

YBTF
Temp.
Detour
Structure

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ENVIRONMENTAL RE-EVALUATION #2
EAST SPAN SEISMIC SAFETY PROJECT
in San Francisco and Alameda Counties
04-SF-80 KP 12.2/KP 14.3
04-ALA-80 KP 0.0/KP 2.1

Why was the structure Ad?

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Background

This Re-evaluation addresses the project to replace the existing East Span of the San Francisco-Oakland Bay Bridge (SFOBB) (hereafter referred to as the East Span project), which is located in San Francisco and Oakland in the counties of San Francisco and Alameda, respectively, between the eastern portal of the Yerba Buena Island Tunnel and the SFOBB Toll Plaza in Oakland (see Figure A-1 in the Appendix for the project construction limits and general project location). The existing East Span must be replaced because it is not expected to withstand a maximum credible earthquake (MCE) on the San Andreas fault or Hayward fault; it does not meet lifeline criteria for providing emergency relief access following an MCE; and it does not meet current operations and safety design standards. A replacement structure will provide a bridge crossing that is usable for emergency response after a major seismic event and will meet current operations and safety design standards.

Since the Final Environmental Impact Statement (FEIS) was issued, a new method of routing traffic around construction on Yerba Buena Island (YBI) has been developed. This temporary detour between the E-1 bridge pier and the YBI tunnel will be a double-deck bypass structure that will carry both directions of traffic. It will be located on the south side of the existing East Span. For the purposes of this Re-evaluation, this new double-deck south-south configuration is called the new N-6 south-south detour. The construction activities will occur on State of California right of way, U.S. Navy property (currently undergoing a federal land transfer process) and on U.S. Coast Guard (USCG) property.

The new N-6 south-south detour is different from the N-6 north-south detour configuration identified in the Record of Decision. The draft Feasibility Study for the West End Tie-In of the South-South Detour Staging Alternative report, dated November 4, 2002, estimated hours of bridge closures for the construction of the N-6 north-south configuration. This N-6 north-south configuration would have involved two single-level decks with westbound traffic on a detour to

the north of the existing bridge and eastbound traffic on a detour to the south of the existing bridge. Please see Figure A-6 in the Appendix for a comparison of the Temporary Construction Easements (TCEs) for the new N-6 south-south detour and the former N-6 north-south single-deck detour.

The new N-6 south-south detour discussed herein is also different from the original N-6 south-south double-deck detour, evaluated and rejected in the FEIS. The original N-2/N-6 south-south double-deck detour configuration would have carried both directions of traffic around the construction zones on double decks to the south of the existing bridge. It was rejected because eastbound traffic traveling from the YBI tunnel would have been split around several columns with three travel lanes on one side of the columns and two lanes on the other. This would have created a hazardous obstruction in the middle of mainline traffic lanes. The configuration of the new N-6 south-south double-deck detour discussed in this Re-evaluation overcomes the problem of separating the lanes of traffic by using additional exterior structural supports to allow for a longer span over the eastbound traffic lanes. The placement of the supports will occur outside the traveled way by utilizing larger supports on the south side of the temporary viaduct. The larger supports will hold up a wider section of the upper deck on existing East Span and detour after the existing supports are removed.

Some of the other differences between the N-6 north-south detour and the new N-6 south-south detour involve bridge and lane closures. There are three types of closures:

- Full bridge closures, both eastbound and westbound directions, simultaneously.
- Partial bridge closures, all lanes of eastbound or westbound direction at different times, rather than simultaneously.
- Lane closures, when individual lanes are closed on either eastbound or westbound direction, either at different times or simultaneously. Several lanes on either or both decks may be closed simultaneously or independently. Such lane closures are already approved by Caltrans' bridge closure procedures and processes for routine bridge maintenance and projects on the bridge and therefore are not discussed in the description below.

The draft Feasibility Study for the West End Tie-In of the South-South Detour Staging Alternative, dated November 4, 2002, estimated hours of full and partial bridge closures for the construction of the N-6 north-south configuration.

- There would have been 13 separate partial bridge closures of 8 hours each for the eastbound deck (total of 104 hours of partial bridge closures).
- There would have been 2 partial bridge closures of 8 hours each for the westbound deck (16 hours of partial bridge closures).
- Two full bridge closures totaling 16 hours would have resulted if the 2 westbound partial bridge closures of 8 hours coincided with the eastbound partial bridge closures.

For the new N-6 south-south detour the bridge closures are as follows:

- It is envisioned that there will be one continuous 48-hour full-bridge closure to conduct the roll-in/roll-out maneuver for the east tie-in of the detour and to connect the west tie-in to the existing bridge. The west tie-in will involve removal of temporary columns and railing, connecting the west tie-in with the existing structure, placing temporary bracing, modifying the road surface and placing K-rail where needed.
- It is envisioned that there will be one continuous partial bridge closure of 24 hours to shift traffic from the eastbound direction of the new N-6 south-south detour to the eastbound deck of the new bridge. It is envisioned no partial bridge closures are needed to shift traffic from the new N-6 south-south detour to the westbound deck of the new bridge. (See Section 2.7.10-Temporary Detours on Yerba Buena Island Considered and Withdrawn of the FEIS). Please see Figure A-3 in the Appendix for a comparison of the rejected and current south-south double-deck detour structures at the west tie-in. Please see Figure A-6 in the Appendix for a comparison of the TCEs.

Environmental Compliance

May 8, 2001	FEIS approved by the Federal Highway Administration (FHWA) (FHWA-CA-EIS-98-01-F); Statutory exemption pursuant to the California Environmental Quality Act (CEQA) CSHC Section 180.2 and CEQA Section 21080.
July 11, 2001	Record of Decision signed.

Purpose of Re-evaluation

This Environmental Re-evaluation of the project FEIS assesses the impacts of using a new N-6 south-south detour to carry all eastbound and westbound traffic to the south of the existing bridge. This temporary new N-6 south-south detour will allow for the dismantling of the existing bridge from just east of the YBI tunnel to the YBI-4 bridge pier and construction of the new East Span of the San Francisco-Oakland Bay Bridge (East Span) on YBI. While a south-south detour on YBI had been considered and withdrawn in the FEIS for the project, the south-south double-deck detour discussed herein had not been identified and evaluated in the FEIS.

This new N-6 south-south detour configuration was pursued because it allows acceleration of the overall construction schedule by 1 to 1 ½ years, thereby providing seismic safety sooner than the previously selected N-6 north-south single-deck detour configuration. The construction work and removal of the detour on YBI will be completed 1 to 1½ years sooner than with the N-6 north-south detour.

The Re-evaluation has been prepared in compliance with 40 C.F.R. 1502.9 and 23 C.F.R. 771.129 and 771.130.

Project Description

The new N-6 south-south detour will take approximately 1 to 1½ years to build. It will be operational for 3 to 4 years. It will take 6 months to 1 year to dismantle it once traffic has been rerouted from the detour onto the new East Span.

Once the detour is open to traffic, the portion of the existing East Span that had carried traffic between the YBI tunnel and the E-1/YBI-4 truss will be dismantled; this activity will take approximately one year. Once the removal of this portion of the existing bridge is completed, the new bridge can be built in this location. These project elements were evaluated in the FEIS for the project and are not further discussed in this Environmental Re-evaluation. Please see Figure A-4 in the Appendix for the location of YBI-4 and the YBI tunnel.

A portion of the detour between YBI-4 and the YBI tunnel could be partially prefabricated off-site. Large prefabricated structural pieces would be brought in by barge and assembled on-site. These segments would be lifted onto the detour footings by tower cranes and anchored into place.

The locations of the footings are not known at this time because the contractor will have a major role in design of the new N-6 south-south detour. Caltrans will require the contractor to submit working drawings for the new N-6 south-south detour showing his proposed method of constructing the detour. The contractor's choices for methods of construction will be reviewed and finalized with the approval of Caltrans.

For purposes of defining detour segments, the new N-6 south-south detour is divided into three segments along the length as described below. Please refer to Figure A-4 in the Appendix for the limits and profile of these segments.

West tie-in

This portion of the new N-6 south-south detour will begin just east of the YBI tunnel portal and will redirect traffic on both decks to the south of the existing bridge alignment. The traffic on the lower deck will be routed through the existing line of columns that hold the upper deck. The west tie-in transition structure from the existing bridge to the detour structure is a very complex structural system designed to support the existing upper deck and provide a lower deck opening free of obstruction to traffic.

The west tie-in of the new N-6 south-south detour will link the western portion of the detour structure with the concrete viaduct portion of the existing bridge, just east of the YBI tunnel. This portion of the detour can be constructed using already-approved lane closure plans and will also require full bridge closures to accomplish certain elements of work, such as allowing for the detour to be connected to the East Span and made operational. It is likely that these full bridge closures will be concurrent with the closures required for the east tie-in.

K-rail barriers will be installed and will serve two purposes:

They will guide vehicles from the existing bridge onto the detour and will also prevent them from travelling onto the existing bridge;

They will be placed across the traffic lanes of the existing bridge for both directions of travel.

Viaduct

The main structure of the double-deck detour is referred to as a viaduct. Like the existing structure, the temporary supports may be as wide as the truss extending from the bottom of the truss down to the foundations at ground level. The number of supports for the truss on the ground on YBI could range from 2 to 12. The transverse width of the supports will vary to match the width of the eastbound lanes on the lower deck. As stated above, footing locations are not yet known.

East tie-in

This double-deck transition structure will connect the viaduct, described above, to the existing bridge at bridge pier E-1. Attaching the east tie-in to the existing truss, 46 meters (150 feet) above the ground surface, in close proximity to the traffic, makes this segment of the detour highly complex and time-sensitive in terms of handling traffic.

The likely method of accomplishing the east tie-in is:

Remove the entire existing 88-meter (288-foot) truss intact and move a completely pre-assembled truss into place that introduces a curved roadway that aligns with the existing bridge and the viaduct. This would involve pushing or rolling out the existing 88-meter (288-foot) truss. Please refer to Figure A-4 in the Appendix for its location roll-in/roll-out maneuver. Then a curved pre-assembled truss would be pushed or rolled into the space created by rolling out the existing truss.

The east tie-in could be prefabricated off-site and brought to YBI by barge. It would likely be off-loaded by a tower crane onto a skid rail structure and pulled across the skids by jacks or a pulley system. It is assumed that the skid rails would continue on land to bring the structure to below the existing E-1 and YBI-4 bridge piers. From here the east tie-in would be jacked or lifted onto awaiting scaffolding or false work which will hold the structure in place until the roll-in/roll-out maneuver is implemented. This scaffolding could be topped with Hillman Rollers® or other equivalent roller system and I-beams. The rollers and I-beams would also be mounted on top of scaffolding that will be built on the north side of the existing bridge between E-1 and YBI-4. These rollers and I-beams will allow the existing truss structure between E-1 and YBI-4 to be rolled out with the help of jacks or tower cranes and onto the awaiting scaffolding. As the existing truss structure is being rolled out, the east tie-in will be rolled into place. Then traffic will be rerouted to and from the existing East Span to the viaduct. The existing truss structure, which connected E-1 and YBI-4, will then be dismantled.

If a temporary skid rail structure and temporary access trestle are built in Coast Guard Cove, dredging to allow barge access may occur. Possible dredging along the eastern side of the skid rail structure footprint would result in the removal of approximately 5,964 to 7,646 cubic meters (7,800 to 10,000 cubic yards) of sediments. Pile-driving steel H-piles would need to occur as part of building the skid rail structure. A vibratory hammer or a small impact hammer such as a diesel Delmag D30-32 would likely drive these piles into the Bay muds. The piles would be approximately 0.6 meters (2 feet) in diameter and 15 to 18 meters (50 to 60 feet) long, with 12 meters (40 feet) being driven below the mudline. There would be approximately 50 to 100 piles and they would be driven every 10 to 20 meters (33 to 66 feet). The skid rail structure's construction, its use during construction, and dismantling would take approximately 1 and 1/2 years.

The access trestle, if built, will be located on the southeast side of YBI and will remain in place after the temporary skid rail structure has been used and removed. The access trestle would continue to facilitate the movement of equipment and construction personnel to and from YBI for other construction contracts.

The contractor's access to the work site will vary with the location of work. The west tie-in will be accessed from Macalla and Southgate Roads, in the vicinity of the east portal of the YBI tunnel. Contractor access to the viaduct and east tie-in on the eastern portion of YBI will be from Macalla Road and from the Bay. Individual workers will arrive to the work site by special vehicle permit in personal vehicles or will be transported by bus or van. Parking will be restricted to the temporary construction easements.

Access via Macalla Road will be restricted because of the narrow roadway.

Once a contractor is selected for the new N-6 south-south detour and final designs have been approved by Caltrans it will be known which, if any, of these options the contractor will pursue. Until that time and for the purpose of this Environmental Re-evaluation, Caltrans is assuming that the contractor will choose to build the temporary access trestle, the temporary skid rail structure and use the roll-in/roll-out maneuver.

AFFECTED ENVIRONMENT

There are no permanent impacts associated with the new N-6 south-south detour; therefore, impacts are compared to impacts described in the Temporary Impacts During Construction Activities, Section 4.14, of the FEIS.

Community Impacts

The construction of the new East Span has the potential to cause temporary impacts to residents on YBI, including occupants of USCG housing and former U.S. Navy housing. These temporary impacts would include noise, traffic disruptions, air quality and vibrations. The construction of the new N-6 south-south detour would not add to these impacts because they are temporary, as is the construction overall and therefore, there will be no additional community impacts beyond those identified in the project FEIS (see Section 4.14.1-Community Impacts of the FEIS).

Consistency With Land Use Plans

The construction of the East Span and the construction of the new N-6 south-south detour will have no impact on the City and County of San Francisco's (CCSF's) 1996 Treasure Island (TI) Draft Reuse Plan and the CCSF's Master Plan. The land on YBI that will be used for the construction of the East Span and the temporary new N-6 south-south detour is within existing or soon to be acquired State right-of-way.

The construction activities for the current temporary new N-6 south-south detour will not result in any inconsistencies with plans and policies identified in the project FEIS or substantially affect other plans related to YBI. The new N-6 south-south detour and related construction activities will not inhibit the land transfer process between the U.S. Navy and the CCSF, nor would it affect the CCSF's redevelopment planning and permitting processes that require participation of federal, state and regional agencies. Major redevelopment actions by CCSF cannot begin until the planning and permitting actions have been completed. Caltrans' use of the temporary new N-6 south-south detour option on YBI would not result in any additional community impacts beyond those identified in the East Span project FEIS (see Section 4.41.1-Temporary Impacts During Construction Activities-Community Impacts of the FEIS).

In April 1998 as part of the Base Reuse and Closure (BRAC) process, the U.S. Navy transferred 4.3 hectare (10.6 acre) to the USCG. No specific master plan has been developed for the existing USCG facility because the USCG has delayed final master plan preparation pending the outcome of the TI BRAC process. The USCG will be commencing a regional planning project in the summer of 2003 to cover all of their facilities in the greater Bay Area. This process is anticipated to take approximately 1 to 1½ years. Subsequently, individual master plans may be prepared for key USCG bases to plan for regional requirements identified in the regional plan. The south-south double-deck detour will not affect the USCG regional or master planning process; the planning process can continue unimpeded while the project is built. The bridge will be completed by the time the USCG is ready to implement any changes to its YBI base (see Section 4.1.5- Development Trends of the FEIS).

Transportation

As identified in the FEIS (Section 4.14.2-Transportation Impacts During Construction of the FEIS), construction-related vehicle traffic on Route 80 and on local roads on YBI anticipated during construction of the East Span may affect traffic operations on YBI. Construction activities could cause temporary traffic disruptions as construction-related traffic would be noticeable on I-80, the East Span, YBI roadways and could contribute to localized congestion.

Construction would cause temporary traffic disruptions, as construction-related traffic would be noticeable on local roadways, especially Macalla Road. The FEIS states that "the closures would be a safety measure implemented during certain construction operations, such as the movement of heavy materials that are suspended by crane over the road. The USCG requires emergency access to its facility 24 hours/7 days a week by police, fire, and ambulance services." Caltrans will include in the contract specifications the requirement for the contractor to provide emergency access to the USCG base at all times. Caltrans will require the contractor to have a communication system to allow early notification to the USCG for any partial closures on Macalla Road.

The construction activities for the new N-6 south-south detour would result in different transportation impacts from those identified in the FEIS.

Temporary full bridge closures, partial bridge closures and lane closures have the potential to affect regional transportation services. Although the congestion caused by such closures is temporary, it can cause serious travel delays. For this reason, Caltrans has carefully balanced the gains in project completion against these travel delays. Caltrans has concluded that the temporary traffic impacts caused by the closures are outweighed by the advantages of completing the project sooner than would otherwise be possible.

To mitigate for the impacts to transportation, Caltrans is pursuing an aggressive Traffic Management Plan, with transportation providers in the Bay Area, including the Bay Area Transportation District, AC Transit, and various ferry services. The Plan will include an intensive public awareness campaign to notify the public of bridge closures well in advance; the campaign will include public service announcements in the media. The bridge closures will be conducted during off-peak travel times (nights and weekends). Full and partial bridge closures will be timed to avoid weekends when public events such as sports, which typically generate large volumes, are scheduled.

Caltrans will also include in the contract specifications that the contractor cannot exceed the number of temporary bridge closures or the times allowed for each full bridge closure under threat of heavy financial penalties.

Given these restrictions and since most equipment and materials will be delivered by barge, the new N-6 south-south detour does not substantially change temporary traffic disruptions from those described in the FEIS. (see Section 4.14.2-Transportation Impacts During Construction of the FEIS).

Visual

The State right-of-way, where the construction activities are to occur, has been the site of other construction and maintenance activities in the past. Its appearance will not vary from typical visual signs of construction.

The view from the Senior Officers' Historic District will improve as compared to the N-6 north-south detour configuration because none of the south-south portion of the detour will be on the north side of the existing bridge. There will be scaffolding to support the roll-out maneuver of the

existing truss between E-1 and YBI-4. If this maneuver occurs, the scaffolding will remain in place for 1 year until the section of the existing East Span between YBI-4 and the YBI tunnel has been dismantled. This scaffolding will be within view from the Senior Officers' Historic District, but it will not cause a major change as compared to the existing view from the District.

The view from the USCG base, during the construction period, will change from what was discussed in the project FEIS. Instead of a single-deck detour to carry eastbound traffic being in operation for 4 to 5 years, there will be a double-deck structure in operation for 3 to 4 years. The new N-6 south-south detour will take approximately 1 to 1½ years to build. Eastbound and westbound traffic will be routed to the detour structure at the same time. Westbound traffic lanes will be switched to the new East Span approximately 1 year prior to the eastbound traffic lanes. As a result, the new N-6 south-south detour will result in temporary visual impacts to the USCG base but these impacts will be for a shorter period as compared to the N-6 north-south detour (see Section 4.14.3-Construction-period Visual Impacts of the FEIS).

Air Quality

There are sensitive receptors in the vicinity of the construction activities, such as the USCG base personnel and residents of former U.S. Navy housing. Construction of the project will generate air pollutant emissions. The largest sources of anticipated pollutants will be dust generated by trenching, excavation, materials movement, and other ground-disturbing activities and exhaust emissions from equipment and marine vessels. However, generation of emissions at the construction site will be fairly limited compared to the rest of the construction site. Most emissions will be generated by equipment being used on the site such as cranes, pile driving equipment and transport trucks. Emissions will be temporary and will vary from day to day, depending on the type of work being done. In fact, an improvement in air quality beyond that anticipated in the FEIS could result due to the proximity and acceleration in the project schedule, which will reduce the lengths and numbers of the trips to and from the site required for construction equipment and barges, thereby reducing project emissions.

Measures to reduce emissions during construction, as specified in Caltrans' Standard Specifications, that will be applied to the new N-6 south-south detour include the following:

- Covering trucks transporting dust-producing material leaving or entering a construction site;

- Reducing construction vehicle travel speeds on unpaved surfaces;
- Maintaining equipment per manufacturers' specifications; and
- Conforming to all air pollution rules, regulations, ordinances, and statutes.

As a result, construction-staging activities for the new N-6 south-south detour would not result in additional significant air quality impacts beyond those that are identified in the FEIS (see Section 4.4-Air Quality of the FEIS).

Noise and Vibration

The closest receptors for the construction activities of the new N-6 south-south detour are USCG personnel, occupied former U.S. Navy housing, and residents on TI. Caltrans has conducted noise modelings for the single-deck N-6 north-south detour and the current double-deck new N-6 south-south detour and compared them to known noise levels from the existing East Span. Table 1a below shows that the modeled noise levels from the new N-6 south-south detour will not differ greatly from the existing East Span or those modeled for the N-6 north-south detour. The modeled readings below are based on the highest predicted noise levels for the detours, utilizing the calibration factors from a previous noise study for this area, "Noise and Vibration Study: San Francisco-Oakland Bay Bridge, East Span Seismic Safety Project", dated September 1998. The contractor for the new N-6 south-south detour will have the option of either a steel or concrete structure, subject to Caltrans' approval. The modeling that was used for the readings below assumes, as demonstrated in the previous noise and vibration study, that all K-factor or correlation factor noise will be present with a steel structure and absent in a concrete structure. Correlation factor noise is calculated by simultaneously measuring traffic speed, traffic volumes, and percentages of large trucks and actual noise levels created by traffic at or near the proposed construction site. The correlation factor was not applied to the calibrations for the concrete structure because the noise model assumes that the structure is concrete.

RECEPTOR	EXISTING EAST SPAN	N-6 NORTH-SOUTH STEEL DETOUR	N-6 NORTH-SOUTH CONCRETE DETOUR	SOUTH-SOUTH STEEL DETOUR	SOUTH-SOUTH CONCRETE DETOUR
4A	72 dBA	74 dBA	74 dBA	73 dBA	73 dBA
5M-1	67 dBA	66 dBA	66 dBA	66 dBA	66 dBA
7M-1	71 dBA	69 dBA	60 dBA	67 dBA	58 dBA
6M-2	72 dBA	71 dBA	60 dBA	69 dBA	58 dBA
6M-1	72 dBA	71 dBA	64 dBA	70 dBA	63 dBA
6A	72 dBA	71 dBA	60 dBA	70 dBA	59 dBA
11A	75 dBA	73 dBA	59 dBA	72 dBA	58 dBA

Table 1a. Noise and Vibration Study

Please see Figure A-7 in the Appendix of the Re-evaluation, for the location of the noise receptors on YBI.

Pile-driving of steel H-piles would need to occur as part of the building of the skid rail structure in Coast Guard Cove. A vibratory hammer or a small impact hammer such as a diesel Delmag D30-32 would likely drive these piles into the Bay muds. The piles would be approximately 15 to 18 meters (50 to 60 ft) long, with 12 meters (40 ft) being driven below the mudline. This in-water pile-driving would not generate additional noise impacts beyond those identified in the FEIS (see 4.14.5-Construction-period Noise and Vibration of the FEIS).

Hazardous Wastes

The alignment for the new East Span, including the land area of the new N-6 south-south detour, has been assessed for hazardous material and contamination found in soil and groundwater. Contaminant sources were past storage and use of petroleum products, lead from motor vehicle exhaust emissions, landfill disposal and use of lead-based paint on the existing bridge. In addition, construction methods and equipment may require use of hazardous materials.

Some hazardous materials could be encountered during construction of the new N-6 south-south detour. However, if hazardous materials are encountered, compliance with applicable laws and regulations, coordination with responsible agencies, and implementation of BMPs will ensure that

construction activities for the new N-6 south-south detour do not result in any hazardous waste impacts beyond those identified in the FEIS (see Section 4.14.6-Hazardous Waste of the FEIS).

Dredged Material

If dredging were conducted in Coast Guard Cove to allow barge access, it would result in approximately 5,964 to 7,646 cubic meters (7,800 to 10,000 cubic yards) of sediments. It is possible that some pollutants from previous activities on YBI have been transported into the sediments in the Coast Guard Cove through the storm water system. The U.S. Navy has completed sampling of the sediments in this area (Source Area IR 13, Section E, of the FEIS). If dredging occurs, additional sediment testing may be required. The contractor will be required to dispose of the sediments at an approved upland site based on test results. He will also be required to provide containment for free liquids released during drying dredged material. Any water remaining after evaporation will be disposed in accordance with federal, state and local regulations.

Pile-driving in Coast Guard Cove will not disturb contaminants.

Water Quality

Activities such as dredging, in-water pile-driving, and construction activities on land could lead to additional pollutants entering Bay waters.

A Storm Water Pollutant Prevention Plan (SWPPP) will be prepared for the new N-6 south-south detour contract. Implementation of these plans will minimize the potential for impacts at the construction site. The plan will identify storm water pollution control measures to minimize the degradation of off-site receiving waters to the maximum extent practicable. Current best management practices (BMPs) for the construction industry include but not are limited to:

- Erosion Control;
- Sediment Control;
- Spill Prevention and Control;
- Solid Waste Management;
- Hazardous Waste Management;
- Vehicle Equipment Maintenance and;
- Concrete Waste Management.

There is a possibility that additional pollutants could enter surface, ground water and Bay waters as a result of construction activities, but because SWPPP and BMPs will be implemented during the construction activities for the new N-6 south-south detour, there will be no additional impacts to water quality beyond those identified in the FEIS (see Section 4.14.7-Water Resources and Water Quality of the FEIS).

Biological Resources

Vegetation

Since the area has been used by the military since the 1860s, only non-native vegetation is present; only a few native species are present on the island. No special status plant species exist within the State right-of-way boundaries and there are no such species in the construction site of the new N-6 south-south detour. This area was surveyed for the Natural Environmental Study, dated September 1998. Some of the non-native vegetation will need to be cleared to make way for a land-based skid rail system that will allow the temporary east tie-in structure to be moved from a barge to false-work below the existing bridge and west of existing bridge pier E-1. If Macalla Road is expanded, the contractor will have to abide by any ESAs that are established to protect native species or vegetation to historic properties. Please see Figure A-5 in the Appendix for the location of the Environmentally Sensitive Areas (ESAs), in relationship to the new N-6 south-south detour.

Wetlands

There are no non-tidal wetlands on YBI.

Sand Flats

There are no sand flats on YBI. A small sand and cobble pocket beach occurs along the northern shore of Coast Guard Cove, adjacent to a steep and eroding shoreline with portions of the eastern end of the site being protected by failing armoring consisting predominantly of concrete debris and remnants of an old pier. This steep beach provides little intertidal habitat and does not have the same degree of biological activity as the sand flat habitat found on the Emeryville Flats north of the Oakland Touchdown. There is a fringe of shallow bottom near the shoreline but away from the island there are slightly deeper mud bottom areas.

The area of the potential skid rail structure will occupy approximately 10,000 square meters (108,900 square feet) of the shoreline and shallow water areas of Coast Guard Cove. The majority of the subtidal area where the skid rail structure and access trestle would be constructed consists of a sand and cobble bottom. Because of the low habitat value of the small sand and cobble pocket beach and because the skid rail structure and access trestle will be temporary structures, there are no impacts.

Eelgrass Beds

The temporary skid rail structure, temporary access trestle and accompanying shadow areas will not impact the entire eelgrass bed in Coast Guard Cove. Please see Figure A-8 in the Appendix for a location map of the eelgrass bed in relation to the temporary skid rail structure and temporary access trestle.

Eelgrass beds within San Francisco Bay are known to fluctuate naturally in size, shape and density over time. The eelgrass bed in Coast Guard Cove was last surveyed in October 1999 and was determined to be approximately 2,400 square meters (25,700 square feet). The area of the skid rail structure and access trestle will be approximately 10,000 square meters (108,900 square feet). Although the skid rail structure is an open design, with only a small area on the northeast side covered by the access trestle, it has been assumed that the number of piles needed to support the skid rails and the rails themselves would reduce light on the Bay bottom to levels that are too low to support eelgrass growth and survival. For this reason, it has been assumed that all eelgrass within the footprint of the skid rail structure would be affected by the project. Any eelgrass within 10 meters (33 feet) of the northeast and southwest sides of the skid rail structure is also expected to be impacted due to increased shading. The estimated shadow areas will be approximately 1,000 square meters (10,890 square feet) on each side of the structure. These estimates are based on sun angle evaluation. Collectively, the skid rail structure and temporary access trestle area, including additional areas of shading, will directly impact approximately 700 to 800 square meters (6,970 to 8,276 square feet) of eelgrass, depending upon the final project footprint and assuming the 1999 surveys are representative conditions for the site.

Propeller scour from barge activity could adversely affect substrate elevations and sediment suitability to support eelgrass by scouring away the sands that are presently in the proposed area for the skid rail structure. The potential turbidity increase associated with construction, barge use of the trestle, and structure removal will affect the eelgrass temporarily. The increased shading

from the skid rail structure will also affect eelgrass temporarily. All impacts to eelgrass are temporary because the contractor will be required to maintain surface sediments and to restore a clean coarse sandy condition following removal of the skid rail structure; the eelgrass will then rejuvenate and re-grow.

The eelgrass impacted by construction related activities at this location would recover in approximately 2 years following restoration of suitable site conditions. This would require removal of the skid rail structure and access trestle, and may require repair to any damage to site bathymetry and replacement of clean sandy sediments to the surface of the site. The skid rail structure's construction, its use during construction, and dismantling would take approximately 1 and ½ years. Once the skid rail structure has been removed and the access trestle is still in use, the Environmentally Sensitive Area (ESA) boundary will be extended into the area formerly occupied by the skid rail structure. This will facilitate the re-vegetation by the eelgrass in this area. Please see Figure A-5 in the Appendix for the location of the ESAs, in relationship to the new N-6 south-south detour.

Regular monthly meetings are held with the Interagency Biological Mitigation Group, consisting of representatives from Caltrans, National Marine Fisheries Service (NMFS), California Department of Fish and Game, U.S. Army Corps of Engineers, East Bay Regional Park District, U.S. Fish and Wildlife Service (USFWS) and San Francisco Bay Conservation and Development Commission. At the March 12, 2003 meeting, the potential new impacts of the skid rail structure and the access trestle on eelgrass were discussed with agency staff responsible for Essential Fish Habitat (EFH) and eelgrass, which contributes to EFH. The resource agencies agreed that if eelgrass restoration efforts elsewhere such as at the Oakland Touchdown were successful, no additional mitigation would be required for the impacts of the temporary skid rail structure and temporary access trestle. Furthermore, as stated in the permits for the East Span, conceptual mitigation of impacts to special aquatic sites such as eelgrass beds is 3:1. In this case, this would result in 0.19 to 0.23 hectare (0.48 to 0.57 acre) of mitigation, assuming other eelgrass restoration efforts are unsuccessful. Caltrans will continue to co-ordinate with the resource agencies on the eelgrass beds.

Benthic Environment

The benthic environment may be affected by the skid rail structure, temporary access trestle and vessel access to this temporary structure. If dredging were needed for the skid rail structure, it

would be minimal and limited to the northeastern side of Coast Guard Cove. Activities currently conducted in the benthic environment in the Cove, such as vessel and navigational buoy maintenance at the USCG base, would continue.

Wildlife

Pile-driving of steel H-piles would occur as part of building the skid rail structure in Coast Guard Cove. A vibratory hammer or a small impact hammer would be used to drive these piles into the Bay muds. Placement of these types of small temporary piles is expected to require pile-driving hammer energy of 100 to 200 kJ. Pile-driving with these types of hammers does not generate sound pressure levels (SPLs) above 180 dB. By contrast, the large permanent in-Bay piles are expected to require pile-driving hammer energy of approximately 1,700 kJ.

NMFS currently considers that underwater SPLs above 190 decibels referenced to 1 micropascal, root-mean-square (abbreviated as 190 dB re 1 μ Pa RMS [impulse]) could cause temporary hearing impairment (Level B harassment) in harbor seals and sea lions and SPLs above 180 dB re 1 μ Pa RMS (impulse) could cause temporary hearing impairment (Level B harassment) in whales. Harbor seals haul out on the southwestern side of YBI. Because of the location of the haul-out site on the island in relation to the construction site on the southeastern portion of YBI, the island itself acts as a barrier; it will attenuate the sound, vibration and ground motion from the construction and pile-driving activities in the water and on the land.

The NMFS Biological Opinion and Incidental Take Statement, dated October 30, 2001, state that "Beyond 69 m (204 dB re: 1 μ Pa) and up to a distance of 440m (180 dB re: 1 μ Pa) from an active pile driving operation, listed salmonids are likely to experience trauma in many organs including the inner ear, eyes, blood, nervous system, kidney and liver". Due to the size and type of the piles and pile-driving hammer likely to be used for the construction of the temporary skid rail structure and temporary access trestle, the underwater SPLs will not reach or exceed 180 dB re 1 μ Pa RMS (impulse), and therefore, there are no impacts to fish.

The USFWS Biological Opinion, which addressed protected bird species, requires Caltrans to monitor for the construction impacts to birds during pile-driving for in-Bay permanent piles. The Biological Opinion implicitly recognizes that driving the smaller diameter piles associated with temporary structures, such as those associated with the temporary skid rail structure and temporary access trestle, does not involve impacts and therefore do not require bird monitoring.

Therefore, the construction activities for the new N-6 south-south detour would not result in additional temporary impacts to special status wildlife species.

Conclusion

Given the past use of the State right-of-way and its proximity to the existing East Span on YBI, there is limited suitable habitat for special status species. Use of a portion of Coast Guard Cove for construction of the temporary skid rail structure and the temporary access trestle would result in additional temporary impacts to eelgrass and the benthic environment beyond those identified in the FEIS. However, because of the small area affected, the temporary nature of the impacts and the mitigation program for eelgrass, these impacts are considered minor (see Section 4.14.8-Natural Resources of the FEIS).

Historic Properties

Archaeological Site SFr04/H

The area of potential effect established for archaeological studies, approved by the Federal Highway Administration (FHWA) on February 18, 1998, includes the area of the new N-6 south-south detour. The entire area of potential effect was subjected to a Phase 1 archaeological survey, completed in June 1998. The only eligible archaeological resource identified was SFr04/H; the State Historic Preservation Officer (SHPO) concurred with the findings of the Phase 1 survey and the site's eligibility on August 21, 1998.

Precise locations of footings associated with the detour are not known at this time because the contractor will be preparing plans subject to Caltrans' approval. However, it is known that the entire archaeological site is outside the footprint of the new N-6 south-south detour. Therefore, there are no additional effects due to the new N-6 south-south detour to archaeological site SFr04/H (see Section 4.14.9 Temporary Impacts During Construction Activities – Historic and Cultural Resources of the FEIS). Please see Figure A-5 in the Appendix for the location of archaeological site SFr04/H in relationship to the new N-6 south-south detour footprint.

Historic Architectural Resources

The construction period impacts to the Senior Officers' Historic District would be decreased in comparison to the N-6 north-south detour since the new N-6 south-south detour would be completely on the south side of the existing East Span.

Building 206, a garage next to National Register-eligible Quarters 8, will be temporarily relocated during construction; it does not affect the historic significance of Quarters 8 since it is not a contributor to the significance of Quarters 8. There are two alternatives for the temporary relocation of Building 206, as shown in Figure A-6, Locations 1 and 2. The historic significance of Quarters 8 is based on its architecture and its associations with military history. The new N-6 south-south detour is entirely outside the boundaries of the eligible property, which is restricted to the building itself. Therefore, there is no effect to the building. Further, because the detour is temporary, there are no permanent effects to the property's significance. Please see Figure A-6 in the Appendix for the location of Quarters 8 and Building 206 in relationship to the new N-6 south-south detour.

Conclusion

The construction of the south-south temporary detour would not result in any additional adverse effects to historic properties beyond those identified in the FEIS (see Section 4.14.9- Temporary Impacts During Construction Activities – Historic and Cultural Resources of the FEIS). FHWA consulted with the SHPO on March 20, 2003 regarding the change in the undertaking. The SHPO concurred with the conclusions of the Supplemental Finding of Effect on March 20, 2003 that the new N-6 south-south detour would not cause any additional effects to historic properties. See the Appendix for the letter of concurrence from the SHPO.

The contractor will abide by any ESAs that are established to protect the archaeological site, historic properties and vegetation that belongs to historic properties. Please see Figure A-5 in the Appendix for the location of the ESAs in relationship to the new N-6 south-south detour footprint.

Section 4(f)

There are no previously unidentified 4(f) resources within the construction limits for the new N-6 south-south detour. In addition, there are no previously identified 4(f) resources. Therefore, there are no new uses of 4(f) resources (see Chapter 6-Section 4(f) Evaluation of the FEIS).

Utilities

Utility surveys have been conducted on YBI and there are utilities located within the construction site for the new N-6 south-south detour. However, construction and pile driving activities would not result in any impacts to utilities beyond those identified in the project FEIS. This is because the eastbound detour for the N-6 north-south temporary detour had the same alignment as the south-south temporary detour (see Section 4.12-Utilities of the FEIS).

Cumulative

The East Span cumulative impacts assessment included construction activities of the East Span on YBI. No new impacts, beyond those identified in the project FEIS, will result from the construction of this new N-6 south-south detour on YBI (see Section 4.15-Cumulative Impacts of the FEIS).

Conclusion

The purpose and need for the project as set forth in the approved FEIS remains unchanged and the project maintains its status as statutorily exempt from CEQA. There are no changes in the scope of the project as approved in the FEIS. However, use of the State right-of-way and the water based ESA for construction of the new N-6 south-south detour was not specifically described in the FEIS. Therefore, pursuant to regulations for implementing the National Environmental Protection Act (NEPA), this Re-evaluation was prepared to determine whether a supplemental EIS would be necessary.

The additional environmental analysis conducted in support of this Re-evaluation did not identify any project changes requiring revisions to the FEIS, any changes in the circumstances surrounding the project, or the identification of any new significant impacts not previously addressed in the FEIS. This Re-evaluation concludes that a supplemental environmental document is not necessary.

EAST SPAN SEISMIC SAFETY PROJECT, ENVIRONMENTAL RE-EVALUATION #2
04-SF-80-KP 12.2/KP 14.3, 04-ALA-80 KP 0.0/KP 2.1

David J. Nicol
for Gary N. Hamby

April 1, 2003
Date

Division Administrator
Federal Highway Administration

Mara Melandry

March 28, 2003

Mara Melandry
Environmental Manager, SFOBB
California Department of Transportation

Date

Appendix

Figure A-1	Project Construction Limits
Figure A-2	N-6 north-south Detour
Figure A-3	Comparison of the Rejected and Current New N-6 south-south detours at the West Tie-in
Figure A-4	Current South-South Double-Deck Detour
Figure A-5	ESA Boundaries
Figure A-6	Comparison of Temporary Construction Easement
Figure A-7	Noise Measurement and Modeling – Yerba Buena Island
Figure A-8	Eelgrass Beds, Temporary Skid Rail Structure and Temporary Access Trestle – Yerba Buena Island
Correspondence:	Letter of Concurrence from the SHPO

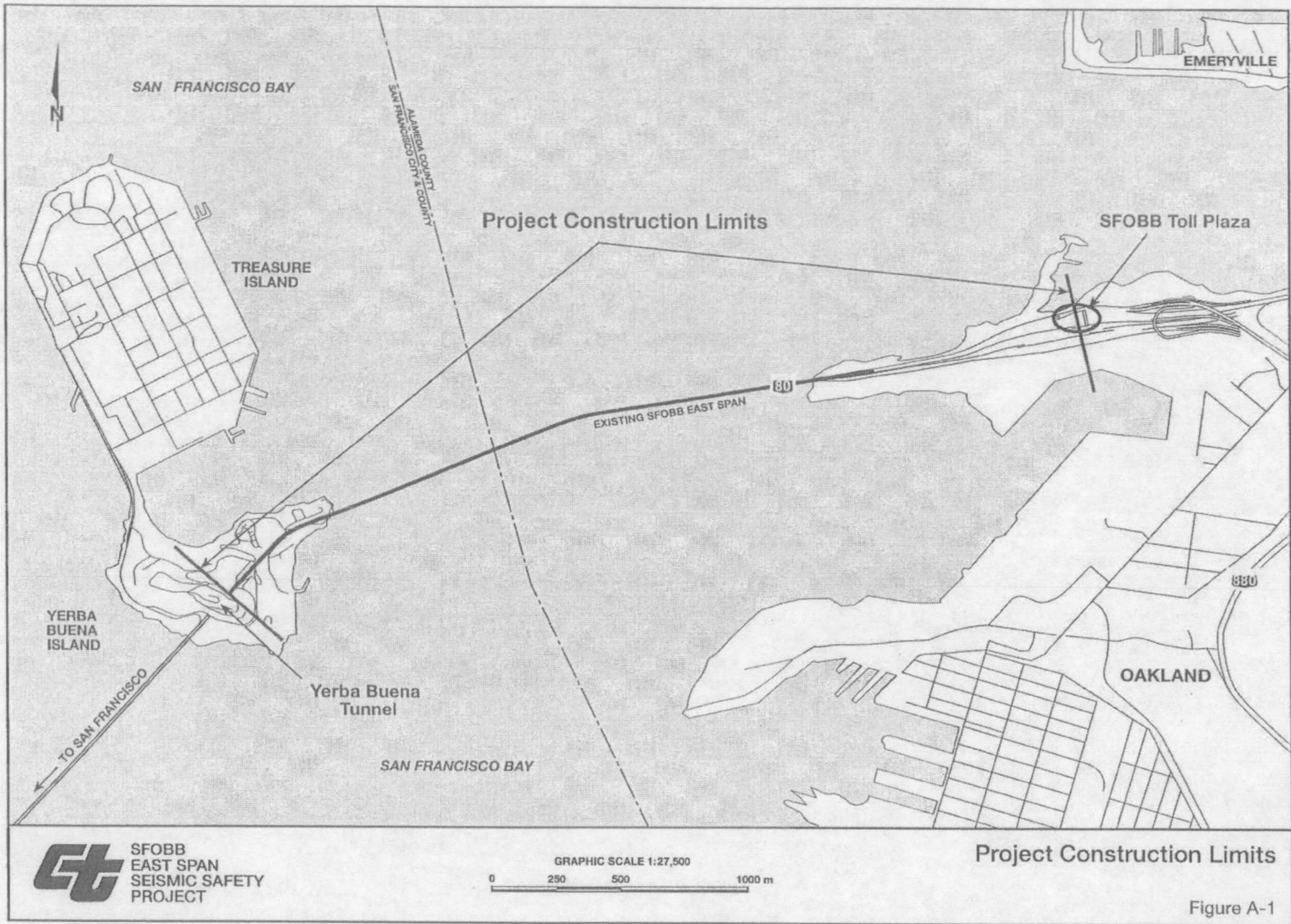
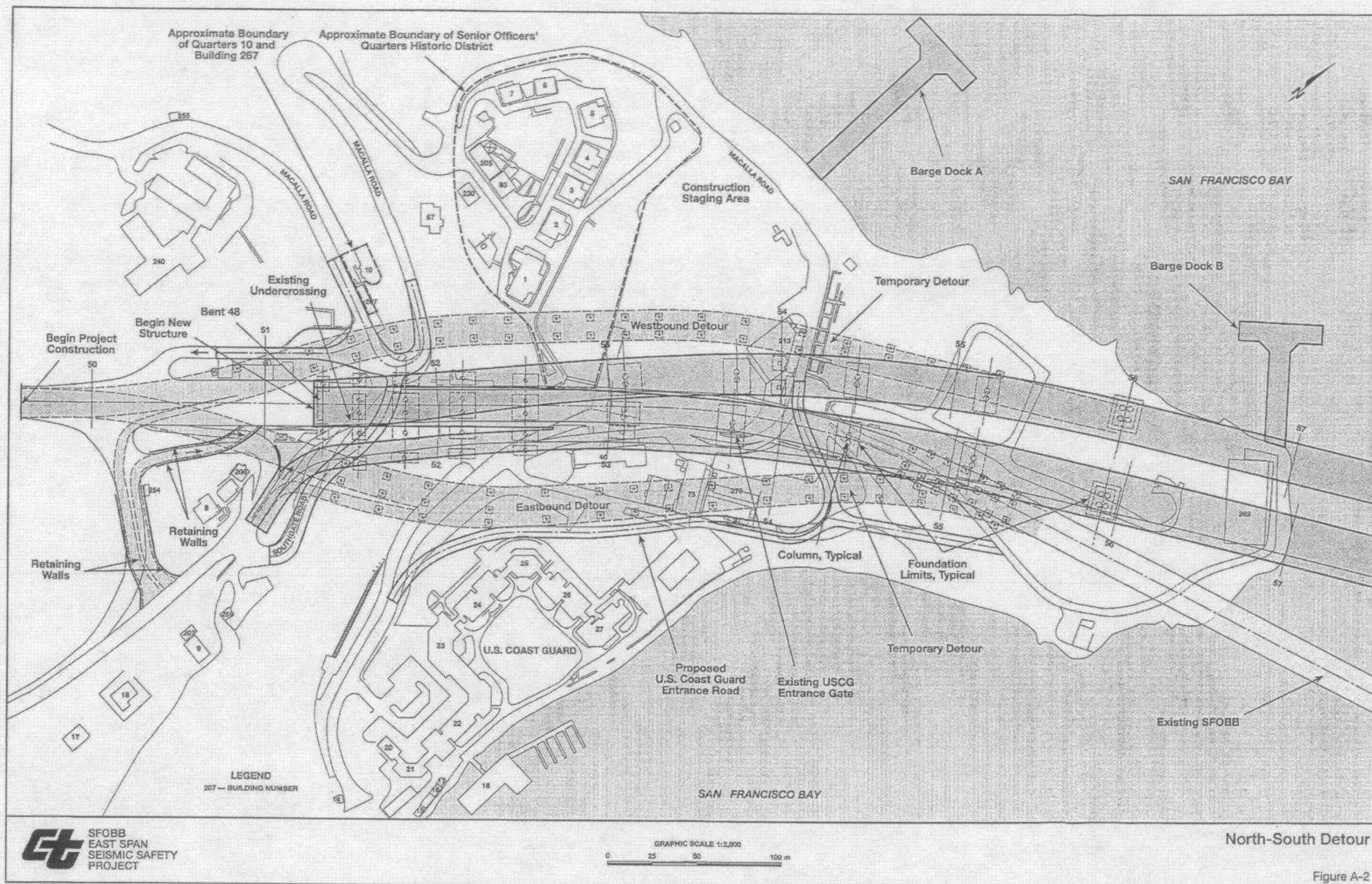
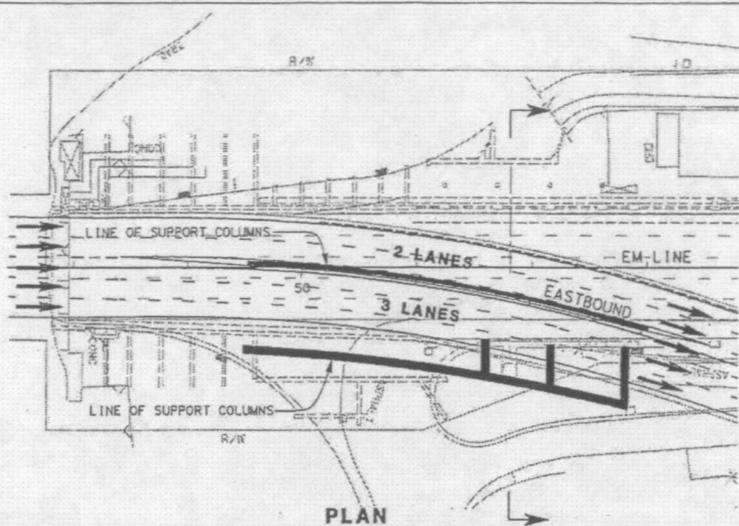
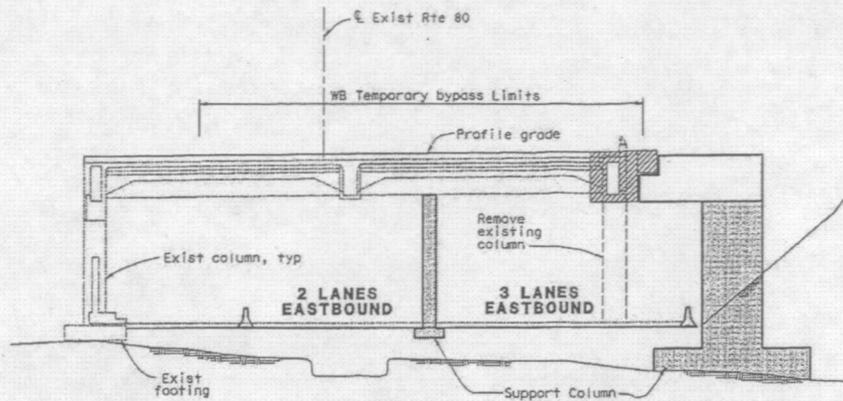


Figure A-1



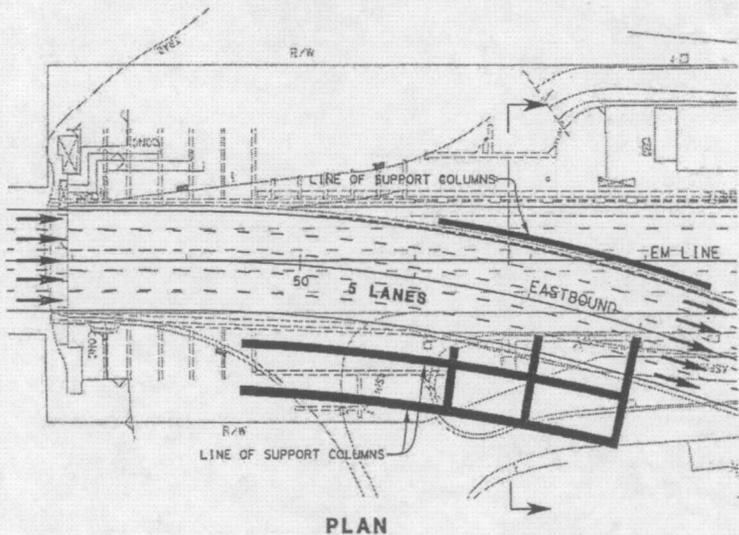


PLAN

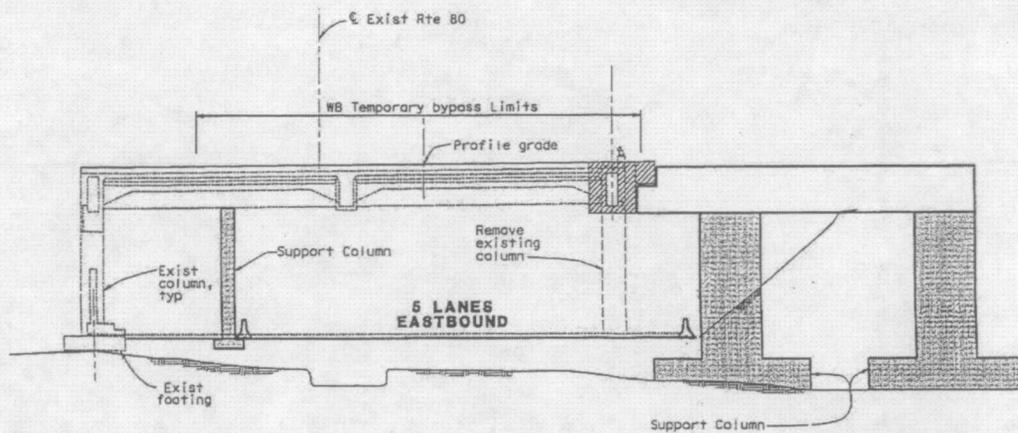


SECTION

REJECTED SOUTH-SOUTH DOUBLE DECK DETOUR



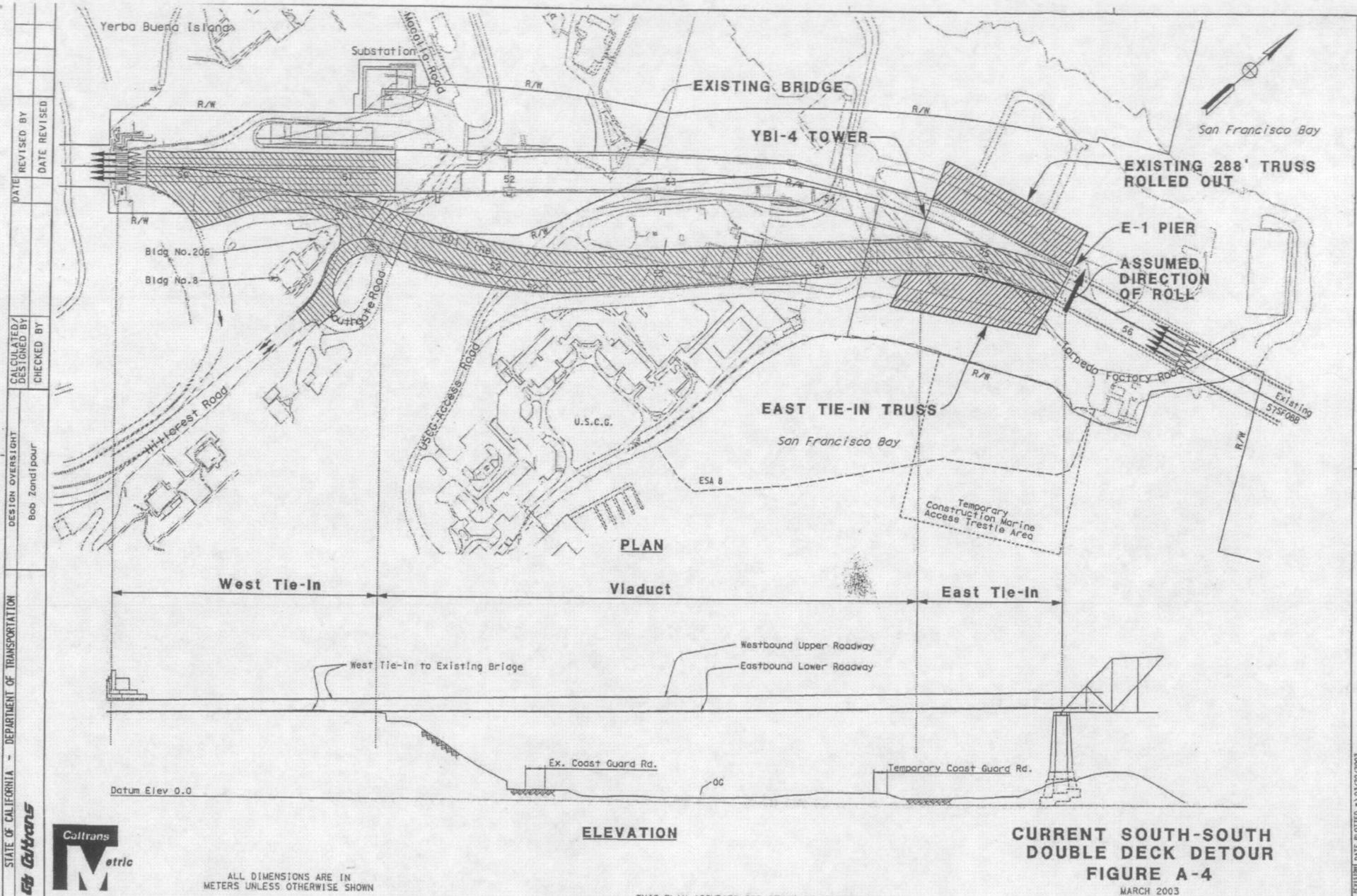
PLAN



SECTION

COMPARISON OF THE
REJECTED AND CURRENT
SOUTH SOUTH DETOUR
AT THE WEST TIE-IN
FIGURE A-3

MARCH 2003
NO SCALE



DATE REVISED BY
 DATE REVISED
 CALCULATED/DESIGNED BY
 CHECKED BY
 DESIGN OVERSIGHT
 Bob Zand/pour
 STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 Caltrans
 Metric

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

ELEVATION

**CURRENT SOUTH-SOUTH DOUBLE DECK DETOUR
FIGURE A-4**

THIS PLAN ACCURATE FOR STAGE CONSTRUCTION ONLY.

MARCH 2003
NO SCALE

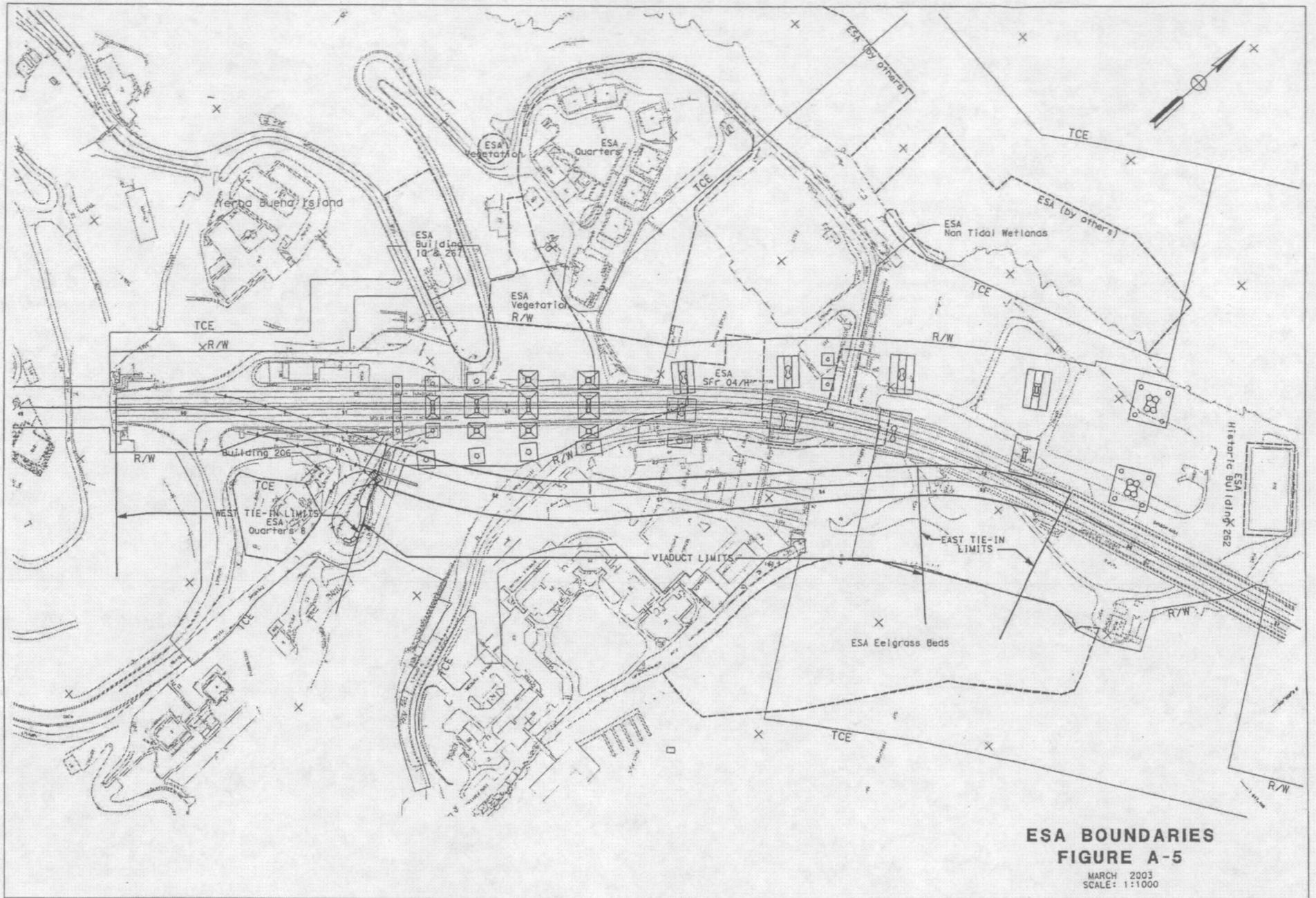


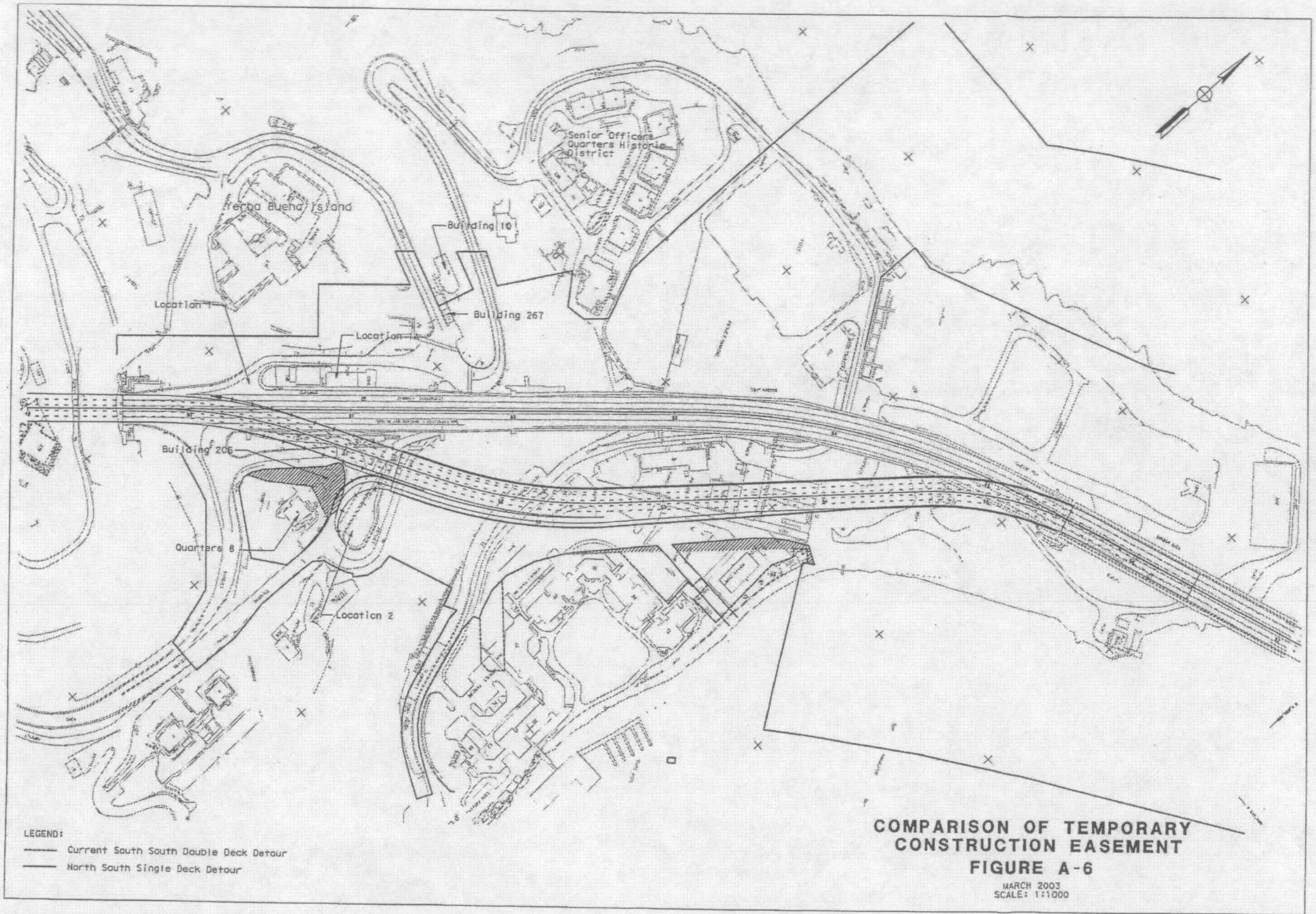
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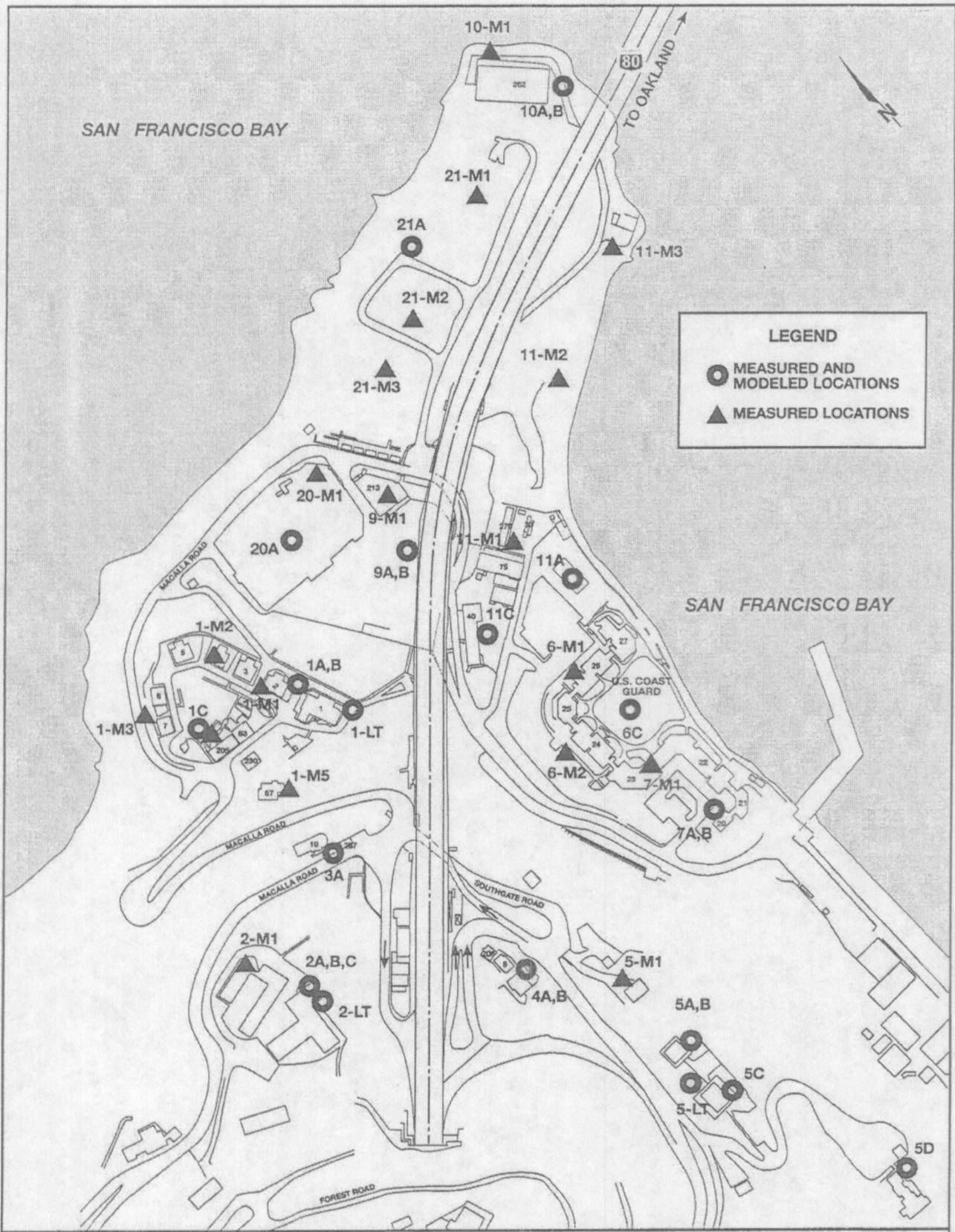


LEGEND:

- Current South South Double Deck Detour
- North South Single Deck Detour

**COMPARISON OF TEMPORARY
CONSTRUCTION EASEMENT
FIGURE A-6**

MARCH 2003
SCALE: 1:1000

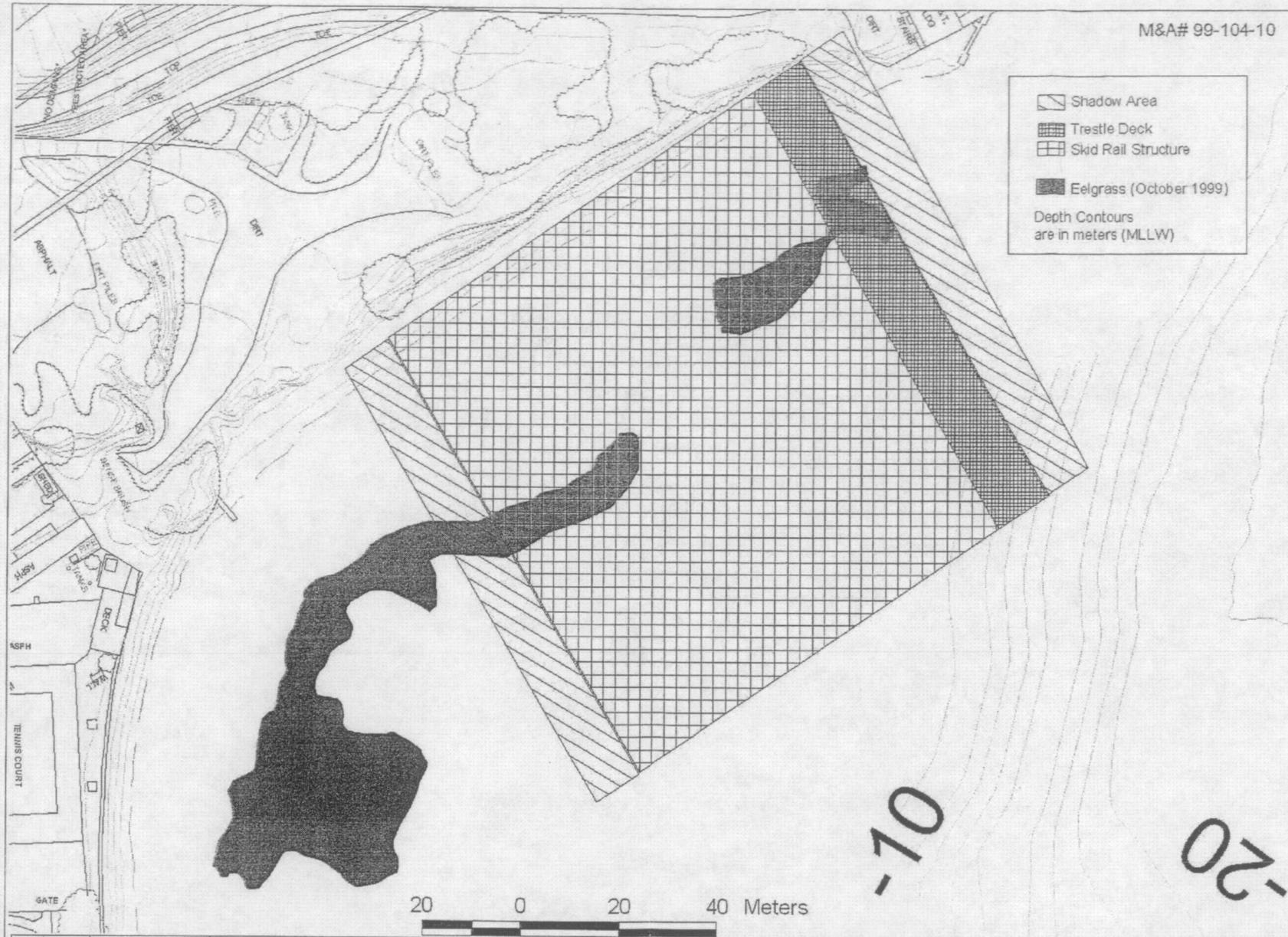


SFOBB
EAST SPAN
SEISMIC SAFETY
PROJECT

GRAPHIC SCALE 1:3,500
0 25 50 m

Noise Measurement and Modeling
Locations—Yerba Buena Island

Figure A-7



Shadow Area
Trestle Deck
Skid Rail Structure
Eelgrass (October 1999)
Depth Contours
are in meters (MLLW)

1" = 25 m

Eelgrass beds, temporary skid rail structure and temporary access trestle
Yerba Buena Island

Figure A-8



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CALIFORNIA DIVISION
980 Ninth Street, Suite 400
Sacramento, CA. 95814-2724
March 20, 2003

IN REPLY REFER TO
HDA-CA
File # 04-SF-80-7.6/8.9
Document # P43929
FHWA 980717A

Dr. Knox Mellon
State Historic Preservation Officer
Office of Historic Preservation
P.O. Box 942896
Sacramento, CA 94296-0001

Dear Dr. Mellon:

SUBJECT: East Span Seismic Safety Project SFOBB - Supplemental Finding of Effect # 2

Enclosed for your review is a Supplemental Finding of Effect Number 2 for the East Span Seismic Safety Project on the San Francisco-Oakland Bay Bridge.

We request your concurrence that a recent change in the undertaking, a new detour configuration to carry traffic around the construction on Yerba Buena Island located within the original project area of potential effect, will not have any additional adverse effects on historic properties. Accordingly, no amendments to the Memorandum of Agreement for the project executed in May 2000 are required.

We have provided a concurrence line for your convenience. Once again, we appreciate your consistently prompt responses regarding this vital public safety project.

If you have any questions please call Joan Bollman at 916-498-5028. Please fax a copy of your concurrence signature to Mara Melandry at 510-286-6374.

Sincerely,

A handwritten signature in cursive script that reads "Joan Bollman".

For
Gary N. Hamby
Division Administrator

Enclosure

Signature

A handwritten signature in cursive script that reads "Gary N. Hamby".

Title

CA SHPO

Date

3/20/2003

Box 1, Folder 3

Item 4

ACCNO_000006