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 : 55C0059
Facility Carried: SANTIAGO CANYON RD
Location : 0.8 MI N MODJESKA RD
City :
Inspection Date : 29-MAY-01

Bridge Inspection Report

Inspection Type

Routine	Group A	Underwater	Special	Other
X				

Name : WILLIAMS CANYON CREEK

CONSTRUCTION INFORMATION

Year Built : 1970
Year Widened : 1983
Length (m) : 10.7

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

Description of Structure : Single span CIP/RC rigid frame deck slab supported upon spread footings.

Span Configuration : (S) 1 @ 10.1 m (N) c/c

LOAD CAPACITY AND RATINGS

Design Live Load : MS - 18 OR HS - 20
Inventory Rating : 57.1 metric tons Calculation Method : LOAD FACTOR
Operating Rating : 99.9 metric tons Calculation Method : LOAD FACTOR
Permit Rating : PPPPP
Posting Load : Type 3 N/A english tons Type 3S2 N/A english tons Type 3-3 N/A english tons

DESCRIPTION ON STRUCTURE

Bridge width : (W) 0.1 m br, 5.9 m, 3.8 m med, 6.2 m, 0.1 m br (E)
Total Width : 16.2 m Net Width : 15.90 m No. of Lanes : 2
Rail Description : Type 15 Metal Railing Rail Code : 1111
Min. Vertical Clearance : Unimpaired

DESCRIPTION UNDER STRUCTURE

Channel Description : Natural earth trapezoidal with a cobbled bottom and with rock slopes upstream.

CONDITION OF STRUCTURE

The structure is in good condition.

ELEMENT LEVEL INSPECTION RATINGS

F#	Elem No.	Element Description	Env	Total Quantity	Units	Qty in each Condition State St. 1	St. 2	St. 3	St. 4	St. 5
01	38	Concrete Slab - Bare	2	160	sq.m.	160	0	0	0	0
01	215	Reinforced Conc Abutment	2	32	m.	32	0	0	0	0
01	337	Metal Railing (W6X25 Posts)	2	42	m.	42	0	0	0	0

WORK RECOMMENDATIONS - NONE

Printed on : 01-JUN-2001 11:17:10 AM

Bridge No.: 55C0059 **Location: 0.8 MI N MODJESKA RD** **Inspection Date: 29-MAY-01**

Inspected By : M. Ogata

M. Ogata

Registered Civil Engineer

REGISTERED PROFESSIONAL ENGINEER
MAKOTO OGATA
No. C23989
Exp. 12-31-01
CIVIL
STATE OF CALIFORNIA

CC : TMRut
Orange County

Printed on : 01-JUN-2001 11:17:10 AM

Bridge No.: 55C0059 Location: 0.8 MI N MODJESKA RD Inspection Date: 29-MAY-01

STRUCTURE INVENTORY AND APPRAISAL REPORT

IDENTIFICATION

(1)	STATE NAME - CALIFORNIA	069
(8)	STRUCTURE NUMBER	55C0059
(5)	INVENTORY ROUTE(ON/UNDER) - ON	1 40 0L0300
(2)	HIGHWAY AGENCY DISTRICT	12
(3)	COUNTY CODE 059 (4) PLACE CODE	00000
(6)	FEATURE INTERSECTED - WILLIAMS CANYON CREEK	
(7)	FACILITY CARRIED - SANTIAGO CANYON RD	
(9)	LOCATION - 0.8 MI N MODJESKA RD	
(11)	MILEPOINT/KILOMETERPOINT	0
(12)	BASE HIGHWAY NETWORK - NOT ON NET	0
(13)	LRS INVENTORY ROUTE & SUBROUTE	
(16)	LATITUDE	33 DEG 43 MIN 40 SEC
(17)	LONGITUDE	117 DEG 39 MIN 00 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	1970
(106)	YEAR RECONSTRUCTED	1983
(42)	TYPE OF SERVICE: ON - HIGHWAY	1
	UNDER - WATERWAY	5
(28)	LANES: ON STRUCTURE 02 UNDER STRUCTURE	
(29)	AVERAGE DAILY TRAFFIC	9000
(30)	YEAR OF ADT 1999 (109) TRUCK ADT	3%
(19)	BYPASS, DETOUR LENGTH	39 KM

GEOMETRIC DATA

(48)	LENGTH OF MAXIMUM SPAN	10.1 M
(49)	STRUCTURE LENGTH	10.7 M
(50)	CURB OR SIDEWALK: LEFT 0 M RIGHT	0 M
(51)	BRIDGE ROADWAY WIDTH CURB TO CURB	15.9 M
(52)	DECK WIDTH OUT TO OUT	16.2 M
(32)	APPROACH ROADWAY WIDTH (W/SHOULDERS)	15.8 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	15.9 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 = 85.0

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	8
(62)	CULVERTS	N

LOAD RATING AND POSTING

		CODE
(31)	DESIGN LOAD - MS - 18 OR HS - 20	5
(63)	OPERATING RATING METHOD - LOAD FACTOR	1
(64)	OPERATING RATING -	99.9
(65)	INVENTORY RATING METHOD - LOAD FACTOR	1
(66)	INVENTORY RATING -	57.1
(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	9
(69)	UNDERCLEARANCES, VERTICAL & HORIZONTAL	N
(71)	WATER ADEQUACY	8
(72)	APPROACH ROADWAY ALIGNMENT	8
(36)	TRAFFIC SAFETY FEATURES	1111
(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	18000
(115)	YEAR OF FUTURE ADT	2019

INSPECTIONS

(90)	INSPECTION DATE 05/01	(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)

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STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
DIVISION OF STRUCTURES

SUPPLEMENTARY BRIDGE REPORT

DS-M19 (REV. 2/93)

Bridge Number 55C-59

Location 12 - Ora - FAS L030-CR
Dist.-Co.-Rte.-City

Date of Investigation July 5, 1995

TYPE OF INVESTIGATION/REPORT			
BIENNIAL	X	DAMAGE	
CATEGORY A		OTHER	
UNDERWATER		OFFICE	

Name **WILLIAMS CANYON CREEK (Santiago Canyon Road, 0.8 mile north of Modjeska Canyon Road)**

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:

There is medium scaling on bridge deck that is concentrated on the northbound half of the bridge.

Bottom of channel is littered with tree branches and debris.

Condition of structure is good.

WORK RECOMMENDED:

Repair deck surface.

M. Hadi Behrooj 11/13

By

G. P. Balinghasay

REGISTERED PROFESSIONAL ENGINEER
MOHAMMAD HADI BEHROOJ
No. C 41777
Exp. MAR 31 1996
CIVIL
STATE OF CALIFORNIA

GPB:cd
cc: CDHarris
Orange County
WLindsey

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

(ATTACHMENT A)

PONTIS DATA FORM - PIA

BRIDGE NUMBER	FRAME	INSPECTION DATE
55C0059	01	070595
1 8	9	11 16

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

DEL	ELE #	ELEMENT DESCRIPTION	ENV	TOTAL QUANTITY	UNITS	QUANT CONDITION STATE 1	QUANT CONDITION STATE 2	QUANT CONDITION STATE 3	QUANT CONDITION STATE 4	QUANT CONDITION STATE 5
	51	CONCRETE ABUTMENT	2	32	M	32				
	101	METAL BRIDGE RAILING	2	42	M	42				
	138	CONCRETE SLAB - BARE	2	1	EA			1		

18 19 22 23 28 33 38 43 48

07/11/95

BY: CJB

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
DIVISION OF STRUCTURES

SUPPLEMENTARY BRIDGE REPORT

DS-M19 (REV. 8/92)

Bridge Number 55C-59

Location 12 - Ora - FAS L030-CR
Dist.-Co.-Rte.-City

Date of Investigation April 22, 1993

TYPE OF INVESTIGATION/REPORT			
BIENNIAL	X	DAMAGE	
CATEGORY A		OTHER	
UNDERWATER		OFFICE	

Name **WILLIAMS CANYON CREEK (Santiago Canyon Road, 0.8 mile north of Modjeska Canyon Road)**

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.

REVISION (correction):

Description on Structure: Wearing Surface/Protection System - 100, none.

Henry Ma

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

REGISTERED PROFESSIONAL ENGINEER
HENRY MA
No. C-36817
Exp. 6-30-96
CIVIL
STATE OF CALIFORNIA

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION (ATTACHMENT A)

P O N T I S D A T A F O R M - P I A

BRIDGE NUMBER	FRAME	INSPECTION DATE
55C0059	01	042293
1 8	9	11 16

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	

DEL	ELE #	ELEMENT DESCRIPTION	ENV	TOTAL QUANTITY	UNITS	QUANT CONDITION STATE 1	QUANT CONDITION STATE 2	QUANT CONDITION STATE 3	QUANT CONDITION STATE 4	QUANT CONDITION STATE 5
	51	CONCRETE ABUTMENT; DRY	2	2	EA	2				
	101	METAL BRIDGE RAILING	2	138	LF	138				
	106	SLOPE PAVING	2	2	EA	2				
	138	CONCRETE SLAB - BARE	2	1	EA		1			

18 19 22 23 28 33 38 43 48

H. MA

BY: _____

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

BRIDGE REPORT 14W14 **Bridge No.** 55C - 59

DS-M58 (REV. 1/91)

Location 12 - Ora - FAS L030-CR
Dist Co Rte City

REVISED ORIGINAL REPORT **Date of Investigation** April 17, 1991

Name WILLIAMS CANYON CREEK (Santiago Canyon Road, 0.8 mile north of Modjeska Canyon Road)

Lat. 33 °- 43.6'N **Long.** 117 °- 38.9'W

Custodian County of Orange **Owner** County of Orange

STRUCTURAL DATA AND HISTORY

Year Built 1970 **By** County of Orange **Contract No.** FAP S-1279 (7)
See Page 2

Designed by: County **Plans Avail. @** DOS

Description: Single span CIP RC rigid frame slab on spread footing.

Spans (S) 33' (N)

Length 35' **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 H20-S16-44 **Design Method** Unknown

DESCRIPTION - ON STRUCTURE

Bridge Width (W) 0.3'br, 19.4', 12.5'm, 20.3', 0.3'br (E)

Total Width 53' **Net Width** 52.2' **Lanes** 2 **Tracks** None

Median Painted stripe **Rail Type** 15 1111

Vert. Clearance over deck Unimpaired **Appr. Rdwy. Width** 52'

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 Williams Canyon

Bridge No. 55C - 59

April 17, 1991

DESCRIPTION - HYDRAULICS

Channel Natural earth channel

Navigable: Yes [ ] No [X] **Clearances:** Vert. _____ Horiz. _____

Pier/Abutment Protection (For Navigation) [ ]

TRAFFIC INFORMATION	DECK	YEAR	UNDER	YEAR
Average Daily Traffic & Year :	13,000	1989	N	
Average Daily Traffic (Future) :	15,000 Est	2010	N	
Average Daily Trucks (% OF ADT) :	3% Est		N	
Bypass Detour Length	24 miles		N	
Shell Route:	No		No	
Functional Classification :	07		N	

LOAD RATINGS: Inventory HS 35 Operating HS 59

Permit PPPPP Computation Method Load Factor

CONDITION RATINGS:

Deck [7] Superstructure [8] Substructure [8]

Channel & Channel Protection [8] Culvert [N] Widenable Yes

APPRAISAL RATINGS:

Waterway Adequacy [8] Approach Roadway Alignment [8]

Date of Revisions _____

STRUCTURAL DATA AND HISTORY (Con't.)

Date of Revision - 1983, widened 12' on east side.

CONDITION OF STRUCTURE:

As previously noted, there is an area (6'± x 8'±) where concrete deck surface has raveled -off with no exposure of reinforcing steel.

Condition of the structure is good.

Henry Ma

REGISTERED CIVIL ENGINEER HENRY MA No. C-36817 Exp. 6-30-92 CIVIL STATE OF CALIFORNIA

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

SUPPLEMENTARY BRIDGE REPORT

DS-M19 (REV. 1/89)

Bridge No. 55C-59

Location 12 - Ora - FAS L030 - CR
(Dist. Co. Rte. City)

Date of Investigation 4-11-89

Name WILLIAMS CANYON CREEK (Santiago Canyon Road, 0.8 mile N. of Modjeska Canyon Road)

CONDITION RATING:

Deck 6 Superstructure 8 Substr.&Pipes 8

Channel & Channel Protection 8 Culvert N Widenable? Yes

TYPE OF INVESTIGATION/REPORT

BIENNIAL X DAMAGE ____

CATEGORY A ____ OTHER ____

UNDERWATER ____ OFFICE ____

CONDITION OF STRUCTURE:

Condition of the structure is fair.

REVISION:

Location: 12-Ora-FAS L030-CR
Name: WILLIAMS CANYON CREEK (Santiago Canyon Road, 0.8 mile north of Modjeska Canyon Road)

ADT: 13,000 (1988)

WORK RECOMMENDED:

None.

RECOMMENDED POSTING:

None.

SUBSTRUCTURE CODING UPDATE:

Single span structure.

2 RC open end diaphragm abutments on spread footing.

Henry Ma

REGISTERED PROFESSIONAL ENGINEER
HENRY MA
No. C-36817
Exp. 6-30-92
CIVIL
STATE OF CALIFORNIA

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

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

Bridge No. 55C-59

Location 7-Ora-FAS LØ3Ø-CR
Dist - Co - Rte - PM - City

Date of Investigation April 21, 1987

Name WILLIAMS CANYON CREEK (Santiago Canyon Rd., Ø.8 mile N. of Modjeska Rd.)

CONDITION RATING:

Deck	Superstructure	Substr. & Pipes	Overall
6	8	8	6

Channel & Channel Protection 8 Retaining Walls N

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

REVISION:

Average Daily Traffic - 4,ØØØ (1985)

CONDITION OF STRUCTURE:

Overall condition of the structure is good.

RECOMMENDED POSTING:

None

WORK RECOMMENDED:

None

Henry Ma

REGISTERED PROFESSIONAL ENGINEER
HENRY MA
No. C-36817
Exp. 6-30-88
CIVIL
STATE OF CALIFORNIA

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
SUPPLEMENTARY BRIDGE REPORT
BR.OS M18 (REV. 1/74)

Bridge No. 55C-59

Location 7-Ora-FAU L030-CR
Dist-Co.-Rte.-Pfx.-City (On Deck)

Date of Investigation January 9, 1986

Name WILLIAMS CANYON CREEK (Santiago Canyon Road, 0.8 mile N. of Modjeska Road)

CONDITION RATING: **APPRAISAL RATING:**

Deck (6) Superstructure 8 Substr. & Pipes 8 Overall (6)

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

REVISION:

Condition Rating - Deck 6
Appraisal Rating - Overall 6
Bridge Width - (S)0.3'br, 19.7', 12.5'(m), 20.5', 0.3'br (N)
Median - Double-Double stripe.

CONDITION OF STRUCTURE:

Deck concrete aggregate is raveling-off in an area of approximately 10' x 15' in the median and the northbound lane near the north paving notch. O

Otherwise, the overall condition of the structure is good.

RECOMMENDED POSTING:

None

WORK RECOMMENDED:

None

Henry Ma
C-36817

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
SUPPLEMENTARY BRIDGE REPORT
DH-0S M19 (REV. 1/74)

Bridge No. 55C-59

Location 7-Ora-~~Var~~ FAS L030-CR
Dist - Co - Rte - PM - City (On Deck)

Date of Investigation October 26, 1983

Name WILLIAMS CANYON CREEK (Santiago Canyon Road, 0.8 mile N. of Modjeska Road)

CONDITION RATING: **APPRAISAL RATING:**

Deck 8 Superstructure 8 Substr. & Pipes 8 Overall 8

Channel & Channel Protection (8) Retaining Walls N

Widenable? Yes [X] No [ ] Conditional [ ]

Action Required by County Yes [X] No [ ]

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

REVISION:

Date of Revision : 1983 - Widened structure 12' on the east side (northbound) by Orange County.

Bridge Width - 0.3' br, 52.4', 0.3' br.

Total Width - 53'

Approach Roadway Width - 53'

CONDITION OF STRUCTURE:

The structure widening has recently been completed and work is now in progress to widen the northbound roadway.

The overall condition of the structure is good.

RECOMMENDED POSTING:

None

RECOMMENDATION:

None

Original signed by

E. L. Neff
C-28703

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

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

Bridge No. 55C-59

Location 07-Ora-FAS L030-CR (On deck)
Dist - Co - Rte - PM - City

Date of Investigation October 19, 1981

Name WILLIAMS CANYON CREEK (Santiago Canyon Road, 0.8 mile north of Modjeska Road)

CONDITION RATING: **APPRAISAL RATING:**

Deck 8 **Superstructure** 8 **Substr. & Pipes** 8 **Overall** 8

Channel & Channel Protection 6 **Retaining Walls** N

Widenable? Yes ☒ No ☐ Conditional ☐

Action Required by County: Yes ☐ No ☒

CONDITION OF STRUCTURE:

The overall condition of the structure is good.

RECOMMENDED POSTING:

None.

E. L. Neff
C 28703

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
BRIDGE REPORT
DS-M58 (REV. 1/75)

Bridge No. 55C-59

Other No.

P.U.C. No.

REVISED SEE REVISED ORIGINAL REPORT

Location 07-Ora-FAS-L030
Dist - Co - Rte - PM - City

Date of Investigation August 13, 1980

Name WILLIAMS CANYON CREEK (Santiago Canyon Road-.8 miles north of Modjeska Road)

Lat. N33°- 43.6' Long. W117°- 38.9'

STRUCTURAL DATA AND HISTORY

Year Built 1970 By Orange County FAP No. S-1279(7)

Date of Revisions

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

Description: Single RC slab on RC abutments, supported on spread footings.

Spans 1 @ 33' c/c

Length 35' Skew None Design LL H20-S16-44

Ratings: Inventory HS 35.6/LF Operating HS 59.2/LF Permit PPPPP/LF

DESCRIPTION – ON STRUCTURE

Bridge Width .3'br; 40.4'; .3'br

Total Width 41' Lanes 2 Tracks None

Median None Rail Type 15 (1111)

Vert. Clearance over deck Unimpaired Appr. Rdwy. Width 41'

Wearing Surface None Deck Seal None

Alignment Tangent between curves

DESCRIPTION – UNDER STRUCTURE

Roadway Section None

Clearances: Vert. Horiz.; Lt. Rt.

Lanes Tracks Pumpplant: None ☒ See Br. No.

Facilities Crossed Williams Canyon Creek

cc:

(1) CON'T.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
BRIDGE REPORT
DS-M58A (REV. 1/75)

Bridge No. 55C-59

Date August 13, 1980

DESCRIPTION – HYDRAULICS

Channel Fairly well defined and unimproved

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

MAINTENANCE

Custodian Orange County Owner Same

ORIGINAL CONDITION RATING		ORIGINAL APPRAISAL	
Deck	8	Overall	8
Superstructure	8	Deck Geometry	7
Substructure & Pipes	8	Underclearances Vert.	N
Channel & Channel Protection	6	Horiz.	N
Retaining Walls	N	Safe Load Capacity	9
Approach Rdwy. Alignment	9	Waterway Adequacy	6
Estimated Remaining Life	50	Approach Rdwy. Alignment	7

Widenable? Yes ☒ No ☐ Conditional ☐

Action Required by County: Yes ☐ No ☒

AVERAGE DAILY TRAFFIC - 7,000 (Estimated 1980)

BYPASS DETOUR LENGTH - 36 miles

CONDITION OF STRUCTURE - The structure is in good condition.

LOAD CAPACITY - The inventory, operating and permit ratings shown were obtained through the "Frame Rate" program using the load factor (LF) method of analysis.

RECOMMENDED POSTING - None.

Original signed by

FRANK J. WALLISER **
C 019767

FJW:ll
cc:DEHiggins
Orange County (2)

DIST	ROUTE	COUNTY	STRU. NO	POSTMILE	RATING	WIDTH=FT	STRU TYPE	YR ORIG CONST	
07	CO RD	55 C	0059	.	010.0		CS	70	OCT. 10, 1979

INFLUENCE LINE FOR CRITICAL INVENTORY RATING POINT SPAN 1 10TH POINT 5

MEM NO	LEFT	.1	.2	.3	.4	.5	.6	.7	.8	.9	RIGHT
1	0.0	0.888	1.949	3.183	4.589	6.168	4.589	3.183	1.949	0.888	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 SANTIAGO CANYON ROAD (WILLIAMS CANYON CRK)
3 SINGLE SPAN RIGID FRAME RC SLAB W/NO AC SURFACING
4 RATE 10' WIDTH

55C-59

DIST	ROUTE	COUNTY	STRU. NO	POSTMILE	RATING WIDTH-FT	STRU TYPE	YR ORIG CONST	
07	CO RD	55 C	0059	.	010.0	CS	70	OCT. 10, 1979

	RATING FACTOR	PT	SPAN	ULT MOM CAP 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	1.78	5	1	1142.6	0.0	246.9	0.0	324.8	0.0	147.6	0.0
OPER	2.96	5	1	1142.6	0.0	246.9	0.0	324.8	0.0	147.6	0.0
PURP	2.25	5	1	1142.6	0.0	246.9	0.0	324.8	0.0	147.6	0.0

THE NUMBER OF AXLES ON THE TRUCK THAT CAUSES THE PURPLE RATING FACTOR IS 13.
FC = 1.30 FY = 60.

IF THE REPORTED ULTIMATE MOMENT CAPACITY IS 0, IT WAS DETERMINED NOT TO BE CRITICAL

2 SANTIAGO CANYON ROAD (WILLIAMS CANYON CRK)
3 SINGLE SPAN RIGID FRAME RC SLAB W/NO AC SURFACING
4 RATE 10' WIDTH

PPPPP

(3)

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

Bridge No. 55C-59

Location 07-Ora-FAS 1279-15.6
Dist - Co - Rte - PM - City

Date of Investigation June 16, 1976

Name WILLIAMS CANYON CREEK

CONDITION RATING: **APPRAISAL RATING:**

Deck 8 Superstructure 8 Substr. & Pipes 8 Overall 8

Channel & Channel Protection 8 Retaining Walls -

Widenable? Yes [X] No [ ] Conditional [ ]

Action Required by ~~XXXXX~~ County: Yes [ ] No [X]

CONDITION OF STRUCTURE:

This structure is in good condition. Channel clearance under the structure is about 4 1/2 feet.

RAIL RATING:

(1111)

RECOMMENDATIONS:

None.

A. L. Clemence

ALC:ic

(1) **

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

Bridge No. 55C-59

Location 7-Ora-FAS 1279-15.6
Dist - Co - Rte - PM - City

Date of Investigation July 16, 1974

Name WILLIAMS CANYON CREEK

CONDITION RATING: **APPRAISAL RATING:**

Deck 8-F8 Superstructure 8-F8 Substr. & Pipes 8-F8 Overall 8-F8

Channel & Channel Protection 8-F8 Retaining Walls NA

Widenable? Yes [X] No [ ] Conditional [ ]

Action Required by District: Yes [ ] No [X]

CONDITION OF STRUCTURE:

The overall condition is good. No changes were noted.

CAPACITY RATING:

Unchanged. P-13

RECOMMENDATIONS:

None.

Original signed by

W. R. Baker

WRB:ah
cc: Orange County (2)

Sheet 1 of 2

STATE OF CALIFORNIA

BRIDGE REPORT

S-94

Bridge No. 55C-059

Date of Investigation 3/28/72

Location 7-ORA-FAS1279-15.6
Dist.-Co.-Rte. - City - P.M.

Name Williams Canyon Creek

Location On Santiago Canyon Road between Silverado Canyon Rd. and Modjeska Rd. near Williams Canyon Rd.

Latitude 33°-43.6' Longitude 117°-38.9' DOD Rd. ____ (Section) Br. ____ (Letter)

Custodian County Owner County

CLASSIFICATION

Federal Aid System 07 Administrative 4 Functional 3

STRUCTURAL DATA AND HISTORY

Year Built 1970 By County Cont. No. - FAP No. S-1279 (7)

Designed by County Plans Avail Yes at County

Spans 1@33.3' Length 35' Skew 0°

Description RC rigid frame on spread footings

On Structure

Roadway Section 2@20.1' Total Width 40'-11"

Rail Type Lt. Steel tube Rt. Steel tube Median None Lanes 2 (No.) Tracks - (No.)

Clearances: Vert. Unimpaired Horiz. 40'-2" PUC No. -

Design LL H20-S16-44 Overload Rating P-13

Under Structure

Roadway Section - Lanes - (No.) Tracks - (No.)

Clearances: Vert - Horiz. - PUC No. -

HYDRAULIC STRUCTURE

Report? Yes ☐ No ☒ Nav. Control Yes ☐ No ☒ Clear. Diag. Yes ☐ No. ☒

Relief Structures -

APPRAISAL OF NON-STRUCTURAL FACTORS

Deck Geometry 8 Approach Alignment 8

Waterway Adequacy 8 Clearances (Vert. & Horiz.) 9 & 8

Sheet 2 of 2

Bridge No. 55C-059

Date of Investigation 3/28/72

STATE OF CALIFORNIA

BRIDGE REPORT

ADT 1000 Year 1971

RATING OF CONDITION:

Deck 8 Substructure 8

Superstructure 8 Overall 8

EXISTING POSTING:

None.

CONDITION OF STRUCTURE:

The deck surface has shrinkage cracks. It is patched and has been saw-cut to obtain grade. The remainder of the structure is in good condition.

CHANNEL:

The channel is natural with a sand and gravel bed. The slopes have rock protection near the structure.

There is 6 feet of uniform clear height under the soffit.

CAPACITY:

The structure is considered safe for legal loads by design and inspection and it will carry a P-13 overload.

POSTING RECOMMENDATION:

None.

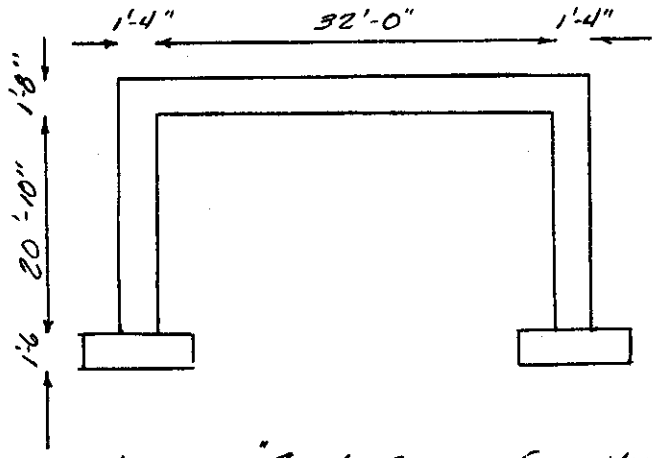
W.R. SCHOTT
C.E. Lic. No. 13592

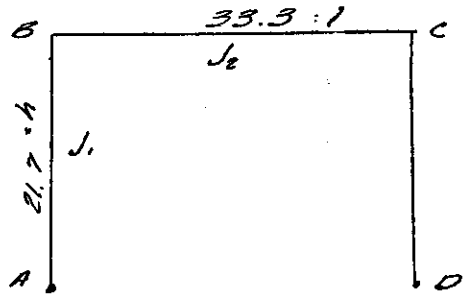
FORM HBD-M70A

Williams Canyon Creek 55C-059 WCS WRK 3-28-72 7/72 1 of 3

Safe Load Calculations - AASHO Maintenance Manual 1970

RC rigid frame





Using "Rigid Frame Formulas" by Kleinlogel

$I_{slab} = 20^3 \cdot 8000 = J_1 = 0.386\ ft^4$ $I_{wall} = 16^3 \cdot 4096 = J_1 = 0.196\ ft^4$

Dead Load = $1.67 \cdot 0.15 \sim 0.250$ k/ft²

$k = \frac{J_2}{J_1} \cdot \frac{h}{l} = \frac{0.196}{0.386} \cdot \frac{21.7}{33.3} = 0.334$

$N = 2k + 3 = 3.668$

Dead Load Moments

$M_B = M_C = \frac{-ql^2}{4N} = \frac{-0.25 \cdot 33.3^2}{4 \cdot 3.668} = -18.9$ k-ft/ft

$M_L = \frac{ql^2}{8} + M_B = \frac{0.25 \cdot 33.3^2}{8} - 18.9 = 15.7$ k-ft/ft

using a fluid pressure of 0.036 k/ft²
$p = 0.036 \cdot 21.7 = 0.782$

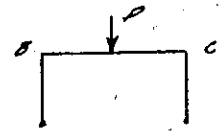
$M_B = M_C = \frac{-7ph^2k}{60N} = \frac{-7 \cdot 0.782 \cdot 21.7^2 \cdot 0.334}{60 \cdot 3.668} = -4.0$ k-ft

Live Load Distribution

$E = 4 + 0.06L = 4 + 0.06 \cdot 32 = 5.92$ ft/wheel $= 0.169$ w/ft

Impact = 30%

LL + I Moments

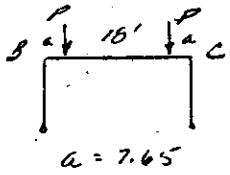


$$M_B = M_C = -\frac{3Pl}{8N} = -\frac{1.3 \times 0.169 \times 3 \times 24 \times 33.3}{8 \times 3.67}$$

$$= -18.0 \text{ K-ft} \leftarrow \text{controls}$$

$$M_L = \frac{Pl}{4} + M_B = \frac{1.3 \times 0.169 \times 24 \times 33.3}{4} - 18.0$$

$$= 43.9 - 18.0 = 25.9 \text{ K-ft}$$



$$M_B = M_C = -\frac{3Pa\left(1 - \frac{a}{l}\right)}{N} = -\frac{1.3 \times 0.169 \times 24 \times 7.65\left(1 - \frac{7.65}{33.3}\right)}{3.67}$$

$$= -8.5 \text{ K-ft}$$

Resisting Moments

@ B $A_s = \#8@6" = 1.58 \text{ in}^2/\text{ft}$ $d = 16" - 2\frac{1}{2} = 13\frac{1}{2}"$
$A_s' = \#8@12" = 0.79 \text{ in}^2/\text{ft}$ $d' = 2\frac{1}{2}"$

Design stress: $f_s = 24{,}000$ psi, $f_c = 1300$ psi, $n = 10$

Overload stresses: $f_s = 30{,}000$ psi, $f_c = 1650$ psi, $n = 10$

$$m = \frac{10 \times 1.58}{12 \times 13.5} + \frac{19 \times 0.79}{162} = 0.098 + 0.093 = 0.191$$

$$q = 0.098 + 0.093 \times 2.5/13.5 = 0.098 + 0.017 = 0.115$$

$k = 0.32$

$z = 0.37$ $\quad j = 0.89$ (from ACI tables)

$$M_r = \frac{30}{12} \times 0.89 \times 1.58 \times 13.5 = \underline{47.4 \text{ K-ft}}$$

$$f_c = \frac{30{,}000}{10} \times \frac{0.32}{0.68} = 1410 \text{ psi} \quad \text{OK}$$

@ L $A_s = \#8@12 + \#9@12 = 0.79 + 1.00 = 1.79 \text{ in}^2/\text{ft}$
$d = 17\frac{1}{2}"$, $d' = 2\frac{1}{2}"$, $A_s' = \#5@12 = 0.31 \text{ in}^2/\text{ft}$

$$m = \frac{10 \times 1.79}{210} + \frac{19 \times 0.31}{210} = 0.085 + 0.028 = 0.113$$

$\rho = 0.085 + 0.028 \times 0.143 = 0.085 + 0.004 = 0.089$

$k = 0.32$ $\quad 0.143/0.32 = 0.45$ $\quad .028/0.32 = 0.088$

$z = 0.34$ $\quad j = 0.89$

$M_r = \frac{30}{12} \times 0.89 \times 1.79 \times 17.5 =$ 69.6 K-ft

$f_c = 3000 \times \frac{0.32}{0.68} =$ 1410 psi OK

Live Load + Impact Capacity $= M_r - M_{DL} \geq M_{LL+I}$

@ Bent $\quad 47.4 - 22.9 = 24.9$ K-ft > 18.0 OK

@ L Span $\quad 69.6 - 11.7 = 57.9$ K-ft > 25.9 K-ft OK

Frame is good for P-13 overload

BRIDGE REPORT

SUPERSEDED

Office Report
Date of ~~Investigation~~ Aug. 2, 1971

General Description

Name WILLIAMS CANYON CREEK 07-Ora-Co.Rd.
Dist.-Co. Rt.

Location 5.0 Miles northerly of Live Oak Canyon Road on Santiago Canyon Road Post Mile

Description RC single span rigid frame slab on spread footings with cantilever wingwalls.

Railing Metal tube bridge railing - Orange County Type 15 / Approx. skew 0°

Spans 1 @ 32.0' clear

Total length 34.0'

Roadway width 40.0' between metal tube bridge railing
Describe median, shdrs., surf., etc.
Sidewalks None

Width 2 lanes @ 12.0' Alignment tangent

Design Live Loading H20-S16 Overload rating Purple

Waterway Sufficient - unlined channel with rock slope protection. Minimum clear height = 7'-6"

Other features crossed None

Vertical clearance Unimpaired

History

Date built 1971 By Orange County Hwy Dept. Contract No. 07-248404

Designed by Boyle Engineering, Santa Ana, CA Designer A. M. Fickes

Plans IN Los Angeles Bridge Department ~~Bridge~~ County R.E. B. Talley

Contractor Stones Construction Company

REMARKS

Federal Aid Secondary Project No. S-1279 (7)

GHN:cm

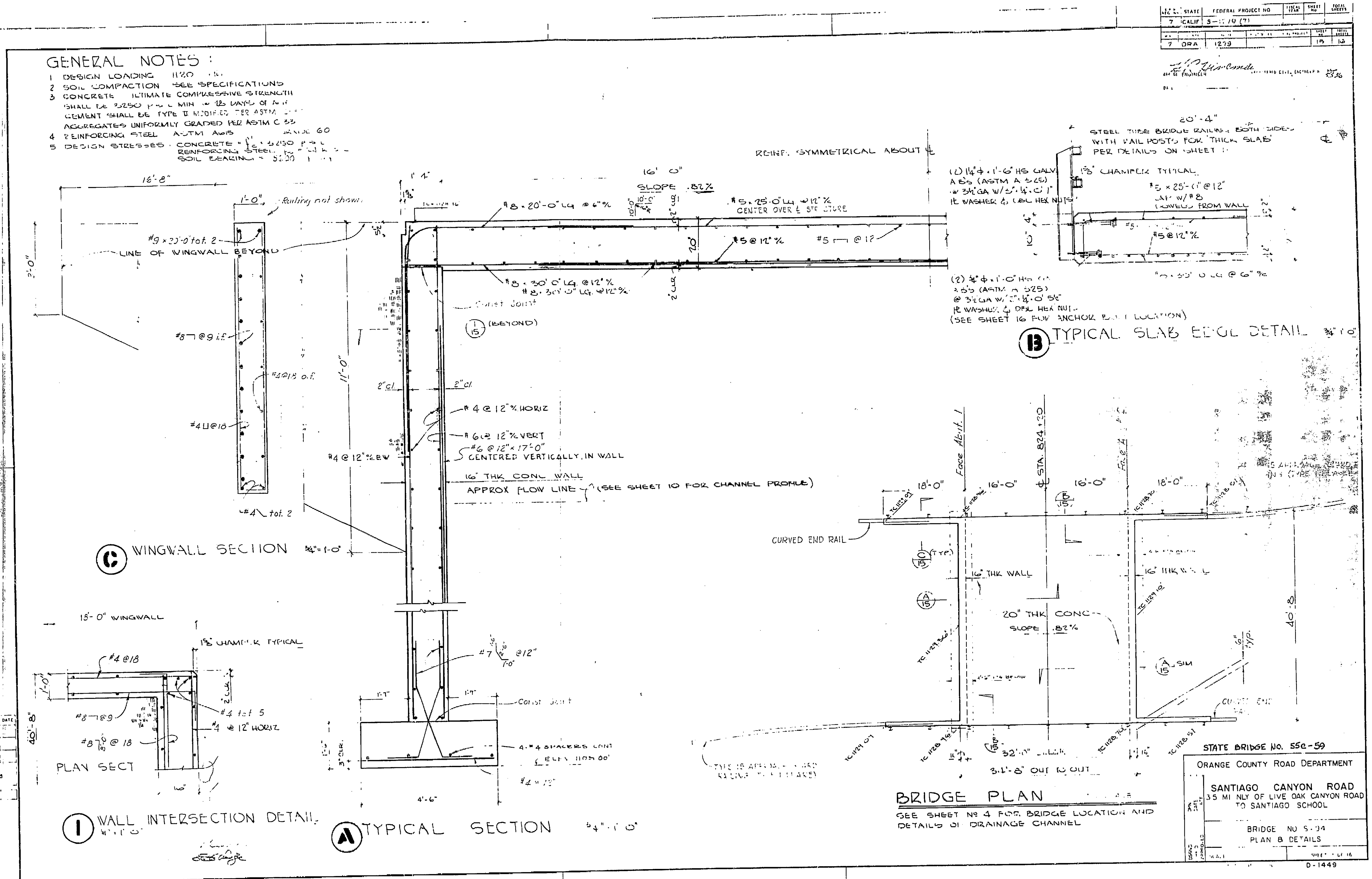
J. M. Carr

By: G. H. Nakano

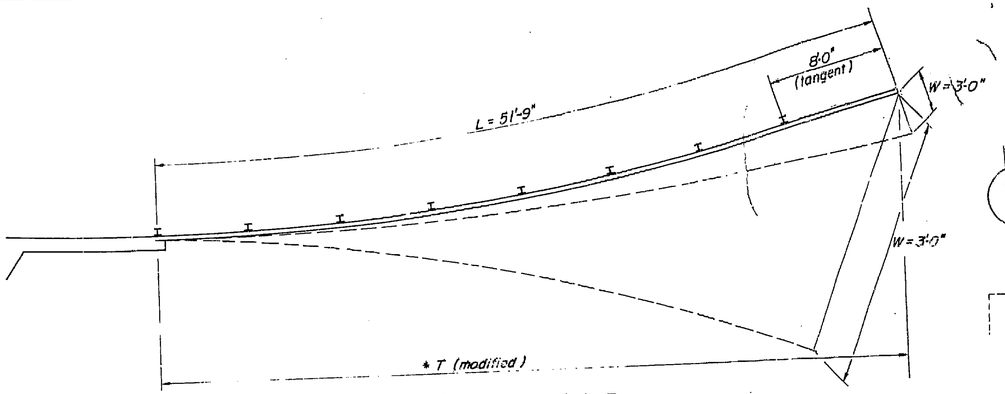
cc: ~~District~~
~~Materials~~ Dept.

HBD-M-15 (BR. VIAD)

EST. 4192. 30048-500 3-69 4M ⓢ OSP

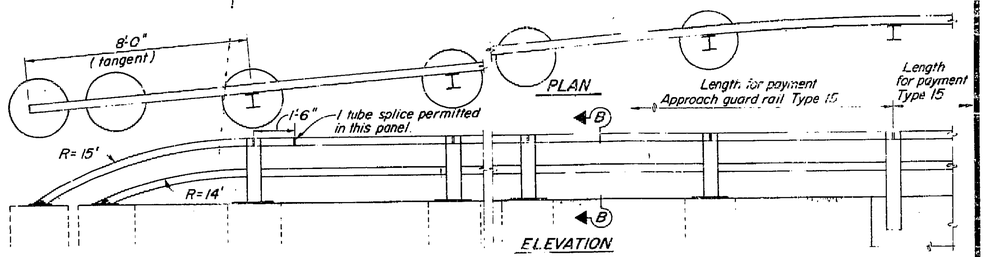

GENERAL NOTES:
1 DESIGN LOADING H20
2 SOIL COMPACTION SEE SPECIFICATIONS
3 CONCRETE ULTIMATE COMPRESSIVE STRENGTH SHALL BE 3250 PSI MIN @ 28 DAYS
CEMENT SHALL BE TYPE II MODIFIED PER ASTM
AGGREGATES UNIFORMLY GRADED PER ASTM C 33
4 REINFORCING STEEL ASTM A615 GRADE 60
5 DESIGN STRESSES CONCRETE
REINFORCING STEEL
SOIL BEARING
REINF. SYMMETRICAL ABOUT ℄
C WINGWALL SECTION
LINE OF WINGWALL BEYOND
Railing not shown
A TYPICAL SECTION
16' THK CONC WALL
APPROX FLOW LINE (SEE SHEET 10 FOR CHANNEL PROFILE)
CENTERED VERTICALLY IN WALL
B TYPICAL SLAB EDGE DETAIL
STEEL TUBE BRIDGE RAILING BOTH SIDES WITH RAIL POSTS FOR THICK SLAB PER DETAILS ON SHEET
(SEE SHEET 16 FOR ANCHOR BOLT LOCATION)
1 WALL INTERSECTION DETAIL
15'-0" WINGWALL
PLAN SECT
BRIDGE PLAN
SEE SHEET No 4 FOR BRIDGE LOCATION AND DETAILS OF DRAINAGE CHANNEL
CURVED END RAIL
16" THK WALL
20" THK CONC
SLOPE .82%
Face Abut. 1
STA 824+20
STATE BRIDGE No. 55C-59
ORANGE COUNTY ROAD DEPARTMENT
SANTIAGO CANYON ROAD
3.5 MI NLY OF LIVE OAK CANYON ROAD TO SANTIAGO SCHOOL
BRIDGE NO S-34
PLAN & DETAILS
D-1449
DESIGNED FEW
CHECKED DRR
SUPERVISED BY A M FICKES

DIST	COUNTY	ROUTE	POST MILES	TOTAL PROJECT	SHEET	TOTAL SHEETS
07	ORA	12				

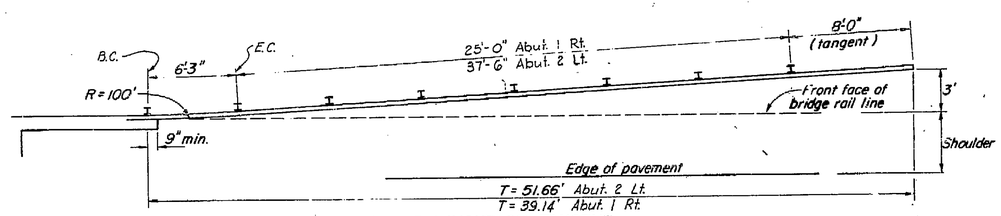


FLARE LAYOUT ON CURVE

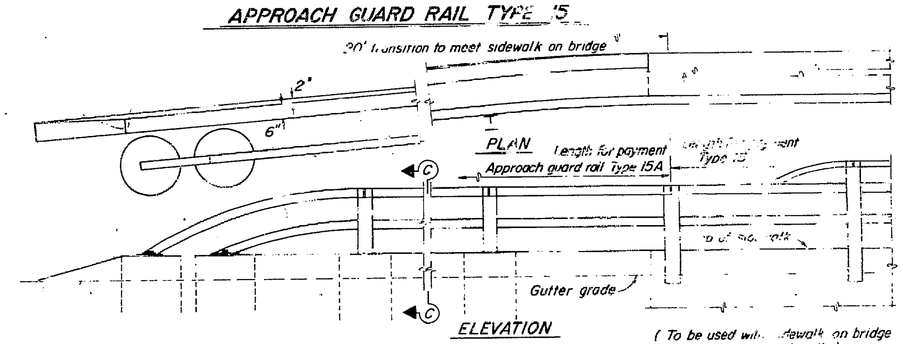
* These dimensions modified by the Engineer to meet curve



APPROACH GUARD RAIL TYPE 15



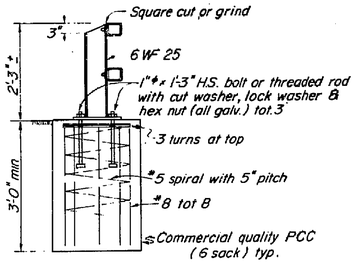
FLARE LAYOUT ON TANGENT



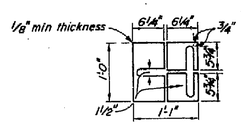
APPROACH GUARD RAIL TYPE 15A

(To be used with sidewalk on bridge but no approach sidewalk.)

TYPE 1 FLARE

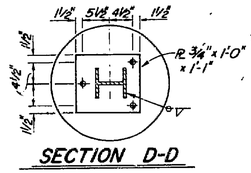


SECTION B-B



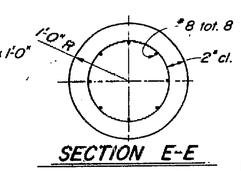
SHIM DETAILS

Scale : 1" = 1'-0"



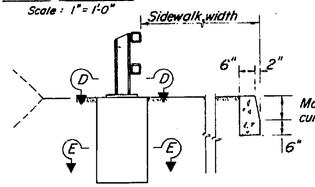
SECTION D-D

Scale : 1" = 1'-0"



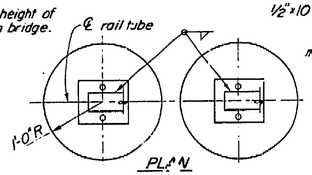
SECTION E-E

Scale : 1" = 1'-0"

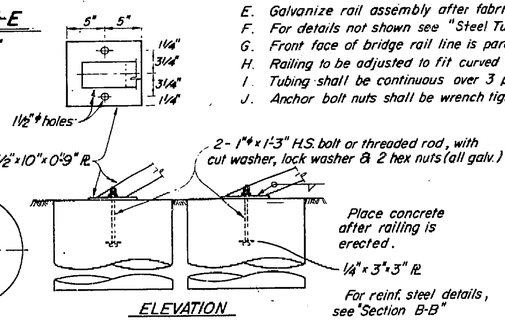


SECTION C-C

See Section B-B for details not shown.



PLAN



ELEVATION

END ANCHORAGE DETAILS

Notes :

A. Tubing shall be shop bent or fabricated to fit horizontal curves of less than 950' radius.
B. Posts shall be vertical and spaced at 6'-3" cc max.
C. Top of rail elevations to be determined by the Engineer unless shown on the plans.
D. No more than one tube splice per panel is permitted.
E. Galvanize rail assembly after fabrication.
F. For details not shown see "Steel Tube Bridge Rail" sheet.
G. Front face of bridge rail line is parallel or concentric to pavement edge.
H. Railing to be adjusted to fit curved roadway.
I. Tubing shall be continuous over 3 posts with a minimum length of 3 panels except as noted.
J. Anchor bolt nuts shall be wrench tight. Torque rail to post nuts to 175 ft. lbs.

STANDARD DRAWING

Structural Details
Checked By
Reviewed

Br. No. 55C-59

ORANGE COUNTY ROAD DEPARTMENT

SANTIAGO CANYON ROAD
3.5 MI. NLY. OF LIVE OAK CANYON ROAD TO SANTIAGO SCHOOL

TYPE 15 APPROACH RAILING

DESIGN DETAILS CHK'D APPROVED DATE

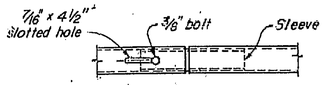
SCALE | SHEET OF

REVISION DATES | PRELIMINARY STAGE ONLY

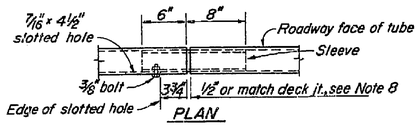
WO
CU

Disregard prints bearing earlier revision dates

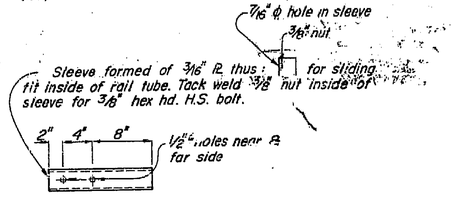
DIST.	COUNTY	ROUTE	POST MILES-TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	ORA	1279			



ELEVATION

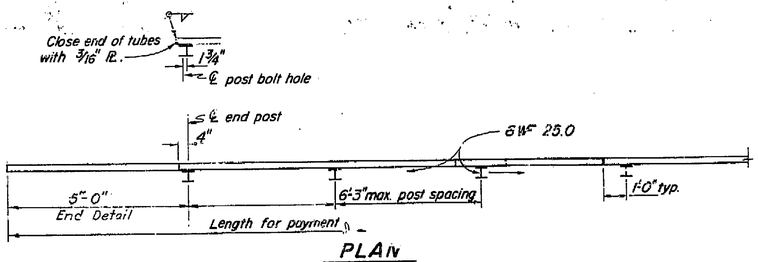


PLAN

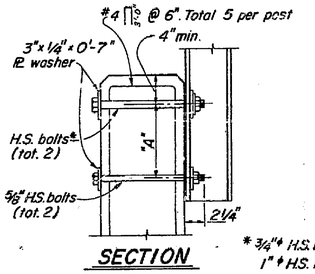


SLEEVE

DETAIL A · TUBE SPLICE



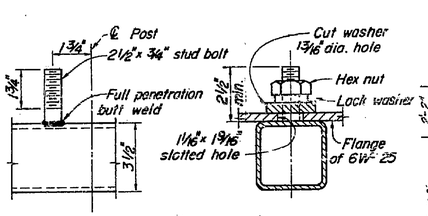
PLAN



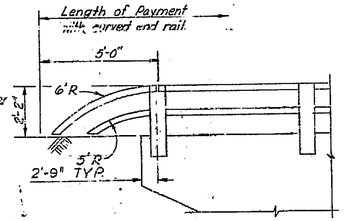
SECTION

RAIL POST ON WALL

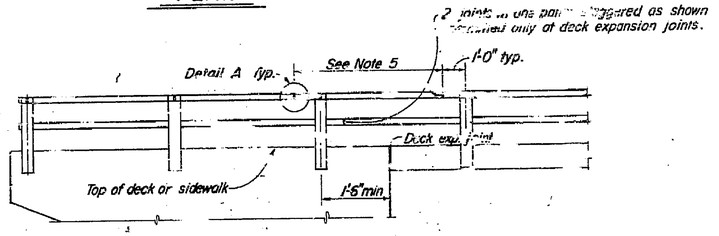
* 3/4" ϕ H.S. bolts: A=10"
1" ϕ H.S. bolts: A=5"



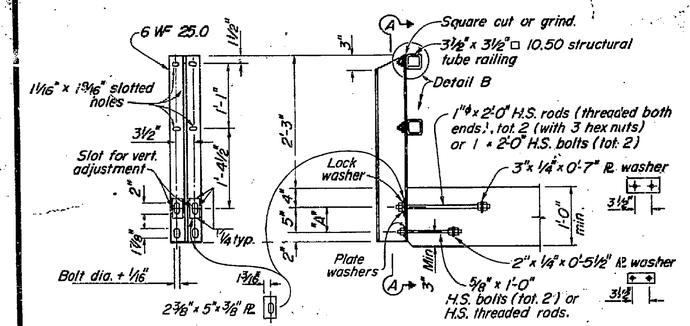
DETAIL B - STUD BOLT



CURVED END RAIL DETAIL

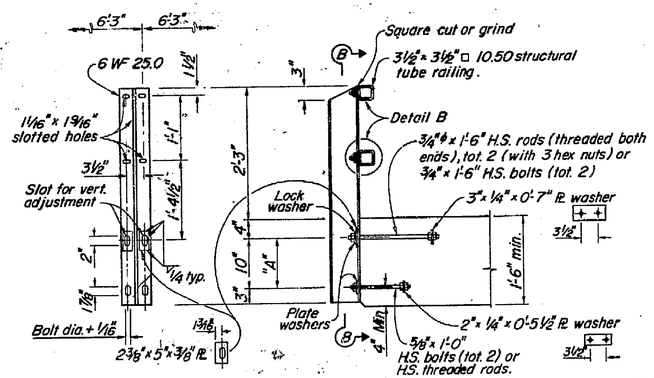


RAIL ELEVATION



SECTION A-A

RAIL POST DETAILS · THIN SLAB



SECTION B-B

RAIL POST DETAILS · THICK SLAB

NOTES:

1. Posts shall be vertical.
2. Tubing shall be shop bent to fit horizontal curve when curve radius is less than 950'.
3. Tubing shall be parallel to vertical alignment.
4. Contractor to provide metal shims to align posts.
5. Tubing shall be continuous over not less than 3 intermediate posts, with a minimum length of 3 panels except as noted.
6. Galvanize rail assembly after fabrication.
7. Space posts to provide 1'-6" min. clear between expansion joints and ℄ of post.
8. Rail joints in top and bottom tubes at deck expansion joints shall provide allowance for movement equal to width of deck joint with corresponding increase in length of sleeve.
9. Railing on bridge wingwalls to be placed after walls are backfilled.
10. Stud bolt nuts shall be torqued to 175 ft. lbs.
11. Anchor bolt nuts shall be wrench tight.

STANDARD DRAWING

Submitted by: DESIGN DETAILS

Approved Recommended by

Structural Details
Checked By
Reviewed

Bridge No. 55C-59

ORANGE COUNTY ROAD DEPARTMENT

SANTIAGO CANYON ROAD
3.5 MI. NLY OF LIVE OAK CANYON ROAD TO SANTIAGO SCHOOL

STEEL TUBE BRIDGE RAILING STD. DETAILS

DESIGNED / CHECKED / APPROVED

SCALE

SHEET OF

REVISION DATES

(PRELIMINARY-STAGE ONLY)

PROJECT ENG.	DATE	DESIGN ENG.	DATE	APPROVAL RECOMMENDED BY	DATE

WO
CU

Disregard prints bearing earlier revision dates

07-Ora-Co.Rd. 802 (FAS 1279)

July 24, 1969

Bridge File:

The following identification has been assigned a proposed structure in Orange County.

Br. 556-59 WILLIAMS CANYON CREEK On Santiago Canyon Rd. 5 Mi. N. of Live Oak

It is planned to advertise before October 1969 for construction of the bridge.

ORIGINAL SIGNED BY
T. W. RODGERS

T. W. Rodgers

RTS of
cc: WCKiedaisch
BHJennings
BrBook