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# Bridge Inspection Records Information System

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State of California  
Department of Transportation

**Division of Maintenance  
Structures Maintenance & Investigations**



**DEPARTMENT OF TRANSPORTATION**  
Structure Maintenance & Investigations

Bridge Number : 55C0122  
Facility Carried: BREA BLVD  
Location : 0.6 MI N CENTRAL AVE  
City :  
Inspection Date : 05-JUN-01

**Bridge Inspection Report**

Inspection Type

Routine ☒ Group A ☐ Underwater ☐ Special ☐ Other ☐

**Name : BREA CANYON CHANNEL**

CONSTRUCTION INFORMATION

Year Built : 1930  
Year Widened : N/A  
Length (m) : 18.9

Skew (degrees): 45  
No. of Joints : 0  
No. of Hinges : 0

Description of Structure : Simply supported 2-span CIP/RC T-beam (5 each) with an RC pier wall and with RC open end diaphragm abutments, all supported upon concrete piles.

Span Configuration : (W) 2 @ 9.1 m (E) c/c

LOAD CAPACITY AND RATINGS

Design Live Load : M - 13.5 OR H - 15

Inventory Rating : 25.4 metric tons

Operating Rating : 41.7 metric tons

Permit Rating : P P P P P

Posting Load : Type 3 N/A english tons

Calculation Method : LOAD FACTOR

Calculation Method : LOAD FACTOR

Type 3S2 N/A english tons Type 3-3 N/A english tons

DESCRIPTION ON STRUCTURE

Bridge width : (S) 0.3 m br, 0.2 m cu, 2 @ 4.6 m, 0.2 m cu, 0.3 m br (N)

Total Width : 10.1 m

Net Width : 9.10 m

Rail Description : Concrete Baluster

Min. Vertical Clearance : Unimpaired

No. of Lanes : 2

Rail Code : 0000

DESCRIPTION UNDER STRUCTURE

Channel Description : Natural earth trapezoidal, RC rectangular through the site.

REVISIONS

The abutments and the pier have been retrofitted seismically. The columns have been replaced with a pier wall.

CONDITION OF STRUCTURE

There is a large crack, 6 mm +/-, on the south end of east abutment, adjacent to a previously repaired crack, and at the north side of the west abutment. (O)

Retaining wall in front of west abutment has a crack, running the entire height of the wall. (O)

The concrete baluster railings have various cracks and spalls. (O)

Otherwise, the structure is in good condition.

MISCELLANEOUS

Pedestrian access beneath the structure is from the easterly quadrants.

ELEMENT LEVEL INSPECTION RATINGS									
F#	Element Description	Env	Total Units Quantity	Qty in each Condition State					
No.				St. 1	St. 2	St. 3	St. 4	St. 5	
01 13	Concrete Deck - Unprotected w/ AC Overlay	2	170 sq.m.	170	0	0	0	0	0
01 110	Reinforced Conc Open Girder/Beam	2	95 m.	95	0	0	0	0	0

Printed on : 08-JUN-2001 10:24:02 AM

Bridge No.: 55C0122

Location: 0.6 MI N CENTRAL AVE

Inspection Date: 05-JUN-01

F#	Element Description No.	Env	Total Units Quantity	Qty in each Condition State				
				St. 1	St. 2	St. 3	St. 4	St. 5
01 210	Reinforced Conc Pier Wall	2	14 m.	14	0	0	0	
01 215	Reinforced Conc Abutment	2	28 m.	24	4	0	0	0
01 227	Reinforced Conc Submerged Pile	2	1 ea.	1	0	0	0	
01 256	Slope Protection	2	2 ea.	2	0	0	0	0
01 339	Concrete Railing (aesthetic/masonry)	2	58 m.	58	0	0	0	0

WORK RECOMMENDATIONS - NONE

Inspected By : M. Ogata

*M. Ogata*  
 Registered Civil Engineer



CC : TMRut  
 Orange County

Bridge No.: 55C0122

Location: 0.6 MI N CENTRAL AVE

Inspection Date: 05-JUN-01

## STRUCTURE INVENTORY AND APPRAISAL REPORT

## \*\*\*\*\* IDENTIFICATION \*\*\*\*\*

(1) STATE NAME - CALIFORNIA 069  
 (8) STRUCTURE NUMBER 55C0122  
 (5) INVENTORY ROUTE (ON/UNDER) - ON 1 40 0M003N  
 (2) HIGHWAY AGENCY DISTRICT 12  
 (3) COUNTY CODE 059 (4) PLACE CODE 00000  
 (6) FEATURE INTERSECTED - BREA CANYON CHANNEL  
 (7) FACILITY CARRIED - BREA BLVD  
 (9) LOCATION - 0.6 MI N CENTRAL AVE  
 (11) MILEPOINT/KILOMETERPOINT 0  
 (12) BASE HIGHWAY NETWORK - NOT ON NET 0  
 (13) LRS INVENTORY ROUTE & SUBROUTE  
 (16) LATITUDE 33 DEG 56 MIN 24 SEC  
 (17) LONGITUDE 117 DEG 53 MIN 24 SEC  
 (98) BORDER BRIDGE STATE CODE % SHARE %  
 (99) BORDER BRIDGE STRUCTURE NUMBER

## \*\*\*\*\* STRUCTURE TYPE AND MATERIAL \*\*\*\*\*

(43) STRUCTURE TYPE MAIN: MATERIAL - CONCRETE  
 TYPE - TEE BEAM CODE 1 04  
 (44) STRUCTURE TYPE APPR: MATERIAL -  
 TYPE - CODE  
 (45) NUMBER OF SPANS IN MAIN UNIT 2  
 (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 1930  
 (106) YEAR RECONSTRUCTED 0000  
 (42) TYPE OF SERVICE: ON - HIGHWAY 1  
 UNDER - WATERWAY 5  
 (28) LANES: ON STRUCTURE 02 UNDER STRUCTURE  
 (29) AVERAGE DAILY TRAFFIC 15000  
 (30) YEAR OF ADT 1999 (109) TRUCK ADT 1%  
 (19) BYPASS, DETOUR LENGTH 2 KM

## \*\*\*\*\* GEOMETRIC DATA \*\*\*\*\*

(48) LENGTH OF MAXIMUM SPAN 9.1 M  
 (49) STRUCTURE LENGTH 18.9 M  
 (50) CURB OR SIDEWALK: LEFT .2 M RIGHT .2 M  
 (51) BRIDGE ROADWAY WIDTH CURB TO CURB 9.1 M  
 (52) DECK WIDTH OUT TO OUT 10.1 M  
 (32) APPROACH ROADWAY WIDTH (W/SHOULDERS) 9.1 M  
 (33) BRIDGE MEDIAN - CLOSED (NO BARRIER) 2  
 (34) SKEW 45 DEG (35) STRUCTURE FLARED NO  
 (10) INVENTORY ROUTE MIN VERT CLEAR 99.99 M  
 (47) INVENTORY ROUTE TOTAL HORIZ CLEAR 9.1 M  
 (53) MIN VERT CLEAR OVER BRIDGE RDWY 99.99 M  
 (54) MIN VERT UNDERCLEAR REF - NOT H/RR 0 M  
 (55) MIN LAT UNDERCLEAR RT REF - NOT H/RR 0 M  
 (56) MIN LAT UNDERCLEAR LT 0 M

## \*\*\*\*\* NAVIGATION DATA \*\*\*\*\*

(38) NAVIGATION CONTROL - NOT APPLICABLE CODE N  
 (111) PIER PROTECTION - NOT REQUIRED CODE 1  
 (39) NAVIGATION VERTICAL CLEARANCE 0 M  
 (116) VERT-LIFT BRIDGE NAV MIN VERT CLEAR 0 M  
 (40) NAVIGATION HORIZONTAL CLEARANCE 0

## \*\*\*\*\* SUFFICIENCY RATING = 70.0 \*\*\*\*\*

STATUS = FUNCTIONALLY OBSOLETE

HEALTH INDEX = 98.62

## \*\*\*\*\* CLASSIFICATION \*\*\*\*\* CODE

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

## \*\*\*\*\* CONDITION \*\*\*\*\* CODE

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

## \*\*\*\*\* LOAD RATING AND POSTING \*\*\*\*\* CODE

(31) DESIGN LOAD - M - 13.5 OR H - 15 2  
 (63) OPERATING RATING METHOD - LOAD FACTOR 1  
 (64) OPERATING RATING - 41.7  
 (65) INVENTORY RATING METHOD - LOAD FACTOR 1  
 (66) INVENTORY RATING - 25.4  
 (70) BRIDGE POSTING - Equal to or above legal loads 5  
 (41) STRUCTURE OPEN, POSTED OR CLOSED - A  
 DESCRIPTION - OPEN, NO RESTRICTION

## \*\*\*\*\* APPRAISAL \*\*\*\*\* CODE

(67) STRUCTURAL EVALUATION 6  
 (68) DECK GEOMETRY 3  
 (69) UNDERCLEARANCES, VERTICAL & HORIZONTAL N  
 (71) WATER ADEQUACY 9  
 (72) APPROACH ROADWAY ALIGNMENT 8  
 (36) TRAFFIC SAFETY FEATURES 0000  
 (113) SCOUR CRITICAL BRIDGES 8

## \*\*\*\*\* PROPOSED IMPROVEMENTS \*\*\*\*\*

(75) TYPE OF WORK - MISC STRUCTURAL WORK CODE 38  
 (76) LENGTH OF STRUCTURE IMPROVEMENT 18.9 M  
 (94) BRIDGE IMPROVEMENT COST \$229,000  
 (95) ROADWAY IMPROVEMENT COST \$23,000  
 (96) TOTAL PROJECT COST \$344,000  
 (97) YEAR OF IMPROVEMENT COST ESTIMATE 1999  
 (114) FUTURE ADT 30000  
 (115) YEAR OF FUTURE ADT 2019

## \*\*\*\*\* INSPECTIONS \*\*\*\*\*

(90) INSPECTION DATE 06/01 (91) FREQUENCY 24 MO  
 (92) CRITICAL FEATURE INSPECTION: (93) CFI DATE  
 A) FRACTURE CRIT DETAIL - NO -1 MO A)  
 B) UNDERWATER INSP - NO -1 MO B)  
 C) OTHER SPECIAL INSP - NO -1 MO C)

**SUPPLEMENTARY BRIDGE REPORT**

DS-M19 (REV. 2/93)

Bridge Number 55C-122

Location 12 - Ora - FAS M003-CR  
Dist.-Co.-Rte.-City

Date of Investigation September 10, 1997

**TYPE OF INVESTIGATION/REPORT**

BIENNIAL	<u>X</u>	DAMAGE	___
CATEGORY A	___	OTHER	___
UNDERWATER	___	OFFICE	___

Name BREA CANYON CHANNEL (Brea Boulevard, 0.6 mile north of Central Avenue)

**CONDITION RATINGS:**

Element Level Inspection (ELI) form attached.

Channel & Channel Protection

8

SCOUR CRITICAL:

A scour rating of A-3 is appropriate.

MISCELLANEOUS DISCUSSION:

The inspection team consisted of Makoto Ogata and Faye Kirchhoff.

The structure is scheduled to be retrofitted seismically in 1999.

CONDITION OF STRUCTURE:

Less than 2% of the deck AC overlay has been repaired. (O)

There are numerous cracks on concrete bridge railing due to age of structure. (O)

There is a large crack, 6 mm ±, on the south end of east abutment, adjacent to a previously repaired crack, and at the north side of the west abutment. (O)

Retaining wall in front of west abutment has a crack, running the entire height of the wall. (O)

Otherwise, the condition of the structure is good.

WORK RECOMMENDED:

Rescind the previously recommended repair of the cracks in the abutments.

7-14-95

*M. Ogata*

M. Ogata



MO:cd

c: TMRut  
Orange County

INFORMATION ONLY - NOT FOR UPDATE

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

DISTRICT	12
COUNTY	ORA
ROUTE	
POSTMILE	
NAME	

08/11/97

55C SHAWN ZANGANEH

BY:

me

Bridge Number 55C-122

Location 12 - Ora - FAS M003-CR  
Dist.-Co.-Rte.-City

Date of Investigation July 14, 1995

**TYPE OF INVESTIGATION/REPORT**

BIENNIAL	<u>X</u>	DAMAGE	___
CATEGORY A	___	OTHER	___
UNDERWATER	___	OFFICE	___

Name BREA CANYON CHANNEL (Brea Boulevard, 0.6 mile north of Central Avenue)

**CONDITION RATINGS:**

Condition ratings of all bridge elements are shown on the PONTIS DATA FORM (Attachment A).

Channel & Channel Protection

8

SCOUR CRITICAL:

A scour rating of A-3 is appropriate.

CONDITION OF STRUCTURE:

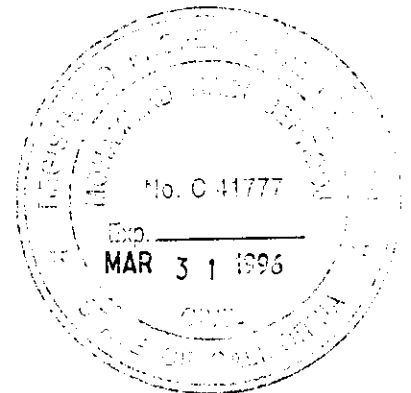
- A. There are numerous cracks on concrete bridge railing due to age of structure.
- B. There is a large crack, 6 mm  $\pm$ , on the south end of east abutment, adjacent to a previously repaired crack.
- C. Retaining wall in front of west abutment has a crack, running the entire height of the wall.

WORK RECOMMENDED:

Repair crack for locations "B" and "C".

By M. Hadi Behrooj *MM/17*  
G. P. Balinghasay

GPB:cd  
cc: CDHarris  
Orange County  
WLindsey



INFORMATION ONLY - NOT FOR UPDATE

BRIDGE NUMBER      FRAME      INSPECTION DATE

5 5 C 0 1 2 2      0 1      0 7 1 4 9 5

1      8      9      11      16

SCOUR CRITICAL	NO
CATEGORY A	NO
FRACTURE CRITICAL	NO
ELIGIBLE FOR RAIL UPGRADE	NO
UNDERWATER INSPECTION	NO

DISTRICT 12  
COUNTY ORA  
ROUTE  
POSTMILE  
NAME

[illegible]

BY: \_\_\_\_\_



Bridge Number 55C-122

TYPE OF INVESTIGATION/REPORT

BIENNIAL	<u>X</u>	DAMAGE	___
CATEGORY A	___	OTHER	___
UNDERWATER	___	OFFICE	___

Location 12 - Ora - FAS M003-CR  
Dist.-Co.-Rte.-City

Date of Investigation April 16, 1993

Name BREA CANYON CHANNEL (Brea Boulevard, 0.6 mile north of Central Avenue)

CONDITION RATINGS:

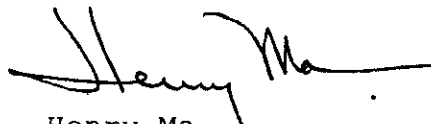
Condition ratings of all bridge elements are shown on the PONTIS DATA FORM (Attachment A).

Channel & Channel Protection

8

CONDITION OF STRUCTURE:

Condition of the structure is good.

  
Henry Ma

HM:cd  
cc: INagai (2)  
County of Orange



(ATTACHMENT A)

INFORMATION ONLY - NOT FOR UPDATE

SCOUR CRITICAL	NO
CATEGORY A	NO
FRACTURE CRITICAL	NO
ELIGIBLE FOR RAIL UPGRADE	NO
UNDERWATER INSPECTION	NO

DISTRICT	12
COUNTY	ORA
ROUTE	***
POSTMILE	*****
NAME	

H. MA

**BY:**

BRIDGE REPORT

DS-M58 (REV. 1/91)

14V32

Bridge No. 55C - 122

Location 12 - Ora - FAS M003-CR  
Dist Co Rte City

REVISED ORIGINAL REPORT

Date of Investigation April 12, 1991

Name BREA CANYON CHANNEL (Brea Boulevard, 0.6 mile north of  
Central Avenue)

Lat. 33° - 56.4'N Long. 117° - 53.4'W

Custodian County of Orange Owner County of Orange

STRUCTURAL DATA AND HISTORY

Year Built 1930 ± By County of Orange Contract No. Unknown

Designed by: County Plans Avail. @DOS

Description: 2 span simply supported CIP RC "T" beam (5 each) supported  
by RC pile bent and RC pile bent abutments.

Spans (W) 2 @ 30' (E)

Length 62' NBIS Bridge Length Yes Skew 45° Right

Number Of Intermediate Joints: @Hinges None @Bents 1

Maximum Column/Pier Height: (Less than 20') X (20'-29') (30' & Over)

Design Live Load H15 Design Method Unknown

DESCRIPTION - ON STRUCTURE

Bridge Width (S) 1'br, 0.8'cu, 30', 0.8'cu, 1'br (N)

Total Width 33' Net Width 30' Lanes 2 Tracks None

Median None Rail Type Concrete baluster 0000

Vert. Clearance over deck Unimpaired Appr. Rdwy. Width 28'

Deck Type 1 Wearing Surface/Prot. Sys. 600 AC/none

Alignment Tangent

DESCRIPTION - UNDER STRUCTURE

Roadway Section None

Clearances: Road: Vert. Horiz.Lt. ; Rt.

Lanes Tracks

Facilities Crossed Brea Canyon Channel (A 04)

April 12, 1991

## DESCRIPTION - HYDRAULICS

Natural canyon channel with heavy vegetation growth (RC  
Channel rectangular channel under bridge)

Navigable: Yes ☐ No ☒ Clearances: Vert. Horiz.

Pier/Abutment Protection (For Navigation) ☐

## TRAFFIC INFORMATION

	DECK	YEAR	UNDER	YEAR
Average Daily Traffic & Year :	16,000	1989	N	
Average Daily Traffic (Future) :	18,000 Est	2010	N	
Average Daily Trucks ( % OF ADT ) :	1% Est		N	
Bypass Detour Length	1 mile		N	
Shell Route:	No		No	
Functional Classification :	09		N	
LOAD RATINGS:	Inventory HS 16	Operating	HS 26	
	Permit PPPPP	Computation Method	Load Factor	

## CONDITION RATINGS:

Deck	7	Superstructure	7	Substructure	7
Channel & Channel Protection	8	Culvert	N	Widenable	No

## APPRAISAL RATINGS:

Waterway Adequacy	9	Approach Roadway Alignment	8
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Date of Revisions

## CONDITION OF STRUCTURE:

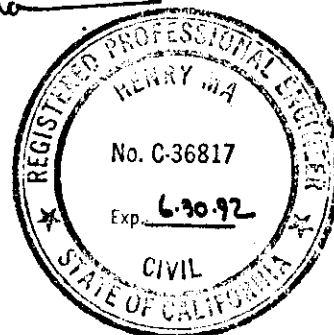
Due to advanced age of the structure, there are cracks and spalls in the concrete bridge rail and exterior.

Condition of the structure is good.

Henry Ma

HM:ms

cc: INagai (2)  
County of Orange



Bridge No. 55C-122  
Location 12-Ora - FAS M003 - CR  
Dist. Co. Rte. City  
Date of Investigation 4-17-89

Name BREA CANYON (Brea Boulevard, 0.9 mile west of Route 57)

**CONDITION RATING:**

Deck 6 Superstructure 6 Substr.&Pipes 6  
Channel & Channel Protection 8 Culvert N Widenable? No

**TYPE OF INVESTIGATION/REPORT**

BIENNIAL X DAMAGE \_\_\_\_\_  
CATEGORY A \_\_\_\_\_ OTHER \_\_\_\_\_  
UNDERWATER \_\_\_\_\_ OFFICE \_\_\_\_\_

**CONDITION OF STRUCTURE:**

As reported previously, due to advance age of this structure, there are numerous cracks and spalls in the concrete barrier railing.

Condition of the structure remains fair.

**REVISION:**

Location: 12-Ora-FAS M003-CR  
Condition Rating: Deck - 6  
ADT: 16,000 (1988)

**WORK RECOMMENDED:**

None.

**RECOMMENDED POSTING:**

None.

**SUBSTRUCTURE CODING UPDATE:**

2 RC pile bent abutments.

1 RC pile bent.

  
Henry Ma

HM:ms  
cc: INagai (2)  
County of Orange (2)



STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**SUPPLEMENTARY BRIDGE REPORT**  
DH-QS M19 (REV. 1/74)

Bridge No. 55C-122  
Location 7-Oran-FAS. M003-CR  
Dist - Co - Rte - PM - City  
Date of Investigation April 23, 1987

Name BREA CANYON (Brea Blvd., 0.9 mile west of Rte. 57))

**CONDITION RATING:**

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

**APPRAISAL RATING:**

Widenable? Yes ☐ No ☒ Conditional ☐

Action Required by County Yes ☐ No ☒

**PRIORITY**

A - Immediate Action  
B - Early Scheduling  
C - Routine Maint.  
O - For Record Only

**CONDITION OF STRUCTURE:**

Condition of the structure is fair.

**RECOMMENDED POSTING:**

None

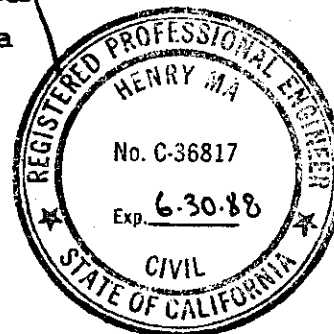
**WORK RECOMMENDED:**

None

HM:pht

cc: INagai (2)  
Orange County (2)

Henry Ma



STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
SUPPLEMENTARY BRIDGE REPORT  
DN-OS 119 (REV. 1/74)

Bridge No. 55C-122  
Location 7-Gra-FAS M003-CR  
Sta - Co - Hw - Rd - City (On Deck)  
Date of Investigation November 14, 1985

Name BREA CANYON (Brea Blvd. 0.9 mile W. of Rte. 57)

CONDITION RATING:

APPRAISAL RATING:

Deck N Superstructure 6 Substr. & Pipes 6 Overall 3  
Channel & Channel Protection 8 Retaining Walls N

Widenable? Yes ☐ No ☐ Conditional ☒

Action Required by County Yes ☐ No ☒

PRIORITY

A - Immediate Action  
B - Early Scheduling  
C - Routine Maint.  
O - For Record Only

WORK DONE:

Previously recommended work to clean debris is done.

CONDITION OF STRUCTURE:

The condition of the structure is fair.

RECOMMENDED POSTING:

None

WORK RECOMMENDED:

None

HM:pdh  
cc: INagai (2)  
Orange County (2)

Henry Ma  
C-36817

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
SUPPLEMENTARY BRIDGE REPORT  
DH-OS M19 (REV. 1/74)

14V32  
Bridge No. 55C-122  
Location 7-Ora-FAS M003-CR  
Dist - Co - Rte - PM - City (On Deck)  
Date of Investigation July 13, 1983

Name BREA CANYON (Brea Blvd., 0.9 mile W. of Rte. 57)

CONDITION RATING:

APPRAISAL RATING:

Deck N Superstructure 6 Substr. & Pipes 6 Overall 3  
Channel & Channel Protection 8 Retaining Walls N

Widenable? Yes ☐ No ☐ Conditional ☒

Action Required by District: Yes ☒ No ☐

PRIORITY

A - Immediate Action  
B - Early Scheduling  
C - Routine Maint.  
O - For Record Only

CONDITION OF STRUCTURE:

Large forked tree jammed into the center pile. There is much debris around the upstream pile.

Otherwise, the condition of the structure is fair.

RECOMMENDED POSTING:

None

RECOMMENDATION:

Clean the debris and drift out from under the structure.

*E. L. Neff*  
E. L. Neff  
C-28703

ELN:pdh  
cc: DRHiggins (2)  
Orange County (2)



STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
SUPPLEMENTARY BRIDGE REPORT  
DH-03 M19 (REV. 1/74)

Bridge No. 55C-122  
Location 07-Oran-PAS MOO3-CR (on deck)  
Dist - Co - Rte - PM - City  
Date of Investigation July 16, 1981

Name BREA CANYON (Brea Boulevard, 0.9 mile west of Route 57)

CONDITION RATING:

APPRAISAL RATING:

Deck N Superstructure 6 Substr. & Pipes 6 Overall 3  
Channel & Channel Protection 8 Retaining Walls N

Widenable? Yes ☐ No ☐ Conditional ☒

Action Required by County Yes ☐ No ☒

CONDITION OF STRUCTURE:

There is no change as previously reported and the overall condition of the structure is fair.

REVISION:

Description: Delete the words in the second and third lines "with timber bulkheads of Creosoted Douglas fir piles and redwood timber planks."

RECOMMENDED POSTING:

None.

*E. L. Neff*  
E. L. Neff \*\*  
C 88703

KLN:ed  
cc: ENHiggins (2)  
Orange County (2)

REVISED

SEE REVISION

ORIGINAL REPORT

Bridge No. 55C-122  
Other No.  
P.U.C. No.  
Location 07-Oran-CR  
Dist - Co - Rte - PM - City  
FAS M003 (on deck)  
Date of Investigation February 5, 1981

Name BREA CANYON (Brea Boulevard-.9 mile west of Route 57)  
Lat. N33°- 56.4' Long. W117°- 53.4'

#### STRUCTURAL DATA AND HISTORY

Year Built 1930+ By Orange County Contract No. Unknown

Date of Revisions

Designed by: B.D. ☐ Orange County Plans Avail. @ BD

Description: Two RC girder (5) spans on RC pile (5) bents and RC open bents, with ~~timber bulkheads of Creosoted Douglas fir piles and redwood timber planks.~~ see Report of 7/14/81

Spans 2 @ 30' c/c

Length 62' Skew 45° Rt. Design LL H15

Ratings: Inventory HS 15.8/LE Operating HS 26.4/LE Permit PPPPP/LE

#### DESCRIPTION - ON STRUCTURE

Bridge Width 2 @ 15'

Total Width 32.9' Lanes 2 Tracks None

Median Double yellow stripe Rail Type Concrete baluster (0110)

Vert. Clearance over deck Unimpaired Appr. Rdwy. Width 30'

Wearing Surface AC (8"+) Deck Seal None

Alignment Bridge - Tangent Roadway - 700'± radius.

#### DESCRIPTION - UNDER STRUCTURE

Roadway Section None

Clearances: Vert. N Horiz.; Lt. Rt.

Lanes None Tracks None Pumpplant: None ☒ See Br. No.

Facilities Crossed Brea Canyon (OCECD-A02)

cc:

Bridge No. 55C-122  
Date February 5, 1981

**DESCRIPTION - HYDRAULICS**

Channel Natural earth cut streambed with GRSP around new constructed training walls.

Navigable: Yes ☐ No ☒ Clearances: Vert. N Horiz. N

**MAINTENANCE**

Custodian Orange County  
City of Brea Owner Orange County  
City of Brea

**ORIGINAL  
CONDITION RATING**

Deck	<u>N</u>
Superstructure	<u>6</u>
Substructure & Pipes	<u>6</u>
Channel & Channel Protection	<u>8</u>
Retaining Walls	<u>N</u>
Approach Rdwy. Alignment	<u>3</u>
Estimated Remaining Life	<u>30</u>

**ORIGINAL  
APPRAISAL**

Overall	<u>6</u>
Deck Geometry	<u>7.4</u>
Underclearances	Vert. <u>N</u>
	Horiz. <u>N</u>
Safe Load Capacity	<u>7</u>
Waterway Adequacy	<u>8</u>
Approach Rdwy. Alignment	<u>3</u>

Widenable? Yes ☐ No ☐ Conditional ☒

Action Required by City  
District Yes ☐ No ☒

AVERAGE DAILY TRAFFIC - 4,000 Estimated 1981

BYPASS DETOUR LENGTH - 6 miles

SEISMIC RETROFIT - Not applicable.

DISCUSSION - The abutment embankment slopes were washed out in the storm of early 1980 and exposed the abutment RC piles to a depth of approximately 8 feet. The timber training walls stayed in place.

WORK DONE - Work has been completed on the storm damage to the abutment embankments. The timber bulkhead training walls were removed from the channel.

RC concrete retaining walls were constructed immediately in front of the abutments to the elevation of the girder soffits, and the walls curve around the embankments. The walls and embankment are further protected by grouted rock slope protection, and rip-rap beyond this limit.

BRIDGE No. 55C-122  
SHEET 3 of 3  
DATE February 5, 1981

CONDITION OF STRUCTURE - The northeast wingwall has separated from the abutment seat about 3/8" and the crack extends from the rail baluster down to the bottom of the wall. The top part above the bridge seat was sealed during the storm damage repairs.

Otherwise, the overall condition of the structure is fair.

LOAD CAPACITY: Calculations were made in accordance with Manual for Maintenance Inspection of Bridges, 1978. The structure is safe for Legal Loads and Purple Extra Legal Loads.

POSTING RECOMMENDATION - None.

*E. L. Neff*  
E. L. NEFF  
C 28703

ELN:11

cc: DRHiggins

~~City of Dora (2)~~

Orange County (2)

DIST ROUTE COUNTY STRU. NO POSTMILE RATING WIDTH-FT STRU TYPE YR ORIG CONST

07 CO, RD 55 C 0122 . 032.8 CG JUL. 15, 1980

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											
1	0.0	1.500	3.000	4.500	6.000	7.500	6.000	4.500	3.000	1.500	0.0

THE CRITICAL OPERATING RATING POINT IS THE SAME AS THE CRITICAL INVENTORY RATING POINT

THE CRITICAL PURPLE RATING POINT IS THE SAME AS THE CRITICAL INVENTORY RATING POINT

- 2 BREA CANYON
- 3 8" OVERLAY 7-14-80
- 4 SPLIT TANDEM

DIST 07 ROUTE CO.RD COUNTY 55 C STRU. NO 0122 POSTMILE . RATING 032.8 WIDTH-FT STRU TYPE CG YR ORIG CONST

JUL. 15, 1980

	RATING FACTOR	PT	SPAN	ULT MOM TOP IN COM	ULT MOM CAP BOT IN COM	POS HS20 MOMENT	NEG HS20 MOMENT	POS PURP MOMENT	NEG PURP MOMENT	DEAD LOAD MOMENT	SECONDARY MOMENT
INV	0.79	5	1	2963.9	0.0	923.8	0.0	1151.1	0.0	1064.1	0.0
OPER	1.32	5	1	2963.9	0.0	923.8	0.0	1151.1	0.0	1064.1	0.0
PURP	1.06	5	1	2963.9	0.0	923.8	0.0	1151.1	0.0	1064.1	0.0

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 BREA CANYON
- 3 8" OVERLAY 7-14-80
- 4 SPLIT TANDEM

SUPPLEMENTARY BRIDGE REPORT

OFFICE REPORT

~~XXXXXXXXXXXXXXXXXXXX~~

Oct. 1, 1973

Name **BREA CANYON** **OLD 07-Ora-57**  
**NEW 07-Ora-CoRd**  
**OLD 4.5 Miles N. of Jct Rte 72** Dist.-Co.-Rte.  
Location **NEW .58 Miles N of Central Ave on Brea Blvd** Post Mile

As a result of action taken by the California Highway Commission on August 22, 1973, Resolution R 2015, this structure was relinquished to the County of Orange.

RECOMMENDATIONS:

Remove from the bridge list, drop from the records, and assign Bridge No. 55C-122.

J. M. Borik

*R F Prodoehl*  
By R. F. Prodoehl

JMB:RFP:bc  
cc: Dist. 07

## SUPPLEMENTARY BRIDGE REPORT

Date of Investigation April 25, 1973Name BREA CANYON 07-Ora-57  
Location 4.5 Miles North of Jct. with Rte. 72 Dist.-Co.-Rte.  
Post Mile

## CONDITION OF STRUCTURE:

There are approximately 12 concrete rail balusters in the west rail and 11 in the east rail spalled due to corrosion of the reinforcing steel.

Otherwise the structure is in good condition throughout.

## RECOMMENDATIONS:

Chip out the spalled area in the east and west rail balusters. Sandblast the spalled area and rusty reinforcing steel and patch with epoxy bonded cement mortar.

Estimated Cost: \$300

Next Investigation: May 1974

*J M Borik*  
J. M. Borik

JMB:bg  
cc: Dist. 07



## SUPPLEMENTARY BRIDGE REPORT

Date of Investigation Oct. 20, 1971

Name BREA CANYON

07-Ora-57

Dist-Co.-Rte.

Location 4.5 Miles N. of Jct. with Rte. 72

Post Mile

## CONDITION OF STRUCTURE:

At the southeast corner of this structure, the mounting bolts are missing which formerly attached the metal beam guard railing to the bridge rail curb.

There are concrete spalls at the following locations:

On the west barrier railing:

Location 1: On the rail post over the southerly bent, at the bottom on the outside of the rail and near the center of the inside of the rail.

Location 2: Several balusters  $\pm 20'$  from the south end of the rail.

On the east barrier railing:

Location 1: On the outside of the post at the bottom over the southerly bent.

Otherwise, the structure is in good condition.

## EARTHQUAKE REVIEW - EVALUATION OF SUPPORT POINTS:

Good stability.

## RECOMMENDATIONS:

1. Remove any loose concrete remaining on the rail spalls and clean the rust from any exposed reinforcing steel. Patch the spalls with Speedcrete or equivalent.
2. Remount the metal beam guard railing at the southeast corner with  $5/8"$  diameter bolts in concrete anchors drilled into the barrier rail curbing.

Estimated cost:

Item 1: \$150

Item 2: \$100

Next Investigation: October 1972

BB:cm

cc:Dist. 07

B. Baker

*B. Baker*

Investigated 9/15/72 By WRB

Changes Noted Review work later

Date of Investigation 9/15/72

Name: MARY CANTON  
Location: 4.5 Miles N. of Jct. Sta. 100.0

DESCRIPTION OF LOCATION:

The location is on the right-hand side of the road, about 1/2 mile north of the intersection of the road with the railroad tracks. The location is a small, open area of land, about 1/2 acre in size, and is surrounded by trees and brush.

The location is a small, open area of land, about 1/2 acre in size, and is surrounded by trees and brush.

DESCRIPTION OF THE LOCATION:

The location is a small, open area of land, about 1/2 acre in size, and is surrounded by trees and brush. The location is a small, open area of land, about 1/2 acre in size, and is surrounded by trees and brush.

The location is a small, open area of land, about 1/2 acre in size, and is surrounded by trees and brush. The location is a small, open area of land, about 1/2 acre in size, and is surrounded by trees and brush.

DESCRIPTION OF THE LOCATION:

The location is a small, open area of land, about 1/2 acre in size, and is surrounded by trees and brush. The location is a small, open area of land, about 1/2 acre in size, and is surrounded by trees and brush.

Other: The location is a small, open area of land, about 1/2 acre in size, and is surrounded by trees and brush.

Remarks: The location is a small, open area of land, about 1/2 acre in size, and is surrounded by trees and brush.

Good spacing.

THE REMARKS:

1. Remove any loose material from the area, and clear the area of any debris. The location is a small, open area of land, about 1/2 acre in size, and is surrounded by trees and brush.

2. Remove any loose material from the area, and clear the area of any debris. The location is a small, open area of land, about 1/2 acre in size, and is surrounded by trees and brush.

Remarks:

OK: 9/15/72  
WRB

Next Investigation: 9/15/72

Notes:

9/15/72

*[Signature]*

## SUPPLEMENTARY BRIDGE REPORT

Date of Investigation July 17, 1969Name BREA CANYON 07-Ora-57  
Dist.-Co.-Rte.  
Location 4.5 Miles N. of Jct. with Rte. 72 Post Mile 26.90

## CONDITION OF STRUCTURE:

An erosion gully exists at the southeast return wall. The top plank is broken in the timber bulkhead at this same location. The broken plank is not detrimental.

There is 8" x 2' spall on the outside of the southeast rail post. There is also a spall in the same location in the southwest rail post.

Numerous minor spalls in the baluster rail. The spalls are minor in nature and are mentioned for the record only.

Otherwise, both the structure and the downstream check dam are in good condition throughout.

## RECOMMENDATIONS:

1. Divert runoff water from the bridge by constructing an AC dike from the southeast return wall to downdrain located approximately 15' south of the structure. The dike should parallel the metal beam approach rail. Backfill the gully at the southeast return wall with AC.
2. Repair concrete spalls on the outside of the southerly rail posts by removing any unsound concrete, cleaning the spalled areas, and patching with epoxy bonded concrete.

Estimated Cost: \$150

Next Investigation: October 1969

JEB:cm  
cc:Dist. 07  
Hdq. Maint.  
J. E. BruceInvestigated 10-16-69 By WUWChanges Noted REC: Do prevrec work. Note: PT & T  
Lines on E. side of eddy.Investigated 10/6/70 By PEN  
Changes Noted NR

## SUPPLEMENTARY BRIDGE REPORT

Date of Investigation Oct. 4, 1966Name BREA CANYON07-Ora-57

Dist.-Co. Rt.

Location 4.5 Miles N. of Jct. with Rte. 72Post Mile 26.90

## WORK DONE:

A 1" PMS blanket was recently placed on the deck.

A PMS dike was installed adjacent to the northeast wingwall.

## CONDITION OF STRUCTURE:

There is a total of 7 1/2" of PMS on the deck. There is a concrete spall at the west end of the north abutment and one at the east end of the south abutment.

The structure is otherwise in satisfactory condition throughout.

## DISCUSSION:

Memorandum dated June 17, 1966, to Mr. E. T. Telford, Attn: Mr. W. E. Schaefer from R. A. Wagner/D. B. Jennings, indicated that this structure should not be subjected to an additional load of a 1" PMS blanket. Inadvertently a 1" blanket was placed.

Field measurements were taken and a stress analysis made. There are no "As Built" plans in the files.

The stress analysis indicates that the upper limits of allowable stresses are approached when purple loads are imposed on the structure. The additional stresses are tolerable, however, any additional PMS will reduce the overload rating to "Green."

## RECOMMENDATIONS:

Repair the spalls on the abutments by removing any unsound concrete, thoroughly cleaning the spalled area, and patching with epoxy bonded concrete.

Estimated Cost: \$100

Next Investigation: October 1967

FJS:cm  
cc:Dist. 07  
Hdq. Maint.

DONE 11-30-66  
W.O. 532(611)  
COST \$19.88

*F. J. Sanchez*  
F. J. Sanchez

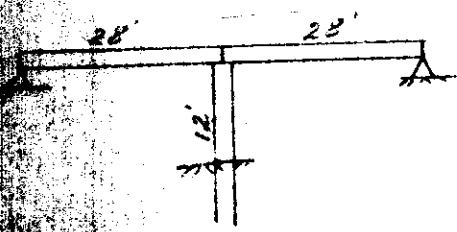
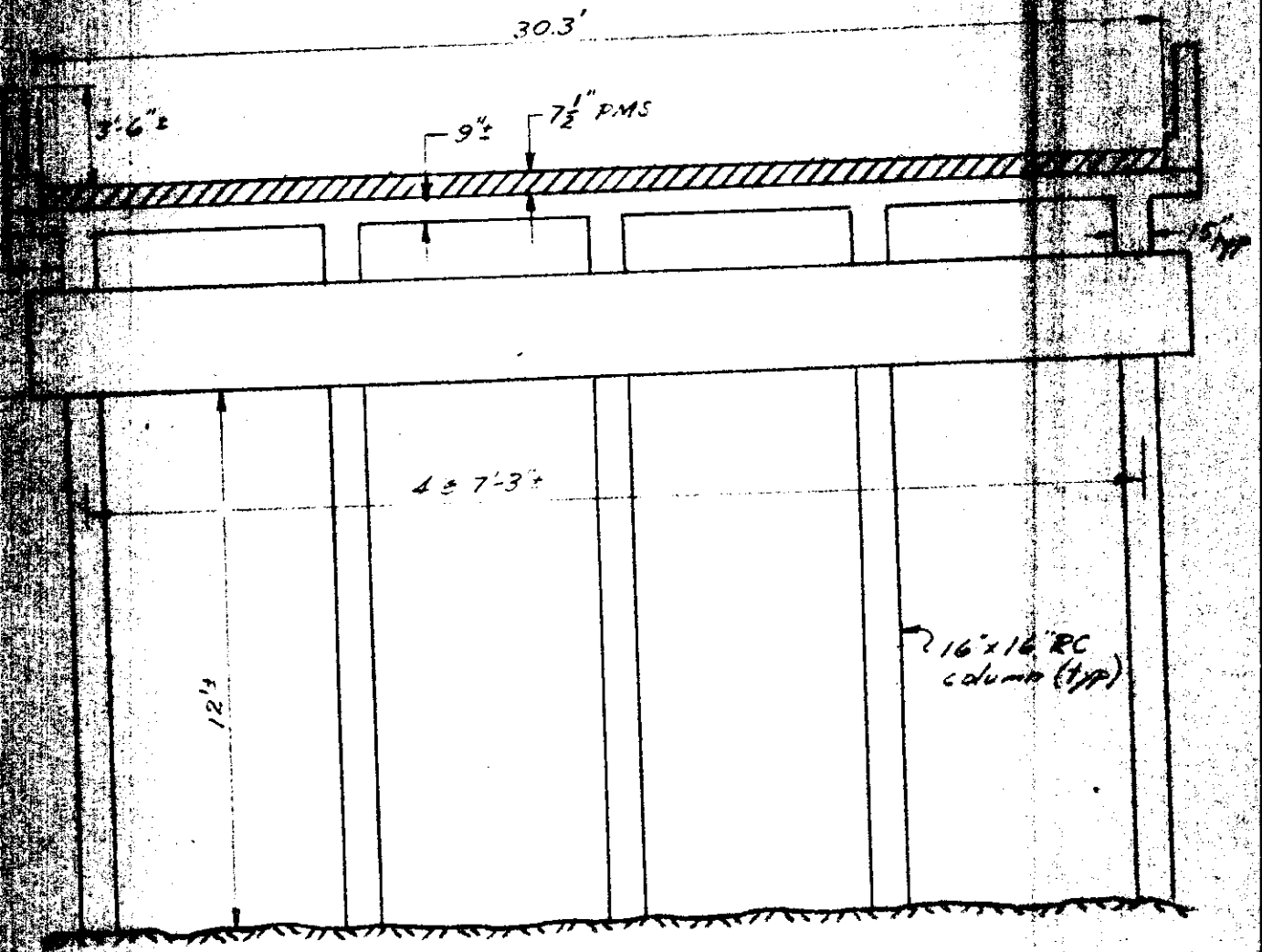
*over*

Investigated 9-7-67 By PAB

Changes Noted Prev. Rec. work  
done. NR

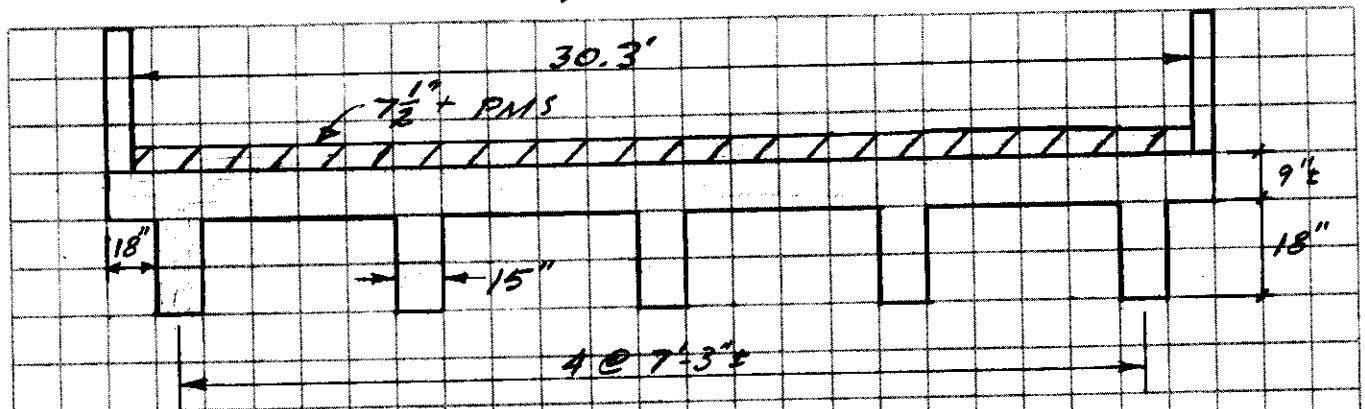
Investigated 10/24/68 By GRR

Changes Noted 7/one

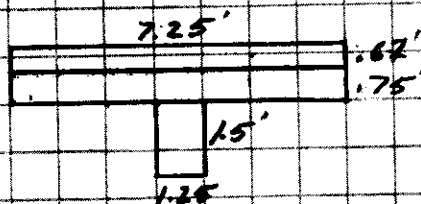


Field Measured by: F.J. Sanchez  
9-21-66





Spans: 2 @ 28.0'



DL:

$$PMS = 7.25 \times 0.62 \times 144 = 645 \text{ #/ft}$$

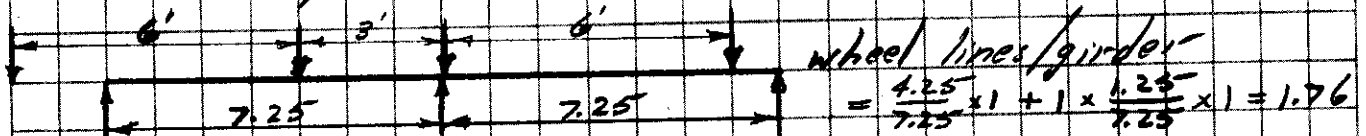
$$\text{deck} = 7.25 \times 0.75 \times 150 = 817$$

$$\text{girder} = 1.25 \times 1.5 \times 150 = 282$$

$$\text{Total DL} = 1744 \text{ #/ft}$$

$$DLM = \frac{wL^2}{8} = \frac{1.74 \times 28^2}{8} = 170 \text{ K}$$

$$LLM @ \text{Impact} = 133.7 \text{ K/wheel line} - 352 \text{ vehicle}$$



$$LLM = 1.76 \times 133.7 = 235 \text{ K}$$

$$\text{Total M} = 170 + 235 = 405 \text{ K Exist.}$$

$$DL_{orig} = 817 + 282 = 1099 \text{ #/ft}$$

$$f_s \text{ allowable} = YP \times 0.82$$

$$= 30,000 \times 0.82 = 24,500 \text{ psi}$$

(date: 1905-1936)

$$DLM_{orig} = \frac{1.1 \times 28^2}{8} = 108 \text{ K}$$

$$\text{Tot. M}_{orig} = DLM_{orig} + LL = 108 + 235 = 343 \text{ K Orig.}$$

$$f_s \text{ Exist} = f_s \text{ orig} \times \frac{M_{exist}}{M_{orig}}$$

$$\text{Assume } f_s \text{ original design} = 16,000 \text{ psi}$$

$$\text{then } f_s \text{ exist} = 16,000 \times \frac{405}{343} = 18,900 < 24,500 \text{ allowable} \therefore \text{OK.}$$

FOR PURPLE LOADING

$$DLM = 170 \text{ K} \quad LLM = 1.5 \times 235 = 352 \text{ K} \quad \text{Tot. M} = 170 + 352 = 522 \text{ K}$$

$$f_s = 16,000 \times \frac{522}{343} = 24,300 < 24,500 \text{ allowable} \therefore \text{OK.}$$

## SUPPLEMENTARY BRIDGE REPORT

Date of Investigation August 27, 1965Name BREA CANYON VII-Ora-57  
Location 4.5 Miles North of Junction with Rt. 72 Post Mile 26.90  
Dist.-Co. Rt.

## WORK DONE:

Both approach slabs have been patched with PMS.

## CONDITION OF STRUCTURE:

There is a crack on the west end of the north abutment pile cap and on the east end of the south abutment pile cap.

Both barrier rails have numerous spalls but no reinforcing steel is exposed.

There is a spall with the steel exposed on the west fascia girder by the south abutment.

The approach fill underneath both reinforced concrete pile cap abutments has settled approximately 3" the entire length of the abutments. The fill underneath the north abutment is sandy with gravel mixed in. The fill underneath the south abutment has been stabilized with concrete.

Otherwise, the structure is in good condition.

## RECOMMENDATIONS:

- (1) Clean spalled area located on the west fascia girder, wire brush the exposed reinforcing steel, and patch with epoxy bonded concrete.
- (2) Backfill under both abutment caps with cement stabilized soil, well tamped into place. Stabilize the slope adjacent to the north abutment with cement.

Estimated Cost: \$200.00

Next Investigation: October, 1966

D. B. Jennings  
by: Tom Brown

*Tom Brown*

TB;mb  
cc: Dist. VII  
Hdq. Maint.



## SUPPLEMENTARY BRIDGE REPORT

Date of Investigation Oct. 7, 1964Name BREA CANYON07-0ra-57

Dist.-Co.-Rt.

Location 4.5 Miles N. of Jct. with Rte. 72Post Mile 26.90

## CONDITION OF STRUCTURE:

Two spalls appear at the outside of the southwest wingwall; however, no reinforcing is exposed and the spalls are not seen from the traveled way, so no recommendations will be made at this time.

## RECOMMENDATIONS:

None

Next Investigation: October 1965

D. B. Jennings

By: M. C. Hopkins

*M.C. Hopkins*

MCH:cm

cc:Dist.07

Hdq. Maint.

## SUPPLEMENTARY BRIDGE REPORT

Date of Investigation August 17, 1962Name BREA CANYON VII-Ora-~~19A~~ 57  
Location 4.5 Miles Northeast of Jct. with Rte. 2. 72 PM 26.90 A  
Dist.-Co.-Rt.-Sec.

## CONDITION OF STRUCTURE:

The structure is in good condition throughout.

Overside drainage adjacent to the end of the northeast wing-wall has eroded a gully in the approach fill. There appears to have been an asphalt side drain at this location, but it was eroded away along with the fill material.

## RECOMMENDATIONS:

Backfill the eroded gully with well compacted local material and reconstruct the overside drain.

Estimated Cost: About \$100

Next Investigation: August 1963

ARR:cm  
cc:Dist.VII  
Hdq. Maint.

DONE 9-18-62  
W.O. 63-07032D09  
COST \$75.82

*A. R. Rossing*  
A. R. Rossing

Investigated 8/8/63 By BWC  
Changes Noted Prv. work  
done. NR.

SUPPLEMENTARY BRIDGE REPORT

Date of Investigation August 8, 1960

Name BREA CANYON

VII-Ora-19-A

Dist.-Co.-Rt.-Sec.

Location 4.6 Miles Northeast of Jct. with Rte 2

Refer to the original report dated May 13, 1938, and to subsequent supplementary reports.

CONDITION OF STRUCTURE:

The guardrail at the Northeast corner of the bridge is loose.

The structure is otherwise in good condition.

In connection with the resurfacing of the roadway through this section, a lift of up to 4" of P.M.S. material has been placed on the deck. A total of approximately 7" of P.M.S. is now on the bridge deck.

RECOMMENDATIONS:

Repair the loose guardrail at the northeast corner of the bridge.

Estimated Cost: Under \$50.

Next Investigation: August 1961

DONE 10-21-60  
W.O. 61-7437-D9  
COST \$38.16

*Wm. M. Crawford*  
Wm. M. Crawford

WMC:cm

cc:Dist. VII

Hdq. Maint.

Investigated 8/21/61 By ARR

Changes Noted Prev rec. write  
not done. N.R.

2 @ 28'

## SUPPLEMENTARY BRIDGE REPORT

Date of Investigation December 18, 1956

Name BREA CANYON

VII-Ora-19-A

Location 4.6 Miles Northeast of Junction with Route 2.

Dist.-Co.-Rt.-Sec.

Refer to original report dated May 1938 and to subsequent supplementary reports.

## WORK DONE:

The work previously recommended has not as yet been done.

## CONDITION OF STRUCTURE:

The southeast return bridge rail has been struck by a vehicle and has damaged the 4 northerly balusters.

Animals burrowing under the south abutment cap have produced voids in the approach fill between piles 1, 2, 3 and 4.

There are also some voids under the southwest and southeast wingwalls.

The bridge number on the southeast end post is no longer legible.

The structure is otherwise in good condition throughout.

## RECOMMENDATIONS:

1. Repair the broken plank as previously recommended. This plank is in the northerly planks and is in the 5th panel from the west end of the timber bulkhead.

2. Repair the damaged rail balusters as follows:

Chip out all broken concrete, straighten the reinforcing bars and form the balusters to their original dimensions. Place six sack concrete in these forms and after the concrete has set remove the forms and smooth up any irregular areas.

3. Remove all loose material from the south abutment cap, and place in the voids under this cap and between the cap and the top of the timber bulkhead a 4 sack concrete mix. This concrete should be placed between piles 1, 2, 3 and 4, and under the southwest and southeast wingwalls. It is estimated that approximately 2 to 3 cubic yards of concrete will be required.

4. Repaint the bridge number on the southeast end post.

55C-122

BRIDGE No. 55-57  
 SHEET 2  
 DATE December 18, 1956

Estimated Cost: Item #1 No cost.  
 Item #2 Approximately \$100.  
 Item #3 Approximately \$100.  
 Item #4 Less than \$50.

Total Cost: Approximately about \$250.

Next Investigation: December 1957.

4-12-57  
 DONE  
 W.O. 57-7K9-B  
 COST 220.54

ARR:mh  
 cc: Dist VII  
 Maint. Dept.

*A. R. Rossing*  
 A. R. Rossing

Investigated 8-21-59 By WHH

Changes Noted Prev. Rec. done  
 Rec: Repair loosened bolt  
 which fastens guard rail to  
 NW corner of Bridge curb.  
 Est. Cost: Less than \$50.

## SUPPLEMENTARY BRIDGE REPORT

Date of Investigation December 22, 1955Name BREA CANYON

VII-Ora-19-A

Dist.-Co.-Rt.-Sec.

Location 4.6 Miles Northeast of Junction with Route 2.

Refer to original report dated May 1938 and to subsequent supplementary reports.

## WORK DONE:

The work recommended in the previous report has not been done.

## CONDITION OF STRUCTURE:

Except as noted in this report, the structure appears to be in about the same condition as when last inspected.

In connection with the resurfacing of the roadway through this section, a lift of from 1 1/2" to 2 1/2" of asphaltic material has been placed on the deck.

## RECOMMENDATIONS:

Do the work recommended in Item #1 of the Supplementary Bridge Report dated April 28, 1954.

Next Inspection: December 1956.

*W E Bastues*

W. E. Bastues

WEB:mh  
cc: Dist VII  
Maint. Dept.

## SUPPLEMENTARY BRIDGE REPORT

Date of Investigation December 6, 1954

Name BREA CANYON

VII-Ora-19-A

Location 4.6 Miles North East of Junction on with Route #2.

Dist.-Co.-Rt.-Sec.

Refer to original report dated May 1938 and to subsequent supplementary reports.

## WORK DONE:

All of the work previously recommended has been properly done, except that repair of the broken plank, Item #1 of the recommendations listed in the supplementary bridge report dated April 28, 1954 has not been done.

## CONDITION OF STRUCTURE:

The structure appears to be in satisfactory condition, and except as noted above under WORK DONE, is about in the same condition as when last inspected.

## RECOMMENDATIONS:

1. Do the work recommended in Item #1 of the supplementary bridge report, dated April 28, 1954.

Next Inspection: December 1955.

WEB:mh  
cc: Dist VI  
Maint. Dept.

*W E Bastues*  
W. E. Bastues

## SUPPLEMENTARY BRIDGE REPORT

Date of Investigation June 30, 1954Name BREA CANYON

VII-Or-a-19-A

Dist.-Co.-Rt.-Sec.

Location 4.6 Miles NE of Jct. with Rte. 2.

Refer to original report dated May 13, 1938 and to subsequent supplementary reports.

The inspection as covered in this report was made with Supt. Ryan and Foreman Van Robinson.

## WORK DONE

The work recommended in the report of April 28, 1954 will be done soon.

## CONDITION OF STRUCTURE

In the bulkhead to the north abutment, the 3rd pile from the southeast angle point of this bulkhead is tilted outward. Cracks in the fill above this bulkhead and settlement under the RC cap of the north abutment in the approach fill indicate there may have been some channelward motion of this pile against the resistance of the cable ties near the top of the pile. It would be both difficult and expensive to pull this pile back so it is considered advisable to bend the proposed new 4" x 12" CDF planks around the pile and to splice them at the pile as required to get proper bearing on existing piles.

In order to forestall any further channward motion of this pile it is considered advisable to install an additional 1"Ø galvanized tie rod anchored to an "Everstick" or equal.

*Anchor*

There is a cavity under the RC cap of the north abutment under the northbound roadway and as stated above there are cracks in the fill material between this cap and the bulkhead.

Otherwise the structure is in about the same condition as when last inspected.

## RECOMMENDATIONS

In addition to the work recommended in the bridge report dated April 28, 1954 it is recommended that the following work be done:

1. At the 2nd pile from the angle point at the southeast end of the bulkhead adjacent to the north abutment at a distance of about 2' down from the top of the pile and on the east face of the pile cut a hole in the existing bulkhead and drill a 14' depth horizontal hole in the earth fill in back of the abutment. With the depth of the hole measured from the face of the existing plank.



BRIDGE No. 55-37SHEET 2DATE June 30, 1957

The diameter of the hole should be the same as that required by the manufacturer for use in the galvanized steel anchor to be used.

2. Place a 1" galvanized rod threaded into an "Everstick" pole anchor of such capacity to develop the strength of a 1" rod. Force the "Everstick" pole anchor open and thoroughly backfill the portion of the hole in front of the anchor by hand compacting the material. Drill a hole in the new supplementary bulkhead planks as required to receive this 1" galvanized tie rod. Place an 8" x 8" CDF wale 10' long between pile #2 & 3 from the south east angle point of this bulkhead with a hole drilled as required to receive the tie rod. Fasten the wale to existing planks by toenailing. Place 6" x 6" x 1/2" plate washer with 1 1/8" hole and tighten the tie rod tightly in an attempt to arrest further channelward motion of this pile. The center of the tie rod should be as close to the 3rd pile from the southeast angle point of this bulkhead as practicable. Thoroughly treat ends of crosoted timber where cut and swab tie rod holes with cresote or wood perservative.
3. Thoroughly fill the holes under the RC cap near the northbound lanes of the north abutments with tamped earth and finish off flush with the existing slopes. Then drill holes in the approach fill to the depth of the bottom of the cap and fill the holes and the cavaties under the pavement in the approach fill with a wet sand cement mixture. Drill sufficient holes and add sufficient of this mixture to thoroughly fill all of the voids in the approach fill

Estimated cost: \$300

Next investigation: December 1954.

*R. A. Wagner*  
R. A. Wagner



## SUPPLEMENTARY BRIDGE REPORT

Date of Investigation April 28, 1954Name BREA CANYON

VII-Ora-19-A

Location 4.6 Miles northeast of junction with Route 2.

Dist.-Co.-Rt.-Sec.

Refer to original report dated May 13, 1938 and to subsequent supplementary reports.

This investigation was made at the request of District VII for the purpose of determining the extent of progressive deterioration of the bulkheads due to decay.

## CONDITION OF STRUCTURE

The condition of the structure proper was not investigated but will be investigated during the next regularly scheduled inspection.

The condition of the bulkhead walls is as follows:

At the northwest corner of the structure, the 5th bulkhead plank from the top of the wall in the 2nd panel from the edge of the bridge is broken. It appears that an inherent weakness rather than decay in the plank was the cause of this fracture.

Many of the planks in the north bulkhead are bowed badly by the earth load but it appears that this condition is due to the 3" x 12" planks having an 8' span and the condition is not considered serious at this time. Many of the piles in this bulkhead have been forced out of plumb with their tops going channelward but as this bulkhead is anchored into the fill with steel rods, the condition is not considered serious.

At the north bulkhead, panels #1, 2 & 3 from the east end of the bulkhead show from 1" to 2" of surface decay on nearly all planks. The planks in other panels of this bulkhead when bored, appeared to be sound and have full section.

At the south bulkhead, the planks in all three panels of the bulkhead wingwall at the southwest corner of the structure show considerable decay.

## RECOMMENDATIONS

1. At the northwest corner of the structure, repair the broken plank located 5 planks down from the top of the 2nd panel from the edge of the structure as follows: Shave the broken plank so that it is flush with the other planks in this panel and then place a new 4" x 12" creosoted Douglas fir plank over the

DNW:sdf

cc:Dist. VII

Maint. Dept.

SEE SUPPLEMENTARY REPORT OF \_\_\_\_\_

55C-122  
BRIDGE No. ~~55-25~~  
SHEET 2  
DATE 4-28-54

broken plank. Force the new plank flush against the broken plank and hold in place by means of a 4" x 6" x 2' cleats fastened to the piles @ each end of the new plank. Secure the cleats to the piles with three 5/8" x 9" lag screws at each pile.

2. At the north bulkhead, place supplementary bulkhead planks at panels 1, 2 & 3 from the east end of the bulkhead in accordance with details shown on accompanying DL Drawing #LA-218-1. In placing these supplementary planks, start the 1st plank as low as possible without disturbing existing broken concrete rip rap and carry planks to near the top of the existing bulkhead; stop all planks at the centerline of pile #4 from the east so that planks may be added at a future date if necessary; where piles are not in straight alignment, block out from the piles to the planking as required but provide for a minimum of 5" penetration of lag screw into pile; seal the area between the bottom of the bottom plank and the top of the broken concrete rip rap with concrete before backfilling the space between the existing and supplementary walls.
2. At the south bulkhead, place supplementary bulkhead planks at all 3 panels of the bulkhead wingwall at the southwest corner of the structure in accordance with details shown on accompanying D.L. Drawing # DL-LA218-1.

Estimated cost: \$1200

Next investigation: December 1954.

R. A. Wagner

BY: D. N. Weston  
D. N. Weston

SUPPLEMENTARY BRIDGE REPORT

bejagijaevnf jxeh

bejoh segnarD

Date of Investigation January 17, 1951

Name BREA CANYON

VII-Ora-19-A

Dist.-Co.-Rt.-Sec.

Location 4.6 miles NE of Jct. with Rte. 2

Refer to original report dated May 1938, and to subsequent supplementary reports.

WORK DONE:

The work previously recommended has been properly accomplished.

CONDITION OF STRUCTURE:

Except for the work performed in accordance with the previous report, the structure is in about the same condition as of said report.

RECOMMENDATIONS:

None.

Next investigation: January 1952.

H. K. MAUZY

HKM:jc

cc: Dist. VII  
Maint. Dept.

Investigated 1-17-52 By MWG

Next Investigation 1-53

Changes Noted NONE

Investigated 12/17/52 By JPA

Next Investigation 12-53

Changes Noted NONE

over

Investigated 12/14/57 T.M.F.

Next Investigation 12-54

Changes Noted None

FORM NO. 104-100  
10-1-57

SUPPLEMENTARY BRIDGE REPORT

Date of Investigation

Name

Location

Refer to original report when necessary.

Notes:

The work previously reported was completed.

LOCATION OF STRUCTURE:

Refer to the original report for the location of the structure. The structure is located on the left side of the road.

IN CONSTRUCTION:

None.

Next Investigation: January 1958.

H. E. MANN

Investigated 1-17-58 by W.M.C.

Next Investigation 1-23

Changes Noted None

Investigated by

Next Investigation

Changes Noted

RM:jo

cc: Dist. VII  
Main. Dept.



# SUPPLEMENTARY BRIDGE REPORT

Date of Investigation November 3, 1949

Name BREA CANYON VII-Ora-19-A  
 Dist.-Co.-Rt.-Sec.

Location 4.6 Miles NE of Jct. with Rte. 2

Refer to original report dated May 1938, and to subsequent supplementary reports.

## CONDITION OF STRUCTURE:

The southerly clearance marker is set about 16" outside of the bridge curb line.

The approach embankment at both abutments is undermined from about 6" to 2' at the elevation of the bottom of the cap to about 2' below this elevation. No approach settlement of the fill at these locations is apparent. The undermining has been caused by burrowing rodents. The toe of the embankment at channel grade is protected from the stream by a timber retaining wall.

The bulkhead planks in the timber retaining wall along the right side of the southerly approach fill are extensively decayed. Some of the timber posts used as temporary extensions to the driven piles also are extensively decayed.

Some of the posts in the approach railing at both ends of the structure are decayed.

Except as noted above, the structure is in good condition.

## RECOMMENDATIONS:

1. Re-set the southerly clearance marker so that it is on bridge curbline.
2. Poison the rodents which burrow in the approach fills near both ends of the bridge.
3. Backfill under the caps at both ends of the bridge with cement stabilized dirt, well tamped into place. The dirt should be so placed as to form a slope of about 1:1 from the edge of the cap toward the channel, or flatter.
4. Replace all decayed posts in the timber approach railing at both ends of the bridge.
5. Make repairs to the decayed timber retaining wall at the southeast corner of the bridge by lagging on new CDF bulkhead planks and installing new anchors, all as detailed on attached Drawing No. DL-LA105-2.

Estimated Cost: \$700.

Finance: Replacements.

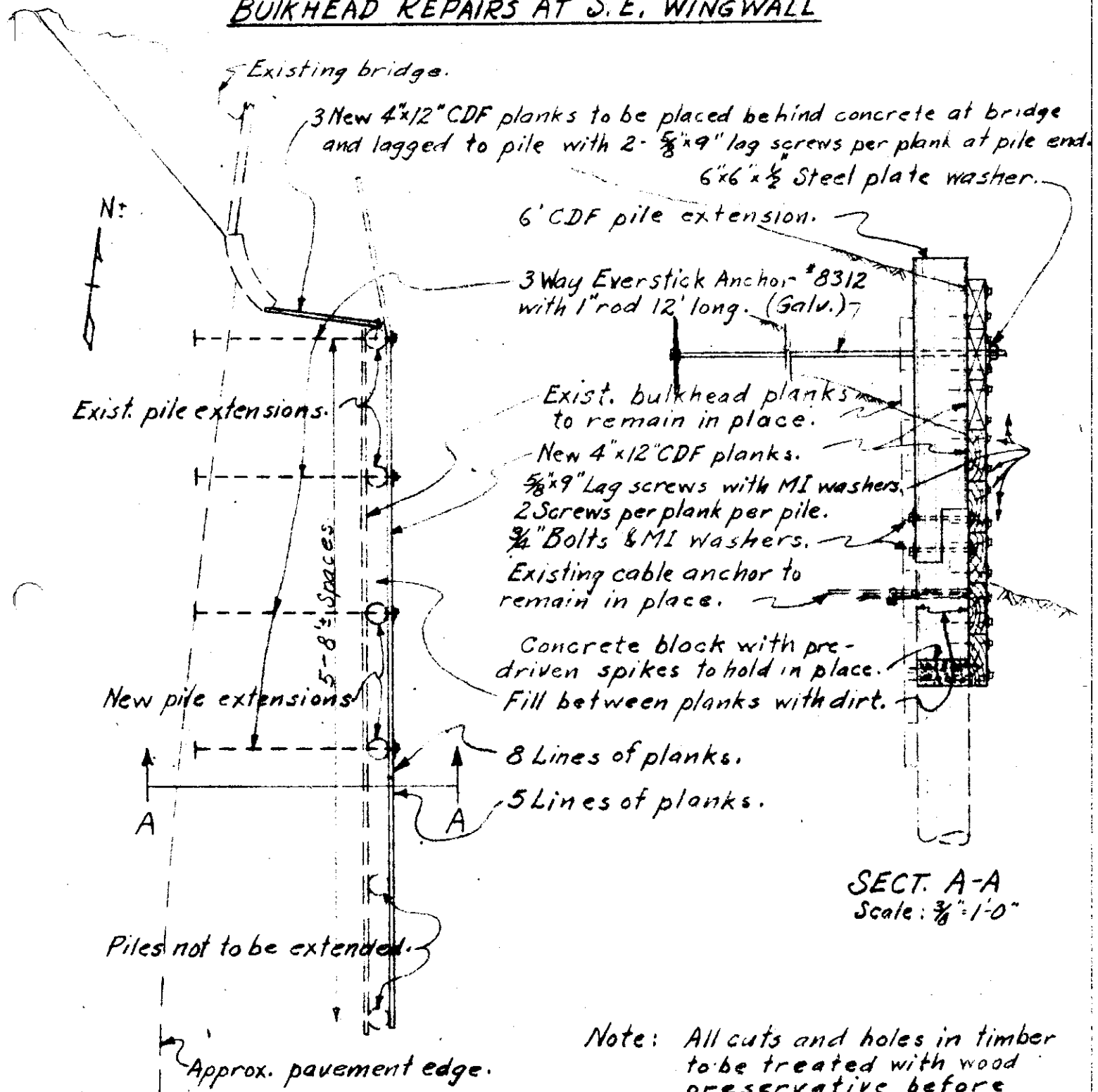
WOL:lh  
 cc: Dist. VII  
 Maint. Dept.

Next Investigation: November 1950.

William O. Langenbach  
 W. O. LANGENBACH

JOB BREA CANYON BR. ~~55-94~~ 55C-122

BULKHEAD REPAIRS AT S. E. WINGWALL



SECT. A-A  
 Scale: 3/8" = 1'-0"

PART PLAN  
 Scale: 1/8" = 1'-0"

Note: All cuts and holes in timber to be treated with wood preservative before assembling.



# SUPPLEMENTARY BRIDGE REPORT

Date of Investigation August 17, 1948

Name BRECA CANYON

VII-0ra-19-A

Dist.-Co.-Rt.-Sec.

Location 4.6 Miles N.E. of Jct. with Rte. 2

Refer to original report dated May 1938, and to subsequent supplementary reports.

## CONDITION OF CHANNEL:

The channel is well defined.

## WIDENING:

Widening is feasible on either side with the west side preferred for reasons of alignment.

## DETOUR:

A detour at this site should be provided with some waterway opening and the cost of such a detour is estimated at \$5,000.

## SALVABLE MATERIALS:

None.

## CONDITION OF STRUCTURE:

The structure is in good condition.

## RECOMMENDATIONS:

None.

Next Investigation: August 1949.

ORIGINAL SIGNED BY  
M. W. GEWERTZ

M. W. GEWERTZ

MWG:lh

cc: Dist. VII ✓  
Maint. Dept.

## SUPPLEMENTARY BRIDGE REPORT

Date of Investigation June 19, 1947

Name BREA CANYON VII-ORA-19-A  
Dist.-Co.-Rt.-Sec.

Location 4.6 Mi. N. E. of Junction with Route 2

Refer to original report dated May 1935 and to subsequent supplementary reports.

### WORK DONE:

The entire roadway has been resurfaced adjacent to the bridge and said surfacing has been carried right across the bridge deck. This takes care of work recommended last time.

### CONDITION OF STRUCTURE:

All repairs previously made are in very good condition. This results in this bridge being in an excellent state of repair and about the same as when last investigated.

### RECOMMENDATIONS:

No work is recommended at this time.

Next Investigation: June 1948.

  
A. J. STOCKS

cc: District VII (2)  
Maintenance Dept.

## SUPPLEMENTARY BRIDGE REPORT

Date of Investigation May 16, 1946

Name BREA CANYON

VII-Ora-19-A

Dist.-Co.-Rt. Sec.

Location 4.6 Miles N. E. of Junction with Route 2

Refer to original report dated May, 1938, and to subsequent supplementary reports.

## WORK DONE:

Under Work Order 7K44, at a final cost of \$1,500, the work recommended in the report of April 23, 1945, has been properly done.

Under Work Order 77J14, at a final cost of \$496.41, the work recommended in the report of September 11, 1945, has been properly done.

## CONDITION OF STRUCTURE:

There is a crack in the asphaltic topping on the berm at the downstream side of Abutment A-1.

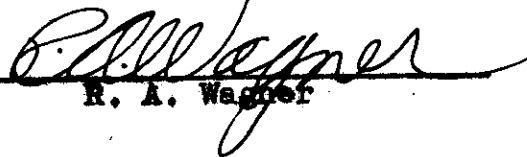
Except for the work done as noted above, the condition of the structure is about the same as when last inspected.

## RECOMMENDATIONS:

It is recommended that the cracks in the asphaltic mix topping at the downstream side of Abutment A-1 be sealed.

Finance: General Maintenance.

Next Investigation: April, 1947.

  
R. A. Wagner

RAW:gc

cc: District VII (2)  
Maintenance Dept.

19 JUN 1947

SEE SUPPLEMENTARY REPORT OF

## SUPPLEMENTARY BRIDGE REPORT

Date of Investigation September 19, 1945

Name BREA CANYON

VII-Ora-19-A

Dist.-Co.-Rt.-Sec.

Location 4.6 miles northeast of junction with Route 2.

Refer to original report dated May 13, 1938 and to subsequent supplementary reports.

### WORK DONE:

Work previously recommended is now being done.

### CONDITION OF STRUCTURE:


Except for work recommended and in course of construction, the structure is the same as when last inspected.

### RECOMMENDATIONS:

Complete all work previously recommended. No new work recommended at this time.

Finance: As previously arranged.

Next inspection, April, 1946.

  
A. J. Stocks

cc District VII (2)  
Maint. Dept.



## SUPPLEMENTARY BRIDGE REPORT

Date of Investigation September 11, 1945

Name BREA CANYON

VII-Ora-19-A

Dist.-Co.-Rt.-Sec.

Location 4.6 Miles NE Jct. with Rte. 8.

Refer to original report dated May 1935 and to subsequent supplementary reports.

This investigation was made in conforming with a request by District VII to investigate the underseoured condition of the N Abutment retaining wall.

### WORK IN PROGRESS:

District forces were in the process of doing the work recommended in the previous report.

### CONDITION OF STRUCTURE:

The water in the channel was lower than it usually is when inspections are made. This condition permitted observation of the bottom of the retaining wall near the N. Abutment. It was noted that a small amount of large riprap which was placed many years ago was present at this location but that it was mostly at an elevation below the level of the bottom plank of the bulkhead. The dirt behind the bulkhead of the wall is seoured out under the bottom plank causing a continual settlement of the fill behind the wall. Due to the presence of the large riprap excavating down and installing new or additional planks would be very difficult and expensive. Also the piles to which the planks are fastened are greatly overstressed. Therefore it is considered advisable to place additional riprap against the face of the wall instead of placing additional planks on the lower parts of the piles.

Other portions of the bridge were not inspected at this time.

### RECOMMENDATIONS:

It is recommended that the following work be done as soon as convenient, preferably before this winters storms cause flow in the channel again:

1. Place about 50 linear feet of light riprap to one man boulders along the stream face of the N. Abutment. The riprap should start at a point about 20 feet up stream from the upstream face of the bridge and extend under the bridge. It should be so placed as to

form a

cc: District VII (2)  
Maintenance Dept.

BRIDGE No. ~~55-57~~ 55C-122  
SHEET 2  
DATE Sept. 12, 1945.

toe, triangular in cross-section, along the base of the wall. and should extend up about 3 feet above the bottom of the bottom plank of the bulkhead.

2. Place additional fill material under the north end of the bridge on top of the fill behind the retaining wall as required to build the fill up to the top of the wall and to slope it up against the approach fill.

Estimated Cost: About \$500.

Finance: Replacements.

*Done 12-13-45  
@ \$496.41 77514*

Next Investigation: October 4, 1945.

*William O. Langenbach*  
William O. Langenbach.

SEE SUPPLEMENTARY REPORT OF 16 MAY 1946, FOLLOWING.

by R.E.S. 4/26/45

# Design Calculations for Bulkhead Repairs.

Calculations predicated on basis of 36#/c.f. equivalent fluid pressure, for earth fill, with assumption that overburden is taken by the concrete cap at end of bridge.

Calculation for 3"x12" planks at 8' depth, below top of wall:-

$$\frac{I}{E} = \frac{bd^2}{6} = \frac{12 \times (3)^2}{6} = 18''^3$$

$$\text{Earth pressure per lin. ft.} = 8 \times 36 = 288 \text{ \#/lf.}$$

$$M = \frac{288 \times (8)^2}{8} = 2304 \text{ \#'}$$

$$S = \frac{2304 \times 12}{18} = 1540 \text{ \#/in} \quad (\text{ok.})$$

Calculation for 4"x12" planks at 13' depth, below top of wall:-

$$\frac{I}{E} = \frac{bd^2}{6} = \frac{12 \times (4)^2}{6} = 32''^3$$

$$\text{Earth pressure per lin. ft.} = 13 \times 36 = 468 \text{ \#/lf.}$$

$$M = \frac{468 \times (8)^2}{8} = 3744 \text{ \#'}$$

$$S = \frac{3744 \times 12}{32} = 1410 \text{ \#/in} \quad (\text{ok.})$$

$$\text{Load on lag screw, (2-per plank), at 13' depth, below top of wall:} = \frac{13 \times 36 \times 8}{2} = \frac{3744}{2} = 1872 \text{ \#}$$

$$\text{Withdrawing load for } \frac{5}{8}'' \text{ lag screw} = 384 \text{ \#/lin" of thread.} \\ (\text{per Doug. Fir Use Book}) = 5 \times 384 = 1920 \text{ \# Total. (ok.)}$$

Submitted with Report of 23 APR 1945.

(to accompany Rept. dated 4/23/45)

Bridge No. ~~35-57~~ 350-124  
BEEA CANYON  
VII-Ord - 19 - A

by R.E.S. 4/27/45

Estimate of cost for repairing  
south bulkhead.

Materials:

4.8 M.B.M. D.F. Planking @ \$75 =	\$360.00
Creosoting Timber @ \$40/M = 40 x 4.8 =	192.00
Hardware, estimated	35.00
Struct. Excau. } under Labor.	
Back fill	
P.C. Concrete - 2 c.y. @ \$30	60.00
Asphaltic premix 2 tons @ \$5	10.00
Imported earth fill - 30 c.y. @ 0.50	15.00
Equipment rental	30.00

Labor:

5-man crew - 10 days @ \$70 700.00

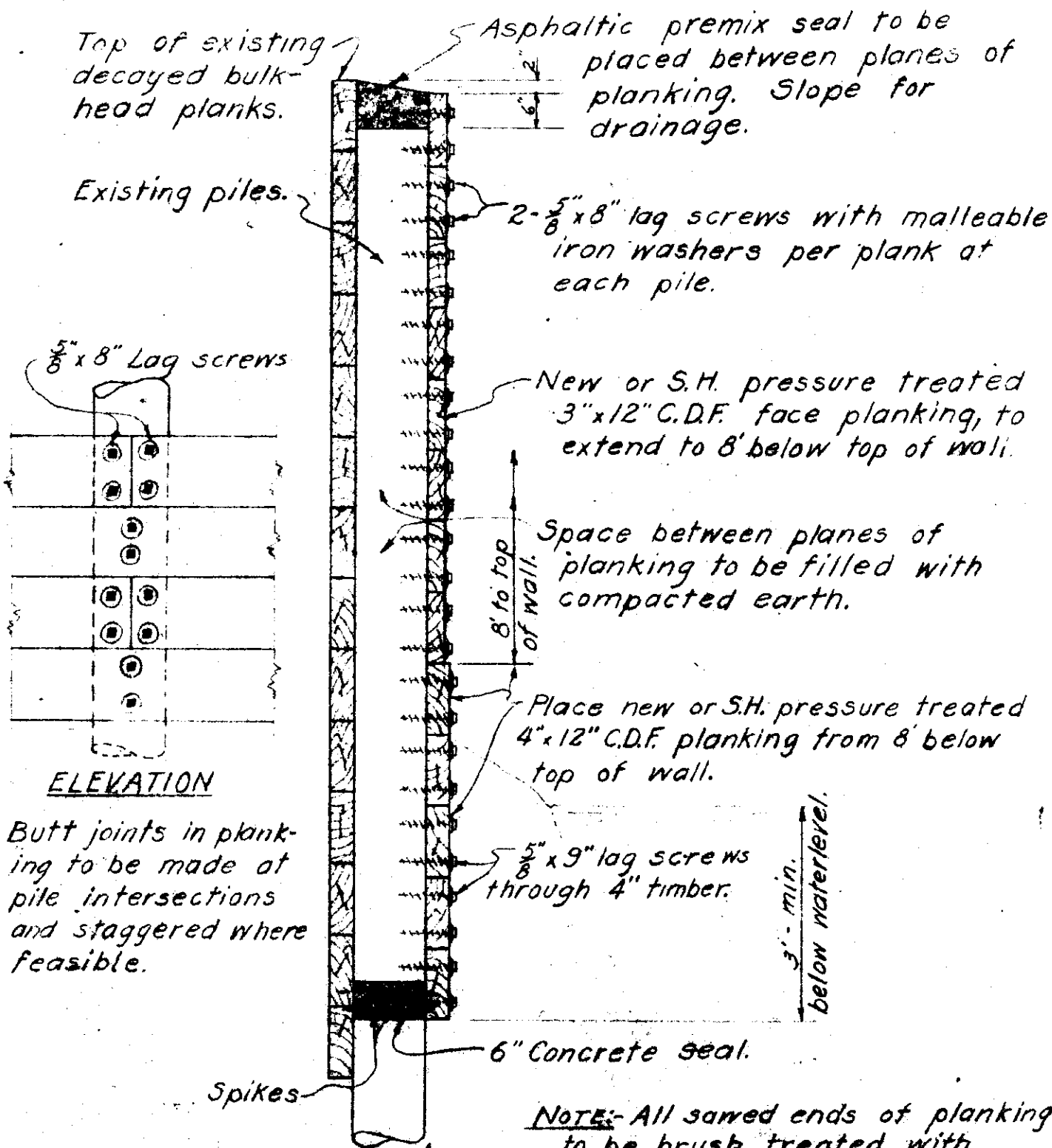
Total estimated Cost = \$ 1,402.00

Say \$ 1,500

(To accompany Rept. dated 4/23/45)

Submitted with Report of 23 APR 1945





NOTE: All sawed ends of planking to be brush treated with wood preservative. (3-Coats)

To accompany supplementary bridge report dated 4-23-45.

BULKHEAD REPAIRS  
Scale  $\frac{1}{2}$ " = 1'-0"

Submitted with Report of 23 APR 1945

## SUPPLEMENTARY BRIDGE REPORT

Date of Investigation April 23, 1945Name BREA CANYON

VII-Ora-19-A

Dist.-Co.-Rt.-Sec.

Location 4.6 Miles N.E. of Junction with Route 2.

Refer to original report dated May, 1938, and to subsequent supplementary reports.

## CONDITION OF STRUCTURE:

As noted in supplementary bridge report dated April 14, 1939, decay existed in several of the redwood planks in the south bulkhead, which retains the south approach embankment beneath Span 1. Decay has since become general in the bulkhead planks throughout the entire length of the bulkhead wall and several spots have become infested with termites. Repairs are now necessary in the twelve panels beneath the bridge and adjacent to edges of deck.

Decay of redwood planking of the north bulkhead has not progressed so rapidly where majority of planks as disclosed by drilling contain at least 2" or more of sound material, and it is estimated that at least two more years of service life can be gained from this portion of the structure.

Treated timber piling in both bulkheads are generally sound.

Wedges which formerly tightened the wire strand deadman cable around top of Pile 12 of the south bulkhead are missing and the cable is loose. (Piles are numbered from left to right with No. 1 at upstream end of bulkhead.)

Otherwise, the general condition of the structure is about the same as of previous investigations.

There has been some slight twisting in a counter-clockwise direction of the bridge deck and girder system, due to relatively sharp skew of the structure which has caused some cracking of the concrete shoulders at ends of abutment caps outside of girders. This is an old condition and not serious, but cracks should be mortared up.

Minor cracks also occur on channel sides near tops of R.C. abutment piles and in faces of abutment caps over piles due to earth pressure of embankments at ends of the bridge, which causes slight rotation of caps about ends of girders, or bulging effect on caps and abutment piles. This is an old condition, which is apparently stable, and is not serious.

RES:t

cc: District VII (2)  
Maintenance Dept.SEE SUPPLEMENTARY REPORT OF 19 SEP 1945

55C-122

BRIDGE No. 55-97  
SHEET 2  
DATE 4-23-45

### RECOMMENDATIONS:

It is recommended that the following work be done:

1. Temporarily drain water from channel beneath the bridge by cutting an opening through existing steel sheet pile check dam, which may later be closed on completion of bulkhead repairs by means of a steel plate.

2. Repair twelve panels in the south bulkhead between Pile 1 at upstream end and Pile 13, or second wing pile from angle point on downstream side of bridge, by facing existing bulkhead piles with 3" x 12" D.F. timber planking pressure treated with creosote; in accordance with attached Drawing DL-LA-105-1. Treated plank facing should extend to a depth of 3' below top of check dam in vicinity of channel, and otherwise, to a depth of 3' below existing ground line.

3. In completing backfill between existing bulkhead planks and new face planks, encase top of Pile 12 with a concrete collar, in order to embed and cause proper functioning of existing loose deadman cable.

4. Clean and remove broken chips of concrete and mortar up cracks as required, which occur in shoulders at ends of abutment caps.

Estimated Cost: \$1,500.

Finance: Replacements.

Next Investigation: September, 1945

RES:t

R. E. Stearns  
R. E. STEARNS

## SUPPLEMENTARY BRIDGE REPORT

Date of Investigation August 20, 1942Name BREA CANYON

VII-Ora-19-A

Dist.-Co.-Rt.-Sec.

Location 4.6 miles N.E. of Jct. with Rte. 2

Refer to original report dated May 13, 1938 and to subsequent supplementary reports.

## FENCES WITHIN R/W:-

There are several pipes across the channel about 75' from the upstream side of the bridge. These are not considered objectionable.

## CONDITION OF STRUCTURE:-

There is apparently no change in the condition of the structure since the last investigation.

The deflection of the north bulkhead toward the channel is about the same as when last inspected.

## RECOMMENDATIONS:-

No work is recommended at this time.

Next Investigation: September 1943

R.A. Wagner  
R.A. Wagner

Investigated 10-6-43 By R.E.S.Next Investigation 10-44.Changes Noted NoneInvestigated 10-25-44 By RawNext Investigation 6-45Changes Noted None - Watch N.E. Abutment

CC: District VII (2)  
Maintenance Dept.



## SUPPLEMENTARY BRIDGE REPORT

Date of Investigation April 8, 1942.

Name BREA CANYON

VII-Ora-19-A

Dist.-Co.-Rt.-Sec.

Location 4.6 Miles Northeast of Junction with Rte. 2.

Refer to original report dated May 13, 1938 and subsequent supplementary reports.

### WORK DONE:-

Under General Maintenance the work recommended in Bridge Report of May 1941 has been done.

### FENCES WITHIN RIGHT OF WAY:-

None.

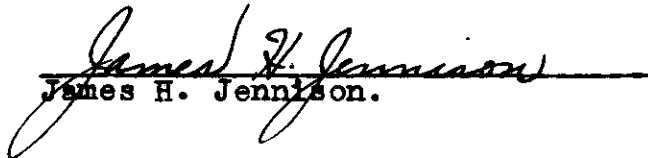
### CONDITION OF STRUCTURE:-

The north bulkhead has deflected toward the channel considerably, particularly in the westerly portion, but the condition is probably no different than that reported in Bridge Report of May 1938. Some of the bulkhead planks are partially decayed, and some are noticeably bowed toward the channel due to earth pressure. No repairs are considered necessary at this time, but the condition should be watched.

### RECOMMENDATIONS:-

No work is recommended at this time.

Next investigation, September 1942.

  
James H. Jennison.

cc: District VII(2).  
Maintenance Dept.

AUG 20 1942

## SUPPLEMENTARY BRIDGE REPORT

Date of Investigation May 13, 1941Name BREA CANYON

VII-Ora-19-A

Dist.—Co.—Rt.—Sec.

Location 4.5 Miles N.E. of Jct. with Rte. 2

Refer to original report dated May, 1938, and to subsequent supplementary reports.

## WORK DONE:-

Under Work Order No. 27K11 for \$1,000.00 a steel sheet piling cut-off wall was constructed across the channel at the downstream side of the bridge and rocks have been placed on the downstream side of this cut-off wall. The lower bulkhead planks between the second and sixth piles of the south bulkhead have been repaired. The riprap under the lower planks of the northwest bulkhead apparently has been repaired.

## WORK NOT DONE:-

The 1"x 3" battens have not yet been placed over the cracks between the bulkhead planks.

## CONDITION OF STRUCTURE:-

There are two holes in the back fill in back of the north bulkhead which apparently were caused due to material being washed out through the cracks between the bulkhead planks.

Except as noted the condition of the structure is about the same as when last inspected.

## RECOMMENDATIONS:-

It is recommended that the following work be done when convenient:

1. Fill the cracks greater than 1" wide between the bulkhead planks with Portland Cement mortar and place 1"x 3" battens under all cracks between the bulkhead planks below the elevation of high water flow.
2. Fill the holes in back of the north bulkhead with packed earth and grade the drain toward the channel.
3. Fill the hole in the downstream edge of the roadway fill adjacent to abutment #A-1.

cc: District VII (2)  
Maintenance Dept.

APR 8 1942  
SEE SUPPLEMENTARY REPORT OF FOLLOWING

55C-122

Bridge No. 55-57  
Sheet 2  
Date 5-13-41

**RECOMMENDATIONS: (continued)**

4. Seal the cracks in the asphaltic mix cover on the fills above the bulkheads.

5. Smooth up the low place in the pavement at the south end of the bridge.

Finance: General Maintenance

Next Investigation: May, 1942

*Done 10-29-41 @ \$50.69*

  
R. A. Wagner

RAW:fo

② Wagner  
③ Godwin

July 24, 1939

STILL  
55C-122

S. V. Cartelyou

Los Angeles, California

VII-ORA-19-A  
#55-39

District VII, Orange County, Route 19, Section A.

Brea Canyon Bridge No. 85-87, located approximately 4-1/2 miles northward from the city of Brea.

Construct steel sheet piling cut-off wall below bridge and place heavy rip-rap to protect bridge from stream scour.

Recommended for day labor because job is not of a nature adaptable to contract.

(To be financed from Br. Dept. Replacement funds)

a/e 105  
Replacement Project

1,000.00

1,000.00

4,461,979.19

1,000.00

4,460,979.19

JUL 28 1939

cc PLF Lab M. Godwin



55C-122

FUND ReplacementSTATE OF CALIFORNIA  
DEPARTMENT OF PUBLIC WORKS  
DIVISION OF HIGHWAYSDIST. VII  
COUNTY Ora  
ROUTE 19  
SECTION A  
Br. 55-37

ACCOUNT \_\_\_\_\_

CLASSIFICATION \_\_\_\_\_

## REQUEST FOR MAINTENANCE WORK ORDER

July 19 1939MR. C. H. PURCELL  
State Highway Engineer  
Sacramento, California

It is respectfully requested that a Maintenance Work Order be issued for the amount and purpose hereinafter described.

## Location of Work

Brea Canyon Bridge No. 55-37, located on Ora-19-A  
approximately 4-1/2 miles northerly from the City of Brea.

## Description of Work

Construct steel sheet piling cut-off wall below  
bridge and place heavy rip-rap to protect bridge from stream  
scour.Recommended for day labor because job is not of a  
nature adaptable to contract.

## Estimate of Cost

Labor	_____	\$
Material	_____	\$
Plant and Equipment Rental	_____	\$
Supplies	_____	\$
TOTAL AMOUNT REQUESTED	_____	\$ 1,000.00

Made by A.B.E.  
Checked by K.M.F.W. H. Taker  
Dist. Maint. Engr. District EngineerApproved \_\_\_\_\_  
Maintenance Engineer

STATE OF CALIFORNIA  
DEPARTMENT OF PUBLIC WORKS  
**DIVISION OF HIGHWAYS**  
DISTRICT VII  
305 STATE BUILDING, CIVIL ENGINEER  
LOS ANGELES, CALIFORNIA

PLANNED  
TO DATE

ROAD VII-GRA-19-A

BR. # 55-37

July 19, 1939

Mr. C. H. Russell  
State Highway Engineer  
Sacramento, California

Dear Sir:

Reference is made to the Bridge Report dated May 13, 1939, and also to the Supplemental Bridge Report dated April 14, 1939 covering Brea Canyon Bridge No. 55-52 on Road VII-GRA-19-A.

These reports contain recommendations for work to be done to protect this open end abutment bridge from channel scour, as follows:

1. Construct a concrete cut-off wall across the channel downstream from bridge, normal to channel, and with its south end in line with the southeast corner of bridge, extending from the south bulkhead to the north bank of stream. Wall to be 10 feet in total height, 10 inches thick, reinforced with 1/2" square bars at 12 inch centers both ways in center of wall. Top of wall to be at former grade of stream bed.

2. Backfill in front of abut wall (downstream side) with heavy rip-rap which may be available at site.

3. Place 1"x3" redwood battens over all cracks in bulkhead, which are below highwater mark.



4. Repair the decayed lower planks of the south bulkhead between the second and sixth piles from the west corner of that portion of the bulkhead which parallels the channel, by scabbing in new 3" x 12" redwood planks between piles over decayed planks as necessary.

5. Repair the rip-rap under the lower planks of the northwest bulkhead so that it will safely resist high water damage."

This stream flows through the Brea oil fields and the stream bed at this location contains a high percentage of oil sand and rotary mud. Considerable difficulty was experienced while attempting to dry up this material during excavation under Day Labor work Order No. 07X119 at Bridge No. 55-134, which is located over this channel two-tenths of a mile downstream. Extensive channel paving at Bridge No. 55-34, located on this channel two-tenths of a mile upstream will soon be completed under Contract work Order No. 07X122. It is understood that the Contractor has also had much difficulty with excavation in this stream bed.

Because of the difficulties previously experienced in trying to dry up stream bed material during excavation in this location, it is the District's recommendation that sheet steel piling be driven to form a cut-off wall, instead of the H.C. cut-off wall proposed in (1) above.

The District has some 340 lineal feet of 19" c/s sheet steel piling on hand that could be used on this work.

352-124

Mr. C. H. Purcell

Page 40.

7/19/39

Our estimate of cost for performing the work proposed using steel sheet piling, is as follows:

Item No. 1

Clearing up grooves, hauling and driving sheet steel piling, \$350.00

Driving timber pile adjacent to existing pile in south abutment, and cutting narrow vertical slot through bulkhead planking to permit steel piling to extend well up into earth fill 50.00

Item No. 2

50 Tons heavy rip-rap in place @ 3.00 150.00  
" yards excavation @ 1.00 20.00  
(Note: Rip-rap not available at site)

Item No. 3

Place 18x24 D W battens over cracks 25.00

Item No. 4

Repair decayed planking south bulkhead 25.00

Item No. 5

100 Tons heavy rip-rap in place @ 3.00 300.00

Sub-Total \$ 950.00

Contingencies 5% 47.50

Total \$ 997.50

Call \$1000.00

It is respectfully requested that a Day Labor Allotment in the amount of \$1,000.00, to be financed from the Replacement Fund, be approved to cover the cost of work as proposed above.

Yours very truly,

J. V. CONTEY  
District Engineer

Original Signed W. L. Fahy  
By W. L. FAHEY  
District Maintenance Mgr.

ABH:ewa

DIVISION OF HIGHWAYS  
SACRAMENTO  
RECEIVED

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14 23 2000 0000

## SUPPLEMENTARY BRIDGE REPORT

Date of Investigation April 14, 1939.

Name BREA CANYON

VII-Ora-19-A

Dist.-Co.-Rt.-Sec.

Location 4.5 miles north of junction with Route 2.

Refer to the original report dated May 1938.

### WORK DONE:-

(1) Large pieces of broken concrete have been placed along the base of the north bulkhead. (2) A portion of the north bulkhead where some of the planks are missing has been filled with broken concrete rip rap. (3) The channel may have been partly backfilled since it was scoured out during the flood of March, 1938.

### PRESENT CONDITION OF STRUCTURE:-

Except for a few decayed planks in the south bulkhead, the entire structure is in good condition.

### RECOMMENDATIONS:-

It is recommended that the following work be done as soon as convenient:

- (1) Carry out items #1, 2 and 5 of the recommendations of the report of 5/13/38, not yet started.
- (2) Repair the decayed lower planks of the south bulkhead between the second and sixth piles from the west corner of that portion of the bulkhead which parallels the channel, by scabbing in new 3x12 redwood planks between piles over decayed planks as necessary.
- (3) Repair the rip rap under the lower planks of the northwest bulkhead so that it will safely resist high water damage.

Estimated cost: \$1000. (Includes item #1)  
Finance: Replacements.

Investigated 2-5-40 By ILB Next inspection: May 1940.

Next Investigation 5-41 Fred M. Barnes

Changes noted None, check work by C. F. Hamlin  
done next report

cc: District VII (2).  
Maintenance Dept.  
R. A. Wagner.

SEE SUPPLEMENTARY REPORT OF APR 8 1942 FOLLOWING.



STATE OF CALIFORNIA  
DEPARTMENT OF PUBLIC WORKS  
DIVISION OF HIGHWAYS

DISTRICT VII **55C-122**  
COUNTY Ora  
ROUTE 19  
SECTION A

PRELIMINARY ESTIMATE OF COST  
STATE HIGHWAY

FROM Brea Canyon Protection (STA. \_\_\_\_\_)

TO \_\_\_\_\_ (STA. \_\_\_\_\_)

October 26, 19 38

QUANTITY	UNIT	ITEM	PRICE*	AMOUNT
1.	300	c.y. structure excavation	2 00	600 00
2.	2000	c.y. ditch & channel excavation	0 50	1000 00
3.	1500	c.y. back fill	0 50	750 00
4.	48000	lbs. bar reinforcing steel	0 05	2400 00
5.	300	c.y. Cl. "A" PCC structures	20 00	6000 00
6.	190	c.y. Cl. "A" PCC slope pavement & invert slab	16 00	3040 00
7.	1	lot miscellaneous items of work	L.S.	250 00
Subtotal				14040 00
Supplemental Allotments				
		ditch excavation beyond Sta. 12+50	100 00	
		repairs to rail on N.E. corner	10 00	
		remove existing timber bulkheads and extend wood flumes	200 00	310 00

LENGTH \_\_\_\_\_ MILES

COST \_\_\_\_\_ PER MILE

MADE BY CAMC

CHECKED BY LBD

PD \*INCLUDES CONTRACTOR'S PROFIT  
ALL ITEMS ESTIMATED IN PLACE UNLESS OTHERWISE NOTED

SUB-TOTAL

14350 00

CONTINGENCIES 5%

1435 0 0

TOTAL

15785 00

APPROVED

F. W. PANHORST

DISTRICT ENGINEER

By [Signature]  
Designing Engineer

STATE HIGHWAY ENGINEER

## BRIDGE REPORT

Date of Investigation May 13, 1938

## General Description

Name BREA CANYON 57  
VII-Oran-191-A  
Dist.-Co.-Rt.-Sec.

Location 4.5 Miles north of Jct. with Rte. # 72 PM 26.90A

Description RC (5) Girder structure on RC (5) Pile bents and open end bents. Timber bulkheads of Creosoted Douglas fir piles and Redwood timber planks in front of open end bents to retain roadway fills. Asphaltic surfacing on deck. Approximate skew 45° Rt.

Spans 2 @ 28.0' c/c Total length 60'

Roadway width 30.3' between Concrete Curbs Sidewalks None

Alignment Good. Final. On long radius curve. 10" High-6" Wide

Width Good. Wider than adjacent pavement.

Standard of design Fairly strong County standard.

Waterway Excessive. Velocity medium. Sand and peat soil channel. Opening flowed about 1/2 full, 1938.

Clear height at centerline = 15'±

Vertical clearance under (See diagram)

## History

Date built \_\_\_\_\_ By Orange County Contract No. \_\_\_\_\_

Designed by \_\_\_\_\_

Plans To be obtained.

## REMARKS

NO ENCROACHMENTS

cc: District VII (2)  
Maintenance Dept.

53022 Mr. Wagner.  
STATE PRINTING OFFICE

SEE SUPPLEMENTARY REPORT OF APR 14 1938 FOLLOWING.



Name BREA CANYON Location VII-Ora-19-A  
Dist.-Co.-Rt.-Sec.

### Summary of Construction, Maintenance and Alteration Work

CONT. OR W. O. No.	DATE	DESCRIPTION	W. O. AMOUNT	FINAL COST
27-K-11	7/24/39	Cut-off wall, rip-rap. (See following)	\$ 1,000	
7-K-44	6/7/45	Replace bulkhead plank Rpt. 4/23/45	\$ 1,500.00	
<del>7-K-77</del> 77-14	9-28-45	Rip Rap @ No. about.	\$ 500.00	\$ 496.41
17K9 7/sup	1-16-50	Replace bulkhead plank per recommendations of 11-3-49.	\$ 1,000.00	\$ 1,096.64
55-7K9 1/5	7-7-54	Repairs as recommended in Report dated 4-28-54.	\$ 1,200.	
55-7K9 5/5	8-17-54	Repairs as recommended in Br. Report dated 6-30-54.	\$ 300.	
57-7K9-B	5-3-57	Work as recommended in Br. Rpt. dated 12-18-56.	\$ 250.	\$ 220.56
61-7U32D9	11-2-60	Work as rec. in Suppl. Br. Rpt. dated 8-8-60	Under \$ 50.	\$ 38.16
63-07U32D09	4-18-63	Work as Rec. in Suppl. Br. Rpt. dated 8-17-62.	\$ 100.	\$ 75.82

### CONDITION OF STRUCTURE:-

The channel has scoured downward about 4' since the structure was built. Scour extends from upper edge of bridge downstream only with sharp 2' drop-off. Upstream end of north bulkhead, extending to centerline of bridge roadway has partially failed and has been temporarily repaired. There is considerable rotting of redwood planks, but the creosoted Douglas fir bulkhead piles are still in fairly good condition.

If the above noted erosion can be stopped, it is considered that the bulkheads will serve for some time as yet, but channel paving with concrete walls and elimination of timber bulkheads will have to be resorted to eventually ~~much~~ at a later date when funds are more plentiful.

All concrete in the structure itself appears to be of good quality, and the structure is in good condition otherwise.

### SUMMARY:-

Structure is safe for legal loads by inspection.

Probable remaining economic service life, structurally, 50 years.

### RECOMMENDATIONS:-

The following work should be done during the summer of 1938:-

- (1) Construct a concrete cut-off wall across the channel downstream from bridge, normal to shannel, and with its south end in line with the SE corner of bridge, extending from the south bulkhead to the north bank of stream. Wall to be 10' in total height, 10" thick, reinforced with 1/2" square bars at 12" centers both ways in center of wall. Top of wall to be at former grade of stream bed.
- (2) Backfill in front of above wall (downstream side) with heavy rip-rap or broken concrete which is available at site.
- (3) Backfill in front of bottom of upstream end of north bulkhead (where badly scoured) with heavy rip-rap which may be available at the site.
- (4) Backfill the stream channel under the bridge to its original elevation.
- (5) Place 1" x 3" redwood battens over all cracks in bulkheads which are below highwater mark.

Estimated cost, about-----\$ 1,500  
Finance: Replacement Fund.

Next inspection, July 1939.

Fred Barnes.

APR 14 1939

SEE SUPPLEMENTARY REPORT OF                      FOLLOWING.