GOLDEN GATE BRIDGE
HIGHWAY & TRANSPORTATION DISTRICT

Golden Gate Suspension Bridge Seismic Retrofit Project

BUILDING AND OPERATING COMMITTEE MEETING

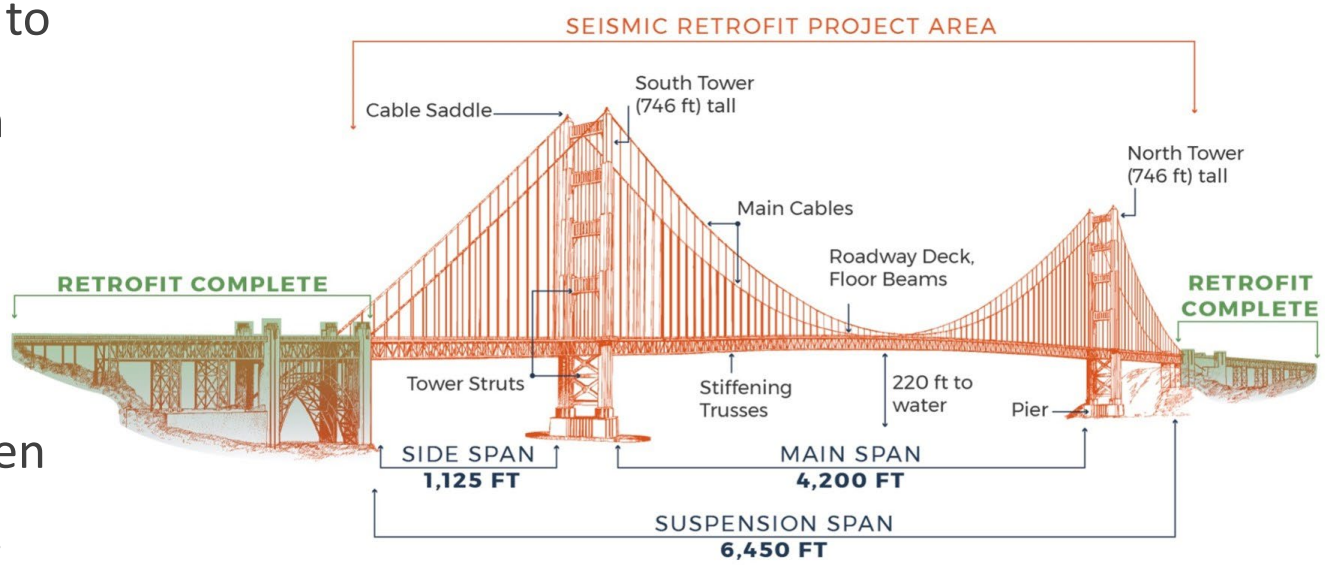
JUNE 26, 2025

Introduction to Project

PROJECT SCOPE

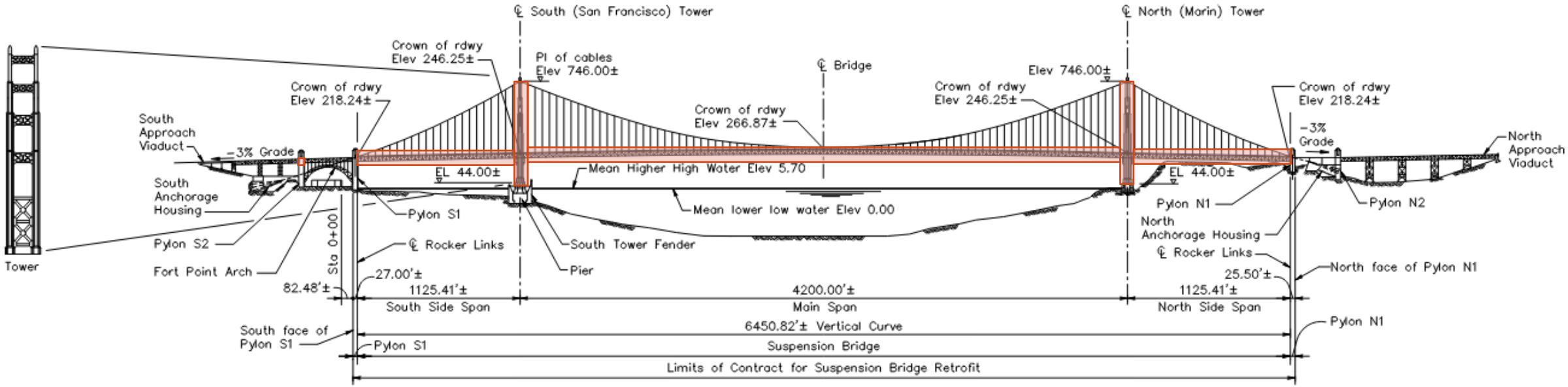
Introduction to the Project

The Golden Gate Bridge, Highway and Transportation District (District) proposes to strengthen the Golden Gate Bridge to withstand a magnitude 8.3 earthquake on the Richter Scale centered on the San Andres Fault (the maximum credible earthquake).



Considerable seismic retrofit work has been completed. The **Golden Gate Suspension Bridge Seismic Project** (Project) is the last construction phase of the overall seismic retrofit. The Project provides seismic retrofit modifications to the Suspension Bridge portion of the Golden Gate Bridge.

Summary of Project Scope



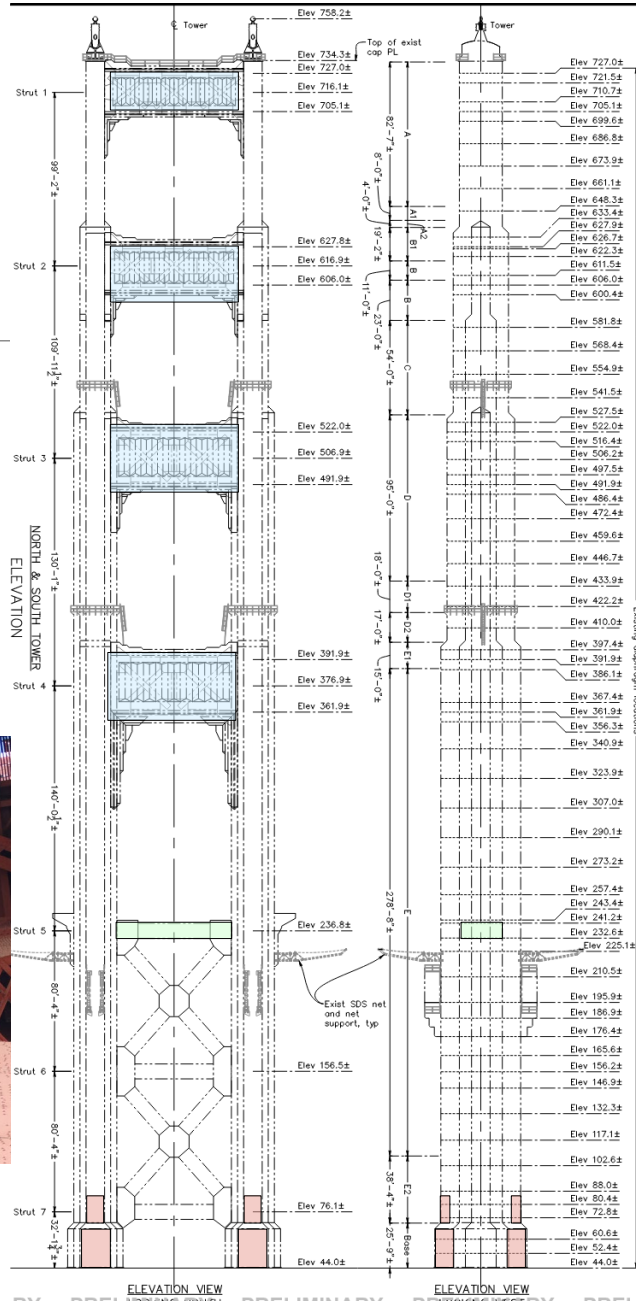
ELEVATION

Project Scope

1. Strengthen existing North and South Tower shafts at base

2. Repair existing North and South Tower transverse cross strut steel façade covers

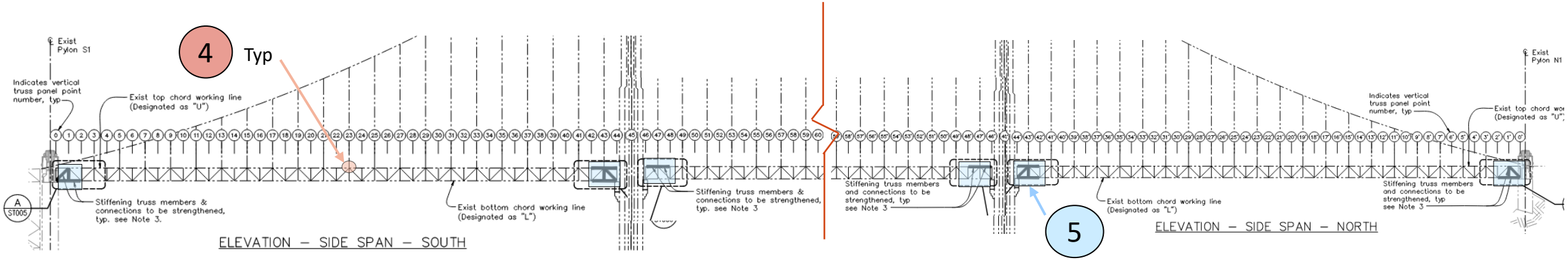
3. Remove existing North and South Tower Strut 5 bottom lacing and install cover plate



Project Scope (continued)

4 Retrofit all existing E&W stiffening truss suspender rope socket connections

5 Strengthen selected existing E&W stiffening truss members and connections

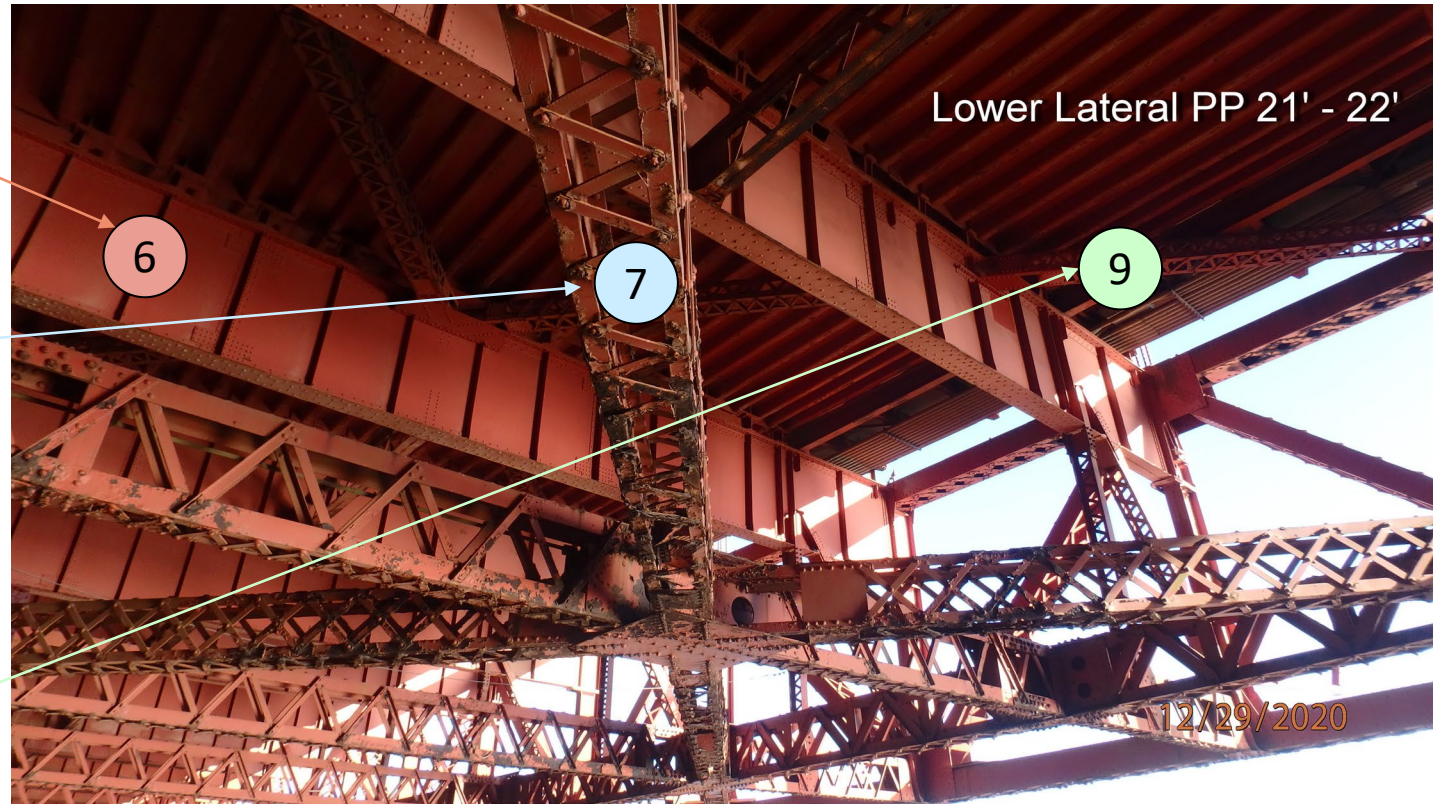


Project Scope (continued)

6 Strengthen existing floorbeams

7 Strengthen existing stiffening truss bottom lateral members and connections

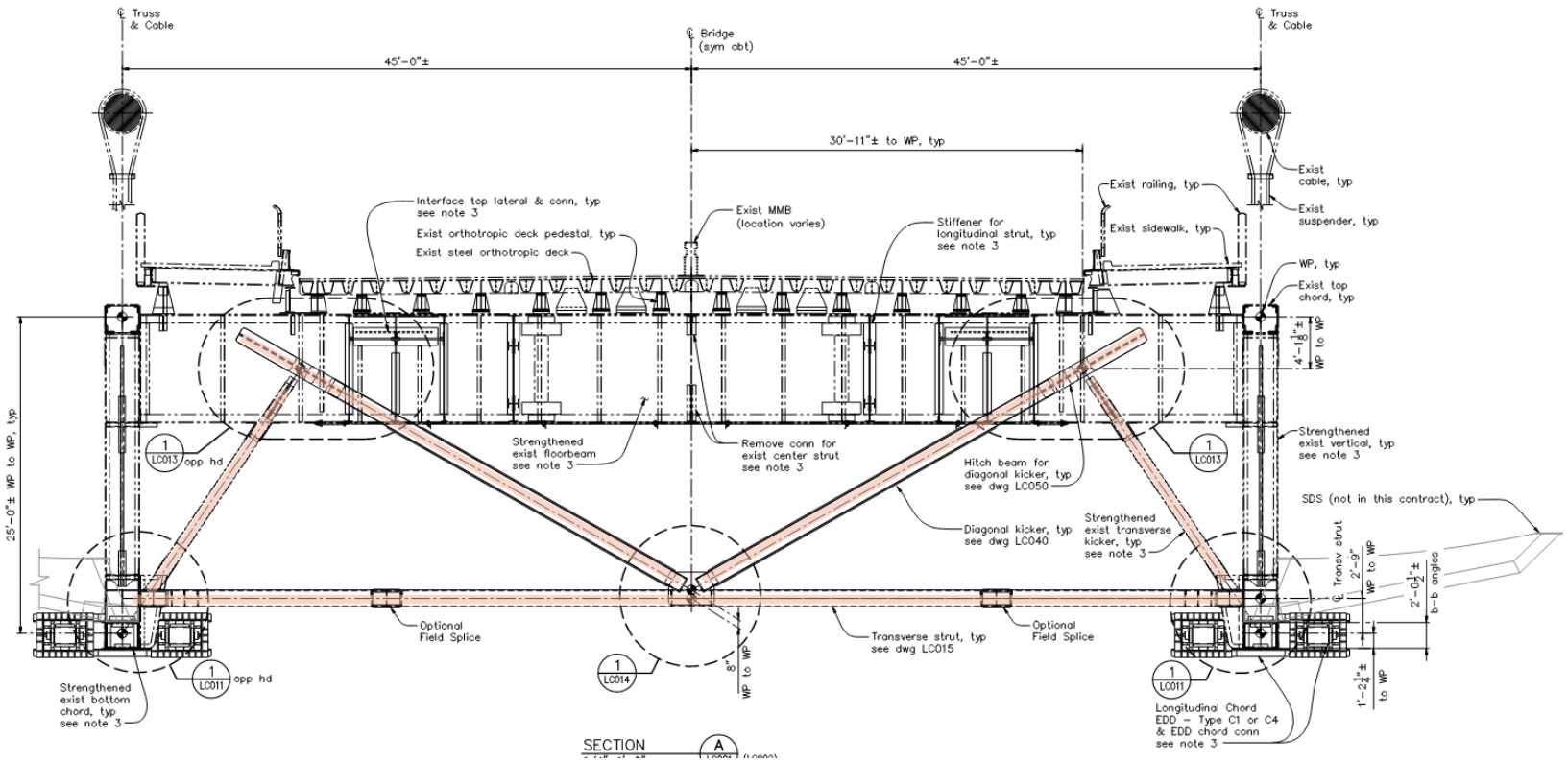
9 Remove existing stiffening truss top lateral members and connections and install new top lateral members and connections



Project Scope (continued)

8

Install cross strut and transverse kickers between E&W stiffening truss bottom chords at select locations



Cross Section at PP 1 and PP1’

Project Scope (continued)

10 Remove existing outrigger truss at select locations

11 Install new longitudinal struts, and remove existing center struts

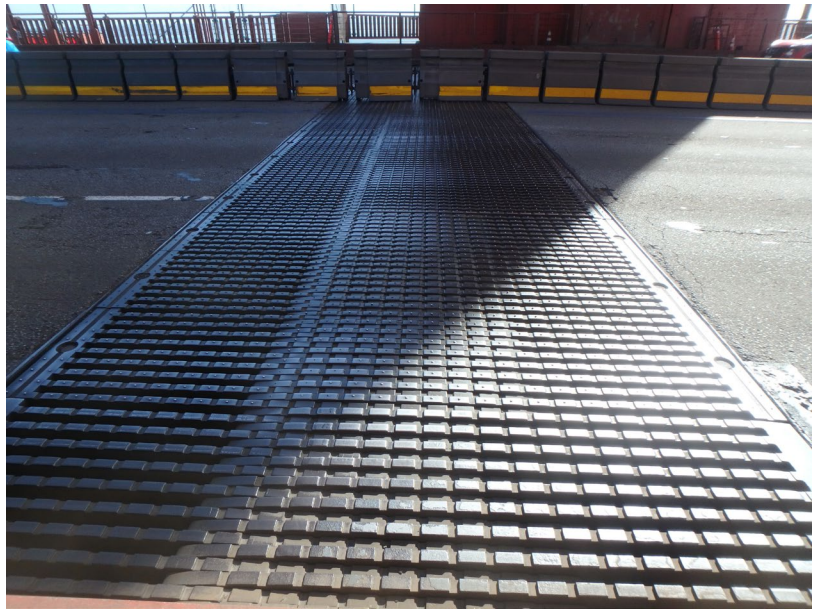
Project Scope (continued)

12 Strengthen existing deck support pedestal connections

Project Scope (continued)

13 Retrofit all existing roadway deck expansion joints located at 50-feet intervals

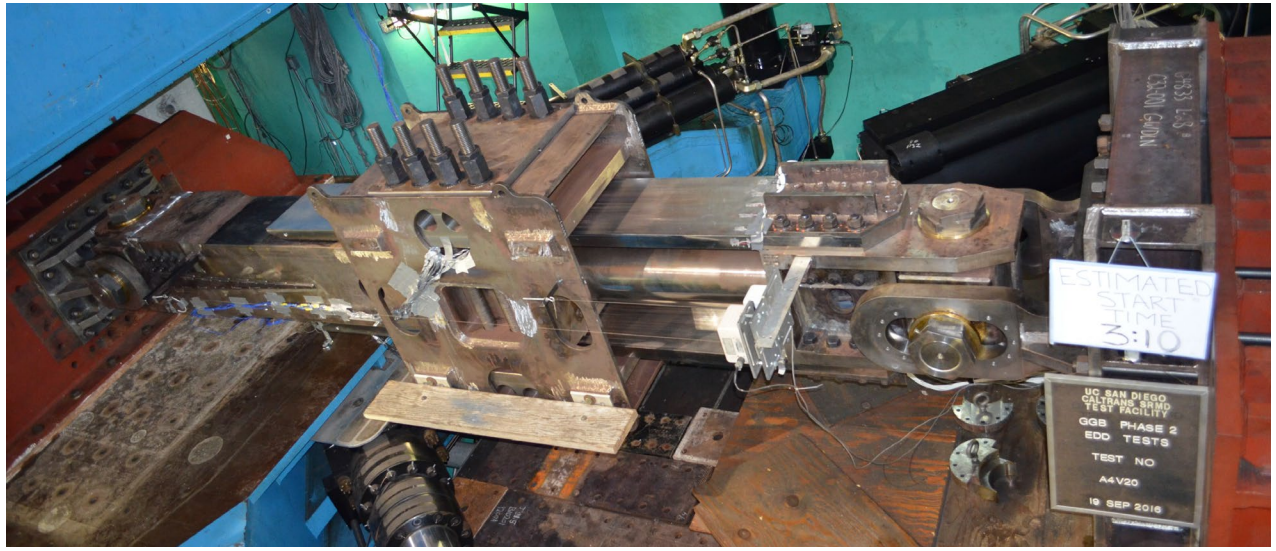
14 Remove existing finger expansion joint and install new seismic isolation deck joint assembly

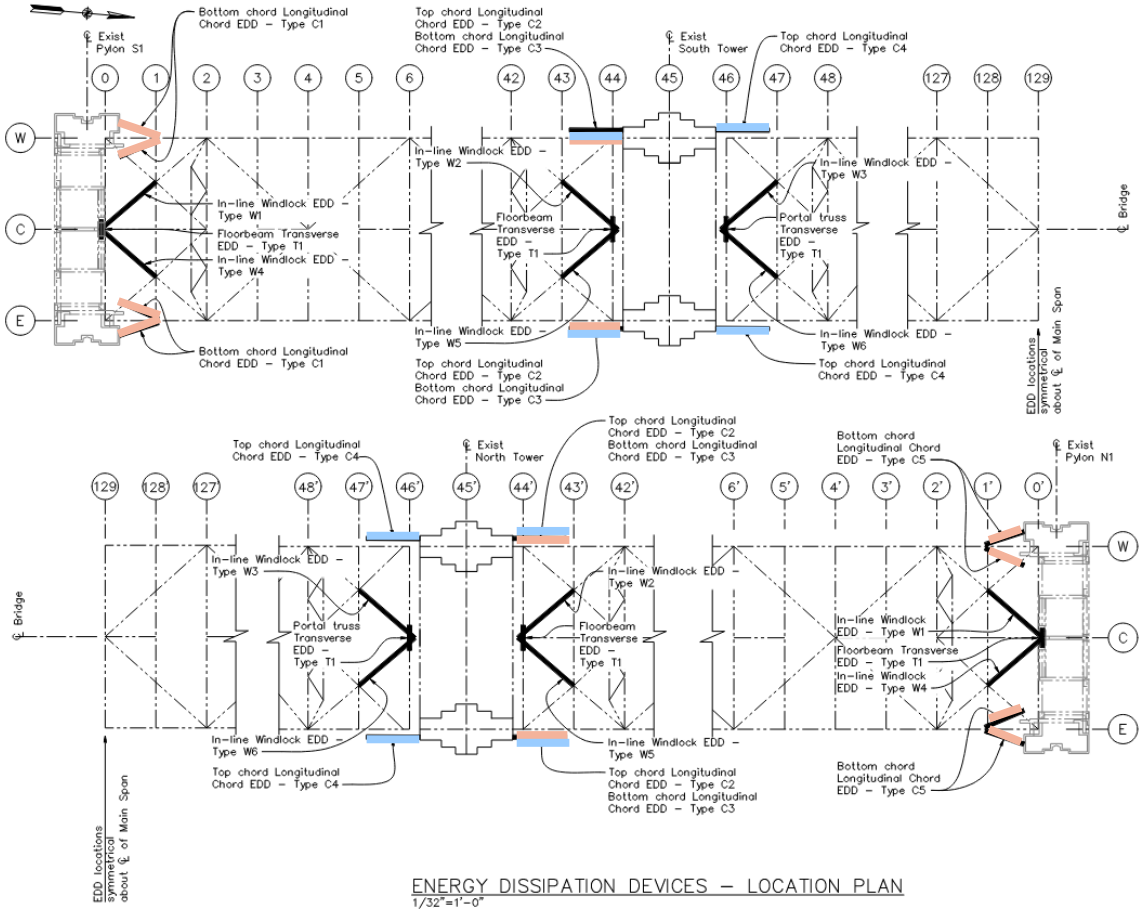


Project Scope (continued)

15 Install Longitudinal Chord energy dissipation devices (EDDs) at E&W stiffening truss bottom chords at Pylons and Main Towers

16 Install Longitudinal Chord EDDs at E&W stiffening truss top chords at the Main Towers

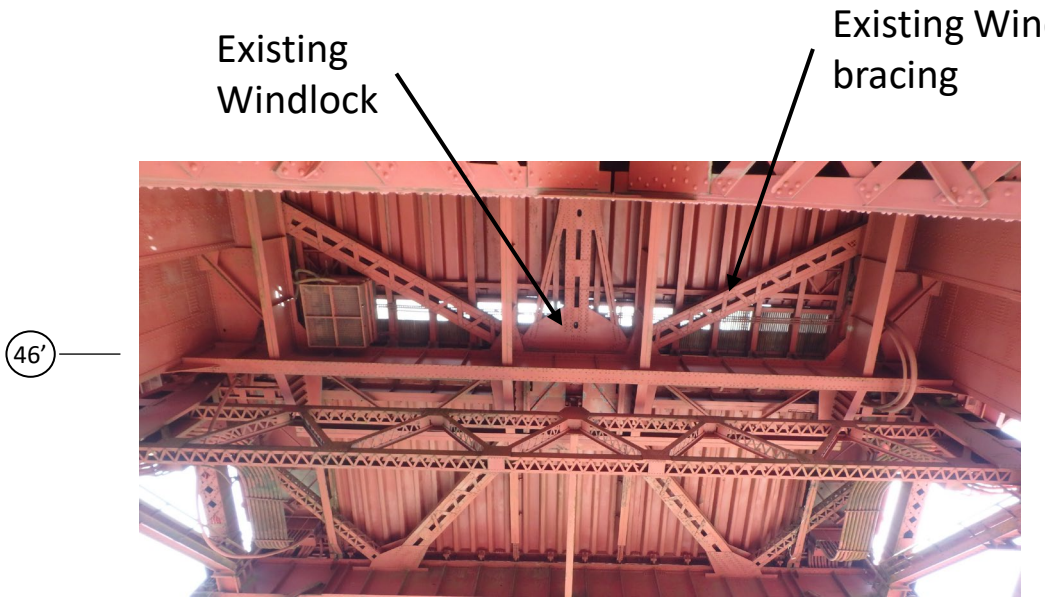


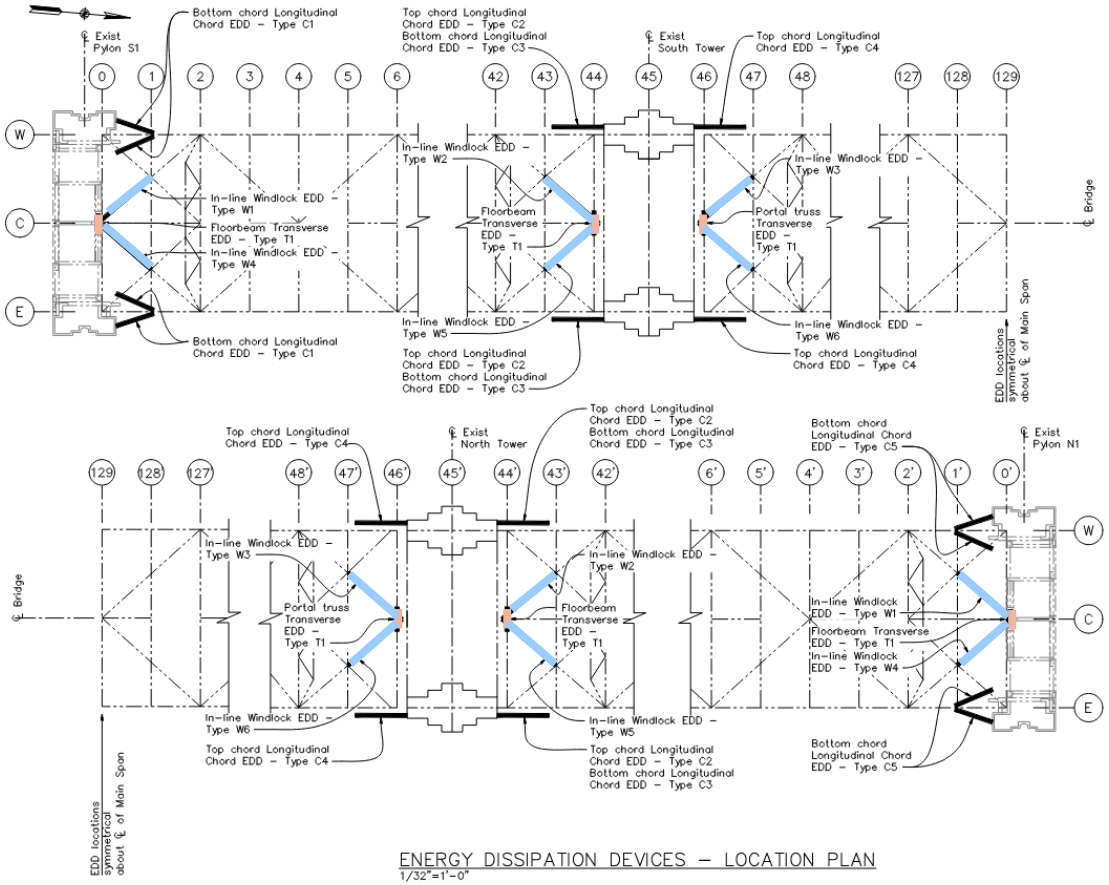


Project Scope (continued)

17 Install Transverse EDD including framing at underside of floorbeam at the Pylons and the Main Towers

18 Remove existing diagonal windlock bracing and install In-Line Windlock EDDs at the Pylons and the Main Towers

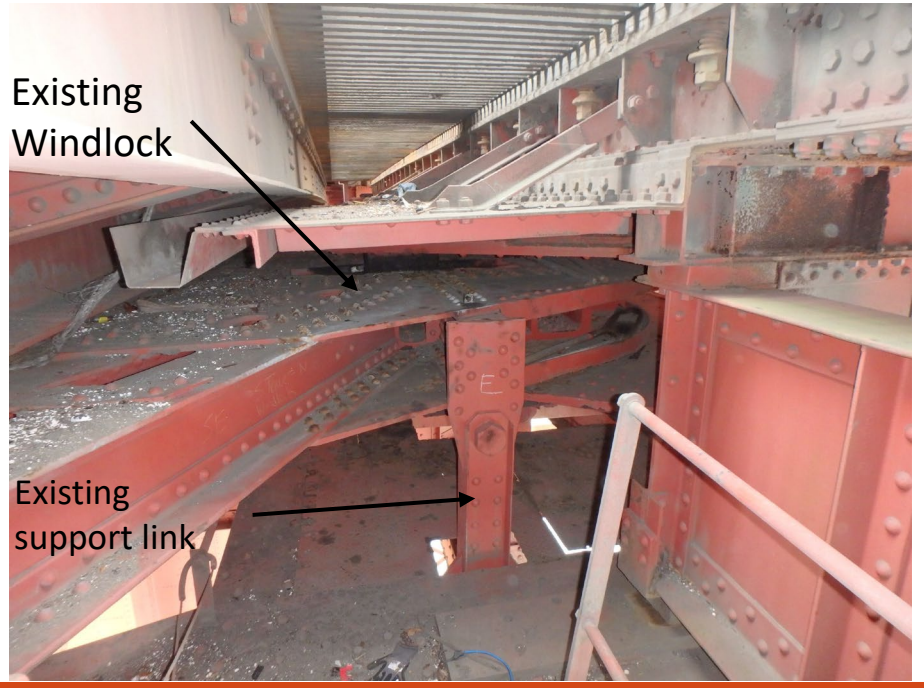




Project Scope (continued)

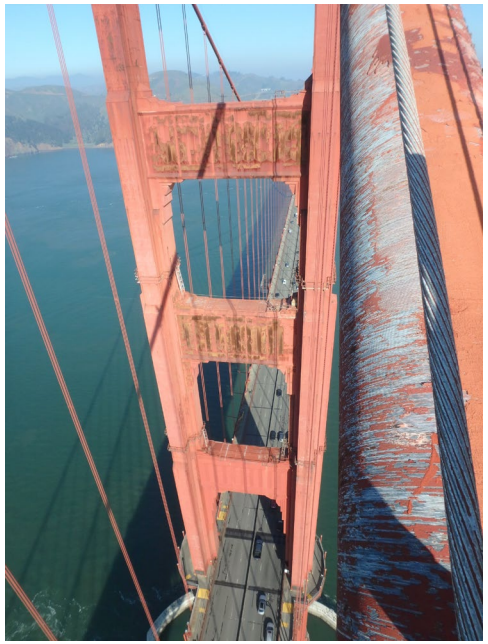
19 Retrofit existing end panel hinged stringer bracket girder seats at PP46 and PP46’

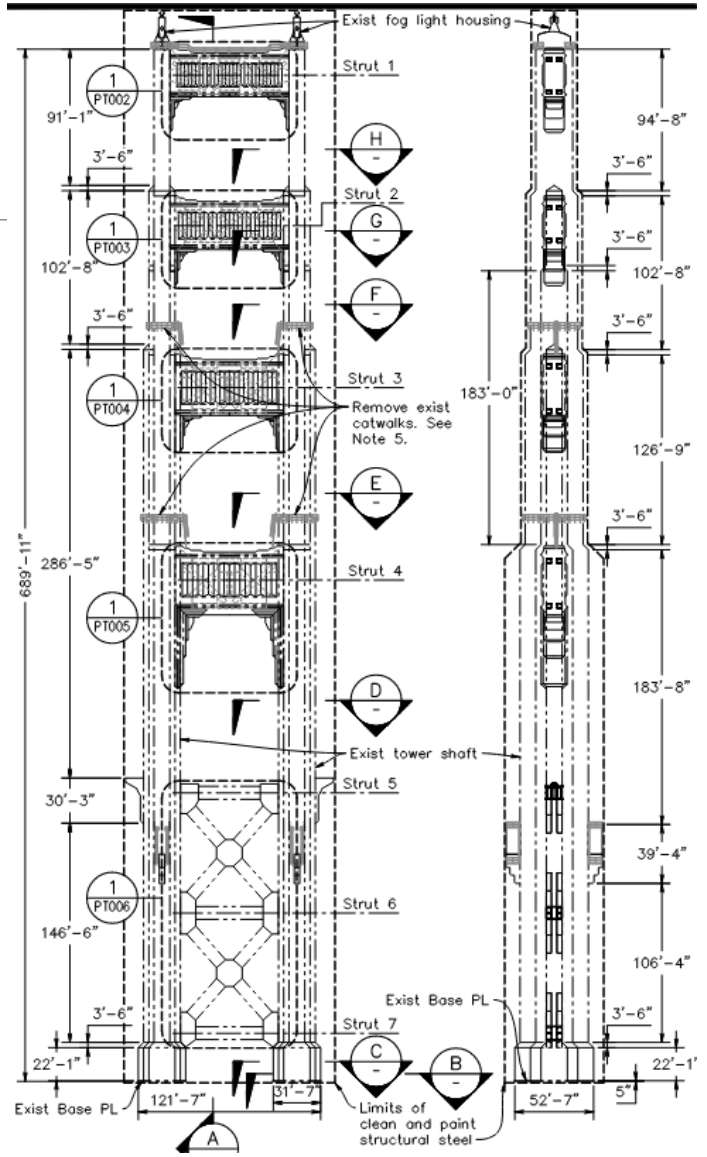
20 Retrofit existing windlock vertical supports at Pylons and Main Towers



Project Scope (continued)

21 Clean and paint all exterior surfaces of the South Tower from top of concrete to top of fog light housing





Project Scope (continued)

22 Retrofit existing Fort Point Arch EDDs

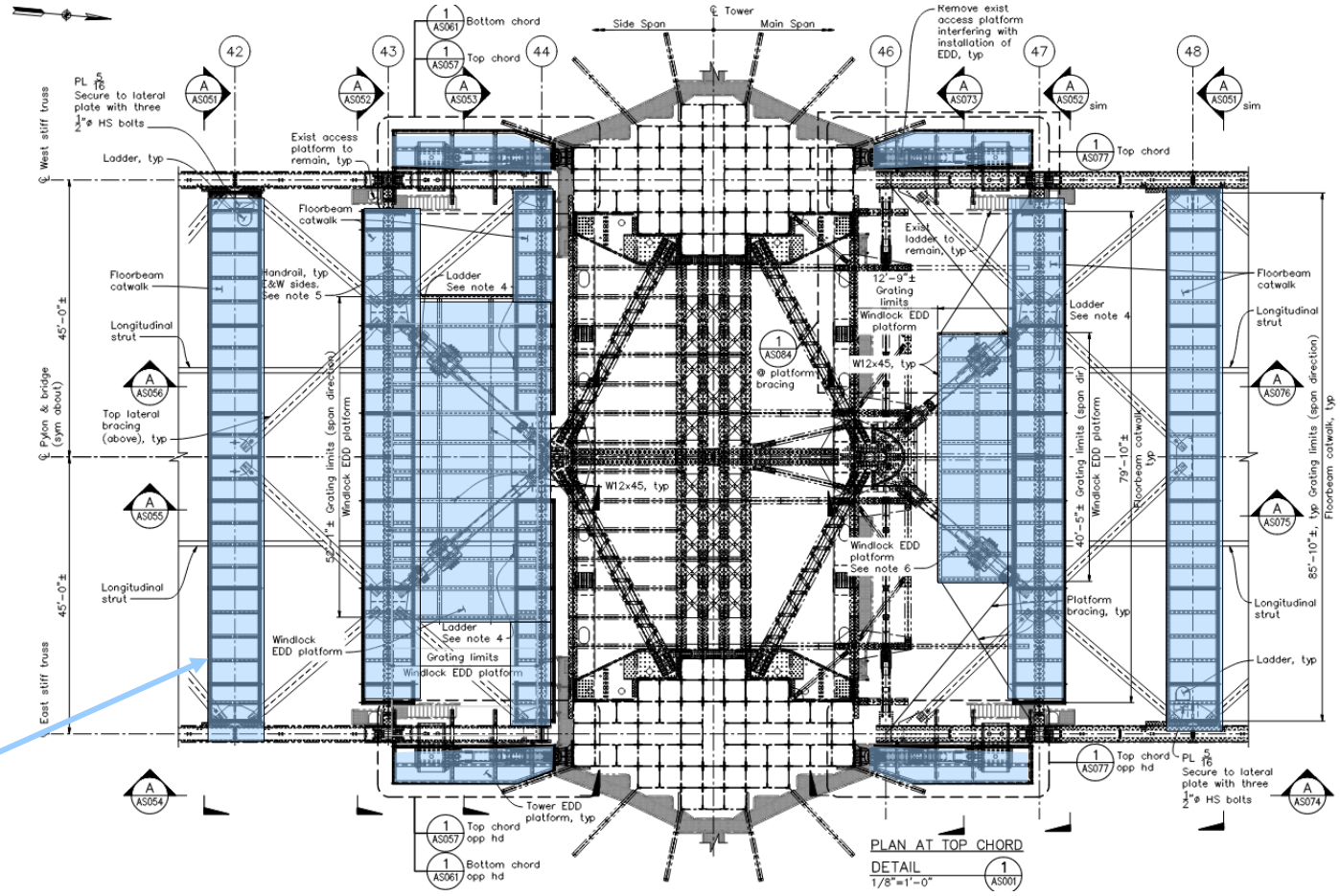
Longitudinal Unit

Transverse Unit

Project Scope (continued)

24

Remove portions of existing access catwalks and install new access platforms



Install new access platforms, typ.

PROCUREMENT

CONSTRUCTION MANAGER/GENERAL CONTRACTOR (CMGC) PROCESS

CMGC Project Delivery Method

July 2018 – Board of Directors approved the use of the Construction Manager/General Contractor (CMGC) procurement method for procuring construction of the project.

April 2019 – Board of Directors authorized establishment of Project #1923, Seismic Retrofit Phase 3B CMGC.

CMGC Delivery Method

- Consists of two distinct contracting phases: Preconstruction Phase and the Construction Phase
- Allows District to select a prime contractor based on qualifications

CMGC Project Delivery Method

2024 – Board of Directors authorizes execution of CMGC and Independent Cost Estimator (ICE) professional services agreements. Notice to proceed was issued effective March 2024, work commenced and has been continuing.

- Contractor acts as a consultant during the Preconstruction Phase (prior to finalizing construction plans and specifications) to provide input on:
  - Constructability
  - Construction cost and schedule risks and how those risks can be mitigated
  - Project site environmental setting and regulatory constraints and its effect on construction cost and schedule
- Provides for an open-book, production-based, transparent construction cost estimate

Preconstruction Phase – Main Goals

Establish Construction Agreed Price (CAP) and Schedule based on:

- 100% construction drawings and specifications
- Agreed to Cost Model
- Agreed to Risk Register and Risk Mitigation
- Construction Access Plan
- Construction Means and Methods Plan
- Subcontracting and DBE Plans
- Quality Control Plan
- Health and Safety Plan
- Required Environmental Mitigations and Permit Conditions

Preconstruction Phase – Outcomes

Two possible outcomes at the end of the Preconstruction Phase:

- The CMGC's Construction Price Proposal (CPP) is accepted by the District
  - The CPP becomes the Construction Agreed Price (CAP)
  - District will prepare a Construction Contract that includes the CAP with the CMGC

- The CMGC's Construction Price Proposal (CPP) is not accepted by the District
  - District reserves the right to terminate the CPP process
  - CMGC will not be excused from completion of the Preconstruction Services required under the Preconstruction PSA
  - District reserves the right to procure the Construction Contract scope of work by some other project delivery method

Budget and Funding

PRECONSTRUCTION AND CONSTRUCTION

Preconstruction Phase

- April 2019 – Project #1923, Seismic Retrofit Phase 3B CMGC established with a budget of $9,861,844, funded with 100% unspent FHWA funds from previous projects #9102 and #9206 (Phase 3 Design and 3A construction), for continuation of design and contract administration.

- August 2023 – Rename project Golden Gate Suspension Bridge Seismic Retrofit and increase the budget by $1,443,663, with 100% remaining unspent FHWA funds from previous projects #9102 and #9206, for a total project budget of $11,305,507, for continuation of design and contract administration.

- February 2024 – Increase budget by $8,540,031, financed with 100% District funds, for a total project budget of $19,845,538, for CMGC consultant, ICE consultant, design consultant and contract administration.

Preconstruction Phase

- April 2024 – Increase budget by $229,737, financed with 100% District funds, for a total project budget of $20,075,275, for environmental reevaluation.

- May 2025 – Increase budget by $5,568,659, financed with 100% District funds, for a total project budget of $25,643,934, for CMGC consultant, ICE consultant, design consultant and contract administration.

Construction Phase

- January 2023 – US Department of Transportation selected the District for the FY 2022 Bridge Investment Program (BIP) Grant in the amount of $400M for the Golden Gate Suspension Bridge Seismic Retrofit construction.
- July 2024 – The FY 24/25 Adopted Budget includes a new project, Project #2250, Golden Gate Suspension Bridge Seismic Retrofit Construction Project, with a $870M project budget.
- September 2024 – Board of Directors approves a funding plan for Project #2250, in the amount of $869.6M, funded with $400M of federal BIP grant funds, $200M in Caltrans Local Highway Bridge Program (HBP) funds and $269.6M in District reserves.

Construction Cost Estimates

OPINION OF PROBABLE CONSTRUCTION COSTS AND COST SCHEDULE RISK ASSESSMENT

OPCC 1 Estimate

- During the preconstruction phase, the Engineer/designer, the CMGC and the ICE develop a cost model and methodology for pricing the work.
- Each party performs their own quantity take-offs and pricing for the work, based on the current developed design drawings and specifications, to determine their opinion of probable construction cost (OPCC) for the project.
- In November 2024, the parties completed OPCC #1, with the construction cost estimated greatly exceeding the $870M project budget.

FHWA Cost Schedule Risk Assessment (CSRA) Workshop

- FHWA requires performing a Cost Schedule Risk Assessment (CSRA) for all major projects (projects in excess of $500M), using a probabilistic methodology to determine the probable cost of a project.
- In order to obligate federal funds for the construction project, a Financial Plan must be developed and submitted to FHWA and Caltrans. FHWA requires that the 70th percentile probable cost determined from the CSRA be the minimum cost used in the Financial Plan.
- The methodology uses the OPCC 1 pricing and the pricing and probability of project risks developed by the project team to develop a costs estimate.
- In March 2025, FHWA held the CSRA workshop. The workshop used the OPCC 1 pricing and the probability of risks developed by the project team for the project. The CSRA also determined that the estimated project cost greatly exceeded the project budget.

Cost Evaluation

- The OPCC 1 costs were evaluated and compared to the previous cost estimate performed in 2022 to determine what was driving the cost increase.
- The OPCC 1 painting costs were higher than anticipated due to the unknowns related to the new Cal OSHA regulations for paint removal containing lead
- California Code of Regulations, Title 8, Industrial Relations, Section 1532.1, Lead, Applies to all construction work where an employee may be occupationally exposed to lead.
- New regulations went into effect January 1, 2025. Lowers the Permissible Exposure Limit for lead by 80% and lowers the Action Level for lead by 93%.
- Over 1.5 M square feet of painting is estimated as part of the project. The CMGC used a very conservative price for the blast clean and paint bid items due to the uncertainty of the new regulations.

Cost Evaluation

- Higher than anticipated increases in material and labor costs due to inflation since the 2022 cost estimate.
- Additional labor resources necessary to construct the complex retrofit design details.
- Additional costs due to increased scope compared to the scope in the 2022 cost estimate.
- Additional logistics and supervision costs necessary to manage multiple work fronts and hundreds of workers.
- An extended estimated project duration compared to the previous project duration.

Phasing of the Project

REDUCED SCOPE AND NEW PHASING

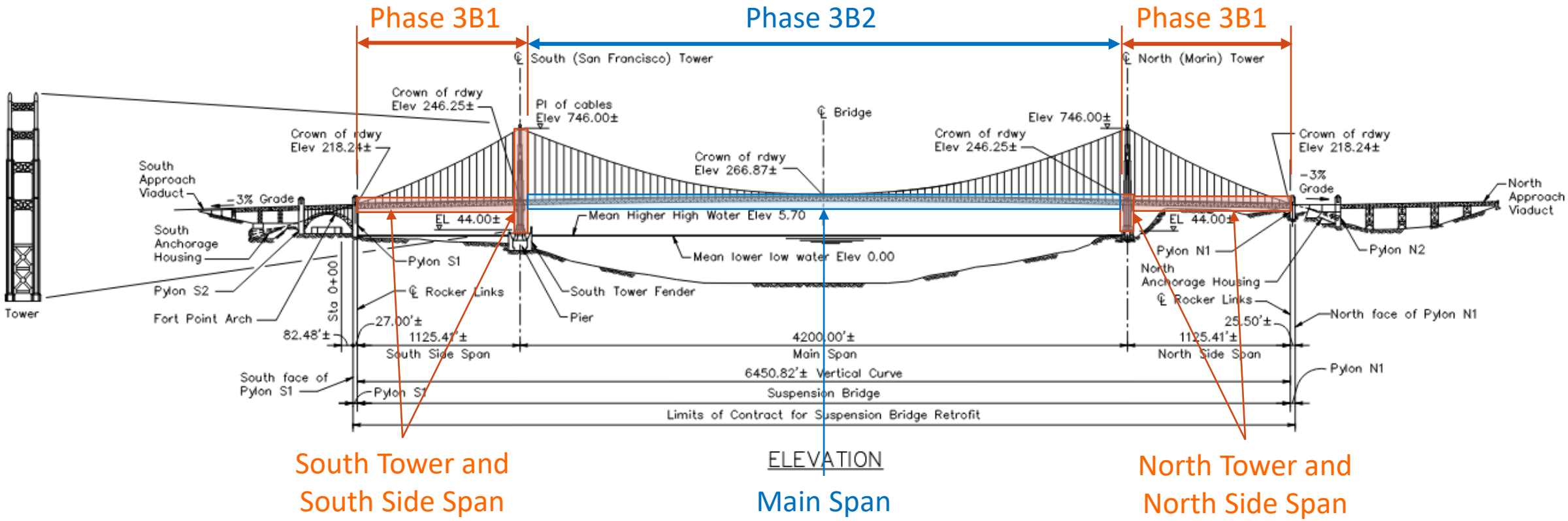
Reduced Scope

- There are insufficient funds currently available to fully finance the construction project as scoped. District staff and the designers reviewed the work items and determined scope that could be reduced or eliminated to save costs.
- Project Modifications:
  - Modify floor beam retrofit details
  - Modify clean and paint limits
  - Remove existing roadway deck expansion joint retrofit
  - Remove retrofit of Marin Abutment expansion joint
  - Eliminate North tower façade repairs
  - Reduce South Tower painting limits
  - Remove retrofit of the Fort Point Arch EDDs

New Seismic Retrofit Phases

- The reduced scope did not produce sufficient savings to allow the project to proceed with the current budget.
- District staff discussed with FHWA and Caltrans options for progressing the project and agreed that the project may be broken up into smaller phases, provided the phases had independent utility of each other.
- It has been determined that the project may be phased with one phase retrofitting the towers and side spans and another phase retrofitting the main span. This will allow the seismic retrofit of a portion of the suspension span to be completed while additional funding for the remaining portion is pursued.

Summary of Project Phases



Next Steps

Preconstruction Phase Schedule

May 2024	CMGC and ICE review and comment on 90% design drawings, specifications, reports
June 2024	Project Team to complete initial meetings (First Construction Baseline Review Meeting, Cost Model Workshop, Site Visits with Field Reports, Risk Assessment Meeting)
November 2024	CMGC and ICE to submit first OPCC & HDR to submit Engineer's Estimate
June 2025	CMGC and ICE to submit second OPCC & HDR to submit Engineer's Estimate
June 2025	HDR to finalize plans and specifications
July-August 2025	CMGC to finalize all Preconstruction Phase submittals
August 2025	CMGC and ICE to submit CPP & HDR to submit Engineer's Estimate
September 2025	Complete Preconstruction Phase

Next Steps

- Finalize documents for Phase 3B1.
- Investigate a project specific waiver to the new CalOSHA lead regulations.
- Complete the environmental re-validation.
- Secure all remaining construction permits.
- Modify the BIP agreement.
- Obligate the $400M BIP grant funds by September 30, 2025.
- Award a construction contract in 2025.
- Develop a finance plan for the construction of Phase 3B2.

Thank you

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