Outlook

Protect OUR Historical Stockton Bridge-Comprehensive Review of Caltrans Bridge Inspection Reports and Transparency Concerns Regarding the Historic Stockton Avenue Bridge

From TJ 4 Capitola <tj4capitolabeachtown@gmail.com>

Date Wed 8/26/2026 4:34 AM

To Margaux Morgan <mmorgan@cityofcapitola.gov>; Gerry Jensen <gjensen@cityofcapitola.gov>; Clarke, Joe <jclarke@cityofcapitola.gov>; Melinda Orbach <morbach@cityofcapitola.gov>; Westman, Susan <swestman@cityofcapitola.gov>

Cc City Clerk <cityclerk@cityofcapitola.gov>; Gautho, Julia <jGautho@cityofcapitola.gov>

1 attachment (16 MB)

Cal Trans Bridge Reports BIRIS_36C0110.pdf;

City Clerk,
Please add this email and attached document to the published August 27, 2026 City Council Meeting comments, with printed copies for each Council Member. In addition, include all comments and documents in the meeting minutes.

Mayor and Council Members,

Please find attached six Caltrans Bridge Inspection Reports spanning an 11-year period (2013–2024), which consistently incorporate baseline structural data dating back to 2009. A critical analysis of these objective documents reveals a profound contradiction with the **April 1, 2026, CSWST2 Existing Condition Memorandum**. While the independent Caltrans reports categorize the structure's overall condition as "fair" across ten separate inspection cycles, they simultaneously carry a continuous, active work recommendation to replace the bridge deck overlay. This formal recommendation has been explicitly active since 2011 to preserve the bridge and prevent internal structural failure.

Chronic Deferred Maintenance: The Bridge Deck Overlay

The attached documentation proves that Caltrans inspectors have explicitly flagged the bridge deck as requiring immediate, preventative remediation across multiple decades, a timeline completely minimized by the City's contracted vendor:

- **Pages 8 & 9:** Detail a formalized work recommendation—initially entered in **2011**—to apply a polyester concrete overlay to the deck structure.
- **Page 12:** Explicitly mandates the proposed action **"Deck-Place Overlay"** under the "Deck Work Recommendations" section.
- **Page 16:** Formally confirms that the 2011 work recommendation remains active and unaddressed.

- **Page 19:** Re-lists the proposed overlay work within the "Deck Work Recommendations" schedule.
- **Page 23:** Notes the continuous, ongoing necessity to install a polyester concrete overlay.
- **Page 26:** Catalogs the **"Deck-Place Overlay"** action under prioritized deck maintenance.
- **Page 28:** Explicitly links the 2011 work recommendation to a severely weathered and cracked deck surface requiring immediate sealing.
- **Page 30:** Outlines the **"Deck-Place Overlay"** requirement under mandatory local agency actions.
- **Page 41:** Re-verifies the active proposed action status for the polyester overlay installation.

Historical Baselines and Dynamic Site Conditions

The modern inspection logs heavily rely on structural baselines established in 2009 to track the long-term structural health of the bridge:

- **2009 Load Rating Analysis:** The legal and permit load capacities cited across all modern reports are derived exclusively from the Load Rating Summary Sheet dated September 4, 2009.
- **2009 Channel Measurements & Scour Evaluation:** The 2013 and 2015 reports utilize a baseline cross-section measured on September 25, 2009. While the reports confirm that the channel protection remains stable and classified as "protected" with no historical scour, they document volatile, seasonal creek dynamics.
- **Dynamic Hydrology:** Inspectors noted that Soquel Creek experiences natural seasonal berming downstream, blocking free flow into the ocean. Combined with heavy rain events, this berming caused water depths at Bent 2 / Pier 2 to surge to 8 feet—more than double the standard historical baseline of 3 to 4 feet.
- **2009 Photographic Record:** The 2024 report still relies on routine evaluation photographs captured on September 25, 2009, to track long-term deck and joint deterioration.

Deconstructing the CSWST2 Report: Contradictions and Capital Escalation

The April 1, 2026, CSWST2 memorandum utilizes a narrative of structural decay to push for a high-cost, total bridge replacement. However, a technical cross-examination with independent data reveals critical discrepancies:

1. **The Deck Replacement Paradox:** CSWST2 asserts that a full deck slab replacement is mandatory due to transverse reinforcement corrosion, claiming an overlay or methacrylate treatment is unfeasible. Yet, CSWST2 simultaneously admits that **"a load rating reduction is not regarded as necessary"** and that the reinforcement loss **"will not lead to a collapse risk."** If the bridge remains completely safe for everyday legal traffic loads, accelerating a total replacement without executing Caltrans' decades-old preventative overlay recommendations represents an unjustified escalation of public spending.
2. **Manufactured Urgency via Scour Analysis:** CSWST2 highlights a "Code 3" classification to label the bridge as "scour critical" under extreme, hypothetical 100-year flow scenarios

(17,500 cfs). What the vendor minimizes is that **historical field logs confirm no scour has ever been observed at the bridge site.** The channel is naturally protected and highly stable. CSWST2's model relies heavily on unverified assumptions regarding floating debris depths and silty-sandy soil types, weaponizing predictive software to overshadow a century of empirical structural stability.

3. **Utility Conflation:** The vendor catalogs various utility defects, including cracking in an 18-inch asbestos cement sewer main and exposed electrical wiring. These are standard municipal utility maintenance issues. Conflating routine utility repairs with a systemic failure of the bridge structure itself is a classic tactic used to artificially inflate the necessity of a total capital replacement project.

The Role of Caltrans Bias-Free Appraisals vs. Municipal Procurement

It is vital to distinguish between data sources when evaluating public infrastructure safety. The City utilizes CSWST2 engineers hired via an RFP process. It is well-established that vendor-driven analyses can be influenced to mirror a municipality's desired policy outcome—in this case, building a brand-new bridge rather than maintaining the existing one.

Conversely, Caltrans structural civil engineers operate completely free of local political or financial biases. Their sole mandate is to safeguard public safety and preserve state infrastructure assets through three rigid, objective functions:

1. **Objective Safety Appraisals:** Conducting field examinations to grade structural health on a regulated scale.
2. **Legal Load Rating Certification:** Utilizing empirical mathematics to dictate structural weight limits, ensuring heavy freight trucks do not cause catastrophic failure.
3. **Prescriptive Maintenance Planning:** Injecting formalized "Work Recommendations" into state infrastructure systems to mandate preventative care—such as sealing weathered decks before moisture reaches internal steel reinforcement.

By ignoring these multi-decade Caltrans recommendations, the City and its consultant have allowed a manageable maintenance item to transform into an artificially manufactured infrastructure crisis.

Conclusion and Call to Transparency

The systemic omission or minimization of continuous Caltrans work recommendations in local discussions directly undermines the core tenant of "Trust" explicitly outlined as a pillar in the City's 2025–2029 Strategic Plan—a document to which each of you signed your name.

As City Council Members, it is your fiduciary and ethical obligation to implement responsible, transparent administrative processes. The community deserves accurate, unfiltered, and objective data regarding its public infrastructure rather than a single, vendor-driven conclusion.

Respectfully Submitted,
TJ Welch

Please find attached the entire six Cal Trans Bridge Reports here:

California Department of Transportation
Division of Maintenance

Structure Maintenance and Investigations

BRIDGE

INSPECTION

RECORDS

INFORMATION

SYSTEM

The requested documents have been generated by BIRIS.

These documents are the property of the California Department of Transportation and should be handled in accordance with Deputy Directive 55 and the State Administrative Manual.

Records for “Confidential” bridges may only be released outside the Department of Transportation upon execution of a confidentiality agreement.



Photo #1
Details near Pier 2 in Span 1.

119 - Rail-Damage/Deterioration



Photo #2

Typical rail deterioration.

102 - Deck-Damage/Deterioration



Photo #3

Typical deck cracks.

36C0110

May 15, 2024 [AAAN]

500 - Approach



Photo #4

2 FT diameter AC approach in the westbound lane at A1 is cracking and potholing.

BRIDGE INSPECTION REPORT
Routine Inspection



BRIDGE NO.: **36C0110**
STRUCTURE NAME: **SOQUEL CREEK**
INSPECTION DATE: **May 14, 2024**

BRIDGE LOCATION INFORMATION

(9) LOCATION	AT THE ESPLANADE	(7) FACILITY CARRIED	STOCKTON AVE
(11) POSTMILE	0	(6) FEATURE INTERSECTED	SOQUEL CREEK
(16) LATITUDE	36°58'20.27"	(5) INVENTORY RTE(ON/UNDER)	ON 150000000
(17) LONGITUDE	121°57'11.45"	(104) ON NATIONAL HIGHWAY SYSTEM	NOT ON NHS

STRUCTURAL HEALTH CONDITION SUMMARY INFORMATION

(58) DECK	4 POOR	DECK AREA (M)^2	524
(59) SUPERSTRUCTURE	5 FAIR	SUFFICIENCY RATING	60.6
(60) SUBSTRUCTURE	5 FAIR	PAINT CONDITION	N/A
(62) CULVERT	N N/A (NBI)	STRUCTURALLY DEFICIENT (SD) STATUS	SD
(67) STRUCTURE EVALUATION	5 ABOVE MIN TOLERABLE	(113) SCOUR	5 STABLE W/IN FOOTING OR PIL

PHOTOGRAPH IDENTIFICATION



Routine-Roadway View (09/25/2019)



Routine-Elevation View (09/25/2019)



Routine-Underside View (09/25/2019)



Routine-Map View (10/05/2022)

TEAM LEADER: Zhigang Zhang

REPORT AUTHOR: Zhigang Zhang

INSPECTED BY: Z.Zhang/B.Nekaien

Zhigang Zhang (Registered Civil Engineer) — Date: 10/4/2024

PROFESSIONAL ENGINEER — REGISTERED — STATE OF CALIFORNIA
Zhigang Zhang
No. 72440
Exp. 06/30/2026
CIVIL

STRUCTURE OVERVIEW

AGENCY INFORMATION

(1) STATE NAME	CALIFORNIA 069
(2) HIGHWAY DISTRICT	05
(3) COUNTY CODE	(36)SANTA CRUZ
(4) PLACE CODE	(11040) CAPITOLA
(21) MAINTAIN	04 CITY OR MUNICIPAL HI
(22) OWNER	04 CITY OR MUNICIPAL HI
(98) BORDER BRIDGE STATE CODE	N/A % SHARE N/A
(99) BORDER BRIDGE STRUCTURE NUMBER	N/A

INSPECTION INFORMATION

(90) INSPECTION DATE	05/24	(91) FREQUENCY	24 MO
(92) CRITICAL FEATURE INSPECTION		(93) CFI DATE	
A) NSTM INSP	N-NO	MO A)	N/A
B) UNDERWATER INSP	N-NO	MO B)	04/96
C) OTHER SPECIAL INSP	N-NO	MO C)	N/A

CONSTRUCTION INFORMATION

(27) YEAR BUILT	1934	(45) MAIN SPANS	3	(43a) STRUCTURE TYPE MAIN	2: CONCRETE CONT
(106) YEAR MODIFIED	N/A	(46) APPR SPANS	0	(43b) DESIGN TYPE MAIN	05: BOX BEAM OR GDR - MU
(34) SKEW	0	(48) MAX SPAN (M)	25.9	(44a) STRUCTURE TYPE APPR	0: OTHER/ NOT APPLICABLE
(49) LENGTH (M)	41.8	(35) STR FLARE	0-NO	(44b) DESIGN TYPE APPR	00: OTHER/NOT APPLICABLE
(112) NBIS BR LENGTH	Y	JOINTS	2	NO. OF HINGES	0

STRUCTURE DESCRIPTION

3 span, continuous parabolic RC (7 cell) box girder with cantilevered end spans on RC pier walls and RC diaphragm ends with non-monolithic wingwalls, all founded on RC pile caps and timber piles

SPAN CONFIGURATION

1 @ 25 ft, 1 @ 85 ft, 1 @ 25 ft

OPERATIONAL INFORMATION

LOAD CAPACITY

(31) DESIGN LOAD	0 UNKNOWN	(65) CALC METHOD	1 LF LOAD FACTOR
(66) INVENTORY RATING	RF=1.01 =>32.7 metric tons	(63) CALC METHOD	1 LF LOAD FACTOR
(64) OPERATING RATING	RF=1.68 =>54.4 metric tons	(70) BRIDGE POSTING	5 AT/ABOVE LEGAL LOADS
(41) STRUCTURE STATUS	A-OPEN, NO RESTRICTION	PERMIT RATING	PPPPP
OVERLAY THICKNESS	0 inches		

POSTING LOADS

	Safe Loads	Existing Ordinance/Order	Posting Signs	
Type 3	Legal	N/A	N/A	U.S. Tons
Type 3S2	Legal	N/A	N/A	U.S. Tons
Type 3-3	Legal	N/A	N/A	U.S. Tons
Speed	25	N/A	N/A	MPH

Additional Ordinance/Order Requirements

NONE

Additional Signs

NONE

Posting Date N/A
Load Rating Summary Date 09/04/19
Load Rating Type Calculated
Load Rating Tool - Date BDS, Hand Calcs (LRE) - 09/03/19

MINIMUM VERTICAL CLEARANCE

(53) MIN VERT CLEAR OVER BRIDGE RDWY		Unimpaired
(54) MIN VERT UNDERCLEAR REF	N-NOT H/RR	0.00 M

MINIMUM LATERAL UNDERCLEARANCE

(55) MIN LAT UNDERCLEAR RT REF	N-NOT H/RR	0.0 M
(56) MIN LAT UNDERCLEAR LT		0.0 M

CONDITION INFORMATION

INSPECTION COMMENTARY

SCOPE AND ACCESS

This inspection was completed in accordance with SM&I standards for a routine regularly scheduled evaluation. All elements received a full visual inspection. The deck was walked and the channel was waded and probed. Water was present under all spans at a depth of 1-3 feet with the pierwalls wet and the abutments dry, see Photo 1.

NUMBERING CONVENTION

This structure alignment is east and west. The western abutment is Abutment 1 and is located nearest to the Venetian Court with the ocean on the right. The eastern abutment is Abutment 4 and is located nearest the Esplanade.

DECK AND ROADWAY

The AC approach is cracking and potholing in the westbound lane at Abutment 1, see Photo 4.

SPECIAL INSPECTION INFORMATION

STEEL INVESTIGATION DETAILS - NOT APPLICABLE FOR THIS BRIDGE.

UNDERWATER INVESTIGATION DETAILS - NOT APPLICABLE FOR THIS BRIDGE.

DECK AND ROADWAY

DECK CROSS SECTION

1.08 ft br, 5 ft sw, 30 ft, 5 ft sw, 1.08 ft br

DECK GEOMETRY

(49)	LENGTH	41.8 M
(51)	NET WIDTH	9.1 M
(52)	TOTAL WIDTH	12.9 M
(50)	CURB OR SIDEWALK	LEFT 1.5 M RIGHT 1.5 M
(32)	APPROACH RDWY WIDTH	9.1 M
(33)	BRIDGE MEDIAN	0 NO MEDIAN

DECK STRUCTURE INFORMATION

(107)	DECK STRUCTURE TYPE	1-CIP CONCRETE
(108)	WEARING SURFACE / PROTECTIVE SYSTEM	
A)	TYPE OF WEARING SURFACE	0-NONE
B)	TYPE OF MEMBRANE	0-NONE
C)	TYPE OF DECK PROTECTION	0-NONE
	OVERLAY THICKNESS (inches)	0 inches
(29)	AVERAGE DAILY TRAFFIC	15000
(30)	YEAR OF ADT 2014	(109) TRUCK ADT % 10 %
(19)	BYPASS, DETOUR LENGTH	3 KM
(114)	FUTURE ADT	20403
(115)	YEAR OF FUTURE ADT	2041
(37)	HISTORICAL SIGNIFICANCE	2: ELIGIBLE FOR NRHP

DECK ROADWAY/OPERATIONAL INFORMATION

(42a)	TYPE OF SERVICE	5-HIGHWAY-PEDESTRIAN
(12)	BASE HIGHWAY NETWORK	0-NOT ON NET
(13)	LRS INVENTORY RTE & SUBRTE	
(104)	NATIONAL HIGHWAY SYSTEM	0-NOT ON NHS
(26)	FUNCTIONAL CLASS	16-MINOR ARTERIAL URBAN
(100)	DEFENSE HIGHWAY	0-NOT STRAHNET
(101)	PARALLEL STRUCTURE	N-NONE EXISTS
(102)	DIRECTION OF TRAFFIC	2-2 WAY
(10)	INVENTORY ROUTE MIN VERT CLEAR	99.99 M
(47)	INVENTORY ROUTE TOTAL HORIZ CLEAR	9.1 M
(68)	DECK GEOMETRY	3 INTOLERABLE - CORRECT
(72)	APPR ROADWAY ALIGN	8 EQUAL DESIRABLE CRIT
(105)	FEDERAL LANDS HWY	0-NOT APPLICABLE
(110)	DESIGNATED NATIONAL NETWORK	0-NOT ON NET
(20)	TOLL	3-ON FREE ROAD
(28a)	LANES	2
	SPEED	25
(103)	TEMPORARY STRUCTURE	N/A

DECK ELEMENT INSPECTION RATINGS AND NOTES

(58) DECK RATING = 4

Elem No.	Defect/ Prot	Defect	Element Description	Env	Total Qty	Units	Qty in each Condition State CS 1	CS 2	CS 3	CS 4
16			**Top Flange-RC**	2	524	sq.m	264	0	260	0
	1130		**Cracking (RC and Other)**	2	260		0	0	260	0

(16-1130) Cracking (RC and Other)

The bare concrete deck surface is weathered and abraded with random cracking throughout. The randomly oriented deck cracks are

DECK ELEMENT INSPECTION RATINGS AND NOTES

(58) DECK RATING = 4

Elem No.	Defect/ Prot	Defect	Element Description	Env	Total Qty	Units	Qty in each Condition State CS 1	CS 2	CS 3	CS 4

(16-1130) Cracking (RC and Other)

up to 0.125 inches in width at an average of 2 feet on center. See Photo 2 and Photo #4 from 2019. A work recommendation to place a polyester concrete overlay on the deck was entered in 2011.

DECK PHOTOGRAPHS



Photo 3
Typical deck cracks.

JOINT - APPROACH - RAIL

RAIL INFORMATION

(36a) Rail Code 0 (36b) Transition 0 (36c) Appr Guardrail 0 (36d) Appr Guardrail End 0 Roadway Speed 25 MPH

JOINT/APPROACH/RAIL ELEMENT INSPECTION RATINGS AND NOTES

Elem No.	Defect/ Prot	Defect	Element Description	Env	Total Qty	Units	Qty in each Condition State CS 1	CS 2	CS 3	CS 4
304			**Joint-Open Expansion**	2	27	m	0	27	0	0
	2350		**Debris Impaction (Joints)**	2	27		0	27	0	0

(304-2350) Debris Impaction (Joints)

The armored open joints at the abutments are filled with emulsion, dirt and debris. See Photo 3. A work recommendation to clean out the joints has been entered.

Elem No.	Defect/ Prot	Defect	Element Description	Env	Total Qty	Units	Qty in each Condition State CS 1	CS 2	CS 3	CS 4
331			**Railing-RC**	4	82	m	62	8	12	0
	1080		**Delamination/Spall/Patched Area**	4	20		0	8	12	0

(331-1080) Delamination/Spall/Patched Area

The bridge rails have some areas of delamination and spalling greater than 6 inches in diameter with exposed corroded reinforcement. See Photo #2 of this report and Photo #5 from 2019. A work recommendation to patch the spalls was entered in 2001.

JOINT - APPROACH - RAIL

JOINT/APPROACH/RAIL PHOTOGRAPHS



Photo 2
Typical rail deterioration.



Photo 4
2 FT diameter AC approach in the westbound lane at A1 is cracking and potholing.

SUPERSTRUCTURE

SUPERSTRUCTURE ELEMENT INSPECTION RATINGS AND NOTES

(59) SUPERSTRUCTURE RATING = 5

Elem No.	Defect/ Prot	Element Description	Env	Total Qty	Units	Qty in each Condition State CS 1	CS 2	CS 3	CS 4
105		**Box Girder-RC**	3	41	m	0	41	0	0
	1130	**Cracking (RC and Other)**	3	41		0	41	0	0

(105) Box Girder-RC

The box girder soffit exhibits numerous previous patches, minor areas of thin cover, patchy scaliness with efflorescent staining that is co-located with the cracking detailed below.

(105-1130) Cracking (RC and Other)

The soffit in Span 1 has a longitudinal crack with efflorescence along the centerline, numerous previous patches and efflorescent staining, see Photo 1.

The soffit in Span 2 has transverse cracking with black leachate near the midspan along the edge of deck on the left and right, a longitudinal crack with efflorescence along the centerline, and numerous previous patches. There are also several 5 foot long transverse cracks at the crown of the soffit.

The soffit in Span 3 has a longitudinal crack with efflorescence along the centerline continuing down the face of Pier Wall 3.

No substantial changes were noted to the superstructure since the last routine inspection. See Photos #8 to #10 from 2011.

All cracks described in this defect are between 0.012 and 0.05 inches in width.

SUBSTRUCTURE

DESCRIPTION UNDER STRUCTURE

(42b) TYPE OF SERVICE UNDER	5-WATERWAY	(38) NAVIGATION CONTROL	0: NO CONTROL
(69) UNDERCLEARANCES V - H	N NOT APPLICABLE (NBI)	(111) PIER PROTECTION	**N/A**
(71) WATER ADEQUACY	7 ABOVE MINIMUM	(39) NAVIGATION VERTICAL CLEARANCE	0.0 M
(61) CHANNEL PROTECTION	8 PROTECTED	(116) VERT-LIFT BRIDGE NAV MIN VERTICAL CLEAR	M
(113) SCOUR	5 STABLE W/IN FOOTING OR PILE	(40) NAVIGATION HORIZONTAL CLEARANCE	0.0 M
SCOUR POA DATE	N/A		

CHANNEL DESCRIPTION

Sandy beach outlet, tidal influence

SUBSTRUCTURE ELEMENT INSPECTION RATINGS AND NOTES

(60) SUBSTRUCTURE RATING = 5

Elem	Defect/	Element Description	Env	Total	Units	Qty in each Condition State

SUBSTRUCTURE

SUBSTRUCTURE ELEMENT INSPECTION RATINGS AND NOTES

(60) SUBSTRUCTURE RATING = 5

Elem No.	Defect/ Prot	Defect	Element Description	Env	Total Qty	Units	Qty in each Condition State CS 1	CS 2	CS 3	CS 4
210			**Pier Wall-RC**	3	26	m	10	16	0	0
	1080		**Delamination/Spall/Patched Area**	3	3		0	3	0	0
	1130		**Cracking (RC and Other)**	3	13		0	13	0	0

(210-1080) Delamination/Spall/Patched Area

The pier walls have occasional sound patches.

(210-1130) Cracking (RC and Other)

The pier walls have occasional random cracks with cracks sizes generally under 0.05 inches in width.

215			**Abutment-RC**	3	27	m	11	16	0	0
	1080		**Delamination/Spall/Patched Area**	3	2		0	2	0	0
	1130		**Cracking (RC and Other)**	3	14		0	14	0	0

(215) Abutment-RC

This element represents the vertical diaphragms adjacent to the ends of the cantilevered end spans.

Wingwalls are not integral to the abutment and are not included in this quantity.

(215-1080) Delamination/Spall/Patched Area

The abutments have occasional sound patches.

(215-1130) Cracking (RC and Other)

The abutment faces have occasional random cracks with crack sizes generally under 0.05 inches in width.

228			**Pile-Timber**	4	1	ea.	1	0	0	0

(228) Pile-Timber

The pile element is included to indicate the presence of piles on this structure. The piles were not exposed for visual inspection. No indication of pile distress was noted in any substructure element.

256			**Slope Protection**	2	1	ea.	1	0	0	0

(256) Slope Protection

There were no significant defects noted.

SUBSTRUCTURE PHOTOGRAPHS



Photo 1
Details near Pier 2 in Span 1.

WORK RECOMMENDATIONS

DECK WORK RECOMMENDATIONS

Rec Date	10/05/2011	Work By	LOCAL AGENCY	Est Cost		Dist Target
Status	PROPOSED	Action	Deck-Place Overlay	Str Target	ROUTINE	EA

Place a polyester concrete overlay on the deck.

JOINT/APPR/RAIL WORK RECOMMENDATIONS

Rec Date	05/14/2024	Work By	LOCAL AGENCY	Est Cost		Dist Target
Status	PROPOSED	Action	Appr Roadway-Repair	Str Target	ROUTINE	EA

Repair the cracking and potholing AC approach at Abutment 1.

Rec Date	09/25/2019	Work By	LOCAL AGENCY	Est Cost		Dist Target
Status	PROPOSED	Action	Joints-Repair/Clean	Str Target	ROUTINE	EA

Clean the dirt and debris out of the joints at the abutments.

Rec Date	05/02/2001	Work By	LOCAL AGENCY	Est Cost		Dist Target
Status	PROPOSED	Action	Rail-Repair	Str Target	ROUTINE	EA

Clean and patch the delaminations and the spalls on the bridge rail.

SUPERSTRUCTURE WORK RECOMMENDATIONS - NONE

SUBSTRUCTURE WORK RECOMMENDATIONS - NONE

OTHER WORK RECOMMENDATIONS - NONE



Photo #1
Routine Map View

BRIDGE INSPECTION REPORT
Routine Inspection



BRIDGE NO.: **36C0110**
STRUCTURE NAME: **SOQUEL CREEK**
INSPECTION DATE: **May 18, 2022**

BRIDGE LOCATION INFORMATION

(9) LOCATION	AT THE ESPLANADE	(7) FACILITY CARRIED	STOCKTON AVE
(11) POSTMILE	0	(6) FEATURE INTERSECTED	SOQUEL CREEK
(16) LATITUDE	36°58'20.27"	(5) INVENTORY RTE(ON/UNDER)	ON 150000000
(17) LONGITUDE	121°57'11.45"	(104) ON NATIONAL HIGHWAY SYSTEM	NOT ON NHS

STRUCTURAL HEALTH CONDITION SUMMARY INFORMATION

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(60) SUBSTRUCTURE	5 FAIR	PAINT CONDITION	N/A
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(67) STRUCTURE EVALUATION	5 ABOVE MIN TOLERABLE	(113) SCOUR	5 STABLE W/IN FOOTING

PHOTOGRAPH IDENTIFICATION



Routine-Roadway View (09/25/2019)



Routine-Elevation View (09/25/2019)



Routine-Underside View (09/25/2019)



Routine-Map View (10/05/2022)

TEAM LEADER: Shawn Hart

REPORT AUTHOR: Shawn Hart

INSPECTED BY: S.Hart/K.Ghazizadeh

Shawn Hart (Registered Civil Engineer) — Date: 10/15/2022

PROFESSIONAL ENGINEER — REGISTERED — Shawn Hart — No. 68403 — Exp. 09/30/2023 — CIVIL — STATE OF CALIFORNIA

STRUCTURE OVERVIEW

AGENCY INFORMATION

(1) STATE NAME	CALIFORNIA 069
(2) HIGHWAY DISTRICT	05
(3) COUNTY CODE	(36)SANTA CRUZ
(4) PLACE CODE	(11040) CAPITOLA
(21) MAINTAIN	04 CITY OR MUNICIPAL HI
(22) OWNER	04 CITY OR MUNICIPAL HI
(98) BORDER BRIDGE STATE CODE	N/A % SHARE N/A
(99) BORDER BRIDGE STRUCTURE NUMBER	N/A

INSPECTION INFORMATION

(90) INSPECTION DATE	05/22	(91) FREQUENCY	24 MO
(92) CRITICAL FEATURE INSPECTION		(93) CFI DATE	
A) FRACTURE CRITICAL INSP	N-NO	MO A)	N/A
B) UNDERWATER INSP	N-NO	MO B)	04/96
C) OTHER SPECIAL INSP	N-NO	MO C)	N/A

CONSTRUCTION INFORMATION

(27) YEAR BUILT	1934	(45) MAIN SPANS	3	(43a) STRUCTURE TYPE MAIN	2: CONCRETE CONT
(106) YEAR MODIFIED	N/A	(46) APPR SPANS	0	(43b) DESIGN TYPE MAIN	05: BOX BEAM OR GDR - MU
(34) SKEW	0	(48) MAX SPAN (M)	25.9	(44a) STRUCTURE TYPE APPR	0: OTHER/ NOT APPLICABLE
(49) LENGTH (M)	41.1	(35) STR FLARE	0-NO	(44b) DESIGN TYPE APPR	00: OTHER/NOT APPLICABLE
(112) NBIS BR LENGTH	Y	JOINTS	2	NO. OF HINGES	0

STRUCTURE DESCRIPTION

3 span, continuous parabolic RC (7 cell) box girder with cantilevered end spans on RC pier walls and RC diaphragm ends with non-monolithic wingwalls, all founded on RC pile caps and timber piles

SPAN CONFIGURATION

1 @ 25 ft, 1 @ 85 ft, 1 @ 25 ft

OPERATIONAL INFORMATION

LOAD CAPACITY

(31) DESIGN LOAD	0 UNKNOWN	(65) CALC METHOD	1 LF LOAD FACTOR
(66) INVENTORY RATING	RF=1.01 =>32.7 metric tons	(63) CALC METHOD	1 LF LOAD FACTOR
(64) OPERATING RATING	RF=1.68 =>54.4 metric tons	(70) BRIDGE POSTING	5 AT/ABOVE LEGAL LOADS
(41) STRUCTURE STATUS	A-OPEN, NO RESTRICTION	PERMIT RATING	PPPPP
OVERLAY THICKNESS	0 inches		

POSTING LOADS

	Safe Loads	Existing Ordinance/Order	Posting Signs	
Type 3	Legal	N/A	N/A	U.S. Tons
Type 3S2	Legal	N/A	N/A	U.S. Tons
Type 3-3	Legal	N/A	N/A	U.S. Tons
Speed	25	N/A	N/A	MPH

Additional Ordinance/Order Requirements

NONE

Additional Signs

NONE

Posting Date N/A
Load Rating Summary Date 09/04/19
Load Rating Type Calculated
Load Rating Tool - Date BDS, Hand Calcs (LRE) - 09/03/19

MINIMUM VERTICAL CLEARANCE

(53) MIN VERT CLEAR OVER BRIDGE RDWY	Unimpaired	
(54) MIN VERT UNDERCLEAR REF	N-NOT H/RR	0.00 M

MINIMUM LATERAL UNDERCLEARANCE

(55) MIN LAT UNDERCLEAR RT REF	N-NOT H/RR	0.0 M
(56) MIN LAT UNDERCLEAR LT		0.0 M

CONDITION INFORMATION

INSPECTION COMMENTARY

SCOPE AND ACCESS

This inspection was completed in accordance with SM&I standards for a routine regularly scheduled evaluation. All elements received a full visual inspection. The deck was walked and the channel was waded and probed. Flowing water was present under all spans at a depth of 2-3 feet with the pierwalls wet and the abutments dry.

NUMBERING CONVENTION

This structure alignment is east and west. The western abutment is Abutment 1 and is located nearest to the Venetian Court with the ocean on the right. The eastern abutment is Abutment 4 and is located nearest the Esplanade.

SPECIAL INSPECTION INFORMATION

STEEL INVESTIGATION DETAILS - NOT APPLICABLE FOR THIS BRIDGE.

UNDERWATER INVESTIGATION DETAILS - NOT APPLICABLE FOR THIS BRIDGE.

DECK AND ROADWAY

DECK CROSS SECTION

1.08 ft br, 5 ft sw, 30 ft, 5 ft sw, 1.08 ft br

DECK GEOMETRY

(49)	LENGTH	41.1 M
(51)	NET WIDTH	9.1 M
(52)	TOTAL WIDTH	12.9 M
(50)	CURB OR SIDEWALK	LEFT 1.5 M RIGHT 1.5 M
(32)	APPROACH RDWY WIDTH	9.1 M
(33)	BRIDGE MEDIAN	0 NO MEDIAN

DECK STRUCTURE INFORMATION

(107)	DECK STRUCTURE TYPE	1-CIP CONCRETE
(108)	WEARING SURFACE / PROTECTIVE SYSTEM	
A)	TYPE OF WEARING SURFACE	0-NONE
B)	TYPE OF MEMBRANE	0-NONE
C)	TYPE OF DECK PROTECTION	0-NONE
	OVERLAY THICKNESS (inches)	0 inches
(29)	AVERAGE DAILY TRAFFIC	15000
(30)	YEAR OF ADT 2013	(109) TRUCK ADT % 10 %
(19)	BYPASS, DETOUR LENGTH	3 KM
(114)	FUTURE ADT	20403
(115)	YEAR OF FUTURE ADT	2041
(37)	HISTORICAL SIGNIFICANCE	2: ELIGIBLE FOR NRHP

DECK ROADWAY/OPERATIONAL INFORMATION

(42a)	TYPE OF SERVICE	5-HIGHWAY-PEDESTRIAN
(12)	BASE HIGHWAY NETWORK	0-NOT ON NET
(13)	LRS INVENTORY RTE & SUBRTE	
(104)	NATIONAL HIGHWAY SYSTEM	0-NOT ON NHS
(26)	FUNCTIONAL CLASS	16-MINOR ARTERIAL URBAN
(100)	DEFENSE HIGHWAY	0-NOT STRAHNET
(101)	PARALLEL STRUCTURE	N-NONE EXISTS
(102)	DIRECTION OF TRAFFIC	2-2 WAY
(10)	INVENTORY ROUTE MIN VERT CLEAR	99.99 M
(47)	INVENTORY ROUTE TOTAL HORIZ CLEAR	9.1 M
(68)	DECK GEOMETRY	3 INTOLERABLE - CORRECT
(72)	APPR ROADWAY ALIGN	8 EQUAL DESIRABLE CRIT
(105)	FEDERAL LANDS HWY	0-NOT APPLICABLE
(110)	DESIGNATED NATIONAL NETWORK	0-NOT ON NET
(20)	TOLL	3-ON FREE ROAD
(28a)	LANES	2
	SPEED	25
(103)	TEMPORARY STRUCTURE	N/A

DECK ELEMENT INSPECTION RATINGS AND NOTES

(58) DECK RATING = 4

Elem No.	Defect/ Prot	Defect	Element Description	Env	Total Qty	Units	Qty in each Condition State CS 1	CS 2	CS 3	CS 4
16			**Top Flange-RC**	2	524	sq.m	264	0	260	0
	1130		**Cracking (RC and Other)**	2	260		0	0	260	0

(16-1130) Cracking (RC and Other)

The bare concrete deck surface is weathered and abraded with random cracking throughout. The randomly oriented deck cracks are up to 0.125 inches in width at an average of 2 feet on center. See Photo #4 from 2019. A work recommendation to place a polyester concrete overlay on the deck was entered in 2011.

JOINT - APPROACH - RAIL

JOINT - APPROACH - RAIL

RAIL INFORMATION

(36a) Rail Code 0 (36b) Transition 0 (36c) Appr Guardrail 0 (36d) Appr Guardrail End 0 Roadway Speed 25 MPH

JOINT/APPROACH/RAIL ELEMENT INSPECTION RATINGS AND NOTES

Elem No.	Defect/ Prot	Defect	Element Description	Env	Total Qty	Units	Qty in each Condition State CS 1	CS 2	CS 3	CS 4
304			**Joint-Open Expansion**	2	27	m	0	27	0	0
	2350		**Debris Impaction (Joints)**	2	27		0	27	0	0

(304-2350) Debris Impaction (Joints)

The armored open joints at the abutments are filled with emulsion, dirt and debris. See Photo #6 from 2011. A work recommendation to clean out the joints has been entered.

Elem No.	Defect/ Prot	Defect	Element Description	Env	Total Qty	Units	Qty in each Condition State CS 1	CS 2	CS 3	CS 4
331			**Railing-RC**	4	82	m	62	8	12	0
	1080		**Delamination/Spall/Patched Area**	4	20		0	8	12	0

(331-1080) Delamination/Spall/Patched Area

The bridge rails have some areas of delamination and spalling greater than 6 inches in diameter with exposed corroded reinforcement. See Photo #5 from 2019. A work recommendation to patch the spalls was entered in 2001.

SUPERSTRUCTURE

SUPERSTRUCTURE ELEMENT INSPECTION RATINGS AND NOTES

(59) SUPERSTRUCTURE RATING = 5

Elem No.	Defect/ Prot	Defect	Element Description	Env	Total Qty	Units	Qty in each Condition State CS 1	CS 2	CS 3	CS 4
105			**Box Girder-RC**	3	41	m	0	41	0	0
	1130		**Cracking (RC and Other)**	3	41		0	41	0	0

(105) Box Girder-RC

The box girder soffit exhibits numerous previous patches, minor areas of thin cover, patchy scaliness with efflorescent staining that is co-located with the cracking detailed below.

(105-1130) Cracking (RC and Other)

The soffit in Span 1 has a longitudinal crack with efflorescence along the centerline, numerous previous patches and efflorescent staining.

The soffit in Span 2 has transverse cracking with black leachate near the midspan along the edge of deck on the left and right, a longitudinal crack with efflorescence along the centerline, and numerous previous patches. There are also several 5 foot long transverse cracks at the crown of the soffit.

The soffit in Span 3 has a longitudinal crack with efflorescence along the centerline continuing down the face of Pier Wall 3.

No substantial changes were noted to the superstructure since the last routine inspection. See Photos #8 to #10 from 2011.

All cracks described in this defect are between 0.012 and 0.05 inches in width.

SUBSTRUCTURE

DESCRIPTION UNDER STRUCTURE

(42b) TYPE OF SERVICE UNDER	5-WATERWAY	(38) NAVIGATION CONTROL	0: NO CONTROL
(69) UNDERCLEARANCES V - H	N NOT APPLICABLE (NBI)	(111) PIER PROTECTION	**N/A**
(71) WATER ADEQUACY	7 ABOVE MINIMUM	(39) NAVIGATION VERTICAL CLEARANCE	0.0 M
(61) CHANNEL PROTECTION	8 PROTECTED	(116) VERT-LIFT BRIDGE NAV MIN VERTICAL CLEAR	M
(113) SCOUR	5 STABLE W/IN FOOTING	(40) NAVIGATION HORIZONTAL CLEARANCE	0.0 M
SCOUR POA DATE	N/A		

CHANNEL DESCRIPTION

Sandy beach outlet, tidal influence

SUBSTRUCTURE ELEMENT INSPECTION RATINGS AND NOTES

(60) SUBSTRUCTURE RATING = 5

Elem	Defect/	Element Description	Env	Total	Units	Qty in each Condition State

SUBSTRUCTURE

SUBSTRUCTURE ELEMENT INSPECTION RATINGS AND NOTES

(60) SUBSTRUCTURE RATING = 5

Elem No.	Defect/ Prot	Element Description	Env	Total Qty	Units	Qty in each Condition State CS 1	CS 2	CS 3	CS 4
210		**Pier Wall-RC**	3	26	m	10	16	0	0
	1080	**Delamination/Spall/Patched Area**	3	3		0	3	0	0
	1130	**Cracking (RC and Other)**	3	13		0	13	0	0

(210-1080) Delamination/Spall/Patched Area

The pier walls have occasional sound patches.

(210-1130) Cracking (RC and Other)

The pier walls have occasional random cracks with cracks sizes generally under 0.05 inches in width.

215		**Abutment-RC**	3	27	m	11	16	0	0
	1080	**Delamination/Spall/Patched Area**	3	2		0	2	0	0
	1130	**Cracking (RC and Other)**	3	14		0	14	0	0

(215) Abutment-RC

This element represents the vertical diaphragms adjacent to the ends of the cantilevered end spans.

Wingwalls are not integral to the abutment and are not included in this quantity.

(215-1080) Delamination/Spall/Patched Area

The abutments have occasional sound patches.

(215-1130) Cracking (RC and Other)

The abutment faces have occasional random cracks with crack sizes generally under 0.05 inches in width.

228		**Pile-Timber**	4	1	ea.	1	0	0	0

(228) Pile-Timber

The pile element is included to indicate the presence of piles on this structure. The piles were not exposed for visual inspection. No indication of pile distress was noted in any substructure element.

256		**Slope Protection**	2	1	ea.	1	0	0	0

(256) Slope Protection

There were no significant defects noted.

OTHER PHOTOGRAPHS



Photo 1
Routine Map View

WORK RECOMMENDATIONS

DECK WORK RECOMMENDATIONS

Rec Date	10/05/2011	Work By	LOCAL AGENCY	Est Cost		Dist Target
Status	PROPOSED	Action	Deck-Place Overlay	Str Target	ROUTINE	EA

Place a polyester concrete overlay on the deck.

JOINT/APPR/RAIL WORK RECOMMENDATIONS

Rec Date	09/25/2019	Work By	LOCAL AGENCY	Est Cost		Dist Target
Status	PROPOSED	Action	Joints-Repair/Clean	Str Target	ROUTINE	EA

Clean the dirt and debris out of the joints at the abutments.

Rec Date	05/02/2001	Work By	LOCAL AGENCY	Est Cost		Dist Target
Status	PROPOSED	Action	Railing-Repair	Str Target	ROUTINE	EA

Clean and patch the delaminations and the spalls on the bridge rail.

SUPERSTRUCTURE WORK RECOMMENDATIONS - NONE

SUBSTRUCTURE WORK RECOMMENDATIONS - NONE

OTHER WORK RECOMMENDATIONS - NONE



Photo #1
Routine Map View

BRIDGE INSPECTION REPORT
Routine Inspection



BRIDGE NO.: **36C0110**
STRUCTURE NAME: **SOQUEL CREEK**
INSPECTION DATE: **September 17, 2021**

BRIDGE LOCATION INFORMATION

(9) LOCATION	AT THE ESPLANADE	(7) FACILITY CARRIED			STOCKTON AVE
(11) POSTMILE	0	(6) FEATURE INTERSECTED			SOQUEL CREEK
(16) LATITUDE	36°58'20.27"	(5) INVENTORY RTE(ON/UNDER)	ON		150000000
(17) LONGITUDE	121°57'11.45"	(104) ON NATIONAL HIGHWAY SYSTEM			NOT ON NHS

STRUCTURAL HEALTH CONDITION SUMMARY INFORMATION

(58) DECK	4 POOR	DECK AREA $(M)^2$	524
(59) SUPERSTRUCTURE	5 FAIR	SUFFICIENCY RATING	60.6
(60) SUBSTRUCTURE	5 FAIR	PAINT CONDITION	N/A
(62) CULVERT	N N/A (NBI)	STRUCTURALLY DEFICIENT (SD) STATUS	SD
(67) STRUCTURE EVALUATION	5 ABOVE MIN TOLERABLE	(113) SCOUR	5 STABLE W/IN FOOTING

PHOTOGRAPH IDENTIFICATION



Routine-Roadway View (09/25/2019)



Routine-Elevation View (09/25/2019)



Routine-Underside View (09/25/2019)



Routine-Map View (02/16/2022)

TEAM LEADER: Shawn Hart

REPORT AUTHOR: Shawn Hart

INSPECTED BY: S.Hart/J.Mok

Shawn Hart (Registered Civil Engineer) — Date: 3/16/2022

PROFESSIONAL ENGINEER — REGISTERED — STATE OF CALIFORNIA
Shawn Hart
No. 68403
Exp. 09/30/2023
CIVIL

STRUCTURE OVERVIEW

AGENCY INFORMATION

(1) STATE NAME	CALIFORNIA	069	
(2) HIGHWAY DISTRICT	05		
(3) COUNTY CODE	(36)SANTA CRUZ		
(4) PLACE CODE	(11040) CAPITOLA		
(21) MAINTAIN	04 CITY OR MUNICIPAL HI		
(22) OWNER	04 CITY OR MUNICIPAL HI		
(98) BORDER BRIDGE STATE CODE	N/A	% SHARE	N/A
(99) BORDER BRIDGE STRUCTURE NUMBER	N/A		

INSPECTION INFORMATION

(90) INSPECTION DATE	09/21	(91) FREQUENCY	24 MO
(92) CRITICAL FEATURE INSPECTION		(93)	CFI DATE
A) FRACTURE CRITICAL INSP	N-NO	MO A)	N/A
B) UNDERWATER INSP	N-NO	MO B)	04/96
C) OTHER SPECIAL INSP	N-NO	MO C)	N/A

CONSTRUCTION INFORMATION

(27) YEAR BUILT	1934	(45) MAIN SPANS	3	(43a) STRUCTURE TYPE MAIN	2: CONCRETE CONT
(106) YEAR MODIFIED	N/A	(46) APPR SPANS	0	(43b) DESIGN TYPE MAIN	05: BOX BEAM OR GDR - MU
(34) SKEW	0	(48) MAX SPAN (M)	25.9	(44a) STRUCTURE TYPE APPR	0: OTHER/ NOT APPLICABLE
(49) LENGTH (M)	41.1	(35) STR FLARE	0-NO	(44b) DESIGN TYPE APPR	00: OTHER/NOT APPLICABLE
(112) NBIS BR LENGTH	Y	JOINTS	2	NO. OF HINGES	0

STRUCTURE DESCRIPTION

3 span, continuous parabolic RC (7 cell) box girder with cantilevered end spans on RC pier walls and RC diaphragm ends with non-monolithic wingwalls, all founded on RC pile caps and timber piles

SPAN CONFIGURATION

1 @ 25 ft, 1 @ 85 ft, 1 @ 25 ft

OPERATIONAL INFORMATION

LOAD CAPACITY

(31) DESIGN LOAD	0 UNKNOWN	(65) CALC METHOD	1 LF LOAD FACTOR
(66) INVENTORY RATING	RF=1.01 =>32.7 metric tons	(63) CALC METHOD	1 LF LOAD FACTOR
(64) OPERATING RATING	RF=1.68 =>54.4 metric tons	(70) BRIDGE POSTING	5 AT/ABOVE LEGAL LOADS
(41) STRUCTURE STATUS	A-OPEN, NO RESTRICTION	PERMIT RATING	PPPPP
OVERLAY THICKNESS	0 inches		

POSTING LOADS

	Safe Loads	Existing Ordinance/Order	Posting Signs	
Type 3	Legal	N/A	N/A	U.S. Tons
Type 3S2	Legal	N/A	N/A	U.S. Tons
Type 3-3	Legal	N/A	N/A	U.S. Tons
Speed	25	N/A	N/A	MPH

Additional Ordinance/Order Requirements

NONE

Additional Signs

NONE

Posting Date N/A
Load Rating Summary Date 09/04/19
Load Rating Type Calculated
Load Rating Tool - Date BDS, Hand Calcs (LRE) - 09/03/19

MINIMUM VERTICAL CLEARANCE

(53) MIN VERT CLEAR OVER BRIDGE RDWY	Unimpaired	
(54) MIN VERT UNDERCLEAR REF	N-NOT H/RR	0.00 M

MINIMUM LATERAL UNDERCLEARANCE

(55) MIN LAT UNDERCLEAR RT REF	N-NOT H/RR	0.0 M
(56) MIN LAT UNDERCLEAR LT		0.0 M

CONDITION INFORMATION

INSPECTION COMMENTARY

SCOPE AND ACCESS

This inspection was completed in accordance with SM&I standards for a routine regularly scheduled evaluation. All elements received a

CONDITION INFORMATION

INSPECTION COMMENTARY

full visual inspection. The deck was walked and the channel was waded and probed. Flowing water was present under all spans at a depth of 2-3 feet with the pierwalls wet and the abutments dry.

NUMBERING CONVENTION

This structure alignment is east and west. The western abutment is Abutment 1 and is located nearest to the Venetian Court with the ocean on the right. The eastern abutment is Abutment 4 and is located nearest the Esplanade.

WATERWAY

The channel cross section was re-measured during this inspection. No significant changes from the previous cross section (measured in 2013) were observed.

SPECIAL INSPECTION INFORMATION

STEEL INVESTIGATION DETAILS - NOT APPLICABLE FOR THIS BRIDGE.

UNDERWATER INVESTIGATION DETAILS - NOT APPLICABLE FOR THIS BRIDGE.

DECK AND ROADWAY

DECK CROSS SECTION

1.08 ft br, 5 ft sw, 30 ft, 5 ft sw, 1.08 ft br

DECK GEOMETRY

(49)	LENGTH	41.1 M
(51)	NET WIDTH	9.1 M
(52)	TOTAL WIDTH	12.9 M
(50)	CURB OR SIDEWALK	LEFT 1.5 M RIGHT 1.5 M
(32)	APPROACH RDWY WIDTH	9.1 M
(33)	BRIDGE MEDIAN	0 NO MEDIAN

DECK STRUCTURE INFORMATION

(107)	DECK STRUCTURE TYPE	1-CIP CONCRETE
(108)	WEARING SURFACE / PROTECTIVE SYSTEM	
A)	TYPE OF WEARING SURFACE	0-NONE
B)	TYPE OF MEMBRANE	0-NONE
C)	TYPE OF DECK PROTECTION	0-NONE
	OVERLAY THICKNESS (inches)	0 inches
(29)	AVERAGE DAILY TRAFFIC	15000
(30)	YEAR OF ADT 2013	(109) TRUCK ADT % 10 %
(19)	BYPASS, DETOUR LENGTH	3 KM
(114)	FUTURE ADT	20403
(115)	YEAR OF FUTURE ADT	2041
(37)	HISTORICAL SIGNIFICANCE	2: ELIGIBLE FOR NRHP

DECK ROADWAY/OPERATIONAL INFORMATION

(42a)	TYPE OF SERVICE	5-HIGHWAY-PEDESTRIAN
(12)	BASE HIGHWAY NETWORK	0-NOT ON NET
(13)	LRS INVENTORY RTE & SUBRTE	
(104)	NATIONAL HIGHWAY SYSTEM	0-NOT ON NHS
(26)	FUNCTIONAL CLASS	16-MINOR ARTERIAL URBAN
(100)	DEFENSE HIGHWAY	0-NOT STRAHNET
(101)	PARALLEL STRUCTURE	N-NONE EXISTS
(102)	DIRECTION OF TRAFFIC	2-2 WAY
(10)	INVENTORY ROUTE MIN VERT CLEAR	99.99 M
(47)	INVENTORY ROUTE TOTAL HORIZ CLEAR	9.1 M
(68)	DECK GEOMETRY	3 INTOLERABLE - CORRECT
(72)	APPR ROADWAY ALIGN	8 EQUAL DESIRABLE CRIT
(105)	FEDERAL LANDS HWY	0-NOT APPLICABLE
(110)	DESIGNATED NATIONAL NETWORK	0-NOT ON NET
(20)	TOLL	3-ON FREE ROAD
(28a)	LANES	2
	SPEED	25
(103)	TEMPORARY STRUCTURE	N/A

DECK ELEMENT INSPECTION RATINGS AND NOTES

(58) DECK RATING = 4

Elem No.	Defect/ Prot	Defect	Element Description	Env	Total Qty	Units	Qty in each Condition State CS 1	CS 2	CS 3	CS 4
16			**Top Flange-RC**	2	524	sq.m	264	0	260	0
	1130		**Cracking (RC and Other)**	2	260		0	0	260	0

(16-1130) Cracking (RC and Other)

The bare concrete deck surface is weathered and abraded with random cracking throughout. The randomly oriented deck cracks are up to 0.125 inches in width at an average of 2 feet on center. See Photo #4 from 2019. A work recommendation to place a polyester concrete overlay on the deck was entered in 2011.

JOINT - APPROACH - RAIL

RAIL INFORMATION

(36a) Rail Code 0 (36b) Transition 0 (36c) Appr Guardrail 0 (36d) Appr Guardrail End 0 Roadway Speed 25 MPH

JOINT/APPROACH/RAIL ELEMENT INSPECTION RATINGS AND NOTES

Elem No.	Defect/ Prot	Defect	Element Description	Env	Total Qty	Units	Qty in each Condition State CS 1	CS 2	CS 3	CS 4
304			**Joint-Open Expansion**	2	27	m	0	27	0	0
	2350		**Debris Impaction (Joints)**	2	27		0	27	0	0

(304-2350) Debris Impaction (Joints)

The armored open joints at the abutments are filled with emulsion, dirt and debris. See Photo #6 from 2011. A work recommendation to clean out the joints has been entered.

Elem No.	Defect/ Prot	Defect	Element Description	Env	Total Qty	Units	Qty in each Condition State CS 1	CS 2	CS 3	CS 4
331			**Railing-RC**	4	82	m	70	0	12	0
	1080		**Delamination/Spall/Patched Area**	4	12		0	0	12	0

(331-1080) Delamination/Spall/Patched Area

The bridge rails have some areas of delamination and spalling greater than 6 inches in diameter with exposed corroded reinforcement. See Photo #5 from 2019. A work recommendation to patch the spalls was entered in 2001.

SUPERSTRUCTURE

SUPERSTRUCTURE ELEMENT INSPECTION RATINGS AND NOTES

(59) SUPERSTRUCTURE RATING = 5

Elem No.	Defect/ Prot	Defect	Element Description	Env	Total Qty	Units	Qty in each Condition State CS 1	CS 2	CS 3	CS 4
105			**Box Girder-RC**	3	41	m	0	41	0	0
	1130		**Cracking (RC and Other)**	3	41		0	41	0	0

(105) Box Girder-RC

The box girder soffit exhibits numerous previous patches, minor areas of thin cover, patchy scaliness with efflorescent staining that is co-located with the cracking detailed below.

(105-1130) Cracking (RC and Other)

The soffit in Span 1 has a longitudinal crack with efflorescence along the centerline, numerous previous patches and efflorescent staining.

The soffit in Span 2 has transverse cracking with black leachate near the midspan along the edge of deck on the left and right, a longitudinal crack with efflorescence along the centerline, and numerous previous patches. There are also several 5 foot long transverse cracks at the crown of the soffit.

The soffit in Span 3 has a longitudinal crack with efflorescence along the centerline continuing down the face of Pier Wall 3.

No substantial changes were noted to the superstructure since the last routine inspection. See Photos #8 to #10 from 2011.

All cracks described in this defect are between 0.012 and 0.05 inches in width.

SUBSTRUCTURE

DESCRIPTION UNDER STRUCTURE

(42b) TYPE OF SERVICE UNDER	5-WATERWAY	(38) NAVIGATION CONTROL	0: NO CONTROL
(69) UNDERCLEARANCES V - H	N NOT APPLICABLE (NBI)	(111) PIER PROTECTION	**N/A**
(71) WATER ADEQUACY	7 ABOVE MINIMUM	(39) NAVIGATION VERTICAL CLEARANCE	0.0 M
(61) CHANNEL PROTECTION	8 PROTECTED	(116) VERT-LIFT BRIDGE NAV MIN VERTICAL CLEAR	M
(113) SCOUR	5 STABLE W/IN FOOTING	(40) NAVIGATION HORIZONTAL CLEARANCE	0.0 M
SCOUR POA DATE	N/A		

CHANNEL DESCRIPTION

Sandy beach outlet, tidal influence

SUBSTRUCTURE ELEMENT INSPECTION RATINGS AND NOTES

(60) SUBSTRUCTURE RATING = 5

Elem	Defect/	Element Description	Env	Total	Units	Qty in each Condition State

SUBSTRUCTURE

SUBSTRUCTURE ELEMENT INSPECTION RATINGS AND NOTES

(60) SUBSTRUCTURE RATING = 5

Elem No.	Defect/ Prot	Defect	Element Description	Env	Total Qty	Units	Qty in each Condition State CS 1	CS 2	CS 3	CS 4
210			**Pier Wall-RC**	3	26	m	10	16	0	0
	1080		**Delamination/Spall/Patched Area**	3	3		0	3	0	0
	1130		**Cracking (RC and Other)**	3	13		0	13	0	0

(210-1080) Delamination/Spall/Patched Area

The pier walls have occasional sound patches.

(210-1130) Cracking (RC and Other)

The pier walls have occasional random cracks with cracks sizes generally under 0.05 inches in width.

215			**Abutment-RC**	3	27	m	11	16	0	0
	1080		**Delamination/Spall/Patched Area**	3	2		0	2	0	0
	1130		**Cracking (RC and Other)**	3	14		0	14	0	0

(215) Abutment-RC

This element represents the vertical diaphragms attached the ends of the cantilevered end spans.

Wingwalls are not integral to the abutment and are not included in this quantity.

(215-1080) Delamination/Spall/Patched Area

The abutments have occasional sound patches.

(215-1130) Cracking (RC and Other)

The abutment faces have occasional random cracks with crack sizes generally under 0.05 inches in width.

228			**Pile-Timber**	4	1	ea.	1	0	0	0

(228) Pile-Timber

The pile element is included to indicate the presence of piles on this structure. The piles were not exposed for visual inspection. No indication of pile distress was noted in any substructure element.

256			**Slope Protection**	2	1	ea.	1	0	0	0

(256) Slope Protection

There were no significant defects noted.

CHANNEL X-SECTION

Side Upstream
X-Section Date 09/17/2021
Measured From Top of RC Rail (left side)

Location	Horiz(m)	Vert(m)	Comments
Face of Abutment 1	0.00	6.32	
Mid Span 1	3.95	7.10	
Pier 2	7.92	7.48	Span 2 Side
Mid Span 2	21.05	7.04	
Pier 3	33.80	6.48	Span 2 Side
Mid Span 3	37.95	6.00	
Face of Abutment 4	42.10	3.90	Paved shore

OTHER PHOTOGRAPHS



Photo 1
Routine Map View

WORK RECOMMENDATIONS

DECK WORK RECOMMENDATIONS

Rec Date	10/05/2011	Work By	LOCAL AGENCY	Est Cost		Dist Target
Status	PROPOSED	Action	Deck-Place Overlay	Str Target	2 YEARS	EA

Place a polyester concrete overlay on the deck.

JOINT/APPR/RAIL WORK RECOMMENDATIONS

Rec Date	09/25/2019	Work By	LOCAL AGENCY	Est Cost		Dist Target
Status	PROPOSED	Action	Joints-Repair/Clean	Str Target	2 YEARS	EA

Clean the dirt and debris out of the joints at the abutments.

Rec Date	05/02/2001	Work By	LOCAL AGENCY	Est Cost		Dist Target
Status	PROPOSED	Action	Railing-Repair	Str Target	2 YEARS	EA

Clean and patch the delaminations and the spalls on the bridge rail.

SUPERSTRUCTURE WORK RECOMMENDATIONS - NONE

SUBSTRUCTURE WORK RECOMMENDATIONS - NONE

OTHER WORK RECOMMENDATIONS - NONE

DEPARTMENT OF TRANSPORTATION
Structure Maintenance & Investigations

Bridge Number : 36C0110
Facility Carried: STOCKTON AVE
Location : AT THE ESPLANADE
City : CAPITOLA
Inspection Date : 09/25/2019

Bridge Inspection Report

Inspection Type

Routine	FC	Underwater	Special	Other
X				

STRUCTURE NAME: SOQUEL CREEK

CONSTRUCTION INFORMATION

Year Built : 1934
Year Modified: N/A
Length (m) : 41.1
Skew (degrees): 0
No. of Joints : 2
No. of Hinges : 0

Structure Description: 3 span, continuous parabolic RC (7 cell) box girder on RC pier walls and RC diaphragm abutments with non-monolithic wingwalls, all founded on RC pile caps and timber piles

Span Configuration : 1 @ 25 ft, 1 @ 85 ft, 1 @ 25 ft

SAFE LOAD CAPACITY AND RATINGS

Design Live Load: UNKNOWN
Inventory Rating: RF=1.01 =>32.7 metric tons Calculation Method: LOAD FACTOR
Operating Rating: RF=1.68 =>54.4 metric tons Calculation Method: LOAD FACTOR
Permit Rating : PPPPP
Posting Load : Type 3: Legal Type 3S2: Legal Type 3-3: Legal

DESCRIPTION ON STRUCTURE

Deck X-Section: 1.08 ft br, 5 ft sw, 30 ft, 5 ft sw, 1.08 ft br
Total Width: 12.9 m Net Width: 9.1 m No. of Lanes: 2 Speed: 25 mph
Min. Vertical Clearance: Unimpaired Overlay Thickness: 0.0 inches
Rail Code: 0000

DESCRIPTION UNDER STRUCTURE

Channel Description: Sandy beach outlet, tidal influence

NOTICE

The bridge inspection condition assessment used for this inspection is based on the American Association of State Highway and Transportation Officials (AASHTO) Bridge Element Inspection Manual 2013 as defined in Moving Ahead for Progress in the 21st Century (MAP-21) federal law. The new element inspection methodology may result in changes to related condition and appraisal ratings on the bridge without significant physical changes at the bridge.

The element condition information contained in this report represents the current condition of the bridge based on the most recent routine and special inspections. Some of the notes presented below may be from an inspection that occurred prior to the date noted in this report. Refer to the Scope and Access section of this inspection report for a description of which portions of the bridge were inspected on this date.

INSPECTION COMMENTARY

SCOPE AND ACCESS

This bridge was accessed by foot on and around the abutments. During this inspection, Soquel Creek was bermed up just downstream from the bridge and was not flowing freely into the ocean or tidally. The water in the creek was as deep as 8 feet at Pier 2. During the last several inspections the creek levels were substantially lower at 3 to 4 feet deep and wading and probing has been possible (most recently in 2016). No scour has been historically noted and the channel section was spot checked along the left and right bridge rails with no significant changes noted compared to the 2013 channel cross

INSPECTION COMMENTARY

section. Those areas of the superstructure, substructure and soffit usually inspected while wading were adequately seen from the banks of the creek with the aid of binoculars or through clear water. All elements were fully inspected.

NUMBERING CONVENTION

This structure alignment is east and west. The western abutment is Abutment 1 and is located nearest to the Venetian Court with the ocean on the right. The eastern abutment is Abutment 4 and is located nearest the Esplanade.

SAFE LOAD CAPACITY

A Load Rating Summary Sheet dated 9/04/2019 is on file for this structure. While this report does not include a check of that analysis, it does verify that the structural conditions observed during this inspection are consistent with those assumed in that analysis. The current rating is based on LFD hand calculations and BDS computer output dated 9/03/2019.

ELEMENT INSPECTION RATINGS AND COMMENTARY

Elem No.	Defect /Prot	Defect	Element Description	Env	Total Qty	Units	Qty in each Condition State St. 1	St. 2	St. 3	St. 4
16			**Top Flange-RC**	2	524	sq.m	264	0	260	0
	1130		**Cracking (RC and Other)**	2	260		0	0	260	0

(16-1130)
The bare concrete deck surface is weathered and abraded with random cracking throughout. The randomly oriented deck cracks are up to 0.125 inches in crack width at an average of 2 feet on center. See Photo #4. A work recommendation to place a polyester concrete overlay on the deck was entered in 2011.

105			**Box Girder-RC**	3	41	m	0	41	0	0
	1130		**Cracking (RC and Other)**	3	41		0	41	0	0

(105)
The box girder soffit exhibits numerous previous patches, minor areas of thin cover, patchy scaliness with efflorescent staining that is co-located with the cracking detailed below.

(105-1130)
The soffit in Span 1 has a longitudinal crack with efflorescence along the centerline, numerous previous patches and efflorescent staining.

The soffit in Span 2 has transverse cracking with black leachate near the midspan along the edge of deck on the left and right, a longitudinal crack with efflorescence along the centerline, and numerous previous patches. There are also several 5 foot long transverse cracks at the crown of the soffit.

The soffit in Span 3 has a longitudinal crack with efflorescence along the centerline continuing down the face of Pier Wall 3.

No substantial changes were noted to the superstructure since the last routine inspection. See Photos #8 to #10 from 2011.

All cracks described in this defect are between 0.012 and 0.05 inches in width.

210			**Pier Wall-RC**	3	26	m	10	16	0	0

ELEMENT INSPECTION RATINGS AND COMMENTARY

Elem No.	Defect /Prot	Defect	Element Description	Env	Total Qty	Units	Qty in each Condition State St. 1	St. 2	St. 3	St. 4
	1080		Delamination/Spall/Patched Area	3	3		0	3	0	0
	1130		Cracking (RC and Other)	3	13		0	13	0	0

(210-1080)
The pier walls have occasional sound patches.

(210-1130)
The pier walls have occasional random cracks with cracks sizes generally under 0.05 inches in width.

215			Abutment-RC	3	27	m	11	16	0	0
	1080		Delamination/Spall/Patched Area	3	2		0	2	0	0
	1130		Cracking (RC and Other)	3	14		0	14	0	0

(215)
Wingwalls are not integral to the abutment and are not included in this quantity.

(215-1080)
The abutments have occasional sound patches.

(215-1130)
The abutment faces have occasional random cracks with crack sizes generally under 0.05 inches in width.

228			Pile-Timber	4	1	ea.	1	0	0	0

(228)
The pile element is included to indicate the presence of piles on this structure. The piles were not exposed for visual inspection. No indication of pile distress was noted in any substructure element.

256			Slope Protection	2	1	ea.	1	0	0	0

(256)
There were no significant defects noted.

304			Joint-Open Expansion	2	27	m	0	27	0	0
	2350		Debris Impaction (Joints)	2	27		0	27	0	0

(304-2350)
The armored open joints at the abutments are filled with emulsion, dirt and debris. See Photo #6 from 2011. A work recommendation to clean out the joints has been entered.

331			Railing-RC	4	96	m	84	0	12	0
	1080		Delamination/Spall/Patched Area	4	12		0	0	12	0

(331-1080)
The bridge rails have some areas of delamination and spalling greater than 6 inches in diameter with exposed corroded reinforcement. See Photo #5. A work recommendation to patch the spalls was entered in 2001.

WORK RECOMMENDATIONS

RecDate: 09/25/2019
Action : Joints-Repair/Clean
Work By: LOCAL AGENCY
Status : PROPOSED

EstCost:
StrTarget: 2 YEARS
DistTarget:
EA:

Clean the dirt and debris out of the joints at the abutments.

WORK RECOMMENDATIONS

RecDate: 10/05/2011	EstCost:		Place a polyester concrete overlay on the deck.
Action : Deck-Place Overlay	StrTarget:	2 YEARS	
Work By: LOCAL AGENCY	DistTarget:		
Status : PROPOSED	EA:		

RecDate: 05/02/2001	EstCost:		Clean and patch the delaminations and the spalls on the bridge rail.
Action : Railing-Repair	StrTarget:	2 YEARS	
Work By: LOCAL AGENCY	DistTarget:		
Status : PROPOSED	EA:		

Team Leader : Shawn Hart

Report Author : Shawn Hart

Inspected By : S.Hart/KJ.Shurbert

3/9/20

Shawn Hart (Registered Civil Engineer) (Date)



STRUCTURE INVENTORY AND APPRAISAL REPORT

********** IDENTIFICATION **********

(1)	STATE NAME- CALIFORNIA	069
(8)	STRUCTURE NUMBER	**36C0110**
(5)	INVENTORY ROUTE(ON/UNDER)- ON	150000000
(2)	HIGHWAY AGENCY DISTRICT	05
(3)	COUNTY CODE 087 (4) PLACE CODE	11040
(6)	FEATURE INTERSECTED-	SOQUEL CREEK
(7)	FACILITY CARRIED-	STOCKTON AVE
(9)	LOCATION-	AT THE ESPLANADE
(11)	MILEPOINT/KILOMETERPOINT	0
(12)	BASE HIGHWAY NETWORK- NOT ON NET	0
(13)	LRS INVENTORY ROUTE & SUBROUTE	
(16)	LATITUDE	36 DEG 58 MIN 20.27 SEC
(17)	LONGITUDE	121 DEG 57 MIN 11.45 SEC
(98)	BORDER BRIDGE STATE CODE % SHARE	%
(99)	BORDER BRIDGE STRUCTURE NUMBER	

******** STRUCTURE TYPE AND MATERIAL *********

(43)	STRUCTURE TYPE MAIN:MATERIAL- CONCRETE CONT TYPE- BOX BEAM OR GIRDER - MULTI CODE	205
(44)	STRUCTURE TYPE APPR:MATERIAL- OTHER/NA TYPE- OTHER/NA CODE	000
(45)	NUMBER OF SPANS IN MAIN UNIT	3
(46)	NUMBER OF APPROACH SPANS	0
(107)	DECK STRUCTURE TYPE- CIP CONCRETE CODE	1
(108)	WEARING SURFACE / PROTECTIVE SYSTEM:	
A)	TYPE OF WEARING SURFACE- NONE CODE	0
B)	TYPE OF MEMBRANE- NONE CODE	0
C)	TYPE OF DECK PROTECTION- NONE CODE	0

********** AGE AND SERVICE **********

(27)	YEAR BUILT	1934
(106)	YEAR RECONSTRUCTED	0000
(42)	TYPE OF SERVICE: ON- HIGHWAY-PEDESTRIAN	5
	UNDER- WATERWAY	5
(28)	LANES:ON STRUCTURE 02 UNDER STRUCTURE	00
(29)	AVERAGE DAILY TRAFFIC	15000
(30)	YEAR OF ADT 2013 (109) TRUCK ADT	10 %
(19)	BYPASS, DETOUR LENGTH	3 KM

********** GEOMETRIC DATA **********

(48)	LENGTH OF MAXIMUM SPAN	25.9 M
(49)	STRUCTURE LENGTH	41.1 M
(50)	CURB OR SIDEWALK: LEFT 1.5 M RIGHT	1.5 M
(51)	BRIDGE ROADWAY WIDTH CURB TO CURB	9.1 M
(52)	DECK WIDTH OUT TO OUT	12.9 M
(32)	APPROACH ROADWAY WIDTH (W/SHOULDERS)	9.1 M
(33)	BRIDGE MEDIAN- NO MEDIAN	0
(34)	SKEW 0 DEG (35) STRUCTURE FLARED	NO
(10)	INVENTORY ROUTE MIN VERT CLEAR	99.99 M
(47)	INVENTORY ROUTE TOTAL HORIZ CLEAR	9.1 M
(53)	MIN VERT CLEAR OVER BRIDGE RDWY	99.99 M
(54)	MIN VERT UNDERCLEAR REF- NOT H/RR	0.00 M
(55)	MIN LAT UNDERCLEAR RT REF- NOT H/RR	0.0 M
(56)	MIN LAT UNDERCLEAR LT	0.0 M

********** NAVIGATION DATA **********

(38)	NAVIGATION CONTROL- NO CONTROL CODE	0
(111)	PIER PROTECTION- CODE	
(39)	NAVIGATION VERTICAL CLEARANCE	0.0 M
(116)	VERT-LIFT BRIDGE NAV MIN VERT CLEAR	M
(40)	NAVIGATION HORIZONTAL CLEARANCE	0.0 M

****

SUFFICIENCY RATING =	60.6
PAINT CONDITION INDEX =	N/A

********** CLASSIFICATION ********** CODE

(112)	NBIS BRIDGE LENGTH- YES	Y
(104)	HIGHWAY SYSTEM- NOT ON NHS	0
(26)	FUNCTIONAL CLASS- MINOR ARTERIAL URBAN	16
(100)	DEFENSE HIGHWAY- NOT STRAHNET	0
(101)	PARALLEL STRUCTURE- NONE EXISTS	N
(102)	DIRECTION OF TRAFFIC- 2 WAY	2
(103)	TEMPORARY STRUCTURE-	
(105)	FED.LANDS HWY- NOT APPLICABLE	0
(110)	DESIGNATED NATIONAL NETWORK - NOT ON NET	0
(20)	TOLL- ON FREE ROAD	3
(21)	MAINTAIN- CITY OR MUNICIPAL HIGHWAY AGENCY	04
(22)	OWNER- CITY OR MUNICIPAL HIGHWAY AGENCY	04
(37)	HISTORICAL SIGNIFICANCE- ELIGIBLE	2

********** CONDITION ********** CODE

(58)	DECK	4
(59)	SUPERSTRUCTURE	5
(60)	SUBSTRUCTURE	5
(61)	CHANNEL & CHANNEL PROTECTION	8
(62)	CULVERTS	N

********* LOAD RATING AND POSTING ********* CODE

(31)	DESIGN LOAD- UNKNOWN	0
(63)	OPERATING RATING METHOD- LOAD FACTOR	1
(64)	OPERATING RATING-	54.4
(65)	INVENTORY RATING METHOD- LOAD FACTOR	1
(66)	INVENTORY RATING-	32.7
(70)	BRIDGE POSTING- EQUAL TO OR ABOVE LEGAL LOADS	5
(41)	STRUCTURE OPEN, POSTED OR CLOSED-	A
	DESCRIPTION- OPEN, NO RESTRICTION	

********** APPRAISAL ********** CODE

(67)	STRUCTURAL EVALUATION	5
(68)	DECK GEOMETRY	3
(69)	UNDERCLEARANCES, VERTICAL & HORIZONTAL	N
(71)	WATER ADEQUACY	7
(72)	APPROACH ROADWAY ALIGNMENT	8
(36)	TRAFFIC SAFETY FEATURES	0000
(113)	SCOUR CRITICAL BRIDGES	5

********** PROPOSED IMPROVEMENTS **********

(75)	TYPE OF WORK- CODE	
(76)	LENGTH OF STRUCTURE IMPROVEMENT	M
(94)	BRIDGE IMPROVEMENT COST	
(95)	ROADWAY IMPROVEMENT COST	
(96)	TOTAL PROJECT COST	
(97)	YEAR OF IMPROVEMENT COST ESTIMATE	
(114)	FUTURE ADT	20403
(115)	YEAR OF FUTURE ADT	2041

********** INSPECTIONS **********

(90)	INSPECTION DATE 09/19 (91) FREQUENCY	24	MO		
(92)	CRITICAL FEATURE INSPECTION:			(93) CFI DATE	
A)	FRACTURE CRIT DETAIL-	NO	MO	A)	
B)	UNDERWATER INSP-	NO	MO	B)	04/96
C)	OTHER SPECIAL INSP-	NO	MO	C)	

36C0110

Sep 25, 2019 [AAAK]

101 - Routine-Elevation View



Photo #1

Looking North

36C0110

Sep 25, 2019 [AAAK]

100 - Routine-Roadway View



Photo #2

Looking East

36C0110

Sep 25, 2019 [AAAK]

135 - Routine-Underside View



Photo #3

Looking West

36C0110

Sep 25, 2019 [AAAK]

102 - Deck-Damage/Deterioration



Photo #4

Deck Cracking (typ)

36C0110

Sep 25, 2019 [AAAK]

119 - Rail-Damage/Deterioration



Photo #5

Bridge Rail Condition (typ)

Structure Maintenance & Investigations

Load Rating Summary Sheet

Bridge Number: 36C0110
Facility Carried: STOCKTON AVE
Location: AT THE ESPLANADE
City: CAPITOLA

Bridge Name: SOQUEL CREEK
Structural Element Rated: THREE SPAN CONTINUOUS REINFORCED CONCRETE (RC) BOX GIRDER

Rating Summary

	Rating Factor	Metric Tons	Critical Location: Structure	Control Element	Load Action	Location
DESIGN LOADING						
Inventory:	1.01	32.7	Span 1-3	Box Girder	Ultimate Moment	PM; At 0.50 pt of Span 2
Operating:	1.68	54.4	Span 1-3	Box Girder	Ultimate Moment	PM; At 0.50 pt of Span 2
LEGAL RATING		Posting U.S. Tons				
Type 3 (25T):	2.14	Legal	Span 1-3	Box Girder	Ultimate Moment	PM; At 0.50 pt of Span 2
Type 3S2 (36T):	2.16	Legal	Span 1-3	Box Girder	Ultimate Moment	PM; At 0.50 pt of Span 2
Type 3-3 (40T):	2.47	Legal	Span 1-3	Box Girder	Ultimate Moment	PM; At 0.50 pt of Span 2
PERMIT RATING		Permit Rating				
5 Axle Truck :	1.21	P	Span 1-3	Box Girder	Ultimate Moment	PM; At 0.50 pt of Span 2
7 Axle Truck :	1.12	P	Span 1-3	Box Girder	Ultimate Moment	PM; At 0.50 pt of Span 2
9 Axle Truck :	1.09	P	Span 1-3	Box Girder	Ultimate Moment	PM; At 0.50 pt of Span 2
11 Axle Truck:	1.09	P	Span 1-3	Box Girder	Ultimate Moment	PM; At 0.50 pt of Span 2
13 Axle Truck:	1.09	P	Span 1-3	Box Girder	Ultimate Moment	PM; At 0.50 pt of Span 2

NOTES:

Ratings for the bridge superstructure was established by utilizing the influence lines generated at critical locations based on the Load Factor Rating (LFR) analysis of the Bridge Design Software (BDS) in April of 1979. No changes to the dead load were made since 1979; therefore, no adjustments to the dead load demands were made in the analysis.

Rating Factors based on Positive moment are 1.21, 1.12, 1.09, 1.09, 1.09 for P5(48)-P13(48) split axle trucks, respectively.

The load rating is based on the existing bridge geometry and roadway configuration. Modification to the structure (such as bridge rail modification or widening) may require a new load rating.

Overlay Used In Rating: None

Rating Method: 1 LF Load Factor (Inventory (65)) / 1 LF Load Factor (Operating (63))

Analysis Tool Used: BDS, Hand Calcs (LRE)

Rating/File Location: Rating Branch Server

Control Rating By: Bourlien Wong — Rating Date: 09/03/2019

Rating Checked By: Diya Azzam — 9/9/19

Rating Type: Calculated

Summary Prepared By: Bourlien Wong — Summary Date: 09/04/2019

REGISTERED PROFESSIONAL ENGINEER
Bourlien Wong
No. 60604
12/31/2020
CIVIL
STATE OF CALIFORNIA

Bourlien Wong - Registered Engineer — 9/9/19 Date

Structure Maintenance

Load Rating Summary Sheet

Bridge Number: 36C0110
Facility Carried: STOCKTON AVE
Location: AT THE ESPLANADE
City: CAPITOLA

HISTORY (36C0110)
The structure was built in 1934 and was designed for an unknown live load. Legible as-built plans are available in BIRIS. The bridge was previously load rated in 1979 using the Bridge Design Software (BDS), by Load Factor Method (LFR) using moment demands from HS20 and Permit loads.

STRUCTURE DESCRIPTION
This structure is a three span continuous Reinforced Concrete (RC) Box Girder.

SCOPE OF WORK
Ratings for the bridge superstructure was established by utilizing the influence lines (IFL) generated at critical locations based on the 1979 BDS LFR moment only analysis. The substructures were not evaluated. No changes to the dead load were made since 1979; therefore, no adjustments to the dead load demands were made in the analysis.

RATING ANALYSIS

GENERAL: The 1934 portion was rated for longitudinal moment using IFL based on the 1979 BDS output. The justification for the use of BDS output is based on the 2017 independent study validating the BDS results. The reported load rating also includes the evaluation of bridge specific field inspection reports verifying that the conditions do not warrant reduction of the superstructure capacity. These ratings supersede all previous rating analyses.

MODELING ASSUMPTIONS AND ENGINEERING JUDGEMENT:
Moment demands for all legal and permit trucks were established by moving the trucks from one end to the other end of the bridge and utilizing IFL based on the BDS output.

ASSUMPTIONS TO BE FIELD VERIFIED:
Existing structural conditions were assumed per BIR dated 09/01/2015.

MATERIALS: The material strengths used in the BDS analysis were as follows:
RC Concrete: F'c= 2.50 ksi and Reinforcing Steel: Fy= 33 ksi

DEAD LOADS: concrete baluster on both sides of the structure. No other appurtenances or overlay were considered in the analysis.

LIVE LOADS: Caltrans specified P5 to P13, 48-kip split-axle (24 kips/axle) permit truck configuration was used in the analysis.

RATING SUMMARY: The controlling rating factors can be found on the first page of this LRSS.

REVISED LOAD RATINGS:
The NBI Operating and Inventory Rating Methods (Item Codes 63 and 65) remain as 1 (LF Load Factor). The Operating and Inventory Ratings (item codes 64 and 66) remain as 54.4 and 32.7 metric tons, respectively, utilizing the HS20 load case. Permit ratings also remain as PPPPP (for P5 to P13 truck configuration).

All assumptions to be field verified listed above, along with the overall condition of the structure, must be verified where possible and documented in a routine Bridge Inspection Report for this load rating to be valid and to meet FHWA requirements.

DEPARTMENT OF TRANSPORTATION
Structure Maintenance & Investigations

Bridge Number : 36C0110
Facility Carried: STOCKTON AVE
Location : AT THE ESPLANADE
City : CAPITOLA
Inspection Date : 09/01/2015
Inspection Type
Routine FC Underwater Special Other
X

Bridge Inspection Report

STRUCTURE NAME: SOQUEL CREEK

CONSTRUCTION INFORMATION

Year Built : 1934
Year Widened: N/A
Length (m) : 41
Skew (degrees): 0
No. of Joints : 2
No. of Hinges : 0

Structure Description: 3 span, continuous parabolic RC (7 cell) box girder on RC pier walls and RC diaphragm abutments all RC pile caps and timber piles

Span Configuration : 1 @ 25 ft, 1 @ 85 ft, 1 @ 25 ft

SAFE LOAD CAPACITY AND RATINGS

Design Live Load: UNKNOWN
Inventory Rating: RF=1.01 =>32.7 metric tons Calculation Method: LOAD FACTOR
Operating Rating: RF=1.68 =>54.4 metric tons Calculation Method: LOAD FACTOR
Permit Rating : PPPPP
Posting Load : Type 3: Legal Type 3S2: Legal Type 3-3: Legal

DESCRIPTION ON STRUCTURE

Deck X-Section: 1 ft 1 in br, 5 ft sw, 30 ft, 5 ft sw, 1 ft 1 in br
Total Width: 12.8 m Net Width: 9.1 m No. of Lanes: 2 Speed: 25 mph
Min. Vertical Clearance: Unimpaired Overlay Thickness: 0.0 Inches
Rail Code: 0000

Rail Type	Location	Length (ft)	Rail Modifications
Concrete Baluster	Right/Left	314	

DESCRIPTION UNDER STRUCTURE

Channel Description: Sandy beach outlet, tidal influence

NOTICE

The bridge inspection condition assessment used for this inspection is based on the American Association of State Highway and Transportation Officials (AASHTO) Bridge Element Inspection Manual 2013 as defined in Moving Ahead for Progress in the 21st Century (MAP-21) federal law. The new element inspection methodology may result in changes to related condition and appraisal ratings on the bridge without significant physical changes at the bridge.

The element condition information contained in this report represents the current condition of the bridge based on the most recent routine and special inspections. Some of the notes presented below may be from an inspection that occurred prior to the date noted in this report. Refer to the Scope and Access section of this inspection report for a description of which portions of the bridge were inspected on this date.

INSPECTION COMMENTARY

SCOPE AND ACCESS
This bridge was accessed by foot on and around the abutments. During this inspection, Soquel Creek was bermed up just downstream from the bridge and was not flowing freely into the ocean or tidally. The water in the creek was as deep as 8 feet at Bent 2. During the last several inspections the creek levels were substantially lower at 3 to 4 feet deep and wading and probing has been possible. No scour has been historically noted and the channel section was measured along the left and right bridge rails with no

INSPECTION COMMENTARY

significant changes noted compared to the 2013 channel cross section. Those areas of the superstructure, substructure and soffit usually inspected while wading were adequately seen from the banks of the creek with the aid of binoculars or thorough clearish water. All elements were fully inspected.

NUMBERING CONVENTION
This structure alignment is east and west. The western abutment is Abutment 1 and is located nearest to the Venetian Court with the ocean on the right. The eastern abutment is Abutment 4 and is located nearest the Esplanade.

SAFE LOAD CAPACITY
A Load Rating Summary Sheet dated 11/16/2009 is on file for this structure. While this report does not include a check of that analysis, it does verify that the structural conditions observed during this inspection are consistent with those assumed in that analysis. The current rating is based on BDS computer output dated 4/16/1979.

WATERWAY
Minor debris was on the upstream nose of Pier 3. No scour was noted on the upstream or downstream side of either pier.

ELEMENT INSPECTION RATINGS AND NOTES

Elem No.	Defect /Prot	Defect	Element Description	Env	Total Qty	Units	Qty in each Condition State St. 1	St. 2	St. 3	St. 4
16			Top Flange-RC	2	524	sq.m	264	0	260	0
	1130		Cracking (RC and Other)	2	260		0	0	260	0

(16-1130)
The bare concrete deck surface is weathered and abraded with random cracking throughout. The randomly oriented deck cracks are up to 1/8 of an inch in crack width at 1 to 3 feet on center.

105			Box Girder-RC	3	41	m	0	41	0	0
	1130		Cracking (RC and Other)	3	41		0	41	0	0

(105)
Overall, the superstructure soffit of the bridge has numerous previous patches, minor areas of thin cover, patchy scaliness with efflorescent staining and some cracking as detailed below.

(105-1130)
The soffit in Span 1 has a longitudinal crack with efflorescence along the centerline, numerous previous patches and efflorescent staining.

The soffit in Span 2 has transverse cracking with black leachate near the midspan along the edge of deck on the left and right, a longitudinal crack with efflorescence along the centerline, and numerous previous patches. There are also several 5 foot long transverse cracks at the crown of the soffit.

The soffit in Span 3 has a longitudinal crack with efflorescence along the centerline continuing down the face of Pier Wall 3.

No substantial changes were noted to the superstructure from 2013. See Photos No. 8 to 10 from 2011.

210			Pier Wall-RC	3	26	m	13	13	0	0
	1130		Cracking (RC and Other)	3	13		0	13	0	0

(210-1130)
The pier walls have occasional patches and random cracks with cracks sizes generally under 1/16 of an inch in width.

ELEMENT INSPECTION RATINGS AND NOTES

Elem No.	Defect /Prot	Element Description	Env	Total Qty	Units	Qty in each Condition State St. 1	St. 2	St. 3	St. 4
215		**Abutment-RC**	3	27	m	13	14	0	0
	1130	**Cracking (RC and Other)**	3	14		0	14	0	0

(215-1130)
The abutment faces have occasional patches and random cracks with crack sizes generally under 1/16 of an inch in width.

228		**Pile-Timber**	4	1	ea.	1	0	0	0

(228)
The pile element is included to indicate the presence of piles on this structure. The piles were not exposed for visual inspection. No indication of pile distress was noted in any substructure element.

256		**Slope Protection**	2	1	ea.	1	0	0	0

(256)
There were no significant defects noted.

304		**Joint-Open Expansion**	2	27	m	27	0	0	0

(304)
The armored open joints at the abutments are filled with emulsion, dirt and debris.

331		**Railing-RC**	4	96	m	84	0	12	0
	1080	**Delamination/Spall/Patched Area**	4	12		0	0	12	0

(331-1080)
The bridge rails have some areas of delamination and spalling with exposed corroded reinforcement.

WORK RECOMMENDATIONS

RecDate: 10/05/2011	EstCost:	Place a polyester overlay.
Action : Deck-Place Overlay	StrTarget: 2 YEARS	
Work By: LOCAL AGENCY	DistTarget:	Clean and/or replace the joints during
Status : PROPOSED	EA:	the contract.
RecDate: 05/02/2001	EstCost:	Clean and patch the delaminations and the
Action : Railing-Repair	StrTarget: 2 YEARS	spalls on the bridge rail.
Work By: LOCAL AGENCY	DistTarget:	
Status : PROPOSED	EA:	

Team Leader : Daniel Zuhlke

Report Author : Daniel Zuhlke

Inspected By : D.Zuhlke

9/22/2015

Daniel Zuhlke (Registered Civil Engineer) (Date)



STRUCTURE INVENTORY AND APPRAISAL REPORT

********** IDENTIFICATION **********

(1) STATE NAME- CALIFORNIA 069
(8) STRUCTURE NUMBER **36C0110**
(5) INVENTORY ROUTE(ON/UNDER)- ON 150000000
(2) HIGHWAY AGENCY DISTRICT 05
(3) COUNTY CODE 087 (4) PLACE CODE 11040
(6) FEATURE INTERSECTED- SOQUEL CREEK
(7) FACILITY CARRIED- STOCKTON AVE
(9) LOCATION- AT THE ESPLANADE
(11) MILEPOINT/KILOMETERPOINT 0
(12) BASE HIGHWAY NETWORK- NOT ON NET 0
(13) LRS INVENTORY ROUTE & SUBROUTE
(16) LATITUDE 36 DEG 58 MIN 20.27 SEC
(17) LONGITUDE 121 DEG 57 MIN 11.45 SEC
(98) BORDER BRIDGE STATE CODE % SHARE %
(99) BORDER BRIDGE STRUCTURE NUMBER

******** STRUCTURE TYPE AND MATERIAL *********

(43) STRUCTURE TYPE MAIN:MATERIAL- CONCRETE CONT
TYPE- BOX BEAM OR GIRDER - MULTI CODE 205
(44) STRUCTURE TYPE APPR:MATERIAL- OTHER/NA
TYPE- OTHER/NA CODE 000
(45) NUMBER OF SPANS IN MAIN UNIT 3
(46) NUMBER OF APPROACH SPANS 0
(107) DECK STRUCTURE TYPE- CIP CONCRETE CODE 1
(108) WEARING SURFACE / PROTECTIVE SYSTEM:
A) TYPE OF WEARING SURFACE- NONE CODE 0
B) TYPE OF MEMBRANE- NONE CODE 0
C) TYPE OF DECK PROTECTION- NONE CODE 0

********** AGE AND SERVICE **********

(27) YEAR BUILT 1934
(106) YEAR RECONSTRUCTED 0000
(42) TYPE OF SERVICE: ON- HIGHWAY-PEDESTRIAN 5
UNDER- WATERWAY 5
(28) LANES:ON STRUCTURE 02 UNDER STRUCTURE 00
(29) AVERAGE DAILY TRAFFIC 15000
(30) YEAR OF ADT 2013 (109) TRUCK ADT 10 %
(19) BYPASS, DETOUR LENGTH 3 KM

********** GEOMETRIC DATA **********

(48) LENGTH OF MAXIMUM SPAN 25.9 M
(49) STRUCTURE LENGTH 41.0 M
(50) CURB OR SIDEWALK: LEFT 1.5 M RIGHT 1.5 M
(51) BRIDGE ROADWAY WIDTH CURB TO CURB 9.1 M
(52) DECK WIDTH OUT TO OUT 12.8 M
(32) APPROACH ROADWAY WIDTH (W/SHOULDERS) 9.1 M
(33) BRIDGE MEDIAN- NO MEDIAN 0
(34) SKEW 0 DEG (35) STRUCTURE FLARED NO
(10) INVENTORY ROUTE MIN VERT CLEAR 99.99 M
(47) INVENTORY ROUTE TOTAL HORIZ CLEAR 9.1 M
(53) MIN VERT CLEAR OVER BRIDGE RDWY 99.99 M
(54) MIN VERT UNDERCLEAR REF- NOT H/RR 0.00 M
(55) MIN LAT UNDERCLEAR RT REF- NOT H/RR 0.0 M
(56) MIN LAT UNDERCLEAR LT 0.0 M

********** NAVIGATION DATA **********

(38) NAVIGATION CONTROL- NO CONTROL CODE 0
(111) PIER PROTECTION- CODE
(39) NAVIGATION VERTICAL CLEARANCE 0.0 M
(116) VERT-LIFT BRIDGE NAV MIN VERT CLEAR M
(40) NAVIGATION HORIZONTAL CLEARANCE 0.0 M

****

SUFFICIENCY RATING = 75.3
STATUS
HEALTH INDEX 70.1
PAINT CONDITION INDEX = N/A

********** CLASSIFICATION ********** CODE

(112) NBIS BRIDGE LENGTH- YES Y
(104) HIGHWAY SYSTEM- NOT ON NHS 0
(26) FUNCTIONAL CLASS- MINOR ARTERIAL URBAN 16
(100) DEFENSE HIGHWAY- NOT STRAHNET 0
(101) PARALLEL STRUCTURE- NONE EXISTS N
(102) DIRECTION OF TRAFFIC- 2 WAY 2
(103) TEMPORARY STRUCTURE-
(105) FED.LANDS HWY- NOT APPLICABLE 0
(110) DESIGNATED NATIONAL NETWORK - NOT ON NET 0
(20) TOLL- ON FREE ROAD 3
(21) MAINTAIN- CITY OR MUNICIPAL HIGHWAY AGENCY 04
(22) OWNER- CITY OR MUNICIPAL HIGHWAY AGENCY 04
(37) HISTORICAL SIGNIFICANCE- ELIGIBLE 2

********** CONDITION ********** CODE

(58) DECK 6
(59) SUPERSTRUCTURE 6
(60) SUBSTRUCTURE 7
(61) CHANNEL & CHANNEL PROTECTION 8
(62) CULVERTS N

********* LOAD RATING AND POSTING ********* CODE

(31) DESIGN LOAD- UNKNOWN 0
(63) OPERATING RATING METHOD- LOAD FACTOR 1
(64) OPERATING RATING- 54.4
(65) INVENTORY RATING METHOD- LOAD FACTOR 1
(66) INVENTORY RATING- 32.7
(70) BRIDGE POSTING- EQUAL TO OR ABOVE LEGAL LOADS 5
(41) STRUCTURE OPEN, POSTED OR CLOSED- A
DESCRIPTION- OPEN, NO RESTRICTION

********** APPRAISAL ********** CODE

(67) STRUCTURAL EVALUATION 6
(68) DECK GEOMETRY 3
(69) UNDERCLEARANCES, VERTICAL & HORIZONTAL N
(71) WATER ADEQUACY 7
(72) APPROACH ROADWAY ALIGNMENT 8
(36) TRAFFIC SAFETY FEATURES 0000
(113) SCOUR CRITICAL BRIDGES 5

********** PROPOSED IMPROVEMENTS **********

(75) TYPE OF WORK- MISC STRUCTURAL WORK CODE 38
(76) LENGTH OF STRUCTURE IMPROVEMENT 42.1 M
(94) BRIDGE IMPROVEMENT COST $560,000
(95) ROADWAY IMPROVEMENT COST $112,000
(96) TOTAL PROJECT COST $940,800
(97) YEAR OF IMPROVEMENT COST ESTIMATE 2010
(114) FUTURE ADT 20000
(115) YEAR OF FUTURE ADT 2035

********** INSPECTIONS **********

(90) INSPECTION DATE 09/15 (91) FREQUENCY 48 MO
(92) CRITICAL FEATURE INSPECTION: (93) CFI DATE
A) FRACTURE CRIT DETAIL- NO MO A)
B) UNDERWATER INSP- NO MO B) 04/96
C) OTHER SPECIAL INSP- NO MO C)

DEPARTMENT OF TRANSPORTATION
Structure Maintenance & Investigations

Bridge Number : 36C0110
Facility Carried: STOCKTON AVE
Location : AT THE ESPLANADE
City : CAPITOLA
Inspection Date : 09/27/2013
Inspection Type
Routine FC Underwater Special Other
X

Bridge Inspection Report

STRUCTURE NAME: SOQUEL CREEK

CONSTRUCTION INFORMATION

Year Built : 1934
Year Widened: N/A
Length (m) : 41
Skew (degrees): 0
No. of Joints : 2
No. of Hinges : 0

Structure Description: 3 span, continuous RC box girder with parabolic soffit on RC pier walls and diaphragm abutments all on timber piles.

Span Configuration : 1 @ 25 ft, 1 @ 85 ft, 1 @ 25 ft

SAFE LOAD CAPACITY AND RATINGS

Design Live Load: UNKNOWN
Inventory Rating: RF=1.01 =>32.7 metric tons Calculation Method: LOAD FACTOR
Operating Rating: RF=1.68 =>54.4 metric tons Calculation Method: LOAD FACTOR
Permit Rating : PPPPP
Posting Load : Type 3: Legal Type 3S2: Legal Type 3-3: Legal

DESCRIPTION ON STRUCTURE

Deck X-Section: 1 ft 1 in br, 5 ft sw, 30 ft, 5 ft sw, 1 ft 1 in br
Total Width: 12.8 m Net Width: 9.1 m No. of Lanes: 2 Speed: 25 mph
Min. Vertical Clearance: Unimpaired

Rail Code: 0000

Rail Type	Location	Length (ft)	Rail Modifications
Concrete Baluster	Right/Left	314	

DESCRIPTION UNDER STRUCTURE

Channel Description: Sandy beach outlet, tidal influence

INSPECTION COMMENTARY

SCOPE AND ACCESS
This bridge was accessed by foot on and around the abutments. This bridge can have tidal influence and was scheduled for inspection during the lowest tide of the week at + 3 feet at 11:17 am on 9/27/2013. During this inspection, Soquel Creek was bermed up just downstream from the bridge and was not flowing freely into the ocean or tidally. There was a substantial rain event 6 days before this inspection that raised the water level of the creek. The water in the creek was as deep as 8 feet at Bent 2. During the last several inspections the creek levels were substantially lower at 3 to 4 feet deep and wading and probing has been possible. No scour has been historically noted and the channel section was measured along the left and right bridge rails with no significant changes noted compared to the 2009 channel cross section. Those areas of the superstructure, substructure and soffit usually inspected while wading were adequately seen from the banks of the creek with the aid of binoculars. All elements were fully inspected.

NUMBERING CONVENTION
This structure alignment is East and West. The western abutment is Abutment 1 and is located nearest to the Venetian Court with the ocean on the right. The eastern abutment is Abutment 4 and is located nearest the Esplanade.

INSPECTION COMMENTARY

REVISIONS
Various NBI and ELI element data fields have been updated based on field measurements and As Built plans.

DECK AND ROADWAY
The bare concrete deck surface is weathered and abraded with random cracking throughout. The randomly oriented deck cracks are up to 1/8 of an inch in crack width at 1 to 3 feet on center.

The armored open joints at the abutments are filled with emulsion, dirt and debris.

The bridge rails have some areas of delamination and spalling with exposed corroded reinforcement.

No substantial changes were noted to the deck and roadway from 2011. See Photos No. 3 to 7 from 2011.

SUPERSTRUCTURE
Overall, the superstructure soffit of the bridge has numerous previous patches, minor areas of thin cover, patchy scaliness with efflorescent staining and some cracking as detailed below.

The soffit in Span 1 has a longitudinal crack with efflorescence along the centerline, numerous previous patches and efflorescent staining.

The soffit in Span 2 has transverse cracking with black leachate near the midspan along the edge of deck on the left and right, a longitudinal crack with efflorescence along the centerline, and numerous previous patches. There are also several 5 foot long transverse cracks at the crown of the soffit.

The soffit in Span 3 has a longitudinal crack with efflorescence along the centerline continuing down the face of Pier Wall 3.

No substantial changes were noted to the superstructure from 2011. See Photos No. 8 to 10 from 2011.

SUBSTRUCTURE
The abutment faces and the pier walls have occasional patches and random cracks with cracks sizes generally under 1/16 of an inch in width. The abutment faces have several sealed cracks with efflorescent staining.

Minor debris was on the upstream nose of Pier 3. No scour was noted on the upstream or downstream side of either pier.

No substantial changes were noted to the substructure from 2011. See Photos No. 11 from 2011.

SAFE LOAD CAPACITY
A Load Rating Summary Sheet dated 11/16/2009 is on file for this structure. While this report does not include a check of that analysis, it does verify that the structural conditions observed during this inspection are consistent with those assumed in that analysis. The current rating is based on BDS computer output dated 4/16/1979.

ELEMENT INSPECTION RATINGS

Elem No.	Element Description	Env	Total Qty	Units	Qty in each Condition State St. 1	St. 2	St. 3	St. 4	St. 5

Elem No.	Element Description	Env	Total Qty	Units	Qty in each Condition State St. 1	St. 2	St. 3	St. 4	St. 5
12	Concrete Deck - Bare	3	501	sq.m.	501	0	0	0	0
105	Reinforced Concrete Closed Webs/Box Girder	3	41	m.	0	41	0	0	0
210	Reinforced Conc Pier Wall	3	26	m.	0	26	0	0	0
215	Reinforced Conc Abutment	3	27	m.	0	27	0	0	0
228	Timber Submerged Pile	4	1	ea.	1	0	0	0	0
256	Slope Protection	2	1	ea.	1	0	0	0	0
304	Open Expansion Joint	2	27	m.	27	0	0		
339	Concrete Railing (aesthetic/masonry)	4	96	m.	0	56	40	0	
358	Deck Cracking	4	1	ea.	0	0	1	0	
359	Soffit of Concrete Deck or Slab	4	1	ea.	0	0	0	1	0

WORK RECOMMENDATIONS

RecDate: 10/05/2011 Action : Deck-Place Overlay Work By: LOCAL AGENCY Status : PROPOSED	EstCost: StrTarget: 2 YEARS DistTarget: EA:	Place a polyester overlay.
RecDate: 05/02/2001 Action : Railing-Repair Work By: LOCAL AGENCY Status : PROPOSED	EstCost: StrTarget: 2 YEARS DistTarget: EA:	Clean and/or replace the joints during the contract. Clean and patch the delaminations and the spalls on the bridge rail.

CHANNEL X-SECTION

Side : Upstream
X-Section Date: 09/27/2013
Measured From : Left, Top of concrete rail

Location	Horiz(m)	Vert(m)	Comments
Abutment 1 face	0.00	6.18	water depth 0.78 m
Bent 2	7.92	7.70	water depth 2.42 m
midspan		7.00	water depth 1.90 m
Bent 3	33.83	6.45	water depth 1.75 m
Abutment 4 face	42.10	6.00	water depth 1.40 m

Team Leader : Daniel Zuhlke
Report Author : Daniel Zuhlke
Inspected By : D Zuhlke

10/16/2013
Daniel Zuhlke (Registered Civil Engineer) (Date)



STRUCTURE INVENTORY AND APPRAISAL REPORT

********** IDENTIFICATION **********

(1) STATE NAME- CALIFORNIA 069
(8) STRUCTURE NUMBER **36C0110**
(5) INVENTORY ROUTE(ON/UNDER)- ON 150000000
(2) HIGHWAY AGENCY DISTRICT 05
(3) COUNTY CODE 087 (4) PLACE CODE 11040
(6) FEATURE INTERSECTED- SOQUEL CREEK
(7) FACILITY CARRIED- STOCKTON AVE
(9) LOCATION- AT THE ESPLANADE
(11) MILEPOINT/KILOMETERPOINT 0
(12) BASE HIGHWAY NETWORK- NOT ON NET 0
(13) LRS INVENTORY ROUTE & SUBROUTE
(16) LATITUDE 36 DEG 58 MIN 20.41 SEC
(17) LONGITUDE 121 DEG 57 MIN 11.5 SEC
(98) BORDER BRIDGE STATE CODE % SHARE %
(99) BORDER BRIDGE STRUCTURE NUMBER

******** STRUCTURE TYPE AND MATERIAL *********

(43) STRUCTURE TYPE MAIN:MATERIAL- CONCRETE CONT
TYPE- BOX BEAM OR GIRDER - MULTI CODE 205
(44) STRUCTURE TYPE APPR:MATERIAL- OTHER/NA
TYPE- OTHER/NA CODE 000
(45) NUMBER OF SPANS IN MAIN UNIT 3
(46) NUMBER OF APPROACH SPANS 0
(107) DECK STRUCTURE TYPE- CIP CONCRETE CODE 1
(108) WEARING SURFACE / PROTECTIVE SYSTEM:
A) TYPE OF WEARING SURFACE- NONE CODE 0
B) TYPE OF MEMBRANE- NONE CODE 0
C) TYPE OF DECK PROTECTION- NONE CODE 0

********** AGE AND SERVICE **********

(27) YEAR BUILT 1934
(106) YEAR RECONSTRUCTED 0000
(42) TYPE OF SERVICE: ON- HIGHWAY-PEDESTRIAN 5
UNDER- WATERWAY 5
(28) LANES:ON STRUCTURE 02 UNDER STRUCTURE 00
(29) AVERAGE DAILY TRAFFIC 15000
(30) YEAR OF ADT 2013 (109) TRUCK ADT 10 %
(19) BYPASS, DETOUR LENGTH 3 KM

********** GEOMETRIC DATA **********

(48) LENGTH OF MAXIMUM SPAN 25.9 M
(49) STRUCTURE LENGTH 41.0 M
(50) CURB OR SIDEWALK: LEFT 1.5 M RIGHT 1.5 M
(51) BRIDGE ROADWAY WIDTH CURB TO CURB 9.1 M
(52) DECK WIDTH OUT TO OUT 12.8 M
(32) APPROACH ROADWAY WIDTH (W/SHOULDERS) 9.1 M
(33) BRIDGE MEDIAN- NO MEDIAN 0
(34) SKEW 0 DEG (35) STRUCTURE FLARED NO
(10) INVENTORY ROUTE MIN VERT CLEAR 99.99 M
(47) INVENTORY ROUTE TOTAL HORIZ CLEAR 9.1 M
(53) MIN VERT CLEAR OVER BRIDGE RDWY 99.99 M
(54) MIN VERT UNDERCLEAR REF- NOT H/RR 0.00 M
(55) MIN LAT UNDERCLEAR RT REF- NOT H/RR 0.0 M
(56) MIN LAT UNDERCLEAR LT 0.0 M

********** NAVIGATION DATA **********

(38) NAVIGATION CONTROL- NO CONTROL CODE 0
(111) PIER PROTECTION- CODE
(39) NAVIGATION VERTICAL CLEARANCE 0.0 M
(116) VERT-LIFT BRIDGE NAV MIN VERT CLEAR M
(40) NAVIGATION HORIZONTAL CLEARANCE 0.0 M

****

SUFFICIENCY RATING = 60.6
STATUS STRUCTURALLY DEFICIENT
HEALTH INDEX 74.2
PAINT CONDITION INDEX = N/A

********** CLASSIFICATION ********** CODE

(112) NBIS BRIDGE LENGTH- YES Y
(104) HIGHWAY SYSTEM- NOT ON NHS 0
(26) FUNCTIONAL CLASS- MINOR ARTERIAL URBAN 16
(100) DEFENSE HIGHWAY- NOT STRAHNET 0
(101) PARALLEL STRUCTURE- NONE EXISTS N
(102) DIRECTION OF TRAFFIC- 2 WAY 2
(103) TEMPORARY STRUCTURE-
(105) FED.LANDS HWY- NOT APPLICABLE 0
(110) DESIGNATED NATIONAL NETWORK - NOT ON NET 0
(20) TOLL- ON FREE ROAD 3
(21) MAINTAIN- CITY OR MUNICIPAL HIGHWAY AGENCY 04
(22) OWNER- CITY OR MUNICIPAL HIGHWAY AGENCY 04
(37) HISTORICAL SIGNIFICANCE- ELIGIBLE 2

********** CONDITION ********** CODE

(58) DECK 4
(59) SUPERSTRUCTURE 5
(60) SUBSTRUCTURE 6
(61) CHANNEL & CHANNEL PROTECTION 8
(62) CULVERTS N

********* LOAD RATING AND POSTING ********* CODE

(31) DESIGN LOAD- UNKNOWN 0
(63) OPERATING RATING METHOD- LOAD FACTOR 1
(64) OPERATING RATING- 54.4
(65) INVENTORY RATING METHOD- LOAD FACTOR 1
(66) INVENTORY RATING- 32.7
(70) BRIDGE POSTING- EQUAL TO OR ABOVE LEGAL LOADS 5
(41) STRUCTURE OPEN, POSTED OR CLOSED- A
DESCRIPTION- OPEN, NO RESTRICTION

********** APPRAISAL ********** CODE

(67) STRUCTURAL EVALUATION 5
(68) DECK GEOMETRY 3
(69) UNDERCLEARANCES, VERTICAL & HORIZONTAL N
(71) WATER ADEQUACY 7
(72) APPROACH ROADWAY ALIGNMENT 8
(36) TRAFFIC SAFETY FEATURES 0000
(113) SCOUR CRITICAL BRIDGES 5

********** PROPOSED IMPROVEMENTS **********

(75) TYPE OF WORK- MISC STRUCTURAL WORK CODE 38
(76) LENGTH OF STRUCTURE IMPROVEMENT 42.1 M
(94) BRIDGE IMPROVEMENT COST $560,000
(95) ROADWAY IMPROVEMENT COST $112,000
(96) TOTAL PROJECT COST $940,800
(97) YEAR OF IMPROVEMENT COST ESTIMATE 2010
(114) FUTURE ADT 20000
(115) YEAR OF FUTURE ADT 2035

********** INSPECTIONS **********

(90) INSPECTION DATE 09/13 (91) FREQUENCY 24 MO
(92) CRITICAL FEATURE INSPECTION: (93) CFI DATE
A) FRACTURE CRIT DETAIL- NO MO A)
B) UNDERWATER INSP- NO MO B) 04/96
C) OTHER SPECIAL INSP- NO MO C)

36C0110

Oct 25, 2011 [AAAH]

100 - Routine-Roadway View



Photo #1

Looking from Abutment 1, westerly.

36C0110

Oct 25, 2011 [AAAH]

101 - Routine-Elevation View



Photo #2

Looking northerly from the channel.



Photo #3
Deck cracking typical throughout the deck surface.

36C0110

Oct 25, 2011 [AAAH]

102 - Deck-Damage/Deterioration



Photo #4

Deck cracking typical throughout the deck surface.

36C0110

Oct 25, 2011 [AAAH]

104 - Deck-Unusual Conditions



Photo #5

Manholes on the left sidewalk with concrete patches.

36C0110

Oct 25, 2011 [AAAH]

124 - Joint-Damage/Deterioration



Photo #6

Open armored joints, typical with dirt and debris.



Photo #7

Typical thin cover with delaminations and spalls with exposed corroded reinforcement.

36C0110

Oct 25, 2011 [AAAH]

107 - Super-Damage/Deterioration



Photo #8

Cracking, spalling and patches near midspan Span 2, typical.

36C0110

Oct 25, 2011 [AAAH]

107 - Super-Damage/Deterioration



Photo #9

Soffit distress, Span 2 midspan right, near right edge of deck.

36C0110

Oct 25, 2011 [AAAH]

107 - Super-Damage/Deterioration



Photo #10

Soffit distress, Span 2 midspan left, near left edge of deck.



Photo #11
Abutment 1, right, deterioration and cracking, typical.

DEPARTMENT OF TRANSPORTATION
Structure Maintenance & Investigations

Bridge Number : 36C0110
Facility Carried: STOCKTON AVE
Location : 0.05 MI E OF WHARF RD
City : CAPITOLA
Inspection Date : 10/05/2011
Inspection Type
Routine FC Underwater Special Other
[X]

Bridge Inspection Report

STRUCTURE NAME: SOQUEL CREEK

CONSTRUCTION INFORMATION

Year Built : 1934
Year Widened: N/A
Length (m) : 42.1
Skew (degrees): 0
No. of Joints : 2
No. of Hinges : 0

Structure Description: RC continuous box girder with parabolic soffit on 2 solid wall piers and diaphragm abutments all on timber piles.

Span Configuration :1 @ 7.92 m, 1 @ 25.91 m, 1 @ 7.92 m

LOAD CAPACITY AND RATINGS

Design Live Load: UNKNOWN
Inventory Rating: 32.7 metric tonnes Calculation Method: LOAD FACTOR
Operating Rating: 54.4 metric tonnes Calculation Method: LOAD FACTOR
Permit Rating : PPPPP
Posting Load : Type 3: Legal Type 3S2: Legal Type 3-3: Legal

DESCRIPTION ON STRUCTURE

Deck X-Section: 1.86 m sw, 9.05 m, 1.83 m sw
Total Width: 13.4 m Net Width: 9.1 m No. of Lanes: 2
Rail Description: Concrete aesthetic (339) Rail Code : 0000
Min. Vertical Clearance: Unimpaired

DESCRIPTION UNDER STRUCTURE

Channel Description: Sandy beach outlet, tidal influence

INSPECTION COMMENTARY

NOMENCLATURE
This structure alignment is almost due East and West. The Western Abutment is Abutment 1 and the Eastern Abutment is Abutment 4. Abutment 4 is located nearest the Esplanade, Stockton Ave. and the shopping district.

Previous reports have confused the nomenclature and the plans simply list the abutments as Eastern and Western. For clarification, where the plans call out the Western Abutment, that will be considered Abutment 1; where the plans call out the Eastern Abutment, that will be considered Abutment 4.

REVISIONS
GPS coordinates have been updated.

ELI 228, submerged timber piles, were added at 1 each.

ELI 304, open joint, was added at 27 each in condition state 2.

CONDITION OF STRUCTURE
ACCESS
Tide charts were consulted online and a low tide of +2.4 feet on 10/05/2011 at 12:37 PM

INSPECTION COMMENTARY

was utilized for our inspection. The tidal channel was accessed from the western shore at the Venetian Hotel with chest waders. All elements were fully accessible and fully inspected.

This structure does not need an underwater inspection by the dive team. All elements can be inspected by wading and probing with consideration taken for the tidal flows.

DECK, RAILS & JOINTS

The concrete deck surface exhibits heavy random cracks in the deck throughout. These cracks are moderate to severe in size and density (up to 1/8 inch in crack width and 1-3' OC). The deck is also heavily weathered and abraded in areas. There is an outstanding work recommendation from 2001 to seal the cracks with methacrylate resin that has been rescinded in lieu of a new work recommendation to place a polyester overlay. See photographs No. 3-4.

The left sidewalk area has 9 manhole covers with patches. See photograph No. 5.

The armored open joints at the abutments are filled with emulsion, dirt and debris. No work is required. See photograph No. 6.

There are delaminated areas and spalls with exposed reinforcement in several of the concrete barrier rail vertical post elements on both the right and left rails. The issue appears to have been thin cover of the steel with concrete. There is an outstanding work recommendation from 2001 to clean and patch the delaminations and spalls that should be completed. See photograph No. 7.

SUPERSTRUCTURE

The superstructure has numerous cracks (from fine to 2 mm in width), efflorescent staining and numerous previous patches.

The soffit in Span 1 exhibits a longitudinal crack with efflorescence along the centerline continuing down the pier.

The soffit in Span 2 exhibits some transverse soffit cracks with black leachate near the edge of the deck midspan on the left and the right. The soffit also exhibits a longitudinal crack with efflorescence along the centerline. The soffit also exhibits numerous patches from previous spall repairs. There are also several 5' transverse cracks at the crown of the soffit, some with thin cover. See photograph No. 8-10.

The soffit in Span 3 exhibits a longitudinal crack with efflorescence along the centerline, numerous previous patches and efflorescent staining in the soffit.

No work is currently recommended for the soffit distress. Previous efforts to clean and patch the soffit have been effective for now.

SUBSTRUCTURE

The abutment faces exhibit numerous sealed cracks and efflorescent staining. See photograph No.11.

No scour was observed visually through the 3-4 foot deep water or by probing.

SAFE LOAD CAPACITY

This bridge's safe load capacity was recently reviewed, documented and transmitted on a Structure Rating Summary Sheet dated 11/16/2009.

ELEMENT INSPECTION RATINGS

Elem No.	Element Description	Env	Total Qty	Units	Qty in each Condition State St. 1	St. 2	St. 3	St. 4	St. 5
12	Concrete Deck - Bare	3	560	sq.m.	0	560	0	0	0
105	Reinforced Concrete Closed Webs/Box Girder	3	42	m.	0	42	0	0	0
210	Reinforced Conc Pier Wall	3	27	m.	0	27	0	0	0
215	Reinforced Conc Abutment	3	27	m.	0	27	0	0	0
228	Timber Submerged Pile	4	1	ea.	1	0	0	0	0
256	Slope Protection	2	2	ea.	2	0	0	0	0
304	Open Expansion Joint	2	27	m.	0	27	0		
339	Concrete Railing (aesthetic/masonry)	4	96	m.	91	0	5	0	0
358	Deck Cracking	4	1	ea.	0	0	0	1	0
359	Soffit of Concrete Deck or Slab	4	1	ea.	0	0	0	1	0

WORK RECOMMENDATIONS

RecDate: 10/05/2011
Action : Deck-Place Overlay
Work By: LOCAL AGENCY
Status : PROPOSED
EstCost:
StrTarget: 2 YEARS
DistTarget:
EA:

Place a 3/4 to 1 inch polyester overlay.

Clean and/or replace the joints during the contract.

RecDate: 05/02/2001
Action : Railing-Repair
Work By: LOCAL AGENCY
Status : PROPOSED
EstCost:
StrTarget: 2 YEARS
DistTarget:
EA:

Clean and patch the delaminations and the spall in the bridge rail.

Inspected By : Daniel Zuhlke

Daniel Zuhlke (Registered Civil Engineer)



STRUCTURE INVENTORY AND APPRAISAL REPORT

********** IDENTIFICATION **********

(1) STATE NAME- CALIFORNIA 069
(8) STRUCTURE NUMBER **36C0110**
(5) INVENTORY ROUTE(ON/UNDER)- ON 1500E1740
(2) HIGHWAY AGENCY DISTRICT 05
(3) COUNTY CODE 087 (4) PLACE CODE 11040
(6) FEATURE INTERSECTED- SOQUEL CREEK
(7) FACILITY CARRIED- STOCKTON AVE
(9) LOCATION- 0.05 MI E OF WHARF RD
(11) MILEPOINT/KILOMETERPOINT 0
(12) BASE HIGHWAY NETWORK- NOT ON NET 0
(13) LRS INVENTORY ROUTE & SUBROUTE
(16) LATITUDE 36 DEG 58 MIN 20.54 SEC
(17) LONGITUDE 121 DEG 57 MIN 11.57 SEC
(98) BORDER BRIDGE STATE CODE % SHARE %
(99) BORDER BRIDGE STRUCTURE NUMBER

******** STRUCTURE TYPE AND MATERIAL *********

(43) STRUCTURE TYPE MAIN:MATERIAL- CONCRETE CONT
TYPE- BOX BEAM OR GIRDER - MULTI CODE 205
(44) STRUCTURE TYPE APPR:MATERIAL- OTHER/NA
TYPE- OTHER/NA CODE 000
(45) NUMBER OF SPANS IN MAIN UNIT 3
(46) NUMBER OF APPROACH SPANS 0
(107) DECK STRUCTURE TYPE- CIP CONCRETE CODE 1
(108) WEARING SURFACE / PROTECTIVE SYSTEM:
A) TYPE OF WEARING SURFACE- CONCRETE CODE 1
B) TYPE OF MEMBRANE- NONE CODE 0
C) TYPE OF DECK PROTECTION- NONE CODE 0

********** AGE AND SERVICE **********

(27) YEAR BUILT 1934
(106) YEAR RECONSTRUCTED 0000
(42) TYPE OF SERVICE: ON- HIGHWAY-PEDESTRIAN 5
UNDER- WATERWAY 5
(28) LANES:ON STRUCTURE 02 UNDER STRUCTURE 00
(29) AVERAGE DAILY TRAFFIC 15000
(30) YEAR OF ADT 2009 (109) TRUCK ADT 10 %
(19) BYPASS, DETOUR LENGTH 3 KM

********** GEOMETRIC DATA **********

(48) LENGTH OF MAXIMUM SPAN 25.9 M
(49) STRUCTURE LENGTH 42.1 M
(50) CURB OR SIDEWALK: LEFT 1.9 M RIGHT 1.8 M
(51) BRIDGE ROADWAY WIDTH CURB TO CURB 9.1 M
(52) DECK WIDTH OUT TO OUT 13.4 M
(32) APPROACH ROADWAY WIDTH (W/SHOULDERS) 9.1 M
(33) BRIDGE MEDIAN- NO MEDIAN 0
(34) SKEW 0 DEG (35) STRUCTURE FLARED NO
(10) INVENTORY ROUTE MIN VERT CLEAR 99.99 M
(47) INVENTORY ROUTE TOTAL HORIZ CLEAR 9.1 M
(53) MIN VERT CLEAR OVER BRIDGE RDWY 99.99 M
(54) MIN VERT UNDERCLEAR REF- NOT H/RR 0.00 M
(55) MIN LAT UNDERCLEAR RT REF- NOT H/RR 0.0 M
(56) MIN LAT UNDERCLEAR LT 0.0 M

********** NAVIGATION DATA **********

(38) NAVIGATION CONTROL- NO CONTROL CODE 0
(111) PIER PROTECTION- CODE
(39) NAVIGATION VERTICAL CLEARANCE 0.0 M
(116) VERT-LIFT BRIDGE NAV MIN VERT CLEAR M
(40) NAVIGATION HORIZONTAL CLEARANCE 0.0 M

****

SUFFICIENCY RATING = 58.4
STATUS STRUCTURALLY DEFICIENT
HEALTH INDEX 68.0
PAINT CONDITION INDEX = N/A

********** CLASSIFICATION ********** CODE

(112) NBIS BRIDGE LENGTH- YES Y
(104) HIGHWAY SYSTEM- NOT ON NHS 0
(26) FUNCTIONAL CLASS- MINOR ARTERIAL URBAN 16
(100) DEFENSE HIGHWAY- NOT STRAHNET 0
(101) PARALLEL STRUCTURE- NONE EXISTS N
(102) DIRECTION OF TRAFFIC- 2 WAY 2
(103) TEMPORARY STRUCTURE-
(105) FED.LANDS HWY- NOT APPLICABLE 0
(110) DESIGNATED NATIONAL NETWORK - NOT ON NET 0
(20) TOLL- ON FREE ROAD 3
(21) MAINTAIN- CITY OR MUNICIPAL HIGHWAY AGENCY 04
(22) OWNER- CITY OR MUNICIPAL HIGHWAY AGENCY 04
(37) HISTORICAL SIGNIFICANCE- ELIGIBLE 2

********** CONDITION ********** CODE

(58) DECK 3
(59) SUPERSTRUCTURE 5
(60) SUBSTRUCTURE 6
(61) CHANNEL & CHANNEL PROTECTION 7
(62) CULVERTS N

********* LOAD RATING AND POSTING ********* CODE

(31) DESIGN LOAD- UNKNOWN 0
(63) OPERATING RATING METHOD- LOAD FACTOR 1
(64) OPERATING RATING- 54.4
(65) INVENTORY RATING METHOD- LOAD FACTOR 1
(66) INVENTORY RATING- 32.7
(70) BRIDGE POSTING- EQUAL TO OR ABOVE LEGAL LOADS 5
(41) STRUCTURE OPEN, POSTED OR CLOSED- A
DESCRIPTION- OPEN, NO RESTRICTION

********** APPRAISAL ********** CODE

(67) STRUCTURAL EVALUATION 5
(68) DECK GEOMETRY 3
(69) UNDERCLEARANCES, VERTICAL & HORIZONTAL N
(71) WATER ADEQUACY 7
(72) APPROACH ROADWAY ALIGNMENT 8
(36) TRAFFIC SAFETY FEATURES 0000
(113) SCOUR CRITICAL BRIDGES 5

********** PROPOSED IMPROVEMENTS **********

(75) TYPE OF WORK- MISC STRUCTURAL WORK CODE 38
(76) LENGTH OF STRUCTURE IMPROVEMENT 42.1 M
(94) BRIDGE IMPROVEMENT COST $560,000
(95) ROADWAY IMPROVEMENT COST $112,000
(96) TOTAL PROJECT COST $940,800
(97) YEAR OF IMPROVEMENT COST ESTIMATE 2010
(114) FUTURE ADT 10477
(115) YEAR OF FUTURE ADT 2029

********** INSPECTIONS **********

(90) INSPECTION DATE 10/11 (91) FREQUENCY 24 MO
(92) CRITICAL FEATURE INSPECTION: (93) CFI DATE
A) FRACTURE CRIT DETAIL- NO MO A)
B) UNDERWATER INSP- NO MO B) 04/96
C) OTHER SPECIAL INSP- NO MO C)

Structure Maintenance & Investigations

Structure Rating Summary Sheet

Bridge Number: 36C0110
Facility Carried: STOCKTON AVE
Location: 0.05 MI E OF WHARF RD
City: CAPITOLA

Bridge Name: SOQUEL CREEK

Structural Element Rated: 3 span, RC continuous box girder.

Rating Summary

DESIGN LOADING	Rating Factor	Metric Tonnes	Critical Location: Structure	Control Element	Load Action	Location
Inventory:	1.01	32.7	3 span, RC continuous box girder.	Girder	Ultimate Moment	0.5 pt of Span 2
Operating:	1.68	54.4	3 span, RC continuous box girder.	Girder	Ultimate Moment	0.5 pt of Span 2

LEGAL RATING	Posting U.S. Tons				
Type 3 (25T):					
Type 3S2 (36T):					
Type 3-3 (40T):					

PERMIT RATING	Permit Rating		Control Element	Load Action	Location
5 Axle Truck :	1.09	P	3 span, RC continuous box girder.	Girder	Ultimate Moment	0.5 pt of Span 2
7 Axle Truck :	1.09	P	3 span, RC continuous box girder.	Girder	Ultimate Moment	0.5 pt of Span 2
9 Axle Truck :	1.09	P	3 span, RC continuous box girder.	Girder	Ultimate Moment	0.5 pt of Span 2
11 Axle Truck:	1.09	P	3 span, RC continuous box girder.	Girder	Ultimate Moment	0.5 pt of Span 2
13 Axle Truck:	1.09	P	3 span, RC continuous box girder.	Girder	Ultimate Moment	0.5 pt of Span 2

RELEVANT LOAD RATING INFORMATION

NOTES:

This Rating Summary is based on load rating calculations performed by SMI. This Summary does not include a check of that analysis. This Rating Summary has verified that the physical conditions used in the above referenced analysis have not changed, and the results of that rating are summarized here.
Additional notes:
The number of axles on the truck that causes the purple rating factor is 9.
Fc= 1.00 ksi
Fy= 3 ksi
No AC
Rating width 33 ft.

Overlay Used In Rating: None

Rating Method: Load Factor (LF) Inventory (65) / Load Factor (LF) Operating (63)

Analysis Tool Used: BDS Frame Rate

Rating/File Location: Bridge Book

Control Rating By: SMI Rating Date: 04/16/1979

Rating Checked By: SMI

Rating Type: Calculated

Summary Prepared By: Daniel Zuhlke Summary Date: 11/16/2009

REGISTERED PROFESSIONAL ENGINEER
Daniel Zuhlke
No. 61330
06/30/2011
CIVIL
STATE OF CALIFORNIA

Daniel Zuhlke - Registered Engineer

DEPARTMENT OF TRANSPORTATION
Structure Maintenance & Investigations

Bridge Number : 36C0110
Facility Carried: STOCKTON AVE
Location : 0.05 MI E OF WHARF RD
City : CAPITOLA
Inspection Date : 10/01/2009

Bridge Inspection Report

Inspection Type

Routine	FC	Underwater	Special	Other
X				

STRUCTURE NAME: SOQUEL CREEK

CONSTRUCTION INFORMATION

Year Built : 1934
Year Widened: N/A
Length (m) : 42.1
Skew (degrees): 0
No. of Joints : 0
No. of Hinges : 0

Structure Description: RC continuous box girder with parabolic soffit on 2 solid wall piers and diaphragm abutments all on timber piles.

Span Configuration : 1 @ 7.92 m, 1 @ 25.91 m, 1 @ 7.92 m

LOAD CAPACITY AND RATINGS

Design Live Load: OTHER OR UNKNOWN
Inventory Rating: 32.7 metric tonnes Calculation Method: LOAD FACTOR
Operating Rating: 54.4 metric tonnes Calculation Method: LOAD FACTOR
Permit Rating : PPPPP
Posting Load : Type 3: Legal Type 3S2: Legal Type 3-3: Legal

DESCRIPTION ON STRUCTURE

Deck X-Section: 1.86 m sw, 9.05 m, 1.83 m sw
Total Width: 13.4 m Net Width: 9.1 m No. of Lanes: 2
Rail Description: Concrete aesthetic (339) Rail Code : 0000
Min. Vertical Clearance: Unimpaired

DESCRIPTION UNDER STRUCTURE

Channel Description: Sandy beach outlet, tidal influence

CONDITION TEXT

NOMENCLATURE

This structure alignment is almost due North and South. The Southern Abutment is Abutment 1 and the Northern Abutment is Abutment 4. Abutment 4 is located nearest the Esplanade, Stockton Ave. and the shopping district.

Previous reports have confused the nomenclature and the plans simply list the abutments as Eastern and Western. For clarification, where the plans call out the Western Abutment, that will be considered Abutment 1; where the plans call out the Eastern Abutment, that will be considered Abutment 4.

REVISIONS

Various Load Rating information has been updated accordingly to match the attached Load Rating Summary Sheet.

CONDITION OF STRUCTURE

CONDITION TEXT

As previously reported, there are heavy random cracks in the deck throughout. These cracks are moderate to severe in size and density (up to 5mm in size and 1-3' OC). The deck is also heavily weathered and abraded in areas. There is an outstanding work recommendation from 2001 to seal the cracks with methacrylate resin that should be completed. See attached photographs.

Also as previously reported, there are spalls with exposed reinforcement in several of the concrete barrier rail vertical post elements. Both left and right rails are affected. The issue appears to have been thin cover of the steel with concrete. There is an outstanding work recommendation from 2001 to patch the spalls that should be completed. See attached photographs.

High tidal conditions prevented a thorough inspection of the bridge soffit. A follow up inspection will be planned in the next 12 months.

During the previous inspection in 2007 the following soffit distress was noted:

"The soffit in Span 1 exhibits a longitudinal crack with efflorescence along the centerline continuing down the pier. The pier area exhibits a black leachate. Previous patches are also evident. There is also a 1/2 SF spall with exposed reinforcing steel."

"The soffit in Span 2 exhibits transverse reflective soffit cracks with black leachate. The soffit also exhibits numerous patches from previous spall repairs. There is 1 SF area 20' from Pier 2 and 10' from the right soffit edge that exhibits a wet rusty efflorescent that should be repaired. Midspan there are also 2 exposed reinforcement bars, approximately 6" each. The soffit also exhibits random cracking midspan of moderate intensity. There are also several 5' transverse cracks at the crown of the soffit, some with thin cover."

"The soffit in Span 3 is in the worst condition of the soffit spans. Numerous previous patches are evident in the soffit."

"The cracks and the spalls in the soffit of all spans should be cleaned, chipped out as necessary and patched and sealed as previously recommended."

As previously reported, Abutment 4 exhibits numerous sealed cracks.

This structure does not need an underwater inspection by the dive team. All elements can be inspected by wading and probing with consideration taken for the tidal flows.

On this date, 4-6' or more of water was in all 3 spans limiting the inspection to areas observable from the banks of the channel.

This structure is in generally good condition for a structure built in 1934 although preventative maintenance as noted above is needed to maintain this condition.

SAFE LOAD CAPACITY

Various Load Rating information has been updated accordingly to match the attached Load Rating Summary Sheet.

ELEMENT INSPECTION RATINGS

F#	Elem	Element Description	Env	Total Qty	Units	Qty in each Condition State St. 1	St. 2	St. 3	St. 4	St. 5
101	12	Concrete Deck - Bare	3	560	sq.m.	0	560	0	0	0
101	105	Reinforced Concrete Closed	3	42	m.	0	42	0	0	0

F#Elem	Element Description	Env	Total Qty	Units	Qty in each Condition State St. 1	St. 2	St. 3	St. 4	St. 5
	Webs/Box Girder								
101 210	Reinforced Conc Pier Wall	3	27	m.	0	27	0	0	0
101 215	Reinforced Conc Abutment	3	27	m.	0	27	0	0	0
101 256	Slope Protection	2	2	ea.	2	0	0	0	0
101 339	Concrete Railing (aesthetic/masonry)	4	96	m.	91	0	5	0	0
101 358	Deck Cracking	4	1	ea.	0	0	0	1	0
101 359	Soffit of Concrete Deck or Slab	4	1	ea.	0	0	0	1	0

WORK RECOMMENDATIONS

RecDate: 05/02/2001 EstCost:
Action : Railing-Repair StrTarget: 2 YEARS
Work By: LOCAL AGENCY DistTarget:
Status : PROPOSED EA:

Patch the spalls in barrier elements. The spalls are due to thin cover.

RecDate: 05/02/2001 EstCost:
Action : Deck-Methacrylate StrTarget: 2 YEARS
Work By: LOCAL AGENCY DistTarget:
Status : PROPOSED EA:

Seal the deck cracks with methacrylate resin.

RecDate: 08/10/1999 EstCost:
Action : Super-Patch spalls StrTarget: 2 YEARS
Work By: LOCAL AGENCY DistTarget:
Status : PROPOSED EA:

Repair spalled areas in the deck soffit. See report for details.

Inspected By : Daniel Zuhlke

Registered Civil Engineer



STRUCTURE INVENTORY AND APPRAISAL REPORT

********** IDENTIFICATION **********

(1)	STATE NAME- CALIFORNIA	069
(8)	STRUCTURE NUMBER	**36C0110**
(5)	INVENTORY ROUTE(ON/UNDER)- ON	1500E1740
(2)	HIGHWAY AGENCY DISTRICT	05
(3)	COUNTY CODE 087 (4) PLACE CODE	11040
(6)	FEATURE INTERSECTED-	SOQUEL CREEK
(7)	FACILITY CARRIED-	STOCKTON AVE
(9)	LOCATION-	0.05 MI E OF WHARF RD
(11)	MILEPOINT/KILOMETERPOINT	0
(12)	BASE HIGHWAY NETWORK- NOT ON NET	0
(13)	LRS INVENTORY ROUTE & SUBROUTE	00
(16)	LATITUDE	36 DEG 58 MIN 22 SEC
(17)	LONGITUDE	121 DEG 57 MIN 07 SEC
(98)	BORDER BRIDGE STATE CODE % SHARE	%
(99)	BORDER BRIDGE STRUCTURE NUMBER	

******** STRUCTURE TYPE AND MATERIAL *********

(43)	STRUCTURE TYPE MAIN:MATERIAL-	CONCRETE CONT
	TYPE- BOX BEAM OR GIRDER - MULTI CODE	205
(44)	STRUCTURE TYPE APPR:MATERIAL-	OTHER/NA
	TYPE- OTHER/NA CODE	000
(45)	NUMBER OF SPANS IN MAIN UNIT	3
(46)	NUMBER OF APPROACH SPANS	0
(107)	DECK STRUCTURE TYPE- CIP CONCRETE CODE	1
(108)	WEARING SURFACE / PROTECTIVE SYSTEM:	
A)	TYPE OF WEARING SURFACE- CONCRETE CODE	1
B)	TYPE OF MEMBRANE- NONE CODE	0
C)	TYPE OF DECK PROTECTION- NONE CODE	0

********** AGE AND SERVICE **********

(27)	YEAR BUILT	1934
(106)	YEAR RECONSTRUCTED	0000
(42)	TYPE OF SERVICE: ON- HIGHWAY-PEDESTRIAN	5
	UNDER- WATERWAY	5
(28)	LANES:ON STRUCTURE 02 UNDER STRUCTURE	00
(29)	AVERAGE DAILY TRAFFIC	7600
(30)	YEAR OF ADT 1978 (109) TRUCK ADT	10 %
(19)	BYPASS, DETOUR LENGTH	3 KM

********** GEOMETRIC DATA **********

(48)	LENGTH OF MAXIMUM SPAN	25.9 M
(49)	STRUCTURE LENGTH	42.1 M
(50)	CURB OR SIDEWALK: LEFT 1.9 M	RIGHT 1.8 M
(51)	BRIDGE ROADWAY WIDTH CURB TO CURB	9.1 M
(52)	DECK WIDTH OUT TO OUT	13.4 M
(32)	APPROACH ROADWAY WIDTH (W/SHOULDERS)	9.1 M
(33)	BRIDGE MEDIAN- NO MEDIAN	0
(34)	SKEW 0 DEG (35) STRUCTURE FLARED	NO
(10)	INVENTORY ROUTE MIN VERT CLEAR	99.99 M
(47)	INVENTORY ROUTE TOTAL HORIZ CLEAR	9.1 M
(53)	MIN VERT CLEAR OVER BRIDGE RDWY	99.99 M
(54)	MIN VERT UNDERCLEAR REF- NOT H/RR	0.00 M
(55)	MIN LAT UNDERCLEAR RT REF- NOT H/RR	0.0 M
(56)	MIN LAT UNDERCLEAR LT	0.0 M

********** NAVIGATION DATA **********

(38)	NAVIGATION CONTROL- NO CONTROL CODE	0
(111)	PIER PROTECTION- CODE	
(39)	NAVIGATION VERTICAL CLEARANCE	0.0 M
(116)	VERT-LIFT BRIDGE NAV MIN VERT CLEAR	M
(40)	NAVIGATION HORIZONTAL CLEARANCE	0.0 M

****

SUFFICIENCY RATING =	60.2
STATUS	STRUCTURALLY DEFICIENT
HEALTH INDEX	69.0
PAINT CONDITION INDEX =	N/A

********** CLASSIFICATION ********** CODE

(112)	NBIS BRIDGE LENGTH- YES	Y
(104)	HIGHWAY SYSTEM- NOT ON NHS	0
(26)	FUNCTIONAL CLASS- MINOR ARTERIAL URBAN	16
(100)	DEFENSE HIGHWAY- NOT STRAHNET	0
(101)	PARALLEL STRUCTURE- NONE EXISTS	N
(102)	DIRECTION OF TRAFFIC- 2 WAY	2
(103)	TEMPORARY STRUCTURE-	
(105)	FED.LANDS HWY- NOT APPLICABLE	0
(110)	DESIGNATED NATIONAL NETWORK - NOT ON NET	0
(20)	TOLL- ON FREE ROAD	3
(21)	MAINTAIN- CITY OR MUNICIPAL HIGHWAY AGENCY	04
(22)	OWNER- CITY OR MUNICIPAL HIGHWAY AGENCY	04
(37)	HISTORICAL SIGNIFICANCE- ELIGIBLE	2

********** CONDITION ********** CODE

(58)	DECK	3
(59)	SUPERSTRUCTURE	5
(60)	SUBSTRUCTURE	6
(61)	CHANNEL & CHANNEL PROTECTION	7
(62)	CULVERTS	N

********* LOAD RATING AND POSTING ********* CODE

(31)	DESIGN LOAD- OTHER OR UNKNOWN	0
(63)	OPERATING RATING METHOD- LOAD FACTOR	1
(64)	OPERATING RATING-	54.4
(65)	INVENTORY RATING METHOD- LOAD FACTOR	1
(66)	INVENTORY RATING-	32.7
(70)	BRIDGE POSTING- EQUAL TO OR ABOVE LEGAL LOADS	5
(41)	STRUCTURE OPEN, POSTED OR CLOSED-	A
	DESCRIPTION- OPEN, NO RESTRICTION	

********** APPRAISAL ********** CODE

(67)	STRUCTURAL EVALUATION	5
(68)	DECK GEOMETRY	3
(69)	UNDERCLEARANCES, VERTICAL & HORIZONTAL	N
(71)	WATER ADEQUACY	7
(72)	APPROACH ROADWAY ALIGNMENT	8
(36)	TRAFFIC SAFETY FEATURES	0000
(113)	SCOUR CRITICAL BRIDGES	5

********** PROPOSED IMPROVEMENTS **********

(75)	TYPE OF WORK- MISC STRUCTURAL WORK CODE	38
(76)	LENGTH OF STRUCTURE IMPROVEMENT	42.1 M
(94)	BRIDGE IMPROVEMENT COST	$240,800
(95)	ROADWAY IMPROVEMENT COST	$48,160
(96)	TOTAL PROJECT COST	$288,960
(97)	YEAR OF IMPROVEMENT COST ESTIMATE	2009
(114)	FUTURE ADT	10477
(115)	YEAR OF FUTURE ADT	2029

********** INSPECTIONS **********

(90)	INSPECTION DATE 10/09 (91) FREQUENCY	24 MO
(92)	CRITICAL FEATURE INSPECTION: (93) CFI DATE	
A)	FRACTURE CRIT DETAIL- NO MO	A)
B)	UNDERWATER INSP- NO MO	B)
C)	OTHER SPECIAL INSP- NO MO	C)

36C0110

Oct 01, 2009 [AAAG]

103 - Deck-Details



Photo #1

Typical deck cracking

36C0110

Oct 01, 2009 [AAAG]

103 - Deck-Details



Photo #1

Typical deck cracking



Photo #1
Typical deck cracking

36C0110

Oct 01, 2009 [AAAG]

103 - Deck-Details



Photo #1

Typical deck cracking

36C0110

Oct 01, 2009 [AAAG]

103 - Deck-Details



Photo #1

Typical deck cracking

36C0110

Oct 01, 2009 [AAAG]

119 - Rail-Damage/Deterioration



Photo #1

Typical thin cover on the rail with exposed corroded reinforcement



Photo #1
Joint at Abutment 4

36C0110

Oct 01, 2009 [AAAG]

119 - Rail-Damage/Deterioration



Photo #1

Typical thin cover on the rail with exposed corroded reinforcement

DEPARTMENT OF TRANSPORTATION
Structure Maintenance & Investigations

Bridge Number : 36C0110
Facility Carried: STOCKTON AVE
Location : 0.05 MI E OF WHARF RD
City : CAPITOLA
Inspection Date : 05/20/2009

Bridge Inspection Report

Inspection Type

Routine	FC	Underwater	Special	Other
☐	☐	☐	☐	☒

STRUCTURE NAME: SOQUEL CREEK

CONSTRUCTION INFORMATION

Year Built : 1934
Year Widened: N/A
Length (m) : 42.1
Skew (degrees): 0
No. of Joints : 0
No. of Hinges : 0

Structure Description: RC continuous box girder with parabolic soffit on 2 solid wall piers and diaphragm abutments all on timber piles.

Span Configuration : 1 @ 7.92 m, 1 @ 25.91 m, 1 @ 7.92 m

LOAD CAPACITY AND RATINGS

Design Live Load: OTHER OR UNKNOWN
Inventory Rating: 32.6 metric tonnes Calculation Method: LOAD FACTOR
Operating Rating: 53.5 metric tonnes Calculation Method: LOAD FACTOR
Permit Rating : PPPPP
Posting Load : Type 3: Legal Type 3S2: Legal Type 3-3: Legal

DESCRIPTION ON STRUCTURE

Deck X-Section: 1.86 m sw, 9.05 m, 1.83 m sw
Total Width: 13.4 m Net Width: 9.1 m No. of Lanes: 2
Rail Description: Concrete aesthetic (339) Rail Code : 0000
Min. Vertical Clearance: Unimpaired

DESCRIPTION UNDER STRUCTURE

Channel Description: Sandy beach outlet

CONDITION TEXT

HISTORY

A review of all existing Bridge Inspection Reports (B.I.R) reveals no history of scour.

REVISIONS

The National Bridge Inventory Item 113 Code has been revised from T to 5.

SCOUR

This report addresses hydraulic issues only. The structure's scour potential has been assessed in accordance with the Federal Highway Administration Technical Advisory T5140.23, "Evaluating Scour at Bridges". The National Bridge Inventory Item 113 Code, "Vulnerability to Scour", has been changed to 5: "Bridge foundations determined to be stable for calculated scour conditions; Scour is within limits of footing or piles."

This evaluation is based on an office review of maintenance records, as-built plans and the recent field investigation conducted on 05/20/2009. During the field investigation, an upstream channel cross-section was taken (attached) at the bridge site. Comparison of the recent cross-section and the cross sections taken on 02/16/1977, 04/16/1992 and 05/02/2001 indicates the channel is relatively stable. The thalweg elevation appears to

CONDITION TEXT

be at pier 2.

The channel banks (on northeast side) are protected with sheet piles . The channel bed material is sandy silt. Surrounding vegetation is minimal. No debris issues were observed at the time investigation and the debris potential is low. The structure is tidally controlled. No hydraulic skew, local scour, contraction, degradation, or substructure exposure was observed. The flow or tidal velocity was almost negligible the day of our investigation.

Upon review of the as-built plans, the existing channel elevation appear to be at or close to the design elevation. The tidal influence does not appear to pose much scour potential to this structure. Furthermore, no significant scour issues were reported on previous investigation reports. Therefore, based on our engineering judgment this bridge is not considered scour critical.

CHANNEL X-SECTION

Side : Upstream
Measured From :top of rail
X-Section Date: 05/20/2009

Location	Horiz(m)	Vert(m)	Comments
Rail + curb HI = 1.23 m			
A1 (SW)	0.00	6.30	Top of footing & Face of Abutment 1
	0.61	7.40	
	4.80	7.50	
	7.72	7.90	Pier 2 centerline
	21.54	6.50	EOW
	33.10	6.60	
	35.78	6.40	Pier 3 centerline
	39.31	5.90	
	39.50	4.70	
	42.10	4.50	Face of Abutment 4

Inspected By : Ali Nojoumi

Registered Civil Engineer

REGISTERED PROFESSIONAL ENGINEER
CHARLES J. NEICHEN
No. 054230
Exp. 12-31-09
CIVIL
STATE OF CALIFORNIA

36C0110

Oct 01, 2007 [AAAE]

107 - Super-Damage/Deterioration



Photo #1

Soffit distress in Span 3

107 - Super-Damage/Deterioration



Photo #1

Soffit distress in Span 2

113 - Sub-Damage/Deterioration



Photo #1

Face of Abutment 1

107 - Super-Damage/Deterioration



Photo #1

Soffit distress in Span 2



Photo #1
Soffit distress in Span 2

107 - Super-Damage/Deterioration



Photo #1

Soffit distress in Span 2



Photo #1
Soffit distress in Span 2



Photo #1
Soffit distress in Span 2



Photo #1
Soffit distress in Span 2

DEPARTMENT OF TRANSPORTATION
Structure Maintenance & Investigations

Bridge Number : 36C0110
Facility Carried: STOCKTON AVE
Location : 0.05 MI E OF WHARF RD
City : CAPITOLA
Inspection Date : 05/08/2007

Bridge Inspection Report

Inspection Type

Routine	FC	Underwater	Special	Other
X				

STRUCTURE NAME: SOQUEL CREEK

CONSTRUCTION INFORMATION

Year Built : 1934
Year Widened: N/A
Length (m) : 42.1
Skew (degrees): 0
No. of Joints : 0
No. of Hinges : 0

Structure Description: RC continuous box girder with parabolic soffit on 2 solid wall piers and diaphragm abutments all on timber piles.

Span Configuration : 1 @ 7.92 m, 1 @ 25.91 m, 1 @ 7.92 m

LOAD CAPACITY AND RATINGS

Design Live Load: OTHER OR UNKNOWN
Inventory Rating: 32.6 metric tons Calculation Method: LOAD FACTOR
Operating Rating: 53.5 metric tons Calculation Method: LOAD FACTOR
Permit Rating : PPPPP
Posting Load : Type 3 N/A Type 3S2 N/A Type 3-3 N/A

DESCRIPTION ON STRUCTURE

Deck X-Section: 1.86 m sw, 9.05 m, 1.83 m sw
Total Width: 13.4 m Net Width: 9.1 m No. of Lanes: 2
Rail Description: Concrete aesthetic (339) Rail Code : 0000
Min. Vertical Clearance: Unimpaired

DESCRIPTION UNDER STRUCTURE

Channel Description: Sandy beach outlet

CONDITION TEXT

NOMENCLATURE

This structure alignment is almost due North and South. The Southern Abutment is Abutment 1 and the Northern Abutment is Abutment 4. Abutment 4 is located nearest the Esplanade, Stockton Ave. and the shopping district.

Previous reports have confused the nomenclature and the plans simply list the abutments as Eastern and Western. For clarification, where the plans call out the Western Abutment, that will be considered Abutment 1; where the plans call out the Eastern Abutment, that will be considered Abutment 4.

REVISIONS

NBI Item 37 - Historical Significance for this bridge was updated due to an evaluation by the Caltrans Environmental Program to Code 2 - Eligible for National Register listing.

CONDITION OF STRUCTURE

On 5/8/2007 Steve Jesberg, the Public Works Director for the City of Capitola, met us on site during our inspection to discuss the inspection procedures and some future plans for the structure.

CONDITION TEXT

As previously reported, there are heavy random cracks in the deck throughout. These cracks are moderate to severe in size and density (up to 5mm in size and 1-3' OC). The deck is also heavily weathered and abraded in areas. There is an outstanding work recommendation from 2001 to seal the cracks with methacrylate resin that should be completed.

Also as previously reported, there are spalls with exposed reinforcement in several of the concrete barrier rail vertical post elements. Both left and right rails are affected. The issue appears to have been thin cover of the steel with concrete. There is an outstanding work recommendation from 2001 to patch the spalls that should be completed.

Previous reports have detailed an extensive history of soffit spalling and repairs. On this inspection the following details were noted:

The soffit in Span 1 exhibits a longitudinal crack with efflorescence along the centerline continuing down the pier. The pier area exhibits a black leachate. Previous patches are also evident. There is also a 1/2 SF spall with exposed reinforcing steel.

The soffit in Span 2 exhibits transverse reflective soffit cracks with black leachate. The soffit also exhibits numerous patches from previous spall repairs. There is 1 SF area 20' from Pier 2 and 10' from the right soffit edge that exhibits a wet rusty efflorescent that should be repaired. Midspan there are also 2 exposed reinforcement bars, approximately 6" each. The soffit also exhibits random cracking midspan of moderate intensity. There are also several 5' transverse cracks at the crown of the soffit, some with thin cover.

The soffit in Span 3 is in the worst condition of the soffit spans. Numerous previous patches are evident in the soffit.

The cracks and the spalls in the soffit of all spans should be cleaned, chipped out as necessary and patched and sealed as previously recommended.

Abutment 4 exhibits numerous sealed cracks as previously reported.

This structure does not need an underwater inspection by the dive team. All elements can be inspected by wading and probing with consideration taken for the tidal flows.

On this date, 3-4' of water was in all 3 spans and a wading inspection allowed for all elements to be adequately inspected. No scour was detected.

This structure is in generally good condition for a structure built in 1934 although preventative maintenance as noted above is needed to maintain this condition.

ELEMENT INSPECTION RATINGS

F#	Elem	Element Description	Env	Total Qty	Units	Qty in each Condition State St. 1	St. 2	St. 3	St. 4	St. 5
101	12	Concrete Deck - Bare	3	560	sq.m.	0	560	0	0	0
101	105	Reinforced Concrete Closed Webs/Box Girder	3	42	m.	0	42	0	0	0
101	210	Reinforced Conc Pier Wall	3	27	m.	0	27	0	0	0
101	215	Reinforced Conc Abutment	3	27	m.	0	27	0	0	0
101	256	Slope Protection	2	2	ea.	2	0	0	0	0
101	339	Concrete Railing (aesthetic/masonry)	4	96	m.	91	0	5	0	0

F#Elem	Element Description	Env	Total Qty	Units	Qty in each Condition State St. 1	St. 2	St. 3	St. 4	St. 5
101 358	Deck Cracking	4	1	ea.	0	0	0	1	0
101 359	Soffit of Concrete Deck or Slab	4	1	ea.	0	0	0	1	0

WORK RECOMMENDATIONS

RecDate: 05/02/2001 EstCost:
Action : Railing-Repair StrTarget: 2 YEARS
Work By: LOCAL AGENCY DistTarget:
Status : PROPOSED EA:

Patch the spalls in barrier elements. The spalls are due to thin cover.

RecDate: 05/02/2001 EstCost:
Action : Deck-Methacrylat StrTarget: 2 YEARS
Work By: LOCAL AGENCY DistTarget:
Status : PROPOSED EA:

Seal the deck cracks with methacrylate resin.

RecDate: 08/10/1999 EstCost:
Action : Super-Patch spal StrTarget: 2 YEARS
Work By: LOCAL AGENCY DistTarget:
Status : PROPOSED EA:

Repair spalled areas in the deck soffit. See report for details.

Inspected By : Daniel Zuhlke

Registered Civil Engineer

REGISTERED PROFESSIONAL ENGINEER
DANIEL LUDWIG ZUHLKE
C 61330
EXP. 06-30-~~2007~~ 2009
CIVIL
STATE OF CALIFORNIA

STRUCTURE INVENTORY AND APPRAISAL REPORT

********** IDENTIFICATION **********

(1)	STATE NAME- CALIFORNIA	069
(8)	STRUCTURE NUMBER	**36C0110**
(5)	INVENTORY ROUTE(ON/UNDER)- ON	1500E1740
(2)	HIGHWAY AGENCY DISTRICT	05
(3)	COUNTY CODE 087 (4) PLACE CODE	11040
(6)	FEATURE INTERSECTED-	SOQUEL CREEK
(7)	FACILITY CARRIED-	STOCKTON AVE
(9)	LOCATION-	0.05 MI E OF WHARF RD
(11)	MILEPOINT/KILOMETERPOINT	0
(12)	BASE HIGHWAY NETWORK- NOT ON NET	0
(13)	LRS INVENTORY ROUTE & SUBROUTE	
(16)	LATITUDE	36 DEG 58 MIN 22 SEC
(17)	LONGITUDE	121 DEG 57 MIN 07 SEC
(98)	BORDER BRIDGE STATE CODE % SHARE	%
(99)	BORDER BRIDGE STRUCTURE NUMBER	

******** STRUCTURE TYPE AND MATERIAL *********

(43)	STRUCTURE TYPE MAIN:MATERIAL- CONCRETE CONT TYPE- BOX BEAM OR GIRDER - MULTI CODE	205
(44)	STRUCTURE TYPE APPR:MATERIAL- NOT APPLICABLE TYPE- NOT APPLICABLE CODE	
(45)	NUMBER OF SPANS IN MAIN UNIT	3
(46)	NUMBER OF APPROACH SPANS	0
(107)	DECK STRUCTURE TYPE- CIP CONCRETE CODE	1
(108)	WEARING SURFACE / PROTECTIVE SYSTEM:	
A)	TYPE OF WEARING SURFACE- CONCRETE CODE	1
B)	TYPE OF MEMBRANE- NONE CODE	0
C)	TYPE OF DECK PROTECTION- NONE CODE	0

********** AGE AND SERVICE **********

(27)	YEAR BUILT	1934
(106)	YEAR RECONSTRUCTED	0000
(42)	TYPE OF SERVICE: ON- HIGHWAY-PEDESTRIAN	5
	UNDER- WATERWAY	5
(28)	LANES:ON STRUCTURE 02 UNDER STRUCTURE	00
(29)	AVERAGE DAILY TRAFFIC	7600
(30)	YEAR OF ADT 1978 (109) TRUCK ADT	10 %
(19)	BYPASS, DETOUR LENGTH	3 KM

********** GEOMETRIC DATA **********

(48)	LENGTH OF MAXIMUM SPAN	25.9 M
(49)	STRUCTURE LENGTH	42.1 M
(50)	CURB OR SIDEWALK: LEFT 1.9 M RIGHT	1.8 M
(51)	BRIDGE ROADWAY WIDTH CURB TO CURB	9.1 M
(52)	DECK WIDTH OUT TO OUT	13.4 M
(32)	APPROACH ROADWAY WIDTH (W/SHOULDERS)	9.1 M
(33)	BRIDGE MEDIAN- NO MEDIAN	0
(34)	SKEW 0 DEG (35) STRUCTURE FLARED	NO
(10)	INVENTORY ROUTE MIN VERT CLEAR	99.99 M
(47)	INVENTORY ROUTE TOTAL HORIZ CLEAR	9.1 M
(53)	MIN VERT CLEAR OVER BRIDGE RDWY	99.99 M
(54)	MIN VERT UNDERCLEAR REF- NOT H/RR	0.00 M
(55)	MIN LAT UNDERCLEAR RT REF- NOT H/RR	0.0 M
(56)	MIN LAT UNDERCLEAR LT	0.0 M

********** NAVIGATION DATA **********

(38)	NAVIGATION CONTROL- NO CONTROL CODE	0
(111)	PIER PROTECTION- CODE	
(39)	NAVIGATION VERTICAL CLEARANCE	0.0 M
(116)	VERT-LIFT BRIDGE NAV MIN VERT CLEAR	M
(40)	NAVIGATION HORIZONTAL CLEARANCE	0.0 M

****

SUFFICIENCY RATING =	60.2
STATUS	STRUCTURALLY DEFICIENT
HEALTH INDEX	69.0
PAINT CONDITION INDEX =	N/A

********** CLASSIFICATION ********** CODE

(112)	NBIS BRIDGE LENGTH- YES	Y
(104)	HIGHWAY SYSTEM- NOT ON NHS	0
(26)	FUNCTIONAL CLASS- MINOR ARTERIAL URBAN	16
(100)	DEFENSE HIGHWAY- NOT STRAHNET	0
(101)	PARALLEL STRUCTURE- NONE EXISTS	N
(102)	DIRECTION OF TRAFFIC- 2 WAY	2
(103)	TEMPORARY STRUCTURE-	
(105)	FED.LANDS HWY- NOT APPLICABLE	0
(110)	DESIGNATED NATIONAL NETWORK - NOT ON NET	0
(20)	TOLL- ON FREE ROAD	3
(21)	MAINTAIN- CITY OR MUNICIPAL HIGHWAY AGENCY	04
(22)	OWNER- CITY OR MUNICIPAL HIGHWAY AGENCY	04
(37)	HISTORICAL SIGNIFICANCE- NOT ELIGIBLE	5

********** CONDITION ********** CODE

(58)	DECK	3
(59)	SUPERSTRUCTURE	5
(60)	SUBSTRUCTURE	6
(61)	CHANNEL & CHANNEL PROTECTION	7
(62)	CULVERTS	N

********* LOAD RATING AND POSTING ********* CODE

(31)	DESIGN LOAD- OTHER OR UNKNOWN	0
(63)	OPERATING RATING METHOD- LOAD FACTOR	1
(64)	OPERATING RATING-	53.5
(65)	INVENTORY RATING METHOD- LOAD FACTOR	1
(66)	INVENTORY RATING-	32.6
(70)	BRIDGE POSTING- EQUAL TO OR ABOVE LEGAL LOADS	5
(41)	STRUCTURE OPEN, POSTED OR CLOSED-	A
	DESCRIPTION- OPEN, NO RESTRICTION	

********** APPRAISAL ********** CODE

(67)	STRUCTURAL EVALUATION	5
(68)	DECK GEOMETRY	3
(69)	UNDERCLEARANCES, VERTICAL & HORIZONTAL	N
(71)	WATER ADEQUACY	7
(72)	APPROACH ROADWAY ALIGNMENT	8
(36)	TRAFFIC SAFETY FEATURES	0000
(113)	SCOUR CRITICAL BRIDGES	T

********** PROPOSED IMPROVEMENTS **********

(75)	TYPE OF WORK- MISC STRUCTURAL WORK CODE	38
(76)	LENGTH OF STRUCTURE IMPROVEMENT	42.1 M
(94)	BRIDGE IMPROVEMENT COST	$677,000
(95)	ROADWAY IMPROVEMENT COST	$68,000
(96)	TOTAL PROJECT COST	$1,015,000
(97)	YEAR OF IMPROVEMENT COST ESTIMATE	1999
(114)	FUTURE ADT	10000
(115)	YEAR OF FUTURE ADT	2015

********** INSPECTIONS **********

(90)	INSPECTION DATE 05/07 (91) FREQUENCY	24	MO	
(92)	CRITICAL FEATURE INSPECTION:	(93) CFI DATE		
A)	FRACTURE CRIT DETAIL- NO	MO	A)	
B)	UNDERWATER INSP- NO	60 MO	B)	10/94
C)	OTHER SPECIAL INSP- NO	MO	C)	

DEPARTMENT OF TRANSPORTATION
Structure Maintenance & Investigations

Bridge Number : 36C0110
Facility Carried: STOCKTON AVE
Location : 0.05 MI E OF WHARF RD
City : CAPITOLA
Inspection Date : 05/25/2005

Bridge Inspection Report

Inspection Type

Routine	FC	Underwater	Special	Other
X				

STRUCTURE NAME: SOQUEL CREEK

CONSTRUCTION INFORMATION

Year Built : 1934
Year Widened: N/A
Length (m) : 42.1
Skew (degrees): 0
No. of Joints : 0
No. of Hinges : 0

Structure Description: RC continuous box girder with parabolic soffit on 2 solid wall piers and diaphragm abutments all on timber piles.

Span Configuration : 1 @ 7.92 m, 1 @ 25.91 m, 1 @ 7.92 m

LOAD CAPACITY AND RATINGS

Design Live Load: OTHER OR UNKNOWN
Inventory Rating: 32.6 metric tons Calculation Method: LOAD FACTOR
Operating Rating: 53.5 metric tons Calculation Method: LOAD FACTOR
Permit Rating : PPPPP
Posting Load : Type 3 N/A Type 3S2 N/A Type 3-3 N/A

DESCRIPTION ON STRUCTURE

Deck X-Section: 1.86 m sw, 9.05 m, 1.83 m sw
Total Width: 13.4 m Net Width: 9.1 m No. of Lanes: 2
Rail Description: Concrete aesthetic (339) Rail Code : 0000
Min. Vertical Clearance: Unimpaired

DESCRIPTION UNDER STRUCTURE

Channel Description: Sandy beach outlet

CONDITION TEXT

NOMENCLATURE

Abutment 1 is located nearest to the Esplanade (Zelda's and the shopping district).

CONDITION OF STRUCTURE

As previously reported, there are heavy random cracks in the deck throughout. These cracks are moderate to severe in size and density. The deck is also heavily abraded in areas. There is an outstanding work recommendation from 2001 to seal the cracks with methacrylate resin that should be completed.

Also as previously reported, there are spalls with exposed reinforcement in several of the concrete barrier vertical post elements. Both left and right rails are affected. There is an outstanding work recommendation from 2001 to patch the spalls that should be completed.

Previous reports have detailed an extensive history of soffit spalling and repairs. On this inspection the following details were noted:

The soffit in Span 1 exhibits a longitudinal crack with efflorescence along the centerline continuing down the pier. The pier area exhibits a black leachate. Previous patches are also evident.

CONDITION TEXT

The soffit in Span 2 exhibits transverse reflective soffit cracks with black leachate. The soffit also exhibits numerous patches from previous spall repairs. There is 1 SF area 20' from Pier 2 and 10' from the right soffit edge that exhibits a wet rusty efflorescent that should be repaired. Midspan there are also 2 exposed reinforcement bars, approximately 6" each. The soffit also exhibits random cracking midspan of moderate intensity. There are also several 5' transverse cracks at the crown of the soffit, some with thin cover. All these areas should be chipped out and repaired.

The soffit in Span 3 is in the worst condition of the soffit spans. Numerous previous patches are evident in the soffit.

Abutment 4 exhibits numerous sealed cracks as previously reported.

This structure is in generally good condition for a structure built in 1934 although preventative maintenance as noted above is needed to maintain this condition.

UNDERWATER INVESTIGATION

This structure does not need an underwater inspection by the dive team. All elements can be inspected by wading and probing with consideration taken for the tidal flows.

On this date, 3-4' of water was in all 3 spans and a wading inspection allowed for all elements to be adequately inspected. No scour was detected.

ELEMENT INSPECTION RATINGS

F#Elem	Element Description	Env	Total Qty	Units	Qty in each Condition State St. 1	St. 2	St. 3	St. 4	St. 5
01 12	Concrete Deck - Bare	3	560	sq.m.	0	560	0	0	0
01 105	Reinforced Concrete Closed Webs/Box Girder	3	42	m.	0	42	0	0	0
01 210	Reinforced Conc Pier Wall	3	27	m.	0	27	0	0	0
01 215	Reinforced Conc Abutment	3	27	m.	0	27	0	0	0
01 256	Slope Protection	2	2	ea.	2	0	0	0	0
01 339	Concrete Railing (aesthetic/masonry)	4	96	m.	91	0	5	0	0
01 358	Deck Cracking	4	1	ea.	0	0	0	1	0
01 359	Soffit of Concrete Deck or Slab	4	1	ea.	0	0	0	1	0

WORK RECOMMENDATIONS

RecDate: 05/02/2001 EstCost:
Action : Railing-Repair StrTarget: 2 YEARS
Work By: LOCAL AGENCY DistTarget:
Status : PROPOSED EA:
Patch spalls in barrier elements. The spalls are due to thin cover.

RecDate: 05/02/2001 EstCost:
Action : Deck-Methacrylat StrTarget: 2 YEARS
Work By: LOCAL AGENCY DistTarget:
Status : PROPOSED EA:
Seal deck cracks with methacrylate.

RecDate: 08/10/1999 EstCost:
Action : Super-Patch spal StrTarget: 2 YEARS
Work By: LOCAL AGENCY DistTarget:
Status : PROPOSED EA:
Repair spalled areas in the deck soffit. See report for details.

Inspected By : Daniel Zuhlke

Registered Civil Engineer



STRUCTURE INVENTORY AND APPRAISAL REPORT

********** IDENTIFICATION **********

(1) STATE NAME- CALIFORNIA 069
(8) STRUCTURE NUMBER **36C0110**
(5) INVENTORY ROUTE(ON/UNDER)- ON 1500E1740
(2) HIGHWAY AGENCY DISTRICT 05
(3) COUNTY CODE 087 (4) PLACE CODE 11040
(6) FEATURE INTERSECTED- SOQUEL CREEK
(7) FACILITY CARRIED- STOCKTON AVE
(9) LOCATION- 0.05 MI E OF WHARF RD
(11) MILEPOINT/KILOMETERPOINT 0
(12) BASE HIGHWAY NETWORK- NOT ON NET 0
(13) LRS INVENTORY ROUTE & SUBROUTE
(16) LATITUDE 36 DEG 58 MIN 22 SEC
(17) LONGITUDE 121 DEG 57 MIN 07 SEC
(98) BORDER BRIDGE STATE CODE % SHARE %
(99) BORDER BRIDGE STRUCTURE NUMBER

******** STRUCTURE TYPE AND MATERIAL *********

(43) STRUCTURE TYPE MAIN:MATERIAL- CONCRETE CONT
TYPE- BOX BEAM OR GIRDER - MULTI CODE 205
(44) STRUCTURE TYPE APPR:MATERIAL- NOT APPLICABLE
TYPE- NOT APPLICABLE CODE
(45) NUMBER OF SPANS IN MAIN UNIT 3
(46) NUMBER OF APPROACH SPANS 0
(107) DECK STRUCTURE TYPE- CIP CONCRETE CODE 1
(108) WEARING SURFACE / PROTECTIVE SYSTEM:
A) TYPE OF WEARING SURFACE- CONCRETE CODE 1
B) TYPE OF MEMBRANE- NONE CODE 0
C) TYPE OF DECK PROTECTION- NONE CODE 0

********** AGE AND SERVICE **********

(27) YEAR BUILT 1934
(106) YEAR RECONSTRUCTED 0000
(42) TYPE OF SERVICE: ON- HIGHWAY-PEDESTRIAN 5
UNDER- WATERWAY 5
(28) LANES:ON STRUCTURE 02 UNDER STRUCTURE 00
(29) AVERAGE DAILY TRAFFIC 7600
(30) YEAR OF ADT 1978 (109) TRUCK ADT 10 %
(19) BYPASS, DETOUR LENGTH 3 KM

********** GEOMETRIC DATA **********

(48) LENGTH OF MAXIMUM SPAN 25.9 M
(49) STRUCTURE LENGTH 42.1 M
(50) CURB OR SIDEWALK: LEFT 1.9 M RIGHT 1.8 M
(51) BRIDGE ROADWAY WIDTH CURB TO CURB 9.1 M
(52) DECK WIDTH OUT TO OUT 13.4 M
(32) APPROACH ROADWAY WIDTH (W/SHOULDERS) 9.1 M
(33) BRIDGE MEDIAN- NO MEDIAN 0
(34) SKEW 0 DEG (35) STRUCTURE FLARED NO
(10) INVENTORY ROUTE MIN VERT CLEAR 99.99 M
(47) INVENTORY ROUTE TOTAL HORIZ CLEAR 9.1 M
(53) MIN VERT CLEAR OVER BRIDGE RDWY 99.99 M
(54) MIN VERT UNDERCLEAR REF- NOT H/RR 0.00 M
(55) MIN LAT UNDERCLEAR RT REF- NOT H/RR 0.0 M
(56) MIN LAT UNDERCLEAR LT 0.0 M

********** NAVIGATION DATA **********

(38) NAVIGATION CONTROL- NO CONTROL CODE 0
(111) PIER PROTECTION- CODE
(39) NAVIGATION VERTICAL CLEARANCE 0.0 M
(116) VERT-LIFT BRIDGE NAV MIN VERT CLEAR M
(40) NAVIGATION HORIZONTAL CLEARANCE 0.0 M

****

SUFFICIENCY RATING = 60.2
STATUS STRUCTURALLY DEFICIENT
HEALTH INDEX 69.0
PAINT CONDITION INDEX = N/A

********** CLASSIFICATION ********** CODE

(112) NBIS BRIDGE LENGTH- YES Y
(104) HIGHWAY SYSTEM- NOT ON NHS 0
(26) FUNCTIONAL CLASS- MINOR ARTERIAL URBAN 16
(100) DEFENSE HIGHWAY- NOT STRAHNET 0
(101) PARALLEL STRUCTURE- NONE EXISTS N
(102) DIRECTION OF TRAFFIC- 2 WAY 2
(103) TEMPORARY STRUCTURE-
(105) FED.LANDS HWY- NOT APPLICABLE 0
(110) DESIGNATED NATIONAL NETWORK - NOT ON NET 0
(20) TOLL- ON FREE ROAD 3
(21) MAINTAIN- CITY OR MUNICIPAL HIGHWAY AGENCY 04
(22) OWNER- CITY OR MUNICIPAL HIGHWAY AGENCY 04
(37) HISTORICAL SIGNIFICANCE- NOT ELIGIBLE 5

********** CONDITION ********** CODE

(58) DECK 3
(59) SUPERSTRUCTURE 5
(60) SUBSTRUCTURE 6
(61) CHANNEL & CHANNEL PROTECTION 7
(62) CULVERTS N

********** LOAD RATING AND POSTING ********** CODE

(31) DESIGN LOAD- OTHER OR UNKNOWN 0
(63) OPERATING RATING METHOD- LOAD FACTOR 1
(64) OPERATING RATING- 53.5
(65) INVENTORY RATING METHOD- LOAD FACTOR 1
(66) INVENTORY RATING- 32.6
(70) BRIDGE POSTING- EQUAL TO OR ABOVE LEGAL LOADS 5
(41) STRUCTURE OPEN, POSTED OR CLOSED- A
DESCRIPTION- OPEN, NO RESTRICTION

********** APPRAISAL ********** CODE

(67) STRUCTURAL EVALUATION 5
(68) DECK GEOMETRY 3
(69) UNDERCLEARANCES, VERTICAL & HORIZONTAL N
(71) WATER ADEQUACY 7
(72) APPROACH ROADWAY ALIGNMENT 8
(36) TRAFFIC SAFETY FEATURES 0000
(113) SCOUR CRITICAL BRIDGES T

********** PROPOSED IMPROVEMENTS **********

(75) TYPE OF WORK- MISC STRUCTURAL WORK CODE 38
(76) LENGTH OF STRUCTURE IMPROVEMENT 42.1 M
(94) BRIDGE IMPROVEMENT COST $677,000
(95) ROADWAY IMPROVEMENT COST $68,000
(96) TOTAL PROJECT COST $1,015,000
(97) YEAR OF IMPROVEMENT COST ESTIMATE 1999
(114) FUTURE ADT 10000
(115) YEAR OF FUTURE ADT 2015

********** INSPECTIONS **********

(90) INSPECTION DATE 05/05 (91) FREQUENCY 24 MO
(92) CRITICAL FEATURE INSPECTION: (93) CFI DATE
A) FRACTURE CRIT DETAIL- NO MO A)
B) UNDERWATER INSP- NO 60 MO B) 10/94
C) OTHER SPECIAL INSP- NO MO C)

DEPARTMENT OF TRANSPORTATION
Structure Maintenance & Investigations

Bridge Number : 36C0110
Facility Carried: STOCKTON AVE
Location : 0.05 MI E OF WHARF RD
City : CAPITOLA
Inspection Date : 05/07/2003

Bridge Inspection Report

Inspection Type

Routine	Group A	Underwater	Special	Other
X				

STRUCTURE NAME: SOQUEL CREEK

CONSTRUCTION INFORMATION

Year Built : 1934
Year Widened: N/A
Length (m) : 42.1
Skew (degrees): 0
No. of Joints : 0
No. of Hinges : 0

Structure Description: RC continuous box girder with parabolic soffit on solid wall piers and diaphragm abutments all on timber piles.

Span Configuration : 1 @ 7.92 m, 1 @ 25.91 m, 1 @ 7.92 m

LOAD CAPACITY AND RATINGS

Design Live Load: OTHER OR UNKNOWN
Inventory Rating: 32.6 metric tons Calculation Method: LOAD FACTOR
Operating Rating: 53.5 metric tons Calculation Method: LOAD FACTOR
Permit Rating : PPPPP
Posting Load : Type 3 N/A Type 3S2 N/A Type 3-3 N/A

DESCRIPTION ON STRUCTURE

Deck X-Section: 1.86 m sw, 9.05 m, 1.83 m sw
Total Width: 13.4 m Net Width: 9.1 m No. of Lanes: 2
Rail Description: Concrete (aesthetic) Rail Code : 0000
Min. Vertical Clearance: Unimpaired

DESCRIPTION UNDER STRUCTURE

Channel Description: Sand with slope protection

CONDITION OF STRUCTURE

As previously reported, there are large transverse cracks in the deck throughout. These cracks are moderate to severe in size and density. The deck is also heavily abraded in areas. There is an outstanding work recommendation to seal the cracks.

Also as previously reported, there are spalls with exposed reinforcement in several of the concrete barrier vertical post elements. Both left and right rails are affected. There is an outstanding work recommendation to patch the spalls.

There are soffit spalls in Spans 1, 2 and 3 with exposed and corroded reinforcement. There are also heavy transverse cracks in the soffit of Span 2 which correspond to the deck cracks. This condition has been previously reported and it appears that some of the spalls have been repaired. The remaining spalls should be repaired as well.

As previously reported, there is a spall with exposed reinforcement at Pier 2 on the west face. There is also a large area of unsound concrete with imminent spalling near this deficiency. There is an outstanding work recommendation to repair this area.

This structure is in generally good condition for a structure built in 1934.

ELEMENT INSPECTION RATINGS

F #	Elem No.	Element Description	Env	Total Qty	Units	Qty in each Condition State St. 1	St. 2	St. 3	St. 4	St. 5
01	12	Concrete Deck - Bare	3	560	sq.m.	0	560	0	0	0
01	105	Reinforced Concrete Closed Webs/Box Girder	3	42	m.	0	42	0	0	0
01	210	Reinforced Conc Pier Wall	3	27	m.	0	27	0	0	0
01	215	Reinforced Conc Abutment	3	27	m.	0	27	0	0	0
01	256	Slope Protection	2	2	ea.	2	0	0	0	0
01	339	Concrete Railing (aesthetic/masonry)	4	96	m.	91	0	5	0	0
01	358	Deck Cracking	4	1	ea.	0	0	0	1	0
01	359	Soffit of Concrete Deck or Slab	4	1	ea.	0	0	0	1	0

WORK RECOMMENDATIONS

RecDate: 05/02/2001 EstCost:
Action : StrTarget: 2 YEARS
Work By: LOCAL AGENCY DistTarget:
Status : PROPOSED EA:

Remove all unsound concrete at Pier 2 and repair. Clean and patch spall with exposed reinforcement.

RecDate: 05/02/2001 EstCost:
Action : StrTarget: 2 YEARS
Work By: LOCAL AGENCY DistTarget:
Status : PROPOSED EA:

Patch spalls in barrier elements.

RecDate: 05/02/2001 EstCost:
Action : StrTarget: 2 YEARS
Work By: LOCAL AGENCY DistTarget:
Status : PROPOSED EA:

Seal deck cracks with methacrylate.

RecDate: 08/10/1999 EstCost:
Action : StrTarget: 2 YEARS
Work By: LOCAL AGENCY DistTarget:
Status : PROPOSED EA:

Repair spalled areas in the deck soffit. Clean rebar and patch.

Inspected By : Daniel Ludwig Zuhlke

Registered Civil Engineer

REGISTERED PROFESSIONAL ENGINEER
DANIEL LUDWIG ZUHLKE
C 61330
EXP. 06-30-2005
CIVIL
STATE OF CALIFORNIA

STRUCTURE INVENTORY AND APPRAISAL REPORT

********** IDENTIFICATION **********

(1) STATE NAME- CALIFORNIA 069
(8) STRUCTURE NUMBER **36C0110**
(5) INVENTORY ROUTE(ON/UNDER)- ON 1500E1740
(2) HIGHWAY AGENCY DISTRICT 05
(3) COUNTY CODE 087 (4) PLACE CODE 11040
(6) FEATURE INTERSECTED- SOQUEL CREEK
(7) FACILITY CARRIED- STOCKTON AVE
(9) LOCATION- 0.05 MI E OF WHARF RD
(11) MILEPOINT/KILOMETERPOINT 0
(12) BASE HIGHWAY NETWORK- NOT ON NET 0
(13) LRS INVENTORY ROUTE & SUBROUTE
(16) LATITUDE 36 DEG 58 MIN 22 SEC
(17) LONGITUDE 121 DEG 57 MIN 07 SEC
(98) BORDER BRIDGE STATE CODE % SHARE %
(99) BORDER BRIDGE STRUCTURE NUMBER

******** STRUCTURE TYPE AND MATERIAL *********

(43) STRUCTURE TYPE MAIN:MATERIAL- CONCRETE CONT
TYPE- BOX BEAM OR GIRDER - MULTI CODE 205
(44) STRUCTURE TYPE APPR:MATERIAL-
TYPE- OTHER CODE 000
(45) NUMBER OF SPANS IN MAIN UNIT 3
(46) NUMBER OF APPROACH SPANS 0
(107) DECK STRUCTURE TYPE- CIP CONCRETE CODE 1
(108) WEARING SURFACE / PROTECTIVE SYSTEM:
A) TYPE OF WEARING SURFACE- CONCRETE CODE 1
B) TYPE OF MEMBRANE- NONE CODE 0
C) TYPE OF DECK PROTECTION- NONE CODE 0

********** AGE AND SERVICE **********

(27) YEAR BUILT 1934
(106) YEAR RECONSTRUCTED 0000
(42) TYPE OF SERVICE: ON- HIGHWAY-PEDESTRIAN 5
UNDER- WATERWAY 5
(28) LANES: ON STRUCTURE 02 UNDER STRUCTURE
(29) AVERAGE DAILY TRAFFIC 7600
(30) YEAR OF ADT 1978 (109) TRUCK ADT 10 %
(19) BYPASS, DETOUR LENGTH 3 KM

********** GEOMETRIC DATA **********

(48) LENGTH OF MAXIMUM SPAN 25.9M
(49) STRUCTURE LENGTH 42.1M
(50) CURB OR SIDEWALK: LEFT 1.9M RIGHT 1.8M
(51) BRIDGE ROADWAY WIDTH CURB TO CURB 9.1M
(52) DECK WIDTH OUT TO OUT 13.4M
(32) APPROACH ROADWAY WIDTH (W/SHOULDERS) 9.1M
(33) BRIDGE MEDIAN- NO MEDIAN 0
(34) SKEW 0 DEG (35) STRUCTURE FLARED NO
(10) INVENTORY ROUTE MIN VERT CLEAR 99.99M
(47) INVENTORY ROUTE TOTAL HORIZ CLEAR 9.1M
(53) MIN VERT CLEAR OVER BRIDGE RDWY 99.9M
(54) MIN VERT UNDERCLEAR REF- NOT H/RR 0 M
(55) MIN LAT UNDERCLEAR RT REF- NOT H/RR 99.9M
(56) MIN LAT UNDERCLEAR LT 0 M

********** NAVIGATION DATA **********

(38) NAVIGATION CONTROL- NO CONTROL CODE 0
(111) PIER PROTECTION- CODE
(39) NAVIGATION VERTICAL CLEARANCE 0M
(116) VERT-LIFT BRIDGE NAV MIN VERT CLEAR M
(40) NAVIGATION HORIZONTAL CLEARANCE 0M

****

SUFFICIENCY RATING = 60.2
STATUS STRUCTURALLY DEFICIENT
HEALTH INDEX = 69.0
PAINT CONDITION INDEX = N/A

********** CLASSIFICATION ********** CODE

(112) NBIS BRIDGE LENGTH- YES Y
(104) HIGHWAY SYSTEM- NOT ON NHS 0
(26) FUNCTIONAL CLASS- MINOR ARTERIAL URBAN 16
(100) DEFENSE HIGHWAY- NOT STRAHNET 0
(101) PARALLEL STRUCTURE- NONE EXISTS N
(102) DIRECTION OF TRAFFIC- 2 WAY 2
(103) TEMPORARY STRUCTURE-
(105) FED.LANDS HWY-
(110) DESIGNATED NATIONAL NETWORK - NOT ON NET 0
(20) TOLL- ON FREE ROAD 3
(21) MAINTAIN- CITY OR MUNICIPAL HIGHWAY AGENCY 04
(22) OWNER- CITY OR MUNICIPAL HIGHWAY AGENCY 04
(37) HISTORICAL SIGNIFICANCE- NOT ELIGIBLE 5

********** CONDITION ********** CODE

(58) DECK 3
(59) SUPERSTRUCTURE 5
(60) SUBSTRUCTURE 6
(61) CHANNEL & CHANNEL PROTECTION 7
(62) CULVERTS N

******** LOAD RATING AND POSTING ********* CODE

(31) DESIGN LOAD- OTHER OR UNKNOWN 0
(63) OPERATING RATING METHOD- LOAD FACTOR 1
(64) OPERATING RATING- 53.5
(65) INVENTORY RATING METHOD- LOAD FACTOR 1
(66) INVENTORY RATING- 32.6
(70) BRIDGE POSTING- EQUAL TO OR ABOVE LEGAL LOADS 5
(41) STRUCTURE OPEN, POSTED OR CLOSED- A
DESCRIPTION- OPEN, NO RESTRICTION

********** APPRAISAL ********** CODE

(67) STRUCTURAL EVALUATION 5
(68) DECK GEOMETRY 3
(69) UNDERCLEARANCES, VERTICAL & HORIZONTAL N
(71) WATER ADEQUACY 7
(72) APPROACH ROADWAY ALIGNMENT 8
(36) TRAFFIC SAFETY FEATURES 0000
(113) SCOUR CRITICAL BRIDGES U

********** PROPOSED IMPROVEMENTS **********

(75) TYPE OF WORK- MISC STRUCTURAL WORK CODE 38
(76) LENGTH OF STRUCTURE IMPROVEMENT 42.1M
(94) BRIDGE IMPROVEMENT COST $677,000
(95) ROADWAY IMPROVEMENT COST $68,000
(96) TOTAL PROJECT COST $1,015,000
(97) YEAR OF IMPROVEMENT COST ESTIMATE 1999
(114) FUTURE ADT 38000
(115) YEAR OF FUTURE ADT 2021

********** INSPECTIONS **********

(90) INSPECTION DATE 05/03 (91) FREQUENCY 24 MO
(92) CRITICAL FEATURE INSPECTION: (93) CFI DATE
A) FRACTURE CRIT DETAIL- NO -1 MO A)
B) UNDERWATER INSP- NO 60 MO B) 10/94
C) OTHER SPECIAL INSP- NO MO C)



ELEVATION: Looking Westerly, 03B-05-05



ROADWAY: Looking South
05-SCr-Stockton Avenue, Br#36C-0110, Soquel Creek, 05/02/01, 03B-05-06

DEPARTMENT OF TRANSPORTATION
Structure Maintenance & Investigations

Bridge Number : **36C0110**
Facility Carried: **STOCKTON AVE**
Location : **0.05 MI E OF WHARF RD**
City : **CAPITOLA**
Inspection Date : **02-MAY-01**

Bridge Inspection Report

Inspection Type

Routine	Group A	Underwater	Special	Other
X				

Name : SOQUEL CREEK

CONSTRUCTION INFORMATION

Year Built : 1934
Year Widened : N/A
Length (m) : 42.1

Skew (degrees): 0
No. of Joints : 0
No. of Hinges : 0

Description of Structure : RC continuous box girder with parabolic soffit on solid wall piers and diaphragm abutments all on timber piles.

Span Configuration : 1 @ 7.92 m, 1 @ 25.91 m, 1 @ 7.92 m

LOAD CAPACITY AND RATINGS

Design Live Load : OTHER OR UNKNOWN
Inventory Rating : 32.6 metric tons — Calculation Method : LOAD FACTOR
Operating Rating : 53.5 metric tons — Calculation Method : LOAD FACTOR
Permit Rating : PPPPP
Posting Load : Type 3 N/A english tons Type 3S2 N/A english tons Type 3-3 N/A english tons

DESCRIPTION ON STRUCTURE

Bridge width : 1.86 m sw, 9.05 m, 1.83 m sw
Total Width : 13.4 m — Net Width : 9.10 m — No. of Lanes : 2
Rail Description : Concrete (aesthetic) — Rail Code : 0000
Min. Vertical Clearance : Unimpaired

DESCRIPTION UNDER STRUCTURE

Channel Description : Sand with slope protection

WORK DONE

It appears that cracks in the Abutment 1 (south) diaphragm have been sealed.

REVISIONS

The substructure support elements and span configurations appear to have been referenced incorrectly on several inspection reports. Those reports have reversed the span and support numbering. For clarification from this point on, per the ABME Structure Maintenance Procedures Manual Section 2.3 Attachment A - Local Agency Bridge Orientation/Support Nomenclature, supports are numbered from south to north or from west to east as the individual structure is oriented on the site. In cases where the bridge sits on a southwest/southeast orientation, as this one does, the southern most abutment will be Abutment 1.

The 1991 bridge book photos referenced the incorrect nomenclature. They have been corrected. All stream sections are using the correct nomenclature.

CONDITION OF STRUCTURE

There are large transverse cracks in the deck throughout. These cracks are moderate to severe in size and density. The deck is also heavily abraded in areas.

There are spalls with exposed reinforcement in several of the concrete barrier vertical post elements. Both left and right rails are affected.

There are soffit spalls in Spans 2 and 3 with exposed and corroded reinforcement. There are also heavy transverse cracks in the soffit of Span 2 which correspond to the deck cracks.

There is a spall with exposed reinforcement at Pier 2 on the west face (previously reported as Pier 3, incorrectly). There is also a large area of unsound concrete with imminent spalling near this deficiency.

A stream section was taken during this investigation. No appreciable changes from the previous stream

Bridge No.: 36C0110 **Location: 0.05 MI E OF WHARF RD** **Inspection Date: 02-MAY-01**

sections were noted.

This structure is in generally good condition.

ELEMENT LEVEL INSPECTION RATINGS

F#	Elem No.	Element Description	Env	Total Units Quantity	Qty in each Condition State St. 1	St. 2	St. 3	St. 4	St. 5
01	12	Concrete Deck - Bare	3	560 sq.m.	0	560	0	0	0
01	105	Reinforced Concrete Closed Webs/Box Girder	3	42 m.	0	42	0	0	0
01	210	Reinforced Conc Pier Wall	3	27 m.	0	27	0	0	0
01	215	Reinforced Conc Abutment	3	27 m.	0	27	0	0	0
01	256	Slope Protection	2	2 ea.	2	0	0		
01	339	Concrete Railing (aesthetic/masonry)	4	96 m.	91	0	5	0	
01	358	Deck Cracking	4	1 ea.	0	0	0	1	
01	359	Soffit of Concrete Deck or Slab	4	1 ea.	0	0	0	1	0

WORK RECOMMENDATIONS

Repair spalled areas in the deck soffit. Clean rebar and patch.

Item#	Rec. Date	Work By	Work Id.	Prog. Method	Cost
1	10-AUG-1999	City Agency	40110X99222X		

Seal deck cracks with methacrylate.

Item#	Rec. Date	Work By	Work Id.	Prog. Method	Cost
2	02-MAY-2001	City Agency	40110X01122X		

Patch spalls in barrier elements.

Item#	Rec. Date	Work By	Work Id.	Prog. Method	Cost
3	02-MAY-2001	City Agency	40110X01122X		

Remove all unsound concrete at Pier 2 and repair. Clean and patch spall with exposed reinforcement.

Item#	Rec. Date	Work By	Work Id.	Prog. Method	Cost
4	02-MAY-2001	City Agency	40110X01122X		

Inspected By : Mary L. Warrick

Mary L. Warrick

Registered Civil Engineer



CC : Steve Jaques, Hydraulics

Bridge No.: 36C0110 **Location: 0.05 MI E OF WHARF RD** **Inspection Date: 02-MAY-01**

CHANNEL X-SECTION

Side : Upstream
Measured From : top of concrete rail

X-Section Date : 02-MAY-01

Location	Horiz(m)	Vert(m)	Comments
Abutment 1 face	0.40	6.35	
Pier 2	7.40	6.30	
Span 2	15.00	6.90	thalweg
Span 2	21.20	6.80	
Span 2	30.20	6.75	
Pier 3	33.50	6.40	
Abutment 4 face	41.90	4.30	top of wall

Bridge No.: 36C0110 **Location: 0.05 MI E OF WHARF RD** **Inspection Date: 02-MAY-01**

STRUCTURE INVENTORY AND APPRAISAL REPORT

IDENTIFICATION

(1) STATE NAME - CALIFORNIA 069
(8) STRUCTURE NUMBER 36C0110
(5) INVENTORY ROUTE(ON/UNDER) - ON 1 50 0E1740
(2) HIGHWAY AGENCY DISTRICT 05
(3) COUNTY CODE 087 (4) PLACE CODE 11040
(6) FEATURE INTERSECTED - SOQUEL CREEK
(7) FACILITY CARRIED - STOCKTON AVE
(9) LOCATION - 0.05 MI E OF WHARF RD
(11) MILEPOINT/KILOMETERPOINT 0
(12) BASE HIGHWAY NETWORK - NOT ON NET 0
(13) LRS INVENTORY ROUTE & SUBROUTE
(16) LATITUDE 36 DEG 58 MIN 22 SEC
(17) LONGITUDE 121 DEG 57 MIN 07 SEC
(98) BORDER BRIDGE STATE CODE % SHARE %
(99) BORDER BRIDGE STRUCTURE NUMBER

STRUCTURE TYPE AND MATERIAL

(43) STRUCTURE TYPE MAIN: MATERIAL - CONCRETE CONT
TYPE - BOX BEAM OR GDR - MULTIPLE CODE 2 05
(44) STRUCTURE TYPE APPR: MATERIAL - OTHER
TYPE - OTHER CODE 000
(45) NUMBER OF SPANS IN MAIN UNIT 3
(46) NUMBER OF APPROACH SPANS 0
(107) DECK STRUCTURE TYPE CIP CONCRETE CODE 1
(108) WEARING SURFACE / PROTECTIVE SYSTEM:
A) TYPE OF WEARING SURFACE - CONCRETE CODE 1
B) TYPE OF MEMBRANE - NONE CODE 0
C) TYPE OF DECK PROTECTION - NONE CODE 0

AGE AND SERVICE

(27) YEAR BUILT 1934
(106) YEAR RECONSTRUCTED 0000
(42) TYPE OF SERVICE: ON - HIGHWAY-PEDESTRIAN 5
UNDER - WATERWAY 5
(28) LANES: ON STRUCTURE 02 UNDER STRUCTURE
(29) AVERAGE DAILY TRAFFIC 7600
(30) YEAR OF ADT 1998 (109) TRUCK ADT 10%
(19) BYPASS, DETOUR LENGTH 3 KM

GEOMETRIC DATA

(48) LENGTH OF MAXIMUM SPAN 25.9 M
(49) STRUCTURE LENGTH 42.1 M
(50) CURB OR SIDEWALK: LEFT 1.9 M RIGHT 1.8 M
(51) BRIDGE ROADWAY WIDTH CURB TO CURB 9.1 M
(52) DECK WIDTH OUT TO OUT 13.4 M
(32) APPROACH ROADWAY WIDTH (W/SHOULDERS) 9.1 M
(33) BRIDGE MEDIAN - NO MEDIAN 0
(34) SKEW 0 DEG (35) STRUCTURE FLARED NO
(10) INVENTORY ROUTE MIN VERT CLEAR 99.99 M
(47) INVENTORY ROUTE TOTAL HORIZ CLEAR 9.1 M
(53) MIN VERT CLEAR OVER BRIDGE RDWY 99.99 M
(54) MIN VERT UNDERCLEAR REF - NOT H/RR 0 M
(55) MIN LAT UNDERCLEAR RT REF - NOT H/RR 99.9 M
(56) MIN LAT UNDERCLEAR LT 0 M

NAVIGATION DATA

(38) NAVIGATION CONTROL - NO CONTROL CODE 0
(111) PIER PROTECTION - CODE
(39) NAVIGATION VERTICAL CLEARANCE 0 M
(116) VERT-LIFT BRIDGE NAV MIN VERT CLEAR M
(40) NAVIGATION HORIZONTAL CLEARANCE 0

SUFFICIENCY RATING = 60.2

STATUS = STRUCTURALLY DEFICIENT

HEALTH INDEX = 68.98

CLASSIFICATION

(112) NBIS BRIDGE LENGTH - YES Y
(104) HIGHWAY SYSTEM - NOT ON NHS 0
(26) FUNCTIONAL CLASS - MINOR ARTERIAL URBAN 16
(100) DEFENSE HIGHWAY - NOT STRAHNET 0
(101) PARALLEL STRUCTURE - NONE EXISTS N
(102) DIRECTION OF TRAFFIC - 2 WAY 2
(103) TEMPORARY STRUCTURE -
(105) FEDERAL LANDS HIGHWAY -
(110) DESIGNATED NATIONAL NETWORK - NOT ON NET 0
(20) TOLL - ON FREE ROAD 3
(21) MAINTAIN - CITY OR MUNICIPAL HIGHWAY AGENCY 4
(22) OWNER - CITY OR MUNICIPAL HIGHWAY AGENCY 4
(37) HISTORICAL SIGNIFICANCE - NOT ELIGIBLE 5

CONDITION

(58) DECK 3
(59) SUPERSTRUCTURE 5
(60) SUBSTRUCTURE 6
(61) CHANNEL & CHANNEL PROTECTION 7
(62) CULVERTS N

LOAD RATING AND POSTING

(31) DESIGN LOAD - OTHER OR UNKNOWN 0
(63) OPERATING RATING METHOD - LOAD FACTOR 1
(64) OPERATING RATING - 53.5
(65) INVENTORY RATING METHOD - LOAD FACTOR 1
(66) INVENTORY RATING - 32.6
(70) BRIDGE POSTING - Equal to or above legal loads 5
(41) STRUCTURE OPEN, POSTED OR CLOSED - A
DESCRIPTION - OPEN, NO RESTRICTION

APPRAISAL

(67) STRUCTURAL EVALUATION 5
(68) DECK GEOMETRY 3
(69) UNDERCLEARANCES, VERTICAL & HORIZONTAL N
(71) WATER ADEQUACY 7
(72) APPROACH ROADWAY ALIGNMENT 8
(36) TRAFFIC SAFETY FEATURES 0000
(113) SCOUR CRITICAL BRIDGES U

PROPOSED IMPROVEMENTS

(75) TYPE OF WORK - MISC STRUCTURAL WORK CODE 38
(76) LENGTH OF STRUCTURE IMPROVEMENT 42.1 M
(94) BRIDGE IMPROVEMENT COST $677,000
(95) ROADWAY IMPROVEMENT COST $68,000
(96) TOTAL PROJECT COST $1,015,000
(97) YEAR OF IMPROVEMENT COST ESTIMATE 1999
(114) FUTURE ADT 38000
(115) YEAR OF FUTURE ADT 2021

INSPECTIONS

(90) INSPECTION DATE 05/01 (91) FREQUENCY 24 MO
(92) CRITICAL FEATURE INSPECTION: (93) CFI DATE
A) FRACTURE CRIT DETAIL - NO -1 MO A)
B) UNDERWATER INSP - NO -1 MO B) 10/94
C) OTHER SPECIAL INSP - NO -1 MO C)

DEPARTMENT OF TRANSPORTATION
Structure Maintenance & Investigations

Bridge Number	**36C0110**
Facility Carried	**STOCKTON AVE**
Location	**0 05 MI E OF WHARF RD**
City	**CAPITOLA**
Inspection Date	**10-AUG-99**
Inspection Type	Routine [X] Group A [ ] Underwater [ ] Special [ ] Other [ ]

Bridge Inspection Report

Name SOQUEL CREEK

CONSTRUCTION INFORMATION

Year Built	1934	Skew (degrees)	0
Year Widened	N/A	No of Joints	0
Length (m)	42 1	No of Hinges	

Description of Structure: RC continuous box girder with parabolic soffit on solid wall piers and diaphragm abutments

Span Configuration: 1 @ 7 92 m, 1 @ 25 91 m, 1 @ 7 92 m

LOAD CAPACITY AND RATINGS

Design Live Load	OTHER OR UNKNOWN		
Inventory Rating	32 6 metric tons	Calculation Method	LOAD FACTOR
Operating Rating	53 5 metric tons	Calculation Method	LOAD FACTOR
Permit Rating	PPPPP		
Posting Load	Type 3 N/A english tons	Type 3S2 N/A english tons	Type 3-3 N/A english tons

DESCRIPTION ON STRUCTURE

Bridge width 1 86 m sw, 9 05 m, 1 83 m sw

Total Width	13 4 m	Net Width	9 10 m	No of Lanes	2
Rail Description	Concrete (asthetic)			Rail Code	0000
Min Vertical Clearance	Unimpaired				

DESCRIPTION UNDER STRUCTURE

Channel Description: Sand with slope protection

CONDITION OF STRUCTURE

Spalls in the soffit exist from corroded reinforcing steel

There is spalled concrete in the west side of Pier #3

The structure remains in generally good condition

ELEMENT LEVEL INSPECTION RATINGS

F# Elem No	Element Description	Env	Total Units Quantity	Qty in each Condition State St 1	St 2	St 3	St 4	St 5
01 12	Concrete Deck - Bare	3	560 sq m	0	560	0	0	0
01 105	Reinforced Concrete Closed Webs/Box Girder	3	42 m	0	42	0	0	0
01 210	Reinforced Conc Pier Wall	3	27 m	0	27	0	0	0
01 215	Reinforced Conc Abutment	3	27 m	0	27	0	0	0
01 256	Slope Protection	2	2 ea	2	0	0		
01 339	Concrete Railing (aesthetic/masonry)	4	96 m	96	0	0	0	
01 358	Deck Cracking	4	1 ea	0	0	1	0	
01 359	Soffit of Concrete Deck or Slab	4	1 ea	0	0	0	1	0

Bridge No 36C0110 **Location** 0 05 MI E OF WHARF RD **Inspection Date** 10-AUG-99

WORK RECOMMENDATIONS

Repaired spalled areas in the deck soffit

Item#	Rec Date	Work By	Work Id	Prog Method	Cost
1	10-AUG-1999	City Agency	40110/99222		

Inspected By E J Budney

Registered Civil Engineer

REGISTERED PROFESSIONAL ENGINEER
E. J. BUDNEY
EXPIRES
06-30-00
No. 36203
CIVIL
STATE OF CALIFORNIA

Printed on 22-OCT-1999 09 58 44 AM

Bridge No 36C0110 Location 0 05 MI E OF WHARF RD Inspection Date 10-AUG-99

STRUCTURE INVENTORY AND APPRAISAL REPORT

```
* ********** IDENTIFICATION ** ** *********
(1) STATE NAME - CALIFORNIA                                  06
(8) STRUCTURE NUMBER                                  36C0110
( ) INVENTORY ROUTE(ON/UNDER) - ON                    1 50 0E1740
(2) HIGHWAY AGENCY DISTRICT                                  05
(3) COUNTY CODE 087                (4) PLACE CODE        11140
(6) FEATURE INTERSECTED - SOQUEL CREEK
(7) FACILITY CARRIED - STOCKTON AVE
(9) LOCATION - 0 05 MI E OF WHARF RD
(11) MILEPOINT/KILOMETERPOINT                                 0
(12) BASE HIGHWAY NETWORK -    NOT ON NET                     0
(13) LRS INVENTORY ROUTE & SUBROUTE
(16) LATITUDE                          36 DEG 59 MIN 16  SEC
(17) LONGITUDE                        121 DEG  7 MIN 06 SEC
(98) BORDER BRIDGE STATE CODE                  % MAINE       *
(99) BORDER BRIDGE STRUCTURE NUMBER

** **** ** *** STRUCTURE TYPE AND MATERIAL **********
(43) STRUCTURE TYPE MAIN  MATERIAL - CONCRETE CONT
          TYPE  BO  BEAM OR GDR - MULTIPLE   CODE   2 00
(44) STRUCTURE TYPE APPR  MATERIAL - OTHER
          TYPE  OTHER                        CODE   000
(45) NUMBER OF SPANS IN MAIN UNIT                             3
(46) NUMBER OF APPROACH SPANS                                 0
(107) DECK STRUCTURE TYPE  CIP CONCRETE                  CODE 1
(108) WEARING SURFACE  PROTECTIVE SYSTEM
   A) TYPE OF WEARING SURFACE - CONCRETE                 CODE 1
   B) TYPE OF MEMBRANE - NONE                            CODE 0
   C) TYPE OF DECK PROTECTION - NONE                     CODE 0

*** ********** * AGE AND SERVICE * ** ** ** * **
(27) YEAR BUILT                                          1934
(106) YEAR RECONSTRUCTED                                 0000
(42) TYPE OF SERVICE  ON -  HIGHWAY-PEDESTRIAN
          UNDER - WATERWAY                                   5
(28) LANES ON STRUCTURE 02          UNDER STRUCTURE        /00
(29) AVERAGE DAILY TRAFFIC                                 /00
(30) YEAR OF ADT      1998          (109) TRUCK ADT        10%
(14) BYPASS DETOUR LENGTH                                  5 KM

*****  ********* GEOMETRIC DATA * ****** ** ** ****
(48) LENGTH OF MAXIMUM SPAN                               25 9M
(49) STRUCTURE LENGTH                                     42 1M
(50) CURB OR SIDEWALK  LEFT     1 8M      RIGHT           1 8M
(51) BRIDGE ROADWAY WIDTH CURB TO CURB                    7 1M
(52) DECK WIDTH OUT TO OUT                               13 4M
(32) APPROACH ROADWAY WIDTH (W/SHOULDERS)                 9 1M
(33) BRIDGE MEDIAN   NO MEDIAN                               0
(34) SKEW       0 DEG      (35) STRUCTURE FLARED            NO
(10) INVENTORY ROUTE MIN VERT CLEAR                      99 99M
(47) INVENTORY ROUTE TOTAL HORIZ CLEAR                    9 1M
(53) MIN VERT CLEAR OVER BRIDGE RDWY                     99 99M
(54) MIN VERT UNDERCLEAR REF - NOT H/RR                   0 0M
(55) MIN LAT UNDERCLEAR RT REF -NOT H/RR                 99 9M
(56) MIN LAT UNDERCLEAR LT                                0 0M

*** * *** ******* * NAVIGATION DATA *** *  **********
(38) NAVIGATION CONTROL - NO CONTROL                  CODE 0
(111) PIER PROTECTION -                               CODE
(39) NAVIGATION VERTICAL CLEARANCE                        0 0M
(116) VERT-LIFT BRIDGE NAV MIN VERT CLEAR                   M
(40) NAVIGATION HORIZONTAL CLEARANCE                        0

*** * ********** ********* *** ** **** ***** *
SUFFICIENCY RATING =  60 2
STATUS = STRUCTURALLY DEFICIENT
HEALTH INDEX    88 98
** *** **  ***** CLASSIFICATION  ****** *** ** * CODE
(112) NBIS BRIDGE LENGTH -  YES                              Y
(104) HIGHWAY SYSTEM -  NOT ON NHS                           0
(26) FUNCTIONAL CLASS -  MINOR ARTERIAL URBAN               16
(100) DEFENCE HIGHWAY -  NOT STRAHNET                        0
(101) PARALLEL STRUCTURE -    NONE EXIST                     N
(102) DIRECTION OF TRAFFIC -  2 WAY                          2
(103) TEMPORARY STRUCTURE -
(105) FEDERAL LANDS HIGHWAY -
(110) DESIGNATED NATIONAL NETWORK - NOT ON NET               0
(100) TOLL -    ON FREE ROAD                                 3
(21) MAINTAIN - CITY OR MUNICIPAL HIGHWAY AGENCY             4
(22) OWNER -   CITY OF MUNICIPAL HIGHWAY AGENCY              4
(37) HISTORICAL SIGNIFICANCE -   NOT ELIGIBLE               5

********** CONDITION *** * *** ****** ** CODE
(58) DECK                                                    3
(59) SUPERSTRUCTURE                                          5
(60) SUBSTRUCTURE                                            6
(61) CHANNEL & CHANNEL PROTECTION                            7
(62) CULVERTS                                                N

********** LOAD RATING AND POSTING *** ***** * CODE
(31) DESIGN LOAD - OTHER OR UNKNOWN                          0
(63) OPERATING RATING METHOD -  LOAD FACTOR                  1
(64) OPERATING RATING -                                     33 0
(65) INVENTORY RATING METHOD -  LOAD FACTOR                  1
(66) INVENTORY RATING -                                     20 0
(70) BRIDGE POSTING - Equal to or above legal loads
(41) STRUCTURE OPEN  POSTED OR CLOSED -                      A
     DESCRIPTION - OPEN NO RESTRICTION

**  * * * * **  APPRAISAL  *          CODE
(67) STRUCTURAL EVALUATION                                   5
(68) DECK GEOMETRY                                           3
(69) UNDERCLEARANCES  VERTICAL & HORIZONTAL                  N
(71) WATER ADEQUACY                                          7
(72) APPROACH ROADWAY ALIGNMENT                              8
(36) TRAFFIC SAFETY FEATURES                              0000
(113) SCOUR CRITICAL BRIDGES                                 U

********** PROPOSED IMPROVEMENTS **** *** ******
(75) TYPE OF WORK - MISC STRUCTURAL WORK          CODE    38
(76) LENGTH OF STRUCTURE IMPROVEMENT                      42 1M
(44) BRIDGE IMPROVEMENT COST                          $677 000
(9) ROADWAY IMPROVEMENT COST                          $46 000
(96) TOTAL PROJECT COST                            $1 015 000
(97) YEAR OF IMPROVEMENT COST ESTIMATE                  1999
(114) FUTURE ADT                                       14000
(115) YEAR OF FUTURE ADT                                2021

* ********** **** *** INSPECTIONS ****  ***************
(90) INSPECTION DATE   08/99          (91) FREQUENCY   24 MO
(92) CRITICAL FEATURE INSPECTION                 (93) LAST DATE
   A) FRACTURE CRIT DETAIL -   NO      -1 MO   A)
   B) UNDERWATER INSP -        NO      -1 MO   B)        10/94
   C) OTHER SPECIAL INSP -     NO      -1 MO   C)
```

Printed on 22-OCT-1999 09 58 44 AM

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

Bridge No. 36C-0110

SUPPLEMENTARY BRIDGE REPORT

DS-M19(REV.1-90)

Location 04-SCr-FAU E174-Cptl
Dist.,Co.,Rte.,PM,City

Date of Investigation 4-4-96

Name SOQUEL CREEK (Stockton Avenue)

RATINGS:

[71] **Waterway Adequacy** 7 [61] **Channel & Channel Protection** 7 [72] **Approach Rdwy Align.** 8

TYPE OF INVESTIGATION/REPORT

Biennial	X	**Group A**		**Other**	
Damage		**Underwater**		**Office**	

WORK DONE
The spall in the soffit at Span 3 has been patched.

CONDITION OF STRUCTURE
The timber retaining wall along the front face of Abutment 1 is beginning to deteriorate.

There is a spall with exposed reinforcing steel in the northerly face of Pier 3.

The structure remains in generally good condition.

WORK RECOMMENDED
1. Repair the timber retaining wall along the front face of Abutment 1.

2. Patch the spall in the north face of Pier 3.

E J. Budney
Registered Civil Engineer

EJB:mst



******************************* STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION ******************************

E L E M E N T   L E V E L   I N S P E C T I O N - (E L I)

BRIDGE NUMBER	FRAME	INSPECTION DATE
3 6 C 0 1 1 0	0 1	[redacted] 040496
1 – 8	9	11 – 16

INFORMATION ONLY - NOT FOR UPDATE

SCOUR CRITICAL............. NO
GROUP A INVESTIGATION...... NO
FRACTURE CRITICAL.......... NO
ELIGIBLE FOR RAIL UPGRADE.. NO
UNDERWATER INVESTIGATION... YES

DISTRICT 05
COUNTY SCR
ROUTE
POSTMILE
NAME

DEL	ELE #	ELEMENT DESCRIPTION	ENV	TOTAL QUANTITY	UNITS	QUANT CONDITION STATE 1	QUANT CONDITION STATE 2	QUANT CONDITION STATE 3	QUANT CONDITION STATE 4	QUANT CONDITION STATE 5
	1 2	CONCRETE DECK - BARE	3	1	EA		1			
	1 0 5	REINFORCED CONCRETE CLOSED WEB/BOX GIRDER	3	4 2	M		4 2			
	2 1 0	REINFORCED CONCRETE PIER WALL	3	2 7	M		2 7			
	2 1 5	REINFORCED CONCRETE ABUTMENT	3	2 7	M		2 7			
	3 3 1	CONCRETE BRIDGE RAILING	3	9 6	M		9 6			
18	19		22	23		28	33	38	43	48

04/19/96   03B ED BUDNEY

BY: ____________________

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

Bridge No. 36C-0110

SUPPLEMENTARY BRIDGE REPORT
DS-M19(REV.9-93)

Location 04-SCR-FAU-E190-Cpt1
Dist.,Co.,Rte.,PM,City

Date of Investigation 10/25/94

Name SOQUEL CREEK (Stockton Avenue)

RATINGS:

[71] **Waterway Adequacy**_____ [61] **Channel & Channel Protection** _____ [72] **Approach Rdwy Align.**_____

TYPE OF INVESTIGATION/REPORT

Biennial	_____	**Group A**	_____	**Other**	_____
Damage	_____	**Underwater**	X	**Office**	_____

UNDERWATER INVESTIGATION - TYPE A
Divers: T. Traina, R. Hunt, E. Kaslan
Water Type: Brackish
Visibility: 0.5 m (1.5 ft)

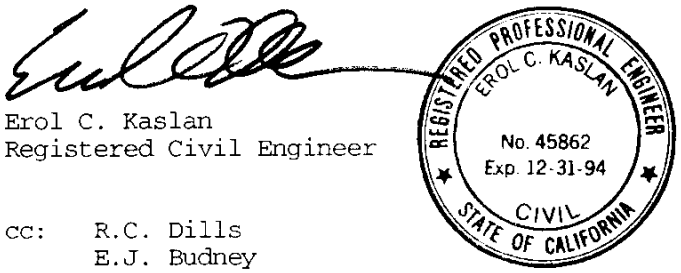
SUBSTRUCTURE INVESTIGATED:

Location	Depth M (ft)	Velocity mps (fps)	Channel	Pier Type
B2	1 (3.3)	NIL	MUD	RC Pier Wall
B3	1.2 (4)	NIL	MUD	RC Pier Wall

CONDITION OF STRUCTURE
No foundation exposure noted. Pier wall concrete in fair condition.

Minor spalls on the soffit were noted.

NEXT UNDERWATER INVESTIGATION
The depth of the water in the channel is less than 1.8 m (6 ft) and the foundation condition can be reliably determined by wading and probing. For these reasons, classify this structure as a Type A underwater investigation on a 60-month investigation interval.



Erol C. Kaslan
Registered Civil Engineer

cc: R.C. Dills
E.J. Budney

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION (ATTACHMENT A)

PONTIS DATA FORM - PIA

BRIDGE NUMBER	FRAME	INSPECTION DATE
36C0110	01	03/22/94
1 8	9	11 16

INFORMATION ONLY - NOT FOR UPDATE	
SCOUR CRITICAL	NO
CATEGORY A	NO
FRACTURE CRITICAL	NO
ELIGIBLE FOR RAIL UPGRADE	NO
UNDERWATER INSPECTION	YES

DISTRICT 04
COUNTY SCR
ROUTE
POSTMILE
NAME

DEL	ELE #	ELEMENT DESCRIPTION	ENV	TOTAL QUANTITY	UNITS	QUANT CONDITION STATE 1	QUANT CONDITION STATE 2	QUANT CONDITION STATE 3	QUANT CONDITION STATE 4	QUANT CONDITION STATE 5
	5	REINFORCED CONCRETE CLOSED WEB/BOX GIRDER	3	42	M		42			
	49	CONCRETE PIER WALL	3	27	M		27			
	51	CONCRETE ABUTMENT	3	27	M		27			
	102	CONCRETE BRIDGE RAILING	3	96	M		96			
	112	CONCRETE DECK - BARE	3	1	EA		1			
18 19			22 23			28	33	38	43	48

03/07/94 03B E. BUDNEY BY: _____

5-18-94

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

Bridge No. 36C-0110

SUPPLEMENTARY BRIDGE REPORT

DS-M19(REV.1-90)

Location 04-SCr-FAU E174-Cptl
Dist.,Co.,Rte.,PM,City

Date of Investigation 3/22/94

Name SOQUEL CREEK (Stockton Avenue)

RATINGS:

[71] **Waterway Adequacy** 7 [61] **Channel & Channel Protection** 7 [72] **Approach Rdwy Align.** 8

TYPE OF INVESTIGATION/REPORT

Biennial	X	**Group A**		**Other**	
Damage		**Underwater**		**Office**	

WORK DONE
The expansion joints at Abutments 1 and 4 have been resealed.

WORK NOT DONE
The spall in the soffit at Span 3 has not been patched.

CONDITION OF STRUCTURE
The structure remains in generally good condition.

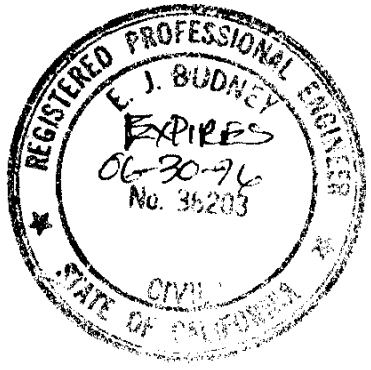
WORK RECOMMENDED
Do Work Not Done.

PONTIS INSPECTION
A PONTIS inspection form for this investigation is attached.

E.J. Budney
Registered Civil Engineer

EJB/pfa

cc: E.J. Budney, OSM&I



B. PAVAN 1 1

9/16/92 BRIDGE NO. 36C-110 04-SCr-FAU E174

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION
STREAM SECTION
DSM 0012 (New 6/92)

BLP

BRIDGE NUMBER	DIST./CO./RTE.	P.M.
36C-110	4-Scr-FAU	E174

BRIDGE NAME SOQUEL CREEK

PROFILE SIDE	MEASURED FROM	DATE
Upstream / Top	Lt. PCC Rail	9-16-92

From BB	Horiz.	Vertical	Comments
		20.7'	Abt. 1 (West) FACE
		23.7'	Bnt. 2, Sp. 2 side
		20.5'	Bnt. 3, ✓
		14.6'	Abt. 4 (East) FACE
OCEANSIDE / Top		Rt. PCC Rail	9-16-92
3.0'		23.1'	Abt. 1
		23.1'	Bnt. 2, Sp. 2 side
		21.1'	Bnt. 3, ✓
		14.8'	Abt. 4 FACE

G92 0127

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

SUPPLEMENTARY BRIDGE REPORT
DS-M19(REV.1-90)

Bridge No. 36C-0110

Location 04-SCr-FAU-E174-Cptl
Dist.,Co.,Rte.,PM,City

Date of Investigation 09/16/92

Name SOQUEL CREEK (Stockton Avenue)

RATINGS:

[58] **Deck** 5 [59] **Superstructure** 6 [60] **Substructure** 6 [71] **Waterway Adequacy** 7

[61] **Channel & Channel Protection** 7 [62] **Culvert** N [72] **Approach Rdwy Align.** 8

TYPE OF INVESTIGATION/REPORT

Biennial	X	**Category A**		**Other**	
Damage		**Underwater**		**Office**	

WORK NOT DONE

1. Repair the spall on soffit of Span 3 (previously noted as Span 1, incorrectly).

SUPL

2. Clean and reseal the expansion joint at Abutments 1 and 4.
   Old: MSCL
   New: DEKM

CONDITION OF STRUCVTURE

There are two minor spalls in the soffit of Span 3. The previously reported spall in Span 1 is actually in Span 3 and measures approximately 9" transversely and 4" longitudinally exposing corroded reinforcing. The second spall is about 3' into the soffit of Span 3 from the left edge of deck at the juncture of soffit to Abutment 4. This spall is actually a ± 1 1/2" hole through the soffit where no reinforcing was found exposed.

This structure remains in fair condition.

UNDERWATER INVESTIGATIONS-TYPE "B"

No scour or undermining was found due to high water. This structure should be considered for underwater investigation to determine the potential for scour or undermining as the water is unclear for investigation with cameras.

WORK RECOMMENDED

1. Complete Work Not Done.

Barry L. Pavan
Reviewed and Approved by

Richard M. Hunt

Richard Hunt
Registered Civil Engineer

REGISTERED PROFESSIONAL ENGINEER
RICHARD M. HUNT
No. 38267
Exp. 3/31/93
CIVIL
STATE OF CALIFORNIA

BLP/RMH/aa-04193
cc: R. Dills, Underwater Investigations
BLPavan
W.B. Lindsey - Hydraulics

4-SCr-FAU E174 # 36C-110

SOQUEL CREEK (STOCKTON AVENUE)



DECKVIEW FROM ABUTMENT ~~4~~ 1
6-4-91.5
ECK-22



Left ~~RIGHT~~ ELEVATION
6-4-91.2
ECK-22

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

SUPPLEMENTARY BRIDGE REPORT

DS-M19(REV.1-90)

Bridge No. 36C-0110 E174

Location 04-SCr-FAU E190-Cptl
Dist., Co., Rte., PM, City

Date of Investigation 6/4/91

Name SOQUEL CREEK (Stockton Ave.)

RATINGS:

58 Deck 5 | 59 Superstructure 6 | 60 Substructure 6 | 71 Waterway Adequacy 7
61 Channel & Channel Protection 7 | 62 Culvert NA | 72 Approach Rdwy Align. 8

CODES:

21 Custodian [04] | 22 Owner [04] | 26 Functional Classification: Deck [NA] Under [16]
41 Str Open, Posted or Closed [A] | 107 Deck Type [1] | 108 Wearing Surface/Prot Sys [100]
Max Col/Pier Ht. [Under 20'] | 111 Pier/Abut. Prot. [NA]
55 Min Lat Underclr on Rt. [NA] | 54 Min Vert Underclr [NA] | 112 NBIS Bridge Length [Y]

DATA:

51 Bridge Width (NET) 29.7' | 109 Average Daily Trucks (% of ADT): Deck 10 Under NA
114 Future ADT: Deck 38,000 Under NA | 115 Yr. of Future ADT: Deck 2021 Under NA
Number of Intermediate Joints: @ Hinges 0 @ Bents 0

TYPE OF INVESTIGATION/REPORT

Biennial	X	Category A		Other	
Damage		Underwater		Office	

CONDITION OF STRUCTURE

There is a small 8" spall with exposed rusted reinforcement on the soffit of Span 1 that should be repaired.

The joint at Abutment 4 is impacted with old AC and should be cleared.

The deck is heavily abraded, with many medium transverse and pattern cracks throughout.

There are a few light longitudinal cracks with some efflorescence on the soffit of the end spans.

There are some light to medium vertical cracks on the right exterior girders of all spans near the bents and at midspan of Span 2.

There is a light to medium horizontal crack with some efflorescence on the Bent 3 wall on the Span 3 side.

This structure is in fair condition.

WORK RECOMMENDED

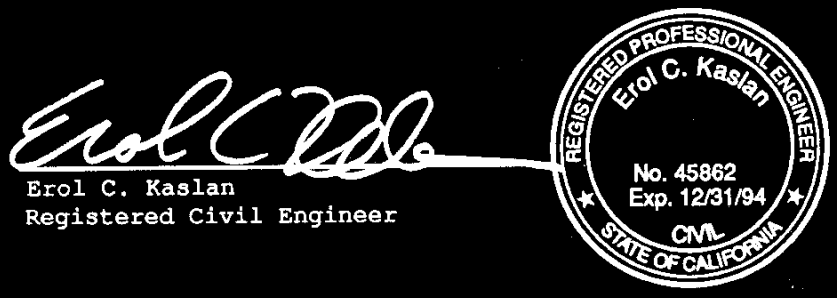
1. Repair the spall on the soffit of Span 1.

SUPL

BRIDGE NO. 36C-0110	
SHEET 2	DATE 6/4/91

WORK RECOMMENDED cont.

2. Clear the Abutment 4 joint. MSCL



Erol C. Kaslan
Registered Civil Engineer

ECK/cgc-23391

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

Bridge No. 36C-0110

SUPPLEMENTARY BRIDGE REPORT
DS-M19(REV.9/88)

Location 4-SCr-FAU E190-Cptl.
Dist.,Co.,Rte.,PM,City

Date of Investigation 4-20-89

Name SOQUEL CREEK (Stockton Ave.)

CONDITION RATING:

Deck 6 **Superstructure** 7 **Substr.&Pipes** 6
Channel & Channel Protection 5 **Culvert** N **Widenable?** Yes

TYPE OF INVESTIGATION/REPORT

BIENNIAL X	DAMAGE
CATEGORY A	OTHER
UNDERWATER	OFFICE

CONDITION OF STRUCTURE
This structure is in the same good condition, there being no significant change since previously inspected.

WORK RECOMMENDED
NONE

for W. Fox
W. Fox

WF/ms

Reviewed by [signature] Ci

REGISTERED PROFESSIONAL ENGINEER
FRANK C. HEGELI
No. 11248
Exp 6/31/92
CIVIL
STATE OF CALIFORNIA

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

SIGNATURE REPORT

DS-M59 (REV. 10/76)

Bridge No. 36C-110

Name SOQUEL CREEK
(Stockton Ave. 0.05mi E/O Wharf Rd.)

4-SCr-FAU E190-Cptl
Dist - Co - Rte - PM - City

On the date shown, the engineer investigated the structure and found no significant changes.

Date	Signature	Prev. Rec. Work Done	Prev. Rec. Work Not Done	Remarks
1-31-85	Vernon Banks			NCNR
1-15-87	W. Fot			

REGISTERED PROFESSIONAL ENGINEER
W. Fot
No. 14026
Exp. 3-31-89
CIVIL
STATE OF CALIFORNIA

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
SUPPLEMENTARY BRIDGE REPORT
DS-M19 (REV. 2/75)

Bridge No. 36C-110

Location 04-SCr-FAU ~~E174~~ E190 Ant 4-Cptl.
Dist - Co - Rte - PM - City

Date of Investigation June 24, 1982

Name SOQUEL CREEK (on ~~Cliff Drive~~ Stockton Ave. (Ant C) 0.05 mi. east of Wharf Rd.)

CONDITION RATING: **APPRAISAL RATING:**

Deck 6 Superstructure 8 Substr. & Pipes 7 Overall 7

Channel & Channel Protection 7 Retaining Walls N Deck Geometry (7)

Widenable? Yes ☒ City No ☐ Conditional ☐

Action Required by District: Yes ☐ No ☒

Average Daily Traffic and Year 7,600 1978

Bypass Detour Length 2 mi.

Seismic Retrofit need not be considered for this continuous structure.

PREVIOUS INVESTIGATION:

February 16, 1977

CHANGES AND ADDITIONS TO PREVIOUS REPORT

Ratings: Inventory HS 20/LF; Operating HS 33/LF; Permit PPPPP/LF

CONDITION OF STRUCTURE:

The high water allowed inspection of span 3 only, which was in good condition. No distress was noted in the remaining spans.

The condition of this structure has not changed significantly from the generally good condition noted previously.

T. J. Harrington
T. J. Harrington
C 22490

TJH/nlc

Santa Cruz

DIST	ROUTE	COUNTY	STRU. NO	POSTMILE	RATING WIDTH-FT	STRU TYPE	YR ORIG CONST	
04	CO RD	36 C	0110	.	033.0	CGB	33	APR. 16, 1979

	RATING FACTOR	PT	SPAN	ULT MOM CAP TOP IN COM	ULT MOM CAP BOT IN COM	POS HS20 MOMENT	NEG HS20 MOMENT	POS PURP MOMENT	NEG PURP MOMENT	DEAD LOAD MOMENT	SECONDARY MOMENT
INV	1.01	5	2	3942.7	0.0	935.1	-15.1	1433.2	-14.8	1464.4	0.0
OPER	1.68	5	2	3942.7	0.0	935.1	-15.1	1433.2	-14.8	1464.4	0.0
PURP	1.09	5	2	3942.7	0.0	935.1	-15.1	1433.2	-14.8	1464.4	0.0

THE NUMBER OF AXLES ON THE TRUCK THAT CAUSES THE PURPLE RATING FACTOR IS 9.
FC = 1.00 FY = 33.

IF THE REPORTED ULTIMATE MOMENT CAPACITY IS 0. IT WAS DETERMINED NOT TO BE CRITICAL

2 SOQUEL CREEK (CLIFF DRIVE)
3 NO AC

C

DIST	ROUTE	COUNTY	STRU. NO	POSTMILE	RATING	WIDTH-FT	STRU TYPE	YR ORIG CONST	
04	CO RD	36 C	0110	.	033.0		CGB	33	APR. 16, 1979

INFLUENCE LINE FOR CRITICAL INVENTORY RATING POINT SPAN 2 10TH POINT 5

MEM NO	LEFT	.1	.2	.3	.4	.5	.6	.7	.8	.9	RIGHT
1	0.0	-0.026	-0.049	-0.067	-0.078	-0.081	-0.076	-0.064	-0.048	-0.026	0.0
2	0.0	0.195	0.680	1.765	3.766	7.107	3.936	1.924	0.765	0.226	0.0
3	0.0	-0.032	-0.059	-0.080	-0.094	-0.101	-0.097	-0.083	-0.060	-0.032	0.0

THE CRITICAL OPERATING RATING POINT IS THE SAME AS THE CRITICAL INVENTORY RATING POINT

THE CRITICAL PURPLE RATING POINT IS THE SAME AS THE CRITICAL INVENTORY RATING POINT

2 SOQUEL CREEK (CLIFF DRIVE)
3 NO AC

BRIDGE NO. 36C-110 04-SCR-FAU E174 P.M. _____
DIST. CO. RTE.

BRIDGE Soquel Creek

PROFILE LT SIDE MEASURED FROM : Top of rail . DATE 2/16/77

From BB	Horz.	Vert.	Comment
Face A#1	1.5	20.6	
& Pier #2	26.6	21.6	
& Pier #3	111.5	20.0	
Brk	125	14.0/18.9	
Face A#4	136.7	13.5	
EB	138		

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
BRIDGE REPORT
DS-M58 (REV. 1/75)

Bridge No. 36C-110

Other No.

P.U.C. No.

Location 04-SCr-FAU ~~E174~~ E190 (AMG) Capitola
Dist - Co - Rte - PM - City

Date of Investigation February 16, 1977

Name SOQUEL CREEK (~~Cliff Drive~~ Stockton Ave) AMG

Lat. 36°-58.3' Long. 121°-57.1'

STRUCTURAL DATA AND HISTORY

Year Built 1934 By County Contract No. ---

Date of Revisions

Designed by: B.D. ☐ County Plans Avail. @ County & BD micro film 3/79

Description: RC continuous box girder with parabolic soffit on RC solid wall piers and diaphragm abutments.

Spans 1@26';1@85';1@26'

Length 138' Skew none Design LL ---

Ratings: Inventory --- Operating --- Permit Legal Loads

DESCRIPTION – ON STRUCTURE

Bridge Width 6.1'SW-29.7'-6.0'SW

Total Width 44.0' Lanes 2 Tracks none

Median none Rail Type Todd Concrete (0000)

Vert. Clearance over deck unimpaired Appr. Rdwy. Width 30'

Wearing Surface none Deck Seal none

Alignment Tangent with "Y" street intersections at each approach.

DESCRIPTION – UNDER STRUCTURE

Roadway Section N/A

Clearances: Vert. N/A Horiz.; N/A Lt. N/A Rt.

Lanes N/A Tracks none Pumpplant: None ☒ See Br. No. N/A

Facilities Crossed none

cc:

(1) CON'T.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
BRIDGE REPORT
DS-M58A (REV. 1/75)

Bridge No. 36C-110

Date February 16, 1977

DESCRIPTION – HYDRAULICS

Channel Sand with rock riprap slope protection at abutments.

Navigable: Yes ☐ No ☒ **Clearances:** Vert. N/A Horiz. N/A

MAINTENANCE

Custodian City of Capitola **Owner** City of Capitola

ORIGINAL CONDITION RATING		ORIGINAL APPRAISAL	
Deck	6	Overall	7
Superstructure	8	Deck Geometry	8
Substructure & Pipes	7	Underclearances Vert.	N/A
Channel & Channel Protection	7	Horiz.	N/A
Retaining Walls	N/A	Safe Load Capacity	5
Approach Rdwy. Alignment	6	Waterway Adequacy	7
Estimated Remaining Life	30	Approach Rdwy. Alignment	6

Widenable? Yes ☒ No ☐ Conditional ☐

Action Required by City: Yes ☐ No ☒

CONDITION OF STRUCTURE

There are many medium transverse deck cracks at all spans.

The structure is in a generally good condition and shows no signs of distress.

ENCROACHMENT

There is one 6" diameter steel pipe at Span 3 left only.

LOAD CAPACITY

Load capacity computations will be made at some future time. The structure has been carrying normal traffic for some time with no signs of distress and is considered adequate for legal loads by inspection.

K. E. JONES
C-9238

KEJ/if

04-Scr-FAU E174

36C-110

SOQUEL CREEK



ROADWAY VIEW LOOKING BACK (SOUTHWEST)



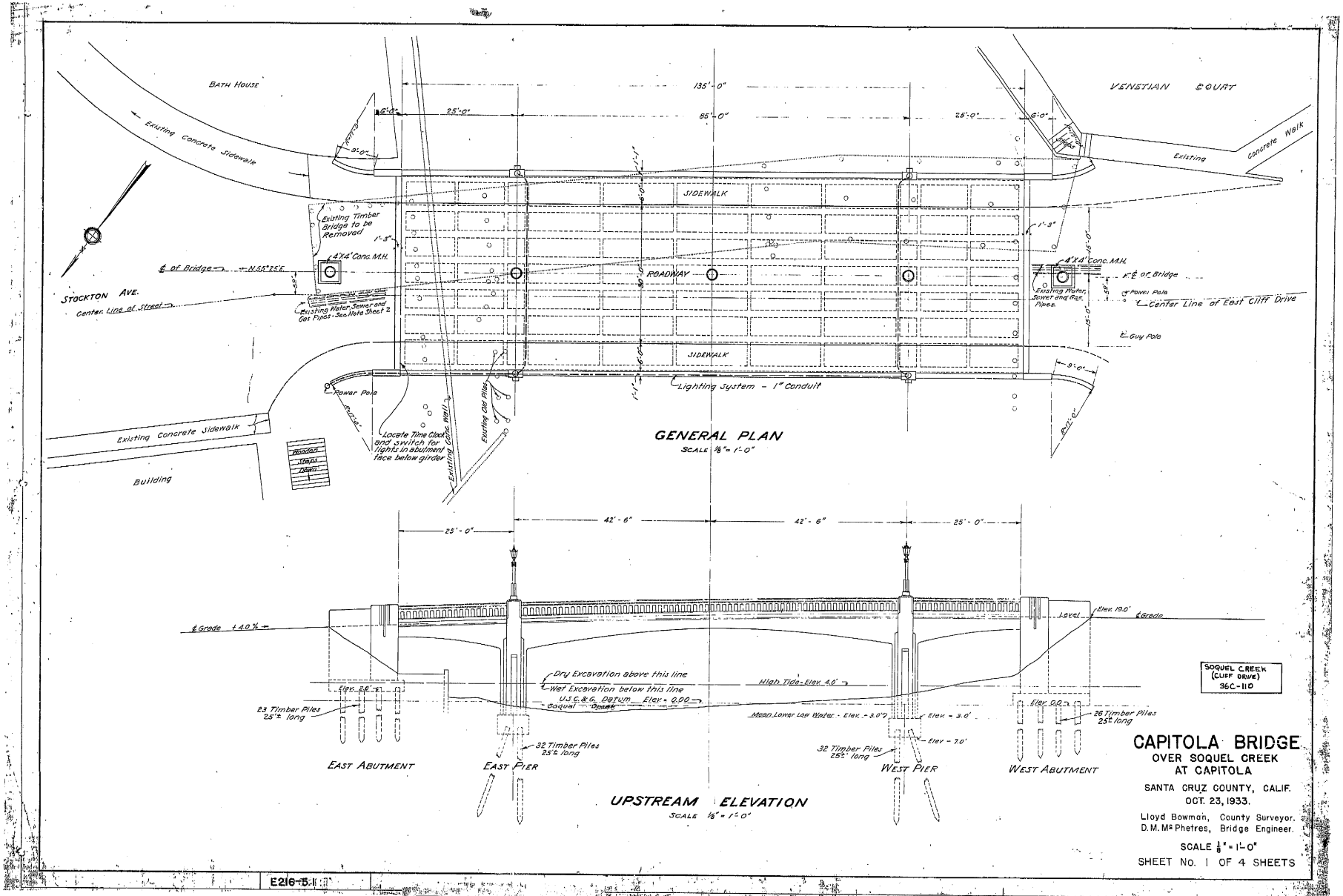
SIDEVIEW LOOKING SOUTHWEST

BRIDGE NO. 36C-110 04-SCR-FAU E174 P.M. _____
DIST. CO. RTE.

BRIDGE Soquel Creek

PROFILE Lt SIDE MEASURED FROM : Top of rail . DATE 2/16/77

From BB	Horz.	Vert.	Comment
Face A#1	1.5	20.6	
℄ Pier #2	26.6	21.6	
℄ Pier #3	111.5	20.0	
Brk	125	14.0/18.9	
Face A#4	136.7	13.5	
EB	138		



SOQUEL CREEK (CLIFF DRIVE) 36C-110

CAPITOLA BRIDGE

OVER SOQUEL CREEK AT CAPITOLA

SANTA CRUZ COUNTY, CALIF.
OCT. 23, 1933.

Lloyd Bowman, County Surveyor.
D.M. McPhetres, Bridge Engineer.

SCALE 1/8" = 1'-0"

SHEET No. 1 OF 4 SHEETS

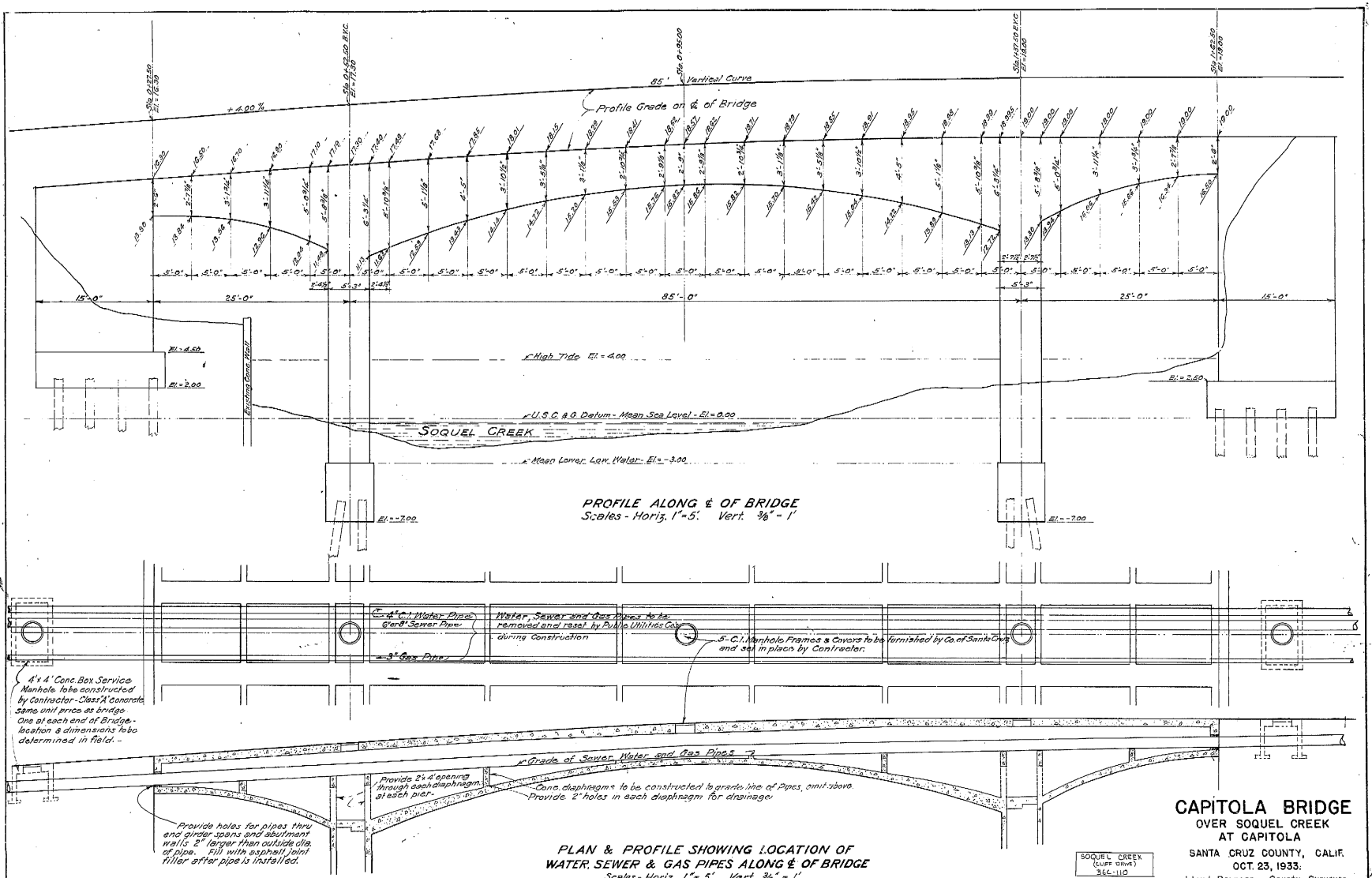
E216-5.1

AS BUILT PLANS
Contract No. UNKNOWN
Date Completed
Document No. 4000 8995

I HEREBY CERTIFY THAT THIS IS A TRUE AND ACCURATE COPY OF THE ABOVE DOCUMENT TAKEN UNDER MY DIRECTION AND CONTROL ON THIS DATE IN SACRAMENTO, CALIFORNIA PURSUANT TO AUTHORIZATION BY THE DIRECTOR OF TRANSPORTATION

DATE 7-27-79 SIGNATURE Joseph M Lastra TITLE Supervising of Materials

MICROFILM - STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION - MICROFILM



CAPITOLA BRIDGE

OVER SOQUEL CREEK
AT CAPITOLA

SANTA CRUZ COUNTY, CALIF.
OCT. 23, 1933.

Lloyd Bowman, County Surveyor.
D. M. Mc Phetres, Bridge Engineer.

SCALES NOTED

SHEET No. 2 OF 4 SHEETS

SOQUEL CREEK (CLIFF DRIVE)
36C-110

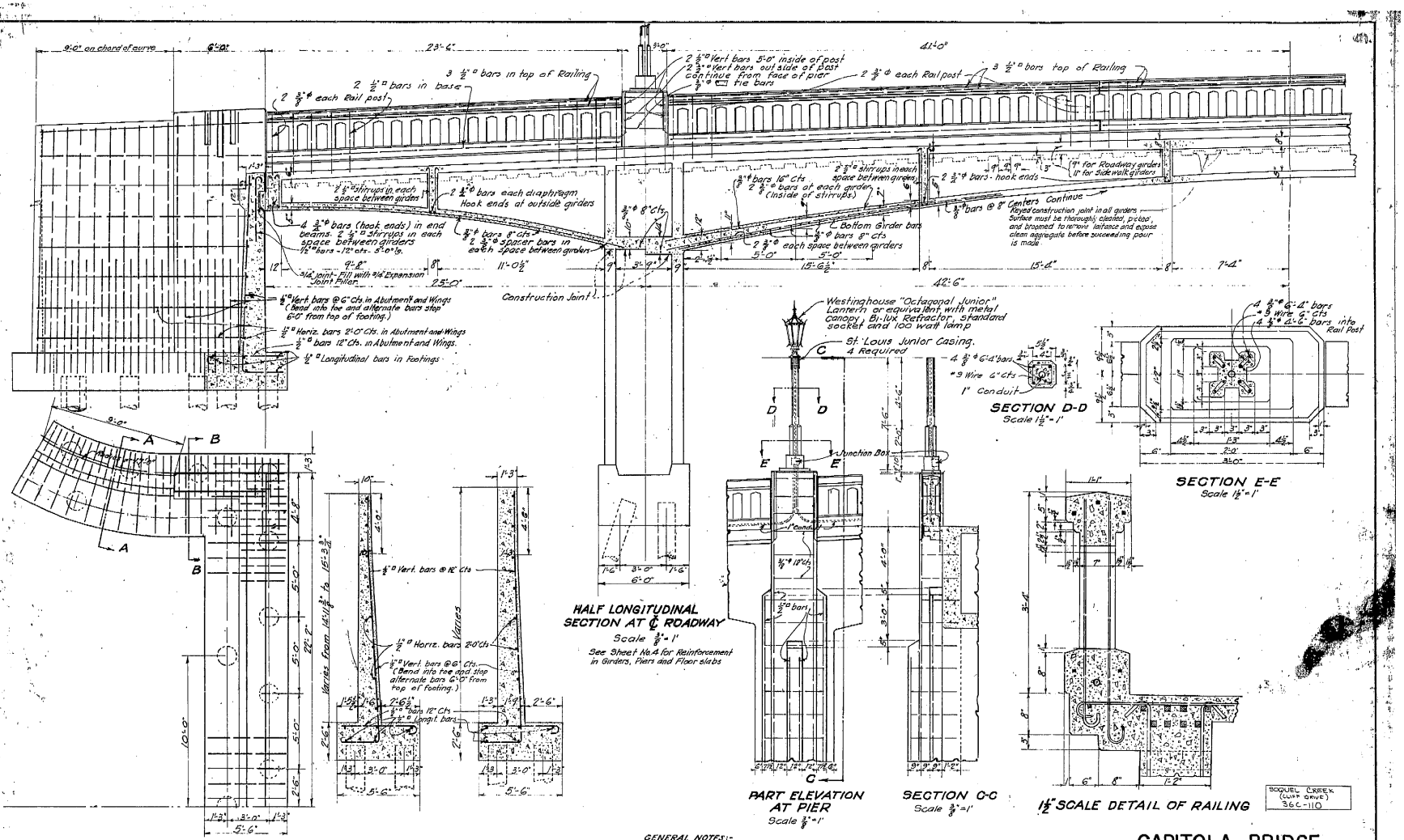
E216-5.2

AS BUILT PLANS
Contract No. UNKNOWN
Date Completed
Document No. 4000899.5

I HEREBY CERTIFY THAT THIS IS A TRUE AND ACCURATE COPY OF THE ABOVE DOCUMENT TAKEN UNDER MY DIRECTION AND CONTROL ON THIS DATE IN SACRAMENTO, CALIFORNIA PURSUANT TO AUTHORIZATION BY THE DIRECTOR OF TRANSPORTATION.

DATE 7-27-79 SIGNATURE Joseph M Porter TITLE Supervising Draftsman

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GENERAL NOTES:-

All Concrete except Railing to be Class "A" (6 sacks of cement per cubic yard). Railing Concrete to be Class "F" (7 sacks per cu. yd.) Chamfer all exposed corners ¾" except as shown. Finish Sidewalks with 1:2 mortar applied and trowelled before base has set. Mark Sidewalk and Curb as directed. Elevations of Abutment and Pier footings may be changed to suit foundation conditions as exposed by excavation.

Class 1 surface finish for Railing and Coping. Ordinary surface finish for remainder of structure.

All Reinforcing Steel to be deformed bars. Where spliced, bars shall be lapped at least 40 diameters. Steel to be accurately placed and securely held in position by tie wire at intersections. Beam and Girder steel to be held and spaced by approved metal devices.

Provide and set 3" dia. pipe Weep Holes at about 5'-0" cts. in abutment and wing walls as directed.

CAPITOLA BRIDGE

OVER SOQUEL CREEK AT CAPITOLA

SANTA CRUZ COUNTY, CALIF. OCT. 23, 1933.

Lloyd Bowman, County Surveyor.

D.M. McPhetres, Bridge Engineer.

SCALES NOTED

SHEET No. 3 OF 4 SHEETS

SOQUEL CREEK (LOWER DRIVE) 36C-110

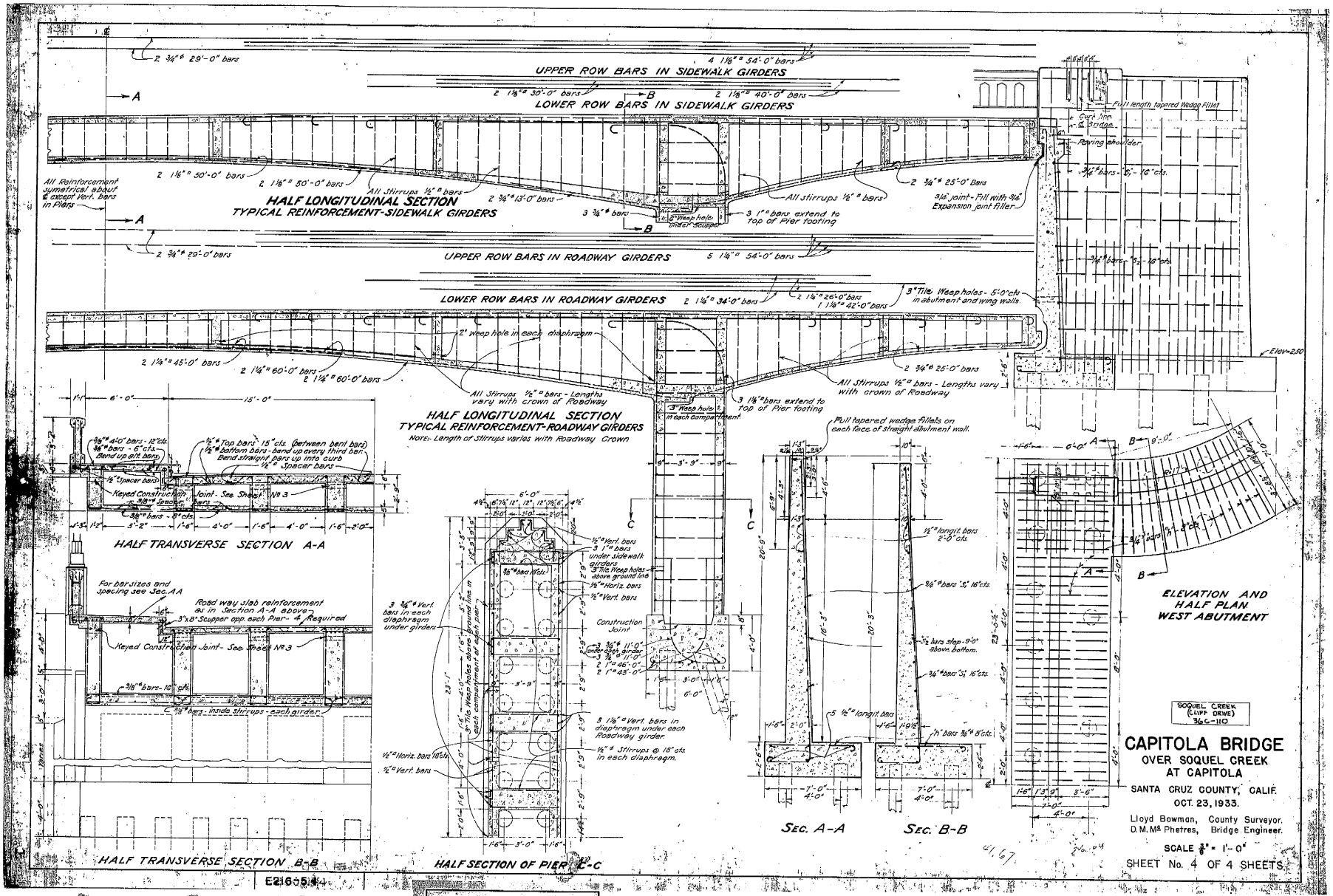
EZ16-65.3

AS BUILT PLANS
Contract No. UNKNOWN
Date Completed
Document No. Hwy 899.5

I HEREBY CERTIFY THAT THIS IS A TRUE AND ACCURATE COPY OF THE ABOVE DOCUMENT TAKEN UNDER MY DIRECTION AND CONTROL ON THIS DATE IN SACRAMENTO, CALIFORNIA PURSUANT TO AUTHORIZATION BY THE DIRECTOR OF TRANSPORTATION.

DATE 7-27-79 SIGNATURE Joseph M Coito TITLE Supervisor of Microfilm

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SOQUEL CREEK (CLIFF DRIVE) 36C-110

CAPITOLA BRIDGE

OVER SOQUEL CREEK AT CAPITOLA

SANTA CRUZ COUNTY, CALIF.

OCT. 23, 1933.

Lloyd Bowman, County Surveyor.
D.M. Mc Phetres, Bridge Engineer.

SCALE 3/8" = 1'-0"

SHEET No. 4 OF 4 SHEETS.

E21655[4]

A'S BUILT PLANS
Contract No. UNKNOWN
Date Completed
Document No. 4200 8995

I HEREBY CERTIFY THAT THIS IS A TRUE AND ACCURATE COPY OF THE ABOVE DOCUMENT TAKEN UNDER MY DIRECTION AND CONTROL ON THIS DATE IN SACRAMENTO, CALIFORNIA PURSUANT TO AUTHORIZATION BY THE DIRECTOR OF TRANSPORTATION.

7-27-79 Joseph M Potts Supervising of Microfilm

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