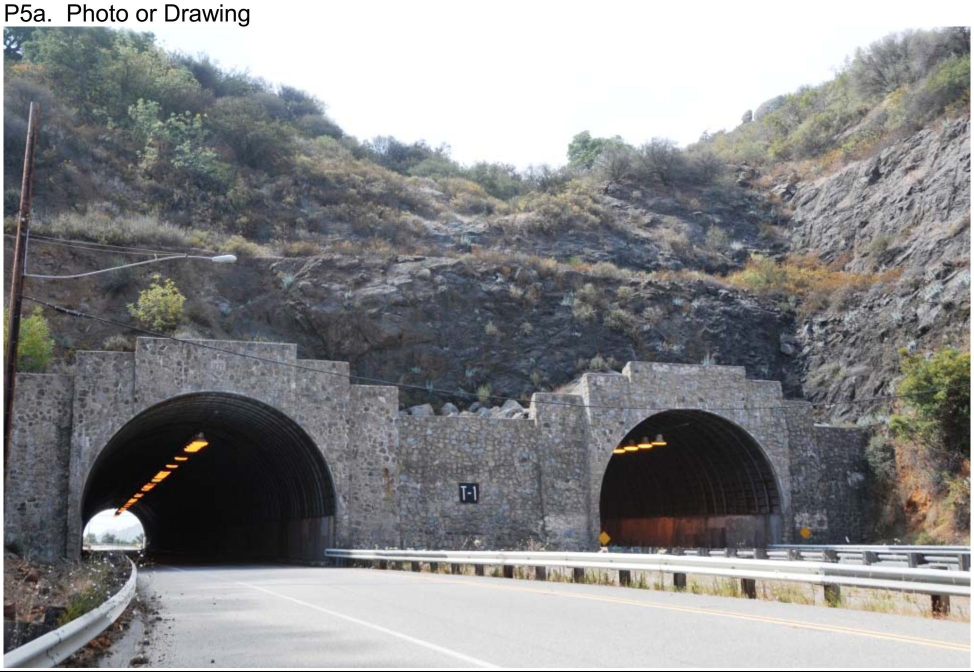
The Kanan Dume Road Northbound Tunnel #1 is located on State Route N9, in Los Angeles County 4.3 miles north of its junction with the Pacific Coast Highway.

***P3a. Description:**

The Kanan Dume Road Northbound Tunnel #1 is located on State Route N9. It is one of two tunnels that carry two lanes of traffic in both directions. The tunnels have steel arches on a concrete footing. The northbound bore is 518 feet in length, carrying two lanes of northbound traffic with five foot curbs. Since the construction of the second bore in 1983, both tunnels have been faced with a stepped stone rubble façade. The face has four steps with the lowest central step visually unifying the portals of the two bores. The northbound bore has a steel rib lining that fits behind a five foot high concrete lining.

***P3b. Resource Attributes:** HP 19. Bridge
***P4. Resources Present:** ☐Building ☒Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5a. Photo or Drawing



P5b. Description of Photo: Entry portal (on right) looking southeast, June 23, 2014

***P6. Date Constructed/Age and Sources:** ☒Historic ☐Prehistoric ☐Both
1974, Caltrans Bridge Files

***P7. Owner and Address:**
Los Angeles County
Road Department
900 S. Fremont Ave.
Alhambra, CA 91803

***P8. Recorded by:**
Helen Blackmore
Dept. of Transportation
111 Grand Ave
Oakland, CA 94612

***P9. Date Recorded:**
November 19, 2014

***P10. Survey Type:**
Intensive

***P11. Report Citation:** Helen Blackmore, Janice Calpo, Lauren Clementino and Noah M. Stewart with contributions from Andy Hope, *Historic Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2015 Update* (California Department of Transportation, Sacramento, 2015).

***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):

Primary #
HRI#

BUILDING, STRUCTURE, AND OBJECT RECORD

*NRHP Status

*Resource Name or # Bridge 53C0899R

B1. Historic Name:
B2. Common Name: Kanan Dume Road Northbound Tunnel #1
B3. Original Use: Tunnel **B4. Present Use:** Tunnel
***B5. Architectural Style:**
***B6. Construction History:**

The Kanan Dume Road Northbound Tunnel #1 was built 1974. The tunnel has undergone minor maintenance since its construction, including: repair of the north approach guardrail (1993); and spalls were patched, gunite areas were completely lined (1995).

***B7. Moved?** ☒No ☐Yes ☐Unknown **Date:** **Original Location:**
***B8. Related Features:**

The northbound bore is one of two bores carrying Kanan Dume Road.

B9a. Architect: **b. Builder:**
***B10. Significance: Theme:** N/A **Area:** N/A
Period of Significance: N/A **Property Type:** N/A **Applicable Criteria:** N/A

The Kanan Dume Road Northbound Tunnel #1 was constructed as one of the many highway improvements carried out during the late 1960s and 1970s. The tunnel is not significant under National Register of Historic Places (National Register) Criterion A or California Register of Historical Resources (California Register) Criterion 1 for its association with the development of the highway network through the region. In addition, the tunnel is not associated with other events that would make it significant under National Register Criterion A and California Register of Criterion 1. It is not associated with a person who made a significant contribution to history at the local, state, or national level, and it is not significant under National Register Criterion B or California Register Criterion 2.

This structure is one of nine tunnels constructed between 1965 and 1974. Prior to this, there were 53 tunnels in the State of California. Tunnel building was not a significant achievement in the state by the time the Kanan Dume Road Northbound Tunnel #1 was constructed in1974. By 1965 the construction of tunnels was in decline as those needed for city improvements or to replace roads skirting around mountains had been constructed to align with current roadways. There were two periods when the majority of tunnels were constructed in California: the first period during the 1930s, specifically 1930-32 and 1935-38, when 23 tunnels were built during the era of public works projects nationally. (See Continuation Sheet, page 3)

B11. Additional Resource Attributes:

***B12. References:** (See Continuation Sheet, page 3)
B13. Remarks:

***B14. Evaluator:**
Helen Blackmore
California Department of Transportation

***Date of Evaluation:**
November 19, 2014

(This space reserved for official comments.)

B10. Significance (continued):

The second major period was during the early 1950s, when ten of the state's roadway tunnels were built. The majority of tunnel construction occurred in Los Angeles, Ventura, and Orange Counties containing 46 percent of tunnels built prior to 1999. Bay Area tunnels in the Counties of Marin, Contra Costa, Alameda, San Francisco and San Mateo account for 37 percent.

Most of the state's tunnels were constructed by boring through hillsides or mountains. However, during the period 1965-1974, bore tunnels accounted for four of the nine tunnels constructed, with cut and cover accounting for the other five. There is a third type of tunnel not seen in this period, constructed of precast concrete tube sections. The bore tunnels are constructed by the excavation of earth and rock. Most have an arched, concrete lined interior; or are partially or unlined; others have light colored tiles making the interior brighter and easier to clean. The use of steel arch with steel rib lining is not unique to the construction of Kanan Dume Road Northbound Tunnel #1. The longest bore tunnel is the Wawona Tunnel in Yosemite National Park measuring 4,236 feet in length; second and third longest tunnels are Bores 1 and 3 of the Caldecott tunnel, Bore 1 measures 3,615 feet and Bore 2, 3,609 feet. Kanan Dume Road Northbound #1, measuring 518 feet in length, was not a significant achievement of civil engineering in 1974. Further, the use of stepped rubble-faced portals to adorn the entrance of the tunnel is not aesthetically significant. Kanan Dume Road Northbound Tunnel #1 is not significant under National Register Criterion C or California Register Criterion 3.

The Kanan Dume Northbound Tunnel #1 was erected as a typical transportation improvement project of the period and the bridge is not associated with events that have made a significant contribution to the broad patterns of history and is not significant under National Register Criterion A or California Register Criterion 1. It is not associated with the lives of significant persons in history and is not significant under National Register Criterion B or California Register Criterion 2. The tunnel does not embody the distinctive characteristics of tunnel construction, does not represent the work of a master and does not possess high artistic value. Further, it does not represent a significant and distinguishable entity whose components may lack individual distinction. The Kanan Dume Road Northbound Tunnel #1 is not significant under National Register Criterion C or California Register Criterion 3. The tunnel has not yielded and is not likely to yield information important in history and is not significant under National Register Criterion D or California Register Criterion 4. Kanan Dume Road Northbound Tunnel #1 (Bridge 53C0899R) is not eligible for inclusion on the National Register or California Register.

***B12. References (continued):**

Caltrans Bridge Inspection Report: April 3, 2013

Feldman, Jessica B. *Caltrans Statewide Historic Bridge Inventory Update – Tunnels*. Revisions by David Lemon and Andrew Hope. (Sacramento, California: California Department of Transportation, Sacramento, 2006).

JRP Historical Consulting Services. *Historic Context Statement – Roadway Bridges of California: 1936-1959.* Prepared for State of California Department of Transportation, n.p., January 2003.

Mead & Hunt. *Historical Resources Evaluation Report – Caltrans Statewide Historic Bridge Inventory: 2010 Update*. (Sacramento, California: California Department of Transportation, Sacramento, 2010).

P5b. Photographs (continued):

Detail entry portal, looking south (on right), June 23, 2014.


Detail of stepped rubble façade of the northbound tunnel, June 23, 2014.

***Resource Name or #** Bridge 53C0899R

***Recorded by:** Helen Blackmore ***Date:** November 19, 2014 ☒ **Continuation** ☐ **Update**

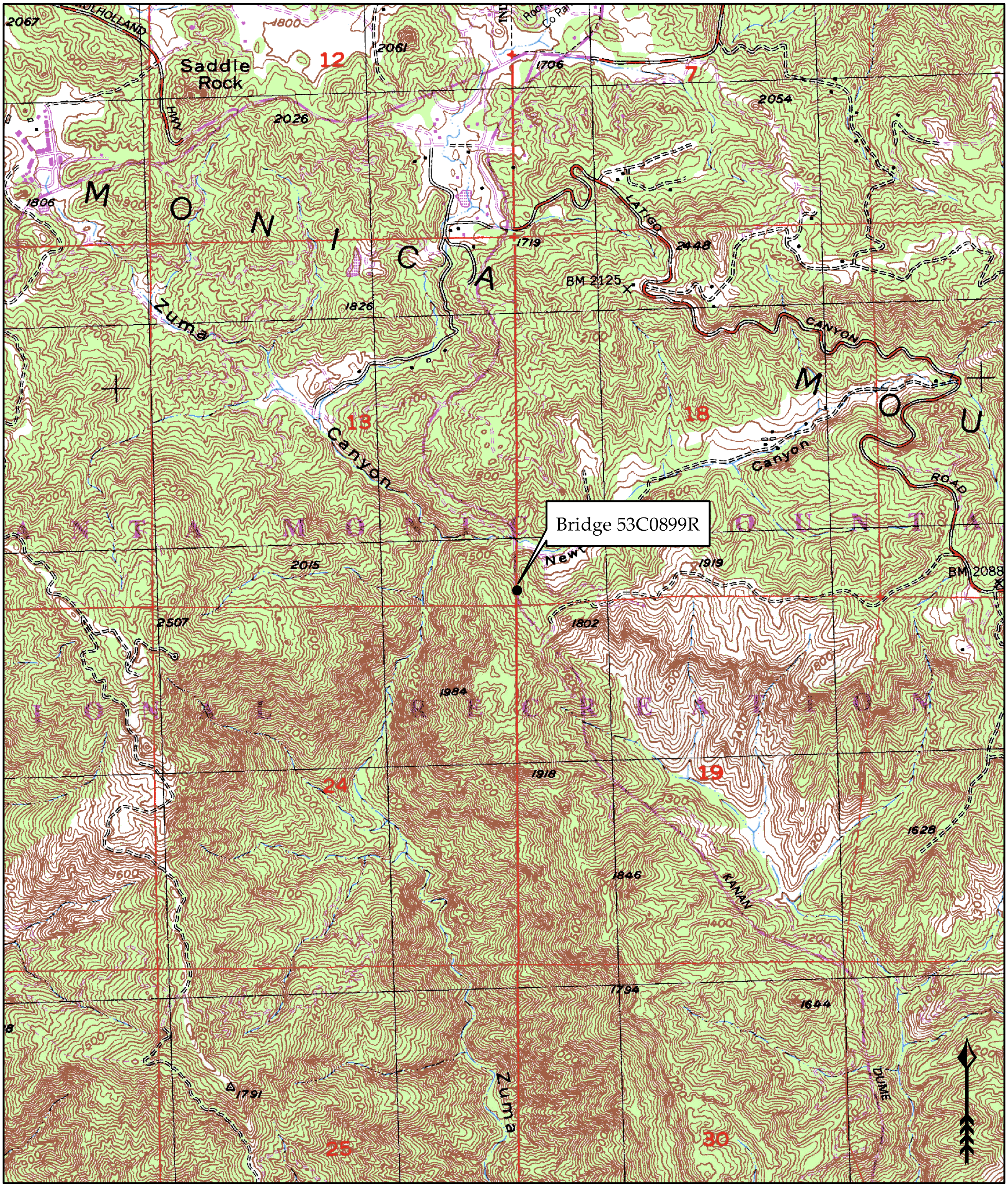
View of tunnel interior looking northwest, June 23, 2014.

View of exit portal (left) looking north, June 23, 2014.

State of California The Resources Agency **DEPARTMENT OF PARKS AND RECREATION**	**Primary #** **HRI#**
LOCATION MAP	**Trinomial**

 ***Resource Name or #:** 53C899R

***Map Name:** Point Dume ***Scale:** 1:24,000 ***Date of Map:** 1995



State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code Reviewer Date

 ***Resource Name or #:** Bridge 53C0900R

P1. Other Identifier: Kanan Dume Road Northbound Tunnel #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:** **T** ; **R** ; **¼ of** **¼ of Sec** **;** M.D. **B.M.**

c. Address: n/a City: Zip:

d. UTM: Zone: 10 ; mE/ mN (G.P.S.)

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

The Kanan Dume Road Northbound Tunnel #2 is located on State Route N9, 0.7 miles north of Mulholland Highway, in Los Angeles County.

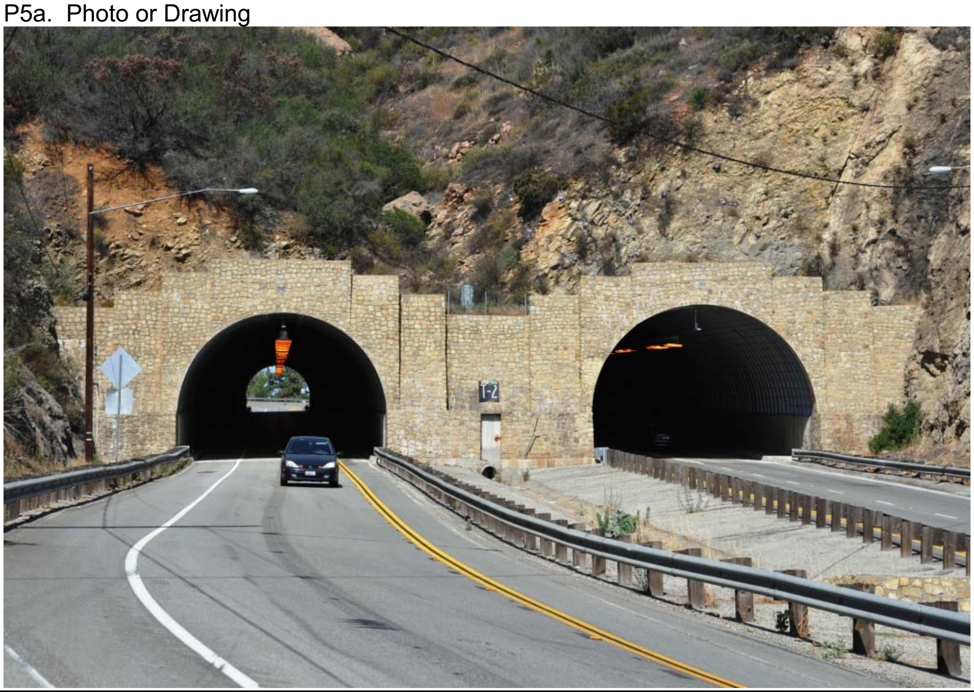
***P3a. Description:**

The Kanan Dume Road Northbound Tunnel #2 bore is located on State Route N9. It is one of two tunnels that carry two lanes of traffic in both directions. The tunnels have steel arches on a concrete footing, with the northbound bore 850 feet in length, carrying two lanes of northbound traffic with five foot curbs. Since the construction of the second bore in 1983, both tunnels have been faced with a stepped stone rubble façade. The face has four steps with the lowest central step visually unifying the portals of the two bores. The bore has a steel rib lining that fits behind a five foot high cement lining.

***P3b. Resource Attributes:** HP 19. Bridge

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

P5a. Photo or Drawing



P5b. Description of Photo:
Entry portal (right), view looking west, June 23, 2014

***P6. Date Constructed/Age and Sources:** ☒Historic ☐Prehistoric ☐Both
1968, Caltrans Bridge Files

***P7. Owner and Address:**
Los Angeles County
Road Department
900 S. Fremont Ave.
Alhambra, CA 91803

***P8. Recorded by:**
Helen Blackmore
Dept. of Transportation
111 Grand Ave
Oakland, CA 94612

***P9. Date Recorded:**
November 19, 2014

***P10. Survey Type:**
Intensive

***P11. Report Citation:** Helen Blackmore, Janice Calpo, Lauren Clementino and Noah M. Stewart with contributions from Andy Hope, *Historic Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2015 Update* (California Department of Transportation, Sacramento, 2015).

***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**

***Resource Name or #** Bridge 53C0900R

B1. Historic Name:
B2. Common Name: Kanan Dume Road Northbound Tunnel #2
B3. Original Use: Tunnel **B4. Present Use:** Tunnel
***B5. Architectural Style:**
***B6. Construction History:**

The Kanan Dume Road Northbound Tunnel #2 was built 1968. In 1976 the guardrail approach was constructed on both approaches. The tunnel has undergone minor maintenance since its construction, including: replacement of lights (1976).

***B7. Moved?** ☒**No** ☐**Yes** ☐**Unknown** **Date:** **Original Location:**
***B8. Related Features:**

The northbound bore is one of two bores carrying Kanan Dume Road.

B9a. Architect: **b. Builder:**
***B10. Significance: Theme:** N/A **Area:** N/A
Period of Significance: N/A **Property Type:** N/A **Applicable Criteria:** N/A

The Kanan Dume Road Northbound Tunnel #2 was constructed as one of the many highway improvements carried out during the late 1960s and 1970s. Bridge 53C09000R is not significant under National Register of Historical Places (National Register) Criterion A or California Register of Historical Resources (California Register) Criterion 1 for its association with the development of the highway network through the region. In addition, the tunnel is not associated with other events that would make it significant under National Register Criterion A or California Register Criterion 1. It is not associated with a person who made a significant contribution to history at the local, state, or national level, and it is not significant under National Register Criterion B or California Register Criterion 2.

This structure is one of nine tunnels constructed between 1965 and 1974. Prior to this, there were 53 tunnels in the State of California. Tunnel building was not a significant achievement in the state by the time the Kanan Dume Road Northbound Tunnel #2 was constructed in 1968. By 1965 the construction of tunnels was in decline as those needed for city improvements or to replace roads skirting around mountains had been constructed to align with current roadways. There were two periods when the majority of tunnels were constructed in California: the first period during the 1930s, specifically 1930-32 and 1935-38, when 23 tunnels were built during the era of national public works projects. (See Continuation Sheet, page 3)

B11. Additional Resource Attributes:

***B12. References:** (See Continuation Sheet, page 3)
B13. Remarks:

***B14. Evaluator:**
Helen Blackmore
California Department of Transportation

***Date of Evaluation:**
November 19, 2014

(This space reserved for official comments.)

B10. Significance (continued):

The second major period was during the early 1950s, when ten of the state's roadway tunnels were built. The majority of tunnel construction occurred in Los Angeles, Ventura, and Orange Counties, containing 46 percent of tunnels built prior to 1999. Bay Area tunnels in the counties of Marin, Contra Costa, Alameda, San Francisco and San Mateo account for 37 percent.

Most of the state's tunnels were constructed by boring through hillsides or mountains. However, during the period 1965-1974, bore tunnels accounted for four of the nine tunnels constructed, with cut and cover accounting for the other five. There is a third type of tunnel not seen in this period, constructed of precast concrete tube sections. The bore tunnels are constructed by the excavation of earth and rock. Most have an arched, concrete lined interior or are partially or unlined. Others have light colored tiles making the interior brighter and easier to clean. The use of steel arch with steel rib lining is not unique to the construction of Kanan Dume Road Northbound Tunnel #2. The longest bore tunnel in the state is the Wawona Tunnel in Yosemite National Park measuring 4,236 feet in length, second and third longest are Bores 1 and 3 of the Caldecott tunnel. Bore 1 measures 3,615 feet and bore 2, 3,609 feet. Thus the Kanan Dume Road Northbound #2 measuring 850 feet in length was not a significant achievement of civil engineering in 1974. Further, the use of stepped rubble to adorn the entrance of the tunnel is not aesthetically significant. Kanan Dume Road Northbound #2 is not significant under National Register Criterion C or California Historic Register Criterion 3.

The Kanan Dume Northbound Tunnel #2 was erected as a typical transportation improvement project of the period and the tunnel is not associated with events that have made a significant contribution to the broad patterns of history and is not significant under National Register Criterion A or California Register Criterion 1. It is not associated with the lives of significant persons in history and is not significant under National Register Criterion B or California Register Criterion 2. Bridge 53C0900R does not embody the distinctive characteristics of tunnel construction, does not represent the work of a master, and does not possess high artistic values. Further, it does not represent a significant and distinguishable entity whose components may lack individual distinction. The Kanan Dume Road Northbound Tunnel #2 is not significant under National Register Criterion C or California Register Criterion 3. The tunnel has not yielded and is not likely to yield information important in history and is not significant under National Register Criterion D or California Register Criterion 4. The Kanan Dume Northbound Tunnel #2 (Bridge 53C0900R) is not eligible for inclusion on the National Register or California Register.

***B12. References (continued):**

Caltrans Bridge Inspection Report: December 7, 2012

Feldman, Jessica B. *Caltrans Statewide Historic Bridge Inventory Update – Tunnels*. Revisions by David Lemon and Andrew Hope. (Sacramento, California: California Department of Transportation, Sacramento, 2006).

JRP Historical Consulting Services. *Historic Context Statement – Roadway Bridges of California: 1936-1959.* Prepared for State of California Department of Transportation, n.p., January 2003.

Mead & Hunt. *Historical Resources Evaluation Report – Caltrans Statewide Historic Bridge Inventory: 2010 Update*. (Sacramento, California: California Department of Transportation, Sacramento, 2010).

P5b. Photographs (continued):

Detail looking east, June 23, 2104

Exit portal (on left), view looking west, June 23, 2014.

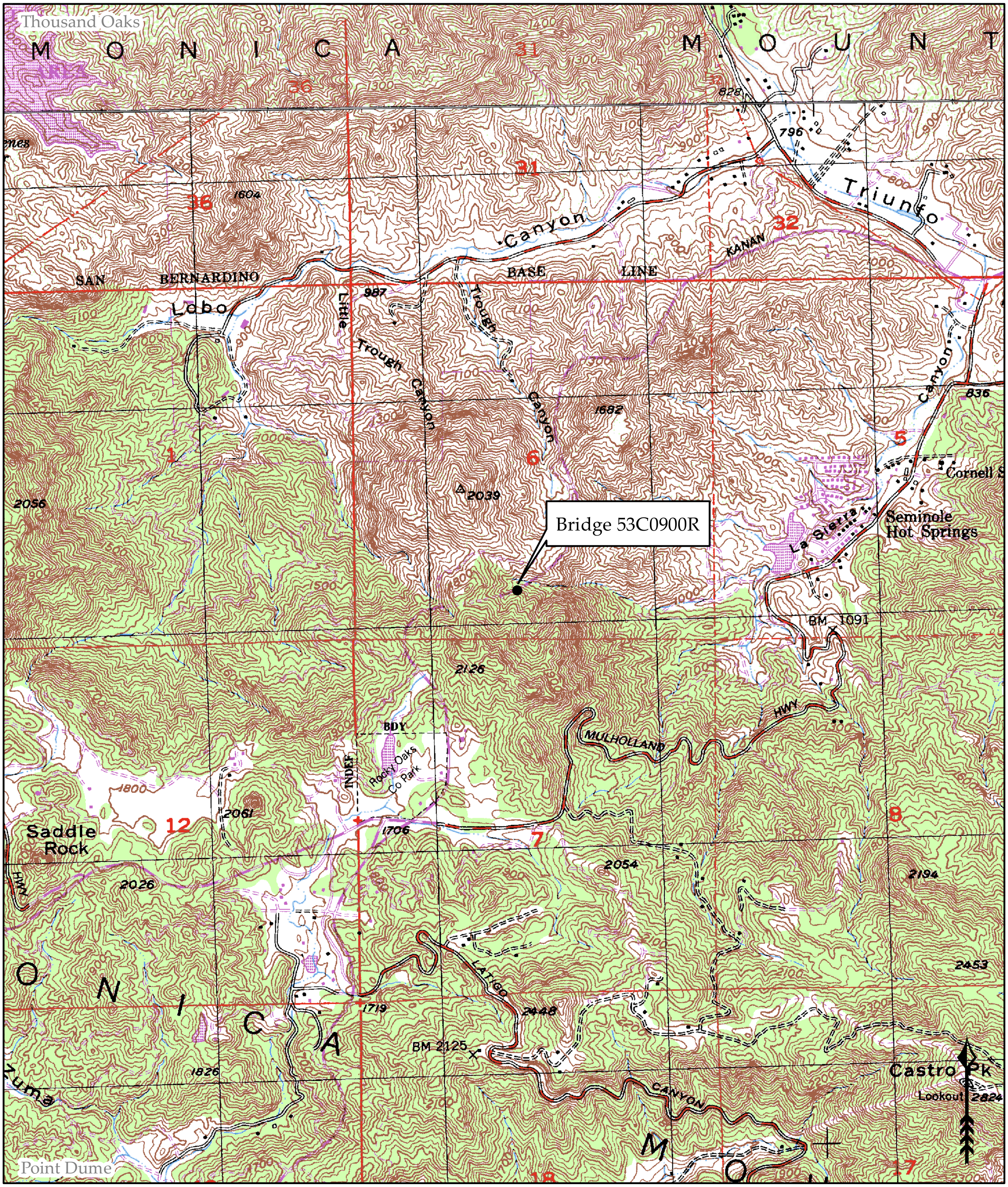
State of California The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary #
HRI#
Trinomial

 ***Resource Name or #:** 53C900R

***Map Name:** Point Dume ***Scale:** 1:24,000 ***Date of Map:** 1995



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

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code Reviewer Date

***Resource Name or #:** Bridge 53C0901R

P1. Other Identifier: Kanan Dume Road Northbound Tunnel #3

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

***b. USGS 7.5' Quad:** Point Dume **Date:** **T** ; **R** ; **¼ of** **¼ of Sec** **;** M.D. **B.M.**
c. Address: n/a City: city Zip:
d. UTM: Zone: 10 ; mE/ mN (G.P.S.)
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Elevation:

The Kanan Dume Road Northbound Tunnel #2 is located on State Route N9, 1.5 miles north of Mulholland Highway, in Los Angeles County.

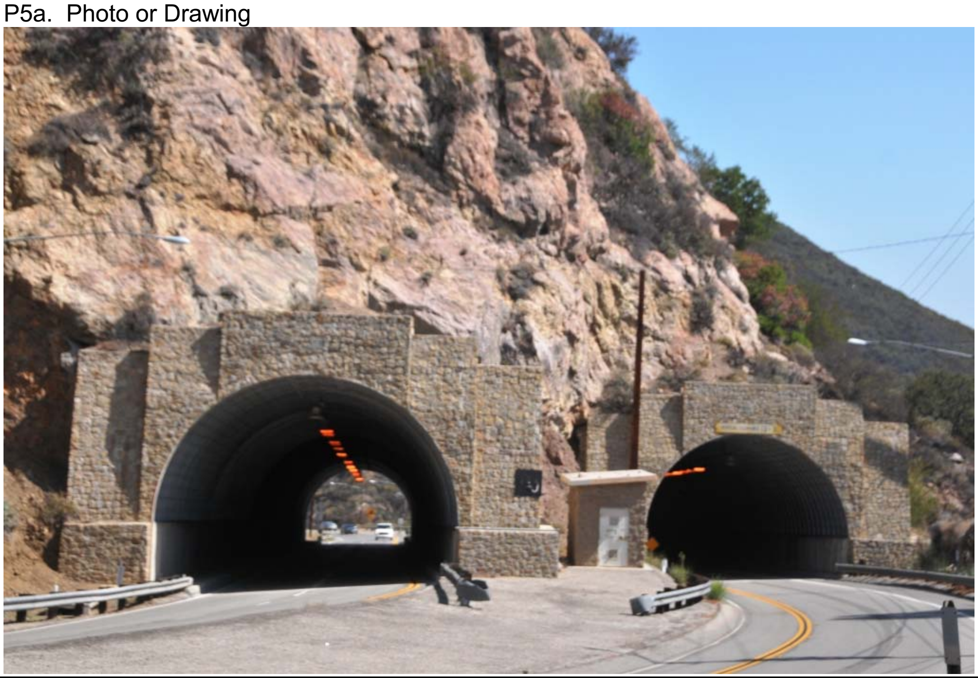
***P3a. Description:**

The Kanan Dume Road Northbound Tunnel #3 bore is located on State Route N9. It is one of two tunnels that carry two lanes of traffic in both directions with steel arches on a concrete footing. The northbound bore is 328 feet in length, carrying two lanes of northbound traffic with five foot curbs. Since the construction of the second bore in 1978, both portals on the north end have been faced with a stepped stone rubble façade. The south portals have been treated the same, except that they are not flush with one another; the northbound portal is recessed back (north) from the southbound portal. The portal face has four steps with the lowest central step visually unifying the portals of the two bores. The northbound bore has a steel rib lining that fits behind a five foot high concrete lining.

***P3b. Resource Attributes:** HP 19. Bridge

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

P5a. Photo or Drawing



P5b. Description of Photo: Entry portal (on right), view looking north, June 23, 2014

***P6. Date Constructed/Age and Sources:** ☒Historic ☐Prehistoric ☐Both
1968, Caltrans Bridge Files

***P7. Owner and Address:**
Los Angeles County
Road Department
900 S. Fremont Ave.
Alhambra, CA 91803

***P8. Recorded by:**
Helen Blackmore
Dept. of Transportation
111 Grand Ave
Oakland, CA 94612

***P9. Date Recorded:** November 18, 2014

***P10. Survey Type:** Intensive

***P11. Report Citation:** Helen Blackmore, Janice Calpo, Lauren Clementino and Noah M. Stewart with contributions from Andy Hope, *Historic Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2015 Update* (California Department of Transportation, Sacramento, 2015).

***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):

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
Primary #
HRI#

BUILDING, STRUCTURE, AND OBJECT RECORD

***NRHP Status**

***Resource Name or #** Bridge 53C0901R

B1. Historic Name:

B2. Common Name: Kanan Dume Road Northbound Tunnel #3

B3. Original Use: Tunnel **B4. Present Use:** Tunnel

***B5. Architectural Style:**

***B6. Construction History:**

The Kanan Dume Road Northbound Tunnel #3 was built in 1968. In 1976 the guardrail approach was constructed on the northwest corner. The tunnel has undergone minor maintenance since its construction, including replacement of lights (1976).

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

***B8. Related Features:**

The northbound bore is one of two bores carrying Kanan Dume Road.

B9a. Architect: **b. Builder:**

***B10. Significance: Theme:** N/A **Area:** N/A

Period of Significance: N/A **Property Type:** N/A **Applicable Criteria:** N/A

The Kanan Dume Road Northbound Tunnel #3 was constructed as one of the many highway improvements carried out during the late 1960s and 1970s. Bridge 53C09001R is not significant under National Register of Historic Places (National Register) Criterion A or California Register of Historical Resources (California Register) Criterion 1 for its association with the development of the highway network through the region. In addition, the tunnel is not associated with other events that would make it significant under National Register Criterion A. It is not associated with a person who made a significant contribution to history at the local, state, or national level, and it is not significant under National Register Criterion B or California Register Criterion 2.

This structure is one of nine tunnels constructed between 1965 and 1974. Prior to this, there were 53 in the State of California. Tunnel building was not a significant achievement in the state by the time the Kanan Dume Road Northbound Tunnel #3 was constructed in 1968. By 1965, the construction of tunnels was in decline as those needed for city improvements or to replace roads skirting around mountains had been constructed to align with current roadways. There were two periods when the majority of tunnels were constructed in California: the first period during the 1930s, specifically 1930-32 and 1935-38, when 23 tunnels were built during the era of national public works projects. (See Continuation Sheet, page 3)

B11. Additional Resource Attributes:

***B12. References:** (See Continuation Sheet, page 3)

B13. Remarks:

***B14. Evaluator:**
Helen Blackmore
California Department of Transportation

***Date of Evaluation:**
November 18, 2014

(This space reserved for official comments.)

***Resource Name or #** Bridge 53C0901R

***Recorded by:** Helen Blackmore ***Date:** November 18, 2014 ☒ **Continuation** ☐ **Update**

B10. Significance (continued):

The second major period was during the early 1950s, when ten of the state's roadway tunnels were built. The majority of tunnel construction occurred in Los Angeles, Ventura, and Orange Counties containing 46 percent of tunnels built prior to 1999. Bay Area tunnels in the counties of Marin, Contra Costa, Alameda, San Francisco and San Mateo account for 37 percent.

Most of the state's tunnels were constructed by boring through hillsides or mountains. However, during the period 1965-1974, bore tunnels accounted for four of the nine tunnels constructed, with cut and cover accounting for the other five. There is a third type of tunnel not seen in this period, constructed of precast concrete tube sections. The bore tunnels are constructed by the excavation of earth and rock. Most have an arched, concrete lined interior or are partially or unlined. Others have light colored tiles making the interior brighter and easier to clean. The use of steel arch with steel rib lining is not unique to the construction of Kanan Dume Road Northbound Tunnel #3. The longest bore tunnel in the state is the Wawona Tunnel in Yosemite National Park measuring 4,236 feet in length, second and third are bores 1 and 3 of the Caldecott tunnel. Bore 1 measures 3,615 feet and Bore 2, 3,609 feet. Thus the Kanan Dume Road Northbound #3, measuring 328 feet in length, was not a significant achievement of civil engineering in 1974. Further, the use of stepped rubble to adorn the entrance of the tunnel is not aesthetically significant. Kanan Dume Road Northbound Tunnel #3, is not significant under National Register Criterion C or California Register Criterion 3.

The Kanan Dume Northbound Tunnel #3 was erected as a typical transportation improvement project of the period and the bridge is not associated with events that have made a significant contribution to the broad patterns of history and is not significant under National Register Criterion A or California Register Criterion 1. It is not associated with the lives of significant persons in history and is not significant under National Register Criterion B or California Register Criterion 2. The tunnel does not embody the distinctive characteristics of tunnel construction, it does not represent the work of a master and does not possess high artistic values. Further, it does not represent a significant and distinguishable entity whose components may lack individual distinction. The Kanan Dume Road Northbound Tunnel #3 is not significant under National Register Criterion C or California Register Criterion 3. The tunnel has not yielded and is not likely to yield information important in history and is not significant under National Register Criterion D or California Register Criterion 4. Bridge 53C0901R is not eligible for inclusion on the National Register or California Register.

***B12. References (continued):**

Caltrans Bridge Inspection Report: December 7, 2012

Feldman, Jessica B. *Caltrans Statewide Historic Bridge Inventory Update – Tunnels*. Revisions by David Lemon and Andrew Hope. (Sacramento, California: California Department of Transportation, Sacramento, 2006).

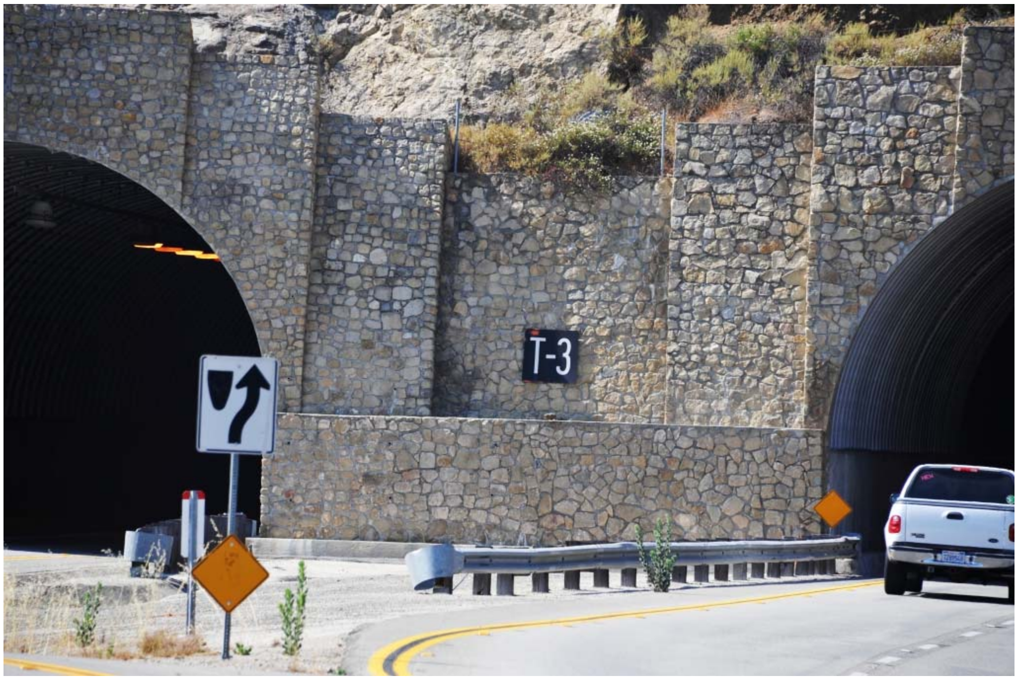
JRP Historical Consulting Services. *Historic Context Statement – Roadway Bridges of California: 1936-1959.* Prepared for State of California Department of Transportation, n.p., January 2003.

Mead & Hunt. *Historical Resources Evaluation Report – Caltrans Statewide Historic Bridge Inventory: 2010 Update*. (Sacramento, California: California Department of Transportation, Sacramento, 2010).

***Resource Name or #** Bridge 53C0901R

***Recorded by:** Helen Blackmore ***Date:** November 18, 2014 ☒ **Continuation** ☐ **Update**

P5b. Photographs (continued):



Detail looking south, June 23, 2104.


Exit portal (on left), view looking south, June 23, 2104.

***Resource Name or #** Bridge 53C0901R

***Recorded by:** Helen Blackmore

***Date:** November 18, 2014 ☒ **Continuation** ☐ **Update**

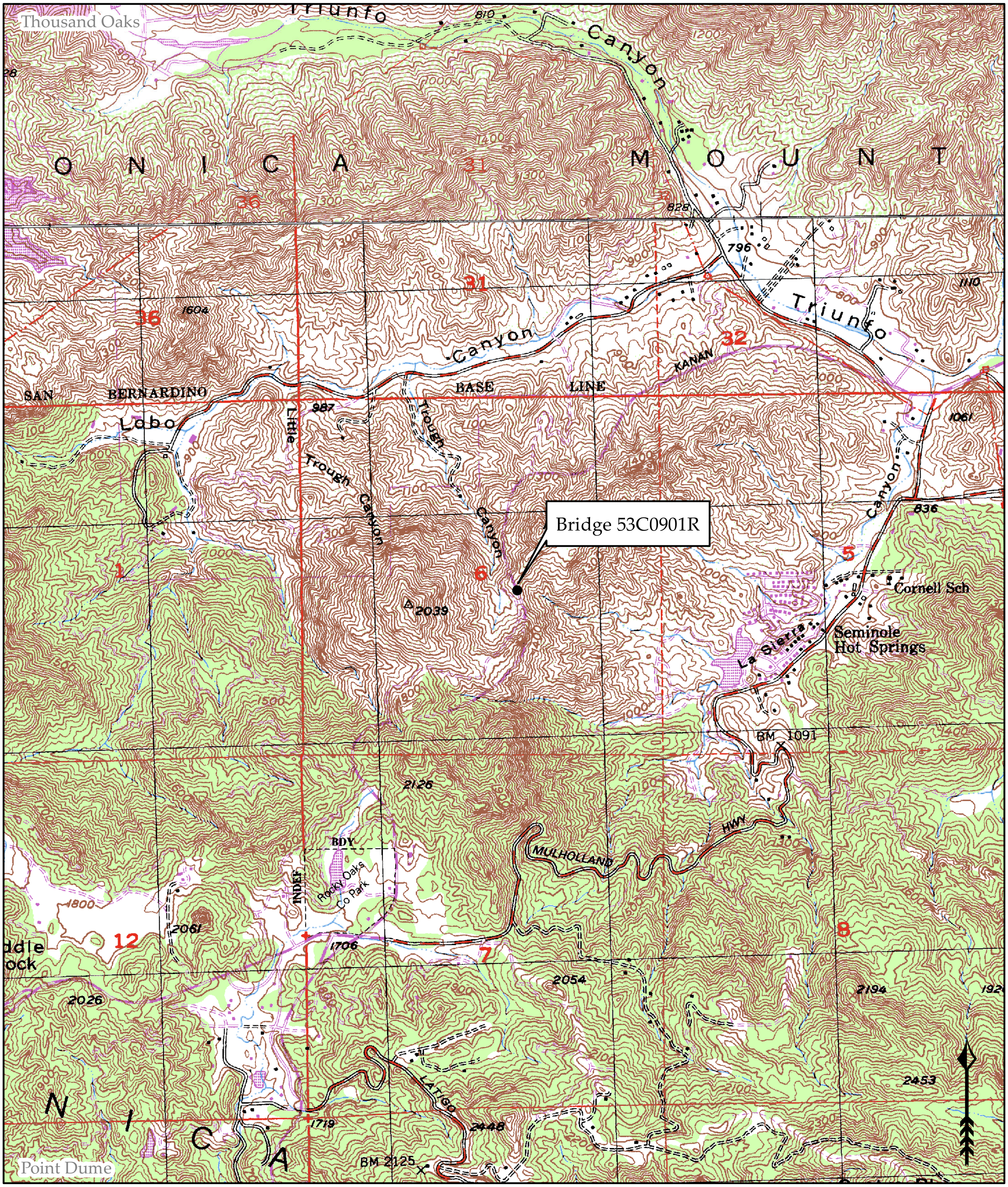
Entry portal (on right), view looking north, June 23, 2014.

State of California The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LOCATION MAP

Primary #
HRI#
Trinomial

  ***Resource Name or #:** 53C901R

***Map Name:** Point Dume ***Scale:** 1:24,000 ***Date of Map:** 1995



This attached DPR for Bridge #53C1560 is the original form submitted to SHPO as part of the Statewide Historic Bridge Inventory Update for bridges constructed between 1965 and 1974. The final SHPO consensus, not reflected in this form, is that status is deferred pending further studies that may be part of future projects; therefore, "Historic significance not determined," or Caltrans Category 4, is the determination as of this writing. Caltrans Structures Maintenance List of Historic Significance (online) will reflect the most current status.

State of California — The Resou
DEPARTMENT OF PARKS AND F
PRIMARY RECORD

 ***Resource Name or #:** Bridge 53C1560

P1. Other Identifier: Friendly Hills Country Club Pedestrian Overcrossing

***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:** La Habra **Date:** **T** ; **R** ; **¼ of** **¼ of Sec** **;** M.D. **B.M.**
c. Address: n/a City: Whittier Zip:
d. UTM: Zone: 10 ; mE/ mN (G.P.S.)
e. Other Locational Data:
Crosses over Lindante Drive approximately 500 feet north of the intersection of Lindante and Youngwood Drives, in Los Angeles County.

***P3a. Description:**
Bridge 53C1560, Friendly Hill Country Club Pedestrian Overcrossing, is a simple laminated redwood timber arch structure resting on reinforced concrete seat abutments. The bridge is a single span 115 feet in length, crossing Lindante Drive, connecting two holes of the Friendly Hill Country Club golf course. The deck is open grate steel and has steel picket handrails.

***P3b. Resource Attributes:** HP 19. Bridge
***P4. Resources Present:** ☐Building ■Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5a. Photo or Drawing

P5b. Description of Photo:
View looking north
June 30, 2014

***P6. Date Constructed/Age and Sources:** ■Historic ☐Prehistoric ☐Both
1970, Caltrans Bridge Records

***P7. Owner and Address:**
City of Whittier
3230 Penn Street
Whittier, CA 90602

***P8. Recorded by:**
Janice Calpo
Dept. of Transportation
1120 N Street
Sacramento, CA 95814

***P9. Date Recorded:**
October 1, 2014

***P10. Survey Type:**
Intensive

***P11. Report Citation:**
Helen Blackmore, Janice Calpo, Lauren Clementino and Noah M. Stewart with contributions from Andy Hope, *Historic Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2015 Update* (California Department of Transportation, Sacramento, 2015).

***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):

Primary #
HRI#

BUILDING, STRUCTURE, AND OBJECT RECORD

***NRHP Status**

***Resource Name or #** Bridge 53C1560

B1. Historic Name:

B2. Common Name: Friendly Hills Country Club Pedestrian Overcrossing

B3. Original Use: Pedestrian Overcrossing **B4. Present Use:** Pedestrian Overcrossing

***B5. Architectural Style:**

***B6. Construction History:**

In 1997, the original plywood deck was replaced with an open grid steel deck. At the same time the laminated wood handrails were replaced with steel picket railings. The south abutment timber cap was also replaced.

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

***B8. Related Features:**

The Friendly Hills Country Club Pedestrian Overcrossing links two parts of the Friendly Hill Country Club golf course.

B9a. 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

Friendly Hills Country Club Pedestrian Overcrossing (53C1560) connects two holes of the Friendly Hill Country Club golf course separated by Lindante Drive. erected as part of the Friendly Hills Country Club, which was a component of the larger Homes of Friendly Hills subdivision started in 1966. The 500 acre/600 unit master planned community was laid out around the golf course with houses on the ridge tops and links in the valleys below. Work on the subdivision started in 1964 and was completed by 1971. The development was the brainchild of Walter R. Gayner of Republic Homes, a major Southern California developer. The subdivision was envisioned as a throwback to the area's rural past. Much of the mature landscape was retained, including large stands of decades old eucalyptus. Each home site was one-half acre and buyers could choose between one and two story as well as split level designs, all with three car garages, in a variety of architectural styles: "Spanish, provincial, modern and California Ranch." Plans for the community were produced by Jennings, Halderman and Hood, Engineers and Planners, based in Santa Ana, California. The golf course was designed by James "Jimmy" Hines, a professional golfer turned course designer. It is unclear who designed the bridge itself.

Laminated wood arch structures are relatively unique in highway bridge applications and are most often used on private roads and pedestrian overcrossings. The main superstructure elements are comprised of glued laminate wood beams (generally referred to as glulam beams), (See Continuation Sheet 3).

B11. Additional Resource Attributes: (List attributes and codes)

***B12. References:** See Continuation Sheet 3

B13. Remarks:

***B14. Evaluator:**
Noah M. Stewart
California Department of Transportation

***Date of Evaluation:** October 1, 2014

(This space reserved for official comments.)

B10. Significance (continued):
which are plant manufactured from thin pieces of lumber bonded together with waterproof structural adhesive and treated with preservatives after fabrication. They are most commonly used for spans of 20 to 80 feet, but can achieve spans over 200 feet.

Glulam has been used as a structural material in building applications in Europe since the early 1900's and in the United States since the mid 1930s. It was only after World War II, with the advent of waterproof adhesives and sealants, that the technology could be used for structures exposed to the elements. The first glulam arch bridges for vehicles were constructed in Oregon in the late 1940's. The Loon Lake Bridge, a three-hinge glulam arch structure, erected near Roseburg, Oregon in 1948, was one of the earliest examples of this bridge type in the United States. Since their introduction glulam wood structures have become the most common type of timber bridge in country.

Bridge 53C1560 is a unique example of bridge construction for the period. Glulam wooden bridges are an uncommon bridge type in California and are mainly used for private roads and pedestrian overcrossings. The most typical examples of laminated wooden bridges in the state are girder and truss structures. Glulam wooden arch bridges are much less common; Friendly Hills Country Club Pedestrian Overcrossing is the only such bridge identified in the Caltrans bridge database. There are likely other bridges of the type in California that are not inspected by the state because they are located on private roads and as a result are not included in the Caltrans bridge database.

Friendly Hills Country Club Pedestrian Overcrossing is not significant under National Register of Historic Places (National Register) Criterion A or California Register of Historical Resources (California Register) Criterion 1 for its association with the suburban or roadway development of the Whittier area. In addition, the bridge is not associated with other events that would make it significant under National Register Criterion A or California Register Criterion 1. It is not associated with persons who made a significant contribution to history at the local, state, or national level. It is not significant under National Register Criterion B or California Register Criterion 2.

The fabrication, transportation, and erection of glulam arch bridges was not a significant achievement by the time Bridge 53C1560 was constructed in 1970. Although the Friendly Hills Country Club Pedestrian Overcrossing is a rare bridge type, it is a late example of a type uncommon in the state. It does not represent a significant innovation in bridge engineering or display a significant variation of its type. It does not display decorative features or significant architectural details. Friendly Hills Country Club Pedestrian Overcrossing is not important as a work of civil engineering or for aesthetic value and is not significant under National Register Criterion C or California Register Criterion 3. The bridge has not yielded and is not likely to yield information important in history and is not significant under National Register Criterion D or California Register Criterion 4. Bridge 53C1560 is not eligible for inclusion on the National Register or California Register.

B12. References (continued):
"Come Up to the Top: to the Homes of Friendly Hills," Los Angeles Times, 17 October 1965, I9.

"Friendly Hills Opens Today in Whittier," Los Angeles Times, 17 October 1965, I24.

"Republic Takes Over Whittier Tract," Los Angeles Times, 15 January 1967, I4.

Ritter, Michael A. and Jeffrey J. Morrell, *Timber Bridges: Design, Construction, Inspection, and Maintenance*. Washington, DC: United States Department of Agriculture, Forest Service, 1990.

"500 Acres Purchased for Project," *Los Angeles Times*, 4 April 1965, II7.

***Resource Name or #** Bridge 53C1560

***Recorded by:** Janice Calpo

***Date:** October 1, 2014 ■ Continuation ☐ Update

P5b. Photographs (continued):

Detail, abutment and underside of deck, looking southwest.

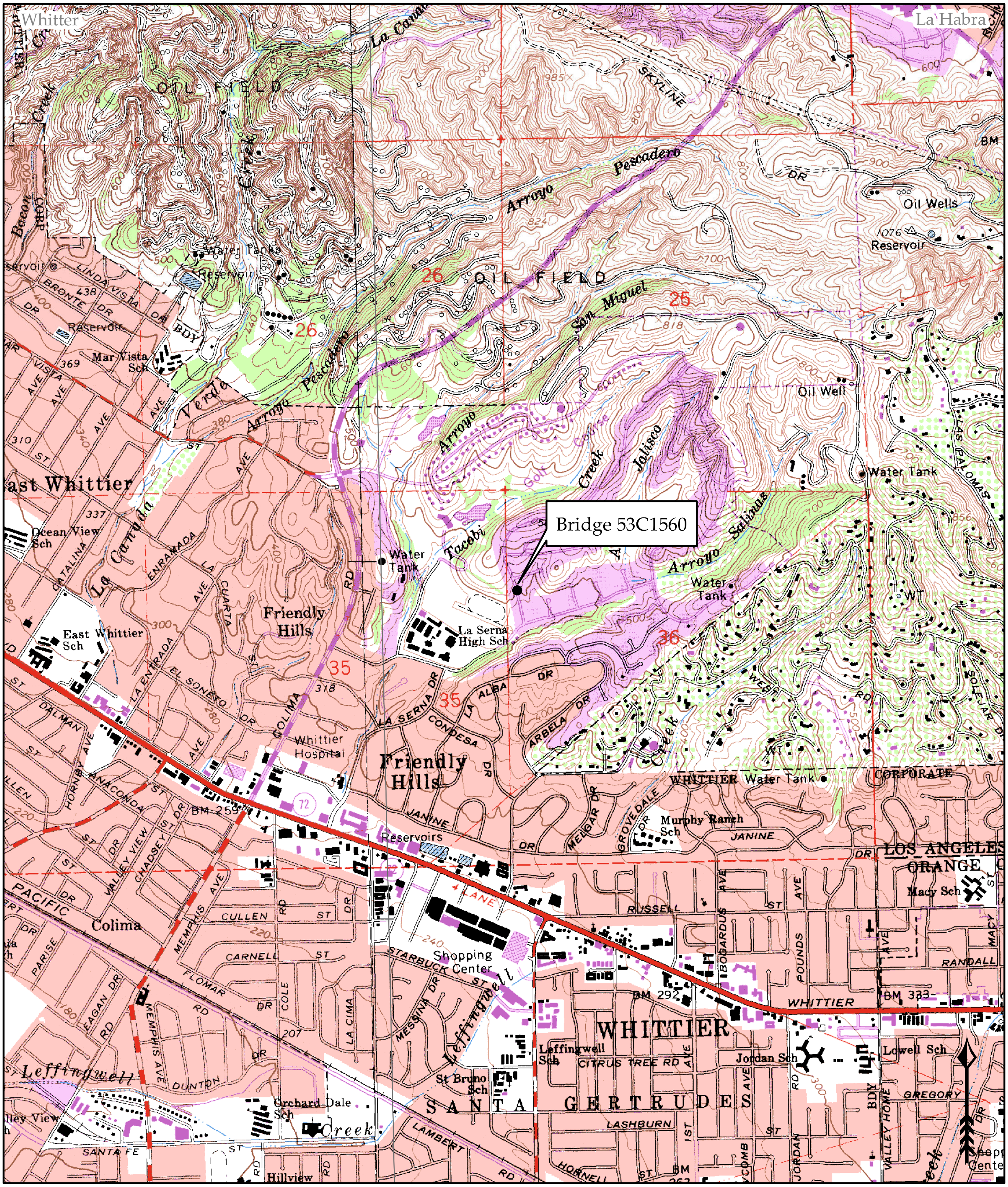
State of California The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary #
HRI#
Trinomial

***Resource Name or #:** 53C1560

***Map Name:** La Habra ***Scale:** 1:24,000 ***Date of Map:** 1974



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

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code | Reviewer | Date

 ***Resource Name or #:** Bridge 54C0192

P1. Other Identifier: Live Oak Creek Bridge

***P2. Location:** ☐ **Not for Publication** ■ **Unrestricted** ***a. County:** San Bernardino
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad:** Yucaipa **Date:** **T** ; **R** ; **¼ of** **¼ of Sec** ; M.D. **B.M.**
c. Address: n/a City: Redlands Zip:
d. UTM: Zone: 10 ; mE/ mN (G.P.S.)
e. Other Locational Data: Elevation:
On live Oak Canyon Road, 2 miles southwesterly of Interstate 10 in San Bernardino County.

***P3a. Description:**
The Live Oak Bridge (54C0192) is a steel Warren deck truss structure that crosses Live Oak Creek. It is 144.6 feet in total length with a single span of 140 feet and a total width of 29 feet. It has a cast-in-place, reinforced concrete deck on rolled steel stringers on rolled steel floor beams and is founded on two closed end and backfilled reinforced concrete cantilever abutments supported on concrete piles. The two lane bridge has metal guard railings with steel posts and chain link fencing bolted to each side of the bridge deck. There are no pedestrian walkways.

***P3b. Resource Attributes:** HP 19. Bridge
***P4. Resources Present:** ☐Building ■Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5a. Photo or Drawing

P5b. Description of Photo:
View looking southwest
June 27, 2014
***P6. Date Constructed/Age and Sources:** ■Historic ☐Prehistoric ☐Both
1970, Caltrans Bridge Files
***P7. Owner and Address:**
City of Redlands
35 Cajon Street
Redlands, CA 92373
***P8. Recorded by:**
Janice Calpo
Dept. of Transportation
1120 N Street
Sacramento, CA 95814
***P9. Date Recorded:**
October 1, 2014
***P10. Survey Type:**
Intensive

P11. Report Citation:
Helen Blackmore, Janice Calpo, Lauren Clementino and Noah M. Stewart with contributions from Andy Hope, *Historic Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2015 Update* (Sacramento, California: California Department of Transportation, Sacramento, 2015).

***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** 6Z

***Resource Name or #** Bridge 54C0192

B1. Historic Name:
B2. Common Name: Live Oak Creek Bridge
B3. Original Use: Bridge **B4. Present Use:** Bridge
***B5. Architectural Style:** Steel Warren deck truss
***B6. Construction History:**

The bridge was constructed in 1970 by the County of San Bernardino. Ownership of the bridge was transferred to the City of Redlands in 1992. The bridge has no major alterations and has only sustained minor maintenance and repair.

***B7. Moved?** ■No ☐Yes ☐Unknown **Date:** **Original Location:**
***B8. Related Features:**

None.

B9a. Architect: Moffat & Nichol, Engineers **b. Builder:** Unknown
***B10. Significance: Theme:** N/A **Area:** N/A
Period of Significance: N/A **Property Type:** N/A **Applicable Criteria:** N/A

The Live Oak Creek Bridge was constructed by the County of San Bernardino Road Department as part of a local transportation improvement project. The Live Oak Creek Bridge is not significant under National Register of Historic Places (National Register) Criterion A or California Register of Historical Resources (California Register) Criterion 1 for its association with the development of the highway network through the region. In addition, the bridge is not associated with other events that would make it significant under National Register Criterion A or California Register Criterion 1. It is not associated with a person who made a significant contribution to history at the local, state, or national level, and it is not significant under National Register Criterion B or California Register Criterion 2.

This structure is one of six metal truss bridges constructed between 1965 and 1974. There are 315 metal truss bridges in California (excluding moveable and steel arch bridges, many of which are also trusses). This bridge type was once common in California, but the number of new metal truss bridges constructed in the state dropped off substantially after the 1950s. As postwar traffic demands required wider roads, steel bridges proved less cost effective and the majority of new bridges were constructed in concrete. By the early 1970s, only 10% of all new bridges in the state were erected in steel. The fabrication, transportation, and erection of metal truss bridges was not a significant achievement in the state by the time the Live Oak Creek Bridge was constructed in 1970. (See Continuation Sheet 3)

B11. Additional Resource Attributes:

***B12. References:**

See Continuation Sheet 3

B13. Remarks:

***B14. Evaluator:**

Lauren Clementino
California Department of Transportation

***Date of Evaluation:**

November 17, 2014

(This space reserved for official comments.)

B10. Significance (continued):

The Live Oak Creek Bridge is a modified Warren deck truss with a single span of 140 feet. The Warren truss was one of the most common truss types built in California. California and many other states had developed standard designs for truss bridges by the 1920s and the Warren truss was commonly used along California highways in the 1920s and 1930s. The majority of Warren trusses constructed in California were pony trusses; later design variations with vertical supports and polygonal top chords were utilized in the 1940s through the 1950s. The typical range of highway Warren truss bridge span lengths is between 40 and 500 feet. The overall length of 144.6 feet and main span of 140 feet in length for the Live Oak Creek Bridge are not notable when compared to other Warren truss bridges in California. The Live Oak Creek Bridge was constructed after the Warren was already an established truss type in California and does not represent a significant innovation in bridge engineering or display a significant variation within an established bridge type. The Live Oak Creek Bridge does not display any decorative features or significant architectural details. The Live Oak Creek Bridge is not significant as a work of civil engineering or for aesthetic value and is not significant under National Register Criterion C or California Register Criterion 3.

The Live Oak Creek Bridge was erected as a typical transportation improvement project of the period and the bridge is not associated with events that have made a significant contribution to the broad patterns of history and is not significant under National Register Criterion A or California Register Criterion 1. It is not associated with the lives of significant persons in history and is not significant under National Register Criterion B or California Register Criterion 2. The Live Oak Creek Bridge is not a distinctive example of metal truss bridge construction, does not represent the work of a master, and does not possess high artistic values. Further, it does not represent a significant and distinguishable entity whose components may lack individual distinction. The Live Oak Creek Bridge is not significant under National Register Criterion C or California Register Criterion 3. The bridge has not yielded and is not likely to yield information important in history and is not significant under National Register Criterion D or California Register Criterion 4. The Live Oak Creek Bridge is not eligible for inclusion on the National Register or California Register.

B12. References (continued):

County of San Bernardino Road Department. As-Built Plans for Construction on Live Oak Canyon Road at Live Oak Creek Yucaipa Area. July 6, 1973.

Department of Transportation. Bridge Inspection Reports for Bridge Number 54C0192. January 13, 1972 to April 8, 2014.

JRP Historical Consulting. *Caltrans Historic Bridges Inventory Update: Metal Truss, Movable, and Steel Arch Bridges*. Prepared for the California Department of Transportation Environmental Program, n.p., September 2004 (revised).

JRP Historical Consulting Services. *Historic Context Statement - Roadway Bridges of California: 1936-1959*. Prepared for State of California Department of Transportation, n.p., January 2003.

***Recorded by:** Janice Calpo ***Date:** October 1, 2014 ■ Continuation □ Update

P5b. Photographs (continued):

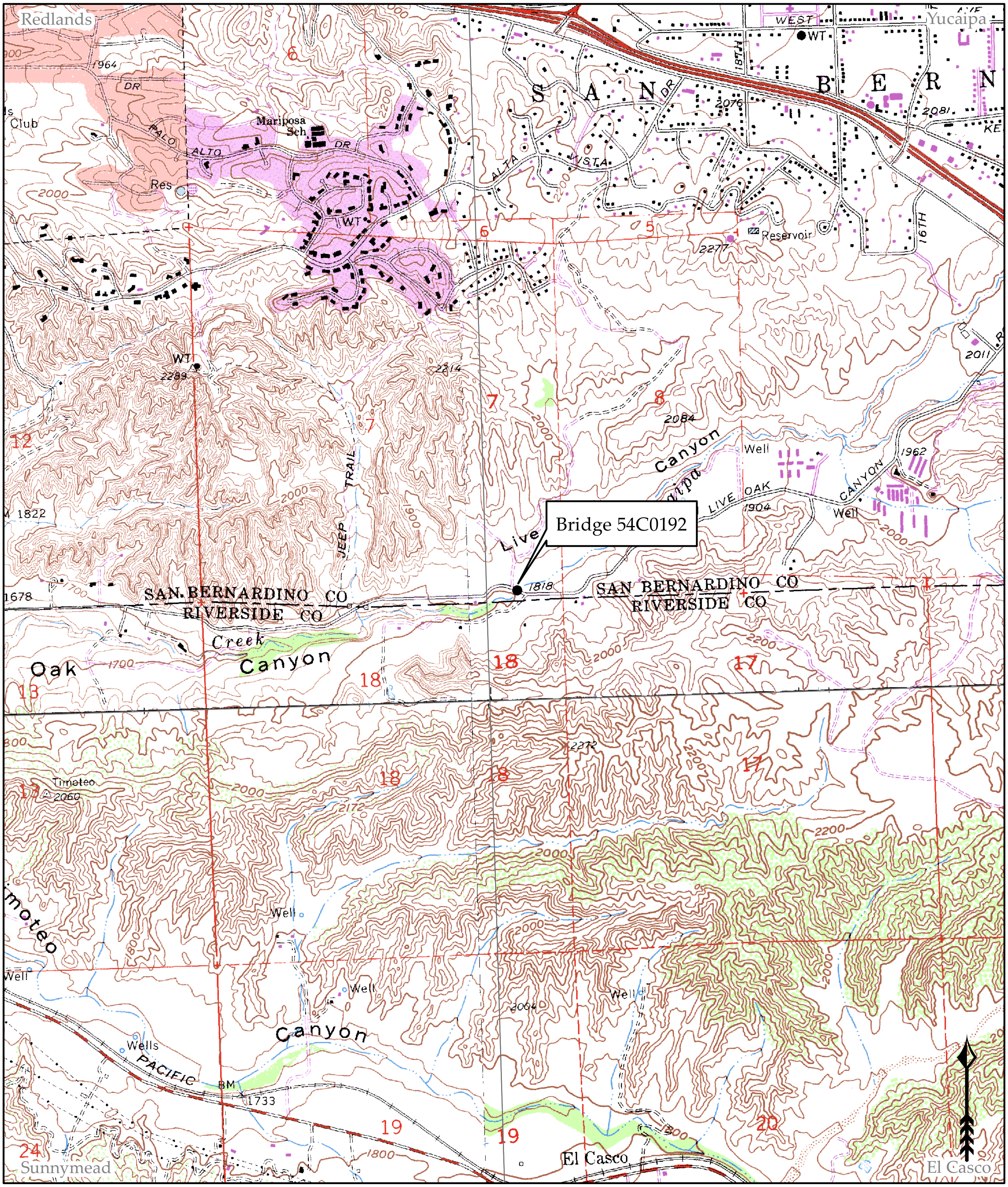
View, looking north (June 27, 2014)

View, looking south (June 27, 2014)

State of California The Resources Agency **DEPARTMENT OF PARKS AND RECREATION**	**Primary #** **HRI#**
# LOCATION MAP	**Trinomial**

 ***Resource Name or #:** 54C0192

***Map Name:** Yucaipa ***Scale:** 1:24,000 ***Date of Map:** 1967



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

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code Reviewer Date

 ***Resource Name or #** Bridge 57 0619

P1. Other Identifier: Adams Avenue Overcrossing (Roscoe E. Hazard Memorial Bridge)

***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:** La Jolla **Date:** **T** ; **R** ; **¼ of** **¼ of Sec** **;** M.D. **B.M.**
c. Address: n/a City: San Diego Zip:
d. UTM: Zone: 10 ; mE/ mN (G.P.S.)
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Elevation:
The Adams Avenue Overcrossing is located in San Diego County over Interstate 805, at post mile 16.99.

***P3a. Description:**
Bridge 57 0619 is a concrete box girder structure, 439 feet in length, that carries Adams Avenue over Interstate 805. The bridge has three spans with the central, main span measuring 218 feet in length. The continuous reinforced concrete three span box girder (six cells) has reinforced concrete open end diaphragm abutments, with inclined tapered piers, all supported on spread footings. The tapered piers and hunches speak to the modern design of this bridge and soften its relation to the road; by locating the footing further back from the highway than it would have been with a straight bent. Further, the arched concrete box girder visually raises the roadway adding to the impression of space under the bridge. The two lane bridge has type 6 railing, with sidewalks on both sides of Adams Avenue.

***P3b. Resource Attributes:** HP 19. Bridge
***P4. Resources Present:** ☐Building ☒Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5a. Photo or Drawing

P5b. Description of Photo:
View looking northeast
July 3, 2014

***P6. Date Constructed/Age and Sources:** ☒Historic ☐Prehistoric ☐Both
1970, Caltrans Bridge Files

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

***P8. Recorded by:**
Janice Calpo
Dept. of Transportation
1120 N Street
Sacramento, CA 95814

***P9. Date Recorded:**
October 1, 2014

***P10. Survey Type:**
Intensive

***P11. Report Citation:**
Helen Blackmore, Janice Calpo, Lauren Clementino and Noah M. Stewart with contributions from Andy Hope, *Historic Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2015 Update* (California Department of Transportation, Sacramento, 2015).

***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):

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

Primary #
HRI#

BUILDING, STRUCTURE, AND OBJECT RECORD

*NRHP Status

*Resource Name or # Bridge 57 0619

B1. Historic Name:
B2. Common Name: Adams Avenue Overcrossing (Roscoe E. Hazard Memorial Bridge)
B3. Original Use: Bridge **B4. Present Use:** Bridge
***B5. Architectural Style:** Modern
***B6. Construction History:**

The overcrossing was built in 1970. The bridge has undergone minor maintenance since its construction, including planing the approaches (1976), placement of a retaining wall in front of the west pier (1984), sidewalks at the west end were leveled (1986), south bound roadway under the bridge widened (1986), sidewalks at end approach replaced (1992), westerly AC approach repaired (1996), and AC approaches resurfaced (2002).

***B7. Moved?** ☒No ☐Yes ☐Unknown **Date:** **Original Location:**
***B8. Related Features:**

The overcrossing is located on Adams Avenue and crosses the Interstate 805.

B9a. Architect: E. F. Van Zee, Bridge Department, California Division of Highways b. **Builder:**

***B10. Significance: Theme:** Engineering **Area:** State
Period of Significance: 1970 **Property Type:** Structure **Applicable Criteria:** C

The Adams Avenue Overcrossing was constructed by Hazard & Maxwell Construction, as part of Jack Cramer's I-805 project in the north Clairemont area. It was one of the many highway improvements carried out during the late 1960s and early 1970s. It is not significant under National Register of Historic Places (National Register) Criterion A or California Register of Historical Resources (California Register) Criteria 1 for its association with the development of the highway network through the region. In addition, the bridge is not associated with other events that would make it significant under National Register of Criterion A or California Register Criterion 1.

The overcrossing is associated with Roscoe E. Hazard whose construction company built the overcrossing, and it was dedicated to him in 1976, upon his death. Roscoe E. Hazard Sr. founded the Hazard Construction Company in the early 1920s, with its headquarters in downtown San Diego. Hazard Construction completed the construction of many southern Californian interchanges, including work on the I-8 at I-805, I-8 at I-15, I-8 at Route 125 and I-8 at Ardath Road. The company has diversified in the last decade and is now a full-service general engineering contracting firm with a focus on private sector work. (See Continuation Sheet, page 3)

B11. Additional Resource Attributes:

***B12. References:** (See Continuation Sheet, page 4)

B13. Remarks:

***B14. Evaluator:**
Helen Blackmore
California Department of Transportation

***Date of Evaluation:**
October 1, 2014

(This space reserved for official comments.)

B10. Significance (continued):

Roscoe E. Hazard was also a community philanthropist. He opened the R. E. Hazard Museum in Mission Valley as a site for his vast collection of frontier history artifacts. He also gifted objects from his personal collection to the Old Town State Park in 1971, as well as Seeley Stables. The bridge however, is not directly associated with this influential man, as he did not have a personal hand in building it. At the point of its construction he was in retirement with the company being operated by his son, and thus is not significant under National Register Criterion B or California Register Criterion 2.

The first concrete box girder bridge in California was erected in 1938. 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. And 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 built between 1965 and 1974.

Bridge 57 0619 is not a typical example of concrete box construction for the period. While the fabrication, transportation, and erection of large concrete box bridges was not a significant achievement in the state by the time the Adams Avenue Overcrossing was constructed in 1970, its design is unique. The Adams Avenue Overcrossing does stand out with regard to modern bridge aesthetics, and its use of an arched concrete box system with tapered columns that are positioned on the diagonal. The overcrossing was sponsored in Portland Cement Association design competition by Adams Avenue School, which caused it to win the Bridge Award for Engineering Excellence in 1970 for its unique form. While the form of the bridge has retained a high level of integrity in design, materials, feeling, location, association, workmanship and setting, new railings were added detracting somewhat from the overall material integrity of the bridge. However, this minor alteration in material integrity is not substantial enough to negate the bridge from the National Register. Therefore bridge 57 0619 is significant under National Register Criterion C at the state level and thus, California Register Criterion 3.

Bridge 57 0619 was erected as a typical transportation improvement project of the period and the bridge is not associated with events that have made a significant contribution to the broad patterns of history and is not significant under National Register Criterion A or California Register Criterion 1. The overcrossing is not directly associated with the life of a significant person in history, and therefore is not significant under National Register Criterion B or California Register Criterion 2. Bridge 57 0619 does embody the distinctive characteristics of concrete box bridge construction and does possess high Modern aesthetic value. Further, it does not represent a significant and distinguishable entity whose components may lack individual distinction. The Adams Avenue Overcrossing is significant under National Register Criterion C and California Register Criterion 3 for its modern engineering aesthetic. The bridge has not yielded and is not likely to yield information important in history and is not significant under National Register Criterion D or California Register Criterion 4. The bridge retains all aspects of integrity: design, material, feeling, location, association, workmanship and setting. Bridge 57 0619 is eligible for inclusion on the National Register and California Register.

***B12. References:**

Alice, Matthew. "What Happened to Roscoe Hazard's Scary Photos?" *San Diego Reader,* Nov. 7, 2002. Accessed from http://www.sandiegoreader.com/news/2002/nov/07/what-happened-roscoe-hazards-scary-photos/ on November 4, 2014.

"An Architect Concentrates on the Aesthetics in Bridge Design." *Pacific Builder & Engineer* 64, no. 4 (Apr 1958): 86-7.

California Division of Highways. "As Built Plans – Bridge 57 0619." 1967.

Hazard Construction Co. "About Us, A Part of San Diego's History," Accessed from http://www.hazardconstruction.com/index.html/ on November 4, 2014.

Hope, Andrew. *Caltrans Statewide Historic Bridge Inventory Update – Survey and Evaluation of Common Bridge Types.* California Department of Transport, November 2004.

JRP Historical Consulting Services. *Historic Context Statement – Roadway Bridges of California: 1936-1959.* Prepared for State of California Department of Transportation, n.p., January 2003.

Myra L. Frank & Associates. *Caltrans' Historic Bridge Inventory Update: Concrete Box Girder Bridges*. n.p., August 2003. With revisions made by Andrew Hope, California Department of Transportation, April 2004.

Reading, James E. & Schlaefli, Andrew P. *History of San Diego Highway Development.*70th Anniversary Edition, San Diego Highway Development Association, 2006.

Stuzinski, S. H. "Some Examples of Box Girder Bridges in California." *The Structural Engineer* 8, no. 41 (August 1963): 253-257.

***Resource Name or #** Bridge 57 0619

***Recorded by:** Janice Calpo

***Date:** October 1, 2014 ☒ **Continuation** ☐ **Update**

P5b. Photographs (continued):

View looking southwest, July 3, 2014

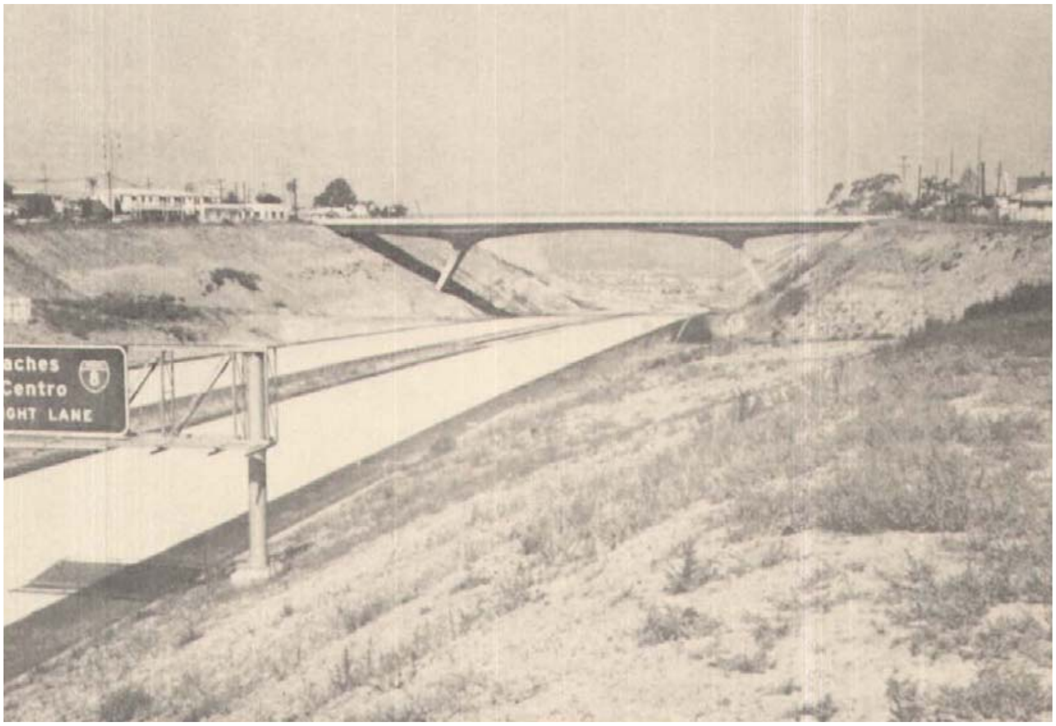
Detail looking northeast, July 3, 2014

***Resource Name or #** Bridge 57 0619

***Recorded by:** Janice Calpo ***Date:** October 1, 2014 ☒ Continuation ☐ Update

Detail on the southeast end of bridge railing, July 3, 2014

Railings on Adams Avenue looking east, July 3, 2014



Adams Avenue Overcrossing, California Department of Transportation, from *San Diego Highway Development*

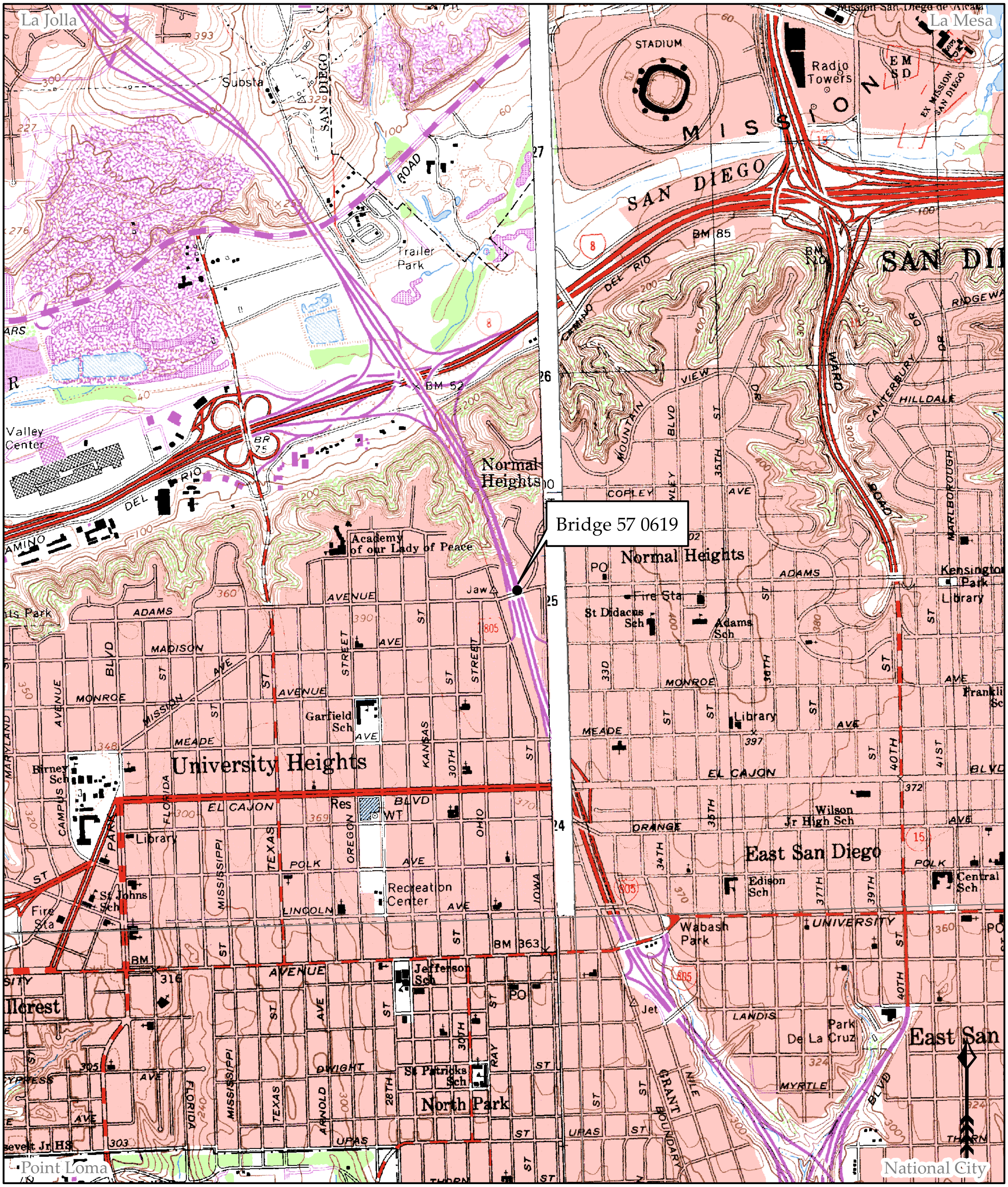
State of California The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary #
HRI#
Trinomial

***Resource Name or #:** 57 0619

***Map Name:** La Jolla ***Scale:** 1:24,000 ***Date of Map:** 1967



PRIMARY RECORD

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

 *Resource Name or # Bridge 57 0676

P1. Other Identifier: Moray Ridge 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:** La Jolla **Date:** **T** ; **R** ; **¼ of** **¼ of Sec** ; M.D. **B.M.**
c. Address: n/a City: San Diego Zip:
d. UTM: Zone: 10 ; mE/ mN (G.P.S.)
e. Other Locational Data: Elevation:
The Murray Ridge Road Overcrossing is located in San Diego County over Interstate 805 at post mile 18.89.

***P3a. Description:**
The overcrossing carries the four lanes of local Murray Ridge Road over Interstate 805. Bridge 57 0676 is a concrete box- girder structure, 350 feet in length, at a skew of 18 degrees. The bridge has four spans with the main span measuring 115 feet in length. It has a continuous four span reinforced concrete box girder (nine cell) on reinforced concrete open end diaphragm abutments and wide, squat "Y" shaped bents, all on spread footings. The vertical bridge profile is narrow tapering towards the bents. The three lane bridge has type 12 railing protecting the sidewalks on either side of the roadway.

***P3b. Resource Attributes:** HP 19. Bridge
***P4. Resources Present:** ☐Building ☒Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5a. Photo or Drawing

P5b. Description of Photo:
View looking east
July 2, 2014
***P6. Date Constructed/Age and Sources:** ☒Historic ☐Prehistoric ☐Both
1972, Caltrans Bridge Files
***P7. Owner and Address:**
State of California
Dept. of Transportation
1120 N Street
Sacramento, CA 95814
***P8. Recorded by:**
Janice Calpo
Dept. of Transportation
1120 N Street
Sacramento, CA 95814
***P9. Date Recorded:**
October 1, 2014
***P10. Survey Type:**
Intensive
***P11. Report Citation:**
Helen Blackmore, Janice Calpo, Lauren Clementino and Noah M. Stewart with contributions from Andy Hope, *Historic Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2015 Update* (California Department of Transportation, Sacramento, 2015).

***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):

Primary #
HRI#

BUILDING, STRUCTURE, AND OBJECT RECORD

*NRHP Status

*Resource Name or # Bridge 57 0676

B1. Historic Name:
B2. Common Name: **Murray Ridge Road Overcrossing**
B3. Original Use: Bridge **B4. Present Use:** Bridge
***B5. Architectural Style:** Modern
***B6. Construction History:**
The overcrossing was built in 1972. The east AC approach was re-surfaced in 1984.

***B7. Moved?** ☒No ☐Yes ☐Unknown **Date:** **Original Location:**
***B8. Related Features:**
The bridge is located on local Murray Ridge Road.

B9a. Architect: A. M. McGillivray, Bridge Department, California Division of Highways
b. Builder: Hazard, Maxwell & Matich
***B10. Significance: Theme:** N/A **Area:** N/A
Period of Significance: N/A **Property Type:** N/A **Applicable Criteria:** N/A

The Murray Ridge Road Bridge was constructed by Hazard, Maxwell & Matich. It was one of the many highway improvements carried out during the late 1960s and early 1970s. It is not significant under National Register of Historic Places (National Register) Criterion A or California Register of Historical Resources (California Register) Criterion 1 for its association with the development of the highway network through the region. In addition, the overcrossing is not associated with other events that would make it significant under National Register Criterion A or California Register Criterion 1. It is not associated with a person who made a significant contribution to history at the local, state, or national level, and it is not significant under National Register Criterion B or California Register Criterion 2.

The first concrete box girder bridge in California was erected in 1938. 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 bridges in California. More than 3,200 of the type built between 1965 and 1974. (See Continuation Sheet, page 3)

B11. Additional Resource Attributes:
***B12. References:** (See Continuation Sheet, page 3)
B13. Remarks:

***B14. Evaluator:**
Helen Blackmore
California Department of Transportation

***Date of Evaluation:**
October 1, 2014

(This space reserved for official comments.)

***Resource Name or #** Bridge 57 0676
***Recorded by:** Janice Calpo ***Date:** October 1, 2014 ☒ **Continuation** ☐ **Update**

B10. Significance (continued):

Bridge 57 0676 is a fairly typical example of concrete box construction for the period. The fabrication, transportation, and erection of large concrete box girder bridges was not a significant achievement in the state by the time the Murray Ridge Road Overcrossing was constructed in 1972. It is not one of the larger examples of this type and it does not incorporate a significantly long main span. The Mulholland Drive Overcrossing (53 0739) in Los Angeles held title to the longest main span of 235 feet in length from its initial construction in 1959 until 1974 when the Interstate 8 bridge over the Pine Valley Creek (57 0692L/R) achieved a 450 foot main span. The Murray Ridge Road Overcrossing, with a total length of 350 feet and main span of 115 feet in length, is not significant as a work of civil engineering. Its construction is typical for the 1960s and 1970s and is not a significant work of civil engineering nor does it stand out with regard to modern bridge aesthetics. Bridge 57 0676 is not significant under National Register Criterion C or California Register Criterion 3.

The overcrossing has not yielded and is not likely to yield information important in history and is not significant under National Register Criterion D or California Register Criterion 4.

Bridge 57-0676 was erected as a typical transportation improvement project of the period and the overcrossing is not associated with events that have made a significant contribution to the broad patterns of history and is not significant under National Register Criterion A or California Register Criterion 1. It is not associated with the lives of significant persons in history and is not significant under National Register Criterion B or California Register Criterion 2. Bridge 57-0676 does not embody the distinctive characteristics of concrete box bridge construction, it does not represent the work of a master, and does not possess high modern aesthetic value. Further, it does not represent a significant and distinguishable entity whose components may lack individual distinction. The Murray Ridge Road Overcrossing is not significant under National Register Criterion C or California Register Criterion 3. The bridge has not yielded and is not likely to yield information important in history and is not significant under National Register Criterion D or California Register Criterion 4. Bridge 57 0676 is not eligible for inclusion on the National Register or California Register.

***B12. References:**

"An Architect Concentrates on the Aesthetics in Bridge Design." *Pacific Builder & Engineer* 64, no. 4 (Apr 1958): 86-7.

California Division of Highways. "As Built Plans – Bridge 57 0676." 1969.

Caltrans Bridge Inspection Report: November 27, 2012.

Hope, Andrew. *Caltrans Statewide Historic Bridge Inventory Update – Survey and Evaluation of Common Bridge Types.* California Department of Transport, November 2004.

JRP Historical Consulting Services. *Historic Context Statement – Roadway Bridges of California: 1936-1959.* Prepared for State of California Department of Transportation, n.p., January 2003.

Myra L. Frank & Associates. *Caltrans' Historic Bridge Inventory Update: Concrete Box Girder Bridges*. n.p., August 2003. With revisions made by Andrew Hope, California Department of Transportation, April 2004.

Stuzinski, S. H. "Some Examples of Box Girder Bridges in California." *The Structural Engineer* 8, no. 41 (August 1963): 253-257.

***Resource Name or #** Bridge 57 0676

***Recorded by:** Janice Calpo ***Date:** October 1, 2014 ☒ **Continuation** ☐ **Update**

P5b. Photographs (continued):

Roadway looking north, July 2, 2014

Central bent looking east, July 2, 2014

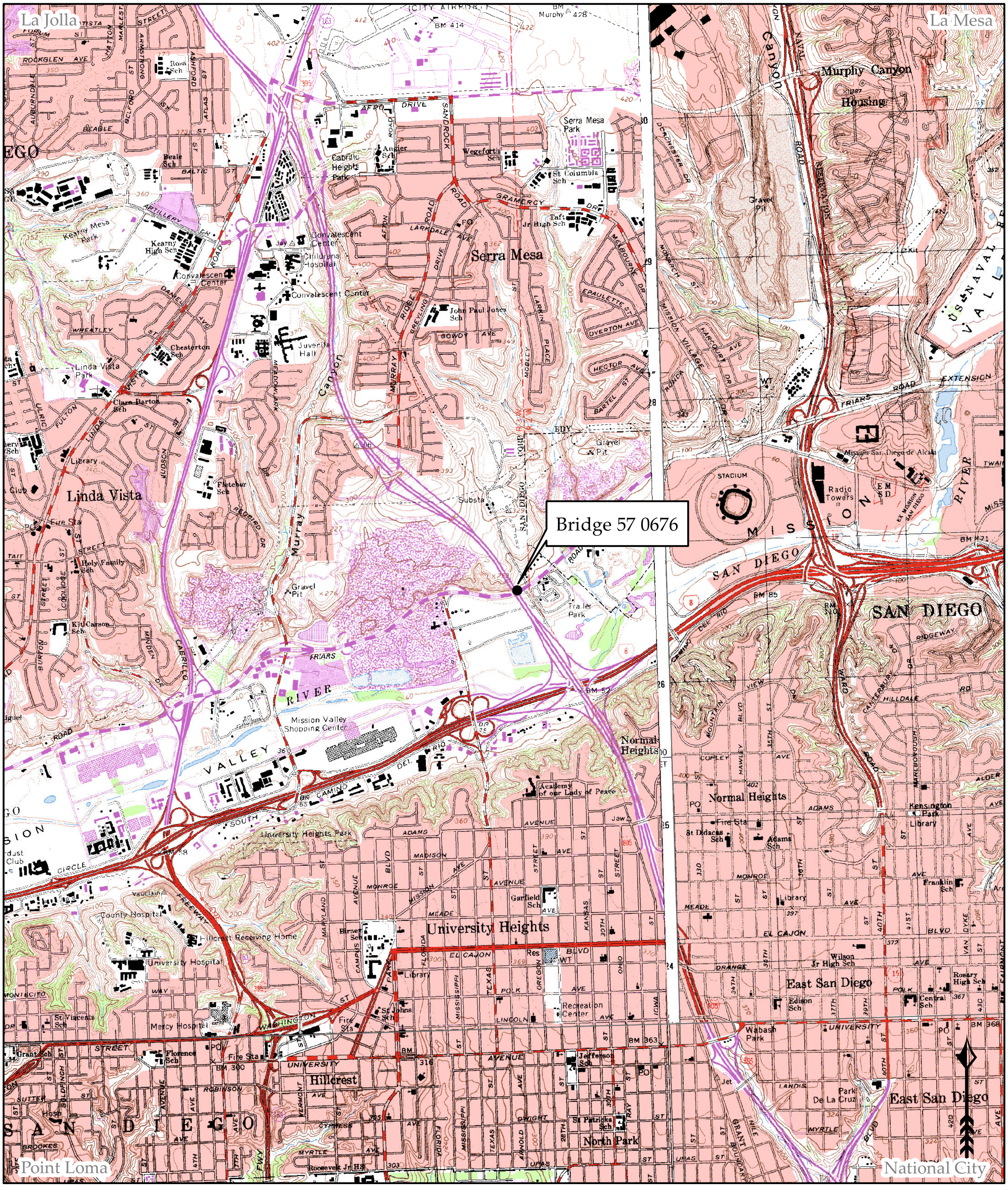
State of California The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary #
HRI#
Trinomial

 ***Resource Name or #:** 57 0676

***Map Name:** La Jolla ***Scale:** 1:24,000 ***Date of Map:** 1967



State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code Reviewer Date

 *Resource Name or # Bridge 57 0678

P1. Other Identifier: Kearny Villa 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:** La Jolla **Date:** **T** ; **R** ; **¼ of** **¼ of Sec** ; M.D. **B.M.**
c. Address: n/a City: San Diego Zip:
d. UTM: Zone: 10 ; mE/ mN (G.P.S.)
e. Other Locational Data: Elevation:
The Kearny Villa Overcrossing is located in San Diego County over Interstate 805 at postmile 20.23 in San Diego.

***P3a. Description:**
The overcrossing carries four lanes of the Kearny Villa Road over the State Route 805 in San Diego. Bridge 57 0678 is a concrete box-girder structure, 437 feet in length, at a skew of 35 degrees. The bridge has four spans with the main span measuring 130 feet in length. The continuous four span reinforced concrete (10 cell) box girder is on reinforced concrete open end diaphragm abutments with narrow "Y" bents, all on spread footings except bent # 3 on 65 ton 10BP57 piles. The concrete box tapers downwards, giving the overcrossing a slender profile, narrowing the visual impact. The four lane bridge has Types 9 and 11 railing along the sidewalk on the north side of the road and Type 12 railing on the south side.

***P3b. Resource Attributes:** HP 19. Bridge
***P4. Resources Present:** ☐Building ☒Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5a. Photo or Drawing

P5b. Description of Photo:
View looking southeast
July 3, 2014
***P6. Date Constructed/Age and Sources:** ☒Historic ☐Prehistoric ☐Both
1972, Caltrans Bridge Files
***P7. Owner and Address:**
State of California
Dept. of Transportation
1120 N Street
Sacramento, CA 95814
***P8. Recorded by:**
Janice Calpo
Dept. of Transportation
1120 N Street
Sacramento, CA 95814
***P9. Date Recorded:**
October 1, 2014
***P10. Survey Type:**
Intensive
***P11. Report Citation:**
Helen Blackmore, Janice Calpo, Lauren Clementino and Noah M. Stewart with contributions from Andy Hope, *Historic Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2015 Update* (California Department of Transportation, Sacramento, 2015).

***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):

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
Primary #
HRI#

BUILDING, STRUCTURE, AND OBJECT RECORD

*NRHP Status

*Resource Name or # Bridge 57 0678

B1. Historic Name:
B2. Common Name: Kearny Villa Road Overcrossing
B3. Original Use: Bridge B4. Present Use: Bridge
***B5. Architectural Style:** Modern
***B6. Construction History:**
The overcrossing was built in 1972.

***B7. Moved?** ☒No ☐Yes ☐Unknown **Date:** **Original Location:**
***B8. Related Features:**
The overcrossing is located on Kearny Villa Road over Interstate 805.

B9a. Architect: A. McGilvray, Bridge Department, California Div. Highways **b. Builder:** Hazard, Maxwell & Matich
***B10. Significance: Theme:** N/A **Area:** N/A
Period of Significance: N/A **Property Type:** N/A **Applicable Criteria:** N/A

The Kearny Villa Road Overcrossing was constructed by Hazard, Maxwell & Matich. It was one of the many highway improvements carried out during the late 1960s and early 1970s. It is not significant under National Register of Historic Places (National Register) Criterion A or California Register of Historical Resources (California Register) Criterion 1 for its association with the development of the highway network through the region. In addition, the overcrossing is not associated with other events that would make it significant under National Register Criterion A or California Register Criterion 1. It is not associated with a person who made a significant contribution to history at the local, state, or national level, and it is not significant under National Register Criterion B or California Register Criterion 2.

The first concrete box girder bridge in California was erected in 1938. 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. And 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 bridges in California. More than 3,200 of the type were built between 1965 and 1974. (See Continuation Sheet, page 3)

B11. Additional Resource Attributes:

***B12. References:** (See Continuation Sheet, page 3)
B13. Remarks:

***B14. Evaluator:**
Helen Blackmore
California Department of Transportation

***Date of Evaluation:**
October 1, 2014

(This space reserved for official comments.)

B10. Significance (continued):

Bridge 57 0678 is a fairly typical example of concrete box construction for the period. The fabrication, transportation, and erection of large concrete box bridges was not a significant achievement in the state by the time the Kearny Villa Road Overcrossing was constructed in 1972. It is not one of the larger examples of this type and it does not incorporate a significantly long main span. The Mulholland Drive Overcrossing (53 0739) in Los Angeles held title to the longest main span of 235 feet in length from its initial construction in 1959 until 1974 when the Interstate 8 bridge over the Pine Valley Creek (57 0692L/R) achieved a 450 foot main span. The Kearny Villa Road Overcrossing with a total length of 437 feet and main span of 130 feet in length is not significant as a work of civil engineering. Its construction is typical for the 1960s and 1970s and is not a significant work of civil engineering nor does it stand out with regard to modern bridge aesthetics. Bridge 57 0678 is not significant under National Register Criterion C or California Register Criterion 3.

Bridge 57 0678 was erected as a typical transportation improvement project of the period and the bridge is not associated with events that have made a significant contribution to the broad patterns of history and is not significant under National Register Criterion A or California Register Criterion 1. It is not associated with the lives of significant persons in history and is not significant under National Register Criterion B or California Register Criterion 2. Bridge 57 0678 does not embody the distinctive characteristics of a concrete box bridge construction, it does not represent the work of a master, and does not possess high Modern aesthetic value. Further, it does not represent a significant and distinguishable entity whose components may lack individual distinction. The Kearny Villa Road Overcrossing is not significant under National Register Criterion C or California Register Criterion 3. The bridge has not yielded and is not likely to yield information important in history and is not significant under National Register Criterion D or California Register Criterion 4. Bridge 57 0678 is not eligible for inclusion on the National Register or California Register.

***B12. References:**

"An Architect Concentrates on the Aesthetics in Bridge Design." *Pacific Builder & Engineer* 64, no. 4 (Apr 1958): 86-7.

California Division of Highways. "As Built Plans – Bridge 57 0678." 1969.

Caltrans Bridge Inspection Report: November 27, 2012.

Hope, Andrew. *Caltrans Statewide Historic Bridge Inventory Update – Survey and Evaluation of Common Bridge Types.* California Department of Transport, November 2004.

JRP Historical Consulting Services. *Historic Context Statement – Roadway Bridges of California: 1936-1959.* Prepared for State of California Department of Transportation, n.p., January 2003.

Myra L. Frank & Associates. *Caltrans' Historic Bridge Inventory Update: Concrete Box Girder Bridges*. n.p., August 2003. With revisions made by Andrew Hope, California Department of Transportation, April 2004.

Stuzinski, S. H. "Some Examples of Box Girder Bridges in California." *The Structural Engineer* 8, no. 41 (August 1963): 253-257.

***Resource Name or #** Bridge 57 0678

***Recorded by:** Janice Calpo

***Date:** October 1, 2014 ☒ **Continuation** ☐ **Update**

P5b. Photographs (continued):

View looking south


View looking north

***Resource Name or #** Bridge 57 0678

***Recorded by:** Janice Calpo

***Date:** October 1, 2014 ☒ **Continuation** ☐ **Update**

Roadway looking northeast

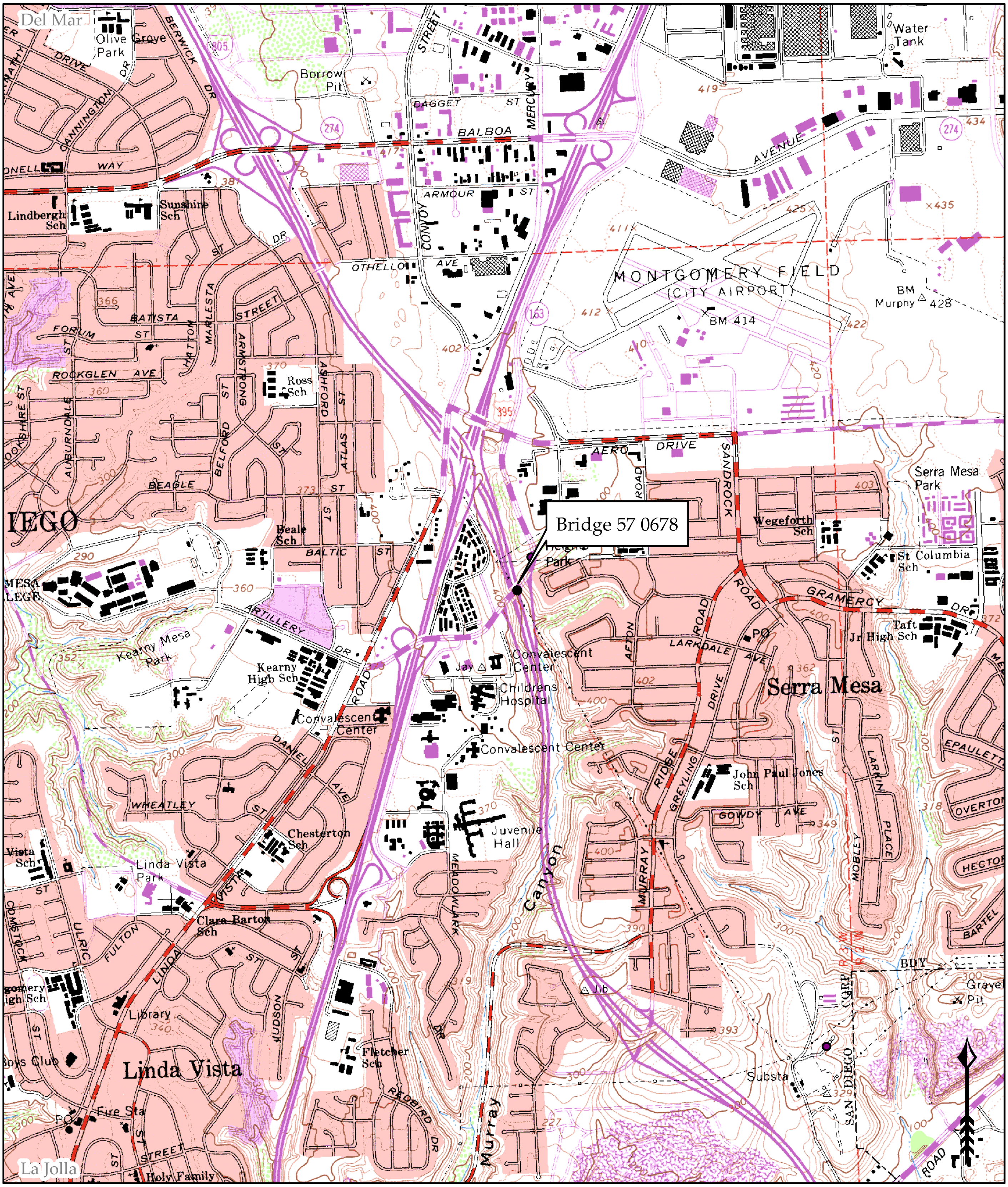
State of California The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary #
HRI#
Trinomial

***Resource Name or #:** 57 0678

***Map Name:** La Jolla ***Scale:** 1:24,000 ***Date of Map:** 1967



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

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code **Reviewer** **Date**

 ***Resource Name or #:** Bridge 57 0762

P1. Other Identifier: Eastgate Mall 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:** Del Mar **Date:** **T** ; **R** ; **¼ of** **¼ of Sec** **;** M.D. **B.M.**
c. Address: n/a City: San Diego Zip:
d. UTM: Zone: 10 ; mE/ mN (G.P.S.)
e. Other Locational Data: Elevation:
The Eastgate Mall Overcrossing is located in San Diego County over Interstate 805, at postmile 26.34 in San Diego.

***P3a. Description:**
The Eastgate Mall Overcrossing, formally the Miramar Road Bridge crosses the Interstate 805 in San Diego. Bridge 57 0762 is a concrete box girder structure, 560 feet in length. The bridge has five spans with the main span measuring 180 feet in length. The central three spans are cast-in-place pre-stressed box girder (five cells) on reinforced concrete with open end, seated abutments. The bent columns are a concrete box arch, shaped like the horns of a long horn steer, and are seated on cast-in-drilled-hole piles on a spread footing. The unique lines give the bridge a modern and elegant feeling, with the horns of the columns tapering seemingly to a point carrying the roadway to the embankments. The two lane bridge has Type 9-11 and 11 railing with a pedestrian sidewalk on the north side of the bridge.

***P3b. Resource Attributes:** HP 19. Bridge
***P4. Resources Present:** ☐Building ☒Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5a. Photo or Drawing

P5b. Description of Photo:
View looking northwest,
July 2, 2014

***P6. Date Constructed/Age and Sources:** ☒Historic ☐Prehistoric ☐Both
1971, Caltrans Bridge Files

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

***P8. Recorded by:**
Janice Calpo
Dept. of Transportation
1120 N Street
Sacramento, CA 95814

***P9. Date Recorded:**
October 1, 2014

***P10. Survey Type:** Intensive

***P11. Report Citation:**
Helen Blackmore, Janice Calpo, Lauren Clementino and Noah M. Stewart with contributions from Andy Hope, *Historic Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2015 Update* (California Department of Transportation, Sacramento, 2015).

***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):

Primary #
HRI#

BUILDING, STRUCTURE, AND OBJECT RECORD

*NRHP Status

***Resource Name or #** Bridge 57 0762

B1. Historic Name:
B2. Common Name: Eastgate Mall Overcrossing
B3. Original Use: Bridge **B4. Present Use:** Bridge
***B5. Architectural Style:** Modern
***B6. Construction History:**

The bridge was constructed in 1971, with only minor maintenance including: cleaning, repairing/replacing seals and backfilling erosion around the abutments (1981), repairing the spalls on the northerly rail (1996).

***B7. Moved?** ☒No ☐Yes ☐Unknown **Date:** **Original Location:**
***B8. Related Features:**

The bridge is located on Eastgate Mall Road, which was formally known as Old Miramar Road. The bridge crosses over the I-805 in San Diego.

B9a. Architect: E. R. Van Zee, Bridge Dept. California Div. Highways **b. Builder:** O. G. Sensone (Construction Co.)
***B10. Significance:** **Theme:** Engineering **Area:** State
Period of Significance: 1971 **Property Type:** Bridge **Applicable Criteria:** C

The Eastgate Mall Overcrossing, formally the Old Miramar Road Bridge, was constructed by O. G. Sensone as part of the development of Interstate 805 by Jack Cramer, the construction of which was completed by 1972. It was one of the many highway improvements carried out during the late 1960s and early 1970s. The overcrossing is not significant under National Register of Historic Places (National Register) Criterion A or California Register of Historical Resources (California Register) Criterion 1 for its association with the development of the highway network through the region.

The bridge is associated with the development of recreation in the US, specifically that of skateboarding. The bridge was first featured in the San Francisco Chronicle on April 16, 1977, showing its use as an architectural half pipe (also known as a "vert ramp"). In 1991, the overcrossing was featured in a momentous centerfold spread in *Transworld Skateboarding Magazine* showing Matt Hensley propelling his skateboard into the air above the eastern transition of the bridge, the photograph made by Dan Sturt. The photograph supplemented Hensley's "Pro-spotlight" interview with the skateboarder who had recently entered the professional ranks. The interview, including the dramatic photograph, was instrumental in thrusting Hensley into the national limelight. (See Continuation Sheet, page 3)

B11. Additional Resource Attributes:

***B12. References:** (See Continuation Sheet, page 4).

B13. Remarks:

***B14. Evaluator:**
Noah Stewart & Helen Blackmore
California Department of Transportation

***Date of Evaluation:**
October 1, 2014

(This space reserved for official comments.)

B10. Significance (continued):

While the bridge had a connection to development of skateboarding in the US, the association was relatively minor. The events that took place at the Eastgate Mall Overcrossing did not affect the progress of skateboarding. Therefore, Bridge 57 0762 is not eligible under National Register Criterion A or California Register Criterion 1.

Matt Hensley, the professional skateboarder, was prominent in the 1990s for his contributions to the development of skateboarding on a national level. In 2013, Hensley was voted the seventh-most influential skateboarder of all time by *Transworld Skateboarding Magazine*. The photograph of Hensley ollieing on the Eastgate Mall Overcrossing's eastern transition helped launch his career as a professional skateboarder. Whilst the bridge is significant to the career of Matt Hensley, Matt Hensley is not significant to the eligibility of the bridge. As a result, Bridge 57 0762 is not eligible under National Register Criterion B or California Register Criterion 2.

The first concrete box girder bridge in California was erected in 1938. 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. And 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 bridges in California. More than 3,200 of the type built between 1965 and 1974.

The Eastgate Mall Overcrossing was one of the first concrete box bridges to utilize a concrete arch support system to create the curved bent columns, for which it received awards from the Federal Highway Administration, San Diego Highway Development Association, and Prestressed Concrete Institute Awards Program for its original use of nontraditional concrete bents and curved concrete arch. The bridge was also nominated for the Bridge Award in Engineering Excellence by Adams Avenue School. In comparison to similar bridges built during the early 1970s, whose bents are linear and vertical; the undulating curved form of the bents of the Eastgate Mall Overcrossing stand out as are unique, functional and aesthetically striking.

Following the construction of this bridge, economic inflation made it more difficult and costly to create such aesthetically designed bridges, leaving this bridge as a unique example in the state of California. While, the fabrication, transportation, and erection of large concrete box bridges was not a significant achievement in the state by the time the Eastgate Mall Overcrossing was constructed in 1971, Bridge 57 0862 is not a typical example of concrete box construction for the period and an effort was made to construct a unique and architecturally interesting bridge. Bridge 57 0762 is significant under National Register Criterion C and California Register Criterion 3 for its unique architectural style and construction.

Bridge 57 0762 was erected as a typical transportation improvement project of the period and the bridge is not associated with events that have made a significant contribution to the broad patterns of history and is not significant under National Register Criterion A or California Register Criterion 1. It is not associated with the lives of significant persons in history and is not significant under National Register Criterion B or California Register Criterion 2. Bridge 57 0762 does embody the distinctive characteristics of concrete box bridge construction. Whilst not representing the work of a master, it does possess high Modern aesthetic value. The Eastgate Mall Overcrossing is significant under National Register Criterion C and National Register Criterion 3. The bridge has not yielded and is not likely to yield information important in history and is not significant under National Register Criterion D or California Register Criterion 4. The Eastgate Mall Overcrossing retains all aspects of integrity; design, materials, feeling, location, association and workmanship as it has not had any work completed on it with the exception of minor maintenance. Bridge 57 0762 is eligible for inclusion on the National Register and California Register.

***Resource Name or #** Bridge 57 0762

***Recorded by:** Janice Calpo ***Date:** October 1, 2014 ☒ **Continuation** ☐ **Update**

***B12. References:**

"An Architect Concentrates on the Aesthetics in Bridge Design." *Pacific Builder & Engineer* 64, no. 4 (Apr 1958): 86-7.

"Bridges Span Design Spectrum". *The San Diego Union*. January 11, 1976. p. F6. OCLC 13155544

Borden, Iain (2001). *Skateboarding, Space and the City: Architecture and the Body*. Oxford. Retrieved November 8, 2012.

California Division of Highways. "As Built Plans – Bridge 57 0762." 1969.

Caltrans Bridge Inspection Report: November 29, 2012.

Hope, Andrew. *Caltrans Statewide Historic Bridge Inventory Update – Survey and Evaluation of Common Bridge Types.* California Department of Transport, November 2004.

JRP Historical Consulting Services. *Historic Context Statement – Roadway Bridges of California: 1936-1959.* Prepared for State of California Department of Transportation, n.p., January 2003.

Kleske, Andrew. "The Bridges of San Diego County." *U-T San Diego*, Sept. 1, 2013. Accessed on Nov. 3, 2014 from http://www.utsandiego.com/news/2013/sep/01/san-diego-bridges-spruce-coronado-cabrillo-hp/#&panel1-13

Lewinson, David (August 16, 1984). "Outdoor Artworks Bring New Beauty to Freeway Travel". *The San Diego Union*. p. E8. OCLC 13155544

Jones, Bob (February 26, 1984). "Architecture at Its Best in S.D Freeways". *The San Diego Union*. p. F1. OCLC 13155544

Myra L. Frank & Associates. *Caltrans' Historic Bridge Inventory Update: Concrete Box Girder Bridges*. n.p., August 2003. With revisions made by Andrew Hope, California Department of Transportation, April 2004.

"Old Miramar Overcrossing." *Cross Sections, District 11*, Spring 1971. 15.

Parry, Bill (February 21, 1965). "150 Additional Freeway Miles Scheduled for San Diego Area". *The San Diego Union*. p. A31. OCLC 13155544

Parry, Bill (June 6, 1965). "Route 805 Hailed as 'Totally New'". *The San Diego Union*. p. A13. OCLC 13155544

Stuzinski, S. H. "Some Examples of Box Girder Bridges in California." *The Structural Engineer* 8, no. 41 (August 1963): 253-257.

*Resource Name or # Bridge 57 0762

*Recorded by: Janice Calpo

*Date: October 1, 2014 ☒ Continuation ☐ Update

P5b. Photographs (continued):

Detail looking southwest

North bent column looking west

***Resource Name or #** Bridge 57 0762

***Recorded by:** Janice Calpo ***Date:** October 1, 2014 ☒ **Continuation** ☐ **Update**

Old Miramar Rd. Br. No. 57-762, dated 12/8/71. D-11 SD route 805.

Old Miramar Rd. O.C. (new), dated 4/7/71. D-11, SD route 805.

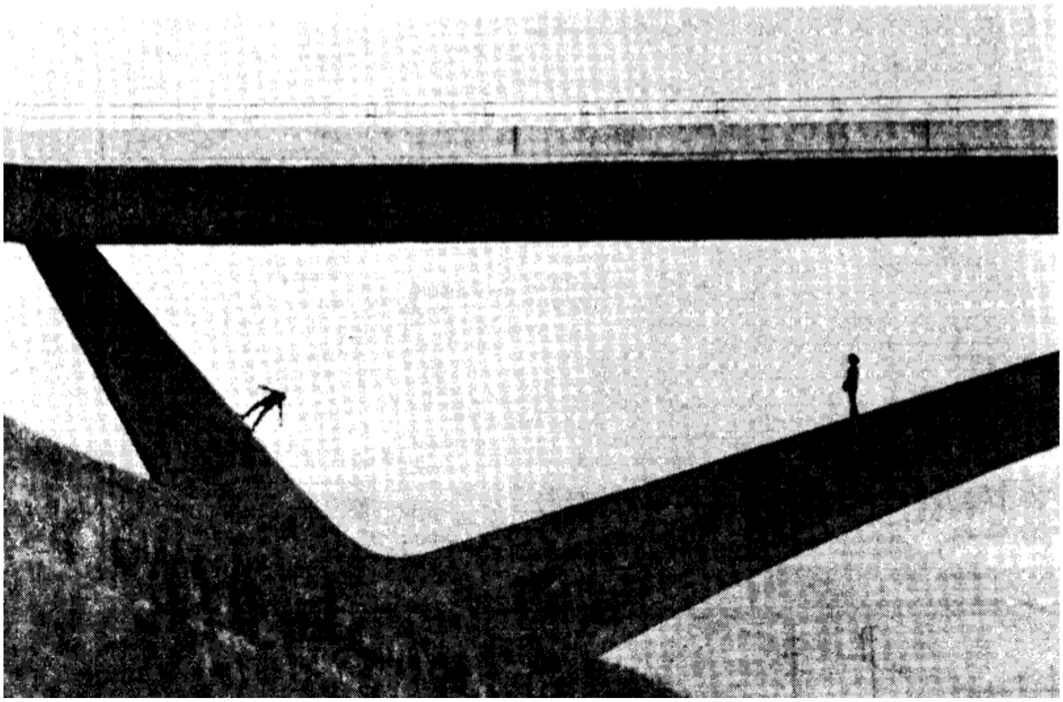
***Resource Name or #** Bridge 57 0762

***Recorded by:** Janice Calpo ***Date:** October 1, 2014 ☒ **Continuation** ☐ **Update**

Adams Avenue School with Principal Bill Murphy, Elementary Class of/with Beth Granby, *Cross Sections*, District 11 Sprint 1971, 15.

Matt Hensley ollieing on the transition of the Eastgate Mall Overcrossing, “Matt Hensley Pro-Spotlight,” *Transworld Skateboarding*, 1990, 66-67.

Quote reads: “There’s this bridge. It’s big, real big, and it has these huge transitions. When, and if, you drive by it, you’re sure to say something like, “Wow, look at that. I wonder if it’s skateable?”



"The Low Road," *San Francisco Chronicle*, Apr. 26, 1977.

Caption reads: "Two young skateboard enthusiasts found a new, arching challenge beneath Interstate 805 in San Diego. The graceful curves of the huge cement supports for the highway overpass provide a sport for the youngsters to roll on in relative quiet and safety."

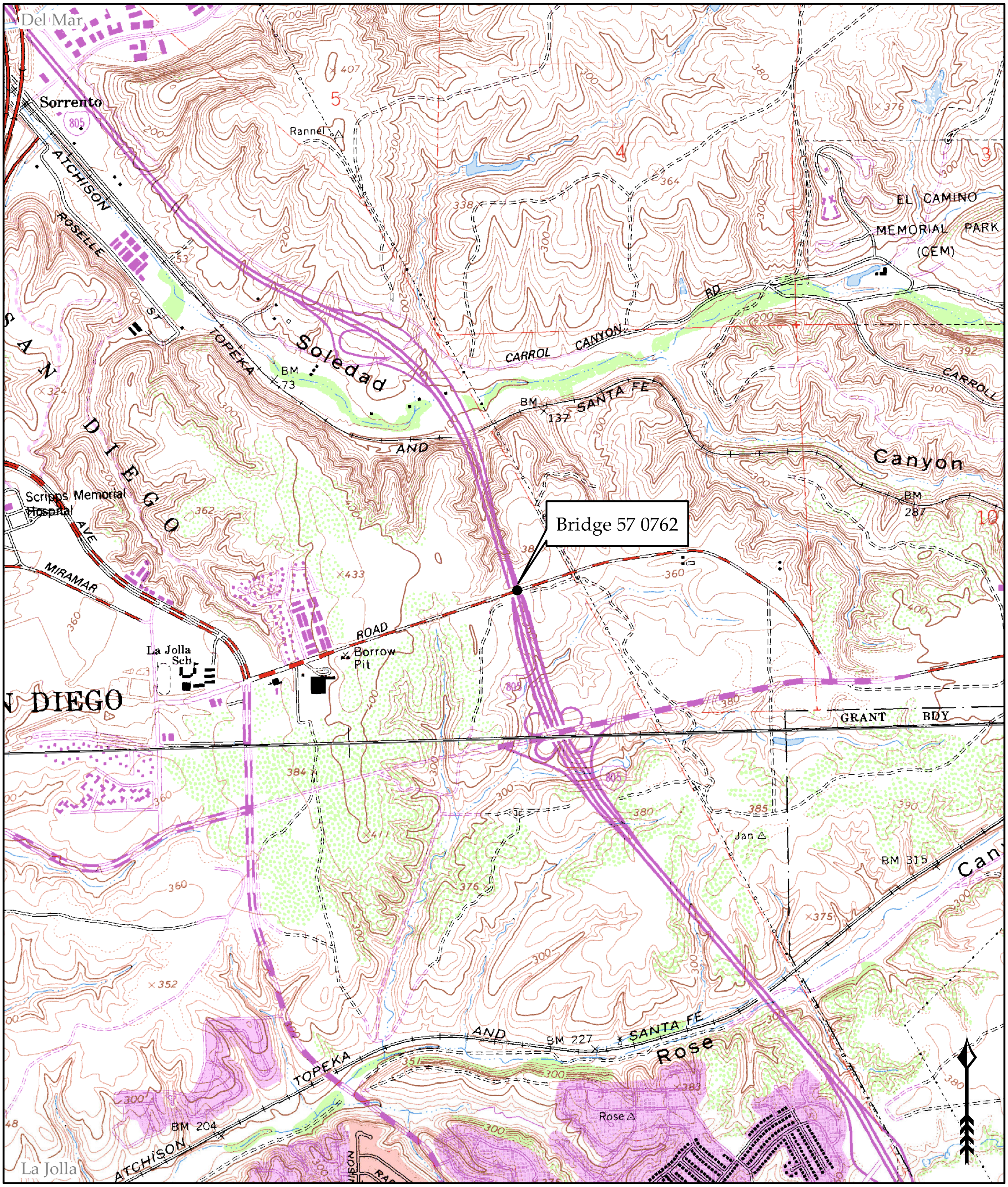
State of California The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary #
HRI#
Trinomial

 ***Resource Name or #:** 57 0762

***Map Name:** Del Mar ***Scale:** 1:24,000 ***Date of Map:** 1967



State of California — The Resources Agency DEPARTMENT OF PARKS AND RECREATION **PRIMARY RECORD**	Primary # HRI # Trinomial NRHP Status Code
Other Listings Review Code	Reviewer Date

 ***Resource Name or #:** Bridge 57 0857

P1. Other Identifier: San Diego-Coronado Bay Bridge

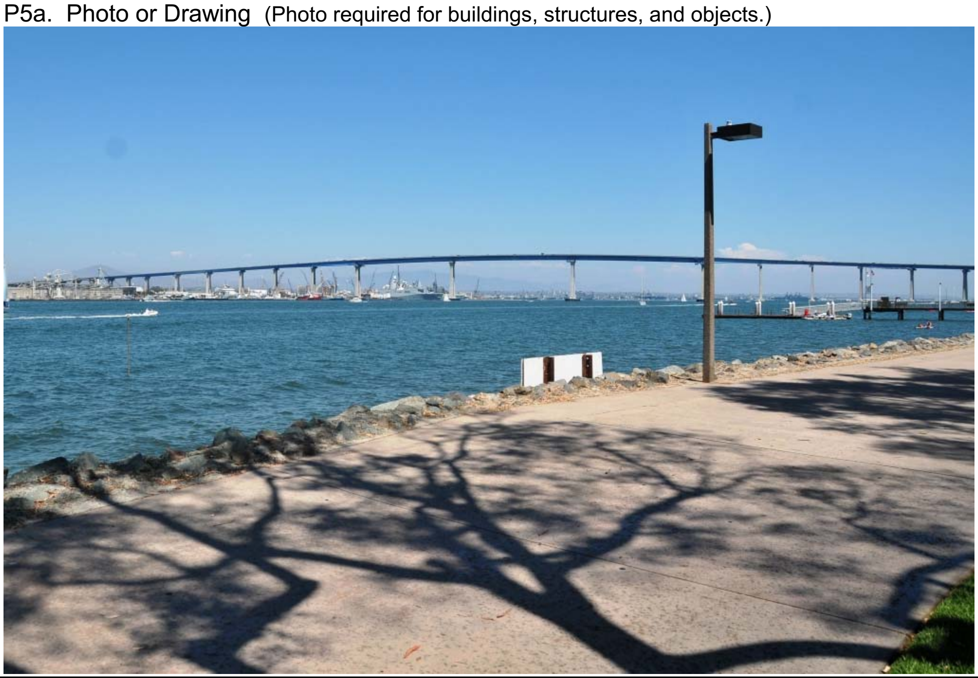
***P2. Location:** ☐ Not for Publication ☒ Unrestricted ***a. County:** San Diego
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad:** **Date:** **T** ; **R** ; **¼ of** **¼ of Sec** ; M.D. **B.M.**
c. Address: n/a City: San Diego Zip:
d. UTM: Zone: 10 ; mE/ mN (G.P.S.)
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Elevation:
San Diego County, State Route 75, postmile R20.49

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

The San Diego-Coronado Bay Bridge, Bridge 57 0857, crosses the San Diego Bay carrying five lanes of State Route 75, connecting the cities of San Diego and Coronado (located on Coronado Island). The bridge is a complicated structure composed of several superstructure elements, including an orthotropic deck structure on a steel box girder for the main spans, continuous and simple composite welded steel plate girders, some suspended, for the west approach and parts of the east approach. The east approach is also composed of precast prestressed concrete "I" girders. The entire bridge is approximately 7,825 feet long (nearly 1.5 miles) with three main spans (two 600 foot and one 500 foot, 200 feet above the water) bridging the shipping channel. (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.)

P5a. Photo or Drawing (Photo required for buildings, structures, and objects.)



P5b. Description of Photo: (View, date, accession #)
View to the south (Coronado side), July 3, 2014

***P6. Date Constructed/Age and Sources:** ☒Historic ☐Prehistoric ☐Both
1969, Caltrans Bridge Files

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

***P8. Recorded by:** (Name, affiliation, and address)
Janice Calpo
Dept. of Transportation
1120 N Street
Sacramento, CA 95814

***P9. Date Recorded:**
October 1, 2014

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

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.")
Helen Blackmore, Janice Calpo, Lauren Clementino and Noah M. Stewart with contributions from Andy Hope, *Historic Resources Evaluation Report: Caltrans Statewide Historic Bridge Inventory: 2015 Update* (California Department of Transportation, Sacramento, 2015).

***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):

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

Primary #
HRI#

BUILDING, STRUCTURE, AND OBJECT RECORD

*NRHP Status

***Resource Name or #** (Assigned by recorder) Bridge 57 0857

B1. Historic Name: San Diego-Coronado Bay Bridge
B2. Common Name: San Diego-Coronado Bay Bridge
B3. Original Use: Bridge B4. Present Use: Bridge
***B5. Architectural Style:** Modern
***B6. Construction History:** (Construction date, alterations, and date of alterations)
Built 1969
***B7. Moved?** ☒No ☐Yes ☐Unknown **Date:** **Original Location:**
***B8. Related Features:** Administration building and toll plaza at the west end. Chicano Park and murals on columns and piers of the bridge, within Chicano Park, at the east approach. Chicano Park and the murals painted on the columns and piers of the bridge are listed in the National Register of Historic Places (National Register) and California Register of Historic Resources (California Register). The Toll Plaza, including the Administration Building, the wing-shaped canopy and surrounding designed landscape, has not been evaluated for the National Register or California Register.

B9a. Architect: Division of Bay Toll Crossings and Robert Mosher (Design Consult), of the architectural firm Mosher and Drew, and William Steven Allen (Design Consult), of the architectural firm Anshen and Allen.
b. Builder: Murphy Pacific Corp. (general contractor, responsible for the superstructure and steel fabricator) and Guy F. Atkinson Co. (substructure)

***B10. Significance: Theme:** Engineering **Area:** State
Period of Significance: 1969 **Property Type:** Structure **Applicable Criteria:** C
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

A bridge traversing the San Diego Bay was first contemplated in 1888 by Hampton Story and Elisia Babcock, developers of the Hotel del Coronado. Rather than build a bridge, the entrepreneurs constructed a rail line that skirted the bay and up a land spit that connected the island to the mainland. During the first half of the twentieth century, local interests suggested several schemes to connect San Diego with the island; however opposition from Coronado residents as well as the United States Navy blocked construction. It wasn't until the mid 1950s, when Governor Edmund Gerald "Pat" Brown, Sr. took personal interest in the project, dubbing it "my baby," that progress was made on the bridge. Governor Brown utilized his powerful political influences and his close relationship with President Lyndon Johnson to break the Navy's opposition to the project. (See Continuation Sheet, page 3)

B11. Additional Resource Attributes: (List attributes and codes)

***B12. References:** Caltrans Bridge Inspection Report: July 31, 2012

B13. Remarks: Administration building and toll plaza potentially eligible for the National Register under Criterion C for architecture and work of a master - William Steven Allen.

***B14. Evaluator:**
Noah Stewart
California Department of Transportation

***Date of Evaluation:** October 1, 2014

(This space reserved for official comments.)

(Sketch Map with north arrow required.)

***P3a. Description (continued):** The west approach spans (spans 1 to 17) have a lightweight cast-in-place reinforced concrete deck on continuous and simple composite welded steel plate girders (4), which rest on reinforced concrete pedestal seat abutments with reinforced concrete column bents. Spans 2, 4, 6, 8, 10, 12, 14 and 16 are suspended. Abutment 1 is on a spread footing. Bents 2 to 18 are on prestressed concrete piles. The main spans (spans 18 to 20) are composed of a single continuous orthotropic steel box girder with an epoxy asphaltic concrete wearing surface. The steel box girder segments rest on reinforced concrete column bents on prestressed concrete piles. The east approach spans (spans 21 to 29) have a lightweight cast-in-place reinforced concrete deck on continuous and simple composite welded steel plate girders (4 to 5) on reinforced concrete column bents. Spans 22, 24 and 26 are suspended. Bents 21 to 23 are on prestressed concrete piles. Bents 24 to 30 are on spread footings. Spans 30 to 32, on the approach have a lightweight cast-in-place reinforced concrete deck on simple precast, prestressed I girders (8 to 9) on reinforced concrete column bents on spread footings.

B10. Significance (continued): With the Navy placated, in 1964 Brown and the three other members of the Toll Bridge Authority approved the sale of bonds and instructed the Division of Bay Toll Crossings to begin construction. Erection of the bridge was still opposed by many Coronado politicians as well as residents. Brown chalked Coronados resistance to provincial squabbling, stating "a lot of retired Navy people didn't want (the bridge) then and will tell you they don't want it now. The growth of the area superseded their wishes. That's the reason I wanted it built -- I could foresee the growth of California and particularly of San Diego County." Brown marked the bridge as "one of the great accomplishments of my tenure as governor."

Because of opposition from Coronado, but also responding to complaints made of the recently completed Richmond-San Rafael Bridge across the northern part of the San Francisco Bay, the California Division of Bay Toll Crossings hired design consultants to help guide aesthetic decisions. Every architectural detail was considered from the graceful, nearly 90 degree, curve to the modified Type 27 railings (34 inches high) designed specifically for the bridge to allow unobstructed views from vehicles of surrounding geography. The concrete towers were designed with a curved cap echoing the arch shape associated with the region's mission architecture, while the blue painted superstructure harmonizes with the sky, bay and sea.

The final bridge was designed by the California Division of Bay Toll Crossings with contributions from architects Robert Mosher, of the La Jolla based firm Mosher and Drew, and William Steven Allen, of the San Francisco firm Anshen and Allen. Both firms Mosher and Drew and Anshen and Allen were important figures in their respective geographical areas during the mid-twentieth century for their work with modern architecture. Mosher and Drew was a La Jolla based firm run by Robert Mosher and Roy Drew. The two were responsible for many important works in the San Diego area and figured prominently in defining a regional modernist design idiom. Of their many works standouts include their own offices within the Green Dragon Colony in La Jolla as well as the La Jolla Art Center (now the Museum of Contemporary Art San Diego), a remodel of Irving Gill's Ellen Browning Scripps Residence, the Applied Physics and Mathematics Building (as well as the general plan of Muir College) at the University of California, San Diego, and the Aztec Center at San Diego State University.

Like Mosher and Drew, Anshen and Allen were prominent figures in developing a regional modernist aesthetic. Anshen and Allen are best known for their work with Joseph Eichler, an earlier developer of modernist tract housing– they designed the original Eichler houses and worked for the developer from 1950 to 1960. They were also responsible for forward-looking designs across the American West, including the Chapel of the Holy Cross in Sedona, Arizona, the Dinosaur National Monument Visitors' Center in Utah and the Berkeley Lawrence Hall of Science. Allen had previously worked with the California Division of Bay Toll Crossings consulting on design and aesthetic matters for the San Mateo-Hayward Bridge crossing the southern portion of San Francisco Bay.

The San Diego-Coronado Bay Bridge was completed in 1969, the same year as the Queensway Drive Bridges and two years after the San Mateo-Hayward Bridge. When it was completed it was the third longest orthotropic deck bridge in the country. It was the longest three-span continuous steel box girder bridge, at 1,880 feet. The curved section of bridge is composed of curved steel plate girders 2,850 feet in length, the longest usage of curved girders in the country when completed. The approach spans that cross over Interstate 5 measure up to 150 feet long; at the time, they were the longest prestressed precast concrete girders used in the U.S. Beyond the engineering considerations, the steel box girder and orthotropic deck superstructure arrangement allowed the designers to achieve long clear spans with relatively shallow profiles and the sleek appearance much admired in modern bridge design. Because of the innovative and aesthetically pleasing design, in 1970, the American Institute of Steel Construction honored the bridge with its Prize Bridge Award for best long span.

The main spans of the San Diego-Coronado Bay Bridge are a combination of steel box girder and orthotropic deck construction. Of the few steel box girder bridges in California, this arrangement is the rarest. Originally orthotropic deck bridges were built with steel girders, however soon it was realized that the steel box girder-orthotropic deck was not only torsionaly stronger than the steel girder version, it was also less expensive to construct. The advantage of the orthotropic deck is that it acts as an integral part of the overall structural system, rather than simply being additional dead load (the weight of the structure itself) that needs to be transferred to the floor beams, girders, and ultimately to the piers and foundations. The orthotropic deck acts as the top flange of the steel beam or box-girder. Since the deck is much larger than the top flange of a typical beam or girder, it contributes significantly to the strength of the bridge superstructure and therefore its ability to span longer distances.

Early steel box girder bridges constructed in California illustrate the system's flexibility. The first such bridge, Indian Creek Bridge (2C0147), was erected in 1966 and had a concrete deck supported by six fairly small steel box girders, rather than a smaller number of larger boxes which later became more common for the type. That same year, the Klamath River Bridge (04 0069) was completed using a combination steel box girder superstructure and suspended span. Other early bridges of this type include a pair (28C0315 and 28C0316) erected in 1968, over MacDonald Avenue, in Richmond, as part of the Bay Area Rapid Transit system (BART). The San Mateo-Hayward Bridge, which opened to traffic in 1967, was the first major orthotropic deck bridge in the United States and featured a steel box girder superstructure for its 750 foot main span, like the San Mateo-Hayward Bridge.

The San Diego-Coronado Bay Bridge was one of the many highway improvements carried out during the late 1960s and early 1970s. It is not significant under National Register of Historic Places (National Register) Criterion A or California Register of Historical Resources (California Register (Criterion 1 for its association with the development of the highway network through the region. While the bridge connected Coronado Island with the mainland, the both cities of Coronado and San Diego were almost completely developed prior to completion of the bridge and it did not factor into the growth of the area, but rather lessened travel times. The bridge is not associated with events that would make it significant under National Register Criterion A or California Register Criterion 1.

With regard to National Register Criterion B and California Register Criterion 2, while Governor Pat Brown championed construction of Bridge 57 0857, using his political connections to usurp the opposition, he did not have a personal hand in its design or construction. The bridge is not directly associated with Governor Brown. The San Diego-Coronado Bay Bridge was designed by the Division of Bay Toll Crossings with design assistance from Robert Mosher and Steven Allen. Both Mosher and Allen were important in development of regional expression of Modern architecture during the mid-twentieth century, however, while the bridge is associated these two prominent architects, the connection between the bridge and its designers is more appropriately considered under Criterion C and Criterion 3 as the work of a master rather than under Criterion B and Criterion 2. Bridge 57 0857 was not associated with a person who made a significant contribution to history. The San Diego-Coronado Bay Bridge is not significant under National Register Criterion B or California Register Criterion 2.

Steel box girder bridges are relatively rare in California. The combination steel box girder and orthotropic deck are even more unusual. Both technologies date to the post-World War II period. The system creates a torsionaly strong bridge that is extremely efficient. While the combination is less expensive than the earlier steel girder and orthotropic deck system, as steel costs escalated and major contractors invested in equipment dedicated to concrete construction, steel bridges were only erected in unique circumstances.

The San Diego-Coronado Bay Bridge is significant under Criterion C and Criterion 3 as an early long span steel box girder bridge with orthotropic deck, as well as for its sleek modern bridge aesthetic. The bridge pushed the envelope in terms of technology, incorporating the longest three-span continuous steel box girders, the longest usage of curved girders, the longest prestressed precast concrete girders as well as the third longest orthotropic deck bridge in the country. As far as the architects work on the San Diego-Coronado Bay Bridge, Robert Mosher was closely involved in the general aesthetic of the bridge – it's graceful lines, thin profile and blue colored superstructure – planned to blend into the sky, while William Steven Allen was largely responsible of the design of the Administration Building and toll plaza structures. Although the men were important in the field of architecture during the mid-twentieth century, neither was known as a bridge specialist. Both Mosher and Allen were known for their residential and institutional work rather than bridge design. Because of this, the bridge does not represent the work of a master. Additionally, it does not represent a significant and distinguishable entity whose components may lack individual distinction.

Bridge 57 0857 retains all seven aspects of integrity. It has not been moved and retains integrity of location. The setting and feeling have been unaltered. The association of the bridge has been unchanged. The design, materials and workmanship of the bridge has been retained, having had only minor maintenance over the years. The San Diego-Coronado Bay Bridge retains high integrity.

San Diego-Coronado Bay Bridge was erected as a typical transportation improvement project of the period and is not associated with events that have made a significant contribution to the broad patterns of history and is not significant under National Register Criterion A or California Register Criterion 1. The bridge is not associated with the lives of significant persons in history and is not significant under National Register Criterion B or California Register Criterion 2. The San Diego-Coronado Bay Bridge embodies the distinctive characteristics of an early long span steel box girder bridge with orthotropic deck as well as for its sleek modern bridge aesthetic. Bridge 57 0857 is significant under National Register Criterion C and California Criterion 3. The bridge has not yielded and is not likely to yield information important in history and is not significant under National Register Criterion D or California Register Criterion 4. Additionally, the San Diego-Coronado Bay Bridge retains high integrity. Bridge 57 0857 is eligible for inclusion on the National Register and California Register.

B12. References (continued):

Jim Fisher, *Historic Resources Evaluation Report for San Diego – Coronado Bay Bridge, Chicano Park and the Chicano Park Murals* (California Department of Transportation, Sacramento, 1996).

Steven Simpson, "The Coronado Bridge: Arc of Art and Utility," San Diego Seacoast Magazine, November 1980, 33-41.

"The San Diego – Coronado Bay Bridge" – Third Anniversary pamphlet. Division of Bay Toll Crossings.

"The San Diego – Coronado Bay Bridge Wins A.I.S.C. Award of Merit" Business and Transportation Agency Bulletin, July 7, 1970.

"20 Years Later, Span Is Loved and Loathed," *Los Angeles Times*, August 02, 1989

P5b. Photographs (continued):

View north, erecting main spans - cantilevered steel box girder, December 18, 1968

View west, completed bridge open to the public, ca. late 1969

View looking south, lifting final steel box girder into place, May 28, 1969

View looking north (Coronado Side), July 3, 2014

***Resource Name or # (Assigned by recorder)** Bridge 57 0857

Detail looking northwest, steel girder superstructure and arch columns (Coronado side), July 3, 2014

Detail looking northeast, prestressed precast reinforced concrete girder superstructure (San Diego Side), July 3, 2014

State of California The Resources Agency
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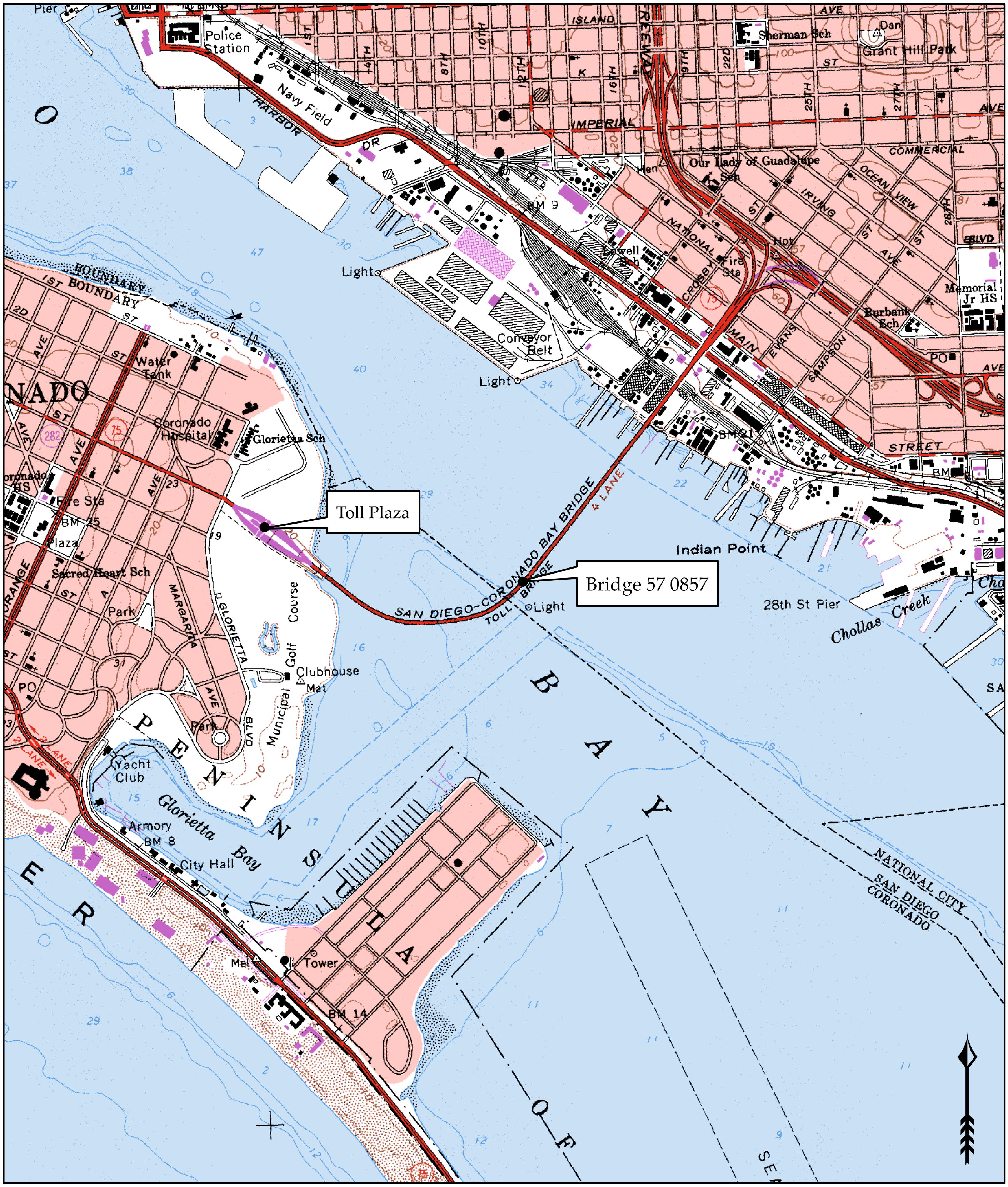
LOCATION MAP

Primary #
HRI#
Trinomial

***Resource Name or #:** 57 0857

***Map Name:** Point Loma ***Scale:** 1:24,000 ***Date of Map:** 1967



*Required information