HISTORICAL RESOURCES EVALUATION REPORT

Golden Gate Bridge Physical Suicide Deterrent System Project

City and County of San Francisco and County of Marin, California

Project 2006-B-17
04-MRN-101-GGHT
Federal Project #: STPL-6003(030)

Prepared for:

Jeffrey Y. Lee, PE, Project Manager
Golden Gate Bridge, Highway and Transportation District
Administration Building, Golden Gate Bridge Toll Plaza
P.O. Box 9000, Presidio Station
San Francisco, California 94129-0601

Approved by:

Jennifer Darcangelo, Chief
Office of Cultural Resource Studies

Andrew Hope, PQS Principal Architectural Historian
Caltrans District 4
111 Grand Avenue
Oakland, California 94623

Prepared by:

Rebecca Meta Bunse, Historian/Architectural Historian
JRP Historical Consulting, LLC
1490 Drew Avenue, Suite #110
Davis, California 95618

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Golden Gate Bridge, Highway and Transportation District
Administration Building, Golden Gate Bridge Toll Plaza
P.O. Box 9000, Presidio Station
San Francisco, California 94129-0601

Approved by:

5-22-08

Jennifer Darcangelo, Chief
Office of Cultural Resource Studies

5/15/08

Andrew Hope, PQS Principal Architectural Historian
Caltrans District 4
111 Grand Avenue
Oakland, California 94623

Prepared by:

5/14/08

Rebecca Meta Bunse, Historian/Architectural Historian
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SUMMARY OF FINDINGS

The Golden Gate Bridge, Highway and Transportation District (District) is proposing the Golden Gate Bridge Physical Suicide Deterrent System Project (the Project) [04-MRN-101-GGHT, Project 2006-B-17; Federal Project #: STPL-6003(030)]. The District, in cooperation with the Federal Highway Administration, is the Lead Agency. The Project under study in this report proposes construction of a suicide deterrent system that would install a physical barrier on the Golden Gate Bridge that would reduce the number of injuries and deaths associated with jumping off the Bridge. JRP Historical Consulting, LLC (JRP) prepared this Historical Resources Evaluation Report (HRER) as part of the environmental compliance for the Project. The purpose of this document is to comply with applicable sections of the National Historic Preservation Act (NHPA) and the implementing regulations of the Advisory Council on Historic Preservation (ACHP) as these pertain to federally funded undertakings and their impacts on historic properties. The properties have also been evaluated in accordance with Section 15064.5(a)(2)-(3) of the California Environmental Quality Act (CEQA) Guidelines using the criteria outlined in Section 5024.1 of the California Public Resources Code.

There is one historic property within the Focused Area of Potential Effect (APE) for this Project that has been previously evaluated and determined eligible for listing in the National Register of Historic Places (NRHP): the Golden Gate Bridge.[1] The Bridge property is also eligible for listing in the California Register of Historical Resources (CRHR) and is considered a historical resource for the purposes of CEQA. The Bridge consists of multiple contributing structures, the main spans, towers, pylons and viaducts, as well as the Round House Gift Center and the Toll Plaza Undercrossing (Bridge 34 0069), all of which are located inside the Focused APE and are addressed herein. Some contributing structures of the Bridge property are located outside the Focused APE and required no further study for this Project.[2]

This HRER provides an update of the previous inventory and evaluation documents for the Golden Gate Bridge property to confirm its contributing elements, character-defining features, historic status, and recent construction and alterations. The update concludes that the Golden Gate Bridge property and the contributing elements within the Focused APE have been "determined eligible for listing in the NRHP and the CRHR," at the national level, under NRHP Criterion C and CRHR Criterion 3, with a period of significance of 1933-1938. The Golden Gate Bridge property also remains an historical resource for the purposes of CEQA.

Non-contributing elements of the Golden Gate Bridge within the Focused APE include: the Administration Building (or Toll Plaza Building) and its ancillary structures, toll booths and canopy, and bus shelters, as well as other modern additions such as telephone booths, new signs and light standards, as well as the visitor parking area. These buildings and structures are not eligible for listing in the NRHP, or the CRHR, and are not considered historical resources for the purposes of CEQA.

[1] Fort Point National Historic Site is underneath the Golden Gate Bridge, outside the Focused APE for this project.

[2] The southern approach roadway structures of the Golden Gate Bridge are contributing elements of the bridge that are outside the Focused APE. As such, the Doyle Drive viaducts (Marina Viaduct - Bridge 34 0014, and Presidio Viaduct - Bridge 34 0019), which are individually listed in the NRHP, did not require further study.

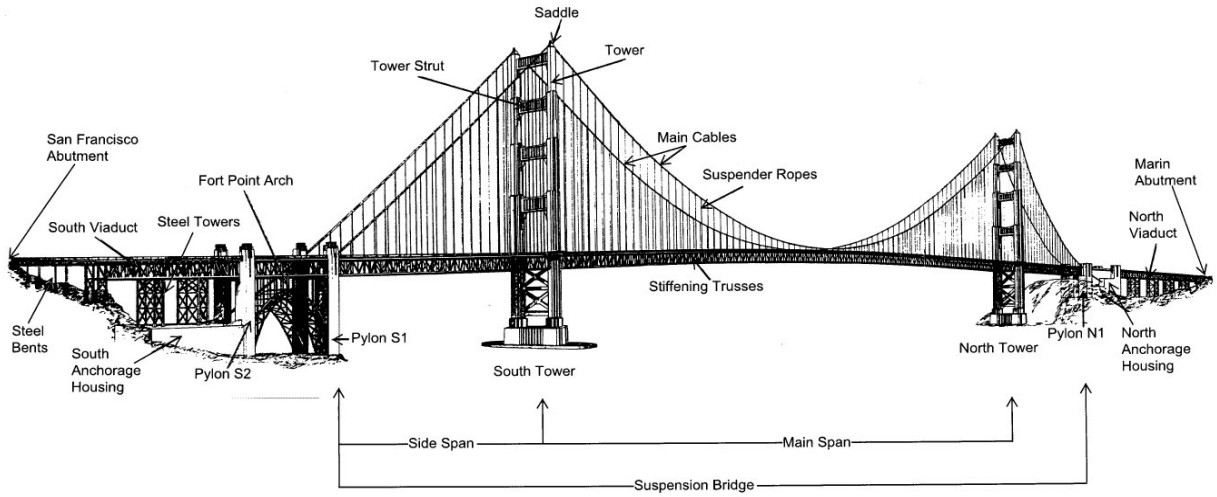
TABLE OF CONTENTS

APPENDICES

1. PROJECT DESCRIPTION

The Project proposes to construct a physical suicide deterrent system along both sides of the Golden Gate Bridge (Bridge). As shown in Figures 1 and 2 (Attachment A), the Project limits are from the Marin abutment (north viaduct) to the San Francisco abutment (south viaduct). The Project APE maps are also included in Appendix A, along with Renderings 1A, 1B, 2A, 2B and 3. The APE is described below in Section 1.6.

The illustration below identifies the various structural elements of the Bridge.



Main Elements of the Golden Gate Bridge

(Source: MacDonald Architects, "HASR: Seismic Retrofit Project, Golden Gate Bridge," [1995]).

The Golden Gate Bridge (the Bridge) has a symmetrical design. Vertical bridge elements on the horizontal plane are generally based on increments of 12 ½ feet. For example, the outside handrail posts and the public safety rail posts are aligned at a spacing of 12 ½ feet. Additionally, light posts are 150 feet apart (12 x 12 1/2 feet), and the suspender ropes are 50 feet apart (4 x 12 ½ feet). (Belvederes (24 widened areas located on both the east and west sidewalks) are 12 ½ feet long and centered between two suspender ropes. Maintenance gates on the public safety railing are spaced at 150 feet (12 x 12 1/2 feet) and are aligned with the light posts. Vertical members of the stiffening truss are spaced at 25 feet and are aligned with the suspender ropes. Figure 2 shows a plan view of a section of the Bridge illustrating the relationship of these Bridge elements.

Several build alternatives have been developed from the three general physical concepts considered for this Project. The alternatives were developed after the first phase of the Project, wind tunnel testing, was completed. Wind tunnel testing on the generic concepts was performed first in order to determine the limiting characteristics of each concept with respect to wind. The wind tunnel testing and analysis determined that any physical addition to the Bridge would

adversely affect the Bridge's aerodynamic stability. However, testing also determined that wind devices could be installed to mitigate the adverse effects associated with the additions.

All of the build alternatives developed and included in this document require the addition of one of two different types of wind devices. The first type of wind device is called a fairing and consists of a curved element placed at two locations below the sidewalk on the top chord of the west stiffening truss. The second type of wind device is called a winglet and consists of a curved element placed above the sidewalk at the top of the alternative posts.

The fairing wind device was previously evaluated as part of the District's seismic retrofit program and has been environmentally cleared. Therefore, this report will not discuss this device. The winglet is a new feature that has not been evaluated and as such, will be discussed in this report.

The following build alternatives would impede the ability of individuals to jump from the Bridge, as well as meet additional criteria established by the Golden Gate Bridge, Highway and Transportation District (District). During the screening process, these alternatives were evaluated for their ability to meet the Project's purpose and need, which included the District's criteria. These alternatives include:

- Alternative 1A – Add Vertical System to Outside Handrail
- Alternative 1B – Add Horizontal System to Outside Handrail
- Alternative 2A – Replace Outside Handrail with Vertical System
- Alternative 2B – Replace Outside Handrail with Horizontal System
- Alternative 3 – Add Net System that Extends Horizontally from Bridge (Add Net System)

Alternatives 1A, 2A and 3 were evaluated utilizing a fairing, while Alternatives 1B and 2B were evaluated utilizing a winglet. Each build alternative design has been developed to maintain the symmetry of the Bridge. The outside handrail posts, light posts, suspender ropes and belvederes would all remain at their current locations. There would be no changes to the stiffening truss.

1.1 Build Alternatives

Alternative 1A – Add Vertical System to Outside Handrail

Alternative 1A would construct a new barrier on top of the outside handrail (and concrete rail at north anchorage housing and north pylon). The barrier would extend 8 feet vertically from the top of the 4-foot high outside handrail for a total height of 12 feet. The barrier's vertical members would be comprised of ½-inch diameter vertical rods spaced at 6 ½ inches on center, leaving a 6-inch clear space between rods. The existing rail posts would be replaced with new 12-foot high outside rail posts at the same locations and of the same cross-section, size, material, and color of the original posts. The top horizontal header would consist of a chevron-shaped

member matching the top element of the outside handrail. The vertical rods would be attached to the horizontal header and outside handrail. The entire system would be constructed of steel that would be painted International Orange, matching the material and color of the outside handrail. Transparent panels would be installed at the belvederes and towers on both sides of the Bridge. This alternative assumes that the modification to the outside handrail on the west side of the Bridge between the two main towers and the installation of the wind fairings have been completed as part of the previously approved seismic retrofit project.

Because maintenance workers would no longer be able to climb over the outside handrail to reach the below-deck maintenance traveler, gates would be located at a spacing of 150 feet on center to generally match the locations of the existing light posts and gates on the public safety railing. The gates would be 8 feet wide and 8 feet high (two 4 foot wide by 8 foot high panels), and match the appearance of the vertical system. The frame for each gate door would be constructed of 2-inch by 2-inch steel members. The gates would be located on top of the outside handrail. The outside handrail would remain in place.

Alternative 1B – Add Horizontal System to Outside Handrail

Alternative 1B would construct a new barrier on top of the outside handrail (and concrete rail at north anchorage housing and north pylon) consisting of ⅜-inch diameter horizontal steel cables at 6 inches on center leaving 5 ⅝ inches clear space between cables. The cable diameter matches the cables on the public safety railing. The new barrier would extend 8 feet above the top of the 4-foot high outside handrail for a total height of 12 feet. The existing rail posts would be replaced with new 12-foot high outside rail posts at the same locations and of the same cross-section, size, material, and color of the original posts. The entire system would be constructed of steel that would be painted International Orange, matching the material and color of the outside handrail. Transparent panels would be installed at the belvederes and towers on both sides of the Bridge.

A winglet would be placed on top of the outside rail posts to ensure aerodynamic stability and impede climbing over the barrier. The winglet would be a transparent 42-inch wide panel with a slight concave curvature extending approximately 2 feet over the sidewalk. The winglet would run the length of the suicide deterrent barrier, except at the north and south towers. The winglet would be notched at the suspender ropes and light posts.

Because maintenance workers would no longer be able to climb over the outside handrail to reach the below-deck maintenance traveler, gates would be located at a spacing of 150 feet on center to generally match the locations of the existing light posts and gates on the public safety railing. The gates would be 8 feet wide and 8 feet high (two 4 foot wide by 8 foot high panels), and match the appearance of the horizontal system. The frame for each gate door would be constructed of 2-inch by 2-inch steel members. The gates would be located on top of the outside handrail. The outside handrail would remain in place.

Alternative 2A – Replace Outside Handrail with Vertical System

Alternative 2A would construct a new vertical 12-foot high barrier consisting of ½-inch diameter vertical steel rods spaced at 4 ½ inches on center, leaving a 4-inch clear space between rods. A rub rail would be installed at the same height as the public safety railing (4 feet 6 inches). The existing rail posts would be replaced with new 12-foot high outside rail posts at the same locations and of the same cross-section, size, material, and color of the original posts. The top horizontal header would consist of a chevron-shaped member matching the top element of the outside handrail to be removed. The vertical rods would be attached to the header and bottom barrier element. The entire system would be constructed of steel that is painted International Orange, matching the material and color of the outside handrail. Transparent panels would be installed along the upper 8 feet at the belvederes and towers on both sides of the Bridge. This alternative assumes that the modification to the outside handrail on the west side of the Bridge between the two main towers and the installation of the wind fairings have been completed as part of the previously approved seismic retrofit project.

Because maintenance workers would no longer be able to climb over the outside handrail to reach the below-deck maintenance traveler, gates would be located at a spacing of 150 feet on center to generally match the locations of the existing light posts and gates on the public safety railing. The gates would be 8 feet wide (two 4 foot wide panels) and 12 feet high, and match the appearance of the vertical system. The frame for each gate door would be constructed of 2-inch by 2-inch steel members. A rub rail would be located at a height of 4 feet 6 inches, matching the height of the public safety railing.

Alternative 2B – Replace Outside Handrail with Horizontal System

Alternative 2B would construct a new 10 foot high barrier consisting of ⅜-inch diameter steel horizontal cables. The cables in the lower 3 ½ foot section would be spaced at 4.4 inches on center, while the cables in the upper 6 ½ foot section would be spaced 6 inches on center. A rub rail would be installed at the same height as the public safety railing (4 feet 6 inches). The existing rail posts would be replaced with new 10-foot high outside rail posts at the same locations and of the same cross-section, size, material, and color of the original posts. The entire system would be constructed of steel that would be painted International Orange, matching the material and color of the outside handrail. Transparent panels would be installed along the upper 6 ½ foot portion at the belvederes and towers on both sides of the Bridge.

A winglet would be placed on top of the rail posts to ensure aerodynamic stability and impede climbing over the barrier. The winglet would be a 42-inch wide translucent panel with a slight concave curvature extending approximately 2 feet over the sidewalk. The winglet would run the length of the suicide deterrent barrier, except at the north and south towers. The winglet would be notched at the suspender ropes and light posts.

Because maintenance workers would no longer be able to climb over the outside handrail to reach the below-deck maintenance traveler, gates would be located at a spacing of 150 feet on center to generally match the locations of the existing light posts and gates on the public safety railing. The gates would be 8 feet wide (two 4 foot wide panels) and 12 feet high, and match the appearance of the horizontal system. The frame for each gate door would be constructed of 2-inch by 2-inch steel members. A rub rail would be located at a height of 4 feet 6 inches, matching the height of the public safety railing.

Alternative 3 – Add Net System

Alternative 3 would construct a horizontal net approximately 20 feet below the sidewalk and approximately 5 feet above the bottom chord of the exterior main truss. The net would extend horizontally approximately 20 feet from the Bridge and be covered with stainless steel cable netting incorporating a grid between 4 and 10 inches. The horizontal support system would connect directly to the exterior truss and be supported by cables back to the top chord of the truss. The support system for the netting would include cables that would pre-stress the netting to help keep it taut and not allow the wind to whip the netting.

The horizontal net would consist of independent 25-foot sections that can be rotated vertically against the truss to allow the maintenance travelers to be moved. The net and the steel horizontal support system would be painted to match the International Orange Bridge color. With this alternative there would be no modifications to the above deck Bridge features. This alternative assumes that the modification to the outside handrail on the west side of the Bridge between the two main towers and the installation of the wind fairings have been completed as part of the previously approved seismic retrofit project.

1.2 No-Build Alternative

The No-Build Alternative represents the future year conditions if no other actions are taken in the study area beyond what is already in place. The No-Build Alternative provides the baseline for existing environmental conditions and future conditions against which all other alternatives are compared. The No-Build Alternative would continue the existing non-physical suicide deterrent programs at the Bridge, as well as implement Bridge modifications approved as part of the seismic retrofit project.

1.3 Existing Suicide Deterrent Programs

Emergency Counseling Telephones

On November 5, 1993, by Board Resolution 93-264, the District upgraded the emergency motorist “call-box” telephone system on the Bridge sidewalks to also accommodate suicide prevention and crisis intervention calls. Additional phones were installed to expand the coverage

area with a total of 11 phones located on both sidewalks. The system was modified to allow the Bridge security staff to instantly connect callers, at their request, to trained suicide prevention counselors at San Francisco Suicide Prevention's crisis line.

To comply with international convention regarding emergency telephones, the signs above the telephone call boxes were modified in color from black on yellow to white on blue. The wording was changed from "Emergency Telephone" to "Emergency Telephone and Crisis Counseling" and the international "telephone" icon was added. Further, in 2006, additional signs with blue with white lettering were added directly above the telephone call boxes that read: "Crisis Counseling, There is Hope, Make the Call. The Consequences of Jumping from this Bridge are Fatal and Tragic."

The phones are used both by potentially suicidal persons seeking assistance and by members of the public who wish to alert District authorities to persons that may be contemplating suicide. In recent years, the proliferation of cellular telephones has also increased the incidence of reporting by the general public of potential persons contemplating suicide.

Public Safety Patrols

On February 23, 1996, under Board Resolution 93-34, a Public Safety Patrol was initiated on the Bridge sidewalks with suicide prevention as one of its primary objectives. The patrols started on April 1, 1996. Under this program, the District's existing Bridge Patrol Program was re-oriented with an emphasis on patrolling the Bridge east sidewalk. The initial patrols were performed on foot and by scooter. In August, 1999, the Board authorized the formation of a bicycle unit within the Bridge Patrol ranks. Today the majority of sidewalk patrolling is done on bicycles. In December 2001, as a result of heightened security concerns, the Board authorized the hiring of additional Bridge patrol officers to expand the Bridge's security force. These new officers are trained in suicide prevention and intervention. In early 2003, the California Highway Patrol (CHP) deployed its own bicycle patrol officers on the Bridge, increasing law enforcement coverage even further. CHP officers are also trained in suicide intervention.

Employee Training

All Bridge security personnel, as well as several Bridge ironworkers who have volunteered to assist in suicide intervention and rescue activities, have received special training. In 2004, the District, CHP, and the U.S. Park Police jointly sponsored an intensive full-day training session on crisis intervention and suicide prevention. This course was attended by more than 120 law enforcement officers, District security and ironworker personnel. The course was conducted by a nationally renowned expert in the field of crisis intervention and by personnel from San Francisco Suicide Prevention, Inc.

Surveillance Cameras

In the 1960s, closed-circuit cameras were installed at the Bridge towers to remotely monitor traffic conditions. As a result of security system upgrades in the mid 1990s and again following September 11, 2001, additional cameras were installed at other locations on and around the Bridge. This network of cameras aids in directing intervention personnel.

1.4 Seismic Retrofit Project

Immediately following the 1989 Loma Prieta earthquake, a vulnerability study for the Bridge was conducted that concluded if a high magnitude earthquake centered near the Bridge occurred, there would be a substantial risk of impending collapse of the San Francisco and Marin Approach Viaducts and the Fort Point Arch, and extensive damage to the remaining Bridge structures. After determining that retrofitting the Bridge would be more cost-effective than replacement, a construction phasing plan was developed in 1996 to retrofit the Bridge. The seismic retrofit modifications were designed to maintain the historic and architectural appearance of the Bridge. The following phasing plan reflected the degrees of structural vulnerabilities:

- Phase I retrofit the Marin (north) Approach Viaduct
- Phase II retrofit the San Francisco (south) Approach Viaduct, San Francisco (south) Anchorage Housing, Fort Point Arch, and Pylons S1 and S2
- Phase III will retrofit the Main Suspension Bridge and Marin (north) Anchorage Housing and North Pylon

Phase I of the seismic retrofit project was completed in 2002. Phase II of the seismic retrofit project was completed in 2008. The third and final phase has been divided into two construction projects: Phase IIIA and Phase IIIB. Phase IIIA, which was awarded on March 28, 2008, will retrofit the north anchorage housing and north pylon. It is scheduled to be completed in 3 years. Phase IIIB, the seismic retrofit of the main span and towers, is planned to start in 20010. Phase IIIB includes a wind retrofit of the suspended span, including the replication of the west outside handrail between the Towers and the installation of wind fairings along the same length.

Wind Retrofit of West Handrail

In accordance with the findings of the wind study report conducted for the seismic retrofit project, the vertical members under the outside handrail on the west side of the Bridge between the two main towers will be modified to reduce the effects of the wind on the handrail. The retrofit modification will replace the existing vertical members and bottom rail with narrower members. The new vertical members will be spaced at 5 inches on center, which will help to increase the porosity of the handrail by allowing the wind to pass through the pickets more freely thus reducing the wind loads inducted upon these elements. The top rail and main support posts would remain unchanged.

Wind fairings will be installed at the west outer edge of the sidewalk and the top chord of the main stiffening truss. A quarter round fairing, with a radius of 19 inches, would be placed at the sidewalk's edge and a half round fairing, with a radius of 25 inches would be placed along the top chord of the stiffening truss. The fairings will be painted to match the existing Bridge color. The fairings radius and diameter will be equivalent to the width of the edge of sidewalk and top chord of the stiffening truss of which they cover. This will retain the same scale and the same

relationship of solids and voids of the main suspension truss's elevation. This modification was previously approved as part of the seismic retrofit project.

1.5 Construction Activities

Construction Staging Areas

Five potential staging areas have been identified. Four of the construction staging areas are located on the northern side of the Bridge in Marin County below the Marin Approach and Span 4 backspan. The four proposed construction staging areas on the north side of the Bridge would be located on existing parking lots and maintenance areas currently used for the Bridge operations. One staging area is located adjacent to the Bridge Toll Plaza within the City and County of San Francisco. This staging area would be located to the west of the Toll Plaza in an existing parking lot. Construction equipment and materials would be located within one or more of these construction staging areas. Storage of construction equipment and materials on-site would be limited to the staging areas.

Construction Activities

Construction of the new barrier would be done in sections, beginning on the west side of the Bridge and ending on the east side of the Bridge. Sidewalk and lane closures may be necessary during limited periods. Construction may take place during non-peak hours to minimize impacts to vehicles and other users of the Bridge. Lane closures would only be permitted during non-peak hours. It is anticipated that it would take 12 to 18 months per side to complete construction.

1.6 Area of Potential Effect

The Area of Potential Effects (APE) for the Project was established by the District, the cultural resources consultant team, Alicia Otani, PQS Principal Architectural Historian, H.P. Tang, Local Assistance Engineer, and Moe Shakeria, Caltrans Project Manager. The APE was signed on November 2, 2007, and is provided in Figure 3, Appendix A.

The APE for historic architectural resources includes two areas: General APE and Focused APE. The General APE was developed to encompass both the project area, and the contributing elements of the Golden Gate Bridge historic property that extend past the project area, namely the appurtenant approach viaducts (the Doyle Drive viaducts in San Francisco County). The Focused APE encompasses only those portions of the Golden Gate Bridge property that may be potentially affected by the Project: the main Bridge structures where the proposed Project would be constructed, and the construction staging areas in the Toll Plaza area and along Conzelman Road. The Project has no potential to effect historic properties outside of the Focused APE. Please refer to Section 4 for a description of the cultural resources addressed in this HRER.

The general environment of this Project is visually spectacular and culturally rich. Located at the mouth of San Francisco Bay, the Bridge spans the Golden Gate Strait, from Fort Point at the northwestern tip of the San Francisco Peninsula to Lime Point at the southeastern end of the

Marin Headlands, east of Fort Baker. The Golden Gate Bridge is one of the most well-known, internationally recognized, and frequently visited suspension bridges in the world. Combining Art Deco and Streamline Moderne design with advanced engineering technologies, and situated against a dramatic coastal backdrop, the Bridge has been described as an environmental sculpture and is widely noted for its harmonious blending of the natural and built environment. The extraordinary setting intensifies the visual power of the Bridge. From its north-south alignment, the Bridge provides panoramic views of the rugged beauty and urban diversity that surround it, encompassing the Marin hills, the Presidio of San Francisco Historic Landmark District, the skyline of San Francisco, Alcatraz and Angel Islands of San Francisco Bay, and the wide expanse of the Pacific Ocean and coastline.[3]

[3] National Park Service, "National Historic Landmark Nomination for the Golden Gate Bridge," (August 13, 1997); Homme, FHWA, "Request for Determination of Eligibility for the Golden Gate Bridge," 1979; NPS, "Presidio of San Francisco: Presidio National Register of Historic Places Registration Forms," signed by Keeper of the National Register of Historic Places, October 1993.

2. RESEARCH AND FIELD METHODS

2.1 Research Methods

The Golden Gate Bridge has been the subject of extensive documentation and historical analysis since the time of its construction (1933-1938). The preparers of this HRER, JRP Historical Consulting, LLC, (JRP) understood that the main Bridge structures would be subject to inventory and evaluation when this Project began in the Fall of 2006, and this was confirmed when the Focused APE was established in November 2007 Figure 3, Appendix A. JRP, therefore, began background research on this property and its surroundings during the initial stages of the Project and this research has continued throughout the on-going refinement of the Project alternatives, project meetings, fieldwork, and effects analysis. This research included pre-field, background, and resource-specific research through review of previous studies of the Golden Gate Bridge, as well as archival research focused upon the location of the proposed Project: the railings, sidewalk, and visitor experience of the Bridge. The most detailed previous studies and most relevant archival sources are listed below, and a comprehensive list of materials consulted appears in Section 7.

- National Park Service, "National Historic Landmark Nomination for the Golden Gate Bridge," (August 13, 1997), submitted to SHPO but not designated as NHL.
- Caspar Mol, MacDonald Architects, "Caltrans Architectural Inventory and Evaluation Form for the Golden Gate Bridge," November 1993, prepared for the "HASR: Proposed Seismic Retrofit Project for the Golden Gate Bridge," (1995).
- Charles Derleth Papers, manuscript collection, including Consulting Board of Engineers for the Golden Gate Bridge. Water Resources Center Archives, University of California, Berkeley.
- Irving F. Morrow (and Gertrude C. Morrow) Collection, 1914-1958, including drawings, plans, and sketches for the Golden Gate Bridge. Environmental Design Archives, College of Environmental Design, University of California, Berkeley.
- Frank L. Stahl, Daniel E. Mohn, and Mary C. Currie, *The Golden Gate Bridge: Report of the Chief Engineer, Volume II, May 2007* (San Francisco, CA: Golden Gate Bridge, Highway and Transportation District, 2007). This 2007 report, a supplement to *The Golden Gate Bridge, Report of the Chief Engineer, September 1937* by Joseph B. Strauss, provides a comprehensive history of the improvements and other modification to the Bridge since its completion in 1937.

Research also included the recognized sources of information about historical resources in California. JRP requested a records search at the Northwest Information Center in March 2007. JRP also reviewed the NRHP, the Office of Historic Preservation (OHP) Determinations of Eligibility for the NRHP, *California Inventory of Historic Resources*, *California Historical Landmarks*, and California Points of Historical Interest to identify the current status of the Bridge and its contributing elements, and to identify any other resources in the Focused APE.

Other than the Golden Gate Bridge, and the other properties in the General APE, no other historic resources were identified in these sources within the Focused APE.[4]

The Golden Gate Bridge historic property and the extensive previous investigations of its history provided the basis for the historical context presented in Section 3 of this HRER, as well as additional research conducted for the Project. JRP historians Rebecca Meta Bunse and Christopher McMorris conducted archival research in the Environmental Design Archives and Water Resources Center Archives at UC Berkeley in June 2007. This research supplemented on-going review of material from Golden Gate Bridge Highway & Transportation District Files, and material collected from various libraries and repositories, including: California Department of Transportation, District 4, Maps Files; Historic Photograph Collection, San Francisco Public Library; Historic American Buildings Survey, Library of Congress; California Room and Government Documents at the California State Library in Sacramento; Bancroft Library at UC Berkeley; and University of California, Davis. Refer to the references listed in Section 6 for a complete listing of materials consulted, and to Section 7 for JRP staff professional qualifications.

JRP assisted the District in the preparation of a letter to interested parties that was sent on April 29, 2008 seeking comment and information pertaining to the historic significance of the Golden Gate Bridge and the potential effect the Project may have on the character-defining features of the property. Copies of the draft letter to interested parties and the list of recipients are in Appendix C. Responses received will be summarized in this report and the environmental document for the project.

2.2 Field Methods

The Golden Gate Bridge historic property was subject to extensive inventory and evaluation as part of two survey efforts in the 1990s: the 1993 survey prepared for the seismic retrofit project, and the 1997 National Historic Landmark nomination. The Focused APE for the current Project established that the Bridge property subject to survey for this HRER consists of the main Golden Gate Bridge structure (Bridge 27 0052), and two contributing elements: the Round House Gift Center and the Toll Plaza Undercrossing (Bridge 34 0069). JRP, in consultation with Alicia Otani, PQS Principal Architectural Historian, Caltrans District 4, and Jennifer Darcangelo, Chief Office of Cultural Resource Studies, Caltrans District 4, designed an inventory and evaluation update strategy for the property to recognize the extensive information provided in the previous studies and augment that work with current description of changes to the property since the mid 1990s. JRP historians conducted fieldwork at the Bridge on March 8, 2007, and November 20, 2007, to collect updated recordation information and to photograph the property. Staff of MacDonald Architects, who are part of the design team for this Project, also made photographs

[4] California Office of Historic Preservation, Directory of Properties - Historic Property Data File for San Francisco County (as of December 2007); Department of Parks and Recreation, *California Inventory of Historic Resources*, (Sacramento: Department of Parks and Recreation, March 1976); Office of Historic Preservation, *California Historical Landmarks*, (Sacramento: California State Parks, 1996); and Office of Historic Preservation, *California Points of Historical Interest*, (Sacramento: California State Parks, May 1992); National Park Service, National Register Information System database: http://www.nr.nps.gov/ (accessed November 2007 and February 2008).

of the Bridge in August 2007, and JRP incorporated some of these images in the updated recordation of the historic property as well.

JRP prepared the DPR 523 form update to present: a summary of previous inventory and evaluation efforts, updated inventory and evaluation of the Toll Plaza Undercrossing (34 0069), confirmation of the current historic status and character-defining features of the Golden Gate Bridge historic property (see Appendix B), and digitized copies of the previous survey forms for the property (Appendix D). A copy of the Caltrans 2006 Statewide Historic Bridge Inventory Update for the bridges within the APE is also included in Appendix D.

3. HISTORICAL OVERVIEW

This HRER has been prepared as part of the Project to clarify the historic status and contributing elements of the Golden Gate Bridge, a multi-component historic structure that has been determined eligible for listing in the NRHP, OHP Status Code 2. The general historical context within which the Bridge should be evaluated is contained in the 1997 National Historical Landmark (NHL) Nomination prepared by the Western Regional Office of the National Park Service (NPS). A copy of this nomination, as well as a previous evaluation of the Bridge prepared in 1993, are included with the DPR 523 form update in Appendix B. The correspondence in Appendix D includes an evaluation of the Presidio Approach Road (Doyle Drive) viaducts prepared in 1987. A collection of additional agency correspondence regarding the historic status of the Bridge and its contributing elements is also included in Appendix E.

There is ample historic context provided in the previous evaluations of this property to demonstrate its historic significance. The 1997 NHL nomination provides the documentation and analysis to support eligibility of the Bridge property under Criterion C, as an important example of suspension bridge technology, Art Deco design, and the work of more than one master engineer and architect. Please refer to Section 5 for a discussion of the conclusions of the previous studies and this HRER.

The 1997 nomination listed eight major engineers and architects who contributed to the project, including Joseph B. Strauss and Irving F. Morrow, of Morrow & Morrow, San Francisco, who served as consulting architect on the original Golden Gate Bridge design and construction project. Both Strauss and Morrow recognized the important historic nature of the setting of the Bridge from the earliest stages of the project. Strauss noted the importance of the history of the area in his initial site investigations, and his respect for existing historic structures directly affected a major component of the final Bridge: the Fort Point Arch.

> [In the in 1920s]… the newly created Golden Gate Bridge District was raising tens of millions of dollars through bond sales for a bridge that would span the Golden Gate from Fort Point to Lime Point. Chief Engineer Joseph Strauss initially concluded that Fort Point sat on the optimal location for a huge concrete caisson anchoring the bridge's San Francisco end. After touring the empty fort, however, he changed his mind. In a 1937 memorandum to the bridge's Board of Directors, Strauss wrote: "While the old fort has no military value now, it remains nevertheless a fine example of the mason's art. Many urged the razing of this venerable structure to make way for modern progress. In the writer's view it should be preserved and restored as a national monument…"
>
> Strauss made some additional calculations and concluded that the fort could be spared by moving the southern anchorage several hundred feet south. However, in order to make up the difference in the total length, he would have to add a 'bridge within the bridge,' and consequently designed a steel arch in the southern anchorage to span the old fort. Fort Point would be overshadowed by the new bridge, but it would be preserved. … But the bridge crews went to extraordinary lengths to preserve one of the fort's most outstanding examples of military engineering, the granite seawall. A tall concrete bridge pylon was planned for the north side of the fort, directly atop the

> seawall. Instead of demolishing the wall or burying it with concrete, Strauss had it dismantled, stored, and re-erected once the pylon was finished.[5]

Strauss probably discussed this in detail with Irving Morrow, who in addition to consulting on the Bridge project, was the San Francisco District Officer of the Historic American Buildings Survey (HABS) at the time. Morrow oversaw submittal of seven photographs of the fort property made by Roger Sturtevant in May 1934, and possibly additional material that has not been digitized by the Library of Congress HABS Program.[6]

Although these bridge designers obviously appreciated the history of the Golden Gate and the military facilities surrounding the site, their design aesthetic looked forward rather than back and their finished product was ultimately a triumph of both bridge engineering and Art Deco design. Consulting architect Morrow was involved with the project from an early point, by about 1930, and continued to collaborate with Strauss and the rest of the Board of Engineers for the next seven years.[7] This early and consistent involvement in the design for the Bridge as consulting architect is evident in his design of the largest components, such as the towers, as well as the human-scale elements of the Bridge like the handrails and light standards. The Board of Engineers engaged Morrow for the "architectural work" of the main towers above the water line including the metal sheathing of the struts, the above ground anchorages (north and south), toll houses, service buildings, and "hand rail, seats, and electroliers" by 1931, and ultimately, he also designed the treatments of the concrete piers and pylons, the arch over Fort Point, and the color of the Bridge.[8]

The minutes of the Board of Engineers' meetings, and correspondence and reports by Morrow and Strauss also reveal that the designers accounted for the pedestrian and motorist experience and use of the Bridge. Strauss claimed in 1933 that "… the extraordinary scenic setting that this one site alone presents…will make it a sightseers' Mecca. For the same reason, it is the only bridge the decks of which will afford the incomparable view that has made the Golden Gate famous. To permit that view, the sidewalks are built as broad promenades, with rest seats at

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[5] John Martini, Fort Point: Sentry at the Golden Gate, ([San Francisco]: Golden Gate National Park Association, c1991), np. The 1997 nomination indicated that the Castillo de San Joaquin was probably destroyed by construction of the bridge, which seems to be confirmed by Martini's history of Fort Point, which continues: "Although the main casemated portion of Fort Point was spared during construction, some of the outworks of the fort had to be demolished to make way for the southern bridge anchorage. Early in the excavation process, the bluff south of the fort was cut back several hundred feet, destroying the counterscarp gallery and ten-gun battery. Bridge excavators also uncovered a long-buried adobe shed believed to be a powder magazine from the Castillo de San Joaquin. After its location was noted and photographed, the hut was demolished; it stood in a location too critical for it to be preserved."

[6] Historic American Buildings Survey, Data Sheets for Fort Point HABS CA-1239, Library of Congress, accessed online: www.loc.gov; HABS, *Catalogue of the Measured Drawings and Photographs of the Survey in the Library of Congress, March 1, 1941* (Washington, D.C.: US GPO, 1941), 48.

[7] Consulting Board of Engineers for the Golden Gate Bridge, Minutes, July 16 and 17, 1934, Charles Derleth Papers, Box 1, Water Resources Center Archives, University of California, Berkeley.

[8] Irving F. Morrow to Joseph B. Strauss, February 19, 1931, and "Architectural Work on the Golden Gate Bridge," typescript, June 14, 1937, "Irving F. Morrow (and Gertrude C. Morrow) Collection, 1914-1958," Project III.14, Environmental Design Archives, College of Environmental Design, University of California, Berkeley.

intervals."[9] The "rest seats" were not ultimately constructed, but visitor experience and views remained central to the design of several elements of the Bridge at the deck level. The Board of Engineers specifically addressed the hand railings again in July 1934, while discussing their attempt "to avoid conflict with the vision of motorists" and remain consistent with the European precedence of railings about one meter high (roughly 3.3 feet). The engineers ultimately decided that it was "…impossible to improve the position of the handrailing without changing the sidewalk level [and] the decision was to leave the railing height at 4 feet."[10]

After the Bridge opened in May 1937, Morrow summarized his design goals for the Bridge, which he considered to be "predominantly 'industrial' in character," explaining that:

> Architectural work on the Golden Gate Bridge was not an act of posthumous deification, but proceeded concurrently with the development of the engineering design. The ideal actualizing design work was to repudiate the devastating obligation to be artistic. Superfluous features were excluded, and interest was secured by the proportioning and handling of necessities.

This was true, asserted Morrow, of not only the major structural components, but also the "handrails, electroliers, etc., where of concrete are reduced to lowest terms, and where of metal are designed of structural steel shapes, utilizing appropriate techniques of fabrication and assembly to motivate design."[11]

[9] "Physical Characteristics of the Golden Gate Bridge compiled by Joseph B. Strauss, Chief Engineer," typescript, received January 28, 1933, "Irving F. Morrow (and Gertrude C. Morrow) Collection, 1914-1958," Project III.21, Environmental Design Archives, College of Environmental Design, University of California, Berkeley.

[10] Consulting Board of Engineers for the Golden Gate Bridge, Minutes, July 16 and 17, 1934, Charles Derleth Papers, Box 1, Water Resources Center Archives, University of California, Berkeley.

[11] Irving F. Morrow to Ernest Born, September 26, 1938, "Irving F. Morrow (and Gertrude C. Morrow) Collection, 1914-1958," Project III.14, Environmental Design Archives, UC, Berkeley.

4. DESCRIPTION OF CULTURAL RESOURCES

This HRER has been prepared as part of the Golden Gate Bridge Physical Suicide Deterrent System Project to supplement previous surveys of the Golden Gate Bridge history property. MacDonald Architects surveyed the Bridge in November 1993 as part of the Historic Architectural Survey Report for the "Proposed Seismic Retrofit Project for the Golden Gate Bridge," completed in January 1995. Meanwhile, the Western Regional Office of the National Park Service surveyed the property for a National Historic Landmark (NHL) Nomination, completed in August 1997. These two surveys are included in the attached DPR 523 form update. Please refer to the detailed property descriptions provided in those surveys, in addition to the supplemental description provided in this section.

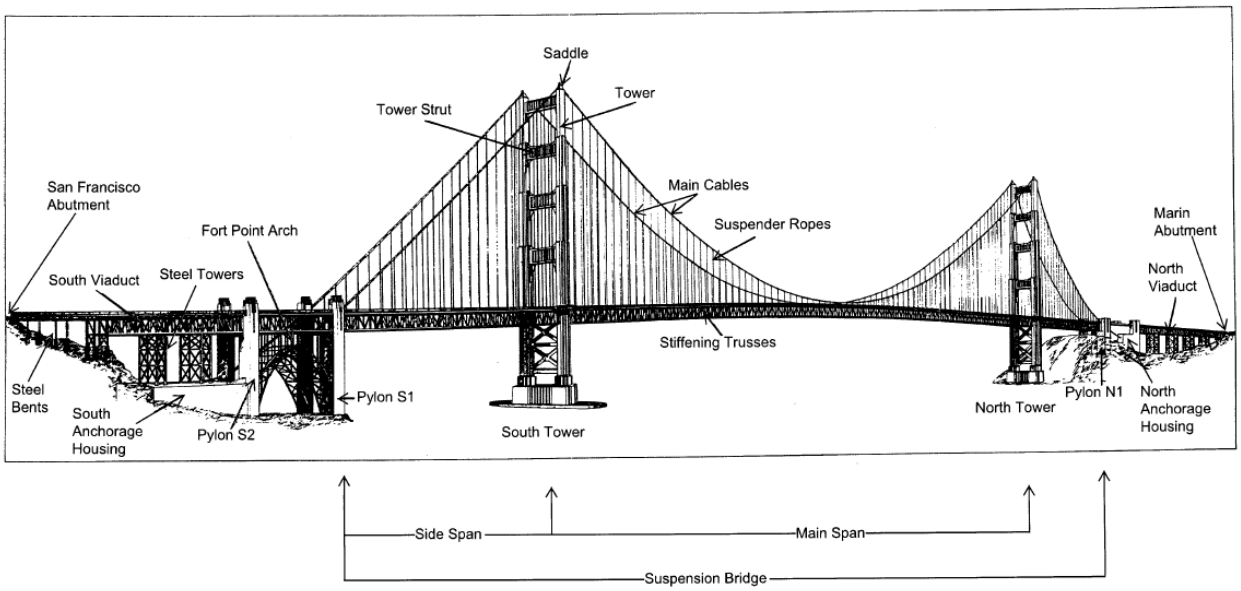
Several historic properties are located within the General APE for this Project: the Golden Gate Bridge (Bridge 27 0052); individually listed historic highway bridges (Marina Viaduct 34 0014 and Presidio Viaducts 34 0019); Fort Point National Historic Site; Presidio of San Francisco National Historic Landmark District; and Forts Baker, Barry and Cronkhite Historic District. Portions of the General APE are located within the boundaries of the Presidio of San Francisco National Historic Landmark District. The Fort Point National Historic Site is located under the Fort Point Arch between Pylon S1 and S2 of the Bridge. None of these properties were subject to further study because they were outside the Focused APE, except for the main Golden Gate Bridge structures and select contributing elements described below.[12]

The Focused APE for historic architectural resources consists of the Golden Gate Bridge (Bridge 27 0052) historic property. The contributing elements of the Bridge located within the Focused APE are the Round House Gift Center and the Toll Plaza Undercrossing (Bridge 34 0069). The Golden Gate Bridge, Round House, and Toll Plaza Undercrossing, were subject to updated inventory and evaluation in the attached DPR 523 form update.

The 1993 survey and the 1997 nomination identified the main Bridge structures from the Toll Plaza area on the south, to the Marin Approach Viaduct and North Abutment on the north as the primary element of the Golden Gate Bridge historic property. The major components of the Golden Gate Bridge are the main suspension span, suspender ropes and suspension cables, four pylons, Four Point Arch and two of each of the following structures: side suspension spans, anchorages, piers, towers, and North and South viaducts (see illustration below).[13]

[12] Fort Point National Historic Site (CA-SFr-48H). San Francisco, California, underneath Fort Point Arch, Golden Gate Bridge. Listed in the NRHP in 1970 for significance in architecture, military history and maritime history (Criteria A and C). Fort Point is also a contributing element of the Presidio National Historic Landmark District (outside the Focused APE). The marker for California State Landmark No. 82 memorializes an earlier fort – Castillo de San Joaquin – established near where Fort Point was later built after the US Army cut away the cliffs in the 1850s (marker at the southeast corner of the Fort Wall, Fort Point, San Francisco, below Golden Gate Bridge). Fort Point was photographed for the Historic American Buildings Survey in 1934, 1968, 1975, and 1983 (Survey number HABS CA-1239).

[13] The General APE for the current Project includes Doyle Drive as a contributing element, while the Focused APE for the current Project encompasses the main bridge structures and the Toll Plaza to account for the proposed Project footprint and construction staging areas.



Main elements of the Golden Gate Bridge
(Source: MacDonald Architects, "HASR: Seismic Retrofit Project, Golden Gate Bridge," [1995]).

The 1997 nomination addressed the collective system of structures that comprise the Golden Gate Bridge property and offered a detailed description of its contributing and non-contributing elements. The nomination identified the southern approach road (also known as the Presidio Approach Road, or Doyle Drive), and its two viaducts (Bridges 34 0014 and 34 0019), as contributing elements of the Bridge, as well as the Round House Gift Center (originally a restaurant and traveler comfort station). The nomination did not specifically call out the small structure known as the Lincoln Boulevard Undercrossing (Bridge 34 0062), located at the north end of Doyle Drive just south of the Toll Plaza area, but the nomination did consider the entire Doyle Drive feature to be a contributing element of the Golden Gate Bridge. The Toll Plaza Undercrossing (34 0069) is also listed in the NRHP as a contributing element of the Presidio of San Francisco National Historic Landmark.[14]

The Toll Plaza Undercrossing is an original component of the Bridge. The tunnel-like undercrossing is a single span concrete tee beam structure designed to allow vehicular traffic and pedestrians to cross from one side of the roadway to the other underneath the Toll Plaza using surface streets. The west side of the undercrossing is directly underneath the Administration Building (a non-contributing element because of integrity loss, according to both the 1993 and 1997 surveys), as shown in Figure 1. The rest of the undercrossing carries the lanes of traffic as they pass through the toll booths. Caltrans bridge logs indicate that the undercrossing is about 33' long and 291' wide, and that it has not undergone major widening or extension since it was completed in 1936.[15]

[14] National Park Service, "National Historic Landmark Nomination for the Golden Gate Bridge," August 13, 1997; Caltrans, "2006 Statewide Historic Bridge Inventory Update," see Appendix D.

[15] Caltrans,"Structure & Maintenance Investigations, Log of Bridges on State Highways," November 2007, accessed online at: http://www.dot.ca.gov/hq/structur/strmaint/brlog/logpdf/logd04.pdf; Caltrans, "2006 Statewide Historic Bridge Inventory Update."

Railings and original light standards are contributing elements of the Bridge. The "Stop – Pay Toll" sign facing southbound traffic on the toll booth canopy was identified as a contributing feature, but it has since been removed for installation of FasTrak™ signs, as discussed below (see Figures 3 and 4 and Photograph 8). The 1997 nomination also concluded that the Sausalito Lateral (original approach to the north side of the Bridge), was not a contributing element because it had not been included in the final scope of work for the original Bridge project, and was not designed, built, or funded by the team that was responsible for the rest of the Golden Gate Bridge. Other non-contributing elements of the Bridge property identified in the 1997 nomination: Toll Plaza Building, the clock on the toll booth canopy (1949), as well as modern bus shelters, phone booths, light standards, and signs.[16]

Both previous surveys summarized major construction and maintenance projects undertaken through the mid 1990s that altered aspects of the Golden Gate Bridge between its completion in 1937 and 1997. Many modifications were made during that sixty year period, but the NHL nomination noted that none of these modifications had "substantially" affected the historic integrity of the Bridge as a historic property. The major projects during that time included: southbound lane widening approaching toll booths in 1947; the widening of both the Marin and San Francisco approach lanes (1950s) and viaducts (early 1960s); replacement of all suspender ropes and their connections between 1973 and 1976; replacement of rivets with bolts on the suspension bridge and approaches; installation of an orthotropic steel plate roadbed (1982-1985) replacing the original reinforced concrete roadway; and addition of lower lateral bracing system and diagonal bracing at North and South viaducts. In addition, during the early 1980s, the North and South approach viaducts underwent a substantial seismic upgrade.[17] Neither of the previous surveys devoted much description to the Vista Point on the Marin County side of the Bridge, also known as the Golden Gate Observation Area. California Division of Highways designed and built this facility just east of US 101, adjacent to the North Abutment in 1961-1962. It was not part of the original Bridge design and construction project and is not a contributing element of the Bridge property.[18]

Other, smaller scale alterations completed between 1937 and 1997 included: addition of a bicycle bridge at the northern pylon in 1968-69 to connect to west sidewalk; removal of original toll booths in the 1980s; and replacement of light fixtures and retention of original light standards (compare light fixture in Figure 2, with Photographs 6-7). Other facilities that underwent changes in the 1980s: the addition of a west sidewalk on the North Approach (there was none

[16] Caspar Mol, MacDonald Architects, "Caltrans Architectural Inventory and Evaluation Form for the Golden Gate Bridge," November 1993, 39-41; National Park Service, "National Historic Landmark Nomination for the Golden Gate Bridge," August 13, 1997, 9-10; Frank L. Stahl, Daniel E. Mohn, and Mary C. Currie, *The Golden Gate Bridge: Report of the Chief Engineer, Volume II, May 2007* (San Francisco, CA: Golden Gate Bridge, Highway and Transportation District, 2007), 102, 122-144, 155-156, 170, 178, 180-182. This 2007 report, a supplement to *The Golden Gate Bridge, Report of the Chief Engineer, September 1937* by Joseph B. Strauss, provides a comprehensive history of the improvements and other modification to the bridge since its completion in 1937.

[17] MacDonald Architects, "Caltrans Evaluation Form, Golden Gate Bridge," November 1993, 39-41; National Park Service, "NHL Nomination, Golden Gate Bridge," August 13, 1997, 9-10; San Francisco Historical Photograph Collection, Image #AAD-1470, August 1947, San Francisco Public Library; District, "Golden Gate Bridge Lighting Facts," http://goldengatebridge.org/research/, accessed January 2008; Stahl, et al., *The Golden Gate Bridge: Report of the Chief Engineer, May 2007*, 102, 122-144, 155-156, 170, 178, 201.

[18] San Francisco Historical Photograph Collection, San Francisco Public Library; GGNRA, *Cultural Landscape Report for Fort Baker* (GGNRA 2005), 20, 44.

originally); east side walk on North Approach widened; North Approach concrete guardrails replaced with metal. This work included removal of "… the structural steel sidewalk framing, including traffic curb, pedestrian railing and electrolier standards, [for transport] to the Napa yard for sandblasting, rehabilitation, and painting. Corrosion damage to individual frame members and railings was repaired and in some cases badly damaged members were replaced."[19] About ten years later, the District replaced over one mile (6,557 linear feet) of pedestrian hand railings on the west side of the Bridge with replicas of the originals. See Figures 2, 5 and 6, and Photographs 5, 6, and 9 for various historic and current views of the sidewalks and railings.[20]

The District is currently conducting a three-phase seismic retrofit program on the Golden Gate Bridge that began in 1997. Phase 1, completed in 2002, retrofitted the Marin (north) Approach Viaduct. Retrofit of the San Francisco (south) Approach Viaduct, San Francisco (south) Anchorage Housing, Fort Point Arch, and Pylons S1 and S2 will be completed as part of Phase 2 (see Photograph 7). The retrofit of the Main Suspension Bridge and Marin (north) Anchorage Housing will be completed under Phase 3, scheduled to start in 2007.[21]

Other than the on-going seismic retrofit project that began in 1997, the most extensive new construction on the Golden Gate Bridge since the 1997 nomination was the installation of new Public Safety Railing between the roadway lanes and each sidewalk in 2003 (Photograph 6). This 4.5' tall railing consists of steel posts set approximately 12.5' apart horizontal pipe rails with horizontal cables and horizontal pipe rails at the top (Photograph 6). The posts were secured to the extant steel curb barrier between the sidewalk and the roadway. The FasTrak[tm] project (2000-2005) required modifications to the toll booth canopy, including the removal of the "Stop – Pay Toll" sign, a contributing feature of the Bridge in the 1997 nomination. The sign was removed in 2000. The toll canopy roof was replaced in 2003 and the 1949 neon clock, which had ceased functioning was not repairable, and was replaced with a replica (Photograph 8).[22]

The completed Public Safety Railing Project and the seismic retrofit program currently underway were subject to Section 106 effects analysis and CEQA impacts analysis. No adverse effects to character-defining features or the qualities that qualify the Golden Gate Bridge for listing in the NRHP were identified for either project.[23] SHPO concurred with these findings, as shown in the

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[19] Stahl, et al., *The Golden Gate Bridge: Report of the Chief Engineer, Volume II, May 2007*, 140-141.

[20] National Park Service, "NHL Nomination, Golden Gate Bridge," August 13, 1997, 9; Stahl, et al., *The Golden Gate Bridge: Report of the Chief Engineer, Volume II, May 2007*, 144.

[21] MacDonald Architects, "HASR: Proposed Seismic Retrofit Project for the Golden Gate Bridge," (1995); District, "Overview of Golden Gate Bridge Seismic Retrofit Updated January 2007," http://goldengatebridge.org/projects/retrofit.php, accessed online February 26, 2008.

[22] Stahl, et al., *The Golden Gate Bridge: Report of the Chief Engineer, Volume II, May 2007*, 49, 185-186, 193, 194, 243-248; District, "Toll History," and "Golden Gate Bridge FasTrak System Timeline," http://goldengatebridge.org/research/, accessed January 2008.

[23] Frank L. Stahl,et al., 243-244; Donald MacDonald, MacDonald Architects, "Historic Property Survey Report, Finding of No Adverse Effect: Environmental Assessment of the Public Safety Railing Project" (March 1999) 1-2 and 6; Donald MacDonald and Caspar Mol, MacDonald Architects, "Historic Property Survey Report, Finding of No Adverse Effect for the Proposed Seismic Retrofit Project for the Golden Gate Bridge," (January 1995); Golden Gate Bridge, Highway and Transportation District, US Department of Transportation Federal Highway Administration, and California Department of Transportation, "Golden Gate Bridge Seismic and Wind Retrofit Project, Draft Environmental Assessment / Initial Study," (November 1995).

attached correspondence, and the previous determination that the Golden Gate Bridge is eligible for listing in the NRHP remains valid.

5. FINDINGS AND CONCLUSIONS

This HRER has been prepared as part of the Golden Gate Bridge Physical Suicide Deterrent System Project to clarify the contributing elements and historic status of the Golden Gate Bridge, a multi-component historic structure that has been determined eligible for listing in the NRHP, at the national level of significance, under Criterion C, with a period of significance of 1933-1938. It carried OHP Status Code 2. Overall, the Golden Gate Bridge has lost some historic integrity through the course of seventy years of operation, maintenance, and improvements. Nevertheless, the property clearly conveys its significance as an excellent example of the incorporation of architectural styling to 1930s state-of-the art engineering, as clarified by this update and as recognized by the state, local, and federal historic preservation programs described herein.

The Golden Gate Bridge has been recognized by several local, state, and federal programs. It was designated as California State Historic Landmark No. 974 in 1990, which automatically listed the property in the California Register of Historical Resources (CRHR).[24] The Golden Gate Bridge and its approaches have been documented by the Historic American Engineering Record (HAER No. CA-31), and the Bridge has been recognized by the American Society of Civil Engineers on at least three separate occasions: as one of the Seven [engineering] Wonders of the World in 1955, as a National Civil Engineering Landmark in 1984, and as a Monument of the Millennium in 2001. The Golden Gate Bridge is also San Francisco City Landmark No. 222. Currently, Caltrans lists this Bridge as Category 2 (eligible for listing in the NRHP) in its Caltrans Historic Bridge Inventory.[25] The Golden Gate Bridge is also considered to be a historical resource for the purposes of CEQA.

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[24] National Park Service, National Historic Landmark Nomination; California OHP, "Directory of Properties in the Historic Property Data File for San Francisco County," as of December 2007, on file with Northwest Information Center; Caltrans, "Structure & Maintenance Investigation, Historical Significance–State Agency Bridges," November 2007, http://www.dot.ca.gov/hq/structur/strmaint/hs_state.pdf. See the correspondence attached to this HRER, including: Homme, FHWA, "Request for Determination of Eligibility for the Golden Gate Bridge," 1979; Stephen Mikesell, "HRER Approaches to the Golden Gate Bridge," 1987; Snyder, Memorandum to SHPO re: Presidio Viaduct and Marina Viaduct, April 3,1990; and Nissley at ACHP, Letter to Markle at FHWA, re: Marina Viaduct Seismic Retrofit, 1994. Caltrans and California Office of Historic Preservation records indicate that the Golden Gate Bridge has been the subject of historic evaluation for many years. The Keeper of the National Register determined the bridge to be eligible for the NRHP in 1977 (Status 2S1) and in 1980 a consensus determination was made, resulting in a Status 2S2 (determined eligible for separate listing). Caltrans Architectural Historian Stephen Mikesell evaluated the approaches to the bridge and concluded that the Presidio Viaduct (Bridge 34 0019) and Marina Viaduct (34 0014) were eligible for listing in the NRHP as contributing elements of the Golden Gate Bridge and SHPO concurred.

[25] National Park Service, National Historic Landmark Nomination; Golden Gate Bridge, HAER # CA-31 (1984); Presidio of San Francisco, HABS # CA-1100-1114, 1173, 1174, 1212-1216, 1239, and 2269; San Francisco Planning Department, Landmarks Preservation Advisory Board, Golden Gate Bridge, case file for Landmark No. 222, 1999; Caltrans, "Structure & Maintenance Investigation, Historical Significance–State Agency Bridges," November 2007.

The Golden Gate Bridge was determined eligible for listing in the NRHP in 1980, under Criteria A, B, and C, at the national level of significance, with a period of significance of 1933-1938. FHWA Region 9 requested the determination in 1979 when the Bridge was about 42 years old, but the California State Historic Preservation Officer, and the Advisory Council for Historic Preservation agreed that the Bridge was exceptionally important. Subsequent research and at least three additional inventory and evaluation efforts have refined the eligibility analysis and expanded the identification of the contributing elements of the property and its character-defining features. Caltrans Architectural Historian Stephen Mikesell, who is now Deputy SHPO, evaluated the approaches to the Bridge and concluded that the Presidio Viaduct (Bridge 34 0019) and Marina Viaduct (34 0014) were eligible for individual listing in the NRHP, and as contributing elements of the Golden Gate Bridge and SHPO concurred (see attached correspondence).

As discussed above, the Bridge was then evaluated in 1993 for a proposed seismic project, and then again in 1997 for a proposed NHL nomination. The 1997 nomination proposed significance under Criterion C only. The supporting documentation and analysis under Criterion C significance appears to be accurate and is proposed as the correct area of significance in this updated evaluation. The NPS has produced and revised guidelines for the evaluation of historic properties since the time of the 1980 determination and the argument for eligibility under Criteria A and B is no longer adequate. The request for determination argued that the Bridge was eligible under Criterion A for its association with the history of the Golden Gate Strait and went on to describe the events and trends in California history that took place through the entrance that the strait provides to San Francisco Bay and points beyond prior to construction of the Bridge. The Bridge does not, however, have direct or important associations with any of the events or trends mentioned in the request for determination, which is a required aspect of eligibility under Criterion A. The request also proposed that the Bridge was eligible for listing under Criterion B, for its association with its lead proponent and engineer, Joseph B. Strauss. Criterion B is intended for direct personal association with a historically significant individual, and is usually applied to the place where the individual conducted his or her important work, such as a studio, work place, or home. The association of the Bridge with Strauss more accurately falls under Criterion C, as the work of a master engineer. The Golden Gate Bridge property, therefore, does not appear to meet Criterion A or Criterion B.[26]

The Golden Gate Bridge is a system of contributing structures that rely upon each to achieve the overall effect of their design. The basic components of the main suspension span and side spans, the pylons, approach viaducts, and Fort Point Arch, are also interconnected with the other contributing elements: the Presidio Approach Road and the Round House. The Toll Plaza Undercrossing (34 0069) is also an original component of the Golden Gate Bridge that appears to be eligible as a contributing element of the Bridge, but was not individually evaluated in the 1993 or 1997 surveys. Caltrans bridge logs indicate that the undercrossing has not undergone major widening or extension since it was completed in 1936.[27] The 1997 nomination included

[26] Homme, FHWA, "Request for Determination of Eligibility for the Golden Gate Bridge," 1979; USDI, National Park Service, "Guidelines for Applying the National Register Criteria for Evaluation," *National Register Bulletin 15* (Washington DC: GPO, 1990; revised 1991-1997; revised for Internet 1995-2002), 16.

[27] Caltrans, "Structure & Maintenance Investigation, Log of Bridges on State Highways," July 2007, accessed online at: http://www.dot.ca.gov/hq/structur/strmaint/brlog/logpdf/logd04.pdf.

the Toll Plaza area within the proposed NHL boundaries because the plaza serves as the southern ending of the main Bridge element and links it to the contributing southern approach road. The Toll Plaza Undercrossing was constructed as part of the original Golden Gate Bridge and its Toll Plaza and, therefore, appears to be a contributing element of the property.

The primary character-defining elements and decorative features of the Bridge and its contributing elements are its major structural elements (the suspension bridge anchorages, pylons, piers, towers, main span and side spans), the plate girder bridge, arch bridge, and truss bridges of the approaches, the southern approach roadway (Doyle Drive), main suspension cables, Round House, and Toll Plaza Undercrossing. The Art Deco / Moderne design of these structures is a high ranking character-defining feature of all of these structures and their use within the overall Bridge. The railings from the original construction and railings replicated to match original, as well as the layout of the sidewalks – width and construction around piers and pylons – that allow pedestrian use of the Bridge are essential character-defining features of the property. Although the sidewalks have been extended and widened, they continue to serve as important, human scale features of the Bridge that make it readily accessible to the commuting and visiting public.

Other character-defining features that are important in conveying the artistic value of the property are the electroliers, or light standards, the International Orange paint color, and remaining concrete railings. The previous evaluations specifically identified the light standards and pedestrian railings as contributing elements of the property, and both were designed by consulting architect Irving F. Morrow. "In addition to recommending the red vermilion (known as "international orange") paint color that still graces the Bridge today, Mr. Morrow was largely responsible for the architectural enhancements that define the Bridge's Art Deco form. The pedestrian railings were simplified to modest, uniform posts placed far enough apart to allow motorists an unobstructed view. The electroliers (light posts) took on a lean, angled form and decorative cladding was added to the portal bracing of the main towers."[28]

Overall, the Golden Gate Bridge has lost some historic integrity through the course of seventy years of operation, maintenance, and improvements. Nevertheless, previous effects analysis has not identified adverse effects to the character-defining features of the Bridge, and the property clearly conveys its significance as an excellent example of the incorporation of architectural styling to 1930s state-of-the art engineering, as clarified by this update and as recognized by the state, local, and federal historic preservation programs described herein.

In summary, there is one historic property within the Focused APE for this Project: the Golden Gate Bridge. The findings of this HRER, and the historic status of the Bridge and the contributing elements of the Bridge studied for this Project, are summarized below.

[28] Stahl, et al., *The Golden Gate Bridge: Report of the Chief Engineer, Volume II, May 2007*, 173.

Historic Status Category	Finding
a) Historic properties listed in the National Register.	Toll Plaza Undercrossing (Bridge 34 0069), listed as contributing element of the Presidio of San Francisco National Historic Landmark, OHP Status Code 1.
b) Historic properties previously determined eligible for the National Register.	Golden Gate Bridge (and contributing elements), determination of eligibility 1980 and subsequent updates, OHP Status Code 2.
c) Resources previously determined not eligible for the National Register.	Administration Building (or Toll Plaza Building) and its ancillary structures, bus shelters; telephone booths, modern signs and light standards, and visitor parking area, OHP Status Code 6.
d) Historic properties determined eligible for the National Register as a result of the current study (refer to relevant evaluations in attached supporting documentation).	Toll Plaza Undercrossing (Bridge 34 0069), as a contributing element of the Golden Gate Bridge historic property, OHP Status Code 3.
e) Resources determined not eligible for the National Register as a result of the current study (refer to relevant evaluations in attached supporting documentation).	None
f) Resources for which further study is needed because evaluation was not possible (e.g., archaeological sites that require a test excavation to deter-mine eligibility).	None
g) Historical resources for the purposes of CEQA	Golden Gate Bridge, and its contributing elements, California State Landmark No.974, City of San Francisco Landmark No. 222, and OHP Status Code 2.
h) Resources that are not historical resources under CEQA, per CEQA Guide-lines §15064.5, because they do not meet the California Register criteria outlined in PRC §5024.1.	Administration Building (or Toll Plaza Building) and its ancillary structures, bus shelters; telephone booths, modern signs and light standards, and visitor parking area, OHP Status Code 6.

6. REFERENCES

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7. PREPARERS' QUALIFICATIONS

Rebecca Meta Bunse, JRP Partner and MA in History (Public History, California State University, Sacramento, 1996), served as primary historian and manager for this Project. Her duties included APE delineation, archival research, field work, evaluation and effects analysis, as well as report writing, review, editing. Ms. Bunse has eighteen years experience working as a consulting historian and architectural historian on a wide variety of historical research and cultural resources management projects, as a researcher, author, and project manager. Based on her level of education and experience, Ms. Bunse qualifies as a historian and architectural historian under the United States Secretary of the Interior's Professional Qualification Standards (as defined in 36 CFR Part 61), and meets the Professionally Qualified Staff Standards for these disciplines in the Section 106 Programmatic Agreement (Section 106 PA) Attachment 1.

JRP Partner Christopher McMorris (MS in Historic Preservation, Columbia University) served as architectural historian for this Project and contributed to archival research, evaluation, and effects analysis. Mr. McMorris has ten years experience working as a consulting historian and architectural historian on a wide variety of historical research and cultural resources management projects. He qualifies as an architectural historian and historian under the United States Secretary of the Interior's Professional Qualification Standards (as defined in 36 CFR Part 61), and meets the Professionally Qualified Staff Standards for these disciplines in the Section 106 Programmatic Agreement (Section 106 PA) Attachment 1.

APPENDICES

APPENDIX A : Figures

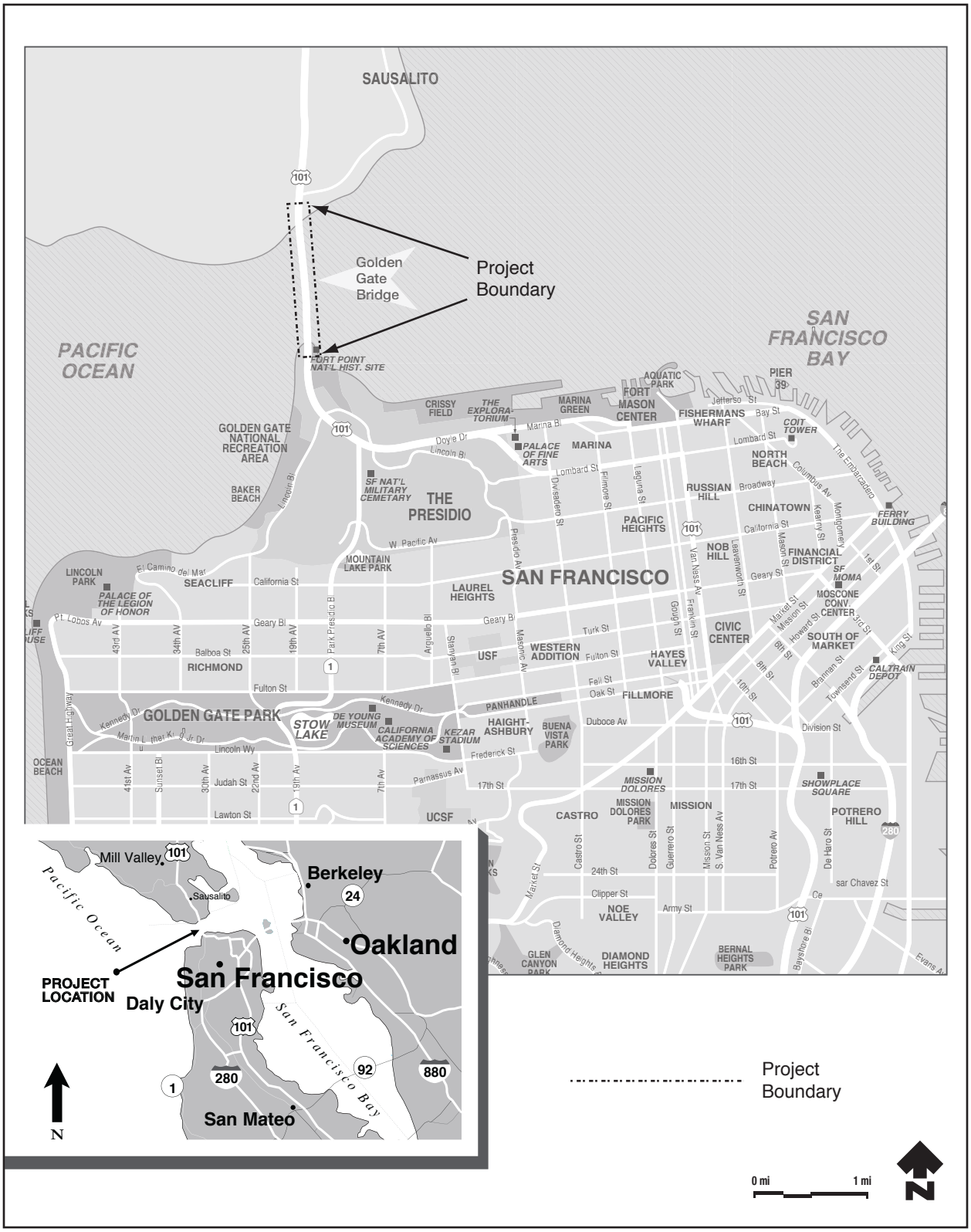


FIGURE 1
PROJECT LOCATION

Source: CirclePoint, 2008

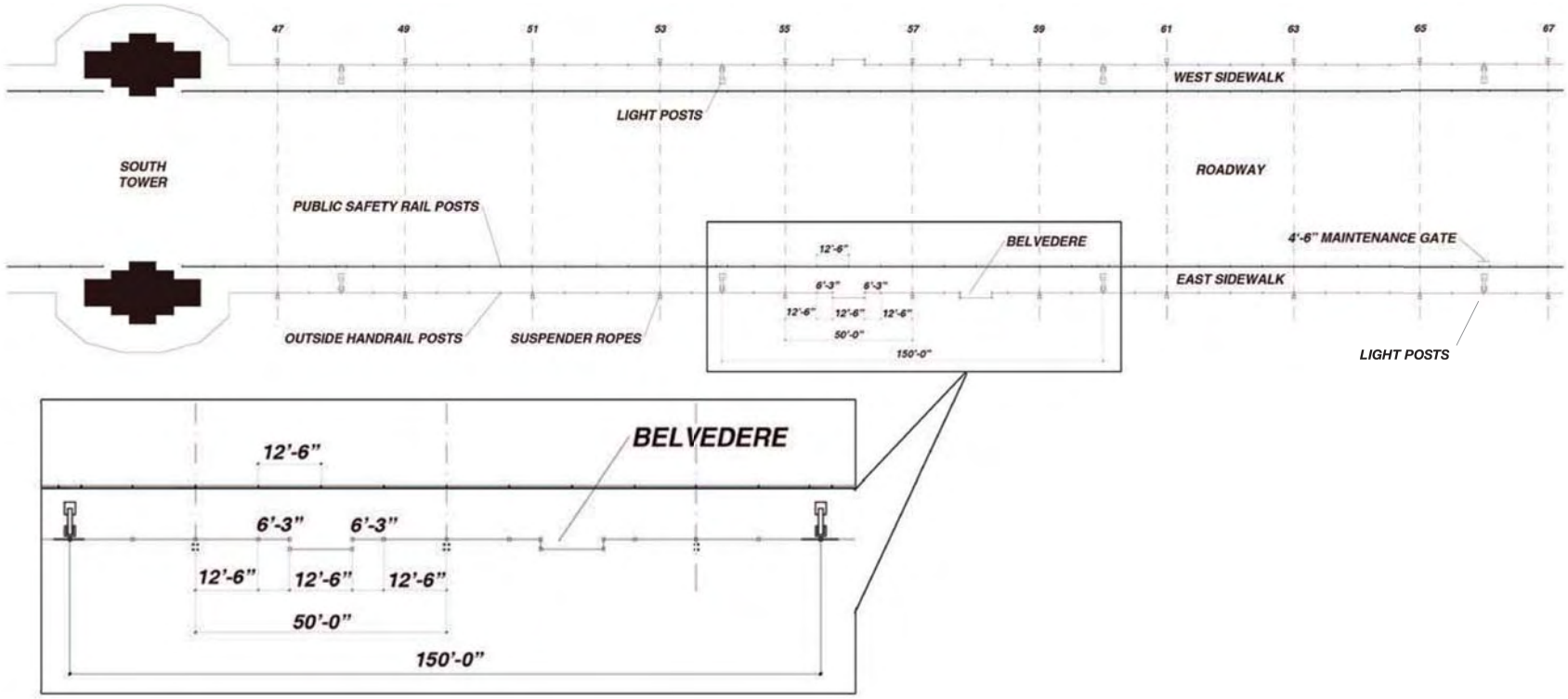


FIGURE 2
PLAN VIEW OF BRIDGE

Source: macdonald architects, 2008

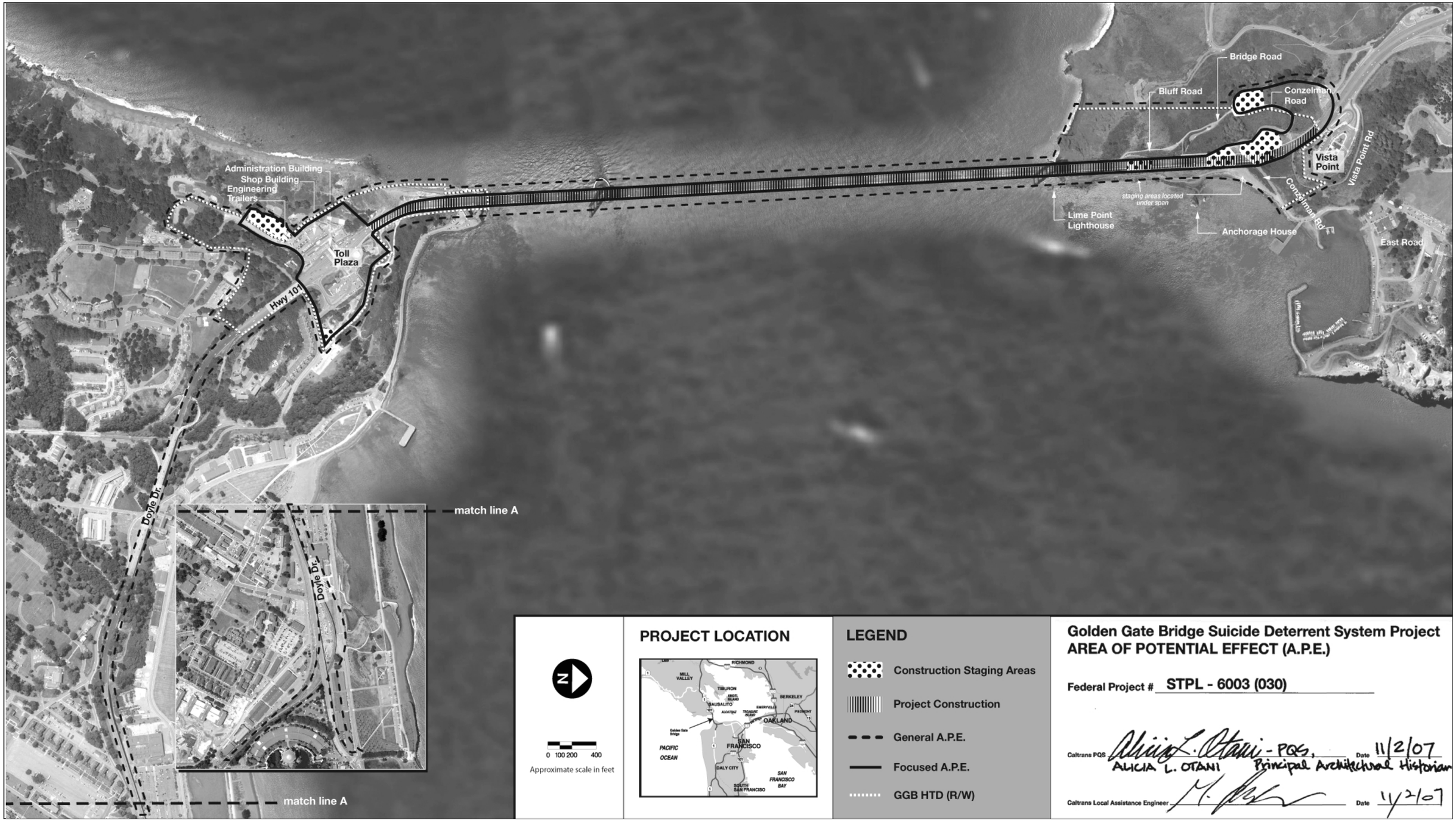
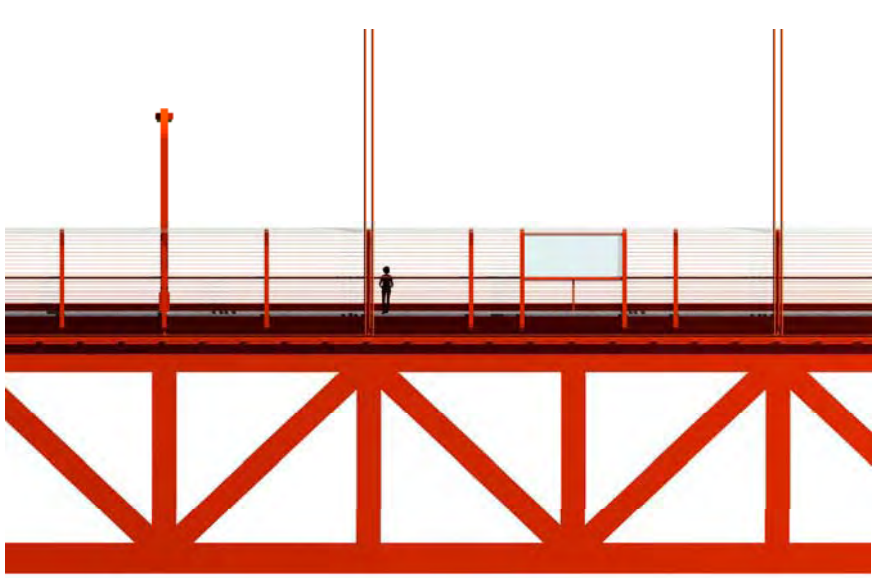


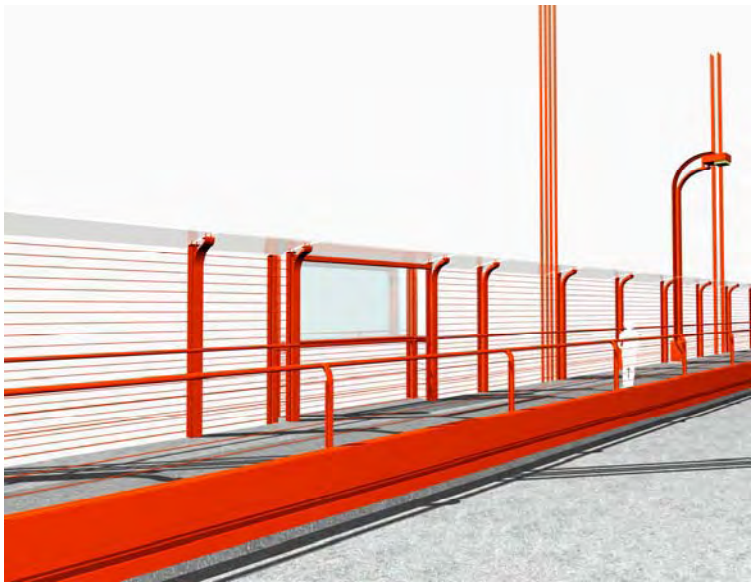
Figure 3. General and Focused Areas of Potential Effect for Historic Architectural Resources

Renderings 1-4: Alternative 1A

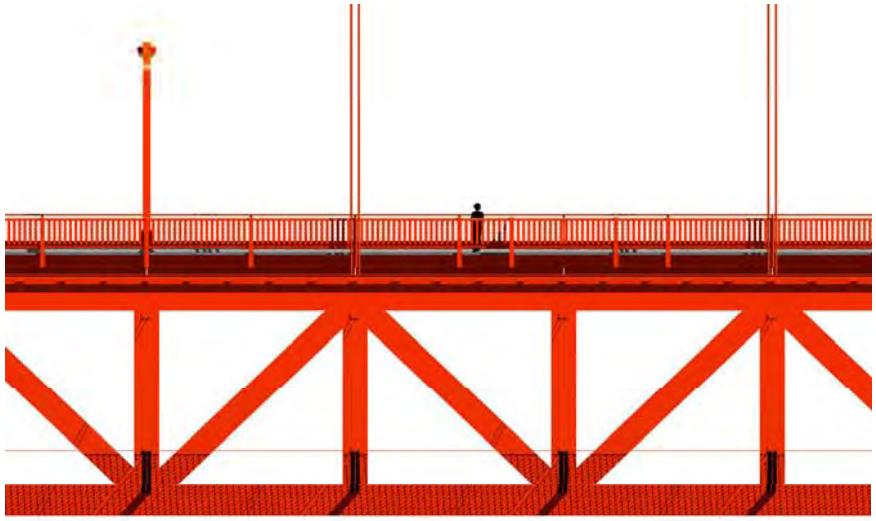
Renderings 1-4: Alternative 1B

Renderings 1-4: Alternative 2A





Renderings 1-4: Alternative 2B



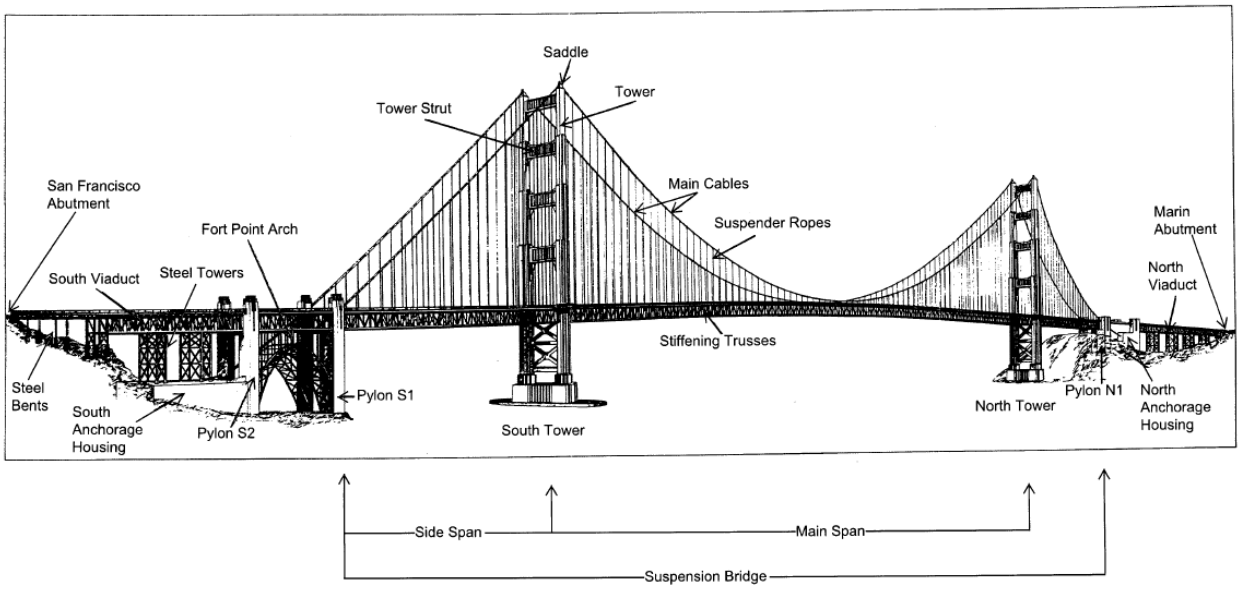
Renderings 1-4: Alternative 3

APPENDIX B : DPR 523 Form Update

P1. Other Identifier: Main and side suspension spans = Bridge 27 0052; Toll Plaza Undercrossing = Bridge 34 0069

***P3a. Description:** This update form has been prepared as part of the Golden Gate Bridge Physical Suicide Deterrent System Project. The Golden Gate Bridge was previously inventoried and evaluated by two survey efforts. MacDonald Architects surveyed the bridge in November 1993 as part of the Historic Architectural Survey Report for the "Proposed Seismic Retrofit Project for the Golden Gate Bridge," completed in January 1995. Meanwhile, the Western Regional Office of the National Park Service surveyed the property for a National Historic Landmark (NHL) Nomination, completed in August 1997. These two surveys are attached to this update form. This update was prepared to incorporate the extensive information provided in these previous studies, to augment that information with descriptions of changes to the property since the mid 1990s, and to clarify and confirm the contributing elements and historic status of the property within the Focused APE for this project.

The 1993 survey and the 1997 nomination identified the main bridge structures from the Toll Plaza area on the south, to the Marin Approach Viaduct and North Abutment on the north as the primary element of the Golden Gate Bridge historic property. The Golden Gate Bridge itself is thoroughly described in the 1997 nomination and its major components are the main suspension span, suspender ropes and suspension cables, four pylons, Four Point Arch and two of each of the following structures: side suspension spans, anchorages, piers, towers, and North and South viaducts. The 1993 survey identified the Round House Gift Center building as a contributing element of the bridge property, but did not address the approach roads in much detail because they were not within the APE for that project.[1]



Main elements of the Golden Gate Bridge
(Source: MacDonald Architects, "HASR: Seismic Retrofit Project, Golden Gate Bridge," [1995]).

The 1997 nomination addressed the collective system of structures that comprise the Golden Gate Bridge property and offered a detailed description of its contributing and non-contributing elements. The nomination identified the southern approach road (also known as the Presidio Approach Road, or Doyle Drive), and its two viaducts (Bridges 34 0014 and 34 0019), as contributing elements of the bridge, as well as the Round House Gift Center (originally a restaurant and traveler comfort station). The nomination did not specifically call out the small structure known as the Lincoln Boulevard Undercrossing (Bridge 34 0062), located at the north end of Doyle Drive just south of the Toll Plaza area, but the

[1] The General APE for the current project includes Doyle Drive as a contributing element, while the Focused APE for the current project encompasses the main bridge structures and the Toll Plaza to account for the proposed project footprint and construction staging areas.

nomination did consider the entire Doyle Drive feature to be a contributing element of the Golden Gate Bridge (see updated significance statement below). Railings and original light standards were identified as contributing elements of the bridge. The "Stop – Pay Toll" sign facing southbound traffic on the toll booth canopy was identified as a contributing feature; it has since been removed for installation of FasTrak[tm] signs, as discussed below (see Figures 3 - 4 and Photograph 8). The 1997 nomination also concluded that the Sausalito Lateral (original approach to the north side of the bridge), was not a contributing element because it had not been included in the final scope of work for the original bridge project, and was not designed, built, or funded by the team that was responsible for the rest of the Golden Gate Bridge, see the attached nomination for more information. Other non-contributing elements of the bridge property identified in the 1997 nomination: Toll Plaza Building, the clock on the toll booth canopy (1949), as well as modern bus shelters, phone booths, light standards, and signs.[2]

Both previous surveys summarized major construction and maintenance projects undertaken through the mid 1990s that altered aspects of the Golden Gate Bridge between its completion in 1937 and 1997. Many modifications were made during that sixty year period, but the NHL nomination noted that none of these modifications had "substantially" affected the historic integrity of the bridge as a historic property. The major projects during that time included: southbound lane widening approaching toll booths in 1947; the widening of both the Marin and San Francisco approach lanes (1950s) and viaducts (early 1960s); replacement of all suspender ropes and their connections between 1973 and 1976; replacement of rivets with bolts on the suspension bridge and approaches; installation of an orthotropic steel plate roadbed (1982-1985) replacing the original reinforced concrete roadway; and addition of lower lateral bracing system and diagonal bracing at North and South viaducts. In addition, during the early 1980s, the North and South approach viaducts underwent a substantial seismic upgrade.[3] Neither of the previous surveys devoted much description to the Vista Point on the Marin County side of the bridge, also known as the Golden Gate Observation Area. California Division of Highways designed and built this facility just east of US 101, adjacent to the North Abutment in 1961-1962. It was not part of the original bridge design and construction project and is not a contributing element of the bridge property.[4]

Other, smaller scale alterations completed between 1937 and 1997 included: addition of a bicycle bridge at the northern pylon in 1968-69 to connect to west sidewalk; removal of original toll booths in the 1980s; and replacement of light fixtures and retention of original light standards (compare light fixture in Figure 2, with Photographs 6-7). Other facilities that underwent changes in the 1980s: the addition of a west sidewalk on the North Approach (there was none originally); east side walk on North Approach widened; North Approach concrete guardrails replaced with metal. This work included removal of "… the structural steel sidewalk framing, including traffic curb, pedestrian railing and electrolier standards, [for transport] to the Napa yard for sandblasting, rehabilitation, and painting. Corrosion damage to individual frame members and railings was repaired and in some cases badly damaged members were replaced."[5] About ten years later, the Golden Gate Bridge and Highway Transportation District (District) replaced over one mile (6,557 linear feet) of pedestrian hand

[2] Caspar Mol, MacDonald Architects, "Caltrans Architectural Inventory and Evaluation Form for the Golden Gate Bridge," November 1993, 39-41; National Park Service, "National Historic Landmark Nomination for the Golden Gate Bridge," August 13, 1997, 9-10; Frank L. Stahl, Daniel E. Mohn, and Mary C. Currie, *The Golden Gate Bridge: Report of the Chief Engineer, Volume II, May 2007* (San Francisco, CA: Golden Gate Bridge, Highway and Transportation District, 2007), 102, 122-144, 155-156, 170, 178, 180-182. This 2007 report, a supplement to *The Golden Gate Bridge, Report of the Chief Engineer, September 1937* by Joseph B. Strauss, provides a comprehensive history of the improvements and other modification to the bridge since its completion in 1937.

[3] MacDonald Architects, "Caltrans Evaluation Form, Golden Gate Bridge," November 1993, 39-41; National Park Service, "NHL Nomination, Golden Gate Bridge," August 13, 1997, 9-10; San Francisco Historical Photograph Collection, Image #AAD-1470, August 1947, San Francisco Public Library; District, "Golden Gate Bridge Lighting Facts," http://goldengatebridge.org/research/, accessed January 2008; Stahl, et al., *The Golden Gate Bridge: Report of the Chief Engineer, May 2007*, 102, 122-144, 155-156, 170, 178, 201.

[4] San Francisco Historical Photograph Collection, San Francisco Public Library; GGNRA, *Cultural Landscape Report for Fort Baker* (GGNRA 2005), 20, 44.

[5] Stahl, et al., *The Golden Gate Bridge: Report of the Chief Engineer, Volume II, May 2007*, 140-141.

railings on the west side of the bridge with replicas of the originals. See Figures 2, 5 and 6, as well as Photographs 5, 6, and 9 for various historic and current views of the sidewalks and railings.[6]

Other than the second, on-going seismic retrofit project that began in 1997, the most extensive new construction on the Golden Gate Bridge since the 1997 nomination was the installation of new Public Safety Railing between the roadway lanes and each sidewalk in 2003 (Photograph 6). This 4.5' tall railing consists of steel posts set approximately 12.5' apart horizontal pipe rails with horizontal cables and horizontal pipe rails at the top (Photograph 6). The posts were secured to the extant steel curb barrier between the sidewalk and the roadway. The FasTrak[tm] project (2000-2005) required modifications to the toll booth canopy, including the removal of the "Stop – Pay Toll" sign that the 1997 nomination considered to be a contributing feature of the bridge. The sign was removed in 2000, and in 2003 the toll canopy roof was replaced and the 1949 neon clock, which had ceased to function and was not repairable, was replaced with a replica (Photograph 8).[7]

The District is currently conducting a three-phase seismic retrofit program on the Golden Gate Bridge that began in 1997. Phase 1, completed in 2002, retrofitted the Marin (north) Approach Viaduct. Retrofit of the San Francisco (south) Approach Viaduct, San Francisco (south) Anchorage Housing, Fort Point Arch, and Pylons S1 and S2 will be completed as part of Phase 2 (see Photograph 7). The retrofit of the Main Suspension Bridge and Marin (north) Anchorage Housing will be completed under Phase 3, scheduled to start in 2007.[8]

The Public Safety Railing Project and the seismic retrofit program currently underway were subject to Section 106 effects analysis and CEQA impacts analysis. No adverse effects to character-defining features or the qualities that qualify the Golden Gate Bridge for listing in the NRHP were identified for either project.[9] SHPO concurred with these findings, as shown in the attached correspondence, and the previous determination that the Golden Gate Bridge is eligible for listing in the NRHP remains valid.

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

***P8. Recorded by:** Meta Bunse, JRP Historical Consulting, LLC, 1490 Drew Ave, Suite 110, Davis, CA 95618

***P9. Date Recorded:** March, August, and November 2007

***P11. Report Citation:** JRP Historical Consulting, LLC, "Historical Resources Evaluation Report, Golden Gate Bridge Physical Suicide Deterrent System Project," Project 2006-B-17, 04-MRN-101-GGHT, Federal Project #: STPL-6003(030) (May 2008)

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[6] National Park Service, "NHL Nomination, Golden Gate Bridge," August 13, 1997, 9; Stahl, et al., *The Golden Gate Bridge: Report of the Chief Engineer, Volume II, May 2007*, 144.

[7] Stahl, et al., *The Golden Gate Bridge: Report of the Chief Engineer, Volume II, May 2007*, 49, 185-186, 193, 194, 243-248; District, "Toll History," and "Golden Gate Bridge FasTrak System Timeline," http://goldengatebridge.org/research/, accessed January 2008.

[8] MacDonald Architects, "HASR: Proposed Seismic Retrofit Project for the Golden Gate Bridge," (1995); District, "Overview of Golden Gate Bridge Seismic Retrofit Updated January 2007," http://goldengatebridge.org/projects/retrofit.php, accessed online February 26, 2008.

[9] Frank L. Stahl,et al., 243-244; Donald MacDonald, MacDonald Architects, "Historic Property Survey Report, Finding of No Adverse Effect: Environmental Assessment of the Public Safety Railing Project" (March 1999) 1-2 and 6; Donald MacDonald and Caspar Mol, MacDonald Architects, "Historic Property Survey Report, Finding of No Adverse Effect for the Proposed Seismic Retrofit Project for the Golden Gate Bridge," (January 1995); District, FHWA, and Caltrans, "Golden Gate Bridge Seismic and Wind Retrofit Project, Draft Environmental Assessment / Initial Study," (November 1995).

***B10. Significance:** This update form has been prepared as part of the Golden Gate Bridge Physical Suicide Deterrent System Project to supplement previous surveys of the Golden Gate Bridge history property and to clarify its historic status and contributing elements. The Bridge is a multi-component historic structure that has been determined eligible for listing in the NRHP, OHP Status Code 2. A collection of agency correspondence regarding the historic status of the bridge and its contributing elements is included in the Historic Property Survey Report and Historical Resources Evaluation Report prepared for this project.

The Golden Gate Bridge has been recognized by several local, state, and federal programs. It was designated as California State Historic Landmark No. 974 in 1990, which automatically listed the property in the California Register of Historical Resources (CRHR).[10] The Golden Gate Bridge and its approaches have been documented by the Historic American Engineering Record (HAER No. CA-31), and the bridge has been recognized by the American Society of Civil Engineers on at least three separate occasions: as one of the Seven [engineering] Wonders of the World in 1955, as a National Civil Engineering Landmark in 1984, and as a Monument of the Millennium in 2001. The Golden Gate Bridge is also San Francisco City Landmark No. 222. Currently, Caltrans lists this bridge as Category 2 (eligible for listing in the NRHP) in its Caltrans Historic Bridge Inventory.[11] The Golden Gate Bridge is also considered to be a historical resource for the purposes of California Environmental Quality Act (CEQA).

The Golden Gate Bridge was determined eligible for listing in the NRHP in 1980, under Criteria A, B, and C, at the national level of significance, with a period of significance of 1933-1938. FHWA Region 9 requested the determination in 1979 when the bridge was about 42 years old, but the California State Historic Preservation Officer, and the Advisory Council for Historic Preservation agreed that the bridge was exceptionally important. Subsequent research and at least three additional inventory and evaluation efforts have refined the eligibility analysis and expanded the identification of the contributing elements of the property and its character-defining features. Caltrans Architectural Historian Stephen Mikesell, who is now Deputy SHPO, evaluated the approaches to the bridge and concluded that the Presidio Viaduct (Bridge 34 0019) and Marina Viaduct (34 0014) were eligible for individual listing in the NRHP, and as contributing elements of the Golden Gate Bridge and SHPO concurred (see the attached correspondence).

As discussed above, the bridge was then evaluated in 1993 for a proposed seismic project, and then again in 1997 for a proposed NHL nomination. The 1997 nomination proposed significance under Criterion C only. The supporting documentation and analysis under Criterion C significance appears to be accurate and is proposed as the correct area of significance in this updated evaluation. The NPS has produced and revised guidelines for the evaluation of historic properties since the time of the 1980 determination and the argument for eligibility under Criteria A and B is no longer adequate. The request for determination argued that bridge was eligible under Criterion A for its association with the history of the Golden Gate Strait and went on to describe the events and trends in California history that took place through the

[10] National Park Service, National Historic Landmark Nomination; California OHP, "Directory of Properties in the Historic Property Data File for San Francisco County," as of December 2007, http://www.dot.ca.gov/hq/structur/strmaint/hs_state.pdf, on file with Northwest Information Center; Caltrans, "Structure & Maintenance Investigation, Historical Significance–State Agency Bridges," November 2007; Homme, FHWA, "Request for Determination of Eligibility for the Golden Gate Bridge," 1979; Stephen Mikesell, "HRER Approaches to the Golden Gate Bridge," 1987; Snyder, Memorandum to SHPO re: Presidio Viaduct and Marina Viaduct, April 3,1990; and Nissley at ACHP, Letter to Markle at FHWA, re: Marina Viaduct Seismic Retrofit, 1994. Caltrans and California Office of Historic Preservation records indicate that the Golden Gate Bridge has been the subject of historic evaluation for many years. The Keeper of the National Register determined the bridge to be eligible for the NRHP in 1977 (Status 2S1) and in 1980 a consensus determination was made, resulting in a Status 2S2 (determined eligible for separate listing). Caltrans Architectural Historian Stephen Mikesell evaluated the approaches to the bridge and concluded that the Presidio Viaduct (Bridge 34 0019) and Marina Viaduct (34 0014) were eligible for listing in the NRHP as contributing elements of the Golden Gate Bridge and SHPO concurred.

[11] National Park Service, National Historic Landmark Nomination; Golden Gate Bridge, HAER # CA-31 (1984); Presidio of San Francisco, HABS # CA-1100-1114, 1173, 1174, 1212-1216, 1239, and 2269; San Francisco Planning Department, Landmarks Preservation Advisory Board, Golden Gate Bridge, case file for Landmark No. 222, 1999; Caltrans, "Structure & Maintenance Investigation, Historical Significance–State Agency Bridges," November 2007.

entrance that the strait provides to San Francisco Bay and points beyond prior to construction of the bridge. The bridge does not, however, have direct or important associations with any of the events or trends mentioned in the request for determination, which is a required aspect of eligibility under Criterion A. The request also proposed that the bridge was eligible for listing under Criterion B, for its association with its lead proponent and engineer, Joseph B. Strauss. Criterion B is intended for direct personal association with a historically significant individual, and is usually applied to the place where the individual conducted his or her important work, such as a studio, work place, or home. The association of the bridge with Strauss more accurately falls under Criterion C, as the work of a master engineer. The Golden Gate Bridge property, therefore, does not appear to meet Criterion A or Criterion B.[12]

There is ample documentation and analysis to support eligibility of the bridge property under Criterion C, as an important example of: suspension bridge technology, Art Deco design, and the work of more than one master engineer and architect. Please refer to the attached copies of the 1993 evaluation, 1997 nomination, and the 1987 evaluation of the Presidio Approach Road for discussion of eligibility under Criterion C. The 1997 nomination listed eight major engineers and architects who contributed to the project, including Joseph B. Strauss and Irving F. Morrow, of Irving F. Morrow & Morrow, San Francisco, who served as consulting architect on the original Golden Gate Bridge design and construction project.

The 1997 nomination listed eight major engineers and architects who contributed to the project, including Joseph B. Strauss and Irving F. Morrow, of Morrow & Morrow, San Francisco, who served as consulting architect on the original Golden Gate Bridge design and construction project. Both Strauss and Morrow recognized the important historic nature of the setting of the Bridge from the earliest stages of the project. Strauss noted the importance of the history of the area in his initial site investigations, and his respect for existing historic structures directly affected a major component of the final Bridge: the Fort Point Arch (see Figure 1 and Photograph 7).

> [In the in 1920s]… the newly created Golden Gate Bridge District was raising tens of millions of dollars through bond sales for a bridge that would span the Golden Gate from Fort Point to Lime Point. Chief Engineer Joseph Strauss initially concluded that Fort Point sat on the optimal location for a huge concrete caisson anchoring the bridge's San Francisco end. After touring the empty fort, however, he changed his mind. In a 1937 memorandum to the bridge's Board of Directors, Strauss wrote: "While the old fort has no military value now, it remains nevertheless a fine example of the mason's art. Many urged the razing of this venerable structure to make way for modern progress. In the writer's view it should be preserved and restored as a national monument…"
>
> Strauss made some additional calculations and concluded that the fort could be spared by moving the southern anchorage several hundred feet south. However, in order to make up the difference in the total length, he would have to add a 'bridge within the bridge,' and consequently designed a steel arch in the southern anchorage to span the old fort. Fort Point would be overshadowed by the new bridge, but it would be preserved. … But the bridge crews went to extraordinary lengths to preserve one of the fort's most outstanding examples of military engineering, the granite seawall. A tall concrete bridge pylon was planned for the north side of the fort, directly atop the seawall. Instead of demolishing the wall or burying it with concrete, Strauss had it dismantled, stored, and re-erected once the pylon was finished.[13]

[12] USDI, National Park Service, "Guidelines for Applying the National Register Criteria for Evaluation," *National Register Bulletin 15* (Washington DC: GPO, 1990; revised 1991-1997; revised for Internet 1995-2002), 16.

[13] John Martini, Fort Point: Sentry at the Golden Gate, ([San Francisco]: Golden Gate National Park Association, c1991), np. The 1997 nomination indicated that the Castillo de San Joaquin was probably destroyed by construction of the bridge, which seems to be confirmed by Martini's history of Fort Point, which continues: "Although the main casemated portion of Fort Point was spared during construction, some of the outworks of the fort had to be demolished to make way for the southern bridge anchorage. Early in the excavation process, the bluff south of the fort was cut back several hundred feet, destroying the counterscarp gallery and ten-gun battery.

Strauss probably discussed this in detail with Irving Morrow, who in addition to consulting on the bridge project, was the San Francisco District Officer of the Historic American Buildings Survey (HABS) at the time. Morrow oversaw submittal of seven photographs of the fort property made by Roger Sturtevant in May 1934, and possibly additional material that has not been digitized by the Library of Congress HABS Program.[14]

Although these bridge designers obviously appreciated the history of the Golden Gate and the military facilities surrounding the site, their design aesthetic looked forward rather than back and their finished product was ultimately a triumph of both bridge engineering and Art Deco design. Consulting architect Morrow was involved with the project from an early point, by about 1930, and continued to collaborate with Strauss and the rest of the Board of Engineers for the next seven years.[15] This early and consistent involvement in the design for the bridge as consulting architect is evident in his design of the largest components, such as the towers, as well as the human-scale elements of the bridge like the handrails and light standards. The Board of Engineers engaged Morrow for the "architectural work" of the main towers above the water line including the metal sheathing of the struts, the above ground anchorages (north and south), toll houses, service buildings, and "hand rail, seats, and electroliers" by 1931, and ultimately, he also designed the treatments of the concrete piers and pylons, the arch over Fort Point, and the color of the bridge.[16]

The minutes of the Board of Engineers' meetings, and correspondence and reports by Morrow and Strauss also reveal that the designers accounted for the pedestrian and motorist experience and use of the bridge. Strauss claimed in 1933 that "… the extraordinary scenic setting that this one site alone presents…will make it a signtseer's Mecca. For the same reason, it is the only bridge the decks of which will afford the incomparable view that has made the Golden Gate famous. To permit that view, the sidewalks are built as broad promenades, with rest seats at intervals."[17] The "rest seats" were not ultimately constructed, but visitor experience and views remained central to the design of several elements of the bridge at the deck level. The Board of Engineers specifically addressed the hand railings again in July 1934, while discussing their attempt "to avoid conflict with the vision of motorists" and remain consistent with the European precedence of railings about one meter high (roughly 3.3 feet). The engineers ultimately decided that it was "…impossible to improve the position of the handrailing without changing the sidewalk level [and] the decision was to leave the railing height at 4 feet."[18]

After the bridge opened in May 1937, Morrow summarized his design goals for the bridge, which he considered to be "predominantly 'industrial' in character," explaining that:

> Architectural work on the Golden Gate Bridge was not an act of posthumous deification, but proceeded concurrently with the development of the engineering design. The ideal actualizing design work was to repudiate the devastating obligation to be artistic. Superfluous features were excluded, and interest was secured by the proportioning and handling of necessities.

Bridge excavators also uncovered a long-buried adobe shed believed to be a powder magazine from the Castillo de San Joaquin. After its location was noted and photographed, the hut was demolished; it stood in a location too critical for it to be preserved."

[14] Historic American Buildings Survey, Data Sheets for HABS CA-1239, Library of Congress, accessed online: www.loc.gov; HABS, *Catalogue of the Measured Drawings and Photographs of the Survey in the Library of Congress, March 1, 1941* (Washington, D.C.: US GPO, 1941), 48.

[15] Consulting Board of Engineers for the Golden Gate Bridge, Minutes, July 16 and 17, 1934, Charles Derleth Papers, Box 1, Water Resources Center Archives, University of California, Berkeley.

[16] Irving F. Morrow to Joseph B. Strauss, February 19, 1931, and "Architectural Work on the Golden Gate Bridge," typescript, June 14, 1937, "Irving F. Morrow (and Gertrude C. Morrow) Collection, 1914-1958," Project III.14, Environmental Design Archives, College of Environmental Design, University of California, Berkeley.

[17] "Physical Characteristics of the Golden Gate Bridge compiled by Joseph B. Strauss, Chief Engineer," typescript, received January 28, 1933, "Irving F. Morrow (and Gertrude C. Morrow) Collection, 1914-1958," Project III.21, Environmental Design Archives, College of Environmental Design, University of California, Berkeley.

[18] Consulting Board of Engineers for the Golden Gate Bridge, Minutes, July 16 and 17, 1934, Charles Derleth Papers, Box 1, Water Resources Center Archives, University of California, Berkeley.

This was true, asserted Morrow, of not only the major structural components, but also the "handrails, electroliers, etc., where of concrete are reduced to lowest terms, and where of metal are designed of structural steel shapes, utilizing appropriate techniques of fabrication and assembly to motivate design."[19]

The Golden Gate Bridge, as evaluated in the 1997 nomination, is a system of contributing structures that rely upon each to achieve the overall effect of their design. The basic components of the main suspension span and side spans, the pylons, approach viaducts, and Fort Point Arch, are also interconnected with the other contributing elements: the Presidio Approach Road and the Round House. The verbal boundary of the property is delineated in the attached 1997 nomination. The Toll Plaza Undercrossing (34 0069) is also an original component of the Golden Gate Bridge that appears to be eligible as a contributing element of the bridge, but was not individually evaluated in the 1993 or 1997 surveys. The Toll Plaza Undercrossing (34 0069) is also listed in the NRHP as a contributing element of the Presidio of San Francisco National Historic Landmark.[20] The tunnel-like undercrossing is a single span concrete tee beam structure designed to allow vehicular traffic and pedestrians to cross from one side of the roadway to the other underneath the Toll Plaza using surface streets. The west side of the bridge is directly underneath the Administration Building (a non-contributing element because of integrity loss, according to both the 1993 and 1997 surveys), as shown in Figure 1 and Photographs 10-11. The rest of the bridge carries the lanes of traffic as they pass through the toll booths. Caltrans bridge logs indicate that the undercrossing is about 33' long and 291' wide, and that it has not undergone major widening or extension since it was completed in 1936.[21] The 1997 nomination included the Toll Plaza area within the proposed NHL boundaries because the plaza serves as the southern ending of the main bridge element and links it to the contributing southern approach road. The Toll Plaza Undercrossing was constructed as part of the original Golden Gate Bridge and its Toll Plaza and, therefore, appears to be a contributing element of the property.

The primary character-defining elements and decorative features of the bridge and its contributing elements are its major structural elements (the suspension bridge anchorages, pylons, piers, towers, main span and side spans), the plate girder bridge, arch bridge, and truss bridges of the approaches, the southern approach roadway (Doyle Drive), main suspension cables, Round House, and Toll Plaza Undercrossing. The Art Deco / Moderne design of these structures is a high ranking character-defining feature of all of these structures and their use within the overall bridge. The railings from the original construction and railings replicated to match original, as well as the layout of the sidewalks – width and construction around piers and pylons – that allow pedestrian use of bridge are essential character-defining features of the property. Although the sidewalks have been extended and widened, they continue to serve as important, human scale features of the bridge that make it readily accessible to the commuting and visiting public.

Other character-defining features that are important in conveying the artistic value of the property are the electroliers, or light standards, the International Orange paint color, and remaining concrete railings. The previous evaluations specifically identified the light standards and pedestrian railings as contributing elements of the property, and both were designed by consulting architect Irving F. Morrow. "In addition to recommending the red vermilion (known as "international orange") paint color that still graces the Bridge today, Mr. Morrow was largely responsible for the architectural enhancements that define the Bridge's Art Deco form. The pedestrian railings were simplified to modest, uniform posts placed far enough apart to allow motorists an unobstructed view. The electroliers (light posts) took on a lean, angled form and decorative cladding was added to the portal bracing of the main towers."[22]

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[19] Irving F. Morrow to Ernest Born, September 26, 1938, "Irving F. Morrow (and Gertrude C. Morrow) Collection, 1914-1958," Project III.14, Environmental Design Archives, UC, Berkeley.

[20] National Park Service, "National Historic Landmark Nomination for the Golden Gate Bridge," August 13, 1997; Caltrans, "2006 Statewide Historic Bridge Inventory Update," and see HRER, Appendix D.

[21] Caltrans, "Structure & Maintenance Investigation, Log of Bridges on State Highways," July 2007, accessed online at: http://www.dot.ca.gov/hq/structur/strmaint/brlog/logpdf/logd04.pdf.

[22] Stahl, et al., *The Golden Gate Bridge: Report of the Chief Engineer, Volume II, May 2007*, 173.

Overall, the Golden Gate Bridge has lost some historic integrity through the course of seventy years of operation, maintenance, and improvements. Nevertheless, previous effects analysis has not identified adverse effects to the character-defining features of the bridge, and the property clearly conveys its significance as an excellent example of the incorporation of architectural styling to 1930s state-of-the art engineering, as clarified by this update and as recognized by the state, local, and federal historic preservation programs described herein.

***B11. Additional Resource Attributes:** (HP4) Ancillary building (Round House Gift Center building)

***B12. References:** Please also consult references included with the attached 1993 and 1997 surveys. Additional references consulted for the preparation of this update form include:

California Department of Transportation, "Structure & Maintenance Investigation, Historical Significance – State Agency Bridges," November 2007, accessed online: http://www.dot.ca.gov/hq/structur/strmaint/hs_state.pdf.

_____, "Structure & Maintenance Investigation, Log of Bridges on State Highways," July 2007, accessed online at: http://www.dot.ca.gov/hq/structur/strmaint/brlog/logpdf/logd04.pdf.

_____, Stephen Mikesell, "HRER Approaches to the Golden Gate Bridge [Presidio Viaduct (Bridge 34 0019) and Marina Viaduct (34 0014)]," 1987.

California Office of Historic Preservation, "Directory of Properties in the Historic Property Data File for San Francisco County," as of December 2007, on file with Northwest Information Center.

District, "Golden Gate Bridge Lighting Facts," http://goldengatebridge.org/research/, accessed January 2008.

_____, "Overview of Golden Gate Bridge Seismic Retrofit Updated January 2007" accessed online February 26, 2008 http://goldengatebridge.org/projects/retrofit.php.

_____, "Toll History," and "Golden Gate Bridge FasTrak System Timeline," http://goldengatebridge.org/research/, accessed January 2008.

Historic American Buildings Survey, Presidio of San Francisco, HABS # CA-1100-1114, 1173, 1174, 1212-1216, 1239, and 2269.

_____, *Catalogue of the Measured Drawings and Photographs of the Survey in the Library of Congress, March 1, 1941* (Washington, D.C.: US GPO, 1941).

Historic American Engineering Record, Golden Gate Bridge, HAER # CA-31 (1984).

Homme, Oscar. FHWA, "Request for Determination of Eligibility for the Golden Gate Bridge," 1979.

MacDonald Architects. "HASR: Proposed Seismic Retrofit Project for the Golden Gate Bridge," (1995).

Martini, John. *Fort Point: Sentry at the Golden Gate*. [San Francisco]: Golden Gate National Park Association, c1991.

Mol, Caspar. MacDonald Architects, "Caltrans Architectural Inventory and Evaluation Form for the Golden Gate Bridge," November 1993.

National Park Service, "National Historic Landmark Nomination for the Golden Gate Bridge," August 13, 1997.

Stahl, Frank L., and Daniel E. Mohn, and Mary C. Currie, *The Golden Gate Bridge: Report of the Chief Engineer, Volume II, May 2007* (San Francisco, CA: Golden Gate Bridge, Highway and Transportation District, 2007).

San Francisco Historical Photograph Collection. San Francisco Public Library. Accessed online at: http://sfpl.org/librarylocations/sfhistory/sfphoto.htm

San Francisco Planning Department, Landmarks Preservation Advisory Board, Golden Gate Bridge, case file for Landmark No. 222, 1999.

***B14. Evaluator:** Meta Bunse ***Date of Evaluation:** April 2008

Figures:

Figure 1. Detail of 1937 photograph showing Toll Plaza and bridge administration building, with west entrance to the Toll Plaza Undercrossing (34 0069) visible underneath the southern end of the building. (San Francisco History Center, San Francisco Public Library)

Figure 2. Photographs of sidewalk, railing, light standards and roadway. At left, just days before the bridge opened in May 1937, with original light fixtures. (San Francisco History Center, San Francisco Public Library) At right, showing replaced light fixtures, by photographer Jet Lowe, 1984. (HAER CA-31, www.loc.gov). See Photograph 6, below for a view of the new public safety railing.

Figure 3. Detail of 1950 photograph showing "Stop – Pay Toll" sign for northbound traffic. Original light standard with suspended light fixture visible at right. (San Francisco History Center, San Francisco Public Library)

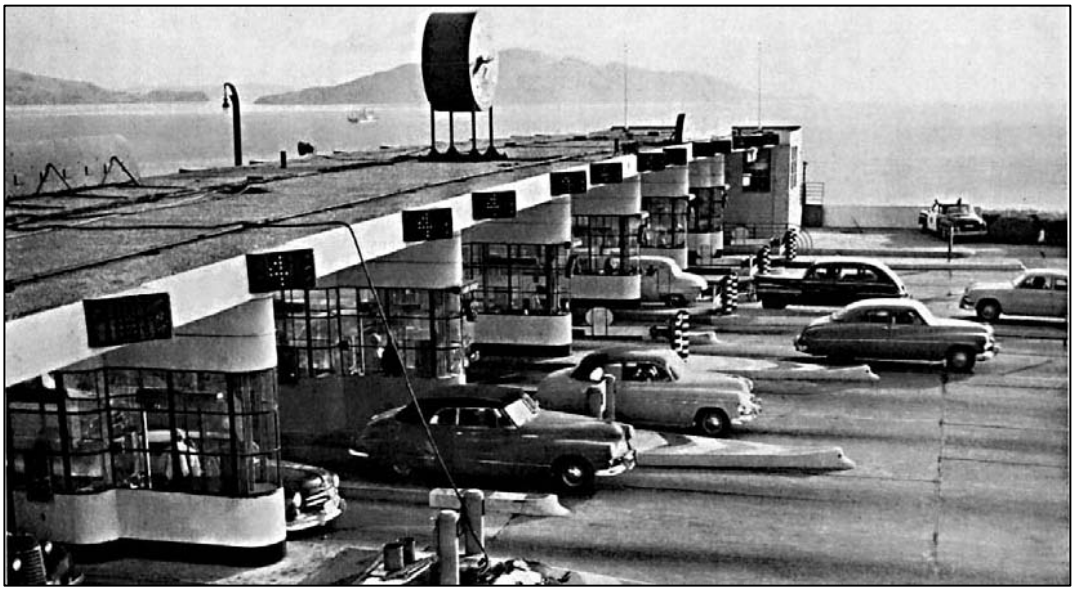


Figure 4. Toll Plaza in 1952, showing clock at center of toll canopy as installed in 1949. (District, 2007 *Report of the Chief Engineer*)

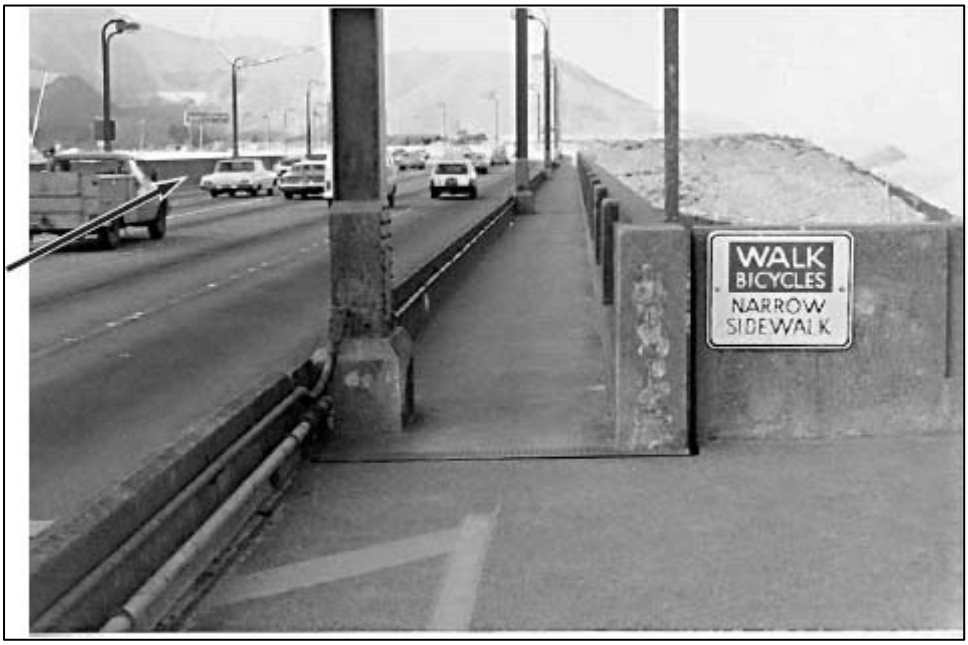


Figure 5. Photograph of east sidewalk, facing North Viaduct before 1980s sidewalk widening and extension projects. Arrow indicates no west sidewalk north of Pylon N1. (District, 2007 *Report of the Chief Engineer*)

Figure 6. Specifications of original sidewalks when the bridge opened in May 1937, as described in the 2007 *Report of the Chief Engineer*:

Separated from the roadway by a 2 foot 6 inch high steel traffic curb, the Bridge, as built, included a pedestrian walkway along its east and west faces. This walkway consisted of a 3½ inch thick concrete slab supported by steel framework extending from the roadway structure and was approximately 14½ inches higher than the roadway. The sidewalks were originally constructed as follows:

West Sidewalk, from the San Francisco abutment north to pylon N2, it was 10 feet wide, with the following exceptions:

- *From pylon S2 to S1, the portion over the Fort Point arch, the sidewalk was 16 feet wide.*
- *The sidewalk remained at 10 feet up to just north of pylon N1, where it flared out to 33 feet to pylon N2.*
- *There was no sidewalk at all north of pylon N2.*

East Sidewalk, from the San Francisco abutment to pylon N2, the sidewalk was 10 feet wide, with the following exceptions:

- *From pylon S2 to S1, the portion over the Fort Point arch, the sidewalk was 16 feet wide.*
- *The sidewalk remained at 10 feet up to just north of pylon N1, where it flared out to 33 feet to pylon N2.*
- *From pylon N2 to the Marin abutment the sidewalk was 6 feet wide.*[23]

[23] Stahl, et al., *The Golden Gate Bridge: Report of the Chief Engineer, Volume II, May 2007*, 105.

Photographs:

Photograph 1. View of west side of bridge, camera facing south, August 2007.
[Source: MacDonald Architects]

Photograph 2. View of east side of bridge from Fort Point, camera facing north, August 2007.
[Source: MacDonald Architects]

Photographs:

Photograph 3. View of west side of the bridge showing South Viaduct, camera facing northeast, August 2007.
[Source: MacDonald Architects]

Photograph 4. View of North Viaduct from Vista Point, camera facing south.
[Source: MacDonald Architects]

Photographs:

Photograph 5. View of bridge deck and towers (right), camera facing north, March 2007.
[Source: JRP Historical Consulting, LLC]

Photographs:

Photograph 6. View of north viaduct, showing safety railing, camera facing north, November 2007.
[Source: JRP Historical Consulting, LLC]

Photograph 7. Seismic retrofit in progress at Fort Point Arch, camera facing northwest, March 2007.
[Source: JRP Historical Consulting, LLC]

Photograph 8. Toll booths and canopy, camera facing northeast, March 2007.
[Source: JRP Historical Consulting, LLC]

Photograph 9. Southbound lanes approaching Toll Plaza, view northeast, March 2007.
[Source: JRP Historical Consulting, LLC]

Photograph 10. West side of Toll Plaza Undercrossing (34 0069), view north, April 2008.
[Source: JRP Historical Consulting, LLC]

Photograph 11. East side of Toll Plaza Undercrossing (34 0069), view southwest, April 2008.
[Source: JRP Historical Consulting, LLC]

APPENDIX C: Letter to Interested Parties

April 29, 2008

GOLDEN GATE BRIDGE
HIGHWAY & TRANSPORTATION DISTRICT

Environmental Studies and
Preliminary Design for a
Suicide Deterrent System on the
Golden Gate Bridge
Contract No. 2006-B-17

Dear Sir or Madam:

The Golden Gate Bridge, Highway and Transportation District (District) is conducting a study of its proposed Golden Gate Bridge Physical Suicide Deterrent System Project (Project) [04-MRN-101-GGHT, Project 2006-B-17; Federal Project #: STPL-6003(030)]. The District, in cooperation with the Federal Highway Administration, is the Lead Agency and is preparing an Environmental Impact Report / Environmental Assessment (EIR/EA) for the project, in accordance with the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA).

The District has formed a consultant team to perform preliminary engineering and environmental technical studies to meet these state and federal environmental requirements. JRP Historical Consulting, LLC, is part of this team and is preparing a technical study of the historic architectural and engineering resources in the proposed project area. Historical resources are those properties potentially eligible, determined eligible, listed in the National Register of Historic Places, or the California Register of Historical Resources. The Golden Gate Bridge and its contributing elements comprise a historic property that is eligible for listing in the National Register and is considered historical resource for the purposes of CEQA.

The District is evaluating five alternatives and a "no-build" alternative for the proposed Project; and descriptions of these alternatives are attached. For additional project information, or to receive copies of this information via regular mail, please visit the project website at: www.ggbsuicidebarrier.org, or call me at (415) 923-2023. If you or your organization has any concerns regarding this Project, including its potential effects on this historical resource, please respond in writing to me at the address below citing your concerns within the next thirty days.

Sincerely,

Jeffrey Y. Lee, PE
Project Manager

Attachment

ATTACHMENT

PROJECT TITLE: Golden Gate Bridge Physical Suicide Deterrent System [04-MRN-101-GGHT, Project 2006-B-17; Federal Project #: STPL-6003(030)]

PROJECT LOCATION: Golden Gate Bridge

PROJECT DESCRIPTION: The Golden Gate Bridge Physical Suicide Deterrent System Project (the Project) under study in this report proposes the construction of a physical suicide deterrent system on the Golden Gate Bridge to reduce the number of injuries and deaths associated with jumping off the Bridge.

The first phase of the Project evaluated several conceptual designs for their performance during high winds to determine which concepts would and would not affect the aerodynamic stability of the Bridge. Meteorological and topographical analyses of wind hazards specifically associated with the Bridge site found that the Bridge could be subjected to winds of up to 100 miles per hour. Very small changes in the shape of the Bridge cross-sections (including the spacing and design of rail and fence elements) can have a significant impact on the Bridge's aerodynamic stability during high winds. Conceptual designs that negatively affected the aerodynamic stability of the Bridge under high winds were eliminated from further consideration, in accordance with the Board's established criterion that mandated maintenance of the aerodynamic stability of the Bridge.

Project alternatives were also developed to meet the following District Board-adopted criteria:

1. Must impede the ability of an individual to jump off of the Golden Gate Bridge.
2. Must not cause safety or nuisance hazards to sidewalk users, including pedestrians, bicyclists, District staff, and District contractors/security partners.
3. Must be able to be maintained as a routine part of the District's ongoing Bridge maintenance program and without undue risk of injury to District employees.
4. Must not diminish ability to provide adequate security of the Golden Gate Bridge.
5. Must continue to allow access to the underside of the Bridge for emergency response and maintenance activities.
6. Must not have a negative impact on the wind stability of the Golden Gate Bridge.
7. Must satisfy requirements of State and Federal historic preservation laws.
8. Must have minimal visual and aesthetic impact on the Golden Gate Bridge.
9. Must be cost effective to construct and maintain.
10. Must not, in and of itself, create undue risk of injury to anyone who comes in contact with the Suicide Deterrent System.
11. Must not prevent construction of a moveable median barrier on the Golden Gate Bridge.

Five build alternatives have been developed that would impede the ability of individuals to jump from the Bridge, that incorporate the wind study findings, and that meet the District criteria:

- Alternative 1A – Add Vertical System to Outside Handrail
- Alternative 1B – Add Horizontal System to Outside Handrail
- Alternative 2A – Replace Outside Handrail with Vertical System
- Alternative 2B – Replace Outside Handrail with Horizontal System
- Alternative 3 – Add Net System that Extends Horizontally from Bridge (Add Net System)

Alternative 1A – Add Vertical System to Outside Handrail. Alternative 1A would construct a new barrier on top of the outside handrail (and concrete rail at north pylon). The barrier would extend 8 feet vertically from the top of the 4-foot high outside handrail for a total height of 12 feet. The barrier's vertical members would be comprised of vertical rods attached to the outside handrail. The top horizontal header would consist of a chevron-shaped member matching the top element of the outside handrail. The entire system would be constructed of steel that would be painted International Orange, matching the material and color of the outside handrail. Transparent vertical panels would be installed in lieu of the steel rods at the slightly wider sections of the sidewalks which are referred to as "belvederes." There are a total of twelve belvederes on each side of the Bridge.

Alternative 1B – Add Horizontal System to Outside Handrail. Alternative 1B would construct a new barrier on top of the existing outside handrail (and concrete rail at north pylon). The new barrier would consist of horizontal steel cables similar to the existing public safety railing ("bike rail" between sidewalk and traffic lanes). The new barrier would extend 8 feet above the top of the 4-foot high outside handrail for a total height of 12 feet. The entire system would be constructed of steel that would be painted International Orange, matching the material and color of the outside handrail. Transparent vertical panels would be installed in lieu of the steel cables at the belvederes.

A "winglet" would be placed on top of the new barrier to ensure aerodynamic stability and to prevent climbing over the barrier. The winglet would be a 42-inch wide transparent panel with a slight concave curvature extending approximately 2 feet over the sidewalk. The winglet would run the length of the suicide deterrent barrier, except at the north and south towers.

Alternative 2A – Replace Outside Handrail with Vertical System. Alternative 2A would construct a new vertical 12-foot high barrier consisting of vertical steel rods in place of the existing outside handrail. The top horizontal header would consist of a chevron-shaped member matching the top element of the outside handrail to be removed. The vertical rods would be attached to the header and bottom barrier element. The entire system would be constructed of steel that is painted International Orange, matching the material and color of the outside handrail. Transparent vertical panels would be installed at the belvederes on both sides of the Bridge.

Alternative 2B – Replace Outside Handrail with Horizontal System. Alternative 2B would construct a new 12 foot high barrier consisting of horizontal steel cables in place of the existing outside handrail. The horizontal steel cables used in the new barrier would be similar to the existing public safety railing ("bike rail" between sidewalk and traffic lanes). The entire system would be constructed of steel that would be painted International Orange, matching the material and color of the outside handrail. Transparent vertical panels would be installed at the belvederes on both sides of the Bridge.

A "winglet" would be placed on top of the new barrier to ensure aerodynamic stability and to prevent climbing over the barrier. The winglet would be a clear 42-inch wide transparent panel with a slight concave curvature extending approximately 2 feet over the sidewalk. The winglet would run the length of the suicide deterrent barrier, except at the north and south towers.

Alternative 3 – Add Net System. Alternative 3 would construct a horizontal net system approximately 20 feet below the sidewalk at the exterior main truss. The net would extend approximately 20 feet horizontally from the Bridge, constructed with a stainless steel cable netting incorporating a grid between 4 and 10 inches. The horizontal support system would connect directly to the exterior truss and be supported by cables back to the top chord of the truss. The support system for the netting would include cables that would pre-stress the netting to help keep it taut and not allow the wind to whip the netting. The horizontal net would consist of independent 25-foot sections that can be rotated vertically against the truss to allow the maintenance travelers to be moved. The net and the steel horizontal support system would be painted to match the International Orange bridge color. With this alternative there would be no modifications to the above deck Bridge features.

No-Build Alternative. The No-Build Alternative represents the future year conditions if no other actions are taken in the study area beyond what is already in place. It is the baseline condition against which all other alternatives are compared. The No-Build Alternative would continue the existing non-physical suicide deterrent programs at the Bridge, which include emergency counseling telephones, public safety patrols, and employee training.

Distribution List for Historic Resources Interested Parties

Federal, State, & Local Government Agencies:

Katry Harris (Transportation)
Kelly Yasaitis Fanizzo (National Park Service)
Katharine R. Kerr (Presidio Trust)
Carol Legard (FHWA Liaison)
Advisory Council on Historic Preservation
Compliance Office
1100 Pennsylvania Avenue NW, Suite 809, Old Post Office Building
Washington, DC 20004

Milford Wayne Donaldson, State Historic Preservation Officer
California Office of Historic Preservation
P.O. Box 942896
Sacramento, CA 94296-0001

Craig Kenkel, Chief of Cultural Resources
Golden Gate National Recreation Area
National Park Service
Fort Mason, Bldg. 201
San Francisco, CA 94123

Ric Borjes, Federal Preservation Officer
The Presidio Trust
34 Graham Street
San Francisco, CA 94129

Tilly Chang, Deputy Director for Planning
Brian Larkin, Chair, Citizens Advisory Committee
San Francisco County Transportation Authority
100 Van Ness Ave # 26
San Francisco, CA 94102

M. Bridget Maley, President
Mark Luellen, Preservation Coordinator
San Francisco Planning Department
Landmark Preservation Advisory Board
1650 Mission St., Ste. 400
San Francisco, CA 94103

Including members: Robert W. Cherney, Lily Chan, Courtney Damkroger, Ina Dearman, Karl Hasz, Johanna Street

David Alumbaugh, Manager
Joshua Switzky, Built Environment Lead
San Francisco Planning Department
City Design Group
1650 Mission St., Ste. 400
San Francisco, CA 94103

Alex Hinds, Director
County of Marin
Community Development Agency
3501 Civic Center Dr., Rm #308
San Rafael, CA 94903

Other Interested Parties:

American Indian Alliance, Marin
P.O. Box 150565
San Rafael, CA 94915

Margie O'Driscoll, Executive Director
American Institute of Architects
Preservation Committee
130 Sutter Street, Suite 600
San Francisco, CA 94102

American Society of Civil Engineering
Historic Civil Engineering Landmark Program
Carol Reese
1801 Alexander Bell Drive
Reston, VA 20191-4400

Anne T. Kent California Room
Civic Center Branch, Marin County Free Library
3501 Civic Center Drive, Room 427
San Rafael, CA 94903

Stephen Farneth
M. Bridget Maley
Architectural Resources Group
Pier 9
The Embarcadero
San Francisco, CA 94111

Art Deco Society of California
100 Bush Street, Suite 511
SF, CA 94104

William F. Bailey
1009 Las Palmas Drive
Santa Clara, CA 95051-5308

Bay Area Discovery Museum
East Fort Baker
557 McReynolds Road
Sausalito, CA 94965

Bay Area Museum Connection San Francisco State University
1600 Holloway Avenue
San Francisco, CA 94132

Martin Friedman, Executive Director
Bay Area Trails Preservation Council
P.O. Box 153
Corte Madera, CA 94976

Belvedere-Tiburon Landmarks Society
PO Box 134
Belvedere-Tiburon, CA 94920

The Bolinas Museum
48 Wharf Road
Bolinas, CA 94924

Cable Car Museum
1201 Mason St.
San Francisco, CA 94108

California Academy of Sciences
California Academy of Sciences, Golden Gate Park
San Francisco CA 94118

California Council for the Humanities
312 Sutter Street #601
San Francisco, CA 94108

Gary Widman
California Heritage Council
P.O. Box 475046
San Francisco, CA 94147

California Historical Society
Stephen Becker, Executive Director
678 Mission Street
San Francisco, CA 94105

California Preservation Foundation
5 Third St., Ste 424
San Francisco, CA 94103

Alison Moore, Archivist
CSAA Archives & Historical Services
150 Van Ness Ave.
San Francisco, CA. 94102

China Camp State Park
Route 1, Box 244
San Rafael, CA 94901
Chinese Culture Center of San Francisco
750 Kearny Street, 3rd Floor
San Francisco, CA 94108

The Chinese Historical Society of America
965 Clay Street
San Francisco, CA 94108

City of Sausalito Historic Landmarks Board
City Hall
420 Litho Street
Sausalito, CA 94965

de Young Museum
50 Hagiwara
San Francisco, CA 94118

Fairfax Historical Society
P.O. Box 662
Fairfax, CA 94978-0622

Falkirk Cultural Center
1408 Mission Avenue
San Rafael, CA 94901

Pansy Tom, Executive Assistant
Fisherman's Wharf Merchants Association
#2 Al Scoma Way at Pier 47
San Francisco, CA 94133

David H. Grubb, Chairman of the Board
Fort Point & Presidio Historical Association
P.O. Box 29163, Presidio Station
San Francisco, CA 94129

Gay, Lesbian, Bisexual, Transgender Historical Society
657 Mission St., Suite 300
San Francisco, CA 94105

Global Virtual Museum
P.O. Box 93
Ross, CA 94957

Carol Prince, Deputy Director, External Affairs
Golden Gate National Park Association
Fort Mason, Building 201
San Francisco, CA 94123

Charlene Harvey, Chair
Golden Gate National Parks Conservancy
Building 201, Fort Mason
San Francisco, CA 94102

Holocaust Center of Northern California (HCNC)
121 Steuart Street
San Francisco, CA 94105

International Museum of Women
P.O. Box 190038
San Francisco, CA 94119-0038

Jewish Museum San Francisco
736 Mission Street
San Francisco, CA 94103

Labor Archives and Research Center San Francisco State University
480 Winston Drive
San Francisco, CA 94132

Lesbian & Gay Historical Society of Northern California
P.O. Box 470310
San Francisco, CA 94147-0310

Marin Conservation League
1623A Fifth Avenue
San Rafael, CA 94901

Jim Farley, Director
Marin County Department of Cultural Services
10 Avenue of the Flags
San Rafael, CA 94903

Marin County Historical Society
1125 D Street
San Rafael CA 94901

Marin Heritage
P.O. Box 1432
San Rafael CA 94915

Marin History Museum
1125 B Street
San Rafael, CA 94901

Marin Museum of the American Indian
2200 Novato Boulevard
Novato CA 94948

Mill Valley Historical Society
375 Throckmorton Avenue
Mill Valley, CA 94941

Mission Cultural Center for Latino Arts
2868 Mission Street
San Francisco, CA 94110

Mission Dolores
3321 Sixteenth Street
San Francisco, CA 94114

Susan Morris, Curator and Historian
55 Rowley Circle
Tiburon, CA 94920

Mount Tamalpais State Park Visitor Center
801 Panoramic Hwy
Mill Valley CA 94941

Museum of Russian Culture
2450 Sutter Street
San Francisco, CA 94115

Nicasio Historical Society
P.O. Box 111
Nicasio, CA 94946
Alan Schmierer

Regional Environmental Coordinator
National Park Service, Pacific West Region Office
1111 Jackson St., Ste. 700
Oakland, CA 94607

Ron Usndergill, Regional Director
National Parks Conservation Association
150 Post St., Suite 310
San Francisco, CA 94108

Anthea M. Hartig, Ph.D., Director
Western Office, The Hearst Building
National Trust for Historic Preservation
5 Third Street, Suite 707
San Francisco, CA 94103

Northern California Chapter Society of Architectural Historians
c/o Lissa McKee, NCCSAH Treasurer
307 Starling Road
Mill Valley, CA 94941

Novato Historical Guild
75 Rowland Way, suite 200
Novato, CA 94945

Novato History Museum and Archives
75 Rowland Way, suite 200
Novato CA 94945

Old Timers Museum
11 Knolltop Ct.
Novato CA 94945

Olompali State Historic Park
P.O. Box 1016
Novato, CA 94948

Amy Meyer, Co-Chair
Edgar Wayburn, Co-Chair
People for a GGNRA
3627 Clement Street
San Francisco, CA 94121

Presidio of San Francisco Museum
William Penn Mott Jr. Visitor Center
Golden Gate National Recreation Area
Building 201, Fort Mason
San Francisco, CA 94123

Richardson's Bay Maritime Association
P. O. Box 1108
Sausalito, CA 94966

Judy Coy, Chair
San Anselmo Historical Commission
110 Tunstead Avenue
San Anselmo, CA 94960

Charles R. Olson, Board President
San Francisco Architectural Heritage
2007 Franklin Street
San Francisco, CA 94109

Steven McAdam, Deputy Director
Kerri Davis, Coastal Program Analyst
San Francisco Bay Conservation and Development Commission
50 California Street, Suite 2600
San Francisco, CA 94111

DeeDee Workman, Executive Director
San Francisco Beautiful
564 Market Street, Ste. 709
San Francisco CA 94104-5415

San Francisco Fire Department Museum
655 Presidio Avenue and Bush Street
San Francisco, CA 94115

San Francisco History Association
PO Box 31907
San Francisco, CA 94131

San Francisco Maritime National Park Association
PO Box 470310
San Francisco, CA 94147-0310

Charles Chase, Executive Director
San Francisco Museum and Historical Society
2007 Franklin Street
San Francisco, CA 94142

San Francisco Museum of Modern Art
151 Third Street
San Francisco, CA 94103

San Francisco's Gold Rush Trail/Foundation
57 Post Street
San Francisco, CA 94104

Sausalito Historical Society
420 Lithos Street
Sausalito, CA 94965

Shaping San Francisco
1095 Market Street, Suite 210
San Francisco, CA 94103

Society of California Pioneers
300 - 4th Street
San Francisco, CA 94107

Sutro Library
480 Winston Drive
San Francisco, CA 94132

The Legion of Honor
100 34th Avenue
San Francisco, CA 94121

The Exploratorium
3601 Lyon Street
San Francisco, CA 94123

The Mexican Museum
San Francisco Fort Mason Center, Building D
San Francisco, CA 94123

The Victorian Alliance
824 Grove St
San Francisco, CA 94117

Treganza Anthropology Museum
600 Holloway Avenue
San Francisco, CA 94132

U.S. District Court for the Northern District of California Historical Society
P.O. Box 36112
San Francisco, CA 94102

Wells Fargo Bank Historical Services
420 Montgomery Street (A0101-026)
San Francisco, CA 94163

APPENDIX D: Previous Inventory and Evaluation Studies

CALIFORNIA DEPARTMENT OF TRANSPORTATION
ARCHITECURAL INVENTORY/EVALUATION FORM MAP REFERENCE NO. GG8

County - Route - Postmile: ( ) LISTED (X) DETERMINED ELIGIBLE
UTM Coordinates: ( ) APPEARS ELIGIBLE ( ) APPEARS INELIGIBLE

IDENTIFICATION

1. **Common Name:**
   Golden Gate Bridge
2. **Historic Name:** Golden Gate Bridge
3. **Street or rural address:**

   City: San Francisco **Zip Code:** CA 94129 **County:** San Francisco
4. **Parcel Number:** **Present Owner:** Golden Gate Bridge Highway and Transportation District

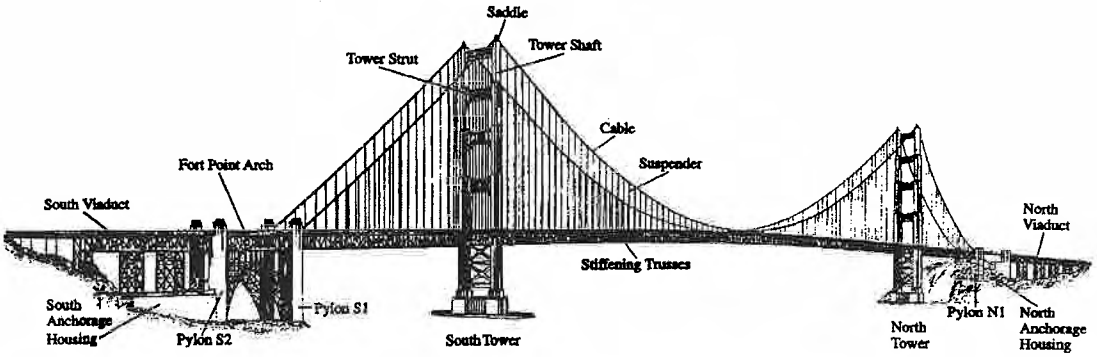
   Address: P.O. Box 9000, Presidio Station **City:** San Francisco **Zip Code:** CA 94129
5. **Ownership is:** (X) Public ( ) Private
6. **Present Use:** Bridge **Original Use:** Bridge

DESCRIPTION

7a. **Architectural Style:** Art Deco

7b. **Briefly describe the present PHYSICAL CONDITION of this site or structure and describe any major alterations from its original condition:**

The Golden Gate Bridge connects San Francisco and Marin County at the mouth of the San Francisco Bay. It consists of several steel and reinforced concrete structures.



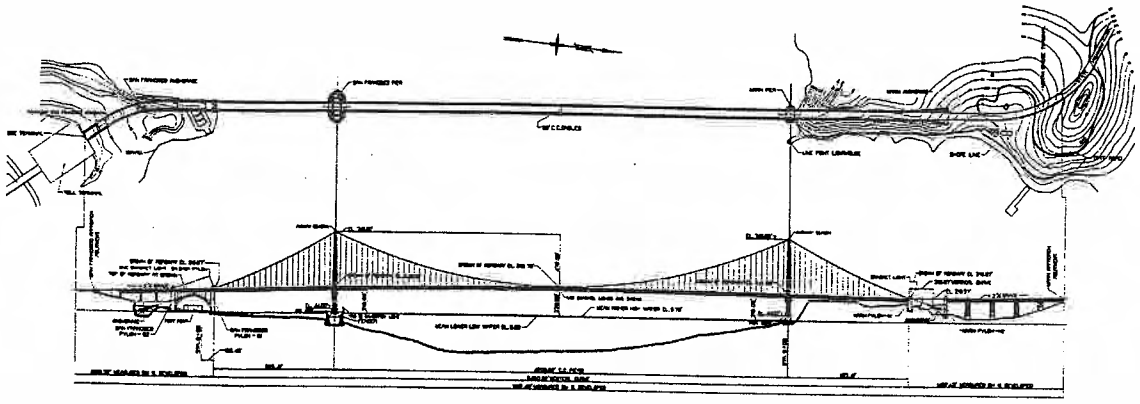
Perspective of the Golden Gate Bridge, viewed from the south-east[1].

The Golden Gate Bridge consists of a number of interconnected structures. From South to North, they are:

- The South Approach Viaduct, which consists of three girder spans of 71 feet length each, supported by braced columns, and 3 truss spans of 125 foot to 175 foot length each, supported by braced towers.
- The South Anchorage Housing, which is a reinforced concrete building-type structure, is about 370 feet long, 120 feet wide and 60 feet tall. It is located beneath the South Approach Viaduct, just South of Fort Point Arch. It serves primarily as weather protection for the cable anchorages of the Suspension Bridge, providing shelter for the cable splays, eye bars and anchorage blocks of the anchorage system.
- Pylon S2, which forms the North end of the anchorage housing, and which supports both the South Viaduct and Fort Point Arch.

- Fort Point Arch, which straddles Fort Point, and which consists of four parallel arches, interconnected by a vast web of members, creating a visually complex composition.
- Pylon S1, which is located between Fort Point Arch and the Suspension Bridge, and supports both.
- The Suspension Bridge, which has a center span of 4,200 feet and two side spans of 1,125 feet each. The roadway deck is supported by two 3-foot diameter cables spaced 90 feet apart. The cables are secured to the tops of the two steel towers by cast steel saddles and are anchored with steel eyebars into concrete blocks located in the North and South Anchorage Housings. The cables are held at a fixed elevation by steel cable tie-downs in the concrete pylons at each end of the span. The North anchorage block is 215 feet from the north pylon, the south anchorage block is 583 feet from the pylon. As a consequence, forces in the bridge are a-symmetrical.
- The North Anchorage Housing, which is a reinforced concrete building-type structure, is approximately 350 feet long, 130 feet wide and 110 feet tall. It is similar to the South Anchorage Housing with respect to structure type and function. The housing encloses and protects the splayed strands of the main cables at their anchorages from exposure to the environment, and houses the concrete anchor blocks. Additionally, the roof of the housing forms the highway roadbed and two pedestrian sidewalks between the Suspension Bridge and the North Approach Viaduct. The North Anchorage Housing incorporates Pylon N1 which supports the north end of the stiffening truss of the Suspension Bridge and houses the main cable tie-downs. This pylon is structurally independent of the anchorage housing. Pylons N2, which supports the North Approach Viaduct trusses at the north end of the housing, is integral with the North Anchorage Housing structure.
- The North Approach Viaduct, which extends from the north end of the Anchorage Housing to the north abutment, consists of five truss spans of 175 feet each. These truss spans are supported on 4 intermediate steel braced frames, on Pylon S2 at the south end and on the north abutment at the north end.

Most steel members in the steel structures are riveted laced box members. The suspension bridge towers are of plate steel cellular construction, also riveted.



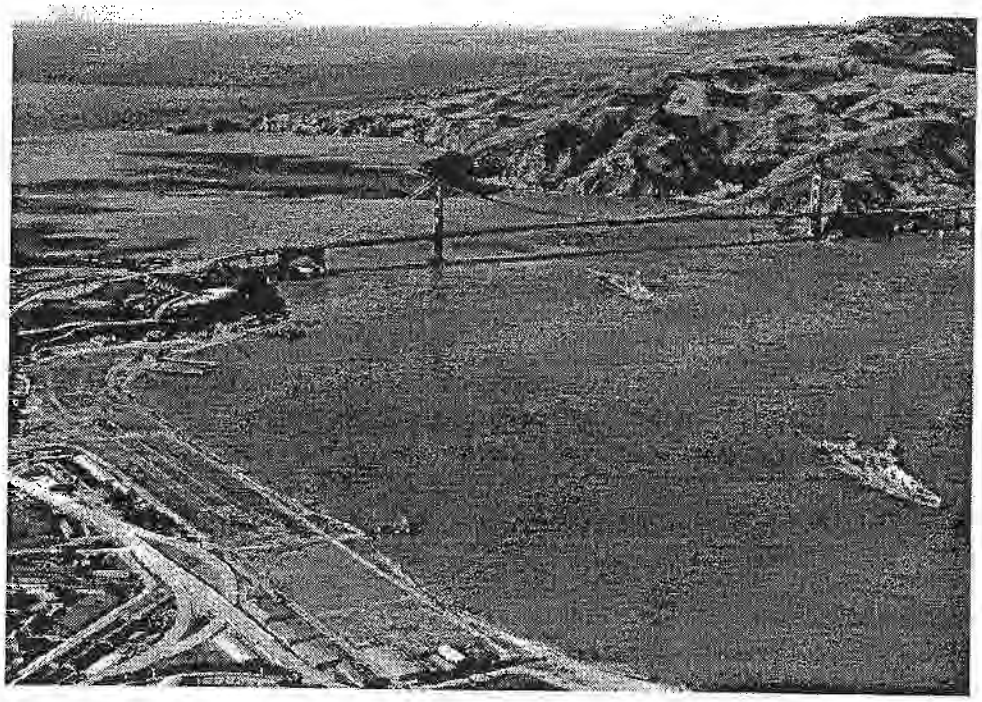
Plan and elevation of the Golden Gate Bridge[2]

The bridge design was a collaboration between bridge engineer Joseph P. Strauss and local architect Irving F. Morrow. When Morrow joined the team in the summer of 1930, the Bridge design had been determined in general terms. Morrow's involvement led to some major aesthetic changes, including the redesign of the horizontal portal bracing struts on the towers, the addition of an arch over Fort Point, and new concrete pylons separating the arch from the rest of the bridge. Morrow also designed the appearance of the concrete piers under the towers, the anchorage housings, the concrete pylons at both ends of the Bridge, and miscellaneous details such as the handrails. He selected the final color for the Bridge, International Orange[3], and fought hard to get it approved.

Morrow's major contribution is that he viewed the Bridge as a whole, and insisted that all elements form an **integral design**. As Morrow himself put it: "The architectural design of the bridge is properly a single, all-inclusive problem embracing its appearance in every possible aspect. Form, texture, color, illumination, etc., are each and every one only integral parts of one general conception. To isolate as a separate detail any one of these aspects of appearance would result in disharmony, or at best in failure to realize to the full

the original intention of the design. As in every problem of design, the crucial matter is the artistic one of determining the effects to be attained. How to realize these effects may require consultation experts: but the technician is not equipped to decide what artistic ends are proper"[4]. And: "In view of the tremendous scale and dignity of the Golden Gate Bridge, the preservation of unity is of prime importance. Small effects, cleverness, trickiness will prove disintegrating and unworthy. All treatment must aim at the utmost breadth and simplicity of effect"[5].

A number of elements were used to create this unity of design. For instance, he introduced the motif of vertical facets, which recurred in the portal bracing struts of the steel towers, in the piers supporting the towers, in the concrete pylons, and in the concrete guardrails at the South Anchorage Housings. Another motif is the stepping of the towers and the pylons, visually exaggerating their height.



8. **Construction date:**
2/23/1933 - 5/27/1937

Est.: ( ) **Factual:** (X)

9. **Architect:**
Joseph P. Strauss, Chief Engineer
Irving F. Morrow, Cons. Architect

10. **Builder:**
Principal Contractors: McClintic-Marshall Corp. (steel superstr.); John A. Roebling's Sons Co. (Steel cables, suspenders); Barrett & Hilp (Anchorages & Piers of Approach Structures); J.H. Pomeroy & Co., Inc., and Raymond Concrete Pile Co. (Steel superstructure North and South Viaducts)

11. **Approx. property size (in feet)**

Frontage: 9152' **Depth:** 90'

12. **Date(s) of encl. photograph(s):**
1937[6]

13. **Condition:** Excellent ( ) Good (X) Fair ( ) Deteriorated ( )

14. **Alterations:**
Since the Golden Gate Bridge was opened in May 1937, there have been many construction and maintenance projects which have resulted in structural modifications and minor alterations of the Bridge.

Following is a list of some of these[7]:

1. Addition of lower lateral bracing system and traveling maintenance platforms.
2. Widening of Marin Approach viaduct (North Viaduct).
3. Widening of the San Francisco Approach viaduct (South Viaduct).
4. Replacement of all suspender ropes and their connections to the stiffening truss.
5. Replacement of rivets by high-strength bolts throughout suspension bridge and both approaches.
6. Installation of new light fixtures.
7. Installation of protective fence on East sidewalk over Fort Point.
8. Installation of short-wave transmitter on top of South tower.
9. Replacement of tower strut ornamental fascia plates.
10. Repair of various corrosion damage throughout the structure.
11. Replacement in kind of corroded members in the North and South Viaducts (except that rivets were replaced by bolts).

12. Additional diagonal bracing at both North and South Viaducts to resist seismic forces, as well as new longitudinal rods at expansion joints.
13. Deck and sidewalk replacement, including widening of curb lanes.

15. Surroundings: Open land (X) Scattered buildings (X) Densely built-up ( )

Residential ( ) Industrial ( ) Commercial ( ) Other:

(Check more than one if necessary)

16. Threats to site: None known ( ) Private Development ( ) Zoning ( ) Vandalism ( )

Public Works Project (X) Other:

17. Is the structure: On its original site? (X) Moved? ( ) Unknown? ( )

18. Related Features:

Related features are the Administration Buildings and the Toll Plaza with the Toll Booths and Canopy, which all were built simultaneously with the bridge. Other structures related to the use of bridge but built later are the Round House, two Bridge Maintenance Buildings and two bus shelters. These structures are evaluated separately in the HASR.

SIGNIFICANCE

19. Briefly state historical and/or architectural importance (include dates, events, and persons associated with the site):

The Golden Gate Bridge is a Category 2 structure, "Determined Eligible for the National Register"[8]. It was found to be eligible on March 10, 1980 under Criteria A, B and C[9].

20. Main theme of the historic resource: (If more than one is checked, number in order of importance)

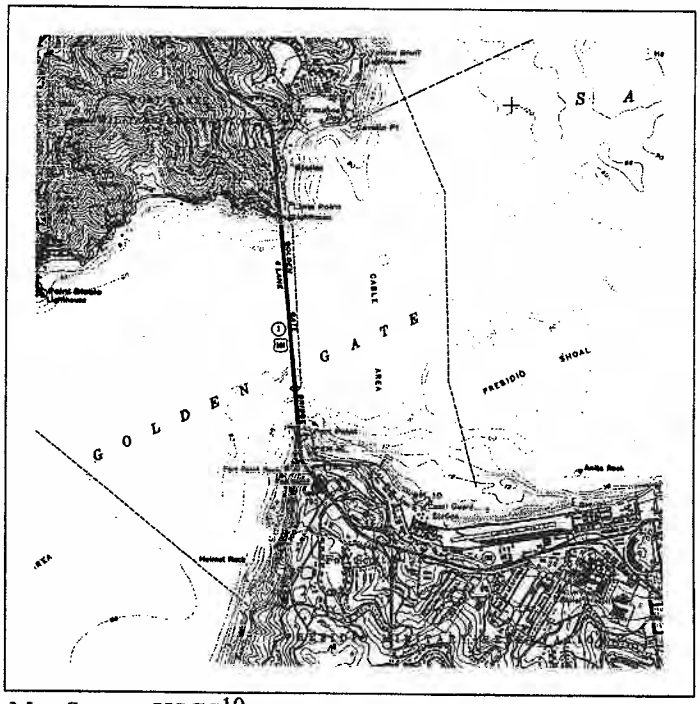
Architecture (X) Arts & Leisure ( )
Economic/Industrial ( ) Exploration/Settlement ( )
Government ( ) Military ( ) Religion ( )
Social/Education ( )

21. Sources (List books, documents, surveys, personal interviews and other dates.)

- See footnotes.
- Draft Finding of No Effect for the Proposed Seismic retrofit Project for the Golden Gate Bridge, San Francisco and Marin Counties, prepared by MacDonald Architects, May 1993.
- Draft Historic Property Survey Report for the Proposed Seismic retrofit Project for the Golden Gate Bridge, San Francisco and Marin Counties, prepared by MacDonald Architects, Sept 1992.

22. Date form prepared: Nov 1993
By: Caspar Mol
Organization: MacDonald Architects
Address: 1620 Montgomery St., Suite 140
City: San Francisco
Zip Code: CA 94111
Phone: 415-398-8728

Location sketch map (draw and label site and surrounding streets, roads and prominent landmarks)



Map Source: USGS[10]

1 Source of illustration: Ketchum, Mark and Charles Seim, T. Y. Lin International, San Francisco, CA, in professional collaboration with Imbsen and Associates, Inc., Sacramento, California, and Geospectra, Inc., Richmond, California. Golden Gate Bridge Seismic Retrofit Studies. 10 July 1991. For the Golden Gate Bridge, Highway and Transportation District, San Francisco, California. T. Y. Lin International ,San Francisco, California.

2 Source of illustration: The Golden Gate Bridge, Report of the Chief Engineer to the Board of Directors of the Golden Gate Bridge and Highway District, California, September 1937, 50th Anniversary Edition published by the Golden Gate Bridge Highway and Transportation District, San Francisco, California, 1987,

3 A piece of trivia: story has it that the paint is called International Orange because it was the color orange used for the "T" in the logo of International Harvester, the agricultural machinery manufacturer.

4 Letter from Irving F. Morrow to Joseph B. Strauss, dated September 12, 1933, Documents Collection, Bancroft Library, U. C. Berkeley, Berkeley, California.

5 Report on color and lighting for the Golden Gate Bridge, April 6, 1935, by Irving F. Morrow to the Board of Directors of the Golden Gate Bridge Highway and Transportation District, San Francisco, California, p. 3.

6 Photograph from The Golden Gate Bridge, Report of the Chief Engineer to the Board of Directors of the Golden Gate Bridge and Highway District, California, September 1937, 50th Anniversary Edition published by the Golden Gate Bridge Highway and Transportation District, San Francisco, California, 1987, p. 76.

7 Source: Finding of no Significant Impact (NEPA) / Negative Declaration (CEQA), Golden Gate Bridge Deck and Sidewalk Replacement and upgrading of the approaches, Federal Highway Administration and the Golden Gate Bridge, Highway and Transportation District, July 1980.

8 Request for Determination of Eligibility for the Golden Gate Bridge, prepared by Omar L. Homme, Division Administrator, Federal Highway Administration, Region Nine, California Division., Sacramento, CA, not dated. Mailed to SHPO on October 30, 1979 and to the National Register of Historic Places on December 11, 1979. It seems the Notice of Determination of Eligibility was mailed out by National Register of Historic Places to SHPO and the ACHP on January 29, 1980.

9 Archaeological Survey Report for the Golden Gate Bridge Seismic Retrofit Project, San Francisco and Marin Counties, California. August 1993. For T. Y. Lin International, San Francisco, California. Basin Research Associates, San Leandro, CA, p.10

10 Map Source: United States Department of the Interior, Geological Survey, San Francisco North Quadrangle, 7.5 minute series, 1956, photorevised 1968 and 1973

CALIFORNIA DEPARTMENT OF TRANSPORTATION
ARCHITECURAL INVENTORY/EVALUATION FORM MAP REFERENCE NO. GG6

County - Route - Postmile: ( ) LISTED ( ) DETERMINED ELIGIBLE
UTM Coordinates: (X) APPEARS ELIGIBLE ( ) APPEARS INELIGIBLE

IDENTIFICATION

1. **Common Name:**
   Round House Gift Shop
2. **Historic Name:** Round House Restaurant
3. **Street or rural address:**

   City: San Francisco **Zip Code:** CA 94129 **County:** San Francisco
4. **Parcel Number:** **Present Owner:** Golden Gate Bridge Highway and Transportation District

   Address: P.O. Box 9000, Presidio Station **City:** San Francisco **Zip Code:** CA 94129
5. **Ownership is:** (X) Public ( ) Private
6. **Present Use:** Gift Shop **Original Use:** Restaurant

DESCRIPTION

7a. **Architectural Style:** Streamline Modern

7b. **Briefly describe the present PHYSICAL CONDITION of this site or structure and describe any major alterations from its original condition:**

The Round House is a one story circular building with a flat roof. About one fourth of the roof is raised approximately four feet. Its supporting walls contain circular louvered vents and east facing windows. The main roof is cantilevered approximately 5 feet on all sides and uses exposed joists radiating from the center. A cantilevered semi-circular deck, also approximately 5 feet in width, surrounds the structure on the south, east and north sides.

The southern, eastern and northern portions of the building walls are defined principally by continuous rectangular picture windows. These constitute over three quarters of the buildings circumference. Single entry doors, symmetrically placed one in the northwest facade and one in the southwest, each with narrow sidelights, provide access to the structure.

A small section of the outdoor arc which constitutes the edge of the roof has been "sliced off" on the west side of the building where it abuts the Toll; Plaza. The exterior walls are stucco, painted to match the buff color of all the District buildings. The fascia board of both the main and the raised roof are painted "International Orange" (the color of the Bridge itself) as are the window frames.

The interior of the structure is primarily a single, open room, with a partially enclosed smaller area located in the western portion of the floor plan.

The structure is located at the west side of the visitor parking lot and at the eastern edge of the Toll Plaza itself. In elevation it sits above the parking lot, straddling the earth berm between "Parking Area Z" and the Toll Plaza. The location constitutes what was the northeast corner of the original Toll Plaza and is across the plaza from the Power House.

The Round House was originally constructed as a 60 seat restaurant consisting of a 32 seat ovoid shaped counter and tables at the windows. Physically separated from the restaurant, the structure also contained public restrooms located in the western-most portion of the building and accessible only from their own external entrances.

In 1955 the restaurant was remodeled to designs by local architect Milton Pflueger. This resulted in the enlargement of the kitchen area into the space formerly occupied by one of the restrooms and the division of the remaining restroom into two. An exterior wing wall screening the restroom doors was relocated.

In addition, part of the eating area was partitioned to create an office; the tables were replaced by booths and the ovoid counter was replaced by two quarter circle counters.

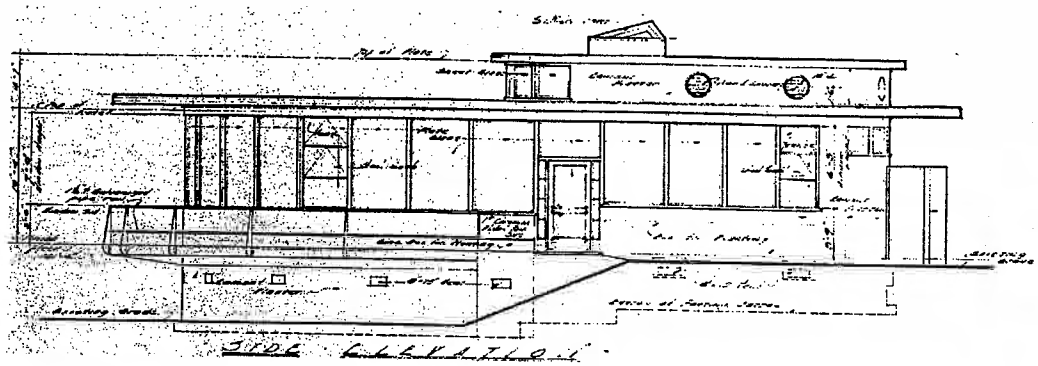
Some years later (1970-1971) the restaurant use of the structure ceased when the operator failed financially.

In 1972, the Golden Gate Bridge District occupied the Round House for office purposes, a use which continued until 1986. Few architectural alterations appear to have been made in conjunction with this use.

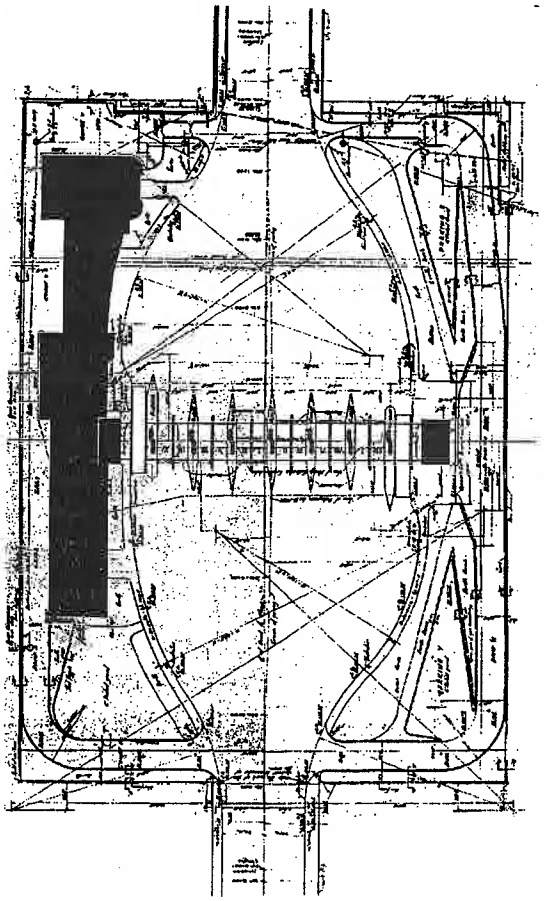
In 1987, the Round House was converted for use as a gift shop. At that time, the remaining interior walls separating kitchen, eating and restroom functions were removed as were those built in 1955. The restroom function was removed from the building.

Exterior changes appear to have been limited to filling in (to match existing stucco) the door and window to the former restroom area. In addition the edge of the roof arc was trimmed off.

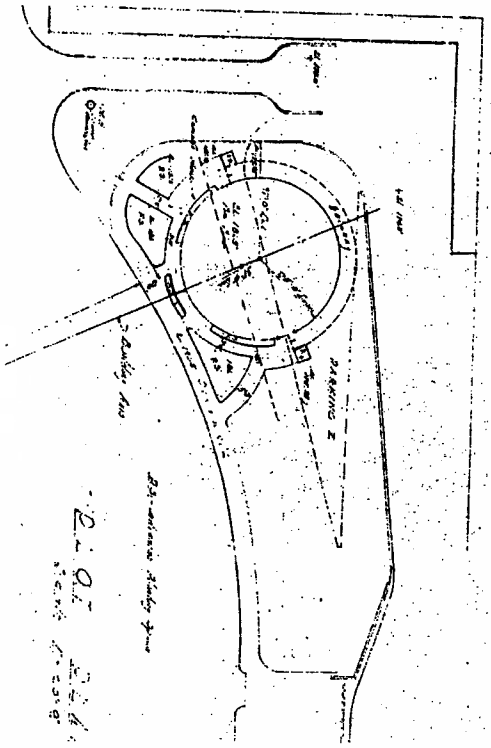
In 1992 the deck was replaced, with kind materials, and the hand railing altered.



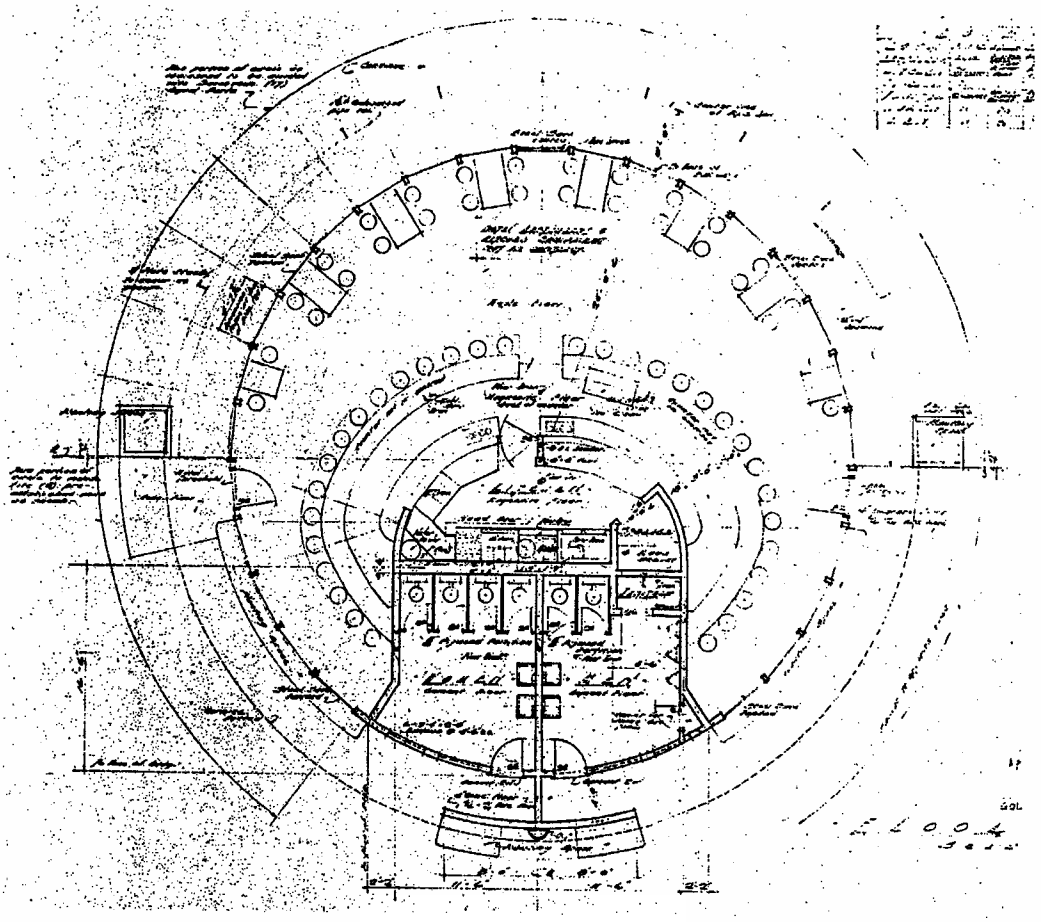
Elevation Drawing by Vincent G. Raney, Architect[1]



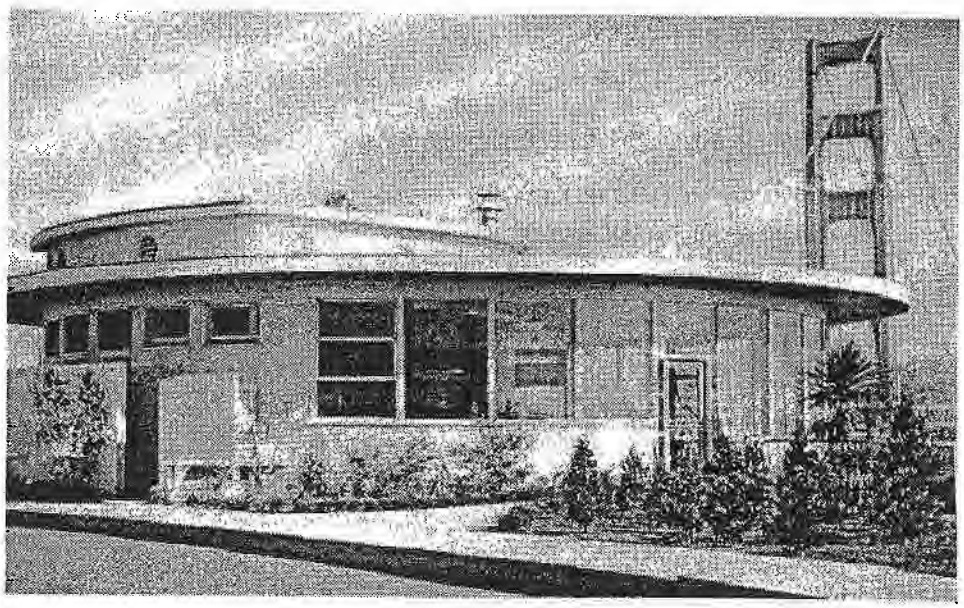
Morrow's original Site Plan for the Toll Plaza Area[2].



Raney's Plot Plan for the Round House in the north-east corner of the Toll Plaza area[3]



Original Plan Round House Restaurant, by Vincent G. Raney, Architect.[4]



8. **Construction date:**
   1939

   Est.: ( ) **Factual:** (X)

9. **Architect:**
   Vincent G. Raney, San Francisco
   Remodeling: Milton T. Pflueger

10. **Builder:**
    Barrett and Hilp

11. **Approx. property size (in feet)**

    Frontage: 50' **Depth:** 50'

12. **Date(s) of encl. photograph(s):**
    est. 1939[5], 1993[6]

13. Condition: Excellent ( ) Good (X) Fair ( ) Deteriorated ( )

14. Alterations:
See 7b above.

15. Surroundings: Open land (X) Scattered buildings (X) Densely built-up ( )

Residential ( ) Industrial ( ) Commercial ( ) Other:

(Check more than one if necessary)

16. Threats to site: None known ( ) Private Development ( ) Zoning ( ) Vandalism ( )

Public Works Project (X) Other:

17. Is the structure: On its original site? (X) Moved? ( ) Unknown? ( )

18. Related Features:
Related features are the Golden Gate Bridge, the Administration Buildings, and the Toll Plaza with the Toll Booths and Canopy. Other structures related to the use of Golden Gate Bridge but built later are the two Bridge Maintenance Buildings and two bus shelters. These structures are evaluated separately in the HASR.

SIGNIFICANCE

19. Briefly state historical and/or architectural importance (include dates, events, and persons associated with the site):

The building appears to be eligible for inclusion in the National Register of Historic Places under Criterion A.

Criterion A, Events and Setting: The significance of the Round House derives first from its integral relationship to the history and use of the Bridge itself, and secondly from its (the Round House) integrity as an individual structure.

The significance of the Bridge was established in the 1980 official determination of its eligibility for the National Register.

Although it was not built for the opening of the Bridge itself (1937), the Round House was constructed very shortly thereafter (1939) to serve the automobile and pedestrian users of the Bridge with refreshment and basic "comfort" facilities. Unlike the other surviving structures which are related to and date from the time of the beginning of the Bridge as an element in Bay Area transportation, the Round House retains significant integrity.

As an integral part of the Bridge, the Round House symbolizes some of the themes associated with the Bridge.

The Bridge was constructed to serve the general public as well as to advance commerce and economic development generally. The Round House reflects the growing appeal of auto travel and use as a form of recreation and the practice of dining out as social entertainment. The fact of the creation of the building as well as its orientation in the direction of dramatic views of the water, the Marin Headlands and the Bridge itself, reflects the pride and sense of celebration which characterized the Bridge's early years. The Round House provided services naturally related to the Bridge as a destination point.

Although use of the building has changed, it remains largely intact and its integrity is sufficient to convey the sense of its original time and place. While all interior features associated with the restaurant use have been removed and its public "comfort" function relocated, the overall form, remaining design features, much of its material as well as its setting convey the original general purpose of the Round House to facilitate public comfort and enjoyment in conjunction with use of the Bridge.

Criterion B, Association with the life of a significant person: Vincent Raney, the original designer, is still a practicing architect, and it would be premature to establish whether or not he is a significant architect. He was well known locally in the 1950's and 60's.
Criterion C, Quality of the structure: The structure is a nice, simple example of modernist architecture, and subsequent alterations have had little impact on its external appearance. The building would be eligible under this Criterion.

Criterion D, Yields information on history or prehistory: There is nothing special about the construction methods of this building that would be worth preserving for the future.

20. Main theme of the historic resource: (If more than one is checked, number in order of importance)

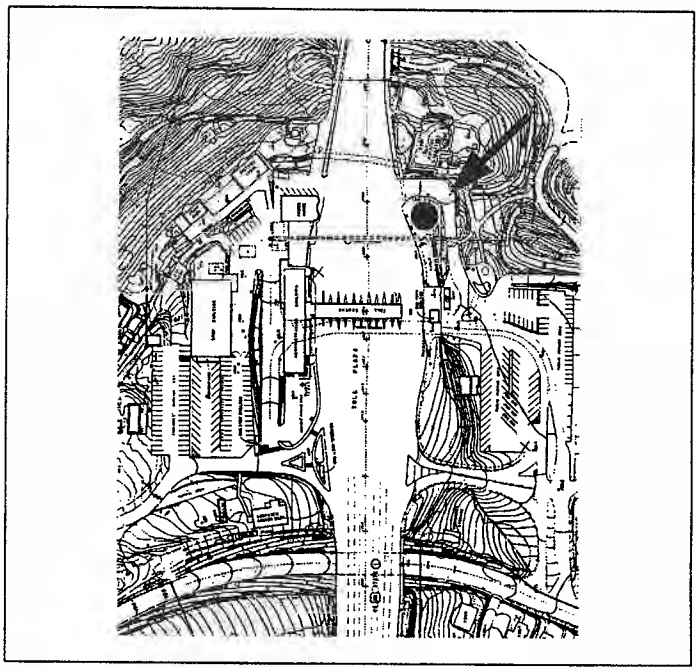
Architecture ( ) Arts & Leisure (1)
Economic/Industrial (2) Exploration/Settlement ( )
Government ( ) Military ( ) Religion ( )
Social/Education ( )

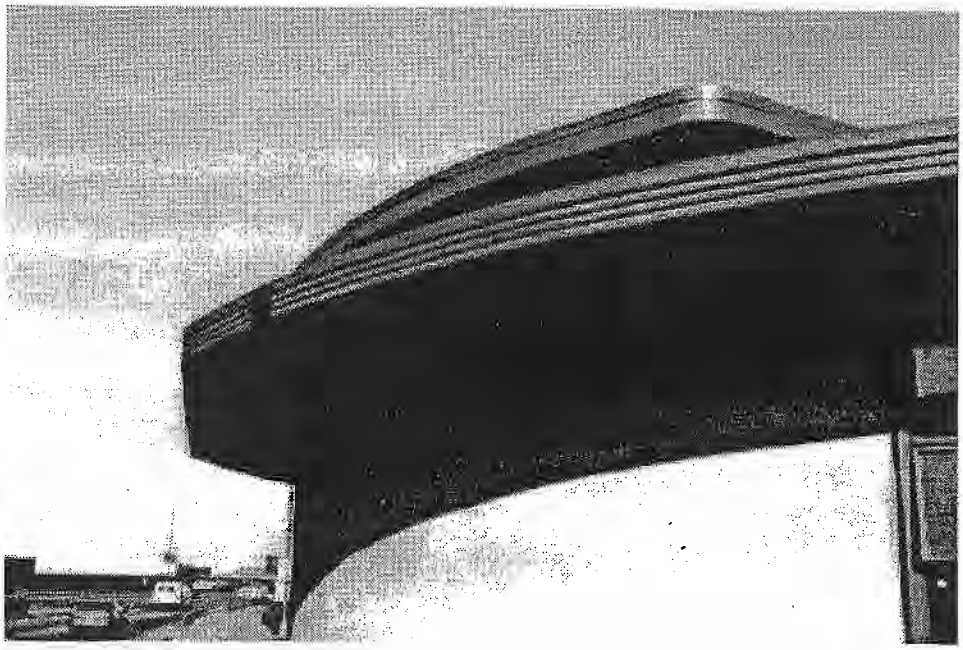
21. Sources (List books, documents, surveys, personal interviews and other dates.)

- Personal interview with Vincent Raney, the original architect of the Round House, on 10/27/1993
- See footnotes

22. Date form prepared: Nov 1993
By: Caspar Mol
Organization: MacDonald Architects
Address: 1620 Montgomery St., Suite 140
City: San Francisco
Zip Code: CA 94111
Phone: 415-398-8728

Location sketch map (draw and label site and surrounding streets, roads and prominent landmarks)





Detail of the canopy of the Round House Souvenir Shop, 1993.
Note the portion that was cut off on the left side.

Round House Souvenir Shop (looking north), 1993.
Note privacy wall and windows on left side were removed.

Interior of Round House Gift Shop, 1993.

1 From construction drawings prepared by Vincent G. Raney, Architect titled Restaurant and Comfort Station for Golden Gate Bridge Highway District, San Francisco,. dated 3-2-1938.

2 From drawing titled Toll Plaza, Plot Plan, by Strauss & Paine, Inc., also signed by Irving F. Morrow, Consulting Architect, dated 8/28/1936, revised 11/17/1936, on file at the Golden Gate Bridge District.

3 From construction drawings prepared by Vincent G. Raney, Architect titled Restaurant and Comfort Station for Golden Gate Bridge Highway District, San Francisco,. dated 3-2-1938.

4 See previous above.

5 Photograph from Office Brochure Vincent G. Raney, Inc.

6 Unless otherwise noted, photographs were taken in October 1993 by MacDonald Architects, San Francisco, CA.

CALIFORNIA DEPARTMENT OF TRANSPORTATION
ARCHITECURAL INVENTORY/EVALUATION FORM MAP REFERENCE NO. GG1

County - Route - Postmile: ( ) LISTED ( ) DETERMINED ELIGIBLE
UTM Coordinates: ( ) APPEARS ELIGIBLE (X) APPEARS INELIGIBLE

IDENTIFICATION

1. **Common Name:**

Golden Gate Bridge District Administration Building

2. **Historic Name:** Golden Gate Bridge District Administration and Maintenance Building

3. **Street or rural address:**

City: San Francisco **Zip Code:** CA 94129 **County:** San Francisco

4. **Parcel Number:** **Present Owner:** Golden Gate Bridge Highway and Transportation District

Address: P.O. Box 9000, Presidio Station **City:** San Francisco **Zip Code:** CA 94129

5. **Ownership is:** (X) Public ( ) Private

6 **Present Use:** Admin. Offices **Original Use:** Admin. Offices

DESCRIPTION

7a. **Architectural Style:** Modern

7b. **Briefly describe the present PHYSICAL CONDITION of this site or structure and describe any major alterations from its original condition:**

The Administration Building is located west of the Toll Plaza. It is a two-story stucco building with a flat roof, and is linear in shape, with its major axis running north-south. It includes administrative offices, garage areas for tow-trucks, a machine shop and a power house. The principal facade is oriented towards the east side, facing the Toll Plaza. The Toll Booth Canopy is attached to the building at about the midpoint. The two-story portion of the building has a large (appr. five feet) overhang on all four sides. The first floor is about 4 feet above grade. An approximately 10-foot wide, 3-foot high planter separates the building from the sidewalk. The building is painted a buff color, with "International Orange" (same color as the bridge) trim, door and window frames, curbs, railings and fascia board.

The main entrance is situated near the south end of the building. It is accessible from the sidewalk along the plaza through a set of wide concrete steps, and from the parking lot south of the building via a wheelchair ramp. A small flat-roofed canopy projects above the entry which is accentuated by two flagpoles to the north. There are no windows above the entry, resulting in a large expanse of blank wall on which are mounted in foot-high serif letters the words "Golden Gate Bridge Highway and Transportation District". Except at the entry, the stucco surface of the facade is perforated at regular intervals with large sliding glass doors (appr. 6 by 8 feet), painted orange, each with a steel guardrail with vertical bars, also painted orange.

There is a secondary entrance north of the Toll Booths, accessible by a small flight of steps going up from the sidewalk. North of this entrance, at the north-east corner of the two-story portion of the building, is located the Toll Office, which is one story high and projects about 10 feet from the front of the building. It has corners cut at a 45-degree angle with a continuous 5-foot high band of windows which give a 180-degree view from the Toll Office. The roof of the Toll Office is used as a deck for the northeasterly corner office. This deck wraps around the north side of the two-story portion of the building to a deck west of the building.

North of the Toll Office are located the Garages and Machine Shop which form a single visual entity and the Power House which has a distinct shape. These portions of the building are one-story high. The front facade of the Garages and Machine Shop is lightly curved towards the northeast, following the shape of

the roadway. There are four large garage doors at the south end and a series of higher steel windows with horizontal divisions. Between the windows, the line of the mullions is continued in the stucco. This is the only place where this banding which surrounded the original building is still visible, everywhere else, it has been eliminated.

At the north end of the building is located the Power House which is approximately three feet higher than the Garages and Machine Shop. It projects towards the east and has rounded corners, with narrow horizontally banded steel windows located up high, looking southeast and northeast.

West of the Administration Building is the maintenance area, a visually chaotic collection of large, small and temporary structures. This area is shielded from public view by the Administration Building.

The west side of the Administration Building is less articulated. When originally built, it was the "back" of the building, with a high fence running closely behind it. Now, it actually is the "front" of the maintenance area, which it dominates (with, to a lesser degree, the Maintenance Building). Roughly at the center of the building is the entry to an underpass (the Tunnel), which gives access to the east side of the toll plaza. Roadways leading from both the north and the south side of the building to this underpass are a major feature on this side of the building. At the entry to the underpass, the building is three stories high, and various offices and other spaces are located around this opening.

About 30 feet north of the tunnel, there is a one-story extension of the first floor of the building, with a roof deck on top, which connects to the roof deck of the Toll Office. The balcony railing is stucco up to about three feet above the roof, with a single steel rail painted orange along the top. When originally built, this was part of the maintenance wing (see below).

The back of the Garages and Machine Shop are dominated by 3 large roll-up steel garage doors of different widths, and a small row of horizontally divided steel windows.

The back of the Power House lines up with the one-story extension of the former maintenance wing. There is a steel roll-up garage door on the south wall, and two banks of louvered openings high up on the wall. Similar openings are found on the north wall.

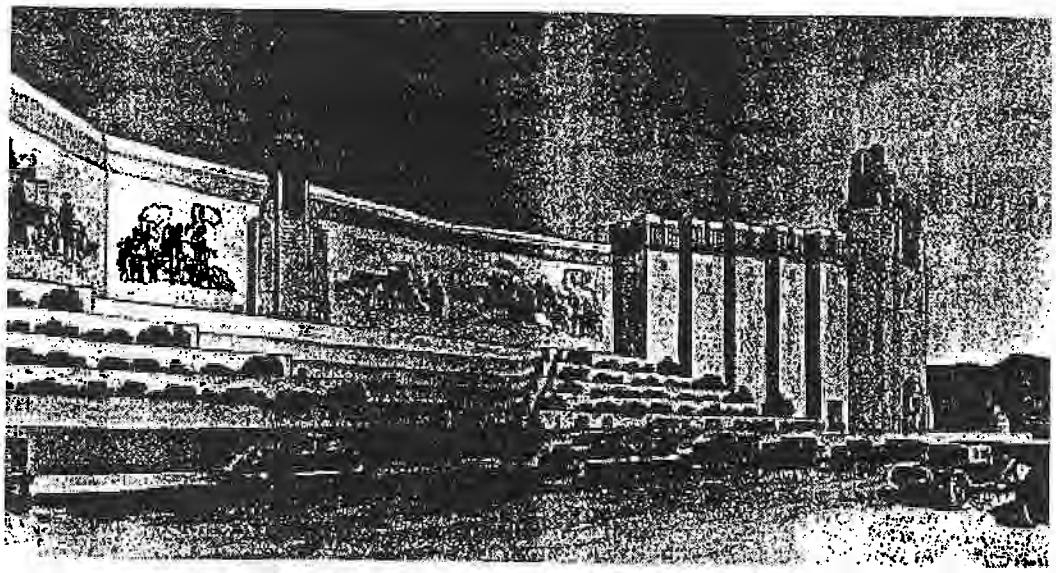
Two eight-foot diameter microwave dishes supported by trussed towers are situated on the roof, one on top of the Garages, and one on the Power House.

The building has cast-in place concrete footings, retaining walls and first floor. Most of the floor is slab-on-grade, except for the basements and the tunnel which are concrete cast-in-place post and beam structures. The walls and the roof of the building are wood-frame, except for the Power House, which has cast-in place concrete walls and roof.

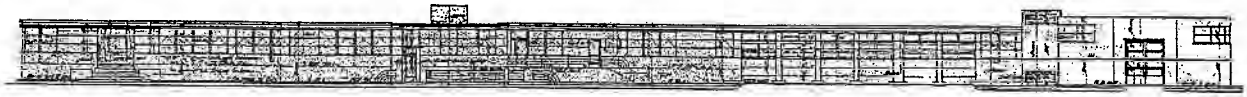
When first built, the building was already substantially different from what architect Irving Morrow had originally designed. His conception for a grand (art deco) toll plaza with associated buildings was destroyed as part of severe cost cutting measures. Records at the Bancroft Library show the Toll Plaza was redesigned four or five times[1] between 1931 and 1936. Morrow himself wrote: "The Toll Plaza has suffered so many cuts and arbitrary changes that most of it can not now be taken very seriously[2]".

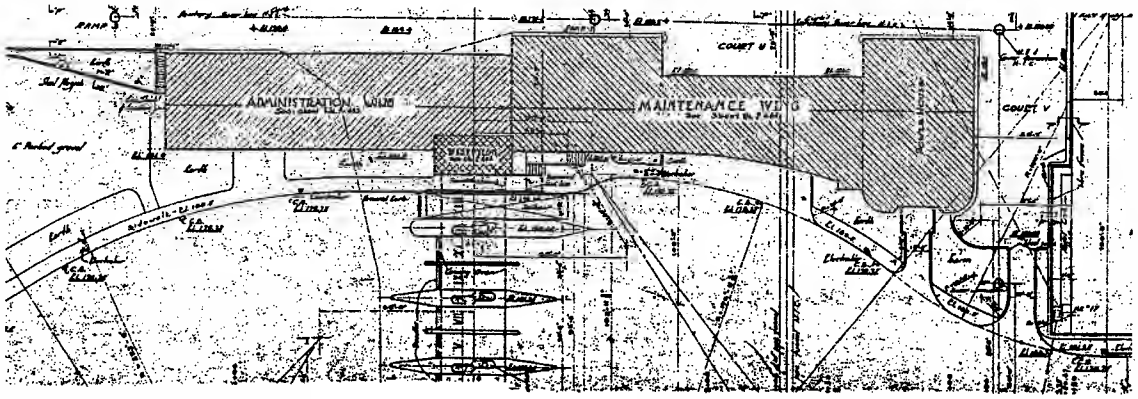
The building as it was finally built[3] consisted of two wings, the administration wing and the maintenance wing (which included locker and storage rooms, a paint shop, a superintendent's office, garages and a power house). The building was one story high with horizontally banded steel frame windows, and had horizontal stucco banding matching the window divisions and the banding in the toll booths. The toll booths and the canopy formed an integral part of the design. The "west pylon" of the canopy which housed stairs to the underpass (tunnel) under the plaza also formed an integral part of the administration building.

Although the final building is substantially smaller than what was originally envisioned, the plan of the building retained to a small degree the idea of a "wall" hugging the plaza, with a light curvature on the north side.

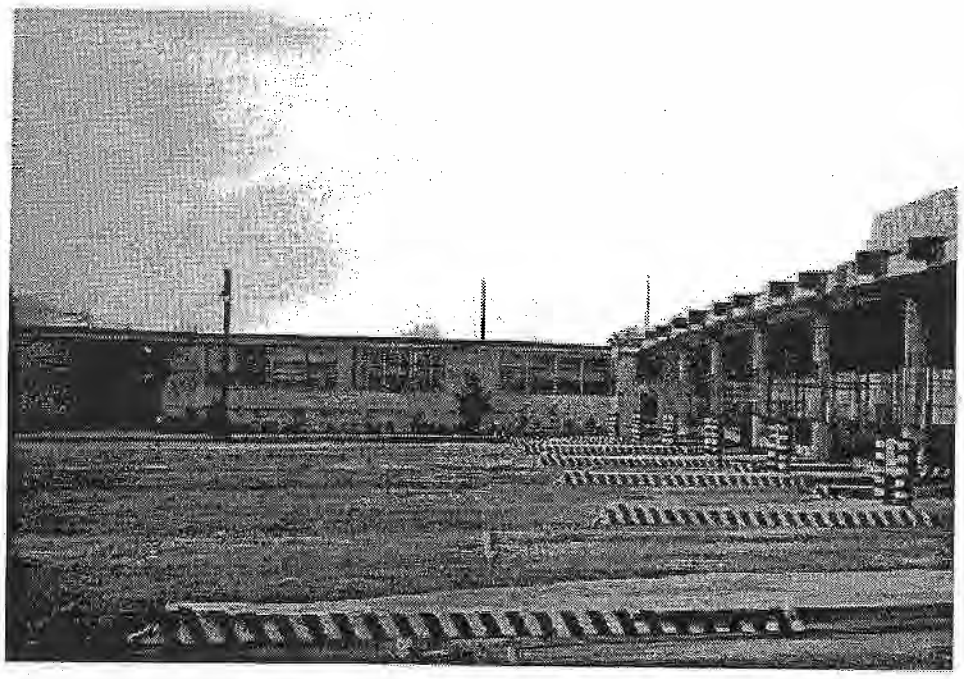


Morrow's grand original concept of the Administration Building[4] (about 1931)





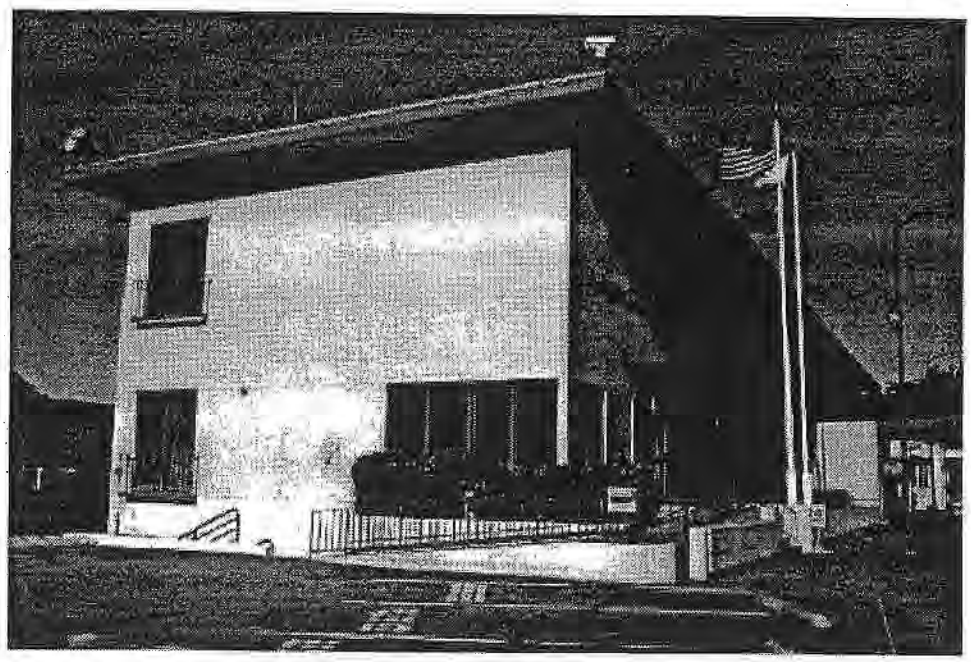
Administration and Maintenance building as shown on construction drawings, 1936[5]



Administration Building and Toll Booths, 1937[6]. Note how the roof of the building ties in with the canopy and the horizontal banding of the windows matches the toll booths.

In 1965, the administration building was substantially altered by Hertzka & Knowles[7], San Francisco, California. A second story was added, numerous windows were relocated and enlarged, a large roof overhang was created, a "sergeant's booth" was added projecting from the line of the facade (now the Toll Office), and the maintenance areas were converted to office space. Three of the five 9-foot garage doors on the west side were combined into two doors of different widths, losing the original rhythm. The horizontal banding was eliminated, as were some of the curved handrails. The horizontal windows were replaced by large vertical aluminum sliding glass doors with mini-balconies. It appears that the addition was done without much respect for the original design and concept.

In 1976, a handicapped ramp was added to the main entry. No major remodeling was done since 1965.



8. **Construction date:**
   1937[8]

   Est.: ( ) **Factual:** (X)

9. **Architect:**
   Irving F. Morrow
   1965 remodeling: Hertzka & Knowles

10. **Builder:**
    Barrett and Hilp
    1965 remodeling:
    Arntz Builders, Novato, CA

11. **Approx. property size (in feet)**

    Frontage: 325' **Depth:** 40-60'

12. **Date(s) of encl. photograph(s):**
    1937, 1993

13. **Condition:** Excellent ( ) Good (X) Fair ( ) Deteriorated ( )

14. **Alterations:**
The Administration Building has been substantially altered since it was originally constructed. See 7b above.

15. **Surroundings:** Open land (X) Scattered buildings (X) Densely built-up ( )

Residential ( ) Industrial ( ) Commercial ( ) Other:

(Check more than one if necessary)

16. **Threats to site:** None known ( ) Private Development ( ) Zoning ( ) Vandalism ( )

Public Works Project (X) Other:

17. **Is the structure:** On its original site? (X) Moved? ( ) Unknown? ( )

18. **Related Features:**

Related features are the Golden Gate Bridge, the Administration Buildings, and the Toll Plaza with the Toll Booths and Canopy. Other structures related to the use of Golden Gate Bridge but built later are the two Bridge Maintenance Buildings and two bus shelters. These structures are evaluated separately in the HASR.

SIGNIFICANCE

19. **Briefly state historical and/or architectural importance (include dates, events, and persons associated with the site):**

The building does not appear to be eligible for inclusion in the National Register of Historic Places.

When the Toll Plaza was originally conceived, the Administration Building and the Toll Booths and Canopy formed a cohesive design. Later modifications to all three structures lead to the loss of this unity. Although this building is technically a 1930's structure, the alterations were so significant that it now really is a (fairly generic) 1960's building.

Criterion A, Events and Setting: Although the building is part of the operation of the Golden Gate Bridge, it is not directly "associated with events that made a significant contribution to the broad patterns of our history". The building as it stands today does not contribute but rather detracts from the beauty of the Golden Gate Bridge.

Criterion B, Association with the life of a significant person: Due to alterations to the building, its association with Irving Morrow has been lost. In addition, Morrow is not considered a significant architect. His body of work, which is very limited, consisted mainly of small residential and commercial projects (with the exception of consultations on the Golden Gate Bridge)[9]. Also, Hertzka and Knowles are not considered significant architects.

Criterion C, Quality of the structure: In its original form, the structure was a nice example of 1930's modern architecture, but subsequent alterations made the building unrecognizable, and as it now stands it is at best a mediocre example of sixties modernist architecture.

Criterion D, Yields information on history or prehistory: The construction means or methods of this building are common, and are not worth preserving for future study. It is a typical wood frame structure with concrete basement and foundations.

20. Main theme of the historic resource: (If more than one is checked, number in order of importance)

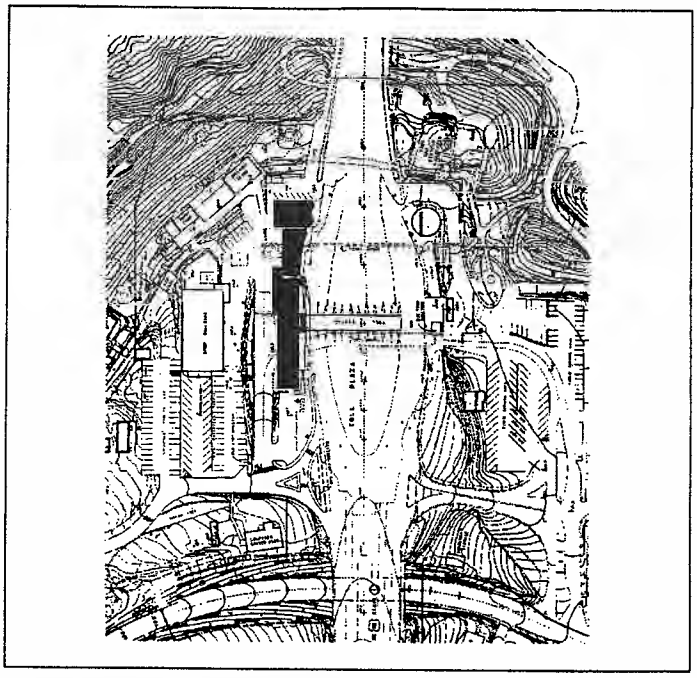
Architecture (X) Arts & Leisure ( )
Economic/Industrial ( ) Exploration/Settlement ( )
Government ( ) Military ( ) Religion ( )
Social/Education ( )

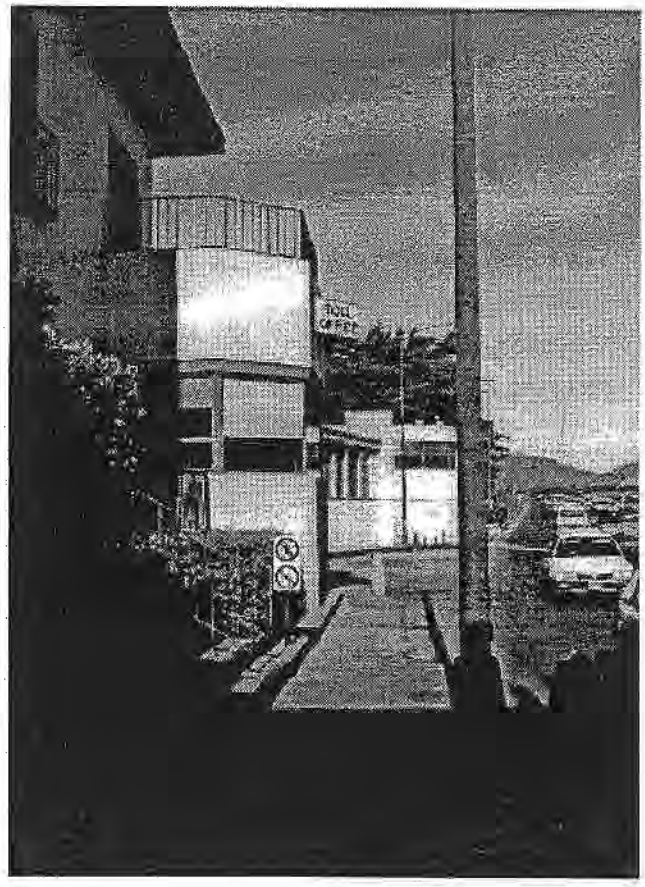
21. Sources (List books, documents, surveys, personal interviews and other dates.)

Drawings: see footnotes
See also: Bibliography of the HASR

22. Date form prepared: Nov 1993
By: Caspar Mol
Organization: MacDonald Architects
Address: 1620 Montgomery St., Suite 140
City: San Francisco
Zip Code: CA 94111
Phone: 415-398-8728

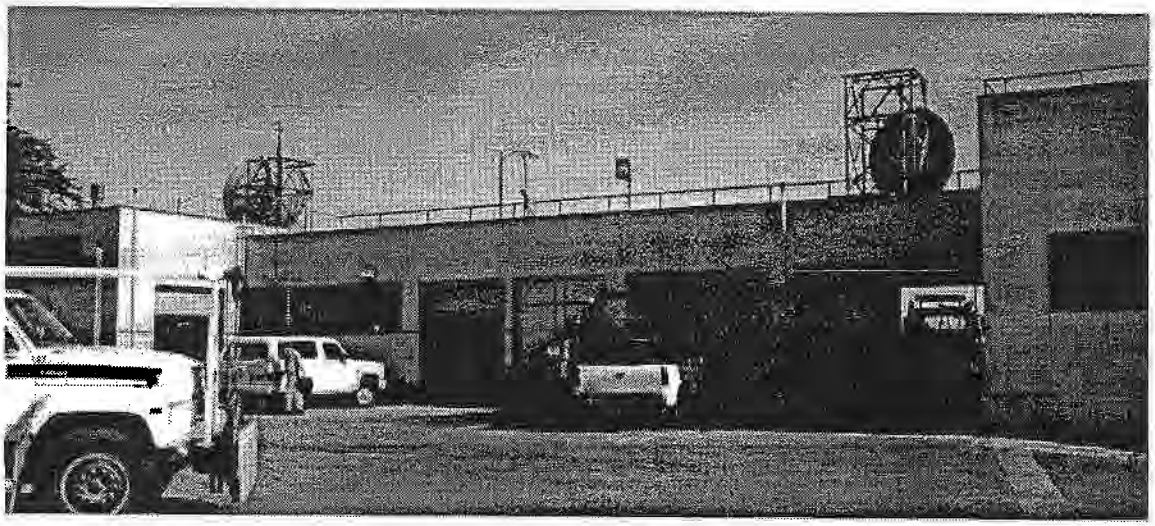
Location sketch map (draw and label site and surrounding streets, roads and prominent landmarks)





Toll Office which was added as part of the 1965 alteration (1993)

Back side (west) of Administration Building (1993)
Note entrance to tunnel.



Garage and Machine Shop, back side (1993).
The Power House is the higher part on the left side.

1 List of drawings Golden Gate Bridge at the Documents Collection, Bancroft Library, U.C. Berkeley, Berkeley, California. This list shows: Plan of Plaza at S.F. Portal 1-19-31; Study for Toll House Plaza 7-6-32; Comparative Bridge Plazas, compares GGB plaza with 8 other bridges 4-10-33; Toll Plaza Schemes A, B, C and D 7-8-35; Toll Plaza Preliminary Plans 1-7-35; Toll Plaza Preliminary Plans 11-2-35; Toll Plaza Preliminary Plans 4-2-36; Construction Documents Toll Plaza 8-28-36; Miscellaneous Details 1-23-37 through 7-31-37

2 Memorandum titled Architectural Work on the Golden Gate Bridge, by Irving F. Morrow, undated, Documents Collection, Bancroft Library, U.C. Berkeley, Berkeley, California.

3 Drawings titled Toll Plaza, by Strauss & Paine, Inc., also signed by Irving F. Morrow, Consulting Architect, dated 8/28/1936, revised 11/17/1936, on file at the Golden Gate Bridge District.

4 Documents Collection, Bancroft Library, U.C. Berkeley, Berkeley, California.

5 Drawings titled Toll Plaza, Plot Plan, Elevations, by Strauss & Paine, Inc., also signed by Irving F. Morrow, Consulting Architect, dated 8/28/1936, revised 11/17/1936, on file at the Golden Gate Bridge District.

6 Photograph from: The Golden Gate Bridge, Report of the Chief Engineer to the Board of Directors of the Golden Gate Bridge and Highway District, by Joseph P. Strauss. January 1938, Golden Gate Bridge and Highway District. Re-printed for the 50th anniversary of the bridge, 1987.

7 Drawings titled Additions and Alterations to Administration Building, by Hertzka & Knowles, dated 10/21/1965, on file with the Golden Gate Bridge District

8 Letter from Noel Stampfli, P.E., Senior Civil Engineer, Golden Gate Bridge, Highway and Transportation District to Charles E. Seim, Project Manager, T.Y. Lin International, dated 10/1/93.

9 A fairly extensive literature study about Morrow unearthed only a handful of projects. Checked were the indexes of California Arts and Architecture, The Architect and Engineer, Western Architect and Engineer, American Architect, Architectural Record, Overland Magazine, American Magazine, San Francisco Chronicle, Invention and Technology, the Documents Collection at Bancroft Library at U. C. Berkeley.

CALIFORNIA DEPARTMENT OF TRANSPORTATION
ARCHITECURAL INVENTORY/EVALUATION FORM MAP REFERENCE NO. GG2

County - Route - Postmile: ( ) LISTED ( ) DETERMINED ELIGIBLE
UTM Coordinates: ( ) APPEARS ELIGIBLE (X) APPEARS INELIGIBLE

IDENTIFICATION

1. **Common Name:**

   Golden Gate Bridge Maintenance Building

2. **Historic Name:** Golden Gate Bridge Machine Shop and Garage Building[1]

3. **Street or rural address:**

   City: San Francisco **Zip Code:** CA 94129 **County:** San Francisco

4. **Parcel Number:** **Present Owner:** Golden Gate Bridge Highway and Transportation District

   Address: P.O. Box 9000, Presidio Station **City:** San Francisco **Zip Code:** CA 94129

5. **Ownership is:** (X) Public ( ) Private

6 **Present Use:** Shop **Original Use:** Shop

DESCRIPTION

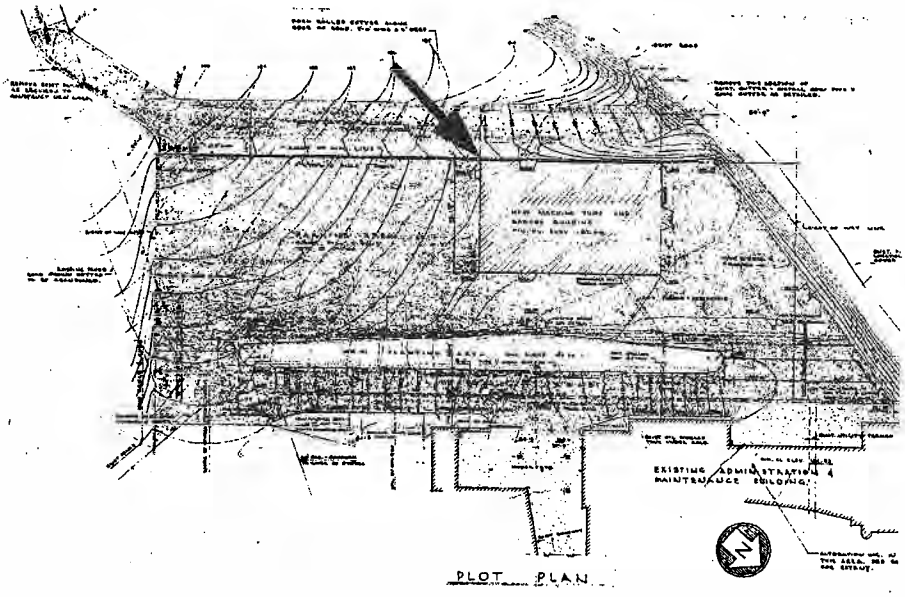
7a. **Architectural Style:** Modern

7b. **Briefly describe the present PHYSICAL CONDITION of this site or structure and describe any major alterations from its original condition:**

The Golden Gate Bridge Maintenance Building is a free-span building of 73'-6" x 120'-0" x 19 feet high, with an internal clear height of about 16 feet. Its structure consists of steel columns and beams to which cast-in-place concrete walls and roof are anchored. Just below the roof line, a 5-foot wide band of wire-glass transom windows provides natural lighting. Three large painted steel roll-up garage doors, a door and a few small windows are the only other openings in the building.

The exterior concrete walls are clad with corrugated galvanized sheet metal from about 4 feet to the underside of the glazing, leaving an exposed concrete base. The building is painted the same buff color as all the other District buildings. The fascia board and the trim around the openings are painted International Orange (the same color as the Golden Gate Bridge).

The construction drawings[2] indicate that a 150' x 414.25' right-of-way was created west of the District property line, as a site for the Maintenance Building. The existing roadway west of the Administration Building was widened as part of this project. The whole area within the new right-of-way around the Maintenance Building was paved. A new road was road built west of the Administration Building, outside the right-of-way area, connecting an unnamed red rock surfaced road (Bowman Road) with the existing road south of the Administration Building (Merchant Road). The site plan nor the survey[3] show any other existing structures in the vicinity of the new building, except for the old batteries.



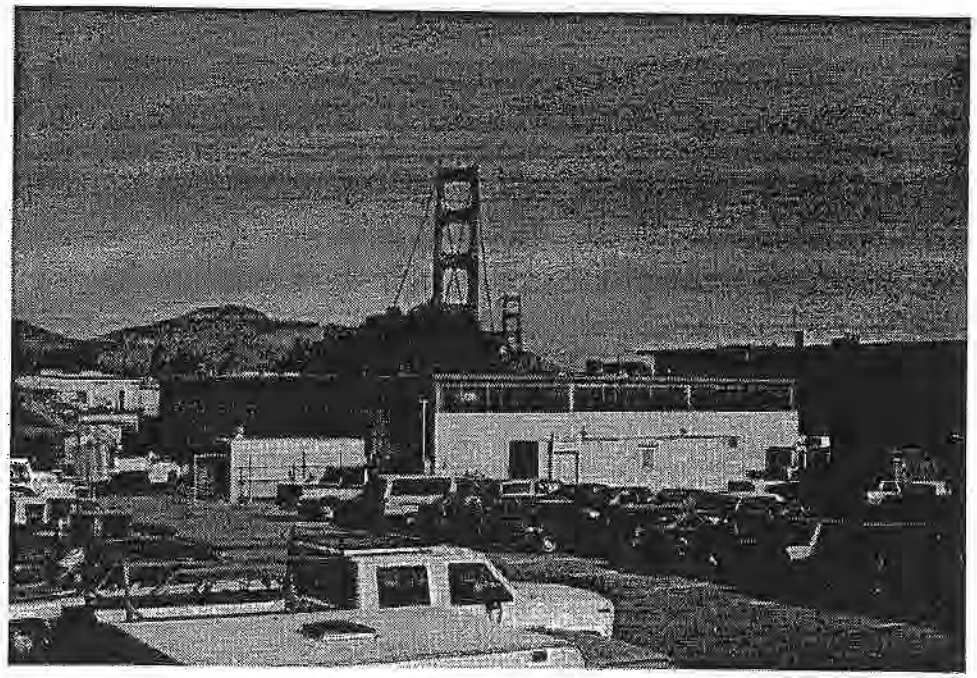
Site Plan[4]

In the years that followed, the Maintenance Building became the center of a large number of small structures strewn around the site.

The building itself was expanded with temporary structures. A one-story L-shaped modular addition was built on the northeast side of the building prior to 1971 (exact date not known)[5] Similarly, a steel container was placed against the south side of the building and another one in the west garage door opening with access from inside the Maintenance Building (see photographs).

Inside, a storage mezzanine and a paint spray booth were added. Other minor modifications have occurred over the years at unknown dates[6].

In 1980 interior offices were added.



8. **Construction date:**
   1955[7]

   Est.: ( ) **Factual:** (X)

9. **Architect:**
   Milton T. Pflueger

10. **Builder:**
    Ira Larsen

11. **Approx. property size (in feet)**

    Frontage: 120' **Depth:** 74'

12. **Date(s) of encl. photograph(s):**
    1993[8]

13. **Condition:** Excellent ( ) Good (X) Fair ( ) Deteriorated ( )

14. **Alterations:**
See item 7b above.

15. **Surroundings:** Open land (X) Scattered buildings (X) Densely built-up ( )
Residential ( ) Industrial ( ) Commercial ( ) Other:
(Check more than one if necessary)

16. **Threats to site:** None known ( ) Private Development ( ) Zoning ( ) Vandalism ( )
Public Works Project (X) Other:

17. **Is the structure:** On its original site? (X) Moved? ( ) Unknown? ( )

18. **Related Features:**

Related features are the Golden Gate Bridge, the Administration Buildings, a smaller maintenance building and the Toll Plaza. Other structures related to the use of Golden Gate Bridge are the Round House and two bus shelters. These structures are evaluated separately in the HASR.

SIGNIFICANCE

19. **Briefly state historical and/or architectural importance (include dates, events, and persons associated with the site):**

The Maintenance Building does not appear to be eligible for inclusion in the National Register of Historic Places.

The building is 38 years old. Although it is a clean, simple, well designed example of an industrial building, by the locally well known architect Milton T. Pflueger, it is not special enough to warrant protection both now and in the future.

20. **Main theme of the historic resource:** (If more than one is checked, number in order of importance)

Architecture (X) Arts & Leisure ( )
Economic/Industrial ( ) Exploration/Settlement ( )
Government ( ) Military ( ) Religion ( )
Social/Education ( )

21. **Sources** (List books, documents, surveys, personal interviews and other dates.)

See footnotes

22. **Date form prepared:** Nov 1993
By: Caspar Mol
Organization: MacDonald Architects
Address: 1620 Montgomery St., Suite 140
City: San Francisco
Zip Code: CA 94111
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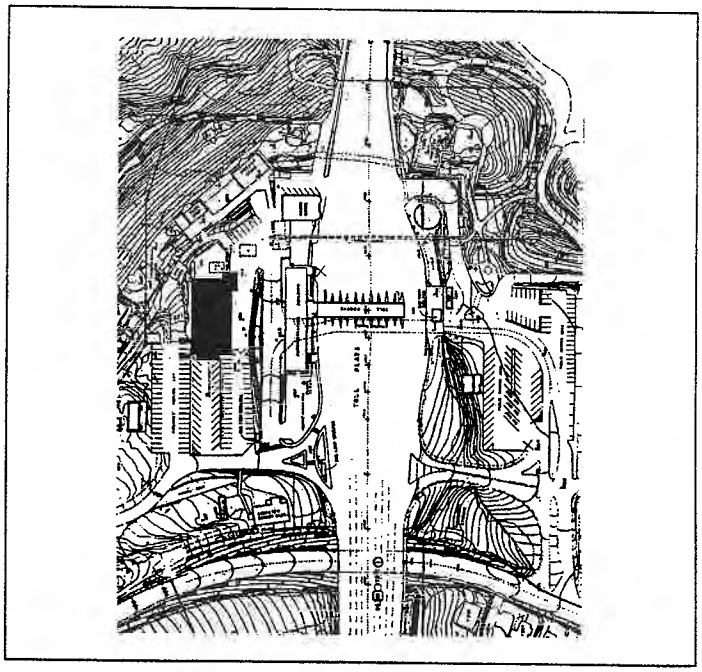
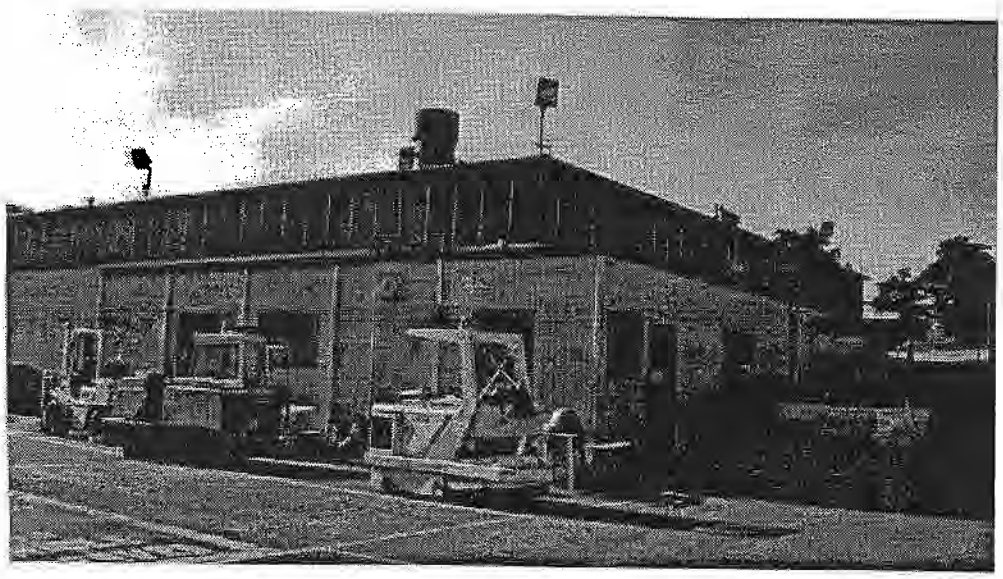
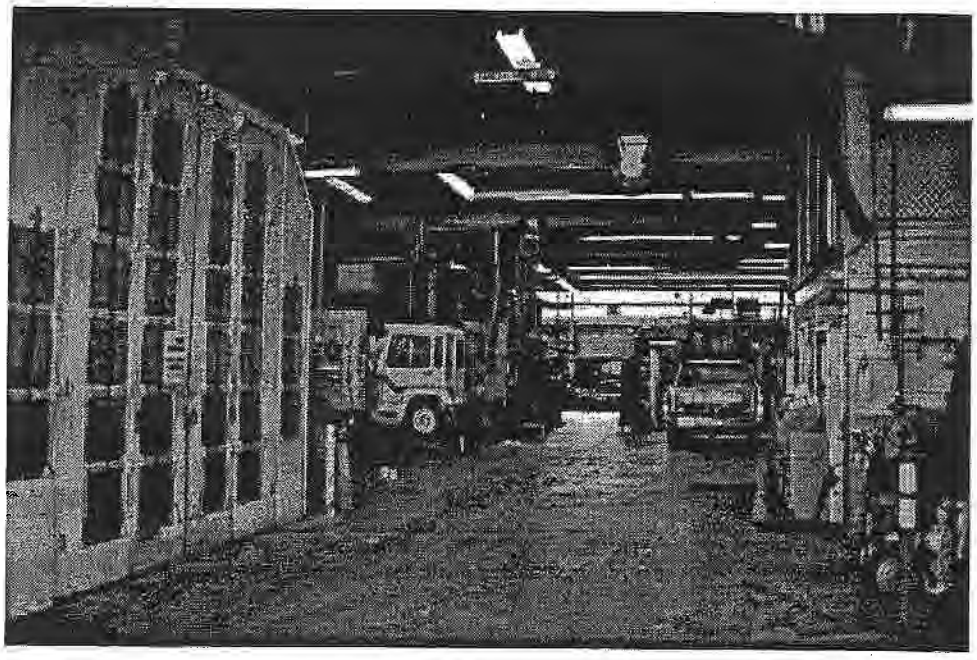
Location sketch map (draw and label site and surrounding streets, roads and prominent landmarks)





North-east corner of Maintenance Building. Note modular units set against building.

South-west corner of Maintenance Building. Note the container set in the garage door opening, and another one against the south facade.



Interior of the Maintenance Building

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1 Name of building on original construction drawings by Milton T. Pflueger, Architect.

2 Machine Shop & Garage Building for Golden Gate Bridge and Highway District of California, Milton T. Pflueger, Architect, San Francisco, California. Dated Feb. 10, 1955. On file at the Golden Gate Bridge Highway and Transportation District, San Francisco, California.

3 Survey by Punnett, Parez & Hutchinson, Civil Engineers, San Francisco, California. Dated July 27, 1954, revised Aug. 10, 1954 and Feb. 10, 1955. On file at the Golden Gate Bridge Highway and Transportation District.

4 Source of illustration: see footnote 2.

5 Letter from Noel Stampfli, P.E., Senior Civil Engineer, Golden Gate Bridge, Highway and Transportation District to Caspar Mol, MacDonald Architects, dated 11/24/93.

6 Letter from Noel Stampfli, P.E., Senior Civil Engineer, Golden Gate Bridge, Highway and Transportation District to Caspar Mol, MacDonald Architects, dated 11/24/93.

7 Letter from Noel Stampfli, P.E., Senior Civil Engineer, Golden Gate Bridge, Highway and Transportation District to Charles E. Seim, Project Manager, T.Y. Lin International, dated 10/1/93.

8 All photographs by MacDonald Architects

CALIFORNIA DEPARTMENT OF TRANSPORTATION
ARCHITECURAL INVENTORY/EVALUATION FORM MAP REFERENCE NO. GG3

County - Route - Postmile: ( ) LISTED ( ) DETERMINED ELIGIBLE
UTM Coordinates: ( ) APPEARS ELIGIBLE (X) APPEARS INELIGIBLE

IDENTIFICATION

1. **Common Name:**

   Golden Gate Bridge Toll Booths, Canopy and Plaza

2. **Historic Name:** Golden Gate Bridge Toll Booths, Canopy and Plaza

3. **Street or rural address:**

   City: San Francisco **Zip Code:** CA 94129 **County:** San Francisco

4. **Parcel Number:** **Present Owner:** Golden Gate Bridge Highway and Transportation District

   Address: P.O. Box 9000, Presidio Station **City:** San Francisco **Zip Code:** CA 94129

5. **Ownership is:** (X) Public ( ) Private

6 **Present Use:** Toll Booths **Original Use:** Toll Booths

DESCRIPTION

7a. **Architectural Style:** Streamline Modern

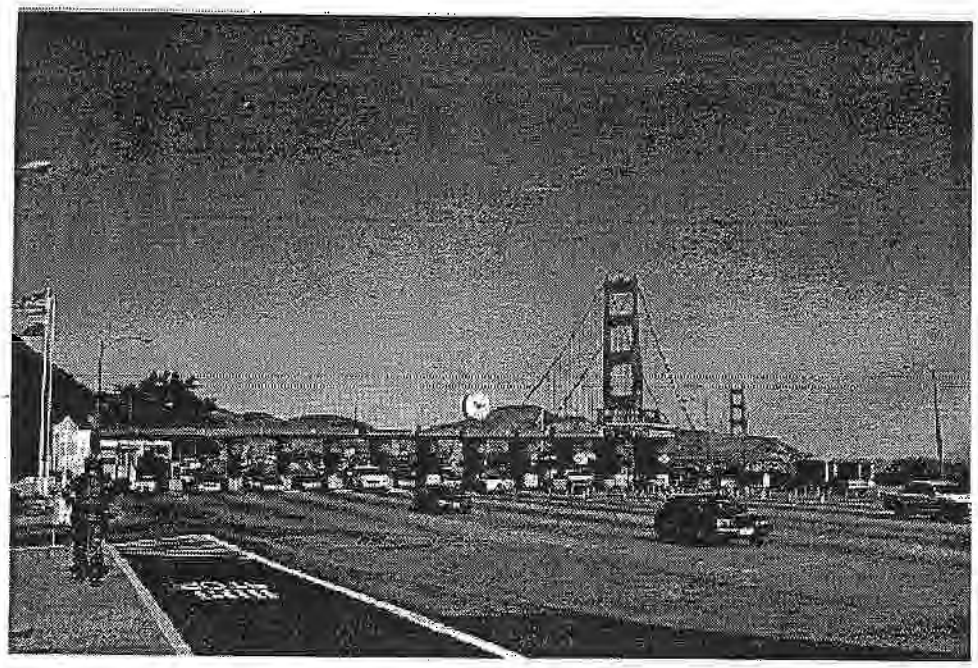
7b. **Briefly describe the present PHYSICAL CONDITION of this site or structure and describe any major alterations from its original condition:**

The Toll Booths are steel, glass and concrete structures. They were designed in 1980 by MacDonald Architects and were built between 1981 and 1989, replacing the existing toll booths.

The new booths have a concrete base, serving as a bumper shield. Above the base, the booth is a simple glass and steel boxes, surrounded with heavy round steel pipes which provide additional protection and give the booths a rounded appearance. Above the glass section, there are three bands of sheet metal panels, extending to the underside of the concrete canopy. The concrete base of the booths is left exposed, the steel parts are painted International Orange (the same color as the bridge), and the underside of the canopy is painted the same buff color as used on all the other District buildings. The rounded shape and horizontal banding give the booths a (streamline) modern look, similar to the original booths (see photographs).

The Canopy which is structurally independent from the booths, consists of a ribbed concrete roof deck supported by steel columns. It was built in 1937. In 1974, part of it was cut off at the east side to create a lane with extra high clearance.

The original construction bonds were paid off in 1971. The District's enabling legislation provided for tolls to be eventually reduced to the level required to finance maintenance.



8. **Construction date:**
1937[1]

Est.: ( ) **Factual:** (X)

9. **Architect:**
Irving F. Morrow
Donald MacDonald

10. **Builder:**

11. **Approx. property size (in feet)**

Frontage: 250' **Depth:** 28-70'

12. **Date(s) of encl. photograph(s):**
1937, 1993[2]

13. **Condition:** Excellent ( ) Good (X) Fair ( ) Deteriorated ( )

14. **Alterations:**
The Canopy was substantially altered. The Toll Booths were replaced by new booths of a different design. See 7b above.

15. **Surroundings:** Open land (X) Scattered buildings (X) Densely built-up ( )

Residential ( ) Industrial ( ) Commercial ( ) Other:

(Check more than one if necessary)

16. **Threats to site:** None known ( ) Private Development ( ) Zoning ( ) Vandalism ( )

Public Works Project (X) Other:

17. **Is the structure:** On its original site? (X) Moved? ( ) Unknown? ( )

18. **Related Features:**

Related features are the Golden Gate Bridge, the Administration Buildings and the Toll Plaza. Other structures related to the use of Golden Gate Bridge but built later are the Round House, two Bridge Maintenance Buildings and two bus shelters. These structures are evaluated separately in the HASR.

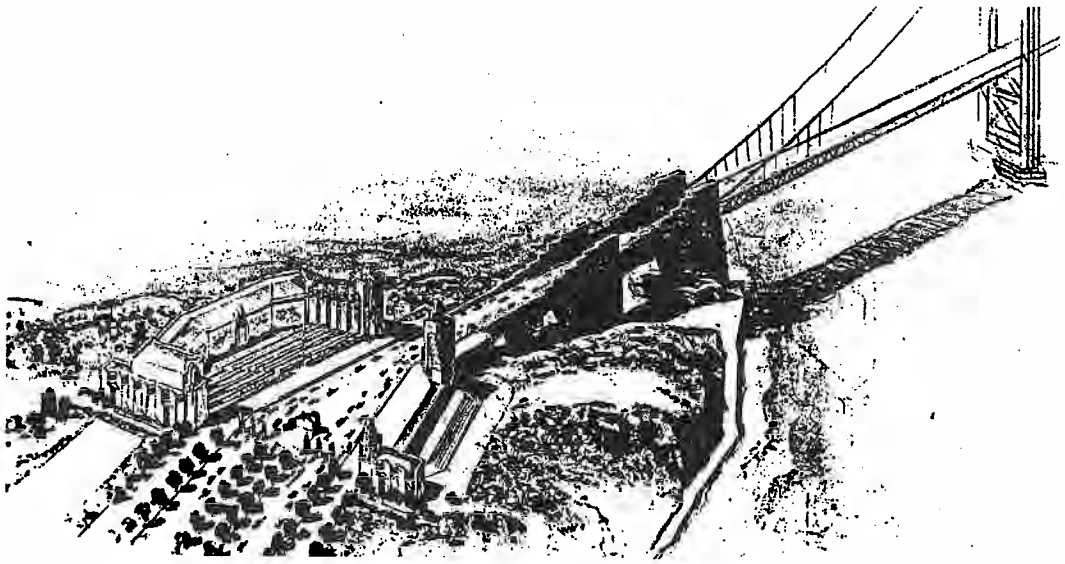
SIGNIFICANCE

19. **Briefly state historical and/or architectural importance (include dates, events, and persons associated with the site):**

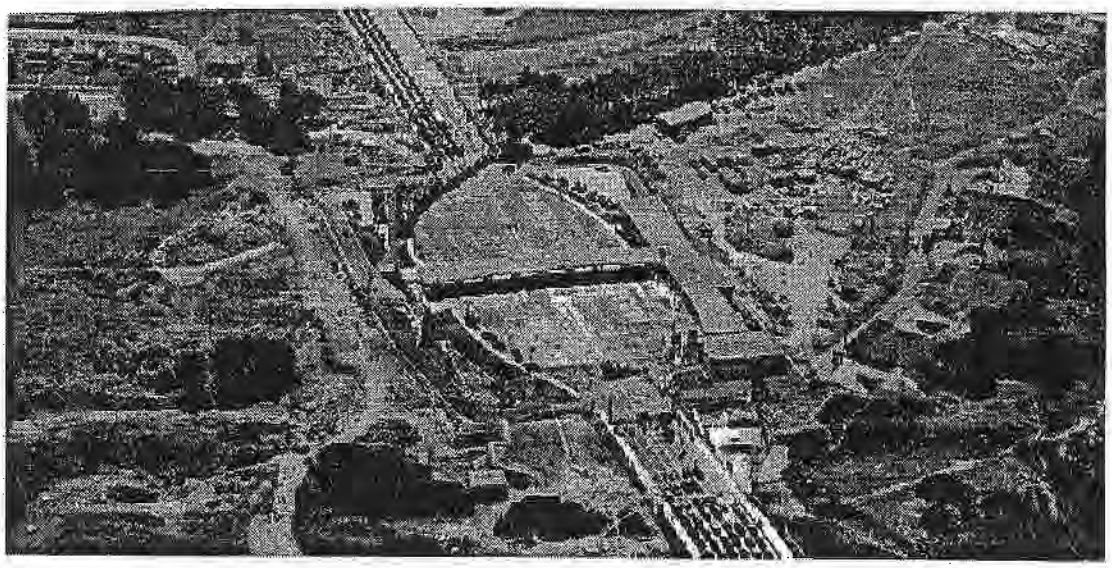
When architect Irving Morrow originally conceived the toll plaza for the Golden Gate Bridge, he envisioned a grand, Art Deco style structure with strong vertical accent, in keeping with bridge and other elements such as the pylons.

Due to cost cutting measures, his original plan was completely changed. From a predominantly Art Deco style vertical design, it was changed to a streamline modern horizontal design. Designed in 1936[3], the plaza and associated buildings were completed in 1937. Morrow himself wrote: "The Toll Plaza has

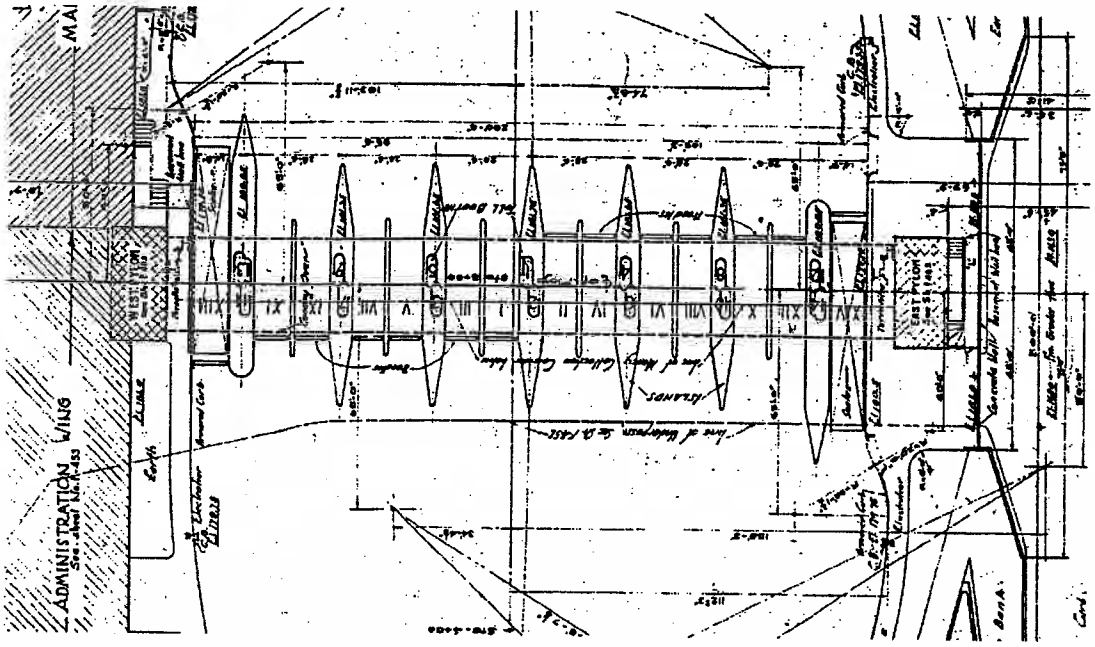
suffered so many cuts and arbitrary changes that most of it can not now be taken very seriously."[4] Despite his disappointment in the final design, the toll plaza area (which included the Administration Building, the Toll Booths and Canopy, the East and West Pylons and the Plaza itself) formed a single, cohesive entity.



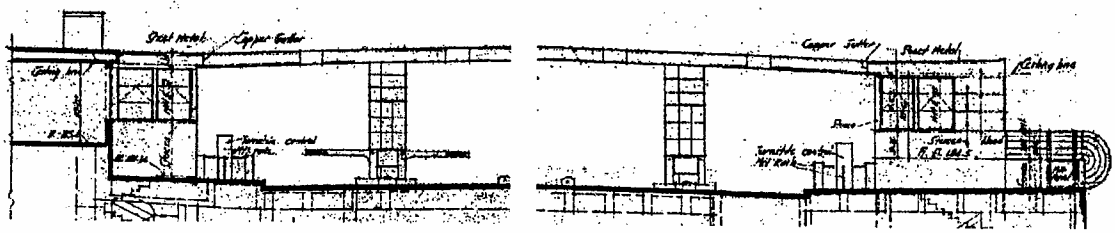
Original conception of the Toll Plaza by Irving Morrow[5]



Toll plaza on opening day, May 28, 1937[6].
Note the symmetry of the design.



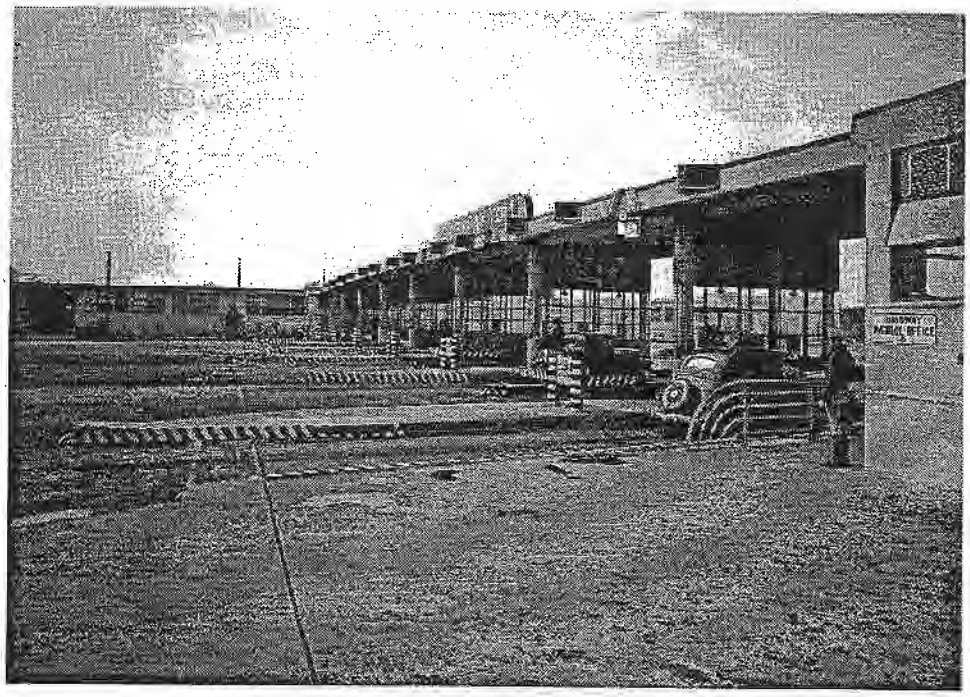
Plan of toll booths and canopy as originally designed[7]



Canopy with East and West Pylons, as originally designed[8]

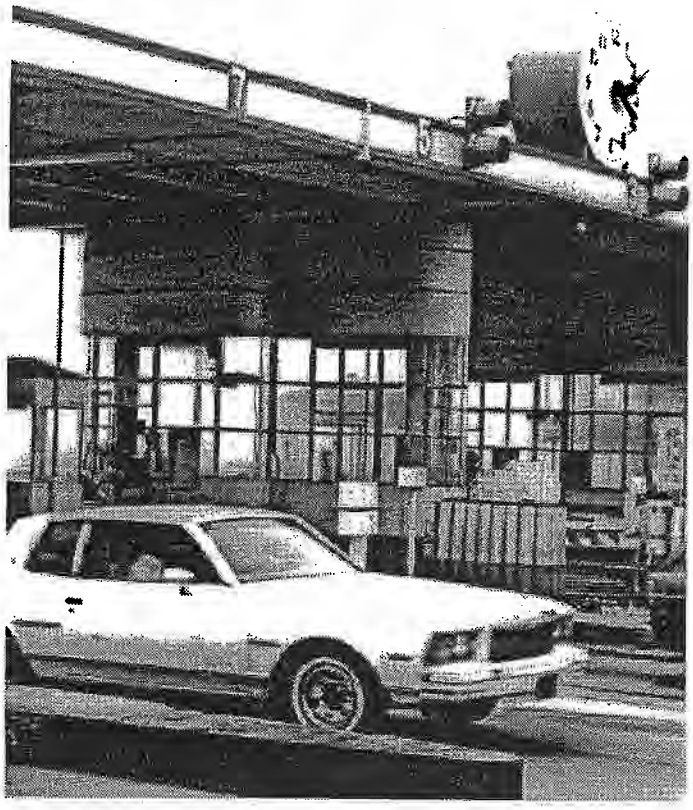
Unfortunately, due to many subsequent alterations, this integrity was completely lost:

- A second story was added to the administration building, and the horizontal banding in both the windows and the walls was eliminated. There is no relationship anymore between the building and the canopy and the booths.
- When originally built, the canopy spanned the full width of the toll plaza, and was terminated on the west side by an enclosed staircase leading to the tunnel under the plaza (the "West Pylon"), and on the east side by a Highway Patrol Office and a second staircase to the tunnel (the "East Pylon"). In 1974 the eastern-most 50 feet of the canopy were removed to allow passage of high and wide loads, and in 1977 the East Pylon was demolished. Two large clocks were added to the roof of the canopy at an unknown date. The original pedestrian turnstiles were demolished around 1970. The original weigh stations were demolished in 1976.
- Originally, there were seven toll booths with curvilinear glass, and horizontal steel banding. They served 14 lanes, and consisted of two compartments each, one serving the lane on the left side, and one serving the lane on the right side (see drawing). Due to the inconvenience of collecting toll from the passenger windows[9], six intermediate booths were later added (exact date not known., in the 1940's [10]). These booths were simple small steel and glass boxes. In 1980 the District started replacing the original booths by booths of a rectangular design. As a result of public input, the District commissioned MacDonald Architects (San Francisco, California) to design new booths. Between 1981 and 1989, the existing booths were replaced by 12 new curvilinear booths. The easternmost booth was omitted to create an extra wide lane.

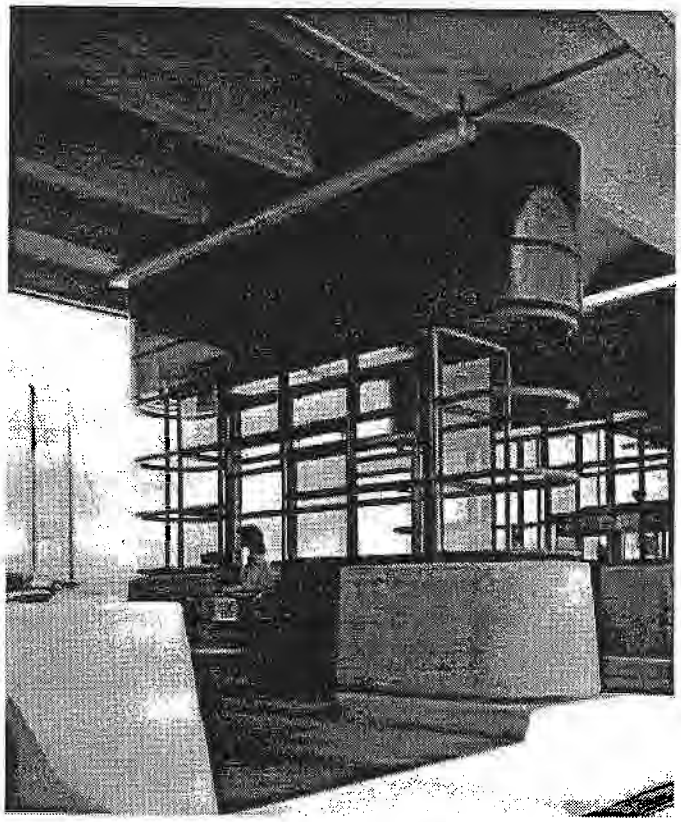


Toll Plaza in 1937[11]
Note the integration of all elements, the Administration Building, the Canopy, the Toll Booths and the CHP Office ("East Pylon").

Same view, 1993
Note how the integrity of the Administration Building, the Toll Booths and Canopy, and the East and West Pylons was lost



Original Toll Booths by Irving Morrow[12]
Each booth had two compartments and curved glass



New Toll Booths by MacDonald Architects[13]

- A small non-descript concrete bus shelter was built at the former location of the Highway Patrol Office (the West Pylon). See separate AI/E form for this new East Bus Stop Shelter.
- The toll plaza was widened both south (in 1955) and north of the Toll Booths (in 1947 and again in 1964). The widening had a profound effect on Morrow's idea of the plaza. Originally, one entered and left the plaza through a narrow opening. The plaza was designed as a place of rest, and its boundaries were well delineated. Widening the access turned it into a point along a freeway, and it is not clear anymore where it starts and stops. The sense of place was lost. This effect was reinforced when part of the canopy was demolished

As it stands today, the original canopy and the original toll booths, as well as the overall plaza composition, have lost their integrity.

The Toll Booths and Canopy do not appear to be eligible for inclusion in the National Register of Historic Places:

Criterion 1, Events and Setting: The current toll booths, which were built in the 1980's, although part of the operation of the Golden Gate Bridge, are not directly associated with the construction of the Golden Gate Bridge.

Criterion 2, Association with the life of a significant person: The Canopy has been altered in a way that destroys the design intention of the original designer, Irving F. Morrow. The current Toll Booths were designed in 1980 by Donald MacDonald Architects and are of different design than those designed by Morrow. The new Toll Booths are too new (average 9 years old) to be considered historic.

Criterion 3, Quality of the structure: Although the new Toll Booths received design awards, they are too new to be considered historic. Any quality the original Canopy may have had was lost in later alterations and demolitions.

Criterion 4, Yields information on history or prehistory: There is nothing special about the construction methods of both the Booths and the Canopy that would be worth preserving for future study.

20. Main theme of the historic resource: (If more than one is checked, number in order of importance)

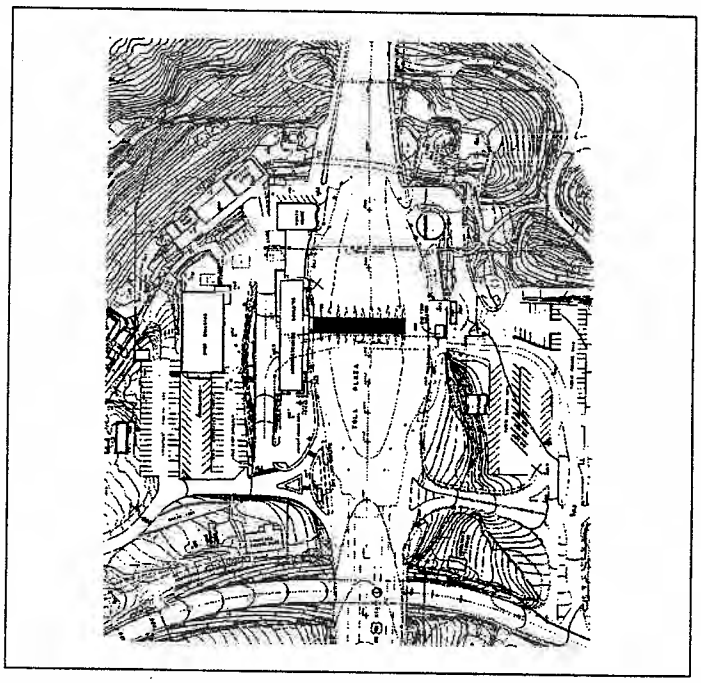
Architecture (X) Arts & Leisure ( )
Economic/Industrial ( ) Exploration/Settlement ( )
Government ( ) Military ( ) Religion ( )
Social/Education ( )

21. Sources (List books, documents, surveys, personal interviews and other dates.)

Toll Booth Drawings on file at MacDonald Architects, San Francisco, California.
Also, see footnotes.

22. Date form prepared: Nov 1993
By: Caspar Mol
Organization: MacDonald Architects
Address: 1620 Montgomery St., Suite 140
City: San Francisco
Zip Code: CA 94111
Phone: 415-398-8728

Location sketch map (draw and label site and surrounding streets, roads and prominent landmarks)



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1 Letter from Noel Stampfli, P.E., Senior Civil Engineer, Golden Gate Bridge, Highway and Transportation District to Charles E. Seim, Project Manager, T.Y. Lin International, dated 10/1/93.
2 Unless otherwise noted, photographs were made in 1993 by MacDonald Architects.
3 Strauss & Paine 1936
4 Morrow, n.d. #2.
5 Illustration by Irving F. Morrow, from the Documents Collection, Bancroft Library, U.C. Berkeley, Berkeley, California. Dated 7/26/1932.
6 Strauss 1938, p. 58
7 From drawing titled Toll Plaza, Plot Plan, by Strauss & Paine, Inc., also signed by Irving F. Morrow, Consulting Architect, dated 8/28/1936, revised 11/17/1936, on file at the Golden Gate Bridge District.
8 From drawing titled Toll Plaza, Elevations and Finish Schedule, by Strauss & Paine, Inc., also signed by Irving F. Morrow, Consulting Architect, dated 8/28/1936, revised 11/17/1936, on file at the Golden Gate Bridge District.
9 Conversation with Robert David, Golden Gate Bridge Highway and Transportation District. 9/28/93.
10 This and other information from: Letter from Noel Stampfli, P.E., Senior Civil Engineer, Golden Gate Bridge, Highway and Transportation District to Caspar Mol, MacDonald Architects, dated 11/24/93.
11 Illustration from The Golden Gate Bridge, Report of the Chief Engineer to the Board of Directors of the Golden Gate Bridge and Highway District, California, September 1937, 50th Anniversary Edition published by the Golden Gate Bridge Highway and Transportation District, San Francisco, California, 1987, p. 63
12 Date of photograph: est. 1980.
13 Date of photograph: est. 1984.

CALIFORNIA DEPARTMENT OF TRANSPORTATION
ARCHITECURAL INVENTORY/EVALUATION FORM

MAP REFERENCE NO. GG4

County - Route - Postmile:
UTM Coordinates:

( ) LISTED
( ) APPEARS ELIGIBLE
( ) DETERMINED ELIGIBLE
(X) APPEARS INELIGIBLE

IDENTIFICATION

1. **Common Name:**
   East Bus Stop Shelter
2. **Historic Name:** None known
3. **Street or rural address:**

   City: San Francisco **Zip Code:** CA 94129 **County:** San Francisco
4. **Parcel Number:** **Present Owner:** Golden Gate Bridge Highway and Transportation District

   Address: P.O. Box 9000, Presidio Station **City:** San Francisco **Zip Code:** CA 94129
5. **Ownership is:** (X) Public ( ) Private
6. **Present Use:** Bus Shelter **Original Use:** Bus Shelter

DESCRIPTION

7a. **Architectural Style:** Modern

7b. **Briefly describe the present PHYSICAL CONDITION of this site or structure and describe any major alterations from its original condition:**

The East Bus Stop Shelter is a concrete block open structure, appr. 20 feet wide and 15 feet deep, with a wood-frame flat roof. The brownish concrete blocks are unpainted. The fascia board of the roof is painted International Orange, the same color as the Golden Gate Bridge.

8. **Construction date:**
   1977

   Est.: ( ) **Factual:** (X)
9. **Architect:**
   GGB District Staff
10. **Builder:**
    GGB District Forces
11. **Approx. property size (in feet)**

    Frontage: 10' **Depth:** 6'
12. **Date(s) of encl. photograph(s):**
    1993

13. **Condition:** Excellent (X) Good ( ) Fair ( ) Deteriorated ( )

14. **Alterations:**
None known

15. **Surroundings:** Open land (X) Scattered buildings (X) Densely built-up ( )

Residential ( ) Industrial ( ) Commercial ( ) Other:

(Check more than one if necessary)

16. **Threats to site:** None known ( ) Private Development ( ) Zoning ( ) Vandalism ( )

Public Works Project (X) Other:

17. **Is the structure:** On its original site? (X) Moved? ( ) Unknown? ( )

18. **Related Features:**

Related features are the Golden Gate Bridge, the Toll Plaza and Booths, the Administration Buildings, the Round House and another bus shelter. These structures are evaluated separately in the HASR.

SIGNIFICANCE

19. **Briefly state historical and/or architectural importance (include dates, events, and persons associated with the site):**

The Bus Shelter does <u>not</u> appear to be eligible for inclusion in the National Register of Historic Places.

The building is years old. It is a generic 1970's bus shelter. Its design does not in any way tie into the design of the other buildings. It would not be eligible under any of the Criteria.

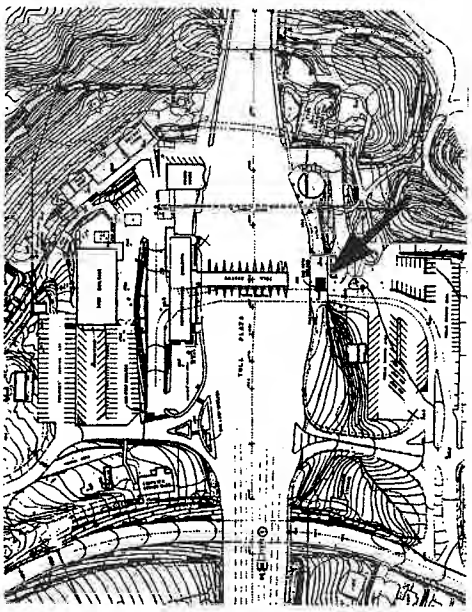
20. **Main theme of the historic resource:** (If more than one is checked, number in order of importance)

Architecture (X) Arts & Leisure ( )
Economic/Industrial ( ) Exploration/Settlement ( )
Government ( ) Military ( ) Religion ( )
Social/Education ( )

21. **Sources** (List books, documents, surveys, personal interviews and other dates.)

22. **Date form prepared:** Nov 1993
By: Caspar Mol
Organization: MacDonald Architects
Address: 1620 Montgomery St., Suite 140
City: San Francisco
Zip Code: CA 94111
Phone: 415-398-8728

Location sketch map (draw and label site and surrounding streets, roads and prominent landmarks)



CALIFORNIA DEPARTMENT OF TRANSPORTATION
ARCHITECURAL INVENTORY/EVALUATION FORM MAP REFERENCE NO. GG7a/b

County - Route - Postmile:
UTM Coordinates:

( ) LISTED
( ) APPEARS ELIGIBLE
( ) DETERMINED ELIGIBLE
(X) APPEARS INELIGIBLE

IDENTIFICATION

1. **Common Name:**
   West Bus Stop Shelters #1 and #2
2. **Historic Name:** None known
3. **Street or rural address:**

   City: San Francisco **Zip Code:** CA 94129 **County:** San Francisco
4. **Parcel Number:** **Present Owner:** Golden Gate Bridge Highway and Transportation District

   Address: P.O. Box 9000, Presidio Station **City:** San Francisco **Zip Code:** CA 94129
5. **Ownership is:** (X) Public ( ) Private
6. **Present Use:** Bus Shelter **Original Use:** Bus Shelter

DESCRIPTION

7a. **Architectural Style:** Modern

7b. **Briefly describe the present PHYSICAL CONDITION of this site or structure and describe any major alterations from its original condition:**

The West Bus Stop Shelters are concrete block open structures, appr. 20 feet wide and 10 feet deep, with a wood-frame flat roof. The brownish concrete blocks are unpainted. The fascia boards of the roofs are painted International Orange, the same color as the Golden Gate Bridge.

8. **Construction date:**
   GG7a (easternmost): 1976
   GG7b (westernmost): 1975

   Est.: ( ) **Factual:** (X)
9. **Architect:**
   District Staff
10. **Builder:**
    District Forces
11. **Approx. property size (in feet)**

    Frontage: 20' **Depth:** 10'
12. **Date(s) of encl. photograph(s):**
    1993[1]
    Shown left is GG7a. GG7b is similar

13. **Condition:** Excellent (X) Good ( ) Fair ( ) Deteriorated ( )

14. **Alterations:**
None known

15. **Surroundings:** Open land (X) Scattered buildings (X) Densely built-up ( )

Residential ( ) Industrial ( ) Commercial ( ) Other:

(Check more than one if necessary)

16. **Threats to site:** None known ( ) Private Development ( ) Zoning ( ) Vandalism ( )

Public Works Project (X) Other:

17. **Is the structure:** On its original site? (X) Moved? ( ) Unknown? ( )

18. **Related Features:**

Related features are the Golden Gate Bridge, the Toll Plaza and Booths, the Administration Buildings, the Round House and another bus shelter. These structures are evaluated separately in the HASR.

SIGNIFICANCE

19. **Briefly state historical and/or architectural importance (include dates, events, and persons associated with the site):**

The Bus Shelters do <u>not</u> appear to be eligible for inclusion in the National Register of Historic Places.

The shelters are 18 and 19 years old. They are non-descript buildings. Their design does not in any way tie into the design of the other buildings. They would not be eligible under any of the Criteria.

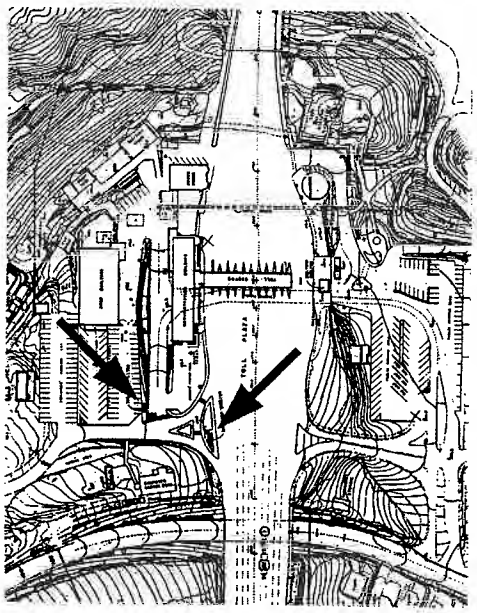
20. **Main theme of the historic resource:** (If more than one is checked, number in order of importance)

Architecture (X) Arts & Leisure ( )
Economic/Industrial ( ) Exploration/Settlement ( )
Government ( ) Military ( ) Religion ( )
Social/Education ( )

21. **Sources** (List books, documents, surveys, personal interviews and other dates.)

22. **Date form prepared:** Nov 1993
By: Caspar Mol
Organization: MacDonald Architects
Address: 1620 Montgomery St., Suite 140
City: San Francisco
Zip Code: CA 94111
Phone: 415-398-8728

Location sketch map (draw and label site and surrounding streets, roads and prominent landmarks)



1 Photograph by MacDonald Architects, San Francisco, California.

CALIFORNIA DEPARTMENT OF TRANSPORTATION
ARCHITECURAL INVENTORY/EVALUATION FORM MAP REFERENCE NO. GG9

County - Route - Postmile:
UTM Coordinates:

( ) LISTED ( ) DETERMINED ELIGIBLE
( ) APPEARS ELIGIBLE (X) APPEARS INELIGIBLE

IDENTIFICATION

1. **Common Name:**
   Comfort Station
2. **Historic Name:** None known
3. **Street or rural address:**

   City: San Francisco **Zip Code:** CA 94129 **County:** San Francisco
4. **Parcel Number:** **Present Owner:** Golden Gate Bridge Highway and Transportation District

   Address: P.O. Box 9000, Presidio Station **City:** San Francisco **Zip Code:** CA 94129
5. **Ownership is:** (X) Public ( ) Private
6. **Present Use:** Toilets **Original Use:** Toilets

DESCRIPTION

7a. **Architectural Style:** Modern

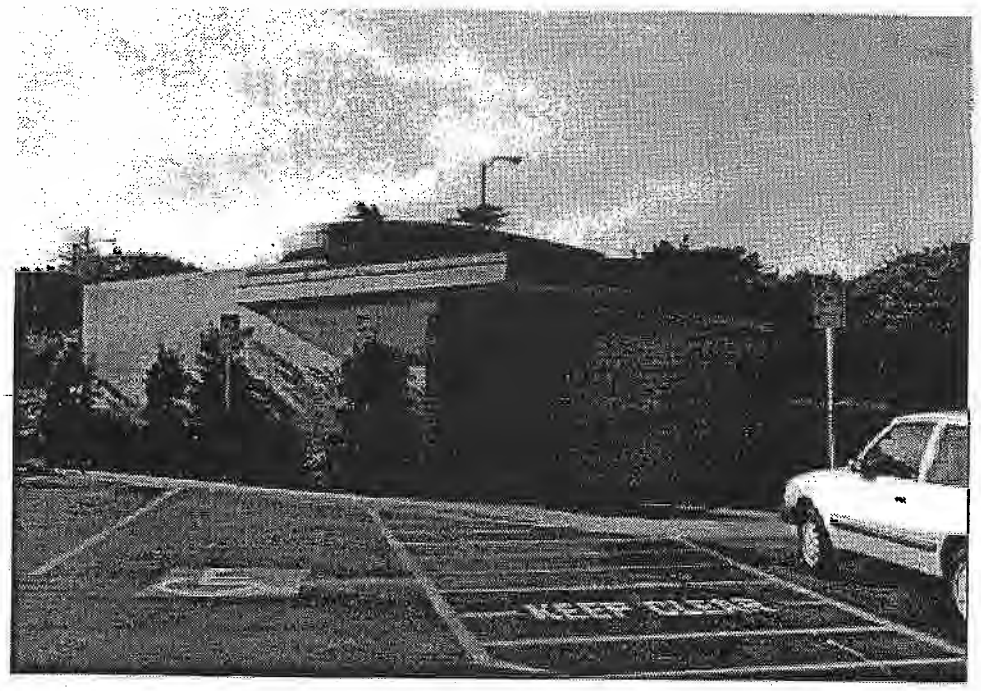
7b. **Briefly describe the present PHYSICAL CONDITION of this site or structure and describe any major alterations from its original condition:**

The Comfort Station houses toilet facilities for men and women. It is a one-story concrete block structure with a flat roof. It is built slightly into the slope between the Toll Plaza and the east parking lot (note 4-foot high retaining wall on photograph, behind the handicapped sign). A small portion of the roof is raised for ventilation and clearstory windows. The entries are located on the north side, on each side of a curved wall. The south, east and north walls are blind. An irregularly shaped canopy on the north side protects the recessed entries from rain. Both the flat roof and the raised portion of the roof with the clearstory windows and louvered vents are visible from the sidewalk along the east side of the Toll Plaza.

The building has a stucco finish, painted the same buff color as the other buildings of the Bridge District. The areas around the entries are tiled to about 8 feet above grade. The fascia board of the roof overhang, the fascia board of the raised portion of the roof, and the louvered vents and clearstory windows in the raised portion are painted International Orange (the color of the Golden Gate Bridge).

The building was built in 1987 by Echo West. It was designed by Grossman Stoller & Associates. It is 115 square feet in plan [1].

There have been no alterations.



8. **Construction date:**
1987

Est.: ( ) **Factual:** (X)

9. **Architect:**
Grossman Stoller & Associates

10. **Builder:**
Echo West

11. **Approx. property size (in feet)**

Frontage: 35' **Depth:** 35'

12. **Date(s) of encl. photograph(s):**
1993[2]

13. **Condition:** Excellent (X) Good ( ) Fair ( ) Deteriorated ( )

14. **Alterations:**
None known

15. **Surroundings:** Open land (X) Scattered buildings (X) Densely built-up ( )

Residential ( ) Industrial ( ) Commercial ( ) Other:

(Check more than one if necessary)

16. **Threats to site:** None known ( ) Private Development ( ) Zoning ( ) Vandalism ( )

Public Works Project (X) Other:

17. **Is the structure:** On its original site? (X) Moved? ( ) Unknown? ( )

18. **Related Features:**

Related features are the Golden Gate Bridge, the Toll Plaza and Booths, the Administration Buildings, the Round House and another bus shelter. These structures are evaluated separately in the HASR.

SIGNIFICANCE

19. **Briefly state historical and/or architectural importance (include dates, events, and persons associated with the site):**

The Comfort Station does <u>not</u> appear to be eligible for inclusion in the National Register of Historic Places.

The building is 6 years old.

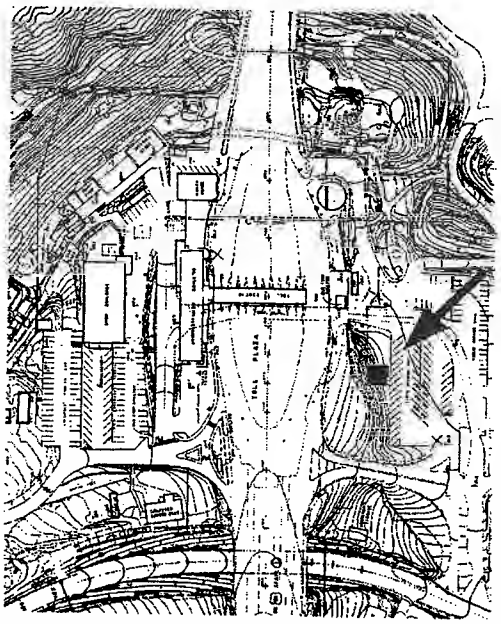
20. Main theme of the historic resource: (If more than one is checked, number in order of importance)

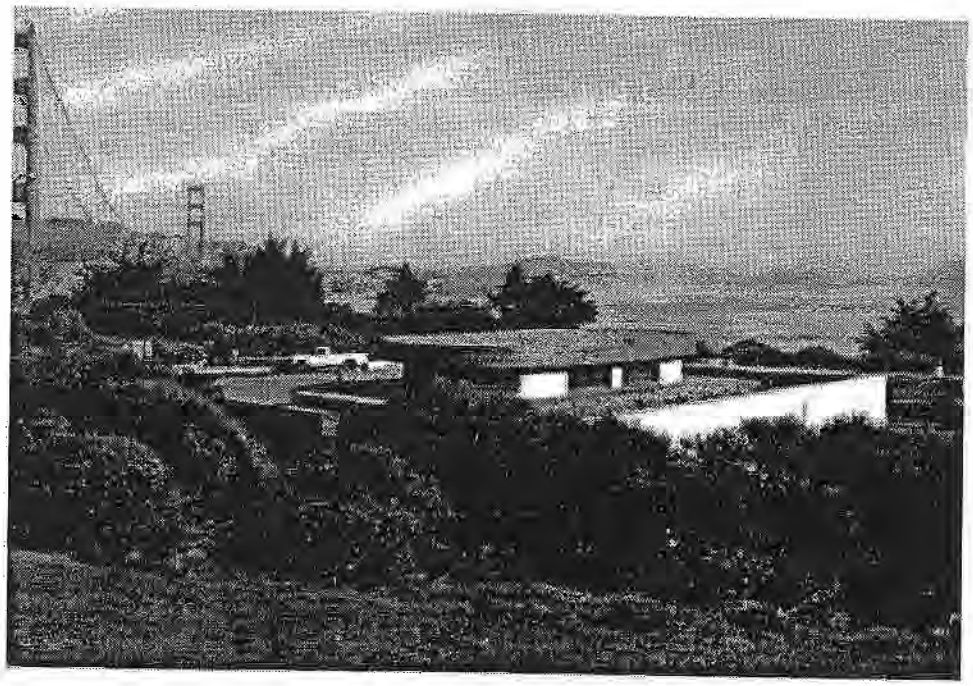
Architecture (X) Arts & Leisure ( )
Economic/Industrial ( ) Exploration/Settlement ( )
Government ( ) Military ( ) Religion ( )
Social/Education ( )

21. Sources (List books, documents, surveys, personal interviews and other dates.)

22. Date form prepared: 1993
By: Caspar Mol
Organization: MacDonald Architects
Address: 1620 Montgomery St., Suite 140
City: San Francisco
Zip Code: CA 94111
Phone: 415-398-8728

Location sketch map (draw and label site and surrounding streets, roads and prominent landmarks)





Comfort Station as seen from the sidewalk along the toll plaza.
Note the roof pop-up, similar to the Round House.

1 Letter from Noel Stamfli, Golden Gate Bridge Highway and Transportation District, San Francisco, California to Caspar Mol, MacDonald Architects, San Francisco, California, dated 11/24/93.
2 Photographs by MacDonald Architects, San Francisco, California.

CALIFORNIA DEPARTMENT OF TRANSPORTATION
ARCHITECURAL INVENTORY/EVALUATION FORM

MAP REFERENCE NO. around GG2

County - Route - Postmile:
UTM Coordinates:

( ) LISTED
( ) APPEARS ELIGIBLE
( ) DETERMINED ELIGIBLE
(X) APPEARS INELIGIBLE

IDENTIFICATION

1. **Common Name:**
   Golden Gate Bridge, Miscellaneous Structures
2. **Historic Name:** None known
3. **Street or rural address:**

   City: San Francisco **Zip Code:** CA 94129 **County:** San Francisco
4. **Parcel Number:** **Present Owner:** Golden Gate Bridge Highway and Transportation District

   Address: P.O. Box 9000, Presidio Station **City:** San Francisco **Zip Code:** CA 94129
5. **Ownership is:** (X) Public ( ) Private
6. **Present Use:** Misc. maintenance functions **Original Use:** Misc. maintenance functions

DESCRIPTION

7a. **Architectural Style:** n.a.

7b. **Briefly describe the present PHYSICAL CONDITION of this site or structure and describe any major alterations from its original condition:**

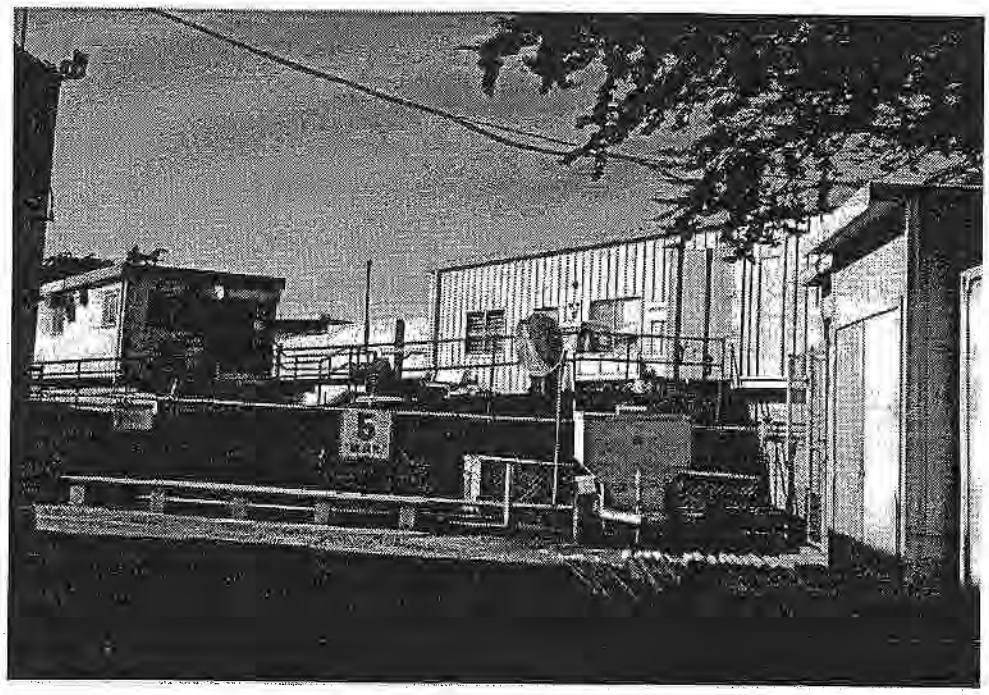
Scattered around the site, mainly north and west of the Maintenance Building are located a large number of wood and light steel single story flat roofed structures, many of which are pre-fabricated trailers. There is no clear organizing pattern to their layout. They seem to have been placed as they became necessary, in a pragmatic fashion, in locations that were available or could be made available at minimal cost.

View of Car Wash with batteries in the background

The principal structures are (numbers refer to Location Sketch Map)

1. District Store (located on top of battery Cranston, built in 1975).
2. Paint Shop (located on top of Battery Cranston, built in 1975).
3. Concrete ramp leading up to Battery Cranston for access to the above structures (built in 1971).
4. Purchasing Office (placed on top of Battery Cranston in 1973).
5. Garage for electric scooter (wood structure located in front of Battery Cranston, built in 1973)
6. Gas pump attendant house.
7. Car Wash (located on Bowman Road; built in 1971).
8. Storage of Maintenance Equipment (wood structure located next to the Car Wash)
9. Office trailer (located next to the computer center, placed in 1980)
10. Office trailer (located next to the computer center, placed in 1983)
11. Engineering Trailer (wooden trailer located west of the employees parking lot, placed in 1985)
12. Engineering Trailer (wooden trailer located west of the employees parking lot, placed in 1985)
13. CHP Trailer (located at the east entry of the tunnel under the plaza, placed in 1984)

In addition, there are miscellaneous containers, sheds and tanks dispersed around the property.



8. **Construction date:**
varies

Est.: ( ) **Factual:** (X)

9. **Architect:**
GGB District Staff

10. **Builder:**
District Forces

11. **Approx. property size (in feet)**

Frontage: n.a. **Depth:** n.a.

12. **Date(s) of encl. photograph(s):**
1993[1]

13. **Condition:** Excellent ( ) Good ( ) Fair (X) Deteriorated ( )

14. **Alterations:**
n.a.

15. **Surroundings:** Open land (X) Scattered buildings (X) Densely built-up ( )
Residential ( ) Industrial ( ) Commercial ( ) Other:
(Check more than one if necessary)

16. **Threats to site:** None known ( ) Private Development ( ) Zoning ( ) Vandalism ( )
Public Works Project (X) Other:

17. **Is the structure:** On its original site? ( ) Moved? ( ) Unknown? ( ) n.a.

18. Related Features:

Related features are the Golden Gate Bridge, the Administration Building, the Maintenance Building and the Toll Plaza.

SIGNIFICANCE

19. Briefly state historical and/or architectural importance (include dates, events, and persons associated with the site):

These structures are not eligible. They negatively impact the overall appearance of the buildings associated with the operation and maintenance of the Golden gate Bridge. Some structures are located on top of Battery Cranston, which is a NRHP contributing structure[2].

20. Main theme of the historic resource: (If more than one is checked, number in order of importance)

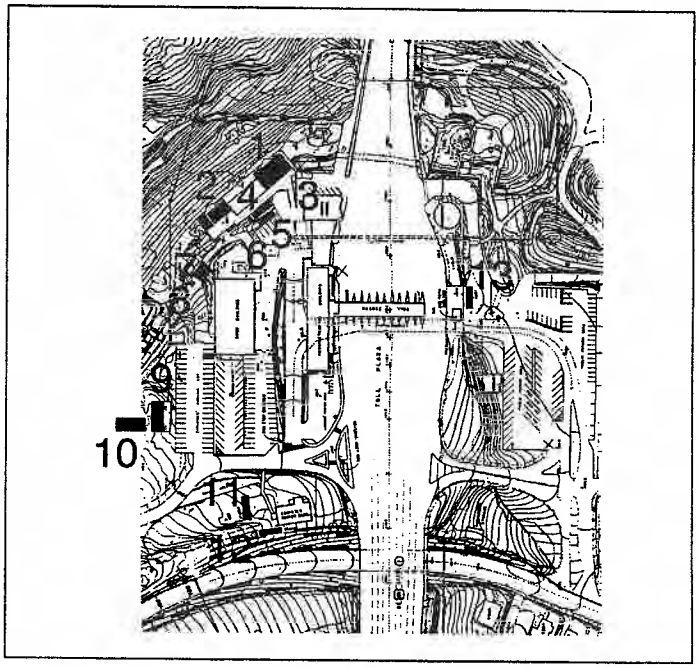
Architecture (X) Arts & Leisure ( )
Economic/Industrial ( ) Exploration/Settlement ( )
Government ( ) Military ( ) Religion ( )
Social/Education ( )

21. Sources (List books, documents, surveys, personal interviews and other dates.)

See footnotes
Drawings: see [3]

22. Date form prepared: Nov 1993
By: Caspar Mol
Organization: MacDonald Architects
Address: 1620 Montgomery St., Suite 140
City: San Francisco
Zip Code: CA 94111
Phone: 415-398-8728

Location sketch map (draw and label site and surrounding streets, roads and prominent landmarks)



1 All photographs by MacDonald Architects, San Francisco, California.

2 Archaeological Survey Report for the Golden Gate Bridge Seismic Retrofit Project, San Francisco and Marin Counties, California. August 1993. For T. Y. Lin International, San Francisco, California. Basin Research Associates, San Leandro, CA.

3 Hogan, Richard S., L.S. Drawing titled "Proposed Widening of the Golden gate Toll Plaza Approach, Topographic Map Plaza Area". 20 November 1961, revised 7-2-82. For U.S. Army District Sacramento, Corps of Engineers, Sacramento, California. Photo Map Survey Co, Sebastopol, California. On file at the Golden Gate Bridge Highway and Transportation District.

CALIFORNIA DEPARTMENT OF TRANSPORTATION
ARCHITECURAL INVENTORY/EVALUATION FORM MAP REFERENCE NO. 999

County - Route - Postmile: (X) LISTED ( ) DETERMINED ELIGIBLE
UTM Coordinates: ( ) APPEARS ELIGIBLE ( ) APPEARS INELIGIBLE

IDENTIFICATION

1. **Common Name:**
   Fort Point
2. **Historic Name: the** fort at Fort Point, later Fort Winfield Scott[1]
3. **Street or rural address:** Presidio of San Francisco

   City: San Francisco **Zip Code:** CA 94129 **County:** San Francisco
4. **Parcel Number:** **Present Owner:** National Park Service

   Address: **City:** **Zip Code:**
5. **Ownership is:** (X) Public ( ) Private
6. **Present Use:** Museum **Original Use:** Military Fort

DESCRIPTION

7a. **Architectural Style:** Mid-nineteenth-century fortification, the only third system fort on the West Coast.

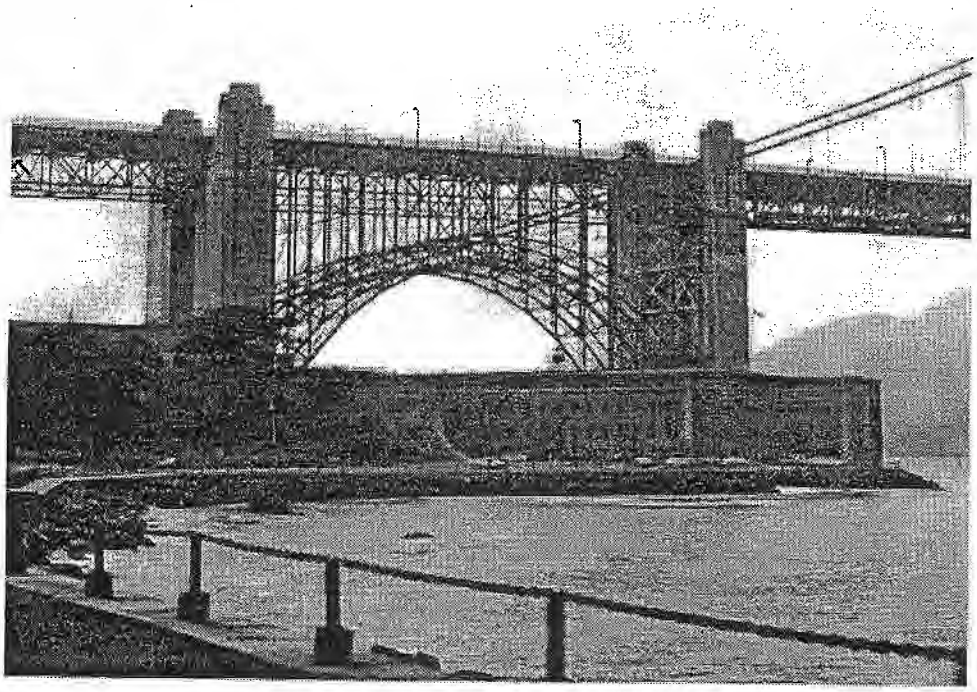
7b. **Briefly describe the present PHYSICAL CONDITION of this site or structure and describe any major alterations from its original condition:**

This large fortification structure exhibits the characteristics of a "Third System" fort with its four tiers of cannon (three tiers corresponding to the three stories of the fort; the fourth, or barbette tier, being the entire roof level).

The fort is of stone and brick masonry construction. On the exterior, the brick walls of Flemish bond are articulated by a cordon of granite cap at the parapet and by granite quoins at the corners. These walls, which average 7 feet in thickness, are punctuated by evenly spaced, narrowly rectangular embrasures for the cannon. The embrasures have granite sills. Guns were located on all but the landward side, or "gorge", of the fort, which housed shops and living quarters.

The irregular plan configuration of the fort has few right angles and measures 150 feet in width, 45 feet in height, and 250 feet on its longest side. Two bastions, the "east bastion" and the "west bastion", project approximately 40 feet to the northeast and the northwest. The plan is organized around a large open parade, surrounded on all sides. A three-tier open gallery spans the gorge side of the irregular central parade and is comprised of simple slender iron columns, cornice and panel moldings, and iron railings of an open honeycomb pattern. The gorge side features wood-panel doors with transoms and granite lintels, and six-over-six double-hung windows with granite lintels and sills. The other parade elevations are comprised of three tiers of open arcades formed of the large casemates for the individual cannon. These casemates have segmental arches at the first and second tiers and full round arches at the third tier. The first tier is faced in granite while a granite string course and cap articulate the second and third tiers.

Three stair towers, octagonal in plan, project from the walls surrounding the parade. A prominent light tower surmounts one of these stair towers[2].



8. **Construction date:** 1853-1861

   Est.: ( ) **Factual:** (X)

9. **Architect:**

10. **Builder:**

11. **Approx. property size (in feet)**

    Frontage: 250 **Depth:** 150'

12. **Date(s) of encl. photograph(s):** 1993

13. **Condition:** Excellent ( ) Good (X) Fair ( ) Deteriorated ( )

14. **Alterations:**
From 1861 to 1913 structural changes to the fort were minimal, but in 1914 the interior of the masonry fort was extensively altered to prepare facilities for conversion to a detention barracks, Shortly after this work was completed, the plans for this new use were dropped. A series of treatments have been proposed for restoration of the fort to its form and appearance before the 1914 alterations. To date, only several of these treatments have been completed, including restoration of iron railings facing the interior parade and the removal of 1914 kitchen and bathroom facilities[3].

15. **Surroundings:** Open land (X) Scattered buildings (X) Densely built-up ( )

    Residential ( ) Industrial ( ) Commercial ( ) Other:

    (Check more than one if necessary)

16. **Threats to site:** None known ( ) Private Development ( ) Zoning ( ) Vandalism ( )

    Public Works Project (X) Other:

17. **Is the structure:** On its original site? (X) Moved? ( ) Unknown? ( )

18. **Related Features:**

The Presidio of San Francisco, which is a National Historic Landmark district. Fort Point Arch, which straddles the fort, and which is part of the Golden Gate Bridge.

SIGNIFICANCE

19. **Briefly state historical and/or architectural importance (include dates, events, and persons associated with the site):**

Fort Point is a contributory structure[4] to the Presidio of San Francisco National Historic Landmark district. It was designated a National Historic Site on October 16, 1970[5]. It is on the State of California Inventory of Historic Places, but has not been designated a State of California Landmark[6]. It is a Historic Engineering Landmark[7].

20. Main theme of the historic resource: (If more than one is checked, number in order of importance)

Architecture (2) Arts & Leisure ( )
Economic/Industrial ( ) Exploration/Settlement ( )
Government ( ) Military (1) Religion ( )
Social/Education ( )

21. Sources (List books, documents, surveys, personal interviews and other dates.)

See notes below

22. Date form prepared: Nov 1993
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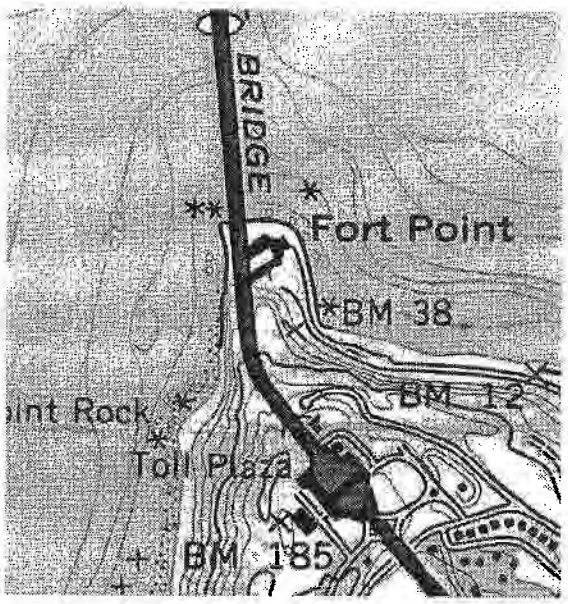

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1 Description from: Presidio - National Register of Historic Places Registration Forms, Golden Gate National Recreation Area, California, October 1993, p. 7-31
2 ibid, p. 7-64/65
3 ibid, p. 7-64
4 ibid, p. 7-20
5 ibid, p. 7-6
6 Archeological Survey Report, Golden Gate Bridge Seismic Retrofit Project, San Francisco and Marin Counties, by Donna M. Garaventa, Stuart A. Guedon, c.s., Basin Research Associates, San Leandro, California, August 1993, Appendix II, p. 15.
7 ibid, p.14.

1. NAME OF PROPERTY

Historic Name: GOLDEN GATE BRIDGE

Other Name/Site Number:

EXHIBIT C

2. LOCATION

Street & Number: US Highway 101/State Highway 1, linking San Francisco and Marin Counties, and spanning the Golden Gate Strait Not for publication:___

City/Town: San Francisco, Sausalito Vicinity:___

State: CA County: San Francisco, Marin Code: CA075, CA041 Zip Code: 94129, 94965

3. CLASSIFICATION

Ownership of Property		Category of Property	
Private:	___	Building(s):	___
Public-Local:	X	District:	___
Public-State:	___	Site:	___
Public-Federal:	___	Structure:	X
		Object:	___

Number of Resources within Property

Contributing	Noncontributing
1	1 buildings
___	___ sites
2	1 structures
___	___ objects
3	2 Total

Number of Contributing Resources Previously Listed in the National Register: 0

Name of Related Multiple Property Listing: N/A

4. STATE/FEDERAL AGENCY CERTIFICATION

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this ____ nomination ____ request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property ____ meets ____ does not meet the National Register Criteria.

Signature of Certifying Official — Date

State or Federal Agency and Bureau

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

Signature of Commenting or Other Official — Date

State or Federal Agency and Bureau

5. NATIONAL PARK SERVICE CERTIFICATION

I hereby certify that this property is:

___ Entered in the National Register
___ Determined eligible for the National Register
___ Determined not eligible for the National Register
___ Removed from the National Register
___ Other (explain):

Signature of Keeper — Date of Action

6. FUNCTION OR USE

Historic:	TRANSPORTATION	Sub:	road-related
Current:	TRANSPORTATION	Sub:	road-related

7. DESCRIPTION

ARCHITECTURAL CLASSIFICATION: MODERN MOVEMENT: Art Deco
MODERN MOVEMENT: Moderne

MATERIALS:

Foundation:	Concrete, Metal
Walls:	Concrete, Stucco
Roof:	Other (gravel over asphalt)
Other:	

Describe Present and Historic Physical Appearance.

Summary Description

The Golden Gate Bridge is one of the most well-known, internationally recognized, and frequently visited suspension bridges in the world. Combining Art Deco and Streamline Moderne design with advanced engineering technologies, and situated against a dramatic coastal backdrop, the bridge has been described as an "environmental sculpture," widely noted for its harmonious blending of the natural and built environment. Located at the mouth of San Francisco Bay, the bridge spans the Golden Gate Strait, from Fort Point at the northwestern tip of the San Francisco Peninsula to Lime Point at the southeastern end of the Marin Headlands, specifically the area of East Fort Baker. The extraordinary setting intensifies the visual power of the bridge. From its north-south alignment, the bridge provides panoramic views of the rugged beauty and urban diversity that surround it, encompassing the Marin hills, the skyline of San Francisco, Alcatraz and Angel Islands of San Francisco Bay, and the wide expanse of Pacific ocean and coastline.

Constructed between 1933 and 1937, the bridge structure consists of two anchorages, four pylons, two piers, two towers, the main span, two side suspension spans, two bridge approaches (including the arch over Fort Point), and the Presidio Approach road and Toll Plaza. Additionally, two ancillary buildings--the Toll Plaza Building and the Round House--stand in the area of the historic Toll Plaza. Construction of the Round House was not completed until 1938. The length of the bridge, measured from abutment to abutment, is 8,981 feet, the length of the main span is 4,200 feet, the navigation clearance is 220 feet (above mean higher high water), and the twin towers stand 746 feet above the water. The bridge is constructed primarily of concrete-and-steel foundation, concrete roadway, steel support structure, and steel cable. Architectural features and details associated with styles identified as Art Deco and Streamline Moderne recur throughout the parts of the bridge--towers, pylons, anchorages, railings, and light standards--and unify the design, merging artistry and utility.

General Description

Land occupied by the bridge is held under special permit to the Golden Gate Bridge, Highway, and Transportation District (GGBHTD). The surrounding lands on either side of the bridge are under the jurisdiction of the National Park Service as part of the Golden Gate National Recreation Area (GGNRA). On its southern side, the bridge is anchored in the Presidio of San Francisco, which was designated a National Historic Landmark in 1962. Its southern approach runs directly over the Fort Point National Historic Site, part of the Presidio of San Francisco National Historic Landmark district. On its northern end, the bridge re-enters GGNRA property, near Fort Baker. The span of the Golden Gate Bridge was the last link to be constructed in a national highway system that connects Mexico to Canada.

The bridge, including its immediate north and south approaches, is 8,981 feet long; each side span (or back span) measures 1,125 feet while the center span is 4,200 feet, giving the suspended structure a total length of 6,450 feet. The north, or Marin, approach, with its

overall length of 1,100 feet, carries the roadway from the North Anchorage to the abutment of the Marin approach road. The south, or San Francisco, approach has an overall length of 1,072 feet, running from the shore-end pylon at Fort Point southward to an abutment approximately 169 feet north of the Toll Plaza. The Presidio approach road, which courses through and above the lands of the historic Presidio of San Francisco military reservation, adds almost two more miles of roadway to the nominated resource. Thus the total length of the nominated historic bridge construction is approximately four miles.

The bridge, commonly perceived as a single awe-inspiring structure, actually consists of a number of interconnected structural components. Starting at the south end, the bridge integrates the following types of bridge construction into its length: a girder bridge, a truss bridge, an arch bridge, the main suspension bridge, and a final truss bridge (see figures 1 and 2). The repetition of Art Deco and Streamline Moderne design elements in both large and small components serves to unite the bridge into a visual whole.

The South Approach Viaduct, 1,072 feet in length, stretches from the south, or San Francisco, abutment northward over Fort Point and the South Anchorage to the shoreward pylon, or Pylon S1. The initial part of this south approach, the girder-bridge portion, consists of three 71-foot plate girder spans, supported by braced columns. These are followed by a truss-bridge portion: three truss spans, varying in length from 125 to 175-feet each, supported by braced towers. The two northernmost truss-support towers rise from the South Anchorage housing, rather than from the ground.

Both the North Anchorage and the South Anchorage, located at either end of the bridge, are reinforced concrete constructions that serve to hold down the cable ends of the entire suspension system. The main part of the anchorages is composed of heavy-mass concrete; the housings around this are of lighter reinforced concrete. Each of the gravity-type anchorages on either side of the span is composed of approximately 60,000 tons of concrete, set well into the rock foundation. Internally, each anchorage consists of an interlocking base block, anchor block, and weight block, all of which work together to resist the pull of the cables and turn them downward into the bedrock. Embedded within each anchorage are upright girders at the rear end of the anchorage that are connected to heavy eye-bar chains that terminate in strand shoes that receive the 61 strands that make up the splayed ends of the cables. With this system, the unit-bearing pressure over any portion of the anchorage foundation does not exceed ten tons per square foot. The reinforced concrete housing enclosing each anchorage serves as weather protection for the cables below the splay points. The roof of the Marin-side housing also doubles as the road bed of the bridge. The North Anchorage is located between the two north pylons, while the South Anchorage is positioned south of the two southern pylons; the fort at Fort Point interfered with positioning the anchorage between the pylons on the San Francisco side. Of architectural note is that the motif of vertical faceting carried throughout the bridge is extended to the tops of the anchorages. This design motif was developed by the bridge's architect, Irving F. Morrow.

The hollow block of the South Anchorage housing is approximately 370 feet long, 120 feet wide, and 60 feet tall, and provides shelter for the cable splays and anchorage blocks. Its

northernmost pylon, or Pylon S1. forms the north end of the anchorage housing, supporting both the South Viaduct and the Fort Point Arch.

The bridge includes four main pylons, which stand in pairs at either end of the central suspension system. Each pylon, constructed of reinforced concrete, is actually comprised of two vertical elements joined by a large horizontal connecting piece, located under the deck. The pylons perform important structural and aesthetic functions. Near either end of the bridge, the shoreward pylon contains cable tie-downs below the deck that vertically restrain the cable. Architecturally, the stepped underside of each pylon's horizontal connecting piece relates to the stepped brackets below the struts of the main towers. Above the roadbed, the vertical elements of the pylons rise on either side of the deck and display a monumental stepped design, complete with the faceted surface decoration that unifies the parts of the bridge.

Located between the two southern pylons and considered part of the south approach, the next bridge substructure is the arch bridge constructed to carry the roadway over the historic fort at Fort Point. Consisting of a two-hinged arch span with four parallel arches interconnected by a web of members, the steel arch span measures 320 feet long and 185 feet high. The northern side of the arch ends in Pylon S1, which stands between the Fort Point Arch and the suspension bridge, and supports both of them.

Moving north, beyond the S1 pylon, is the main suspension portion of the bridge. Between the two towers, a single 4,200-foot center span bridges the entrance to San Francisco Bay; the length of each side span (or backspan) measures 1,125 feet and runs from the pylon closer to the water to the nearest tower. At mid-span, the bridge deck rises 236 feet above the water, high enough to let any ship afloat pass beneath. Components of the suspended portion of the bridge include the north and south piers and towers, the suspension and hanger cables, and the roadbed.

The two piers are the reinforced-concrete substructures from which the bridges's two main steel towers rise. The South Pier, on the San Francisco side, rests on bedrock at a point 1,125 feet out from the shore, and is surrounded by an elliptical concrete fender, which was used in place of a cofferdam during construction. Although the pier is actually attached to the fender construction 100 feet underwater, the fender and pier appear as separate above the water surface. The visible portion of the elliptical fender rises fifteen feet above the water, measuring a width of 155 feet and length of 300 feet, as it surrounds the pier. The top of the South Pier, which rises 44 feet above the water, measures 65 x 134 feet. Combined, the fender and pier contain 130,000 cubic yards of concrete and weigh 274,000 tons.

The North Pier, on the Marin side, rests on rock at the water's edge. The base of the North Pier measures 80 x 160 feet, tapering to 65 x 134 feet at top. It stands a total of 64 feet, extending 44 feet above the surface of the water, and 20 feet below. Built with the help of a cofferdam, the North Pier contains a total of 24,000 cubic yards of concrete, weighing 45,000 tons.

The stepped form of the east-west sides of the piers handsomely initiates the flowing stepped design of the steel towers rising above. Further, the ornamental faceting on the north-south sides of the piers carries through, in concrete, the faceting motif that appears prominently on the towers. Even a navigation light, mounted on a 35-foot high concrete shaft located on the fender of the south pier, echoes the stepped design theme of the bridge.

The twin 746-foot towers, the North Tower and the South Tower, soar to a height equivalent to that of a 65-story office building and define the design and identity of the bridge. The cables of a suspension bridge lend themselves to a natural grace of line, and here the slender steel towers fit well into the architectural continuity of the structure [Mensch, *The Golden Gate Bridge*]. The basic structural components of each tower are two vertical shafts, set 90 feet apart and connected by cross-bracing. Below the suspended deck, for the 200 feet from the top of the piers to the underside of the span, the shafts of the tower are joined by two large steel X-shaped cross-braces. Above the span, up to the tower top, the shafts are joined by four horizontal braces, called portal struts. Composed of steel cells rather than solid steel beams, each tower shaft contains 103 steel cells at its base, tapering off to only 21 cells at the top (see figure 3).

Architect Irving F. Morrow's use of horizontal struts rather than conventional X-shape cross-braces, emphasizes the elegant stepped angles of the towers above the deck. These struts display steel face-plates bearing the vertical faceting that Morrow selected as one of the primary design motifs of the bridge. As further refinement, Morrow added graceful stepped corner brackets under the tower struts.

The function of the towers is to support the cables, which are secured by the cast-steel cable saddles located atop each tower shaft. Each saddle forms a seat for the cables as they pass over the tower tops, transferring the weight of the cables and their suspended load to the towers in a vertical direction. Each saddle measures 21 feet 7 inches long, 11 feet high, and 10 feet wide, and weighs 150 tons. A flashing airway beacon is installed above the last cable saddle on each tower. The cables are supported by cable grooves inside the saddles and are enclosed by a weatherproof wire wrap throughout the length of the cable. Cables are held at a fixed elevation by steel cable tie-downs in the shoreward concrete pylons at each end of the span, and are ultimately anchored by steel eye-bars embedded in the concrete blocks located in the anchorage housings. At the time of construction, the two main suspension cables were the longest built to date, with an overall length of 7,650 feet between the bar pins of the anchorages. Each cable measures 36-3/8 inches in diameter and is composed of 27,572 galvanized bridge wires, grouped in 61 strands of 452 wires each. The bridge contains a total of 80,000 miles of cable wire, weighing 24,500 tons. Vertical suspender rope cables are placed 50 feet apart along the length of the bridge and serve to connect the main cables with the top chord of the stiffening trusses supporting the roadbed. These 512 sets of suspender cables vary in length from 23 to 490 feet.

Vertical cables hang down to support the suspended portion of the bridge, which consists of stiffening trusses, floor beams, and the roadway slab and sidewalks. The stiffening trusses are comprised of 25-foot long sections. The bottom chords of the trusses are supported laterally by means of knee braces at each floor beam; the top chords are connected to the suspender

rope cables. The suspender ropes go through the top chords and connect to the king post The chords of the stiffening truss are made of silicon steel while the diagonals and verticals of the stiffening truss are carbon steel. A series of steel floor beams, placed at fifty-foot intervals, connects the stiffening trusses. These floor beams measure 8-1/2 feet deep and more than 87 feet long, and weigh 23 tons each.

The current roadbed is an orthotropic steel plate structure. The sidewalks are independent of that structure. This roadbed replaced the original reinforced concrete roadway and its supporting steel stringers in 1982-1985. During the same maintenance project, the original reinforced concrete sidewalks were replaced by new lightweight concrete slabs. All these changes reduced the total span weight by 11,500 tons.

The span contains sixty-two feet of roadway (widened from sixty feet in 1982-85) that allow for six lanes of traffic and two ample ten-foot-wide sidewalks. Steel curbs and hand railings run almost the entire length of the sidewalk, with the exception of the concrete railings over the North Anchorage. Off-set bays or overlooks punctuate the sidewalk, providing pedestrian viewing spots, and walkways wrap around the tower legs in order to afford an unimpeded walk across the span.

The next structural component beyond the main span is the north approach, consisting of the North Anchorage housing and the North Approach Viaduct. The North Approach Viaduct extends from the south end of the North Anchorage housing to the north abutment. Situated on the headlands above Fort Baker's Horseshoe Cove, the North Anchorage like its counterpart on the south side, is constructed of reinforced concrete and measures approximately 350 feet long, 130 feet wide and 110 feet tall. Unlike the South Anchorage, the roof of the North Anchorage forms the highway roadbed and the bed for two pedestrian sidewalks between the main span and the North Approach Viaduct. This anchorage housing incorporates the seaward north pylon, Pylon N1, which supports the north end of the stiffening truss of the main span and houses the main cable tie-downs. This pylon is structurally independent of the housing, while Pylon N2, which supports the North Approach Viaduct trusses, is integral with the North Anchorage housing. A steel door, decorated with the vertical faceting that recurs throughout the structure, is located above deck on the west sidewalk, where it provides internal access to the North Anchorage.

Beyond the North Anchorage, the North Approach Viaduct is composed of a series of five 175-foot deck truss spans, supported on steel towers that reach upwards to a height of 160 feet. These truss spans are supported by Pylon N2 on the south end, by the four intermediate steel braced frames, and by the north abutment at the north end. The North Approach Viaduct measures 1,100 feet in length and carries the roadway from the North Anchorage to the beginning of the State Highway approach road that links the bridge with Highway 101 at Waldo Point in Marin. Originally, the concrete curbs and balustrades over the North Anchorage continued along the full length of this approach, but they were replaced in the 1980s with orange steel handrailings similar to the original railings that run along the rest of the bridge.

As described throughout this summary, even minor components conform to the fluid, modernistic design evident in the principal parts of the bridge. The original light standards, spaced 150-feet apart on each side of the bridge and of the San Francisco and Sausalito roadway approaches, exhibit unornamented but sculptural profiles that relate to the graceful curves of the towers and suspension cables and that reflect the clean, elegant lines of the most progressive design of the period. (Several additional light standards of different design have been interspersed with these over time.) The hand railing and sidewalk curbs, which run along most of the bridge, are simple in design, reflecting the basic techniques of steel fabrication. The concrete balustrades over the North Anchorage are articulated with simple recessed rectangles; this articulation relates to geometric patterns and receding planes used as surface decoration elsewhere on the bridge structure and approach road. All steel members and surfaces of the bridge are unified by the now famous reddish orange paint color identified as International Orange.

A number of alterations have been made to the bridge since its opening in 1937, although none of these substantially affects its architectural or historical integrity. Some of this work constituted routine maintenance demanded by high exposure to severe weather conditions; other alterations resulted from increased usage. In 1951, after a particularly violent wind storm closed the bridge for three hours, the Bridge District implemented a project to stiffen the cross-bracing under the roadway in order to reinforce resistance to high winds. Additional changes came in 1962 when workers core drilled holes in the roadbed in order to insert the neoprene cylinders used to reverse lanes for the changing flow of traffic. To this day, these cylinders are moved in anticipation of commuting hours. The North Approach and the South Approach viaducts were both widened in the early 1960s. In 1968-69, a bike path was created that utilized both the existing west sidewalk and a newly-built 95-foot concrete bike bridge to connect the northernmost pylon to existing roads in Fort Baker. In 1970 the pedestrian turnstiles were removed from each end of the span. In 1973-76, the Bridge District replaced all the suspender rope cables when it was determined that some were corroding in the sea air.

The major project of the 1980s was replacement of the deck of the roadbed. At this time, the original concrete deck and its supporting steel stringers were replaced by an orthotropic steel deck that possessed greater flexibility and reduced the weight of the entire structure. This deck and sidewalk replacement included the widening of the curb lanes. One significant change that occurred during this project was the replacement of the concrete guard walls of the north approach by an orange steel handrailing consistent with those along the rest of the bridge. Original concrete guard walls now exist only over the North Anchorage. Also as part of the 1980s work, the east sidewalk of the north approach was widened and a west sidewalk added where none existed previously.

Other repairs include the installation of new fixtures on the light standards to replace the original sodium-vapor illumination, the replacement of rivets in some locations by high-strength bolts, the installation of a temporary protective fence on the east sidewalk over Fort Point, the installation of a microwave transmitter on top of the South Tower, and the replacement of 6,557 feet of deteriorating deck railings with exact replicas of the originals.

In the 1980s a seismic upgrade project was begun to bring the structure into conformance with current standards. Various modifications include: strengthening of concrete foundations, anchorages and pylons; the installation of shock isolators and dampers at key locations; and, the replacement, addition or covering of certain steel members. Care was taken to preserve as much of the character, appearance, and proportions of the original materials as possible. None of these various repairs or maintenance activities has altered the historic integrity of the bridge.

CONTRIBUTING RESOURCES

The Golden Gate Bridge constitutes a series of interdependent component structures. However, for the purpose of categorizing and counting resources, the Golden Gate Bridge can be divided into two principal contributing structures: the bridge itself and the Presidio approach road, which includes the Toll Plaza. In addition, a small ancillary contributing building, identified as the Round House, stands in the area of the Toll Plaza and retains substantial integrity to its original design.

The nominated property also includes numerous features, such as light standards, railings, and, specifically, the "Stop--Pay Toll" sign on the canopy atop the toll booths. For the purpose of categorizing and counting resources, these features are not categorized or counted individually. They are however considered integral and important parts of the Landmark.

Bridge

(For a description of the bridge see the general description above.)

Presidio Approach Road

The Presidio approach road, which includes a low viaduct, a high viaduct, and the Toll Plaza, is primarily an elevated roadway that courses west and northwest over the lands of the Presidio of San Francisco. The Presidio approach road is functionally and aesthetically integral to the Golden Gate Bridge. It was designed by Strauss and Paine, built under contract to the bridge District, and financed from the original $35 million bond approved by Bridge District voters on November 4, 1930. Exhibiting design elements of the bridge proper, the Presidio approach road was an integral part of the historic construction project. General design characteristics that unify the Presidio approach road and the bridge proper are the lack of applied ornamentation and the melding of functional and stylistic elements. Specifically, a prominent part of the Presidio approach road, a high viaduct near the Toll Plaza, directly repeats many of the celebrated design features of the bridge proper, in both steel and concrete members. Also, on both viaducts included in the Presidio approach road, the curbs and the simple rectangular relief on the concrete guard walls match those found on the North Anchorage of the bridge. Finally, the distinctive light standards that unify the bridge design are carried throughout the length of the Presidio approach road (the new standards are in addition to the original fixtures).

The Bridge District could not have survived financially if the construction of connecting approach roads, bearing toll-paying passengers, had been delayed. For this reason, the Bridge District decided to build one minimal approach road at each end of the bridge until more permanent connections were made by the State Division of Highways and the City of San Francisco. The Sausalito lateral road and Presidio approach road became crucial to the operation of the bridge and were included in the planning documents. They were identified in the 1930 bond measure and carried as separate items in the plans, specifications, and estimates on which the Golden Gate Bridge Project was bid in 1931 [1987 CALTRANS Historic Resource and Evaluation Report].

While the Presidio approach road is included, the approach road on the Marin side, identified as the Sausalito Lateral, is not. The need for an approach road on the Marin side was certainly anticipated by Bridge engineers; however, the Sausalito Lateral was not included in the final scope of work for the Bridge project. Further, the Sausalito Lateral contract was never awarded by the District; rather, the planning was transferred to the California State Highway Commission, and the work was subsequently executed as a Works Progress Administration (WPA) project. Physically, the Sausalito Lateral does not exhibit the basic design elements that unite the bridge structure and the Presidio approach road; the exception to this is the repetition of the distinctive light standards. For all of these reasons, the Sausalito Lateral is not considered sufficiently integral to the historic Bridge construction to be included within the proposed boundary. It is probable however that the Sausalito Lateral is eligible for the National Register of Historic Places at the local or State level of significance as part of the historic Bridge construction or as a WPA project.

The Presidio approach road, known as Doyle Drive, was originally designed as a single approach beginning at Marina Boulevard and extending through the toll plaza. The contract for the approach was awarded to the firm of Eaton & Smith of San Francisco and work commenced in 1934. After work began, the design of the eastern terminus was modified to add a connecting secondary approach from Lombard Street via Richardson Avenue. The Lombard connector was built as a W.P.A. project sponsored by the city of San Francisco. Its design and execution match the Marina/Doyle Drive approach. It is also considered a contributing resource. The Lombard connector, which was originally intended for truck traffic, now serves as another primary approach for all vehicles. Beginning at the intersection of Richardson Avenue and Lyon Street, the Lombard connector curves behind the Palace of fine Arts before joining Doyle Drive by means of a braided connection. The entering lanes of the Lombard approach run under Doyle Drive and up a ramp to join bridge-bound traffic.

The original plans for the bridge called for an additional bridge approach through the Presidio from the south, connecting with Funston Avenue. This approach, however, was not included in the Bridge District's budget and was not designed or completed as part of the bridge construction. The approach road was eventually funded and constructed by the state and was completed after 1938. The connector, which feeds into the Doyle Drive viaduct just north of Lincoln Boulevard, is known today as the 19th Avenue and Park Presidio Boulevard and forms part of State Highway 1. Because the connector was not completed as part of the bridge construction, it was not considered for inclusion within the Landmark boundaries.

The Presidio approach road, as an extension of Marina Boulevard and Richardson Avenue/Lombard Street, begins at the eastern boundary of the Presidio, along Lyon Street, and extends, at its western end, through the Toll Plaza. The three-lane (plus sidewalk) roadway consists of the 3308 feet-long reinforced-concrete "Low Viaduct," the 1519 feet-long structural-steel "High Viaduct," the paved roadway and grading, and the Toll Plaza. The Low, or Marina, Viaduct (Bridge 34-14 in the CALTRANS Bridge Inventory) reaches from Marina Boulevard and courses about 3,308 feet, roughly in a westerly direction, to a hill. The separate entering and exiting lanes from the Lombard connector also rest on the Low Viaduct. The Low Viaduct is constructed mostly of simple reinforced concrete spans of 32.5 feet each. The footings rest on wooden piles below ground water and concrete piles above ground water. The Low Viaduct is supported on transverse structural frames, or bents. Each bent comprises two columns with a cross girder and one or more horizontal struts depending upon its height.

The High, or Presidio, Viaduct (Bridge 34-19 in the CALTRANS Bridge Inventory) begins at the north slope of the hill where the Low Viaduct leaves off and extends north approximately 1,518 feet to the hill on which the Toll Plaza is located. The High Viaduct is constructed of steel, using a Pratt deck-truss system comprised of eight 135-foot deck-truss spans flanked on each end by four beam spans. This system is carried on concrete piers, on spread footings. The legs of the concrete piers, which rise to a height of about 50 feet, are cast with the same stepped design displayed on the bridge towers, while the horizontal connecting members of the piers relate to the design of the main towers' portal struts.

The Toll Plaza area, the westernmost part of the Presidio approach road, is located 170 feet south of the bridge's south abutment. The shape of the Toll Plaza area is created by an elongated widening of the roadway in order to accommodate twelve lanes of traffic at the toll booths (see figure 4). The west side of the Toll Plaza is bordered by the Toll Plaza Building; the Round House Gift Shop and a small bus shelter form the east boundary. Much of the plaza is constructed on deep fill; however the buildings are carried to bedrock. Originally measuring 350 feet x 500 feet, the Toll Plaza was widened south in 1955, and north of the toll booths in 1947 and 1964. These widening programs profoundly altered Morrow's original conception of the plaza as a well-delineated oval that was entered and exited through narrow openings. Because the Toll Plaza has lost its original shape and design, most of this feature of the Presidio approach road does not possess high integrity. (For an individual description of the Round House, see below; for individual descriptions of the Toll Plaza Building and the bus shelter, see below, under Noncontributing.)

At the time the Presidio approach road was constructed, some changes were made to existing Presidio roadways, buildings, and structures. Specifically, the engineers found it necessary to modify Lincoln Boulevard by diverting it south of the Toll Plaza, depressing and reconstructing it for approximately one-quarter mile, and constructing an overpass across it to complete the entire Presidio approach roadway. Other changes precipitated by the project included the destruction of Battery Lancaster, formerly part of a coastal defense system, and its subsequent incorporation into the approach road, just north of the Toll Plaza. Remnants of the Battery, including the easternmost gun emplacement, may still be seen near the Toll Plaza. A starred bronze disk marking the center of the old fire control station at Battery Lancaster is set into the roadway on the center line of the bridge, 180 feet south from the south abutment.

Strauss fondly remembered this as the site where he first gazed out at the Golden Gate Strait in 1918, dreaming of bridge building. Batteries Slaughter and Baldwin were also destroyed or buried during the construction of the Presidio approach road. One small corner of concrete from Battery Slaughter may be seen on the side of the highway. Remains of Battery Baldwin were uncovered during removal of lead paint-tainted soil and seismic retrofit of the bridge viaducts in the 1990s. Remnants of the Spanish fortification Castillo de San Joaquin were probably destroyed by the bridge construction. Two nineteenth-century artillery-control stations, which were part of a fire-control station network stretching from near Drakes Bay in the north to Point San Pedro in the south, still exist beneath the supports for the bridge.

In 1987, the California Department of Transportation prepared a Historic Resource Evaluation Report (HRER) to evaluate the approach roads in the context of their relationship to the Golden Gate Bridge. The HRER concluded that the Presidio approach road met the criteria for National Register listing as integral to the Golden Gate Bridge. In addition, the Presidio approach road, or Doyle Drive, was listed in 1993 as a contributing component to the Presidio of San Francisco National Historic Landmark District. Most of the Presidio approach road is currently owned and maintained by CALTRANS, except for the Toll Plaza portion, which is still owned and maintained by the Bridge District.

Round House

The Round House is located on the east side of the Toll Plaza, north of the toll booths, almost directly across from the powerhouse. Designed by San Francisco architect Vincent G. Raney, the Round House was completed in 1938 by the Golden Gate Bridge and Highway District as a restaurant and comfort station to meet the needs of Bridge District employees and visitors. Raney's design of the building maintains the Streamline Moderne feel of Morrow's original Administration and Maintenance Building.

The Round House is a one-story circular building with a flat roof. About one quarter of the roof is raised approximately four feet, providing space for circular louvered vents. The main roof is cantilevered about six feet on all sides, with exposed joists radiating from center. The building has large picture windows on three-quarters of its perimeter, facing north, east and south, while the west side, facing the Toll Plaza, currently has no openings. The stucco-surfaced walls are painted the same buff color as all Bridge District buildings. The fascia board of both the main roof and the raised roof are painted International Orange, as are the wood window frames.

The Round House was remodeled by architect Milton T. Pflueger in 1955. Most of the changes were internal to the structure, although at some point the restroom privacy wall and windows on the west side of the building were removed. From 1972 to 1986 the Round House was used as an office by the Bridge District. The building was again remodeled in 1987 when it was converted to its current use as a gift shop. At that time, all the remaining interior walls were removed, as well as a slice of the prominently overhanging roof on the west side, next to the widened Toll Plaza. In 1992, the deck was replaced in kind and the hand railing was upgraded to meet current safety codes. One light standard with an original sodium-vapor lamp stands behind the Round House.

NONCONTRIBUTING

Included within the proposed boundary are the noncontributing Toll Plaza Building, which has been substantially altered from its original design, and a modern bus shelter at the eastern end of the toll plaza. A Historic Architectural Survey Report, completed by MacDonald Architects in January 1995 concluded that none of the resources in the toll plaza, with the exception of the Round House, were eligible for listing in the National Register, either individually or as contributing elements of a historic district. The toll plaza is included within the boundaries of the National Historic Landmark because it marks the end of the approach road and links the approach with the bridge.

Minor features that also do not contribute include a phone booth in the Toll Plaza area, a small number of modern light standards, partial replacement railings, new signs, and new paving and curbs, especially in the Toll Plaza area. The clock on the toll canopy is particularly compatible with the historic design of the bridge, but was installed in 1949, after the period of national significance. Resources located within the Golden Gate National Recreation Area beneath the elevated portion of the approach road and the bridge that are unrelated to the bridge do not contribute to the Golden Gate Bridge National Historic Landmark.

Toll Plaza Building

The Toll Plaza Building consists of five interconnected principal parts: the main offices, the garages, the powerhouse, the toll-collection canopy and booths, and the underpass. The combined office, garage, and powerhouse parts of the building line the Toll Plaza and actually define the plaza's southwest perimeter. From the office part of the building, a large canopy projects out over the Toll Plaza; this canopy is connected to and shelters eleven toll booths. Directly below the canopy and booths lies a substantial tunnel and road construction that functions as a transverse underpass beneath the Toll Plaza. The southwest end of this underpass underlies and connects structurally and spatially with the office part above (small rooms integrated into the underpass actually have internal spatial connections with the offices above).

The main elevations of the office, garage, and powerhouse parts of the Toll Plaza Building align and face the Toll Plaza. These parts are characterized by flat roofs and stucco clad walls. The office part is mostly two-story with a simple overhang at the roof line, projecting approximately five feet on all sides; the garage and powerhouse parts are one-story. All three parts are painted a buff color, with International Orange trim, doors, window frames, curbs, railings and fascia board.

Although continuing to function as administrative offices, the main office part of the Toll Plaza Building has been radically altered from its original design. The current appearance of the office part of the building is a result of alterations performed by Milton T. Pflueger in 1957 and by the San Francisco architectural firm of Hertzka & Knowles in 1965. During these two renovations, the second story was added, numerous windows were relocated and enlarged, the large roof overhang was created, a toll sergeant's booth projecting from the line of the facade was added, and maintenance areas were converted to office space. The

horizontal banding was eliminated, as were some of the curved handrails (the curved steel railings near the pedestrian entrance to the underpass appear original, although perhaps relocated). The horizontal windows were replaced by large vertical aluminum sliding glass doors with small balconies. In 1976, a handicapped ramp was added to the main entry.

Although the garage and powerhouse parts of the Toll Plaza Building do retain relatively greater integrity, the gentle curve of the front elevation of the garage part remains as the only evidence of the graceful shape of the Toll Plaza's original design. Additionally, some of the horizontal banding that distinguished the original design has survived. Major alterations to the garages include various modifications to the openings as well as the loss of one entire bay for the addition of a new projecting office.

The block-like powerhouse part forms the northernmost end of the Toll Plaza Building. It stands approximately three feet taller than the adjacent garages. Its poured-in-place concrete walls are distinguished architecturally by rounded corners, set with high, horizontally banded steel windows. Most of the original steel windows remain on all elevations. Some of the original generating equipment and related fixtures may remain on the interior.

The part of the Toll Plaza Building that comprises the toll-collection canopy and booths has been altered substantially from its original design and fabric. The original booths have been replaced entirely, while the original canopy remains, though now truncated at its easternmost end. Eleven toll booths serve 12 traffic lanes. Ten of the booths are of steel, glass, and concrete, designed to recall the rounded Streamline Moderne character of the original booths; these were designed in 1980 by MacDonald Architects and were installed between 1981 and 1989. The westernmost booth, of undetermined date, is a simple box with ceramic tiles at the base and glass walls above.

As constructed in 1937, the canopy, a ribbed roof deck of concrete construction supported by steel columns, spanned the full width of the Toll Plaza. On its west end, where it connected into the original Administration and Maintenance Building, the canopy was supported below by the structural component known as the "west pylon" (extant), which contained an enclosed staircase (extant) leading down to the underpass. On its east end the canopy was supported by a structural component known as the "east pylon" (extant), which included a small office (demolished), originally used by the California Highway Patrol (CHP), and a second staircase to the underpass. In 1974, the easternmost 50 feet of the canopy were cut off to create an outermost lane with no restrictive clearance. In 1977, the CHP office was demolished, and the East Bus Stop Shelter (see below for individual description of this shelter) was constructed in its place. The "east pylon" stairs now descend from this bus shelter.

The original toll booths were constructed of curvilinear glass and horizontal steel banding. They were only seven in number, but served 14 lanes. Each booth consisted of two compartments, one serving the lane on the left side, the other serving the lane on the right. To facilitate toll collection, six intermediate booths were added sometime in the 1940s. These booths were simple rectangular steel and glass boxes.

While the original booths have been replaced and the canopy truncated, the neon-illuminated "Stop--Pay Toll" sign mounted on the canopy and facing the southbound traffic is original; its northbound-facing partner was destroyed when one-way tolls were implemented in 1968. A neon-illuminated, eight-foot clock (extant) was added to the roof of the canopy in 1949 [*San Francisco Examiner,* February 16, 1949]. Original pedestrian turnstiles were removed around 1970.

The underpass part of the Toll Plaza Building was designed by Strauss and Paine and constructed of reinforced and poured-in-place concrete. It is structurally interdependent with the basement of the office part of the building and with the foundation of the canopy and booths. The original truck scales were removed from the street level of the underpass in 1976, but the pits are still visible. One entrance to the underpass is the stairwell on the street level that descends from the East Bus Stop, or former "east pylon" (previously the California Highway Patrol office), and leads down to the pedestrian sidewalk that borders the two-way road through the tunnel. Built into this underpass structure is the bottom floor of the former CHP office, which consists of two small, rounded rooms. The original lockers in the locker room are still in use by the gardening staff, while the other room is used as the gardening office. When some of the lockers were removed a few years back, original bridge worker graffiti (mostly names and dates) were found scratched into the wall behind them. The office room retains its rounded walls, and a band of glass block windows is set into each room. While the street-level portion of the CHP office was demolished in 1977, these bottom rooms remain. A retaining wall on the east side of the Toll Plaza also belongs to the original understructure.

On the west side, another entrance to the understructure is accessible through the stairwell of the "west pylon," the point at which the toll canopy is connected to the office part of the building. This staircase descends to the tunnel beneath the plaza. Directly west of the underground stairwell access, a remodeled garage and office are carved out from the underpass wall. Across the tunnel road from this garage and set within the curve of the tunnel wall is a small office that originally served the Bridge District parking lot. The tunnel was constructed to enable pedestrian and vehicular traffic to pass from one side of the bridge to the other, particularly allowing northbound traffic to exit and turn around before crossing the bridge. The tunnel also provides access to the maintenance road, parking lots, and buildings located behind the Toll Plaza Building, and is used primarily by Bridge District staff.

Bus shelter

A modern bus shelter, dating to 1977, stands on the east side of the Toll Plaza, at the location of the "east pylon" access stairs to the underpass tunnel. This small open structure, rectangular in plan, is of utilitarian unpainted concrete-block construction, with a steel-frame flat roof. The simple fascia board of the roof is painted International Orange.

8. STATEMENT OF SIGNIFICANCE

Certifying official has considered the significance of this property in relation to other properties:
Nationally: X Statewide: __ Locally: __

Applicable National Register Criteria: A__ B__ C X D__

Criteria Considerations (Exceptions): A__ B__ C__ D__ E__ F__ G__

NHL Criteria: 4

NHL Theme(s): III. Expressing Cultural Values
5. architecture, landscape architecture, and urban design
IV. Expanding Science and Technology
2. technological applications

National Register Areas of Significance: Architecture, Engineering

Period(s) of National Significance: 1933-1938

Significant Dates: 1933, 1937

Significant Person(s): N/A

Cultural Affiliation: N/A

Architect/Builder: Strauss, Joseph B. (chief engineer)
Ellis, Charles A. (design engineer)
Morrow, Irving F. (architect)
Cone, Russell, G. (resident engineer)
Paine, Clifford E. (principal assistant engineer)
Moisieff, Leon (consulting engineer)
Ammann, O.H. (consulting engineer)
Derleth, Charles E., Jr. (consulting engineer)

State Significance of Property, and Justify Criteria, Criteria Considerations, and Areas and Periods of Significance Noted Above.

Summary Statement of Significance

The Golden Gate Bridge, along with the Brooklyn Bridge, is the most widely known, celebrated, and photographed bridge in the country. Public recognition and the popularity of the Golden Gate Bridge are based largely on the bridge's sheer beauty. The bridge exhibits a litheness of expression and a level of design and structural integration rare among suspension bridges; further, the Golden Gate Strait, which the bridge spans, provides a setting of exceptional scenic majesty. The Golden Gate Bridge is nationally significant as one of the nation's most conspicuous masterpieces of progressive 1930s "modernist" architecture. Despite being carried out on a heroic scale under challenging circumstances, the bridge did not introduce any nationally significant design or construction practices. Instead, it applied state-of-the-art theories and techniques to extreme degrees of length and height in a challenging environment. Nevertheless, it is impossible to separate the successful architectural appearance from the engineering work that both made the architects work possible, and greatly directed the aesthetic alternatives. Therefore, while other suspension bridges would be chosen to represent nationally significant advances in engineering, the Golden Gate Bridge is arguably the best example of incorporating architectural styling to then state-of-the-art engineering capabilities. The bridge has retained a high degree of integrity.

The period of national significance for the Golden Gate Bridge corresponds to its construction, from 1933 through 1938. Work began on January 5, 1933, and although the bridge opened for traffic on May 28, 1937, the mammoth construction project continued through 1938 with the completion of the Round House Restaurant. From 1938, no new buildings or major additions were undertaken until 1955 with the construction of a new Maintenance Building (located outside the proposed boundary). Today the Round House, now converted to a gift shop, stands as the last piece of the initial historic construction project for the Golden Gate Bridge, and is one of the least altered original components of the historic Toll Plaza area.

Contributing to the Golden Gate Bridge National Historic Landmark are all parts of the original 1933-1938 bridge construction that retain a high degree of historic integrity. The only major component of the nominated resource that has been determined not to contribute is the Toll Plaza Building. This building, which itself is comprised of several interconnected parts, was constructed during the original project. Later alterations, however, have substantially changed the form and appearance of the Toll Plaza Building, although parts of the building, such as the garages, powerhouse, and underpass, retain varying degrees of integrity in themselves.

Engineering

Challenges to designing and constructing suspension bridges were more the rule than the exception during this period. The most important aspect of the history of this type of engineering is understood through the accomplishment of longer and longer suspension bridges throughout the first half of the twentieth century. With each success, lessons were learned and

confidences were increased in the engineering and economic feasibility of building more challenging bridges. As population in older metropolitan areas surged, and new patterns of settlement began to turn mid-sized cities into major metropolitan areas, a relatively small cadre of experienced bridge engineers moved from the easy bridge sites to the more daunting ones. They sought to demonstrate the feasibility of building taller bridges over waterways previously not spanned for fear of hampering taller and taller maritime traffic. They needed to design bridges that could cross broad waterways where previous bridge technology could not have succeeded. More remote crossings were also under consideration because concerns about disturbing already built-up areas necessitated bridge construction away from the city centers (which were themselves typically located near the narrower points in the rivers). Sites previously dismissed due to poor or uncertain bridge foundation conditions, or featuring elevations that would necessitate long and costly approach ramps were being reconsidered. Bolder and bolder theories on calculating the amount of steel necessary to stiffen a suspended roadway from destructive undulations made previously prohibitive bridge sites financially feasible. With the exception of a few suspension bridges associated with major advances in some of these areas, the steady increase in bridge length and height reflected cumulative advances in design and construction practices, as opposed to nationally significant ones.

Nevertheless, the Golden Gate Bridge is impressive, not only for its completed appearance, but for the challenging nature of its construction, which called for the application of state-of-the-art scientific knowledge and technical skill. The "bridge that couldn't be built" faced a number of daunting obstacles, both natural and manmade, that heighten the achievement embodied in the finished project. In this regard, the challenges of its design and construction are illustrative of early 20th century suspension bridge engineering.

From its very inception, the Golden Gate Bridge received national attention as the first bridge that would be built across the entrance of a major United States harbor. This entrance, known as the Golden Gate Strait, and the surrounding lands, comprising the Marin Headlands to the north and the tip of the San Francisco Peninsula to the south, were well known not only for their importance as the "gate" to the largest inlet harbor system in the United States' West Coast, but also for their exceptional natural, scenic, and historical values. These lands were incorporated into the National Park System as the Golden Gate National Recreation Area in 1972.

The distance across the Golden Gate Strait, which exceeds a mile, presented a formidable engineering challenge in bridge construction. Prior to the erection of the Golden Gate Bridge, broad water barriers had been crossed successfully by tunnels or cantilever- and suspension-type bridges. The first successful long-span suspension bridge built in America was the Cincinnati-Covington Bridge, constructed across the Ohio river in the 1860s. This bridge was designed by John August Roebling, who later, in 1869, designed the Brooklyn Bridge, which surpassed the Cincinnati-Covington Bridge's span by over 1000 feet. The main span of the Brooklyn Bridge extends 1,595 feet between towers; the entire length of the deck between anchors is 3,455 feet.

When completed in 1937, the Golden Gate Bridge's central span of 4,200 feet was the longest in the world, and remained so for nearly thirty years. Previously, the George Washington

Bridge, built in 1927-1931 across New York City's Hudson River, gracefully exhibited the record suspension span of 3,500 feet, which nearly doubled the preexisting record. In 1959-64 the span of the Golden Gate was itself surpassed in length by the 4,260-foot span of the Verrazano-Narrows Bridge, New York City [Delony, *Landmark American Bridges*, p. 143].

In addition to the formidable width of the Golden Gate Strait, other challenging site conditions had to be overcome. While most bridges cross rivers and ravines, the Golden Gate Bridge crosses an entrance to the open sea. Thus, the bridge engineers had to contend with ocean storms, fog and high winds, strong tides, and a more than 300-foot deep channel with a bare-rock bottom. The geographical exigencies of this site demanded construction methods and materials that would work in the harsh, exposed setting. Human obstacles, including military objections that dictated that the minimum vertical clearance of the span be high enough to admit any military or commercial vessel, also influenced design. As a result, the bridge clearance rises 220 feet above the water, an unprecedented height for any bridge over navigable water at the time of its construction. Despite major and unforeseen setbacks in the project, the advanced design and construction solutions utilized by bridge engineers brought the huge construction project in on time and under budget, a feat that many had predicted could never be accomplished.

Joseph B. Strauss (1870-1938), who supervised the bridge construction, was a master engineer and project facilitator of national stature and significance. His early reputation as a gifted bridge engineer derived from the technological advancement of the bascule, or counter-balanced, bridge, for which he received a patent early in the twentieth century [Van Der Zee, *The Gate*, p. 32-33]. His lack of a formal degree in engineering makes Strauss' achievement all the more remarkable. He was awarded an honorary doctor of science degree in 1930. Strauss was 59 years old in 1929 when he became the Chief Engineer of the proposed Golden Gate Bridge project.

While Strauss, as Chief Engineer, is commonly credited with the design of the Golden Gate Bridge, his major contribution to the project lay in promotion and coordination rather than engineering. Strauss first contemplated building a bridge across the Golden Gate Strait in 1918, and he maintained his vision while tenaciously fighting for the bridge's construction from 1918 until its completion. During the 1920s, Strauss campaigned vigorously among the northern counties of California to raise public and financial support for the establishment of a Golden Gate Bridge and Highway District (GGBHD). Due to delays resulting from lawsuits and court injunctions, almost six years passed between the time the enabling act for the creation of the GGBHD was passed in 1923 to the day the Bridge District was actually incorporated on December 4, 1928. It was another contentious four years before construction began. Without Strauss's vision, personal abilities, and persistence, the enormously expensive and controversial bridge project would probably not have gone forward during the lean years of the Great Depression.

With perseverance and commitment, Strauss was able to retain his position as Chief Engineer even though his original design for the bridge, submitted in 1921, was soundly rejected by officials and the public alike [Van Der Zee, *The Gate*, pp. 66-67]. Strauss scratched his design and worked to form a new team of engineering specialists, which included civil

engineer and professor Charles A. Ellis, who designed the specifications for withstanding ocean currents and heavy winds, and civil engineer Leon Moissieff, who previously had served as a designing engineer under Othmar H. Ammann on the celebrated George Washington Bridge construction. Ammann himself, along with Berkeley professor and civil engineer, Charles E. Derleth, Jr., served as Consulting Engineers. Russell G. Cone, as Resident Engineer, and Clifford E. Paine, as Principal Assistant Engineer, supervised the daily site work and the quality control of construction materials. Architect Irving F. Morrow, whose contributions proved so vital to the distinctive appearance of the bridge, helped round out the team. The total engineering force numbered approximately one hundred men.

Primary contractors included the McClintic-Marshall Corporation, a division of Bethlehem Steel Company, which produced the steel for the main towers and suspension spans. John A. Roebling's Sons Company of New Jersey supplied the cables and the technical know-how and workers for the cable spinning and installation. Pacific Bridge Company built the main piers and underwater foundation, while Barrett & Hilp were responsible for constructing the anchorages and approach piers.

Charles Ellis prepared the design for the bridge's towers, which were built of carbon and silicon steel plate riveted into clusters of structural cells. Ellis worked out a sophisticated analytical method of computing stress based on the massive tower legs being built as structural units rather than assemblages of connected parts. The soundness of Ellis' approach was confirmed by testing, using a scale model [Van Der Zee, *The Gate*, citing the *Engineering News-Record,* January 1934]. Ellis's contribution to the bridge project had been unjustly obscured by time and professional rivalries, and only recently has he received the appropriate credit and recognition for his important role.

However, one key element of then state-of-the-art design theory for this and other long-span suspension bridges of the early 20th century soon proved critically flawed. Building on the influential work of engineers Leon Moissieff and Othmar Amman, suspension bridges were being designed to meet an aesthetic ideal and economy of materials associated with building thinner and lighter stiffening members to support the suspended roadway. The dramatic 1940 failure of Washington's extremely thin and narrow (only two lane) Tacoma Narrows suspension bridge demonstrated the catastrophic impact even moderately strong winds could have on inadequately stiffened roadways. The soundness of all such suspension bridges designed on the basis of the deflection theory of calculating loads and stresses were reevaluated and, as in the case of the Golden Gate Bridge, most were later strengthened [Billington, *The Tower and the Bridge*, pp.136-7].

At 746 feet from the water line, the bridge's twin towers were the tallest ever built, 232 feet higher than those of the neighboring San Francisco-Oakland Bay Bridge, which was completed in 1936 (see figure 5). The towers were composed of the largest structural steel members ever assembled. Steel for the bridge was fabricated in Pennsylvania and shipped, via the Panama Canal, to Bethlehem Steel's warehouse and assembly plant in Alameda. There, the pieces were catalogued and stacked, ready to be barged to the construction site in loads of 500 tons. The large towers were constructed utilizing a method consulting engineer Leon Moissieff had applied earlier on a smaller scale for the Philadelphia-Camden (Benjamin Franklin) bridge

[Chapter *Workshop of the World, A Selective Guide to the Industrial Archeology of Philadelphia*, p. 6-8; Paine, "Designing Bridge Towers 700-Ft. High," *Engineering News-Record* 117: 497-505; Van Der Zee, *The Gate*, p. 191-2]. Instead of using solid columns of steel, each tower is built from hollow steel cells clustered together with rivets. Each cell, made from inch-thick steel, measures 42 inches square and 35 feet high. A honeycomb of 103 of these cells comprises the base of each of the two shafts that form the leg of each tower. As the shafts rise, the number of perimeter cells drops off at intervals corresponding to the placement of the braces, culminating in only 21 cells at the tops of the towers. A complete tower is composed of these steel cells, held together by 600,000 field-driven rivets. Each tower contains a total of 22,200 tons of steel.

The tower design was driven by the need for flexibility and strength. Each tower would have to support itself, part of the cables, and part of the roadway--about 75,000,000 pounds of dead weight--in addition to as much as 9,500,000 pounds of live weight. The towers also needed to be able to bend with the expansion and contraction of the cables, and to yield to prevailing winds. The bridge was designed to move under stress and strain. For the center span, provision in the design was made for maximum transverse deflection of 27.7 feet and for maximum downward deflection of 5.8 feet. For the towers, provision was made for transverse deflection of 12-1/2 inches and longitudinal deflection of 22 inches shoreward and 18 inches channelward [1947-48 GGBHD Annual Report].

The possibility of portal rather than diagonal bracing allowed the towers a markedly different treatment than had ever been tried on a bridge. Engineering decisions provided the freedom for new types of stylistic effects.

Building the bridge's two deep-water piers, identified as the South Pier and the North Pier, proved to be one of the most difficult tasks of bridge construction. Because of the Bay Area's seismic activity, substantial geologic work had to be carried out on the ocean's floor. The South Pier, on the San Francisco side, rests on bedrock at a point 1,125 feet out from the south shore, and is surrounded by an elliptical concrete fender, which was used in place of a cofferdam during construction. On this side, the engineers found it necessary first to build this protective concrete fender within which the pier could be built. The work was particularly treacherous in the ocean waters, and the access trestle used for pier construction was itself destroyed twice--once by a storm, once by a fog-bound ship--delaying construction.

Deep-sea diving operations were essential to this phase of the project. Divers carried out underwater excavations to a point 100 feet below the surface of the water in order to place the entire fender and pier structure on more solid, level footing. After blasting into the bedrock, they lowered steel guide-frames into sockets blown out of the rock. Within steel frames, or guides, a total of 130,000 cubic yards of concrete were poured through tremies, or underwater pipes, to construct both the fender and the pier. Unlike the North Pier, the South Pier is attached to the fender structure underwater. The mammoth underwater section measures 155 x 300 feet, while the top surface of the South Pier, which rises 44 feet above water, tapers to a size of 65 x 134 feet. The original plan to build the pier base in a pneumatic caisson was abandoned when the caisson placed in the fender was tossed about so wildly by a violent storm that it had to be removed; otherwise it likely would have destroyed both itself and the fender

structure. Instead, the fender ring was completely enclosed and raised to a higher elevation. Water was then pumped out of the area of the fender ring, and pier construction proceeded. The South Pier fender, constructed first as a defense against the elements during open-sea construction, was ultimately used as a permanent defense for the completed pier.

The construction of the North Pier on a rocky ledge at the water's edge on the Marin side of the strait was a more trouble-free operation: the pier was constructed within a cofferdam, as planned. For both the South Pier and the North Pier, Strauss was proud of his utilization of a newly developed high-silica or "pink" cement in order to increase the water resistance of the pier foundations.

Strauss was also particularly proud of the worker-safety measures employed on the bridge. Only eleven workers died during construction, with ten of the deaths occurring during one horrible accident. This number was significantly lower than usual for bridge work; the traditional formula was one life lost for every million spent. Twenty-four men died on the neighboring San Francisco-Oakland Bay Bridge, a number that was considered to be within acceptable safety limits. Before it became common practice, Strauss required his workers to wear hard hats. Safety lines were also required. Some of these ideas came from the subcontractors. The Roebling crew, 100 percent union, was comprised of experienced bridgemen, who initiated the hard-hat requirement, tried various rain gear and safety belts, and conducted training at the fort at Fort Point for their apprentices. Experiments were also tried with special diets to combat dizziness, sauerkraut juice to cure hangovers, and tinted sun-goggles to reduce glare. After several men working on the Marin towere were diagnosed with lead poisoning from riveting lead-painted sections of the tower inside the confined cell spaces, Strauss decided that extra precautions would be taken. Riveters were required to wear respirators and received physical examinations and blood tests. More importantly, the paint on the prefabricated tower cells was changed from red lead, which had caused the problems, to iron oxide. Strauss and his lead engineers did not brook any dissent. In contrast to other jobs, one of the most important safety measures on the Golden Gate Bridge was the strict enforcement of rules and regulations. It is said that any worker caught "horsing around," drinking on the bridge, or ignoring safety procedures was immediately dismissed.

Perhaps the most famous and expensive safety device ever used for a major construction job was the enormous safety net installed underneath the bridge's suspended structure as it was being built. Costing $130,000, the net was made of half-inch manila rope, woven into six-inch squares. Built onto a large steel frame that was wider than the bridge, the net moved out from the towers on roller clamps as work progressed, so that it eventually extended under the entire length of the construction between pylons. The purpose of the net was two-fold: one was to save lives, the other was to remove a degree of danger from the job, allowing the men to work more surely and rapidly, thereby saving money on the accelerated construction schedule. The net paid off handsomely in saving both time and lives. The span was completed in five months, and by the end of the job nineteen men had fallen into the net, dubbing themselves grateful members of the "Halfway to Hell Club."

Sadly, in addition to many injuries, eleven men did die during construction. One was killed by a traveling crane while working on the suspended structure. The second accident, which

killed ten men, occurred in the last stages of work when the men were pulling wooden forms off the concreted roadway. To remove these forms, the men worked underneath the deck on a traveling platform that hung from the floor girders by four clamps. When the safety bolts on this contraption came loose, the whole platform collapsed, falling into the net and dragging it into the water. The twelve men working on the platform plummeted into the water, with only two surviving. These were to be the last fatalities. Although unable to resist the force of a heavy falling structure, the net performed admirably and was subsequently used on other construction projects.

Another notable aspect of the project was Strauss' decision to preserve the old brick fort at Fort Point by spanning the historic site with a 319-foot arch bridge, incorporated into the south approach. Strauss argued to save the fort:

> While the old fort has no military value now, it remains nevertheless a fine example of the mason's art. Many had urged the razing of this venerable structure in order to make way for modern progress and provide an uninterrupted working area for the bridge during construction. In the writer's view it should be preserved and restored as a national monument, and that was the primary reason for the arch [Strauss, p. 62].

Completed in 1861, the fort at Fort Point is a "Third System" brick-and-masonry fortification with four tiers of cannon. The fort was designated a National Historic Site on October 16, 1970, and is also a major contributing resource to the Presidio of San Francisco National Historic Landmark district. The arched portion of the Golden Gate Bridge, which allowed for the preservation of the historic fort, stands as still another component of the bridge that attests to its design quality and sensitivity to the surrounding resources and environment.

On the most basic level, the bridge fulfills its function as the means of transit for tens of thousands of people daily. Vital to the daily commute of a sprawling, interconnected Bay Area region, the bridge carries many more vehicles than its builders projected and acts as an essential link in the nation's transportation system. The number of vehicles crossing the bridge during its first five years in operation was 25% greater than projected, and its 1970s use was three times what the engineers projected [Frank L. Stahl, "The Golden Gate Bridge: Backbone of a Transit System," pp.162-4 in Annals of the NY Academy of Science, *Long Span Bridges*, v.352]. Yet over and beyond its intended role, the bridge's elegantly functional design stands as one of the nation's most recognized accomplishments in architecture and engineering. More than a means to getting somewhere, the bridge is a destination in itself.

Architecture

The Golden Gate Bridge stands as a national architectural masterpiece representing the period that scholars have dubbed the "great age of the suspension bridge" [Condit, p. 154]. Architectural historian Richard Guy Wilson, noted expert in twentieth-century American architecture, describes the nation's interest and achievement in bridge building during the 1920s and 1930s as follows:

> Shrugging off the historical references that had dominated early bridge designs, American bridge engineers and architects of the 1920s and 1930s sought expression and meaning in the structure and its purpose. Thus the resulting bridges, like the George Washington, were also works of art, great pieces of sculpture that tugged at the base of emotions in their daring spanning of large voids. David B. Steinman, one of the leading bridge designers of the period, saw bridges as akin to religious ecstasy. He liked to quote from Franklin Delano Roosevelt's 1931 dedication speech at the George Washington Bridge: "there can be little doubt that in many ways the story of bridge-building is the story of civilization." The "ugly civilization" of the nineteenth and early twentieth centuries had been left behind, according to Steinman; an era of "beauty of bridges" had occurred: "instead of resorting to concealment of extraneous decoration, bridge designers are now directing their efforts toward producing the most beautiful designs in the steel itself, by developing and perfecting forms and proportions that will most beautifully express the dominant spirit of this material--its strength, its power, and its grace."
>
> Bridge-building was avidly followed by the American public throughout the 1930s. Of course, construction meant considerable work to Depression America, but its fascination went beyond that--it also represented heroism and accomplishment....
>
> Several thousand bridges of all sizes and types--reinforced concrete, metal arch, cantilever truss, and suspension--were executed in the United States in the 1920s and 1930s. In a sense this was the great age of American bridge building....

If the 1920s and 1930s constituted the "great age of American bridge building," the suspension bridge was clearly the great bridge type of the period [Wilson, p. 103].

The Golden Gate Bridge effectively conveyed a new suspension-bridge aesthetic that emphasized light, air, and simplicity, over solidity, complexity, and mass. Although the essential bridge design was dictated largely by practical engineering requirements, the consideration and inclusion of aesthetic design elements are what distinguished the completed appearance of the bridge from other suspension bridges. Once the functional requirements for the structure had been met, the project engineers, along with the consulting architect for the bridge, Irving F. Morrow (1884-1952), tried to find new shapes and forms that would transcend basic mathematical formulas and previous bridge work. The verticality, the stepped profile, and the prism, or faceting, motif of the various bridge components relate the design of the bridge to "modernist" stylistic features of the 1920s and 1930s that have been identified as "Art Deco." The prism, or faceting, motif appeared as early as 1925 on the Polish Pavilion at the Paris *L'Exposition des Arts Décoratifs et Industriels Modernes*; this exposition is generally recognized as the initial source of Art Deco design. Clean lines and spare structural expression also relate the design of the bridge to the "modernist" stylistic features of the period that have been identified as "Streamline Moderne" and "Machine Moderne." The style

of the bridge could be described as "Streamline Deco." recognizing both Art Deco and Streamline Moderne characteristics.

Architect Morrow insisted that the bridge be viewed as a whole and worked to integrate all the elements, creating a unity of design. As Morrow explained:

> The architectural design of the bridge is properly a single, all-inclusive problem embracing its appearance in every possible aspect. Form, texture, color illumination, etc., are each and every one only integral parts of one general conception. To isolate as a separate detail any one of these aspects of appearance would result in disharmony, or at best in failure to realize to the full the original intention of the design. As in every problem of design, the crucial matter is the artistic one of determining the effects to be attained" [Morrow, letter to Strauss, Bancroft Library, 1933].

Morrow effectively melded the structural exigencies of bridge construction with "modernist" stylistic effects of the period. Credit for this design achievement also belongs to engineer Charles A. Ellis (1876-1949) who devised a method of construction that did not rely heavily on the convention of diagonal bracing. Erected without conspicuous bracing above the deck, the bridge's twin towers, which stand 746 feet above water level, could be designed with a stepped profile, gracefully elongated and elegantly articulated by graded planes. This stepped profile, diminishing upward, enhances the visual effects of perspective, causing the towers to appear even taller and more impressive in scale than they actually are. Horizontal cross members, or struts, connect the two vertical shafts that comprise each tower. These struts, which are gradually thinner and more closely spaced toward the top of the towers, complement the effect of the stepped design and remain subordinate to the towers' attenuated verticality. In Morrow's words: "The use of portal bracing instead of diagonal bracing, and the positions of the bracing struts were determined with reference to appearance..." [Morrow, Notes on the Architecture, n.d.]. These struts are subtly articulated by relief courses of elongated triangular prisms, or facets, that appear not simply to decorate but to carry through the overall design verticality and to relate to the expression of structure and thrust. Elongated bracket-like elements, located at the corners of the struts and diminishing in size upward, help integrate the horizontal and refine the overall profile of the towers. The strut bracing creates open portals within each tower, which are graded in size and shape as the tower rises. These portals, which become shorter but wider as they ascend, lend a rising openness to the towers that enhances the height of the bridge; at the same time, the portals delicately take on a horizontal emphasis near the top, which slightly counters the towers' predominant vertical thrust. Further, the portals draw attention to and frame the spectacular landscape. Among great suspension bridges, the Golden Gate Bridge stands out not only for its size and setting, but for its design, which represents one of the most consummate artistic unions of style and structure in the history of bridge construction.

The dominance of the towers in the design of the bridge is due in large part to the relative thinness and simplicity of both the span and the system of cables and suspenders. These qualities imbue the structure with a spare elegance and lightness in design that are at the center of the artistic achievement embodied by the bridge. The design of basic structural elements is

integral to the style of the bridge; the dichotomy between essential structure and applied stylistic effects, which appears in so many nineteenth- and early twentieth-century bridges, has effectively been eliminated.

Morrow described his integration of stylistic effects and structural elements in this way: "Throughout the architectural aspects of the bridge, the effort was to secure beauty through the composition and proportioning of required features rather that through the addition of ornament" [Morrow, Notes on the Architecture, undated]. He explained further:

> Not only has no decoration in the ordinary sense been employed, but features which are commonly made ornamental on such structures, like handrails and electroliers, have been designed from structural steel shapes. This has led to greater consistency, because sophisticated ornamental details of this kind on a purely business-like steel structure are almost certain to prove inharmonious....Where contrasts of texture were desired, and where large undiversified surfaces were likely to be unsatisfactory in execution, intersecting plane vertical facets were used, scaled in size to the requirements of each situation. This device, which became a sort of typical decorative motif for the architecture, is susceptible to execution in either steel or concrete.

Specifically, it was Morrow who convinced the engineers to cover the towers with small riveted steel panels in a way that articulated vertical thrust and refined the towers' profile with stepped setbacks. Morrow also ensured that harmonious and unifying features appear throughout the design. The stepped profile, which is most apparent on the tower shafts and at the brackets located below the tower struts, is repeated in concrete both in the brackets of the internal arch of the pylons under the deck and in the design of the pylons visible above the roadbed. Further, the prominent faceting motif on the face plates over the tower struts is repeated in concrete on the tops of the anchorages, along the tops of the piers, and, again, in the top of the pylons visible above the roadway. Such design themes and motifs have been painstakingly extended to the smallest details. The steel door leading to the interior of the North Anchorage bears the same decorative faceting as the tower struts. Even the navigation light located on the South Pier fender is mounted on a stepped concrete shaft that resembles a miniature tower or pylon. This repetition of stepped setbacks and faceting reflects and emphasizes the angular Art Deco look of the towers, highlighting their thrust and grace. The consistent architectural imagery throughout the bridge design is a striking achievement.

The simplicity of "modernist" design of the period, sometimes identified stylistically as "moderne," extends to the bridge railings and light standards. The aluminum and steel hand railings and curbs are consistent in style with the bridge's spare lines and streamline design. The bridge was designed to appeal to pedestrians with its wide sidewalks, off-set bays, and curving walkways around the towers. Casting aside the original plans for elaborate wrought-metal hand railings and cast-metal street lamps, Morrow simplified the railing to a line of uniform posts, spaced slightly farther apart than was conventional. This wide spacing was intended to allow both pedestrians and drivers to enjoy the spectacular setting. Slender light standards, devoid of surface ornamentation, curve elegantly over the roadway and harmonize with the sleek stepped profiles of the towers.

After much consultation, Morrow also convinced the Bridge District authorities to paint the structure International Orange rather than the grey originally discussed. Morrow felt that the best color would be one of some contrast with the environment, to emphasize the magnitude and scale of the bridge. Thus the warm orange of the bridge is strikingly offset by the blue sky and water, the gray fog, and the green or golden hills of the surrounding landscape.

Morrow realized that every design decision was essential to the ultimate success of the bridge's design. He stated his position as follows:

> In view of the tremendous scale and dignity of the Golden Gate Bridge, the preservation of unity is of prime importance. Small effects, cleverness, trickiness will prove disintegrating and unworthy. All treatment must aim at the utmost breadth and simplicity of effect [Report on Color and Lighting, April 6, 1935, p. 3].

Morrow's prescience and persistence on architectural matters assured the integration of style and structure for which the bridge is celebrated.

Leading architectural historians and critics have universally extolled the design of the bridge and recognized its preeminent significance: "The great length of the main span, the setting, and the simplicity and unity of the design combine to make the Golden Gate the classic of modern suspension bridges" [Condit, p. 237]. Scholarly praise of the bridge has even verged on the poetic:

> The Golden Gate Bridge is one of the great designs of the period, a monument of the machine moderne style. As an experience it is overwhelming and moving. The approach from either side is through natural landscape, the brown hills of Marin county or the green park of the Presidio; then the setback towers of the bridge soar upward into view. On the bridge the landmasses recede, the buildings of San Francisco and the suburbs across the bay diminish in size. The sky is high overhead and the water, with its ships like toys, miniature models, far below. The tires of passing automobiles sing, the cables glisten as they swing down to the roadway, and for a brief instant nature and the machine merge [Wilson, p. 110].

The Golden Gate Bridge was designated State of California Landmark No. 974 (CAL/OHP 1990c:107) and a Civil Engineering Landmark by the American Society of Civil Engineers. Further, the bridge was determined eligible for individual listing in the National Register of Historic Places in 1980 under National Register Criteria A, B, and C.

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Additional sources

Also consulted were architectural plans and construction drawings by Strauss & Paine, ca. 1936; by Milton T. Pflueger, 1957; and by Hertzka and Knowles, 1965. All on file with the Golden Gate Bridge, Highway and Transportation District. Knowledgeable Highway and Transportation District staff include: Pete Schneider, Dan Mohn, Merv Giacomini, Bob Warren, and Tyrone Jones.

Previous documentation on file (NPS):

___ Preliminary Determination of Individual Listing (36 CFR 67) has been requested.
___ Previously Listed in the National Register.
_X_ Previously Determined Eligible by the National Register.
___ Designated a National Historic Landmark.
___ Recorded by Historic American Buildings Survey: #
_X_ Recorded by Historic American Engineering Record: # CA-31

Primary Location of Additional Data:

___ State Historic Preservation Office
_X_ Other State Agency
___ Federal Agency
___ Local Government
___ University
_X_ Other (Specify Repository):

California Department of Transportation

Golden Gate Bridge, Highway, and Transportation District

Cultural Resources Office
National Park Service
600 Harrison Street, Suite 600
San Francisco, CA 94107-1372

10. GEOGRAPHICAL DATA

Acreage of Property: approximately 35 acres

UTM References:

	Zone	Easting	Northing
A	10	548700	4184290
B	10	546790	4184210
C	10	547980	4183870
D	10	547510	4183740
E	10	546100	4184520
F	10	545870	4187000

Verbal Boundary Description:

Boundaries are delineated on a 1973 San Francisco North Quadrangle 7.5 minute topographic map, prepared by the U.S. Geological Survey (scale 1:24,000). In addition, a 1993 sketch plan of the Toll Plaza has been included to provide a more detailed representation of the boundary in this area.

Starting from the east, the boundary includes the easternmost reaches of the Presidio approach road. Here the Presidio approach road actually begins as two separate approach roads--the Doyle Drive approach and the Richardson Avenue approach--that ultimately join; both approaches are included in the boundary as integral parts of the Presidio approach road. Specifically, the boundary for the Doyle Drive approach starts across Doyle Drive at the east boundary of the Presidio of San Francisco (along Lyon Street); the boundary then runs along either side of the Doyle Drive approach, as the approach leads west toward the Bridge. Similarly, the boundary for the Richardson Avenue approach starts across the east boundary of the Presidio (along Lyon Street); the boundary then runs along either side of the Richardson Avenue approach, as the approach leads northwest toward the Bridge. Where the Doyle Drive approach and Richardson Avenue approach join, the boundary continues along either side of the approach road, now identified as U.S. Highway 101 (State Highway 480). The approach road heads in a northwesterly direction across the Presidio to the Toll Plaza.

The Toll Plaza area is formed by a widening of the roadway; the boundary encompasses the Toll Plaza area by following this widening and by including the Toll Plaza Building and the Round House, two buildings integral to the Toll Plaza; and the structural components of the toll plaza area, including the underpass, rooms on either side of the underpass, and retaining walls on the east side. Beyond the Toll Plaza, the boundary continues on each side of the bridge structure as it spans the Golden Gate Strait. At the northern end of the Bridge, the boundary terminates with the north abutment, where the bridge structure meets the State-owned portion of Highway 101 in Marin County.

Boundary Justification:

The boundary of the Golden Gate Bridge National Historic Landmark consists of the bridge structure itself and the mostly elevated Presidio approach road. The boundary encompasses all construction that was planned and developed by the Golden Gate Bridge, Highway and Transportation District (GGBHTD) through 1938. The Landmark boundary is not identical to the current GGBHTD permit boundary, because the permit boundary includes later accretions of land ceded by the Army, along with more recent buildings that have become part of the Bridge District.

The Presidio approach road is included because it constitutes a primary part of the historic construction project. Vital to the success of the Bridge, this approach road was built by the Bridge District and the City of San Francisco concurrently with the construction of the bridge proper. The various components of the Presidio approach road exhibit the same design elements as the bridge itself, including the distinctive light standards, curbs, and handrails. The Presidio approach road has been determined to begin at the east boundary of the Presidio of San Francisco (along Lyon Street) based on the historic jurisdiction of the Bridge District and based on the commencement there of the design elements that unify the entire approach road and bridge structure.

In addition to the bridge structure and Presidio approach road, the boundary includes two ancillary buildings, the Toll Plaza Building and the Round House; both buildings stand in the area of the Toll Plaza. The Toll Plaza Building, historically identified as the Administration and Maintenance Building, was part of the original Bridge construction project. The toll plaza building forms the western boundary of the toll plaza and is integrally connected with other elements of the toll plaza, including the canopy covering the toll booths, basement-level rooms and the underpass beneath the toll plaza. Due to substantial nonhistoric alterations, however, the Toll Plaza Building in its current condition does not possess a high degree of integrity. Because of its structural integration with the toll plaza, it is included within the boundary as a noncontributing building.

The Round House was constructed by the GGBHD to accommodate Bridge District employees and visitors as a restaurant and comfort station. It was completed in 1938, the year after the opening of the Bridge. The design of the building maintains the "Streamline Moderne" feel of Morrow's original Administration and Maintenance Building and harmonizes with the modern design character of the approach and bridge structure.

11. FORM PREPARED BY

Name/Title: Susan Goldstein, Intern Historian
Paul Bryant Alley, Architectural Historian
Cultural Resources Team
National Park Service
Pacific Great Basin System Support Office
600 Harrison Street, Suite 600
San Francisco, CA 94107-1372

Telephone: (415) 427-1404

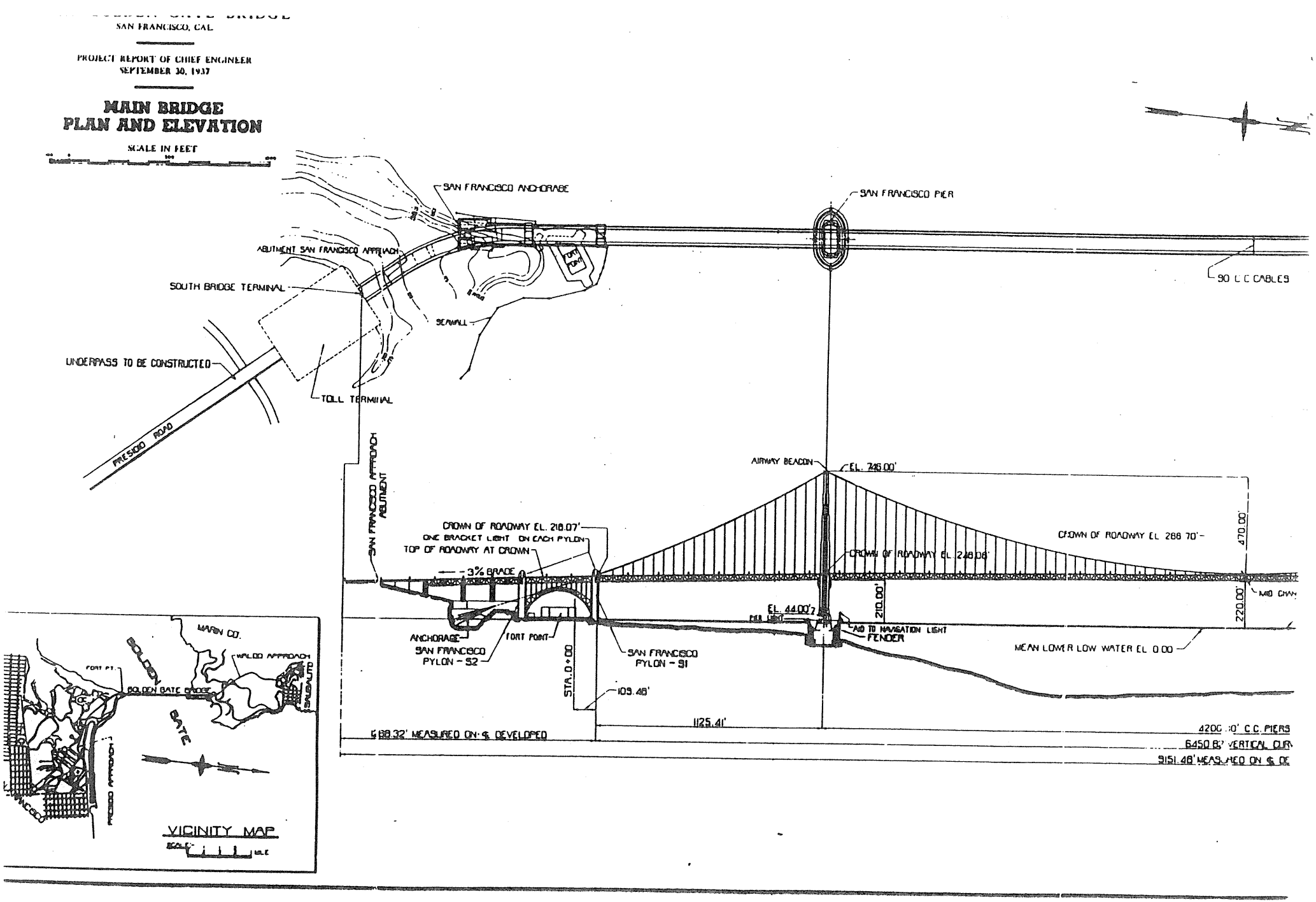


Figure 1: Golden Gate Bridge Plan and Elevation. Project Report of Chief Engineer, 30 September 1937. [left half of complete sheet]

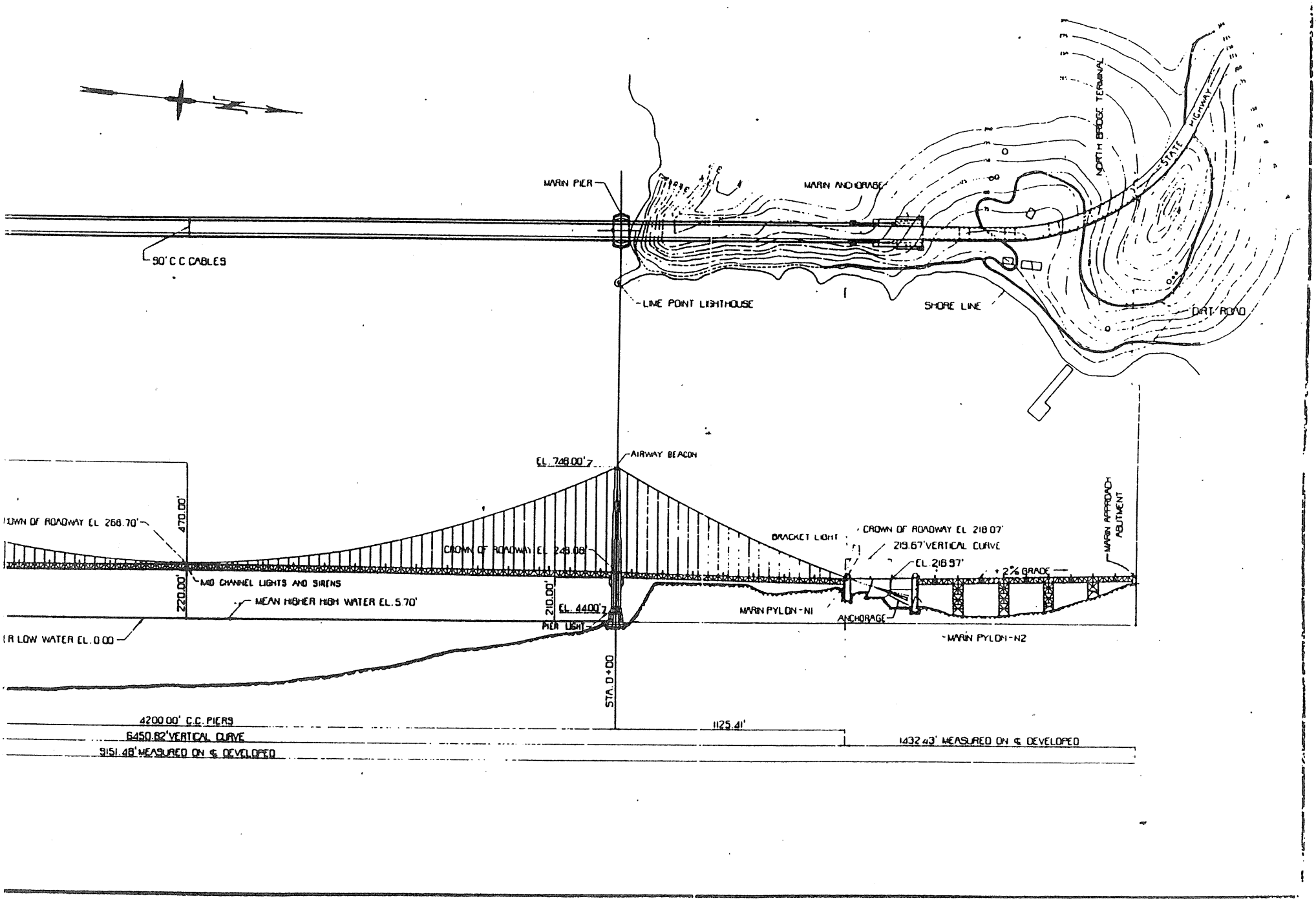
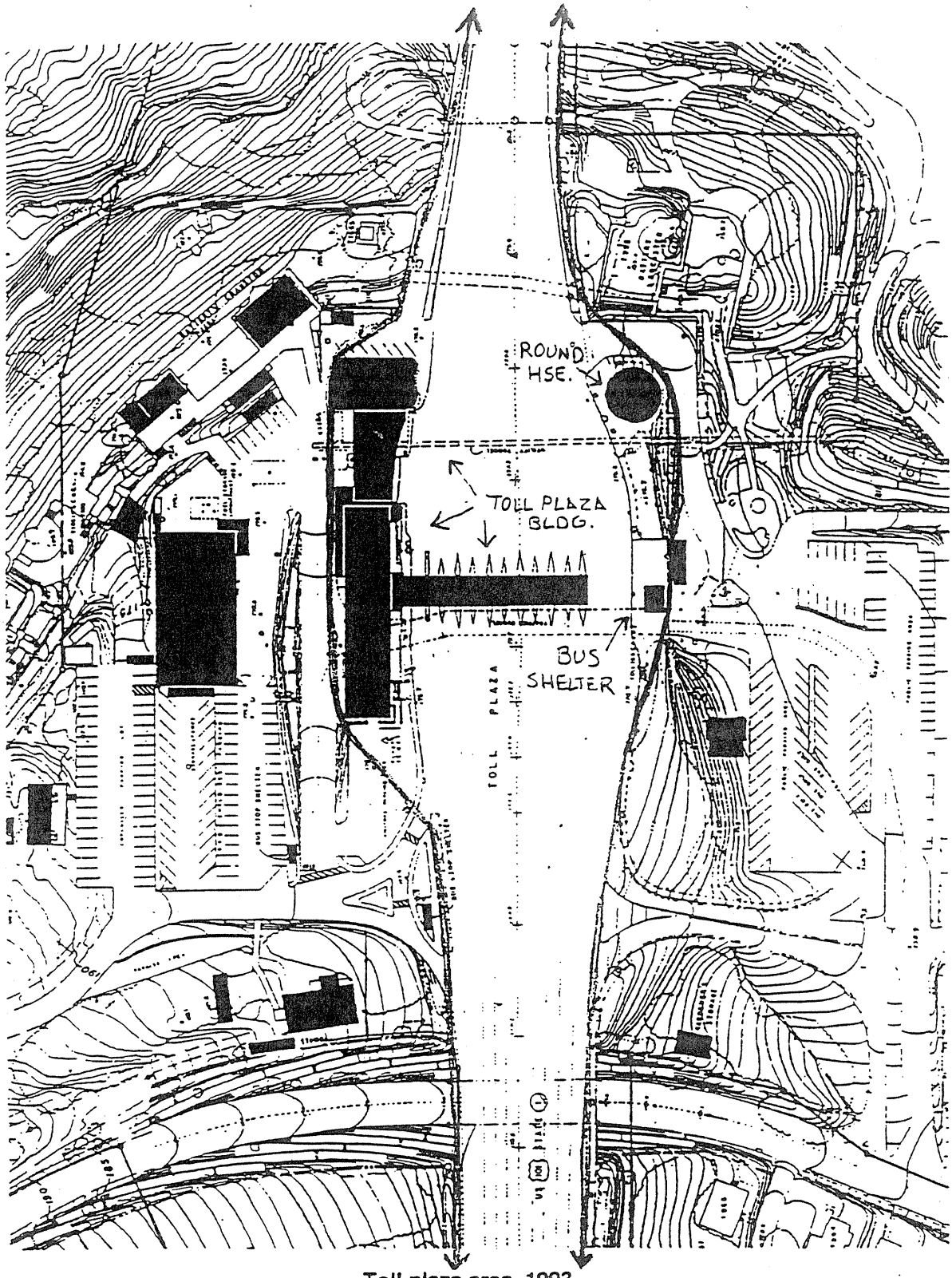


Figure 2: Golden Gate Bridge Plan and Elevation. Project Report of Chief Engineer, 30 September 1937. [right half of sheet]



Toll plaza area, 1993

Figure 4: "Proposed Widening of the Golden Gate Toll Plaza Approach, Topographic Map Plaza Area." 20 November 1961, revised 2 July 1982. Photo Map Survey Co., Sebastopol, California.

Bridge No.	County	Route	Postmile	Name	City	Year Blt.	NR Status
27 0040L	Marin	101	0.89	WALDO TUNNEL	Sausalito	1937	**2**
27 0040R	Marin	101	0.89	WALDO TUNNEL	Sausalito	1954	**2**
27 0042	Marin	101	3.33	WALDO UNDERCROSSING	Sausalito	1943	5
27 0050	Marin	101	11.41	COLEMAN SCHOOL POC	San Rafael	1969	5
27 0052	Marin	101	0.01	GOLDEN GATE BR		1937	**2**
27 0054	Marin	1	47.6	FALLON CREEK		2001	5
27 0056	Marin	1	29.85	TOMASINI CANYON		1925	5
27 0059	Marin	101	14.71	LUCAS VALLEY ROAD UC	San Rafael	1952	5
27 0060F	Marin	101	9.96	S101-E580 CONNECTOR OC	San Rafael	1953	5
27 0063R	Marin	101	1.09	WALDO SIDEHILL VIADUCT	Sausalito	1954	5
27 0064R	Marin	101	1.19	WALDO SIDEHILL VIADUCT	Sausalito	1954	5
27 0066	Marin	101	1.52	SPENCER AVENUE OC	Sausalito	1954	5
27 0067	Marin	101	1.68	MONTE MAR DRIVE UC	Sausalito	1954	5
27 0069	Marin	131	5.69	ROUTE131/101 SEPARATION		1956	5
27 0070	Marin	580	2.63	SAN QUENTIN STREET UC	San Rafael	1957	5
27 0072	Marin	101	7.37	TAMALPAIS DRIVE OC	Corte Madera	1957	5
27 0073L	Marin	580	4.5	BELLAM BOULEVARD UC	San Rafael	1959	5
27 0073R	Marin	580	4.5	BELLAM BOULEVARD UC	San Rafael	1959	5
27 0074	Marin	580	3.29	SIR FRANCIS DRAKE BLV OC	San Rafael	1957	5
27 0076	Marin	101	4.75	STRAWBERRY PEDESTRIAN OC	Corte Madera	1957	5
27 0077	Marin	1	12.37	ESKOOT CREEK		1957	5
27 0078	Marin	101	8.29	GREENBRAE PEDESTRIAN OC	Larkspur	1959	5
27 0079L	Marin	37	13.77	ATHERTON AVENUE UC		1959	5
27 0079R	Marin	37	13.77	ATHERTON AVENUE UC		1959	5
27 0080	Marin	101	13.71	FREITAS PARKWAY OC	San Rafael	1960	5
27 0081F	Marin	37	11.23	W37-N101 CONNECTOR OH	Novato	1964	5
27 0081H	Marin	37	11.2	IGNACIO SEPARATION & OH	Novato	1964	5
27 0082	Marin	101	15.57	MILLER CREEK ROAD OC		1961	5
27 0083	Marin	101	18.09	IGNACIO BOULEVARD OC		1964	5
27 0084	Marin	101	16.64	PACHECO CREEK OC		1964	5
27 0085F	Marin	101	18.88	S101-E37 CONNECTOR OC	Novato	1964	5
27 0086K	Marin	101	18.94	SOUTH NOVATO BLVD OC	Novato	1964	5
27 0088	Marin	101	20.19	ROWLAND BOULEVARD OC	Novato	1974	5
27 0089L	Marin	101	20.52	NOVATO CREEK	Novato	1974	5
27 0089R	Marin	101	20.51	NOVATO CREEK	Novato	1974	5
27 0090L	Marin	101	20.89	FRANKLIN AVE OVERHEAD	Novato	1974	5
27 0090R	Marin	101	20.88	FRANKLIN AVE OVERHEAD	Novato	1974	5
27 0091	Marin	101	21.11	DE LONG AVENUE OC	Novato	1974	5
27 0092L	Marin	101	21.47	OLIVE AVENUE UC	Novato	1974	5

Bridge No.	County	Route	Postmile	Name	City	Year Blt.	NR Status
34 0048	San Francisco	101	3.96	18TH STREET POC	San Francisco	1953	5
34 0050	San Francisco	101	3.22	25TH ST POC	San Francisco	1953	5
34 0051	San Francisco	101	3.53	22ND STREET POC	San Francisco	1953	5
34 0056	San Francisco	101	1.11	PAUL AVENUE UC	San Francisco	1954	5
34 0057L	San Francisco	101	1.41	BACON STREET UC	San Francisco	1954	5
34 0057R	San Francisco	101	1.41	BACON STREET UC	San Francisco	1960	5
34 0060	San Francisco	101	0.01	COUNTY LINE UC	San Francisco	1954	5
34 0061	San Francisco	101	0.18	BLANKEN AVENUE UC	San Francisco	1954	5
34 0062	San Francisco	101	9.71	LINCOLN BLVD UC	San Francisco	1936	1
34 0063S	San Francisco	101	2.2	ALEMANY CIRCLE UC	San Francisco	1950	5
34 0064K	San Francisco	101	2	ALEMANY CIRCLE UC	San Francisco	1954	5
34 0069	San Francisco	101	9.85	TOLL PLAZA UC	San Francisco	1936	1
34 0070	San Francisco	101	1.63	ALEMANY SEP (I 280-101)	San Francisco	1960	5
34 0070E	San Francisco	280	4.07	ALEMANY SEPR (280S/101N)	San Francisco	1966	5
34 0070H	San Francisco	101	1.48	ALEMANY CON(280-101S,WU)	San Francisco	1960	5
34 0071F	San Francisco	101	1.94	ALEMANY BLVD UC	San Francisco	1960	5
34 0073	San Francisco	280	3.87	ALEMANY BLVD OC	San Francisco	1963	5
34 0074	San Francisco	280	3.28	ALEMANY BLVD OC	San Francisco	1963	5
34 0075	San Francisco	280	3.23	JUSTIN DRIVE OC	San Francisco	1963	5
34 0076	San Francisco	280	3.53	ST MARYS POC	San Francisco	1963	5
34 0077	San Francisco	101	4.25	CENTRAL VIADUCT	San Francisco	1955	5
34 0078	San Francisco	280	2.62	THERESA ST POC	San Francisco	1964	5
34 0079K	San Francisco	280	2.72	SAN JOSE AVENUE UC	San Francisco	1964	5
34 0079L	San Francisco	280	2.7	SAN JOSE AVENUE UC	San Francisco	1964	5
34 0079R	San Francisco	280	2.7	SAN JOSE AVENUE UC	San Francisco	1964	5
34 0079S	San Francisco	280	2.69	SAN JOSE AVENUE UC	San Francisco	1964	5
34 0080	San Francisco	280	2.75	BRANCH EAST UC	San Francisco	1964	5
34 0081	San Francisco	280	2.69	MONTEREY BLV ONRAMP OC	San Francisco	1964	5
34 0082	San Francisco	280	2.21	PAULDING ST OC	San Francisco	1964	5
34 0083	San Francisco	280	2.47	BADEN STREET OC	San Francisco	1964	5
34 0085	San Francisco	280	0.71	ROUTE 280/82 SEPARATION	San Francisco	1964	5
34 0085S	San Francisco	280	0.75	SICKLES AVE UC	San Francisco	1964	5
34 0086	San Francisco	280	0.9	SAN JOSE AV OC	San Francisco	1964	5
34 0087	San Francisco	280	1.46	SAN JOSE AV OC	San Francisco	1964	5
34 0088	San Francisco	101	4.12	BAYSHORE VIADUCT	San Francisco	1955	5
34 0089	San Francisco	280	2.89	LYELL ST UC	San Francisco	1964	5
34 0090	San Francisco	280	2.82	MONTEREY BLVD EB OC	San Francisco	1964	5
34 0091	San Francisco	280	2.87	MONTEREY BLVD WB OC	San Francisco	1964	5
34 0092Y	San Francisco	280	2.9	BOSWORTH STREET UC	San Francisco	1964	5

APPENDIX E: Agency Correspondence re: Golden Gate Bridge

REQUEST FOR DETERMINATION OF ELIGIBILITY

FOR THE

GOLDEN GATE BRIDGE

TABLE OF CONTENTS

I. INTRODUCTION

Between 1969 and 1978, the Golden Gate Bridge Highway and Transportation District and the California Department of Transportation (CALTRANS) conducted engineering studies of the condition of the roadway slab on the Golden Gate Bridge. The bridge spans the entrance to San Francisco Bay between San Francisco and Marin Counties (see Exhibit 1). The studies resulted in a determination that the roadway is in no danger of immediate failure, but that unchecked deterioration will lead to unacceptably high maintenance cost to prevent future failure. The studies further found that the existing slab could be rehabilitated for about $10 million (1978), which would extend its useful life for 12-15 years, or the slab could be replaced for about $35 million, which would provide a serviceable roadway for another 50 years. Either rehabilitation or replacement of the slab would take approximately four years. The recommendation of the engineering studies is to replace the roadway slab.

Since a Federal grant has been obtained to pay for the project, the National Historic Preservation Act of 1966 (NHPA) and Executive Order 11593 are applicable. The Golden Gate Bridge is not presently listed on the National Register of Historic Places; however, pursuant to the guidelines implementing procedures with respect to NHPA and E.O. 11593, the Federal Highway Administration (FHWA) and the State

Historic Preservation Officer (SHPO) have applied the National Register Criteria to the bridge to determine its listing eligibility. In March 1979, following consultations and field reviews, the FHWA and SHPO agreed that the bridge is eligible for inclusion on the National Register.

THEREFORE: in compliance with Section 63.3, Federal Register, Vol. 42, No. 183, applicable when FHWA and SHPO agree a property is eligible, the following information is hereby submitted to the Keeper of the National Register for determination of eligibility.

II. THE ELIGIBLE PROPERTY

A. Background

The physical barrier created by San Francisco Bay has always figured in the sequence of development of the Bay Area. Those areas which lacked convenient access via land or water to the metropolitan center developed later and grew more slowly. As the San Francisco Bay Area developed, it was inevitable that pressure would mount to bridge the Golden Gate to provide for the expansion of growth northward from San Francisco. Marin County and regions further north had been inhabited since the early settlement of the Bay Area, but not until the advent of the automobile and the feasibility of Marin County as a bedroom community for San Francisco did a span across the Gate become a serious topic. Ferryboats had plied the bay from San Francisco to Sausalito, in southern Marin, since the late 19th century, but by 1919, the service had been rendered inadequate to accommodate the demand for the passage of cars bound to and from Marin.

In 1918, the first feasibility studies for a Golden Gate Bridge were undertaken. During the next 15 years, as the burden upon ferry service increased, political, business, and civic interests both north and south of the Gate joined to study the magnitude of the engineering

feat that lay ahead. These years saw the formation of the Bridging the Golden Gate Association, the passage of the Golden Gate Bridge and Highway District Act, the formation of the Golden Gate Bridge and Highway District, and the commencement of the planning and designing of the bridge. The successful passage of a bond act in 1930 to fund construction brought the probability of construction nearer fruition. Finally, in 1935, after several delays due to litigation, construction was commenced. On May 28, 1937, the Golden Gate Bridge was open to traffic.

B. Description

The Golden Gate Bridge is one of the world's greatest suspension bridges, and, until the Verranzano Narrows Bridge (New York) was erected in 1964, contained the longest single span between towers of any bridge in the world. The bridge is 8450 feet long from abutment to abutment, exclusive of approaches, and its two towers rise above the water to a height of 746 feet. Between these towers a single 4200-foot span bridges the entrance to San Francisco Bay. At mid-span, the bridge is 220 feet above the water, high enough to let any ship afloat pass beneath, although several modern day aircraft carriers must tilt their radar antennae.

Since the Golden Gate is a suspension bridge, the entire roadway is "suspended" at 50-foot intervals by four 2½-inch steel ropes which are attached above to two steel cables which pass over the top of the towers and fasten to concrete blocks on shore. These two huge cables are 7650 feet long, 36½ inches in diameter, and contain over 27,000 parallel wires approximately ¼-inch thick. The bridge has six lanes and two sidewalks and is painted red-orange which contrasts with the colors of the Bay and the shore (see Exhibits 2, 3, and 4).

Since its opening, traffic volumes on the bridge have risen from 9000 vehicles per day (1937) to approximately 100,000 vehicles per day (1978). Since the Bridge District has no taxing power, the entire operation is funded from revenues derived from tolls. Over the years, the toll has returned to its original $1.00 level for a round trip. The original bonded indebtedness incurred to construct the bridge was also paid from the tolls. In 1971, the bonds were fully redeemed.

The affairs of the Golden Gate Bridge, Highway and Transportation District are managed by a Board of Directors representing San Francisco, Marin, Sonoma, Napa, Mendocino, and Del Norte Counties. The members

of the Board are selected by the Boards of Supervisors of the respective counties. Today, the Bridge District not only operates the Bridge itself, but also owns a fleet of modern buses, which carry passengers from Marin to San Francisco. In recent years the District also purchased ferryboats, which ply the Bay from the San Francisco embarcadero to Marin County. Thus, ironically, the bridge which was constructed to replace the ferries, is today the owner of a ferry fleet.

C. Significance and Eligibility

The Golden Gate Bridge is not presently listed on the National Register of Historic Places, although it is included on the Historical American Engineering Register. The Secretary of the Interior has established a National Register Criteria which must be applied to heritage resources which are affected by federally funded projects. The National Register Criteria states that:

> The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects of State and local importance that possess integrity of location design, setting, materials, workmanship, feeling, and association, and:
> 1. That are associated with events that have made a significant contribution to the broad patterns of our history; or

2. That are associated with the lives of persons significant in our past; or
3. That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
4. That have yielded, or may be likely to yield, information important in prehistory or history.

Measured against the National Register Criteria, the bridge has been determined to be eligible for inclusion on the National Register on the basis of three of the four criteria mentioned. This determination has been made by the Federal Highway Administration in consultation with the State Historic Preservation Officer.

CRITERION 1: EVENTS AND SETTING

The entrance to San Francisco Bay has played a significant role in Western history since the days of Spanish exploration. Commerce to and from the San Francisco Bay Area was channeled through the Golden Gate long before overland transportation was possible. The mile-wide passage between present day Marin and San Francisco Counties witnessed the passage of the ships of every maritime nation from the Spanish era through Mexican, California Republic, and finally, American dominion. The defense of the United States has been inextricably

interwoven with the history of the Bay. For many soldiers and sailors in every war since the 19th Century, the Golden Gate was the last sight on departure and the first sight on return.

The Golden Gate is fortunate in having a scenic setting which is world famous. San Francisco is one of the world's most fascinating cities. The millions of tourists who go there every year would be sufficient testimony of its allure. Yet, the fact that San Francisco is so well known to millions who have never been here is even better evidence; and, if asked what they know of San Francisco, most would say, Chinatown, the Cable Cars, and the Golden Gate Bridge. So great is the fame of the portals to San Francisco Bay, that when one refers to "the City by the Golden Gate," a stranger, a world away, knows what city is meant.

Still, the bridge is more than an adornment. It is so easy to think of the bridge as a mile long span across a narrow strait, that one forgets it is a link in a highway stretching from Canada to Mexico. The Golden Gate Bridge is the southern gateway to the Redwood Empire, with its thousand year old trees; to the world renowned California wine country, ninety miles away, which inspired the likes of Robert

Louis Stevenson and Jack London. Finally, the Golden Gate is the gateway to Asia with its billion people. It is a symbol of the international bonds between America and Asia in much the same way that the Statue of Liberty represents the link between America and Europe.

CRITERION 2: ASSOCIATION WITH THE LIFE OF A SIGNIFICANT PERSON

The Golden Gate Bridge was designed and constructed under the supervision of Joseph B. Strauss, Chief Engineer of the Golden Gate Bridge and Highway District from 1929 to 1937. Born in Cincinnati, he was graduated from the University of Cincinnati in 1893. Later that university conferred on him the Degree of Doctor of Science. In 1894, he organized and became president of the Strauss Engineering Corporation. Since that time he was in charge of design and construction of bridges all over the world. To his credit stand more than four hundred great steel bridges.

He designed the Republican Bridge at Leningrad (formerly St. Petersburg), Russia; the Longview, Washington, bridge across the Columbia River; the beautiful bascule span of the famous Arlington Memorial Bridge at Washington D.C.; and many others. As Consulting

Engineer to the Port of New York Authority, he shared credit for the Hudson River Bridge and the Bayonne Arch at Bayonne, New Jersey. He was a member of many important societies of engineers in the United States and was consulting engineer for half a dozen foreign governments stretched around the globe from the Republic of Panama to Egypt.

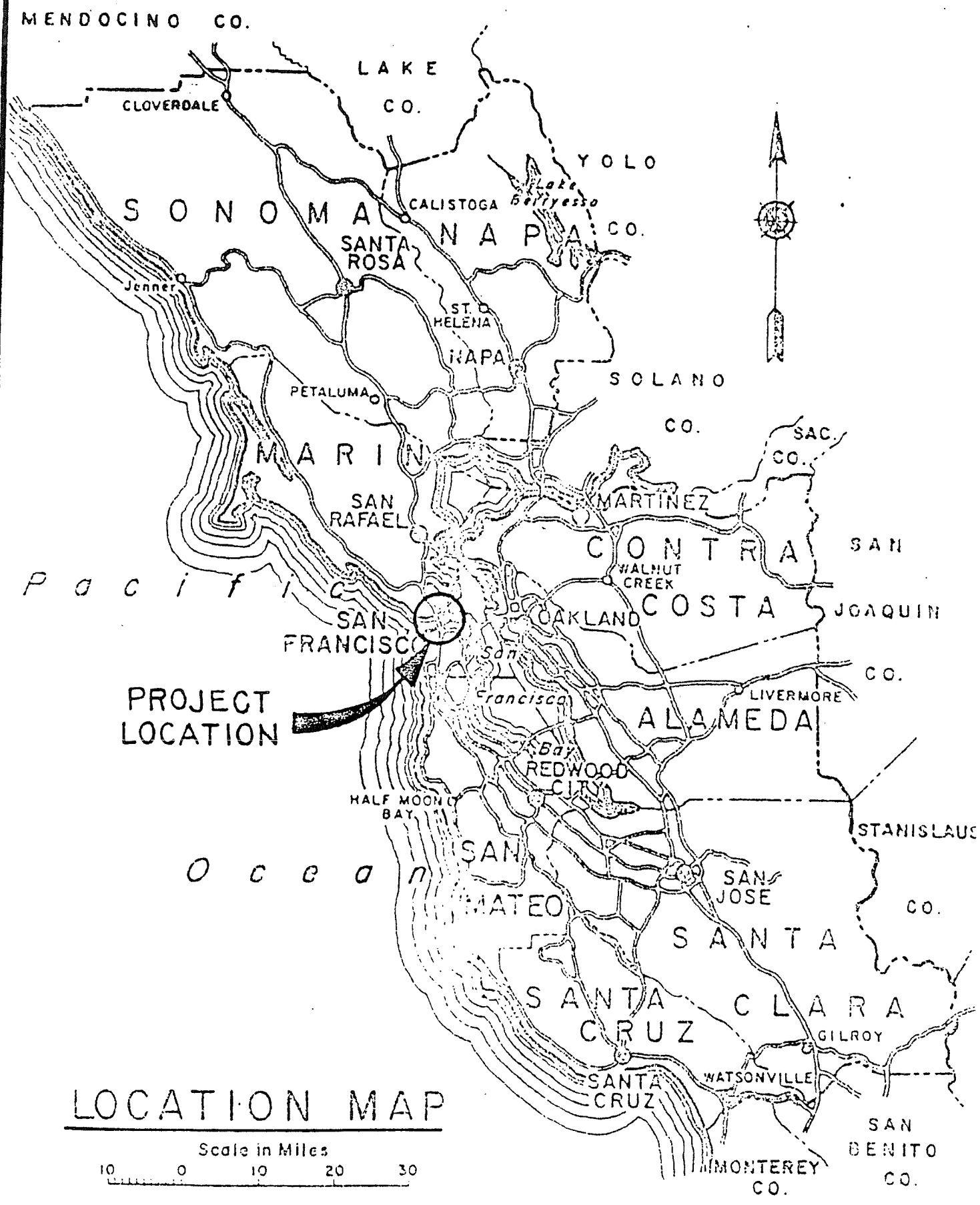
CRITERION 3: QUALITY OF THE STRUCTURE

The structural attributes of the Golden Gate Bridge which make it one of the marvels of the engineering world have been previously described and discussed; therefore, the significance of the bridge with respect to design, size, and type will not be further cited here as evidence of its eligibility for inclusion on the National Register. (Also see Exhibit 4 - Bridge Statistics).

CRITERION 4: YIELDS INFORMATION ON HISTORY OR PREHISTORY

Not Applicable.

The National Historic Preservation Act declares that the spirit and direction of the Nation are founded upon its past and reflected in its great works. Celebrated in history, adventure, song, and poetry, the Golden Gate Bridge is the very essence of this spirit.

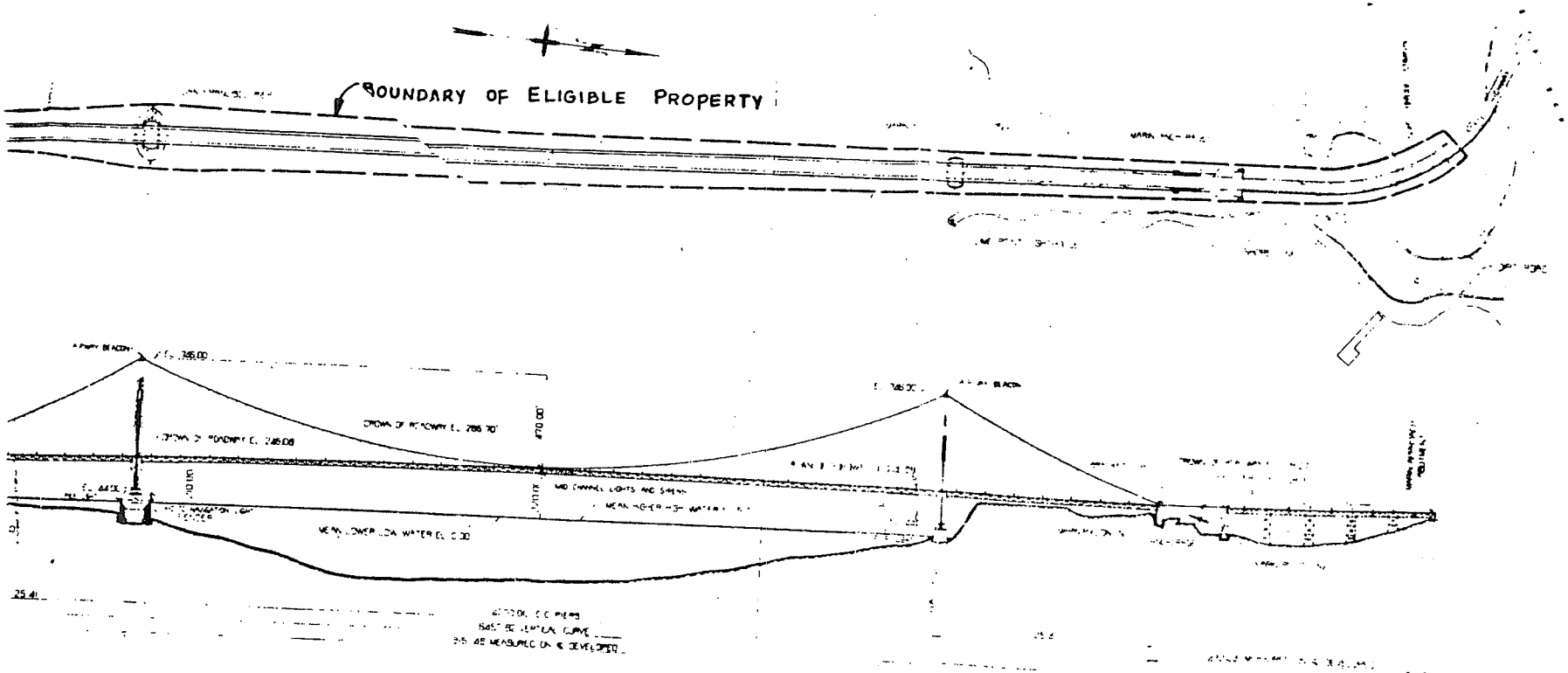


LOCATION MAP

Scale in Miles

10 0 10 20 30

EXHIBIT 2



THE GOLDEN GATE BRIDGE

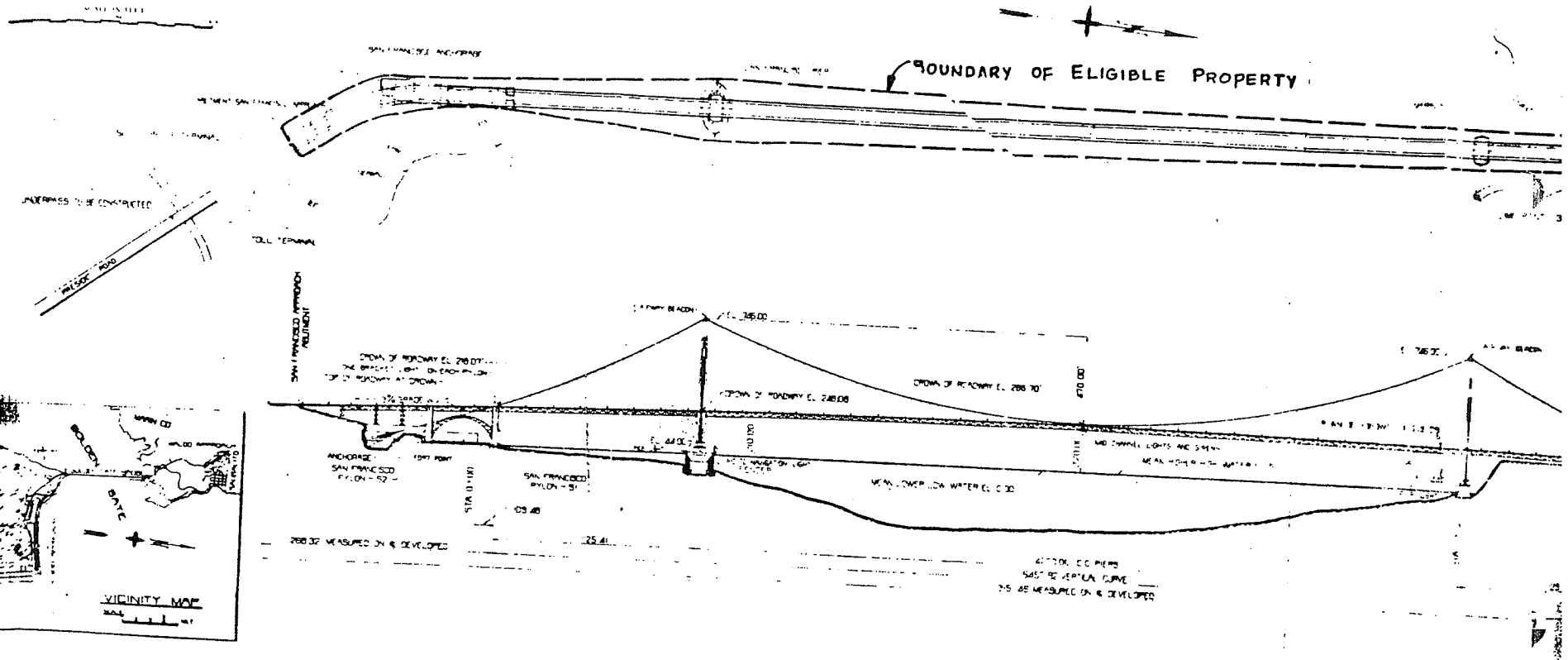
SAN FRANCISCO, CALIFORNIA

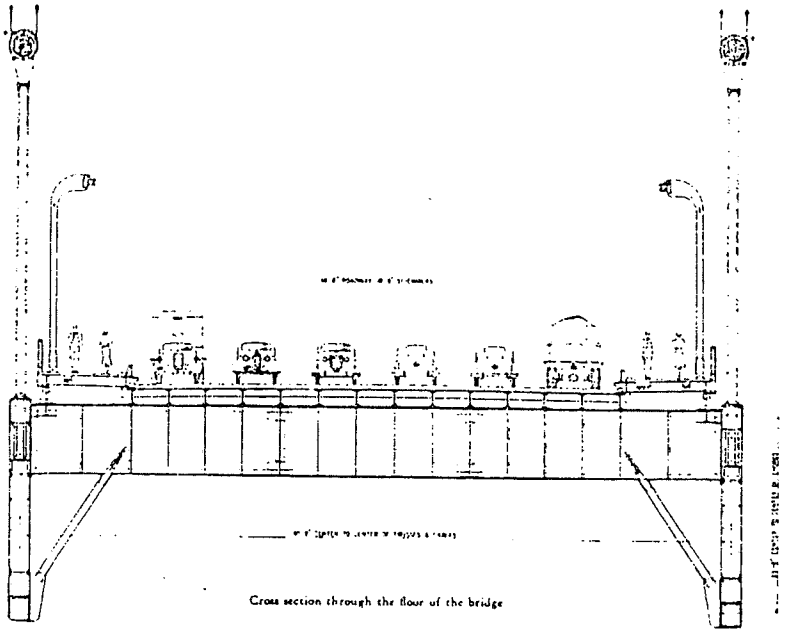
DISTRICT ENGINEER'S OFFICE

OCTOBER 16, 1937

MAIN BRIDGE
PLAN AND ELEVATION

SCALE AS SHOWN



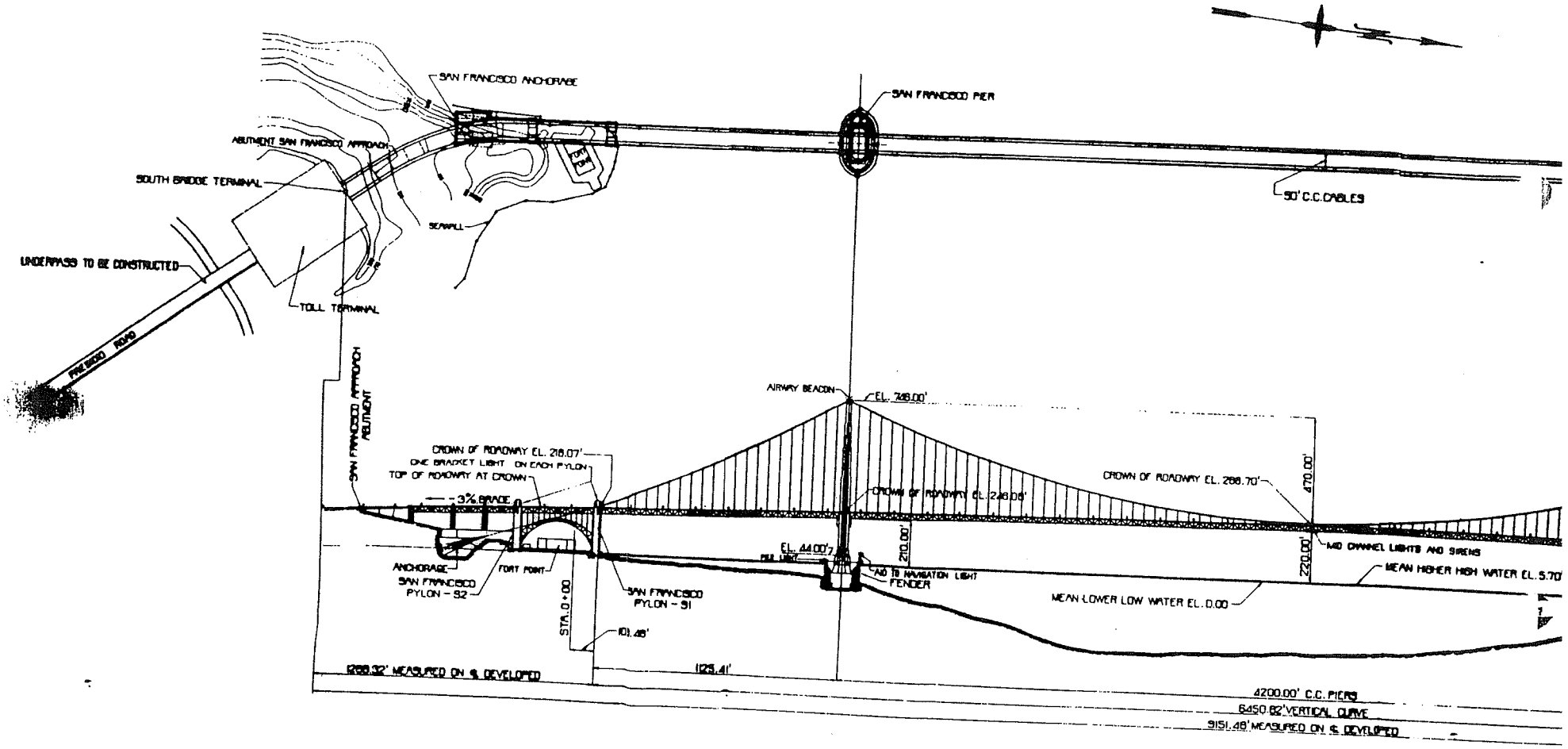


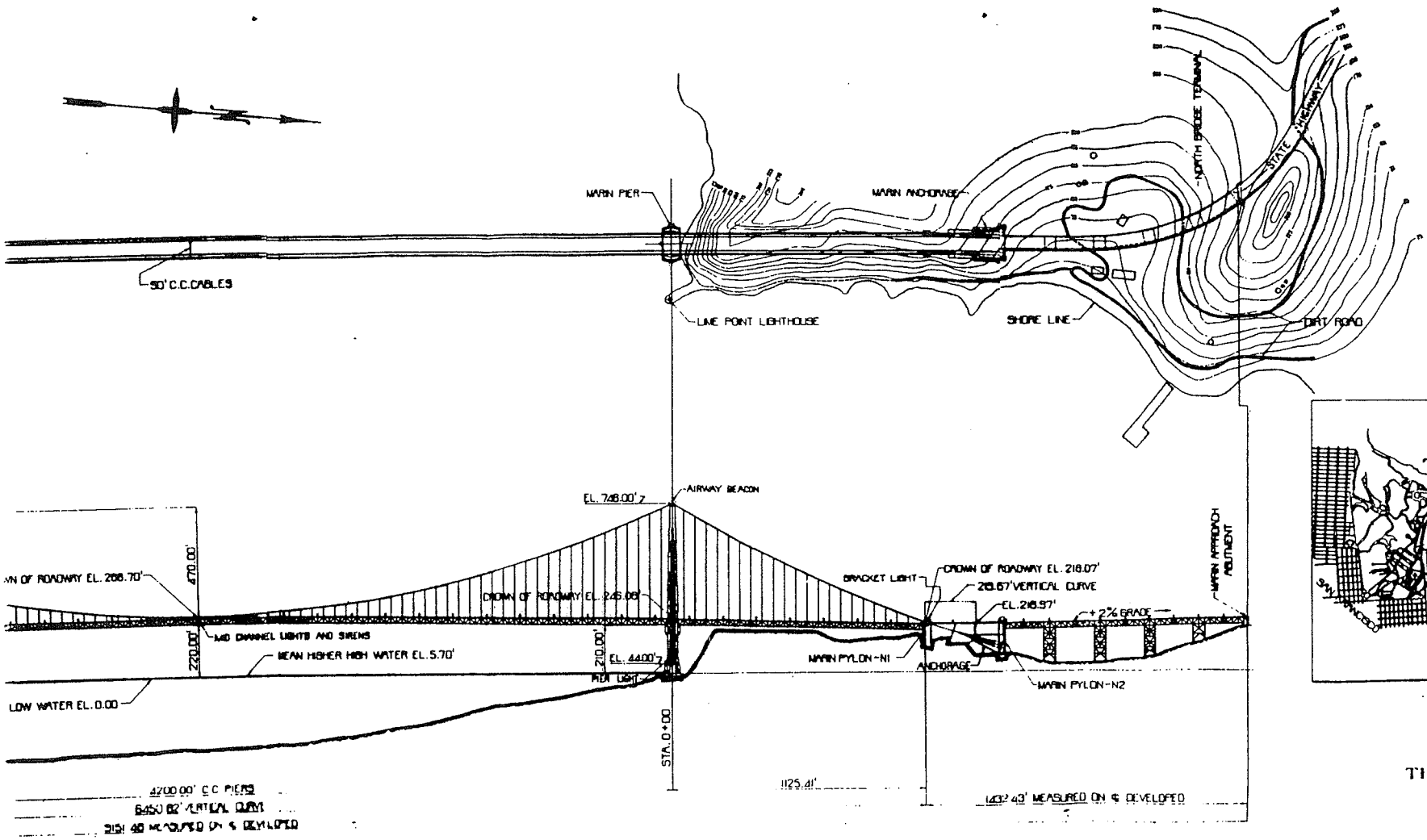
Cross section through the floor of the bridge

GOLDEN GATE BRIDGE
CROSS SECTION

Total Length of Bridge including Approach Structure	8,981 ft	2,737	m
Length of Suspended Structure	6,450 ft	1,966	m
Length of Main Span	4,200 ft	1,280	m
Length of Each Side Span	1,125 ft	343	m
Width of Bridge	90 ft	27.4	m
Width of Roadway Between Curbs	60 ft	18.3	m
Clearance Above Mean Higher High Water	220 ft	67	m
Live Load Capacity Per Lineal Foot	4,000 lb	1,810	kg
Total Weight on San Francisco Pier Foundation	726,000,000 lb	329,000,000	kg
Weight of Cable Anchorage at Each End of Bridge	240,000,000 lb	109,000,000	kg
Deepest Foundation Below Mean Lower Low Water	130 ft	39	m
Maximum Transverse Deflection, Center Span	27 ft	8.1	m
Maximum Downward Deflection, Center Span	10 ft	3	m
Maximum Upward Deflection, Center Span	33 ft	10	m
TOWERS			
Height of Towers	746 ft	227	m
Weight of Two Towers	68,000,000 lb	31,000,000	kg
Number of Cells at Base, Per Leg (8' 6" x 5' 6") (1 Foot Thick)	963		
Number of Cells at Top, Per Leg	21		
Base Dimension (Each Leg)	54 ft 6 in	16.6	m
Load on Tower from Cables	123,000,000 lb	56,000,000	kg
Transverse Deflection	12 in.	0.32	m
Longitudinal Deflection	Shoreward 22 in. (0.56m); Channelward 18 in. (0.46m)		
CABLES			
Diameter of Cables Over Wrapping	36 in	92	cm
Length of One Cable	7,650 ft	2,332	m
Number of Wires in Each Cable	27,572		
Number of Strands in Each Cable	61		
Size of Wire (No. 6) Diameter	0.196 in.	5	mm
Total Length of Wire Used	80,000 miles	129,000	km
Weight of Cables, Suspenders and Accessories	24,500 tons	22,200,000	kg
CONCRETE QUANTITIES			
San Francisco Pier and Fender	130,000 cu yd	99,400	m³
Marin Pier	23,500 cu yd	18,000	m³
Anchorages, Pylons and Cable Housings	182,000 cu yd	139,000	m³
Approaches	25,500 cu yd	20,000	m³
Paving	25,000 cu yd	19,000	m³
	359,000 cu yd	297,400	
STRUCTURAL STEEL QUANTITIES			
Main Towers	44,000 tons	40,000	t
Suspended Structure	24,000 tons	21,800	t
Anchorages	4,600 tons	4,200	t
Approaches	20,500 tons	18,600	t
	93,000 tons	84,600	t

GOLDEN GATE BRIDGE STATISTICS


SAN FRANCISCO ANCHORAGE
SAN FRANCISCO PIER
ABUTMENT SAN FRANCISCO APPROACH
SOUTH BRIDGE TERMINAL
SEAWALL
50' C.C. CABLES
UNDERPASS TO BE CONSTRUCTED
TOLL TERMINAL
FINE BRIDGE ROAD
SAN FRANCISCO APPROACH ABUTMENT
AIRWAY BEACON
EL. 746.00'
CROWN OF ROADWAY EL. 216.07'
ONE BRACKET LIGHT ON EACH PYLON
TOP OF ROADWAY AT CROWN
3% GRADE
CROWN OF ROADWAY EL. 268.70'
CROWN OF ROADWAY EL. 246.06'
470.00'
210.00'
220.00'
EL. 44.00'
MID CHANNEL LIGHTS AND SIRENS
MEAN HIGHER HIGH WATER EL. 5.70'
ANCHORAGE
SAN FRANCISCO PYLON - S2
FORT POINT
SAN FRANCISCO PYLON - S1
AID TO NAVIGATION LIGHT FENDER
MEAN LOWER LOW WATER EL. 0.00
STA. 0+00
101.48'
1228.32' MEASURED ON ℄ DEVELOPED
1125.41'
4200.00' C.C. PIERS
6450.82' VERTICAL CURVE
9151.48' MEASURED ON ℄ DEVELOPED

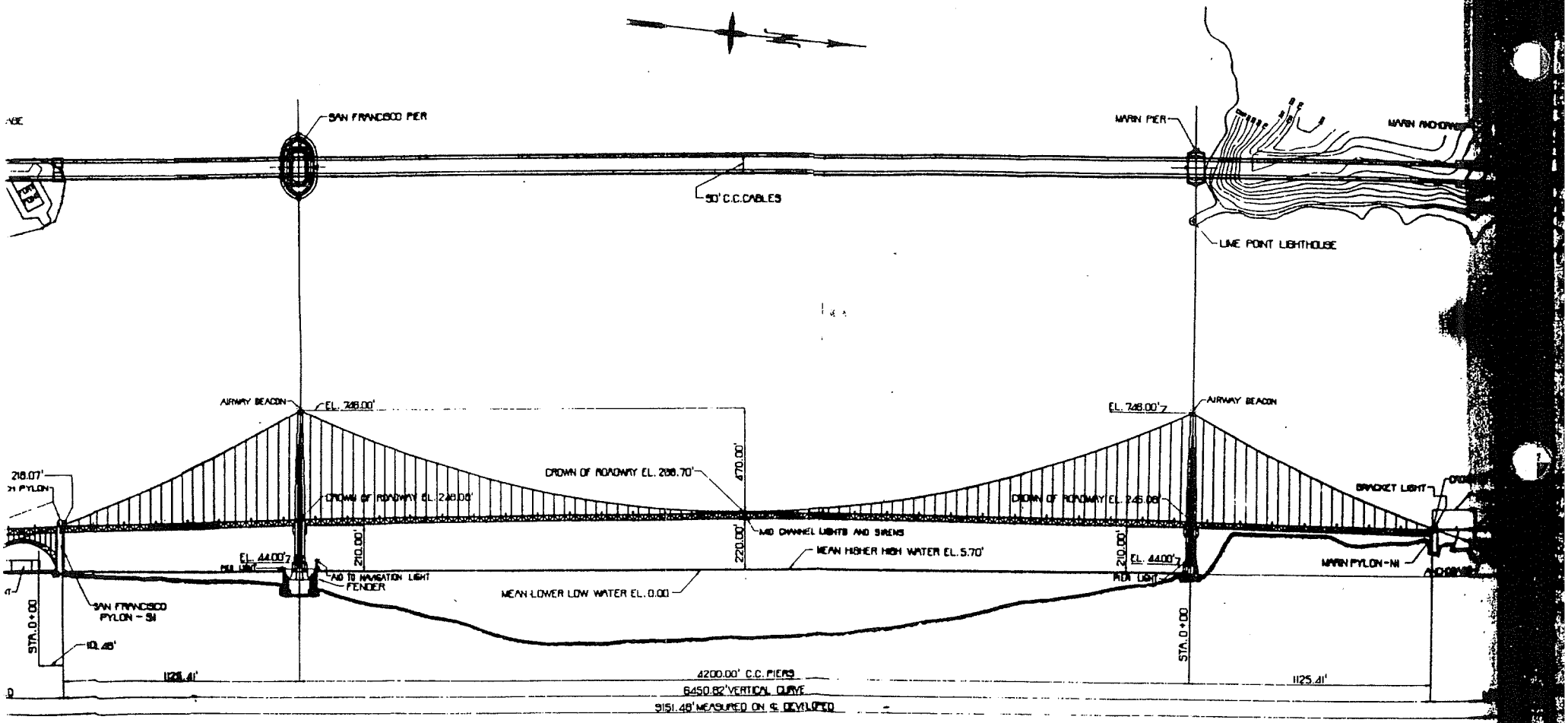


THE GOLDEN GATE BRID
SAN FRANCISCO, CAL.

PROJECT REPORT OF CHIEF ENGINEER
SEPTEMBER 30, 1937

MAIN BRIDGE
PLAN AND ELEVATION

SCALE IN FEET


SAN FRANCISCO PIER
MARIN PIER
50' C.C. CABLES
LIME POINT LIGHTHOUSE
AIRWAY BEACON
EL. 746.00'
EL. 746.00'
AIRWAY BEACON
218.07'
PYLON
CROWN OF ROADWAY EL. 246.00'
CROWN OF ROADWAY EL. 246.70'
CROWN OF ROADWAY EL. 246.00'
470.00'
BRACKET LIGHT
MID CHANNEL LIGHTS AND SIRENS
210.00'
220.00'
210.00'
EL. 44.00'
EL. 44.00'
MEAN HIGHER HIGH WATER EL. 5.70'
AID TO NAVIGATION LIGHT
FENDER
MEAN LOWER LOW WATER EL. 0.00
MARIN PYLON - N1
SAN FRANCISCO PYLON - S1
STA. 0+00
STA. 0+00
1125.41'
4200.00' C.C. PIERS
1125.41'
6450.82' VERTICAL CURVE
9151.48' MEASURED ON ℄ DEVELOPED

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
REGION NINE
CALIFORNIA DIVISION
P.O. Box 1915
Sacramento, California 95809

ARIZONA
CALIFORNIA
NEVADA
HAWAII
GUAM
AMERICAN SAMOA

January 15, 1980

IN REPLY REFER TO
HA-CA

File:
BHOS-3072(42)
Golden Gate Brid

Dr. William J. Murtagh
Keeper of the National Register
Heritage Conservation and Recreation Service
Department of the Interior
Washington, D. C. 20240

Dear Dr. Murtagh:

On December 11, 1979 we submitted to your office a request for determination of National Register eligibility for the Golden Gate Bridge in the Counties of San Francisco and Marin. Subsequently, Mr. Joseph Towner of your staff requested additional information to assist in the eligibility determination.

Enclosed are a set of photos showing this bridge from various viewpoints and a drawing of the bridge in plan and elevation.

With regard to the question of why the toll plaza was not included in the eligibility package, it was our feeling that this facility was constructed for the purpose of collecting tolls until the bridge bonds were retired and then the booths would be removed. As such, they are considered temporary structures which do not possess significant features which would qualify them for the National Register, nor do they add to the features which qualify the bridge for the National Register even though they are contiguous to the bridge. There have also been numerous modifications to the toll plaza since the original construction.

If you have any further questions, please contact Messrs. D. L. Eyres, District Engineer or H. F. Rennison, Jr., Area Engineer, at FTS 448-3541.

Sincerely yours,

For
Omar L. Homme
Division Administrator

Enclosures

United States Department of the Interior

HERITAGE CONSERVATION AND RECREATION SERVICE
WASHINGTON, D. C. 20243

IN REPLY REFER TO: W436

Mr. Omer L. Homme
Division Administrator
Federal Highway Administration
Region Nine
Department of Transportation
P.O. Box 1915
Sacramento, California 95809

Dear Mr. Homme:

Thank you for your letter requesting a determination of eligibility for inclusion in the National Register pursuant to Executive Order 11593 or the National Historic Preservation Act of 1966, as amended. Our determination appears on the enclosed material.

As you are aware, transportation projects requiring the use of lands from significant historic properties are also subject to the provisions of section 4(f) of the Department of Transportation Act of 1966. Your request for our professional judgment constitutes a part of the Federal planning process. We urge that this information be integrated into the National Environmental Policy Act and section 4(f) analyses in order to bring about the best possible program decisions. This determination does not represent the results of formal consultation by the Department of Transportation with the Department of the Interior pursuant to section 4(f). Such requirements would be fulfilled only when the Department of the Interior separately comments on any section 4(f) statement which may be prepared and approved by you for circulation. The determination also does not serve in any manner as a veto to uses of the property, with or without Federal participation or assistance. Any decision on the property in question and the responsibility for program planning concerning such properties lie with your agency after the Advisory Council on Historic Preservation has had an opportunity to comment.

We are pleased to be of assistance in the consideration of historic resources in the planning process.

Sincerely,

Carol D. Shull

Carol D. Shull
Acting Keeper of the National Register

Enclosure

STATE OF CALIFORNIA—THE RESOURCES AGENCY

EDMUND G. BROWN JR., Gover

DEPARTMENT OF PARKS AND RECREATION
P.O. BOX 2390
SACRAMENTO 95811

(916) 445-8006

NOV 30 1979

Mr. Omar L. Homme
Division Administrator
Federal Highway Administration
P.O. Box 1915
Sacramento, California 95809

Dear Mr. Homme:

Golden Gate Bridge

I have received your letter of October 30, 1979 regarding the National Register eligibility of the Golden Gate Bridge in the counties of San Francisco and Marin.

Thank you for transmitting the Determination of Eligibility Report for this property. The Golden Gate Bridge, a property of exceptional importance, is clearly eligible for inclusion in the National Register of Historic Places despite the fact that it achieved significance within only the past 50 years. It possesses the quality of significance in American history, architecture, and culture, and thus qualifies under National Register Criteria A, B, and C (36 CFR 60.6).

If you have any questions or concerns, please feel free to contact Jeffrey Bingham at 322-8701.

Sincerely yours,

Knox Mellon

Dr. Knox Mellon
State Historic Preservation Officer
Office of Historic Preservation

G-9328C

DETERMINATION OF ELIGIBILITY
NOTIFICATION DISTRIBUTION

cc: State Historic Preservation Officer: Dr. Knox Mellon
Federal Representative: Mr. Robert F. Crecco
Bureau Liaison: Mr. Larry Isaacson
Advisory Council on Historic Preservation Denver Office

bcc: HCRS Regional Office: Pacific Southwest
Interagency Archeological Services: San Francisco
NATIONAL REGISTER
FOR: JTowner:mjd 343-6401 1/29/80
BASIC FILE RETAINED IN NATIONAL REGISTER

HISTORIC RESOURCE EVALUATION REPORT

APPROACHES TO THE GOLDEN GATE BRIDGE

Prepared for: Darnell Reynolds, Chief, Environmental Branch A
District 4, Department of Transportation

Prepared by: Stephen D. Mikesell
Cultural Studies Section, Office of Environmental Analysis
Department of Transportation

December, 1987

A. SUMMARY OF FINDINGS

Of the various approaches to the Golden Gate Bridge on the San Francisco and Marin County shores, only the "Presidio Approach Road" is an original part of the Golden Gate Bridge. This road, now called Doyle Drive and identified as Structures 34-14 and 34-19 on the Caltrans Bridge Inventory, appears to be eligible for listing in the National Register of Historic Places. Other approaches do not appear to be eligible for National Register listing.

B. SCOPE OF REPORT

This report will evaluate National Register eligibility for the approaches to the Golden Gate Bridge. All approach structures were evaluated individually as part of the Caltrans Historic Bridge Inventory and none was found to be individually eligible for listing in the National Register of Historic Places. This report will evaluate eligibility in terms of the relationship between these approaches and the Golden Gate Bridge, to identify any approaches that are original approach spans to the bridge, and which should have been included as part of the Request for Determination of Eligibility for the Golden Gate Bridge as constituent components of the bridge project.

The term, "original approach span," is defined as any approach (i.e. a span or roadway south of the Golden Gate Bridge abutment in San Francisco or north of the abutment in Marin County) which was constructed as an integral part of the larger bridge project. An approach span meeting this definition was: 1) designed by the firm of Strauss and Paine, designers of the Golden Gate Bridge; 2) built under contract to the Golden Gate Bridge and Highway District in the mid-1930s; and 3) financed from the original $35 million bond approved by district voters on November 4, 1930.

This report is divided into three major parts. Section C provides a historical overview of the building of approaches to the Golden Gate Bridge. Section D discusses the many approaches to the Golden Gate Bridge which were not part of the original Golden Gate Bridge. Section E discusses in detail those approaches which were part of the Golden Gate Bridge and which appear to be eligible for the National Register.

C. HISTORY OF GOLDEN GATE BRIDGE APPROACHES

The Golden Gate Bridge was determined eligible for listing in the National Register of Historic Places in 1980 through a Request for Determination of Eligibility prepared by the Golden Gate Bridge and Highway District. That determination concerned only the Golden Gate Bridge, from abutment to abutment. This report focuses on any improvements directly associated with the Golden Gate Bridge which extend beyond the north or south abutment. The Golden Gate Bridge is also a State Historical Landmark. Documentation for the State Historical Landmark does not mention the approaches.

The Golden Gate Bridge, a risky venture from an engineering and

construction standpoint, was also a financial risk. The bridge was constructed by the Golden Gate Bridge and Highway District, a special purpose district including the counties of Del Norte, San Francisco, Marin, Mendocino, Napa and Sonoma. The District incorporated in 1929 and in November, 1930 committed to the issuance of $35 million in bonds, at 5 percent interest, to pay for construction of the bridge. These bonds were secured by expected toll revenues and by the taxing authority of the District, specifically authority to tax real property. Early completion of the project was imperative, were property owners in these counties to avoid heavy taxation on depressed land values.

Toll-generating capability obviously required adequate approaches on the San Francisco and Marin shores. On a long-term basis, the District assumed that such access would be provided by the California Division of Highways and by the City-County of San Francisco. The District assumed that the Division of Highways would provide a bridge approach in Marin from U.S. 101 at the Waldo Grade, and a route 480/1* approach in San Francisco along what is now called Park Presidio Boulevard (Route 1.) San Francisco was expected to provide feeder road access from the Marina district.

District planners, including Chief Engineer, J.B. Strauss, were not willing to leave entirely to others the task of building approach roads, simply because the District could not survive financially, were the approach roads delayed. In its planning, the District board decided that it would be prudent for the district to build one minimal approach road at each end of the bridge, until more permanent connections were made by the Division of Highways and San Francisco.

The logic behind these approaches was explained in 1937 by Strauss:

> The Golden Gate Bridge is, as stated, a project conceived and justified as a toll bridge. For this reason the studies underlying the conclusions presented in the Chief Engineer's report of 1930 were limited to the examination of those factors only which would more immediately affect the financial success of the bridge, and the carrying out of the origin-destination surveys necessary for the purpose of determining approach road locations and capacities was postponed pending the approval of the bonds. Nevertheless, the traffic and revenue forecasts were very definitely predicated upon the assumption that adequate and properly placed approaches would be provided by the time the bridge was opened to traffic.[1]

To this end, the district decided to build two approach roads -- one in San Francisco and one in Marin. It did so as a kind of insurance policy, in the event that the Division of Highways and San Francisco were unable to complete the major approaches and feeder roads in a timely manner.

*Doyle Drive through the Presidio of San Francisco is signed U.S. 101, but is officially designated Interstate 480 in the Caltrans highway log.

It was an insurance policy that paid dividends, for other parties were unable to complete their approaches in time for the opening of the bridge. Both the Park Presidio connectors and the Waldo Grade and Tunnel approach in Marin were delayed, leading Chief Engineer Strauss to make the following comments in 1937:

> As to approaches, the [1930] plan included (1) a lateral to Sausalito's south limits leading from a braided connection with the Waldo Road, and (2) the so-called Presidio Approach Road terminating at the end of Marina Boulevard in San Francisco. The remaining outlets, unfortunately, but through no fault of the District, were not contracted for completion synchronously with the completion of the bridge, with the result that when the bridge was completed, it lacked adequate and properly placed feeders to its main approaches.[2]

The Sausalito Lateral and Presidio Approach Road, then, were crucial to the operation of the bridge and were included in all major planning documents. They were mentioned in the 1930 Chief Engineer's Report and in the 1930 bond measure. They were also carried as separate items in the plans, specifications, and estimates on which the Golden Gate Bridge Project was bid in 1931.

The overall bridge project was bid for in 10 separate contracts, totaling about $24 million. The two biggest contracts were for the steel superstructure, a $10.5 million contract to McClintic-Marshall Corp., and the cables, a $5.85 million contract to John A. Roebling's Sons Co. The approach road contracts were small by comparison -- $996,000 for the Presidio Approach Road, and $59,780 for the Sausalito Lateral -- accounting for 4.4% of total project costs.

The Presidio Approach Road contract was awarded to the firm of Eaton & Smith, of San Francisco, and work commenced in January, 1934. The Contract was broken into two parts, with Part I including the necessary grading work, and Part II including the construction of the two structures needed for this approach, the so-called "High Viaduct" and "Low Viaduct."

The Low Viaduct, now carried as Bridge 34-14 in the Caltrans Bridge Inventory, reached from Marina Boulevard, north about 3300 feet to a hill. The High Viaduct, now carried as Bridge 34-19, began at the north slope of this hill and extended north about 1500 feet, to the hill on which the toll plaza was to be constructed. Work on the Low Viaduct continued from June 1934 to September 1936. Work on the High Viaduct extended from February 1934 to June 1935.[3]

The design of the Presidio Approach Road was modified at its southern end while the road was under construction. J. B. Strauss explains how and why this modification occurred:

> Some time after work on the Presidio Approach road had begun, objection was raised to its terminus at Marina Boulevard, on the ground that the bridge traffic would increase the congestion on the boulevard intolerably. The District was therefore asked to abandon this terminus and divert all the traffic to Lombard

> Street. After protracted negotiation between the City, the War Department, the Park Commission and the District, an agreement was reached on a compromise solution proposed by the Chief Engineer [Strauss], whereby the Marina Terminus was retained as planned and a secondary outlet, for truck traffic principally, was carried behind the Palace of Fine Arts joining with the Presidio Approach by means of a braided connection with a new diagonal street now called Richardson Avenue and thence with Lombard Street. This outlet was subsequently built as a W.P.A. project sponsored by the city.[4]

The Sausalito Lateral contract was never awarded by the Golden Gate Bridge and Highway District. Strauss explains how this project was built:

> This staff [Strauss' assistants], operating under the direction of the Chief Engineer, handled all the work on the [Golden Gate Bridge] project from its inception to its conclusion, with one exception, namely that on February 1, 1933 the Board of Directors by resolution transferred the planning of the Sausalito Lateral work to the California State Highway Commission. The work was executed as a W.P.A. project sponsored by the District.[5]

In subsequent years, other agencies built numerous roadways that connect, directly or indirectly, to the Golden Gate Bridge. Chief among these are the U.S. 101 connections in Marin County, and the State Route 1 connections in San Francisco. These roadways, however, were not planned as part of the original Golden Gate Bridge project, were not designed by Strauss, and were not approved or funded by the Golden Gate Bridge and Highway District.

D. ROADWAYS AND APPROACHES THAT ARE NOT ELIGIBLE FOR LISTING IN THE NATIONAL REGISTER AS PART OF THE GOLDEN GATE BRIDGE

The narrative above demonstrates that very few approach roads or structures were built as part of the Golden Gate Bridge. Only the Presidio Approach Road and Sausalito Lateral were originally planned by the District, and only the Presidio Approach Road was actually built by the District.

If we use District design, funding, and construction as criteria for direct association with the Golden Gate Bridge, it is possible to eliminate from consideration all elements of U.S. 101 in Marin County, and all elements of State Route 1 in San Francisco, even where those roadways and structures were constructed in the 1930s.

In Marin County, no elements north of the Golden Gate Bridge abutments are directly associated with the Golden Gate Bridge. These would include the Waldo Tunnel (left), constructed by the Division of Highways in 1937. It would also include the Sausalito Lateral, which was planned preliminarily by the District, but which was brought to the construction phase by the Division of Highways.

In San Francisco, the State Route 1 approaches should not be considered as integral elements of the Golden Gate Bridge. This

roadway through the Presidio was planned, designed, and constructed entirely by the Division of Highways and was completed after completion of the Golden Gate Bridge. The same logic excludes those connector ramps that allow transitions from State Route 1 to U.S. 480.

E. STRUCTURES THAT APPEAR TO BE ELIGIBLE FOR LISTING IN THE NATIONAL REGISTER OF HISTORIC PLACES

The only approach road that appears to be eligible for listing in the National Register of Historic Places as an integral part of the Golden Gate Bridge is the Presidio Approach Road, now called Doyle Drive.

As demonstrated in the earlier narrative, the Presidio Approach Road was a functional part of the Golden Gate Bridge. The road was designed, funded and constructed by the District. The road, as shown on the attached "Presidio Approach Road (Doyle Drive)" schematic, comprises three major elements -- the High Viaduct (34-19), the Low Viaduct (34-14), and a series of connectors designed by J.B. Strauss but included at the request of the City of San Francisco.

These various units are not only functionally related to the Golden Gate Bridge, they are also very much aesthetically a part of the bridge. Strauss and his architect, Irving Morrow, designed a clean-lined "modernistic" bridge. Strauss explained the design concept:

> The architectural treatment [of the Golden Gate Bridge] is in general modernistic, to ensure a satisfactory architectural effect without undue cost or structural sacrifice. Where ornament was desirable, either to enrich certain surfaces unlikely to be perfectly executed over large areas, a simple vertical fluting was used consisting of intersecting plane facets which could be carried out readily in both concrete and steel. Since an ornamental elaboration of minor details such as hand rails, lighting units, etc., is likely to be inharmonious in a structure predominantly engineering and industrial in character, these features were handled in the spirit of the large design, using principally structural steel shapes.[6]

While eschewing applied ornamentation, Strauss and Morrow nonetheless paid attention to the details of the total design, much to the credit of the overall structure. For example, the inflected pattern of the tower sheathing -- the largest and most easily recognizable non-structural aspect of the bridge -- is repeated in concrete at the toll plaza. The careful detailing of the bridge itself accounts for a great deal of the success of the design.

This same attention to detail and repetition of design motifs can be found on the Presidio Approach Road. The High Viaduct is a steel Pratt deck truss structure, carried on concrete piers, on spread footings. The concrete piers, which rise to a height of about 50 feet, are cast in the same inflected and fluted pattern of the bridge towers -- the piers are small and simplified copies of the towers for the Golden Gate Bridge.

The light standards on Doyle Drive are identical to those found on the Golden Gate Bridge. These standards are very "modernistic," to use Strauss' phrase, their metal beams bent into a very sculptural form. Apparently all original fixtures remain on Bridges 34-14 and 34-19; the few new standards found on these structures are in addition to, not at the expense of, the original fixtures.

The Presidio Approach Road is also unified architecturally by its railing, which is the same on 34-14 and 34-19. It is a simple concrete barrier, scored on the outside face. This barrier is dissimilar from the metal baluster railing found on the bridge itself.

In summary, the Presidio Approach Road (34-14, 34-19, and the roadway between the two structures, also called Doyle Drive, and designated postmiles 4.5 to 5.3 on Route 480 in San Francisco) is an integral part of the Golden Gate Bridge and is eligible for listing in the National Register of Historic Places as a constituent component of that larger structure.

---

1. Golden Gate Bridge and Highway District, The Golden Gate Bridge: Report of the Chief Engineer to the Board of Directors of the Golden Gate Bridge and Highway District, California, September, 1937, p. 64.

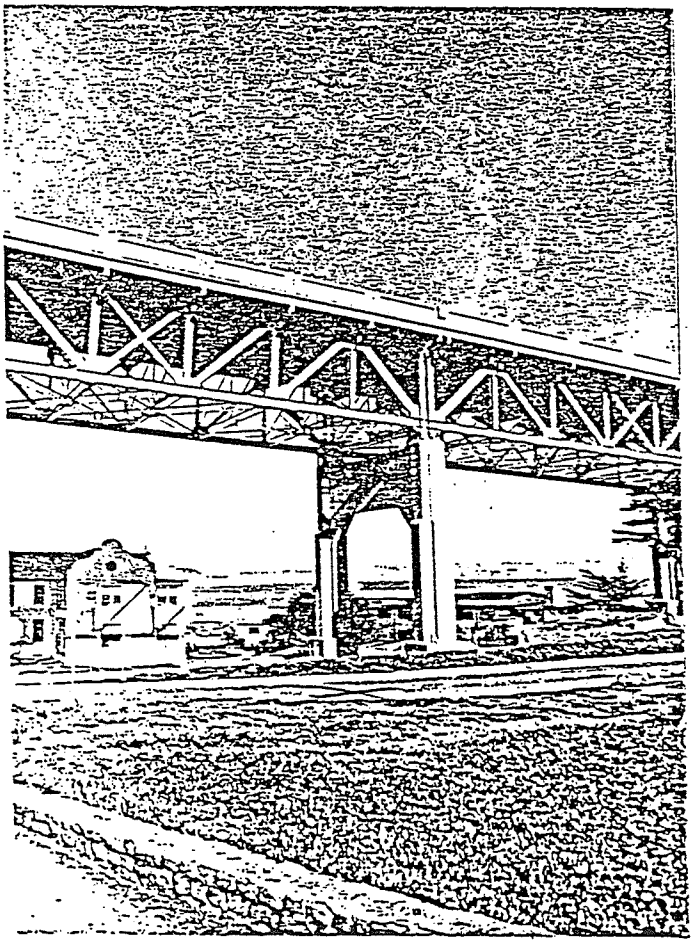
2. Ibid., p. 44.

3. Ibid., pp. 183-4.

4. Ibid., p. 50.

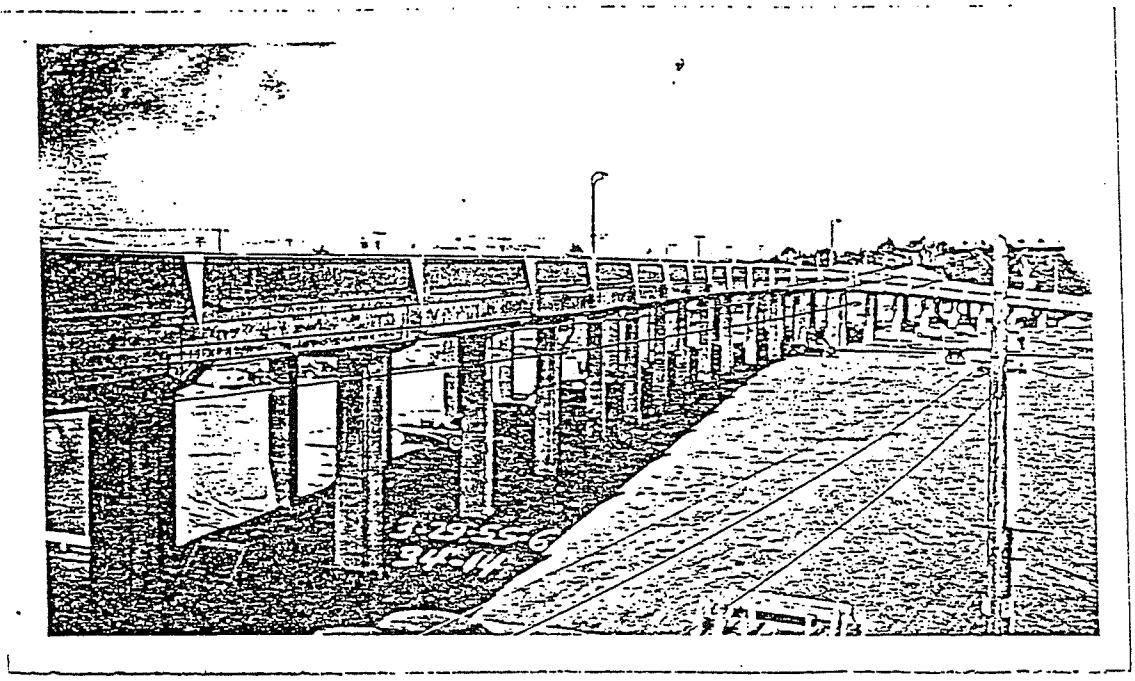
5. Ibid., p. 36.

6. Ibid., p. 91.

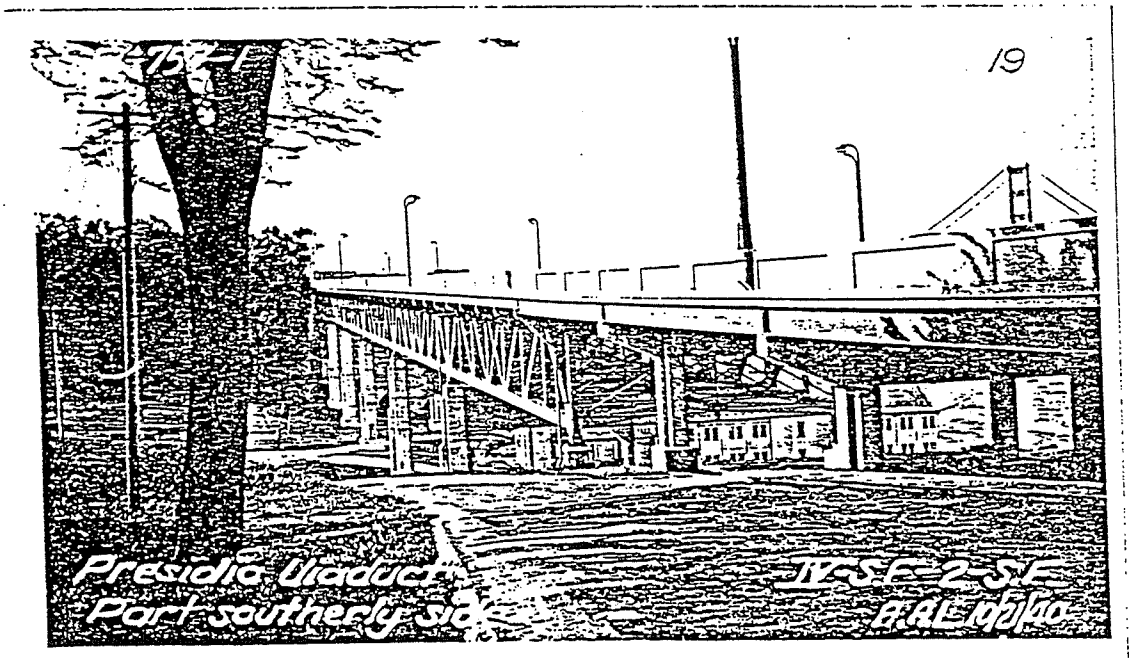


PRESIDIO APPROACH ROAD

BRIDGE 34-19, HIGH VIADUCT



BRIDGE 34-14, LOW VIADUCT



BRIDGE 34-19, HIGH VIADUCT

Wong

STATE OF CALIFORNIA — THE RESOURCES AGENCY

PETE WILSON, *Governor*

OFFICE OF HISTORIC PRESERVATION

DEPARTMENT OF PARKS AND RECREATION

P.O. BOX 942896
SACRAMENTO 94296-0001
(916) 653-6624
FAX: (916) 653-9824

JAN 11 1994

FHWA-Sacramento

(916) 653-6624
FAX (916) 653-6624

December 29, 1993

FHWA931112A

Roger Borg, Division Administrator
Region Nine
Federal Highway Administration
California Division
980 9th Street
SACRAMENTO CA 95814-2724

Re: Marina Viaduct Seismic Retrofit, San Francisco, San Francisco County.

Thank you for submitting to our office your November 9, 1993 letter and supporting documentation regarding the proposed seismic retrofit for the Marina Viaduct, a 3,300 foot long portion of Doyle Drive, which serves as an approach to the Golden Gate Bridge, San Francisco, San Francisco County. The viaduct was constructed in 1936 as part of the overall construction of the Golden Gate Bridge and retains many of the design features and ornamentation associated with the world-famous structure.

The proposed project will involve the installation of cable restrainers along with the addition of a small amount of new material on the underside of the viaduct superstructure, and the removal of existing corbels and their replacement with continuous ledgers. You are seeking our comments on your determination of eligibility of the Marina Viaduct for inclusion on the National Register of Historic Places (NRHP) in accordance with Section 106 of the National Historic Preservation Act. You are also seeking our comments on your determination of the effects the proposed project will have on historic resources in accordance with the aforementioned act.

Our review of the submitted documentation leads us to concur with your determination that the Marina Viaduct is eligible for inclusion on the NRHP under Criterion C as defined by 36 CFR 60.4 as a contributing member of the Golden Gate Bridge System. The viaduct's design associations with the bridge make it a compatible component of the bridge system with its identical concrete railings and light standards. The fact that it was designed by Golden Gate Bridge designer, J.B. Strauss, makes its architectural associations with the bridge even stronger

We also concur with your determination that the proposed project, as described, will have no adverse effect on the viaduct as defined in 36 CFR 800.9. Very little of the viaduct's historic fabric will be disturbed or removed during the retrofit, and there will be no noticeable difference in the structure's appearance after the project is completed. Please submit your documentation to the Advisory Council on Historic Preservation (ACHP) for their concurrence on our determination of no adverse effect pursuant to 36 CFR 800.5.

Thank you again for seeking our comments on you project. If you have any questions, please contact staff historian Clarence Caesar at (916) 653-8902.

Sincerely,

Steade R. Craigo, A.I.A.
Acting State Historic Preservation Officer

cc: Stanley Albright, Western Region, NPS

Advisory
Council On
Historic
Preservation

The Old Post Office Building
1100 Pennsylvania Avenue, NW, #809
Washington, DC 20004

Reply to: 730 Simms Street, #401
Golden, Colorado 80401

April 28, 1994

Roger Borg
Division Administrator
Federal Highway Administration
Region Nine, California Division
980 9th Street, Suite 400
Sacramento, CA 95814-2724

REF: No Adverse Effect determination for the Seismic Retrofit Project on the Marina Viaduct, City and County of San Francisco, California

Dear Mr. Borg:

We have reviewed the documentation regarding your no adverse effect determination for the above referenced undertaking. Under procedures set forth in 36 CFR Section 800.5(d)(2), the Council does not object to the finding of no adverse effect. This letter evidences that the requirements of Section 106 of the National Historic Preservation Act and the Council's regulations have been met for this project. It should be retained with all supporting documentation in your agency's environmental or project file.

If you have any questions or require the further assistance of the Council, please contact the Western Office at (303) 231-5320.

Sincerely,

Claudia Nissley
Director, Western Office
of Review

United States Department of the Interior

NATIONAL PARK SERVICE
Golden Gate National Recreation Area
Fort Mason, San Francisco, California 94123

EZBauer
JDKao
NAStampfli
TLJones
GSShishido
SGHolland
File:

IN REPLY REFER TO:

L76 (GOGA-RMPPC)

OCT 17 1995

Mervin C. Giacomini
District Engineer
Golden Gate Bridge, Highway and Transportation District
Box 9000 Presidio Station
San Francisco, California 94129

Dear Mr. Giacomini:

Golden Gate National Recreation Area supports and endorses the proposed Golden Gate Bridge Seismic Retrofit Project. Our staff has worked with the Golden Gate Bridge, Highway and Transportation District (GGBHTD) for many months to identify measures to minimize harm to park resources, identify alternative approaches where appropriate, and identify reasonable mitigation measures for unavoidable effects. Our concerns to date are addressed in the environmental assessment prepared for public review.

This letter does not represent the Department of the Interior formal determination as required by Section 4 (f) of the Department of Transportation Act. Such a request should be made to the Director of the Office of Environmental Policy and Compliance at the Department of the Interior's Washington Office, at the initiation of the public comment period for the EA/IS.

We look forward to the conclusion of the environmental review process and our continued cooperation on this important project.

Sincerely,

Brian O'Neill
General Superintendent

RECEIVED
OCT 19 1995
GOLDEN GATE BRIDGE
ENGINEERING DEPT.

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
REGION NINE
CALIFORNIA DIVISION
980 Ninth Street, Suite 400
Sacramento, California 95814-2724

ARIZONA
CALIFORNIA
NEVADA
HAWAII
GUAM
AMERICAN SAMOA
N. MARIANA IS.

June 27, 1995

IN REPLY REFER TO

HA-CA
File #: 04-SF-101
Document #: 767

Ms. Claudia Nissley, Director
Western Division of Project Review
Advisory Council on Historic Preservation
730 Simms Street - Suite 401
Golden, Colorado 80401

SUBJECT: Seismic Retrofitting of the Golden Gate Bridge

Dear Ms. Nissley:

Enclosed is a copy of the May 25, 1995 letter from the Office of Historic Preservation concurring in our March 7, 1995 submittal for the proposed seismic retrofitting of the Golden Gate Bridge, San Francisco, California. Based on the State Historic Preservation Office's (SHPO) review of the documents submitted, the SHPO concurred that the Round House Gift Shop is eligible for the NRHP under Criteria A as defined by 36 CFR 60.4. All the other structures outlined in the HASR are not eligible for inclusion on the NRHP under any of the criteria defined by 36 CFR 60.4

The SHPO also concurred with our determination that the proposed seismic retrofit project as described in the FNAE will have no adverse effect on the Golden Gate Bridge.

We are submitting the HASR, HPSR, and FNAE for your concurrence with the SHPO's determination of no adverse effect pursuant to 36 CFR 800.5. If you have any questions, please contact Bill Wong of this office at (916) 498-5041.

Sincerely,

S/B. Wong

For
Fred J. Hempel
Division Administrator

Enclosure
cc:
Caltrans Hqs, Howard Sarasohn
Caltrans Dist. 04, Joann Cullom
FHWA, Joan Bollman/Steve Guhin
FHWA, John Schultz

GPWong:jw

STATE OF CALIFORNIA — THE RESOURCES AGENCY
OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
P.O. BOX 942896
SACRAMENTO 94296-0001
(916) 653-6624
FAX: (916) 653-9824

(916) 653-6624
FAX (916) 653-9824

May 25, 1995

FHWA920324A

Fred J. Hempel, Division Administrator
Federal Highway Administration
Region Nine, California Division
980 9th Street, Suite 400
SACRAMENTO CA 95814-2724

Re: Seismic Retrofit of the Golden Gate Bridge, San Francisco, San Francisco County.

Dear Mr. Hempel:

Thank you for submitting to our office your March 7, 1995 letter and supporting documentation regarding the proposed seismic retrofitting of the Golden Gate Bridge, San Francisco, San Francisco County. The Golden Gate Bridge (Bridge) has been determined, by consensus, to be eligible for inclusion on the National Register of Historic Places (NRHP). Among the submitted supporting documentation is the Historic Property Survey Report (HPSR), Historic Architectural Survey Report (HASR), and the Finding of No Adverse Effect (FNAE).

The proposed project is being considered due to a study conducted under California Executive Order D-86-90 in which T.Y. Lin International concluded that major seismic retrofitting work needs to executed in order to maintain the Bridge's ability to accommodate some level of traffic immediately following a major earthquake. The work will include the following:

South Viaduct -

- Spans will be isolated with seismic isolators.
- Support structures will be almost entirely replaced by stronger structures of similar layout.

South Pylons -

- Pylons S1 and S2 will require foundation anchorage and strengthening both internally and externally. Pylon exteriors will be restored to existing condition.

Fort Point Arch -

- Arch will be substantially reinforced by strengthening and replacement of deficient members. New members will be added in the upper part of the arch to create a horizontal stiffening truss, while leaving room for possible future light rail right-of-way.

In addition, the South and North Anchorage Housings will be strengthened internally, and the concrete tower bases on the main part of the Bridge will be reinforced internally. Wind retrofit work is required on the west side of the main suspension span to improve the aerodynamics of the handrail. At the North Viaduct, deficient members in the spans and supports will be strengthened.

You are seeking our comments on your determination of the eligibility of the following resources associated with the Bridge for inclusion on the National Register of Historic Places (NRHP) in accordance with Section 106 of the National Historic Preservation Act:

- Round House Gift Shop
- Golden Gate Bridge District Administration Building
- Golden Gate Bridge Maintenance Building
- Golden Gate Bridge Toll Booths, Canopy and Plaza
- East Bus Stop Shelter
- West Bus Stop Shelters #1 and #2
- Comfort Station
- Miscellaneous Structures

You are also seeking our concurrence on your determination of the effects the project will have on historic resources in accordance with the aforementioned act.

Our review of the submitted HASR, HPSR, and FNAE lead us to concur with your determination that the Round House Gift Shop is eligible for the NRHP under Criteria A as defined by 36 CFR 60.4. The structure has strong associations with the Bridge in its historic themes of accommodating the needs of travelers crossing the San Francisco Bay. The structure blends well with those elements of setting and feeling that make the Bridge the desired destination of tourists from around the world. We also concur with your determination that the other aforementioned structures are not eligible for inclusion on the NRHP under any of the criteria defined by 36 CFR 60.4. None of the structures have strong associations with the Bridge's historic period of significance nor are they architecturally significant.

We have also reviewed the FNAE and concur with your determination that the proposed project, as described, will have no adverse effect on the Bridge. All of the work proposed for the seismic retrofit will not alter or change those characteristics of design, setting, or materials that contribute to the Bridge's historic significance. Please submit your documentation to the Advisory Council on Historic Preservation (ACHP) for their concurrence with our determination of no adverse effect pursuant to 36 CFR 800.5.

Thank you for seeking our comments on your project. If you have any questions, please contact staff historian Clarence Caesar at (916) 653-8902.

Sincerely,

Cherilyn Widell
State Historic Preservation Officer

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
REGION NINE
CALIFORNIA DIVISION
980-9th Street, Suite 400
Sacramento, California 95814-2724

ARIZONA
CALIFORNIA
NEVADA
HAWAII
GUAM
AMERICAN SAMOA
N. MARIANA IS.

December 7, 1994
IN REPLY REFER TO

HA-CA

File: 04-SF-101
Golden Gate Bridge

Mr. Joe Browne, Director
CALTRANS, Dist. 04
Oakland, California

Attention: Ms. JoAnn Cullom

Dear Mr. Browne:

SUBJECT: Golden Gate Bridge Seismic Retrofit Project

We received a letter from The Golden Gate Bridge, Highway and Transportation District(GGBH&TD) regarding the Golden Gate Bridge Seismic Retrofit Project. They are requesting our comments on the outline of the Section 4(f) resources that are to be included as part of the environmental review for the project.

We concur that the following resources are to be considered:

- The Golden Gate Bridge and associated buildings (Roundhouse Gift Shop, Toll Plaza)
- East Battery Dynamite
- Bicycle and hiking trails and pathways(impacted by the project)
- Fort Point Historic Property
- Fort Baker

We do not believe the following resources are to be included:

- Scenic Overlooks, Caltrans Vista Point
- East Fort Baker fishing pier
- The Presidio Historic Landmark District

If you have any questions, please contact Messrs. John R. Schultz, Chief, District Operations A or Bill Wong, Senior Transportation Engineer at (916) 498-5041.

Sincerely yours,

/s/ John R. Schultz

For
Peter C. Markles
Acting Division Administrator

cc:
Mr. Merv Giacomini, Golden Gate Bridge
Joan Bollman, with 10-31-94 letter
John Schultz, with 10-31-94 letter
Bill Wong, with 10-31-94 letter

GPWong:lmg File Code: I:\common\policy\GGB4FRES.GPW

GOLDEN GATE BRIDGE, HIGHWAY AND TRANSPORTATION DISTRICT

October 31, 1994

Mr. Bill Wong
Senior Transportation Engineer
Federal Highway Administration
California Division
980 Ninth Street, Suite 400
Sacramento, CA 95814-2724

Re: **GOLDEN GATE BRIDGE SEISMIC RETROFIT PROJECT**

Dear Bill:

JoAnn Cullom, of Caltrans, suggested that I write you to briefly outline our Section 4(f) resources that are under review as part of our environmental review for the project. We would like to request your review and concurrence with the resources being considered:

- The Golden Gate Bridge and associated buildings (Roundhouse Gift Shop, Toll Plaza)
- East Battery Dynamite
- Scenic Overlooks, Caltrans Vista Point
- Bicycle and hiking trails and pathways
- Fort Point Historic Property
- Fort Baker
- East Fort Baker fishing pier
- The Presidio historic landmark district

BOX 9000, PRESIDIO STATION • SAN FRANCISCO, CALIFORNIA 94129-0601 • TELEPHONE 415 921 5858

If you concur with this identification of resources to be considered in our Section 4(f) analysis, please initial this letter and return it to me. If you have any suggestions, please let either JoAnn or myself know as soon as possible so we can complete our report.

Sincerely,

Mervin C. Giacomini, P.E.
Deputy District Engineer

MCG/jd

c: JCullom
DEMohn/NAStampfli/JDKao/2.7.11.7

GOLDEN GATE BRIDGE, HIGHWAY AND TRANSPORTATION DISTRICT

March 20, 1992

Dear

The Golden Gate Bridge, Highway and Transportation District is initiating environmental studies for the Golden Gate Bridge Seismic Retrofit Project. This project was directed by Governor's Executive Order No. D-86-90 after the 1989 Loma Prieta Earthquake. The Governor's Executive Order recommends that the District evaluate and upgrade this critical transportation structure. Attached is a brief project description.

Please advise within 30 days if you have any comments or concerns that we should be aware of for the Golden Gate Bridge Seismic Retrofit project.

Partial funding for this project is from the Federal Highway Administration under the "Intermodal Surface Transportation Efficiency Act of 1991" (ISTEA).

When sufficient engineering and environmental information has been developed, a public informational meeting will be held to discuss the project studies. The public information meeting will be publicized and you will be notified well in advance of the meeting time and location.

BOX 9000, PRESIDIO STATION • SAN FRANCISCO, CALIFORNIA 94129-0601 • TELEPHONE 415 921-5858

If you have any questions regarding this project, please write or telephone:

Mr. Mervin C. Giacomini, Deputy District Engineer
Golden Gate Bridge, Highway and Transportation District
P.O. Box 9000, Presidio Station
San Francisco, CA 94129-0601
Phone: 415-923-2284
FAX: 415-563-0809

Sincerely,

Mervin C. Giacomini

Mervin C. Giacomini, PE
Deputy District Engineer

MCG/sgh

Attachment

c: JoAnn Cullom, Caltrans
DEMohn/2.7.11.5

STATE OF CALIFORNIA — THE RESOURCES AGENCY
OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
P.O. BOX 942896
SACRAMENTO 94296-0001
(916) 653-6624
FAX: (916) 653-9824

(916) 653-6624
FAX (916) 653-9824

May 25, 1995

FHWA920324A

Fred J. Hempel, Division Administrator
Federal Highway Administration
Region Nine, California Division
980 9th Street, Suite 400
SACRAMENTO CA 95814-2724

Re: Seismic Retrofit of the Golden Gate Bridge, San Francisco, San Francisco County.

Dear Mr. Hempel:

Thank you for submitting to our office your March 7, 1995 letter and supporting documentation regarding the proposed seismic retrofitting of the Golden Gate Bridge, San Francisco, San Francisco County. The Golden Gate Bridge (Bridge) has been determined, by consensus, to be eligible for inclusion on the National Register of Historic Places (NRHP). Among the submitted supporting documentation is the Historic Property Survey Report (HPSR), Historic Architectural Survey Report (HASR), and the Finding of No Adverse Effect (FNAE).

The proposed project is being considered due to a study conducted under California Executive Order D-86-90 in which T.Y. Lin International concluded that major seismic retrofitting work needs to executed in order to maintain the Bridge's ability to accommodate some level of traffic immediately following a major earthquake. The work will include the following:

South Viaduct -

- Spans will be isolated with seismic isolators.
- Support structures will be almost entirely replaced by stronger structures of similar layout.

South Pylons -

- Pylons S1 and S2 will require foundation anchorage and strengthening both internally and externally. Pylon exteriors will be restored to existing condition.

Fort Point Arch -

- o Arch will be substantially reinforced by strengthening and replacement of deficient members. New members will be added in the upper part of the arch to create a horizontal stiffening truss, while leaving room for possible future light rail right-of-way.

In addition, the South and North Anchorage Housings will be strengthened internally, and the concrete tower bases on the main part of the Bridge will be reinforced internally. Wind retrofit work is required on the west side of the main suspension span to improve the aerodynamics of the handrail. At the North Viaduct, deficient members in the spans and supports will be strengthened.

You are seeking our comments on your determination of the eligibility of the following resources associated with the Bridge for inclusion on the National Register of Historic Places (NRHP) in accordance with Section 106 of the National Historic Preservation Act:

- o Round House Gift Shop
- o Golden Gate Bridge District Administration Building
- o Golden Gate Bridge Maintenance Building
- o Golden Gate Bridge Toll Booths, Canopy and Plaza
- o East Bus Stop Shelter
- o West Bus Stop Shelters #1 and #2
- o Comfort Station
- o Miscellaneous Structures

You are also seeking our concurrence on your determination of the effects the project will have on historic resources in accordance with the aforementioned act.

Our review of the submitted HASR, HPSR, and FNAE lead us to concur with your determination that the Round House Gift Shop is eligible for the NRHP under Criteria A as defined by 36 CFR 60.4. The structure has strong associations with the Bridge in its historic themes of accommodating the needs of travelers crossing the San Francisco Bay. The structure blends well with those elements of setting and feeling that make the Bridge the desired destination of tourists from around the world. We also concur with your determination that the other aforementioned structures are not eligible for inclusion on the NRHP under any of the criteria defined by 36 CFR 60.4. None of the structures have strong associations with the Bridge's historic period of significance nor are they architecturally significant.

We have also reviewed the FNAE and concur with your determination that the proposed project, as described, will have no adverse effect on the Bridge. All of the work proposed for the seismic retrofit will not alter or change those characteristics of design, setting, or materials that contribute to the Bridge's historic significance. Please submit your documentation to the Advisory Council on Historic Preservation (ACHP) for their concurrence with our determination of no adverse effect pursuant to 36 CFR 800.5.

Thank you for seeking our comments on your project. If you have any questions, please contact staff historian Clarence Caesar at (916) 653-8902.

Sincerely,

Cherilyn Widell
State Historic Preservation Officer

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CALIFORNIA DIVISION
980 Ninth Street, Suite 400
Sacramento, CA 95814-2724

May 19, 1999

IN REPLY REFER TO
HA-CA
File #: 04-SF-101
Document #: P 22294

CERTIFIED RECEIPT RETURNED: Z 211 283 478

Mr. Daniel Abeyta
Acting State Historic Preservation Officer
Office of State Historic Preservation
P.O. Box 942896
Sacramento, CA 94296-0001

Dear Mr. Abeyta:

SUBJECT: HPSR AND FNAE FOR GOLDEN GATE BRIDGE SAFETY RAILING PROJECT

Enclosed for your review and concurrence is a copy of the Historic Property Survey Report (HPSR) and Finding of No Adverse Effect (FNAE) for the Golden Gate Bridge Public Safety Railing project. The proposed project is to provide a physical separation between the vehicle travel lanes and the bicycle/pedestrian sidewalk on the Golden Gate Bridge. The public Safety Railing would be installed on the east and west sides of the bridge to enhance bicycle and pedestrian safety.

Several design alternatives were considered for the safety railing, and the Golden Gate Bridge, Highway and Transportation District has recommended Alternative C as the Preferred Alternative due to the minimal visual impact.

We have reviewed the enclosed HPSR and FNAE and concur with Caltrans and the GGBH & TD recommendation of Finding of No Adverse Effect determination. Your early review and concurrence will be appreciated.

If you have any questions, please contact Bill Wong at 498-5042.

Sincerely,

/s/ Robert F. Tally

For
Jeffrey A. Lindley
Division Administrator

MC
EZBauer
JDKao
NAStampfl
CTGuerrero
GSShishido
SGHolland
File: 2.7.16.8

Enclosure

cc:
Noel Stampfli, GGBH & TD
Rich Monroe, Caltrans Dist. 04
Joan Cullom, Caltrans Dist. 04

cc: (e-mail)
Bob Tally, HA-CA
Bill Wong, HA-CA

OPTIONAL FORM 99 (7-90)

FAX TRANSMITTAL # of pages ► 1

To Noel Stampfli	From Bill Wong
Dept./Agency Golden Gate Brg	Phone # 916-498-5042
Fax # 415-563-0809	Fax # 916-498-5008

NSN 7540-01-317-7368 5099-101 GENERAL SERVICES ADMINISTRATION

STATE OF CALIFORNIA – THE RESOURCES AGENCY
OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
P.O. BOX 942896
SACRAMENTO, CA 94296-0001
(916) 653-6624 Fax: (916) 653-9824
calshpo@mail2.quiknet.com

June 11, 1999

Reply To: FHWA990525B

Jeffrey Lindley
Division Administrator
California Division
Federal Highway Administration
980 Ninth Street, Suite, 400
SACRAMENTO CA 95814-2724

Re: 04-SF-101
HPSR and FNAE Golden Gate Bridge Safety Railing Project

Dear Mr. Lindley:

FHWA has requested my comments on the subject undertaking in accordance with 36 CFR Part 800, regulations implementing Section 106 of the National Historic Preservation Act. Thank you for consulting me.

FHWA has determined that the only historic property in the undertaking's APE is the Golden Gate Bridge. I do not object to this determination.

FHWA has determined that implementation of any of three alternatives considered will not adversely affect the historic property. FHWA acknowledges that the project sponsors prefer Alternative C. I am not prepared to concur in this determination at this time.

Before further considering the FNAE, I herewith request FHWA to provide me with documentation indicating how and when interested persons were afforded the opportunity to comment on the undertaking's potential effects on the historic property (36 CFR § 800.1[c][2]. I note that the documentation provided refers to a public meeting in early 1999 to discuss the undertaking. Please provide me with any information that documents any interested persons' views about the undertaking's effects on the historic property.

If you have any questions, please call Hans Kreutzberg at 653-9107.

NO_MS
MCGlaccum
EZBauer
JDKao
NS NAStampfli
CTGuerrero
GSShishido
SGHolland
File:
2.7.16.8

cc Joanne Cullom
Marilynn Dolley

Sincerely,

Daniel Abeyta, Acting
State Historic Preservation Officer

SCANNED
Date: 7/20/99
Initials: dfc

Called Joanne Cullom, Golden Gate Bridge will forward needed Project info. 6-21-99

JUN 14 1999
FHWA-Sacramento

SEP 2 8 1999 P-2415

STATE OF CALIFORNIA – THE RESOURCES AGENCY
GRAY DAVIS, *Governor*

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
P.O. BOX 942896
SACRAMENTO, CA 94296-0001
(916) 653-6624 Fax: (916) 653-9824
calshpo@ohp.parks.ca.gov

August 17, 1999

Reply To: FHWA990525B

Jeffrey Lindley
Division Administrator
California Division
Federal Highway Administration
980 Ninth Street, Suite 400
SACRAMENTO CA 95814-2724

RE: 04-SF-101; FNAE for Golden Gate Bridge Safety Railing Project

Dear Mr. Lindley:

In accordance with my request of June 11, 1999, FHWA has furnished me with information that documents consultation with interested persons about the captioned undertaking. Thank you for providing me with this information.

Based on my review of all the documentation received, I herewith concur in your determination that this undertaking will not adversely affect historic properties. Please note that 36 CFR § 800.5(d) specifies the actions to be taken by FHWA if the undertaking is not carried as now proposed. It is therefore important for FHWA to be notified in the event the GGBHTD may modify the undertaking.

FHWA's consideration of historic properties in the project planning process is appreciated. If you have any questions, please contact Hans Kreutzberg at 653-9107 or e-mail hkreu@ohp.parks.ca.gov

Sincerely,

Daniel Abeyta, Acting
State Historic Preservation Officer

Copy to Dist 04 along with CE.
8-25-99

8-25-99

AUG 20 1999
FHWA-Sacramento