



**DEPARTMENT OF TRANSPORTATION**  
Structure Maintenance & Investigations

Bridge Number : 55C0503  
Facility Carried: AVENIDA VAQUERO  
Location : 0.1 MI E/O CMNO D L MARE  
City : SAN CLEMENTE  
Inspection Date : 10/10/2013

**Bridge Inspection Report**

Inspection Type  
Routine FC Underwater Special Other  
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**STRUCTURE NAME:** PRIMA DESHECHA CANADA

**CONSTRUCTION INFORMATION**

Year Built : 1970 Skew (degrees): 40  
Year Widened: N/A No. of Joints : 0  
Length (m) : 11 No. of Hinges : 0

Structure Description: Double 3.0 m W x 2.4 m H x 34.7 m L RC box culvert (non-grade top)  
beneath 3.0 m of earth fill.

Span Configuration : (W) 2 @ 3.0 m (E) clear, normal

**SAFE LOAD CAPACITY AND RATINGS**

Design Live Load: M-13.5 OR H-15  
Inventory Rating: RF=0.75 =>24.3 metric tons Calculation Method: FIELD EVAL/ENG JUDGMENT  
Operating Rating: RF=1.25 =>40.5 metric tons Calculation Method: FIELD EVAL/ENG JUDGMENT  
Permit Rating : P P P P P  
Posting Load : Type 3: Legal Type 3S2: Legal Type 3-3: Legal

**DESCRIPTION ON STRUCTURE**

Deck X-Section: (N) 0.2 m cu, 17.1 m, 0.2 m cu, 0.9 m ea, 1.2 m sw (S)

Total Width: 19.6 m Net Width: 17.1 m No. of Lanes: 3 Speed: 20 mph

Min. Vertical Clearance: Unimpaired

Rail Code: 0000

Rail Type	Location	Length (ft)	Rail Modifications
Miscellaneous	Left	49	

**DESCRIPTION UNDER STRUCTURE**

Channel Description: RC trapezoidal with ramps for golf carts at the inlet and at the outlet.

**INSPECTION COMMENTARY**

**SCOPE AND ACCESS**

The water depth was 2 inches running through both barrels. A complete inspection of all visible bridge elements was performed.

Pedestrian access beneath the structure is from the southwest quadrant.

**REVISIONS**

Element 241 (Reinforced Concrete Culvert): The quantities were modified as follows: from [St. 1 = 15, St. 2 = 10, St. 3 = 10] to [St. 1 = 15, St. 2 = 17, St. 3 = 3].

**MISCELLANEOUS**

Underside and elevation view photos were taken during this inspection.

INSPECTION COMMENTARY

## CULVERT

The soffit of the top slab at both barrels exhibit several longitudinal cracks with light white efflorescence especially at the north end.

The soffit of barrel #2 (east barrel) exhibits unsound concrete 3' X 3' at 35 ft from the north end.

South headwall exhibits:

- \* two spalls with rebar exposed and rusted above both barrels;
- \* unsound concrete;
- \* severe horizontal crack 0.5" wide and this crack develops a spall above the west barrel, but above the east barrel is covered with vegetation;
- \* a vertical crack on top of box wall #2 approximately 0.04" wide; and
- \* unsound concrete 4" X 4" above the east barrel.

The culvert walls exhibit:

- \* Box wall #1 (west) exhibits 7 vertical cracks 0.04" wide; 7 vertical cracks 0.02" wide; and a horizontal crack 10 ft long at north end.
  - \* Box wall #2 exhibits 7 vertical cracks 0.04" wide; and 7 vertical cracks 0.02" wide.
- Some of these cracks were extended to the bottom of the top slab with light white efflorescence and water was seeping and leaking from these cracks.

Abrasion was noticed in several locations at both barrels and at the soffit.

## SAFE LOAD CAPACITY

The current rating has been assigned in accordance with SMI procedures for culverts. Based on the field conditions and load history, the culvert is adequate to carry legal loads.

ELEMENT INSPECTION RATINGS

Elem No.	Element Description	Total			Qty in each Condition State				
		Env	Qty	Units	St. 1	St. 2	St. 3	St. 4	St. 5
241	Reinforced Concrete Culvert	2	35	m.	15	17	3	0	

WORK RECOMMENDATIONS

RecDate: 10/10/2013	EstCost:	Remove and patch unsound concrete at the
Action : Super-Patch spalls	StrTarget: 6 MONTHS	soffit of barrel #2 (east barrel) which
Work By: LOCAL AGENCY	DistTarget:	exhibits unsound concrete 3' X 3' at 35
Status : PROPOSED	EA:	ft from the north end.
 RecDate: 07/27/2011	 EstCost:	 Remove unsound spalls and patch all
Action : Sub-Patch spalls	StrTarget: 2 YEARS	spalls in the two culvert barrels and the
Work By: LOCAL AGENCY	DistTarget:	headwalls.
Status : PROPOSED	EA:	

Team Leader : Ashraf Shenouda  
Report Author : Ashraf Shenouda  
Inspected By : A. Shenouda/KD. Henderson

*Ashraf Shenouda* 12/5/13  
Ashraf Shenouda (Registered Civil Engineer) (Date)



STRUCTURE INVENTORY AND APPRAISAL REPORT

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

(1) STATE NAME- CALIFORNIA 069  
 (8) STRUCTURE NUMBER 55C0503  
 (5) INVENTORY ROUTE (ON/UNDER)- ON 150000000  
 (2) HIGHWAY AGENCY DISTRICT 12  
 (3) COUNTY CODE 059 (4) PLACE CODE 65084  
 (6) FEATURE INTERSECTED- PRIMA DESHECHA CANADA  
 (7) FACILITY CARRIED- AVENIDA VAQUERO  
 (9) LOCATION- 0.1 MI E/O CMNO D L MARES  
 (11) MILEPOINT/KILOMETERPOINT 0  
 (12) BASE HIGHWAY NETWORK- NOT ON NET 0  
 (13) LRS INVENTORY ROUTE & SUBROUTE  
 (16) LATITUDE 33 DEG 27 MIN 25.11 SEC  
 (17) LONGITUDE 117 DEG 38 MIN 32.18 SEC  
 (98) BORDER BRIDGE STATE CODE % SHARE %  
 (99) BORDER BRIDGE STRUCTURE NUMBER

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

(43) STRUCTURE TYPE MAIN:MATERIAL- CONCRETE  
 TYPE- CULVERT CODE 119  
 (44) STRUCTURE TYPE APPR:MATERIAL- OTHER/NA  
 TYPE- OTHER/NA CODE 000  
 (45) NUMBER OF SPANS IN MAIN UNIT 2  
 (46) NUMBER OF APPROACH SPANS 0  
 (107) DECK STRUCTURE TYPE- NOT APPLICABLE CODE N  
 (108) WEARING SURFACE / PROTECTIVE SYSTEM:  
 A) TYPE OF WEARING SURFACE- NOT APPLICABLE CODE N  
 B) TYPE OF MEMBRANE- NOT APPLICABLE CODE N  
 C) TYPE OF DECK PROTECTION- NOT APPLICABLE CODE N

## \*\*\*\*\* AGE AND SERVICE \*\*\*\*\*

(27) YEAR BUILT 1970  
 (106) YEAR RECONSTRUCTED 0000  
 (42) TYPE OF SERVICE: ON- HIGHWAY-PEDESTRIAN 5  
 UNDER- WATERWAY 5  
 (28) LANES:ON STRUCTURE 03 UNDER STRUCTURE 00  
 (29) AVERAGE DAILY TRAFFIC 6000  
 (30) YEAR OF ADT 2010 (109) TRUCK ADT 1 %  
 (19) BYPASS, DETOUR LENGTH 3 KM

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

(48) LENGTH OF MAXIMUM SPAN 3.9 M  
 (49) STRUCTURE LENGTH 11.0 M  
 (50) CURB OR SIDEWALK: LEFT 1.2 M RIGHT 0.2 M  
 (51) BRIDGE ROADWAY WIDTH CURB TO CURB 17.1 M  
 (52) DECK WIDTH OUT TO OUT 19.6 M  
 (32) APPROACH ROADWAY WIDTH (W/SHOULDERS) 17.1 M  
 (33) BRIDGE MEDIAN- NO MEDIAN 0  
 (34) SKEW 40 DEG (35) STRUCTURE FLARED NO  
 (10) INVENTORY ROUTE MIN VERT CLEAR 99.99 M  
 (47) INVENTORY ROUTE TOTAL HORIZ CLEAR 17.1 M  
 (53) MIN VERT CLEAR OVER BRIDGE RDWY 99.99 M  
 (54) MIN VERT UNDERCLEAR REF- NOT H/RR 0.00 M  
 (55) MIN LAT UNDERCLEAR RT REF- NOT H/RR 0.0 M  
 (56) MIN LAT UNDERCLEAR LT 0.0 M

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

(38) NAVIGATION CONTROL- NOT APPLICABLE CODE N  
 (111) PIER PROTECTION- CODE  
 (39) NAVIGATION VERTICAL CLEARANCE 0.0 M  
 (116) VERT-LIFT BRIDGE NAV MIN VERT CLEAR M  
 (40) NAVIGATION HORIZONTAL CLEARANCE 0.0 M

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 SUFFICIENCY RATING = 88.6  
 STATUS  
 HEALTH INDEX 78.1  
 PAINT CONDITION INDEX = N/A

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

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

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

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

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

(31) DESIGN LOAD- M-13.5 OR H-15 2  
 (63) OPERATING RATING METHOD- FIELD EVAL/ENG JUD 0  
 (64) OPERATING RATING- 40.5  
 (65) INVENTORY RATING METHOD- FIELD EVAL/ENG JUL 0  
 (66) INVENTORY RATING- 24.3  
 (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 9  
 (69) UNDERCLEARANCES, VERTICAL & HORIZONTAL N  
 (71) WATER ADEQUACY 9  
 (72) APPROACH ROADWAY ALIGNMENT 7  
 (36) TRAFFIC SAFETY FEATURES 0000  
 (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 8217  
 (115) YEAR OF FUTURE ADT 2028

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

(90) INSPECTION DATE 10/13 (91) FREQUENCY 24 MO  
 (92) CRITICAL FEATURE INSPECTION: (93) CFI DATE  
 A) FRACTURE CRIT DETAIL- NO MO A)  
 B) UNDERWATER INSP- NO MO B)  
 C) OTHER SPECIAL INSP- NO MO C)