
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 : 55C0594
Facility Carried: IRVINE CENTER DR
Location : 0.3 MI S/E SAND CANYN AVE
City :
Inspection Date : 24-JUL-01
Inspection Type
Routine ☒ Group A ☐ Underwater ☐ Special ☐ Other ☐

Bridge Inspection Report

Name : MARSHBURN CHANNEL

CONSTRUCTION INFORMATION

Year Built : 1991
Year Widened : N/A
Length (m) : 13.7

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

Description of Structure : Single span CIP/RC deck slab with RC open end diaphragm abutments, all supported upon concrete piles.

Span Configuration : (W) 1 @ 13.4 m (E) c/c

LOAD CAPACITY AND RATINGS

Design Live Load : MS - 18 + MOD OR HS - 20 + MOD

Inventory Rating : 32.6 metric tons

Operating Rating : 53.5 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, 1.5 m sw, 13.1 m, 8.5 m cu med, 13.0 m, 1.5 m sw, 0.3 m br (N)

Total Width : 38.4 m

Net Width : 25.10 m

No. of Lanes : 6

Rail Description : Type 26 (Conc.) Railing

Rail Code : 1000

Min. Vertical Clearance : Unimpaired

DESCRIPTION UNDER STRUCTURE

Channel Description : RC trapezoidal.

CONDITION OF STRUCTURE

The structure is in excellent condition.

MISCELLANEOUS

Pedestrian access beneath the structure is from the southeast and from the southwest quadrants.

Vehicular access into the channel is from the northwest quadrant of Laguna Canyon Road.

ELEMENT LEVEL INSPECTION RATINGS

F#	Elem	Element Description	Env	Total Units Quantity	Qty in each Condition State				
					St. 1	St. 2	St. 3	St. 4	St. 5
01 38		Concrete Slab - Bare	2	350 sq.m.	350	0	0	0	0
01 215		Reinforced Conc Abutment	2	78 m.	78	0	0	0	0
01 227		Reinforced Conc Submerged Pile	2	48 ea.	48	0	0	0	0
01 256		Slope Protection	2	2 ea.	2	0	0	0	0
01 331		Reinforced Conc Bridge Railing	2	48 m.	48	0	0	0	0

WORK RECOMMENDATIONS - NONE

Bridge No.: 55C0594

Location: 0.3 MI S/E SAND CANYN AVE Inspection Date: 24-JUL-01

Inspected By : M. Ogata

M. Ogata
Registered Civil Engineer



CC : TMRut
Orange County

Bridge No.: 55C0594

Location: 0.3 MI S/E SAND CANYN AVE Inspection Date: 24-JUL-01

STRUCTURE INVENTORY AND APPRAISAL REPORT

***** IDENTIFICATION *****

(1) STATE NAME - CALIFORNIA 069
 (8) STRUCTURE NUMBER 55C0594
 (5) INVENTORY ROUTE(ON/UNDER) - ON 1 40 0M032N
 (2) HIGHWAY AGENCY DISTRICT 12
 (3) COUNTY CODE 059 (4) PLACE CODE 00000
 (6) FEATURE INTERSECTED - MARSHBURN CHANNEL
 (7) FACILITY CARRIED - IRVINE CENTER DR
 (9) LOCATION - 0.3 MI S/E SAND CANYN AVE
 (11) MILEPOINT/KILOMETERPOINT 0
 (12) BASE HIGHWAY NETWORK - NOT ON NET 0
 (13) LRS INVENTORY ROUTE & SUBROUTE
 (16) LATITUDE 33 DEG 40 MIN 04 SEC
 (17) LONGITUDE 117 DEG 45 MIN 43 SEC
 (98) BORDER BRIDGE STATE CODE % SHARE %
 (99) BORDER BRIDGE STRUCTURE NUMBER

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

(43) STRUCTURE TYPE MAIN: MATERIAL - CONCRETE
 TYPE - SLAB CODE 1 01
 (44) STRUCTURE TYPE APPR: MATERIAL -
 TYPE - CODE
 (45) NUMBER OF SPANS IN MAIN UNIT 1
 (46) NUMBER OF APPROACH SPANS 0
 (107) DECK STRUCTURE TYPE CIP CONCRETE CODE 1
 (108) WEARING SURFACE / PROTECTIVE SYSTEM:
 A) TYPE OF WEARING SURFACE - CONCRETE CODE 1
 B) TYPE OF MEMBRANE - NONE CODE 0
 C) TYPE OF DECK PROTECTION - NONE CODE 0

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

(27) YEAR BUILT 1991
 (106) YEAR RECONSTRUCTED 0000
 (42) TYPE OF SERVICE: CN - HIGHWAY-PEDESTRIAN 5
 UNDER - WATERWAY 5
 (28) LANES: CN STRUCTURE 06 UNDER STRUCTURE
 (29) AVERAGE DAILY TRAFFIC 14000
 (30) YEAR OF ADT 1999 (109) TRUCK ADT 1%
 (19) BYPASS, DETOUR LENGTH 2 KM

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

(48) LENGTH OF MAXIMUM SPAN 13.4 M
 (49) STRUCTURE LENGTH 13.7 M
 (50) CURB OR SIDEWALK: LEFT 1.5 M RIGHT 1.5 M
 (51) BRIDGE ROADWAY WIDTH CURB TO CURB 26.1 M
 (52) DECK WIDTH OUT TO CUT 38.4 M
 (32) APPROACH ROADWAY WIDTH (W/SHOULDERS) 26.1 M
 (33) BRIDGE MEDIAN - CLOSED (NO BARRIER) 2
 (34) SKEW 0 DEG (35) STRUCTURE FLARED NO
 (10) INVENTORY ROUTE MIN VERT CLEAR 99.99 M
 (47) INVENTORY ROUTE TOTAL HORIZ CLEAR 26.1 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 = 96.7 *****

STATUS =

HEALTH INDEX = 100

***** 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 7
 (61) CHANNEL & CHANNEL PROTECTION 9
 (62) CULVERTS N

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

(31) DESIGN LOAD - MS - 18 + MOD OR HS - 20 + MOD 6
 (53) OPERATING RATING METHOD - LOAD FACTOR 1
 (64) OPERATING RATING - 53.5
 (65) INVENTORY RATING METHOD - LOAD FACTOR 1
 (66) INVENTORY RATING - 32.6
 (70) BRIDGE POSTING - Equal to or above legal loads 5
 (41) STRUCTURE OPEN, POSTED OR CLOSED - A
 DESCRIPTION - OPEN, NO RESTRICTION

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

(67) STRUCTURAL EVALUATION 7
 (68) DECK GEOMETRY 6
 (69) UNDERCLEARANCES, VERTICAL & HORIZONTAL N
 (71) WATER ADEQUACY 9
 (72) APPROACH ROADWAY ALIGNMENT 8
 (36) TRAFFIC SAFETY FEATURES 1000
 (113) SCOUR CRITICAL BRIDGES 8

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

(75) TYPE OF WORK - CODE
 (76) LENGTH OF STRUCTURE IMPROVEMENT M
 (94) BRIDGE IMPROVEMENT COST
 (95) ROADWAY IMPROVEMENT COST
 (96) TOTAL PROJECT COST
 (97) YEAR OF IMPROVEMENT COST ESTIMATE
 (114) FUTURE ADT 28000
 (115) YEAR OF FUTURE ADT 2019

***** INSPECTIONS *****

(90) INSPECTION DATE 07/01 (91) FREQUENCY 24 MO
 (92) CRITICAL FEATURE INSPECTION: (93) CPI DATE
 A) FRACTURE CRIT DETAIL - NO -1 MO A)
 B) UNDERWATER INSP - NO -1 MO B)
 C) OTHER SPECIAL INSP - NO -1 MO C)

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
DIVISION OF STRUCTURES
SUPPLEMENTARY BRIDGE REPORT
DS-M19 (REV. 2/83)

Bridge Number 55C-594

TYPE OF INVESTIGATION/REPORT

BIENNIAL X DAMAGE
CATEGORY A OTHER
UNDERWATER OFFICE

Location 12 - Ora - FAU M032-CR
Dist.-Co.-Rte.-City

Date of Investigation July 19, 1995

Name MARSHBURN CHANNEL (Irvine Center Drive, 0.3 mile southeast of Sand Canyon Avenue)

CONDITION RATINGS:

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

Channel & Channel Protection

9

SCOUR CRITICAL:

A scour rating of A1 is appropriate.

CONDITION OF STRUCTURE:

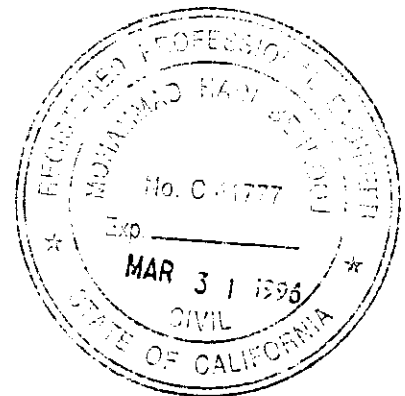
There is light cracking in sidewalks.

Structure is new and is in good condition.

WORK RECOMMENDED:

None.

By M. H. Behrooz ^{HMB}
G. P. Balinghasay



GPB:ms
cc: CDHarris
Orange County
WLindsey

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	

08/02/95

BY:

Bridge Number 55C-594

TYPE OF INVESTIGATION/REPORT

BIENNIAL X DAMAGE
CATEGORY A OTHER
UNDERWATER OFFICE

Location 12 - Ora - FAU M032-CR
Dist.-Co.-Rte.-City

Date of Investigation April 15, 1993

Name MARSHBURN CHANNEL (Irvine Center Drive, 0.3 mile southeast of Sand Canyon Avenue)

CONDITION RATINGS:

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

Channel & Channel Protection

9

CONDITION OF STRUCTURE:

Condition of the structure is good.

REVISION:

Description on structure: Lanes - 4.

Henry Ma

HM:cd

cc: INagai (2)
County of Orange



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

14W13

Bridge No. 55C - 594

DS-M58 (REV. 1/91)

Location 12 - Ora - FAU M032-CR
Dist Co Rte City

Date of Investigation April 19, 1991

Name MARSHBURN CHANNEL (Irvine Center Drive, 0.3 mile southeast
of Sand Canyon Avenue)

Lat. 33° - 40.1'N Long. 117° - 45.7'W

Custodian County of Orange Owner County of Orange

STRUCTURAL DATA AND HISTORY

Year Built 1991 By City of Irvine Contract No. C.I.P. No. 2198

Designed by: C.D.C. Engineering, Inc. Plans Avail. @DOS

Description: Single span CIP RC slab supported by open end RC diaphragm
abutments on concrete piles.

Spans (W) 44' (E)

Length 45' NBIS Bridge Length Yes Skew None

Number Of Intermediate Joints: @Hinges None @Bents None

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

Design Live Load HS20-44 & Alt & Permit Design Method Load Factor

DESCRIPTION - ON STRUCTURE

Bridge Width (S) 1'br, 5'sw, 43', 28'm, 42.5', 5'sw, 1'br (N)

Total Width 126' Net Width 85.5' Lanes 6 Tracks None

Median Raised island Rail Type 26 w/tubular
handrail 1000

Vert. Clearance over deck Unimpaired Appr. Rdwy. Width 88'

Deck Type 1 Wearing Surface/Prot. Sys. 100 Concrete/none

Alignment Tangent

DESCRIPTION - UNDER STRUCTURE

Roadway Section None

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

Lanes Tracks

Facilities Crossed Marshburn Channel (F 16)

April 19, 1991

DESCRIPTION - HYDRAULICS

Channel RC trapezoidal

Navigable: Yes ☐ No ☒ Clearances: Vert. Horiz.Pier/Abutment Protection (For Navigation) ☐

TRAFFIC INFORMATION

	DECK	YEAR	UNDER	YEAR
Average Daily Traffic & Year :	15,000	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 :	14		N	
LOAD RATINGS:	Inventory HS 20	Operating HS 33		
	Permit P P P P P	Computation Method Min By Design		

CONDITION RATINGS:

Deck	8	Superstructure	8	Substructure	8
Channel & Channel Protection	9	Culvert	N	Widenable	Yes

APPRAISAL RATINGS:

Waterway Adequacy	9	Approach Roadway Alignment	8
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Date of Revisions

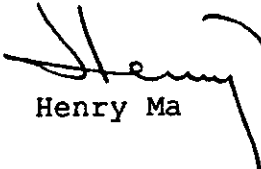
DISCUSSION:

This structure replaced an existing concrete slab bridge (55C-153), which was removed in its entirety, at the same location.

On date of this inspection, total project and approach roadway construction is not yet complete. Only 2 lanes of traffic is using south half of this bridge at this time.

CONDITION OF STRUCTURE:

The structure is new and is in good condition.



Henry Ma

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

