
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 : 55C0553
Facility Carried: IRVINE BLVD
Location : 2.9 MI SE SAND CYN AVE
City :
Inspection Date : 24-JUL-01

Bridge Inspection Report

Inspection Type
Routine ☒ Group A ☐ Underwater ☐ Special ☐ Other ☐

Name : MAGAZINE ROAD UC

CONSTRUCTION INFORMATION

Year Built : 1988 Skew (degrees): 0
Year Widened : N/A No. of Joints : 0
Length (m) : 14.3 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 : (S) 1 @ 13.4 m (N) c/c

LOAD CAPACITY AND RATINGS

Design Live Load : MS - 18 + MOD OR HS - 20 + MOD
Inventory Rating : 32.6 metric tons Calculation Method : LOAD FACTOR
Operating Rating : 53.5 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) 0.3 m br, 15.8 m, 4.3 m med, 18.3 m, 0.3 m br (E)
Total Width : 39.0 m Net Width : 38.40 m No. of Lanes : 4
Rail Description : MBGR Rail Code : 0000
Min. Vertical Clearance : Unimpaired

DESCRIPTION UNDER STRUCTURE

Channel Description : None.

CONDITION OF STRUCTURE

Unsealed cracks exist in the concrete deck which are of moderate size or density. (O)

Otherwise, the structure is in good condition.

MISCELLANEOUS

Vehicular access beneath the structure is via the entrance to El Toro USMC Base on Trabuco Road, near Sand Canyon Road. Telephone Mark Morgan of the County of Orange (949) 726-1784 for advance notice of entry into the base.

ELEMENT LEVEL INSPECTION RATINGS

F#	Elem No.	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	510 sq.m.	510	0	0	0	0
01	215	Reinforced Conc Abutment	2	78 m.	78	0	0	0	0
01	252	Cast-In-Drilled Hole Concrete Pile	2	44 ea.	44	0	0	0	0
01	256	Slope Protection	2	2 ea.	2	0	0	0	0
01	337	Metal Railing (W6X25 Posts)	2	50 m.	50	0	0	0	0
01	358	Deck Cracking	2	1 ea.	0	1	0	0	0

WORK RECOMMENDATIONS - NONE

Bridge No.: 55C0553

Location: 2.9 MI SE SAND CYN AVE

Inspection Date: 24-JUL-01

Inspected By : M. Ogata

M. Ogata
Registered Civil Engineer



CC : TMRut
Orange County

Bridge No.: 55C0553

Location: 2.9 MI SE SAND CYN AVE

Inspection Date: 24-JUL-01

STRUCTURE INVENTORY AND APPRAISAL REPORT

***** IDENTIFICATION *****

(1) STATE NAME - CALIFORNIA 069
 (8) STRUCTURE NUMBER 55C0553
 (5) INVENTORY ROUTE(ON/UNDER) - ON 1 40 0M023N
 (2) HIGHWAY AGENCY DISTRICT 12
 (3) COUNTY CODE 059 (4) PLACE CODE 00000
 (6) FEATURE INTERSECTED - MAGAZINE ROAD UC
 (7) FACILITY CARRIED - IRVINE BLVD
 (9) LOCATION - 2.9 MI SE SAND CYN AVE
 (11) MILEPOINT/KILOMETERPOINT 0
 (12) BASE HIGHWAY NETWORK - NOT ON NET 0
 (13) LRS INVENTORY ROUTE & SUBROUTE
 (16) LATITUDE 33 DEG 40 MIN 01 SEC
 (17) LONGITUDE 117 DEG 42 MIN 25 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 1988
 (106) YEAR RECONSTRUCTED 0000
 (42) TYPE OF SERVICE: ON - HIGHWAY-PEDESTRIAN 5
 UNDER - HIGHWAY W/O PEDESTRIAN 1
 (23) LANES: ON STRUCTURE 04 UNDER STRUCTURE
 (29) AVERAGE DAILY TRAFFIC 16000
 (30) YEAR OF ADT 1999 (103) TRUCK ADT 3%
 (19) BYPASS, DETOUR LENGTH 6 KM

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

(48) LENGTH OF MAXIMUM SPAN 13.4 M
 (49) STRUCTURE LENGTH 14.3 M
 (50) CURB OR SIDEWALK: LEFT 0 M RIGHT 0 M
 (51) BRIDGE ROADWAY WIDTH CURB TO CURB 38.4 M
 (52) DECK WIDTH OUT TO OUT 39 M
 (32) APPROACH ROADWAY WIDTH (W/SHOULDERS) 24.4 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 38.4 M
 (53) MIN VERT CLEAR OVER BRIDGE RDWY 99.99 M
 (54) MIN VERT UNDERCLEAR REF - HIGHWAY 4.83 M
 (55) MIN LAT UNDERCLEAR RT REF - HIGHWAY 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 *****

SUFFICIENCY RATING = 88.3
 STATUS = FUNCTIONALLY OBSOLETE
 HEALTH INDEX = 100

***** CLASSIFICATION *****

(112) NBIS BRIDGE LENGTH - YES Y
 (104) HIGHWAY SYSTEM - NOT ON NHS 0
 (26) FUNCTIONAL CLASS - OTHER PRIN ART URBAN 14
 (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 *****

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

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

(31) DESIGN LOAD - MS - 18 + MOD OR HS - 20 + MOD 6
 (63) 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 *****

(67) STRUCTURAL EVALUATION 7
 (68) DECK GEOMETRY 9
 (69) UNDERCLEARANCES, VERTICAL & HORIZONTAL 3
 (71) WATER ADEQUACY N
 (72) APPROACH ROADWAY ALIGNMENT 8
 (36) TRAFFIC SAFETY FEATURES 0000
 (113) SCOUR CRITICAL BRIDGES N

***** 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 32000
 (115) YEAR OF FUTURE ADT 2019

***** INSPECTIONS *****

(90) INSPECTION DATE 07/01 (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)

Bridge Number 55C-553

TYPE OF INVESTIGATION/REPORT

BIENNIAL X DAMAGE
CATEGORY A OTHER
UNDERWATER OFFICE

Location 12 - Ora - FAU M023-CR
Dist.-Co.-Rte.-City

Date of Investigation July 19, 1995

Name MAGAZINE ROAD UNDERCROSSING (Irvine Boulevard, 2.9 miles 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

N

CONDITION OF STRUCTURE:

There are medium to heavy longitudinal deck cracks, running the entire length of the bridge.

There are numerous soffit cracks, directly opposite deck cracks, showing leach marks.

Condition of structure is good.

WORK RECOMMENDED:

Seal deck cracks.

ENCROACHMENT:

One 0.125 m diameter galvanized steel pipe anchored onto inside face of metal railing post and top of concrete curb.

By M. H. Behrooj ^{7/15}
G. P. Balinghasay



GPB:ms
cc: CDHarris
Orange County

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	

[illegible]

BY:

Bridge No. 55C-553

Name MAGAZINE ROAD UNDERCROSSING
(Irvine Boulevard, 2.9 miles
southeast of Sand Canyon Avenue)

Location 12-Ora-FAU M023-CR
Dist.-Co.-Rte.-City

SUMMARY OF ENCROACHMENTS

Permit No. and Permittee	Date	Description & Location on Bridge
	Prior to 7-19-95	One 0.125 m diameter galvanized steel pipe anchored onto inside face of metal railing post and top of concrete curb.

HBD M 30

SUPPLEMENTARY BRIDGE REPORT

DS-M19 (REV. 8/92)

Bridge Number 55C-553

Location 12 - Ora - FAU M023-CR
Dist.-Co.-Rte.-City

Date of Investigation April 15, 1993

TYPE OF INVESTIGATION/REPORT

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

Name MAGAZINE ROAD UNDERCROSSING (Irvine Boulevard, 2.9 miles 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

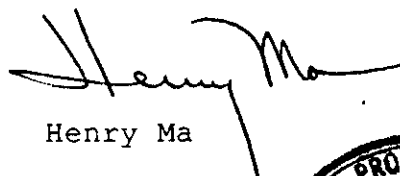
N

CONDITION OF STRUCTURE:

Condition of the structure is good.

REVISION:

Description on structure: Lanes - 5.


Henry Ma

HM:cd

cc: INagai (2)
County of Orange



PONTIS DATA FORM - PIA

BRIDGE NUMBER	FRAME	INSPECTION DATE
55C0553	01	041593
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	

[illegible]

H. MA

BY:

S.M.

BRIDGE REPORT

14W13

Bridge No. 55C - 553

DS-M58 (REV. 1/91)

Location 12 - Ora - FAU M023-CR
Dist Co Rte City

REVISED ORIGINAL REPORT

Date of Investigation April 19, 1991

Name Magazine Road UNDERCROSSING (Irvine Boulevard, 2.9 miles
southeast of Sand Canyon Avenue)

Lat. 33° - 40.1'N Long. 117° - 42.2'W

Custodian County of Orange Owner County of Orange

STRUCTURAL DATA AND HISTORY

Year Built 1988 By County of Orange Contract No. Unknown

Designed by: County Plans Avail. @ DOS

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

Spans (S) 44' (N)

Length 47' 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 (W) 1'br 52', 14'm, 60', 1'br (E)

Total Width 128' Net Width 126' Lanes 4 Tracks None

Median Painted stripe Rail Type Metal beam with CL
fence

0000

Vert. Clearance over deck Unimpaired Appr. Rdwy. Width 80'

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

Alignment Tangent

DESCRIPTION - UNDER STRUCTURE

Roadway Section (S) 0.8'cu, 23.6', 0.8'cu (N)

Clearances: Road: Vert. 15'-10" Horiz. Lt. ; Rt. 0.8'

Lanes 2 Tracks None

Facilities Crossed Magazine Road (military base road)

April 19, 1991

DESCRIPTION - HYDRAULICS

Channel NoneNavigable: Yes ☐ No ☐ Clearances: Vert. _____ Horiz. _____Pier/Abutment Protection (For Navigation) ☐

TRAFFIC INFORMATION

	DECK	YEAR	UNDER	YEAR
Average Daily Traffic & Year :	23,000	1989	50 Est	1991
Average Daily Traffic (Future) :	25,000 Est	2010	50 Est	
Average Daily Trucks (% OF ADT) :	3% Est		N	
Bypass Detour Length	4 miles		1 mile	
Shell Route:	No		No	
Functional Classification :	14		19	
LOAD RATINGS:	Inventory HS 20	Operating HS 33		
	Permit PPPPP	Computation Method Min By Design		

CONDITION RATINGS:

Deck	7	Superstructure	8	Substructure	8
Channel & Channel Protection	N	Culvert	N	Widenable	Yes

APPRAISAL RATINGS:

Waterway Adequacy	N	Approach Roadway Alignment	8
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Date of Revisions _____

CONDITION OF STRUCTURE:

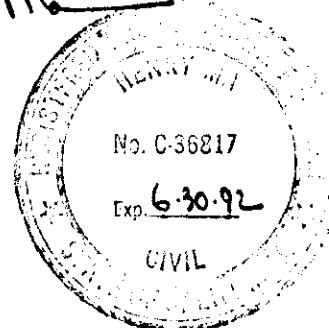
There are 4 moderate longitudinal cracks in the concrete bridge deck nearly full length of the bridge.

✓ Condition of the structure is good.

Henry Ma
Henry Ma

HM:ms

cc: INagai (2)
County of Orange



Bridge No. 55C-553
Other No. _____
P.U.C. No. _____
Location 7-Ora-FAU M023-CR
Dist - Co - Rte - PM - City (On Deck)
Date of Investigation 4-12-89

SEE REVISED
ORIGINAL REPORT

Name MAGAZINE ROAD UNDERCROSSING (Irvine Blvd., 2.9 miles southeast
of Sand Canyon Ave.)
Lat. 33°-40.1'N Long. 117°-42.2'W

STRUCTURAL DATA AND HISTORY

Year Built 1988 By County of Orange Contract No. Unknown

Date of Revisions _____

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

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

Spans 1 @ 44'

Length 47' Skew None Design LL HS20-44 and Alternative and
California Permit Design Loads (P-13)

Ratings: Inventory HS20/LE min. Operating HS33/LE min. Permit P-13/LE
by design by design by design

DESCRIPTION - ON STRUCTURE (Shell Rte.: Yes ☐ No ☒)

Bridge Width (W) 1'cu, 52', 14'm, 60', 1'cu (E)

Total Width 128' Lanes 4 Tracks N

Median Double-Double painted stripe Rail Type Metal Beam Bridge Rail and
Chain Link Fence (1000)

Vert. Clearance over deck Unimpaired Appr. Rdwy. Width 87'

Wearing Surface None Deck Prot. Sys. None

Alignment Tangent

DESCRIPTION - UNDER STRUCTURE (Shell Rte.: Yes ☐ No ☒)

Roadway Section (S) 0.8'cu, 23.6', 0.8'cu (N)

Clearances: Vert. 15'-10" Horiz.: - Lt. 0.8' Rt.

Lanes 2 Tracks N Pumpplant: None ☒ See Br. No.

Facilities Crossed Military reservation road (Magazine Road)

cc:

DESCRIPTION - HYDRAULICS

Channel None.

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

MAINTENANCE

Custodian County of Orange Owner County of Orange

ORIGINAL
CONDITION RATING

Deck	<u>8</u>
Superstructure	<u>8</u>
Substructure & Pipes	<u>8</u>
Channel & Channel Protection	<u>N</u>
Retaining Walls	<u>N</u>
Approach Rdwy. Alignment	<u>8</u>
Estimated Remaining Life	<u>50</u>

ORIGINAL
APPRAISAL

Overall	<u>8</u>
Deck Geometry	<u>8</u>
Underclearances	Vert. <u>7</u>
	Horiz. <u>4</u>
Safe Load Capacity	<u>9</u>
Waterway Adequacy	<u>n</u>
Approach Rdwy. Alignment	<u>8</u>

Widenable? Yes ☒ No ☐ Conditional ☐
(Irvine Blvd.,
Average Daily Traffic & Year 18,000 FAU M023
on deck) (1988)
Bypass Detour Length 8 miles

Action Required: Yes ☐ No ☒
Posting Required: None ☒ Load ☐
Speed ☐

Seismic Retrofit Not applicable.

CONDITION OF STRUCTURE: The structure is new and is in good condition.

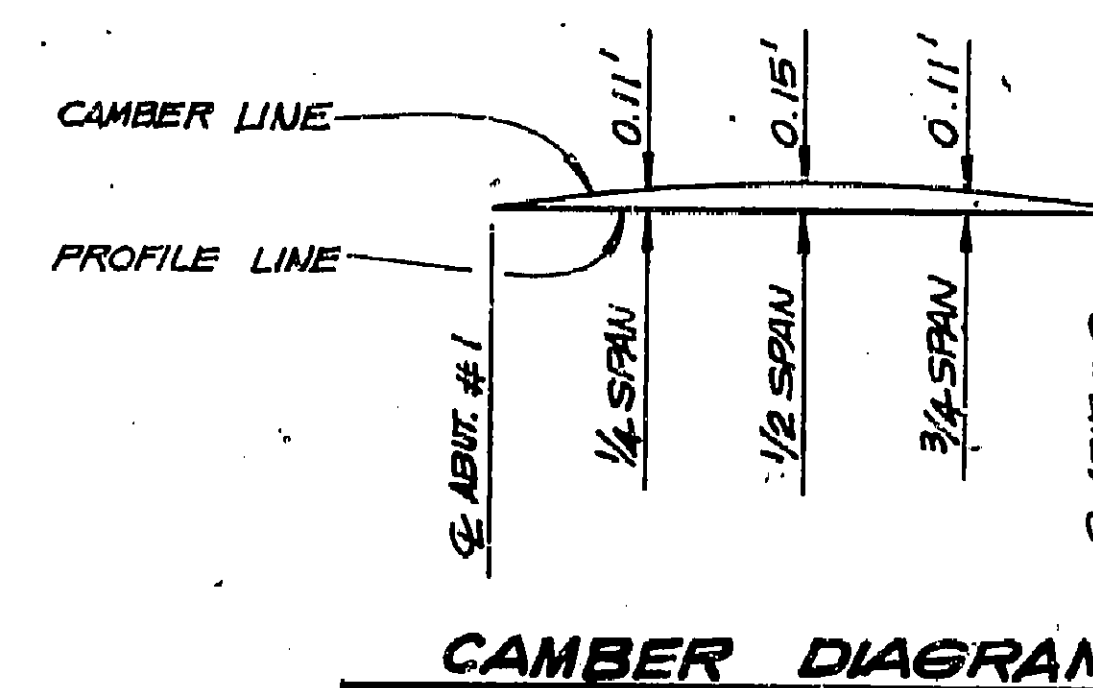
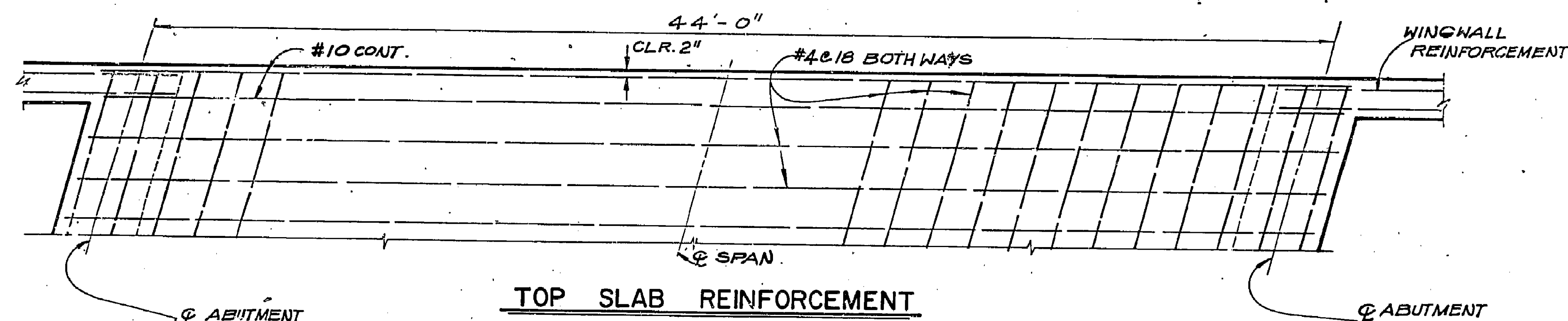
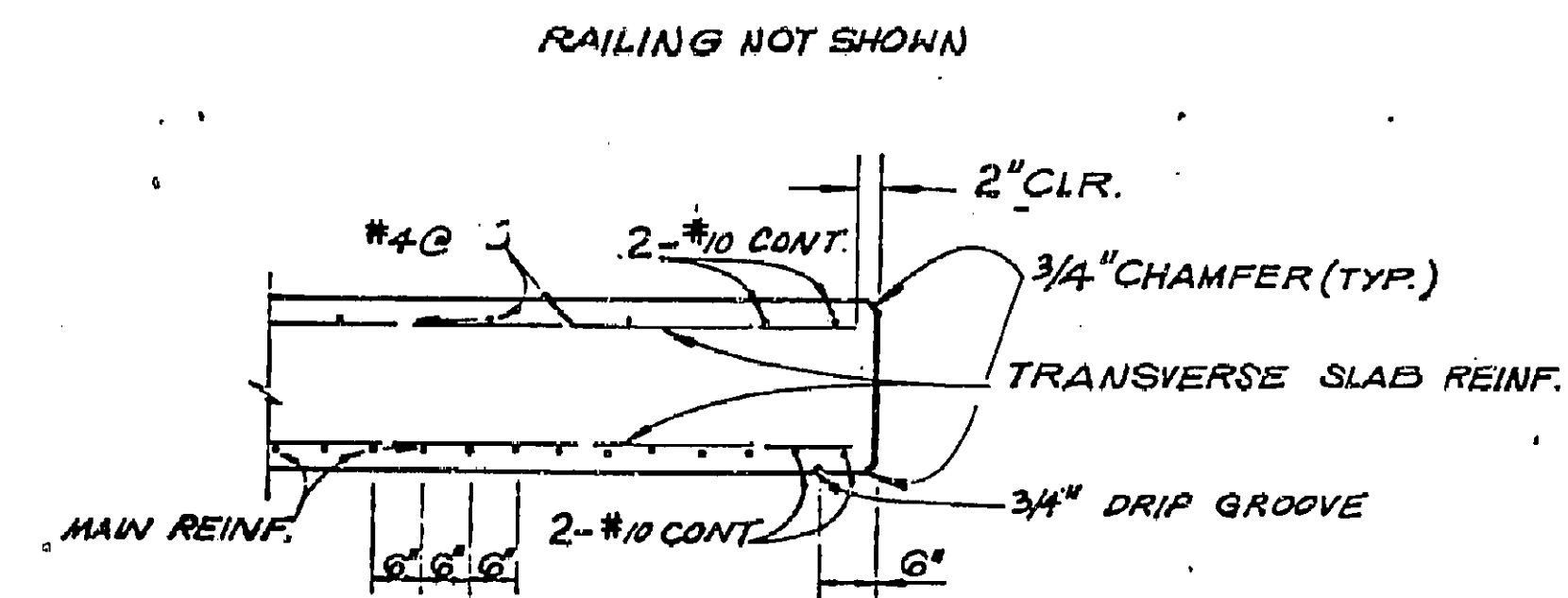
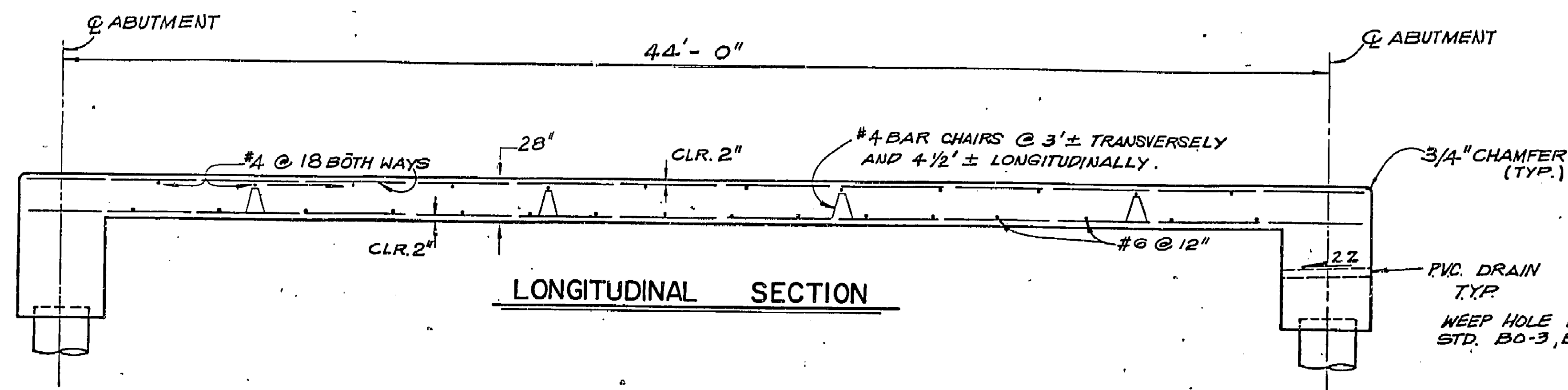
LOAD CAPACITY: The load ratings shown are the minimum load ratings the structure is designed to carry.

Henry Ma

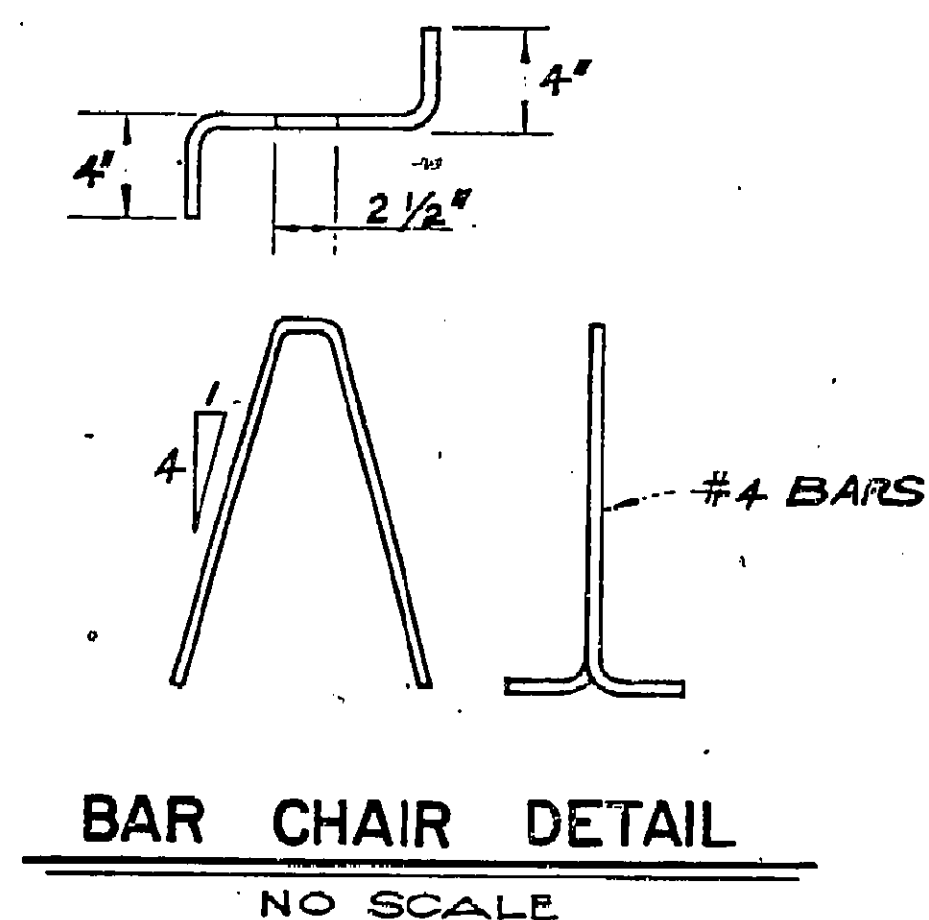
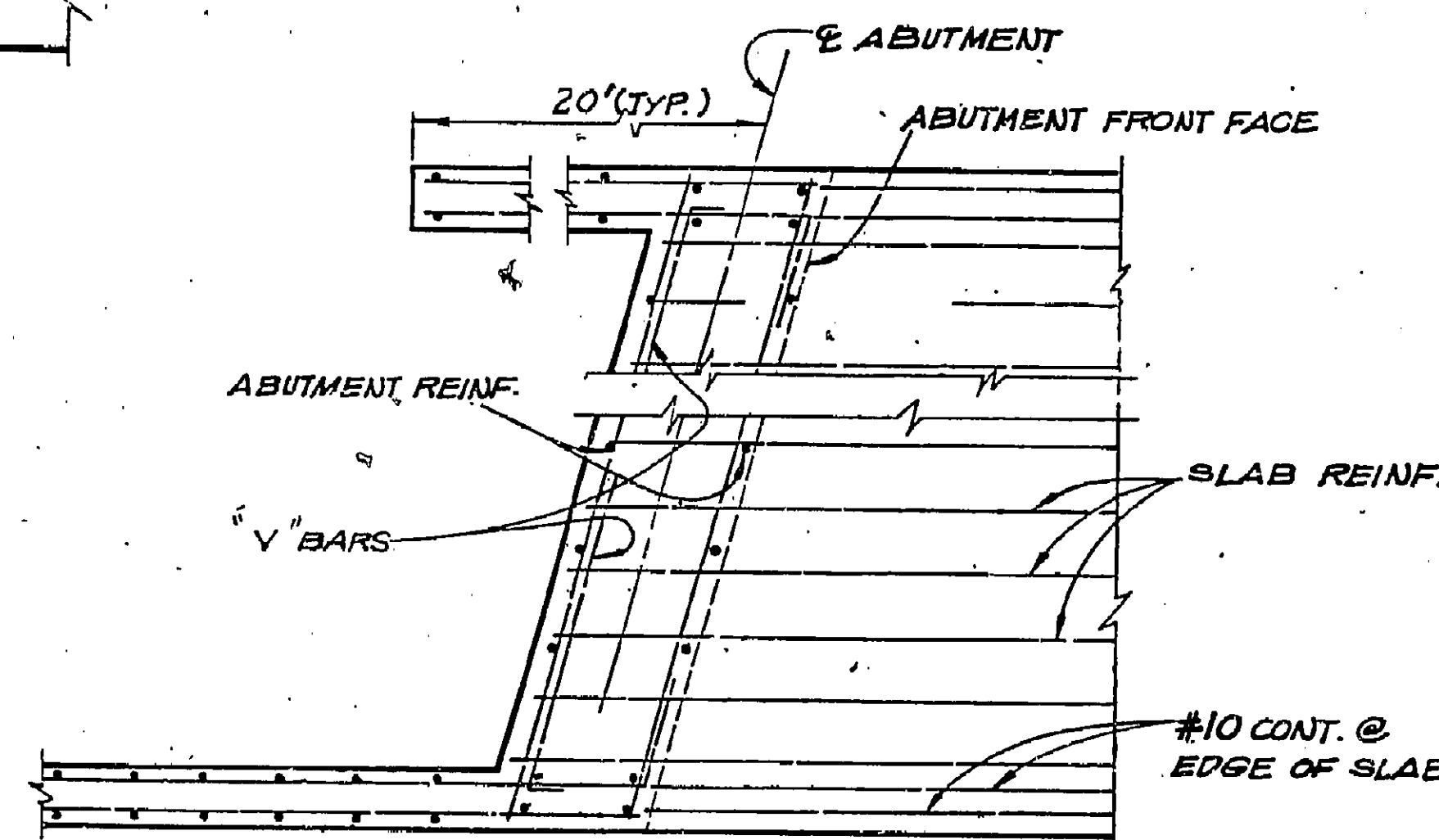
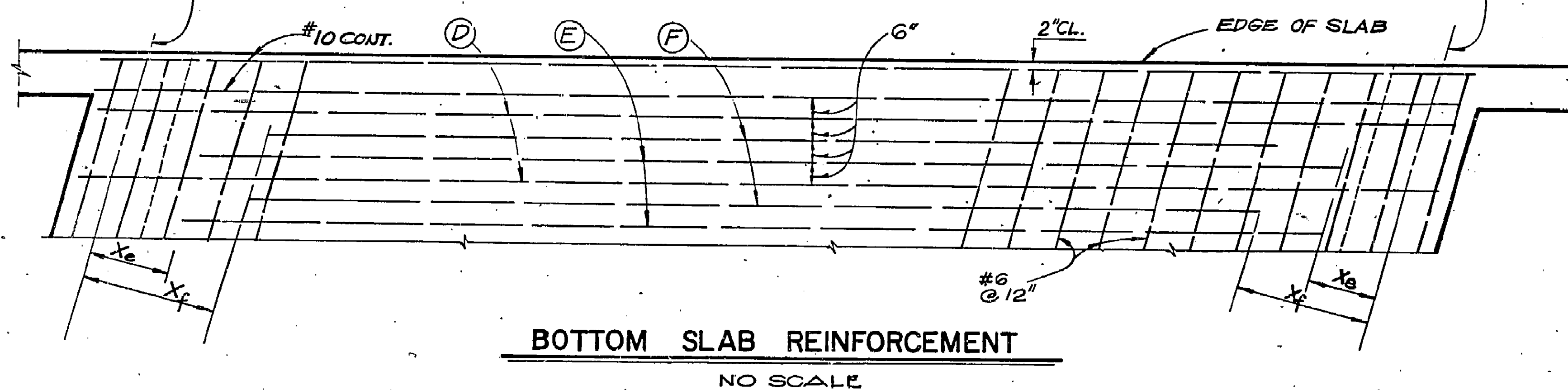
HM/cd

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





NOTE:
CAMBER DIAGRAM DOES NOT INCLUDE ALLOWANCE FOR FALSEWORK SETTLEMENT. THE TOTAL DEFLECTION WILL BE REACHED ABOUT FOUR YEARS AFTER FALSEWORK REMOVAL. FOR VALUES AT TIME OF FALSEWORK REMOVAL, PROVIDE THOSE SHOWN BY FOUR. THE AMOUNT OF CAMBER FOR CONSTRUCTION WILL BE DETERMINED BY THE ENGINEER.



SPECIFICATIONS

DESIGN
A.A.S.H.T.O. STD. SPECS. DATED 7/84 WITH SUBSEQUENT REVISIONS BY CALIFORNIA DEPT. OF TRANSPORTATION

CONSTRUCTION
STANDARD SPECIFICATIONS CALIFORNIA DEPT. OF TRANSPORTATION DATED JULY 1984 AND SPECIAL PROVISIONS.

LIVE LOADING
H.S. 20-44 AND ALTERNATIVE & CALIFORNIA PERMIT DESIGN LOADS (P-13)

PILE LOADING
45 TONS TYPE : CLASS 45

REINFORCEMENTS
EMBEDMENT IS CLEAR TO OUTSIDE OF BAR AND IS 2" TO MAIN REINFORCEMENT EXCEPT AS SHOWN. BACKING FOR HOOKS IS FOUR DIAMETERS EXCEPT AS NOTED. WHERE REINFORCEMENT BARS ARE SPICED, BARS #8 AND SMALLER LAP 45 DIAMETERS OF SMALLER BAR JOINED, BAR 9, 10 & 11 LAP 60 DIAMETERS OF SMALLER BAR JOINED.

CONCRETE
BRIDGE DECK - CLASS D, ABUTMENT - CLASS A
WINGWALL - CLASS A

UNIT STRESSES
PILE CAP & ABUT. : $f'_c = 3250$ P.S.I. @ 28 DAYS, $f_t = 60,000$ P.S.I.
PILES : $f'_c = 6,000$ P.S.I., $f_t = 270,000$ P.S.I. STRANDS, $f_t = 60,000$ P.S.I.

NOTES :

- PLACE ALL TRANSVERSE BARS PERPENDICULAR TO LONGITUDINAL BARS.
- THE CAMBER AT THE MID-SPAN OF THE BRIDGE IS .15'
- THE REINFORCEMENT VARIES IN LENGTH SINCE BRIDGE IS IN A CURVE

LENGTH OF SLAB		44'
BOTTOM OF SLAB	(D) BARS	SIZE #10
	LENGTH	CONT.
	(E) BARS	SIZE #9
	LENGTH	41'-0"
	X _e	1'-6"
	(F) BARS	SIZE #9
	LENGTH	30'-0"
	X _f	7'-0"
SLAB THICKNESS		28"
ULT. DEF. @ MIDSPAN		.15'
APPROX. QUANTITIES PER FT. OF WIDTH	CONC. FT ³	106.2
	STEEL - LBS	400

AS BUILT PLANS
Contract No. **55C-553**
Date Completed
Document No. **DIST 12**

CORNER DETAIL

NOTE: FOR WINGWALL REINFORCEMENT SEE CALTRANS STD B0-1 BRIDGE DETAIL 1-5 (L = 20')

55C-553 1/2" 0 1 2
3 inches on original drawing

ORANGE COUNTY ENVIRONMENTAL MANAGEMENT AGENCY	
IRVINE BOULEVARD MAGAZINE ROAD UNDERCROSSING	
SLAB DETAILS	
MARK DATE	DESCRIPTION
DESIGNED JDS	SCALE AS SHOWN
DRAWN H.P.	CHECKED JDS
DATE 19	DATE 19

DR. 15 (15136)

29X

I HEREBY CERTIFY THAT THIS IS A TRUE AND ACCURATE COPY OF THE ABOVE DOCUMENT TAKEN UNDER MY DIRECTION AND CONTROL ON THIS DATE IN SACRAMENTO, CALIFORNIA PURSUANT TO AUTHORIZATION BY THE DIRECTOR OF TRANSPORTATION.
DATE 3-26-90 SIGNATURE [Signature] SUPERVISOR OF MICROFILM SERVICES

