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Certificate of Appropriateness Case Report

HEARING DATE: MARCH 21, 2018

Case No.:	**2015-009647COA**
Project Address:	**THIRD STREET BRIDGE**
Cross Street(s):	King & Channel Streets
Historic Landmark:	Lanmark No. 194
Zoning:	N/A
Block/Lot:	N/A
Applicant:	Thomas Roitman, Project Manager San Francisco Department of Public Works 30 Van Ness Avenue, Fifth Floor San Francisco, CA 94102
Staff Contact:	Natalia Kwiatkowska - (415) 575-9185 natalia.kwiatkowska@sfgov.org
Reviewed By:	Tim Frye – (415) 575-6822 tim.frye@sfgov.org

PROPERTY DESCRIPTION

THIRD STREET BRIDGE, (Caltrans Bridge No. 34C0025), also known as the Francis "Lefty" O'Doul Bridge, is a heel trunnion bascule drawbridge located at Third Street, between King and Channel Streets. The bridge crosses over Mission Creek Channel and links the South of Market and Mission Bay neighborhoods. Mission Creek Channel runs from the west to the east passing a row of houseboats, the Fourth Street Bridge, and the Third Street Bridge before draining into China Basin and the San Francisco Bay. The subject structure was originally constructed in 1933 and designed and patented by the Joseph Baermann Strauss of the Strauss Engineering Corporation.

The Third Street Bridge is designated as San Francisco Landmark No. 194. The bridge is also listed in the Caltrans Historic Bridge Inventory as a Category 2 bridge, and has been determined by Caltrans as eligible for listing in the National Register of Historic Places (National Register).

The approximately 295 foot long, 80 foot wide Third Street Bridge provides five lanes of traffic and a timber walkway approximately 10 feet wide on the eastern side of the bridge and of varying widths on the western side. The structure consists of an approximately 140-foot-long through steel truss, heel trunnion-type single-leaf bascule drawbridge, bridge deck, counterweight and opening mechanism on the north end, a machinery room within the trunnion section, a North and South approach spans, seven traffic control gates (four of which were designed and built with the original construction of the bridge), three service buildings including Operator's House, Watchman's House, and a new operations building (two of which were designed and built with the original construction of the bridge), and wood fenders and piles located in the Mission Creek Channel.

In the late 1990s rehabilitation work occurred on the bridge and included the following alterations: construction of a new operator house and control equipment, replacement of the southern approach

spans, corroded steel members, wooden piles and other waterside support, and mechanical and electrical components, modification of the roadway decking, and repainting.

CHARACTER-DEFINING FEATURES

The 1989 designating ordinance applies to the entirety of the site. To provide clarity on the review of the proposed project, the Department concurs with the character-defining features identified below by JRP Historic Consulting, as described in the *Finding of No Adverse Effect with Standards Conditions – Secretary of the Interior's Treatment of Historic Properties* (included as an attachment):

- Steel through truss heel trunnion bascule span, including concrete counterweight, opening mechanism, and riveted steel truss members
- Operator's House, including basic form and plan, wood windows, stucco siding, and hip roof
- Watchman's House, including basic form and plan, wood windows, stucco siding, and hip roof
- Traffic Control Gate Standards #1-4
- Steel catwalks and staircases
- Machinery Room
- Metal railing throughout
- Substructure elements, including reinforced concrete columns, reinforced concrete caps, and timber piles that form Piers 1-3
- Under-deck elements of trunnion and bascule trusses, including steel beams, rivets and bolts
- Concrete piles supporting Operator's and Watchman's Houses.

PROJECT DESCRIPTION

San Francisco Public Works is proposing to repair and rehabilitate the Third Street Bridge as preventative maintenance to maintain the integrity of the bridge superstructure.

The proposed project entails the repair and replacement of steel bridge members and the fender pile system, repair of the concrete piles and steel stairway, replacement of the existing deck, and repainting and recoating of the bridge. The described work will require the construction of pile-supported temporary scaffolding and a debris-containment system.

Repair to the counterweight has been determined to be ordinary maintenance and repairs to correct deterioration, decay or damage of existing materials and not subject to the requirements of a Certificate of Appropriateness application and process per Section 1005(e) of the Planning Code.

Please reference the plans and photographs for details. The work is described in more detail below:

Steel Bridge Members

- Damaged and buckled steel members on all parts of the bridge structure will be repaired or replaced by full or partial replacement to match existing members. Surface and pack rust removal will occur on both the underside and top-side of the bride deck, on concrete support piles, and on areas requiring repair that are exposed after cleaning and removal of visible corrosion. Work will include abrasive blasting, wire brushing, needle-gun scaling, and grinding

of localized areas of corrosion. Damaged welds between the decking and bridge support beams/shim plates will be repaired by re-welding or bolting.

Steel Stairway

- The stairway mounted on the bridge superstructure will be repaired by re-welding or replacement of brackets of damaged and deficient welds, followed by replacement of stair treads. Repair and replacement of the stairway feature, including the brackets and treads, will be done in-kind. Materials will match the historic design, color, texture, and materials.

Concrete Piles

- The existing supports for the original Control House (Operator House) and Signalman's Hut (Watchman's House) consist of four 12 x 12 concrete piles in the channel for each structure. Repair of the support piles for both structures will consist of pile cladding and mortar/grout injection.

Fender Pile System

- The existing fender pile system (composed of approximately 130 piles) will be rehabilitated by installing grouted fiberglass sleeves around the existing piles. If fender piles cannot be sleeved due to field conditions, a contingency plan includes the removal of existing piles and replacement of up to 12 piles through vibratory installation. Existing platforms, walkways, fender curtain walls will be reconstructed. The new platforms, walkways and horizontal walers will consist of plastic lumber reinforced with fiberglass.

Decking:

- The existing non-historic deck will be replaced with a new modularized bridge deck system that matches the current non-historic metal deck system. The new deck will be comprised of steel grading with a similar dimension and style as the existing decking. The existing open grating deck on the bascule span of the bridge was installed in the 1953; it replaced the historic timber deck, which was solid creosoted timber planking.
- The existing non-historic timber walkway on the east and west ends of the bridge that provides pedestrian access will be replaced in-kind to match the existing timber decking in materials, dimension, and placement. The planks require periodic replacement due to deterioration from foot traffic and exposure to the elements.

Repainting and Recoating:

- After repair or replacement of the steel bridge members and deck, rust removal, and corrosion mitigation, the bridge structure will be repainted and recoated with a historically appropriate color. The bridge has historically been painted so this activity will not cover materials intended to be exposed. In coordination with Public Works and Caltrans, Preservation staff will review and approve historically appropriate paint colors.

Traffic Control and Pedestrian Safety Gates

- A new traffic control gate will be installed at the northeast side of the bridge to mitigate safety hazards. The bridge currently features a total of seven traffic control gates, four of which were

designed and built with the original construction of the bridge and are identified as character-defining features, these include: three historic traffic control gates located at the southwest, southeast, and northwest corners and one historic pedestrian traffic control gate located at the northwest corner, which does not include the gate arm. The bridge also features three non-historic traffic control gates located adjacent to the historic traffic control gates designed in a railroad crossing-style. The new traffic control gate at the northeast side of the bridge will be designed to match the other three non-historic traffic control gates.

- One new pedestrian traffic control gate will be installed at the northwest corner of the bridge, adjacent to the existing pedestrian gate to mitigate safety hazards. The existing pedestrian gate located at the northwest corner is identified as character-defining features since it was designed and built with the original construction of the bridge; however, the gate arm at the pedestrian gate is not a historic feature and therefore not part of the character-defining features. The new swing gate will be installed in an existing opening where the west sidewalk meets the promenade sidewalk and will be de designed to match the adjacent non-historic railing.

Temporary Scaffolding and Debris-Containment System

- Temporary scaffolding and associated temporary files will be constructed to allow access to the work areas, supports safety netting, and support a containment system encapsulating the entire superstructure. The piles will be installed from a barge equipped with a crane-mounted vibratory hammer. It is possible that the installation of these piles may cause vibrations that could damage the Operator's House and the Watchman's House. Public Work's Standard Construction Measures call for a construction monitoring plan that will monitor vibrations at each of these historic buildings and will ensure that any damage will be minimized and repaired to match existing conditions. Department staff is requesting a Stabilization and Monitoring Plan as a Condition of Approval to further ensure any damage will be minimized.

COMPLIANCE WITH THE PLANNING CODE PROVISIONS

The proposed project is in compliance with all other provisions of the Planning Code.

APPLICABLE PRESERVATION STANDARDS

ARTICLE 10

Pursuant to Section 1006.2 of the Planning Code, unless exempt from the Certificate of Appropriateness requirements or delegated to Planning Department Preservation staff through the Administrative Certificate Appropriateness process, the Historic Preservation Commission is required to review any applications for the construction, alteration, removal, or demolition of any designated Landmark for which a City permit is required. Section 1006.6 states that in evaluating a request for a Certificate of Appropriateness for an individual landmark or a contributing building within a historic district, the Historic Preservation Commission must find that the proposed work is in compliance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*, as well as the designating Ordinance and any applicable guidelines, local interpretations, bulletins, related appendices, or other policies.

THE SECRETARY OF THE INTERIOR'S STANDARDS

Rehabilitation is the act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features that convey its historical, cultural, or architectural values. The Rehabilitation Standards provide, in relevant part(s):

Standard 1: A property shall be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristics of the building and its site and environment.

The proposed project would maintain the subject property's current and historic use as a bridge. Therefore, the proposed project complies with Rehabilitation Standard 1.

Standard 2: The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.

The proposed project would not remove or alter any features or spaces, which characterize the building or surrounding landmark district. The project will include repair of some steel members and the steel stairway. If repair is not possible, replacement will match the historic in design, color, texture, and materials, based on documentary and physical evidence. Therefore, the proposed project complies with Rehabilitation Standard 2.

Standard 3: Each property will be recognized as a physical record of its time, place and use. Changes that create a false sense of historical development, such as adding conjectural features or architectural elements from other buildings, shall not be undertaken.

The proposed project does not include the addition of conjectural elements or architectural features from other structures. The proposed replacement elements, including steel bridge members, bridge deck, fender pile systems, when repair is determined unfeasible, will include in-kind replacement to match the existing based on physical evidence. Therefore, the proposed project complies with Rehabilitation Standard 3.

Standard 5: Distinctive features, finishes, and construction techniques or examples of fine craftsmanship that characterize a property will be preserved.

The proposed project does not impact or destroy any distinctive features, finishes, or construction techniques, which characterize the landmark. The project includes proposed repainting and recoating of the bridge after all repair and replacement of the steel bridge members and deck, rust removal, and corrosion mitigation. The bridge has historically been painted so this activity will not cover materials intended to be exposed. The bridge structure will be repainted and recoated with a multi-part coating system designed for use in marine environments. The coating and painting will help protect the distinctive features of the bridge. In coordination with Public Works and Caltrans, Preservation staff will review and approve historically appropriate paint colors. Therefore, the proposed project complies with Rehabilitation Standard 5.

Standard 6: Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture, and, where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence.

The proposed project will repair rather than replace historic features where possible. Where repair is determined not feasible due to the severity of deterioration, replacement will be completed in-kind to match existing materials in design, color, texture, and where possible, materials. The project includes repair of the existing support piles for the original Control House (Operator House) and Signalman's Hut (Watchman's House). Repair of the support piles for both structures will consist of installation of encapsulating pile jackets to preserve the existing concrete piers, which are located mostly underwater and minimally visible from the public right-of-way. The project also includes the repair of the existing fender pile system by installing grouted fiberglass sleeves around the existing piles. A contingency plan includes the replacement of up to 12 piles through vibratory installation where the severity of deterioration requires replacement. Therefore, the proposed project complies with Rehabilitation Standard 6.

Standard 7: Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.

The project will undertake gentlest means possible with any chemical or physical treatments. The proposal includes chemical and physical treatments during rust removal and lead abatement of the bridge deck, concrete support piles, and other areas. Reference will be made to Preservation Brief 15 on Preservation of Historic Concrete for guidance on cleaning and repairing concrete materials. Lead-based paint on the bridge will be removed in accordance with methods approved by the U.S. Environmental Protection Agency. The Secretary of Interior's Standards for the Treatment of Historic Properties Action Plan, prepared by JRP Consulting, dated June 2016, provides additional information regarding the chemical and physical treatments and consistency with the Secretary of Interior's Standards. Therefore, the proposed project complies with Rehabilitation Standard 7.

Standard 9: New additions, exterior alterations, or related new construction will not destroy historic materials, features, and spatial relationships that characterize the property. The new work will be differentiated from the old and will be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment.

The proposed project would not destroy or damage any contributing materials, features, and spatial relationships that characterize the landmark. The project includes replacement of the non-historic deck with a new modularized bridge deck system. The historic timber deck was replaced with the current deck in 1953; therefore, the existing deck is not considered a character-defining feature of the structure. The new deck will be comprised of steel grading with a similar dimension, pattern, and style as the existing decking. The new deck will be compatible with the

historic materials, features, size, scale, and proportions. The project also includes the replacement of the non-historic timber walkway on the east and west ends of the bridge that provides pedestrian access. The planks require periodic replacement due to deterioration from foot traffic and exposure to the elements. The replacement timber planking will be compatible with the historic materials, features, size, scale, and proportions since the bridge historically included timber walkways. Therefore, the proposed project complies with Rehabilitation Standard #9.

Standard 10: New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

The proposed project includes the addition of one new traffic control gate at the northeast side of the bridge and the addition of one new pedestrian safety gate at the northwest corner of the bridge to mitigate safety hazards. The gates will be designed to be compatible with existing materials, features, size, scale, and proportions and if removed in the future, they will not impair the essential form and integrity of the bridge and its environment. The proposal also includes the construction of two temporary features, including temporary scaffolding and debris-containment system, in such a manner that when removed in the future, they will not impair the essential form and integrity of the bridge and its environment. Department staff is requesting a Stabilization and Monitoring Plan as a Condition of Approval in addition to Public Work's Standard Construction Measures to further ensure any damage will be minimized and repaired to match existing conditions. Therefore, the proposed project complies with Rehabilitation Standard 10.

Summary: The Department finds that the overall project is consistent with the *Secretary of the Interior Standards for Rehabilitation*.

PUBLIC/NEIGHBORHOOD INPUT

To date, the Department has not received any public correspondences about the proposed project.

STAFF ANALYSIS

Included as an exhibit are architectural drawings of the existing structure and the proposed work. Based on the requirements of Article 10 and the *Secretary of Interior's Standards*, Department staff has determined that the proposed work is compatible with the character-defining features of the subject landmark.

Staff finds that the proposed rehabilitation to the structure will preserve the landmark's overall form, setting, or spatial relationship. The project will repair and rehabilitate the Third Street Bridge as preventative maintenance to maintain the integrity of the bridge superstructure. Therefore, rehabilitation of the bridge will not affect the integrity of the landmark.

Staff recommends four Conditions of Approval that will ensure that the proposed work is undertaken in conformance with this Certificate of Appropriateness. These conditions are proposed to further

expand on the Environmental and Section 106 analysis, which will result in greater conformance with the *Standards* and the requirements of Article 10.

Department staff finds that the proposed work will be in conformance with the *Standards* and requirements of Article 10. Staff recommends approval with conditions.

ENVIRONMENTAL REVIEW STATUS

The Department has determined that the proposed project is exempt/excluded from environmental review, pursuant to CEQA Guideline Section 15302 (Class Two – Replacement and Reconstruction of Existing Facilities, where the new structure will be located on the same site as the structure replaced and will have substantially the same purpose and capacity as the structure replaced).

Under the direction of Caltrans, Section 106 analysis of the project compiled the following:

- Archaeological Survey Report (ASR): signed April 2016
- Historic Property Survey Report (HPSR): July 2016 finalized
- Secretary of Interior Standards for Rehabilitation Action Plan (SOIS-AP): signed June 2016
- Finding of No Adverse Effect with the Standard Condition of Secretary of Interior Standards for Rehabilitation (FNAE-SC-SOIS): signed June 2016

The SOIS-AP and FNAE-SC-SOIS documents are included in the packet for your information.

PLANNING DEPARTMENT RECOMMENDATION

Planning Department staff recommends APPROVAL WITH CONDITIONS of the proposed project as it appears to meet the *Secretary of the Interior Standards for Rehabilitation* and requirements of Article 10.

1. Prior to any coating and painting work, the Project Sponsor shall submit proposed paint samples to Planning Department Preservation staff to verify the historically accurate final paint choice and finish for the bridge.

2. Prior to commencement of construction, the Project Sponsor shall consult with a historic engineer prior to any construction work, that meets the minimum qualifications of the Secretary of the Interior's Standards, to conduct peer review of the proposed work, including review of the required Stabilization and Monitoring Plan, Final Inspection Report, and Structural Steel Coatings Report. The Project Sponsor shall provide the information and qualifications for the selected historic engineer consultant to Planning Department Preservation staff to demonstrate compliance with the Secretary of the Interior's historic engineer minimum qualifications.

3. Prior to commencement of construction, the Project Sponsor shall submit a Stabilization and Monitoring Plan that has been reviewed and verified by the required historic engineer to Planning Department Preservation staff. The report shall provide a construction monitoring plan that will monitor vibrations at the Operator's House and the Watchman's House to ensure that any damage will be minimized and repaired to match existing conditions. The report shall

include a pre-construction and post-construction conditions assessment, alerts to Planning Department Preservation staff if a high threshold of vibrations is reached, and quarterly reports to Planning Department Preservation staff summarizing work with accompanying photos.

4. Prior to commencement of construction, the Project Sponsor shall provide a Final Inspection Report to Planning Department Preservation staff that has been reviewed and verified by the required historic engineer consultant. The report shall provide a final percentage of replacement based on the weight of the existing bridge. If it is discovered that 25 percent or more of the total weight of the bridge must be replaced, the Project Sponsor shall return to the Historic Preservation Commission for review and approval of the expanded replacement project under a new Certificate of Appropriateness.

ATTACHMENTS

Draft Motion
Exhibits:

- Aerial Photograph
- Site Photograph

Environmental Analysis
Project Sponsor submittal, including:

- Certificate of Appropriateness Application
- Secretary of Interior Standards for Rehabilitation Action Plan (SOIS-AP)
- Finding of No Adverse Effect with the Standard Condition of Secretary of Interior Standards for Rehabilitation (FNAE-SC-SOIS)
- Reduced Plans

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Historic Preservation Commission
Draft Motion
HEARING DATE: MARCH 21, 2018

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Reviewed By:	Tim Frye – (415) 575-6822 tim.frye@sfgov.org

ADOPTING FINDINGS FOR A CERTIFICATE OF APPROPRIATENESS FOR PROPOSED WORK DETERMINED TO BE APPROPRIATE FOR AND CONSISTENT WITH THE PURPOSES OF ARTICLE 10, TO MEET THE STANDARDS OF ARTICLE 10 AND TO MEET THE SECRETARY OF INTERIOR'S STANDARDS FOR REHABILITATION, FOR THE THIRD STREET BRIDGE, SAN FRANCISCO LANDMARK NO. 194.

PREAMBLE

WHEREAS, on March 10, 2016 San Francisco Department of Public Works ("Project Sponsor") filed an application with the San Francisco Planning Department (hereinafter "Department") for a Certificate of Appropriateness for repair and rehabilitation of the existing bridge consisting of: repair and replacement of steel bridge members and the fender pile system, repair of the concrete piles and steel stairway, replacement of the existing deck, and repainting and recoating.

WHEREAS, the Project was determined by the Department to be categorically exempt from environmental review. The Historic Preservation Commission ("Commission") has reviewed and concurs with said determination.

WHEREAS, on March 21, 2018, the Commission conducted a duly noticed public hearing on the current project, Case No. 2015-009647COA (Project) for its appropriateness.

WHEREAS, in reviewing the Application, the Commission has had available for its review and consideration case reports, plans, and other materials pertaining to the Project contained in the

Department's case files, has reviewed and heard testimony and received materials from interested parties during the public hearing on the Project.

MOVED, that the Commission hereby grants the Certificate of Appropriateness, in conformance with the architectural plans labeled Exhibit A on file in the docket for Case 2015-009647COA based on the following findings:

FINDINGS

Having reviewed all the materials identified in the recitals above and having heard oral testimony and arguments, this Commission finds, concludes, and determines as follows:

1. The above recitals are accurate and also constitute findings of the Commission.

2. Findings pursuant to Article 10:

   The Historic Preservation Commission has determined that the proposed work is compatible with the character of the landmark as described in the designation report.

   - The project will retain the existing transportation use and historic character of the structure and while repairing and replacing damaged elements.

   - The repair will require alterations to some of the existing historic elements. None of these activities will destroy characteristic historic materials, features, or spatial relationships.

   - The removal of the non-historic decking and its replacement with new modularized bridge deck system that matches the current non-historic metal deck system will not detract from the character of the structure or district. The placement, scale, and design of the decking makes it compatible with the structure. The addition of a new deck will be done so as not to damage historic materials, features, and spatial relationships that characterize the historic property.

   - The replacement of the non-historic timber walkway on the east and west ends of the bridge that provide pedestrian access will not remove any historic materails. The planks require periodic replacement due to deterioration from foot traffic and exposure to the elements. The timber planking will be replaced in-kind to match the existing decking in materials, dimension, and placement.

   - The repainting and recoating of the bridge will not destroy any characteristic historic materials. The bridge has historically been painted so this activity will not cover materials intended to be exposed. In coordination with Public Works and Caltrans, Preservation staff will review and approve historically appropriate paint colors.

   - The installation of one new traffic control gate and one new pedestrian safety gate will be compatible with existing materials, features, size, scale, and proportions of the structure.

The gates will be designed to match the existing non-historic gates and are necessary to mitigate safety hazards.

- The proposed project meets the requirements of Article 10 of the Planning Code.
- The proposed project meets the following *Secretary of Interior's Standards for Rehabilitation:*

Standard 1.
A property shall be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristics of the building and its site and environment.

Standard 2.
The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.

Standard 3.
Each property will be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or elements from other historic properties, will not be undertaken.

Standard 5.
Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a property shall be preserved.

Standard 9.
New additions, exterior alterations, or related new construction will not destroy historic materials, features, and spatial relationships that characterize the property. The new work will be differentiated from the old and will be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment.

Standard 10.
New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

3. **General Plan Compliance.** The proposed Certificate of Appropriateness is, on balance, consistent with the following Objectives and Policies of the General Plan:

I. URBAN DESIGN ELEMENT
THE URBAN DESIGN ELEMENT CONCERNS THE PHYSICAL CHARACTER AND ORDER OF THE CITY, AND THE RELATIONSHIP BETWEEN PEOPLE AND THEIR ENVIRONMENT.

GOALS
The Urban Design Element is concerned both with development and with preservation. It is a concerted effort to recognize the positive attributes of the city, to enhance and conserve those attributes, and to

improve the living environment where it is less than satisfactory. The Plan is a definition of quality, a definition based upon human needs.

OBJECTIVE 1
EMPHASIS OF THE CHARACTERISTIC PATTERN WHICH GIVES TO THE CITY AND ITS NEIGHBORHOODS AN IMAGE, A SENSE OF PURPOSE, AND A MEANS OF ORIENTATION.

POLICY 1.3
Recognize that buildings, when seen together, produce a total effect that characterizes the city and its districts.

OBJECTIVE 2
CONSERVATION OF RESOURCES WHICH PROVIDE A SENSE OF NATURE, CONTINUITY WITH THE PAST, AND FREEDOM FROM OVERCROWDING.

POLICY 2.4
Preserve notable landmarks and areas of historic, architectural or aesthetic value, and promote the preservation of other buildings and features that provide continuity with past development.

POLICY 2.5
Use care in remodeling of older buildings, in order to enhance rather than weaken the original character of such buildings.

POLICY 2.7
Recognize and protect outstanding and unique areas that contribute in an extraordinary degree to San Francisco's visual form and character.

The goal of a Certificate of Appropriateness is to provide additional oversight for buildings and districts that are architecturally or culturally significant to the City in order to protect the qualities that are associated with that significance.

The proposed project qualifies for a Certificate of Appropriateness and therefore furthers these policies and objectives by maintaining and preserving the character-defining features of the contributory property and landmark district for the future enjoyment and education of San Francisco residents and visitors.

4. The proposed project is generally consistent with the eight General Plan priority policies set forth in Section 101.1 in that:

   A) The existing neighborhood-serving retail uses will be preserved and enhanced and future opportunities for resident employment in and ownership of such businesses will be enhanced:

The proposed project is for the rehabilitation of a transportation property and will not have any effect on neighborhood-serving retail uses.

B) The existing housing and neighborhood character will be conserved and protected in order to preserve the cultural and economic diversity of our neighborhoods:

The proposed project will strengthen neighborhood character by respecting the character-defining features of the site in conformance with the Secretary of the Interior's Standards.

C) The City's supply of affordable housing will be preserved and enhanced:

The proposed project will not have any effect on the City's supply of afforadable housing.

D) The commuter traffic will not impede MUNI transit service or overburden our streets or neighborhood parking:

The project's effect on surface and marine traffic was discussed in the environmental document, see Case No. 2015-009647ENV.

E) A diverse economic base will be maintained by protecting our industrial and service sectors from displacement due to commercial office development. And future opportunities for resident employment and ownership in these sectors will be enhanced:

The proposed project will not have any impact on industrial and service sector jobs.

F) The City will achieve the greatest possible preparedness to protect against injury and loss of life in an earthquake.

Preparedness against injury and loss of life in an earthquake will be improved by the proposed work. The work will be executed in compliance with all applicable construction and safety measures.

G) That landmark and historic buildings will be preserved:

The proposed project is in conformance with Article 10 of the Planning Code and the Secretary of the Interior's Standards.

H) Parks and open space and their access to sunlight and vistas will be protected from development:

The proposed project will not impact the access to sunlight or vistas for the parks and open space.

5. For these reasons, the proposal overall, is appropriate for and consistent with the purposes of Article 10, meets the standards of Article 10, and the Secretary of Interior's Standards for Rehabilitation, General Plan and Prop M findings of the Planning Code.

DECISION

That based upon the Record, the submissions by the Applicant, the staff of the Department and other interested parties, the oral testimony presented to this Commission at the public hearings, and all other written materials submitted by all parties, the Commission hereby **GRANTS a Certificate of Appropriateness** for the Third Street Briddge, San Francisco Landmark No. 194, for proposed work in conformance with the renderings and architectural sketches labeled Exhibit A on file in the docket for Case No. 2015-009647COA.

APPEAL AND EFFECTIVE DATE OF MOTION: The Commission's decision on a Certificate of Appropriateness shall be final unless appealed within thirty (30) days. Any appeal shall be made to the Board of Appeals, unless the proposed project requires Board of Supervisors approval or is appealed to the Board of Supervisors as a conditional use, in which case any appeal shall be made to the Board of Supervisors (see Charter Section 4.135).

Duration of this Certificate of Appropriateness: This Certificate of Appropriateness is issued pursuant to Article 10 of the Planning Code and is valid for a period of three (3) years from the effective date of approval by the Historic Preservation Commission. The authorization and right vested by virtue of this action shall be deemed void and canceled if, within 3 years of the date of this Motion, a site permit or building permit for the Project has not been secured by Project Sponsor.

THIS IS NOT A PERMIT TO COMMENCE ANY WORK OR CHANGE OF OCCUPANCY UNLESS NO BUILDING PERMIT IS REQUIRED. PERMITS FROM THE DEPARTMENT OF BUILDING INSPECTION (and any other appropriate agencies) MUST BE SECURED BEFORE WORK IS STARTED OR OCCUPANCY IS CHANGED.

I hereby certify that the Historical Preservation Commission ADOPTED the foregoing Motion on March 21, 2018.

Jonas P. Ionin
Commission Secretary

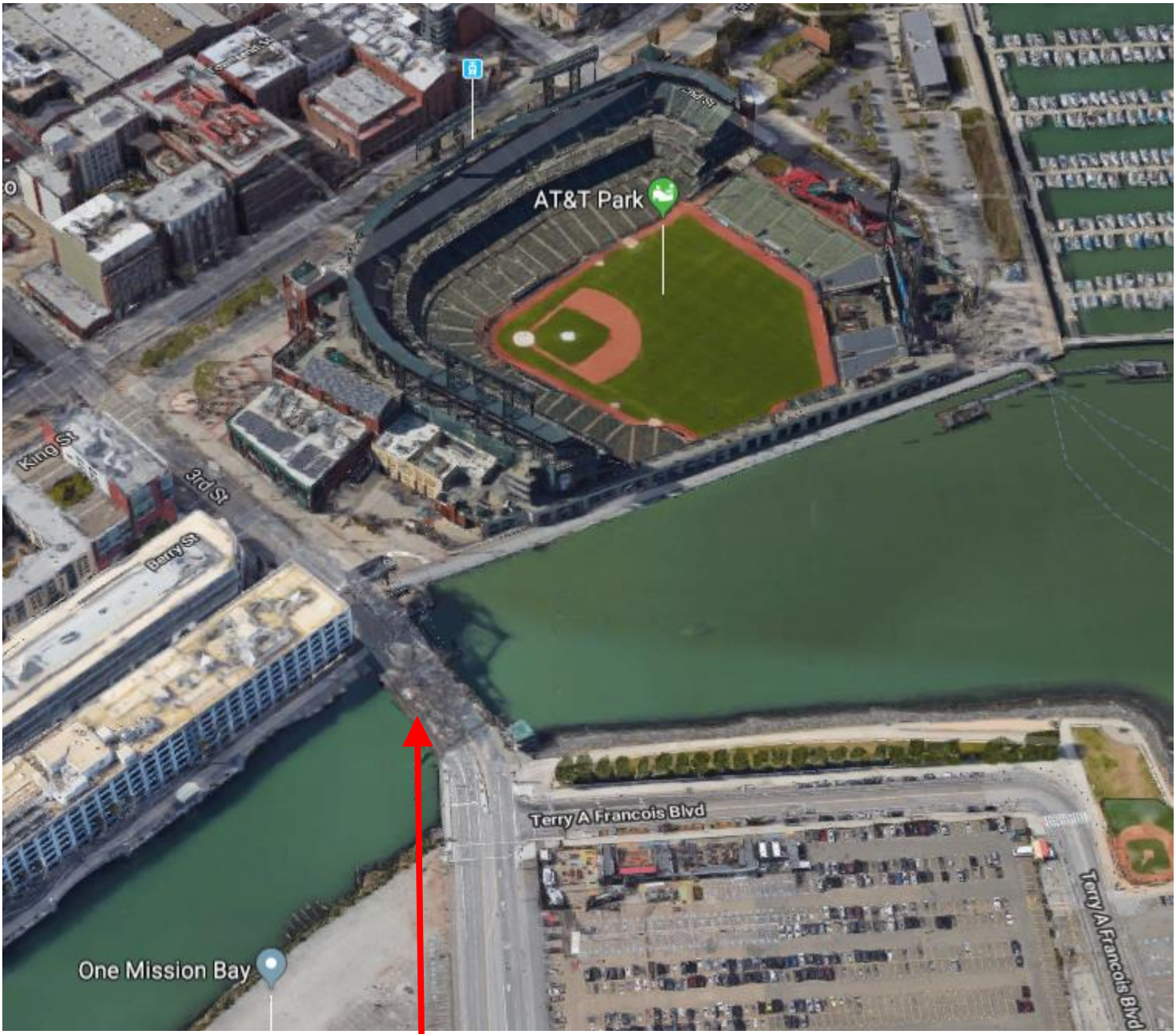
AYES:

NAYS:

ABSENT:

ADOPTED: March 21, 2018

Aerial Photo



Site Photo

SAN FRANCISCO
PLANNING DEPARTMENT

Certificate of Determination
Exemption from Environmental Review

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Case No.:	**2015-009647ENV**
Project Title:	**Third Street Bridge Rehabilitation**
Zoning:	N/A
Block/Lot:	N/A
Lot Size:	N/A
Project Sponsor:	Boris Deunert, San Francisco Public Works, (415) 558-4009
Staff Contact:	Don Lewis, (415) 575-9168, don.lewis@sfgov.org

PROJECT DESCRIPTION:

The Third Street Bridge, also known as the Francis "Lefty" O'Doul Bridge, crosses over Mission Creek Channel in the South of Market neighborhood. The Third Street Bridge was constructed in the 1930s and is a San Francisco historic landmark. The bridge provides five lanes of traffic (three lanes in the southbound direction and two in the northbound direction) and a timber walkway is located on both sides of the bridge. The bridge also opens to allow boats to pass along Mission Creek Channel.

San Francisco Public Works is proposing to repair and rehabilitate the Third Street Bridge to maintain the integrity of the bridge superstructure. The proposed project would: remove surface and pack rust; repair damaged and buckled steel members, damaged welds, the concrete counterweight, the piles supporting ancillary bridge structures, and the fender pile system; and repaint and recoat the bridge. The proposed project also includes the construction of pile-supported temporary scaffolding and a debris-containment system.

(Continued on next page)

EXEMPT STATUS:

Categorical Exemption, Class 2 (California Environmental Quality Act (CEQA) Guidelines section 15302)

(Continued on next page)

DETERMINATION:

I do hereby certify that the above determination has been made pursuant to State and local requirements.

for _____ June 30, 2017

Lisa Gibson
Environmental Review Officer

Date

cc: Boris Deunert, San Francisco Public Works; Allison Vanderslice, preservation planner; historic preservation distribution list; Virna Byrd, M.D.F.; Supervisor Jane Kim, District 6 (via Clerk of the Board)

PROJECT DESCRIPTION (continued):

The proposed project would require the use of non-motorized barges and rafts, moved with tugboats when necessary. During construction, the non-motorized barges and rafts would be stationed on either side of the bridge for use as work platforms. When not in use the small barges or rafts would be moored east of the old Operator House, adjacent to AT&T Park. Larger barges would be moored along the north of China Basin Park. Nighttime and weekend construction would be required.

Temporary Scaffolding and Debris Containment System

Temporary scaffolding would be constructed on the northern side of the channel to allow access to work areas, support safety netting, and support a containment system encapsulating the entire superstructure. Approximately 50 temporary wooden piles would be installed from a non-motorized barge equipped with a crane-mounted vibratory hammer. [1] Temporary piles would be driven to tip elevation of -50 feet San Francisco City Datum.[2]

The encapsulation containment system would be used to contain debris for rust remediation on the structure and stairway, and for some deck work. Additional containment systems would be constructed to hang off the deck for additional deck repair work, off the counterweight for counterweight repair, and attached to the bottom of ancillary bridge structures (Operator House and Signalman's Hut) during repair of the support systems for those structures.[3] Containment systems would use Caltrans authorized geosynthetic fabric and/or plastic sheeting covers and platforms to collect debris and attachments on equipment to catch debris during small demolition activities. Debris-catching devices would be emptied regularly with collected debris removed and stored away from Mission Creek in the staging area on Terry Francois Boulevard and protected from run-on and run-off.

All temporary piles, scaffolding, netting and the containment system would be removed upon completion of work. Temporary piles would be removed by vibratory hammer. Removal and disposal of spent abrasive and resulting debris would comply with local and state regulations.

Repair/Replacement of Steel Bridge Members and Repair of Steel Stairway

Damaged and buckled steel members on all parts of the bridge structure would be repaired or replaced by full or partial replacement, or by flame straightening of the member followed by the installation of bolted cover plates to fully replace the damaged section. Corroded high-strength bolts would be replaced, and broken welds on the structure would be repaired. These repairs would be performed from the temporary scaffolding and from the bridge deck.

Repair of the stairway mounted on the bridge superstructure would include re-welding or replacement of brackets of damaged and deficient welds, followed by replacement of stair treads. These repairs would be performed from the bridge deck.

Surface and pack rust removal would occur on both the underside and top-side of the bridge deck, on existing concrete support piles, and on areas requiring repair that are exposed after cleaning and removing visible corrosion. Additional repair areas may be exposed after cleaning and removing the visible corrosion. Work

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[1] Pile-driving work would not occur at nighttime.

[2] San Francisco City Datum is 6.70 feet above ordinary high water mark. In the vicinity of the Third Street Bridge the mudline varies from -15 to -37 so piles will be driven to a depth below mud line of approximately 45 feet.

[3] Containment systems would conform to Caltrans Standard Specifications sections 13 (Water Pollution Control), 14-9.02 (Air Pollution Control), 14.9-03 (Dust Control), 15-5 (Bridge Rehabilitation), and 48 (Temporary Structures).

would include abrasive blasting, wire brushing, needle-gun scaling, and grinding of localized areas of corrosion.[4] These repairs would be performed from the temporary scaffolding.

Lead abatement would also occur incidental to rust removal, using the same methods as rust removal. Lead-bearing materials would be captured by the encapsulation system. Lead-based paint on the bridge would be removed by the contractor in accordance with methods approved by the U.S. Environmental Protection Agency. Acceptable methods may include wet scraping or the use of a dustless needle gun connected to a vacuum unit with a high efficiency particulate air filter that empties directly into a waste container. The waste container would be properly documented and disposed of at a Class I landfill near the project area. Weep holes would be added to under-deck members exposed to spray, to allow for adequate water drainage. Holes would be drilled in existing members, or be pre-drilled in replacement members. This work would be performed from the temporary scaffolding.

Repair and Replacement of Bridge Deck

Damaged welds between the decking and bridge support beams/shim plates would be repaired by welding or bolting. The existing deck would be entirely replaced with a modularized bridge deck system allowing greater ease of section replacement. The existing deck would be removed and the prefabricated modular system installed by welding or bolting. These repairs would be performed from the bridge deck.

Repair of Concrete Counterweight

The majority of repair on the two concrete counterweights would occur along the edges and where the steel girders connect to the counterweights at areas with exposed steel mesh and steel reinforcement, and concrete spalling (i.e., broken up, flaked, or pitted concrete). Loose, broken, softened, and spalled concrete would be removed by abrasive blasting and chipping down to sound concrete. Where existing reinforcing bars are exposed, concrete would be removed to a minimum of one inch all around the bars. Mortar would be placed in the voids and troweled smooth. The color of the mortar would be selected to best match the existing concrete color.

Repair would occur with the bridge in the raised position so the counterweight is near street grade. The bridge would be closed to traffic during the repair to the concrete counterweight. Work would be accomplished from temporary scaffolding and/or from mechanical lifts on the approach slab roadway surface and sidewalk. Work would be accomplished with chipping hammers and other hand tools.

Repair of Concrete Piles Supporting the Operator House and Signalman's Hut

Each of the existing supports for the original Operator House and Signalman's Hut consists of four 12 x 12 foot concrete piles in the channel for each structure. Repair of the support piles for both structures would consist of pile cladding and mortar/grout injection. During this repair work all spalled concrete would be removed by blasting and chipping, and steel reinforcement would be cleaned by blasting and brushing. Any steel reinforcement with greater than 25 percent loss of cross section would be augmented with additional reinforcement.

In general, the piles would be repaired by encapsulating each deteriorated pile with an epoxy grout or concrete filled pile jacket. Encapsulation is used when a pile is damaged, but still retains some load bearing capacity, as is the case with the existing concrete piles. All in-water work to jacket the piles would be accomplished by using best management practices, including hand-placement of the jackets to minimize bottom sediment disturbance,

[4] Abrasive and water blasting would not occur at nighttime.

and ensuring that grout would be contained and not allowed to enter the water. Pile jackets would be constructed from a composite fiberglass material and are watertight.

Concrete pilings to be encased are first cleaned of any loosely adhering marine organisms and the existing damaged material on the pile. A custom fabricated pile jacket is then installed around the entire pile. The bottom end of the jacket would either be fitted with a watertight rubber seal or embedded in the bed of Mission Creek to prevent concrete leaks. The top end of the jacket would also be sealed or set so that the concrete fill does not spill out of the jacket. Epoxy grout or concrete is then pumped into the jacket through a suitable hose extending down to the lowest point of the jacket and connected via a watertight seal. As the form is slowly filled with concrete, hydraulic pressure forces the entrained seawater within the fabric form out through an overflow valve or the top of the jacket. The method would employ a filter system that collects the exiting water and prevents suspended solids from discharging into surrounding waters. The valve would be permanently closed once the form has been filled.

Repair of the concrete piles would occur during low tide from rafts. Support from a diver would be required, with additional support provided by a non-motorized barge anchored in the channel.

Repaint and Recoat the Bridge

After repair and replacement of the steel bridge members and deck, rust removal, and corrosion repair, the bridge structure would be repainted and recoated with a multi-part coating system designed for use in marine environments. Any deep pitting or any area of unevenness would be filled with epoxy resin. All areas above the deck would be cleaned to near white metal by brushing and blasting and coated with a zinc-rich primer followed by epoxy coating. Work would include use of a sealant for all nuts, bolts, and crevices. All areas within splash zone (deck and below) would be cleaned to near white metal by brushing and blasting, and coated with zinc spray (metalizing) followed by an epoxy coating. Work on steel sections covered at the highest high tide (i.e., directly above the piers) would be scheduled so that this area is treated at low tide.

Repair/Replacement of Fender Pile System

The existing fender pile system (composed of approximately 130 piles) would be rehabilitated by installing grouted fiberglass sleeves around the existing piles, and existing platforms, walkways, fender curtain walls would be reconstructed. The new platforms, walkways and horizontal walers[5] would consist of plastic lumber reinforced with fiberglass. This work would be supported by divers.

Similar to the sleeves on the concrete piles, the pile sleeves on the timber piles would be installed by divers supported by a non-motorized barge equipped with dive and construction related equipment (safety personnel, compressors, grout mixers and pumps, tools and materials, etc). Work would include cleaning the piles of surface debris, installing the jacket to 2 feet below mudline and pumping the sleeve with epoxy grout. Construction of walkways, platforms and walers would be performed from non-motorized barges anchored to the fender pile system. The project would construct a silt-curtain perimeter consisting of a float, a turbidity curtain, and ballast, to minimize mud migration beyond the work area. This would be removed once sediment has settled.

In the event that some existing fender piles cannot be sleeved due to field conditions, a contingency plan allowing the subject piles to be removed and replaced through vibratory installation. This contingency plan would provide for the installation of up to 12 piles over the course of not more than two days. Installation would occur during daylight hours only.

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[5] A waler is a plank of wood or block of concrete used for support or to maintain required separation between components in order to help maintain the form of a construction under stress.

Surface and Marine Traffic

Project-related construction is anticipated to occur for 14 months, from November 2017 to January 2019. Full closure of the bridge would be required for a maximum of 150 days (approximately five months), and partial lane closures of one or two lanes out of the five total travel lanes would occur for the remainder of the construction duration. Project-related construction activities would overlap with San Francisco Giants baseball home games at nearby AT&T Park. During Giants home game days or during other events at AT&T Park, the bridge would be open and operate the same as under existing conditions. During full closure, which would be only allowed when there are no events at AT&T Park, no vehicles, pedestrians or bicyclists would be allowed to cross the bridge. Additionally, during the entire construction duration, vehicular traffic would not be allowed on Terry A. Francois Boulevard between Third Street and approximately 500 feet east, due to construction staging on the northern half of the street.

There would be three phases of partial lane closures. Under the first partial closure scenario, the two northbound travel lanes on the east side of the bridge would be closed to vehicular traffic. The center lane would be reversed to allow northbound traffic, if necessary. Pedestrian traffic on both sides of the bridge would be maintained, but at times, the sidewalk on the east side of the bridge would need to be closed and provide pedestrian detours along the west sidewalk. Vehicles would have to share the northbound lane with bicyclists during this partial closure phase. During the second partial closure scenario, the two middle lanes would be closed, and two northbound and one southbound lanes would remain open to traffic. Pedestrians would be allowed on both sides of the bridge during this phase. During the third partial closure scenario, the single southbound lane on the west side of the bridge would be closed leaving two southbound and two northbound lanes open. While the sidewalk on the west side of the bridge would be closed requiring pedestrian detours along the east side of the bridge, pedestrian access to the wharf on the south side of the China Basin building would be maintained.

During partial lane closure of the bridge, the waterway access in Mission Channel would be unavailable. Construction would not require removal or relocation of the houseboats at the western end of the channel. However, in advance of construction that would limit marine traffic, the project would relocate sailboats and other seafaring boats tethered to the houseboats to marinas nearby. These boats would be relocated from the area and would be returned at no cost to the owner.

Project Approval

The proposed project would be approved administratively by San Francisco Public Works. The posting of this CEQA exemption determination to the Planning Department's exemptions webpage[6] establishes the start of the 30-day appeal period for this CEQA exemption determination pursuant to section 31.04(h) of the San Francisco Administrative Code.

Regulatory and Other Project Permits and Approvals

There is an extensive regulatory framework for activities along the San Francisco waterfront and in the Bay to protect public access and environmental quality. As a result, Public Works may be required to obtain several permits from resource agencies to complete the project, including but not limited to permits from the San Francisco Bay Regional Water Quality Control Board pursuant to the Porter-Cologne Water Quality Control Act, and the San Francisco Bay Conservation and Development Commission pursuant to the McAteer-Petris Act. Public Works would be required to adhere to all

[6] http://sf-planning.org/ceqa-exemptions-map

stipulations specified in these permits. Through the National Environmental Policy Act process conducted through the Caltrans District 4 Office of Local Assistance representing the Federal Highway Administration, Public Works has consulted with the United States Fish and Wildlife Service, the National Marine Fisheries Service, and the State Historic Preservation Office. Public Works would also coordinate with the California Department of Fish and Wildlife and the United States Coast Guard for project approval. Public Works would also obtain all necessary permits and approvals from the Port of San Francisco and other City Departments (i.e., the San Francisco Municipal Transportation Agency) as required pursuant to local regulations for the work to be carried out on the Third Street Bridge.

San Francisco Public Works Standard Construction Measures

San Francisco Public Works has adopted *standard construction measures* to be implemented on all Public Works projects.[7] The objective of these measures is to reduce adverse effects on existing resources to the extent feasible. The construction measures include activities such as early identification of sensitive environmental resources in the project area and incorporation of standard environmental best management practices into construction, such as implementing dust control measures to protect air quality, sediment and erosion control measures to protect water quality, protection of historic resources, and compliance with all local, state, and federal requirements regarding biological resources. In addition, Public Works has standard construction-contract specifications for bridge work, which provides biological impact minimization procedures for work above or adjacent to water.[8]

EXEMPT STATUS:

CEQA State Guidelines section 15302, or Class 2, provides an exemption from environmental review for the replacement or reconstruction of existing structures and facilities where the new structure will be located on the same site as the structure replaced and will have substantially the same purpose and capacity as the structure replaced. The proposed project involves the rehabilitation of the existing Third Street Bridge. Therefore, the project is exempt from environmental review under the stipulations set forth under Class 2.

DISCUSSION OF ENVIRONMENTAL ISSUES:

CEQA Guidelines section 15300.2 establishes exceptions to the application of a categorical exemption for a project. None of the established exceptions applies to the proposed project.

CEQA Guidelines section 15300.2, subdivision (b), provides that a categorical exemption shall not be used where the cumulative impact of successive projects of the same type in the same place, over time, is significant. As discussed below, there are no cumulative projects in the vicinity that could combine with the proposed project to result in significant cumulative effects on the environment. Therefore, there is no possibility of a significant cumulative effect on the environment due to the proposed project.

CEQA Guidelines section 15300.2, subdivision (c), provides that a categorical exemption shall not be used for an activity where there is a reasonable possibility that the activity will have a significant effect on the environment due to unusual circumstances. As discussed below, the proposed project would not have a significant effect on the environment due to unusual circumstances.

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[7] San Francisco Public Works, June 26, 2017.

[8] San Francisco Public Works, September 15, 2016.

CEQA Guidelines section 15300.2, subdivision (e), provides that a categorical exemption shall not be used for a project located on a site which is included on any list compiled pursuant to section 65962.5 of the Government Code. The project site is not located on such a list.

CEQA Guidelines Section 15300.2, subdivision (f), provides that a categorical exemption shall not be used for a project that may cause a substantial adverse change in the significance of a historical resource. For the reasons discussed below, there is no possibility that the proposed project would have a significant effect on a historic resource.

Historic Resources

The below section relies substantially on a historic resource evaluation memorandum prepared for the National Historic Preservation Act section 106 review of the proposed project, as well as the planning department's historic resource evaluation response to that memorandum.[9,10]

Constructed in the 1930s, this heel trunnion bascule drawbridge was designed and patented by the Strauss Engineering Corporation. The Third Street Bridge is San Francisco Historic Landmark #194, listed in the Caltrans historic bridge inventory as a Category 2 bridge, and has been determined by Caltrans as eligible for listing in the National Register of Historic Places (National Register). The bridge has a status code of 2S2 (determined eligible for separate listing through a consensus determination by a federal agency and the State Historic Preservation Officer). The Francis 'Lefty' O'Doul Bridge District has also been identified as eligible for the National Register and includes the following seven features: Francis "Lefty" O'Doul Bridge (P-38-001339); Bridge Operator's House (P-38-004185); Watchman's House (P-38-004186), Traffic Control Gate Standard #1 (P-38-004187); Traffic Control Gate Standard #2 (P-38-004188); Traffic Control Gate Standard #3 (P-38-004189); and Traffic Control Gate Standard #4 (P-38-004190). The Third Street Bridge and its associated six features are considered a "Category A - Historical Resource" for the purposes of the planning department's CEQA review procedures.

Planning department staff finds that the proposed project would be in conformance with the requirements of Article 10 and the *Secretary of Interior's Standards for Rehabilitation (Standards)* for the following reasons. The project would retain and preserve the historic character and use of the property. Construction activities would not destroy characteristic historic materials, features, or spatial relationships. Some steel members, which are distinctive materials, would be repaired or replaced in kind to match the original in design, color, texture, and materials. The project would preserve distinctive materials, features, finishes, and construction techniques or examples of craftsmanship. The project would repair rather than replace historic features where possible, and if the severity of the deterioration requires replacement, the project would match the old in design, color, texture, and, where possible, materials.

The concrete would be cleaned in the gentlest method that is effective. Methods for cleaning concrete materials would include low-pressure water or steam cleaning, micro-abrasive surface treatments, or

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[9] JRP Historical Consulting, LLC, *Finding of No Adverse Effect with Standard Conditions – Secretary of the Interior's Treatment of Historic Properties for the Third Street Bridge Rehabilitation Project,* April 2016. This document (and all other documents cited in this report, unless otherwise noted), is available for review at 1650 Mission Street, Suite 400, San Francisco, CA, as part of Case No. 2015-009647ENV.

[10] San Francisco Planning Department, *Third Street Bridge,* June 5, 2017.

chemical surface treatments. Trial processes would be performed prior to full-scale cleaning that would be reviewed by planning department preservation staff. The bridge would be repainted/recoated with a multi-part coating system designed for use in marine environments, and would be painted using a historically compatible color.

Repair of the stairway mounted on the bridge superstructure would be done in kind, and materials would match the original design, color, texture, and materials. The addition of new welding or bolts would not destroy historic materials, features, and spatial relationships that characterize the property. The new materials would be differentiated from the old and would be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment. The existing deck would be entirely replaced with a modularized bridge deck system allowing for greater ease of section replacement. The existing deck is not an original element of the bridge nor is it a character-defining feature. The installation of pile jackets to repair the existing support piles for the Operator's House and the Watchman's House would be done so as not to destroy the historic materials, features, and spatial relationships. The pile jackets would retain the basic form of the square concrete piles and would be only slightly larger in width than the original piles.

The temporary scaffolding and associated temporary piles would be installed in such a manner that when removed would not impair the essential form and integrity of the bridge and its environment. The piles would be installed from a barge equipped with a crane-mounted vibratory hammer. It is possible that the installation of these piles may cause vibrations that could damage the Operator's House and the Watchman's House. However, Public Works standard construction measures call for a construction monitoring plan that would monitor vibrations at each of these historic building and would ensure that any damage would be minimized and repaired to match existing conditions.

For the above reasons, the proposed project would not cause a significant adverse impact to the historic resource. The proposed work would not adversely affect the landmark structure or contributing features of the Francis 'Lefty' O'Doul Bridge District. As currently proposed and with the implementation of Public Works standard construction measures, the project would have a less-than-significant historic resource impact.

Air Quality

In accordance with the state and federal Clean Air Acts, air pollutant standards are identified for the following six criteria air pollutants: ozone, carbon monoxide (CO), particulate matter (PM), nitrogen dioxide (NO2), sulfur dioxide (SO2) and lead. These air pollutants are termed criteria air pollutants because they are regulated by developing specific public health- and welfare-based criteria as the basis for setting permissible levels. In addition to criteria air pollutants, individual projects may emit toxic air contaminants (TACs). TACs collectively refer to a diverse group of air pollutants that are capable of causing chronic (i.e., of long-duration) and acute (i.e., severe but short-term) adverse effects to human health, including carcinogenic effects. In response to growing concerns of TACs and their human health effects, the San Francisco Board of Supervisors approved a series of amendments to the San Francisco Building and Health Codes, or Health Code, article 38 (Ordinance 224-14, effective December 8, 2014)(article 38). The purpose of article 38 is to protect the public health and welfare by establishing an *air pollutant exposure zone*. Projects within the air pollutant exposure zone require special consideration to determine whether the project's activities would expose sensitive receptors to substantial air pollutant concentrations or add emissions to areas already adversely affected by poor air quality.

The project site is within an air pollutant exposure zone, and project construction activities would result in short-term emissions of diesel particulate matter and other TACs, which can pose health risks to nearby sensitive receptors. Sensitive receptors within 1,000 feet of the project site, include the following: University of California, San Francisco academic facilities located in China Basin Landing, approximately 50 feet from the project site; One Mission Bay residences, located approximately 200 feet to the south of the project site; Rich Sorro Commons, located approximately 425 feet to the northwest of the project site; The Beacon Residences, located approximately 700 feet to the north of the project site; and Channel Mission Bay Residences, located approximately 800 feet to the south of the project site.

The below section relies substantially on an air quality technical memorandum prepared for the proposed project.[11]

Construction Emissions

The proposed project is subject to San Francisco's Clean Construction Ordinance, which requires the development and implementation of a construction emissions minimization plan during project construction. While emission reductions from limiting idling, educating workers and the public and properly maintaining equipment are difficult to quantify, other measures in the construction emissions minimization plan, specifically the requirement for equipment with Tier 2 engines and Level 3 *verified diesel emission control strategy* can reduce construction emissions by 89 to 94 percent compared to equipment with engines meeting no emission standards and without these emission controls.[12] The proposed project would also comply with section 14-9.02, air pollution control, of Caltrans standard specifications, which requires contractor compliance with all applicable laws and regulations related to air quality, including air pollution control district and air quality management district regulations and local ordinances. As shown below in Table 1, construction emissions would not exceed the Bay Area Air Quality Management District significance thresholds. Therefore, the proposed project would result in a less-than-significant impact related to construction emissions impacts on nearby sensitive receptors.

Table 1: Daily Pollutant Emissions (Pounds Per Day)

	ROG	NOx	PM_{10}	$PM_{2.5}$
Project Construction Emissions	2	33	<1	<1
Vehicular Emissions Due to Traffic Detours During Construction and Bridge Closure	<1	16	<1	<1
Total Average Emissions	3	49	1	1
Significance Threshold	54	54	82	54

Source: Terry A. Hayes Associates, 2017

[11] Terry A. Hayes Associates, *Third Street Bridge Rehabilitation Project, Air Quality and Greenhouse Gas Technical Memorandum*, April 17, 2017.

[12] Emissions reductions from the combination of Tier 2 equipment with Level 3 diesel emission control strategies is almost equivalent to requiring only equipment with Tier 4 final engines, which is not yet readily available for engine sizes subject to the Clean Construction Ordinance.

Fugitive Dust Emissions

Fugitive dust emissions are typically generated during construction phases. Studies have shown that the application of best management practices at construction sites significantly control fugitive dust[13] and individual measures have been shown to reduce fugitive dust by anywhere from 30 to 90 percent.[14] The air district has identified a number of best management practices to control fugitive dust emissions from construction activities.[15] The City's Construction Dust Control Ordinance (Ordinance 176-08, effective July 30, 2008) requires a number of measures to control fugitive dust and the measures employed in compliance with the City's Construction Dust Control Ordinance are an effective strategy for controlling construction-related fugitive dust. Therefore, the proposed project would result in a less-than-significant impact related to construction fugitive dust emissions.

Health Risk Assessment

TACs collectively refer to a diverse group of air pollutants that are capable of causing chronic (i.e., of long-duration) and acute (i.e., severe but short-term) adverse effects to human health, including carcinogenic effects. Human health effects of TACs include birth defects, neurological damage, cancer, and mortality. There are hundreds of different types of TACs with varying degrees of toxicity. Individual TACs vary greatly in the health risk they present; at a given level of exposure, one TAC may pose a hazard that is many times greater than another.

Unlike criteria air pollutants, TACs do not have ambient air quality standards but are regulated by the air district using a risk-based approach to determine which sources and pollutants to control as well as the degree of control. A health risk assessment is an analysis in which human health exposure to toxic substances is estimated, and considered together with information regarding the toxic potency of the substances, to provide quantitative estimates of health risks.[16]

A health risk assessment was completed for the proposed project.[17] The primary construction emissions of concern, DPM and PM2.5, would be emitted by diesel-powered construction equipment and trucks hauling and delivering material. The results of the risk assessment for off-site maximally exposed receptors are presented below in Table 2: Project-Level Construction Health Risk Assessment. The maximum construction-related health risk would not exceed the project-level thresholds. Therefore, compliance with the Clean Construction Ordinance would reduce construction emissions impacts on nearby sensitive receptors to a less-than-significant level.

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[13] Western Regional Air Partnership. *2006. WRAP Fugitive Dust Handbook.* September 7, 2006. This document is available online at http://www.wrapair.org/forums/dejf/fdh/content/FDHandbook_Rev_06.pdf, accessed February 16, 2012.

[14] BAAQMD, *Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance,* October 2009, page 27.

[15] BAAQMD, *CEQA Air Quality Guidelines,* May 2011.

[16] In general, a health risk assessment is required if the BAAQMD concludes that projected emissions of a specific air toxic compound from a proposed new or modified source suggest a potential public health risk. The applicant is then subject to a health risk assessment for the source in question. Such an assessment generally evaluates chronic, long-term effects, estimating the increased risk of cancer as a result of exposure to one or more TACs.

[17] Terry A. Hayes Associates, *Third Street Bridge Rehabilitation Project, Air Quality and Greenhouse Gas Technical Memorandum,* April 17, 2017.

Table 2: Project-Level Construction Health Risk Assessment

Risk	Unit	Threshold	Risk		
			Infant	Child	Adult
Excess Cancer Risk	Probability per 1 Million Population	7	6.8	1.4	0.2
Chronic Health Risk	Health Index	1.0	0.01		
Acute Health Risk	Health Index	1.0	0.13		
Increase in $PM_{2.5}$ Concentration	Average Annual ($\mu g/m^3$)	0.2	0.05		

Notes: $PM_{2.5}$= fine particulate matter; $\mu g/m^3$ = micrograms per cubic meter, reflects compliance with the Clean Construction Ordinance.
Source: Terry A. Hayes Associates, 2017.

Cumulative Air Quality

Air quality thresholds are thresholds that determine whether a project contributes to cumulative regional air quality impacts. Since the proposed project meets the screening criteria, it would not contribute to a cumulative air quality impact. Projects within the vicinity of the project site may be required to comply with uniformly applicable development policies, such as article 38 of the Health Code, the Construction Dust Control Ordinance, the Clean Construction Ordinance, and with California regulations that limit idling to no more than five minutes. No significant air quality cumulative impact would occur as a result of the proposed project.

Transportation

The proposed project would generate construction-related traffic, which include trips made by construction workers traveling to and from the project area, material and equipment deliveries, and hauling truck trips associated with excavation and transfer of spoils. Additionally, since the proposed project would fully and partially close the Third Street Bridge to through traffic, the project would result in diversion of the existing traffic which currently travels along the Third Street Bridge across the Mission Channel. Project-related construction is anticipated to occur for 14 months, from November 2017 to January 2019. A transportation memorandum[18] was prepared by a consultant to analyze transportation and circulation impacts associated with the proposed project. The following discussion summarizes the results from this analysis.

Trip Generation

It is estimated that there would be up to 18 workers on site during any phase of construction activity, which would generate a total of 36 daily vehicle trips (18 inbound and 18 outbound trips).[19] In addition to construction work trips, a maximum of eight daily truck trips are expected during any of the construction phases.[20] These truck trips would be dispersed over a typical six-hour work duration from 9:00 a.m. to 3:00 p.m., the duration during which truck traffic would be limited so as to avoid typical commute peak

[18] CHS Consulting Group, *SFPW Third Street Bridge Rehabilitation Project, Transportation Study, June 2017.*

[19] To provide a conservative assessment of potential traffic impacts, all 18 construction workers were assumed to arrive at the project area during the AM peak period (7:00 AM to 9:00 AM) and depart the project area during the weekday PM (5:00 PM to 7:00 PM) peak period.

[20] Truck trips that would be generated by the project include trips for equipment and material deliveries associated with the mobilization and demobilization of construction equipment and transport of any excavation material and supplies used on site.

periods. The project is expected to generate up to 52 total vehicle trips on a daily basis (26 inbound and 26 outbound). During the morning and evening peak hours, the proposed project would generate a maximum of 18 vehicle trips.

The proposed project would temporarily affect roadway capacity along the Third Street Bridge for project construction activities and staging. Public Works anticipates that the Third Street Bridge will be fully closed to through vehicular traffic for up to five months over the course of the 14-month construction period. Outside of these days, the Third Street Bridge will be partially closed with some lanes available for vehicular traffic. Public Works has agreed to implement Improvement Measures 1, Traffic Control Plan, which would further reduce less-than-significant impacts to transportation and circulation. The traffic control plan would include flaggers or temporary traffic signals to be posted at the entrance to staging areas to facilitate truck turning movements, minimize vehicle delays and reduce pedestrian, bicyclist, and vehicle conflicts. Advance warning signs including detour signs and variable message signs would be also posted on Third Street and along detour routes. The plan would also provide for public outreach about temporary bridge closures and detour routes. Specific details of the plan would be developed in accordance with Public Works, San Francisco Municipal Transportation Agency, and other local stakeholders.

Transit
Since the project is a construction project, the project would not impact transit demand, thus, the focus of the following analysis is on transit delay. During project construction, there is the potential for current operations of Muni buses and light rail vehicles to be affected, due to vehicle traffic diverted from the Third Street Bridge to surrounding streets. Although no existing transit service currently crosses the Third Street Bridge, there are several Muni transit lines serving Fourth Street, Brannan Street, Bryant Street, and Townsend Street, including the T-Third light rail,[21] 10-Townsend, 30-Stockton, 45-Union/Stockton, and 47-Van Ness.

The transportation memorandum included a transit delay analysis for the 2017 baseline and 2017 bridge closure scenarios under morning and evening peak hours on non-Giants game days and the evening peak hour following an afternoon Giants game. The 2017 baseline scenario includes future development projects whose construction periods are expected to overlap with the construction timeline for the proposed project. These development projects include: Golden State Warriors New Arena - northeast quadrant of Third Street/16th Street; Affordable Housing Project - Block 3E - southwest quadrant of Fourth Street at China Basin Street; Affordable Housing Project - Block 6E - southeast quadrant of Fourth Street at China Basin Street; Uber/ARE - northeast quadrant of Third Street at South Street; UCSF - Block 33; and UCSF - Block 36. Collectively, construction activity is expected to add approximately 344 inbound trips during the morning peak hour and 344 outbound trips during the evening peak hour. The Pier 48 Mixed-Use Project (Mission Rock) was excluded from this analysis since construction for the Mission Rock project is expected to start in 2019 whereas construction of the Third Street Bridge project would end in January

[21] The T-Third operates primarily within the center median of area roadways separated from other vehicle traffic and with exclusive signal phasing within the study area.

2019. Since the last month of project construction would mostly involve clean-up and demobilization, potential cumulative construction impacts would be minor.[22]

All transit lines within the study area during the weekday morning peak hour under 2017 plus project conditions, which includes cumulative projects, would experience marginal increases or decreases in overall delay of one minute or less within the study area, with the exception of the 47-Van Ness line, where transit vehicles could experience approximately 2-1/2 additional minutes of delay, and the T-Third line, where transit vehicles could experience a marginal (30 seconds) or no additional delay.

All transit lines within the study area during the weekday evening peak hour (non-Giants game day) under 2017 plus project conditions would experience marginal increases or decreases in overall delay of one minute or less within the study detour area, with the exception of the 47-Van Ness line, where transit vehicles could experience up to two additional minutes of delay, and the T-Third, where transit vehicles could experience approximately one to two minutes additional delay.

All transit lines within the study area during the weekday evening peak hour (with afternoon Giants game) under 2017 plus project conditions would experience marginal increases or decreases in overall delay of one minute or less within the study detour area, with the exception of the T-Third line, which is expected to experience between two to four minutes of added delay depending on direction.

As stated above, there are several Muni transit lines serving the project area, including the T-Third, 10-Townsend, 30-Stockton, 45-Union/Stockton, and 47-Van Ness. Only marginal increases in transit delay are expected to occur for the 10-Townsend, 30-Stockton, and 45-Union/Stockton lines. During the weekday morning peak hour, the 47-Van Ness line could experience an approximately 2-½ minute delay. During the weekday evening peak hour (non-Giants game day), the 47-Van Ness and T-Third line could experience up to two additional minutes of delay. During the weekday evening peak hour (with afternoon Giants game), the T-Third line is expected to experience between two to four minutes of added delay. The anticipated level of transit delay is within an acceptable range of transit delay and would be considered a temporary inconvenience on transit riders. Considering the limited duration of construction, and the availability of transit lines in the project area that would only experience marginal increases in delay, the project would have a less-than-significant impact on transit.

Additionally, the Mission Bay Transportation Management Association and UCSF provide private shuttle service to Mission Bay, connecting employees and residents in the area. The proposed project would cause a temporary inconvenience to these private shuttle operators. Given the availability of alternate roadways, it is anticipated that the private shuttle operators would seek alternate roadways to maintain the existing service. Therefore, the proposed project would have a less-than-significant impact to private transit operations, and to reduce this impact further, the project sponsor has agreed to implement Improvement Measure 1, Traffic Control Plan, which includes notifying these transit operators in advance of timing and schedule of roadway closure and providing alternate route information.

[22] Pier 70 Mixed-Use District Project and Crane Cove Park were also excluded from the 2017 baseline scenario, because their project locations are in Pier 70, approximately 1.3 miles south of the Third Street Bridge, and construction traffic for these projects would likely to use the I-280 freeway ramps at Mariposa Street and would not be subject to diversion due to the Third Street Bridge closure.

Pedestrians
Pedestrian access to the bridge would be maintained during partial bridge closure. Under full bridge closure, pedestrians would not have access across Third Street Bridge, except during San Francisco Giants game days when full pedestrian access would be provided. During full bridge closure, pedestrians originating from the either side of the bridge would be able to use continuous sidewalks on Berry Street, Fourth Street Bridge, and Channel Street to reach points on the opposite side of Third Street, resulting in slightly longer walking distances. Given that full bridge closure is a temporary condition, the proposed project would have a less-than-significant impact on pedestrians.

Bicyclists
During partial closure of the Third Street Bridge, bicyclists would share the travel lanes with vehicular traffic along Third Street in both directions, which is similar to existing conditions. During full bridge closure, slightly longer bicycling distances would result which is a temporary condition. The proposed project would have a less-than-significant impact on bicyclists, and impacts would be further reduced with implementation of Improvement Measure 1, Traffic Control Plan, which would provide detour and message signs along Third Street.

Emergency Access
In the event of an emergency during full roadway closure of the Third Street Bridge, vehicles would have to use the adjacent Fourth Street Bridge or Seventh Street to cross the Mission Channel. Although the proposed project would divert more baseline traffic to the Fourth Street Bridge and nearby streets, such an increase in vehicles would not impede or hinder the movement of emergency vehicles in the project area. Impacts to emergency vehicle access would be less than significant, and implementation of Improvement Measure 1, Traffic Control Plan, would further reduce this impact by notifying the fire department and police department in advance of timing and schedule of roadway closure.

In light of the above, the proposed project would not result in individually or cumulatively significant transportation and circulation impacts. As discussed above, the transportation memorandum considered several cumulative projects in its analysis and did not identify a significant cumulative transportation impact.

Noise and Vibration
The below section relies substantially on a noise and vibration technical memorandum prepared for the proposed project.[23] The project site is located in an existing noise environment that is dominated by traffic noise sources, as is typical of urban environments, with an existing average noise level of 72.2 CNEL.[24] Sensitive receptors within 500 feet of the project site include: University of California, San Francisco (UCSF) medical facilities located in China Basin Landing, approximately 45 feet from the nearest proposed pile; One Mission Bay residences, approximately 200 feet to the south of the project site; and Rich Sorro Commons, approximately 425 feet to the northwest of the project site. Other land uses in the project vicinity that are outside of 500 feet of the project site but may be affected by construction activities include the Beacon Residences, Avalon Mission Bay Channel Mission Bay residences, various residences along Mission Channel, and China Basin Marina.

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[23] Terry A. Hayes Associates, *Third Street Bridge Rehabilitation Project, Nosie and Vibration Technical Memorandum*, June 21, 2017.

[24] CNEL is an average sound level during a 24-hour period, and is a noise measurement scale that accounts for noise source, distance, single event duration, single event occurrence, frequency, and time of day.

Approximately 50 temporary wooden piles would be installed using a vibratory hammer during daylight hours over approximately seven days. Temporary piles would be removed after work is completed during daylight hours over approximately five days. In the event that some of the 130 existing fender piles cannot be sleeved due to field conditions, a contingency plan allowing the subject piles to be removed and replaced through vibratory installation would be required. This contingency plan would provide for the installation of up to 15 piles over the course of not more than three days. The proposed project would also include abrasive and/or water blasting, which would be intermittent over approximately 140 days. Jackhammering concrete would be intermittent and would not exceed 20 days. The proposed project would require nighttime and weekend construction. Tug boats would not operate at night, although non-impact equipment on the barges which are moved by the tug boats could operate at night. Vibratory hammers, tug boats, jackhammers, and water/abrasive blasters would not operate at night.

Daytime Noise

Noise impacts from construction of the proposed project would fluctuate depending on the construction phase, equipment type and duration of use, distance between the noise source and receptor, and presence or absence of noise attenuation barriers. Typical noise levels from various types of equipment that would be used during construction are listed below.

Table 3: Construction Equipment Noise Level Ranges

Construction Equipment	Noise Level at 50 feet (dBA)	Noise Level at 100 feet (dBA)
Manlift	67.7	61.7
Welder/Torch	70.0	64.0
Cranes	72.6	66.6
Compressors	73.7	67.7
Generators	77.6	71.6
Jackhammer	81.9	75.9
Blaster (Sand or Water)	88.7	82.7
Tug Boat	91.0	85.0
Vibratory Hammer	93.8	87.8

Source: Federal Highway Administration, *Roadway Construction Noise Model*, 2008; U.S. Army Corps of Engineers, *Missouri River Commercial Dredging Final Environmental Impact Statement*, 2011.

Section 2907 of the San Francisco Police Code limits equipment noise to 80 dBA L_{eq}[25] at 100 feet between 7:00 a.m. and 8:00 p.m. The above table shows that equipment would comply with this limitation, except abrasive sand/water blasters, tug boats, and vibratory hammers. Noise levels associated with this equipment would most likely disturb USCF health facilities located in China Basin Landing, One Mission Bay residents, and Rich Sorro Commons residents. Construction noise would also likely be audible at various residences along Mission Channel, and China Basin Marina.

Section 2907 of the Police Code does not apply to impact tools and equipment with intake and exhaust mufflers recommended by the manufacturer. It is standard practice for Public Works to require all

[25] Leq is the average noise level on an energy basis (i.e., acoustic energy of the sound) for any specific time period. The Leq for 1 hour is the energy average noise level during the hour. Leq can be thought of as the level of a continuous noise, which has the same energy content as the fluctuating noise level. The equivalent noise level is expressed in terms of dBA.

equipment to be maintained to the manufacturer's specifications and recommendations, and therefore would include necessary intake and exhaust mufflers required to comply with section 2907. Although an abrasive sand/water blaster would exceed the section 2097 threshold of 80 dBA L_{eq} at 100 feet, it has been further assessed in the noise memorandum as an unusual source of noise. To assess noise related to impact tools and unusual equipment such as the tug boat and blaster, this analysis employs the general construction noise assessment methodology and criteria provided by the Federal Transit Administration (FTA) guidelines, which identifies a 1-hour L_{eq} of 90 dBA for daytime construction noise exposure at residential uses.[26] Noise generated by the abrasive blaster would not exceed the FTA threshold of 90 dBA at the nearest residential use, which is One Mission Bay at a distance of 200 feet. The abrasive blaster, which would be used intermittently for up to 140 days, would not substantially disturb the medical facilities at UCSF which are approximately 45 feet away. Based on FTA guidance, noise levels have been estimated using the two loudest pieces of equipment at the nearest residential receptor to construction activity (One Mission Bay). The loudest daytime activity would involve operating a vibratory hammer and crane at the same time, which generates a noise level of 93.8 dBA at 50 feet.[27] This would attenuate to 81.8 dBA at 200 feet, which would not exceed the daytime criteria of 90 dBA.

The UCSF health facilities at China Basin Landing are approximately 45 feet from proposed construction activities.[28] The loudest daytime activity would involve operating a vibratory hammer and crane at the same time, which generates a noise level of 94.7 dBA at 45 feet, which would exceed the 90 dBA L_{eq} for sensitive receptors. Approximately 50 temporary wooden piles would be installed using a vibratory hammer during daylight hours over approximately seven days. Of approximately 130 existing piles, up to 15 piles could be replaced using a vibratory hammer rather than repaired during daylight hours. This phase is anticipated to last 15 days. Temporary piles would be removed using a vibratory extractor during daylight hours over approximately five days.

In addition to the above criteria, to determine if the proposed project would result in a substantial temporary increase in noise levels in the project vicinity above levels existing without the project, persistent construction equipment noise related to an increase of 10 dBA over the existing noise levels would represent a perceived doubling of loudness. Construction activities associated with vibratory hammer and crane would exceed ambient noise levels at the UCSF facilities and One Mission Bay residences by more than 10 dBA. In addition, a blaster operating at the same time as a jackhammer would generate a noise level of 89.5 dBA at 50 feet, which would cause the existing noise levels to be exceeded by 10 dBA at the adjacent UCSF health facilities. The vibratory hammer-related noise increase would occur intermittently during the construction process and for limited durations. The vibratory hammer would be used for approximately seven days for the installation of temporary piles during the initial construction phase and for replacing up to 15 existing piles over a 12 day period. In addition, a vibratory extractor, which operates similar to a vibratory hammer, would be used to remove temporary piles over approximately five days. The blaster noise level increase would occur intermittently over approximately 140 days.

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[26] A tugboat would be used intermittently to place non-motorized barges and rafts on either side of the bridge for use as work platforms.

[27] Per Public Works and their construction contractor, the two loudest pieces of equipment that would operate simultaneously is the crane and vibratory hammer. The tugboat and vibratory hammer would not operate simultaneously.

[28] Medical facilities where doctors examine and care for patients are typically considered as sensitive to noise as residences.

Public Works has adopted standard construction measures for controlling construction noise and to reduce adverse noise effects on existing resources to the extent feasible. Standard construction measures include: the construction contractor shall be prohibited from using vibratory hammers, tug boats, jackhammers, and water/abrasive blasters between 8:00 p.m. to 7:00 a.m; construction equipment shall be located as far as feasible from noise-sensitive uses; all construction equipment powered by gasoline or diesel engines shall have sound control devices that are at least as effective as those originally provided by the manufacturer and that all equipment be operated and maintained to minimize noise generation; idling of inactive construction equipment for prolonged periods shall be prohibited (i.e., more than five minutes); prohibit gasoline or diesel engines from having unmuffled exhaust systems; use noise-reducing enclosures around water/abrasive blasters and noise-generating equipment that has the potential to disturb nearby land uses; ensure that equipment and trucks used for project construction utilize the best available noise control techniques wherever feasible; impact tools (e.g., jack hammers) shall be "quiet" gasoline-powered compressors or electrically powered compressors, and electric rather than gasoline- or diesel-powered engines shall be used to avoid noise associated with compressed air exhaust from pneumatically powered tools; and stationary noise sources shall be located as far from nearby receptors as possible, shall be muffled and enclosed within temporary enclosures and shielded by barriers.

Project construction noise would fluctuate depending on construction phase, equipment type and duration of use. The vibratory hammer is the loudest piece of equipment but its use would be limited to a period of approximately 12 days to install and remove 50 temporary wood piles.[29] The second loudest construction noise would be generated from tug boats, which would be used to place the non-motorized barges and rafts for use as work platforms. Tug boat engine noise would be limited to when the tugs are operating which would be during most of the construction phases. However, the use of tug boats would be sporadic since work platforms would not change frequently. In addition, tug boats would not operate at the same time as the vibratory hammer. The blaster would be the third loudest piece of equipment and would be used intermittently for approximately 140 days and would not operate at the same time as the tug boat or vibratory hammer. Considering the temporary and limited duration of construction noise, and with implementation of Public Works adopted standard construction measures, the proposed project would result in a less-than-significant noise impact.

Interior Nighttime Noise Levels at Residences

Nighttime construction may result in sleep disturbance if interior noise levels exceed 45 dBA.[30] The nighttime analysis accounted for simultaneous operation of a generator and compressor, as blasting and use of vibratory hammers are explicitly prohibited at night between 8:00 p.m. and 7:00 a.m. As shown in the table below, nighttime noise levels at nearby residences would not exceed 45 dBA.

[29] In addition, and as stated in the project description, in the event that some existing fender piles cannot be sleeved due to field conditions, a contingency plan would be in place to allow the subject piles to be removed and replaced through vibratory installation. This contingency plan would provide for the installation of up to 12 piles over the course of not more than two days.

[30] Section 2909(d) of the Noise Ordinance.

Table 4: Interior Noise Levels During Nighttime Construction Work

Receptor	Noise Level at 50 feet (dBA, L_{eq}) /a/	Distance from Source to Receptor 200 feet (dBA L_{eq})	Exterior Noise Level (dBA L_{eq})	Interior Noise Level (dBA L_{eq}) /b/
One Mission Bay Residences	79.1	200	67.0	42.0
Rich Sorro Commons	79.1	425	60.5	35.5

/a/ Reference noise level based on a simultaneous operation of a generator and compressor.
/b/ Interior noise level based on an exterior-to-interior 25-dBA sound reduction for single-glazed windows and a fresh air supply system.
Source: Terry A. Hayes Associates, 2017.

Construction Vibration

Construction activity can result in varying degrees of ground vibration, depending on the equipment and methods employed. Project-related construction activity would generate vibration that would be perceptible beyond the construction limits. Human response to vibration is not usually substantial unless the vibration exceeds 70 VdB.[31] The nearest residences to the project site are located at One Mission Bay, which would be approximately 200 feet from the nearest pile. As discussed above, the majority of piles would be repaired and not replaced. Repairing piles would not generate perceptible vibration. If a pile were to be replaced with a vibratory hammer at 200 feet from One Mission Bay, the vibration level would be 67 VdB, which would not exceed the 70 VdB standard. The majority of construction vibration would be generated by pneumatic tools, which would result in a vibration level of 60 VdB at 200 feet. This activity would not be perceptible at One Mission Bay.

The potential for structural damage associated with vibration has been assessed at China Basin Landing and the Operator House and Signalman's Hut. China Basin Landing is an engineered building constructed of reinforced concrete and steel, and studies show that these structures can withstand continuous or frequent vibration levels of at least 0.5 inches per second without experiencing damage.[32] The vibration level at China Basin Landing would be 0.27 inches per second PPV, which would be below the damage standard of 0.5 inches per second PPV.

The proposed project includes repairing the concrete piles associated with the Operator House and Signalman's Hut. The pile repairs are being undertaken to protect these structures. Repair of the support piles for both structures would consist of pile cladding and mortar/grout injection, and would not generate vibration. Replacing piles would generate vibration associated with the vibratory hammer, and studies show that historic and older structures can withstand continuous or frequent vibration levels of at least 0.25 inches per second without experiencing damage.[33] The minimum safe distance for vibration damage to be below the vibration thresholds would be approximately 51 feet at which distance vibration levels would be approximately 0.24 inches per second PPV. However, piles are located within 7 feet of both the Operator's House and Signalman's Hut, which could potentially exceed the 0.25 inches per

[31] Federal Transit Administration, *Transit Noise and Vibration Impact Assessment*, 2006.

[32] *Ibid.*

[33] Caltrans, *Transportation and Construction Vibration Guidance Manual*, September 2013.

second PPV threshold if replacement instead of repair is required at this location. If replacement of piles is required within 7 feet of the Operator House or Signalman's Hut, Public Works will engage a qualified historic architect or historic preservation professional to document and photograph the pre-construction condition of these structures and prepare a plan for monitoring the building during construction, in accordance with Public Works' adopted standard construction measures. The monitoring plan would be approved by planning department preservation staff prior to the beginning of construction and would be implemented during construction. With implementation of Public Works adopted standard construction measures, the proposed project would result in a less-than-significant vibration impact.

Cumulative Construction Noise
The noise memorandum considered several cumulative projects in its analysis. The geographic scope of analysis for cumulative construction noise encompasses reasonably foreseeable projects within approximately 500 feet of the project site that would be under construction during the construction period for the proposed project. Beyond 500 feet, the contributions of noise from other projects would be greatly attenuated through both distance and intervening structures, and their contribution would be expected to be minimal. The closest reasonably foreseeable projects within the 500 feet of the project site are the One Mission Bay Project (located at Block 1) and the Mission Rock Project (located at SWL 337). However, construction of these two cumulative projects would not overlap with the proposed project. Projects within the vicinity of the project site would be required to comply with uniformly applicable development policies, such as sections 2907 and 2908 of the Noise Ordinance.

In light of the above, the proposed project would not result in individually or cumulatively significant noise impacts.

Biological Resources
Biological resources in the project site and vicinity are protected under several federal and state laws and regulations, including the Federal Endangered Species Act implemented by the United States Fish and Wildlife Services and National Marine Fisheries Service (NMFS); the Marine Mammal Protection Act of 1972 implemented by NMFS; and the California Endangered Species Act implemented by the California Department of Fish and Wildlife (CDFW). Additionally, migratory birds are protected by the Migratory Bird Treaty Act. Public Works would be required to consult with these resource agencies in order to obtain the requisite permits to construct the project and would comply with any stipulations that result from consultation. Public Works has adopted standard construction measures for bridge work to protect water quality and biological resources.[34] These measures include biological monitoring and surveying, debris containment systems, minimization of grout and concrete leakage, restrictions on night lighting, and restrictions on pile driving.

For the Third Street Rehabilitation project, Public Works has incorporated several construction methods and best management practices (BMP) into its project description to protect water quality and biological resources. These BMPs include the following: environmental awareness training for construction personnel; use of debris containment netting and scaffolding; pile-jacket sealing methods that would prevent epoxy or concrete from entering the waters of Mission Creek during pile repair; use of turbidity curtains; dust, erosion, and debris control practices; water pollution control plan; maintenance of spill containment materials and equipment; concrete containment measures; trash control; and proper storage and disposal of construction waste.

[34] San Francisco Public Works, September 15, 2016.

The below section relies substantially on a biological assessment prepared for the proposed project.[35] Based on the biological assessment, no special status plant species were determined to have the potential to occur in the project area and nine wildlife species have potential to occur.[36] These nine species are discussed below.

Green Sturgeon, Steelhead, Longfin Smelt

The green sturgeon, steelhead, and longfin smelt were determined to have a low potential to occur in the project area. Approximately 50 temporary piles would be installed and removed with a vibratory hammer. Vibratory hammers generate lower sound levels and different sound wave forms that are less injurious than those generated by impact hammers. The use of a vibratory hammer is expected to avoid generation of underwater sound levels that are harmful to fish. The proposed project would result in an increase of suspended sediment levels during construction but this effect would be short-term and localized, and the proposed project would use turbidity curtains. Additionally, the project includes a debris containment system and a spill prevention plan that would effectively prevent harmful contaminants from entering Mission Creek during construction. No direct impacts are anticipated to green sturgeon, steelhead, and longfin smelt, and construction would be short in duration and temporary in nature. Due to the low potential for these species being present during construction operations, and the incorporation of Public Works standard construction measures and BMPs, the project would result in less-than-significant impacts to green sturgeon, steelhead, and longfin smelt.

Pacific Herring

The Pacific herring is regulated as a CDFW state-managed California commercial fishery. The herring range includes the Pacific Coast from California around the Pacific Rim to Korea. Suitable Pacific herring spawning habitats exists within and adjacent to the project area. The piles supporting the Third Street Bridge provide in-water structures for the herring to use for egg deposition during spawn events. Pacific herring spawning events have been documented within the project area, and therefore the potential for spawning Pacific herring to occur in the project area is considered high. Pacific herring spawn are vulnerable to hydroacoustic impacts, water quality impacts, and habitat loss. Approximately 50 temporary piles would be installed and removed with a vibratory hammer. Vibratory hammers generate lower sound levels and different sound wave forms that are less injurious than those generated by impact hammers. The use of a vibratory hammer is expected to avoid generation of underwater sound levels that are harmful to fish. The proposed project includes biological monitoring to identify spawn events during the herring spawning season (December 1 to February 28) and to protect any potential spawn and embryos. If herring spawning is observed in-water, work would be suspended within 1,500 feet of the proposed project and the in-water work may not continue until spawning has ended and embryos have hatched (up to 21 days). Biological monitoring would ensure the protection of any potential herring spawn in and adjacent to the project area. Potential water quality degradation has been minimized by project design and implementation of standard construction measures and BMPs, as discussed above. No direct impacts are anticipated to Pacific herring, and the existing in-water piles associated with the Third Street Bridge would remain to ensure these structures are available for future spawning events. Additionally, the proposed project includes the use of turbidity curtains to minimize turbidity. The proposed project would result in less-than-significant impacts to Pacific herring.

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[35] Caltrans, *Third Street Bridge Rehabilitation Project, Natural Environmental Study,* December 2015.

[36] All of these species are special status and locally rare species, except for the green sturgeon, steelhead, and the longfin smelt which are federal and state listed wildlife species.

Harbor Porpoise, Pacific Harbor Seal, California Sea Lion

The Harbor porpoise, Pacific harbor seal, and California sea lion are all protected under the Marine Mammal Protection Act. The Harbor porpoise is generally found outside of San Francisco Bay and occasionally enter a short distance (approximately 1 to 2 miles) into the Bay. The Pacific harbor seal feeds in the deeper waters of San Francisco Bay near the Golden Gate Bridge and along the deeper channels extending into the North and South Bay. Pacific harbor seals temporarily come on land between periods of foraging activities called "hauling out." There is no suitable habitat for seals to haul out near the project site; the closest haul-out site is located approximately 2.6 miles northeast of the project site on Yerba Buena Island. California sea lions are relatively abundant in San Francisco Bay from late summer to late spring. In June and July, most of the sea lions head south to breeding grounds on the Channel Islands although some remain year round. The project site does not provide breeding habitat. These species were all determined to have a low potential to occur in the project area.

Harbor porpoise, Pacific harbor seal, and California sea lion species are vulnerable to temporary disturbance from the presence of construction activity and potential impacts to air and water quality. As discussed above, the proposed project includes the use of debris containment systems, worker environmental awareness training, protective measures to prevent and minimize pollutant discharges, and proper storage of concrete waste and stockpiles. Additionally, the project site represents a small portion of the available habitat in the San Francisco Bay and disturbance from the proposed construction project would be temporary.

Marine mammals are particularly vulnerable to hydroacoustic impacts, as they depend heavily on sound as a means to navigate, communicate, and forage. Exposure to high sound pressure levels for sustained periods has the potential to result in harassment of marine mammals. Hydroacoustic effects of the project have been minimized by choosing timber piles for the temporary scaffolding, which would only be installed via vibratory methods. The use of vibratory rather than hammering technique for the temporary pile work would minimize underwater sound. The use of timber piles would also generate less noise than steel pipe piles. Additionally, the mud substrate of the project area would help absorb sound. Disturbances to marine mammals include the installation and removal of approximately 50 temporary wooden piles, rehabilitation to the existing piles, construction noise, artificial lighting, and presence of construction divers and personnel on barges and rafts. These impacts are short in duration and temporary in nature. The proposed project would direct artificial lighting away from water, limit the number of piles installed and removed in a 24-hour period, and would provide biological monitoring for marine mammals to enforce a marine mammal safety zone. The proposed project would result in a less-than-significant impact to Harbor porpoise, Pacific harbor seal, and California sea lion.

California Brown Pelican and Double-crested Cormorant

The California brown pelican was determined to have a moderate potential to occur in the project area while the double-crested cormorant was determined to have a high potential to occur. The California brown pelican are federally delisted and their nesting colony and communal roosts are state fully protected. There are ten known California brown pelican roosting sites in the Bay Area, all are located along the outer coast of San Francisco County, not within the Bay; therefore, there is no potential for nesting colonies at the project site. Double-crested cormorant nesting colonies are considered a resource of conservation and on the CDFW watch list. Known nesting colonies in the San Francisco Bay area include the Bay Bridge, Richmond-San Rafael Bridge, San Mateo Bridge, and on the Yerba Buena and

Alcatraz Islands. While the California brown pelican and double-crested cormorant have the potential to occur within the project area to forage or loaf, the project site represents a small portion of the available habitat in the San Francisco Bay and disturbance from the proposed construction project would be temporary. The Pacific herring are an important prey species for cormorants, and as discussed above, the proposed project includes biological monitoring to protect Pacific herring and herring spawns. Additionally, as discussed above, the project includes a debris containment system, a spill prevention plan, and proper storage of construction waste that would effectively prevent harmful contaminants into the foraging and loafing habitat of these species. In light of the above, the project would result in less-than-significant impacts to California brown pelican and double-crested cormorant.

Essential Fish Habitat

Section 305(b)(2) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA), as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), requires federal agencies to consult with NMFS on activities that may adversely affect essential fish habitat for federally managed fish species. These species include commercial fishes with established Fisheries Management Plans (FMPs) as managed by regional fisheries management councils. Essential fish habitat includes those waters and substrate necessary for fish spawning, breeding, feeding, or growth to maturity. The waters within the project area provide essential fish habitat for federally managed fish species, including the green sturgeon, steelhead, and longfin smelt. Potential temporary adverse effects to essential fish habitat for these species may include changes to local water quality due to turbidity and hydroacoustic impacts during pile installation, the lack of access to habitat during repair and rehabilitation of the existing bridge fenders and concrete piles, and disturbance due to the presence of barges and divers. Permanent changes to essential fish habitat are not anticipated as a result of the proposed project. The proposed project includes the use of turbidity curtains and debris containment systems, restrictions on night lighting, and the implementation of construction best management practices. The proposed project would not make permanent modifications to essential fish habitat, and impacts would be less-than-significant.

Migratory Birds

Under the Migratory Bird Treaty Act, migratory birds, their nests, and eggs are protected from disturbance or destruction. Removal or disturbance of active nests would be in violation of these regulations. Nesting habitat for migratory birds exists within the bridge structure. The Third Street Bridge is a drawbridge, so any nesting or roosting birds may be subjected to disturbance associated with lowering and raising of the bridge, reducing the quality of the bridge as habitat. Public Works has adopted standard construction measures that address migratory birds. These measures include preconstruction nesting bird surveys during the nesting season (February 1 to August 31). If nesting birds are found, buffers would be established to protect nesting birds from construction activity disturbance. The construction buffers would be 50 feet for passerines and 300 feet for raptors. As discussed above, the proposed project includes the use of debris containment systems, worker environmental awareness training, and other protective measures to prevent and minimize pollutant discharges to protect air and water quality. Project impacts would be temporary in nature and limited to a relatively small area in relationship to foraging habitat adjacent to the project area. Additionally, the project would not remove any street trees or vegetation that could provide habitat for migratory birds. Therefore, the project would have less-than-significant impacts to migratory birds.

In light of the above, the proposed project would not result in significant impacts related to biological resources. Additionally, since nearby cumulative projects are not located in the marine environment, there would be no cumulative impact.

Conclusion

The proposed project satisfies the criteria for exemption under the above-cited classification(s). In addition, none of the CEQA Guidelines Section 15300.2 exceptions to the use of a categorical exemption applies to the proposed project. For the above reasons, the proposed project is appropriately exempt from environmental review.

SAN FRANCISCO
PLANNING DEPARTMENT **MEMO**

Historic Resource Evaluation Response

Case No.:	**2015-009647ENV**
Project Address:	**Third Street Bridge**
Zoning:	N/A
Block/Lot:	N/A
Date of Review:	June 5, 2017

Staff Contact: Allison Vanderslice (Preservation Planner)
(415) 575-9075
allison.vanderslice@sfgov.org

Don Lewis (Environmental Planner)
(415) 575-9168
don.lewis@sfgov.org

PART II: PROJECT EVALUATION

PROPERTY DESCRIPTION AND PRE-EXISTING HISTORIC RATING / SURVEY

The Third Street Bridge (Caltrans Bridge No. 34C0025), also known as the Francis "Lefty" O'Doul Bridge, crosses over Mission Creek Channel and links the South of Market and Mission Bay neighborhoods. Mission Creek Channel runs from the west to the east passing a row of houseboats, the Fourth Street Bridge, and the Third Street Bridge before draining into China Basin and the San Francisco Bay. The approximately 295 foot long, 80 foot wide Third Street Bridge provides five lanes of traffic and a timber walkway approximately 10 feet wide on the eastern side of the bridge and of varying widths on the western side. The deck is steel grating with steel plates covering the easternmost travel lanes. In the late 1990s rehabilitation work occurred on the bridge and included the following alterations: constructing a new operator house and control equipment; replacing the southern approach spans, corroded steel members, wooden piles and other waterside support, and mechanical and electrical components; modifying the roadway decking; and repainting.

Constructed in the 1930s, this heel trunnion bascule drawbridge was designed and patented by the Strauss Engineering Corporation. The Third Street Bridge is San Francisco Landmark #194, listed in the Caltrans Historic Bridge Inventory as a Category 2 bridge, and has been determined by Caltrans as eligible for listing in the National Register of Historic Places (National Register). The bridge has a status code of 2S2 (determined eligible for separate listing through a consensus determination by a federal agency and the State Historic Preservation Officer [SHPO]). The Francis 'Lefty' O'Doul Bridge District has also been identified as eligible for the National Register with a status code of 2D2 and includes the following seven features: Francis "Lefty" O'Doul Bridge (P-38-001339); Bridge Operator's House (P-38-004185); Watchman's House (P-38-004186), Traffic Control Gate Standard #1 (P-38-004187); Traffic Control Gate Standard #2 (P-38-004188); Traffic Control Gate Standard #3 (P-38-004189); and Traffic Control Gate Standard #4 (P-38-004190).

Based on the above, the Third Street Bridge and its associated six features are considered a "Category A - Historical Resources" for the purposes of the Planning Department's California Environmental Quality Act (CEQA) review procedures.

PROPOSED PROJECT ☐ Demolition ☒ Alteration ☐ New Construction

PER DRAWINGS DATED: June 2015

PROJECT DESCRIPTION

San Francisco Public Works is proposing the Third Street Bridge Rehabilitation Project. The project includes the following repair and rehab activities: to remove surface and pack rust; to repair damaged and buckled steel members, damaged welds, concrete counterweights, piles supporting ancillary bridge structures, and fender pile system; and to repaint and recoat the bridge. Work will require the construction of pile-supported temporary scaffolding and a debris-containment system.

Damaged and buckled steel members on all parts of the bridge structure will be repaired or replaced by full or partial replacement to match existing members. Surface and pack rust removal will occur on both the underside and top-side of the bridge deck, on concrete support piles, and on areas requiring repair that are exposed after cleaning and removal of visible corrosion. Work will include abrasive blasting, wire brushing, needle-gun scaling, and grinding of localized areas of corrosion. The stairway mounted on the bridge superstructure will be repaired. Damaged welds between the decking and bridge support beams/shim plates will be repaired by re-welding or bolting. After repair or replacement of the steel bridge members and deck, rust removal, and corrosion mitigation, the bridge structure will be repainted/recoated to match the existing color and coating.

The majority of repair on the two concrete counter weights will occur along the edges and where the steel girders connect to the counter weights. Loose, broken, softened, and spalled concrete will be removed by abrasive blasting and chipping down to sound concrete. Mortar will be placed in the voids and troweled smooth. The color of the mortar will be selected to best match the existing concrete color.

The existing deck will be entirely replaced with a modularized bridge deck system that matches the current non-historic metal deck system.

The existing supports for the original Control House (Operator House) and Signalman's Hut (Watchman's House) consist of four 12 x 12 foot concrete piles in the channel for each structure. Repair of the support piles for both structures will consist of pile cladding and mortar/grout injection.

The existing fender pile system (composed of approximately 130 piles) will be rehabilitated by installing grouted fiberglass sleeves around the existing piles. If fender piles cannot be sleeved due to field conditions, a contingency plan includes the removal of existing piles and replacement of up to 12 piles through vibratory installation. Existing platforms, walkways, fender curtain walls will be reconstructed. The new platforms, walkways and horizontal walers will consist of plastic lumber reinforced with fiberglass.

To assist in this evaluation of the Third Street Bridge Rehabilitation Project, Public Works provided the following report prepared for the NHPA Section 106 review of the proposed project:

JRP Historical Consulting, LLC, *Finding of No Adverse Effect with Standard Conditions – Secretary of the Interior's Treatment of Historic Properties for the Third Street Bridge Rehabilitation Project*, April 2016.

PROJECT EVALUATION

If the property has been determined to be a historic resource, please check whether the proposed project would materially impair the resource and identify any modifications to the proposed project that may reduce or avoid impacts.

Subject Property/Historic Resource:

☒ The project will not cause a significant adverse impact to the historic resource as proposed.

☐ The project will cause a significant adverse impact to the historic resource as proposed.

Staff agrees with the analysis presented by JRP in the *Finding of No Adverse Effect with Standard Conditions* (summarized below) and has determined that the proposed work along with the implementation of Public Work's Standard Construction Measures will be in conformance with the requirements of Article 10 and the *Secretary of Interior's Standards for Rehabilitation (Standards)*. Proposed work will not adversely affect the landmark structure or contributing features of the Francis 'Lefty' O'Doul Bridge District. Therefore, Department staff finds that the proposed alteration to the Third Street Bridge would not cause a significant adverse impact upon any qualified historic resource.

The proposed project meets the relevant *Standards* 1, 2, 5, 6, 7, 9 and 10. The following is a summary of the analysis provided by JRP.

> The proposed project will not change the historic use of the property. The bridge will continue to function as bridge. The proposed project will retain and preserve the historic character of the property.
>
> The project will not include new additions, exterior alterations, or related new construction that would destroy historic materials, features and spatial relationships that characterize the historic property. Some activities will require alterations to existing historic features. These include adding weep holes, repairing and replacing steel bridge members, repairing concrete piles supporting the Operator's House and Watchman's House, replacing the bridge deck, and repainting and recoating the bridge structure. None of these activities will destroy characteristic historic materials, features, or spatial relationships.
>
> The project will remove surface and pack rust on both the underside and top-side of the bridge deck, on concrete support piles, and on areas requiring repair that are exposed after cleaning and removing visible corrosion. Some steel members, which are distinctive materials, will be repaired or replaced in kind to match the original in design, color, texture, and materials. The project will

preserve distinctive materials, features, finishes, and construction techniques or examples of craftsmanship. The project will repair rather than replace historic features where possible. If the severity of the deterioration requires replacement, the project will match the old in design, color, texture, and, where possible, materials. Documentary and physical evidence will be used to determine replacement materials.

The concrete will be cleaned in the gentlest method that is effective. Reference will be made to Preservation Brief 15 on Preservation of Historic Concrete for guidance on cleaning and repairing concrete materials. Methods for cleaning concrete materials will include low-pressure water or steam cleaning, microabrasive surface treatments, or chemical surface treatments. Trial processes will be performed prior to full-scale cleaning that will be reviewed by San Francisco Planning Department preservation staff.

After repair/replacement of the steel bridge members and deck, rust removal, and corrosion mitigation, the bridge structure will be repainted/recoated with a multi-part coating system designed for use in marine environments. The bridge has historically been painted so this activity will not cover materials intended to be exposed. The method for preparing and cleaning the surface materials will be done using the gentlest method possible. Following the protective coating, the bridge will be painted using a historically compatible color.

Repair of the stairway mounted on the bridge superstructure will include re-welding or replacement of brackets of damaged and deficient welds, followed by replacement of stair treads. Repair and replacement of the stairway features—including the brackets and treads—will be done in kind. Materials will match the original design, color, texture, and materials.

Damaged welds between the decking and bridge support structure will be repaired by re-welding or bolting. The welds are not original features of the Third Street Bridge. Removing existing welds and adding new ones would not alter or remove important historic materials. The addition of new welding or bolts will not destroy historic materials, features, and spatial relationships that characterize the property. The new materials will be differentiated from the old and will be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment.

The existing deck will be entirely replaced with a modularized bridge deck system allowing for greater ease of section replacement. The existing deck is not an original element of the bridge nor is it a character-defining feature. The new deck will be comprised of steel grading with a similar dimension and style as the existing deck. The addition of a new deck will be done so as not to damage historic materials, features, and spatial relationships that characterize the historic property. The wooden walkway will remain the same.

The project will repair the support piles for the Operator's House and the Watchman's House. The installation of the pile jackets will be done so as not to destroy the historic materials, features, and spatial relationships. The new features will be compatible with the historic features, size,

scale, and proportion. The pile jackets will retain the basic form of the square concrete piles and will be only slightly larger in width than the original piles.

The existing fender pile system (composed of approximately 130 piles) will be repaired with the potential for some replacement of existing piles. The fender pile system is not part of the original bridge and is therefore not a character-defining feature. The addition of a new fender pile system will be done so as not to damage historic materials, features, and spatial relationships that characterize the historic property, and the work will be differentiated from the old and compatible with the historic materials, features, size, scale, and proportion. Because the new system will be similar in dimensions as the existing, it will be compatible with the historic size, scale, and proportion.

The project also includes two temporary features, temporary scaffolding and associated temporary piles, that will be installed in such a manner that when removed will not impair the essential form and integrity of the bridge and its environment. The piles will be installed from a barge equipped with a crane-mounted vibratory hammer. It is possible that the installation of these piles may cause vibrations that could damage the Operator's House and the Watchman's House. However, Public Work's standard construction measures (see attached) call for a construction monitoring plan that will monitor vibrations at each of these historic building and will ensure that any damage will be minimized and repaired to match existing conditions.

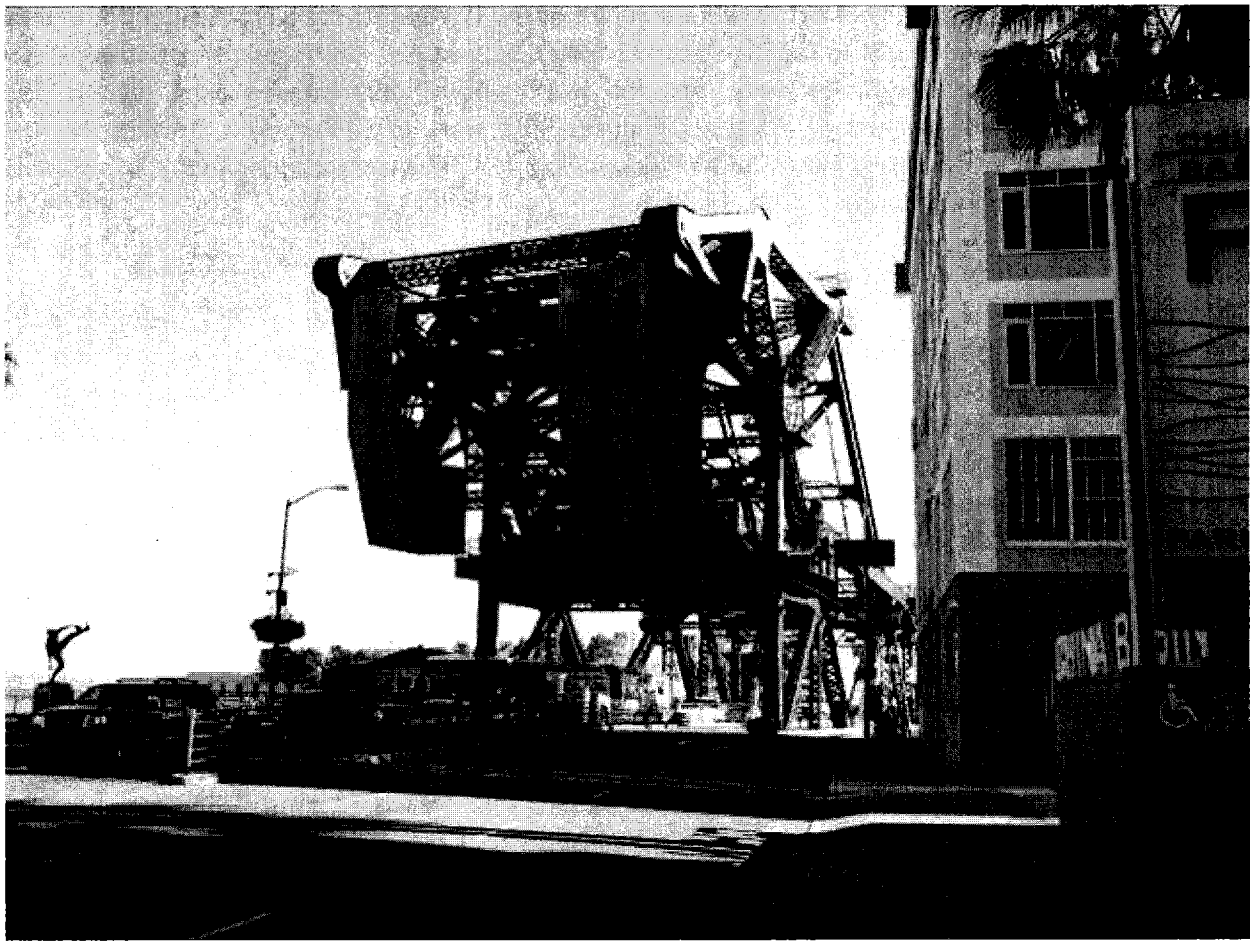
Summary
As currently proposed with the implementation of Public Work's standard construction measures, the project will have a less-than-significant impact upon a historic resource, as defined by CEQA.

PART II: SENIOR PRESERVATION PLANNER REVIEW

Signature: _____ Date: 6·16·2017
Tina Tam, *Senior Preservation Planner*

cc: Don Lewis, Environmental Planning

IMAGES



JRP, April 2016

Historic (Built Environment) Resources. Public Works will consult with CCSF Planning Department Preservation staff to determine if projects that would modify an existing building, structure, or landscape feature require preservation review and if a Historic Resource Evaluation (HRE) will be required. The HRE will be prepared by a qualified architectural historian and will be scoped with CCSF Planning Department Preservation staff. Where the potential for the project to have adverse effects on an historical resource is identified by CCSF Planning Department Preservation staff, the CCSF Planning Department Preservation Planner will consult with Public Works to determine if the project can be conducted as planned or if the project design can be revised to avoid the significant impact. If these options are not feasible, the project will need to undergo further environmental review with the CCSF Planning Department and mitigation may be required. If so, the project would not qualify for a Categorical Exemption from CEQA review.

Within historic districts established by ordinance, and/or mapped by the San Francisco Planning Department as eligible for or on the California Register of Historic Resources and/or the National Register of Historic Places, all distinctive sidewalk elements such as brick surfacing, brick gutters, granite curbs, cobblestones and non-standard sidewalk scoring, and streetscape elements that may include, but are not limited to, streetlights, sidewalk lights, sidewalk elevators and chutes, benches, and utility plates, that appear to be 45 years or older will be treated as potentially character-defining features of their respective historic districts. For those locations, historic materials will be protected in place (preferred method), salvaged and re-installed, or replaced in-kind to match the existing color, texture, material, and character of the existing condition.

Where construction will take place in proximity to a building or structure identified as a significant historical resource but would not otherwise directly affect it, Public Works will implement protective measures, such as but not limited to, the erection of temporary construction barriers to ensure that inadvertent impacts to such buildings or structures are avoided. These measures shall require the development of a Construction Best Practices for Historical Resources Plan and a plan outlining the Construction Monitoring for Historical Resources Program to be reviewed and approved by CCSF Planning Department Preservation staff.

If a project includes or is directly adjacent to historic buildings or structures susceptible to vibration (such as but not limited to unreinforced masonry, earthen construction, lathe and plaster, or fragile architectural ornamentation) as determined in consultation with CCSF Planning Department Preservation staff, Public Works will determine if vibrations associated with proposed construction activities has the potential to cause damage to such buildings or structures. Generally, vibration below 0.12 inches per second peak particle velocity does not have the potential to damage sensitive buildings or structures. A vibration study may be

necessary to determine if such vibration levels will occur. If Public Works determines in consultation with CCSF Planning Department Preservation staff that vibration damage may occur, Public Works will engage a qualified historic architect or historic preservation professional to document and photograph the pre-construction condition of the building and prepare a plan for monitoring the building during construction. The monitoring plan will be submitted to and approved by CCSF Planning Department Preservation Planner prior to the beginning of construction and will be implemented during construction. The monitoring plan will identify how often monitoring will occur, who will undertake the monitoring, reporting requirements on vibration levels, reporting requirements on damage to adjacent historical resources during construction, reporting procedures to follow if such damage occurs, and the scope of the preconstruction survey and post-construction conditions assessment.

If any damage to a historic building or structure occurs, Public Works will modify activities to minimize further vibration. If any damage occurs, the building will be repaired following the Secretary of the Interior's Standards for the Treatment of Historic Properties under the guidance of a qualified historic architect or historic preservation professional in consultation with CCSF Department Preservation Planner.

APPLICATION FOR
Certificate of Appropriateness

1. Owner/Applicant Information

PROPERTY OWNER'S NAME:	
City and County of San Francisco / Department of Real Estate	
PROPERTY OWNER'S ADDRESS:	TELEPHONE:
25 Van Ness Ave. #400 San Francisco, CA 94102	(415) 554-9860
	EMAIL:
	john.updike@sfgov.org

APPLICANT'S NAME:	
City and County of San Francisco / San Francisco Public Works	Same as Above ☐
APPLICANT'S ADDRESS:	TELEPHONE:
30 Van Ness Ave., 5th Floor San Francisco, CA 94103	(415) 558-4077
	EMAIL:
	thomas.roitman@sfdpw.org

CONTACT FOR PROJECT INFORMATION:	
Maureen Zogg	Same as Above ☐
CONTACT PERSON'S ADDRESS:	TELEPHONE:
30 Van Ness Ave., 5th Floor San Francisco, CA 94103	(415) 558-4064
	EMAIL:
	maureen.zogg@sfdpw.org

2. Location and Classification

STREET ADDRESS OF PROJECT:	ZIP CODE:
Third St. over Mission Channel at China Basin	94158
CROSS STREETS:	
Terry A. Francois Blvd. , Berry St.	

ASSESSORS BLOCK/LOT:	LOT DIMENSIONS:	LOT AREA (SQ FT):	ZONING DISTRICT:	HEIGHT/BULK DISTRICT:
n/a /	n/a	n/a	n/a	n/a
ARTICLE 10 LANDMARK NUMBER			HISTORIC DISTRICT:	
194			n/a	

3. Project Description

Rehabilitation of Francis "Lefty" O'Doul/Third Street Bridgeto remove surface and pack rust; repair damaged and buckled steel members, damaged welds, the piles supporting ancillary bridge structures, ancillary bridge structures, and the fender pile system; and to repaint and recoat the bridge.

Building Permit Application No. _____ Date Filed: _____

4. Project Summary Table

If you are not sure of the eventual size of the project, provide the maximum estimates.

GROSS SQUARE FOOTAGE (GSF)	EXISTING USES	EXISTING USES TO BE RETAINED	NET NEW CONSTRUCTION AND/OR ADDITION	PROJECT TOTALS
Residential	n/a	n/a	0	0
Retail	n/a	n/a	0	0
Office	n/a	n/a	0	0
Industrial / PDR Production, Distribution, & Repair	n/a	n/a	0	0
Parking	n/a	n/a	0	0
Other (Specify Use)	Transp. 30,000	Trans. 30,000	0	30,000
Total GSF				30,000
PROJECT FEATURES	**EXISTING USES**	**EXISTING USES TO BE RETAINED**	**NET NEW CONSTRUCTION AND/OR ADDITION**	**PROJECT TOTALS**
Dwelling Units	n/a	n/a	0	0
Hotel Rooms	n/a	n/a	0	0
Parking Spaces	n/a	n/a	0	0
Loading Spaces	n/a	n/a	0	0
Number of Buildings	n/a	n/a	0	0
Height of Building(s)	n/a	n/a	0	0
Number of Stories	n/a	n/a	0	0

Please provide a narrative project description, and describe any additional project features that are not included in this table:

See attached project description.

Findings of Compliance with Preservation Standards

	FINDINGS OF COMPLIANCE WITH PRESERVATION STANDARDS	YES	NO	N/A
1	Is the property being used as it was historically?	☒	☐	☐
2	Does the new use have minimal impact on distinctive materials, features, spaces, and spatial relationship?	☐	☐	☒
3	Is the historic character of the property being maintained due to minimal changes of the above listed characteristics?	☒	☐	☐
4	Are the design changes creating a false sense of history of historical development, possible from features or elements taken from other historical properties?	☐	☒	☐
5	Are there elements of the property that were not initially significant but have acquired their own historical significance?	☐	☒	☐
6	Have the elements referenced in Finding 5 been retained and preserved?	☐	☐	☒
7	Have distinctive materials, features, finishes, and construction techniques or examples of fine craftsmanship that characterize the property been preserved?	☒	☐	☐
8	Are all deteriorating historic features being repaired per the Secretary of the Interior Standards?	☒	☐	☐
9	Are there historic features that have deteriorated and need to be replaced?	☒	☐	☐
10	Do the replacement features match in design, color, texture, and, where possible, materials?	☒	☐	☐
11	Are any specified chemical or physical treatments being undertaken on historic materials using the gentlest means possible?	☒	☐	☐
12	Are all archeological resources being protected and preserved in place?	☐	☐	☒
13	Do exterior alterations or related new construction preserve historic materials, features, and spatial relationships that are characteristic to the property?	☒	☐	☐
14	Are exterior alterations differentiated from the old, but still compatible with the historic materials, features, size, scale, and proportion, and massing to protect the integrity of the property and its environment?	☒	☐	☐
15	If any alterations are removed one day in the future, will the forms and integrity of the historic property and environment be preserved?	☒	☐	☐

Please summarize how your project meets the Secretary of the Interior's *Standards for the Treatment of Historic Properties*, in particular the *Guidelines for Rehabilitation* and will retain character-defining features of the building and/or district:

Standard conditions will be applied in order to meet the SOI Standards. Where possible, deteriorated features will be repaired rather than replaced; otherwise they will match the original in design, color, texture, and if applicable, materials.

Findings of Compliance with General Preservation Standards

In reviewing applications for Certificate of Appropriateness the Historic Preservation Commission, Department staff, Board of Appeals and/or Board of Supervisors, and the Planning Commission shall be governed by *The Secretary of the Interior's Standards for the Treatment of Historic Properties* pursuant to Section 1006.6 of the Planning Code. Please respond to each statement completely (Note: Attach continuation sheets, if necessary). Give reasons as to *how* and *why* the project meets the ten Standards rather than merely concluding that it does so. IF A GIVEN REQUIREMENT DOES NOT APPLY TO YOUR PROJECT, EXPLAIN WHY IT DOES NOT.

1. The property will be used as it was historically or be given a new use that requires minimal change to its distinctive materials, features, spaces, and spatial relationships;

The property was historically used as a bridge for motor and pedestrian traffic, and continues to be used for the same purposes.

2. The historic character of a property will be retained and preserved. The removal of distinctive materials or alteration of features, spaces, and spatial relationships that characterize the property will be avoided;

Where possible, deteriorated features will be repaired rather than replaced. If the severity of the deterioration requires replacement, the new steel members will match the original in design, color, texture, and materials, and will be substantiated by documentary and physical evidence. Pile jackets to be installed on the concrete piles will retain the basic form of the square concrete piles.

3. Each property will be recognized as a physical record of its time, place and use. Changes that create a false sense of historical development, such as adding conjectural features or elements from other historic properties, will not be undertaken;

No alterations to the basic structural configuration of the bridge will take place. No repairs will be done that are not consonant with the original design and appearance.

4. Changes to a property that have acquired historic significance in their own right will be retained and preserved;

The bridge retains a high degree of historic integrity. Later additions by a previous rehabilitation project In the late 1990s replaced the non-historic southern approach spans, corroded steel members mostly under the roadway deck, and mechanical and electrical components, modified the roadway decking, constructed a new operator house with new control equipment, and repainted the bridge using original colors. None of these features have acquired their own historical significance.

5. Distinctive materials, features, finishes, and construction techniques or examples of fine craftsmanship that characterize a property will be preserved;

Structural features will retain the same in form and function. Applying a protective coating and paint is an alteration of the property that will be done in a manner consistent with the SOI Standards. Most of the features to be painted are considered character-defining features. Those above-deck features, including the steel members, are ranked Most Significant, while those below the deck are ranked Less Significant. The bridge has historically been painted so this activity will not cover materials intended to be exposed.

6. Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture, and, where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence;

Deteriorated steel members will be replaced unless repair is not possible, in which case new steel members will match the original in design, color, texture, and materials. The bridge will be repainted a historically compatible color. The pile jackets will retain the basic form of the square concrete piles. Testing and trial work, historic photographs, archival data, and analysis of existing original steel members will be used.

7. Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used;

The steel structure will be cleaned to near white metal by brushing and blasting, which is the gentlest means available for removing existing paint and rust. Any deep pitting or any area of unevenness will be filled with epoxy resin, and all exposed steel will be coated with zinc spray (metalizing) followed by an epoxy coating.

8. Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken;

No archaeological resources have been identified as potentially impacted by the project.

9. New additions, exterior alterations, or related new construction will not destroy historic materials, features, and spatial relationships that characterize the property. The new work shall be differentiated from the old and will be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment;

No additions to the bridge are proposed. Existing honeycomb decking is not historic and if replaced with similar, historically compatible decking, does not represent the destruction of a historic feature. The bridge has historically been painted, and it will be repainted following repair with a historically compatible color.

10. New additions and adjacent or related new construction will be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would not be impaired;

No additions or adjacent new construction are proposed as part of the project.

PLEASE NOTE: *For all applications pertaining to buildings located within Historic Districts, the proposed work must comply with all applicable standards and guidelines set forth in the corresponding Appendix which describes the District, in addition to the applicable standards and requirements set forth in Section 1006.6. In the event of any conflict between the standards of Section 1006.6 and the standards contained within the Appendix which describes the District, the more protective shall prevail.*

Priority General Plan Policies Findings

Proposition M was adopted by the voters on November 4, 1986. It requires that the City shall find that proposed projects and demolitions are consistent with eight priority policies set forth in Section 101.1 of the City Planning Code. These eight policies are listed below. Please state how the project is consistent or inconsistent with each policy. Each statement should refer to specific circumstances or conditions applicable to the property. Each policy must have a response. IF A GIVEN POLICY DOES NOT APPLY TO YOUR PROJECT, EXPLAIN WHY IT DOES NOT.

1. That existing neighborhood-serving retail uses be preserved and enhanced and future opportunities for resident employment in and ownership of such businesses enhanced;

There is no alteration of capacity or use, and minimal alteration of appearance (historically compatible paint color). As such, there is no effect to neighborhood retail.

2. That existing housing and neighborhood character be conserved and protected in order to preserve the cultural and economic diversity of our neighborhoods;

The rehabilitation of this bridge to SOI standards will conserve its character and so have no effect on neighborhood character.

3. That the City's supply of affordable housing be preserved and enhanced;

As a project to maintain an existing transportation facility in operating condition, the project has no effect on the existing supply of affordable housing.

4. That commuter traffic not impede Muni transit service or overburden our streets or neighborhood parking;

As a project to maintain an existing transportation facility in operating condition, the project has no effect on the current volume of commuter traffic.

5. That a diverse economic base be maintained by protecting our industrial and service sectors from displacement due to commercial office development, and that future opportunities for resident employment and ownership in these sectors be enhanced;

As a project to maintain an existing transportation facility in operating condition, the project has no effect on commercial office development.

6. That the City achieve the greatest possible preparedness to protect against injury and loss of life in an earthquake;

Enhancing the structural integrity of the bridge constitutes a positive contribution to earthquake preparedness.

7. That landmarks and historic buildings be preserved; and

The project conserves and repairs an existing landmark to SOI standards.

8. That our parks and open space and their access to sunlight and vistas be protected from development.

As a project to maintain an existing transportation facility in operating condition that makes no changes to the basic structural design of the bridge, the project has no effect on open spaces and parks.

Estimated Construction Costs

TYPE OF APPLICATION: Building	
OCCUPANCY CLASSIFICATION: n/a	
BUILDING TYPE: Heel trunnion bascule steel drawbridge	
TOTAL GROSS SQUARE FEET OF CONSTRUCTION: 30,000	BY PROPOSED USES: Transportation
ESTIMATED CONSTRUCTION COST: $27 million	
ESTIMATE PREPARED BY: Thomas Roitman, Project Manager, SF Public Works	
FEE ESTABLISHED:	

Applicant's Affidavit

Under penalty of perjury the following declarations are made:

a: The undersigned is the owner or authorized agent of the owner of this property.
b: The information presented is true and correct to the best of my knowledge.
c: Other information or applications may be required.

Signature: _____ Date: 2/21/2018

Print name, and indicate whether owner, or authorized agent:

Thomas Roitman

Owner / Authorized Agent (circle one)

Certificate of Appropriateness Application Submittal Checklist

The intent of this application is to provide Staff and the Historic Preservation Commission with sufficient information to understand and review the proposal. Receipt of the application and the accompanying materials by the Planning Department shall only serve the purpose of establishing a Planning Department file for the proposed project. After the file is established, the Department will review the application to determine whether the application is complete or whether additional information is required for the Certificate of Appropriateness process. Applications listed below submitted to the Planning Department must be accompanied by this checklist and all required materials. The checklist is to be completed and **signed by the applicant or authorized agent.**

REQUIRED MATERIALS (please check correct column)	CERTIFICATE OF APPROPRIATENESS
Application, with all blanks completed	☒
Site Plan	☒
Floor Plan	☒
Elevations	☒
Prop. M Findings	☒
Historic photographs (if possible), and current photographs	☒
Check payable to Planning Department — paid by journal entry	☐ N/A
Original Application signed by owner or agent	☒
Letter of authorization for agent	☐ N/A
Other: Section Plan, Detail drawings (i.e. windows, door entries, trim), Specifications (for cleaning, repair, etc.) and/or product cut sheets for new elements (i.e. windows, doors)	☒

NOTES:
☐ Required Material. Write "N/A" if you believe the item is not applicable, (e.g. letter of authorization is not required if application is signed by property owner.)
■ Typically would not apply. Nevertheless, in a specific case, staff may require the item.

PLEASE NOTE: *The Historic Preservation Commission will require additional copies each of plans and color photographs in \ reduced sets (11" x 17") for the public hearing packets. If the application is for a demolition, additional materials not listed above may be required. All plans, drawings, photographs, mailing lists, maps and other materials required for the application must be included with the completed application form and cannot be "borrowed" from any related application.*

For Department Use Only
Application received by Planning Department:

By: _____ **Date:** _____

SAN FRANCISCO PLANNING DEPARTMENT

FOR MORE INFORMATION:
Call or visit the San Francisco Planning Department

Central Reception
1650 Mission Street, Suite 400
San Francisco CA 94103-2479

TEL: **415.558.6378**
FAX: **415 558-6409**
WEB: **http://www.sfplanning.org**

Planning Information Center (PIC)
1660 Mission Street, First Floor
San Francisco CA 94103-2479

TEL: **415.558.6377**
Planning staff are available by phone and at the PIC counter. No appointment is necessary.

Third Street Bridge Rehabilitation Project

Updated Project Description for EEA

(2015-009647ENV)

Summary

San Francisco Public Works is proposing the Third Street Bridge Rehabilitation Project to remove surface and pack rust; repair damaged and buckled steel members, damaged welds, the piles supporting ancillary bridge structures, and the fender pile system; and to repaint and recoat the bridge. Work will require the construction of pile-supported temporary scaffolding and a debris-containment system. This specific scope of work addresses the recommendations provided by Caltrans through the 2014 Bridge Inspection Report.

Project Location

The Third Street Bridge, also known as the Francis "Lefty" O'Doul Bridge, crosses over Mission Creek Channel and links the South of Market and Mission Bay neighborhoods in San Francisco's Eastern Neighborhoods Planning Area. West of the bridge, the culverted and underground portion of Mission Creek drains into Mission Creek Channel. Mission Creek Channel runs from the west to the east passing a row of houseboats, the Fourth Street Bridge, and the Third Street Bridge before draining into China Basin and the San Francisco Bay.

To the northeast of the bridge is AT&T Park, home of the San Francisco Giants, to the northwest is the China Basin building with commercial/office space, to the southwest is land currently proposed for development of a park, residential towers, and a hotel; and to the southeast is China Basin Park and Lot A parking area.

Bridge Background

The approximately 295 foot long, 80 foot wide Third Street Bridge (Caltrans Bridge No. 34C0025) spans the Mission Creek Channel and provides five lanes of traffic (three lanes in the southbound direction and two in the northbound direction), no shoulders, concrete curb in each direction, and a timber walkway approximately 10 feet wide on the eastern side of the bridge and of varying widths on the western side. The deck is steel grating with steel plates covering the easternmost travel lanes. The bridge, an active conduit for vehicles, pedestrians, and cyclists, also opens to allow boats to pass along Mission Creek Channel, a Coast Guard-regulated navigable waterway with limited marine traffic, through use of its bascule arm.

Constructed in the 1930s, this heel trunnion bascule drawbridge[1] was designed and patented by the Strauss Engineering Corporation, is a San Francisco Landmark (#194), listed in the Caltrans Historic Bridge Inventory as a Category 2 bridge, and has been determined by Caltrans as eligible for listing in the National Register of Historic Places (NRHP). In the late 1990s rehabilitation work occurred on the bridge and included replacing the southern approach spans, corroded steel members, wooden piles and other waterside support, mechanical and electrical components, and modifying the roadway decking, constructing a new operator house and control equipment, and repainting.

Based on the most recent Caltrans bridge inspection report, the sufficiency rating of the bridge under

[1] Opens on a fixed axle with one counterweight

the National Bridge Inventory Rating System was 37 and, per the most recent Caltrans Structure Maintenance & Investigations Local Agency Bridge List, has been upgraded to 64.7 (Caltrans 2014). The change in the sufficiency rating is due to a different approach in calculating the bridge rating.

Purpose and Need

While the bridge is not yet considered structurally deficient, clear evidence of damaged and buckled steel members and other damage to the bridge and the trunnion mechanism has been identified. Without preventative maintenance, this damage will worsen and ultimately compromise the structural integrity of the bridge.

The purpose of the project is to maintain the integrity of the bridge superstructure.

Project Scope and Construction

Project work will occur on the Third Street Bridge, with the work limits including the bridge to approximately 80 and 90 feet north and south of the bridge, respectively. The laydown and staging area will include portions of Third Street 210 feet north of work limits and 290 feet south of the work limits. Additionally, the northern half of Terry Francois Blvd (approximately 20 feet wide and 500 feet long) will be used as a staging area. The work limits and staging and laydown areas are shown in Figure 1. Access to the garage at China Basin Landing building will be maintained.

The work associated with the bridge rehabilitation will require the use of non-motorized barges and rafts, moved with tugboats when necessary, to access the bridge during rehabilitation of the fixed span portion of the bridge and to install piles. During construction the non-motorized barges and rafts will be stationed on either side of the bridge for use as work platforms. When not in use the small barges or rafts will be moored east of the old Operator house, adjacent to AT&T Park. Larger barges will be moored along the north of the China Basin Park. Final mooring location will be subject to U.S. Coast Guard approval.

Nighttime and weekend construction will be required. No utility work is anticipated other than locating and avoiding an existing submarine cable in the channel.

The construction area for the project is adjacent to, but falls outside any designated APEZ. All construction work will be done in accordance with the City and County of San Francisco's Clean Construction Ordinance and related standard Best Management Practices as determined necessary by the Project Engineer, based on the Contractor's chosen means and methods of construction.

Bridge Rehabilitation

Temporary Scaffolding and Debris-Containment Systems

Temporary scaffolding will be constructed on the northern side of the channel to allow access to work areas, support safety netting, and support a containment system encapsulating the entire superstructure. Approximately 50 temporary wooden piles will be installed between Pier 2 and a point in the channel 40 feet out from Pier 2, and up to 65 feet from centerline on each side of the bridge. The temporary piles will be installed from a non-motorized barge equipped with a crane-mounted vibratory hammer. Temporary piles will be driven to tip elevation of -50 feet San Francisco City

Datum[2]. Temporary piles will have butt diameters of 16 inches.

The encapsulation containment system for the superstructure will be used to contain debris for rust remediation on the structure and stairway, and for some deck work. Additional containment systems will be constructed to hang off the deck for additional deck repair work, and attached to the bottom of ancillary bridge structures (operator house and signalman hut) during repair of the support systems for those structures. Containment systems will conform to Caltrans Standard Specifications sections 13 (Water Pollution Control), 14-9.02 (Air Pollution Control), 14.9-03 (Dust Control), 15-5 (Bridge Rehabilitation), and 48 (Temporary Structures). Containment systems will use Caltrans authorized geosynthetic fabric and/or plastic sheeting covers and platforms to collect debris and attachments on equipment to catch debris during small demolition activities. Debris-catching devices will be emptied regularly with collected debris removed and stored away from Mission Creek in the staging area on Terry Francois Blvd and protected from run-on and runoff.

All temporary piles, scaffolding, netting and the containment system will be removed upon completion of work. Temporary piles will be removed by vibratory hammer. Removal and disposal of spent abrasive and resulting debris will comply with local and state regulations.

Repair/Replacement of Steel Bridge Members and Repair of Steel Stairway

Damaged and buckled steel members on all parts of the bridge structure will be repaired or replaced by full or partial replacement, or by flame straightening of the member followed by the installation of bolted cover plates to fully replace the damaged section. Repair or replacement will depend on the level of damage as well as the importance of the given element to the structure. Corroded high-strength bolts will be replaced. Broken welds on the structure will be repaired either by welding or bolting. These repairs will be performed from the temporary scaffolding and from the bridge deck.

Repair of the stairway mounted on the bridge superstructure will include re-welding or replacement of brackets of damaged and deficient welds, followed by replacement of stair treads (where section loss is greater than 15%). These repairs will be performed from the bridge deck.

Surface and pack rust removal will occur on both the underside and top-side of the bridge deck, on concrete support piles, and on areas requiring repair that are exposed after cleaning and removing visible corrosion. Additional repair areas may be exposed after cleaning and removing the visible corrosion. Work will include abrasive blasting, wire brushing, needle-gun scaling, and grinding of localized areas of corrosion. These repairs will be performed from the temporary scaffolding.

Lead abatement will also occur incidental to rust removal, using the same methods as rust removal. Lead-bearing materials will be captured by the encapsulation system. Lead-based paint on the bridge will be removed by the contractor in accordance with methods approved by the U.S. Environmental Protection Agency. Acceptable methods may include wet scraping or the use of a dustless needle gun connected to a vacuum unit with a high efficiency particulate air filter that empties directly into a waste container. The waste container would be properly documented

[2] San Francisco City Datum is 6.70 feet above ordinary high water mark. In the vicinity of the Third Street Bridge the mudline varies from -15 to -37 so piles will be driven to a depth below mud line of approximately 45 feet.

and disposed of at a Class I landfill near the project area. Weep holes will be added to under-deck members exposed to spray, to allow for adequate water drainage. Holes will be drilled in existing members, or be pre-drilled in replacement members. This will be performed from the temporary scaffolding.

Repair/Replacement of Bridge Deck

Damaged welds between the decking and bridge support beams/shim plates will be repaired by re-welding or bolting. The existing deck will be entirely replaced with a modularized bridge deck system allowing greater ease of section replacement. The existing deck will be removed and the prefabricated modular system installed by welding or bolting. These repairs will be performed from the bridge deck. The east and west ends of the bridge deck provide pedestrian sidewalks consisting of timber plank decking. These planks require periodic replacement due to deterioration from foot traffic and exposure to the elements. The entire sidewalk timber planking will be replaced in kind as part of this rehabilitation project.

Repair of Concrete Piles Supporting the Operator House and Signalman's Hut

Each of the existing supports for the original Control House (Operator House) and Signalman's Hut (Watchman's House) consists of four 12 x 12 foot concrete piles in the channel for each structure. Repair of the support piles for both structures will consist of pile cladding and mortar/grout injection. During this repair work all spalled concrete will be removed by blasting and chipping, and steel reinforcement will be cleaned by blasting and brushing. Any steel reinforcement with greater than 25% loss of cross section will be augmented with additional reinforcement.

In general, the piles will be repaired by encapsulating each deteriorated pile with an epoxy grout or concrete filled pile jacket. Encapsulation is used when a pile is damaged, but still retains some load bearing capacity, as is the case with the existing concrete piles. All in-water work to jacket the piles will be accomplished by using best management practices, including hand-placement of the jackets to minimize bottom sediment disturbance, and ensuring that grout would be contained and not allowed to enter the water. Pile jackets will be constructed from a composite fiberglass material and are watertight.

Concrete pilings to be encased are first cleaned of any loosely adhering marine organisms and the existing damaged material on the pile. A custom fabricated pile jacket is then installed around the entire pile. The bottom end of the jacket will either be fitted with a watertight rubber seal or embedded in the bed of Mission Creek to prevent concrete leaks. The top end of the jacket will also be sealed or set so that the concrete fill does not spill out of the jacket. Epoxy grout or concrete is then pumped into the jacket through a suitable hose extending down to the lowest point of the jacket and connected via a watertight seal. As the form is slowly filled with concrete, hydraulic pressure forces the entrained seawater within the fabric form out through an overflow valve or the top of the jacket. The method will employ a filter system that collects the exiting water and prevents suspended solids from discharging into surrounding waters. The valve will be permanently closed once the form has been filled.

Repair of the concrete piles will occur during low tide from rafts. Support from a diver will be required, with additional support provided by a non-motorized barge anchored in the channel.

Repaint/Recoat the Bridge

After repair/placement of the steel bridge members and deck, rust removal, and corrosion mitigation, the bridge structure will be repainted/recoated with a multi-part coating system designed for use in marine environments. Any deep pitting or any area of unevenness will be filled with epoxy resin.

All areas above the deck will be cleaned to near white metal by brushing and blasting and coated with a zinc-rich primer followed by epoxy coating. Work will include use of a sealant for all nuts, bolts, and crevices.

All areas within splash zone (deck and below) will be cleaned to near white metal by brushing and blasting, and coated with zinc spray (metalizing) followed by an epoxy coating. Work on steel sections covered at the highest high tide (i.e., directly above the piers) will be scheduled so that this area is treated at low tide.

Repair/Replacement of Fender Pile System

The existing fender pile system (composed of approximately 130 piles) will be rehabilitated by installing grouted fiberglass sleeves around the existing piles, and existing platforms, walkways, fender curtain walls will be reconstructed. The new platforms, walkways and horizontal walers will consist of plastic lumber reinforced with fiberglass. This work will be supported by divers.

Similar to the sleeves on the concrete piles, the pile sleeves on the timber piles will be installed by divers supported by a non-motorized barge equipped with dive and construction related equipment (safety personnel, compressors, grout mixers and pumps, tools and materials, etc). Work will include cleaning the piles of surface debris, installing the jacket to 2 feet below mudline and pumping the sleeve with epoxy grout. Construction of walkways, platforms and walers will be performed from non-motorized barges anchored to the fender pile system. The project will construct a silt-curtain perimeter consisting of a float, a turbidity curtain, and ballast, to minimize mud migration beyond the work area. This will be removed once sediment has settled out.

In the event that some existing fender piles cannot be sleeved due to field conditions, a contingency plan allowing the subject piles to be removed and replaced through vibratory installation will be included in the project documents. This contingency plan would provide for the installation of up to 12 piles over the course of not more than two days. Installation would occur during daylight hours only.

Install Traffic Control and pedestrian Safety Gates

The current configuration has railroad crossing-style traffic control gates at the south-east, south-west, and north-west entrances to the bridge. There is no traffic control gate at the north-east side, which presents a major safety hazard. This safety hazard will be mitigated by installing a fourth traffic control gate to match the other three gates currently installed.

The current configuration leaves a small gap where the west sidewalk meets the promenade sidewalk at the north-west corner of the bridge. This pedestrian safety-hazard will be mitigated by installing a small swing gate which will match adjacent railings.

Surface and Marine Traffic during Construction

Surface Traffic

Partial lane closure (closure of two to three lanes of the total five lanes) will occur for most of the work, including steel truss repair, steel replacement, deck replacement, and other work that is above roadway deck. Vehicular, bicycle, and pedestrian traffic would be permitted during partial lane closure. The duration of construction requiring partial lane closure will be 15 months.

Full closure of the bridge will occur for work occurring below roadway deck including pile removal, installing the temporary piles and replacement fender/dolphin pile system, construction of scaffolding, encapsulating the bridge, removal of surface and pack rust, repair of structural steel members, and application of epoxy paint system. Full closure of the bridge will occur for a maximum of 150 days.

Marine Traffic

When the contractor is working during partial lane closure of the bridge the waterway access in Mission Channel will be unavailable. The bridge will be closed to May 1, 2018 through October 31, 2019.

Construction would not require removal or relocation of the houseboats at the western end of the channel. However, in advance of construction that would limit marine traffic, the project will relocate sailboats and other seafaring boats tethered to the houseboats to other marinas in San Francisco or the Bay Area. These boats will be relocated from the area and would be returned at no cost to the owner.

Construction Schedule

Due to existing development in the project area such as AT&T Park and anticipated development (e.g., the Event Center and Mixed-Use Development at Mission Bay Blocks 29-32 Project and other residential, hotel, and commercial development), compressed and phased construction periods are anticipated.

Table 1 identifies the type and timing of work for the Third Street Rehabilitation Project.

May 2018 to late October 2019 (Bridge Lanes Partially-Closed)
Stairway repair
Partial repair/replacement of bridge deck
Drive temporary and fender piles
Construct scaffolding
Encapsulate the bridge truss
Repair/replacement of steel bridge members
Remove/replace structural steel coating

Repaint/recoat bridge
Remove temporary piles
November 2018 to February 2019*
(Bridge Lanes Fully-Closed)
Major repair/replacement of bridge deck
Repair end locks
Replace piles under bridge (if needed)

*Dependent on Giants season: anticipated to occur late-October to early-April

Third St. Bridge, raised. March 22, 1933 (SFPL Historical Photograph Collection, AAD-1690)

Third St. Bridge being drawn. March 30, 1933 (SFPL Historical Photograph Collection, AAD-1676)

Third St. Bridge, looking north. March 1941 (SFPL Historical Photograph Collection, AAX-0091)

SECRETARY OF THE INTERIOR'S STANDARDS FOR THE TREATMENT OF HISTORIC PROPERTIES ACTION PLAN

for

Third Street Bridge Rehabilitation Project

San Francisco, California

Federal Project No. BRLO-5934(177)

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Figure 1	Project Vicinity
Figure 2	Project Location
Figure 3	Area of Potential Effects (APE)

Attachment B – Correspondence

Attachment C – Plans for Third Street Bridge Seismic Retrofit and Rehabilitation Project, 1998

1. SUMMARY OF ACTION PLAN

The City and County of San Francisco Department of Public Works (City) is planning rehabilitation work on the Third Street Bridge, also known as the Francis "Lefty" O'Doul Bridge (Bridge No. 34C0025), over the Mission Creek Channel in San Francisco, linking the South of Market and Mission Bay neighborhoods. JRP Historical Consulting, LLC (JRP) prepared this Secretary of the Interior's Standards for the Treatment of Historic Properties Action Plan (SOIS Action Plan) to establish tasks to be undertaken during the project to ensure the project avoids an adverse effect to historic properties.

The project proposes to remove surface and pack rust from the structure and repair multiple components of the bridge including damaged and buckled steel members, damaged welds, the concrete counterweights, the piles supporting ancillary bridge structures, and the fender pile system. The project will also repaint and recoat the bridge. Work will require the construction of pile-supported temporary scaffolding and a debris-containment system. The project vicinity and location are illustrated in **Figures 1** and **2**, respectively, in **Attachment A**. See **Attachment A, Figure 3** for a map of the Area of Potential Effects (APE).

JRP prepared this SOIS Action Plan to assist with project compliance under Section 106 of the National Historic Preservation Act (NHPA). The SOIS Action Plan establishes the intent, methods, and applications of the Secretary of the Interior's Standards for the Treatment of Historic Properties (SOI Standards) in order to avoid an adverse effect to historic properties within the APE. The sole historic property in the APE is the Third Street Bridge (Bridge No. 34C0025), which was previously determined eligible for listing in the National Register of Historic Places (NRHP). This property is also listed in the California Register of Historical Resources (CRHR), and is therefore considered a historical resource for the purposes of the California Environmental Quality Act (CEQA). Third Street Bridge was determined eligible under NRHP Criterion B / CRHR Criterion 2 and NRHP Criterion C / CRHR Criterion 3 at the local level of significance. The period of significance for the bridge is 1933.

This SOIS Action Plan was established following a Finding of No Adverse Effect with Standard Conditions – Secretary of the Interior's Treatment of Historic Properties (FNAE–SC–SOIS). A FNAE–SC–SOIS is appropriate because an adverse effect to the historic property will be avoided with the designation and enforcement of this SOIS Action Plan, pursuant to Section 106 PA Stipulation X.B.1. This plan sets forth the tasks required during each stage of the project (pre-construction, during construction, and post-construction) and establishes the responsible parties for each task. These are included in Section 6. The anticipated schedule for each task is included in Section 6.

Correspondence related to the establishment of this SOIS Action plan is provided in **Attachment B**.

2. PROJECT DESCRIPTION SUMMARY

2.1 Summary

City and County of San Francisco Department of Public Works (City) is proposing the Third Street Bridge Rehabilitation Project to remove surface and pack rust; repair damaged and buckled steel members, damaged welds, the concrete counterweight, the piles supporting ancillary bridge structures, and the fender pile system; and to repaint and recoat the bridge. Work will require the construction of pile-supported temporary scaffolding and a debris-containment system. This specific scope of work addresses the recommendations provided by Caltrans through the 2014 Bridge Inspection Report.

A detailed project description is included in the FNAE–SC–SOIS for this project.

2.2 Regulatory Context

This SOIS Action Plan has been prepared pursuant to the 2014 *First Amended Programmatic Agreement Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, as it Pertains to the Administration of the Federal-Aid Highway Program in California* (Section 106 PA) Stipulation X.B.1.b and Attachment 5.

3. HISTORIC PROPERTY DESCRIPTION

The Joseph B. Strauss–designed Third Street Bridge (Bridge No. 34C0025) features a two-span 143-foot-long through steel truss, heel trunnion-type bascule drawbridge with a counterweight and opening mechanism on the north end. A Machinery Room rests on a concrete foundation within the trunnion section above the bridge deck. The bridge provides five lanes of vehicular traffic (three lanes in the southbound direction and two in the northbound direction), and sidewalks east and west sides of the vehicle lanes. The deck on the lift section of the bridge is open grid steel plates covering the southbound travel lanes and steel grid with steel cover plates on the northbound lanes. The trunnion span of the bridge includes concrete slab deck with asphalt.

The bridge includes two former service buildings along the east side of the bridge that were designed by Strauss Engineering Corporation and built with the bridge in 1933: an Operator's House at the north end and a Watchman's House at the south end. A new operations building was constructed south of the Watchman's House in the late 1990s to replace the Operator's House and Watchman's House. The bridge also includes seven traffic control gates, four of which were designed and built with the original construction of the bridge. Two modern control gates are located on the south side of the bridge for each direction of traffic and one modern gate is located on the north side for southbound traffic.

Wood fenders and piles are located in the Mission Creek Channel, running east and west under the bridge. They are used to guide watercraft through the channel.

In the late 1990s a rehabilitation project replaced the non-historic southern approach spans, corroded steel members mostly under the roadway deck, and mechanical and electrical components, constructed the new operator house with new control equipment, and performed seismic upgrades of critical truss members. The bridge was repainted using original colors. Safety curbing and railing was added between the northbound and southbound traffic lanes. Plans for the Seismic Retrofit and Rehabilitation of Third Street Bridge are included for reference in **Appendix C**.

The FNAE–SC–SOIS prepared for this project includes a detailed description and photographs of the bridge.

3.1 National Register of Historic Places Significance

The Third Street Bridge (Bridge No. 34C0025) was previously determined eligible for listing in the NRHP as a result of the Caltrans Historic Bridge Inventory conducted in 1985, a conclusion the SHPO concurred in on September 19, 1985.[1] The 1985 determination did not include formal

[1] U.S. Department of Transportation, Federal Highway Administration and California Department of Transportation, Request for Determination of Eligibility for Inclusion in the National Register of Historic Places, Historic Truss

evaluation using NRHP Criteria. A concurrent study concluded that the bridge was eligible for listing in the NRHP under Criterion B because it is "closely associated with the life of bridge designer, Joseph B. Strauss, who was heavily involved with the planning of the Golden Gate Bridge at the very time that the Third Street Bridge was being built." It was also found eligible under Criterion C as an important local example of the heel trunnion bascule type bridge.[2]

None of the previous documentation identified the bridge's period of significance or the boundaries of the historic property. Based on the significance criteria, the period of significance is 1933, the original construction date. The boundaries of this historic property include the bridge from its approach at the north end to its approach at the south end, and include the traffic control gates. The bridge is eligible at the local level of significance. The bridge retains a high degree of historic integrity. It has undergone periodic work to maintain and repair elements of the bridge, but this work was relatively minor and did not substantially diminish the integrity of design, materials, workmanship, setting, location, feeling, and association.

The character-defining features of this bridge include the steel through truss heel trunnion bascule spans, the concrete counterweight, opening mechanism, and riveted steel truss members. The steel trusses continue below the deck and include original steel members, bolts and rivets. The Operator's and Watchman's houses are also character-defining features and include the basic form and plan, wood windows, stucco siding, and hip roof; the concrete piles supporting the two buildings are also original to the historic property. Traffic Control Gate Standards #1-4 are also character-defining features, as are the steel staircases and catwalks, the Machinery Room, and original metal railing. The control gate arms and modern control gates are not character-defining features. Substructure features that appear to be original include Piers 1-3, which consist of reinforced concrete columns atop reinforced concrete caps that rest on timber piles. The timber fenders are not original and therefore are not character-defining features.

A detailed discussion of the Third Street Bridge's NRHP significance is in the FNAE–SC–SOIS prepared for this project. That report also ranked the character-defining features using the Caltrans "Ranking Character-Defining Features" guidelines, using three categories: Most Significant (M), Significant (S) and Less Significant (LS). These rankings are used in the discussion of the analysis of effects in Section 4 below.

Bridges in California, 1985; Kathryn Gualtieri, Letter to Bruce E. Cannon, Re: Determination of National Register Eligibility: Historic Truss Bridges in California, 19 September 1985.

[2] Donald W. Alden, "Historic Property Survey Report for the Rehabilitation of the Third Street Bridge over Mission Channel Waterway at China Basin, City of San Francisco, Bridge No. 34C-25," prepared for City and County of San Francisco, Department of Public Works, 1 May 1985; Donald W. Alden, "Information Regarding the Effects on the Third Street Bridge over Mission Channel Waterway (China Basin), City of San Francisco, Bridge No. 34C-25," 4 May 1985; Kathryn Gualtieri, Letter to Bruce E. Cannon Re: Rehabilitation of the Third Street Bridge, #34C-25, San Francisco, 28 April 1986.

3.2 Photographs

JRP took the following photographs of the Third Street Bridge on November 10, 2015.

Photograph 1: Third Street Bridge, facing northwest.

Photograph 2: Showing through truss and metal grate deck on southbound lanes, facing northeast.

Photograph 3: Steel Through truss, facing northwest.

Photograph 4: Showing steel through truss and steel deck with composite surface with decorative plank design on northbound lanes; facing southwest.

Photograph 5: Outer southbound lane, sidewalk and steel truss; facing southeast.

Photograph 6: Steel grate deck for southbound traffic and pressure treated wood sidewalk; facing southeast

Photograph 7: Stairway and catwalk on east side of bridge; facing northwest.

Photograph 8: Stairway on east side of bridge leading to Machinery Room; facing north.

Photograph 9: Machinery Room near north end of bridge; facing north.

Photograph 10: Trunnion section of bridge including north side of Machinery Room; facing southeast.

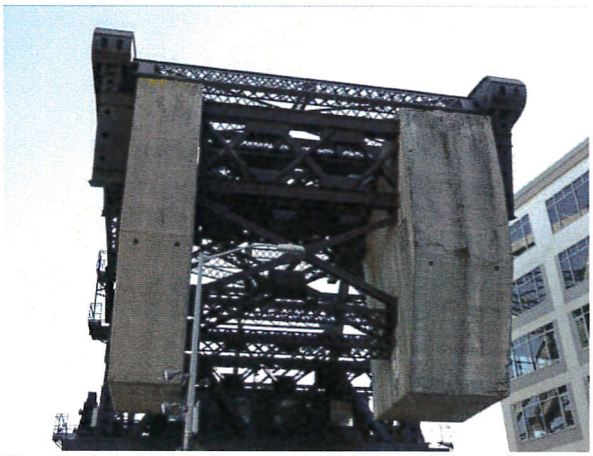
Photograph 11: Trunnion section of bridge; facing east.

Photograph 12: Main trunnion; facing east.

Photograph 13: First link pin (upper right) and counterweight trunnion (center left); facing west.

Photograph 14: Second link pin in trunnion system; facing southeast.

Photograph 15: North side of bridge showing concrete counterweights; facing southeast.



Photograph 16: Concrete counterweights; facing south.

Photograph 17: Concrete counterweights; facing west.

Photograph 18: Concrete counterweights facing northwest.

Photograph 19: East concrete counterweight; facing south.

Photograph 20: East concrete counterweight; facing southeast.

Photograph 21: West side of east counterweight, showing damage near bottom where attached to girder, facing east.

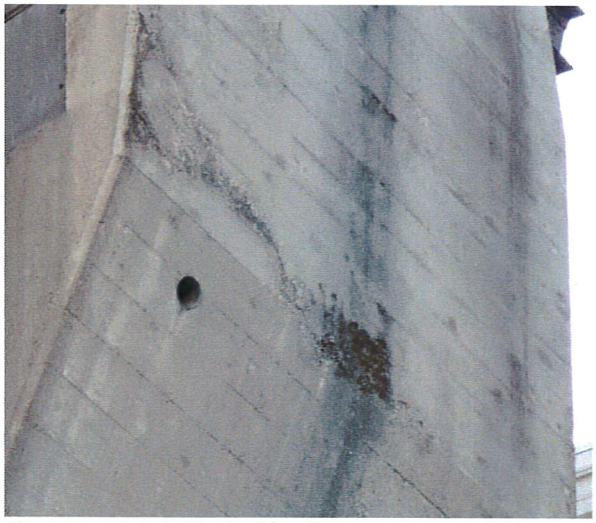
Photograph 22: West side of east counterweight showing deterioration near top where attached to girder on bottom corner; facing east.

Photograph 23: West concrete counterweight; facing south.

Photograph 24: West concrete counterweight; facing southeast.

Photograph 25: West concrete counterweight, showing deterioration on top corner, facing south.

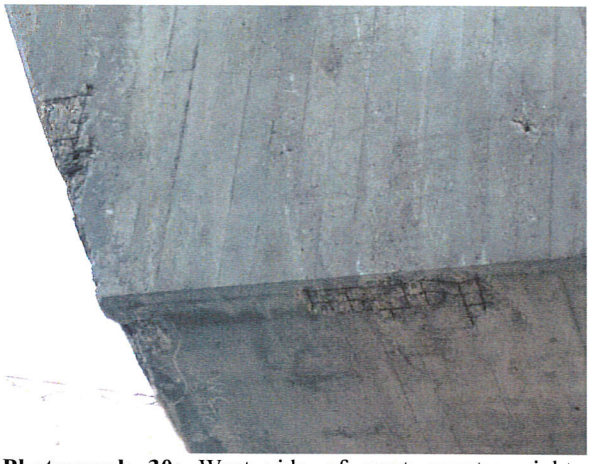
Photograph 26: West concrete counterweight showing deterioration on bottom corner; facing west.



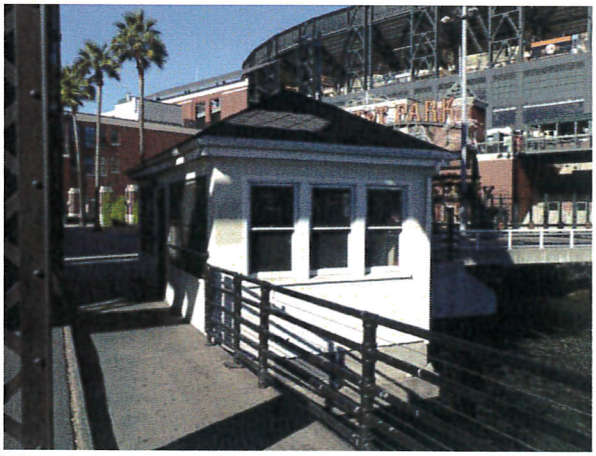
Photograph 27: North side of west counterweight, showing areas of deterioration, facing southwest.

Photograph 28: East side of west counterweight showing exposed metal mesh near top where attached to girder; facing southwest.

Photograph 29: West side of west counterweight, showing deterioration in areas near top, facing east.



Photograph 30: West side of west counterweight showing deterioration on side and bottom; facing east.



Photograph 31: Operator's House; facing northeast.

Photograph 32: Operator's House, showing concrete piles; facing north.

Photograph 33: Watchman's house; facing northeast.

Photograph 34: Watchman's House, showing concrete piles and wood fender piles in foreground; facing south.

Photograph 35: Wood fenders and piles on southwest corner of bridge; facing south.

Photograph 36: Wood fender and piles on northwest corner of bridge; facing east.

Photograph 37: Metal traffic control gate near the southeast corner of the bridge with modern gate behind it; facing southeast.

Photograph 38: Metal traffic control gate near the southwest corner of the bridge with modern gate behind it; facing south.

Photograph 39: The metal traffic control gate at the northeast corner of the bridge is still in use; facing southeast.

Photograph 40: The metal traffic control gate at the northwest corner of the bridge with modern gate to left; facing southwest.

Photograph 41: The 1933 bronze plaque located on the west side of the Watchman's House; facing east.

Photograph 42: New operator and watchman tower with former Watchman's House to right; facing northwest

4. ANALYSIS OF EFFECTS AND CONDITIONS PROPOSED

The Third Street Bridge Rehabilitation Project will not have an adverse effect on the Third Street Bridge because the proposed activities will meet the SOI Standards.[3] This section presents the SOI Standards for Rehabilitation and describes how they apply to the project activities.[4] Caltrans has compiled a list of bridge repair activities that would have no adverse effect when standard conditions are applied.[5] This section notes the activities that require standard conditions to avoid an adverse effect.

The following presents each of the SOI Standards for Rehabilitation followed by a discussion of how the project meets the standard:

1) *A property will be used as it was historically or be given a new use that requires minimal change to its distinctive materials, features, spaces, and spatial relationships.*

The undertaking will not change the historic use of the property. The automobile bridge will continue to function as such.

2) *The historic character of a property will be retained and preserved. The removal of distinctive materials or alteration of features, spaces, and spatial relationships that characterize a property will be avoided.*

The undertaking will retain and preserve the historic character of the property. Some steel members, which are distinctive materials, will be repaired or replaced in kind. Per Caltrans guidance, repairing and replacing steel members of the bridge is as an activity that can be accomplished with no adverse effects by applying standard conditions.[6] These conditions include the following:

- Where possible, deteriorated features will be repaired rather than replaced.
- If the severity of the deterioration requires replacement, the new steel members will match the original in design, color, texture, and materials, and will be substantiated by documentary and physical evidence.

Historic photographs and existing original steel members will be used to determine an appropriate replacement material.

[3] The finding of no adverse effect was concluded in: JRP Historical Consulting, LLC, "Finding of No Adverse Effect with Standards Conditions Secretary of the Interior's Treatment of Historic Properties for Third Street Bridge Rehabilitation Project, San Francisco, California," prepared for Caltrans District 4, December 2015.
[4] United States Department of the Interior, SOI, *The Secretary of the Interior's Standards for the Treatment of Historic Properties* (Washington, D.C.: 1992).
[5] Caltrans, Standard Environmental Reference, Volume 2, Exhibit 7.4: Historic Bridges and Tunnels No Adverse Effects with Standard Conditions, 2014 update, revised 14 August 2015.
[6] Caltrans, Standard Environmental Reference, Volume 2, Exhibit 7.4: Historic Bridges and Tunnels No Adverse Effects with Standard Conditions, 2014 update, revised 14 August 2015.

No other distinctive materials will be removed. Features, spaces, and spatial relationships that characterize the property will not be altered. Alterations are limited to elements that do not characterize the property, like the replacement of the bridge deck that is not original.

3) *Each property will be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or elements from other historic properties, will not be undertaken.*

The undertaking will not make changes to the Third Street Bridge that creates a false sense of historical development. The project entails repairs and in-kind replacement of some materials. No conjectural features from other historic properties will be added to the bridge.

4) *Changes to a property that have acquired historic significance in their own right will be retained and preserved.*

The historic property does not include changes that have acquired historic significance in their own right.

5) *Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property will be preserved.*

The undertaking will preserve distinctive materials, features, finishes, and construction techniques or examples of craftsmanship. As discussed above, some steel members, which are distinctive materials, will be repaired or replaced in kind (see discussion above). Some of the activities of this project will help preserve historic features. The project will remove surface and pack rust on both the underside and top-side of the bridge deck, on concrete support piles, and on areas requiring repair that are exposed after cleaning and removing visible corrosion. Removal will help preserve the bridge materials and will be done so as not to cause damage. The concrete will be cleaned in the gentlest method that is effective. Reference will be made to Preservation Brief 15 on Preservation of Historic Concrete for guidance on cleaning and repairing concrete materials.[7] Methods for cleaning concrete materials will include low-pressure water or steam cleaning, microabrasive surface treatments, or chemical surface treatments. Trial processes will be performed prior to full-scale cleaning.

The project will also add weep holes to steel members to improve water drainage and help preserve elements of the bridge. The bridge was originally designed with weep holes in the main girders under the bridge deck to help drainage, but water accumulation from Mission Creek Channel has caused deterioration. The weep holes will provide adequate drainage to help prevent additional deterioration. The holes will be drilled into girders, which are mostly under-deck members of the bridge considered character-defining features that are ranked Less Significant. At least two weep holes will be added to the beams that span the counterweights. The additional

[7] Paul Gaudette and Deborah Slaton, "Preservation Brief 15: Preservation of Historic Concrete," prepared for the United States Department of the Interior, National Park Service, 2007.

weep holes will be limited in size and scope to only what is necessary to provide adequate drainage. They will be the same size and appearance as the existing weep holes.

After repair/placement of the steel bridge members and deck, rust removal, and corrosion mitigation, the bridge structure will be repainted / recoated with a multi-part coating system designed for use in marine environments. The coating and painting will help protect the distinctive features of the bridge. Caltrans has identified this as a type of activity that can be performed on historic bridges in accordance with the SOI Standards with the use standard conditions. Most of the features to be painted are considered character-defining features. Those above-deck features, including the steel members, are ranked Most Significant, while those below the deck are ranked Less Significant. The bridge has historically been painted so this activity will not cover materials intended to be exposed. The method for preparing and cleaning the surface materials will be done using the gentlest method possible. The zinc spray being used is a protective coating typical for marine environments to avoid corrosion. Following the protective coating, the bridge will be painted using a historically compatible color. The color will be selected based on historic photographs and analysis of existing paint layers.

6) *Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture, and, where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence.*

The undertaking will repair rather than replace historic features where possible. If the severity of the deterioration requires replacement, the project will match the old in design, color, texture, and, where possible, materials. Documentary and physical evidence will be used to determine replacement materials. As discussed above, some steel members, which are distinctive materials, will be repaired or replaced in kind (see discussion above).

Other historic features to be repaired include the concrete piles, bridge stairway, and concrete counterweight. The project will repair the support piles for the Operator's House and the Watchman's House. The Operator's House and the Watchman's House are character-defining features. Because the concrete piles are located beneath the structures and mostly underwater, they have a rating of Less Significant. This activity will repair instead of replace these elements. The installation of encapsulating pile jackets is necessary to preserve the existing concrete piers, which still retain some load-bearing capacity. While the piles are partially visible, they are not a prominent visible element of the bridge. The pile jackets will retain the basic form of the square concrete piles and will be only slightly larger in width than the original piles. Therefore, the installation of the pile jackets will not detract from the historic property and not result in an adverse effect.

Repair of the stairway mounted on the bridge superstructure will include re-welding or replacement of brackets of damaged and deficient welds, followed by replacement of stair treads (where section loss is greater than 15%). The stairways on the bridge are character-defining

features of the historic property ranked Significant. Caltrans has identified this as a type of activity that can be performed on historic bridges in accordance with the SOI Standards with the use standard conditions. Repair and replacement of the stairway features—including the brackets and treads—will be done in kind. Materials will match the original design, color, texture, and materials. Historic photographs and existing stairway elements will be used to determine an appropriate replacement material.

The project will include repairing the two concrete counterweights where damage and deterioration has occurred. Loose, broken, softened, and spalled concrete will be removed by abrasive blasting and chipping down to sound concrete. Where existing reinforcing bars are exposed, concrete will be removed to a minimum of one inch all around the bars. Next, mortar will be placed in the voids and troweled smooth. The color of the mortar will be selected to best match the existing concrete color. The concrete counterweights are considered character-defining features that are part of the bascule bridge span, which is ranked Most Significant. Caltrans has identified this as a type of activity that can be performed on historic bridges in accordance with the SOI Standards with the use standard conditions. The repair of this concrete material will follow National Park Service Preservation Brief 15 on Preservation of Historic Concrete.[8] Specifically, testing and trial work will be performed to identify appropriate materials and methods for preparing the surface and installing the new materials. The replacement material will match the original material, color, and texture as closely as possible.

7) *Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.*

This undertaking will use the gentlest means possible when using chemical and physical treatments. Treatments that cause damage will not be used. The project will include chemical and physical treatments during rust removal and lead abatement of the bridge deck, concrete support piles, and other areas. Methods for cleaning rust from the concrete materials will include low-pressure water or steam cleaning, microabrasive surface treatments, or chemical surface treatments. Trial processes will be performed prior to full-scale cleaning. Reference will be made to Preservation Brief 15 on Preservation of Historic Concrete for guidance on cleaning and repairing concrete materials.[9]

Lead abatement will be undertaken incidental to rust removal, using the same methods as rust removal. Lead-bearing materials will be captured by the encapsulation system established to contain debris. Lead-based paint on the bridge will be removed in accordance with methods approved by the U.S. Environmental Protection Agency. Acceptable methods may include wet scraping or the use of a dustless needle gun connected to a vacuum unit with a high efficiency

[8] Paul Gaudette and Deborah Slaton, "Preservation Brief 15: Preservation of Historic Concrete," prepared for the United States Department of the Interior, National Park Service, 2007.
[9] Paul Gaudette and Deborah Slaton, "Preservation Brief 15: Preservation of Historic Concrete," prepared for the United States Department of the Interior, National Park Service, 2007.

particulate air filter that empties directly into a waste container. In accordance with SOI Standards, testing will be performed to identify to the least invasive method for effectively removing hazardous materials. If any less invasive methods are rejected, the tests will demonstrate that they could not effectively abate lead-based materials.

Nearly all of the lead-based paint was removed in 1999 and only minor sections remain, sandwiched between structural members mostly on the underside of the bridge. Below-deck steel members of the bascule and lift spans are considered character-defining features with a Less Significant rating. Above-deck members are character-defining features with a Most Significant rating. If any of these features require abatement, testing will be performed to identify to the least invasive method for effectively removing hazardous materials. If any less invasive methods are rejected, the tests will demonstrate that they could not effectively abate lead-based materials.

8) *Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.*

The undertaking will not affect or disturb archaeological resources.

9) *New additions, exterior alterations, or related new construction will not destroy historic materials, features, and spatial relationships that characterize the property. The new work shall be differentiated from the old and will be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment.*

The undertaking will not include new additions, exterior alterations, or related new construction that would destroy historic materials, features and spatial relationships that characterize the historic property. Some activities will require alterations to existing historic features. These include adding weep holes, repairing and replacing steel bridge members, repairing concrete piles supporting the Operator's House and Watchman's House, replacing the bridge deck, and repainting and recoating the bridge structure; most of these are discussed in detail above. None of these activities will destroy characteristic historic materials, features, or spatial relationships.

The project will add a limited number of additional weep holes to below-deck members of the bridge and members spanning the counterweight. The bridge was originally designed with weep holes and adding new ones is intended to help drain water and preserve the historic materials.

As discussed above, some steel members, which are distinctive materials, will be repaired or replaced in kind. Replacement will occur depending on the level of damage and importance of the individual steel members.

This project will repair the support piles for the Operator's House and the Watchman's House and install encapsulating pile jackets to preserve the existing concrete piers. This is an alternative to replacing the concrete piles. The installation of the pile jackets will be done so as not to destroy the historic materials, features, and spatial relationships. The new features will be

compatible with the historic features, size, scale, and proportion. The pile jackets will retain the basic form of the square concrete piles and will be only slightly larger in width than the original piles.

The project will repaint and recoat the bridge with a multi-part coating system designed for use in marine environments. As stated above, Caltrans has identified this as a type of activity that can be performed on historic bridges in accordance with the SOI Standards with the use standard conditions. The method for preparing and cleaning the surface materials will be done using the gentlest method possible. The color of paint will be selected based on historic photographs and analysis of existing paint layers.

The existing deck will be replaced while damaged welds between the decking and bridge support will be repaired by re-welding or bolting. The existing deck will be entirely replaced with a modularized bridge deck system allowing greater ease of section replacement. The deck is not an original element of the bridge, nor is it a character-defining feature. The bridge support beams and shims are original to the bridge and considered character-defining features with a Less Significant rating. The welds are not original features of the Third Street Bridge. Removing existing welds and adding new ones would not alter or remove important historic materials. The addition of new welding or bolts will not destroy historic materials, features, and spatial relationships that characterize the property. The new materials will be differentiated from the old and will be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment.

As stated above, the existing bridge deck is not original to the bridge and it is not character defining. The removal of the existing bridge deck will therefore not constitute a change that affects the bridge's historic character. The addition of a new deck will be done so as not to damage historic materials, features, and spatial relationships that characterize the historic property, and the work will be differentiated from the old and compatible with the historic materials, features, size, scale, and proportion. Because it will be very similar in dimensions as the existing, it will be compatible with the historic size, scale, and proportion. The new deck will be comprised of either composite decking or steel grading. The wooden walkway will remain the same.

The existing fender pile system (composed of approximately 130 piles) will be removed, and new fender pile system (composed of approximately 130 piles) will be installed, and existing platforms, walkway, fender curtain walls will be reconstructed. The fender pile system is not part of the original bridge and is therefore not a character-defining feature. The addition of a new fender pile system will be done so as not to damage historic materials, features, and spatial relationships that characterize the historic property, and the work will be differentiated from the old and compatible with the historic materials, features, size, scale, and proportion. Because the new system will be similar in dimensions as the existing, it will be compatible with the historic size, scale, and proportion.

10) New additions and adjacent or related new construction will be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

The undertaking includes two temporary features that will be built in such a manner that when removed will not impair the essential form and integrity of the bridge and its environment.

Temporary scaffolding will be constructed on the northern side of the channel to allow access to work areas, support safety netting, and support a containment system encapsulating the entire superstructure. Temporary piles for the scaffolding will be driven to tip elevation of -50 feet San Francisco City Datum.[10] Temporary piles will have butt diameters of 16 inches and they will be removed following removal of the scaffolding.

An encapsulation containment system for the superstructure will be used to contain debris for rust remediation on the structure and stairway, and for some deck work. Additional containment systems will be constructed to hang off the deck for additional deck repair work, off the counterweight for counterweight repair, and attached to the bottom of ancillary bridge structures (Operator's House and Watchman's House) during repair of the support systems for those structures. The encapsulation system will be clamped to the bridge, and not include permanent or intrusive mounting. These are temporary features that will be removed following the construction. The installation will not destroy historic materials, features, and spatial relationships that characterize the property. The installation will be done in such a manner that when removed the essential form and integrity of the historic property and its environment would be unimpaired.

[10] San Francisco City Datum is 6.70 feet above ordinary high water mark. In the vicinity of the Third Street Bridge the mudline varies from -15 to -37 so piles will be driven to a depth below mud line of approximately 45 feet.

5. MONITORS

Monitoring is not required for this proposed project.

6. RESPONSIBLE PARTIES ACTION PLAN TABLE

6.1 Responsible Parties

The following is a list of the parties responsible for performing the tasks required to meet the SOI Standards for the Third Street Bridge Rehabilitation Project. The list is updated as of June 2016. A complete list of tasks is included in Section 6.2.

Title	Name	Phone number
Caltrans PQS Architectural Historian	Noah Stewart	510-286-5370
Consultant Architectural Historian	Chris McMorris (JRP)	530-575-2521
City Project Manager	Rinaldi Wibowo	415-558-4551
Project Engineer	John Sprinkle	415-558-4540
Contractor	TRC	916-366-0632

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6.2 SOIS Action Plan Table for Third Street Bridge Rehabilitation Project

The following is the SOIS Action Plan table for the Third Street Bridge Rehabilitation Project. This table establishes the tasks to be undertaken before, during, and after construction in order to avoid an adverse effect. The table lays out the responsible party or parties for each task and provides a column in which the date of the task completion can be recorded.

Stage	Responsible Parties	Task	Date Task Completed
Pre-construction	Consultant Architectural Historian* City Project Manager Project Engineer	In coordination with the City Project Manager and Project Engineer, Consultant Architectural Historian will ensure SOI Standards for Third Street Bridge are clearly described and illustrated in the plans, specifications, and estimates (PS&E).	
	Caltrans PQS Architectural Historian*	Caltrans PQS Architectural Historian will review and approve the PS&E package.	
	Caltrans PQS Architectural Historian* City Project Manager Project Engineer	Caltrans PQS Architectural Historian will ensure SOIS Action Plan is included in Environmental Commitment Record (ECR).	
	Consultant Architectural Historian Project Engineer* Contractor	The Project Engineer will notify Caltrans PQS Architectural Historian and Consultant Architectural Historian at least three weeks in advance of construction.	
	Consultant Architectural Historian* Project Engineer Contractor	Consultant Architectural Historian, through coordination with Project Engineer and Contractor, will determine historically appropriate paint color based on historic photographs and documents, and review of existing paint layers.	
	Caltrans PQS Architectural Historian*	Caltrans PQS Architectural Historian will review and approve historically appropriate paint colors.	

Stage	Responsible Parties	Task	Date Task Completed
During Construction	Consultant Architectural Historian Project Engineer Contractor*	Contractor will perform tests and trial work to identify appropriate composition and color for replacement concrete material on counterweights. Tests and trial work will also be performed to determine best method for preparing surface and installing new materials. National Park Service Brief 15 on Preservation of Historic Concrete will guide all work. Contractor and Project Engineer will coordinate with Consultant Architectural Historian to review tests and trial work to ensure implementation of SOI Standards.	
	Caltrans PQS Architectural Historian*	Caltrans PQS Architectural Historian will review and approve tests and trial work performed to identify appropriate composition and color for replacement concrete material on counterweights and to determine best method for preparing surface and installing new materials.	
	Consultant Architectural Historian Project Engineer Contractor*	Contractor will perform tests and trial work to identify appropriate method for removing spalled concrete piers, cleaning the concrete and steel reinforcement, preparing surface, and installing new materials. National Park Service Brief 15 on Preservation of Historic Concrete will guide all work. Contractor and Project Engineer will coordinate with Consultant Architectural Historian to review tests and trial work to ensure implementation of SOI Standards.	

Stage	Responsible Parties	Task	Date Task Completed
	Consultant Architectural Historian Project Engineer Contractor*	When removing surface and pack rust from concrete, Contractor will clean the concrete in the gentlest method that is effective. Reference will be made to Preservation Brief 15 on Preservation of Historic Concrete for guidance on cleaning and repairing concrete materials. Methods for cleaning concrete materials will include low-pressure water or steam cleaning, microabrasive surface treatments, or chemical surface treatments. Trial processes will be performed prior to full-scale cleaning. When removing surface and pack rust from steel members of the bridge, these features will be cleaned following testing to identify to the least invasive method for effectively removing rust. If any less invasive methods are rejected, the tests will demonstrate that they could not effectively abate lead-based materials. Project Engineer and Contractor will coordinate with Consultant Architectural Historian to ensure SOI Standards are followed.	
	Caltrans PQS Architectural Historian*	Caltrans PQS Architectural Historian will review and approve methods of cleaning and removal of rust.	

Stage	Responsible Parties	Task	Date Task Completed
	Consultant Architectural Historian Project Engineer Contractor*	When removing lead-based paint from steel members of the bridge, these features will be cleaned following testing to identify to the least invasive method for effectively removing rust. If any less invasive methods are rejected, the tests will demonstrate that they could not effectively abate lead-based materials. Contractor and Project Engineer will coordinate with Consultant Architectural Historian to review tests and trial work to ensure implementation of SOI Standards.	
	Caltrans PQS Architectural Historian*	Caltrans PQS Architectural Historian will review and approve methods of paint removal.	
	Consultant Architectural Historian*	Project changes will be reviewed by Consultant Architectural Historian to ensure they meet the SOI Standards.	
	Caltrans PQS Architectural Historian*	Caltrans PQS Architectural Historian will review and approve project changes to ensure that they meet the SOI Standards. Additional SHPO consultation may be needed.	
Post Construction	Caltrans PQS Architectural Historian Consultant Architectural Historian Contractor*	Contractor will inform Consultant Architectural Historian and Caltrans PQS Architectural Historian when construction is complete.	

* Primary Responsible Party

FINDING OF NO ADVERSE EFFECT WITH STANDARDS CONDITIONS – SECRETARY OF THE INTERIOR'S TREATMENT OF HISTORIC PROPERTIES

for

Third Street Bridge Rehabilitation Project

San Francisco, California

Federal Project No. BRLO-5934 (177)

Approved by:

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APPENDICES

1. INTRODUCTION

The City and County of San Francisco Department of Public Works (City) is planning rehabilitation work on the Third Street Bridge, also known as the Francis "Lefty" O'Doul Bridge (Bridge No. 34C0025), over the Mission Creek Channel in San Francisco, linking the South of Market and Mission Bay neighborhoods. The project proposes to remove surface and pack rust from the structure and repair multiple components of the bridge including damaged and buckled steel members, damaged welds, the concrete counterweights, the piles supporting ancillary bridge structures, and the fender pile system. The project will also repaint and recoat the bridge. Work will require the construction of pile-supported temporary scaffolding and a debris-containment system. The project vicinity and location are illustrated in **Figures 1** and **2**, respectively, in **Appendix A**. See **Appendix A**, **Figure 3** for a map of the Area of Potential Effects (APE).

JRP Historical Consulting, LLC (JRP) prepared this Finding of No Adverse Effect with Standard Conditions – Secretary of the Interior's Treatment of Historic Properties (FNAE–SC–SOIS) to assist with project compliance under Section 106 of the National Historic Preservation Act (NHPA) by applying the Criteria of Adverse Effect, set forth in Title 36 Code of Federal Regulations (CFR) Part 800.5, to historic properties in the APE. The project Section 106 compliance activities to date include the preparation of a Historic Property Survey Report (HPSR) in October 2015. Based on the conclusions of the HPSR, Caltrans determined that the sole historic property in the APE is the Third Street Bridge (Bridge No. 34C0025), which was previously determined eligible for listing in the National Register of Historic Places (NRHP). This property is also eligible for listing in the California Register of Historical Resources (CRHR), and is therefore considered a historical resource for the purposes of the California Environmental Quality Act (CEQA). Third Street Bridge is eligible under NRHP Criterion B / CRHR Criterion 2 and NRHP Criterion C / CRHR Criterion 3 at the local level of significance. The period of significance for the bridge is 1933.

This FNAE–SC–SOIS concludes that the project will have no adverse effect on the Third Street Bridge because project activities will be conducted in a manner that meets the Secretary of the Interior's Standards for the Treatment of Historic Properties (SOI Standards). Thus, Caltrans, in applying the Criteria of Adverse Effects, proposes that an FNAE–SC–SOIS is appropriate and is seeking SHPO concurrence in this finding pursuant to the 2014 *First Amended Programmatic Agreement Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, as it Pertains to the Administration of the Federal-Aid Highway Program in California* (Section 106 PA) Stipulation X.B.1.b.

2. DESCRIPTION OF THE UNDERTAKING[1]

2.1 Summary

City and County of San Francisco Department of Public Works (City) is proposing the Third Street Bridge Rehabilitation Project to remove surface and pack rust; repair damaged and buckled steel members, damaged welds, the concrete counterweight, the piles supporting ancillary bridge structures, and the fender pile system; and to repaint and recoat the bridge. Work will require the construction of pile-supported temporary scaffolding and a debris-containment system. This specific scope of work addresses the recommendations provided by Caltrans through the 2014 Bridge Inspection Report.

2.2 Project Location

The Third Street Bridge, also known as the Francis "Lefty" O'Doul Bridge, crosses over Mission Creek Channel and links the South of Market and Mission Bay neighborhoods in San Francisco's Eastern Neighborhoods Planning Area. West of the bridge, the culverted and underground portion of Mission Creek drains into Mission Creek Channel. Mission Creek Channel runs from the west to the east passing a row of houseboats, the Fourth Street Bridge, and the Third Street Bridge before draining into China Basin and the San Francisco Bay.

To the northeast of the bridge is AT&T Park, home of the San Francisco Giants; to the northwest is the China Basin Building with commercial/office space; to the southwest is land currently proposed for development of a park, residential towers, and a hotel; and to the southeast is China Basin Park and Lot A parking area.

2.3 Bridge Background

The approximately 295 foot long, 80 foot wide Third Street Bridge (Caltrans Bridge No. 34C0025) spans the Mission Creek Channel and provides five lanes of traffic (three lanes in the southbound direction and two in the northbound direction), no shoulders, concrete curb in each direction, and a timber walkway approximately 10 feet wide on the eastern side of the bridge and of varying widths on the western side. The deck is steel grating with steel plates covering the easternmost travel lanes. The bridge, an active conduit for vehicles, pedestrians, and cyclists, also opens to allow boats to pass along Mission Creek Channel, a Coast Guard-regulated navigable waterway with limited marine traffic, through use of its bascule arm.

Constructed in the 1930s, this heel trunnion bascule drawbridge[2] was designed and patented by the Strauss Engineering Corporation, is a San Francisco Landmark (#194), listed in the Caltrans Historic Bridge Inventory as a Category 2 bridge, and has been determined by Caltrans as eligible for listing in the National Register of Historic Places (NRHP). In the late 1990s

[1] Parsons Brinkerhoff provided this project description in October 2015
[2] Opens on a fixed axle with one counterweight.

rehabilitation work occurred on the bridge and included replacing the southern approach spans, corroded steel members, wooden piles and other waterside support, mechanical and electrical components, and modifying the roadway decking, constructing a new operator house and control equipment, and repainting.

Based on the most recent Caltrans bridge inspection report, the sufficiency rating of the bridge under the National Bridge Inventory Rating System was 37 and, per the most recent Caltrans Structure Maintenance & Investigations Local Agency Bridge List, has been upgraded to 64.7 (Caltrans 2014). The change in the sufficiency rating is due to a different approach in calculating the bridge rating.

2.4 Purpose and Need

While the bridge is not yet considered structurally deficient, clear evidence of damaged and buckled steel members and other damage to the bridge and the trunnion mechanism has been identified. Without preventative maintenance, this damage will worsen and ultimately compromise the structural integrity of the bridge.

The purpose of the project is to maintain the integrity of the bridge superstructure.

2.5 Project Scope and Construction

Project work will occur on the Third Street Bridge, with the work limits extending approximately 80 feet north and 90 feet south of the bridge. The laydown and staging area will include portions of Third Street 210 feet north of work limits and 290 feet south of the work limits. Additionally, the northern half of Terry Francois Blvd (approximately 20 feet wide and 500 feet long) will be used as a staging area. Access to the garage at China Basin Landing building will be maintained.

The work associated with the bridge rehabilitation will require the use of barges and rafts to access the bridge during rehabilitation of the fixed span portion of the bridge and to install piles. During construction the barges and rafts will be stationed on either side of the bridge. When not in use the small barges or rafts will be moored east of the old Operator’s House at the north side of the bridge, adjacent to AT&T Park. Larger barges will be moored along the north side of the China Basin Park. Final mooring location will be subject to U.S. Coast Guard approval.

Nighttime and weekend construction will be required. No utility work is anticipated other than locating and avoiding an existing submarine cable in the channel.

2.6 Bridge Rehabilitation

2.6.1 Temporary Scaffolding and Debris-Containment Systems

Temporary scaffolding will be constructed on the northern side of the channel to allow access to work areas, support safety netting, and support a containment system encapsulating the entire

superstructure. Approximately 50 temporary wooden piles will be installed between Pier 2 and a point in the channel 40 feet out from Pier 2, and up to 65 feet from centerline on each side of the bridge. The temporary piles will be installed from a barge equipped with a crane-mounted vibratory hammer. Temporary piles will be driven to tip elevation of -50 feet San Francisco City Datum.[3] Temporary piles will have butt diameters of 16 inches.

The encapsulation containment system for the superstructure will be used to contain debris for rust remediation on the structure and stairway, and for some deck work. Additional containment systems will be constructed to hang off the deck for additional deck repair work, off the counterweight for counterweight repair, and attached to the bottom of ancillary bridge structures (Operator's House and Watchman's House) during repair of the support systems for those structures. Containment systems will conform to Caltrans Standard Specifications sections 13 (Water Pollution Control), 14-9.02 (Air Pollution Control), 14.9-03 (Dust Control), 15-5 (Bridge Rehabilitation), and 48 (Temporary Structures). Containment systems will use Caltrans authorized geosynthetic fabric and/or plastic sheeting covers and platforms to collect debris and attachments on equipment to catch debris during small demolition activities. Debris-catching devices will be emptied regularly with collected debris removed and stored away from Mission Creek in the staging area on Terry Francois Blvd and protected from run-on and runoff.

All temporary piles, scaffolding, netting and the containment system will be removed upon completion of work. Temporary piles will be removed by vibratory hammer. Removal and disposal of spent abrasive and resulting debris will comply with local and state regulations.

2.6.2 Repair/Replacement of Steel Bridge Members and Repair Steel Stairway

Damaged and buckled steel members on all parts of the bridge structure will be repaired or replaced by full or partial replacement, or by flame straightening of the member followed by the installation of bolted cover plates to fully replace the damaged section. Repair or replacement will depend on the level of damage as well as the importance of the given element to the structure. Corroded high-strength bolts will be replaced. Broken welds on the structure will be repaired either by welding or bolting. These repairs will be performed from the temporary scaffolding and from the bridge deck.

Repair of the stairway mounted on the bridge superstructure will include re-welding or replacement of brackets of damaged and deficient welds, followed by replacement of stair treads (where section loss is greater than 15%). These repairs will be performed from the bridge deck.

Surface and pack rust removal will occur on both the underside and top-side of the bridge deck, on concrete support piles, and on areas requiring repair that are exposed after cleaning and removing visible corrosion. Additional repair areas may be exposed after cleaning and removing

[3] San Francisco City Datum is 6.70 feet above ordinary high water mark. In the vicinity of the Third Street Bridge the mudline varies from -15 to -37 so piles will be driven to a depth below mud line of approximately 45 feet.

the visible corrosion. Work will include abrasive blasting, wire brushing, needle-gun scaling, and grinding of localized areas of corrosion. These repairs will be performed from the temporary scaffolding.

Lead abatement will be undertaken incidental to rust removal, using the same methods as rust removal. Lead-bearing materials will be captured by the encapsulation system. Lead-based paint on the bridge will be removed by the contractor in accordance with methods approved by the U.S. Environmental Protection Agency. Acceptable methods may include wet scraping or the use of a dustless needle gun connected to a vacuum unit with a high efficiency particulate air filter that empties directly into a waste container. The waste container would be properly documented and disposed of at a Class I landfill near the project area.

Weep holes will be added to under-deck members exposed to spray, to allow for adequate water drainage. Holes will be drilled in existing members, or be pre-drilled in replacement members. This will be performed from the temporary scaffolding.

2.6.3 Repair/Replacement of Bridge Deck

Damaged welds between the decking and bridge support beams/shim plates will be repaired by re-welding or bolting. The existing deck will be entirely replaced with a modularized bridge deck system allowing greater ease of section replacement. The existing deck will be removed and the prefabricated modular system installed by welding or bolting. These repairs will be performed from the bridge deck.

2.6.4 Repair of Concrete Counterweight

The majority of repair on the two concrete counter weights will occur along the edges and where the steel girders connect to the counter weights at areas with exposed steel mesh and steel reinforcement, and concrete spalling (i.e., broken up, flaked, or pitted concrete). Loose, broken, softened, and spalled concrete will be removed by abrasive blasting and chipping down to sound concrete. Where existing reinforcing bars are exposed, concrete will be removed to a minimum of one inch all around the bars. Next, mortar will be placed in the voids and troweled smooth. The color of the mortar will be selected to best match the existing concrete color.

Repair will occur with the bridge in the raised position so the counterweight is near street grade at the north abutment. The bridge will be closed to traffic during the repair to the concrete counterweight. Work will be accomplished from temporary scaffolding and/or from mechanical lifts on the approach slab roadway surface and sidewalk. Work will be accomplished with chipping hammers and other hand tools. All temporary measures will be removed upon completion of the work.

2.6.5 Repair of Concrete Piles Supporting the Operator House and Signalman's Hut

Each of the existing supports for the original Control House (Operator's House) and Signalman's Hut (Watchman's House) consists of four twelve-by-twelve inch concrete piles in the channel for each structure. Repair of the support piles for both structures will consist of pile cladding and mortar/grout injection. During this repair work all spalled concrete will be removed by blasting and chipping, and steel reinforcement will be cleaned by blasting and brushing. Any steel reinforcement with greater than 25% loss of cross section will be augmented with additional reinforcement.

In general, the piles will be repaired by encapsulating each deteriorated pile with an epoxy grout or concrete filled pile jacket. Encapsulation is used when a pile is damaged, but still retains some load bearing capacity, as is the case with the existing concrete piles. All in-water work to jacket the piles will be accomplished by using best management practices, including hand-placement of the jackets to minimize bottom sediment disturbance, and ensuring that grout would be contained and not allowed to enter the water. Pile jackets will be constructed from a composite fiberglass material and are watertight.

Concrete pilings to be encased are first cleaned of any loosely adhering marine organisms and the existing damaged material on the pile. A custom fabricated pile jacket is then installed around the entire pile. The bottom end of the jacket will either be fitted with a watertight rubber seal or embedded in the bed of Mission Creek to prevent concrete leaks. The top end of the jacket will also be sealed or set so that the concrete fill does not spill out of the jacket. Epoxy grout or concrete is then pumped into the jacket through a suitable hose extending down to the lowest point of the jacket and connected via a watertight seal. As the form is slowly filled with concrete, hydraulic pressure forces the entrained seawater within the fabric form out through an overflow valve or the top of the jacket. The method will employ a filter system that collects the exiting water and prevents suspended solids from discharging into surrounding waters. The valve will be permanently closed once the form has been filled.

Repair of the concrete piles will occur during low tide from rafts. Support from a diver will be required, with additional support provided by a barge anchored in the channel.

2.6.6 Repaint/Recoat the Bridge

After repair/placement of the steel bridge members and deck, rust removal, and corrosion mitigation, the bridge structure will be repainted/recoated with a multi-part coating system designed for use in marine environments. Any deep pitting or any area of unevenness will be filled with epoxy resin.

All areas above the deck will be cleaned to near white metal by brushing and blasting and coated with a zinc-rich primer followed by epoxy coating. Work will include use of a sealant for all nuts, bolts, and crevices.

All areas within splash zone (deck and below) will be cleaned to near white metal by brushing and blasting, and coated with zinc spray (metalizing) followed by an epoxy coating. Work on steel sections covered at the highest high tide (i.e., directly above the piers) will be scheduled so that this area is treated at low tide.

2.7 Repair/Replacement of Fender Pile System

The existing fender pile system (composed of approximately 130 piles) will be removed, and new fender pile system (composed of approximately 130 piles) will be installed, and existing platforms, walkway, fender curtain walls will be reconstructed. The new fender pile system will consist of plastic piles reinforced with fiberglass. Typical piles will have 16 inch diameters and driven to tip elevation of -50 feet San Francisco City Datum. Dimensional lumber of similar size to existing will be used to recreate platforms, walkway, and fender curtain walls. This work will be supported by divers.

New piles will be driven adjacent to existing pile locations. The new piles will be installed from a barge equipped with a crane mounted vibratory hammer. The age of the bridge and previous work indicate that new construction will likely encounter obstruction such as abandoned timber piles from previous projects. Existing timber piles and other abandoned piles that may be found shall be removed using a barge equipped with crane mounted vibratory hammer. The work may be supported by divers to clear material at the bottom of the channel to the extent necessary to expose the top of the abandoned or broken timber piles for removal. The project will construct a silt-curtain perimeter consisting of a float, a turbidity curtain, and ballast, to minimize mud migration beyond the work area. This will be removed once sediment has settled out.

2.8 Surface and Marine Traffic During Construction

2.8.1 Surface Traffic

Partial lane closure (closure of two to three lanes of the total five lanes) will occur for most of the work, including repair/replacement deck replacement, concrete counterweight repair and other work that is above roadway deck. Vehicular, bicycle, and pedestrian traffic would be permitted during partial lane closure. The duration of construction requiring partial lane closure will be 10 months.

Full closure of the bridge will occur for work occurring below roadway deck including pile removal, concrete counterweight repair, installing the temporary piles and replacement fender/dolphin pile system, construction of scaffolding, encapsulating the bridge, removal of surface and pack rust, repair of structural steel members, and application of epoxy paint system. Full closure of the bridge will occur for a maximum of 150 days.

2.8.2 Marine Traffic

When the contractor is working during partial lane closure of the bridge the waterway access in Mission Channel will be unavailable. The bridge will be closed to navigation April 1st through October 31st, 2017 and April 1st through June 30th, 2018.

Construction would not require removal or relocation of the houseboats at the western end of the channel. However, in advance of construction that would limit marine traffic, the project will relocate sailboats and other seafaring boats tethered to the houseboats to other marinas in San Francisco or the Bay Area. These boats will be relocated from the area and would be returned at no cost to the owner.

2.9 Construction Schedule

Due to existing development in the project area such as AT&T Park and anticipated development (e.g., the Event Center and Mixed-Use Development at Mission Bay Blocks 29-32 Project and other residential, hotel, and commercial development), compressed and phased construction periods are anticipated.

Table 1 identifies the type and timing of work for the Third Street Rehabilitation Project.

Table 1

April 2017 to October 2017*
Concrete counterweight repair
Stairway repair
Repair/replacement of bridge deck
November 2017* to late June 2018
Drive temporary and fender piles
Concrete counterweight repair
Construct scaffolding
Encapsulate the bridge
Repair/replacement of steel bridge members

*Dependent on Giants season; anticipated early April to late October

2.10 Description of APE

The APE for this project was developed by Parsons Brinkerhoff, Garcia & Associates, and JRP in consultation with Caltrans (approved January 28, 2016). The APE is located within a mostly commercial and light-industrial built environment along San Francisco's waterfront area. The bridge carries Third Street over Mission Channel, which flows northeast from an underground pipe at Seventh Street out to the San Francisco Bay through China Basin. North of the bridge, the project APE includes part of Third Street to a point just south of Berry Street. South of the bridge, the APE follows Third Street for approximately 290 feet. It also includes the north half of Terry A. Francois Boulevard, extending east of Third Street for approximately 500 feet. Refer to **Figures 1** and **2** in **Appendix A** for the project vicinity and location maps. **Appendix A**, **Figure 3** is the APE map.

3. PUBLIC PARTICIPATION

JRP identified potential local interested parties for this project and sent a letter informing interested parties of this project. The letter was sent via US Postal Service on October 30, 2015. Recipients of the letter were:

- San Francisco Architectural Heritage
- San Francisco Planning Department
- San Francisco History Association
- San Francisco Museum and Historical Society

On November 18, 2015 JRP sent a follow-up email to San Francisco Architectural Heritage, San Francisco Planning Department, and San Francisco Museum and Historical Society. The San Francisco History Association does not have a published email address, so JRP sent a follow-up communication to the association via the organization's website contacts page. On November 19, 2015, Senior Preservation Planner Tina Tam from the San Francisco Planning Department responded to the email follow-up. Ms. Tam asked if Caltrans wanted the City and County of San Francisco to partake as a third party consultant to the Section 106 review process. If so, she asked that Caltrans send a request letter to the Planning Director, John Rahaim. On December 16, 2015, JRP conducted follow-up telephone calls on the notification letters with the three recipients who had yet to respond. JRP left phone messages with Mike Buhler at San Francisco Architectural Heritage, Lorri Ungaretti at San Francisco Museum and Historical Society, and on the San Francisco History Association general answering machine. Ms. Ungaretti returned the call and requested the letter and email be resent, which was done via email on December 16. See **Appendix B** for a copy of the interested parties letter, email correspondence, and a communications log.

Public participation efforts will include notifying people and businesses within a 300-foot radius of the project and providing information to project stakeholders through informal meetings.

4. DESCRIPTION OF HISTORIC PROPERTIES

4.1 Summary of Steps Taken to Identify Historic Properties

The Third Street Bridge has been formally inventoried and evaluated multiple times. It was included in the Caltrans Historic Bridge Inventory of the 1980s and the update in the 2000s, and was subject to two inventory and evaluation reports, each of which resulted in finding of effect reports.

The earliest known inventory and evaluation of the Third Street Bridge occurred in April 1985 as the city proposed to rehabilitate the bridge and raise the bascule spans. Donald W. Alden prepared a "Historic Evaluation of the Third Street Bridge over Mission Channel Waterway at China Basin" for the City and County of San Francisco. Alden concluded that the bridge was eligible for listing in the NRHP under Criterion B because it is "closely associated with the life of bridge designer, Joseph B. Strauss, who was heavily involved with the planning of the Golden Gate Bridge at the very time that the Third Street Bridge was being built." It was also found eligible under Criterion C as an important local example of the heel trunnion bascule type bridge. The bridge had undergone relatively insignificant rehabilitation work since its original construction and thus Alden concluded it retained integrity of location, design, setting, materials, workmanship, feeling, and association.[4]

This report was followed in May 1985 by a "Historic Property Report for the Rehabilitation of the Third Street Bridge Over Mission Channel Waterway at China Basin" that summarized the previous findings and discussed the proposed project alternatives. Alden also prepared the project's "Information Regarding the Effects on the Third Street Bridge Over Mission Channel Waterway (China Basin)," concluding that the project alternatives would have no effect on the historic property. This report noted that "features providing the historical qualities which appear to make this bridge eligible for the National Register of Historic Places are all contained within the superstructure of the bascule truss portion of the bridge and include the related lifting machinery." The report also notes that the "approach spans, concrete girders to the south and steel girders to the north . . . contribute nothing to the historical character of the bridge."[5] Based on these reports, the California State Historic Preservation Officer (SHPO) concurred in the finding of no effect in April 1986. In correspondence on April 28, 1986, the SHPO noted that the bridge was determined eligible for inclusion in the NRHP.[6]

[4] Donald W. Alden, "Historic Evaluation of the Third Street Bridge over Mission Channel Waterway at China Basin, City of San Francisco, Bridge No. 34C-25," prepared for City and County of San Francisco, Department of Public Works, 24 April 1985, 13-14.
[5] Donald W. Alden, "Information Regarding the Effects on the Third Street Bridge over Mission Channel Waterway (China Basin), City of San Francisco, Bridge No. 34C-25," 3.
[6] Donald W. Alden, "Historic Property Survey Report for the Rehabilitation of the Third Street Bridge over Mission Channel Waterway at China Basin, City of San Francisco, Bridge No. 34C-25," prepared for City and County of San Francisco, Department of Public Works, 1 May 1985; Donald W. Alden, "Information Regarding the Effects on the Third Street Bridge over Mission Channel Waterway (China Basin), City of San Francisco, Bridge No. 34C-25," 4

At about the same time, Caltrans prepared its first Historic Bridge Inventory of 77 truss bridges that were found eligible for inclusion in the NRHP. This inventory included a Truss Bridge Rating Sheet on each bridge, including the Third Street Bridge, which was found to be a significant example of its type, the work of a master (Strauss), and as an important link in the transportation network in the port area of San Francisco. In September 1985, SHPO concurred in findings of the Caltrans Historic Bridge Inventory. This Historic Bridge Inventory documentation did not include a formal evaluation using NRHP Criteria, nor did it identify the bridge's character-defining features.[7]

In October 1989, the City of San Francisco designated the bridge San Francisco City Landmark #194.[8]

In 1994, Carey & Co. Inc. documented the bridge on a DPR 523 Primary Record as part of the "Historic Resources Report, Southern Waterfront" prepared for the Waterfront Plan Environmental Impact Report (EIR) and the Waterfront Land Use Plan. The form provided a brief description of the bridge, and identified its NRHP Status Code as 2S, meaning determined eligible for listing in the NRHP. The reconnaissance-level survey did not include a discussion of the bridge's eligibility or its character-defining features.[9]

In 1997-98 Alden documented the bridge on DPR 523 forms (Primary Record; Building, Structure, and Object Record; and Continuation Sheets) for the City and County of San Francisco, which planned to rehabilitate and seismically strengthen the Third Street Bridge. Alden also prepared a Historic Property Survey Report, Historic Architectural Survey Report, and Finding of Effect for the project. The reports noted that the bridge was previously found eligible for listing in the NRHP under Criterion B for its "association with a person of importance in our past, Joseph B. Strauss the designer," and under Criterion C because it represents the distinctive characteristics of "bridges of this type and period," as well as being the work of a master.[10] That report identified the structure's contributing elements as the "bascule spans, mechanical/electrical drive machinery and traffic control gate standards, including their switching equipment in the Operator's House, counterweights and walkways, railings, and the Operator's and Watchman's houses which are located immediately adjacent to the bridge." The

May 1985; Kathryn Gualtieri, Letter to Bruce E. Cannon Re: Rehabilitation of the Third Street Bridge, #34C-25, San Francisco, 28 April 1986.

[7] U.S. Department of Transportation, Federal Highway Administration and California Department of Transportation, Request for Determination of Eligibility for Inclusion in the National Register of Historic Places, Historic Truss Bridges in California, 1985; Kathryn Gualtieri, Letter to Bruce E. Cannon, Re: Determination of National Register Eligibility: Historic Truss Bridges in California, 19 September 1985.

[8] City and County of San Francisco, "List of Designated Landmarks," updated April-June 2014.

[9] Nancy Goldenberg & Marianne Hurley, Carey & Co. Inc., "Department of Parks and Recreation Primary Record: Third Street Bridge," recorded 21 October 1994, in: "Historic Resources Report: Southern Waterfront, San Francisco, California," prepared by Carey & Co. Inc., prepared for Environmental Science Associates, December 1994.

[10] As discussed in Section 5.3, the application of Criterion B was inaccurate. If this part of the determination were to be altered, the bridge would remain NRHP eligible for its significance under Criterion C.

two houses were noted as being original to the bridge and supported on their own piles. The honeycombed deck in place at the time was noted as not original. The historic integrity of the property was noted as essentially unchanged since the 1985 documentation.[11]

Following the 1997-98 survey and evaluation, the Office of Historic Preservation included eight separate listings for the bridge and its associated features in the Historic Property Data (HPD) File. Although the bridge does not appear to ever have been evaluated as a historic district, the HPD lists the Third Street Bridge as determined eligible as a historic district. The HPD includes Francis 'Lefty' O'Doul Bridge District (P-38-04184), with status code 2S2 (determined eligible for separate listing through a consensus determination by a federal agency and the SHPO) and includes seven features with status code 2D2 (contributors to a district determined eligible for listing through a consensus determination). These 2D2 features are the Francis "Lefty" O'Doul Bridge (P-38-001339); Bridge Operator's House (P-38-004185); Watchman's House (P-38-004186), Traffic Control Gate Standard #1 (P-38-004187); Traffic Control Gate Standard #2 (P-38-004188); Traffic Control Gate Standard #3 (P-38-004189); and Traffic Control Gate Standard #4 (P-38-004190).[12]

The Third Street Bridge was included in the "Caltrans Historic Bridge Inventory Update" reports of the early 2000s, which confirmed that the structure retained historic integrity and remained eligible for the NRHP. Like the 1980s historic bridge inventory, the update also did not address NRHP criteria or the bridge's character-defining features.[13]

4.2 Physical Description of Historic Property

The Third Street Bridge (Bridge No. 34C0025) is approximately 295 foot long, 80 foot wide, and spans the Mission Creek Channel. The bridge features a two-span 143-foot-long through steel truss, heel trunnion-type bascule drawbridge with a counterweight and opening mechanism on the north end designed by Joseph B. Strauss. The south approach consists of seven spans that were installed in the 1990s; there are no approach spans on the north side. See **Photographs 1 to 36** for the structure's current appearance. Plans for the Seismic Retrofit and Rehabilitation of Third Street Bridge are included for reference in **Appendix D**.

The superstructure includes a steel through lift (or bascule) truss section at the south end and a trunnion (or counterweight) section with steel truss at the north end. The truss systems continue below with steel members helping to support the deck. The bridge pivots using a trunnion system that includes an operating pinion near the Machinery Room, an operating strut, two link pins, and

[11] Donald W. Alden, "Historic Property Survey, Historic Architectural Survey, and Findings of Effects Reports for the Rehabilitation and Seismic Strengthening of the Historic Third Street Bridge over Mission Channel Waterway in the City of San Francisco," prepared for City and County of San Francisco," August 1998.
[12] Office of Historic Preservation, "Directory of Properties in the Historic Property Data File for San Francisco County," updated 5 April 2012.
[13] JRP Historical Consulting, "Caltrans Historic Bridge Inventory Update: Metal Truss, Movable, and Steel Arch Bridges," Volume I, prepared for the State of California, Department of Transportation, Environmental Program, September 2004.

two trunnions (**Plate 1**). The Machinery Room rests on a concrete foundation within the trunnion section above the deck. This steel-clad building has a gable roof and three, two-door entrances on the south side. It is accessed by staircases and catwalks, which also provide access to various parts of the superstructure.

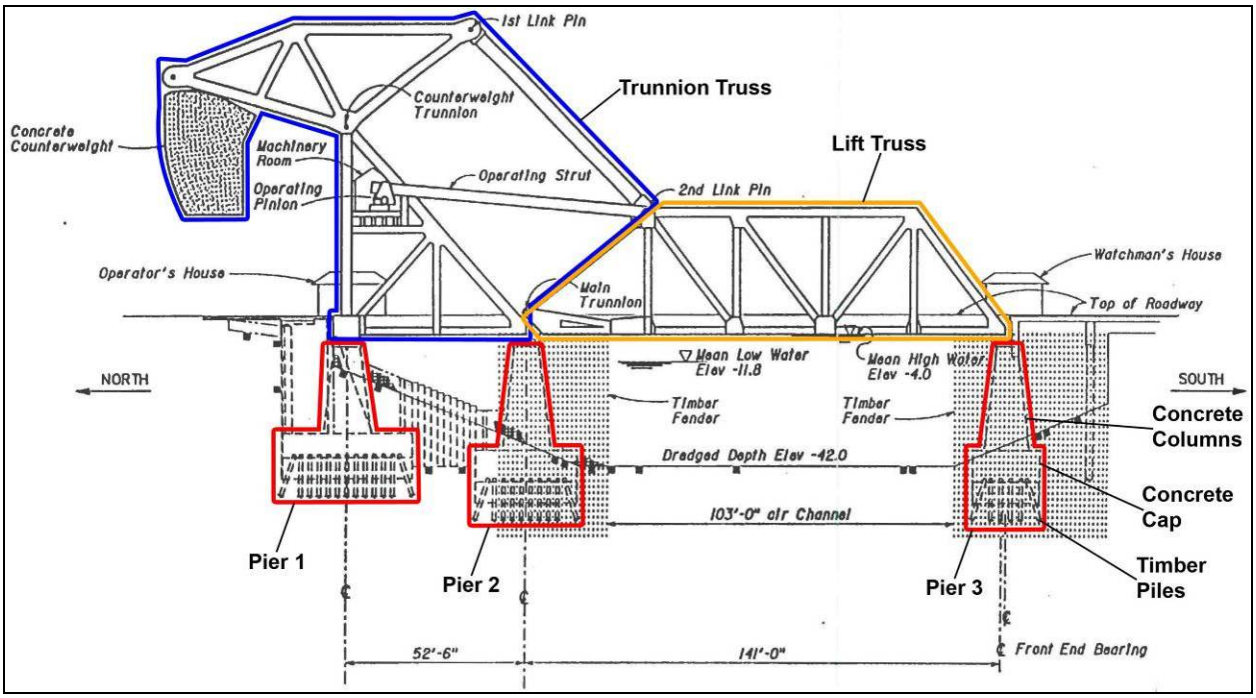


Plate 1. Elevation of Third Street Bridge, showing different elements. This image does not include the south approach spans.[14]

The bridge provides five lanes of vehicular traffic (three lanes in the southbound direction and two in the northbound direction), and pressure treated wood plank sidewalks east and west sides of the vehicle lanes. The deck on the lift section of the bridge is open grid steel plates covering the southbound travel lanes and steel grid with steel cover plates on the northbound lanes. A deteriorating skid course covers the steel plates. The steel cover plates were added in the late 1990s for pedestrian traffic during baseball games. The trunnion span of the bridge includes concrete slab deck with asphalt.

The bridge substructure includes three bents—identified as Piers 1 through 3—under the two-span bascule section of the bridge: Pier 1 supports the counterweight trunnion at the north end; Pier 2 supports the bascule or main trunnion; and Pier 3 supports the bascule landing. These bents include reinforced concrete columns resting on reinforced concrete caps. The caps sit atop timber piles. The approach spans on the south side rest on reinforced concrete caps one steel

[14] Donald W. Alden, "Historic Property Survey Report for the Rehabilitation and Seismic Strengthening of the Historic Third Street Bridge over Mission Channel Waterway in the City of San Francisco," prepared for City and County of San Francisco," August 1998, 3; Annotations by JRP.

seismic piles and a reinforced concrete abutment on timber piles. There is no abutment on the north side.

The bridge includes two former service buildings along the east side of the bridge that were designed by Strauss Engineering Corporation and built with the bridge in 1933: an Operator's House at the north end and a Watchman's House at the south end. The Operator's House is a small, wood-frame building with a 12-foot-by-22-foot plan and a hip roof. It features stucco siding and one-over-one double-hung wood-sash windows on the north, east and south walls. Two fixed windows flank an entrance a centrally sited entrance on the west side. Metal security mesh covers windows on the north and west sides. Designed in a similar style, the Watchman's House features a 10-foot-by-16-foot plan, stucco siding, and a hip roof. It features double-hung wood-sash windows on all walls and an entrance on the west side. A 1933 bronze plaque is located on the west wall of the Watchman's House. A new operations building was constructed south of the Watchman's House in the late 1990s to replace the Operator's House and Watchman's House.

The bridge also includes seven traffic control gates, four of which were designed and built with the original construction of the bridge. Two modern control gates are located on the south side of the bridge for each direction of traffic and one modern gate is located on the north side for southbound traffic. Only one of the original gates is currently being used. It is located at the north end of the bridge and controls pedestrian traffic at the west sidewalk. The gate arm is not an original feature of the gate. The three other original gates are located at the southwest, southeast, and northwest corners of the bridge. These do not include gate arms. The four original gates have been identified by the Office of Historic Preservation as Traffic Control Gate Standards #1-4. It is not clear in the existing documents which number refers to which gate.

Wood fenders and piles are located in the Mission Creek Channel, running east and west under the bridge. They are used to guide watercraft through the channel.

In the late 1990s a rehabilitation project replaced the non-historic southern approach spans, corroded steel members mostly under the roadway deck, and mechanical and electrical components. Plans for the project are included in **Appendix D**. It also modified the roadway decking, constructed a new operator house with new control equipment, and repainted the bridge using original colors. The project also included seismic strengthening of critical truss members by installing slightly heavier diagonal bracing members where old corroded members required replacement. The members were located under the deck and generally out of sight except when the bridge was raised. This work included installing heavier bolts and reinforcing collars on the trunnion bearings and making minor modifications to the support bearings so they will slide on the pier caps during an earthquake. Analysis at the time concluded that these changes were not expected to produce a visual change to the bridge. In addition, seismic work included widening the tops of the concrete bent caps by 3 feet 4 inches on all sides.

The deck work included adding non-skid steel plates over a portion of the existing open grid steel decking for pedestrian traffic. Safety curbing and railing was added between the northbound and southbound traffic lanes. Small cables were added between the rungs of existing railings. The existing open grate deck was not original to the bridge. Original decking included solid creosoted timber planking and was removed in 1953.[15]

This project included preservation of the Operator's House and Watchman's House. Windows, roofing and trim were repaired. The buildings were repainted a puce tan, the original color. The equipment inside was preserved in place. The traffic gates were refurbished by reconditioning the electro-mechanical machinery inside, which was original to the gates. Electronics inside were modified to operate the gates and badly worn mechanical parts were replaced. The gates were cleaned and repainted. The arms, which were not original to the gates, were replaced. Three modern gates have since been installed, and only one of the original gates—located at the northeast corner of the bridge—is still in use. This gate only controls pedestrian traffic across the bridge. The other three original gates remain but the arms have been removed.

Studies for the late 1990s project concluded that the activities would have no adverse effect on the Third Street Bridge. In addition to these changes, the bridge has replacement pressure treated wood plank sidewalks.

JRP took the following photographs of the Third Street Bridge on November 10, 2015.

Photograph 1: Third Street Bridge, facing northwest.

Photograph 2: Showing through truss and metal grate deck on southbound lanes, facing northeast.

[15] Donald W. Alden, "Findings of Effects Report for the Rehabilitation and Seismic Strengthening of the Historic Third Street Bridge over Mission Channel Waterway in the City of San Francisco," prepared for City and County of San Francisco," August 1998, 12.

Photograph 3: Steel Through truss, facing northwest.

Photograph 4: Showing steel through truss and steel deck with composite surface with decorative plank design on northbound lanes; facing southwest.

Photograph 5: Outer southbound lane, sidewalk and steel truss; facing southeast.

Photograph 6: Steel grate deck for southbound traffic and pressure treated wood sidewalk; facing southeast

Photograph 7: Stairway and catwalk on east side of bridge; facing northwest.

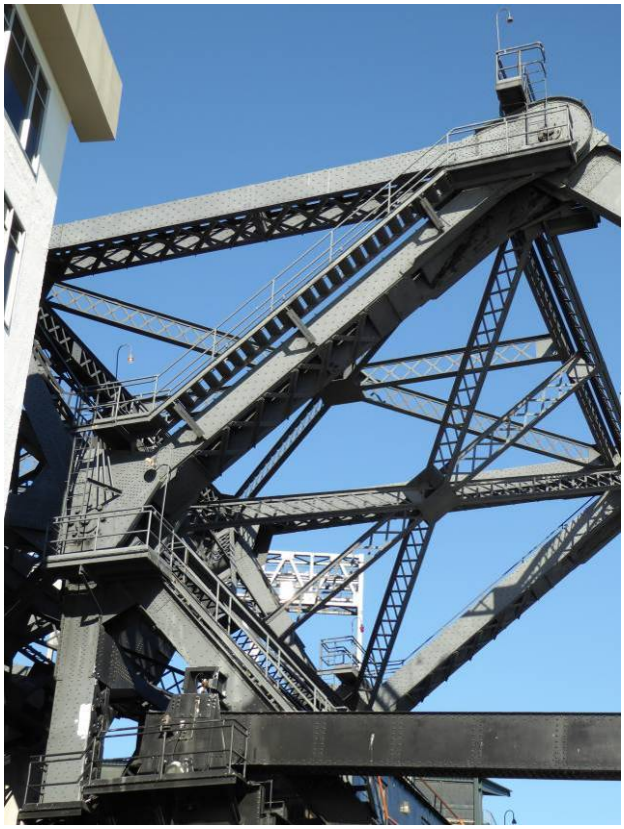
Photograph 8: Stairway on east side of bridge leading to Machinery Room; facing north.

Photograph 9: Machinery Room near north end of bridge; facing north.

Photograph 10: Trunnion section of bridge including north side of Machinery Room; facing southeast.

Photograph 11: Trunnion section of bridge; facing east.

Photograph 12: Main trunnion; facing east.



Photograph 13: First link pin (upper right) and counterweight trunnion (center left); facing west.

Photograph 14: Second link pin in trunnion system; facing southeast.

Photograph 17: Concrete counterweights; facing west.

Photograph 18: Concrete counterweights facing northwest.

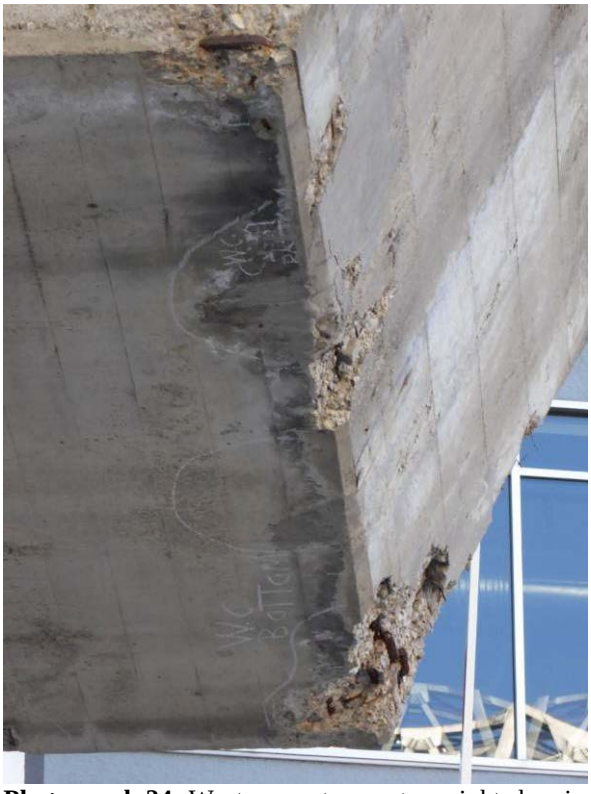
Photograph 19: East concrete counterweight; facing south.

Photograph 20: East concrete counterweight; facing southeast.

Photograph 21: West concrete counterweight; facing south.

Photograph 22: West concrete counterweight; facing southeast.

Photograph 23: West concrete counterweight, showing deterioration on top corner, facing south.



Photograph 24: West concrete counterweight showing deterioration on bottom corner; facing west.

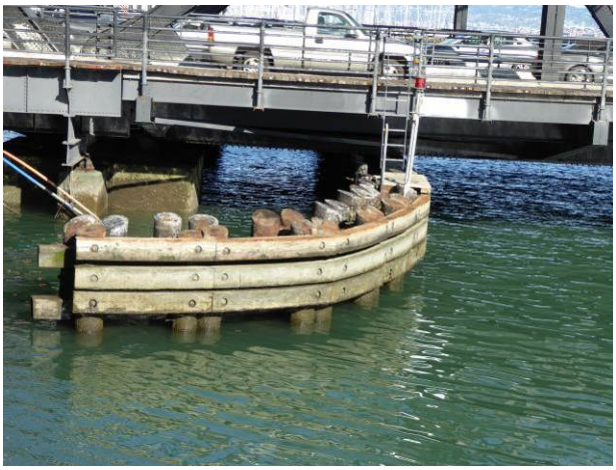
Photograph 25: Operator's House; facing northeast.

Photograph 26: Operator's House, showing concrete piles; facing north.

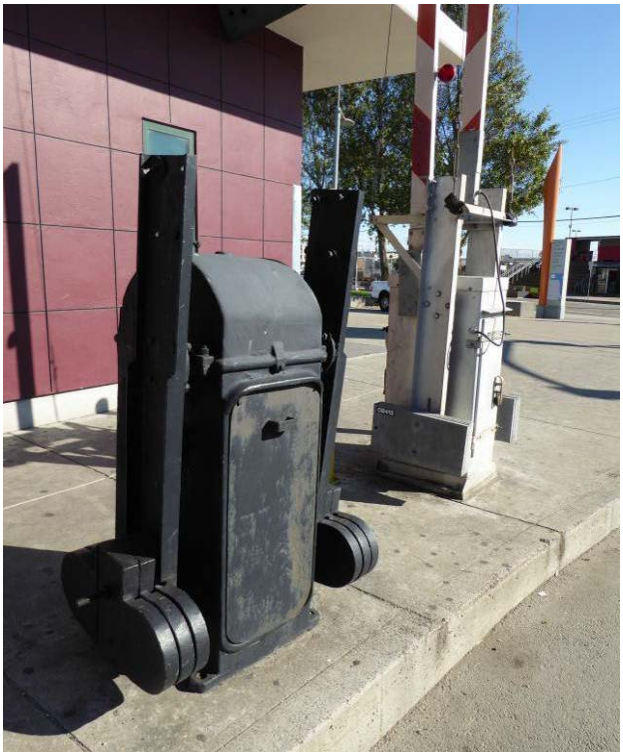
Photograph 27: Watchman's house; facing northeast.

Photograph 28: Watchman's House, showing concrete piles and wood fender piles in foreground; facing south.

Photograph 29: Wood fenders and piles on southwest corner of bridge; facing south.



Photograph 30: Wood fender and piles on northwest corner of bridge; facing east.

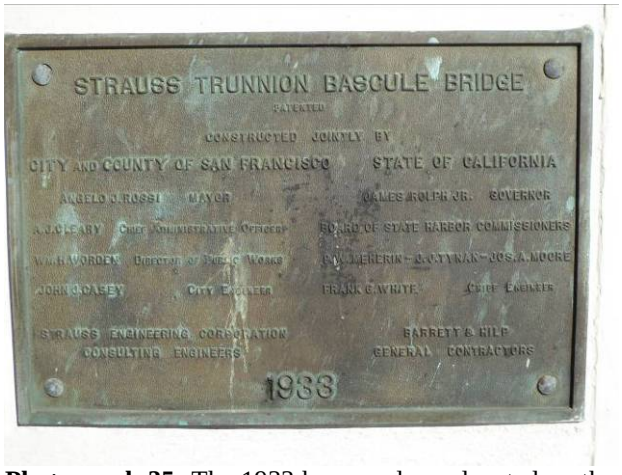


Photograph 31: Metal traffic control gate near the southeast corner of the bridge with modern gate behind it; facing southeast.

Photograph 32: Metal traffic control gate near the southwest corner of the bridge with modern gate behind it; facing south.

Photograph 33: The metal traffic control gate at the northeast corner of the bridge is still in use; facing southeast.

Photograph 34: The metal traffic control gate at the northwest corner of the bridge with modern gate to left; facing southwest.



Photograph 35: The 1933 bronze plaque located on the west side of the Watchman's House; facing east.

Photograph 36: New operator and watchman tower with former Watchman's House to right; facing northwest

4.3 National Register of Historic Places Significance

The Third Street Bridge (Bridge No. 34C0025) was previously determined eligible for listing in the NRHP as a result of the Caltrans Historic Bridge Inventory conducted in 1985, a conclusion the SHPO concurred in on September 19, 1985. SHPO correspondence from 1985 is included in **Appendix B**. The 1985 determination did not include formal evaluation using NRHP Criteria. Concurrently, Donald W. Alden prepared a "Historic Evaluation of the Third Street Bridge over Mission Channel Waterway at China Basin" for the City and County of San Francisco, in which he formally evaluated the bridge under NRHP criteria. Alden concluded that the bridge was eligible for listing in the NRHP under Criterion B because it is "closely associated with the life of bridge designer, Joseph B. Strauss, who was heavily involved with the planning of the Golden Gate Bridge at the very time that the Third Street Bridge was being built." It was also found eligible under Criterion C as an important local example of the heel trunnion bascule type bridge. The bridge had undergone relatively insignificant rehabilitation work since its original construction and thus Alden concluded it retained integrity of location, design, setting, materials, workmanship, feeling, and association.

Please note, the 1985 evaluation the Third Street Bridge's significance under NRHP Criterion B for association with an important person is not an accurate application of this Criterion according to National Register Bulletin 15. While engineers do have associations with their designed properties, this significance is best demonstrated under Criterion C. Properties where an engineer worked or lived are more appropriately evaluated under Criterion B.[16] Even if the determination of eligibility was altered to remove Criterion B (and CRHR Criterion 2), the bridge would remain eligible for its significance under Criterion C (and CRHR Criterion 3).

These conclusions were confirmed when the bridge was inventoried and evaluated in 1997-98. That report noted that the bridge was also an important work of a master architect. It identified the contributing elements as the "bascule spans, mechanical/electrical drive machinery and traffic control gate standards, including their switching equipment in the Operator's House, counterweights and walkways, railings, and the Operator's and Watchman's houses which are located immediately adjacent to the bridge." The two houses were noted as being original to the bridge and supported on their own piles. The honeycombed deck in place at the time was noted as not original. The historic integrity of the property was noted as essentially unchanged since the 1985 documentation.

The determination was reaffirmed in the Caltrans Historic Bridge Inventory updates of the early 2000s. The structure is also listed in the CRHR, based on the formal determination of eligibility to be listed in the NRHP.

None of the previous documentation identified the bridge's period of significance or the boundaries of the historic property. Based on the significance criteria, the period of significance

[16] United States Department of the Interior, National Park Service, "National Register Bulletin 16: How to Apply the National Register Criteria for Evaluation," (Washington, D.C.: National Park Service, 1990, revised 2002), 16.

is 1933, the original construction date. The boundaries of this historic property include the bridge from its approach at the north end to its approach at the south end, and include the traffic control gates. The bridge is eligible at the local level of significance.

The bridge retains a high degree of historic integrity. It has undergone periodic work to maintain and repair elements of the bridge. In the late 1990s a rehabilitation project performed several changes, including replacing some corroded steel members under the deck with slightly heavier diagonal bracing members, installing heavier bolts and reinforcing collars, making minor modifications to the support bearings, and widening the tops of the concrete pier caps by 3 feet 4 inches on all sides. The work also included preserving the Operator's House and Watchman's House while constructing a new Operator's House at the southwest corner of the bridge. Safety curbing and railing were added between the northbound and southbound lanes of traffic and small cables were added between the rungs of existing railings. The bridge, Operator's House, and Watchman's House were repainted using original colors. The traffic gates were refurbished by modifying internal electrical equipment to continue operation, replacing badly worn mechanical parts, cleaning and repainting exterior features, and replacing the gate arms, which were not original to the gates. The gates were painted green, which was believed to be the original color. They have since been repainted black, matching the rest of the bridge superstructure. Non-historic features were also altered, including replacing approach spans, and adding non-skid steel plates to the open grate deck on the northbound lanes. Studies for that project found that the activities would have no adverse effect on the Third Street Bridge. In addition to these changes, the bridge includes replacement pressure treated wood plank sidewalks. These changes are relatively minor and do not substantially diminish the integrity of design, materials, workmanship, setting, location, feeling, and association.

The character-defining features of this bridge include the steel through truss heel trunnion bascule spans, including the concrete counterweight, opening mechanism, and riveted steel truss members. The steel trusses continue below the deck and include original steel members, bolts and rivets. The Operator's and Watchman's houses are also character-defining features and include the basic form and plan, wood windows, stucco siding, and hip roof; the concrete piles supporting the two buildings are also original to the historic property. Traffic Control Gate Standards #1-4 are also character-defining features, as are the steel staircases and catwalks, the Machinery Room, and original metal railing. The control gate arms and modern control gates are not character-defining features. Substructure features that appear to be original include Piers 1-3, which consist of reinforced concrete columns atop reinforced concrete caps that rest on timber piles. The timber fenders are not original and therefore are not character-defining features.

The character-defining features are ranked below using the Caltrans "Ranking Character-Defining Features" guidelines, which establish five ranking criteria that includes: A) Craftsmanship; B) Conveying Significance; C) Public Benefit; D) Visibility and Transparency; and E) Integrity. For each character-defining feature, a point value of 1-3 points (low to high) is assigned for each criterion. The points are then totaled and the character-defining are ranked

using the following three categories: Most Significant (M), Significant (S) and Less Significant (LS). This system was used to rank the Third Street Bridge character-defining features. These rankings are used in the discussion of the potential effects the project will have on the Third Street Bridge.

Criteria Matrix for Ranking Character-Defining Features							
Ranking	**Character-Defining Feature**	**A**	**B**	**C**	**D**	**E**	**Total Points**
M	Steel through truss heel trunnion bascule span, including concrete counterweight, opening mechanism, riveted steel truss members	3	3	3	3	2	14
S	Operator's House, including basic form and plan, wood windows, stucco siding, hip roof	2	2	2	3	2	11
S	Watchman's House, including basic form and plan, wood windows, stucco siding, hip roof	2	2	2	3	2	11
S	Traffic control gate standards #1-4	1	2	2	3	2	10
S	Steel catwalks and staircases	2	2	1	2	2	9
S	Machinery Room	2	2	1	2	2	9
S	Metal railing throughout	1	2	2	2	2	9
L	Substructure elements, including reinforced concrete columns, reinforced concrete caps, and timber piles that form Piers 1-3	1	1	1	1	2	6
L	Under-deck elements of trunnion and bascule trusses, including steel beams, rivets and bolts	1	1	1	1	2	6
L	Concrete piles supporting Operator's and Watchman's Houses	1	1	1	1	2	6

5. DISCUSSION OF NO ADVERSE EFFECT AND CONDITIONS PROPOSED

The project will have no adverse effect because the activities are designed to have no direct, indirect, or cumulative effect on the historic property. This will result from project activities conducted in a manner that complies with the SOI Standards (also referred to as SOIS). This section details the standard conditions that meet the SOI Standards proposed for project activities.

5.1 Concrete repair work

Cleaning and repair work on any concrete materials will follow National Park Service Preservation Brief 15 on Preservation of Historic Concrete.[17] Specifically, testing and trial work will be performed to identify appropriate materials and methods for preparing the surface and installing the new materials. The replacement material will match the original as closely as possible, and, where needed, the replacement material will also match the extant concrete in color and texture as closely as possible.

5.2 Steel repair/replacement work

Replacement of steel members will be performed with the following conditions. Where possible, deteriorated features will be repaired rather than replaced. If the severity of the deterioration requires replacement, new steel members will match the original in design, color, texture, and materials, and will be substantiated by documentary and physical evidence. Historic photographs and existing original steel members will be used to determine appropriate replacement material.

5.3 Protective coating and repainting

The method for preparing and cleaning the surface materials will be done using the gentlest method possible. The zinc spray being used is a protective coating typical for marine environments to avoid corrosion. Following the protective coating, the bridge will be painted using a historically compatible color. The color will be selected based on historic photographs and analysis of existing paint layers.

5.4 SOIS Action Plan

An SOIS Action Plan has been prepared to establish the standard conditions necessary to meet the SOI Standards for the Third Street Bridge Rehabilitation Project. The SOIS Action Plan establishes the intent, methods, and applications of the SOI Standards and sets forth the tasks required during each stage of the project (pre-construction, during construction, and post-

[17] Paul Gaudette and Deborah Slaton, “Preservation Brief 15: Preservation of Historic Concrete,” prepared for the United States Department of the Interior, National Park Service, 2007.

construction) and establishes the responsible parties for each task. The SOIS Action Plan is included in Appendix C.

6. CONCLUSION

This FNAE–SC–SOIS provides an assessment of the effect the Third Street Bridge Rehabilitation Project will have on historic properties. It contains information regarding the Section 106 activities to date, including a summary of the identification of historic properties and consultation with interested parties, along with information about the bridge's history, character-defining features, and period of significance.

The Third Street Bridge (Bridge No. 34C0025) is the sole historic property located in the APE. The structure was previously determined eligible for listing in the NRHP as a result of the Caltrans Historic Bridge Inventory conducted in 1985, a conclusion that was reaffirmed multiple times since. The structure is also listed in the CRHR, based on the formal determination of eligibility for listing in the NRHP.

Caltrans finds that the undertaking will have No Adverse Effect on the Third Street Bridge because project activities will meet the SOI Standards pursuant to Stipulation X.B.1.b of the Section 106 PA. An SOIS Action Plan addresses the standard conditions for the Third Street Bridge Rehabilitation Project; it is included in Appendix C.

CITY AND COUNTY OF SAN FRANCISCO

DEPARTMENT OF PUBLIC WORKS

CONTRACT NO. 1000007012

FEDERAL AID PROJECT NO. BRLO-5934(177)

PLANS PREPARED FOR SAN FRANCISCO PLANNING DEPARTMENT

FOR

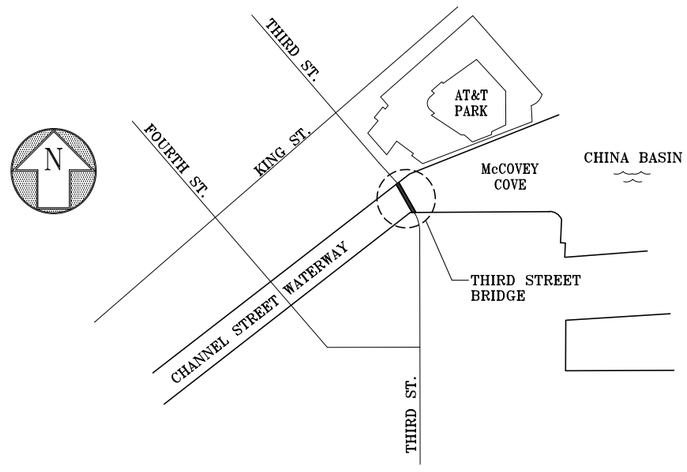
REHABILITATION

OF

THIRD STREET BRIDGE OVER MISSION CHANNEL WATERWAY AT CHINA BASIN

(BRIDGE NO. 34C0025)

IN ACCORDANCE WITH CALIFORNIA PUBLIC CONTRACT CODE SECTION 3300, THE CITY HAS DETERMINED THAT THE CONTRACTOR SHALL POSSESS A VALID GENERAL ENGINEERING (CLASS A) CONTRACTOR'S LICENSE AT THE TIME THAT THE CONTRACT IS AWARDED. LICENSED SPECIALTY CONTRACTORS SHALL PERFORM CERTAIN PORTIONS OF THE WORK AS REQUIRED UNDER THE CONTRACT DOCUMENTS.



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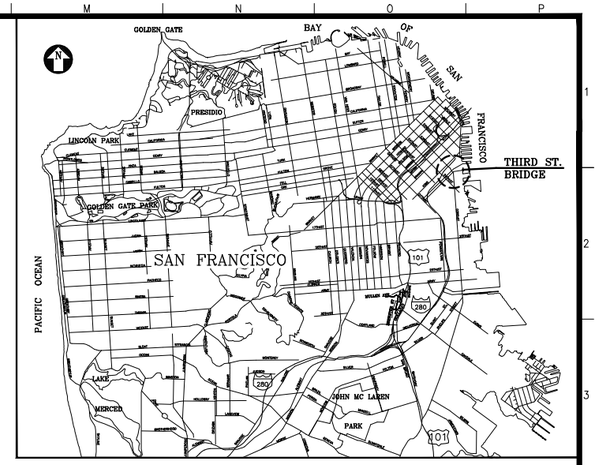

LOCATION MAP

PROJECT DATA

The approximately 295 foot long, 80 foot wide Third Street Bridge (Caltrans Bridge No. 34C0025) spans the Mission Creek Channel and provides five lanes of traffic (three lanes in the southbound direction and two in the northbound direction), no shoulders, concrete curb in each direction, and a timber walkway approximately 10 feet wide on the eastern side of the bridge and of varying widths on the western side. The deck is steel grating with steel plates covering the easternmost travel lanes. The bridge, an active conduit for vehicles, pedestrians, and cyclists, also opens to allow boats to pass along Mission Creek Channel, a Coast Guard regulated navigable waterway with limited marine traffic, through use of its bascule arm.

Constructed in the 1930s, this heel trunnion bascule drawbridge was designed and patented by the Strauss Engineering Corporation, is a San Francisco Landmark (#194), listed in the Caltrans Historic Bridge Inventory as a Category 2 bridge, and has been determined by Caltrans as eligible for listing in the National Register of Historic Places (NRHP). In the late 1990s rehabilitation work occurred on the bridge and included replacing the southern approach spans, corroded steel members, wooden piles and other waterside support, mechanical and electrical components, and modifying the roadway decking, constructing a new operator house and control equipment, and repainting.

PROJECT DESCRIPTION/SCOPE

Repair/Replacement of Steel Bridge Members and Repair of Steel Stairway
Repair/Replacement of Bridge Deck
Repair of Concrete Piles Supporting the Operator House and Signalman's Hut
Repaint/Recoat the Bridge
Repair/Replacement of Fender Pile System

INDEX TO SHEETS

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Division Mgr:	PATRICK RIVERA	

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DRAWN:	DATE: G.C.I. 03/06/18
CHECKED:	DATE: M.J.C. 03/06/18

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SHEET OF SHEETS: 1 OF 29

THIRD STREET BRIDGE REHABILITATION PROJECT

COVER SHEET

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DRAWING NO. PD-1
FILE NO.
REV. NO. 0

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SCALE: NO SCALE

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THIRD STREET BRIDGE REHABILITATION PROJECT

SITE PLAN

CONTRACT NO. 2317J
DRAWING NO. PD-2
FILE NO.
REV. NO. 0

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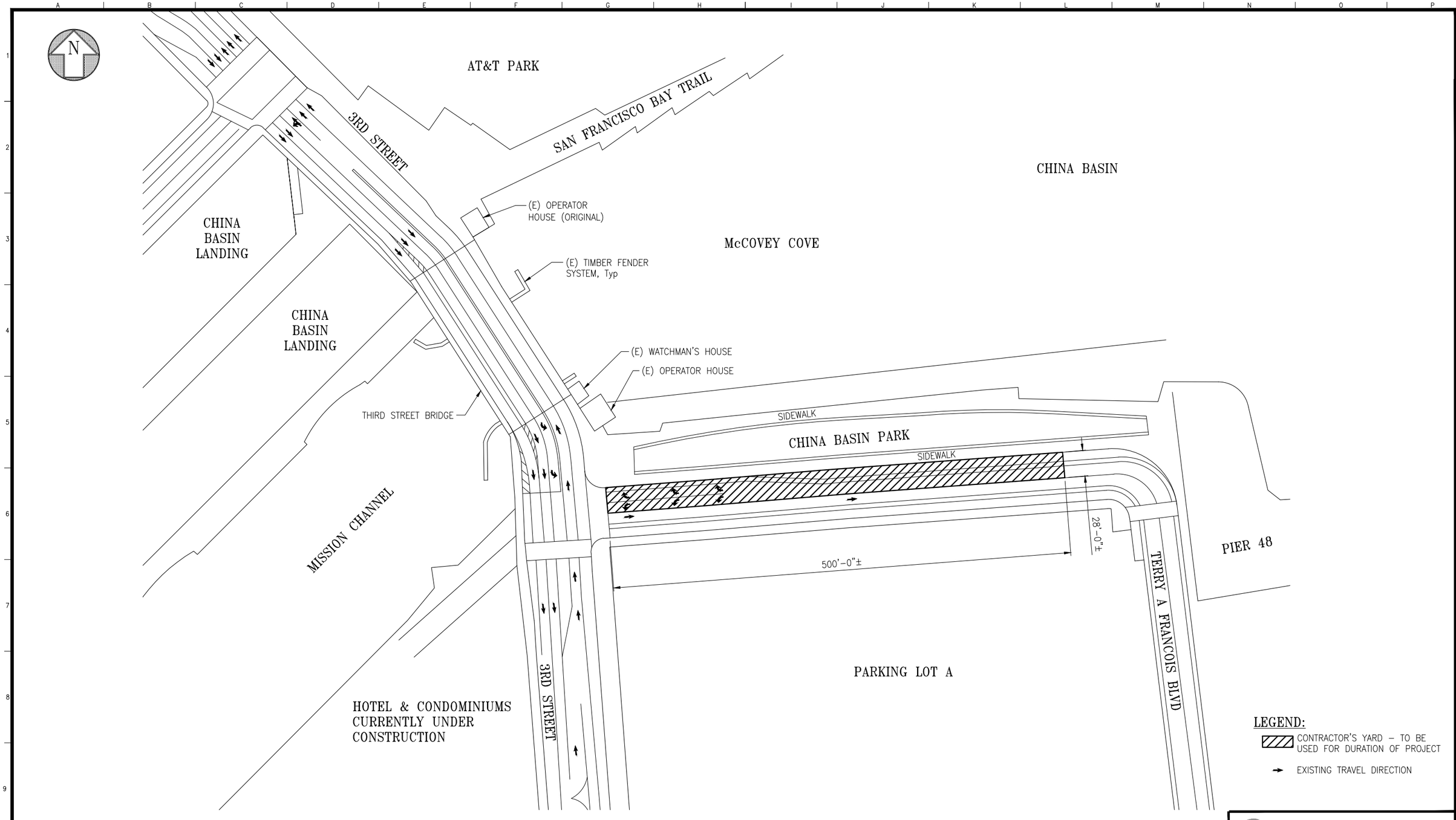

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SCALE: 1"=50'

SHEET OF SHEETS: 3 OF 29

THIRD STREET BRIDGE REHABILITATION PROJECT

CONSTRUCTION STAGING AREA

CONTRACT NO. 2317J
DRAWING NO. PD-3
FILE NO.
REV. NO. 0

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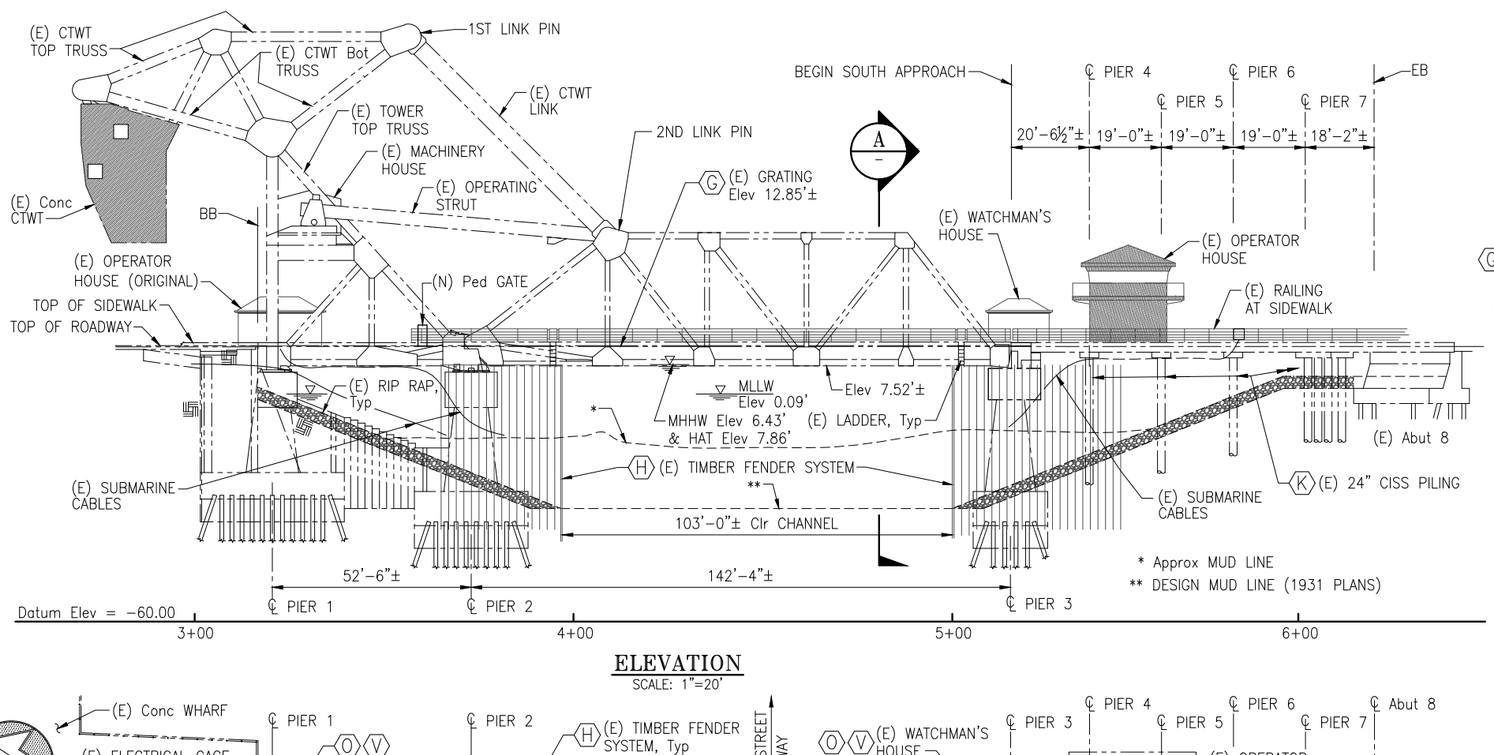

ELEVATION
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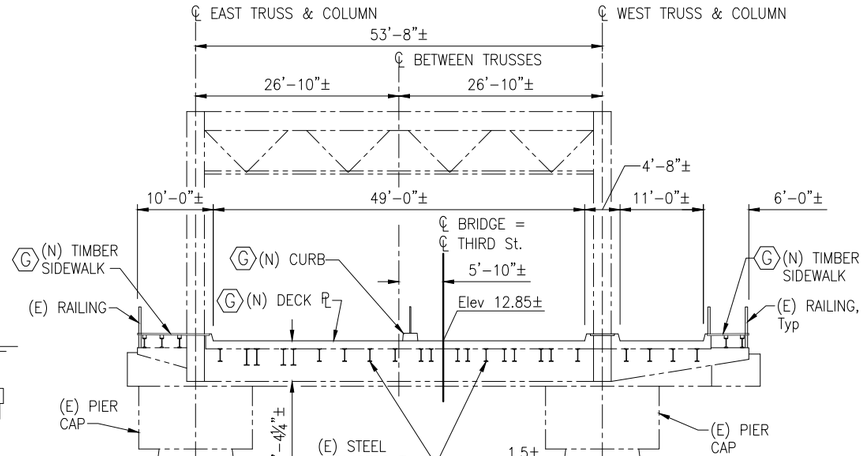

NOTE: (E) Fender System not shown.

SECTION
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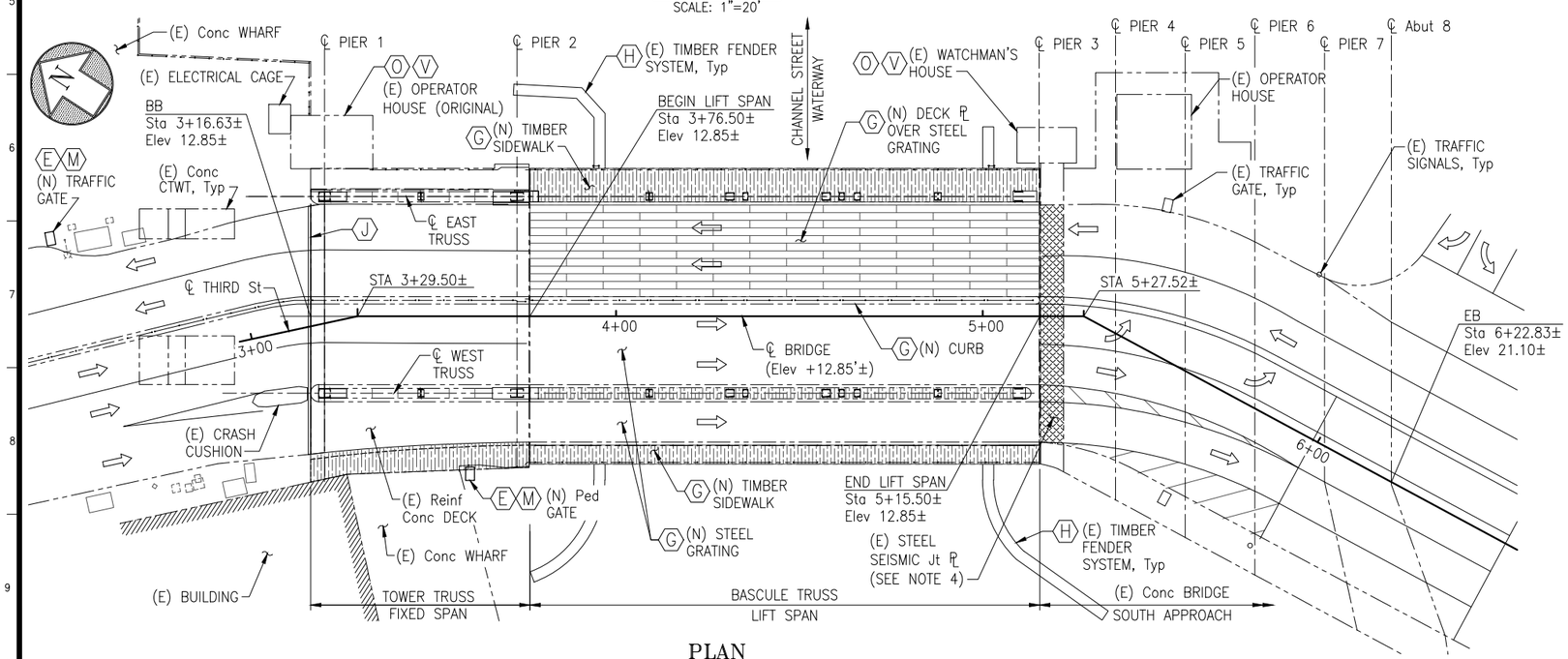

PLAN
SCALE: 1"=20'

NOTES:

1. For Index to Bridge Plans, General Notes & Symbols, see dwg G-03 & G-04.
2. Mean water elevations and Rip Rap locations were taken from reference plans dated 1931.
3. Elevation Datum for these plans and for reference plans is City of San Francisco Datum. See Bench Mark description on dwg G-10.
4. Apply Non-skid Surface Treatment to top surface of seismic joint plate. Plate size = 6'-6" x 65'-6"±.
5. All rehabilitation not shown, see plans for additional rehabilitation.

LEGEND:

- Indicates Existing Structure
- Indicates New Structure
- Indicates Direction of Traffic
- Indicates Turning Lane

REHABILITATION LEGEND:

- (A) FLOOR BEAM REPAIR
- (B) BOTTOM LATERAL REPAIR
- (C) STIFFEN GUSSET PLATE
- (D) FASTENER REPAIR
- (E) ELECTRICAL REPAIR & UPGRADE
- (F) REPLACE HANGER ROD AND SLEEVE
- (G) DECK SYSTEM REPLACEMENT
- (H) FENDER SYSTEM REPAIR
- (J) JOINT SEAL
- (K) CLEAN & RE-COAT 24" CISS PILING
- (M) MECHANICAL REPAIR & UPGRADE
- (N) INJECT CRACK (EPOXY)
- (O) SOFFIT REPAIR
- (P) PACK RUST REPAIR
- (Q) TRUSS MEMBER REPAIR
- (R) TRUSS LATERAL REPAIR
- (S) SWAY BRACE REPAIR
- (T) STAIR REPAIR
- (U) STRINGER REPAIR
- (V) COLUMN REPAIR
- (W) DRILL WEEP HOLES
- (X) LADDER SAFETY CAGE
- (Y) STRINGER DIAPHRAGM

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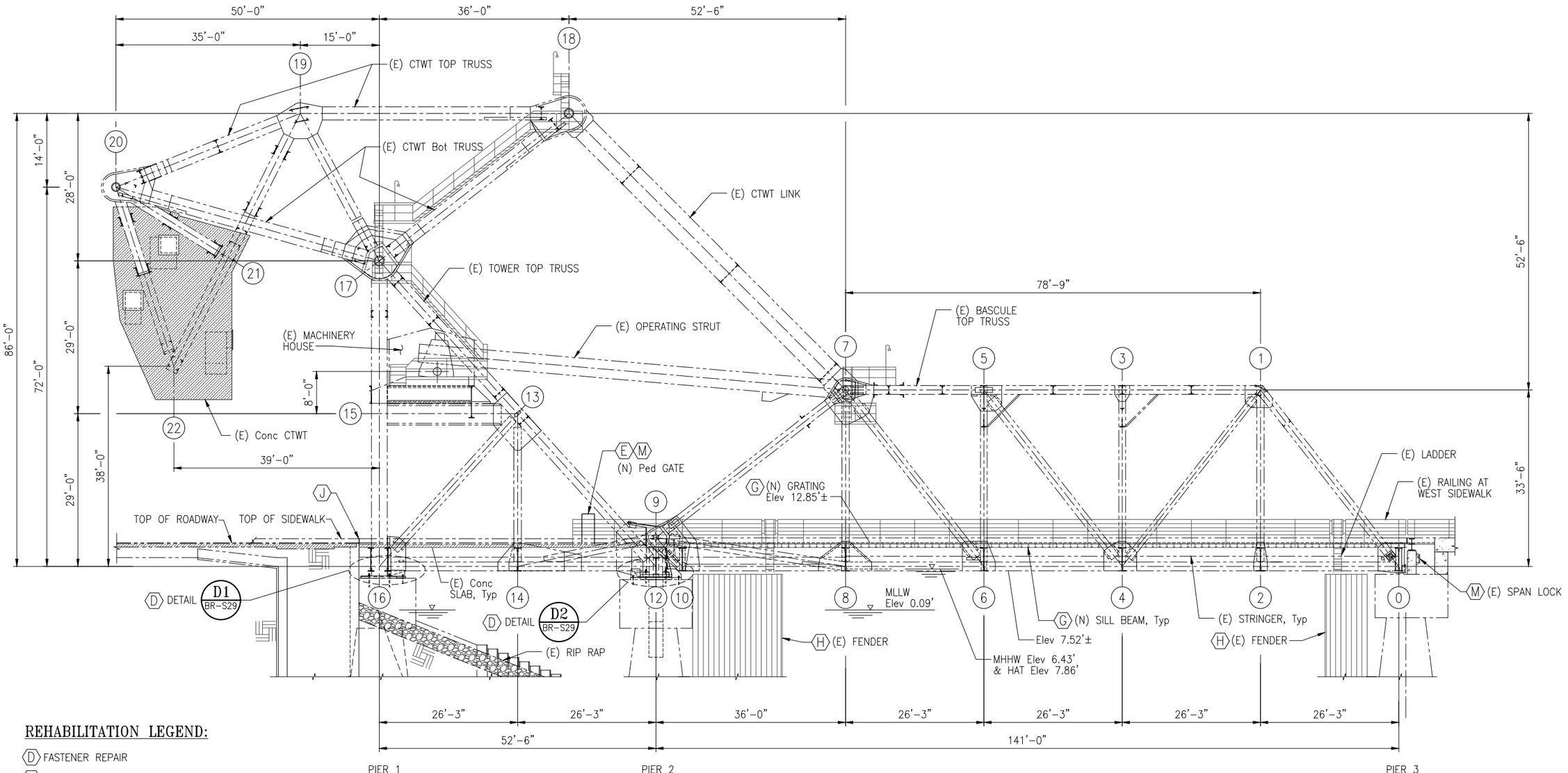
THIRD STREET BRIDGE REHABILITATION PROJECT

GENERAL PLAN

CONTRACT NO. 2317J
DRAWING NO. PD-4
FILE NO.
REV. NO. 0



REHABILITATION LEGEND:

- (D) FASTENER REPAIR
- (E) ELECTRICAL REPAIR & UPGRADE
- (G) DECK SYSTEM REPLACEMENT
- (H) FENDER SYSTEM REPAIR
- (J) JOINT SEAL
- (M) MECHANICAL REPAIR & UPGRADE

ALL DIMENSIONS SHOWN ARE ±

SIDE ELEVATION

SCALE: 1"=10'

NOTES:

1. Mean water elevations and Rip Rap locations were taken from reference plans dated 1931.
2. All rehabilitation not shown, see plans for additional rehabilitation.

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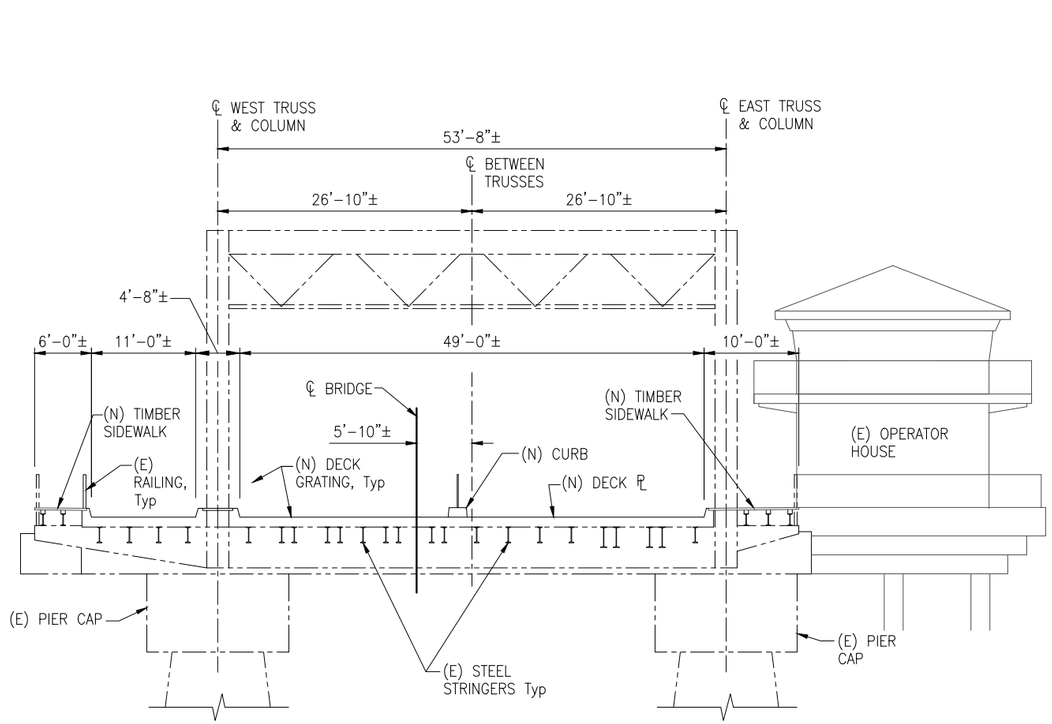
THIRD STREET BRIDGE REHABILITATION PROJECT

ELEVATION NO. 1

CONTRACT NO. 2317J
DRAWING NO. PD-5
FILE NO. 110294
REV. NO. 0



FRONT ELEVATION

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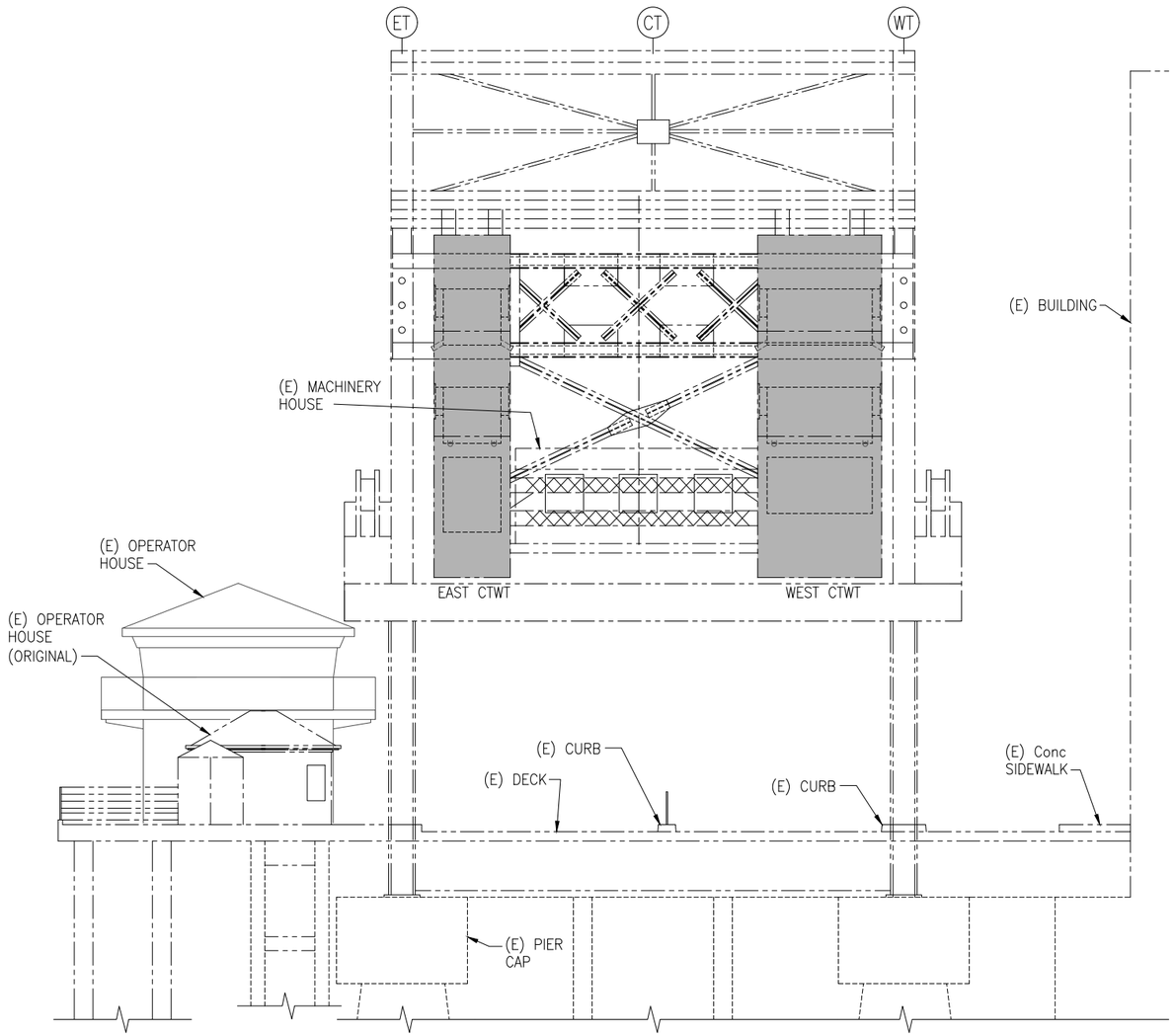

REAR ELEVATION

SCALE: ⅛"=1'–0"

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SCALE: AS SHOWN

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THIRD STREET BRIDGE REHABILITATION PROJECT

ELEVATION NO. 2

CONTRACT NO. 2317J

DRAWING NO. PD–6

FILE NO.

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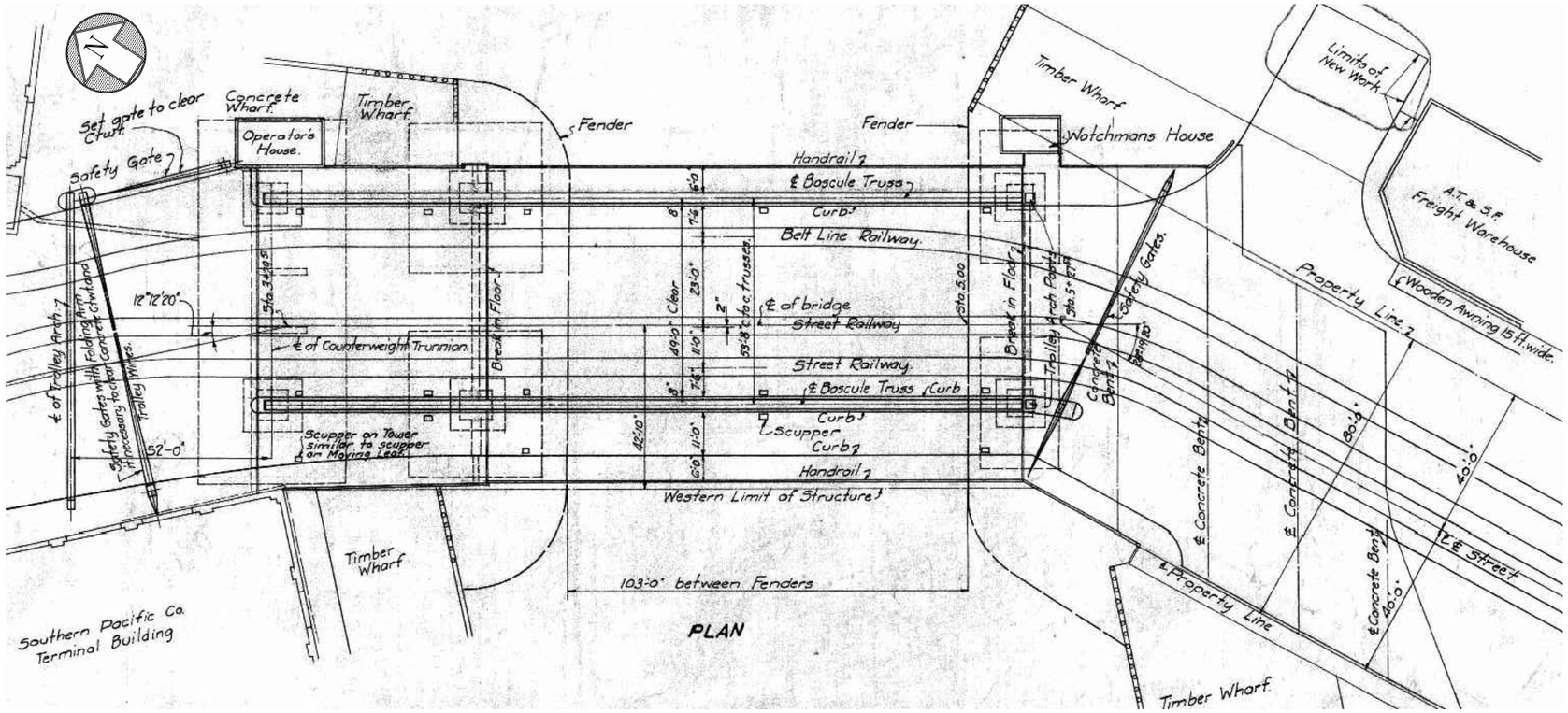

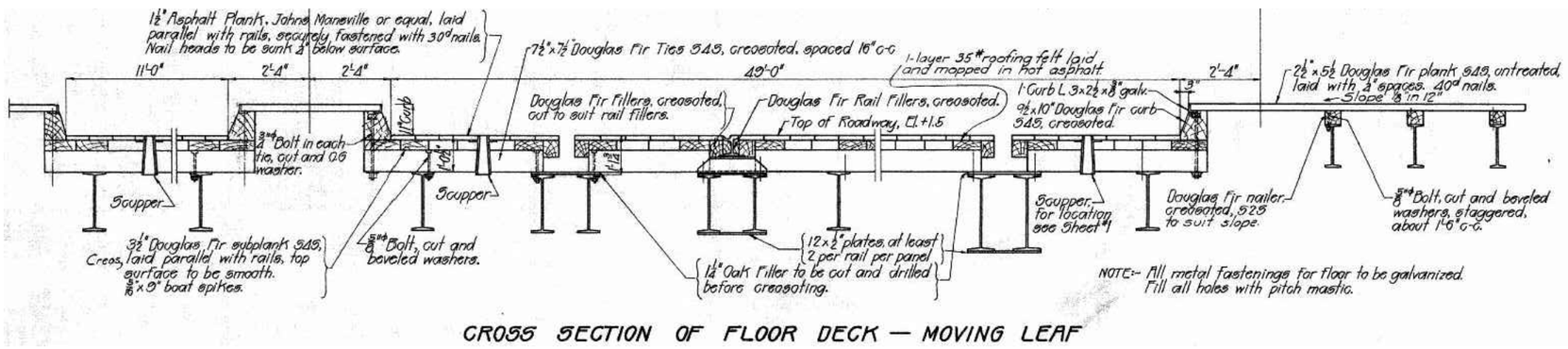

CROSS SECTION OF FLOOR DECK — MOVING LEAF

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Division Mgr:	PATRICK RIVERA	

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THIRD STREET BRIDGE REHABILITATION PROJECT

ORIGINAL DECKING PLAN

CONTRACT NO. 2317J
DRAWING NO. PD-7
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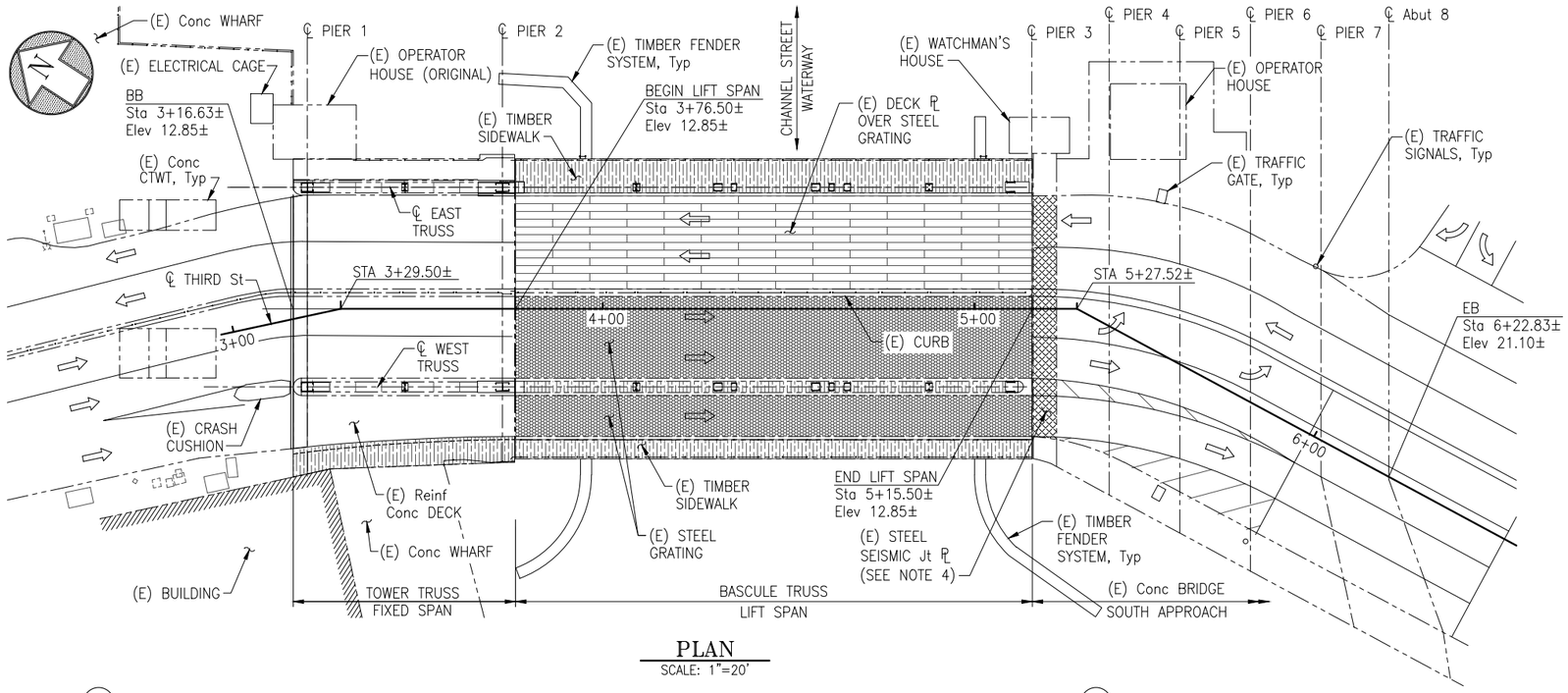

PLAN
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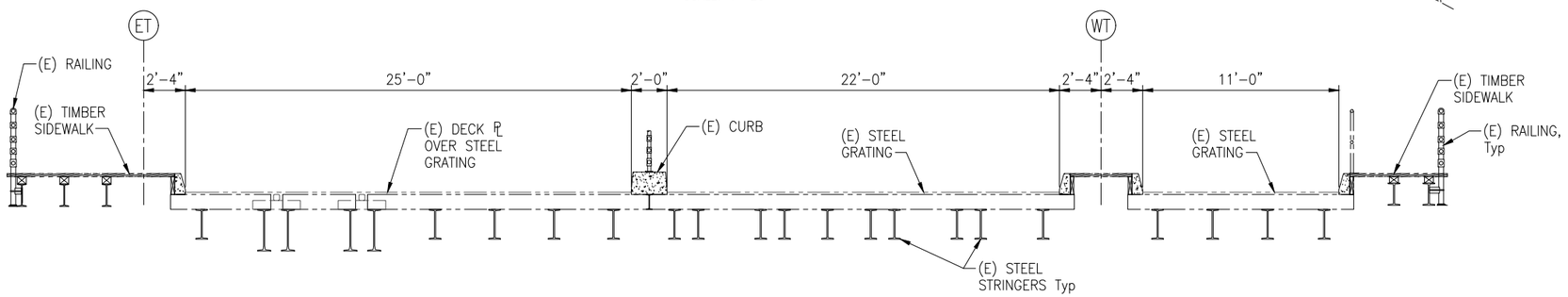

TYPICAL SECTION
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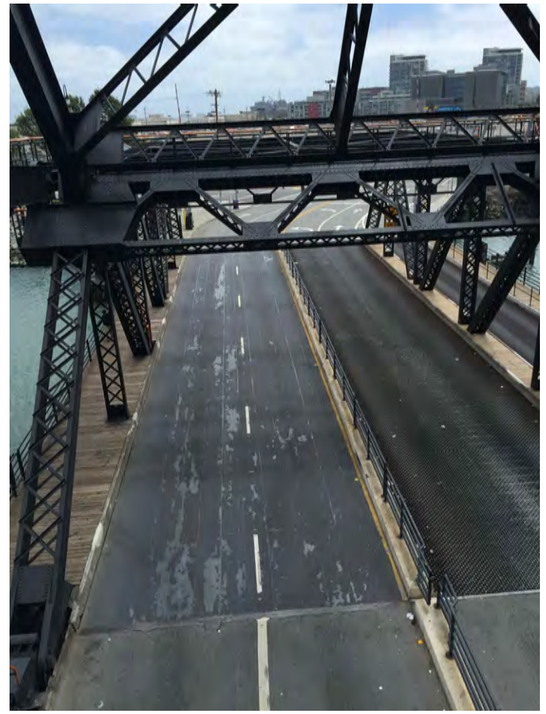
(E) DECK PLATE

(E) STEEL GRATING



LOOKING SOUTH

LOOKING WEST

PREPARED FOR SAN FRANCISCO PLANNING DEPARTMENT

TRC
10680 White Rock Road
Rancho Cordova, CA 95670

NO.	DATE	DESCRIPTION	BY	APP.

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THE CITY AND COUNTY OF SAN FRANCISCO

REGISTERED PROFESSIONAL ENGINEER No. CIVIL STATE OF CALIFORNIA
NOT FOR CONSTRUCTION

SAN FRANCISCO PUBLIC WORKS

DESIGN AND ENGINEERING DIVISION
SAN FRANCISCO PUBLIC WORKS
30 VAN NESS AVENUE, 5TH FLOOR
SAN FRANCISCO, CA 94102 - 6028

		Date:
Section Mgr:	RAYMOND LUI	
Deputy Division Mgr:	FERNANDO CISNEROS	
Division Mgr:	PATRICK RIVERA	

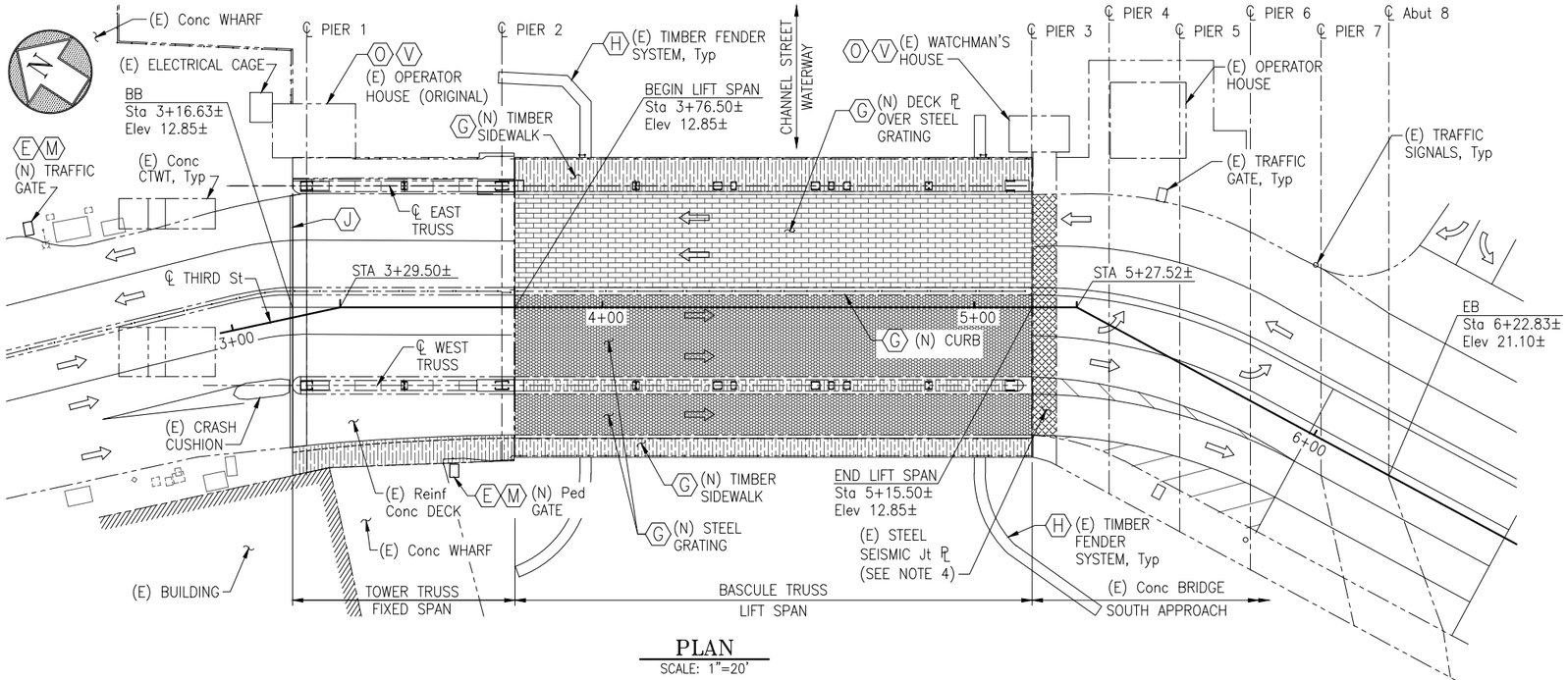
DESIGNED: C.J.P.	DATE: 03/06/18
DRAWN: G.C.I.	DATE: 03/06/18
CHECKED: M.J.C.	DATE: 03/06/18

SCALE: AS SHOWN
SHEET OF SHEETS: 8 OF 29

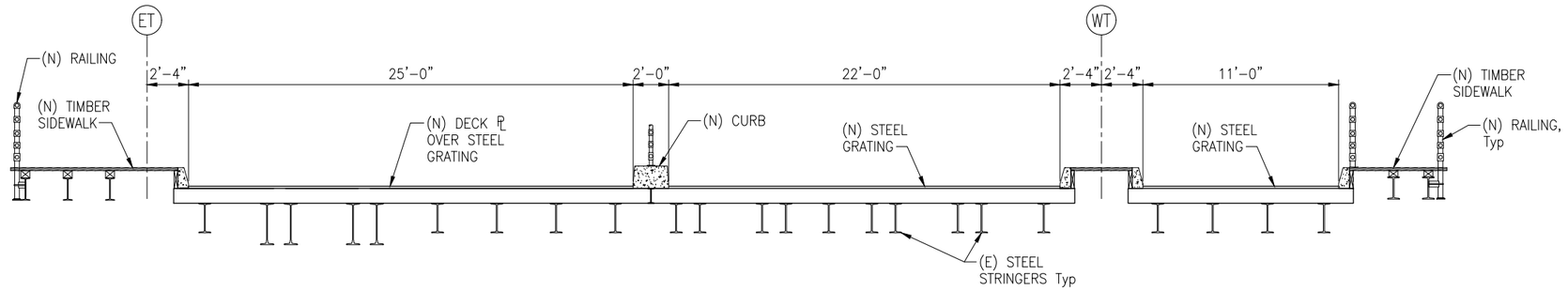
THIRD STREET BRIDGE REHABILITATION PROJECT

CURRENT DECKING PLAN

CONTRACT NO. 2317J
DRAWING NO. PD-8
FILE NO.
REV. NO. 0



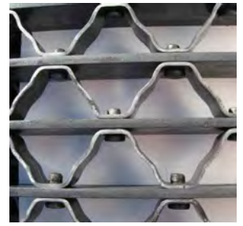
PLAN
SCALE: 1"=20'



TYPICAL SECTION
SCALE: 1/4"=1'-0"

(N) DECK PLATE & (N) STEEL GRATING

(N) DECK PLATE



(N) STEEL GRATING

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SCALE: AS SHOWN

SHEET OF SHEETS: 9 OF 29

THIRD STREET BRIDGE REHABILITATION PROJECT

PROPOSED DECKING PLAN

CONTRACT NO. 2317J
DRAWING NO. PD-9
FILE NO.
REV. NO. 0

SIDE ELEVATION

FRONT ELEVATION

REAR ELEVATION

SIDE ELEVATION

FRONT ELEVATION

REAR ELEVATION

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SCALE: NO SCALE

SHEET OF SHEETS: 10 OF 29

THIRD STREET BRIDGE REHABILITATION PROJECT

PHOTOS NO. 1

CONTRACT NO. 2317J
DRAWING NO. PD-10
FILE NO.
REV. NO. 0

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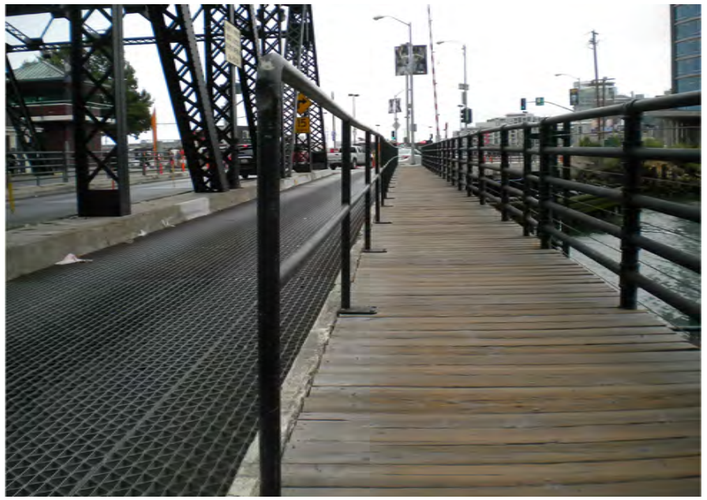
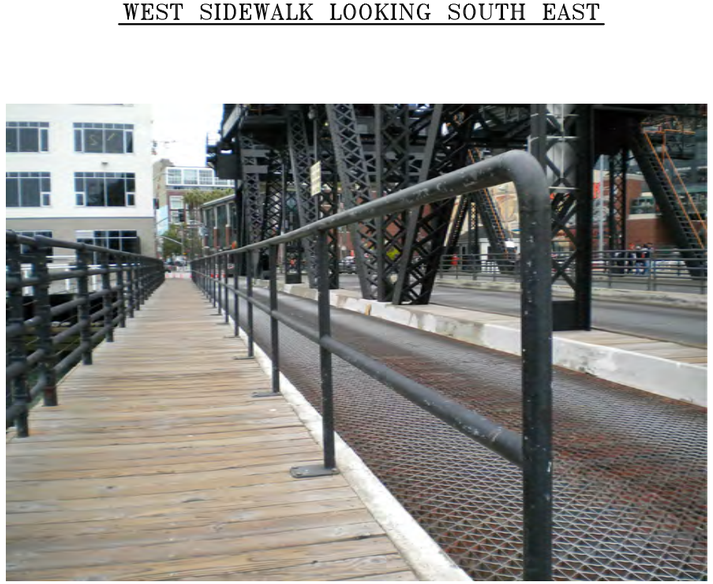
Plot Time: Tue, 06 Mar 2018 - 10:09am Measurement Units are English Model Units: Undefined



WEST SIDEWALK LOOKING SOUTH EAST

EAST SIDEWALK LOOKING SOUTH EAST

LOOKING NORTH WEST FROM OPERATORS HOUSE



WEST SIDEWALK LOOKING NORTH WEST

WEST SIDEWALK LOOKING SOUTH EAST

LOOKING NORTH FROM SOUTH APPROACH

PREPARED FOR SAN FRANCISCO PLANNING DEPARTMENT

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SCALE: NO SCALE

SHEET OF SHEETS: 11 OF 29

THIRD STREET BRIDGE REHABILITATION PROJECT

PHOTOS NO. 2

CONTRACT NO. 2317J
DRAWING NO. PD-11
FILE NO.
REV. NO. 0

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Model Units: Undefined
Drawing Path: H:\240679 SF 3rd Street Bridge\Planning Dept\PD-11 - PHOTOS 2.dwg, Login: gimbsen
Plot Time: Tue, 06 Mar 2018 - 10:10am Measurement Units are English

Estimate of Structural Steel to be Replaced as part of Rehabilitation

The open grating deck on the bascule span of the bridge was installed in the early 1950's and thus is approximately 65 years old and has reached the end of its useful life. This decking is deteriorated beyond repair and requires frequent repair. The deck will be replaced with a nearly identical open grate deck system. The deck constitutes approximately 13% of the total bridge steel weight.

Additionally, it is estimated tha less than 1% of the structural steel of the bridge by weight is corroded or damaged beyond the threshold for repair and requires replacement (an estimate for Floorbeam 16 is provided below as a worst case example). The replacement steel members will be of similar shape and proportions to the existing steel. This extent of corrosion is based on field investigations done by the TRC team in the fall of 2016.

Estimate of Structural Steel to be Repaired as part of Rehabilitation: 25%"

Total Weight of Existing Steel (in lbs)			
west truss	356,917	lbs	
east truss	326,274	lbs	
cross members	397,779	lbs	
operating strut	37,866	lbs	
west add'l	85,602	lbs	
east add'l	84,405	lbs	
floor beams	223,666	lbs	
floor beam add'l	61,381	lbs	
stringers	324,526	lbs	
stringer add'l	69,181	lbs	
bottom bracing	41,629	lbs	
deck, sills, chairs & misc	**308,690**	lbs	
stairs & ladders	11,003	lbs	
Total	**2,328,919**	**lbs**	**< Estimated Total Weight of Structural Steel on Bridge**
Weight of Existing Deck System	**308,690**	**13%**	**< Percentage of Total Weight of Existing Bridge Removed with Deck (note that this is not historic steel, the original timber deck was replaced 40-50 years ago)**
Cantilever Stringer Repairs at Floorbeam 16	**6,371**	**0.27%**	**< Historic Steel @ FB16 Corroded beyond Repair (see photo above)**

Photo 1: Floorbeam 16 Corroded Stringer Members

Source of weights: K\:240679 San Francisco Third Street\5600 - MISCELLANEOUS\620> - Computer Analysis & Engineering Calculations \Bridge Rating\Member Rating

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SHEET OF SHEETS: 12 OF 29

THIRD STREET BRIDGE REHABILITATION PROJECT

PERCENTAGE OF REPAIR VS. REPLACEMENT

CONTRACT NO. 2317J
DRAWING NO. PD-12
FILE NO.
REV. NO. 0

DESCRIPTION

14-8.03.1.1 GENERAL

A. The Work of this Section includes furnishing, installing and maintaining vibration- monitoring instrumentation; collecting vibration data; and interpreting and reporting the results as directed by the Engineer. The Contractor must implement required remedial and precautionary measures based on the vibration-monitoring data.

B. The purpose of the vibration-monitoring program is to protect the following properties from excess vibration during demolition and construction activities associated with the vibro-installation of piles and other vibration-causing activities on the Third Street Bridge Rehabilitation Project:

1. Historic Operator's House, North end, east side of the Third Street Bridge over Mission Channel

2. Historic Watchman's House, South end, east side of the Third Street Bridge over Mission Channel

C. The City is not responsible for the safety of the Work based on vibration-monitoring data, and compliance with this Section does not relieve the Contractor of full responsibility for damage caused by the Contractor's operations.

14-8.03.1.2 RESPONSIBILITIES OF CONTRACTOR

A. Furnish and install vibration-monitoring instrumentation.

B. Protect from damage and maintain instruments installed by the Contractor and repair or replace damaged or inoperative instruments.

C. Collect, interpret and report data from instrumentation specified herein.

D. Implement response actions.

14-8.03.1.3 QUALIFICATIONS OF VIBRATION MONITORING PERSONNEL

A. The Contractor's vibration-monitoring personnel must have the qualifications specified herein. These personnel may be on the staff of the Contractor or may be on the staff of a specialist subcontractor. However, they must not be employed nor compensated by subcontractors, or by persons or entities hired by subcontractors, who will provide other services or material for the project.

B. The Contractor's vibration-monitoring personnel must include a qualified Vibration Instrumentation Engineer who is a registered Professional Engineer in the State of California, who has a minimum of a Bachelor of Science degree in civil engineering, and who has at least 4 years of experience in the installation and use of vibration-monitoring instrumentation and in interpreting instrumentation data. The Vibration Instrumentation Engineer will:

1. Be on site and supervise the initial installation of each vibration-monitoring instrument.

2. Supervise interpretations of vibration-monitoring data.

C. The Contractor's vibration-monitoring personnel will be subject to the review of the Engineer.

14-8.03.1.4 QUALITY ASSURANCE

A. A record of laboratory calibration must be provided for all vibration-monitoring instruments to be used on site. Certification must be provided to indicate that the instruments are calibrated and maintained in accordance with the equipment manufacturer's calibration requirements and that calibrations are traceable to the U. S. National Institute of Standards and Technology (NIST).

14-8.03.1.5 SUBMITTALS

A. As soon as feasible after the Notice to Proceed, submit manufacturer's product data describing all specified vibration-monitoring instruments to the Engineer for review, including requests for consideration of substitutions, if any, together with product data and instruction manuals for requested substitutions.

B. Within 3 weeks after the Notice to Proceed, submit to the Engineer for review the resumes of the Vibration Instrumentation Engineer and any vibration monitoring technical support personnel, sufficient to define details of relevant experience.

C. Within 5 Workdays of receipt of each instrument at the site, submit to the Engineer a copy of the instruction manual and the laboratory calibration and test equipment certification.

D. Prior to the start of construction and prior to performing any vibration monitoring, the Contractor must submit to the Engineer for review a written plan detailing the procedures for vibration monitoring. Such details must include:

1. The name of the Firm providing the vibration monitoring services.

2. Description of the instrumentation and equipment to be used.

3. Measurement locations and methods for mounting the vibration sensors.

4. Procedures for data collection and analysis.

5. Means and methods of providing warning when the Response Values, as specified in Article 3.07, are reached.

6. Generalized plans of action to be implemented in the event any Response Value, as specified in Article 3.07, is reached. The generalized plans of action must be positive measures by the Contractor to control vibrations (e.g. using alternative construction methods).

E. Submit data and reports as specified in Article 14-8.03.3.04.

MATERIALS

14-8.03.2.01 GENERAL

A. Whenever any product is specified by brand name and model number, such specifications will be deemed to be used for the purpose of establishing a standard of quality and facilitating the description of the product desired. The term "acceptable equivalent" will be understood to indicate a product that is the same or better than the product named in the specifications in function, quality, performance, reliability, and general configuration. This procedure is not to be construed as eliminating other manufacturers' suitable products of equal quality. The Contractor may, in such cases, submit complete comparative data to the Engineer for consideration of another product. Substitute products must not be used in the Work unless accepted by the Engineer in writing. The Engineer will be the sole judge of the suitability and equivalency of the proposed substitution.

B. Any request from the Contractor for consideration of a substitution must clearly state the nature of the deviation from the product specified.

C. The Contractor must furnish all installation tools, materials, and miscellaneous instrumentation components for vibration monitoring.

14-8.03.2.02 SEISMOGRAPHS

A. Provide portable seismographs for monitoring the velocities of ground vibrations resulting from construction activities. Provide model DS-477 Blastmate II as manufactured by Instantel Inc., Kanata (Ottawa), Ontario, Canada, model VMS-500 as manufactured by Thomas Instruments, Inc., Spofford, NH, or model NC5310/D, as manufactured by Nomis Inc., Birmingham, AL, or acceptable equivalent. The seismograph must have the following minimum features:

1. Seismic range: 0.01 to 4 inches per second with an accuracy of +5 percent of the measured peak particle velocity or better at frequencies between 10 Hertz and 100 Hertz, and with a resolution of 0.01 inches per second or less.

2. Frequency response (+3 dB points): 2 to 200 Hertz.

3. Three channels for simultaneous time-domain monitoring of vibration velocities in digital format on three perpendicular axes.

4. Two power sources: internal rechargeable battery and charger and 115 volts AC. Battery must be capable of supplying power to monitor vibrations continuously for up to 24 hours.

5. Capable of internal, dynamic calibration.

6. Direct writing to printer and capability to transfer data from memory to 3-1/2 inch magnetic disk. Instruments must be capable of producing strip chart recordings of readings on site within one hour of obtaining the readings. Provide computer software to perform analysis and produce reports of continuous monitoring.

7. Continuous monitoring mode must be capable of recording single-component peak particle velocities, and frequency of peaks with an interval of one minute or less.

CONSTRUCTION METHODS

14-8.03.01 INSTALLATION OF SEISMOGRAPHS

A. The Contractor must install seismographs at four points near the corners of the buildings; these points are denoted as locations 1 through 4 in Figure 1.

B. The seismograph vibration sensors must be located at points on the structures 1 foot above high water.

C. The seismograph vibration sensors must be firmly mounted on the surface of concrete.

14-8.03.3.02 FIELD CALIBRATION AND MAINTENANCE

A. The Contractor's instrumentation personnel must conduct regular maintenance of seismograph installations.

B. All seismographs must have been calibrated by the manufacturer or certified calibration laboratory within one year of their use on site. A current certificate of calibration must be submitted to the Engineer with the Contractor's data.

14-8.03.3.03 DATA COLLECTION

A. The Contractor must collect seismograph data prior to any vibration-producing demolition or construction activities to document background vibrations at each monitoring location. This monitoring must consist of a continuous recording of the maximum single- component peak particle velocities for one-minute intervals, which must be printed on a strip chart. The background monitoring must be performed for a minimum of two non-consecutive workdays, spanning the hours during which demolition and construction activities will take place.

B. The Contractor must monitor vibration during demolition and other significant vibration- producing construction activities as determined by the Engineer. This monitoring must consist of a continuous recording of the maximum single-component peak particle velocities for one-minute intervals, which must be printed on a strip chart. During the monitoring, the Contractor must document all events that are responsible for the measured vibration levels, and submit the documentation to the Engineer with the data as specified in Article 3.04.

C. All vibration monitoring data must be recorded contemporaneously and plotted continuously on a graph by the data acquisition equipment. Each graph must show time- domain wave traces (particle velocity versus time) for each transducer with the same vertical and horizontal axes scale.

D. The Contractor must notify the Engineer at least 24 hours prior to starting a new vibration-producing construction task, and must have the seismographs in place and functioning properly prior to any such activity within 200 feet of the monitoring locations. No significant vibration-producing activity will occur within this zone unless the monitoring equipment is functioning properly.

E. The equipment must be set up in a manner such that an immediate warning is given when the peak particle velocity in any direction exceeds the Response Values specified in Article 3.07. The warning emitted by the vibration-monitoring equipment must be instantaneously transmitted to the responsible person designated by the Contractor by means of warning lights, audible sounds or electronic transmission.

14-8.03.3.04 DATA REDUCTION, PROCESSING, PLOTTING AND REPORTING

A. Within 10 working days after the completion of the background vibration monitoring, the Contractor must submit to the Engineer a hard copy report documenting the results at each of the monitoring locations.

B. During bridge demolition and construction, the Contractor must provide weekly, hard copy reports summarizing any vibration monitoring data collected at the specified vibration-monitoring locations. The reports for each week must be submitted on or before the end of the following week.

C. All reports must be signed by the approved Vibration Instrumentation Engineer, and must include the following:

1. Project identification, including District, County, Route, Post Mile, Project Name and Bridge number as shown on the project plans.

2. Location of the monitoring equipment, including address of adjacent building.

3. Location of vibration sources (e.g. traffic, demolition equipment, etc.)

4. Summary tables indicating the date, time and magnitude and frequency of maximum single-component peak particle velocity measured during each one-hour interval of the monitoring period.

5. Field data forms (construction vibration monitoring only).

6. Appendix graphs of the strip charts printed during the monitoring periods.

D. In addition to the hard copy data specified herein, the Contractor must provide data on 3.5-inch diskettes with each report. Electronic data files for all instrument data must be provided in dBASE IV (.DBF) format.

14-8.03.3.05 DAMAGE TO INSTRUMENTATION

A. The Contractor must protect all instruments and appurtenant fixtures, leads, connections, and other components of vibration-monitoring systems from damage due to construction operations, weather, traffic, and vandalism.

B. If an instrument is damaged or inoperative, the Contractor's instrumentation personnel must repair or replace the damaged or inoperative instrument within 72 hours at no additional cost to the City. The Contractor must notify the Engineer at least 24 hours prior to repairing or replacing a damaged or inoperative instrument. The Engineer will be the sole judge of whether repair or replacement is required.

14-8.03.3.06 DISCLOSURE OF DATA

A. The Contractor must not disclose any instrumentation data to third parties and must not publish data without prior written consent of the City.

14-8.03.3.07 DATA INTERPRETATION AND IMPLEMENTING PLANS OF ACTION

A. The Contractor must interpret the data collected, including making correlations between seismograph data and specific construction activities. The data must be evaluated to determine whether the measured vibrations can be reasonably attributed to construction activities.

B. The Response Values for vibration include a Threshold Value of 0.25 inches per second and a Limiting Value of 0.35 inches per second. The actions associated with these Response Values are defined below. Plans for such actions are referred to herein as plans of action, and actual actions to be implemented are referred to herein as response actions. Response Values are subject to adjustment by the Engineer as indicated by prevailing conditions or circumstances.

C. If a Threshold Value is reached, the Contractor must:

1. Immediately notify the Engineer.

2. Meet with the Engineer to discuss the need for response action(s).

3. If directed by the Engineer during the above meeting that a response action is needed, submit within 24 hours a detailed specific plan of action based as appropriate on the generalized plan of action submitted previously as part of the vibration-monitoring plan specified in Article 1.05.

4. If directed by the Engineer, implement response action(s) within 24 hours of submitting a detailed specific plan of action, so that the Limiting Value is not exceeded.

D. If a Limiting Value is reached, the Contractor must:

1. Immediately notify the Engineer and suspend activities in the affected area, with the exception of those actions necessary to avoid exceeding the Limiting Value.

2. Meet with the Engineer to discuss the need for response action(s).

3. If directed by the Engineer during the above meeting that a response action is needed, submit within 24 hours a detailed specific plan of action based as appropriate on the generalized plan of action submitted previously as part of the vibration-monitoring plan specified in Article 1.05.

4. If directed by the Engineer, implement response action(s) within 24 hours of submitting a detailed specific plan of action, so that the Limiting Value is not exceeded.

14-8.03.3.08 DISPOSITION OF INSTRUMENTS

A. The Contractor must remove salvageable instruments only when directed by the Engineer.

B. All salvaged instruments will become the property of the Contractor.

COMPENSATION

14-8.03.4.01 BASIS OF PAYMENT

A. Any areas where vibration monitoring is required will be paid for as extra work as provided in the Standard Specifications.

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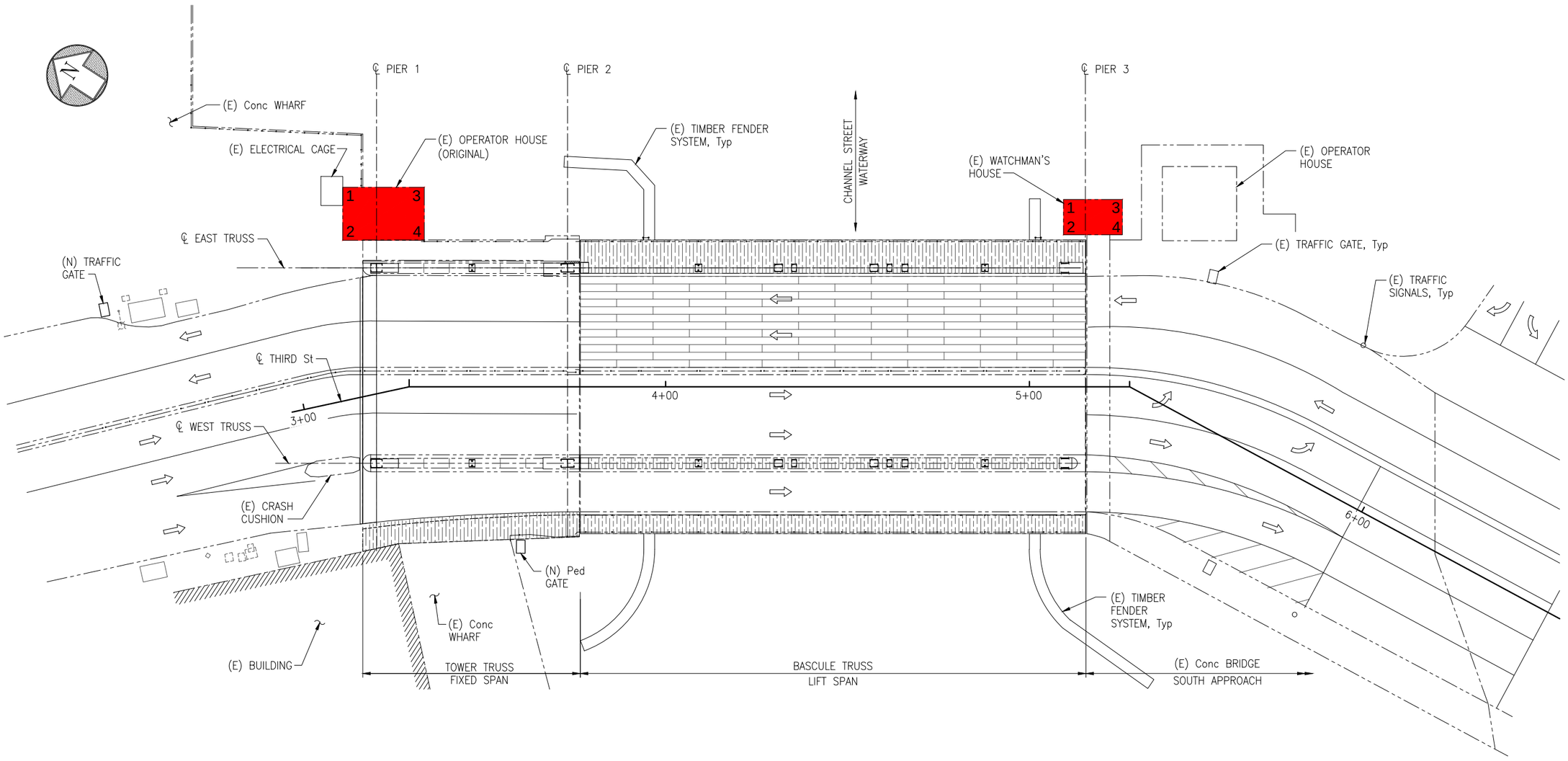
SCALE: AS SHOWN
SHEET OF SHEETS: 13 OF 29

THIRD STREET BRIDGE REHABILITATION PROJECT

STABILIZATION AND MONITORING PLAN NO. 1

CONTRACT NO. 2317J
DRAWING NO. PD-13
FILE NO.
REV. NO. 0



VIBRATION MONITORING LOCATIONS

LEGEND:

1 3
2 4 Indicates Vibration Monitoring locations

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SAN FRANCISCO PUBLIC WORKS

DESIGN AND ENGINEERING DIVISION
SAN FRANCISCO PUBLIC WORKS
30 VAN NESS AVENUE, 5TH FLOOR
SAN FRANCISCO, CA 94102 - 6028

		Date:
Section Mgr:	RAYMOND LUI	
Deputy Division Mgr:	FERNANDO CISNEROS	
Division Mgr:	PATRICK RIVERA	

DESIGNED: C.J.P.	DATE: 03/06/18
DRAWN: G.C.I.	DATE: 03/06/18
CHECKED: M.J.C.	DATE: 03/06/18

SCALE: AS SHOWN

SHEET OF SHEETS: 14 OF 29

THIRD STREET BRIDGE REHABILITATION PROJECT

STABILIZATION AND MONITORING PLAN NO. 2

CONTRACT NO. 2317J
DRAWING NO. PD-14
FILE NO.
REV. NO. 0

Drawing Path: H:\240679 SF 3rd Street Bridge\Planning Dept\PD-14 - STAB-MONT-02.dwg, Login: gimbsen
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Measurement Units are English

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59 STRUCTURAL STEEL COATINGS

Add to section 59-1.01C:

You must submit a written program for air monitoring at the project site to confirm that dust emissions do not exceed the environmental requirements and impact public health. At no time shall fugitive dust or over-spray be allowed beyond the containment structure. At no time shall any fugitive dust or over-spray be allowed to enter the waterway.

The manufacturer must provide written certification that the site supervisor and each applicator performing work on the project have been trained and approved by the manufacturer to apply the selected coating system. The manufacturer must state whether or not it has verified that you will use the proper mixing, coating application, heating, and environmental control equipment for the specified coating products.

You must submit the data and specification sheets for the type of mixing, pumping, and heating equipment to be used for the paint application.

You must submit the data and specifications sheets for the size and type of dehumidification equipment to be used.

Add to section 59-1.01D:

For surfaces having a total dry film coating thickness of 20 mils or less, a non-destructive type holiday detector, Tinker & Rasor Model M1, Elcometer 270/4, or equal must be used. The unit must operate at less than 75 volts. For thicknesses between 10 and 20 mils, a non-sudsing type wetting agent, such as Kodak Photo Flo or equal must be added to the water prior to wetting the detector sponge.

Replace the list in the 2nd paragraph of section 59-1.02B with:

1. Clean dry grit. Do not use unwashed beach sand containing salt or excessive silt.
2. Mineral grit.
3. Steel grit.
4. Manufactured abrasives.

Replace the 2nd paragraph of section 59-1.02C with:

Coatings selected for use must comply with the volatile organic compound concentration limits specified for the air quality district where the project is located - Bay Area Air Quality Management District (BAAQMD).

Add to section 59-1.03B:

Do not apply moisture-cured polyurethane coating if any of the following atmospheric conditions exist:

1. Atmospheric or surface temperature is less than 5 degrees F above the dew point
2. Relative humidity is less than 35 percent
3. Relative humidity is more than 85 percent

The atmospheric and surface temperatures must remain from 36 to 100 degrees F during application and curing time until the film is considered dry-hard under ASTM D1640.

Add to section 59-1.03:

59-1.03E Ambient Air Quality Program

You must prepare a written program for air monitoring at the project site to confirm that VOC and dust emissions do not exceed the specified criteria and impact worker or public health. The following must be addressed:

1. You must monitor emissions of particulate matter equal to or greater than 10 micrometers in aerodynamic size (PM 10) in accordance with 40 CFR 50. The type and number of samplers to be used, their proposed locations, provisions for background monitoring, and the duration of testing must be provided.
2. Observations that will be made to verify that the visible emissions criteria of this specification are not exceeded in accordance with 40 CFR 60.
3. Analysis of airborne lead emissions in accordance with 40 CFR 50 must be performed. The type and number of samplers to be used, their proposed locations, provisions for background monitoring, and the duration of testing must be provided.
4. You must provide a minimum of 96 hours of ambient air monitoring at the start and middle of the surface preparation operations.

Add to section 59-2.01A(1):

Clean and paint portions of the existing steel bridge shown in the following table with the coating system specified:

Bridge name and number	Work description	Coating system
Third Street Bridge (Bridge Number 34C0025)	Clean and paint all steel surfaces of the existing bridge.	Moisture-Cured Polyurethane Coating System and Epoxy Coating System as designated by zone

Replace *Reserved* in section 59-2.01B(2)(a) with:

Scaffolding or supports for the ventilated containment system must not extend below the vertical clearance level of the roadway. Scaffolding or supports suspended from the bottom of the bridge should be as high as possible to remain above high tides, but must be designed to be watertight when submerged by higher than average tides.

Replace *Reserved* in section 59-2.01A(3)(b) with:

Submit proof of each required SSPC-QP certification as specified in section 8-1.04C. Required certifications are:

1. SSPC-QP 1
2. SSPC-QP 2, Category A
3. AISC-420-10/SSPC-QP 3, enclosed shop

Add to section 59-2.01C(2)(a):

The containment system must provide a vertical clearance of 18 feet and a horizontal clearance of 3 feet for the passage of traffic.

Replace the list in the 2nd paragraph of section 59-2.01C(2)(a) with:

1. SSPC-Guide 6 Class 1 A
2. Ventilated containment system
3. Vacuum-shrouded surface preparation equipment and drapes and ground covers
4. Equivalent containment system if authorized
5. 6 mil-thick polyethylene sheet shrink wrap

Add after the 1st sentence of the 1st paragraph of section 59-2.01C(3)(b)(i):

For bridge no. 34C0025, clean previously painted surfaces of spans 1 through 3 by steam cleaning before performing other cleaning or painting activities.

Add to section 59-2.01C(3)(b)(i):

Clean inside surfaces of bolt holes under SSPC-SP 1 and remove visible rust.

Add to section 59-2.01C(3)(b)(ii):

Blast clean all steel surfaces of bridge no. 34C0025 to bare metal under SSPC-SP 10/NACE no. 2. After blast cleaning, surfaces must have a dense, uniform, angular anchor pattern of at least 1.5 mils (2.5 mils maximum) when measured under ASTM D4417.

Add to section 59-2.01C(4)(b)(i):

Coat the inside surfaces of bolt holes cleaned under SSPC-SP 1 with 1 coat of organic zinc primer after applying the undercoat to adjacent steel surfaces. Protect the adjacent undercoated surfaces from the organic zinc primer.

Replace *Reserved* in section 59-2.01C(4)(d) with:

Moisture-cured polyurethane coating systems must comply with the requirements shown in the following table:

Moisture-Cured Polyurethane Coating System Requirements

Surface	Description	Coating	Dry film thickness (mils)
Connections to new structural steel	Undercoat	Inorganic zinc primer, AASHTO M 300 Type I or II or Single-component, zinc-rich moisture-cured polyurethane listed on Caltrans Authorized Material List (AML)	3–5
	Finish Coat	Epoxy with a minimum of 75% solids by volume or single-component, micaceous iron oxide–filled moisture-cured polyurethane with a minimum of 62% solids by volume	3–5
	Total thickness, all coats		6-10
Surfaces cleaned to bare metal[a] Zone #3 from top of bridge down to road deck	1st undercoat	Inorganic zinc primer, AASHTO M 300 Type I or II or Single-component, zinc-rich moisture-cured polyurethane listed on Caltrans Authorized Material List (AML)	3–5
	2nd undercoat	Epoxy with a minimum of 75% solids by volume or single-component, micaceous iron oxide–filled moisture-cured polyurethane with a minimum of 62% solids by volume	3–5
	Finish coat	Aliphatic polyurethane with a minimum of 65% solids by volume or micaceous iron oxide with a minimum of 63% solids by volume. Selected product must have a matte or satin finish and must be on Caltrans Authorized Material List (AML)	2–4
	Total thickness, all coats		8–14
Surfaces cleaned to bare metal[a] Zone #2 from road deck down to high water line	1st undercoat	Inorganic zinc primer, AASHTO M 300 Type I or II or Single-component, zinc-rich moisture-cured polyurethane listed on Caltrans Authorized Material List (AML)	3–5
	2nd undercoat	Epoxy with a minimum of 75% solids by volume or single-component, micaceous iron oxide–filled moisture-cured polyurethane with a minimum of 62% solids by volume	3–5
	Finish coat	Epoxy with a minimum of 75% solids by volume or single-component, micaceous iron oxide–filled moisture-cured polyurethane with a minimum of 62% solids by volume	2–4
	Total thickness, all coats		8–14

Epoxy Coating System Requirements

Surface	Description	Coating	Dry film thickness (mils)
Surfaces cleaned to bare metal[a] Zone #1 from the low tide to high tide elevation including splash zone	Finish coat	Epoxy that can be applied using airless spray at a minimum of 18 mils per coat. The epoxy must have a minimum of 85% solids by volume. The epoxy must be capable of curing while immersed in seawater within 1 hour of being applied without any blistering, foaming, or delaminating.	18 minimum
	Total thickness, all coats		18 minimum
Surfaces cleaned to bare metal[a] Zone #0 from the low tide to high tide elevation including splash zone	Finish coat	Epoxy that can be applied using hand tools at a minimum of 125 mils per coat. The epoxy must have a minimum of 100% solids by volume. The epoxy must be capable of curing while immersed in seawater within 40 minutes of being without	125 minimum
elevation including splash zone		by volume. The epoxy must be capable of curing while immersed in seawater within 40 minutes without any blistering, foaming, or delaminating. The finish coat must me black or other dark color.	
	Total thickness, all coats		125 minimum

[a]Includes locations of spot blast cleaning

The undercoats and finish coat must be from the same manufacturer.

You may thin moisture-cured polyurethane under the manufacturer's instructions.

Moisture-cured polyurethane may entrap bubbles within the coating film when applied at excessive film thicknesses. Repair or remove and replace coating that exhibits bubbling.

The finish coat must match color no. 27038 of FED-STD-595.

You must provide samples for the Engineer and City's approval prior to material procurement.

Add to section 59-2.01C(4):

59-2.01C(4)(e) 2-Component Hand Applied Tidal and Spray Zone Repair Coating System for Repair of Paint at CISS Piles

59-2.01C(4)(e)(i) General

Section 59-2.01C(4)(e) includes specifications for preparing and coating repair of existing paint on CISS pile shells in the tidal and splash zones.

59-2.01C(4)(e)(ii) Materials

Coating must be a self-priming, solvent free 2-component epoxy patching material with the ability to be mixed, applied, and cured under water. The manufacturer must have over 10 years of supplying successful products in similar applications.

59-2.01C(4)(e)(iii) Application

Substrate must be cleaned under 59-2.01C(3)(b)(ii), Blast Cleaning, and manufacturers' instructions.

Material application conditions must comply with the requirements shown in the following table:

Condition	Material	Surface	Ambient	Humidity
Maximum	50 ºF (10 ºC)	50 ºF (10 ºC)	50 ºF (10 ºC)	0%
Maximum	100 ºF (38 ºC)	100 ºF (38 ºC)	100 ºF (38 ºC)	100%

Add to section 59-3.03:

For bridge no. 34C0025, exposed surfaces of hanger rod and sleeves, the 2nd finish coat must match color no. 27038 of FED-STD-595.

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98 BRIDGE MACHINERY OPERATING REHABILITATION

98-1.03D Painting

1. Cleaning and painting of machinery metalwork surfaces must conform to Caltrans standard requirements for structural painting and must be indicated on the shop drawings. Factory painted environments, which must be submitted to the Engineer for approval. If the manufacturer does not have a recommended high performance paint system, the components must be painted according to the paint system and requirements specified herein. Factory painted machinery items must either be painted with a top coat color matching as close as possible to the top coat color, as discussed herein, or must be hand tool and solvent cleaned and overcoated with the top coat of the specified paint system in the appropriate color as discussed herein. You must coordinate required paint colors with the machinery component manufacturers. Manufacturer's paint system and coat colors must be submitted to the Engineer for approval.
4. The paints must be of one manufacturer and must conform to the chemical and performance requirements of the manufacturer's published technical data application information, and the referenced specifications.
5. All metalwork to be painted must be blast cleaned to an SSPC SP10 near-white blast.
6. All metalwork to be painted must receive the 3-coat specified paint system in the shop with the exception of the finished, bearing, and lubricated surfaces.
7. You will not be allowed to clean or paint at night. All cleaning and painting must be performed only during daylight hours.
8. Coatings application must be in accordance with the manufacturer's recommendations, SSPC-PA 1 Paint application Specification No. 1 and these specifications, whichever is more stringent.
9. Coatings must be applied only to surfaces prepared in accordance with the manufacturer's recommendations and these specifications.
10. Paint systems may be applied by conventional air spray, airless spray equipment or brush in accordance with the manufacturer's recommendations and these specifications.
11. The painted surfaces must be free from dry spray, over spray, runs, sags, drips, excessive paint build-up, ridges, waves, laps, streaks, brush marks and variations in color, texture and finish (glossy or dull). The coverage must be complete and each coat must be so applied as to produce an even film of uniform thickness, completely coating corners and crevices, and bonded to the underlying surface. When spot repairs are necessary, the edges of the surrounding coating must be feathered, leaving surfaces prior to painting, tapered and free of loose or damaged coating. Care must be exercised to avoid over spraying or spattering paint on surfaces not to be coated. Damage to surfaces not to be coated must be repaired by you at your expense.
12. All items not to be painted must be covered or protected from cleaning and painting and must be cleaned of overspray. The coverage and protection measures must be submitted to and approved by the Engineer.
13. Machinery component surfaces to be painted must be given one prime coat in the shop. A second touch-up prime coat must be field applied to damaged or unprimed metalwork and a full intermediate coat applied after machinery and equipment have been installed. The final high gloss top coat must be applied after completion of operating tests. Color for the top coat will be Federal Safety Orange for all moving parts. Color for the top coat of stationary parts will be Federal Safety Green.
14. Before application of paint in the shop, surfaces which require painting must be cleaned of all chips, burrs, dirt, rust, mill scale, sand, grease, and other extraneous materials by employing methods such as chipping, grinding, wire brushing, solvents, followed by the required abrasive blast cleaning and residual removal by compressed air. Finished machined surfaces not to be painted must be masked or shielded from abrasive blasting operations. After cleaning, surfaces requiring paint must be painted with one prime coat. Bearing or sliding surfaces that are not painted must be coated with temporary protective materials as approved by the Engineer. Nameplates must be clean and free of paint.
15. After the machinery items have been installed in final position on the bridge, all surfaces which require paint must be cleaned of grease, oil, and loose materials by the use of solvents and compressed air, and all unprimed or damaged shop prime coated surfaces must be repaired with the touch-up primer followed by a full intermediate coat. You must take special care to avoid painting of machinery bearing and sliding surfaces and to mask and protect from paint these surfaces and all nameplates, legend plates, and escutcheons mounted on machinery.
16. After completion of the operating tests and acceptance of the machinery, all oil, grease, dirt, and other foreign matter must again be cleaned from exposed machinery surfaces. The exposed surfaces must then be given a third field coat, the top coat, which must color-code the machinery to identify fixed and moving parts as indicated previously and as shown on the shop drawings.
17. Should the top coat of paint submitted and approved for use on the structural metalwork not be available in the safety colors required for the machinery metalwork, a substitute top coat meeting the performance and color requirements of the top coat specified and compatible with the specified intermediate coat must be submitted to the Engineer for approval. You must place a cautionary sign in the Operator's House and at the entrance to the machinery area of each leaf to explain the color code. Details of the sign including text, dimensions, mounting locations, and materials must be submitted to the Engineer for approval.

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PREPARED FOR SAN FRANCISCO PLANNING DEPARTMENT

TRC
10680 White Rock Road
Rancho Cordova, CA 95670

NO.	DATE	DESCRIPTION	BY	APP.

TABLE OF REVISIONS
THIS DRAWING WAS LAST MODIFIED: 02/15/18 12:27, BY: gimbsen

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SEAL OF THE CITY AND COUNTY OF SAN FRANCISCO

REGISTERED PROFESSIONAL ENGINEER — No. ____ — CIVIL — STATE OF CALIFORNIA
NOT FOR CONSTRUCTION

SAN FRANCISCO PUBLIC WORKS

DESIGN AND ENGINEERING DIVISION
SAN FRANCISCO PUBLIC WORKS
30 VAN NESS AVENUE, 5TH FLOOR
SAN FRANCISCO, CA 94102 - 6028

		Date:
Section Mgr:	RAYMOND LUI	
Deputy Division Mgr:	FERNANDO CISNEROS	
Division Mgr:	PATRICK RIVERA	

DESIGNED: C.J.P.	DATE: 03/06/18
DRAWN: G.C.I.	DATE: 03/06/18
CHECKED: M.J.C.	DATE: 03/06/18

SCALE: NO SCALE

SHEET OF SHEETS: 15 OF 29

THIRD STREET BRIDGE REHABILITATION PROJECT

PAINT ANALYSIS

CONTRACT NO. 2317J
DRAWING NO. PD-15
FILE NO.
REV. NO. 0

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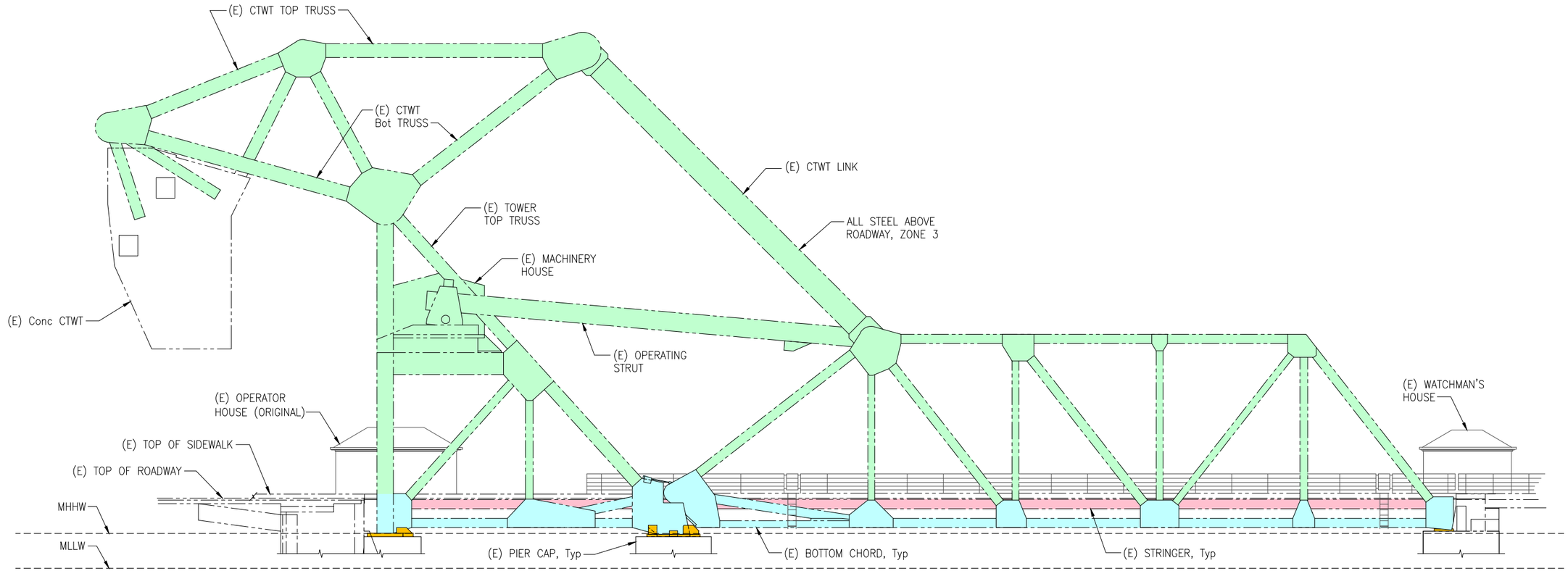
Measurement Units are English



ELEVATION
SCALE: 1"=10'

LEGEND:

Indicates Zone 0 Coating:
Bearings, Mounting Plates and Anchors

Indicates Zone 1 Coating:
Bottom Gusset Connections
Bottom Chords
Floor Beams
Bottom Laterals
Sway Braces
FB 16B Cantilever Stringers

Indicates Zone 2 Coating:
Truss Verticals and Diagonals between Bottom Chord and Deck
Sill Beams
Stringers except FB 16B Cantilever Stringers (See Note 2)

Indicates Zone 3 Coating:
Truss Chords, Diagonals, Verticals, Gussets and Laterals above the Deck
CTWT Trusses and Laterals
Machinery House
Stairs, Landings and Ladders

NOTES:

1. For steel deck plate details, see "DECK REPAIR AND REPLACEMENT" dwgs.
2. Replacement stringers to be shop coated.

PREPARED FOR SAN FRANCISCO PLANNING DEPARTMENT

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DESIGN AND ENGINEERING DIVISION
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SAN FRANCISCO, CA 94102 - 6028

		Date:
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Deputy Division Mgr:	FERNANDO CISNEROS	
Division Mgr:	PATRICK RIVERA	

DESIGNED:	C.J.P.	03/06/18
DRAWN:	G.C.I.	03/06/18
CHECKED:	M.J.C.	03/06/18

SCALE: 1"=10'
SHEET OF SHEETS: 16 OF 29

THIRD STREET BRIDGE REHABILITATION PROJECT

COATING ZONES NO. 1

CONTRACT NO. 2317J
DRAWING NO. PD-16
FILE NO.
REV. NO. XX

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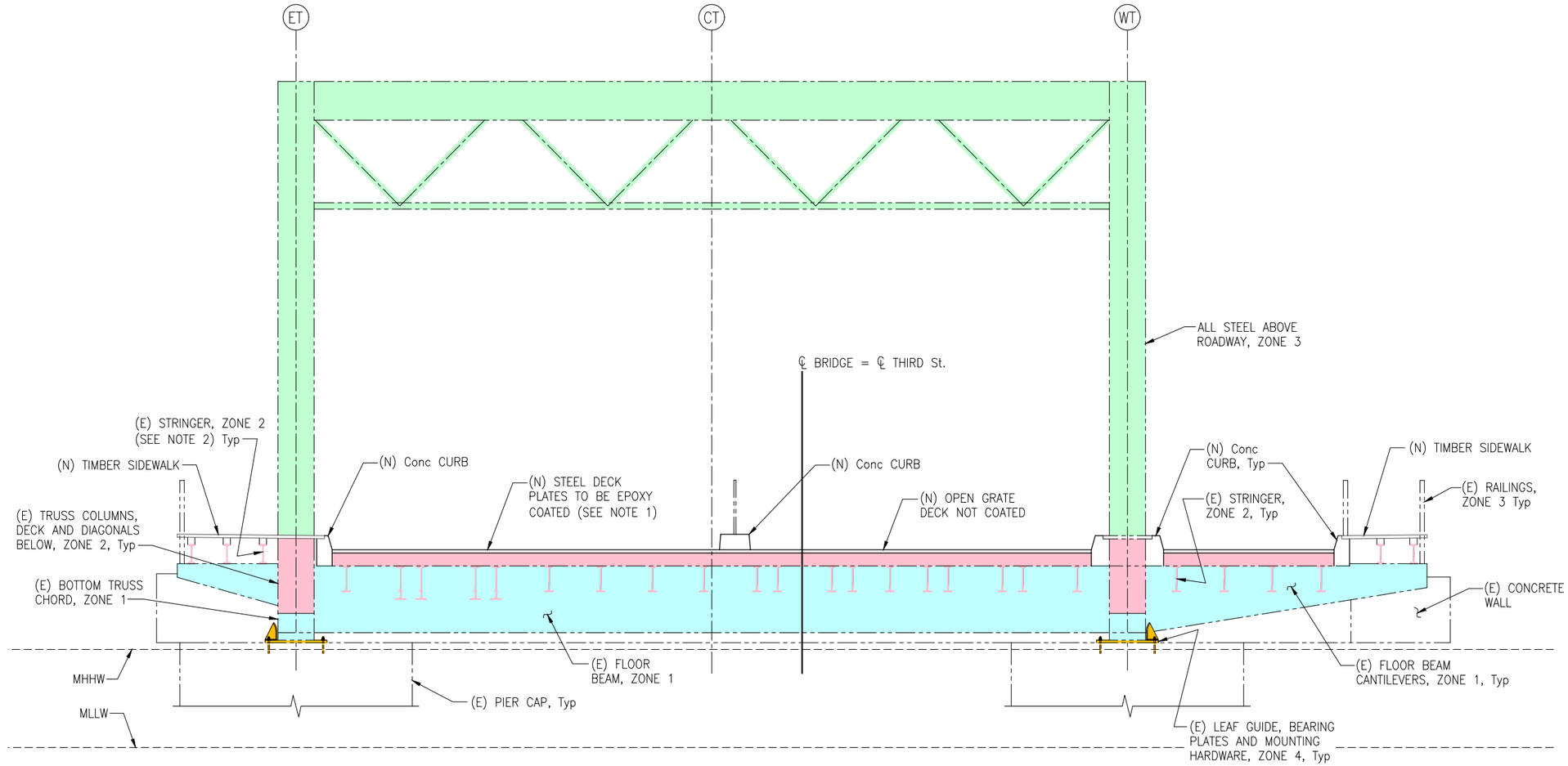

PIER 3 SHOWN, OTHERS SIMILAR

SECTION

SCALE: 1/4"=1'-0"

LEGEND:

Indicates Zone 0 Coating:
- Bearings, Mounting Plates and Anchors

Indicates Zone 1 Coating:
- Bottom Gusset Connections
- Bottom Chords
- Floor Beams
- Bottom Laterals
- Sway Braces
- FB 16B Cantilever Stringers

Indicates Zone 2 Coating:
- Truss Verticals and Diagonals between Bottom Chord and Deck
- Sill Beams
- Stringers except FB 16B Cantilever Stringers (See Note 2)

Indicates Zone 3 Coating:
- Truss Chords, Diagonals, Verticals, Gussets and Laterals above the Deck
- CTWT Trusses and Laterals
- Machine Room
- Stairs, Landings and Ladders

NOTES:

1. For steel deck plate details, see "DECK REPAIR AND REPLACEMENT" dwgs.
2. All new steel to be shop coated.

PREPARED FOR SAN FRANCISCO PLANNING DEPARTMENT

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THIS DRAWING WAS LAST MODIFIED: 02/15/18 11:26, BY: gimbsen

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SAN FRANCISCO, CA 94102 - 6028

		Date:
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Deputy Division Mgr:	FERNANDO CISNEROS	
Division Mgr:	PATRICK RIVERA	

DESIGNED:	C.J.P.	03/06/18
DRAWN:	G.C.I.	03/06/18
CHECKED:	M.J.C.	03/06/18

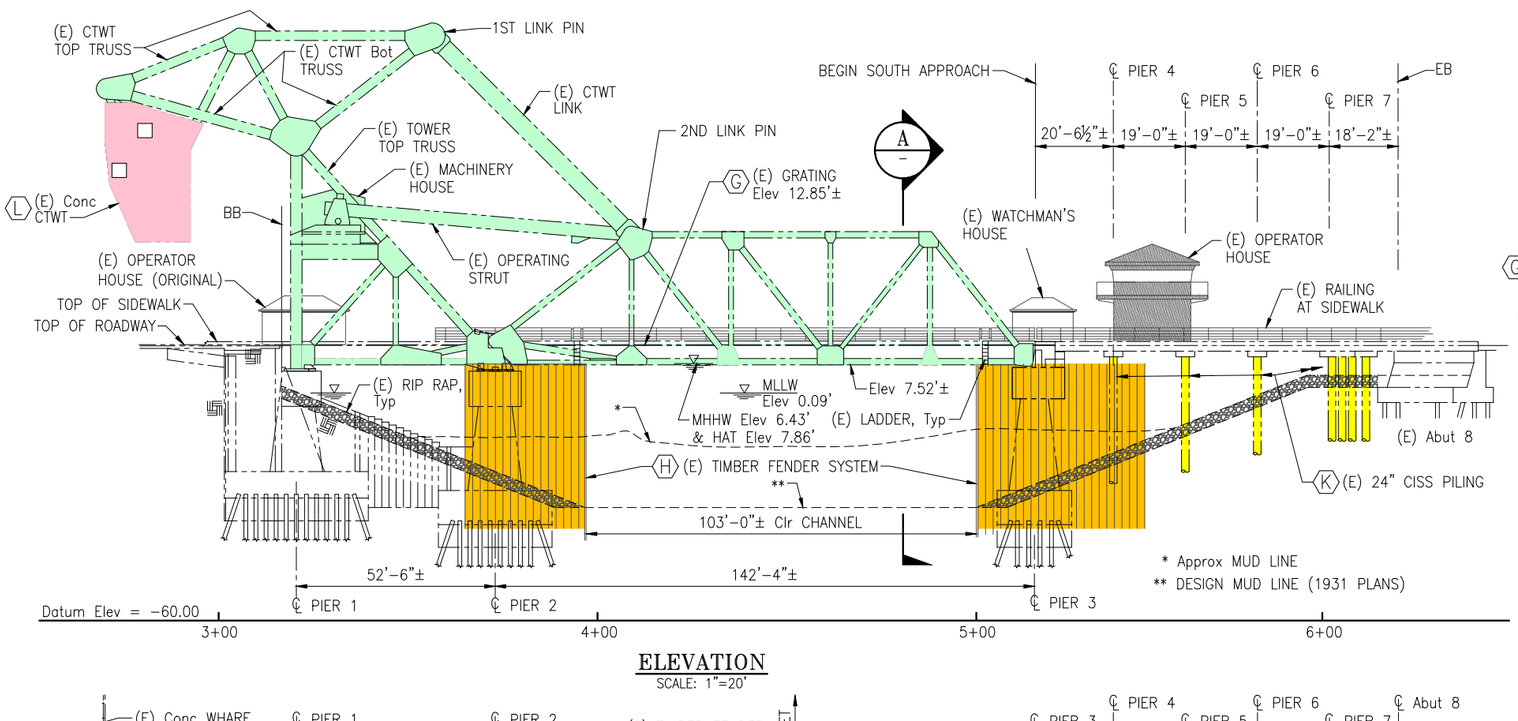
SCALE: 1"=10'

SHEET OF SHEETS: 17 OF 29

THIRD STREET BRIDGE REHABILITATION PROJECT

COATING ZONES NO. 2

CONTRACT NO. 2317J
DRAWING NO. PD-17
FILE NO.
REV. NO. XX



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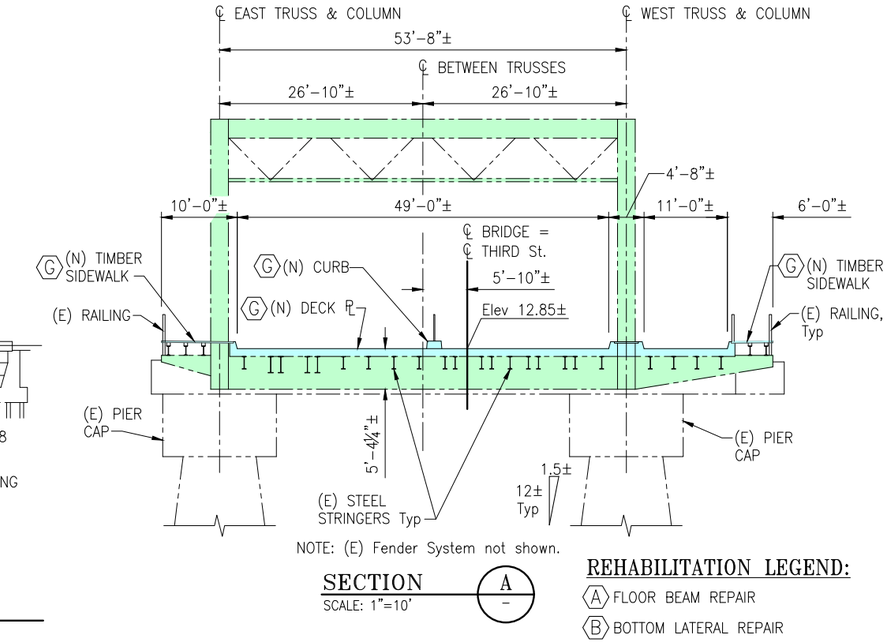
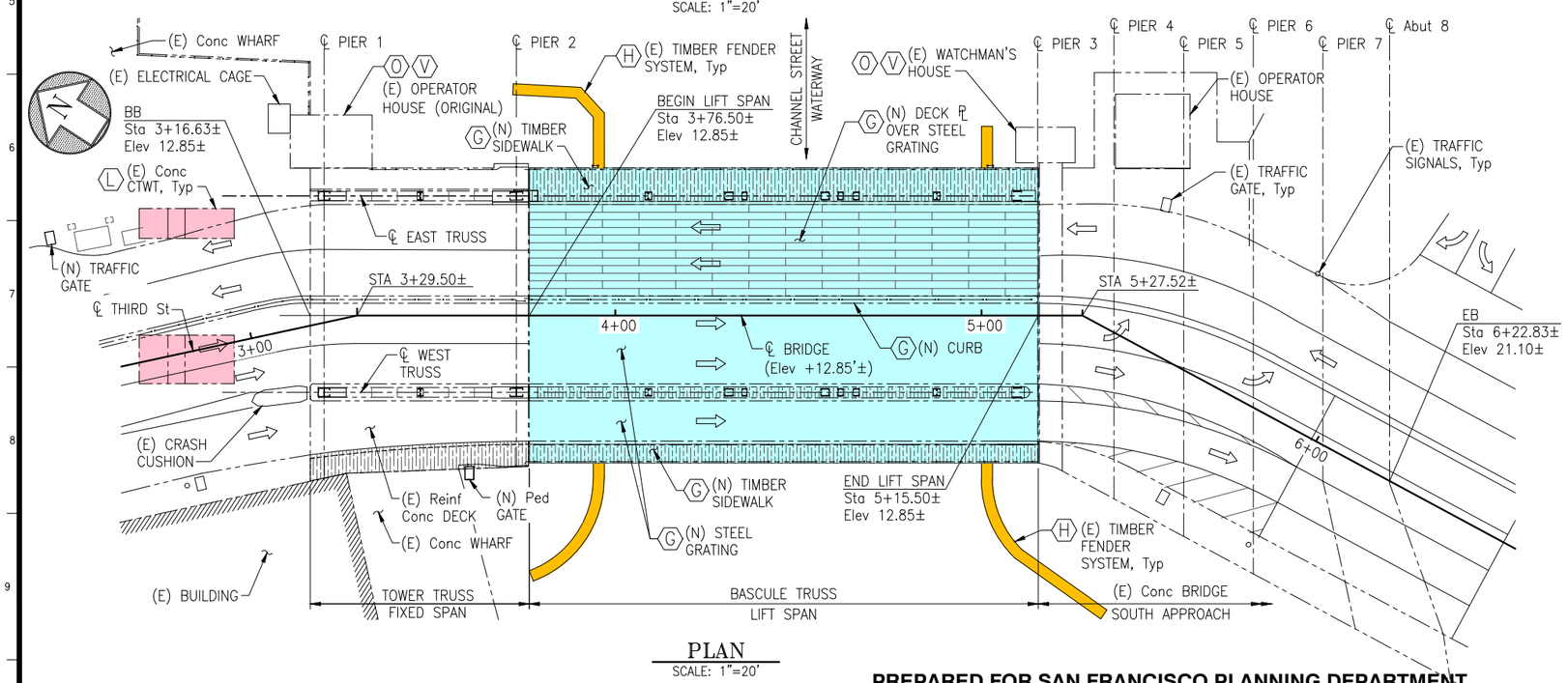


NOTE: (E) Fender System not shown.

SECTION
SCALE: 1"=10'



PLAN
SCALE: 1"=20'

NOTES:

1. For Index to Bridge Plans, General Notes & Symbols, see dwg G-03 & G-04.
2. Mean water elevations and Rip Rap locations were taken from reference plans dated 1931.
3. Elevation Datum for these plans and for reference plans is City of San Francisco Datum. See Bench Mark description on dwg BR-SXX.
4. All rehabilitation not shown, see plans for additional rehabilitation.

LEGEND:

- Indicates Existing Structure
- Indicates New Structure
- Indicates Direction of Traffic
- Indicates Turning Lane
- Indicates Deck Replacement
- Indicates Counterweight Repairs
- Indicates Truss Repair & Coating
- Indicates Fender Rehabilitation
- Indicates Ciss Pile Repair

REHABILITATION LEGEND:

(A) FLOOR BEAM REPAIR
(B) BOTTOM LATERAL REPAIR
(C) STIFFEN GUSSET PLATE
(D) FASTENER REPAIR
(E) ELECTRICAL REPAIR & UPGRADE
(F) REPLACE HANGER ROD AND SLEEVE
(G) DECK SYSTEM REPLACEMENT
(H) FENDER SYSTEM REPAIR
(J) CTWT TRUSS FRAME REPAIR
(K) CLEAN & RE-COAT 24" CISS PILING
(L) CONCRETE COUNTERWEIGHT REPAIR
(M) MECHANICAL REPAIR & UPGRADE
(N) PIER AND ABUTMENT REPAIR
(O) SOFFIT REPAIR
(P) PACK RUST REPAIR
(Q) TRUSS MEMBER REPAIR
(R) TRUSS LATERAL REPAIR
(S) SWAY BRACE REPAIR
(T) STAIR REPAIR
(U) STRINGER REPAIR
(V) COLUMN REPAIR
(W) DRILL WEEP HOLES
(X) LADDER SAFETY CAGE
(Y) STRINGER DIAPHRAGM

PREPARED FOR SAN FRANCISCO PLANNING DEPARTMENT

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THIS DRAWING WAS LAST MODIFIED: 02/15/18 11:31, BY: gimbsen

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REGISTERED PROFESSIONAL ENGINEER No. CIVIL STATE OF CALIFORNIA
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Division Mgr:	PATRICK RIVERA	

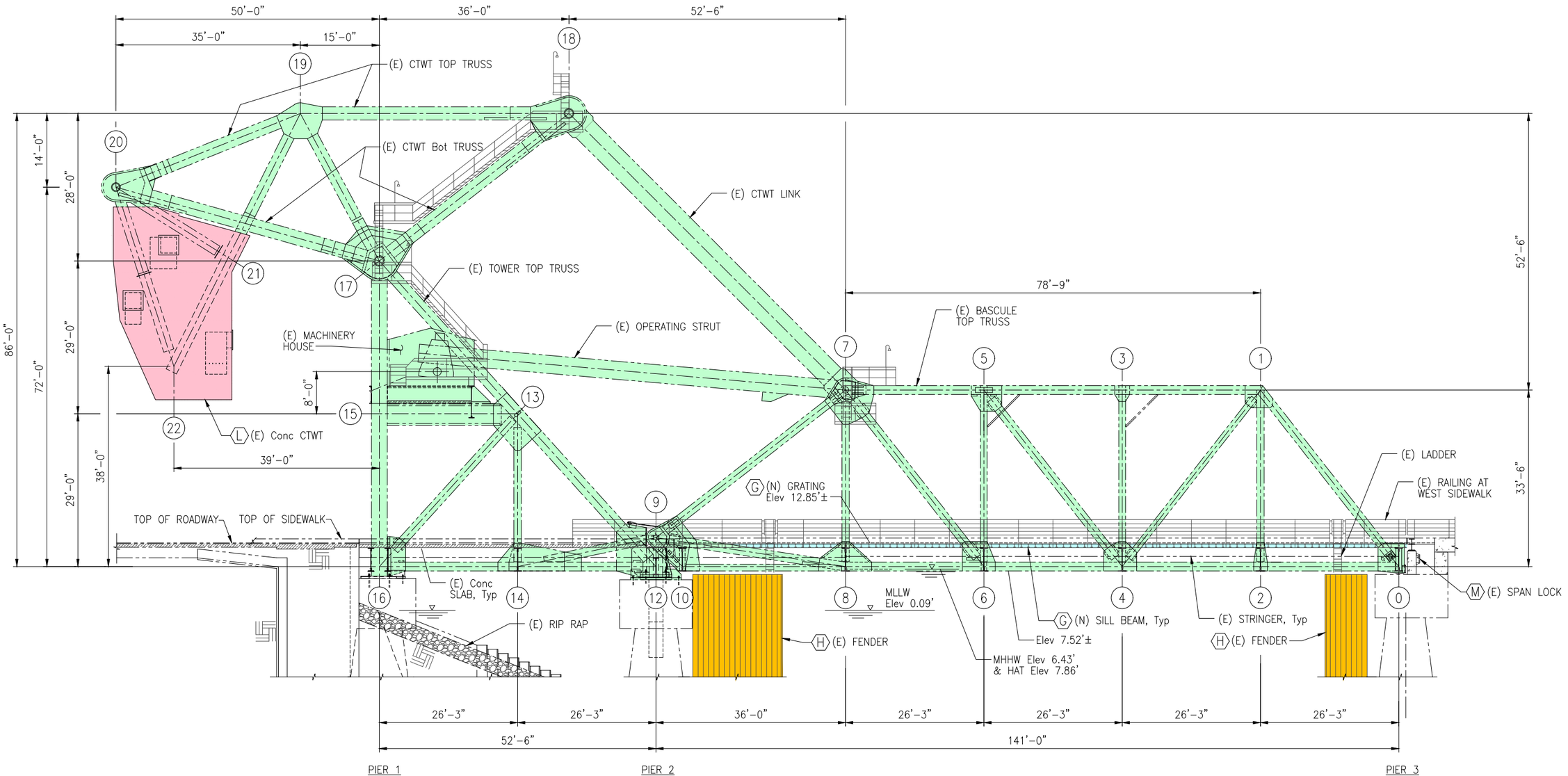
DESIGNED:	C.J.P.	03/06/18
DRAWN:	G.C.I.	03/06/18
CHECKED:	M.J.C.	03/06/18

SCALE: AS SHOWN
SHEET OF SHEETS: 18 OF 29

THIRD STREET BRIDGE REHABILITATION PROJECT

GENERAL PLAN

CONTRACT NO. 2317J
DRAWING NO. PD-18
FILE NO.
REV. NO. 0



REHABILITATION LEGEND:

- (G) DECK SYSTEM REPLACEMENT
- (H) FENDER SYSTEM REPAIR
- (L) CONCRETE COUNTERWEIGHT REPAIR
- (M) MECHANICAL REPAIR & UPGRADE

ALL DIMENSIONS SHOWN ARE ±

ELEVATION
SCALE: 1"=10'

NOTES:

1. Mean water elevations and Rip Rap locations were taken from reference plans dated 1931.
2. All rehabilitation not shown, see plans for additional rehabilitation.

LEGEND:

Indicates Deck Replacement

Indicates Counterweight Repairs

Indicates Truss Repair & Coating

Indicates Fender Rehabilitation

PREPARED FOR SAN FRANCISCO PLANNING DEPARTMENT

TRC
10680 White Rock Road
Rancho Cordova, CA 95670

NO.	DATE	DESCRIPTION	BY	APP.

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DESIGN AND ENGINEERING DIVISION
SAN FRANCISCO PUBLIC WORKS
30 VAN NESS AVENUE, 5TH FLOOR
SAN FRANCISCO, CA 94102 - 6028

		Date:
Section Mgr:	RAYMOND LUI	
Deputy Division Mgr:	FERNANDO CISNEROS	
Division Mgr:	PATRICK RIVERA	

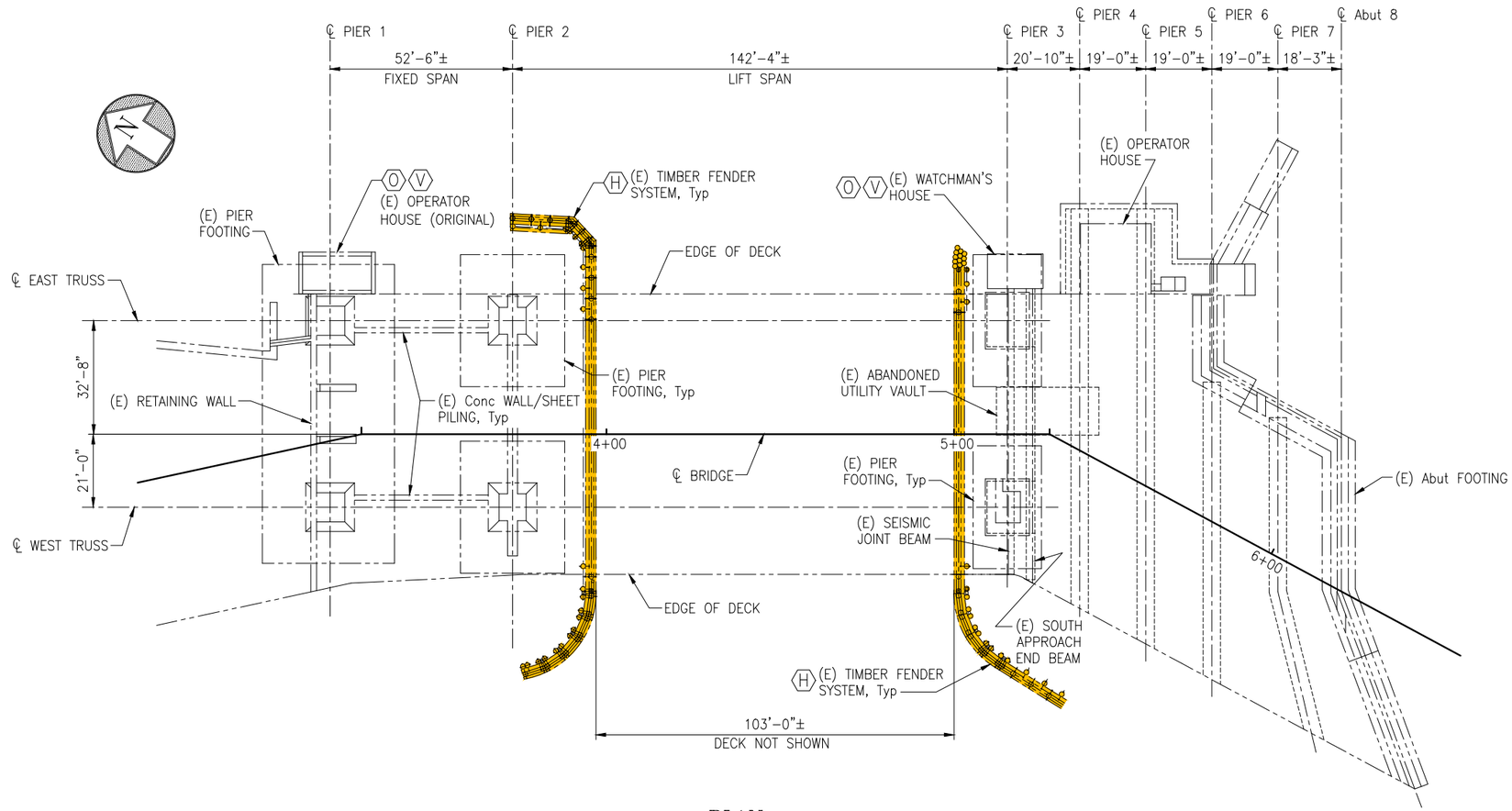
DESIGNED: C.J.P.	DATE: 03/06/18
DRAWN: G.C.I.	DATE: 03/06/18
CHECKED: M.J.C.	DATE: 03/06/18

SCALE: AS SHOWN
SHEET OF SHEETS: 19 OF 29

THIRD STREET BRIDGE REHABILITATION PROJECT

WEST ELEVATION

CONTRACT NO. 2317J
DRAWING NO. PD-19
FILE NO.
REV. NO. 0



PLAN
SCALE: 1"=20'

LEGEND:

Indicates Fender Rehabilitation

REHABILITATION LEGEND:

- (A) FLOOR BEAM REPAIR
- (B) BOTTOM LATERAL REPAIR
- (C) STIFFEN GUSSET PLATE
- (D) FASTENER REPAIR
- (E) ELECTRICAL REPAIR & UPGRADE
- (F) REPLACE HANGER ROD AND SLEEVE
- (G) DECK SYSTEM REPLACEMENT
- (H) FENDER SYSTEM REPAIR
- (J) CTWT TRUSS FRAME REPAIR
- (K) CLEAN & RE-COAT 24" CISS PILING
- (L) CONCRETE COUNTERWEIGHT REPAIR
- (M) MECHANICAL REPAIR & UPGRADE
- (N) PIER AND ABUTMENT REPAIR
- (O) SOFFIT REPAIR
- (P) PACK RUST REPAIR
- (Q) TRUSS MEMBER REPAIR
- (R) TRUSS LATERAL REPAIR
- (S) SWAY BRACE REPAIR
- (T) STAIR REPAIR
- (U) STRINGER REPAIR
- (V) COLUMN REPAIR
- (W) DRILL WEEP HOLES
- (X) LADDER SAFETY CAGE
- (Y) STRINGER DIAPHRAGM

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30 VAN NESS AVENUE, 5TH FLOOR
SAN FRANCISCO, CA 94102 - 6028

		Date:
Section Mgr:	RAYMOND LUI	
Deputy Division Mgr:	FERNANDO CISNEROS	
Division Mgr:	PATRICK RIVERA	

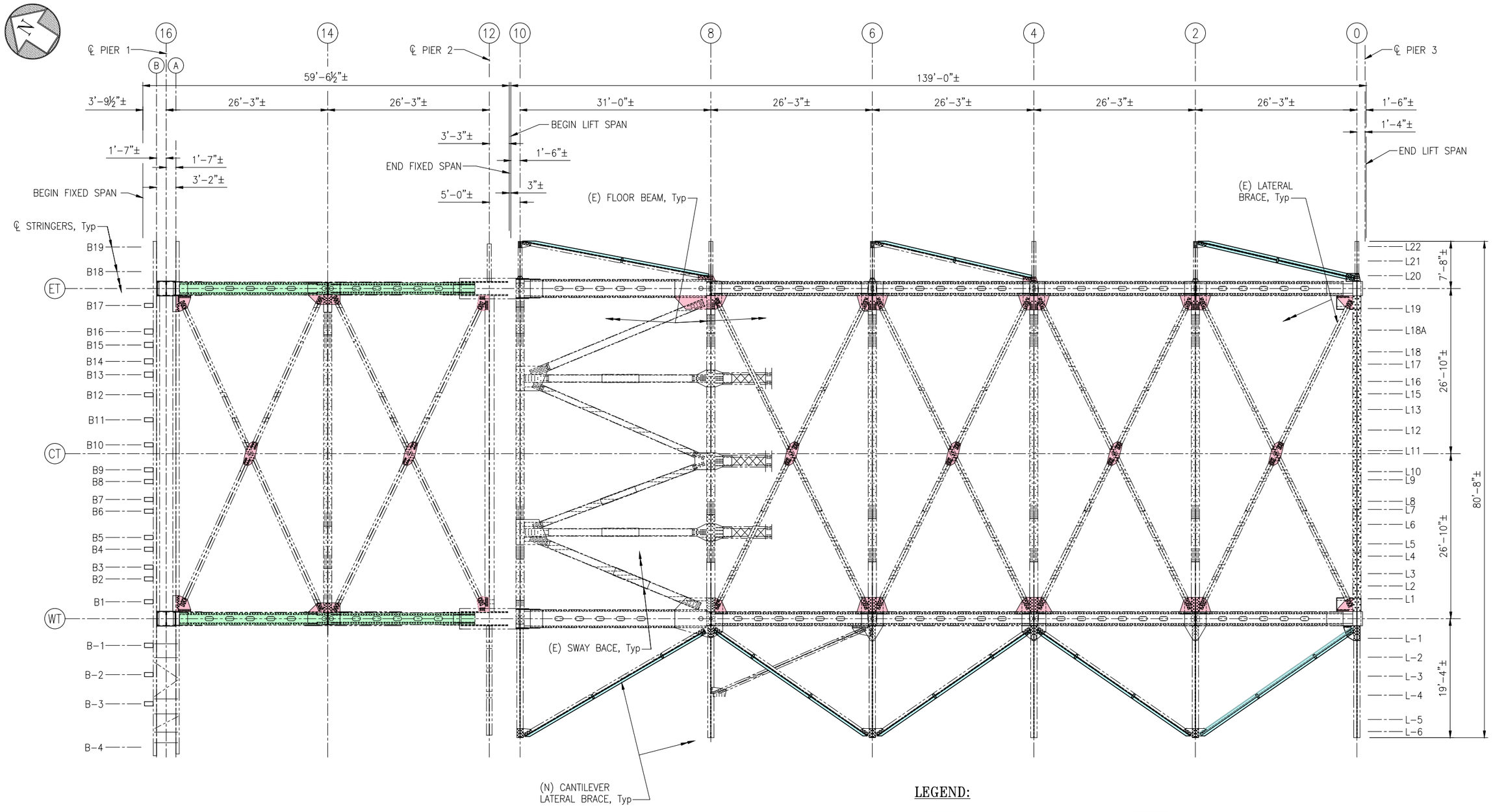
DESIGNED:	C.J.P.	03/06/18
DRAWN:	A.R.C.	03/06/18
CHECKED:	M.J.C.	03/06/18

SCALE: AS SHOWN
SHEET OF SHEETS: 20 OF 29

THIRD STREET BRIDGE REHABILITATION PROJECT

PIER LAYOUT

CONTRACT NO. 2317J
DRAWING NO. PD-20
FILE NO.
REV. NO. 0



NOTE: DECK AND SILL BEAMS NOT SHOWN FOR CLARITY

LEGEND:

Indicates Bottom Lateral Repair

Indicates Gusset Plate Repairs

Indicates Truss Repairs

PLAN
SCALE: 1/8"=1'-0"

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DESIGN AND ENGINEERING DIVISION

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30 VAN NESS AVENUE, 5TH FLOOR
SAN FRANCISCO, CA 94102 - 6028

		Date:
Section Mgr:	RAYMOND LUI	
Deputy Division Mgr:	FERNANDO CISNEROS	
Division Mgr:	PATRICK RIVERA	

DESIGNED:	DATE: C.J.P. 03/06/18
DRAWN:	DATE: G.C.I. 03/06/18
CHECKED:	DATE: M.J.C. 03/06/18

SCALE: AS SHOWN

SHEET OF SHEETS: 21 OF 29

THIRD STREET BRIDGE REHABILITATION PROJECT

REFLECTED FLOOR PLAN

CONTRACT NO. 2317J

DRAWING NO. PD-21

FILE NO.

REV. NO. 0

Drawing Path: H:\240679 SF 3rd Street Bridge\Planning Dept\PD-21 - FLOOR PLAN.dwg, Login: gimbsen
Plot Time: Wed, 07 Mar 2018 - 10:28am
Xrefs: H:\240679 SF 3rd Street Bridge\Planning Dept\VDC_BORDER.dwg
H:\240679 SF 3rd Street Bridge\Structural\MST_BOT LAT.dwg
H:\240679 SF 3rd Street Bridge\Structural\MST_STRINGERS.dwg
Dimension Scale: 8
Model Units: Undefined
Measurement Units are English

Under seismic joint (Pier 3), looking west
EXAMPLE OF <u>REPAIR</u> WORK

At Pier 1, looking up at cantilver stingers north of Floor Beam 16B
EXAMPLE OF <u>REPLACEMENT</u> WORK

At Pier 1, looking up at cantilver stingers north of Floor Beam 16B
EXAMPLE OF <u>REPLACEMENT</u> WORK

Looking at stiffener on north face of Floor Beam 12
EXAMPLE OF <u>REPAIR</u> WORK

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30 VAN NESS AVENUE, 5TH FLOOR
SAN FRANCISCO, CA 94102 - 6028

		Date:
Section Mgr:	RAYMOND LUI	
Deputy Division Mgr:	FERNANDO CISNEROS	
Division Mgr:	PATRICK RIVERA	

DESIGNED:	C.J.P.	03/06/18
DRAWN:	G.C.I.	03/06/18
CHECKED:	M.J.C.	03/06/18

SCALE: NO SCALE
SHEET OF SHEETS: 22 OF 29

THIRD STREET BRIDGE REHABILITATION PROJECT

TYPICAL DAMAGE NO. 1

CONTRACT NO. 2317J
DRAWING NO. PD-22
FILE NO.
REV. NO. 0

Drawing Path: H:\240679 SF 3rd Street Bridge\Planning Dept\PD-22.dwg Login: gimbsen
Plot Time: Tue, 06 Mar 2018 - 10:29am
Dimension Scale: 8 Xrefs: H:\240679 SF 3rd Street Bridge\Planning Dept\IDC_BORDER.dwg
H:\240679 SF 3rd Street Bridge\Structural\xref\100 ft line-CCSF.dwg
Model Units: Undefined
Measurement Units are English

Looking up a hole in sway brace just south of Floor Beam 10
EXAMPLE OF <u>REPAIR</u> WORK

Damaged laces on sway brace
EXAMPLE OF <u>REPAIR</u> WORK

Bottom flange of Floor Beam 2
EXAMPLE OF <u>REPAIR</u> WORK

Bottom of bottom chord of the east truss
EXAMPLE OF <u>REPAIR</u> WORK (NOTE THAT FASTENERS WILL BE REPLACED)

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30 VAN NESS AVENUE, 5TH FLOOR
SAN FRANCISCO, CA 94102 - 6028

		Date:
Section Mgr:	RAYMOND LUI	
Deputy Division Mgr:	FERNANDO CISNEROS	
Division Mgr:	PATRICK RIVERA	

DESIGNED:	C.J.P.	03/06/18
DRAWN:	G.C.I.	03/06/18
CHECKED:	M.J.C.	03/06/18

SCALE: NO SCALE

SHEET OF SHEETS: 23 OF 29

THIRD STREET BRIDGE REHABILITATION PROJECT

TYPICAL DAMAGE NO. 2

CONTRACT NO. 2317J
DRAWING NO. PD-23
FILE NO.
REV. NO. 0

Drawing Path: H:\240679 SF 3rd Street Bridge\Planning Dept\PD-23.dwg Login: gimbsen
Plot Time: Tue, 06 Mar 2018 - 10:30am
Measurement Units are English
Model Units: Undefined
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H:\240679 SF 3rd Street Bridge\Structural\xref\100 ft line-CCSF.dwg

Bolt on bottom of bottom chord
EXAMPLE OF <u>REPLACEMENT</u> WORK
(FASTENERS ONLY TO BE REPLACED)

Gusset plate connecting Floor Beam 6 and bottom chord of west truss
EXAMPLE OF <u>REPAIR</u> WORK (NOTE THAT FASTENERS WILL BE REPLACED)

Top of gusset plate connecting floor beam, bottom chord and lateral brace
EXAMPLE OF <u>REPAIR</u> WORK

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30 VAN NESS AVENUE, 5TH FLOOR
SAN FRANCISCO, CA 94102 - 6028

		Date:
Section Mgr:	RAYMOND LUI	
Deputy Division Mgr:	FERNANDO CISNEROS	
Division Mgr:	PATRICK RIVERA	

DESIGNED:	C.J.P.	03/06/18
DRAWN:	G.C.I.	03/06/18
CHECKED:	M.J.C.	03/06/18

SCALE: NO SCALE

SHEET OF SHEETS: 24 OF 29

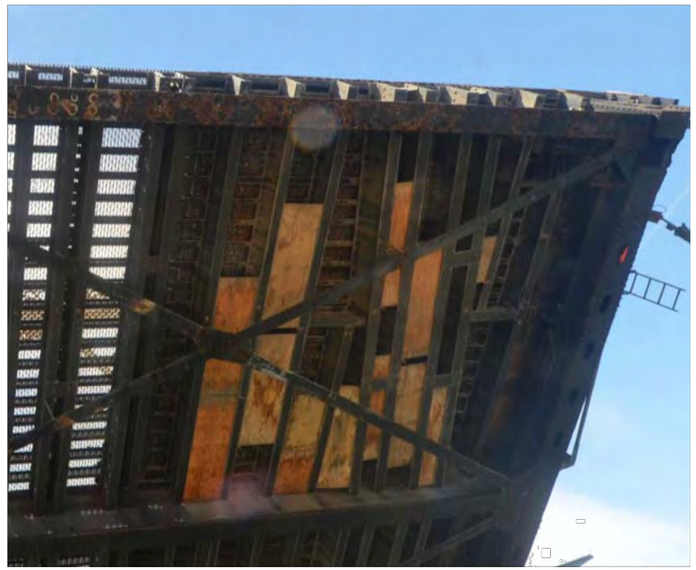
THIRD STREET BRIDGE REHABILITATION PROJECT

TYPICAL DAMAGE NO. 3

CONTRACT NO. 2317J
DRAWING NO. PD-24
FILE NO.
REV. NO. 0

Top of gusset plate under west cantilever
EXAMPLE OF <u>REPAIR</u> WORK

Hanger rod and sleeve near south fender system
EXAMPLE OF <u>REPLACEMENT</u> WORK



Looking up at toe of bridge during lift

Bottom flange of stringer
EXAMPLE OF <u>REPLACEMENT</u> WORK

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30 VAN NESS AVENUE, 5TH FLOOR
SAN FRANCISCO, CA 94102 - 6028

		Date:
Section Mgr:	RAYMOND LUI	
Deputy Division Mgr:	FERNANDO CISNEROS	
Division Mgr:	PATRICK RIVERA	

DESIGNED:	C.J.P.	03/06/18
DRAWN:	G.C.I.	03/06/18
CHECKED:	M.J.C.	03/06/18

SCALE: NO SCALE

SHEET OF SHEETS: 25 OF 29

THIRD STREET BRIDGE REHABILITATION PROJECT

TYPICAL DAMAGE NO. 4

CONTRACT NO. 2317J
DRAWING NO. PD-25
FILE NO.
REV. NO. 0

Drawing Path: H:\240679 SF 3rd Street Bridge\Planning Dept\PD-25.dwg, Login: gimbsen
Plot Time: Tue, 06 Mar 2018 - 10:54am
Dimension Scale: 8 Xrefs: H:\240679 SF 3rd Street Bridge\Planning Dept\DC_BORDER.dwg
Model Units: Undefined
H:\240679 SF 3rd Street Bridge\Structural\xref\100 ft line-CCSF.dwg
Measurement Units are English

Stringer cantilevers north of floor beam 16B
EXAMPLE OF <u>REPLACEMENT</u> WORK

Floor bean 12 (@ location with 1975 retrfit blocks)
EXAMPLE OF <u>REPAIR</u> WORK

Steel bearing on top of Pier 2
EXAMPLE OF <u>REPAIR</u> WORK

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DESIGN AND ENGINEERING DIVISION
SAN FRANCISCO PUBLIC WORKS
30 VAN NESS AVENUE, 5TH FLOOR
SAN FRANCISCO, CA 94102 - 6028

		Date:
Section Mgr:	RAYMOND LUI	
Deputy Division Mgr:	FERNANDO CISNEROS	
Division Mgr:	PATRICK RIVERA	

DESIGNED:	C.J.P.	03/06/18
DRAWN:	G.C.I.	03/06/18
CHECKED:	M.J.C.	03/06/18

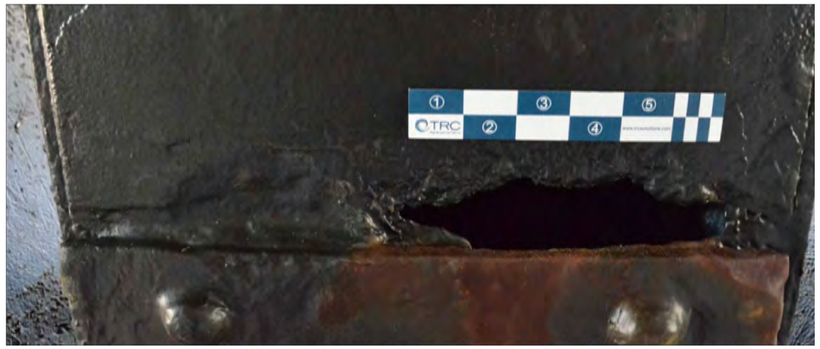
SCALE: NO SCALE

SHEET OF SHEETS: 26 OF 29

THIRD STREET BRIDGE REHABILITATION PROJECT

TYPICAL DAMAGE NO. 5

CONTRACT NO. 2317J
DRAWING NO. PD-26
FILE NO.
REV. NO. 0



ilt-up lateral stabilizing braces between floor beam 8 and 10 which require weep holes and cover plates for

EXAMPLE OF REPAIR WORK

Bottom chord fasteners and pack rust

EXAMPLE OF REPAIR WORK (NOTE THAT FASTENERS WILL BE REPLACED)

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DESIGN AND ENGINEERING DIVISION
SAN FRANCISCO PUBLIC WORKS
30 VAN NESS AVENUE, 5TH FLOOR
SAN FRANCISCO, CA 94102 - 6028

		Date:
Section Mgr:	RAYMOND LUI	
Deputy Division Mgr:	FERNANDO CISNEROS	
Division Mgr:	PATRICK RIVERA	

DESIGNED:	C.J.P.	03/06/18
DRAWN:	G.C.I.	03/06/18
CHECKED:	M.J.C.	03/06/18

SCALE: NO SCALE

SHEET OF SHEETS: 27 OF 29

THIRD STREET BRIDGE REHABILITATION PROJECT

TYPICAL DAMAGE NO. 6

CONTRACT NO. 2317J
DRAWING NO. PD-27
FILE NO.
REV. NO. 0

Dimension Scale: 8 Xrefs: H:\240679 SF 3rd Street Bridge\Planning Dept\IDC_BORDER.dwg
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Model Units: Undefined
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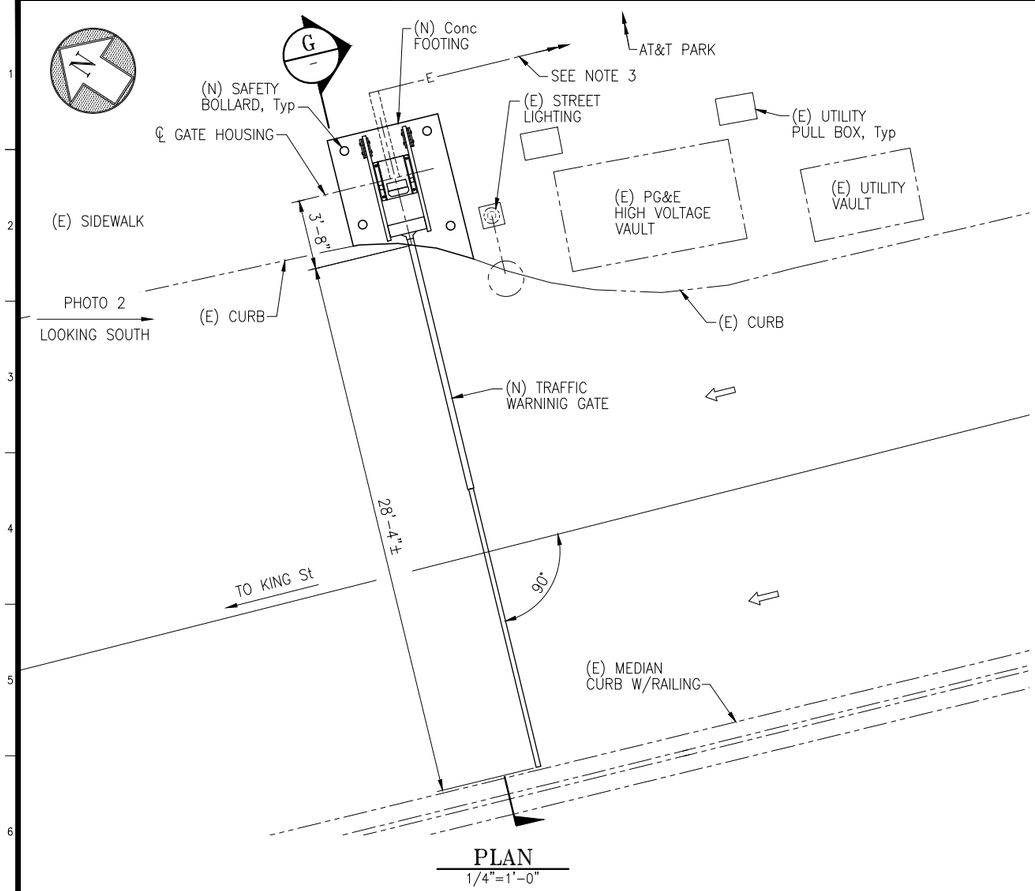
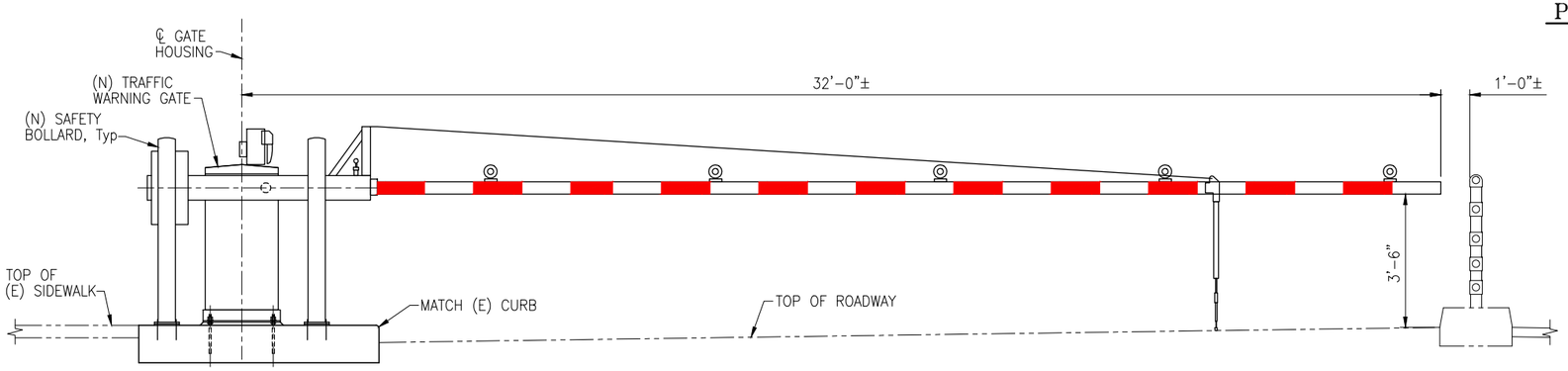
Plot Time: Tue, 06 Mar 2018 - 10:30am Measurement Units are English



PLAN
1/4"=1'-0"

PHOTO 2 LOOKING SOUTH
NO SCALE



SECTION G
SCALE: 1/2"=1'-0"

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SAN FRANCISCO PUBLIC WORKS
DESIGN AND ENGINEERING DIVISION
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30 VAN NESS AVENUE, 5TH FLOOR
SAN FRANCISCO, CA 94102 - 6028

		Date:
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Deputy Division Mgr:	FERNANDO CISNEROS	
Division Mgr:	PATRICK RIVERA	

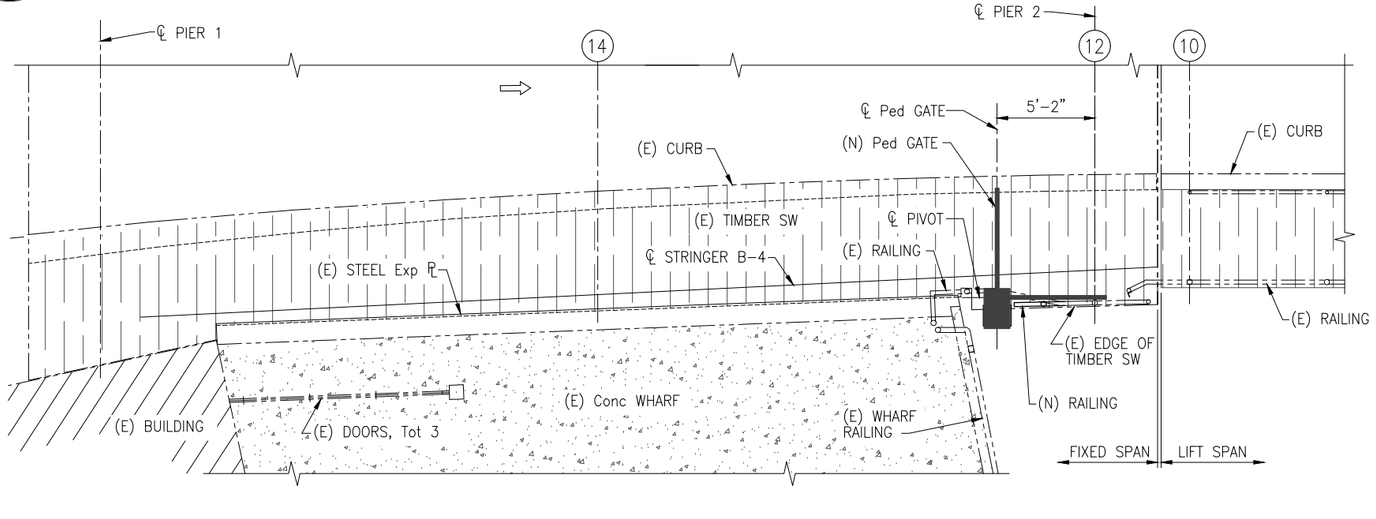
DESIGNED:	C.J.P.	03/06/18
DRAWN:	G.C.I.	03/06/18
CHECKED:	M.J.C.	03/06/18

SCALE: AS SHOWN
SHEET OF SHEETS: 28 OF 29

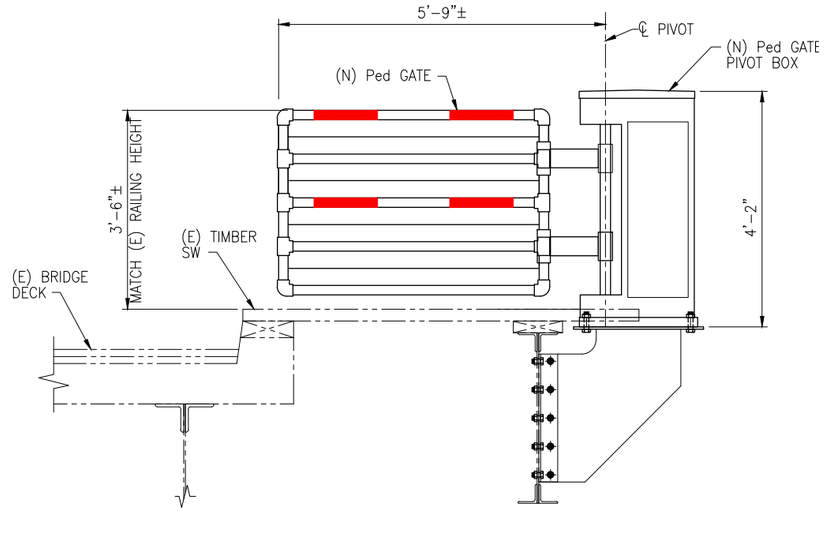
THIRD STREET BRIDGE REHABILITATION PROJECT

NORTHEAST TRAFFIC WARNING GATE DETAILS

CONTRACT NO. 2317J
DRAWING NO. PD-28
FILE NO. 110402
REV. NO. 0



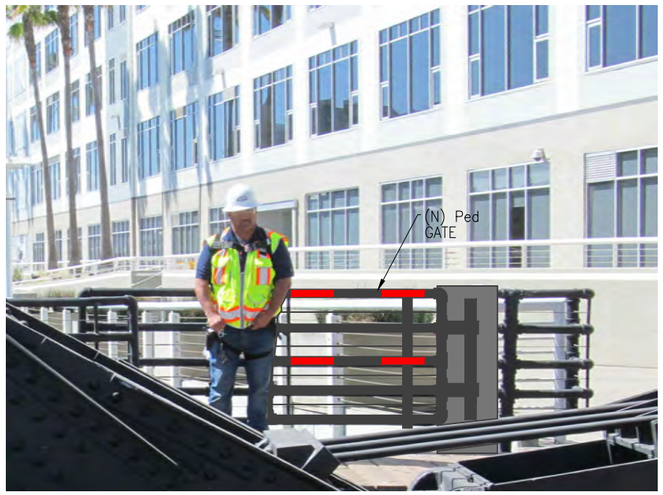
PLAN
1/4"=1'-0"



LOOKING SOUTHEAST

LOOKING NORTHWEST

LOOKING NORTHWEST



LOOKING SOUTHWEST

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DESIGN AND ENGINEERING DIVISION
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30 VAN NESS AVENUE, 5TH FLOOR
SAN FRANCISCO, CA 94102 - 6028

		Date:
Section Mgr:	RAYMOND LUI	
Deputy Division Mgr:	FERNANDO CISNEROS	
Division Mgr:	PATRICK RIVERA	

DESIGNED:	DATE:
C.J.P.	03/06/18
DRAWN:	DATE:
G.C.I.	03/06/18
CHECKED:	DATE:
M.J.C.	03/06/18

SCALE: AS SHOWN
SHEET OF SHEETS: 29 OF 29

THIRD STREET BRIDGE REHABILITATION PROJECT

NORTHWEST PEDESTRIAN GATE DETAILS

CONTRACT NO.	2317J
DRAWING NO.	PD-29
FILE NO.	110400
REV. NO.	0