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

**STRUCTURE NAME:** LAGUNITAS CREEK

| Year Built | 1929 |
| Year Widened | N/A |
| Length (m) | 46.3 |

Structure Description: Painted steel pony truss main span with RC "T" (5) beam end-spans on RC piers and RC abutments. The bents are founded on piles and the abutments are founded on spread footings.

Span Configuration: 1 @ 7.32 m, 1 @ 30.48 m, 1 @ 7.32 m

**LOAD CAPACITY AND RATINGS**

| Design Live Load | MS-13.5 OR HS-15 |
| Inventory Rating | 20.8 metric tonnes |
| Operating Rating | 35.4 metric tonnes |
| Permit Rating | XXXXX |
| Posting Load | Type 3: Legal Type 352: Legal Type 3-3: Legal |

**DESCRIPTION ON STRUCTURE**

Deck X-Section: 1.2 m sw, 0.21 m cu, 7.32 m, 0.21 m cu

Total Width: 8.8 m Net Width: 7.3 m No. of Lanes: 2

Rail Description: Painted steel rail Rail Code: 0000

Min. Vertical Clearance: Unimpaired

**DESCRIPTION UNDER STRUCTURE**

Channel Description: Sandy silt.

**CONDITION TEXT**

**FRACUTURE CRITICAL INVESTIGATION**

A fracture critical inspection was performed on 08/12/2009 by Ron Bennett from the Office of Specialty Investigations and Bridge Management. The structure was accessed with the Under Bridge Inspection Truck (UBIT) operated by Mike Barrios. Lane closures and traffic control were provided by the North Bay Petaluma bridge crew. The investigation was conducted in accordance with the Fracture Critical Member Inspection Plan, dated 09/20/2007.

A hands-on visual inspection was performed on: (i) the tension members of the left and right steel truss, and (ii) the steel floor beams. No cracks or fractures were found.

The topmost rust found between the bottom chord members and the gusset plates of each truss showed no change since last inspection.

**STEEL INVESTIGATIONS**

This structure qualifies for an in-depth Steel investigation because it has the following fracture critical or fatigue prone details:

Floor Beams: FC Members
Truss: FC Members
Fracture Critical: Yes Inspection Freq.: 24 Next Inspection: 08/12/2011

Printed on: Tuesday 09/01/2009 07:32 AM 27 0023/AAAH/16968
Bridge Inspection Report

STRUCTURE NAME: LAGUNITAS CREEK

CONSTRUCTION INFORMATION

Year Built : 1929
Year Widened: N/A
Length (m) : 46.3
Skew (degrees): 0
No. of Joints : 2
No. of Hinges : 0

Structure Description: Painted steel pony truss main span with RC "T" (5) beam end-spans on RC piers and RC abutments. The bents are founded on piles and the abutments are founded on spread footings.

Span Configuration : 1 @ 7.32 m, 1 @ 30.48 m, 1 @ 7.32 m

LOAD CAPACITY AND RATINGS

Design Live Load: MS-13.5 OR HS-15
Inventory Rating: 20.8 metric tons
Operating Rating: 35.4 metric tons
Permit Rating : XXXXX
Posting Load : Type 3 N/A

Calculation Method: ALLOWABLE STRESS

Type 382 N/A
Type 3-3 N/A

DESCRIPTION ON STRUCTURE

Deck X-Section: 1.2 m sw, 0.21 m cu, 7.32 m, 0.21 m cu
Total Width: 8.8 m
Net Width: 7.3 m
No. of Lanes: 2
Rail Description: Painted steel rail
Min. Vertical Clearance: Unimpaired
Rail Code : 0000

DESCRIPTION UNDER STRUCTURE

Channel Description: Sandy silt.

CONDITION TEXT

HISTORY

The structure consists of a painted steel pony truss main span with RC "T" (5) beam end-spans on RC piers and RC abutments. The bents are founded on piles and the abutments are founded on spread footings.

The bridge was completed in 1929.

CONDITION OF STRUCTURE

No new defects were found during this investigation.

The following conditions existed prior to this investigation and have been updated with this report:

There are longitudinal and diagonal cracks in the concrete deck at Abutment 1, extending approximately 2.5 m (8 ft) into the approach span. The cracks are generally 1.6 mm (1/16") or greater in width and spaced less than 15 cm (6") apart. Some of the cracks in the SB Lane extend over the entire length of the approach span.

Printed on: Monday 06/23/2008 02:38 PM 27 0023/AAAG/13809
The concrete deck in the steel truss span has longitudinal, transverse and pattern cracks throughout. The cracks are generally 1.6 mm (1/16") or greater in width and spaced less than 15 cm (6") apart.

There are longitudinal and diagonal cracks in the concrete deck at Abutment 4, extending approximately 2.5 m (8 ft) into the approach span. The cracks are generally 1.6 mm (1/16") or greater in width and spaced less than 15 cm (6") apart.

There is a 15 x 15 x 10 cm (6 x 6 x 4 in) triangular spall in the bottom corner of the RC slab, where the slab meets the steel floor beam, at the eighth panel point on the right side of the structure.

The AC approach pavement at both approaches is beginning to break up.

The loose and broken elements of the original sliding expansion joints have been cut or removed as a modification to make them open expansion joints. There were no sharp or pointed steel elements that could be a hazard to traffic.

The steel bridge rails facing traffic have moderate rust and are spotted with fungus growth. Some of the riveted connections on the rails have up to 8 mm (1/3 in) of pack rust under them.

Some of the steel gusset plates connecting the bridge rails to the vertical truss members have up to 6 mm (1/4 in) of pack rust at each corner of the plate.

The top chord of both steel trusses is in fair condition. There are a few areas with spot rust and up to 3 mm (1/8 in) of pack rust found mainly at the edges of the gusset plate connections.

A considerable amount of drift is caught in the lateral bracing and the lower chord of the steel truss.

There are light vertical cracks in the RC beams in the approach spans at about 60 cm (2 ft) spacing.

The Abutment 4 wall and the soffit of Span 3 are covered with graffiti, however, it is not in public view.

The steel rocker bearings are tilted toward Abutment 4 at an angle of approximately 30 degrees. They appear to be in good working condition.

The bolts on the steel fixed bearings are rusty and bent toward Abutment 1 at an angle of about 30 degrees.

There are light pattern cracks in the RC soffit throughout the steel truss portion of the structure. There is a large longitudinal soffit crack about 90 cm (36 in) long between the first and second floor beams that is beginning to spall. There is also a 120 x 40 cm (48 x 16 in) spall with one exposed longitudinal rebar in the left side of the RC soffit in Bay 5.

There is up to 13 mm (1/2 in) of pack rust along the top flanges of the steel floor beams where they meet the RC slab.

The steel lateral braces in Bays 4 and 6 are bent. This deformation was most likely caused by the forces of flood waters and the lodging of drift between the floor beams and the bracing.

There is up to 6 mm (1/4 in) of pack rust between the corners of the steel gusset plates.
and the bottom chord of the steel truss.

The steel gusset plate connections at L4 left and right have up to 35 mm of expansion visible between plates. The pack rust has been painted over previously, however, the paint is beginning to fail leaving a 6 mm (1/4 in) open gap.

There is one corroded rivet head at the left floor beam connection in Bay 6.

The timber fenders at Piers 2 and 3 are rotten.

PAINT CONDITION

The paint on the steel truss members, floor beams, lateral braces and bearings has some faded and chalky areas, as well as occasional surface and edge rust. Pack rust is present at some of the connections.

UNDERWATER INVESTIGATION

The river was flowing under Span 2. The maximum depth exceeded 1.2 m (4 ft) at Pier 3. The abutments were outside the water level.

A Type "A" (wading and probing) underwater inspection was performed at Pier 2. No scour problems were noted.

The water depth prevented the underwater inspection at Pier 3. Large rock has been placed at this location as scour protection.
RecDate: 03/28/2007  
Action: Seismic-Retrofit  
Work By: STRAIN  
Status: PROPOSED  

EstCost: $205,000  
StrTarget: 2 YEARS  
DistTarget:  
EA:  

Steel truss members may require strengthening. Priority 4. Final Score 1.75.

RecDate: 05/16/2006  
Action: Super-Misc.  
Work By: BRIDGE CREW  
Status: PROPOSED  

EstCost: $1,000  
StrTarget: 2 YEARS  
DistTarget:  
EA:  

Remove the drift caught in the lateral bracing and the lower chord of the steel truss.

RecDate: 05/16/2006  
Action: Deck-Methacrylate  
Work By: MAINT. CONTRACT  
Status: PROGRAMMED  

EstCost: $9,000  
StrTarget: 2 YEARS  
DistTarget:  
EA: 0E9800  

Prepare the concrete surface and apply methacrylate treatment to fill the cracks and extend the service life of the deck (408 m^2 x $20/m^2 = $8160). The cost estimate does not include traffic control.

RecDate: 02/10/1984  
Action: Railing-Upgrade  
Work By: STRAIN  
Status: PROPOSED  

EstCost: $38,610  
StrTarget: 2 YEARS  
DistTarget:  
EA:  

F1-06 / F2-0 / F3-5 / Rail Type-SR

Inspected By: B.Trinh/T.Le

Registered Civil Engineer
**STRUCTURE INVENTORY AND APPRAISAL REPORT**

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

(1) STATE NAME - CALIFORNIA 069
(8) STRUCTURE NUMBER 27 0023
(5) INVENTORY ROUTE (ON/UNDER) - ON 131000010
(2) HIGHWAY AGENCY DISTRICT 04
(3) COUNTY CODE 041 (4) PLACE CODE 00000
(6) FEATURE INTERSECTED - LAGUNITAS CREEK
(7) FACILITY CARRIED - STATE ROUTE 1
(9) LOCATION - 04-MRN-001-28.51
(11) MILEPOINTE/KILOMETERPOINT 28.51
(12) BASE HIGHWAY NETWORK - PART OF NET 1
(13) LRS INVENTORY ROUTE & SUBROUTE 0000000000101
(16) LATITUDE 38 DEG 03 MIN 54 SEC
(17) LONGITUDE 122 DEG 48 MIN 12 SEC
(98) BORDER BRIDGE STATE CODE % SHARE %
(99) BORDER BRIDGE STRUCTURE NUMBER

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

(43) STRUCTURE TYPE MAIN/MATERIAL - STEEL
TYPE - TRUSS - THER CODE 310
(44) STRUCTURE TYPE APPR/MATERIAL - CONCRETE
TYPE - TEE BEAM CODE 104
(45) NUMBER OF SPANS IN MAIN UNIT 1
(46) NUMBER OF APPROACH SPANS 2
(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 1929
(106) YEAR RECONSTRUCTED

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

(48) LENGTH OF MAXIMUM SPAN 30.5 M
(49) STRUCTURE LENGTH 46.3 M
(50) CURB OR SIDEWALK: LEFT 1.2 M RIGHT 0.2 M
(51) BRIDGE ROADWAY WIDTH CURB TO CURB 7.3 M
(52) DECK WIDTH OUT TO OUT 8.8 M
(32) APPROACH ROADWAY WIDTH (W/SHOULDERS) 6.7 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 7.3 M
(53) MIN VERT CLEAR OVER BRIDGE RDWY 99.99 M
(54) MIN VERT UNDERCLEAR REF- NOT H/RR 0.00 M
(55) MIN VERT UNDERCLEAR RT REF- NOT H/RR 0.00 M
(56) MIN VERT UNDERCLEAR LT 0.00 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 **********

SUFFICIENCY RATING = 35.8
STATUS STRUCTURALLY DEFICIENT
HEALTH INDEX 71.1
PAINT CONDITION INDEX = 65.9

********** CLASSIFICATION **********

(112) NBIS BRIDGE LENGTH- YES 0
(104) HIGHWAY SYSTEM- NOT ON NHS 0
(26) FUNCTIONAL CLASS- MINOR ARTERIAL RURAL 06
(100) DEFENSE HIGHWAY- NOT STRATEGIC 0
(101) PARALLEL STRUCTURE- NONE EXISTS 0
(102) DIRECTION OF TRAFFIC- 2 WAY 2
(103) TEMPORARY STRUCTURE- 0
(105) FED.LANDS HWY- NOT APPLICABLE 0
(110) DESIGNATED NATIONAL NETWORK- NOT ON NET 0
(20) TOLL- ON FREE ROAD 3
(21) MAINTAIN- STATE HIGHWAY AGENCY 01
(22) OWNER- STATE HIGHWAY AGENCY 01
(37) HISTORICAL SIGNIFICANCE- NOT ELIGIBLE 5

********** CONDITION ************

(58) DECK 5
(59) SUPERSTRUCTURE 4
(60) SUBSTRUCTURE 7
(61) CHANNEL & CHANNEL PROTECTION 7
(62) CULVERTS N

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

(31) DESIGN LOAD- MS-13.5 OR HS-15 3
(63) OPERATING RATING METHOD- ALLOWABLE STRESS 2
(64) OPERATING RATING- 35.4
(65) INVENTORY RATING METHOD- ALLOWABLE STRESS 2
(66) INVENTORY RATING- 20.8
(70) BRIDGE POSTING- EQUAL TO OR ABOVE LEGAL LOADS 5
(41) STRUCTURE OPEN, POSTED OR CLOSED- NO RESTRICTION

********** APPRAISAL ************

(67) STRUCTURAL EVALUATION 4
(68) DECK GEOMETRY 2
(69) UNDERCLEARANCES, VERTICAL & HORIZONTAL N
(71) WATER ADEQUACY 8
(72) APPROACH ROADWAY ALIGNMENT 6
(36) TRAFFIC SAFETY FEATURES 0000
(113) SCOUR CRITICAL BRIDGES U

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

(75) TYPE OF WORK- REPLACE FOR DEFICIENCY CODE 31
(76) LENGTH OF STRUCTURE IMPROVEMENT 56.289 M
(94) BRIDGE IMPROVEMENT COST 594,000
(95) ROADWAY IMPROVEMENT COST 559,000
(96) TOTAL PROJECT COST 892,000
(97) YEAR OF IMPROVEMENT COST ESTIMATE 1999
(114) FUTURE ADT 4827
(115) YEAR OF FUTURE ADT 2028

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

(90) INSPECTION DATE 05/08 (91) FREQUENCY 24 MO
(92) CRITICAL FEATURE INSPECTION:
A) FRACTURE CRIT DETAIL- YES 24 MO A) 09/07
B) UNDERWATER INSPE- NO NO B)
C) OTHER SPECIAL INSPE- NO NO C)

Printed on: Monday 06/23/2008 02:38 PM

27 0023/AAAG/13809
Bridge Inspection Report

STRUCTURE NAME: LAGUNITAS CREEK

CONSTRUCTION INFORMATION

Year Built : 1929
Year Widened: N/A
Length (m) : 46.3

Skew (degrees): 0
No. of Joints : 2
No. of Hinges : 0

Structure Description: Painted steel pony truss main span with RC 'T' (5) beam end-spans on RC piers and RC abutments. The bents are founded on piles and the abutments are founded on spread footings.

Span Configuration : 1 @ 7.32 m, 1 @ 30.48 m, 1 @ 7.32 m

LOAD CAPACITY AND RATINGS

Design Live Load: MS-13.5 OR HS-15
Inventory Rating: 20.8 metric tons
Operating Rating: 35.4 metric tons
Permit Rating : XXXXX
Posting Load : Type 3 N/A

Verification Method: ALLOWABLE STRESS
Type 3S2 N/A
Type 3-3 N/A

DESCRIPTION ON STRUCTURE

Deck X-Section: 1.2 m sw, 0.21 m cu, 7.32 m, 0.21 m cu
Total Width: 8.8 m
Net Width: 7.3 m

Rail Description: Painted steel rail
Min. Vertical Clearance: Unimpaired

No. of Lanes: 2
Rail Code : 0000

DESCRIPTION UNDER STRUCTURE

Channel Description: Sandy silt.

CONDITION TEXT

FRACTURE CRITICAL INVESTIGATION

A fracture critical inspection of the structure was performed on 09/20/2007 in accordance with the attached Fracture Critical Member Inspection Plan, dated 09/20/2007. Access to the bridge was provided by the Under Bridge Inspection Truck (UBIT) operated by Mike Barrios. Traffic control and lane closures were provided by the North Bay Petaluma Bridge Crew.

Carlos F. Villalobos of the Office of Specialty Investigations and Bridge Management performed a visual inspection of the tension members of the left and right truss and the floor beams. No fractures or cracks were found.

Up to 6 mm (1/4"") thick pack rust was found between the bottom chord members and the gusset plates of each truss. Also, up to 12 mm (1/2"") thick pack rust was found on the top flange of the floor beams at the interface with the RC slab.

Printed on: Friday 02/22/2008 10:38 AM 27 0023/AAAF/12060
STEEL INVESTIGATIONS

This structure qualifies for an in-depth Steel investigation because it has the following fracture critical or fatigue prone details:

Floor Beams: FC Members
Truss: FC Members
Fracture Critical: Yes

Inspected By: Carlos F. Villalobos

Inspection Freq.: 24
Next Inspection: 09/20/2009

Registered Civil Engineer
FRACUTRE CRITICAL MEMBER INSPECTION PLAN
BRIDGE No. 27 0023 (LAGUNITAS CREEK)
04-MRN-001-28.51

BRIDGE DESCRIPTION

Painted riveted steel pony truss main span with RC "T" beam (5) end spans on RC piers and RC abutments. The bents are founded on piles and the abutments are founded on spread footings.

FRACUTRE CRITICAL MEMBERS

1. Tension members of the left and right truss
2. Floor beams

MEMBERS AND DETAILS THAT REQUIRE INSPECTION

<table>
<thead>
<tr>
<th>SPAN OR BENT No.</th>
<th>FRACTURE CRITICAL MEMBERS AND FATIGUE PRONE DETAILS</th>
<th>INSPECTION METHOD</th>
<th>INSPECTION COMPLETED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Span 2</td>
<td>Lower chord members L0-L1, L1-L2, L2-L3, L3-L4, L4-L5, L5-L6, L6-L7, L7-L8, L8-L9 and L9-L10 of the left truss</td>
<td>VT</td>
<td>YES</td>
</tr>
<tr>
<td>Span 2</td>
<td>Vertical members L1-U1, L3-U3, L5-U5, L7-U7 and L9-U9 of the left truss</td>
<td>VT</td>
<td></td>
</tr>
<tr>
<td>Span 2</td>
<td>Diagonal members U1-L2, U3-L4, L6-U7 and L8-U9 of the left truss</td>
<td>VT</td>
<td></td>
</tr>
<tr>
<td>Span 2</td>
<td>Lower chord members L0-L1, L1-L2, L2-L3, L3-L4, L4-L5, L5-L6, L6-L7, L7-L8, L8-L9 and L9-L10 of the right truss</td>
<td>VT</td>
<td></td>
</tr>
<tr>
<td>Span 2</td>
<td>Vertical members L1-U1, L3-U3, L5-U5, L7-U7 and L9-U9 of the right truss</td>
<td>VT</td>
<td></td>
</tr>
<tr>
<td>Span 2</td>
<td>Diagonal members U1-L2, U3-L4, L6-U7 and L8-U9 of the right truss</td>
<td>VT</td>
<td></td>
</tr>
<tr>
<td>Span 2</td>
<td>Tension stress areas and end connections of the floor beams</td>
<td>VT</td>
<td></td>
</tr>
</tbody>
</table>

TRUSS ELEVATION
INSPECTION METHODS

1. VISUAL INSPECTION (VT)

Visual inspections will be conducted in accordance with NBIS Code of Federal Regulation 23 CFR Part 650. The inspection procedure recommendations in the AASHTO “Manual for Condition Evaluation of Bridges,” 1994, second edition and the “Inspection of Fracture Critical Bridge Members” FHWA Report No. FHWA-IP-86-26 will be followed. These inspections shall be hands-on with the inspector being within arm length of the component. Critical areas, if required, shall be specially cleaned prior to the inspection and additional lighting and magnification shall be used.

2. LIQUID PENETRANT TESTING (PT)

The testing will be performed by a Certified ASNT Level II inspector from the Fracture Critical Inspection Team following the Structure Maintenance and Investigations approved procedure No. PT-001, “Procedure for Liquid Penetrant Inspection for the Detection of Cracks in Structural Steel Bridge Components”. Use this method to verify crack indications.

SPECIAL INSPECTION NEEDS

1. TRAFFIC MANAGEMENT PLAN

A lane closure will be required in the NB direction of travel. Since this is only a two-lane bridge, a flagging operation will also be required during the lane closure. Traffic control and lane closures will be provided by the North Bay Petaluma Bridge Crew. Contact John O’Neill, Bridge Supervisor, at (707) 762-6641 to make traffic control arrangements.

2. EQUIPMENT

The following equipment will be utilized to perform this inspection: flashlight, wire brush, scraper and camera.

The fracture critical members will be accessed with an Under Bridge Inspection Truck (UBIT).

Prepared by: [Signature]
Carlos F. Villalobos (FC Group)

Approved by: [Signature]
Vassil Simeonov (FC Program Senior)
DEPARTMENT OF TRANSPORTATION
Structure Maintenance & Investigations

Bridge Number : 27 0023
Facility Carried: STATE ROUTE 1
Location : 04-MRN-001-28.51
City : 
Inspection Date : 05/16/2006
Inspection Type : Routine

Bridge Inspection Report

STRUCTURE NAME: LAGUNITAS CREEK

CONSTRUCTION INFORMATION

Year Built : 1929
Year Widened: N/A
Length (m) : 46.3
Skew (degrees): 0
No. of Joints : 2
No. of Hinges : 0

Structure Description: Painted steel pony truss main span with RC "T" (5) beam end-spans on RC piers and RC abutments. The bents are founded on piles and the abutments are founded on spread footings.

Span Configuration : 1 @ 7.32 m, 1 @ 30.48 m, 1 @ 7.32 m

LOAD CAPACITY AND RATINGS

Design Live Load: MS-13.5 OR HS-15
Inventory Rating: 20.8 metric tons
Operating Rating: 35.4 metric tons
Permit Rating : XXXXX
Postig Load : Type 3 N/A
Calculation Method: ALLOWABLE STRESS

Type 3S2 N/A Type 3-3 N/A

DESCRIPTION ON STRUCTURE

Deck X-Section: 1.2 m sw, 0.21 m cu, 7.32 m, 0.21 m cu
Total Width: 8.8 m
Net Width: 7.3 m
No. of Lanes: 2
Rail Description: Painted steel rail
Min. Vertical Clearance: Unimpaired
Rail Code : 0000

DESCRIPTION UNDER STRUCTURE

Channel Description: Sandy silt.

CONDITION TEXT

HISTORY

The structure consists of a painted steel pony truss main span with RC "T" (5) beam end-spans on RC piers and RC abutments. The bents are founded on piles and the abutments are founded on spread footings. The bridge was completed in 1929.

CONDITION OF STRUCTURE

There are severe longitudinal and diagonal cracks of severe density in the concrete deck at Abutment 1, extending approximately 2.5 m (8 ft) into the span. Some of the cracks in the S3 Lane extend over the entire length of the span.

The concrete deck in the steel truss span has moderate to severe longitudinal, transverse and pattern cracks of up to severe density.

There are moderate to severe longitudinal and diagonal cracks in the concrete deck at Abutment 4, extending approximately 2.5 m (8 ft) into the span.

A considerable amount of drift is caught in the lateral bracing and the lower chord of...
The following conditions were noted in previous inspection reports and have not changed significantly:

There is a 15 x 15 x 10 cm (6 x 6 x 4 in) triangular spall in the bottom corner of the RC slab, where the slab meets the steel floor beam, at the eighth panel point on the right side of the structure.

The AC approach pavement at both approaches is beginning to break up.

The loose and broken elements of the original sliding expansion joints have been cut or removed as a modification to make them open expansion joints. There were no sharp or pointed steel elements that could be a hazard to traffic.

The steel bridge rails facing traffic have moderate rust and are spotted with fungus growth. Some of the riveted connections on the rails have up to 8 mm (1/3 in) of pack rust under them.

Some of the steel gusset plates connecting the bridge rails to the vertical truss members have up to 6 mm (1/4 in) of pack rust at each corner of the plate.

The top chord of both steel trusses is in fair condition. There are a few areas with spot rust and up to 3 mm (1/8 in) of pack rust found mainly at the edges of the gusset plate connections.

There are light vertical cracks in the RC beams in the approach spans.

The Abutment 4 wall and the soffit of Span 3 are covered with graffiti, however, it is not in public view.

The steel rocker bearings are tilted toward Abutment 4 at an angle of approximately 30 degrees. They appear to be in good working condition.

The bolts on the steel fixed bearings are rusty and bent toward Abutment 1 at an angle of about 30 degrees.

There are light pattern cracks in the RC soffit throughout the steel truss portion of the structure. There is a large longitudinal soffit crack about 90 cm (36 in) long between the first and second floor beams that is beginning to spall. There is also a 120 x 40 cm (48 x 16 in) spall with one exposed longitudinal rebar in the left side of the RC soffit in Bay 5.

There is up to 13 mm (1/2 in) of pack rust along the top flanges of the steel floor beams where they meet the RC slab.

The steel lateral braces in Bays 4 and 6 are bent. This deformation was most likely caused by the forces of flood waters and the lodging of drift between the floor beams and the bracing.

There is up to 6 mm (1/4 in) of pack rust between the corners of the steel gusset plates and the bottom chord of the steel truss.

The steel gusset plate connections at L4 left and right have up to 35 mm of expansion visible between plates. The pack rust has been painted over previously, however, the paint is beginning to fail leaving a 6 mm (1/4 in) open gap.

There is one corroded rivet head at the left floor beam connection in Bay 6.
CONDITION TEXT

The timber fenders at Piers 2 and 3 are rotten.

PAINT CONDITION

The paint on the steel truss members, floor beams, lateral braces and bearings has some faded and chalky areas, as well as occasional surface and edge rust. Pack rust is present at some of the connections.

UNDERWATER INVESTIGATION

The river was flowing under Span 2. The maximum depth exceeded 1.2 m (4 ft) at Pier 3. The abutments were outside the water level.

A Type "A" (wading and probing) underwater inspection was performed at Pier 2. No scour problems were noted.

The water depth prevented the underwater inspection at Pier 3. Large rock has been placed at this location as scour protection.

FRACTURE CRITICAL INVESTIGATION

The bridge is fracture critical.

The structural system has low load path redundancy. The fracture critical elements are the steel truss members.

The Fracture Critical Inspection Team (FCIT) is responsible for conducting the investigations.

The next inspection of this type is overdue.

<table>
<thead>
<tr>
<th>ELEMENT INSPECTION RATINGS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field Element Description</td>
</tr>
<tr>
<td>101 12 Concrete Deck - Bare</td>
</tr>
<tr>
<td>101 121 Painted Steel Bottom Chord Thru Truss</td>
</tr>
<tr>
<td>101 126 Painted Steel Thru Truss (excl. bottom chord)</td>
</tr>
<tr>
<td>101 152 Painted Steel Floor Beam</td>
</tr>
<tr>
<td>101 227 Reinforced Conc Submerged Pile</td>
</tr>
<tr>
<td>101 304 Open Expansion Joint</td>
</tr>
<tr>
<td>101 311 Moveable Bearing (roller, sliding, etc.)</td>
</tr>
<tr>
<td>101 313 Fixed Bearing</td>
</tr>
<tr>
<td>101 330 Metal Bridge Railing - coated or uncoated</td>
</tr>
<tr>
<td>101 357 Pack Rust</td>
</tr>
<tr>
<td>101 358 Deck Cracking</td>
</tr>
<tr>
<td>101 359 Soffit of Concrete Deck or Slab</td>
</tr>
</tbody>
</table>

Printed on: Wednesday 07/05/2006 04:17 PM 27 0023/AAAE/8045
**WORK RECOMMENDATIONS**

**RecDate: 05/16/2006**
**Action:** Super-Misc.
**Work By:** BRIDGE CREW
**Status:** PROPOSED

<table>
<thead>
<tr>
<th>EstCost: $1,000</th>
<th>StrTarget: 2 YEARS</th>
<th>Remove the drift caught in the lateral bracing and the lower chord of the steel truss.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DistTarget:</td>
<td></td>
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<tr>
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**RecDate: 05/16/2006**
**Action:** Deck-Methacrylat
**Work By:** MAINT. CONTRACT
**Status:** PROPOSED

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<th>EstCost: $9,000</th>
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<th>Prepare the concrete surface and apply methacrylate treatment to fill the cracks and extend the service life of the deck (408 m^2 x $20/m^2 = $8160). The cost estimate does not include traffic control.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<tr>
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**RecDate: 02/10/1984**
**Action:** Railing-Upgrade
**Work By:** STRAIN
**Status:** PROPOSED

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<th>F1-06 / F2-0 / F3-5 / Rail Type-SR</th>
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<td>EA:</td>
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</tbody>
</table>

**Inspected By:** Vassil Simeonov

[Registered Civil Engineer's Seal]

Registered Civil Engineer

**Page 4 of 5**
STRUCTURE INVENTORY AND APPRAISAL REPORT

IDENTIFICATION

(1) STATE NAME- CALIFORNIA 069
(8) STRUCTURE NUMBER 27 0023
(5) INVENTORY ROUTE (ON/UNDER)- ON 131000010
(2) HIGHWAY AGENCY DISTRICT 94
(3) COUNTY CODE 041 (4) PLACE CODE 00000
(6) FEATURE INTERSECTED- LAGUNITAS CREEK
(7) FACILITY CARRIED- STATE ROUTE 1
(19) LOCATION- 04-MIN-001-28.51
(11) MILEPOINT/XKILOMETERPOINT 28.51
(12) BASE HIGHWAY NETWORK- PART OF NET 1
(13) LKS INVENTORY ROUTE & SUBROUTE 000000000101
(15) LATITUDE 38 DEG 03 MIN 54 SEC
(17) LONGITUDE 122 DEG 48 MIN 12 SEC
(98) BORDER BRIDGE STATE CODE % SHARE 
(99) BORDER BRIDGE STRUCTURE NUMBER

STRUCTURE TYPE AND MATERIAL

(43) STRUCTURE TYPE MAIN- MATERIAL- STEEL
TYPE- TRUSS- THRU CODE 110
(44) STRUCTURE TYPE APPR- MATERIAL- CONCRETE
TYPE- TEE BRAM CODE 104
(45) NUMBER OF SPANS IN MAIN UNIT 1
(46) NUMBER OF APPROACH SPANS 2
(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

AGG AND SERVICE 1929

RECONSTRUCTED

TYPE OF SERVICE- ON- HIGHWAY-PEDESTRIAN 5
UNDER- WATERWAY 5

AVERAGE DAILY TRAFFIC 2750

YEAR OF ADT 2000 (109) TRUCK ADT 5

YEAR BUILT 1929

WIDTH OUT TO OUT 10 M

GEOMETRIC DATA

LENGTH OF MAXIMUM SPAN 30.5 M

CURB OR SIDEWALK- LEFT 1.2 M RIGHT 0.2 M

BRIDGE ROADWAY WIDTH CURB TO CURB 7.3 M

DECK WIDTH OUT TO OUT 8.8 M

APPROACH ROADWAY WIDTH (W/SHOULders) 6.7 M

BRIDGE MEDIAN- NO MEDIAN 0

SKEW 0 DBG (35) STRUCTURE FLARED NO

INVENTORY ROUTE MIN VERT CLEAR 99.99 M

INVENTORY ROUTE TOTAL HORIZ CLEAR 7.3 M

MIN VERT CLEAR OVER BRIDGE RWDY 99.99 M

MIN VERT UNDERCLEAR REF- NOT H/RR 0.00 M

MIN LAT UNDERCLEAR RT REF- NOT H/RR 0.00 M

MIN LAT UNDERCLEAR LT 0.00 M

NAVIGATION DATA

NAVIGATION CONTROL- NO CONTROL CODE 0

PIER PROTECTION- CODE

NAVIGATION VERTICAL CLEARANCE 0.0 M

VERT-LIFT BRIDGE NAV MIN VERT CLEAR M

NAVIGATION HORIZONTAL CLEARANCE 0.0 M

SUFFICIENCY RATING = 35.8

STATUS STRUCTURALLY DEFICIENT

HEALTH INDEX 71.1

PAINT CONDITION INDEX = 65.9

CLASSIFICATION CODE

LENGTH BRIDGE LENGTH- YES Y

FUNCTIONAL CLASS- MINOR ARTERIAL RURAL 06

DEFENSE HIGHWAY- NOT STRANDED 0

PARALLEL STRUCTURE- NONE EXISTS N

DIRECTION OF TRAFFIC- 2 WAY 2

TEMPORARY STRUCTURE

PRED.LANDS HWY- NOT APPLICABLE 0

DESIGNATED NATIONAL NETWORK- NOT ON NET 0

TOLL- ON FREE ROAD 3

MAINTAIN- STATE HIGHWAY AGENCY 01

OWNER- STATE HIGHWAY AGENCY 01

HISTORICAL SIGNIFICANCE- NOT ELIGIBLE 5

CONDITION CODE

DECK

SUPERSTRUCTURE 5

SUBSTRUCTURE 7

CHANNEL & CHANNEL PROTECTION 7

CULVERTS N

LOAD RATING AND POSTING CODE

DESIGN LOAD- MS-13.5 OR HS-15 3

OPERATING RATING METHOD- ALLOWABLE STRESS 2

OPERATING RATING- 35.4

INVENTORY RATING- ALLOWABLE STRESS 2

INVENTORY RATING- 20.8

BRIDGE POSTING- EQUAL TO OR ABOVE LEGAL LOADS 5

DESCRIPTION- OPEN, NO RESTRICTION

APPRAISAL CODE

STRUCTURAL EVALUATION 4

DECK GEOMETRY 2

UNDERCLEARANCES, VERTICAL & HORIZONTAL N

WATER ADEQUACY 8

APPROACH ROADWAY ALIGNMENT 8

TRAFFIC SAFETY FEATURES 0

SCOUR CRITICAL BRIDGES U

PROPOSED IMPROVEMENTS 31

TYPE OF WORK- REPLACE FOR DEFICIENT

LENGTH OF STRUCTURE IMPROVEMENT 56.289 M

BRIDGE IMPROVEMENT COST $594,000

ROADWAY IMPROVEMENT COST $59,000

TOTAL PROJECT COST $392,000

YEAR OF IMPROVEMENT COST ESTIMATE 1999

FUTURE ADT 4700

YEAR OF FUTURE ADT 2020

INSPECTIONS

INSPECTION DATE 05/06 (91) FREQUENCY 24 MO

CRITICAL FEATURE INSPECTION:

A) FRAGMENT CRIT DETAIL- YES 24 MO A) 04/02
B) UNDERWATER INSPE- NO 24 MO B
C) OTHER SPECIAL INSPE- NO 24 MO C

Printed on: Friday 07/14/2006 11:27 AM 27 0023/AAAB/8845
Bridge Inspection Report

STRUCTURE NAME: LAGUNITAS CREEK

CONSTRUCTION INFORMATION

Year Built : 1929
Year Widened: N/A
Length (m) : 46.3
Skew (degrees): 0
No. of Joints : 2
No. of Hinges : 0

Structure Description: Painted steel pony truss main span with RC "T" (5) beam end-spans on RC piers and RC abutments. The bents are founded on piles and the abutments are founded on spread footings.

Span Configuration : 1 @ 7.32 m, 1 @ 30.48 m, 1 @ 7.32 m

LOAD CAPACITY AND RATINGS

Design Live Load: MS-13.5 OR HS-15
Inventory Rating: 20.8 metric tons
Operating Rating: 35.4 metric tons
Calculation Method: LOAD FACTOR
Calculation Method: LOAD FACTOR
Permit Rating : XXXXX
Posting Load : Type 3 N/A
Type 3S2 N/A
N/A

DESCRIPTION ON STRUCTURE

Deck X-Section: 1.2 m sw, 0.21 m cu, 7.32 m, 0.21 m cu
Total Width: 8.8 m
Net Width: 7.3 m
No. of Lanes: 2
Min. Vertical Clearance: Unimpaired
Rail Description: Painted steel rail
Rail Code : 0000

DESCRIPTION UNDER STRUCTURE

Channel Description: Sandy silt.

HISTORY

The structure consists of a painted steel pony truss main span with RC "T" (5) beam end-spans on RC piers and RC abutments. The bents are founded on piles and the abutments are founded on spread footings. The bridge was completed in 1929.

CONDITION OF STRUCTURE

There are random cracks approximately 0.5 mm wide throughout the RC deck surface. There are large diagonal deck cracks about 2 mm wide with edge spalls near both abutments. There is a 2 mm wide longitudinal deck crack in the centerline of the roadway at Abutment 1.

There is a 0.15 m x 0.15 m x 0.10 m triangular spall in bottom corner of the RC slab, where the slab meets the steel floor beam, at the eighth panel point on the right side of the structure.

The AC approach pavement at both approaches is beginning to break up due to the tightness of the open joints. The concrete along the open joints is breaking up as well because of the tight joint and the impact of traffic movement.

The loose and broken elements of the old sliding expansion joints have been cut or removed as a modification to make them open expansion joints. A close inspection did not reveal any sharp or pointed steel elements that could be a hazard to traffic.

The steel bridge rails facing traffic are rusty and spotted with fungus growth. Many of the rivet connections on the rails have up to 12.7 mm of pack rust under them.

The steel gusset plates connecting the bridge rail to the vertical truss members have typically 5.4 mm to 12.7 mm of pack rust at each corner of the plate.
The top chord of both steel trusses is in fairly good condition. There are a few areas with rust and about 6.4 mm of pack rust found mainly at the edges of the gusset plate connections.

There are light vertical cracks at approximately 300 mm on center in the RC "T" beams in both approach spans.

The Abutment 4 wall and adjoining span is covered with graffiti, however, it is not in public view.

The steel rocker bearings are tilted toward Abutment 4 at an angle of approximately 30 degrees. They are in good working condition.

The bolts on the steel fixed bearings are rusty and bent toward Abutment 4 at an angle of about 30 degrees.

There are light pattern cracks in the RC soffit throughout the steel truss portion of the structure. There is a large longitudinal soffit crack about 0.9 m long between the first and second floor beams that is beginning to spall. There is a 1.2 m x 0.4 m spall with one piece of longitudinal reinforcement exposed in the left side of the RC soffit in Bay 5. (These spalls to be patched by bridge crew as mentioned above under "Work Done").

There is about 12.5 mm of pack rust along the top flange of all of the steel floor beams where they meet the RC slab.

The steel lateral braces in Bays 4 and 6 are bent. This deformation was most likely caused by the forces of flood waters and the lodging of tree branches etc. between the floor beams and lateral bracing.

There is approximately 6.4 mm of pack rust between the corners of the steel gusset plates and the bottom chord of the steel truss.

The steel gusset plate connections at L4 left and right have about 35 mm of expansion visible between plates. The pack rust has been painted over previously, however, the paint is beginning to fail leaving a 6.4 mm open gap.

There is one rivet head at the left floor beam connection in Bay 6 that is corroded.

The timber fenders at Piers 2 and 3 are rotten. Scour does not appear to be a problem at Pier 2 as of yet. Large rock has been placed between the columns at Pier 3 as scour protection.

PAINT CONDITION

The paint on the steel truss members, rocker bearings, fixed bearings, lateral braces, and floor beams is in fair condition. There are some faded and chalky areas, as well as pack rust at the connections, but a majority of the paint system is still effective.

SIGNS

The following sign is located on the left side of the Southbound approach to the structure: "NO DIVING OR JUMPING FROM BRIDGE".

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<th>Element Inspection Ratings</th>
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Printed on: Tuesday 06/08/2004 09:11 AM 27 0023/AAAD/4791
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<td>1</td>
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**WORK RECOMMENDATIONS**

RecDate: 02/10/1984  
EstCost: $192,000  
F1-06 / F2-0 / F3-5 / Rail Type-SR

Action: Railing-Upgrade  
StrTarget: 2 YEARS

Work By: STRAIN  
DistTarget: EA:

Inspected By: Patti E. Clawson

Registered Civil Engineer
**STRUCTURE INVENTORY AND APPRAISAL REPORT**

<table>
<thead>
<tr>
<th><strong>STATE NAME</strong></th>
<th>CALIFORNIA</th>
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Printed on: Tuesday 06/08/2004 09:11 AM 27 0023/AAAD/4791
DEPARTMENT OF TRANSPORTATION  
Structure Maintenance & Investigations

Bridge Inspection Report

Name: LAGUNITAS CREEK

CONSTRUCTION INFORMATION

Year Built: 1929  
Year Widened: N/A  
Length (m): 45.3

Skew (degrees): 0  
No. of Joints: 2  
No. of Hinges: 0

Description of Structure: Painted steel pony truss main span with RC "T" (5) girder end-spans on RC piers and RC abutments.  
Span Configuration: 1 @ 7.32 m, 1 @ 30.48 m, 1 @ 7.32 m

LOAD CAPACITY AND RATINGS

Design Live Load: MS - 13.5 OR HS - 15  
Inventory Rating: 20.8 metric tons  
Operating Rating: 35.4 metric tons

Calculation Method: LOAD FACTOR

Permit Rating: XXXXX

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: 1.2 m sw, 0.21 m cu, 7.32 m, 0.21 m cu  
Total Width: 8.8 m  
Net Width: 7.30 m  
No. of Lanes: 2

Rail Description: Painted steel rail  
Min. Vertical Clearance: Unimpaired

DESCRIPTION UNDER STRUCTURE

Channel Description: Sandy silt.

GROUP 'A' FEATURES

This structure qualifies for an in-depth Group 'A' investigation because it possesses the following fracture critical or fatigue prone details:

Member / Detail
Truss/F.C.
Truss/Low Redundancy
Truss/Other

Fracture Critical: Yes  
Inspection Freq.: 48  
Next Inspection: 09-APR-06

HISTORY

The original structure consists of a painted steel pony truss main span with RC "T" (5) girder end-spans on RC piers and RC abutments. The bridge was completed in 1929.

WORK DONE

Repairs were being done on the structure at the time of this inspection. The following work was in progress:

1) Patching of two minor soffit spalls.
2) Tightening of nut on left bolt at left steel fixed bearing at Pier 2.
3) Trimming of encroaching vegetation at both abutment slopes.

CONDITION OF STRUCTURE

There are random cracks approximately 0.5 mm wide throughout the RC deck surface. There are large diagonal deck cracks about 2 mm wide with edge spalls near both abutments. There is a 2 mm wide longitudinal deck crack in the centerline of the roadway at Abutment 1.

There is a 0.15 m x 0.15 m x 0.10 m triangular spill in bottom corner of the RC slab, where the slab meets the concrete approach.

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the steel floor beam, at the eighth panel point on the right side of the structure.

The AC approach pavement at both approaches is beginning to break up due to the tightness of the open joints. The concrete along the open joints is breaking up as well because of the tight joint and the impact of traffic movement.

The steel bridge rails facing traffic are rusty and spotted with fungus growth. Many of the rivet connections on the rails have up to 12.7 mm of pack rust under them.

The steel gusset plates connecting the bridge rail to the vertical truss members have typically 6.4 mm to 12.7 mm of pack rust at each corner of the plate.

The top chord of both steel trusses is in fairly good condition. There are a few areas with rust and about 6.4 mm of pack rust found mainly at the edges of the gusset plate connections.

There are light vertical cracks at approximately 300 mm on center in the RC "T" beams in both approach spans.

The steel rocker bearings are tilted toward Abutment 4 at an angle of approximately 45 degrees. They are in good working condition.

The bolts on the steel fixed bearings are rusty and bent toward Abutment 4 at an angle of about 30 degrees.

There are light pattern cracks in the RC soffit along the steel truss portion of the structure. There is a large longitudinal soffit crack about 0.9 m long between the first and second floor beams that is beginning to spall. There is a 1.2 m x 0.4 m spall with one piece of longitudinal reinforcement exposed in the left side of the RC soffit in Bay 5. (These spalls to be patched by bridge crew as mentioned above under "Work Done").

There is about 12.5 mm of pack rust along the top flange of all of the steel floor beams where they meet the RC slab.

The steel lateral braces in Bays 4 and 6 are bent. This deformation was most likely caused by the forces of flood waters and the lodging of tree branches etc. between the floor beams and lateral bracing.

There is approximately 6.4 mm of pack rust between the corners of the steel gusset plates and the bottom chord of the steel truss.

The steel gusset plate connections at L4 left and right have about 35 mm of expansion visible between plates. The pack rust has been painted over previously, however, the paint is beginning to fail leaving a 6.4 mm open gap.

There is one rivet head at the left floor beam connection in Bay 6 that is corroded.

**GROUP "A" INVESTIGATION**

A Group "A" investigation was conducted at this time with the aid of a maintenance snooper. The results of the inspection are noted above in the "Condition of Structure" text.

**SIGNS**

The following sign is located on the left side of the Southbound approach to the structure:

"NO DIVING OR JUMPING FROM BRIDGE"

---

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<thead>
<tr>
<th>#</th>
<th>Element Description</th>
<th>Env Quantity</th>
<th>Total Units Quantity</th>
<th>Qty in each Condition State</th>
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<td>01 12</td>
<td>Concrete Deck - Bare</td>
<td>2 408 sq.m.</td>
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<td>01 121</td>
<td>Painted Steel Bottom Chord Thru Truss</td>
<td>2 30 m.</td>
<td>0 20 10 0 0</td>
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<td>01 126</td>
<td>Painted Steel Thru Truss (excl. bottom chord)</td>
<td>2 61 m.</td>
<td>36 15 10 0 0</td>
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<tr>
<td>01 152</td>
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<td>01 227</td>
<td>Reinforced Conc Submerged Pile</td>
<td>2 52 ea.</td>
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Printed on: 11-APR-2002 03:13:29 PM
### Bridge No.: 27 0023  Location: 04-MRN-001-28.51  Inspection Date: 09-APR-02

**Work Recommendations**  - None

**Strain Recommendations**  
F1-06 / F2-0 / F3-5 / Rail Type-SR

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<th>Urgency</th>
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<td>0 - Proposed</td>
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Inspected By:  

[Signature]

Registered Civil Engineer

CC: Kevin Flora, Hydraulics

Printed on:  11-APR-2002 03:13:29 PM
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<th>Vert(m)</th>
<th>Comments</th>
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<tr>
<td>Pier 2</td>
<td>6.10</td>
<td>2.32</td>
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<tr>
<td>Pier 2</td>
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## Bridge No.: 27 0023
### Location: 04-MRN-001-28.51
### Inspection Date: 09-APR-02

### Structure Inventory and Appraisal Report

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**Structure Type and Material**

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**Aging and Service**

- Year Built: 1929
- Type of Service: On - Highway-Pedestrian 5
- Under - Waterway 5

**Geometric Data**

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<td>Min Lnt Underclear Lt</td>
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<td>Navigation Horizontal Clearance</td>
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**Sufficiency Rating**

- Sufficient Rating: 35.2
- Status: Structurally Deficient
- Health Index: 71.67

**Classification**

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<td>Federal Lands Highway - Not Applicable</td>
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**Condition**

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<td>Superstructure</td>
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<td>Substructure</td>
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<td>Channel &amp; Channel Protection</td>
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<td>Culverts</td>
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**Load Rating and Posting**

<table>
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<th>Description</th>
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<tr>
<td>Design Load - MS - 13.5 or HS - 15</td>
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<td>Operating Rating Method - Load Factor</td>
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<td>Operating Rating</td>
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<td>Inventory Rating Method - Load Factor</td>
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<td>Inventory Rating</td>
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<td>Bridge Posting - Equal to or above legal loads</td>
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</tr>
<tr>
<td>Structure Open, Posted or Closed - A Description</td>
<td>OPEN, NO RESTRICTION</td>
</tr>
</tbody>
</table>

**Appraisal**

<table>
<thead>
<tr>
<th>Description</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structural Evaluation</td>
<td>4</td>
</tr>
<tr>
<td>Deck Geometry</td>
<td>2</td>
</tr>
<tr>
<td>Underclearances, Vertical &amp; Horizontal</td>
<td>N</td>
</tr>
<tr>
<td>Water Adequacy</td>
<td>8</td>
</tr>
<tr>
<td>Approach Roadway Alignment</td>
<td>8</td>
</tr>
<tr>
<td>Traffic Safety Features</td>
<td>0000</td>
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<tr>
<td>Scour Critical Bridges</td>
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</table>

**Proposed Improvements**

<table>
<thead>
<tr>
<th>Description</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of Work - Replace for Deficiency</td>
<td>31</td>
</tr>
<tr>
<td>Length of Structure Improvement</td>
<td>56.289 M</td>
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<tr>
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<tr>
<td>Roadway Improvement Cost</td>
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<td>Total Project Cost</td>
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</tr>
<tr>
<td>Year of Improvement Cost Estimate</td>
<td>1999</td>
</tr>
<tr>
<td>Future ADT</td>
<td>3100</td>
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<tr>
<td>Year of Future ADT</td>
<td>2015</td>
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**Inspections**

<table>
<thead>
<tr>
<th>Description</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inspection Date</td>
<td>04/02</td>
</tr>
<tr>
<td>Frequency</td>
<td>24 Mo</td>
</tr>
<tr>
<td>Critical Feature Inspection</td>
<td>93 CPI Date</td>
</tr>
<tr>
<td>Fracture Crit Detail - Y</td>
<td>48 Mo A</td>
</tr>
<tr>
<td>Underwater Insp - No</td>
<td>1 Mo B</td>
</tr>
<tr>
<td>Other Special Insp - No</td>
<td>1 Mo C</td>
</tr>
</tbody>
</table>
Bridge Inspection Report

Name: LAGUNITAS CREEK

CONSTRUCTION INFORMATION

Year Built: 1929
Year Widened: N/A
Length (m): 46.3

Skew (degrees): 0
No. of Joints: 5
No. of Hinges: 0

Description of Structure: Painted steel pony truss main span with RC "T" (5) girder end spans on RC piers and RC abutments.

Span Configuration: 1 @ 7.32 m, 1 @ 30.48 m, 1 @ 7.32 m

LOAD CAPACITY AND RATINGS

Design Live Load: MS - 13.5 OR HS - 15
Inventory Rating: 20.8 metric tons
Operating Rating: 35.4 metric tons

Calculation Method: LOAD FACTOR
Permit Rating: XXXXX
Calculation Method: LOAD FACTOR

Posting Load: Type 3 N/A english tons
Type 382 N/A english tons
Type 3-3 N/A english tons

DESCRIPTION OF STRUCTURE

Bridge Width: 1.2 m sw, 0.21 m cu, 7.32 m, 0.21 m cu
Total Width: 8.8 m
Net Width: 7.30 m

Rail Description: Painted steel rail
Min. Vertical Clearance: Unimpaired
No. of Lanes: 2
Rail Code: 0000

DESCRIPTION UNDER STRUCTURE

Channel Description: Sandy silt.

GROUP 'A' FEATURES

This structure qualifies for an in-depth Group 'A' investigation because it possesses the following fracture critical or fatigue prone details:

Member / Detail
Truss/P.C.
Truss/Sow Redundancy

Fracture Critical: Yes
Inspection Freq.: 48
Next Inspection: 03-FEB-04

WORK DONE

Repairs were being done on the structure at the time of this inspection. The following work was in progress:

1) Placement of new bridge markers at both approaches to the structure.
2) Repainting of bridge identification on both ends of the structure.
3) Replacement of all timber members and bolts in pedestrian walkway on left side of the structure.
4) Removal of flood debris from superstructure and bearing areas.

CONDITION OF STRUCTURE

There are random cracks approximately 0.5 mm wide throughout the RC deck surface. There are large diagonal deck cracks about 2 mm wide with edge spalls near both abutments. There is a 2 mm wide longitudinal deck crack in the centerline of the roadway at Abutment 1.

There is a 0.15 m x 0.15 m x 0.10 m triangular spall in bottom corner of the RC slab, where the slab meets the steel floor beam, at the eighth panel point on the right side of the structure.

The AC approach pavement at both approaches is beginning to break up due to the tightness of the open joints. The concrete along the open joints is breaking up as well because of the tight joint and the...
impact of traffic movement.

The steel bridge rails facing traffic are rusty and spotted with fungus growth. Many of the rivet connections on the rails have up to 12.7 mm of pack rust under them.

The steel gusset plates connecting the bridge rail to the vertical truss members have typically 6.4 mm to 12.7 mm of pack rust at each corner of the plate.

The top chord of both steel trusses is in fairly good condition. There are a few areas with rust and about 6.4 mm of pack rust found mainly at the edges of the gusset plate connections. Very little rust is visible on the steel rivet heads of the top chord and diagonal trusses connections.

Both trusses are in good alignment.

There are light vertical cracks at approximately 300 mm on center in the RC "T" beams in both approach spans.

The steel rocker bearings are tilted toward Abutment 4 at an angle of approximately 45 degrees. They are in good working condition.

The bolts on the left steel fixed bearing are rusty and bent toward Abutment 4 at an angle of about 30 degrees. The nut on the left bolt is not tight down to the bearing plate, but twisted 3/4 of the way up the bolt.

There are light pattern cracks in the RC soffit throughout the steel truss portion of the structure. There is a large longitudinal soffit crack between the first and second floor beams that is beginning to spall. There is a 0.9 m long piece of exposed longitudinal reinforcement in the left side of the RC soffit in Bay 5.

There is about 6.4 mm of pack rust along the top flange of all of the steel floor beams where they meet the RC slab.

The steel lateral braces in Bays 4 and 6 are bent. This deformation was most likely caused by the forces of flood waters and the lodging of tree branches etc. between the floor beams and the lateral bracing.

There are a few rivet heads on the connections to the bottom chord of the steel truss that are losing section due to rust. There is approximately 6.4 mm of pack rust between the corners of the steel gusset plates and the bottom chord of the steel truss.

**PAINT CONDITION**

The paint on the steel truss members, rocker bearings, fixed bearings, lateral braces, and floor beams is in fair condition. There are some faded and chalky areas, but overall the paint system is still effective. Paint Code - 3.

The steel bridge railing, gusset plate connections, and a few rivet heads are rusty and beginning to lose section. Paint Code - 4.

**GROUP "A" INVESTIGATION**

A Group "A" investigation was conducted at this time with the aid of a maintenance snooper. The results of the inspection are noted above in the "Condition of Structure" text.

**SIGNS**

The following sign is located on the left side of the Southbound approach to the structure:

NO DIVING OR JUMPING FROM BRIDGE

<table>
<thead>
<tr>
<th>FW El No.</th>
<th>Element Description</th>
<th>Quantity</th>
<th>Env Total</th>
<th>Qty in each Condition State</th>
</tr>
</thead>
<tbody>
<tr>
<td>01 12</td>
<td>Concrete Deck - Bare</td>
<td>408 sq.m.</td>
<td>2</td>
<td>0 0 0 0 0 0 0</td>
</tr>
<tr>
<td>01 121</td>
<td>Painted Steel Bottom Chord Thru Truss</td>
<td>30 m.</td>
<td>2</td>
<td>0 20 10 0 0</td>
</tr>
<tr>
<td>01 126</td>
<td>Painted Steel Thru Truss (excl. bottom chord)</td>
<td>61 m.</td>
<td>2</td>
<td>36 15 10 0 0</td>
</tr>
<tr>
<td>01 152</td>
<td>Painted Steel Floor Beam</td>
<td>85 m.</td>
<td>2</td>
<td>0 0 85 0 0</td>
</tr>
<tr>
<td>01 227</td>
<td>Reinforced Conc Submerged Pile</td>
<td>52 ea.</td>
<td>2</td>
<td>52 0 0 0 0</td>
</tr>
<tr>
<td>01 304</td>
<td>Open Expansion Joint</td>
<td>18 m.</td>
<td>2</td>
<td>0 18 0 0 0</td>
</tr>
<tr>
<td>01 311</td>
<td>Moveable Bearing (roller, sliding, etc.)</td>
<td>2 ea.</td>
<td>2</td>
<td>0 0 0 0 0</td>
</tr>
</tbody>
</table>
**Bridge No.: 27 0023**  
**Location: 04-MRN-001-28.51**  
**Inspection Date: 03-FEB-00**

<table>
<thead>
<tr>
<th>#</th>
<th>Elem No.</th>
<th>Element Description</th>
<th>Env</th>
<th>Total Units Quantity</th>
<th>Qty in each Condition State</th>
<th>Work Id.</th>
<th>Prog. Method</th>
<th>Cost (In Thousands)</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>313</td>
<td>Fixed Bearing</td>
<td>2</td>
<td>2 ea.</td>
<td>1, 1, 0</td>
<td></td>
<td>H3132</td>
<td>$5,000</td>
</tr>
<tr>
<td>01</td>
<td>330</td>
<td>Metal Bridge Railing - Uncoated</td>
<td>2</td>
<td>93 m.</td>
<td>0, 83, 10, 0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01</td>
<td>357</td>
<td>Pack Rust</td>
<td>2</td>
<td>1 ea.</td>
<td>0, 1, 0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01</td>
<td>358</td>
<td>Deck Cracking</td>
<td>2</td>
<td>1 ea.</td>
<td>0, 1, 0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01</td>
<td>359</td>
<td>Soffit of Concrete Deck or Slab</td>
<td>2</td>
<td>1 ea.</td>
<td>0, 1, 0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**WORK RECOMMENDATIONS**

Replace the bolts in the steel fixed bearings.

<table>
<thead>
<tr>
<th>Item#</th>
<th>Rec. Date</th>
<th>Work By</th>
<th>Work Id.</th>
<th>Prog. Method</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>03-FEB-2000</td>
<td>Bridge Crew</td>
<td>40023X000034X</td>
<td>H3132</td>
<td>$5,000</td>
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</table>

**STRAIN RECOMMENDATIONS**

F1-06 / F2-0 / F3-5 / Rail Type-SR

<table>
<thead>
<tr>
<th>Item#</th>
<th>Type</th>
<th>Fiscal Year</th>
<th>Urgency</th>
<th>Status</th>
<th>Cost (In Thousands)</th>
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<tbody>
<tr>
<td>1</td>
<td>Rail Upgrade</td>
<td>2001</td>
<td>1</td>
<td>0 - Proposed</td>
<td>$192</td>
</tr>
</tbody>
</table>

**Inspected By:**  
Patti B. Clawson

[Registered Civil Engineer Stamp]

**CC:** John Rogers, Paint Program
STRUCTURE INVENTORY AND APPRAISAL REPORT

---- IDENTIFICATION ----
1. STATE NAME - CALIFORNIA 069
2. STRUCTURE NUMBER 27 0023
3. INVENTORY ROUTE(ON/UNDER) - ON 1.31 000010
4. HIGHWAY AGENCY DISTRICT 04
5. COUNTY CODE 041
6. FEATURE INTERSECTED - LAGUNITAS CREEK
7. FACILITY CARRIED - STATE ROUTE 1
8. LOCATION - 04-MRN-001-26.51
9. MILEPOINT/KILOMETERPOINT 20.51
10. BASE HIGHWAY NETWORK - PART OF NHS 1
11. LRS INVENTORY ROUTE & SUBROUTE 000000000101
12. LATITUDE 38 DEG 03 MIN 54 SEC
13. LONGITUDE 122 DEG 48 MIN 12 SEC
14. BORDER BRIDGE STATE CODE % SHARE 1
15. BORDER BRIDGE STRUCTURE NUMBER

----- STRUCTURE TYPE AND MATERIAL -----
16. STRUCTURE TYPE MAIN - MATERIAL - STEEL
17. STRUCTURE TYPE APPR - MATERIAL - CONCRETE
18. TYPE - TRUSS - TROUGH CODE 3 10
19. TYPE - TRESTLE BEAM CODE 104
20. NUMBER OF SPANS IN MAIN UNIT 1
21. NUMBER OF APPROACH SPANS 2
22. DECK STRUCTURE TYPE - CIP CONCRETE CODE 1

23. 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 ----- 1929

24. YEAR BUILT 1929
25. YEAR RECONSTRUCTED

26. TYPE OF SERVICE ON - HIGHWAY-PEDESTRIAN 5
27. UNDER - WATERWAY 5

28. LANES ON STRUCTURE 02
29. UNDER STRUCTURE
30. YEAR OF ADT 1997
31. TRUCK ADT 1%
32. Bypass, Detour Length 10 KM

----- GEOMETRIC DATA ----- 30.5 M
33. LENGTH OF MAXIMUM SPAN 30.5 M
34. STRUCTURE LENGTH 46.3 M
35. CURB OR SIDEWALK: LEFT 1.2 M RIGHT 0.2 M
36. BRIDGE ROADWAY WIDTH CURB TO CURB 7.3 M
37. DECK WIDTH OUT TO OUT 8.8 M
38. APPROACH ROADWAY WIDTH (M/SHOULDERS) 6.7 M
39. BRIDGE MEDIAN - NO MEDIAN 0
40. SKEW 0 DEG 35 STRUCTURE PLARED NO
41. INVENTORY ROUTE MIN VERT CLEAR 99.99 M
42. INVENTORY ROUTE TOTAL HORIZ CLEAR 7.3 M
43. MIN VERT CLEAR OVER BRIDGE 99.99 M
44. MIN VERT UNDERCLEAR 99.99 M
45. MIN LAT UNDERCLEAR AT REF - NOT H/R 0 M
46. MIN LAT UNDERCLEAR LAT 0 M

----- NAVIGATION DATA -----
47. NAVIGATION CONTROL - NO CONTROL CODE 0
48. VIER PROTECTION CODE
49. NAVIGATION VERTICAL CLEARANCE 0 M
50. VERT-LIFT BRIDGE NAV MIN VERT CLEAR M
51. NAVIGATION HORIZONTAL CLEARANCE 0

----- INSPECTION ----- 10-27-2000 10:44:33 AM

----- APPRAISAL ----- 4

----- PROPOSED IMPROVEMENTS ----- 31

----- INSPECTION ----- 02/00

----- CRITICAL FEATURE INSPECTION ------ 02/00

----- DESIGN LOAD RATING AND POSTING ----- 3

----- STRUCTURAL EVALUATION ----- 4

----- WATER ADEQUACY ----- 8

----- APPROACH ROADWAY ALIGNMENT ----- 8

----- TRAFFIC SAFETY FEATURES ----- 0.005

----- RECOMMENDATION ----- NO CRITICAL BRIDGES

----- SUMMARY ----- 2015

----- INSPECTION SUMMARY ----- 02/00
DEPARTMENT OF TRANSPORTATION
Structure Maintenance & Investigation

Bridge Inspection Report

Name: LAGUNITAS CREEK

CONDITION OF STRUCTURE

The loose and broken elements of the old sliding expansion joints have been cut or removed as a modification to make it an open expansion joint. A close inspection did not reveal any sharp or pointed steel elements that could be a hazard to traffic. Due to restrictive speed and traffic conditions the added impact on the structure is insignificant.

There are light vertical cracks in the concrete girders at 300 to 450 mm on centers. The Abutment #4 wall and adjoining span is covered with graffiti. However, being outside the public view this condition shall be ignored.

There are few rivet heads that display half-eaten heads from corrosion. The outer bearing plate at Pier #2 appears to be slightly pushed up at its one end, indicating the corrosion process may be the culprit and has started.

There is heavy drift hanging in-between the floor beams and lower lateral bracing. This condition needs attention to avoid a fire hazard to the structure.

No other significant deficiency is noted in the condition of this structure during this investigation.

PAINT CONDITION

The rust spots are prevalent at many places on the truss. The joint plates are pushed out from corrosion process and few of the rivet heads are half eaten. Preventive maintenance by cleaning the affected areas and touch of paint will extend the useful life of the truss. CODE 4

<table>
<thead>
<tr>
<th>#</th>
<th>Elem Element Description</th>
<th>No.</th>
<th>Env Quantity</th>
<th>Total Quantity</th>
<th>Quantity in each Condition</th>
<th>State</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Concrete Deck - Bare</td>
<td>12</td>
<td>2</td>
<td>1 sq.m.</td>
<td>1</td>
<td>0</td>
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<tr>
<td>01</td>
<td>Painted Steel Bottom Chord Thru Truss</td>
<td>121</td>
<td>2</td>
<td>30 m.</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>01</td>
<td>Painted Steel Thru Truss (Excluding Bottom Chord)</td>
<td>126</td>
<td>2</td>
<td>61 m.</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>01</td>
<td>Painted Steel Floor Beam</td>
<td>152</td>
<td>2</td>
<td>185 m.</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>01</td>
<td>Reinforced Conc Submerged Pile</td>
<td>227</td>
<td>2</td>
<td>52 ea.</td>
<td>52</td>
<td>0</td>
</tr>
<tr>
<td>01</td>
<td>Open Expansion Joint</td>
<td>304</td>
<td>2</td>
<td>18 m.</td>
<td>0</td>
<td>18</td>
</tr>
<tr>
<td>01</td>
<td>Moveable Bearing (roller, sliding, etc.)</td>
<td>311</td>
<td>2</td>
<td>18 ea.</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>01</td>
<td>Fixed Bearing</td>
<td>313</td>
<td>2</td>
<td>2 ea.</td>
<td>2</td>
<td>0</td>
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<tr>
<td>01</td>
<td>Metal Bridge Rail - Uncoated</td>
<td>330</td>
<td>2</td>
<td>93 m.</td>
<td>0</td>
<td>93</td>
</tr>
<tr>
<td>01</td>
<td>Deck Cracking</td>
<td>358</td>
<td>2</td>
<td>1 ea.</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

WORK RECOMMENDATIONS

Remove the hanging drift from the lower floor beams and lower lateral bracings.

<table>
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<th>Reco. Date</th>
<th>Work By</th>
<th>Work Id.</th>
<th>Prog. Method</th>
<th>Cost</th>
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<tbody>
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<td>14-APR-1998</td>
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<td>40023X98103X</td>
<td>H9999</td>
<td>$1,000</td>
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</table>

STRAIN RECOMMENDATIONS  

- None

Inspected By: Ram L. Kalia

Registered Civil Engineer

Printed on: 17-MAY-1998 11:06:26 AM
**Bridge No.: 27 0023**  
**Location: 04-MRN-001-28.51**

---

**Structure Inventory and Appraisal Report**

**Identification**

<table>
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<th>Code</th>
<th>Description</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>069</td>
<td>State Name - California</td>
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<tr>
<td>27</td>
<td>Structure Number</td>
<td>27 0023</td>
</tr>
<tr>
<td>04</td>
<td>Highway Agency District</td>
<td></td>
</tr>
<tr>
<td>0000</td>
<td>County Code</td>
<td></td>
</tr>
<tr>
<td>04</td>
<td>Place Code</td>
<td></td>
</tr>
<tr>
<td>04</td>
<td>Feature Intersected - Lagunaaris CR</td>
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</tr>
<tr>
<td>04</td>
<td>Facility Carried - State Route 1</td>
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</tr>
<tr>
<td>04</td>
<td>Location - 04-MRN-001-28.51</td>
<td></td>
</tr>
<tr>
<td>28.51</td>
<td>Milepoint/Kilometer Point</td>
<td></td>
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<tr>
<td>1</td>
<td>Base Highway Network - Part of Net</td>
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<tr>
<td>0000</td>
<td>LRS Inventory Route &amp; Subroute</td>
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<td>035</td>
<td>Latitude - 38 deg 03 min 54 sec</td>
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<tr>
<td>012</td>
<td>Longitude - 122 deg 48 min 12 sec</td>
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<tr>
<td>0000</td>
<td>Broad Bridge State Code</td>
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<tr>
<td>0000</td>
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**Structure Type and Material**

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<th>Description</th>
<th>Value</th>
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<tr>
<td>3</td>
<td>Structure Type Main - Material - Steel</td>
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<tr>
<td>10</td>
<td>Structure Type AP: Material - Concrete</td>
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<tr>
<td>010</td>
<td>Number of Spans in Main Unit</td>
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<tr>
<td>02</td>
<td>Number of Approach Spans</td>
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<tr>
<td>1</td>
<td>Deck Structure Type - CIP Concrete</td>
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<td>1</td>
<td>Wearing Surface / Protective System</td>
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<td>0</td>
<td>Type of Wearing Surface - Concrete</td>
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<td>Type of Membrane - None</td>
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<td>0</td>
<td>Type of Deck Protection - None</td>
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**Year Built**

<table>
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<tr>
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<td>1929</td>
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**Reconstructed**

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**Type of Service**

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<th>Description</th>
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<tbody>
<tr>
<td>Highway-Pedestrian</td>
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<tr>
<td>Under - Waterway</td>
<td>5</td>
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**Lanes; On Structure and Under Structure**

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
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<tbody>
<tr>
<td>Average Daily Traffic</td>
<td>3090</td>
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<tr>
<td>Year of Ad 1997</td>
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<tr>
<td>Truck Ad 1%</td>
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<td>Bypass, Decur Length</td>
<td>10 KM</td>
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**Geometric Data**

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<td>Length of Maximum Span</td>
<td>30.5M</td>
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<td>Structure Length</td>
<td>46.3M</td>
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<td>Curb or Sidewalk: Left</td>
<td>1.2M</td>
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<tr>
<td>Right</td>
<td>7.3M</td>
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<tr>
<td>Bridge Roadway Width Curb to Curb</td>
<td>8.6M</td>
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<tr>
<td>Deck Width Out to Out</td>
<td>6.7M</td>
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<tr>
<td>Approach Roadway Width (W/Shoulders)</td>
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<tr>
<td>Bridge Median - No Median</td>
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<tr>
<td>Skew - 0 Deg (35) Structure Flared</td>
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<tr>
<td>Inventory Route Min Vert Clear</td>
<td>99.99M</td>
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<tr>
<td>Inventory Route Total Hwy Clear</td>
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<tr>
<td>Min Vert Clear Over Bridge Hwy</td>
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<td>Min Vert Underclear Ref - Not H/BR</td>
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<tr>
<td>Min Vert Underclear Ref - Not H/BR</td>
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<tr>
<td>Min Lat Underclear Ref - Not H/BR</td>
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**Navigation Data**

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<td>Pier Protection</td>
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<td>Navigation Vertical Clearance</td>
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<tr>
<td>Vert-Lift Bridge NAV Min Vert Clear</td>
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<tr>
<td>Navigation Horizontal Clearance</td>
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**Load Rating and Posting**

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<td>Operating Rating Method - Load Factor</td>
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<td>Operating Rating</td>
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<td>Inventory Rating Method - Load Factor</td>
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<td>Inventory Rating</td>
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<td>Bridge Posting - No Posting Required</td>
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<td>Structure Open, Posted or Closed - Description - Open, No Restriction</td>
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**Condition**

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**Deck Geometry**

<table>
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<tr>
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**Underclearances, Vertical & Horizontal**

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**Bridge Elevation**

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**Approach Roadway Alignment**

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**Traffic Safety Features**

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**Scour Critical Bridges**

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**Proposed Improvements**

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<th>Description</th>
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<tr>
<td>Type of Work - Sup/Sub Rehab</td>
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<tr>
<td>Length of Structure Improvement</td>
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<td>Bridge Improvement Cost</td>
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<td>Roadway Improvement Cost</td>
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<td>Total Project Cost</td>
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<td>Year of Improvement Cost Estimate</td>
<td>1998</td>
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<td>Future Ad 2015</td>
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**Inspections**

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<tr>
<td>Inspection Date 04/88</td>
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<tr>
<td>Critical Feature Inspection</td>
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<td>Fracture Crit Detal - No</td>
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<tr>
<td>Underwater Insp - No</td>
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<td>Other Special Insp - No</td>
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**Sufficiency Rating**

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<tr>
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**Status**

| Functional Obsolete                    | Y     |

**Classification**

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<tr>
<td>Highway System - Not on NHS</td>
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<td>Functional Class - Minor Arterial Rural</td>
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<tr>
<td>Defense Highway - Not Strainnet</td>
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<tr>
<td>Parallel Structure - None Exists</td>
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<tr>
<td>Direction of Traffic - 2 Way</td>
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<tr>
<td>Temporary Structure</td>
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<tr>
<td>Federal Lands Highway - Not Applicable</td>
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<td>Designated National Network - Not on Net</td>
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<td>Toll - on Free Road</td>
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<td>Maintain - State Highway Agency</td>
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<tr>
<td>Owner - State Highway Agency</td>
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<tr>
<td>Historical Significance - Not Eligible</td>
<td>5</td>
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</table>
SUPPLEMENTARY BRIDGE REPORT

Bridge No. 27-0023

Location 04-Mtn-1-28.51

Date of Investigation 4-09-96

Name LAGUNITAS CREEK

RATINGS:

71 Waterway Adequacy 8 6 Channel & Channel Protection 7 72 Approach Rdwy Align. 8

TYPE OF INVESTIGATION/REPORT

Biennial X Group A Underwater

CONDITION OF STRUCTURE

The loose and broken elements of the old sliding expansion joints have been cut or removed as a modification to make it an open expansion joint. A close inspection did not reveal any sharp or pointed steel elements. Due to restrictive speed and traffic conditions the added impact on the structure is insignificant.

There are light vertical cracks in the concrete girders at 300 to 450 mm on centers. The Abutment #4 wall and adjoining span is covered with graffiti. However, being outside the public view this condition shall be ignored.

There are few rivet heads that display half eaten rivet heads from corrosion. The outer bearing plate at Pier #2 appears to be slightly pushed up at its one end, indicating the corrosion process may be the culprit.

No other significant deficiency is noted in the condition of this structure during this investigation.

WORK DONE

Accumulated dirt from abutment seats has been removed.

40023X92077X H1_2_ $100

WORK NOT DONE

Deck expansion joints have not been repaired.

40023X92077X H4_2_ $30 000 By Contract DELETE

WORK RECOMMENDED

None.

PAINT CONDITION

The rust spots are prevalent at many places on the truss. The joint plates are pushed out from corrosion process and few of the rivet heads are half eaten. Preventive maintenance by cleaning the affected areas and touch of paint will extend the useful life of the truss.

CODE 4

Ram Lubhaya Kalia
Registered Civil Engineer

RLK: zbt

cc: District 4 (3)
<table>
<thead>
<tr>
<th>ELEMENT NUMBER</th>
<th>ELEMENT DESCRIPTION</th>
<th>TOTAL</th>
<th>QUANTITY</th>
<th>QUANTITY</th>
<th>QUANTITY</th>
<th>QUANTITY</th>
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<tbody>
<tr>
<td>121</td>
<td>PAINTED STEEL THRU TRUSS BOTTOM CHORD</td>
<td>30 M</td>
<td>30</td>
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<tr>
<td>126</td>
<td>PAINTED STEEL THRU TRUSS EXCLUDING BOTTOM CHORD</td>
<td>61 M</td>
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<td>152</td>
<td>PAINTED STEEL FLOORBeam</td>
<td>85 M</td>
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<td>227</td>
<td>REINFORCED CONCRETE SUBMERGED PILE</td>
<td>52 EA</td>
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<td>330</td>
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<td>93 M</td>
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03/25/96        04D RAM KALIA

BY: R KALIA
SUPPLEMENTARY BRIDGE REPORT

Bridge No. 27-0023
Location 04-Mtn-1-28.51

Name LAGUNITAS CREEK

Date of Investigation 4/5/94

RATINGS:
71 Waterway Adequacy 8 61 Channel & Channel Protection 7 72 Approach Rdwy Align 8

TYPE OF INVESTIGATION/REPORT
Biennial X Group A Underwater

CONDITION OF STRUCTURE
The structure essentially remains in the same condition as documented in the previous Bridge Report #27-0023, dated 3/17/92, with work yet to be done.

WORK NOT DONE

1. Deck expansion joints have not been repaired. 40023X92077X H4_2_ $30 000 By Contract

2. Accumulated dirt from abutment seats has not been removed. 40023X92077X H1_2_ $100

WORK RECOMMENDED
Do the work as noted under "Work Not Done".

PAINT CONDITION
Code 4. The rust spots are prevalent at many places on the truss. The joint plates are pushed out due to corrosion process and few of the rivet heads are half eaten. Preventive maintenance by cleaning the affected areas and touch of paint will extend the useful life of the truss.

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

Ram Lakhia
Registered Civil Engineer
RLK/pfa

cc: District 4 (3)
P.J. Whitfield, OSM&I
<table>
<thead>
<tr>
<th>Bridge Number</th>
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<th>Inspection Date</th>
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<tbody>
<tr>
<td>27 0023</td>
<td>01</td>
<td>04/10/94</td>
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<table>
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<tr>
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<th>N</th>
<th>Quant</th>
<th>UNIT</th>
<th>Condition</th>
<th>Condition</th>
<th>Condition</th>
<th>Condition</th>
<th>Condition</th>
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<td></td>
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<td>Painted Steel Thru Truss</td>
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<td></td>
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<tr>
<td>Bottom Chord</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Excluding Bottom Chord</td>
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<tr>
<td>Painted Steel Floor Beam</td>
<td>32</td>
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<td>Unknown Assembly Joint/Seal</td>
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<td>Driven Conc. Foundation Piles</td>
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**District:** 04  
**County:** MRN  
**Route:** 001  
**Postmile:** 028.51  
**Name:** LAGUNITAS CR  

12/24/93 040 R. KALIA  
6-7-94
Caitrans  
P.O. Box 942874...  
Sacramento, CA 94274  

The Coast Guard is reviewing records for bridge navigation lighting. Title 33 of the Code of Federal Regulations, Subpart 118.1, specifies that bridges over navigable waters of the United States will be lighted for the protection of navigation, unless exempted by the Coast Guard.

I have reviewed the file for the following bridge under your jurisdiction: CA Route 1 over Lagunitas Creek, 2.3, and found there is no significant nighttime navigation.

Therefore, this letter formally exempts you from the need to display navigation lights. If you have any questions regarding this letter, please call me at (510) 437-3514.

Sincerely,

[Signature]

W.R. Till  
Chief, Bridge Section  
By direction of the District Commander
SUPPLEMENTARY BRIDGE REPORT

Bridge No. 27-0023
Location 04-Mrn-1-28.51
Date of Investigation 3/17/92

Name LAGUNITAS CREEK

RATINGS:
58 Deck 6  59 Superstructure 6  60 Substructure 7  71 Waterway Adequacy 8
61 Channel & Channel Protection 7  62 Culvert N  72 Approach Rdwy Align. 8

TYPE OF INVESTIGATION/REPORT
Biennial X Category A
Damage Underwater Other Office

CONDITION OF STRUCTURE
The armor plate deck expansion joints at B-2 and B-3 have totally failed and
disintegrated. Therefore, it is non-functional in accommodating any expansion
movement. The gap at these expansion joints are filled with compacted dirt and
remaining steel parts and a dip does cause added impact onto Span #2. The sharp
corners of few of broken brackets can do some harm to the tires.

The rust at many joints is pushing the outer edges of steel plates out of plane
and few of the rivet heads are also pulled at a oblique plane to indicate rust is
at work. One rivet head located near the upper chord joint U5U6 is half eaten by
rust.

The concrete deck surface displays many cracks at 6" to 2' on centers without any
visible cracks or efflorescence in the deck soffit.

The timber planks of the left pedestrian sidewalk are beginning to deteriorate at
few spots and may need replacing in the next couple of years.

The bearing seats at A-1 and A-4 have minor accumulation of dirt with some
graffiti on abutment walls.

There is no evidence of potential scour noted at this structure during this
investigation.

WORK RECOMMENDED
1. Repair both deck expansion joints by removing the existing header plate and
other steel members placing Type "A" joint seal. The movement rating is
anticipated to be about 1/2 inch.
   40023X92077X H4_2_ $30,000 By Contract

2. Remove accumulated dirt from A-1 and A-4 bearing seats.
   40023X92077X H1_2_ $100
<table>
<thead>
<tr>
<th>From BB</th>
<th>Horz.</th>
<th>Vert. ft</th>
<th>Comment</th>
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<td>A-1</td>
<td></td>
<td>7.3</td>
<td>'having notch vicinity'</td>
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<tr>
<td>B-2</td>
<td></td>
<td>15.1</td>
<td>'Scouring was uniform '</td>
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<tr>
<td>Middle of Span '2</td>
<td></td>
<td>25.1</td>
<td>'no scour was evident'</td>
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<td>B-3</td>
<td></td>
<td>17.85</td>
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<tr>
<td>A-4</td>
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<td>8.4</td>
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</table>
PAINT CONDITION
The rust spots are prevalent at many places on the truss. The joint plates are pushed out due to corrosion process and few of the rivet heads are half eaten. Preventive maintenance by cleaning the affected areas and touch of paint will extend the useful life of the truss.

Code 4

FLK/cg-10492

cc: District 4 (3)
PJWhitfield
Memorandum

To: LENKA CULIK-CARO
Senior Transportation Engineer
Project Development - North Counties 4

Date: September 12, 1991
File: 416.2
04-MRN-0001-28.5/31.5
04234-13225K
Pt. Reyes Sta.

From: DEPARTMENT OF TRANSPORTATION
OFFICE OF STRUCTURE MAINTENANCE
AND INVESTIGATIONS

Subject: AC Overlay at Lagunitas Creek Bridge No. 27-23

Your memo of September 4, 1991 inquired regarding the possibility of placing a 0.15 feet AC overlay on the above-noted structure.

The Office of Structure Maintenance and Investigations desires that no additional deadload be placed on this structure which has a low permit capacity rating. Please transition the overlay smoothly into the ends of the bridge.

R. P. Hackett, Branch Chief
Office of Structure Maintenance
and Investigations

cc: JJGallippi
Bridge Book
State of California  
Business, Transportation and Housing Agency  

MEMORANDUM

Date: September 4, 1991

To: JOSEPH J. GALLIPPI  
Section Chief  
Office of Structure Maintenance 
& Investigation

File: 04-MRN-001-28.5/31.5  
04234-13225K  
Pt. Reyes Sta.

From: DEPARTMENT OF TRANSPORTATION - 4  
PROJECT DEVELOPMENT - North Counties

Subject: AC Overlay at Lagunitas Creek Bridge

Reference is made to the above project. This is an AC overlay project with no widening nor extensive modifications. The overlay will consist of a 0.15 feet AC(A) surface course.

Please provide your recommendation for overlay of the bridge deck of Lagunitas Creek Bridge (Br. No. 27-23, PM 28.51).

If you have any questions regarding this request please call me at ATSS 8-542-4163 or Shein Lin, Project Engineer, at ATSS 8-542-4365.

LENKA CULIK-CARO  
Senior Transportation Engineer

cc: LCulik-Caro  
SCLin  
Project File
SUPPLEMENTARY BRIDGE REPORT

Bridge No. 27-0023
Location 04-Mar-1-28.51 Dist., Co., Rd., FM, City
Date of Investigation 08/21/90

Name LAGUNITAS CREEK

RATINGS:
58 Deck 6 59 Superstructure 6 60 Substructure 7 71 Waterway Adequacy 4
61 Channel & Channel Protection 4 62 Culvert NA 72 Approach Rdwy Align. 7

CODES:
21 Custodian 01 22 Owner 01 26 Functional Classification: Deck 1 Under NA
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 Undercr on Rt. NA 54 Min Vert Undercr NA 112 NBIS Bridge Length Y

DATA:
51 Bridge Width (NET) 24.0' 109 Average Daily Trucks (% of ADT): Deck 5.2 Under NA
114 Future ADT: Deck 9900 Under NA 115 Yr. of Future ADT: Deck 2002 Under NA

Number of Intermediate Joints: @ Hinges 0 @ Bents 2

TYPE OF INVESTIGATION/REPORT
Biennial X Category A
Damage Category A
Other

CONDITION OF STRUCTURE
The condition of this structure has not changed appreciably since the previous investigation.

PAINT
Remains code 4.

WORK RECOMMENDED
None.

R. Sennett
Reviewed and Approved by

Steve Ng
Registered Civil Engineer

RS/SN/dg-30290

cc: Dist 4 (3) Coders S. Nakao - Hydrology N. Moore
On the date shown, the engineer investigated the structure and found no significant changes.

<table>
<thead>
<tr>
<th>Date</th>
<th>Signature</th>
<th>Completed work</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>6-9-88</td>
<td>Harold Ken</td>
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</table>
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
SUPPLEMENTARY BRIDGE REPORT
DS-W19 (REV. 2/75)

Bridge No. 27-23
Location 04-Mrn., 1-28.51
Dist - Co - Re - Pi - City

Date of Investigation November 20, 1986

Name LAGUNITAS CREEK

CONDITION RATING:

Deck 6 Superstructure 6 Substr. & Pipes 7 Overall 3
Channel & Channel Protection 4 Retaining Walls N

Widenable? Yes ☐ No ☑ Conditional ☐
Action Required by District: Yes ☐ No ☑

WORK DONE:

Voids, which, apparently, were created beneath the approach pavements adjacent to both abutments by last winter's flood waters, were filled with concrete by the Maintenance, Bridge and Mud-jacking crews. An excellent job was done of farming and filling between the columns of the "spill-through" type abutments.

PAINT CONDITION:

Unchanged, Code 4

CONDITION OF STRUCTURE:

The Streambed is 6.5' below the top of the cofferdam for the Column 1 footing at Pier 3. This is at about the bottom of the footing as shown on the plans. The pier is founded on 30'+ long piles.

D. D. Loftin, P.E., C11161

DDL/nlc

cc: District 4 (3)
    NLM, DDL, Coders
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
SUPPLEMENTARY BRIDGE REPORT
DS-M19 (REV. 2/75)

Bridge No. 27-23
Location 04-Mrn-1-28.51
Dist. Co. Re. Pla. City

Date of Investigation April 25, 1985

Name LAGUNITAS CREEK

CONDITION RATING:

Deck 6
Superstructure 6
Substr. & Pipes 7
Overall 3

Channel & Channel Protection 4
Retaining Walls N

APPRAISAL RATING:

Widenable? Yes ☒ No ☐ Conditional ☐

Action Required by District: Yes ☒ No ☐

PAINT CONDITION:

There is some spot rusting on the understructure and some rust on the pedestrian walkway where pedestrians have scratched the structure. The condition is code 4.

CONDITION OF STRUCTURE:

Both approaches have medium to large transverse cracks.

D. D. Loftin, P.E., C11161

by Jeff Olson

DDL/JO/nlc

CC: Dist. 4(3)
   Coding
   BFD, DDL, JWO
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
SUPPLEMENTARY BRIDGE REPORT
DS-M18 (REV. 2/75)

Bridge No. 27-23
Location 04-Mrn-1-28.51
Dist - Co - Rts - PM - City
Date of Investigation June 13, 1984

Name LAGUNITAS CREEK

CONDITION RATING:

<table>
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<th></th>
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<th>Superstructure</th>
<th>Substr. &amp; Pipes</th>
<th>Overall</th>
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<tbody>
<tr>
<td></td>
<td>6</td>
<td>6</td>
<td>7</td>
<td>3</td>
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</table>

Channel & Channel Protection Retaining Walls

|                  | 4    | N              |

Widenable? No Conditional

Action Required by District: No

PAINT CONDITION:
The bottom chord of the downstream truss has considerable light rust. There is very little rust on the upstream truss. The skid rails and sidewalk railing have some rust. The condition is Code 4.

WORK DONE:
The cover plate to the joint armor in the southbound lane at Pier 3 has been removed. The joints are in good condition.

10/26/82 (13023)

D. D. Loftin, P.E., C11161

DDL/nlc

cc: Dist. 4(3)
BFD, DDL
Coders
STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
SUPPLEMENTARY BRIDGE REPORT  
DS-M19 (REV. 2/75)

Bridge No. 27-23  
Location 04-Mrn-1-26.51  
Dist - Co - Rte - PM - City

Report  
Date of Investigation Dec. 31, 1980

Name LAGUNITAS_CREEK

CONDITION RATING:

Deck 6  Superstructure 5  Substr. & Pipes 7  Overall 3

Channel & Channel Protection 4  Retaining Walls N

Widenable? Yes ☑ No ☐ Conditional ☐

Action Required by District: Yes ☑ No ☐

JOINT ARMOR

The cover plates which have broken through and been rewelded several times since about 1967 have several new breaks.

These joints at Piers 2 and 3 are no longer functioning and are completely closed at less than 60°F. The theoretical movement is less than 3/8".

There have been several complaints about the noise made by the loose plates.

RECOMMENDATIONS:

As it becomes necessary remove the broken plates 1 lane width at a time and repair as shown on the attached sketches.

The cost should be under $4,000.

D. D. Loftin, P.E., Cl1161

DDL/mlc

cc: District 04(3)  
DDL
PROCEDURES
1. Remove continuous 9" plates to edges of brackets.
2. If necessary, use portions of plates as filler plates over brackets.
3. Chip deck, as necessary to obtain minimum depth of 3/4" for Set 45.
4. Place 1/2" deep form with wedges for easy removal against the "Z" leg & caulk as necessary to prevent intrusion of the Set 45 onto or against the end span.

PLAN PIER 2 JOINT
Scale: 3/8" = 1'-0"
STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
SUPPLEMENTARY BRIDGE REPORT  
BS-819 (REV. 2/75)  

Bridge No. 27-23  
Location 04-Mrn-1-28.51  
Dist - Co - Pk - PW - City  

Date of Investigation Oct. 28, 1981  

LAGUNITAS CREEK  

Name  

CONDITION RATING:  
Deck  6  
Superstructure  5  
Substr. & Pipes  7  
Overall  3  
Channel & Channel Protection  4  
Retaining Walls  N  

Widenable? Yes ☐ No ☑ Conditional ☐  

Action Required by District: Yes ☐ No ☑  

ENCROACHMENT:  
By Permit No. 481-U-794755, 4-4" PT&T ducts were neatly supported from the left side sidewalk supports.  

PAINT CONDITION: Code 1  

CONDITION OF STRUCTURE:  
Maintenance intends to replace the broken joint armor plates.  

D. D. Loftin, P.E., C11161  

DDL/nlc  

cc: Dist. 04(3)  
DDL
STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
SUPPLEMENTARY BRIDGE REPORT  
DS-019 (REV. 2/75)  

Bridge No. 27-23  
Location 04-Mrn-1-28.51  
Dist: Co- Re- PW- City  

Date of Investigation October 26, 1982  

Name LAGUNITAS CREEK  

CONDITION RATING:  
Deck 6  Superstructure 6*  Substr. & Pipes 7  Overall 3  
Channel & Channel Protection 4  Retaining Walls N  

Widenable? Yes ☑ No ☐ Conditional ☐  
Action Required by District: Yes ☑ No ☐  

WORK DONE:  
The cover plates to the joint armor at Piers 2 and 3 have been removed in the northbound lanes. Since the joints have been closed for years and are non-functioning, this is a good solution to the problem of banging, broken plates. The riding quality of the deck has not been lowered by the 1/2" depression left by the removal of the plates.  

PAINT CONDITION:  
Overall the paint system is a very good Code 4. There is some to fairly heavy rust on some truss rivet heads on the downstream side. This rust is generally on heads which have previously lost section to corrosion. There are, also a very few small freckles of rust on other members.  

RECOMMENDATIONS:  
When needed, remove the armor plates in the southbound lanes at Piers 2 and 3 as previously done in the northbound lanes. The cost should be under $1,200 (13023).  

D. D. Loftin, P.E., C11161  
DDL/nlc  
cc: District 04(3), DDL, BD
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
SUPPLEMENTARY BRIDGE REPORT
DS-W18 (REV. 2/75)

Bridge No. 27-23
Location 04-Mrn-1-28.51
Dist - Co - Rn - Pm - City
Date of Investigation Oct. 28, 1981

Name LAGUNITAS CREEK

CONDITION RATING:

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APPRAISAL RATING:

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</table>

Widenable? Yes [ ] No X Conditional [ ]

Action Required by District: Yes [ ] No X

ENCROACHMENT:

By Permit No. 481-U-794755, 4-4" PT&T ducts were neatly supported from the left side sidewalk supports.

PAINT CONDITION: Code 1

CONDITION OF STRUCTURE:

Maintenance intends to replace the broken joint armor plates.

D. D. Loftin, P.E., C11161
DDL/mlc

cc: Dist. 04(3)
    DDL
STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
SUPPLEMENTARY BRIDGE REPORT  
DS-818 (REV. 2/75)  

Bridge No. 27-23  
Location 04-Mrn-1-28.51  
Dist - Co - Rd - PM - City  

Report  
Date of Investigation Dec. 31, 1980  

Name LAGUNITAS CREEK  

CONDITION RATING:  

Deck 6 Superstructure 5 Substr. & Pipes 7 Overall 3  
Channel & Channel Protection 4 Retaining Walls N  

Widenable? Yes □ No X Conditional □  
Action Required by District: Yes X No □  

JOINT ARMOR  
The cover plates which have broken through and been rewelded several times since about 1967 have several new breaks.  

These joints at Piers 2 and 3 are no longer functioning and are completely closed at less than 60°F. The theoretical movement is less than 3/8".  

There have been several complaints about the noise made by the loose plates.  

RECOMMENDATIONS:  

As it becomes necessary remove the broken plates 1 lane width at a time and repair as shown on the attached sketches.  

The cost should be under $4,000.  

D. D. Loftin, P.E., C11161  

DDL/nlc  
cc: District 04(3)  
DDL
PROCEDURES
1. Remove continuous 9" plates to edges of brackets.
2. If necessary, use portions of plates as filler plates over brackets.
3. Chip deck, as necessary to obtain minimum depth of 3/4" for Set 45.
4. Place 1/2" deep form with wedges for easy removal against the "Z" leg & caulk as necessary to prevent intrusion of the Set 45 onto or against the end span.

PLAN PIER 2 JOINT
Scale: 3/8" = 1'-0"

Note: Joint @ Pier 3 similar except both lanes need repair.

REPAIRED PART SECTIONS
Scale: 1/16" = 1'-0"
September 12, 1980

Pacific Telephone Company
1000 Fourth Street #414
San Rafael, CA  94901

Gentlemen:

This is in reference to your Encroachment Permit Application to place four 4" portland cement conduits along State Route 1 in Marin County, your Job # WC-1343T.

The proposal is satisfactory insofar as the bridge is concerned subject to the following:

1. The duct supports are to be galvanized after fabrication.

2. Holes for the expansion anchors should be made by drilling. Percussion tools and self-drilling anchors cannot be used. If reinforcing steel is encountered, a new hole will be drilled and the first hole neatly patched with color matching grout.

3. The permit will indicate that the permittee acknowledges they will share in the cost of repainting the structure at a future date commensurate with the difficulties encountered in protecting or moving the ducts and hangers.

Please furnish us with three sets of your completed plans for our further review.

If you have any questions, contact W. Brewer of this office at (415) 557-2793.

Sincerely yours,

JOHN WEST
District Director

By ORIGINAL SIGNED BY

R. L. CASHION
Permit Engineer

WB:ms  cc:  REG-BCB,JDC,RLC,WFM,JOHN CREED-HQ
# UTILITY ENCROACHMENT PERMIT APPLICATION

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

**UTILITY ENCROACHMENT PERMIT APPLICATION**

**FORM DM P-18/REV 5 76**

**TYPE OR PRINT LEGIBLY. COMPLETE ALL ITEMS. MARK N/A WHEN NOT APPLICABLE.**

## PART I - PROJECT INFORMATION

<table>
<thead>
<tr>
<th>1. Applicant's Name:</th>
<th>Pacific Telephone Company</th>
<th>Phone No.</th>
<th>453-9213</th>
</tr>
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<tbody>
<tr>
<td>2. Address:</td>
<td>1000 Fourth Street W/4, San Rafael, California 94901</td>
<td></td>
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<tr>
<td>3. Location of Encroachment</td>
<td>County/City: Marin</td>
<td>State Route No. 1</td>
<td></td>
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<tr>
<td>4. Project Location:</td>
<td>Attach location map or describe location in reference to State highway. Sir Francis Drake Boulevard and State Highway #1</td>
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<tr>
<td>5. Brief description of work within State right of way and attach plan(s) and specifications.</td>
<td>Place approximately 714 trench feet of 4&quot;&quot; HDG&quot;&quot; conduit and steel pipe underground and bridge as detailed on the attached drawing. Pipes: Kind Steel</td>
<td>Diameter 4&quot;</td>
<td>Low or High Pressure Conveyor</td>
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<td>Excavation: Depth 48&quot;</td>
<td>Width 18&quot;</td>
<td>Length 714</td>
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<td>6. Estimated Starting Date:</td>
<td>7-15-80</td>
<td>Estimated Completion Date:</td>
<td>9-30-80</td>
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<td>7. Is installation for:</td>
<td>Service ☐</td>
<td>Replacement ☐</td>
<td>Betterment, new distribution ☐</td>
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<td>8. Is City/County/other Agency requiring permits?</td>
<td>Yes ☑</td>
<td>No ☐</td>
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<tr>
<td>If Yes, describe:</td>
<td>County of Marin</td>
<td></td>
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<tr>
<td>9. Is City/County/other Agency requiring environmental document(s)?</td>
<td>Yes ☐</td>
<td>No ☑</td>
<td>If &quot;Yes&quot;, please check: Exempt ☐</td>
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<td>10. If answers to Lines 8 and 9 are both &quot;No&quot;, complete Part II.</td>
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## Remarks:

Bill Bridge Numbers are 27-23 +27-24

---

**TITIAN**

**Engineer**

**TITLE**

**DATE**
PERMIT INSPECTION DATA

Name: G.T.T.  Address: 1000 Hill Street Room 44
City or Town: SAN RAFAEL CA. 94901
County: MARIN  Route 1  City or Town: MARIN  Post Mile 28.43

Geographical side of right of way and distance from closest intersecting road or street:
WEST SIDE OF HWY 1

1. Verify if applicant is property owner or lessee
   Yes ☐ No ☑ Unknown ☐

2. Permit is requested for: Driveway ☐ Parking Area ☐ Trunk Line ☐
   Utility ☐ Landscaping ☐ Tree Removal ☐ Curb & Sidewalk ☐ Utility Service(s) ☑
   Other Work ☐ describe in Remarks below.

3. Driveway for: Residence ☐ Business ☐
   Width & Number of Driveways _______

4. Driveway or parking area surfaced with: Base & Armour Coat ☐ AC ☐
   PCC ☐ Structural section _______

5. Driveway is in: Cut ☐ Fill ☐ Level Section ☐

6. If driveway is in cut or fill, recommend length of level section _______

7. Sight distance will be impaired: Yes ☐ No ☑

8. It can be improved by: _______

9. Type of drainage recommended: Culvert ☐ Valley Gutter ☐ Drop Inlet ☐
10. Size and length of culvert _______ Flared end sections:
    Inlet ☐ Outlet ☐

11. PCC curb is in place: Yes ☐ No ☑ Sidewalk: Yes ☐ No ☑
12. PCC curb is recommended: Yes ☐ No ☑ If "Yes" indicate on sketch.
13. Sidewalk: Width _______ Length _______ Curb face from property line _______

14. Distance of building from property line _______ from center line ______

15. Sewer main is under pavement or shoulder: Yes ☐ No ☑

16. Distance of main from: Curb _______ property line _______ Center line ______

PM 6-10
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
SUPPLEMENTARY BRIDGE REPORT
DS-W19 (REV. 2/75)

Bridge No. 27-23
Location 04-Mrn-1-28.51
Dist - Co - Me - PM - City
Date of Investigation Aug. 13, 1980

Name LAGUNITAS CREEK

CONDITION RATING:

Deck 6 Superstructure 5 Substr. & Pipes 7 Overall 3

Channel & Channel Protection 4 Retaining Walls

APPRaisal RATING:

Widenable? Yes ☐ No ☐ Conditional ☐

Action Required by District: Yes ☐ No ☐

WORK DONE:

An 8" C.I.P. water line was placed along the downstream side of the structure.

Owner: North Marin Water District.

Encroachment Permit #480-U-794009

CONDITION OF STRUCTURE:

The paint system is in good condition.

D. D. Loftin, P.E., C11161

by W. Mark Ashley

W. Mark Ashley

DDL/WMA/nlc

cc: Dist. 04(3)

WMA
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

UTILITIES ENCROachment PERMIT

To North Marin Water District
P. O. Box 146
Novato, CA 94947

San Francisco, California
Dated February 1, 1980

Permittee

1. Subject first to the applicable law, and second, to the terms and conditions relating to Utility Encroachments issued by the State of California, Department of Transportation, which by this reference is made a part hereof, permission is hereby given to install an 8" water main on Lagunitas Creek Bridge No. 27-23 on the westerly side of State Highway 04-Mrn-1, Post Mile 28.51.

Three days before work is started under this permit, notice shall be given to, and approval of construction details, operations, public safety, and traffic control shall be obtained from Highway Maintenance Superintendent W. F. McBride, P. O. Box 587, Petaluma, 707-762-6641.

Your attention is directed to the attached Special Provisions, Nos. 1, 11A, and 32, which must be complied with.

All holes for the anchors in concrete structure shall be drilled with a nonpercussion type tool.

Permittee shall contact State's representative for final inspection and approval of completed work.

When applicable, permittee shall comply with Attachment "A".

in accordance with your attached Plan No. 1931 P-C

2. This Permit has been issued by the Department pursuant to:
   Complete (X) Your Application of December 24
   Proper ( ) Utility Notice No. of
   Line ( ) Agreement No. of
   1979

3. This Permit applies only to the work specifically authorized above.

4. Inspection required by Division—Full ( ) Partial (X)

5. This Permit shall be void unless the work hereinafore provided for shall have been completed before August 30, 1980, unless time extension granted by separate Rider.

DEPARTMENT OF TRANSPORTATION

T. R. Lammers
District Director of Transportation

By

District Permits Engineer

ORIGINAL SIGNED BY

R. L. Cashion

(Copies of the incorporated Terms and Conditions may be obtained upon request.)
**Bridge Name:** Lagunitas Creek  
**Contract No:** 381664  
**Cost of Job (Paint Only):** $28,800  
**Contractor:** Bay Area Coatings  
**Sub Contractor:** D. Perry

**Date Started:** 8-15-79  
**Date Completed:** 10-15-79  
**Working Days Allowed:** 30  
**Days Worked:** 30  
**Days Lost - Weather:** 8  
**Days Lost - Other:** 0  
**Days Overrun:** 0

**Type of Structure - Number and Length of Spans:** Steel pony truss 1-span 101' long with 2 PCC approach spans - total length 151'.

**Total Area:** 10,880  
**Area Blasted:** 10,880  
**Total Tons:** 28

**Description of Paint System:**
- Vinyl Wash Primer.  
  2 mils Vinyl Finish 8010-71-C-35 & 8010-61-J-40, Total 6 mils.

**Remarks:**
- Curb painted white with 8010-61-J-10.  
- Traffic face of rail painted with State-furnished white enamel paint.

<table>
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<th>Method</th>
<th>Supplier</th>
<th>Spec No.</th>
<th>Amount Used</th>
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**Totals**  
- 17,210.10  
- 1.58

**Report By:** D. Perry  
**Title:** HET I  
**Date:** 10-16-79
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
SUPPLEMENTARY BRIDGE REPORT
DS-818 (REV. 2/75)

Bridge No. 27-23
Location 04-Mrn-1-28.51
   Dist - Co - Rte - PM - City
Date of Investigation July 9, 1979

Name LAGUNITAS CREEK

CONDITION RATING:
Deck 6 Superstructure 5 Substr. & Pipes 7 Overall 3*
Channel & Channel Protection 4 Retaining Walls ---

APPRAISAL RATING:

Widenable? Yes ☐ No X Conditional ☐
Action Required by District: Yes ☐ No X

LOAD RATINGS:
Inventory: HS 13, Operating: HS 22, Permit: XXXXX (See the report, dated 2/20/79, for the Conditional rating.)

SAFE LOAD CAPACITY APPRAISAL: Rating 5

WORK DONE:
The deck joint armor was repaired and is in good condition.
The cleaning and painting contract is beginning.

D. D. Loftin, P.E., Cl1161
DDL/nlc

cc: Dist. 04(3)
   DDL
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
SUPPLEMENTARY BRIDGE REPORT
DS-M19A (REV. 6/75)

Bridge No. 27-23

Location 04-Mrn-1-28.51
Dist - Co - Rte - PM - City

REPORT
Date of Investigation Feb. 20, 1979

Name LAGUNITAS CREEK

PERMIT LOAD CARRYING CAPACITY:

Effective April 1, 1979, in accordance with a teletype dated February 13, 1979, the Permit load rating is XXXXX. The Conditional Load Rating with the restrictions of no bonus weights, speed less than 15 MPH, truck must straddle the centerline of structure and no other trucks or busses on the structure is PPPPP.

D. D. Loftin, P.E., C11161
DDL/n1c

cc: Dist. 04(3)
DDL
Ref: STRUOL output of 8/22/78
LOAD SCALE = 1.086 for permit
+.302 HS20. (4.43 & 4.74 control)

& SUMMARY of "TT5"

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<th>P l086</th>
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Above adjustments are for speed less than 15MPH, no bonus. No other veh.'s on str. & load crito between trusses.
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<td>13 AXLE</td>
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</table>

LEGAL

|          |        |        |
| TYPE 3   |        |        |
| TYPE 3S2 |        |        |
| TYPE 3-3 |        |        |
| AC=      | NONE   |        |

RATED BY: T. Tsukiji / TAM

DATE: 8/23/78
<table>
<thead>
<tr>
<th>BRIDGE NO.</th>
<th>LOCATION</th>
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<tbody>
<tr>
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<tr>
<td>AC=</td>
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<p>| RATED BY: | T. Tsukiji TAM |
| DATE: | 8/23/78 |</p>
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<thead>
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<th>ULT MOM CAP</th>
<th>ULT MOM CAP</th>
<th>POS MS20</th>
<th>NEG MS20</th>
<th>POS PURP</th>
<th>NEG PURP</th>
<th>DEAD LOAD</th>
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<tr>
<td>INV</td>
<td>1.41</td>
<td>5</td>
<td>1</td>
<td>402.9</td>
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<td>0.0</td>
<td>109.1</td>
<td>0.0</td>
<td>131.5</td>
</tr>
</tbody>
</table>

The number of axles on the truck that causes the purple rating factor is 13.

**FC = 1.00** FY = 33.

If the reported ultimate moment capacity is 0, it was determined not to be critical.

2. Bridge across Laguna Creek (27=23)
3. Rating of T-beam approach span
4. No A-C, 6/78
DIST | ROUTE | COUNTY | STRU. ND | POSTMILE | RATING | WIDTH-FT | STRU TYPE | YR | ORIG | CONST | AUG. 03, 1978
--- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | ---
04 | 001 | 27 | 0023 | 026.51 | 005.5 | CG | T-BEAM | 29 | | | 

INFLUENCE LINE FOR CRITICAL INVENTORY RATING POINT SPAN 1 10TH POINT 5

<table>
<thead>
<tr>
<th>MEM</th>
<th>LEFT</th>
<th>.1</th>
<th>.2</th>
<th>.3</th>
<th>.4</th>
<th>.5</th>
<th>.6</th>
<th>.7</th>
<th>.8</th>
<th>.9</th>
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</thead>
<tbody>
<tr>
<td>NO</td>
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<td>1.145</td>
<td>2.290</td>
<td>3.435</td>
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<td>4.580</td>
<td>3.435</td>
<td>2.290</td>
<td>1.145</td>
<td>0.0</td>
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</table>

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 BRIDGE ACROSS LAGUNITAS CREEK (27-23)
3 RATING OF T-BEAM APPROACH SPAN
4 NO A.C. 8/78
<table>
<thead>
<tr>
<th>Dist</th>
<th>Route</th>
<th>County</th>
<th>Stru. No</th>
<th>Postmile</th>
<th>Rating</th>
<th>Width-Ft</th>
<th>Stru Type</th>
<th>Yr</th>
<th>Orig</th>
<th>Const</th>
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<tr>
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<th>Ult Mom Cap</th>
<th>Pos HS20 Moment</th>
<th>Neg HS20 Moment</th>
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<th>Neg Purp Moment</th>
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<tr>
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<td>481.1</td>
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<td>211.5</td>
<td>-42.1</td>
<td>21.8</td>
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</tr>
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</table>

The number of axles on the truck that causes the purple rating factor is 13.

FC = 1.00 FY = 33.

If the reported ultimate moment capacity is 0, it was determined not to be critical.

2. Bridge across Lagunitas Creek (27-23)
3. Rating of deck slab on floor beams (truss span)
4. No AC overlay 8/78
5. Axles split for permit vehicle
DIST | ROUTE | COUNTY | STRU. NO | POSTMILE | RATING | WIDTH-FT | STRU TYPE | YR | ORIG | CONSTR | DATE | 
04 | 01 | 27 | 0023 | 020.51 | 025 | CGS | 29 | AUG, 05, 1978 |

INFLUENCE LINE FOR CRITICAL INVENTORY RATING POINT SPAN 1 10TH POINT 4

<table>
<thead>
<tr>
<th>MEM NO</th>
<th>LEFT</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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</thead>
<tbody>
<tr>
<td>1</td>
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<td>0.494</td>
<td>0.994</td>
<td>1.507</td>
<td>2.040</td>
<td>1.598</td>
<td>1.188</td>
<td>0.817</td>
<td>0.491</td>
<td>0.217</td>
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</tr>
<tr>
<td>2</td>
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<td>-0.315</td>
<td>-0.294</td>
<td>-0.250</td>
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<td>-0.057</td>
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<tr>
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<td>0.081</td>
<td>0.084</td>
<td>0.079</td>
<td>0.067</td>
<td>0.051</td>
<td>0.033</td>
<td>0.015</td>
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THE CRITICAL OPERATING RATING POINT IS THE SAME AS THE CRITICAL INVENTORY RATING POINT

INFLUENCE LINE FOR CRITICAL PURPLE RATING POINT SPAN 6 10TH POINT 6

<table>
<thead>
<tr>
<th>MEM NO</th>
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<th>4</th>
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<tbody>
<tr>
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<td>0.033</td>
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<tr>
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<td>0.491</td>
<td>0.917</td>
<td>1.188</td>
<td>1.598</td>
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<td>1.507</td>
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BRIDGE ACROSS LAGUNITAS CREEK (27=23)
RATING OF DECK SLAB ON FLOOR BEAMS (TRUSS SPAN)
NO AC OVERLAY 8/78
AXLES SPLIT FOR PERMIT VEHICLE
<table>
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<tr>
<th>1ST ROUTE</th>
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<th>STRU. NO</th>
<th>POSTMILE</th>
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<td>29</td>
<td>AUG 03, 1978</td>
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INFLUENCE LINE FOR CRITICAL INVENTORY RATING POINT

SPAN: 1 10TH POINT: 5

MEM   LEFT 1 2 3 4 5 6 7 8 9 RIGHT
NO    0.0 1.145 2.290 3.435 4.580 5.725 4.580 3.435 2.290 1.145 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

BRIDGE ACROSS LAGUNITAS CREEK (27-33)
RATING OF T-BEAM APPROACH SPAN
NO A.C. 5/78
<table>
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<tr>
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<td>131.5</td>
<td>0.0</td>
<td>54.7</td>
<td>0.0</td>
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</table>

THE NUMBER OF AXLES ON THE TRUCK THAT CAUSES THE PURPLE RATING FACTOR IS 13.
FC = 1.00 FY = 33.

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

2 BRIDGE ACROSS LAGUNITAS CREEK (27=23)
3 RATING OF T-BEAM APPROACH SPAN
4 NO A.C. 8/78
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
SUPPLEMENTARY BRIDGE REPORT
DS-910 (REV. 2/75)

Bridge No. 27-23
Location 04-Mrn-1-28-51
Dist - Co - Rte - PM - City
Date of Investigation March 15, 1978

Name
LAGUNITAS CREEK

CONDITION RATING:

Deck 6 Superstructure 5 Substr. & Pipes 7 Overall 5

Channel & Channel Protection 4 Retaining Walls

APPRaisal RATING:

Widenable? Yes □ No □ Conditional □

Action Required by District: Yes □ No □

EARTHQUAKE RETROFITTING:

The bearings should be examined.

PAINT CONDITION:

The condition is Code 5 with heavy rust on some flange edges and rivets. At present, about 30% of the surface area of the trusses and less than 10% of the remainder needs cleaning to bare metal.

Painting is scheduled for 1979 by EA 381661.

CONDITION OF STRUCTURE:

The cover plates for the expansion joint armour at Piers 2 and 3 have broken through at several places. The various pieces bang noisily under traffic and should be coming out of the joints shortly. The plates have failed in fatigue adjacent to the support brackets, probably because of the concrete between brackets either being low or having large voids. Several past repairs by welding the cracked pieces together have been only temporarily successful. At Pier 2, the southbound 1/2 of the plate is in good condition. The northbound 1/2 has broken through at various times at 6 places. A 2'-8" section adjacent to the center of roadway is loose and almost out. At Pier 3, the southbound 1/2 has 2 new breaks. The northbound 1/2 has broken through and been welded at 4 locations. Two of the welds are broken.

The joints were completely closed at about 60°F probably caused by the short end spans being shoved inward by the approaches since construction in 1929.

(Cont.)
RECOMMENDATIONS:

1. Remove the 9" x 1/2" x 12' section of plate from the northbound lane at Pier 2 and all 24' of the plate at Pier 3.

2. Clean the concrete and tops of brackets, fill any voids in the concrete and place a leveling course of either Fondu or Set 45 flush with the tops of the brackets. The existing concrete should be roughened by chipping before placing the leveling course.

3. Place the new 8" x 1/2" x 11'-11" plates. Butt weld and plug weld as shown on the attached plans.

The cost should be under $4,500.

D. D. Loftin, P.E., C11161

DDL/nlc

cc: District 04(3) DDL
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
SUPPLEMENTARY BRIDGE REPORT
DS-918 (REV. 2/75)

Bridge No. 27-23

Location 04-Mrn-1-28.51
Dist. Co. Res. PM City

Date of Investigation June 1, 1976

Name LAGUNITAS CREEK

CONDITION RATING:
Deck 7 Superstructure 7 Substr. & Pipes 7 Overall 7

Channel & Channel Protection 4 Retaining Walls -

APPRaisal RATING:

Widenable? Yes □ No □ Conditional □

Action Required by District: Yes □ No □

Truss Protection Against Traffic

Protection rating - poor. Consists of light angles and lattice. There are no approach guard railings.

Condition of Structure

The top plate of the deck expansion armor at Pier 2 was broken through in 2 places at old welds. At Pier 3 the plate was completely broken through at the center line of roadway and partially broken through at about halfway between wheel lines, both at old welds. All breaks were in the northbound lane.

The main truss members have some rust. Some connections have considerable rust. The left bearing anchor bolts at Pier 2 have heavy rust.

Recommendations

1. When design studies, presently underway, are complete, upgrade the protection of the truss members against vehicular damage.

2. If repairs to the expansion armor have not been made, re-butt weld the broken plates and place several additional plug welds to the supporting members between breaks.

D. D. Loftin, P.E., Cl1161

cc: District 04 (3)
DDL

(1)
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
BRIDGE REPORT
DH-OS MS8 (REV. 3/74)

REvised ORIGINAL REPORT

Bridge No. 27-23
Other No. 
P.U.C. No. 
Location 04-Mra-1-20.51
Dist - Co - Rte - PM - City
Date of Investigation January 14, 1975

Name LAGUNITAS CREEK
Lat. 38°-03.9'    Long. 122°-48.2'

STRUCTURAL DATA AND HISTORY

Year Built 1929    By Marin County    Contract No. 
Date of Revisions 2/29 - 7/29 - 1961
Designed by: B.D. Marin County Plans Avail. e BD

Description: Steel pony truss main span with RC "T" (5) girder end spans on RC piers and abutments.

Spans 124'-10'-100'-124'
Length 152'    Skew None    Design L.L H-15
Ratings: Inventory Operating Permit

DESCRIPTION - ON STRUCTURE

Bridge Width 4.0' sw-0.7' cu, -24.0'-0.7' cu
Total Width 29.0'
Lanes 2    Tracks None
Median None    Rail Type Steel(Skid) (0900)
Vert. Clearance over deck Unimpaired
Appr. Rdwy. Width 22'
Wearing Surface None    Deck Seal None

Alignment Tangent, Moderately curved approaches.

DESCRIPTION - UNDER STRUCTURE

Roadway Section None
Lanes Tracks Pumplnt: None See Br. No.
Facilities Crossed Dist. 04(3) DDL/nlk

cc: Dist. 04(3) DDL/nlk
Bridge No. 27-23

Date January 14, 1975

DESCRIPTION - HYDRAULICS

Channel Sandy silt

MAINTENANCE

Custodian State
Owner State

ORIGINAL CONDITION RATING

Deck 7-F7
Superstructure 7-F7
Substructure & Pipes 7-F7
Channel & Channel Protection 4-F4
Retaining Walls
Approach Rdwy. Alignment 7-F7
Estimated Remaining Life 30

CONDITION OF STRUCTURE

The sidewalk railing mesh was re-tied. One small area is loose, again.

There is considerable rust on anchor bolts and other small areas where water collects. This structure is scheduled for painting in 1978.

The deck has a few small transverse cracks.

D. D. Loftin
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

UTILITIES ENCROACHMENT PERMIT

To North Marin County Water District
999 Atherton Avenue
Novato, CA 94947

San Francisco, California
Dated October 11, 1974

Permittee

1. Subject first to the applicable law, and second, to the terms and conditions relating to Utility Encroachments issued by the State of California, Department of Transportation, which by this reference is made a part hereof, permission is hereby given to install 6" sewer main including through the Lagunitas Creek Bridge (Marked) along the easterly side of State Highway 04-Mrn-1, Post Mile 28.0± to 28.7+. -

Three days before work is started under this permit, notice shall be given to, and approval of construction details, operations, public safety, and traffic control shall be obtained from Highway Maintenance Superintendent A. W. Close, P. O. Box 587, Petaluma, 762-6641.

Your attention is directed to the attached Special Provisions, Nos. 1, 2, 5, 11A, and 32, which must be complied with.

When applicable, permittee shall comply with Attachment "A".

Notwithstanding any standard specification of special provision tolerances, no leakage will be permitted in the pipeline installed through the State's bridge.

in accordance with your attached Plan No. 3003-C-15 thru 3003-C-24 incl. and Specifications

2. This Permit has been issued by the Department pursuant to:
   Complete (x) Your Application of April 13, 1974
   Proper ( ) Utility Notice No. of
   Line ( ) Agreement No. of

3. This Permit applies only to the work specifically authorized above.
4. Inspection required by Division—Full ( ) Partial (x)
5. This Permit shall be void unless the work hereinafore provided for shall have been completed September 30, 1975, unless time extension granted by separate Rider.

DISTRIBUTION:
2 White to Permittee
1 Pink to Headquarters-Mtc.
1 Blue to Dist. Utility Engineer
1 Yellow to file
1 Green to

.inspect. Phone

DEPARTMENT OF TRANSPORTATION

T. R. Lammers
Director of Transportation

By

V. S. Yoder
Permit Engineer

(Copies of the incorporated Terms and Conditions may be obtained upon request.)
SUPPLEMENTARY BRIDGE REPORT

Bridge No. 27-23
Location 04-Mrn-1-28.51
Dist - Co - Rte - PM - City
Date of Investigation September 6, 1973

Name LAGUINITAS CREEK

CONDITION RATING:

Deck 7 Superstructure 7 Substr. & Pipes 8 Overall
Channel & Channel Protection 8 Retaining Walls

Widenable? Yes ☐ No ☒ Conditional ☐
Action Required by District: Yes ☒ No ☐

CONDITION OF STRUCTURE
The trusses and railings have some minor rust spots.
The chain link mesh is loose on 2 panels of the sidewalk railing. The mesh protrudes into the sidewalk area.

RECOMMENDATIONS
Re-tie the sidewalk railing mesh as necessary.

D. D. Loftin
DDL/nlk

cc: District 04(3)
PAINT RECORD

LAGUNITAS CREEK 27-23

Bridge Name Bridge No.
14-494604 6,367

Contract No. Cost of Job (Paint only) Dist-Co-Rte-P.M.

D. E. Burgess Co. ---- L. R. Brush
Contractor Subcontractor Paint Inspector

9-20-67 Date Started Date Completed Working days allowed
9-20-67

Days Worked Days Lost Weather Days Lost Other Days Overrun

Thru Steel Pony Truss
Type of Structure

3 Spans
No. & Size of Spans
10,880
10,230 sq. ft. 100% 67

Total Area Area Blasted Total Tons

100% SB 4 mils Zinc-Loc Primer, 1 coat Vinyl Wash Primer, 52-G-52
Description of Paint System

& 2 coats 2 mils thick Green Finish Coat 64-G-82

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Steam Clean</td>
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<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Blast Clean</td>
<td></td>
<td>Monterey Sand</td>
<td>30.5 tons</td>
<td>10,230</td>
<td>3700.48</td>
<td>0.36</td>
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<td>Vinyl Wash Primer</td>
<td>Spray</td>
<td>Doidge-Koren</td>
<td>52-G-52</td>
<td>30 gals</td>
<td>10,230</td>
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<td>344.92</td>
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<td>Under Coats</td>
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<td>105 gals</td>
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<td>10,230</td>
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</table>

6640.11 0.639

L. R. Brush
This Report By
BPI Gr. II
Title
SUPPLEMENTARY BRIDGE REPORT

Date of Investigation: May 21, 1963

Name: LAGUNITAS CREEK (Arroyo San Geronimo)

Location: 28 3/4 miles north of the junction with Route 101

MISCELLANEOUS DATA

There is a ½" CI pipe suspended from the sidewalk on the left side of the structure. The pipe terminates short of both abutments.

CONDITION OF STRUCTURE

There is a minor scour at Pier 2.

At Pier 3, the rockers are tilted excessively. The right rocker is binding on the lower lateral bracing. This is an old condition which was probably caused by a slight rotation of Piers 2 and 3 towards the channel. In the past it was deemed advisable to defer repairs because the limited clearance between the top of the pier and the bottom of the trusses made it difficult to raise the span. The short 50 ton jacks in the Hayward Yard will simplify the task.

RECOMMENDATIONS

Plumb the rockers at Pier 3. The total weight of the truss span is about 200 tons. Therefore, for safety, the structure should be lifted one corner at a time with both jacks set just inside of the rocker.

Estimated Cost: $150.00

C. E. Negus, Jr.

cc: District IV(3)
    Maintenance Dept.
SUPPLEMENTARY BRIDGE REPORT

Investigated: 7/24/64 By:  
Changes Noted: Work appears to be straightened.

ONC N'R.

Investigated: 6/28/64 By:  
Changes Noted: None

RECOMMENDATIONS

There is nothing of a serious nature from the physical

Investigated: 5/17/64 By:  
Changes Noted: Water pipe between bent 2 and 3. No

CONDITION OF STRUCTURE

There is a minor crack at point B.

Investigated: 5/10/64 By:  
Changes Noted: None

ECONOMIC ASPECTS

Report of the cracks at point B. The total weight of the

Investigated: 7/24/64 By:  

Estimated Cost: $0.00

C.F. Engineer:

Use on page 10 (3)
SUPPLEMENTARY BRIDGE REPORT

Date of Investigation: May 3, 1960

Name: LAGUNITAS CREEK  IV-Mrn-56-D

Location: 28.3 miles north of junction with Route 1

UTILITIES

A 2" outside diameter water pipe is attached to outside of right truss.

DISCUSSION

In the supplementary bridge report of May 25, 1956, the tilted rockers at Bent 3 were discussed. To aid in future investigations, measurements were made on the right hand rocker. The results of these measurements are as follows: Distance from top of rocker plate to top of masonry plate is 0.40' on stream side and 0.23' on bankside. These measurements were made when the temperature was about 55°.

CONDITION OF STRUCTURE

Reflector buttons in northerly W60R clearance marker are broken.

Structure is in good condition.

RECOMMENDATION

Replace broken reflectors in northerly W60R.

Estimated cost under $25

C. F. Stewart

C. F. Stewart

Investigated 3/61 by W.K.

Changes Noted: Work rec. has been done. O.N.O. G.C.

Investigated 4/7/61 by H.R.

Changes Noted: Rust starting on railing, hangers and wing connections. Sidewalk bolt rusted. Otherwise, rocks - No Rec.

cc: District IV (3)
Maintence Dept.
SUPPLEMENTARY BRIDGE REPORT

Name: LAGUNITAS CREEK (Arroyo San Geronimo) IV-Mtn-56-C

Location: 28.9 miles north of junction with Route 1

Office Report
Date of Investigation: July 26, 1956

Refer to the original report dated March 1942 and to the subsequent supplementary bridge reports.

MISCELLANEOUS DATA

Map studies indicate that the correct name of the stream flowing under this structure is Lagunitas Creek. Therefore this structure should be carried as Lagunitas Creek (Arroyo San Geronimo) in lieu of its original name Arroyo San Geronimo.

HIGH WATER MARK

The Bridge Research Section locates the high water, for December 1955, at 0.7' below the reinforced concrete girder soffit at the upstream end of the southerly abutment.

RECOMMENDATIONS

Correct all bridge records to reflect the name change as indicated under the heading Miscellaneous Data of this report.

W. O. Langenbach

By T. E. Gooch

cc: District IV(3) Maint. Dept.

INVESTIGATED 5-27-37 by TEC

Next Investigation: 5-58

Changes: No change — good condition

SEE SUPPLEMENTARY REPORT OF: ————

EST. 5210: 3X70 4-28 1K 8PO
SUPPLEMENTARY BRIDGE REPORT

Date of Investigation May 25, 1956

Name: LAGUNITAS CREEK (ARROYO SAN GERONIMO) (Lagunitas Creek)
Location: 28.8 miles north of junction with route 1

Reference is made to original report dated March 1942 and to subsequent supplementary reports.

HIGH WATER

During the winter of 1955-56 high water reached to a level of 0.3' above the concrete girder soffit on the upstream side of the bridge along the left bank of the stream.

WORK DONE

Complete repainting of the structural steel in this bridge has recently been completed by contract.

CONDITION OF STRUCTURE

Mr. Brush, State Bridge Paint Inspector, on the job during the recent repainting advised the writer that the rocker at the northeast corner of the steel truss span has tipped to the degree that it is fouling on part of the steel span. That was quite carefully investigated during this investigation and it was found that the degree of fouling is minor and that the rocker is in contact with a gusset plate and angle which are a portion of the lower lateral system. This is a condition which appears to have existed for many years. Since the fouling is not yet causing any serious problem it is decided that the condition should be watched for changes and no correction made at this time.

There has been minor additional scour along both banks of the stream in the vicinity of this structure but it does not appear that corrective measures will be required to adequately protect the structure.

Other than noted above the structure is in good condition.

RECOMMENDATIONS

No work is recommended at this time.

cc: Dist. IV(3) Maint. Dept.

W. O. Langenbach
# HIGH WATER DATA

**LAGUNITAS CREEK**

Name (ARROYO SAN GERONIMO) (LAGUNITAS CREEK)  
Location IV-Mrn-56-9

<table>
<thead>
<tr>
<th>DATE</th>
<th>OBSERVER</th>
<th>GAGE HEIGHT</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-25-56</td>
<td>W.O. Langenbach</td>
<td></td>
<td>During the winter of 1955-56 high water reached to a level of 0.3' above the concrete girder soffit on the upstream side of the bridge along the left bank of the stream.</td>
</tr>
<tr>
<td>7-26-56</td>
<td>T.E. Gooch</td>
<td></td>
<td>The Bridge Research Section locates the high water for Dec. 1955 @ 0.7' below the reinforced concrete girder soffit @ the US end of the southerly abutment.</td>
</tr>
<tr>
<td>2-1-63</td>
<td>EHS</td>
<td></td>
<td>H.W. of Jan-Feb-63, 3.0' below clearance line upstream left bank. 1955 HWM 0.3' above clearance line upstream left bank.</td>
</tr>
<tr>
<td>4/26/64</td>
<td>DDL</td>
<td></td>
<td><em>HW 1982 - 1.5' above bottom chord of truss</em></td>
</tr>
</tbody>
</table>

**FORM BD 103**
Paint Record

Name: Arroyo San Geronimo (Lagunitos Creek)  IV-56-56

Type of structure and portion painted: Steel pony truss with two concrete end spans. Painted steel pony truss, sidewalk fence, and face and top of curbs.

Contract No: 22-05  Contractor: R. O. Rhodes & Co.  Contract cost $1940.00

Date painted: May 24, 1956  by R. O. Rhodes & Co.  

Area of painted portion: 10331.6 sq. ft.  Weight of steel painted: 67 tons

Weather conditions when painted: 56° F 78%  

Time between coats: 1-2.46 hrs.  2-3. 24 hrs.  3-4. 6 days

Sandblasted: Field  (Shop or Field)  Area sandblasted: 10231.6 sq. ft.

<table>
<thead>
<tr>
<th>Cost</th>
<th>Specification and Color—Furnished By</th>
<th>Painted</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Sq. Ft.</td>
</tr>
<tr>
<td>First</td>
<td>Sandartery</td>
<td>10231.6</td>
</tr>
<tr>
<td>First</td>
<td>52-3-55 semi-quick drying red lead</td>
<td>10231.6</td>
</tr>
<tr>
<td>Second</td>
<td></td>
<td>10231.6</td>
</tr>
<tr>
<td>Third</td>
<td></td>
<td>10231.6</td>
</tr>
<tr>
<td>Finish</td>
<td>52-5-60 Aluminum finish coat</td>
<td>10231.6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cost</th>
<th>Gallons Used</th>
<th>Sq. Ft./Gallon</th>
<th>Gallons/Ton</th>
<th>Total Painting Cost</th>
<th>Total Cost Per Sq. Ft.</th>
<th>Total Cost Per Ton</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>4 gal.</td>
<td>213.3</td>
<td>.72</td>
<td>41.07</td>
<td>14.13</td>
<td></td>
</tr>
<tr>
<td>Second</td>
<td>36 gal.</td>
<td>342.2</td>
<td>.54</td>
<td>181.5</td>
<td>7.41</td>
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</tr>
<tr>
<td>Third</td>
<td>32 gal.</td>
<td>312.7</td>
<td>.48</td>
<td>145.03</td>
<td>5.75</td>
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<tr>
<td>Finish</td>
<td>30 gal.</td>
<td>341.1</td>
<td>.45</td>
<td>153.7</td>
<td>10.14</td>
<td></td>
</tr>
</tbody>
</table>

Totals: 5373.35

 resident Engineer

L. R. Bruehl

EST. 1918, 1490 3-29 10M 0 840
SUPPLEMENTARY BRIDGE REPORT

LAGUNITAS CREEK
Name (ARROYO SAN GERONIMO)  IV-Rep-56-G
Location  26.5 miles north of junction with Route 1

Date of Investigation: July 7, 1953

Refer to original report dated March, 1942 and to subsequent supplemental reports.

WORK DONE:

The sidewalk on the structure was replaced as recommended in the report dated March 8, 1949 and so recorded in a stamped report which is kept only in the Bridge Books at Sacramento.

CONDITION OF STRUCTURE:

Inspection made in September, 1951 indicated that slight scour had occurred near both abutments of the structure. During this current inspection it was noted that the scour had progressed in the bank near the north abutment to the extent where it is advisable to take necessary steps to stop this action.

Except as noted above the general condition of the structure is good.

RECOMMENDATIONS:

It is recommended that rock riprap be placed along the northerly bank of the structure and between the columns of pier P-3 in order to stop embankment erosion.

Estimated cost: $400.

W. O. Langenbach

cc: District IV (2)
    Maintenance Department
SUPPLEMENTARY BRIDGE REPORT

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Investigated 4/54 by RU

Next Investigation 4/55

CONDITION OF STRUCTURE:

Inspection made in September 1954. It was found that the abutments were in good condition as were the approach approaches to the bridge. The approach approaches were in need of repair. The approach approaches were repaired. The approach approaches were then checked for cracks and were found to be in good condition.

RECOMMENDATIONS:

It is recommended that the approach approaches be repaired. The approaches are to be repaired and the repaired approaches are to be checked for cracks and found to be in good condition. The repaired approaches are to be checked for cracks and found to be in good condition.

M. O. Landreth

Maintenance Department
SUPPLEMENTARY BRIDGE REPORT

Date of Investigation: March 8, 1949

Name: ARROYO SAN GERONIMO
Location: 28.39 miles north of junction with Route I.

Refer to original report dated March 1942, and to the subsequent supplementary reports.

WORK DONE:

The work recommended in the report of February 5, 1947 has been completed.

CONDITION OF STRUCTURE:

There is a hole in the timber sidewalk at the north abutment. The timber walk is badly decayed throughout.

Otherwise the structure is in good condition.

RECOMMENDATIONS:

Replace the timber sidewalk in kind.

Estimated Cost: $850

Finance: Replacement

Investigated 2-50 By H. E. O.
Next Investigation 8-51
Changes Noted New SW placed about 1/2” water line on upstream side - structure OK

cc: District IV (2)
    Maintenance Dept.
    Bridge Dept.

Note: This work can be postponed until after July, if sufficient funds are not available at this time.

Next Investigation: March 1950

H. P. O’Donnell

Investigated 9/51 By H. E. O.
Next Investigation 9/52
Changes Noted Right from both

Obits: No preference
SUPPLEMENTARY BRIDGE REPORT

Date of Investigation: February 5, 1947

LAG-UNITAS CREEK
Name: ARROYO SAN GERONIMO
Location: 28.5 miles north of junction with Route 1.

Refer to original report dated March, 1942.

CONDITION OF STRUCTURE

Considerable amounts of earth and debris have collected in the truss joints, on the truss shoes and on the lower chord tie plates.

The short planks which cover the northwesterly truss shoe adjacent to the timber sidewalks are missing.

The structure is otherwise in good condition and paint is still fair.

RECOMMENDATIONS

When convenient, clean earth and debris from truss joints, shoes and tie plates. Also replace the missing planks over the northwesterly truss shoe.

Finance: General Maintenance.

R. J. Israel
R. J. Israel

cc: District IV (2)
Maintenance Dept.

Investigated 2-12-48 By NE
Next Investigation 2-49
Changes Noted Done OK.

SEE SUPPLEMENTARY REPORT OF 3-8-49
General Description

Name: LAGUNITAS CREEK
    (ARROYO SAN GERONIMO)

Location: 28.3 miles north of junction with Route 101

Description: Steel pony truss and R.C. (5) girder on R.C. piers
    and abutments.

Approximate skew: None.

Spans: 1 @ 24', 1 @ 100.0', 1 @ 24' c/c.

Total length: 152'.

Roadway width: 24.0' between concrete curbs

Sidewalks: 1 @ 4.0'.

Alignment: Good, on tangent. Probably final.

Width: Adequate, slightly wider than traveled way.


Waterway: Sufficient. Moderate velocity. Sandy channel.

Vertical clearance: Unimpaired under (See diagram)

History

Date built: 1929

By: Marin County

Contract No.

Designed by: Marin County - R. E. Messner, County Surveyor

Plans: Complete in Bridge Dept. files. "Field Check" 2-43.

Remarks

Final Report filed 11/6/11

In Vol. 1967-Cleaned and Paint

Form BD-23

CC: Dist. IV (2)

Maintenance Dept.

C.S.T. Marekoff

SEE SUPPLEMENTARY REPORT OF 5 FEB 1947 FOLLOWING
PLANS AND DIMENSIONS:

Truss Details:

- Span: 1 @ 100.0' c/c
- Panels: 10 @ 10.0'
- C/C Trusses: 27'-4"
- C/C Chords: 10.0'
- Deck: 8-3/4" R.C. slab on floorbeams.
- Floorbeams: 28" x 3/4" web plus 4LS: 6"x4"x5/8"

CONDITION OF STRUCTURE:

Concrete is of good quality and the structure is in good condition throughout.

CONDITION OF PAINT:

This structure was last painted in Jan. 1938, by Mr. Marckhoff.

The paint is now in good condition throughout the structure.

FENCES WITHIN THE RIGHT OF WAY:

None.

STRESS ANALYSIS:

This structure was designed for the standard H-15 loading.

RECOMMENDATIONS:

No work is recommended at this time.

Next Investigation: March 1943

Investigated 2-44 By RJ
Next Investigation 2-45
Changes Noted None

Investigated 2-45 By RJ
Next Investigation 2-46
Changes Noted None

R.J. Israel
R.J. Israel

Investigated 2-43 By RJ
Next Investigation 2-44
Changes Noted No change in structure

5 FEB 1947
SEE SUPPLEMENTARY REPORT OF
Summary of Construction, Maintenance and Alteration Work

<table>
<thead>
<tr>
<th>CONT. OR W.O. NO.</th>
<th>DATE</th>
<th>DESCRIPTION</th>
<th>W.O. AMOUNT</th>
<th>FINAL COST</th>
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<td>04-K-43</td>
<td>11-5-37</td>
<td>Clean and paint.</td>
<td>$645.00</td>
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<tr>
<td>04-K-43 (Sup)</td>
<td>1-17-38</td>
<td>Finish above work.</td>
<td>$231.00</td>
<td>$765.03</td>
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<tr>
<td>1-4K9 1-Sup</td>
<td>7-21-49</td>
<td>Replace timber sidewalk as recommended in Bridge Report 3-8-49.</td>
<td>$850.00</td>
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<tr>
<td>56-14K05</td>
<td>4-4-56</td>
<td>Clean &amp; Paint Bridge</td>
<td>$3,867.00</td>
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<td></td>
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<td>Contract items</td>
<td>$1,940.00</td>
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<td></td>
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<td>State Furn.Mat. paint</td>
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<td></td>
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<td>Contingencies 5%</td>
<td>127.00</td>
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<td>56-14K05-18</td>
<td>6-29-56</td>
<td>Engineering</td>
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<tr>
<td>14-494601</td>
<td>2-13-67</td>
<td>Clean &amp; paint 2 Bros. #27-23 &amp; 27-70</td>
<td>$500.00</td>
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<tr>
<td>14-494604</td>
<td>5-25-67</td>
<td>Clean &amp; paint 2 Bros. #27-23 &amp; 27-70</td>
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<td>$17,546.00</td>
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<td>Total</td>
<td>$17,546.00</td>
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PAINT RECORD

Bridge: Arroyo San Geronimo (Cayunitas Creek)  Br. No. 2723
District: IV  County: Marin  Route: 56  Section: 6
Description of painted portion: One 100' steel pony truss.

Surface area of steel:  Weight: tons

Date painted: 1929  By: Marin County
Contract or W. O. No.: Cost:
Weather conditions:

Sandblasted:

<table>
<thead>
<tr>
<th>Coat</th>
<th>BRAND OF PAINT</th>
<th>No. of Gall. Used</th>
<th>Gall. Per Ton</th>
<th>Method of Appl.</th>
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<tbody>
<tr>
<td>Spot</td>
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<tr>
<td>1st</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3rd</td>
<td>Color is grey. Brand is unknown.</td>
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Record of Inspections and Subsequent Operations.

4/27/34. Paint in good condition. Spotting not needed at this time.

[Signature]

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### SUMMARY OF ENCROACHMENTS

<table>
<thead>
<tr>
<th>Permit No. and Permittee</th>
<th>Date</th>
<th>Description &amp; Location on Bridge</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>2&quot; O.D. water pipe attached to outside of right truss.</td>
</tr>
</tbody>
</table>