DEPARTMENT OF TRANSPORTATION
Structure Maintenance & Investigations

Bridge Number : 24C0306
Facility Carried: ALTA MESA ROAD
Location : 0.4 MI N OF SR 104
City
Inspection Date : 02/16/2010
Inspection Type
Routine [X] FC [ ] Underwater [ ] Special [ ] Other [ ]

Bridge Inspection Report

STRUCTURE NAME: LAGUNA CREEK

CONSTRUCTION INFORMATION

Year Built : 1940
Year Widened: N/A
Length (m) : 93.3
Skew (degrees): 0
No. of Joints : 0
No. of Hinges : 0

Structure Description: PCC deck, on timber stringer spans, and timber cap-and-post bents, with timber bulkhead abutments

Span Configuration : 16 @ 5.8m

LOAD CAPACITY AND RATINGS

Design Live Load: UNKNOWN
Inventory Rating: 19.9 metric tonnes Calculation Method: ALLOWABLE STRESS
Operating Rating: 29.9 metric tonnes Calculation Method: ALLOWABLE STRESS
Permit Rating : GGGGG
Posting Load : Type 3: Legal Type 3S2: Legal Type 3-3: Legal

DESCRIPTION ON STRUCTURE

Deck X-Section: 0.1m r - 0.2m cu - 6.3m - 0.2m cu - 0.1m r
Total Width: 6.7 m Net Width: 6.3 m No. of Lanes: 2
Rail Description: Timber Rail Rail Code : 0000
Min. Vertical Clearance: Unimpaired

DESCRIPTION UNDER STRUCTURE

Channel Description: U-shaped pilot stream in flat watercourse; earth lined; low flow

CONDITION TEXT

INSPECTION ACCESS
1. The day of this inspection, water was flowing under Spans 3 and 13 with the deepest area approximately 4' at the deepest part of the channel.
2. The depth of AC overlay on the bridge deck was 2.4 inches at the time of this inspection. The condition of the top side of the concrete deck could not be inspected due to the AC overlay.

CONDITION OF STRUCTURE
DECK AND RAIL:
1. The third rail post on the left side from Abutment 1 is broken. See photo 1.
2. The paint system on the timber rail has peeled off and failed. See photo 1.
3. There was no identification for this structure.

SUPERSTRUCTURE/SUBSTRUCTURE:
The following conditions existed prior to this investigation and are updated with this report:
1. The Abutment 1 timber lagging is heavily rotted and failing along the front plank line. Four of the timber lagging boards are completely rotted. The ends of the left wing wall boards are completely rotted through for a length of approximately 3". See photo 2.
2. Bent cap 2 has a horizontal split about 2" deep full length. See photo 4.
3. In span 2, right side, the exterior girder has a decay zone running along a horizontal split. The split is approximately 2/3 of the way down from the top of the girder. The affected area is approximately 2" high and 4" deep into the thickness of the girder. See

CONDITION TEXT

photo 5.
4. In span 4 right side, the exterior girder has a decay zone running along a horizontal split. The split is approximately 1/2 of the way down from the top of the girder. The affected area is approximately 1" high and 2" deep into the thickness of the girder. Since this is the exterior girder, it only carries dead load. See photo 6.
5. There is a horizontal split in the right side of Bent cap 6 about 3" deep and 12' long. See photo 7.
6. In Span 6, right side, the exterior girder has a decay zone running along a horizontal split. The affected area is approximately 1.5" high and 3" deep into the thickness of the girder. See photo 8.
7. In Span 14, the left exterior girder has a horizontal decay zone at mid height of the girder. The affected area is up to 2' high and 4" deep. See photo 9. Also, on the left face of Girder 3, there is an area of white fungal growth approximately 9" long x 3" high. This area is decayed approximately 1/4" into the face of the girder. The white fungus continues along a horizontal crack for a total length of approximately 3'. See photo 12.
8. At Pier 15, the right end of the bent cap has a section of wood split out at the bottom corner of the cap from the end back to the pile. The voided area averages 3" wide and 3" high. See photo 10. Also, there is a horizontal split in the bent cap about 2" deep full length. See photo 11.

SAFE LOAD CAPACITY
- The load rating for this bridge is currently under review. When that review is completed, a report will be written to document any changes and a load rating summary sheet will be created.

ELEMENT INSPECTION RATINGS

Elem No.	Element Description	Env	Total Qty	Units	Qty in each Condition State St. 1	St. 2	St. 3	St. 4	St. 5
13	Concrete Deck - Unprotected w/ AC Overlay	2	590	sq.m.	590	0	0	0	0
111	Timber Open Girder/Beam	2	1400	m.	1376	0	0	24	
206	Timber Column or Pile Extension	2	30	ea.	30	0	0	0	0
216	Timber Abutment	2	17	m.	0	8	0	9	0
235	Timber Cap	2	126	m.	125	1	0	0	
332	Timber Bridge Railing	2	211	m.	0	210	1		

WORK RECOMMENDATIONS

RecDate: 11/01/2006 Action : Work By: LOCAL AGENCY Status : PROPOSED	EstCost: StrTarget: DistTarget: EA:	Replace the rotted exterior girders.
RecDate: 11/01/2006 Action : Work By: LOCAL AGENCY Status : PROPOSED	EstCost: StrTarget: DistTarget: EA:	Replace the broken timber rail post.
RecDate: 11/01/2006 Action : Work By: LOCAL AGENCY Status : PROPOSED	EstCost: StrTarget: DistTarget: EA:	Replace the rotted timber lagging at abutment 1

WORK RECOMMENDATIONS

RecDate: 07/20/2004
Action : Paint-Full prep/Pain
Work By: LOCAL AGENCY
Status : PROPOSED

EstCost:
StrTarget: 2 YEARS
DistTarget:
EA:

Repaint the bridge railing.

RecDate: 02/26/2002
Action : Undefined Work
Work By: LOCAL AGENCY
Status : PROPOSED

EstCost:
StrTarget: 2 YEARS
DistTarget:
EA:

Monitor the timber lagging at abutment 1 for signs of further failure.

Inspected By : HX.Dang/AN.Dang

Andy N. Dang (Registered Civil Engineer)

REGISTERED PROFESSIONAL ENGINEER
Andy N. Dang
No. 63640
09/30/2012
CIVIL
STATE OF CALIFORNIA

STRUCTURE INVENTORY AND APPRAISAL REPORT

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

(1) STATE NAME- CALIFORNIA 069
(8) STRUCTURE NUMBER 24C0306
(5) INVENTORY ROUTE(ON/UNDER)- ON 140000000
(2) HIGHWAY AGENCY DISTRICT 03
(3) COUNTY CODE 067 (4) PLACE CODE 00000
(6) FEATURE INTERSECTED- LAGUNA CREEK
(7) FACILITY CARRIED- ALTA MESA ROAD
(9) LOCATION- 0.4 MI N OF SR 104
(11) MILEPOINT/KILOMETERPOINT 0
(12) BASE HIGHWAY NETWORK- PART OF NET 1
(13) LRS INVENTORY ROUTE & SUBROUTE 000000000000
(16) LATITUDE 38 DEG 18 MIN 32 SEC
(17) LONGITUDE 121 DEG 13 MIN 33 SEC
(98) BORDER BRIDGE STATE CODE % SHARE %
(99) BORDER BRIDGE STRUCTURE NUMBER

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

(43) STRUCTURE TYPE MAIN:MATERIAL- WOOD OR TIMBER
TYPE- STRINGER/MULTI-BEAM OR GDR CODE 702
(44) STRUCTURE TYPE APPR:MATERIAL- OTHER/NA
TYPE- OTHER/NA CODE 000
(45) NUMBER OF SPANS IN MAIN UNIT 16
(46) NUMBER OF APPROACH SPANS 0
(107) DECK STRUCTURE TYPE- CIP CONCRETE CODE 1
(108) WEARING SURFACE / PROTECTIVE SYSTEM:
A) TYPE OF WEARING SURFACE- BITUMINOUS CODE 6
B) TYPE OF MEMBRANE- NONE CODE 0
C) TYPE OF DECK PROTECTION- NONE CODE 0

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

(27) YEAR BUILT 1940
(106) YEAR RECONSTRUCTED 0000
(42) TYPE OF SERVICE: ON- HIGHWAY 1
UNDER- WATERWAY 5
(28) LANES:ON STRUCTURE 02 UNDER STRUCTURE 00
(29) AVERAGE DAILY TRAFFIC 1500
(30) YEAR OF ADT 2006 (109) TRUCK ADT 10 %
(19) BYPASS, DETOUR LENGTH 18 KM

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

(48) LENGTH OF MAXIMUM SPAN 5.8 M
(49) STRUCTURE LENGTH 93.3 M
(50) CURB OR SIDEWALK: LEFT 0.0 M RIGHT 0.0 M
(51) BRIDGE ROADWAY WIDTH CURB TO CURB 6.3 M
(52) DECK WIDTH OUT TO OUT 6.7 M
(32) APPROACH ROADWAY WIDTH (W/SHOULDERS) 5.4 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 6.3 M
(53) MIN VERT CLEAR OVER BRIDGE RDWY 99.99 M
(54) MIN VERT UNDERCLEAR REF- NOT H/RR 0.00 M
(55) MIN LAT UNDERCLEAR RT REF- NOT H/RR 0.0 M
(56) MIN LAT UNDERCLEAR LT 0.0 M

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

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

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SUFFICIENCY RATING = 35.2
STATUS STRUCTURALLY DEFICIENT
HEALTH INDEX 95.2
PAINT CONDITION INDEX = N/A

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

(112) NBIS BRIDGE LENGTH- YES Y
(104) HIGHWAY SYSTEM- NOT ON NHS 0
(26) FUNCTIONAL CLASS- MINOR ARTERIAL RURAL 06
(100) DEFENSE HIGHWAY- NOT STRAHNET 0
(101) PARALLEL STRUCTURE- NONE EXISTS N
(102) DIRECTION OF TRAFFIC- 2 WAY 2
(103) TEMPORARY STRUCTURE-
(105) FED.LANDS HWY- NOT APPLICABLE 0
(110) DESIGNATED NATIONAL NETWORK - NOT ON NET 0
(20) TOLL- ON FREE ROAD 3
(21) MAINTAIN- COUNTY HIGHWAY AGENCY 02
(22) OWNER- COUNTY HIGHWAY AGENCY 02
(37) HISTORICAL SIGNIFICANCE- NOT ELIGIBLE 5

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

(58) DECK 7
(59) SUPERSTRUCTURE 4
(60) SUBSTRUCTURE 6
(61) CHANNEL & CHANNEL PROTECTION 6
(62) CULVERTS N

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

(31) DESIGN LOAD- UNKNOWN 0
(63) OPERATING RATING METHOD- ALLOWABLE STRESS 2
(64) OPERATING RATING- 29.9
(65) INVENTORY RATING METHOD- ALLOWABLE STRESS 2
(66) INVENTORY RATING- 19.9
(70) BRIDGE POSTING- EQUAL TO OR ABOVE LEGAL LOADS 5
(41) STRUCTURE OPEN, POSTED OR CLOSED- A
DESCRIPTION- OPEN, NO RESTRICTION

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

(67) STRUCTURAL EVALUATION 4
(68) DECK GEOMETRY 2
(69) UNDERCLEARANCES, VERTICAL & HORIZONTAL N
(71) WATER ADEQUACY 9
(72) APPROACH ROADWAY ALIGNMENT 8
(36) TRAFFIC SAFETY FEATURES 0000
(113) SCOUR CRITICAL BRIDGES U

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

(75) TYPE OF WORK- REPLACE FOR DEFICIENC CODE 31
(76) LENGTH OF STRUCTURE IMPROVEMENT 93.3 M
(94) BRIDGE IMPROVEMENT COST $1,357,000
(95) ROADWAY IMPROVEMENT COST $271,400
(96) TOTAL PROJECT COST $2,279,760
(97) YEAR OF IMPROVEMENT COST ESTIMATE 2010
(114) FUTURE ADT 2567
(115) YEAR OF FUTURE ADT 2028

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

(90) INSPECTION DATE 02/10 (91) FREQUENCY 24 MO
92) CRITICAL FEATURE INSPECTION 93 CFI DATE
A FRACTURE CRIT DETAIL- NO MO A
B UNDERWATER INSP- NO MO B
C OTHER SPECIAL INSP- NO MO C

LAGUNA CREEK

0.4 MI N OF SR 104 | 02/18/2010 [AAAB] | 24C0306

119 - PHOTO-RAIL DAMAGE/DETERIORATION

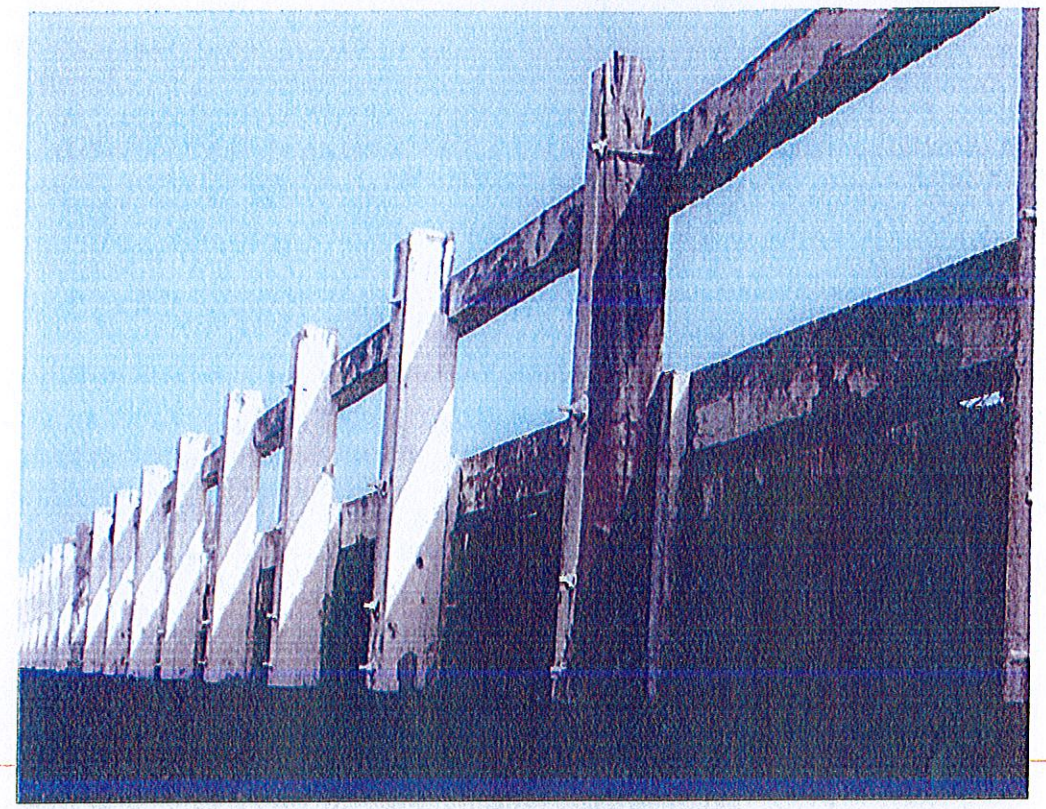

Photo No. 1

The third rail post on the left side from Abutment 1 broken.

113 - PHOTO-SUB DAMAGE/DETERIORATION

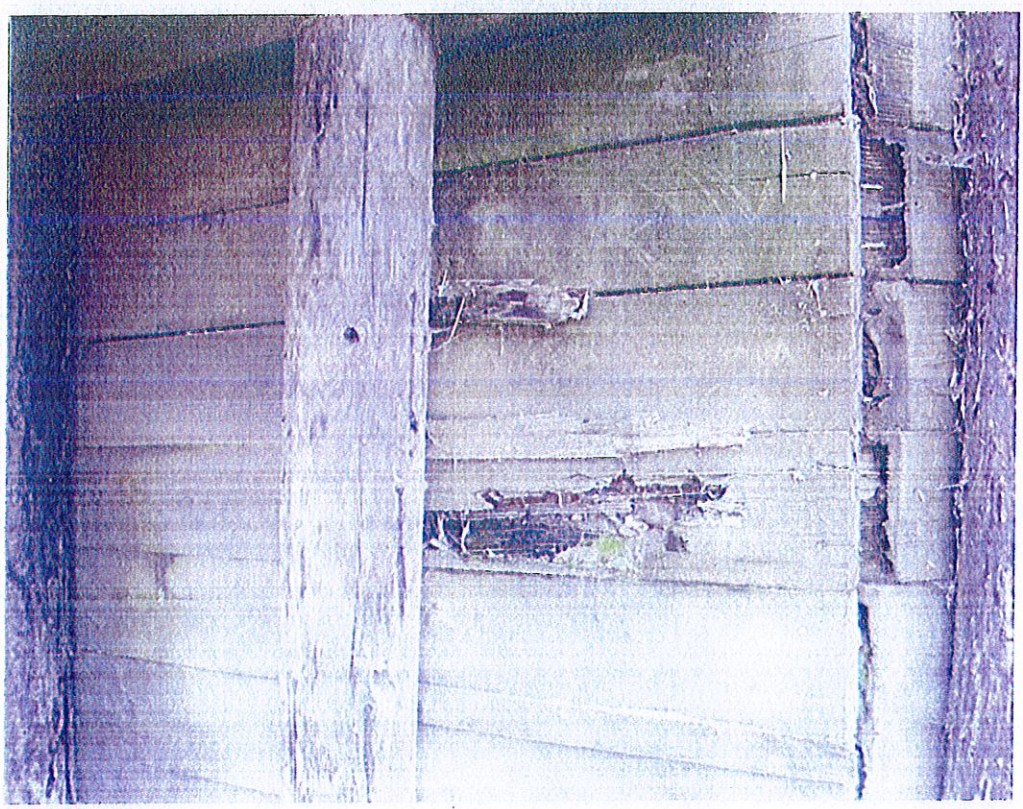

Photo No. 2

Abutment 1 timber lagging is rotted.

114 - PHOTO-SUB DETAILS

Photo No. 3

Abutment 17.

113 - PHOTO-SUB DAMAGE/DETERIORATION

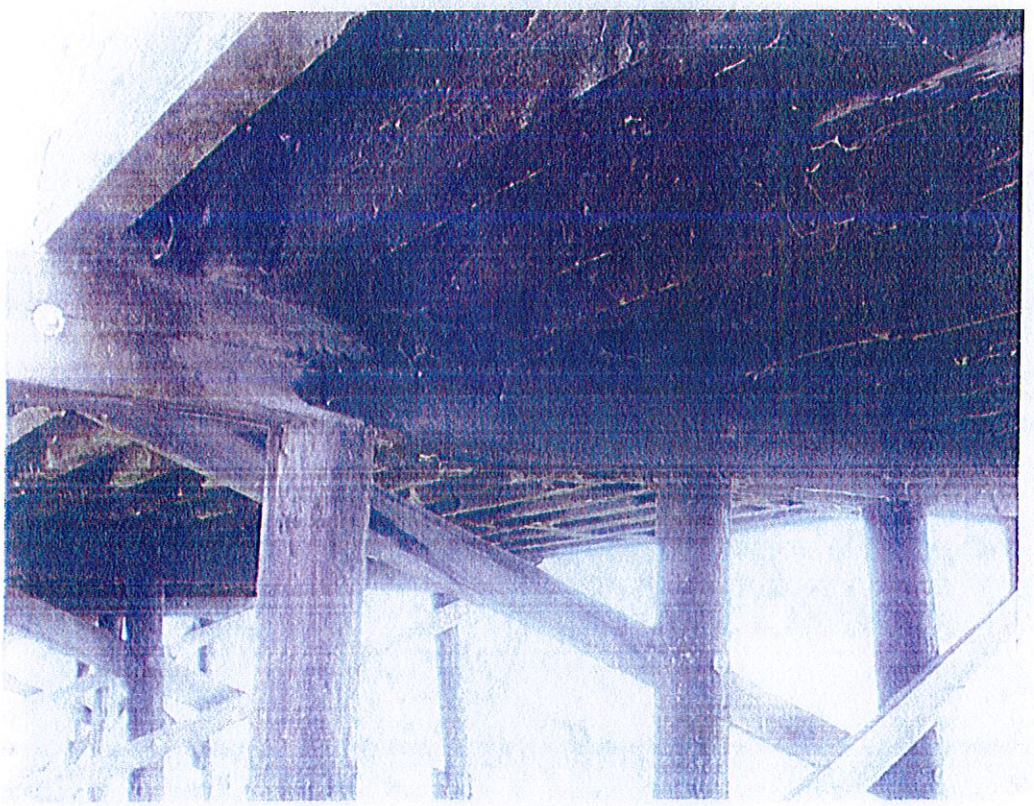

Photo No. 4

Bent cap 2 split.

107 - PHOTO-SUPER DAMAGE/DETERIORATION

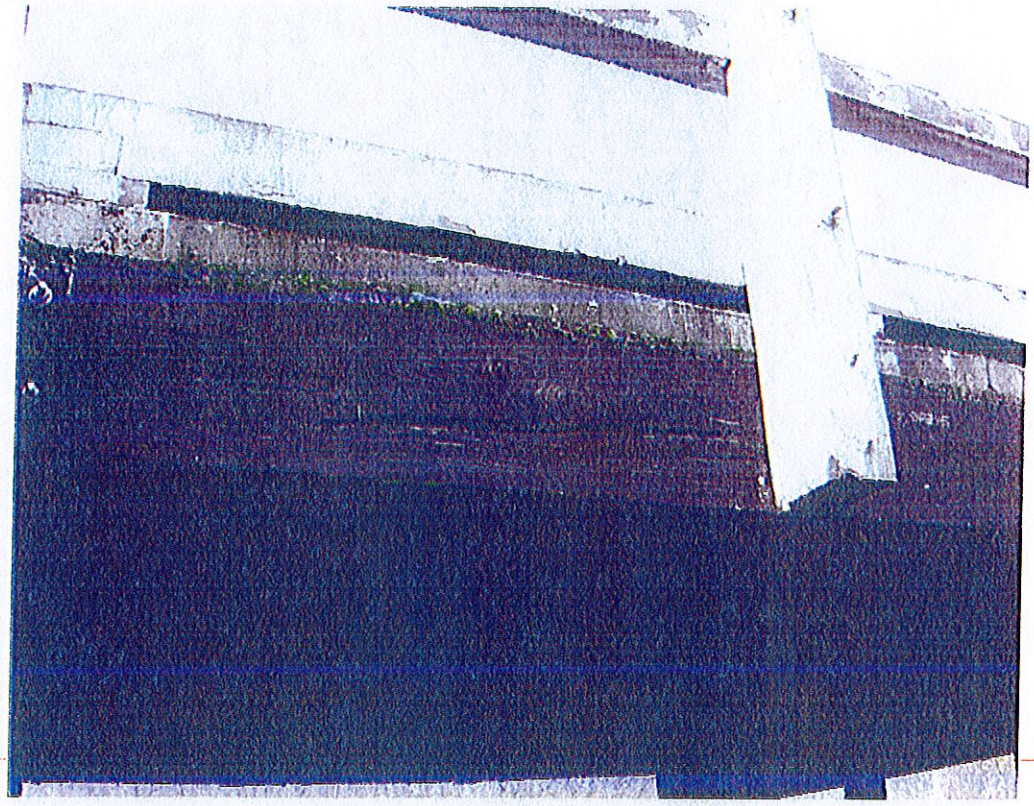

Photo No. 5

Exterior girder split on the right side at Span 2.

107 - PHOTO-SUPER DAMAGE/DETERIORATION

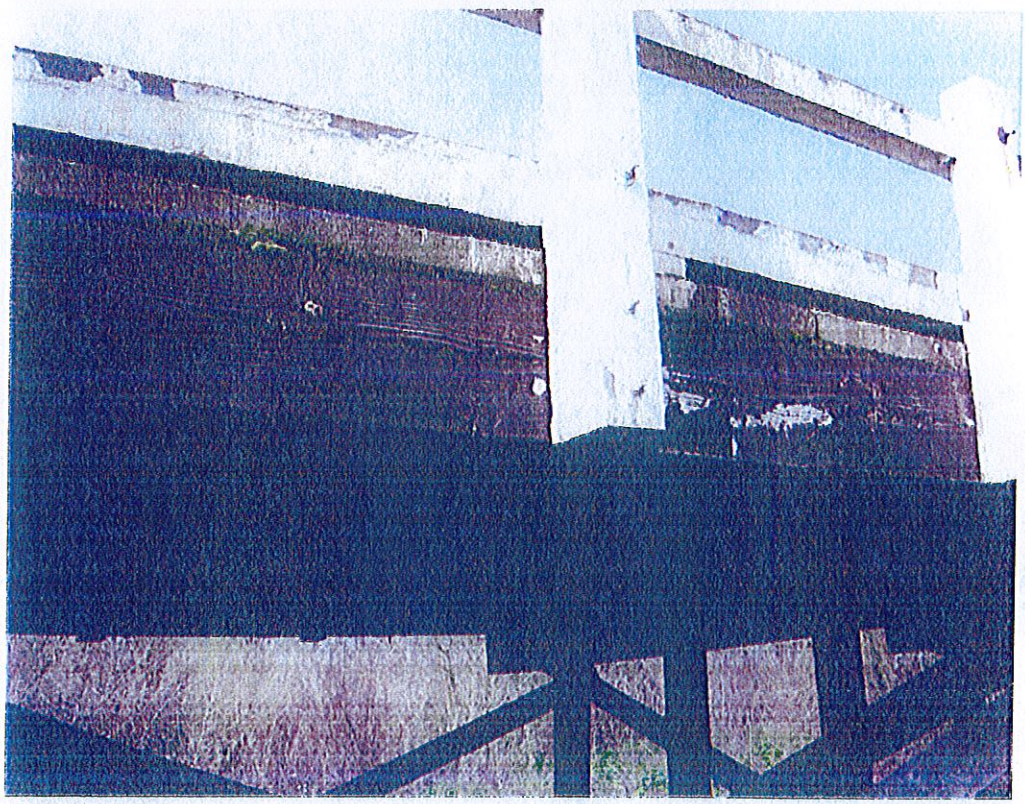

Photo No. 6

Exterior girder split on the right side at Span 4.

113 - PHOTO-SUB DAMAGE/DETERIORATION

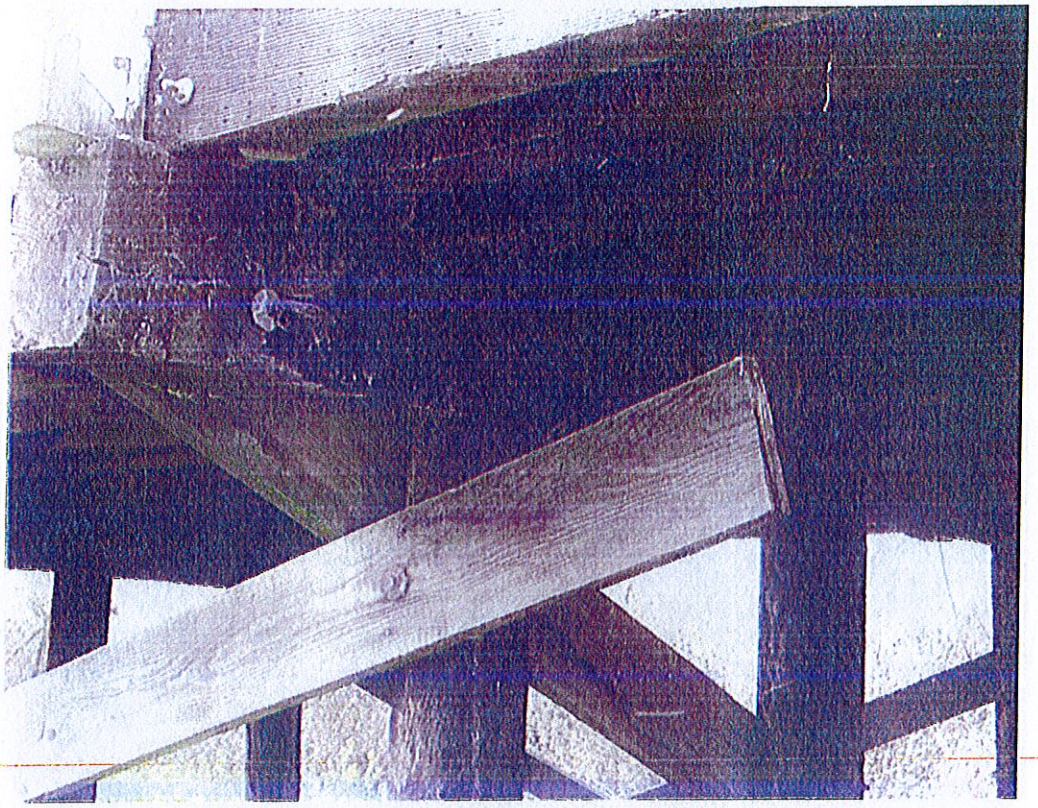

Photo No. 7

Bent cap 5 horizontal split.

107 - PHOTO-SUPER DAMAGE/DETERIORATION

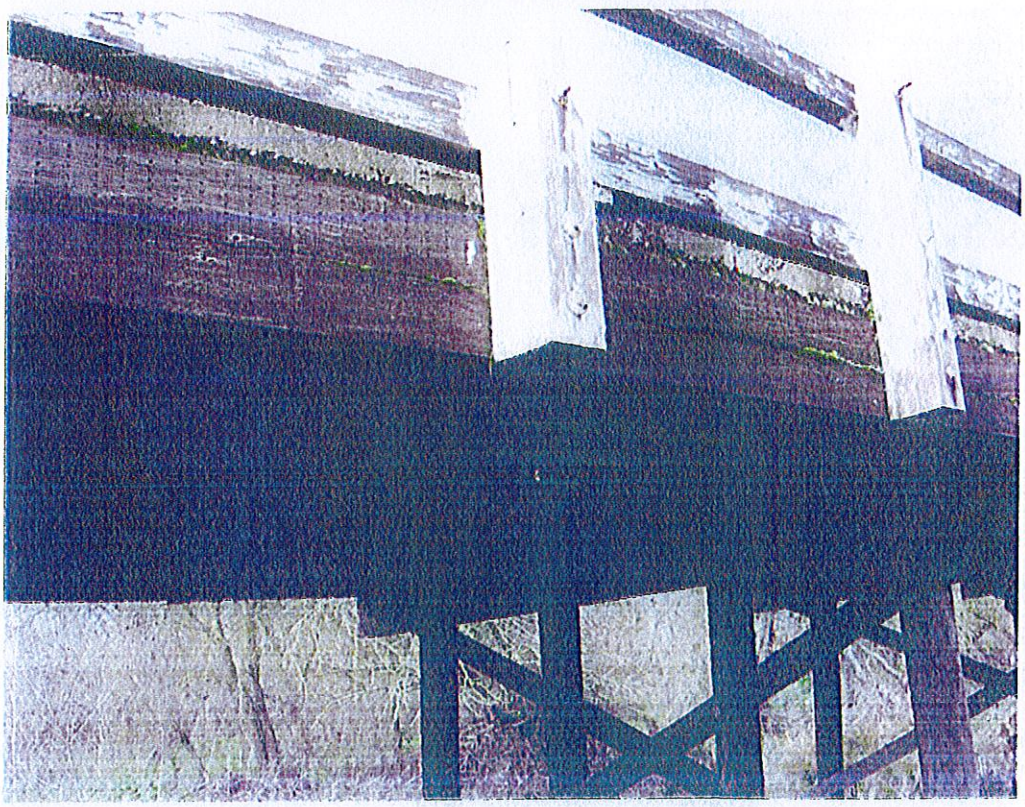

Photo No. 8

Exterior girder split on the right side at Span 6.

107 - PHOTO-SUPER DAMAGE/DETERIORATION

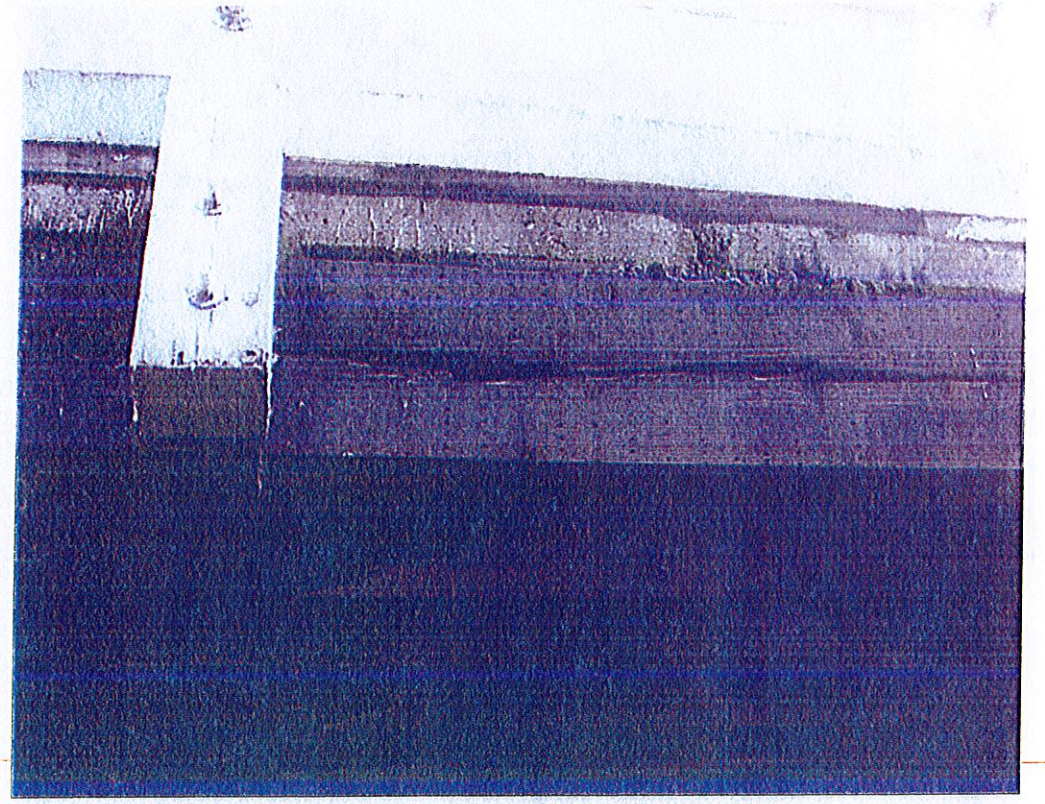

Photo No. 9

Left exterior girder in Span 14 horizontal decay zone.

113 - PHOTO-SUB DAMAGE/DETERIORATION

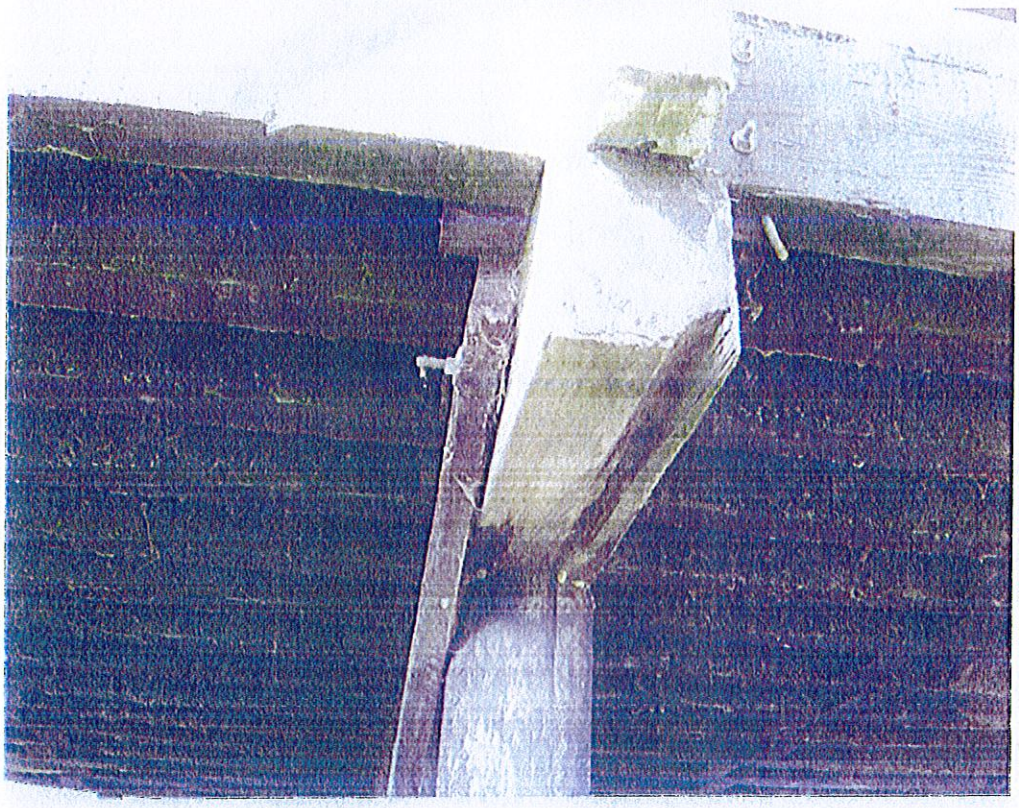

Photo No. 10

Bent cap 15 split.

113 - PHOTO-SUB DAMAGE/DETERIORATION

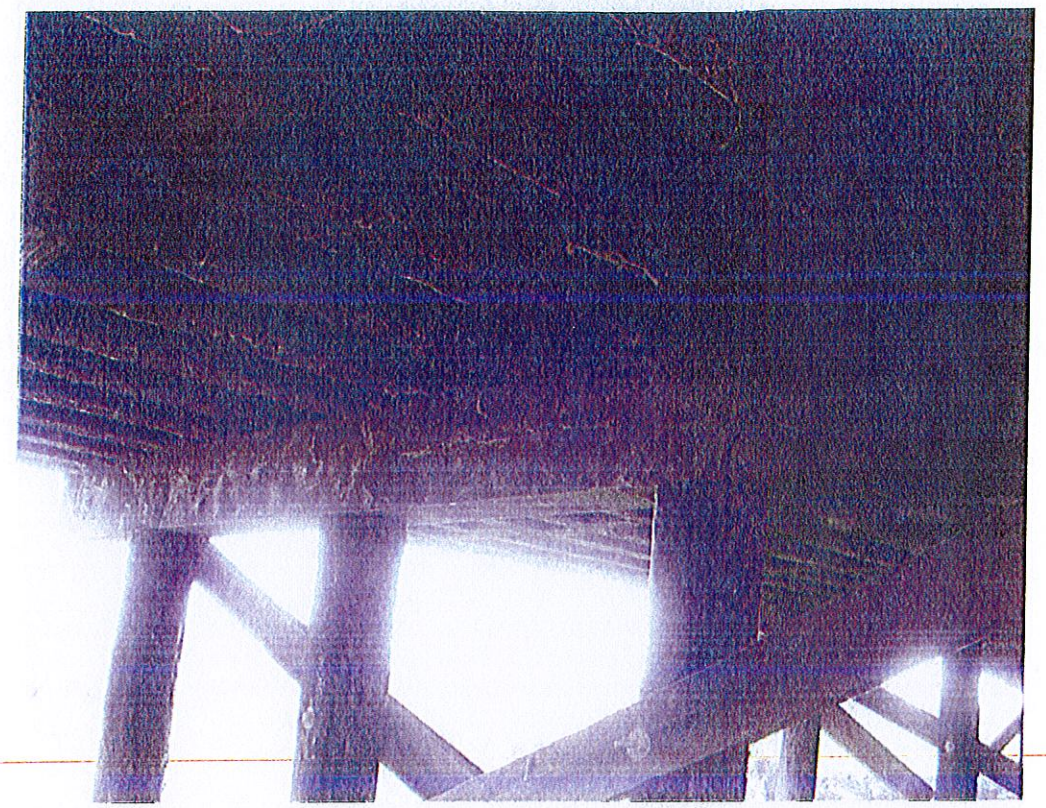

Photo No. 11

Split in Bent cap 15.

107 - PHOTO-SUPER DAMAGE/DETERIORATION

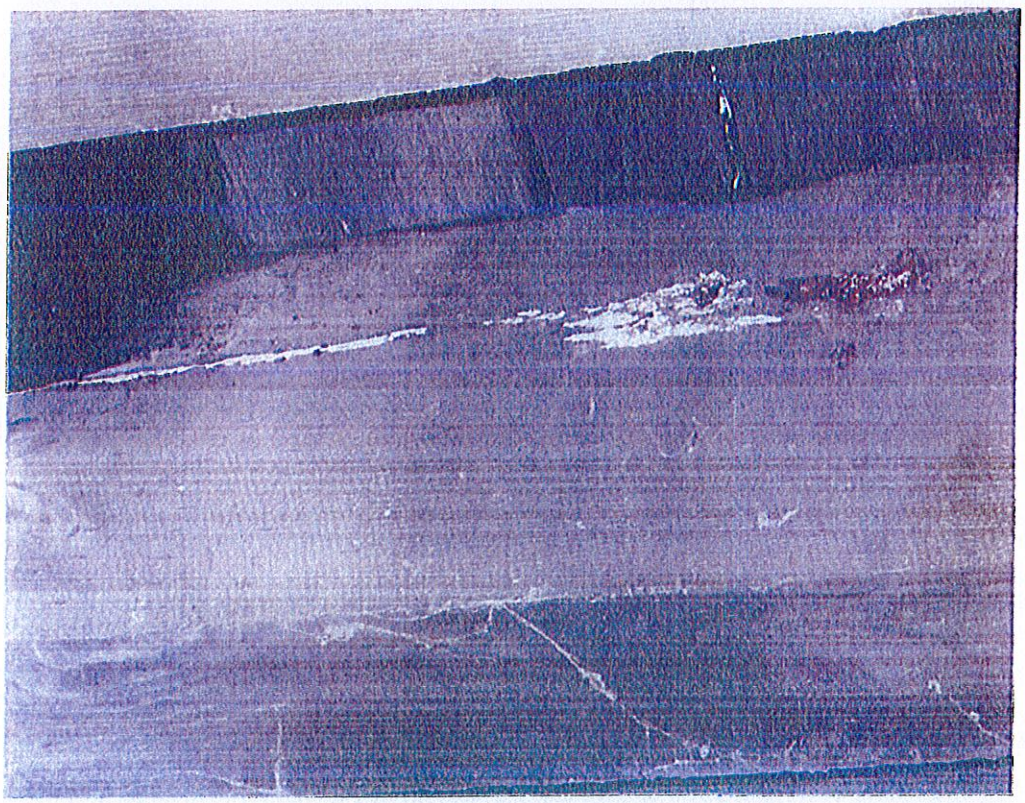

Photo No. 12

Girder 3 decay at Span 14.