

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF MAINTENANCE  
STRUCTURE MAINTENANCE & INVESTIGATIONS  
100 South Main Street, 3rd Floor  
LOS ANGELES, CA 90012  
PHONE (213) 897-2004  
FAX (213) 897-2033



*Making Conservation  
a California Way of Life.*

July 24, 2019

Mr. Marwan Youssef  
Director Of Public Works/City Engineer  
City of Westminster  
8200 Westminster Blvd  
Westminster, CA 92683

Dear Mr. Youssef:

In accordance with Title 23 of the Code of Federal Regulations (Federal Highway Act) and the National Bridge Inspection Standards (NBIS), Caltrans Structure Maintenance and Investigations performed an inspection of 6 bridges under your jurisdiction. The type of inspection is indicated on the bridge report transmittal sheet. The bridges have been rated to indicate their deficiencies, structural adequacy, safe load carrying capacity and overall general condition.

Enclosed are copies of the Bridge Inspection Reports for the structures noted on the attached transmittal sheet. These reports contain descriptions of physical changes to the structures since the last inspection, recommendations for work to be done, and additional information not recorded in the previous Bridge Reports.

Your attention is directed to the requirements of Title 23, Part 650 of the Code of Federal Regulations, where newly completed structures or any modification of existing structures shall be entered in the inventory within 90 days. Please notify this office of any newly constructed bridge or culvert within your jurisdiction, more than 20 feet measured along the center of the roadway and carrying public vehicular traffic or over a public roadway, in order that it may be entered in the inventory of bridge structures in compliance with Federal requirements.

Should you have any questions regarding the enclosed Bridge Inspection Reports, please contact Bing Wu @ (213) 897-0874.

Sincerely,

A handwritten signature in blue ink, appearing to read "Ching Chao".

CHING CHAO  
Office Chief  
Structure Maintenance & Investigations - (Investigations-South)

Enclosures

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF MAINTENANCE  
 STRUCTURE MAINTENANCE & INVESTIGATIONS  
 100 South Main Street, 3rd Floor  
 LOS ANGELES, CA 90012  
 PHONE (213) 897-2004  
 FAX (213) 897-2033



*Making Conservation  
 a California Way of Life.*

**Bridge Report Transmittal Sheet**

**Batch**    **51287**

**City of Westminster**

Bridge #	Bridge Name	Location	Inspection		Outstanding	
			Date	Type	Work	Cost
55C0093	EAST GARDEN GROVE- WINTRSBURG CHANNEL	AT MCFADDEN AVENUE	04/06/2019	Routine	N	\$
55C0135	WESTMINSTER CHANNEL	0.1 MI S ROUTE 1-405	04/06/2019	Routine	Y	\$
55C0424	EAST GARDEN GROVE- WINTRSBURG CHANNEL	0.25 MI N EDINGER AVE	04/06/2019	Routine	Y	\$
55C0426	EAST GARDEN GROVE- WINTRSBURG CHANNEL	0.10 MI N MCFADDEN AVE	04/06/2019	Routine	Y	\$
55C0427	EAST GARDEN GROVE- WINTERSBURG CHANNEL	AT EDINGER AVE	04/06/2019	Routine	N	\$
55C0457	WESTMINSTER CHANNEL	100' N BOLSA AVE	04/06/2019	Routine	Y	\$

**6**    Bridge(s) in this Transmittal

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF MAINTENANCE  
STRUCTURE MAINTENANCE & INVESTIGATIONS  
100 South Main Street, 3rd Floor  
LOS ANGELES, CA 90012  
PHONE (213) 897-2004  
FAX (213) 897-2033



*Making Conservation  
a California Way of Life.*

**WEB SITES:**

The National Bridge Inspection Standards (NBIS) Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation's Bridges, Element Level Inspection, Structure Maintenance and Investigations Manuals, Local Assistance Program Guidelines and other related information are posted on Division of Maintenance, Structure Maintenance and Investigations; Division of Local Assistance, Local Highway Bridge Program (HBP) and FHWA websites.

The websites can be accessed at:

1. "Caltrans Structure Maintenance and Investigations" <http://www.dot.ca.gov/hq/structur/strmaint/>
2. "Caltrans Division of Local Assistance" <http://www.dot.ca.gov/hq/LocalPrograms/hbrr99/hbrr99a.htm>
3. "FHWA" <http://www.fhwa.dot.gov/BRIDGE/mtguide.pdf>

**Inspection Type Definitions****Routine Inspection:**

Routine Inspections consist of both the initial Inventory Inspection (the first inspection of the bridge that places it in the bridge inventory or when there has been a change in the configuration of the structure) and subsequent regularly scheduled inspections. The initial inspection provides all the Structural Inventory & Appraisal (SI&A) data required by federal and state regulations, determines the baseline structural conditions, lists any existing problems, and establishes the load capacity of the structure. Subsequent inspections consist of observations, measurements needed to determine the physical and functional condition of the bridge, to identify any changes from the previously recorded conditions, and verification of its load capacity. These inspections are generally conducted from the deck, ground and/or water level, and from permanent work platforms and walkways, if present. Inspection of underwater portions of the substructure is limited to observations during low-flow periods and/or probing for signs of undermining. Special equipment should be utilized in circumstances where its use provides the only practical access to areas of the structure.

**Fracture Critical, Special Feature & Underwater Inspections:**

Fracture Critical, Special Feature, and Underwater Inspections are up close, hands-on inspections of one or more members above or below the water level to identify any deficiencies not readily detectable using Routine Inspection procedures. These inspections generally require special equipment such as under-bridge inspection equipment, manlifts, boats, traffic control, and railroad flagging. Personnel with special skills such as divers or structural steel inspectors trained in non-destructive testing techniques may be required.

**Other Inspections:**

Other Inspections are conducted on damaged structures, structures that have developed specific problems, or structures suspected of developing problems. The scope of these investigations should be sufficient to determine the need for emergency load restrictions or closure of the structure, monitor a changing condition, and to assess the level of effort necessary to effect a repair.



DEPARTMENT OF TRANSPORTATION  
Structure Maintenance & Investigations

Bridge Number : 55C0457  
Facility Carried: EDWARDS ST  
Location : 100' N BOLSA AVE  
City : WESTMINSTER  
Inspection Date : 04/06/2019

# Bridge Inspection Report

## Inspection Type

Routine	FC	Underwater	Special	Other
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**STRUCTURE NAME:** WESTMINSTER CHANNEL

## CONSTRUCTION INFORMATION

Year Built : 1965	Skew (degrees): 1
Year Modified: 1972	No. of Joints : 0
Length (m) : 13.7	No. of Hinges : 0

Structure Description: Quadruple (10.00 feet W x 9.00 feet H x 107.00 feet L) RC box culvert (grade top) beneath 1.00 foot of earth fill.

Span Configuration : (S) 4 @ 10.00 feet (N).

## SAFE LOAD CAPACITY AND RATINGS

Design Live Load: UNKNOWN	
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 : PPPPP	
Posting Load : Type 3: <u>Legal</u>	Type 3S2: <u>Legal</u> Type 3-3: <u>Legal</u>

## DESCRIPTION ON STRUCTURE

Deck X-Section: (W) 0.80 feet hw, 8.00 feet sw, 64.00 ft, 8.00 feet sw, 25.00 feet earth, 0.80 feet hw (E).

Total Width: 32.3 m	Net Width: 19.5 m	No. of Lanes: 5	Speed: 40 mph
Min. Vertical Clearance: Unimpaired			Overlay Thickness: 2.0 inches
Rail Code: <u>NNNN</u>			

## DESCRIPTION UNDER STRUCTURE

Channel Description: RC box culvert upstream, natural earth trapezoidal with rock slopes downstream.

## NOTICE

The bridge inspection condition assessment used for this inspection is based on the American Association of State Highway and Transportation Officials (AASHTO) Bridge Element Inspection Manual 2013 as defined in Moving Ahead for Progress in the 21st Century (MAP-21) federal law. The new element inspection methodology may result in changes to related condition and appraisal ratings on the bridge without significant physical changes at the bridge.

The element condition information contained in this report represents the current condition of the bridge based on the most recent routine and special inspections. Some of the notes presented below may be from an inspection that occurred prior to the date noted in this report. Refer to the Scope and Access section of this inspection report for a description of which portions of the bridge were inspected on this date.

## INSPECTION COMMENTARY

### HISTORY

The bridge number is changed from 55C0457M to 55C0457.

### SCOPE AND ACCESS

A complete routine inspection was performed by walking on and around the channel to inspect all visible elements of the structure. Culvert deck was inspected by walking on sidewalks. Soffit and all substructure were inspected by walking underneath the culvert boxes with rain boots due to water at 2.0 inches deep inside all barrels at the time of inspection.

**INSPECTION COMMENTARY**

There is no need for a special equipment to inspect this structure except rain boots if it is in raining season.

**REVISIONS**

NBI item 36 (Traffic Safety Features) was revised from 0000 to NNNN.

**DECK AND ACCESS**

Asphalt roadway is in good condition.

**CULVERT**

Debris has been accumulating right in front of box walls at the east end as the following locations below:

There is a (3.0 feet H X 4.0 feet wide) of debris in front of box wall #2.

There is a (2.0 feet H X 3.0 feet wide) of debris in front of box wall #3.

There is a (1.0 foot H X 3.0 feet wide) of debris in front of box wall #4.

All of the culvert walls are covered with graffiti (see the attached photos no. 4 and 5).

Top of the westerly headwall has a spall at (4.0 inches L X 3.0 inches W X 1.0 inch D) about 10.0 feet from the northerly end and right above barrel #4.

The soffit at barrel #2 has a spall at (12.0 inches L X 3.0 inches w X 1.0 inch D) at the construction joint approximately 25.0 feet from the east end.

There is an unsound concrete area at (12.0 inches L X 15.0 inches W) at the fillet of culvert wall #2 (inside barrel #3) at the construction joint approximately 25.0 feet from the east end.

The culvert soffit of the top slab, there are two longitudinal construction joints with white efflorescence in between all barrels. The easterly construction joint has a sign of water leaking more than the westerly construction joint (see the attached photos no. 2 and 3).

The culvert walls has numerous vertical cracks as the following locations below:

Culvert wall #1 has four vertical cracks, up to 0.04 inches wide.

Culvert wall #2 has six vertical cracks, up to 0.04 inches wide.

Culvert wall #3 has five vertical cracks, up to 0.04 inches wide.

Culvert wall #4 has two vertical cracks, up to 0.04 inches wide.

Culvert wall #5 has a vertical crack 0.04 inches wide.

The westerly headwall has two vertical cracks, up to 0.04 inches above the culvert walls.

**SAFE LOAD CAPACITY**

A Load Rating Summary Sheet was archived on 06/16/2015 for this structure. 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 AND COMMENTARY**

Elem No.	Defect /Prot	Defect	Element Description	Env	Total Qty	Units	Qty in each Condition State			
							St. 1	St. 2	St. 3	St. 4
241			Culvert-RC	2	132	m	119	13	0	0
	1080		Delamination/Spall/Patched Area	2	2		0	2	0	0
	1120		Efflorescence/Rust Staining	2	1		0	1	0	0
	1130		Cracking (RC and Other)	2	10		0	10	0	0

(241)

The culvert soffit has spalls, cracks with efflorescence.

(241-1080)

Top of the westerly headwall has a spall at (4.0 inches L X 3.0 inches W X 1.0 inch D) about 10.0 feet from the northerly end and right above barrel #4.

The soffit at barrel #2 has a spall at (12.0 inches L X 3.0 inches w X 1.0 inch D) at the construction joint approximately 25.0 feet from the east end.

There is an unsound concrete area at (12.0 inches L X 15.0 inches W) at the fillet of culvert wall #2 (inside barrel #3) at the construction joint approximately 25.0 feet from the east end.

(241-1120)

The culvert soffit of the top slab, there are two longitudinal construction joints with white efflorescence in between all barrels. The easterly construction joint has a sign of water leaking more than the westerly construction joint (see the attached photos no. 2 and 3).

(241-1130)

The culvert walls has numerous vertical cracks as the following locations below:

Culvert wall #1 has four vertical cracks, up to 0.04 inches wide.

Culvert wall #2 has six vertical cracks, up to 0.04 inches wide.

Culvert wall #3 has five vertical cracks, up to 0.04 inches wide.

Culvert wall #4 has two vertical cracks, up to 0.04 inches wide.

Culvert wall #5 has a vertical crack 0.04 inches wide.

The westerly headwall has two vertical cracks, up to 0.04 inches above the culvert walls.

**WORK RECOMMENDATIONS**

RecDate: 04/06/2019

Action : Remove Vegetation

Work By: LOCAL AGENCY

Status : PROPOSED

EstCost:

StrTarget: 2 YEARS

DistTarget:

EA:

Remove all debris at the upstream.

RecDate: 04/06/2019

Action : Deck-Patch spalls

Work By: LOCAL AGENCY

Status : PROPOSED

EstCost:

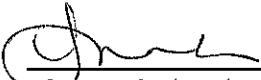
StrTarget: 2 YEARS

DistTarget:

EA:

Sawcut, clean and remove all lose materials around all of culvert soffit and pier wall spalls; and then, repair them with cement mortar.

Team Leader : Edwin Mah  
Report Author : Nelson N. Vo  
Inspected By : NN.Vo/E.Mah

  
Edwin Mah (Registered Civil Engineer) (Date) 7/17/2019



STRUCTURE INVENTORY AND APPRAISAL REPORT

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

(1) STATE NAME- CALIFORNIA 069  
 (8) STRUCTURE NUMBER 55C0457  
 (5) INVENTORY ROUTE(ON/UNDER)- ON 150000000  
 (2) HIGHWAY AGENCY DISTRICT 12  
 (3) COUNTY CODE 059 (4) PLACE CODE 84550  
 (6) FEATURE INTERSECTED- WESTMINSTER CHANNEL  
 (7) FACILITY CARRIED- EDWARDS ST  
 (9) LOCATION- 100' N BOLSA AVE  
 (11) MILEPOINT/KILOMETERPOINT 0  
 (12) BASE HIGHWAY NETWORK- NOT ON NET 0  
 (13) LRS INVENTORY ROUTE & SUBROUTE  
 (16) LATITUDE 33 DEG 44 MIN 40.66 SEC  
 (17) LONGITUDE 118 DEG 00 MIN 56.13 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 4  
 (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 1965  
 (106) YEAR RECONSTRUCTED 1972  
 (42) TYPE OF SERVICE: ON- HIGHWAY-PEDESTRIAN 5  
 UNDER- WATERWAY 5  
 (28) LANES:ON STRUCTURE 05 UNDER STRUCTURE 00  
 (29) AVERAGE DAILY TRAFFIC 17000  
 (30) YEAR OF ADT 2019 (109) TRUCK ADT 1 %  
 (19) BYPASS, DETOUR LENGTH 2 KM

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

(48) LENGTH OF MAXIMUM SPAN 3.0 M  
 (49) STRUCTURE LENGTH 13.7 M  
 (50) CURB OR SIDEWALK: LEFT 2.4 M RIGHT 2.4 M  
 (51) BRIDGE ROADWAY WIDTH CURB TO CURB 19.5 M  
 (52) DECK WIDTH OUT TO OUT 32.3 M  
 (32) APPROACH ROADWAY WIDTH (W/SHOULDERS) 19.5 M  
 (33) BRIDGE MEDIAN- NO MEDIAN 0  
 (34) SKEW 1 DEG (35) STRUCTURE FLARED NO  
 (10) INVENTORY ROUTE MIN VERT CLEAR 99.99 M  
 (47) INVENTORY ROUTE TOTAL HORIZ CLEAR 19.5 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

## \*\*\*\*\*

SUFFICIENCY RATING = 88.7  
 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 7

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

(31) DESIGN LOAD- UNKNOWN 0  
 (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 4  
 (69) UNDERCLEARANCES, VERTICAL & HORIZONTAL N  
 (71) WATER ADEQUACY 8  
 (72) APPROACH ROADWAY ALIGNMENT 8  
 (36) TRAFFIC SAFETY FEATURES NNNN  
 (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 19048  
 (115) YEAR OF FUTURE ADT 2037

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

(90) INSPECTION DATE 04/19 (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)



Photo No. 1  
Deck View looking South



Photo No. 1  
SideView looking East.



Photo No. 5  
Graffiti is on the walls at the east end.



Photo No. 4  
Graffiti is on the walls at the east end.



Photo No. 1  
Underside (barrel 4) View looking East.



Photo No. 1  
Underside (barrel 3) View looking East.



Photo No. 1  
Underside (barrel 2) View looking East.



Photo No. 1

Underside (barrel 1) View looking East.



Photo No. 3  
White efflorescence at the construction joint.



Photo No. 2  
White efflorescence at the construction joint.