
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 : 55C0520R
Facility Carried: E/B SNTA MRGTA PWY
Location : 2.7 MI SE EL TORO RD
City :
Inspection Date : 12-JUN-01

Bridge Inspection Report

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

Name : ARROYO TRABUCO

CONSTRUCTION INFORMATION

Year Built : 1984
Year Widened : N/A
Length (m) : 365.8
Skew (degrees): 99
No. of Joints : 0
No. of Hinges : 1

Description of Structure : Continuous 7-span CIP/PS concrete box girder (7 cells) with RC two column bents and RC open end seat abutments, all supported upon steel piles.

Span Configuration : (W) 41.5 m, 5 @ 56.1 m, 41.5 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 : PPPPP
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) 0.5 m br, 2.4 m & varies sw, 17.4 m, 0.5 m br (N)
Total Width : 20.6 m
Net Width : 19.80 m
Rail Description : (N) 25 conc., (S) Misc.
Min. Vertical Clearance : Unimpaired
No. of Lanes : 3
Rail Code : 1110

DESCRIPTION UNDER STRUCTURE

Channel Description : Natural earth trapezoidal ravine.

REVISIONS

(RAIL RATINGS): (New): 1110, (Old): 1111. The terminii of the barrier approach guard railings are not to current standards.

The joint seal assemblies are currently being replaced with neoprene strip seals.

CONDITION OF STRUCTURE

There are 10 mm offsets in the railings at the hinge and at the abutments. (O)

Otherwise, the structure is in good condition.

MISCELLANEOUS

Vehicular parking is at the northwest quadrant.

ELEMENT LEVEL INSPECTION RATINGS

F#	ElemElement Description No.	Env	Total Units Quantity	Qty in each Condition State				
				St. 1	St. 2	St. 3	St. 4	St. 5
01 12	Concrete Deck - Bare	2	7210 sq.m.	7210	0	0	0	0
01 104	P/S Conc Closed Web/Box Girder	2	366 m.	366		0	0	0
01 205	Reinforced Conc Column or Pile Extension	2	12 ea.	12	0	0	0	0
01 215	Reinforced Conc Abutment	2	84 m.	84	0	0	0	0
01 225	Unpainted Steel Submerged Pile	2	1 ea.	1	0	0	0	0
01 300	Strip Seal Expansion Joint	2	60 m.	60	0	0		

Printed on : 15-JUN-2001 09:53:02 AM

Bridge No.: 55C0520R Location: 2.7 MI SE EL TORO RD

Inspection Date: 12-JUN-01

F#	Elem No.	Element Description	Env	Total Units Quantity	Qty in each Condition State				
					St. 1	St. 2	St. 3	St. 4	St. 5
01 312		Enclosed/Concealed Bearing	2	3 ea.	0	3	0	0	0
01 321		Reinforced Conc Approach Slab w/ or w/o AC Ovly	2	3 ea.	3	0	0	0	0
01 331		Reinforced Conc Bridge Railing	2	366 m.	366	0	0	0	0
01 335		Other Bridge Railing	2	366 m.	366	0	0		

WORK RECOMMENDATIONS - NONE

Inspected By : M. Ogata

M. Ogata
 Registered Civil Engineer

CC : TMRut
Orange County

Bridge No.: 55C0520R

Location: 2.7 MI SE EL TORO RD

Inspection Date: 12-JUN-01

STRUCTURE INVENTORY AND APPRAISAL REPORT

***** IDENTIFICATION *****

(1) STATE NAME - CALIFORNIA 069
 (8) STRUCTURE NUMBER 55C0520R
 (5) INVENTORY ROUTE (ON/UNDER) - ON 140 0W4580
 (2) HIGHWAY AGENCY DISTRICT 12
 (3) COUNTY CODE 059 (4) PLACE CODE 00000
 (6) FEATURE INTERSECTED - ARROYO TRABUCO
 (7) FACILITY CARRIED - E/B SMTA MRGTA PWY
 (9) LOCATION - 2.7 MI SE EL TORO RD
 (11) MILEPOINT/KILOMETERPOINT 0
 (12) BASE HIGHWAY NETWORK - NOT ON NET 0
 (13) LRS INVENTORY ROUTE & SUBROUTE
 (16) LATITUDE 33 DEG 38 MIN 13 SEC
 (17) LONGITUDE 117 DEG 36 MIN 57 SEC
 (98) BORDER BRIDGE STATE CODE % SHARE %
 (99) BORDER BRIDGE STRUCTURE NUMBER

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

(43) STRUCTURE TYPE MAIN: MATERIAL - PRSTR CONC CONT
 TYPE - BOX BEAM OR GDR - MULTIPLE CODE 6 05
 (44) STRUCTURE TYPE APPR: MATERIAL -
 TYPE - CODE
 (45) NUMBER OF SPANS IN MAIN UNIT 7
 (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 1984
 (106) YEAR RECONSTRUCTED 0000
 (42) TYPE OF SERVICE: ON - HIGHWAY 1
 UNDER - OTHER 0
 (28) LANES: ON STRUCTURE 03 UNDER STRUCTURE
 (29) AVERAGE DAILY TRAFFIC 20000
 (30) YEAR OF ADT 1999 (109) TRUCK ADT 3%
 (19) BYPASS, DETOUR LENGTH 16 KM

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

(48) LENGTH OF MAXIMUM SPAN 56.1 M
 (49) STRUCTURE LENGTH 365.8 M
 (50) CURB OR SIDEWALK: LEFT 0 M RIGHT 0 M
 (51) BRIDGE ROADWAY WIDTH CURB TO CURB 19.8 M
 (52) DECK WIDTH OUT TO OUT 20.6 M
 (32) APPROACH ROADWAY WIDTH (W/SHOULDERS) 20.7 M
 (33) BRIDGE MEDIAN - NO MEDIAN 0
 (34) SKEW 99 DEG (35) STRUCTURE FLARED NO
 (10) INVENTORY ROUTE MIN VERT CLEAR 99.99 M
 (47) INVENTORY ROUTE TOTAL HORIZ CLEAR 19.8 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 = 80.0 *****
 STATUS =
 HEALTH INDEX = 99.83

***** 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 8
 (60) SUBSTRUCTURE 7
 (61) CHANNEL & CHANNEL PROTECTION N
 (62) CULVERTS N

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

(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 ***** CODE

(67) STRUCTURAL EVALUATION 7
 (68) DECK GEOMETRY 9
 (69) UNDERCLEARANCES, VERTICAL & HORIZONTAL N
 (71) WATER ADEQUACY 9
 (72) APPROACH ROADWAY ALIGNMENT 8
 (36) TRAFFIC SAFETY FEATURES 1110
 (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 40000
 (115) YEAR OF FUTURE ADT 2019

***** INSPECTIONS *****

(90) INSPECTION DATE 06/01 (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-520 R

Location 12 - Ora - FAS W458-CR
Dist.-Co.-Rte.-City

Date of Investigation August 7, 1996

TYPE OF INVESTIGATION/REPORT

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

Name ARROYO TRABUCO (Santa Margarita Parkway eastbound, 0.2 mile east of Alicia Parkway)

CONDITION RATINGS:

Element Level Inspection (ELI) form attached.

Channel & Channel Protection

8

MISCELLANEOUS DISCUSSION:

Bearing assemblies were removed and replaced with elastomeric bearing pads.

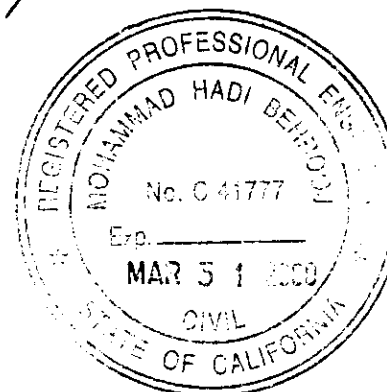
CONDITION OF STRUCTURE:

- A. Concrete deck has light transverse cracking. Also, concrete deck shows repair marks in less than 2% of its area.
- B. Failed concrete patch near southwest girder remains the same.

WORK RECOMMENDED:

Repair failed concrete patch in location "B".

By M. Hadi Behrooj *MHB*
G. P. Balinghasay



GPB:cd
cc: TMRut
Orange County

SUPPLEMENTARY BRIDGE REPORT

DS-M19 (REV 2/93)

Bridge Number 55C-520 R

Location 12 - Ora - FAS W458-CR
Dist.-Co.-Rte.-City

Date of Investigation June 24, 1994

TYPE OF INVESTIGATION/REPORT

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

Name ARROYO TRABUCO (Santa Margarita Parkway eastbound, 0.2 mile east of Alicia Parkway)

CONDITION RATINGS:

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

Channel & Channel Protection

(8)

SCOUR CRITICAL:

The scour rating of A-2 is appropriate.

CONDITION OF STRUCTURE:

The patch of concrete fracture near southwest girder (exterior girder) bearing plate at the west abutment has failed.

WORK DONE:

The soil and debris has been removed from steel bearing assembly area of west abutment.

WORK RECOMMENDED:

Remove unsounded concrete from above fracture and patch with cement mortar.

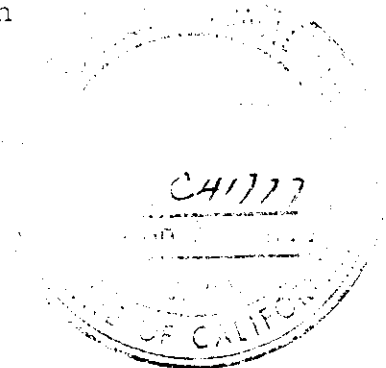
M. H. Behrooj ¹¹⁴¹⁷

By

S. A. Zanganeh
S. A. Zanganeh

SAZ:cd

cc: CDHarris
Orange County
WLindsey



INFORMATION ONLY - NOT FOR UPDATE

BRIDGE NUMBER	FRAME	INSPECTION DATE
55C0520R	01	062494
1 8	9	11 16

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]

08/02/95

BY: Sgt L

SUPPLEMENTARY BRIDGE REPORT
DS-M19 (REV. 12/81)

Bridge Number 55C-520 R

Location 12 - Ora - FAS W458-CR
Dist.-Co.-Rte.-City

Date of Investigation June 12, 1992

TYPE OF INVESTIGATION/REPORT

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

Name ARROYO TRABUCO (Santa Margarita Parkway eastbound, 0.2 mile east of Alicia Parkway)

CONDITION RATINGS:

Deck	Superstructure	Substructure	Channel & Channel Protection	Culvert
<u>8</u>	<u>8</u>	<u>8</u>	<u>(8)</u>	<u>N</u>

DISCUSSION:

A twin bridge was constructed in 1991 on the north adjacent to this structure. Consequently this structure is re-numbered as 55C-520 R.

CONDITION OF STRUCTURE:

Soil and debris, fallen through the open deck joint, has accumulated around steel roller bearings of the west abutment.

Previously noted concrete fracture near southwest girder (exterior girder) bearing plate at the west abutment remains the same.

On date of inspection, it was noted at the east abutment that bridge movement has reached its extreme contracted state relative to girder bearing area where steel bearing roller is at its extreme edge of the steel bearing sole plate. The open deck joint at this abutment, measured this date, is 1 3/4" at south curb flowline varying to 2 1/2" at north bridge rail flowline.

Condition of the structure is good.

REVISIONS:

Bridge Number - 55C-520 R

Name - ARROYO TRABUCO (Santa Margarita Parkway eastbound, 0.2 mile east of Alicia Parkway)

Bridge Width - (S) 1.8'br, 8' & var sw, 57', 1.8'br (N)

Net Width - 57'

Lanes - 3

Median - None

Rail Type - (S) Type 25 modified with sidewalk
(N) Type 25 modified

Approach Roadway Width - 96'

Average Daily Traffic - Est. 15,000 (1992)
Est. 20,000 (2010)

Bypass Detour Length - 1 mile

Condition Rating: Channel & Channel Protection - 8

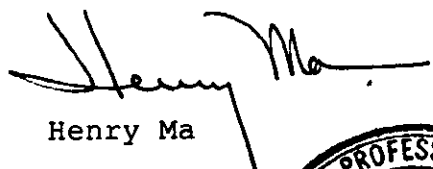
(There is no deterioration in condition of channel banks from the previous report, the above rating change indicates the nature of the earth channel to reflect more closely to the current Federal Coding Guide.)

WORK DONE:

During the phase of construction of the adjacent bridge, a sidewalk has been constructed (added) on this structure against the existing south bridge rail.

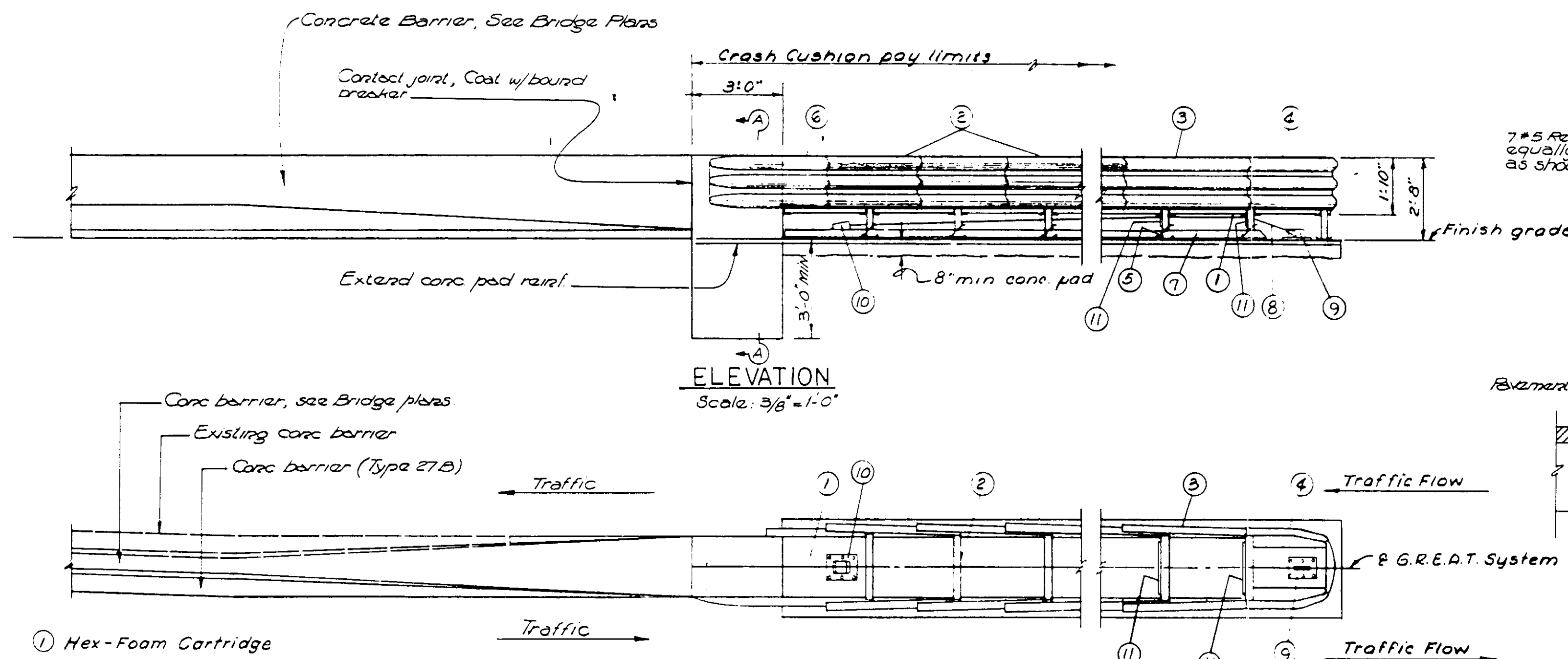
WORK RECOMMENDED:

Remove soil and debris away from steel bearing assembly area of the west abutment.

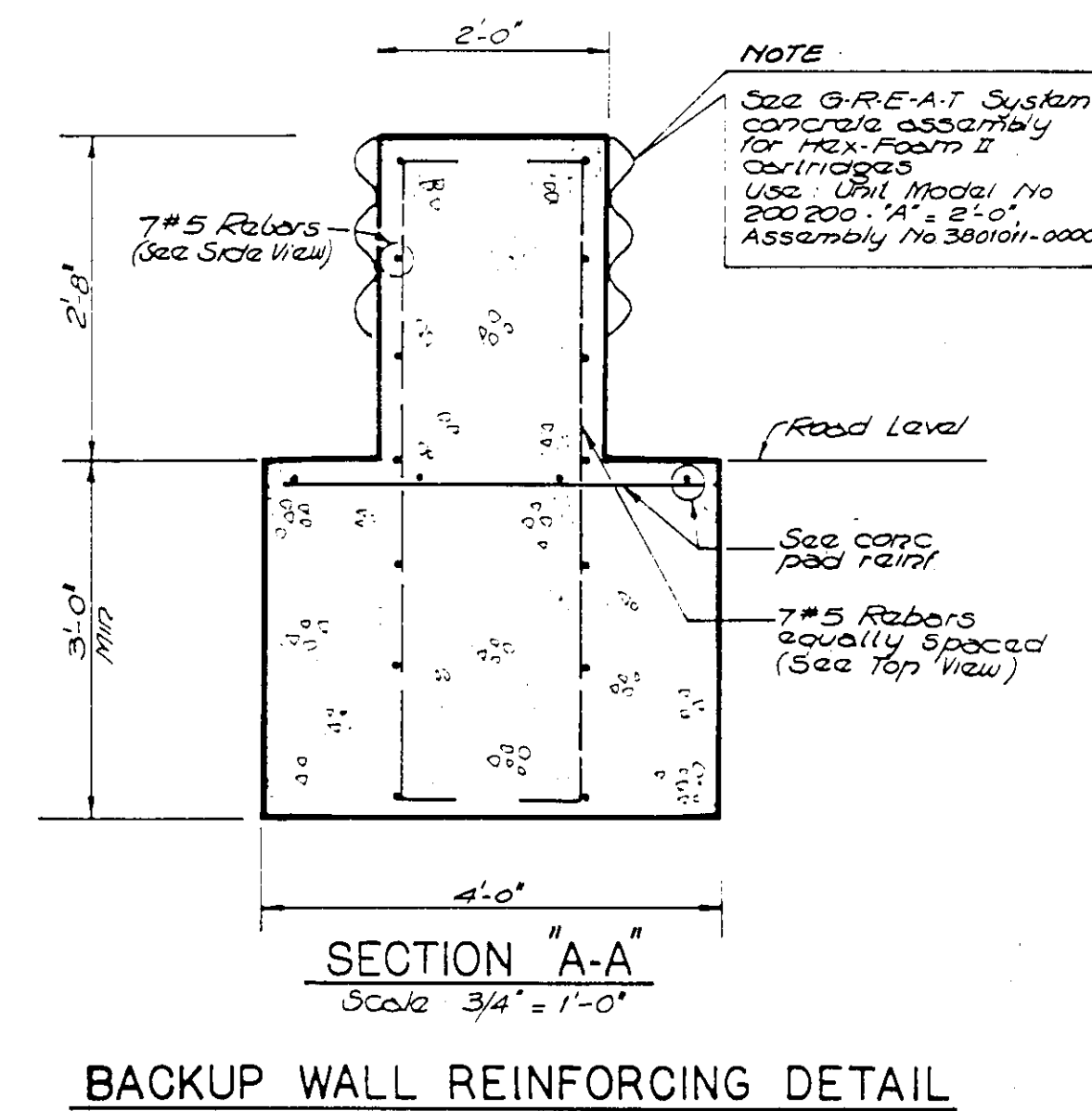
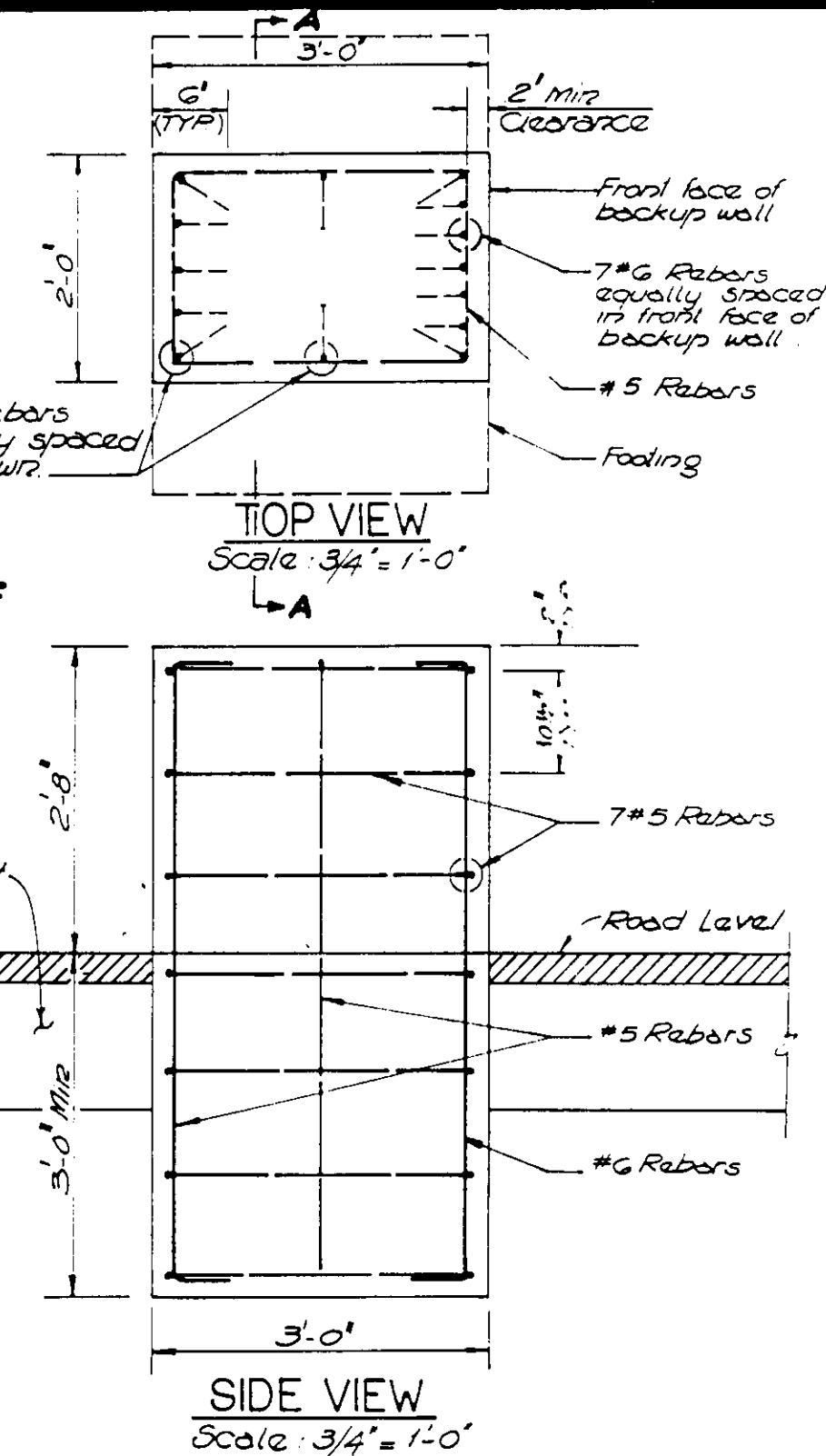
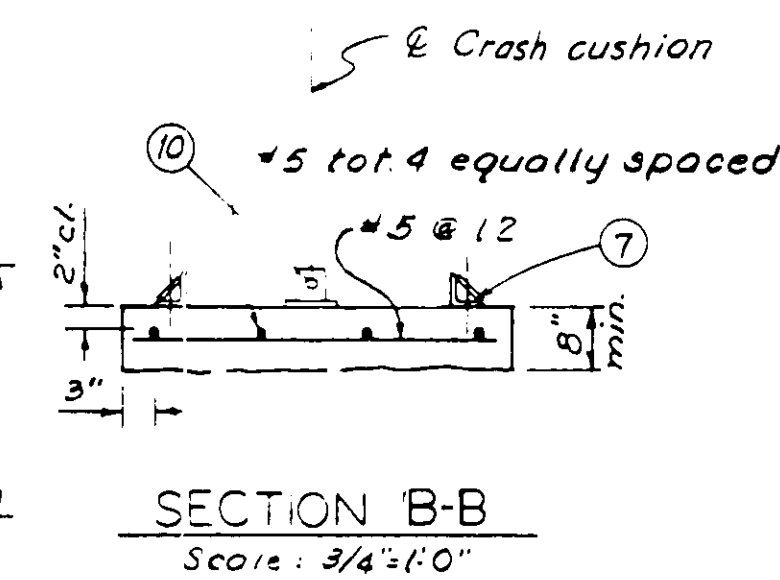
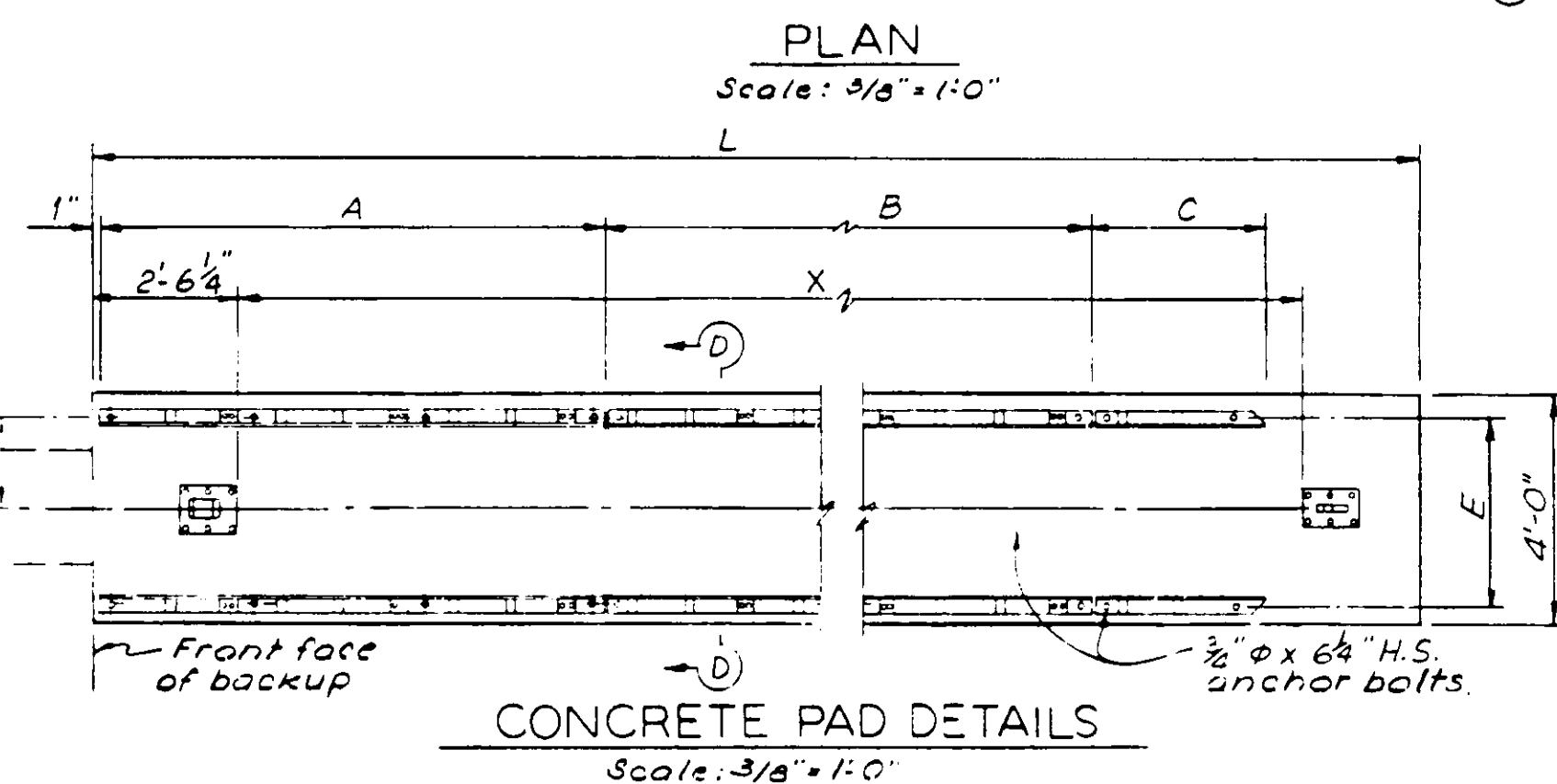

Henry Ma

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





- ① Hex-Foam Cartridge
- ② Diaphragms
- ③ Thrie Beam Panels
- ④ Nose Wrap
- ⑤ Stabilizing Chains
- ⑥ Wing Terminal Panel
- ⑦ Restraining Chain Railing
- ⑧ Restraining Cable
- ⑨ Front Cable Anchor
- ⑩ Rear Cable Anchor
- ⑪ Restraining Cable Guide



RAIL LENGTH					
ASSEMBLY NO.	NO. OF BAYS	TOTAL RAIL LENGTH	A	B	C
35-18-04-6	6	17'-11"	27-22-034	27-22-037	
" " 04-7	7	20'-11"	" " 8'-11"	27-22-035	27-22-035
" " 04-8	8	23'-11"	" " 9'-0"	" " 3'-0"	27-22-036
" " 04-9	9	26'-11"	" " 9'-0"	" " 6'-0"	27-22-037
" " 04-10	10	29'-11"	" " 18'-0" (TOTAL)	" " 3'-0"	27-22-035

PAD LENGTH			
No. of Bays	L	X	ANCHOR BOLT QUAN
6	22'-0"	17'-7 1/4"	28
7	25'-0"	20'-7 1/4"	32
8	28'-0"	23'-7 1/4"	34
9	31'-0"	26'-7 1/4"	36
10	34'-0"	29'-7 1/4"	40

WIDTH		
UNIT MODEL NO.	D	E
200200	2'-0"	2'-3"
206206	2'-6"	2'-9"
300300	3'-0"	3'-3"

For use with Type 50, use D = 2'-0"

- Notes:
- For all accessories to G.R.E.A.T. System, concrete anchor bolts etc., see Mfr's details.
 - Transition of E Barrier to meet E of G.R.E.A.T. System.
 - Concrete footing to Concrete Barrier Type B7B varies. (See Bridge Plans)
 - See 'Roadway Plans' for details.
 - Place rebar to avoid interference when drilling anchor bolt holes.

See Note 1 For Verification									
Model No.	No. of Bays	L	A	B	C	D	E	X	No. of Anchor Bolts
USE → 200200	7	25'-0"	8'-11"	5'-0"	3'-0"	2'-0"	2'-3"	20'-7 1/4"	32



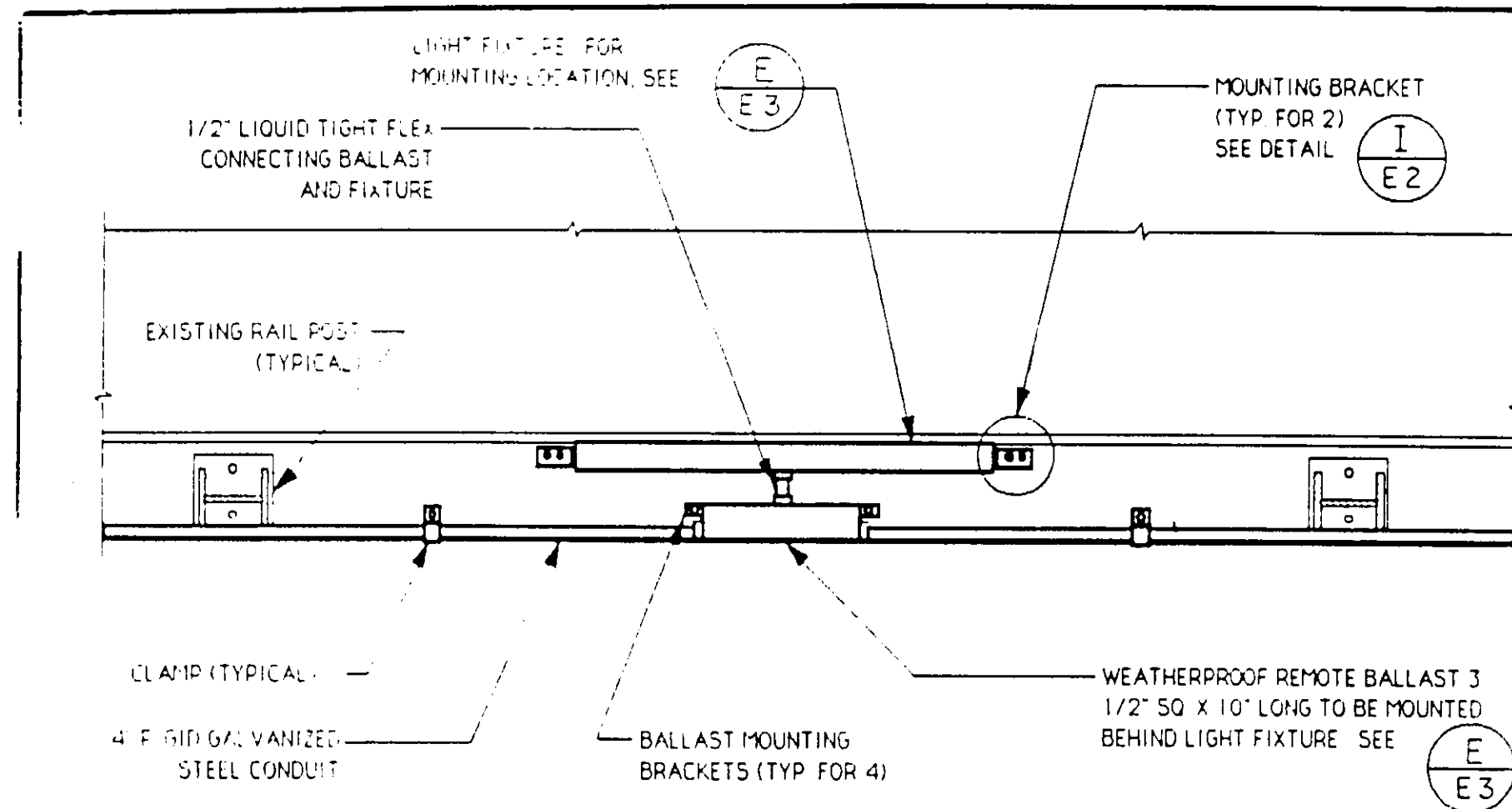
For bridges: special anchorage will have to be designed

DESIGN	By TOJ	Checked SC
DETAILS	By	Checked
QUANTITIES	By	Checked

WILLIAMSON & SCHMID
CONSULTING CIVIL ENGINEERS AND LAND SURVEYORS
17799 SKY PARK BOULEVARD • IRVINE, CALIFORNIA 92714 • (714) 261-2222
APPROVED BY: *Stephen P. Schmid* RCE 5/8/87 EXPIRES 5/8/90 DATE

BRIDGE NO.	
POST MILE	
VEHICLE CRASH CUSHION (G.R.E.A.T.)	

NO. 0133	200200	TYPE 50 ATTACHMENT	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	0	1	2	3	CU	WO	Disregard prints bearing earlier revision dates	REVISION DATES (PRELIMINARY STAGE ONLY)	SHEET 49 OF 57
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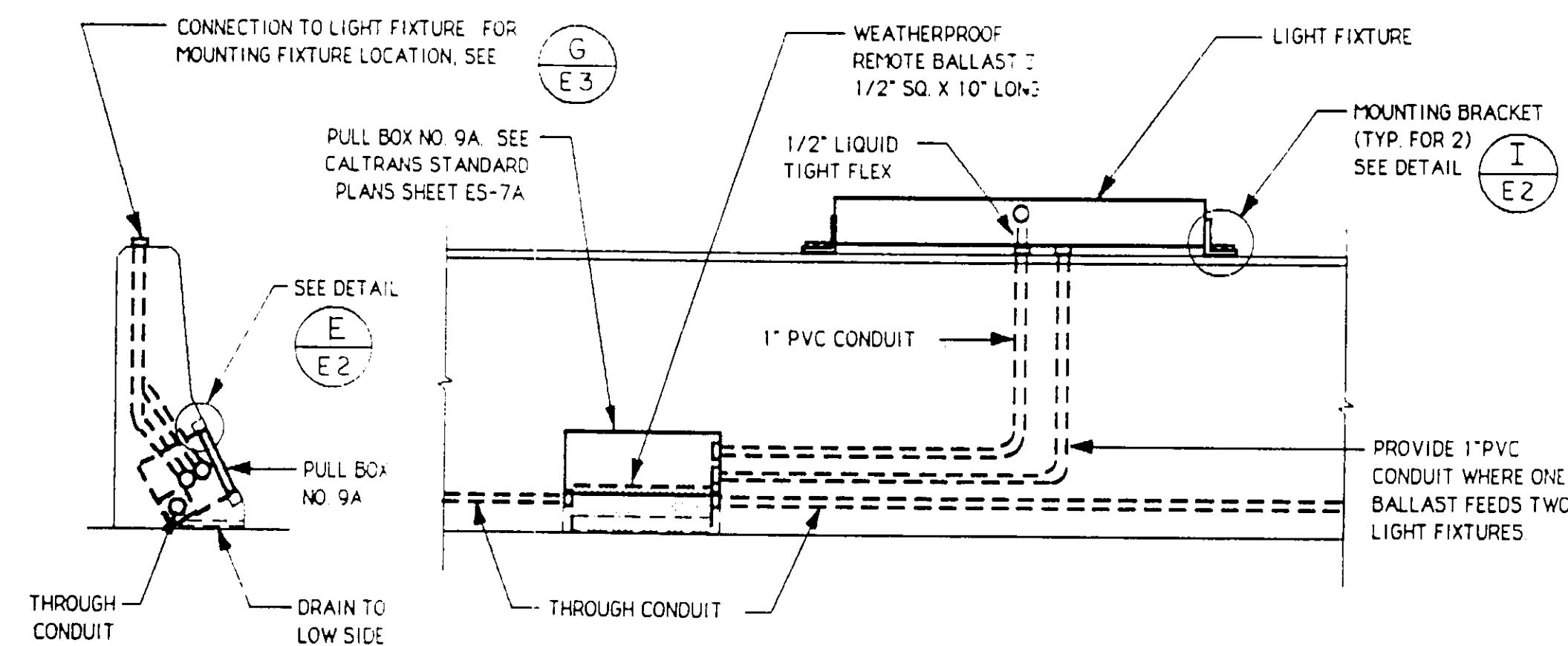
TOP VIEW

FIXTURE MOUNTING & BALLAST DETAIL

3/4" = 1'-0"

FOR EXISTING CONCRETE BARRIER

A
E3



SECTION

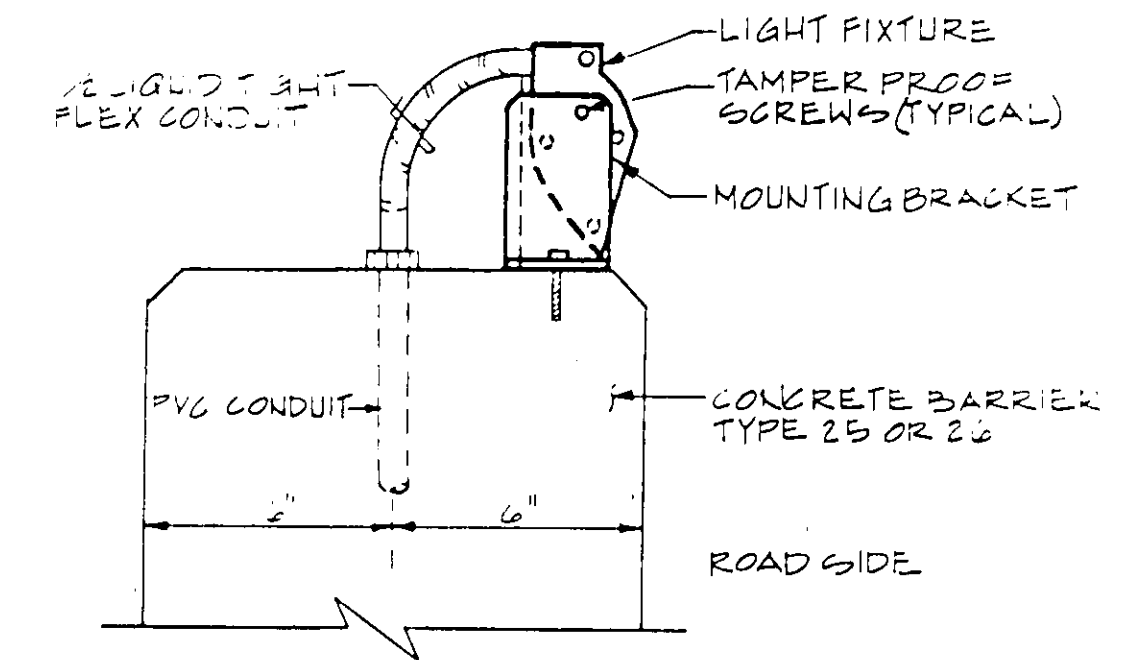
ELEVATION

FIXTURE & PULL BOX NO. 6 MOUNTING DETAIL

3/4" = 1'-0"

FOR CONCRETE BARRIER TYPE 27

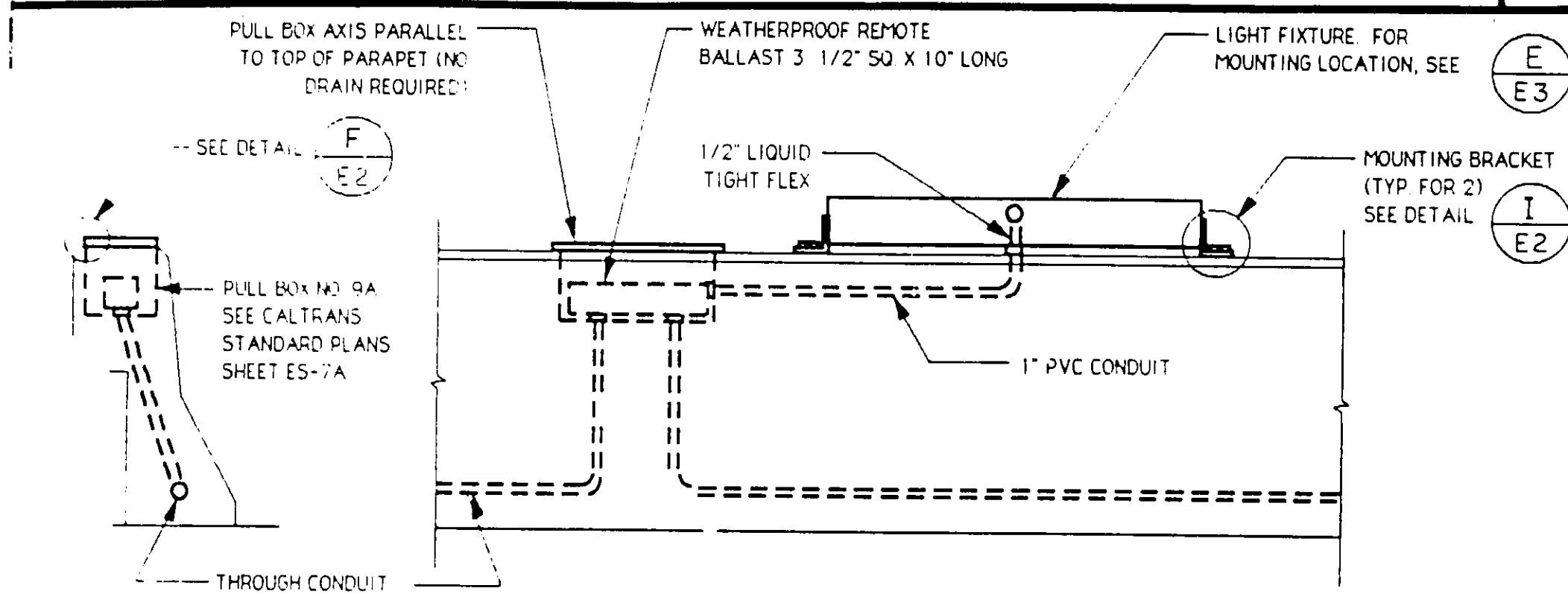
D
E3



FIXTURE MOUNTING DETAIL

1/4" = 1'-0"

F
E3



SECTION

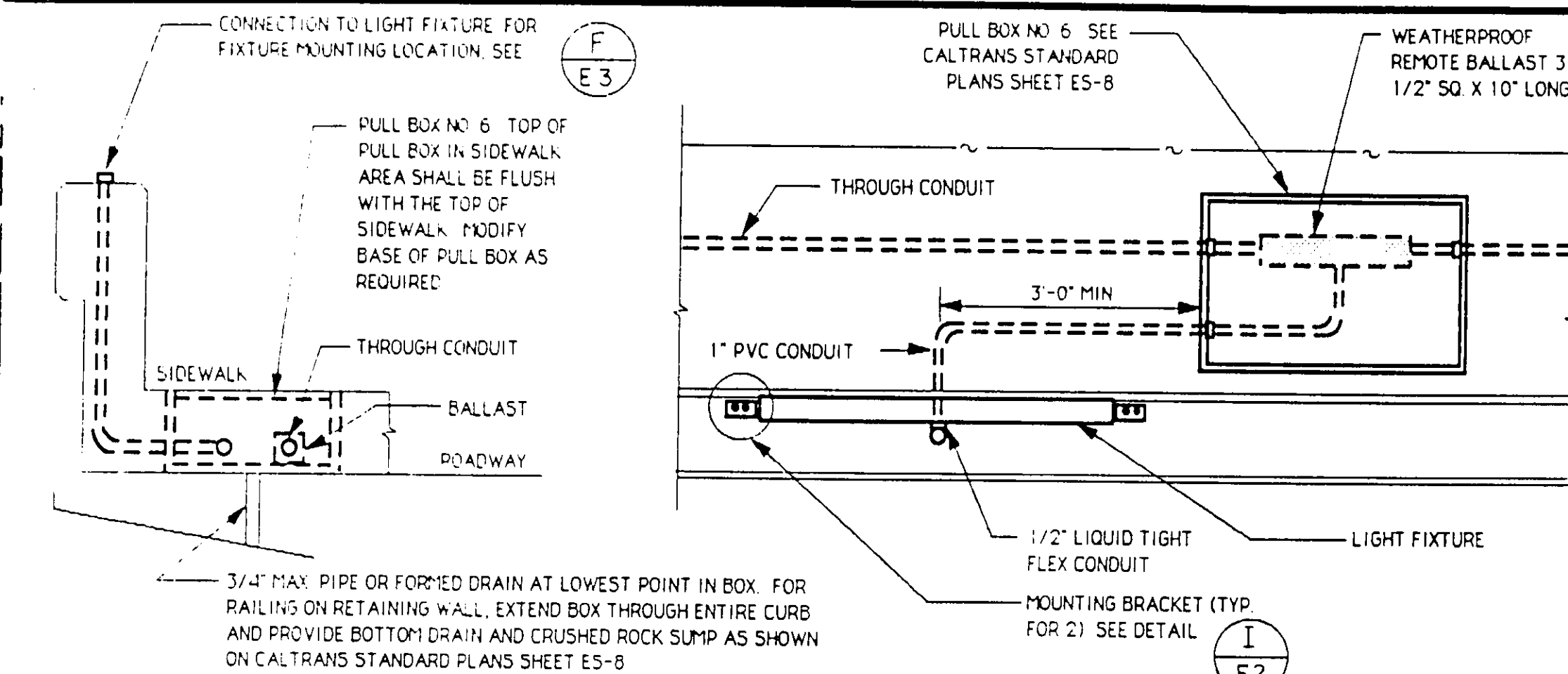
ELEVATION

FIXTURE & PULL BOX NO. 9A MOUNTING DETAIL

3/4" = 1'-0"

FOR CONCRETE BARRIER TYPE 25

B
E3



SECTION

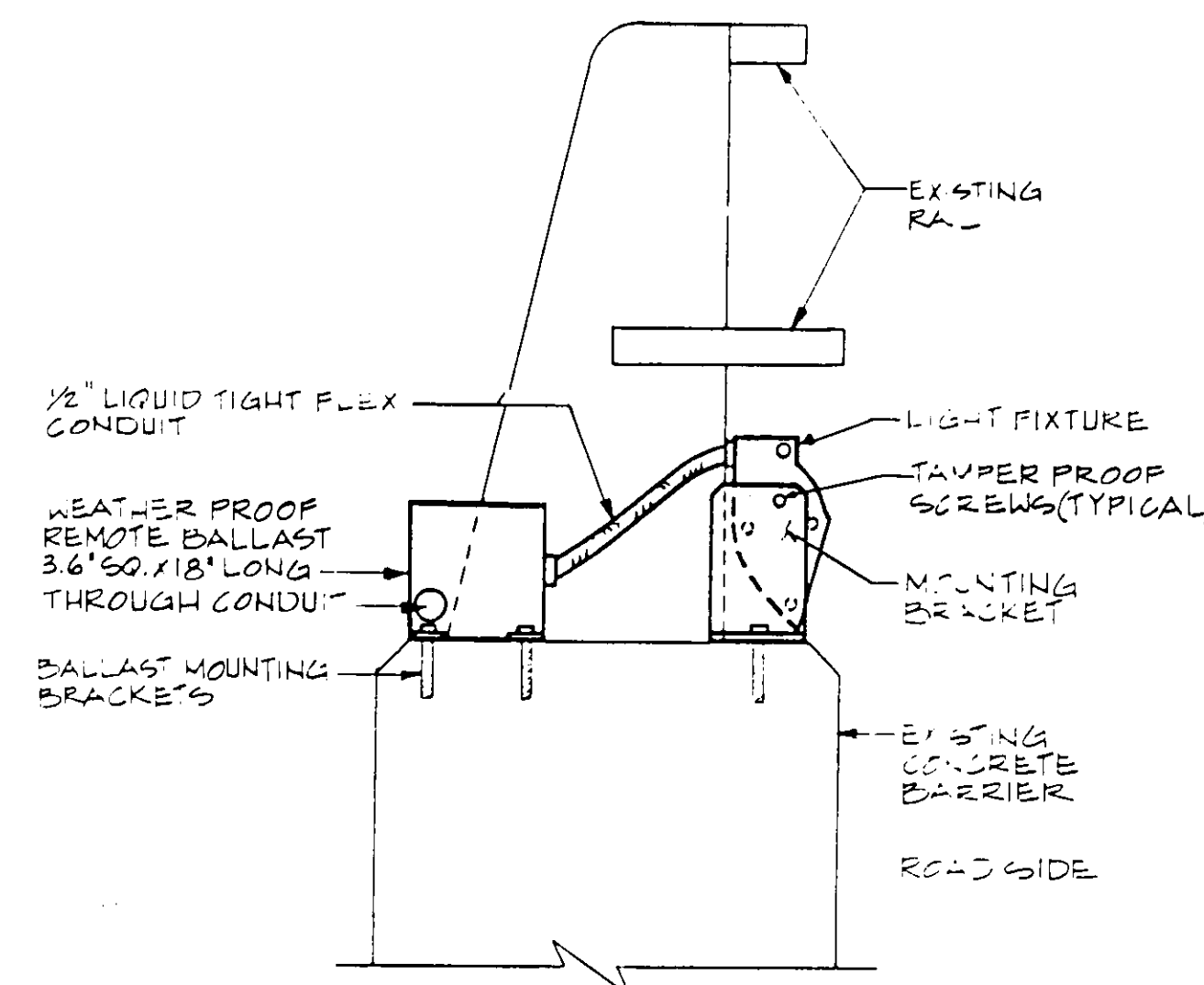
TOP VIEW

FIXTURE & PULL BOX NO. 6 MOUNTING DETAIL

3/4" = 1'-0"

FOR CONCRETE BARRIER TYPE 26

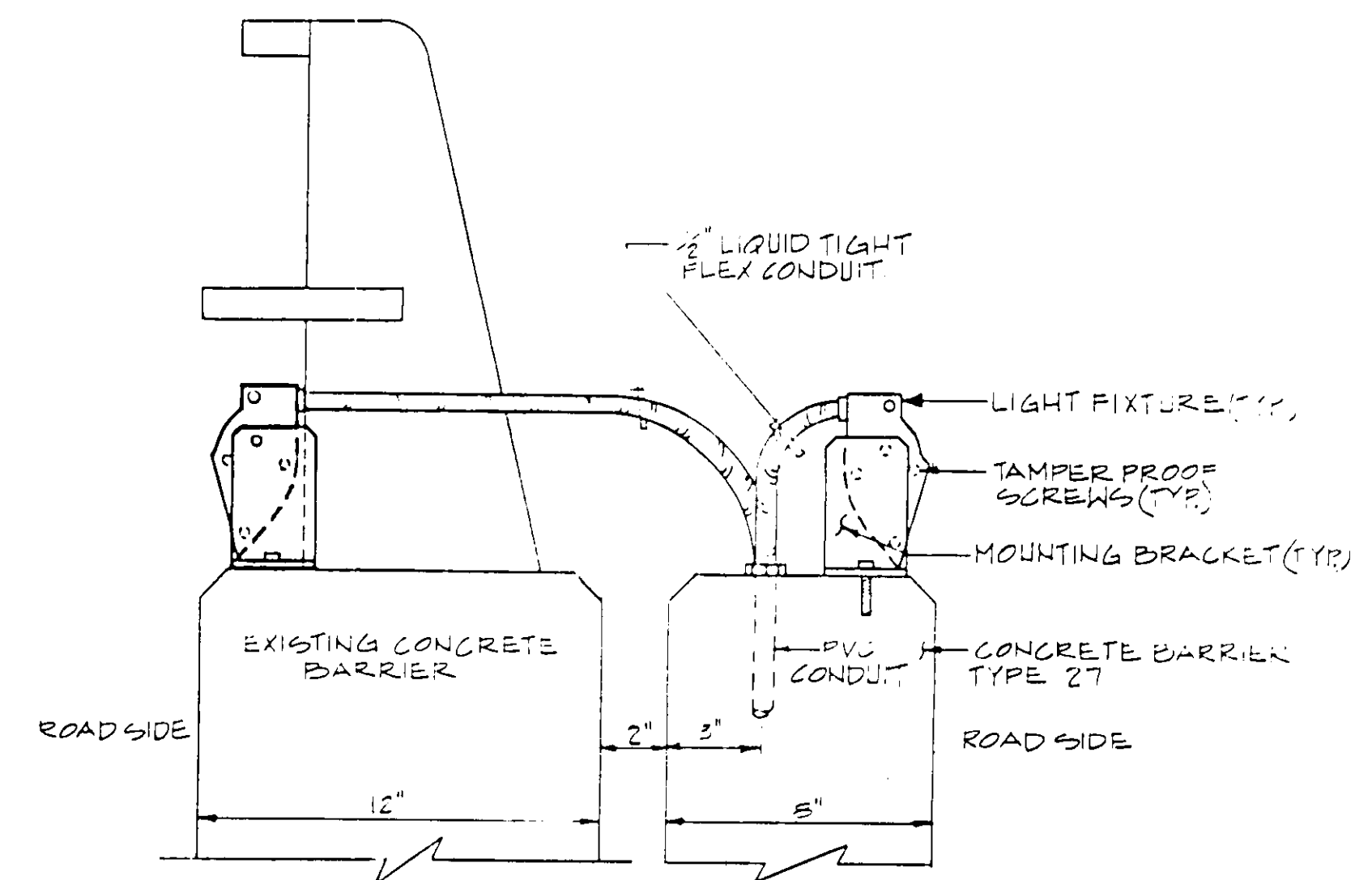
C
E3



FIXTURE MOUNTING DETAIL

1/4" = 1'-0"

E
E3



FIXTURE MOUNTING DETAIL

1/4" = 1'-0"

G
E3

SPARVAN
ELECTRICAL & CONTROL SYSTEM ENGINEERS
4140 NORSE WAY
LONG BEACH, CA 90808
PHONE (213) 425-1233

DESIGNED BY
DP-
DRAWN BY
DDE
CHECKED BY
FILLER ROOM

**SANTA MARGARITA PARKWAY BRIDGE
OVER ARROYO TRABUCO - WIDENING**

BRIDGE LIGHTING DETAILS

SHEET
48
OF
57
JOB NO.



JUNE 28, 1989

INDEX TO BRIDGE PLANS

SHEET NO.	TITLE
22	BRIDGE TITLE SHEET
23	GENERAL PLAN
24	DECK CONTOURS
25	FOUNDATION PLAN
26	ABUTMENT DETAILS - 1
27	ABUTMENT DETAILS - 2
28	PIER 2 DETAILS
29	PIER 3 DETAILS
30	PIER 4, 5, 6, & 7 DETAILS
31	TYPICAL SECTION - FRAME 1
32	TYPICAL SECTION - FRAME 2
33	GIRDER LAYOUT - FRAME 1
34	GIRDER LAYOUT - FRAME 2
35	HINGE DETAILS
36	RESTRAINER DETAILS
37	PCC APPROACH SLAB
38	JOINT SEAL ASSEMBLY DETAILS - 1
39	JOINT SEAL ASSEMBLY DETAILS - 2
40	CONCRETE BARRIER TYPE 27
41	RAISED SIDEWALK - EXISTING BRIDGE
42	ROCK SCOUR PROTECTION DETAILS
43	LOG OF TEST BORINGS - 1
44	LOG OF TEST BORINGS - 2
45	LOG OF TEST BORINGS - 3

PLAN SYMBOLS

	SECTION IDENTIFICATION
	CALTRANS STANDARD PLAN (JANUARY, 1988) SHEET NUMBER
	DETAIL NUMBER

PLANS FOR THE IMPROVEMENT OF
SANTA MARGARITA PARKWAY BRIDGE
OVER
ARROYO TRABUCO-WIDENING
IN
COUNTY OF ORANGE, CALIFORNIA

INDEX TO STANDARD PLANS

THE FOLLOWING STATE OF CALIFORNIA DEPARTMENT OF
TRANSPORTATION STANDARD PLANS DATED JANUARY 1988,
ARE A PART OF THESE CONTRACT DRAWINGS.

A62 - C	EXCAVATION AND BACKFILL BRIDGE
B0 - 3	BRIDGE DETAILS
B0 - 5	BRIDGE DETAILS
B0 - 13	BRIDGE DETAILS
B3 - 1	RETAINING WALL TYPE I H = 4' - 30'
B3 - 9	RETAINING WALL DETAILS No. 2
B6 - 21	JOINT SEALS
B7 - 1	BOX GIRDER DETAILS
B7 - 10	UTILITY OPENING - BOX GIRDER
B8 - 5	CAST-IN-PLACE PRESTRESSED GIRDER DETAILS
B11 - 51	TUBULAR HAND RAILING
B11 - 53	CONCRETE BARRIER TYPE 25
B11 - 54	CONCRETE BARRIER TYPE 26
B14 - 3	SUPPLY LINE & COMMUNICATION & SPRINKLER CONTROL CONDUITS
B2 - 5	PILE DETAILS - CLASS 45 & CLASS 70

SPECIFICATIONS

STANDARD SPECIFICATIONS DATED JANUARY 1988, STATE OF
CALIFORNIA, DEPARTMENT OF TRANSPORTATION.
SPECIAL PROVISIONS FOR THE CONSTRUCTION OF THIS PROJECT.

APPROXIMATE QUANTITIES

SALVAGE METAL BRIDGE RAILING	LUMP SUM
FURNISH STEEL PILING (HP 10 X 57)	2,944. LF
DRIVE STEEL PILE (HP 10 X 57)	46. EA
FURNISH STEEL PILING (HP 12 X 74)	4,478. LF
DRIVE STEEL PILE (HP 12 X 74)	190. LF
PRESTRESSING CAST-IN-PLACE CONCRETE	LUMP SUM
DRILL AND GROUT DOUELS	3,050. LF
JOINT SEAL ASSEMBLY (MR 7 1/2")	75. LF
JOINT SEAL ASSEMBLY (MR 6")	53. LF
JOINT SEAL ASSEMBLY (MR 3")	72. LF
TUBULAR HAND RAILING	1,268. LF
CONCRETE BARRIER (TYPE 25)	869. LF
CONCRETE BARRIER (TYPE 26)	1,268. LF
CONCRETE BARRIER (TYPE 27)	395. LF
ROCK SCOUR PROTECTION (EXIST. BRIDGE)	1,852. CY
ROCK SCOUR PROTECTION (WIDENING)	2,113. CY
BRIDGE LIGHTING	LUMP SUM

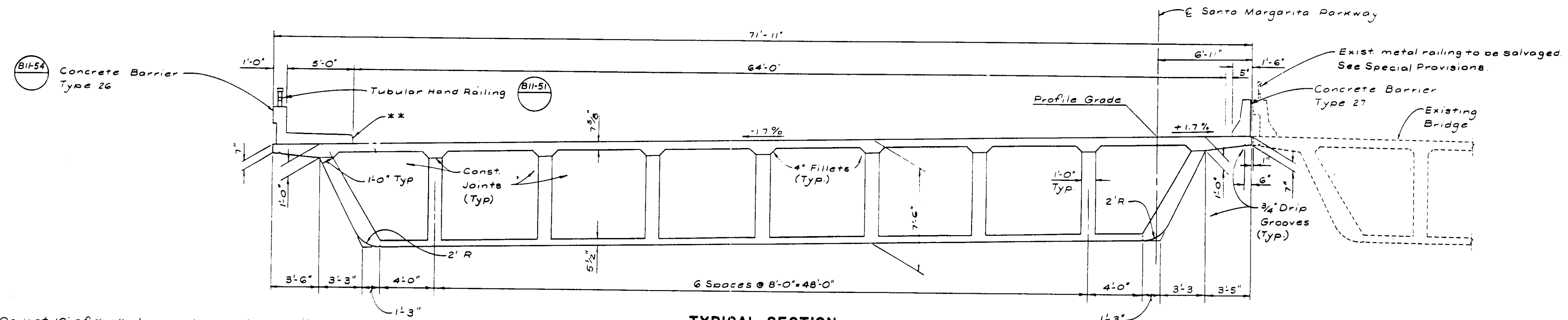
FINAL PAY QUANTITIES

STRUCTURE EXCAVATION (BRIDGE)	381. CY
STRUCTURE EXCAVATION (TYPE D: WIDENING)	3,158. CY
STRUCTURE EXCAVATION (TYPE D: EXIST. BRIDGE)	2,185. CY
STRUCTURE EXCAVATION (RETAINING WALL)	139. CY
STRUCTURE BACKFILL (BRIDGE)	145. CY
STRUCTURE BACKFILL (RETAINING WALL)	125. CY
PERVIOUS BACKFILL MATERIAL	61. CY
STRUCTURAL CONCRETE, BRIDGE	7,146. CY
STRUCTURAL CONCRETE, BRIDGE FOOTING	559. CY
STRUCTURAL CONCRETE, APPROACH SLAB	72. CY
STRUCTURAL CONCRETE, RETAINING WALL	36. CY
RAISED SIDEWALK, EXISTING BRIDGE	354. CY
BAR REINFORCING STEEL (BRIDGE)	1,419,500. LB
BAR REINFORCING STEEL (RET. WALL)	2,530. LB
MISCELLANEOUS METAL (BRIDGE)	4,400. LB
MISCELLANEOUS METAL (RESTRAINER)	7,400. LB

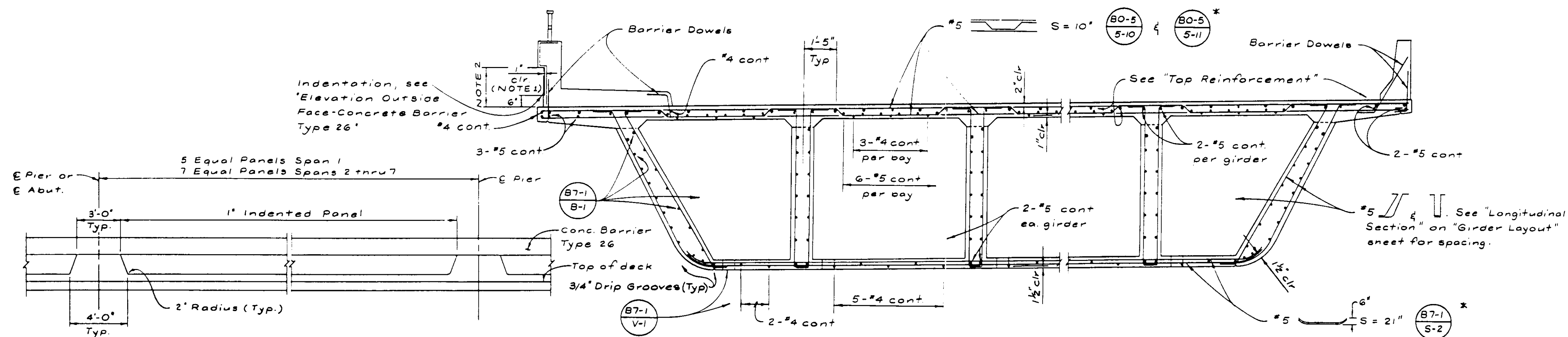
TWO DAYS BEFORE YOU DIG
CALL USA TOLL FREE
800-422-4133



	DESIGNED BY WMA	SANTA MARGARITA PARKWAY BRIDGE OVER ARROYO TRABUCO - WIDENING	SHEET 22 OF 57 SHEETS		
	DRAWN BY OMC				
	CHECKED BY CCC				
	FIELD BOOK				
APPROVED BY 	RCE C 34299	EXPIRES 9-30-91	DATE 6-22-88	BRIDGE TITLE SHEET	JOB NO.



** On last 10' of deck at each abutment, transition curb face to match condition at approach slab
See "PCC Approach Slab" sheet.



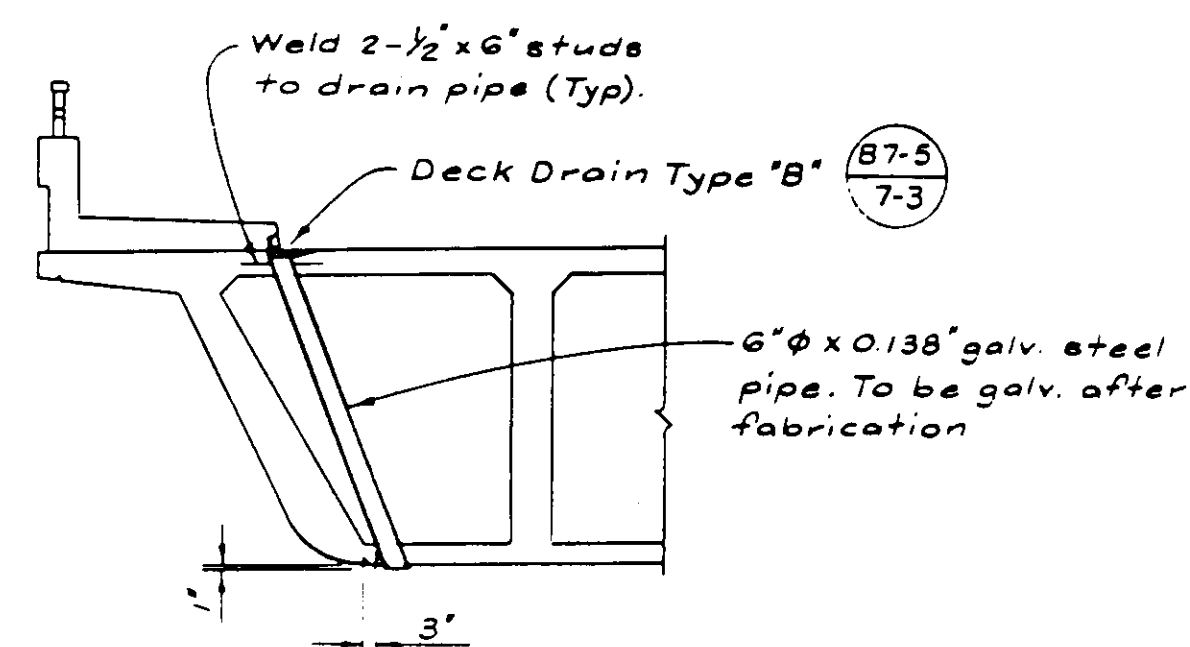
ELEVATION OUTSIDE FACE - CONCRETE BARRIER TYPE 26

No Scale

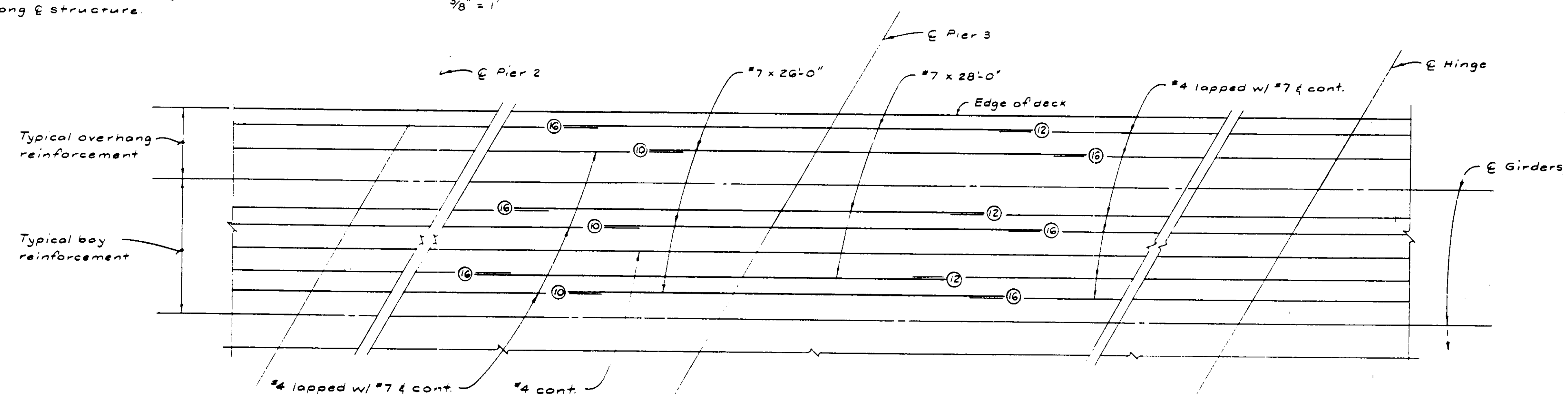
NOTES 1. Clearance to reinforcing steel in Barrier to be 1" except as noted.

2. Dimensions may vary with cross slope

* Transverse deck and bottom slab reinf. shall be placed normal to ϕ girders and spaced along ϕ structure.



DECK DRAIN DETAIL



TOP REINFORCEMENT

No scale

⑩ — Indicates distance in feet from Pier 3



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3880 OLD TOWN AVE., SUITE 207B, SAN DIEGO, CA 92110 (619)582-1830

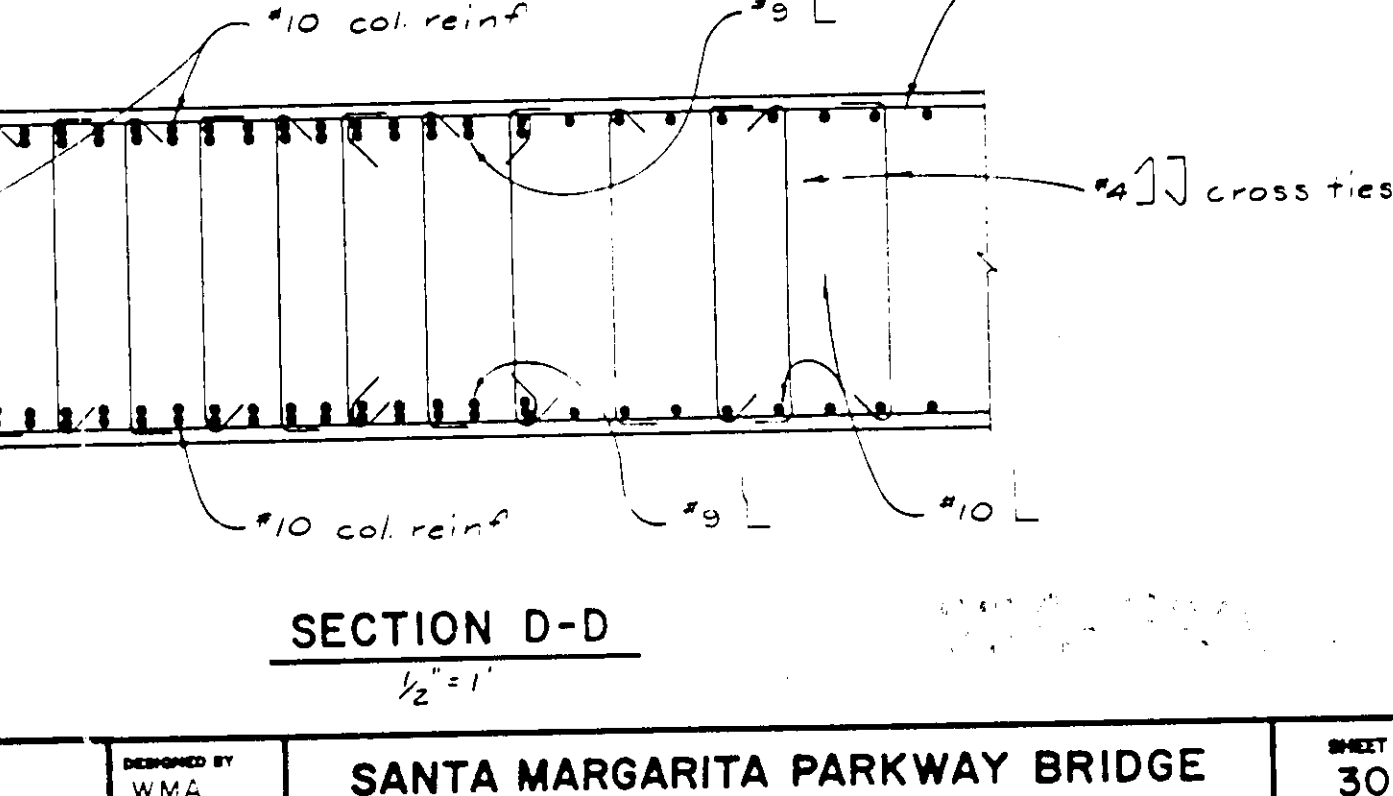
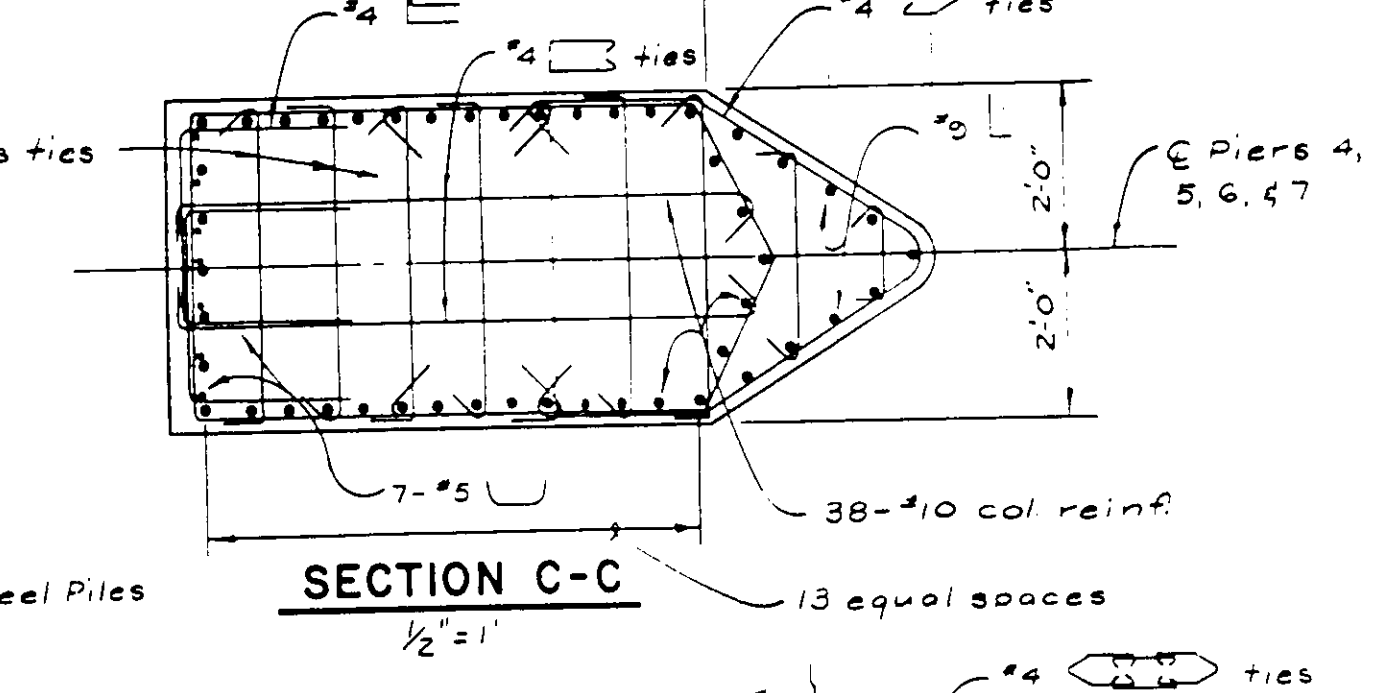
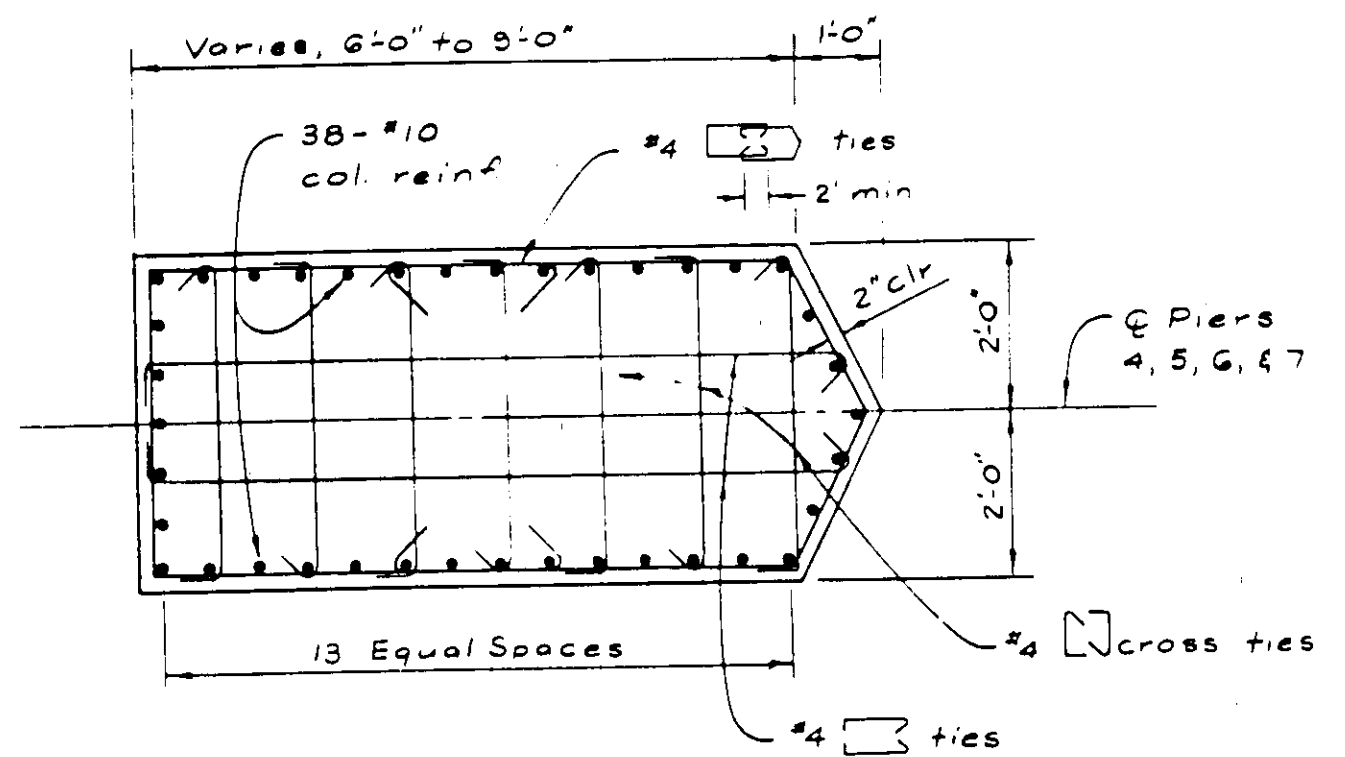
APPROVED BY	R.C.E.	EXPIRES	DATE
	C 34299	9-30-91	6-28-8

DESIGNED BY	WMA
DRAWN BY	RLA
CHECKED BY	CCC
FIELD BOOK	

**SANTA MARGARITA PARKWAY BRIDGE
OVER ARROYO TRABUCO - WIDENING**

TYPICAL SECTION - FRAME 1

SHEET
31
OF
57
SHEETS

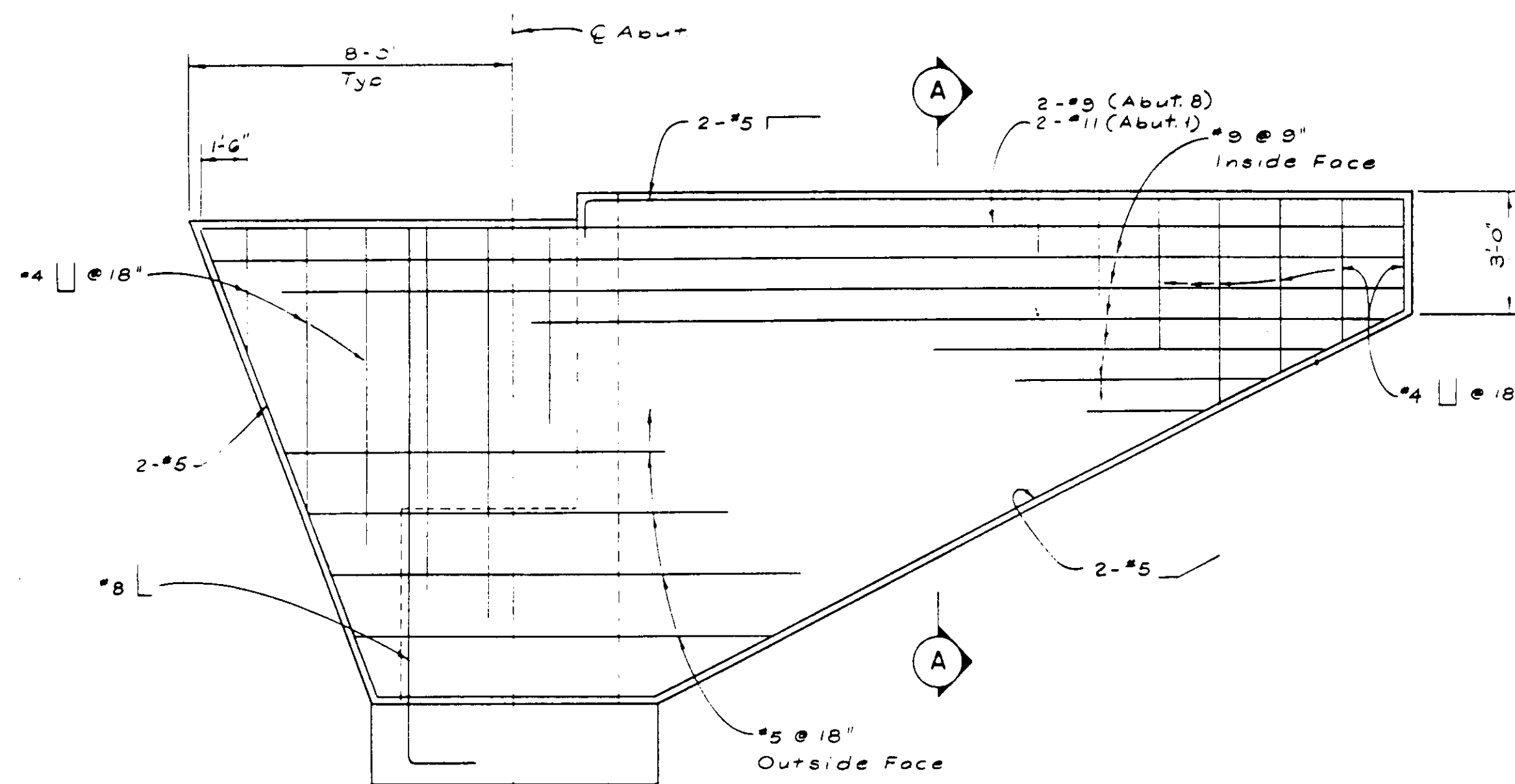


FOOTING PLAN (PIERS 5, 6
3/16" = 1' 8 & 7)

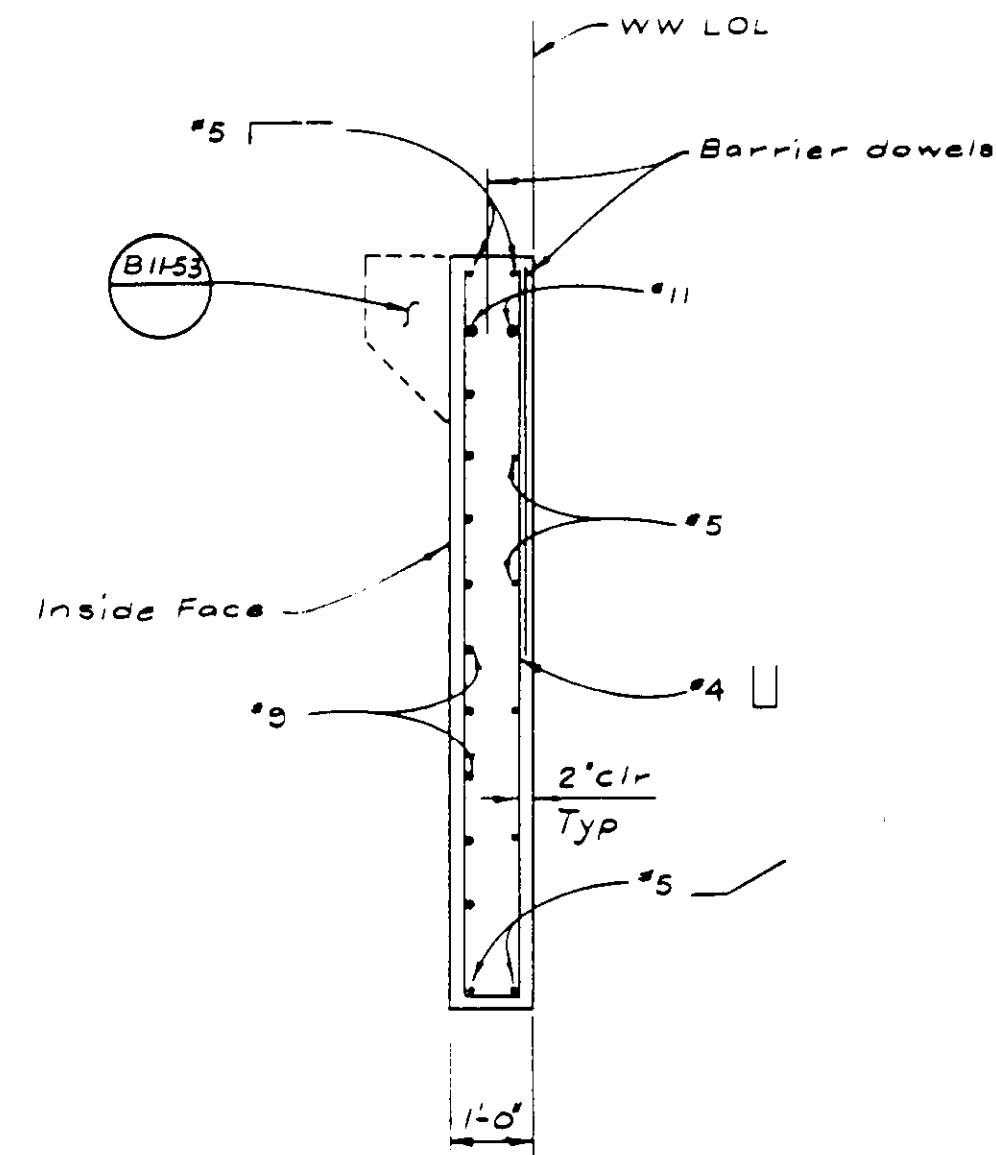
**SANTA MARGARITA PARKWAY BRIDGE
OVER ARROYO TRABUCO - WIDENING**

PIERS 4, 5, 6, & 7 DETAILS

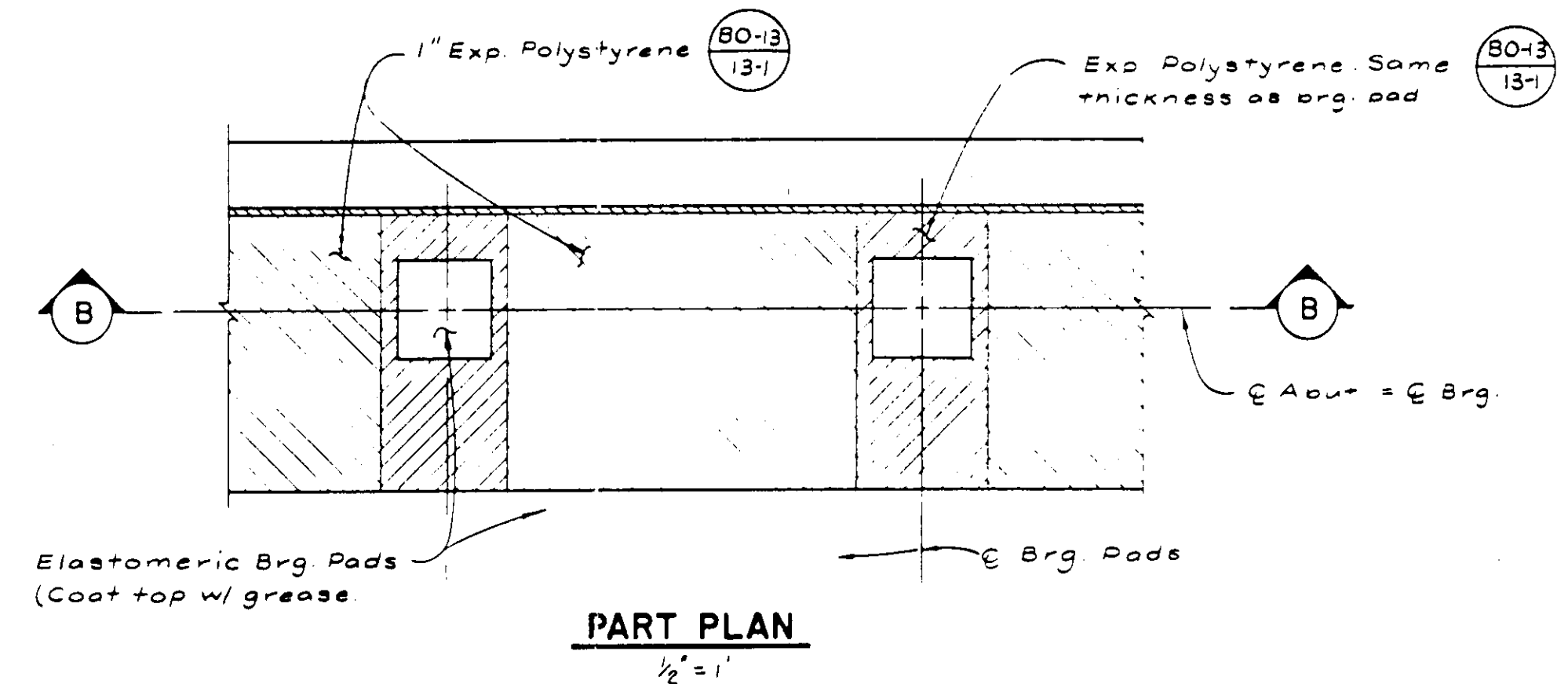
SHEET
30
OF
57
SHEETS



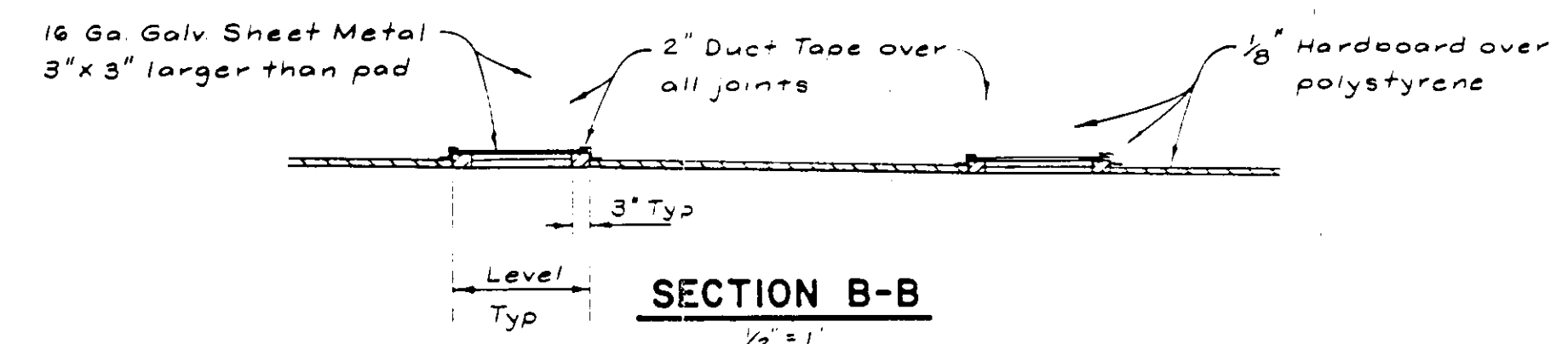
ELEVATION
3/8" = 1'



SECTION A-A
1/2" = 1'

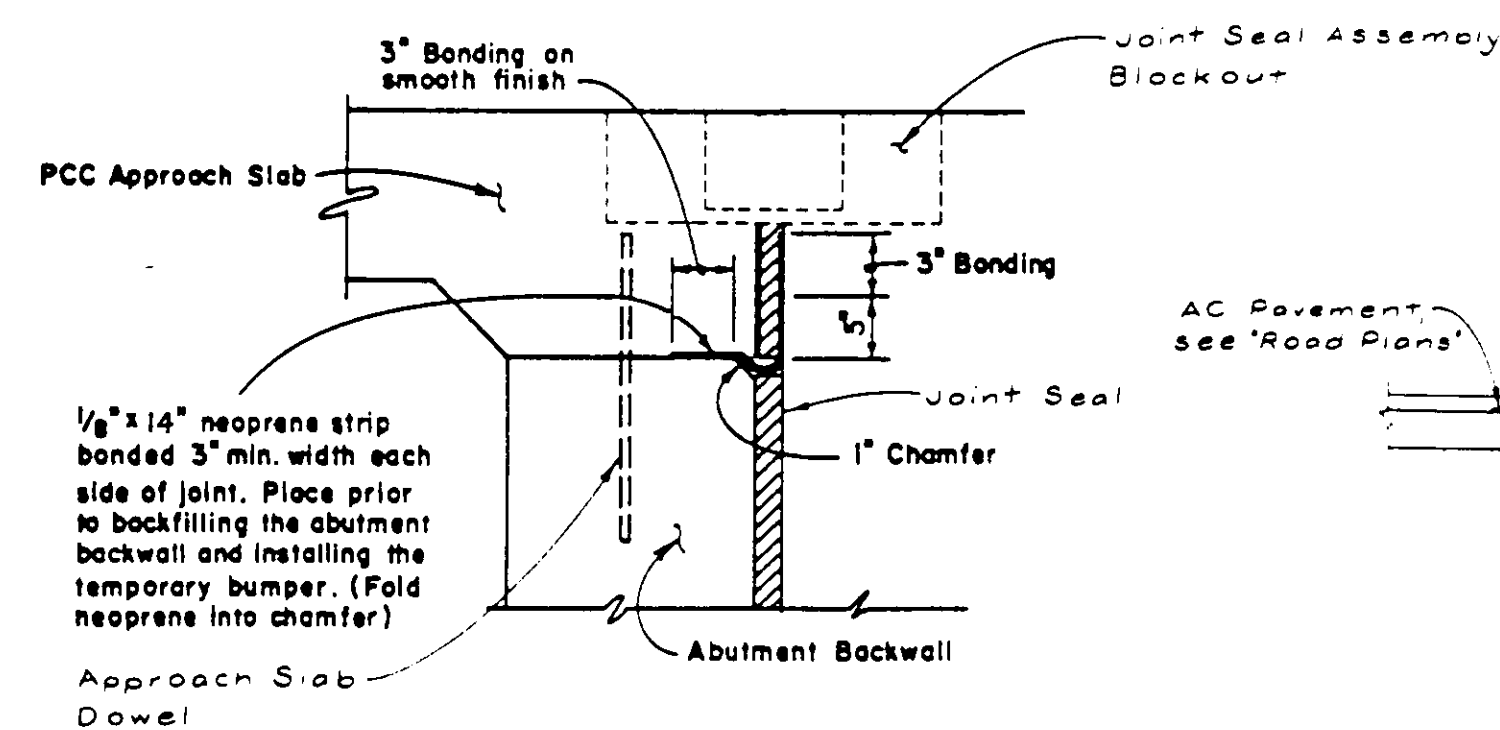


PART PLAN
1/2" = 1'

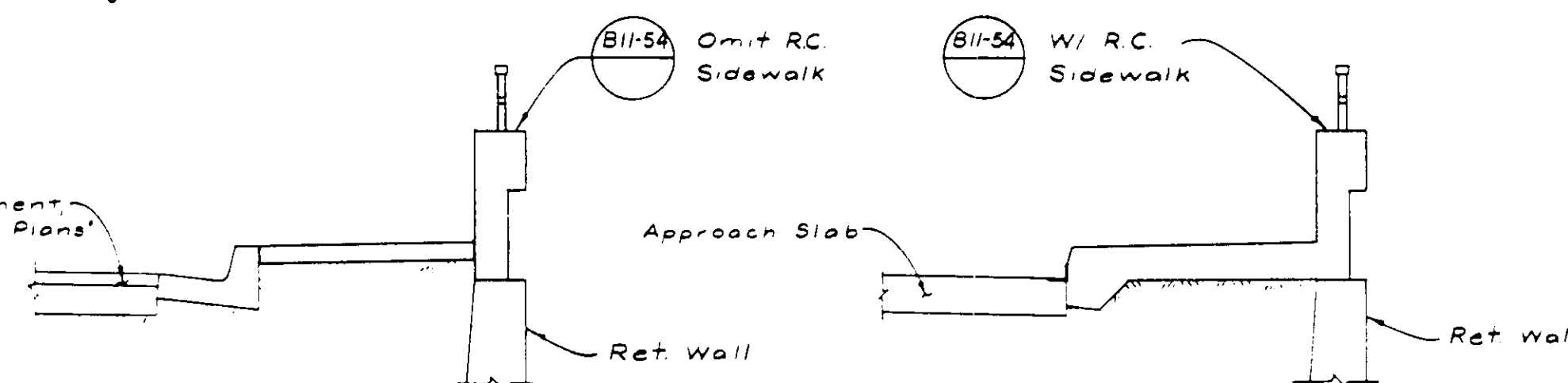


SECTION B-B
1/2" = 1'

WINGWALL DETAILS

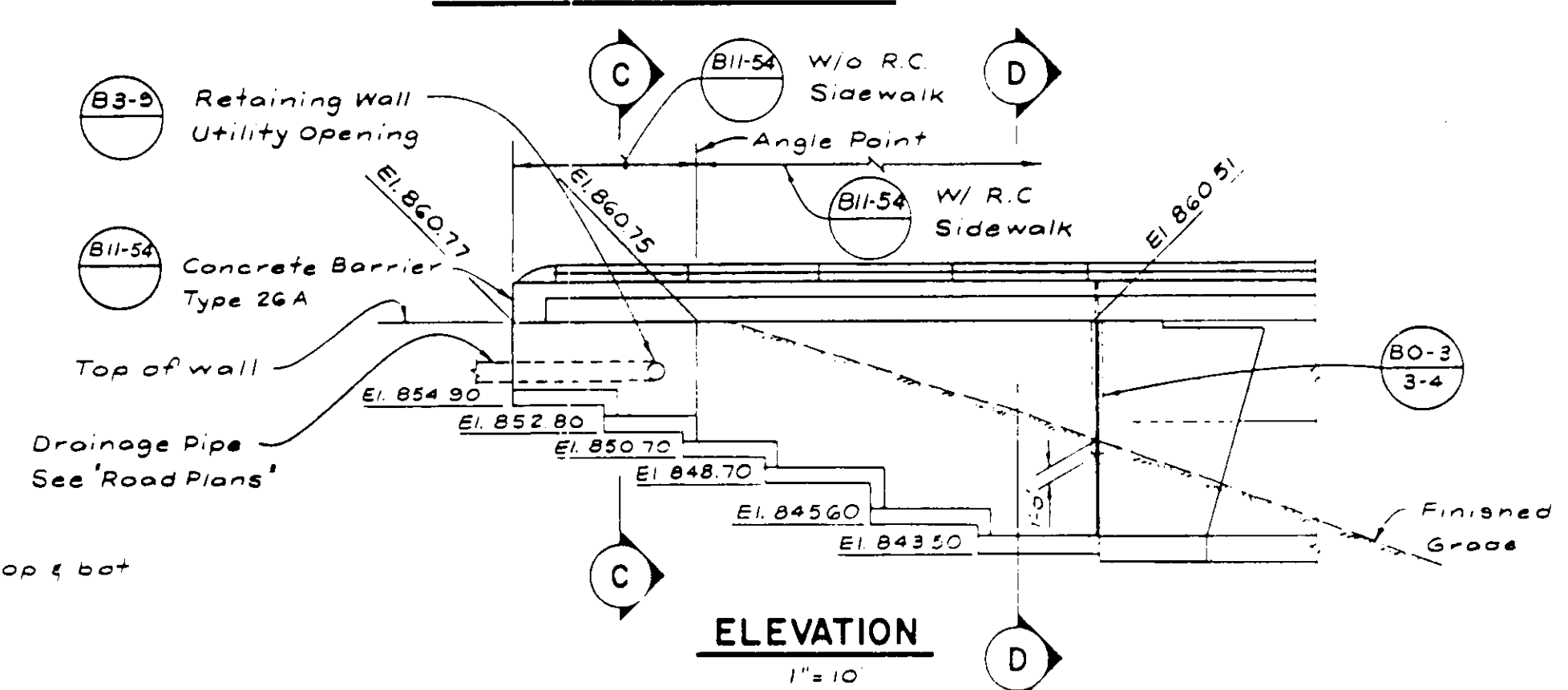


JOINT PROTECTION DETAIL
Not to Scale

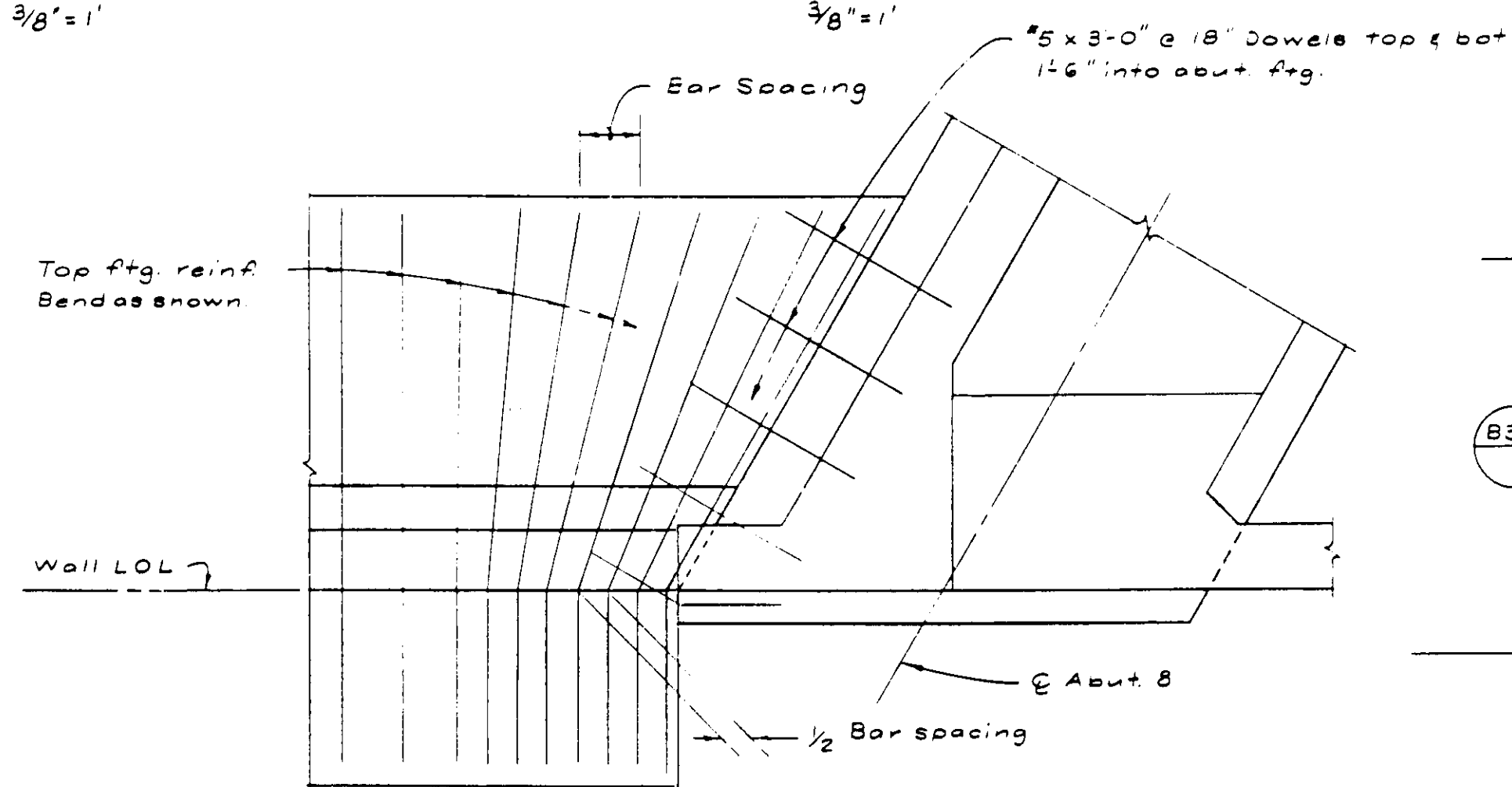


SECTION C-C
3/8" = 1'

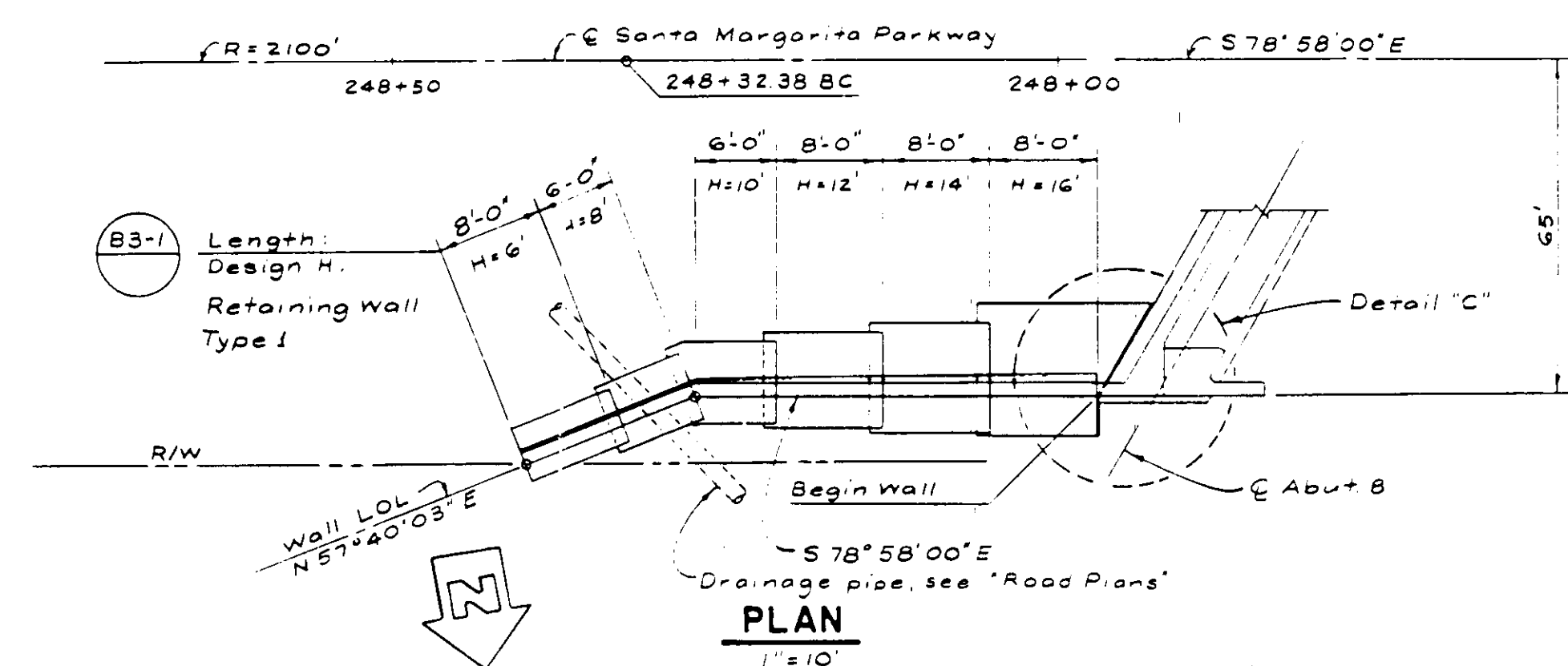
SECTION D-D
3/8" = 1'



ELEVATION
1' = 10'



DETAIL "C"
1/2" = 1'



PLAN
1' = 10'

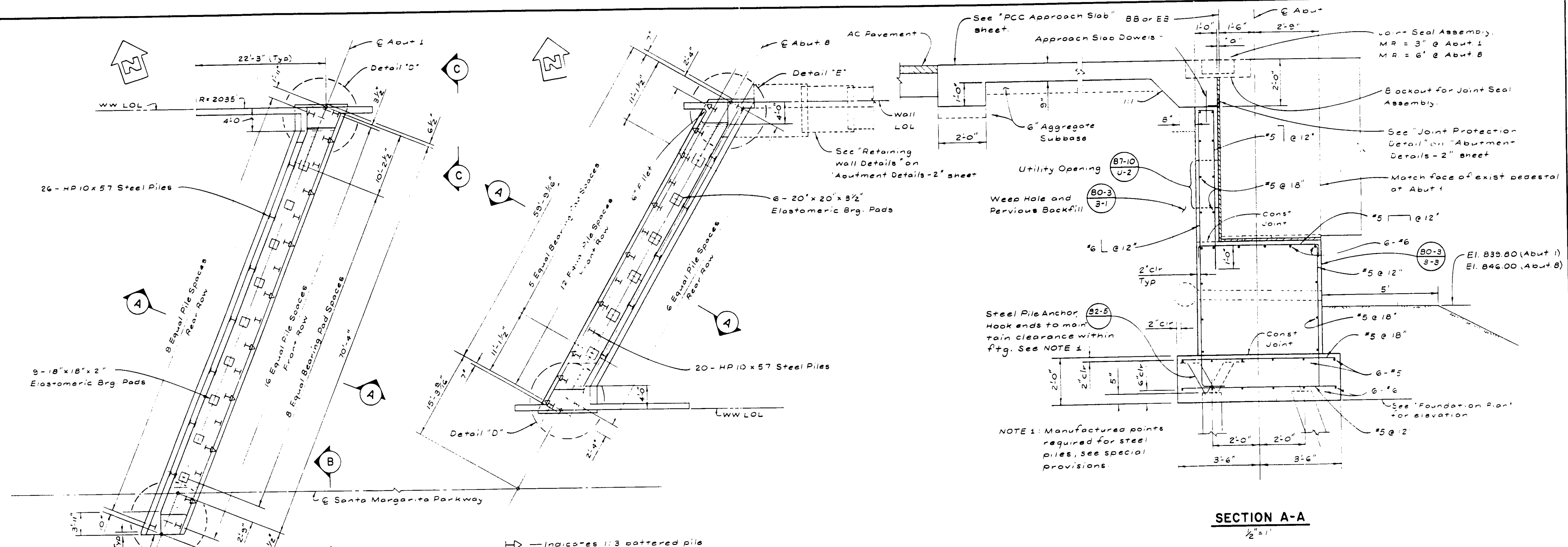


McDANIEL ENGINEERING COMPANY, INC.
3080 OLD TOWN AVE., SUITE 207B, SAN DIEGO, CA 92110 (619) 592-1870
APPROVED BY: [Signature] R.C.E. EXPIRES: 9-30-91 DATE: 5-28-89

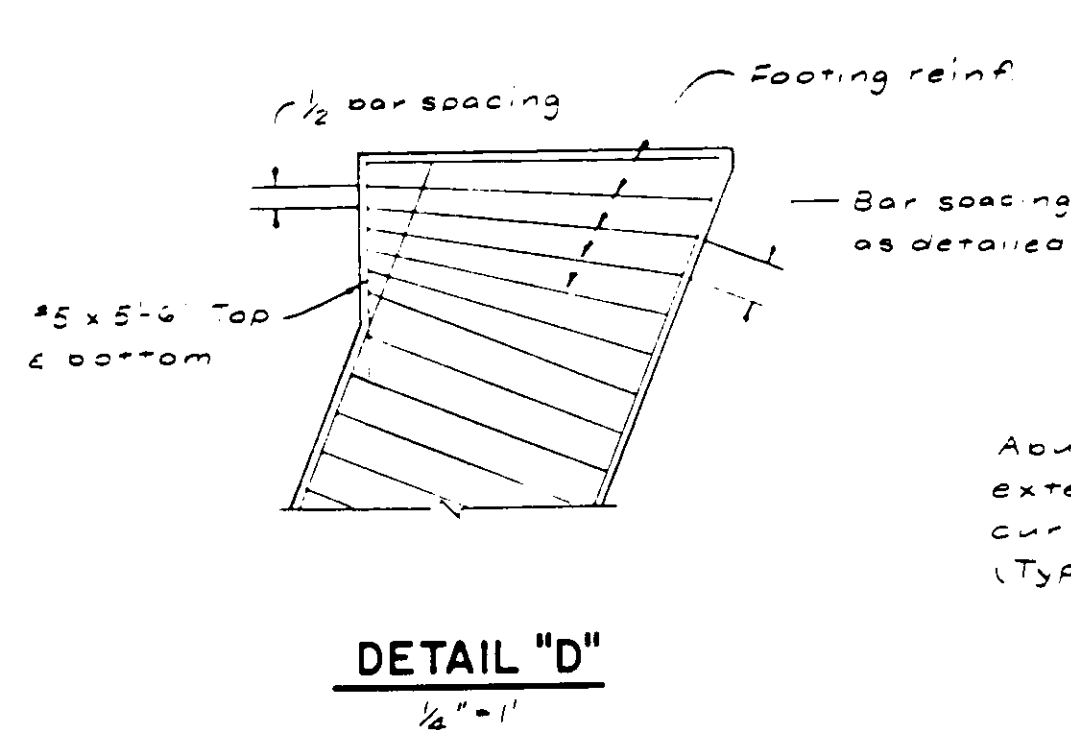
**SANTA MARGARITA PARKWAY BRIDGE
OVER ARROYO TRABUCO - WIDENING**

ABUTMENT DETAILS - 2

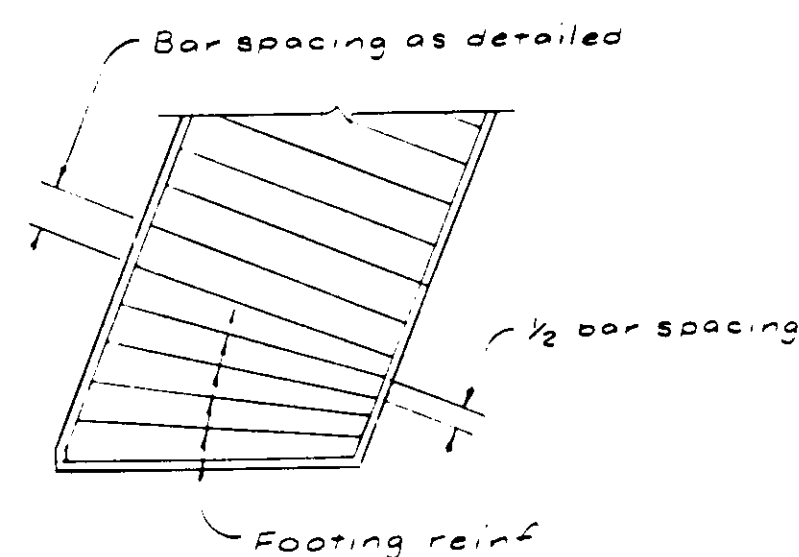
**SHEET
27
OF
57
SHEETS**



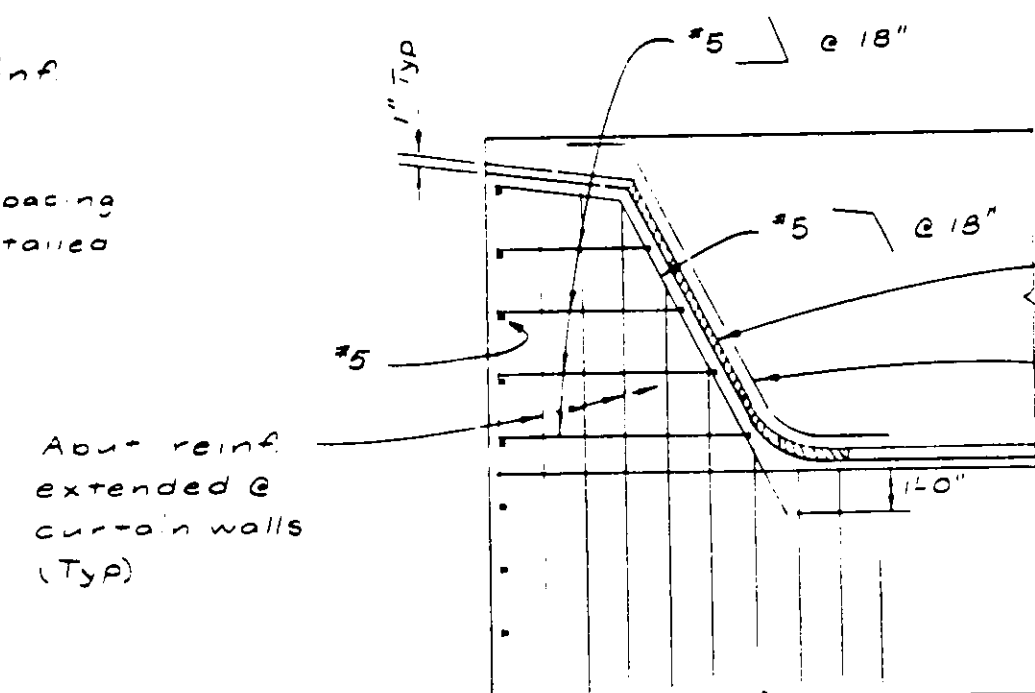
SECTION A-A
1/2" = 1'



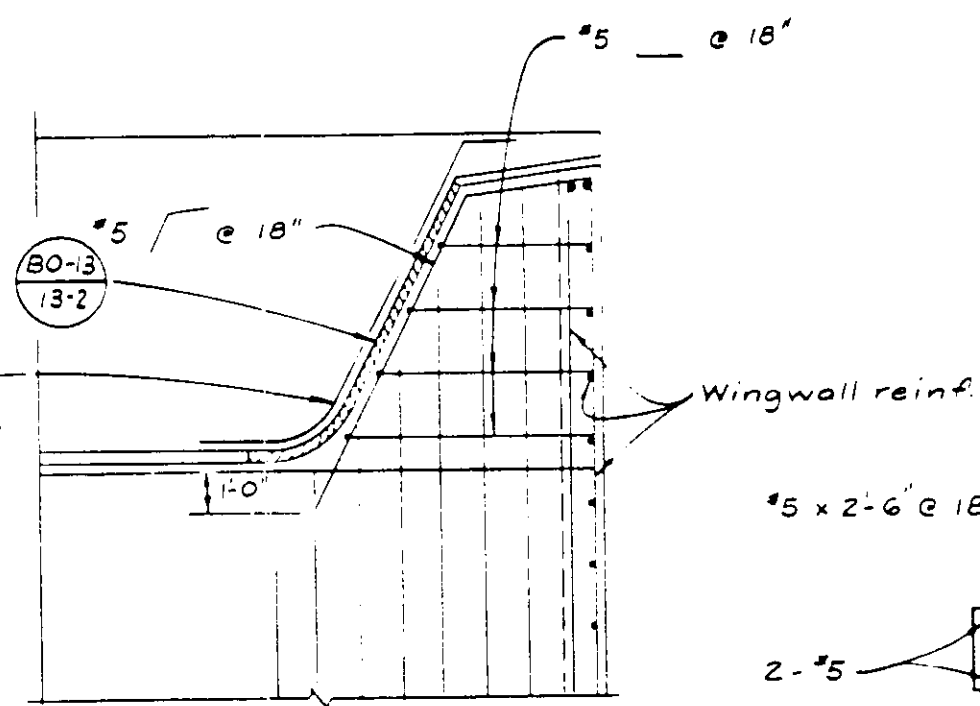
DETAIL "D"
1/4" = 1'



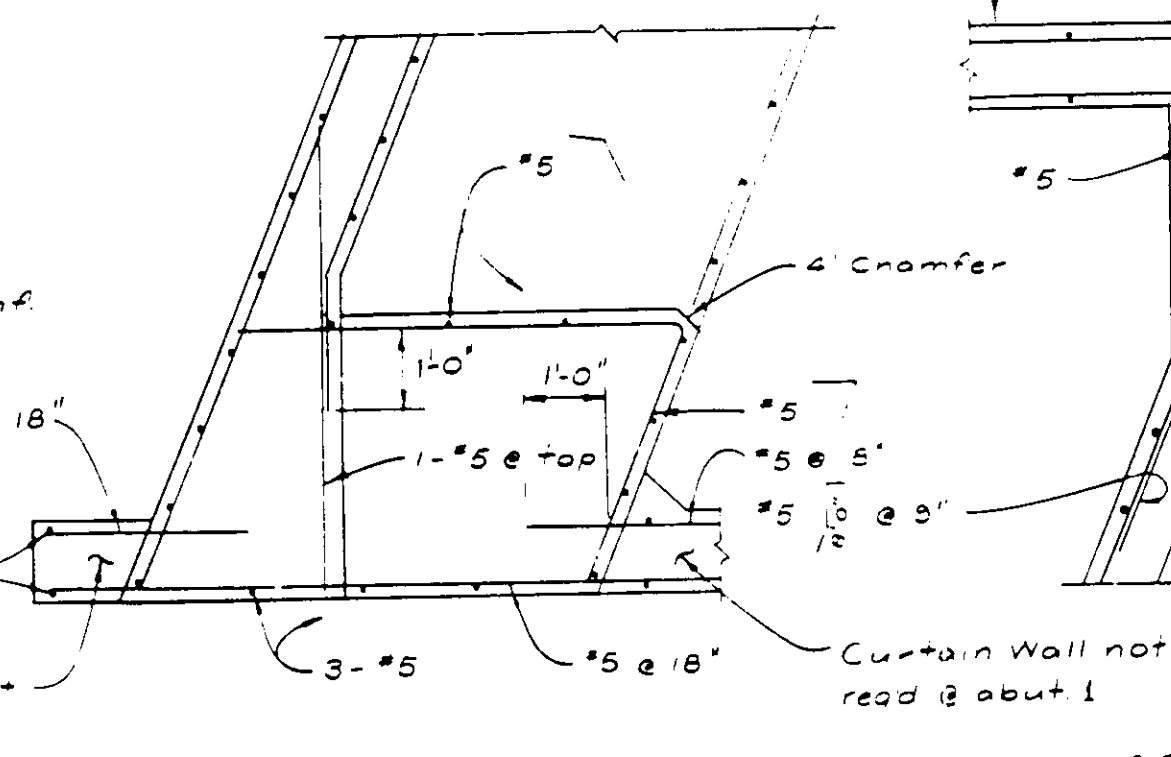
DETAIL "E"
1/4" = 1'



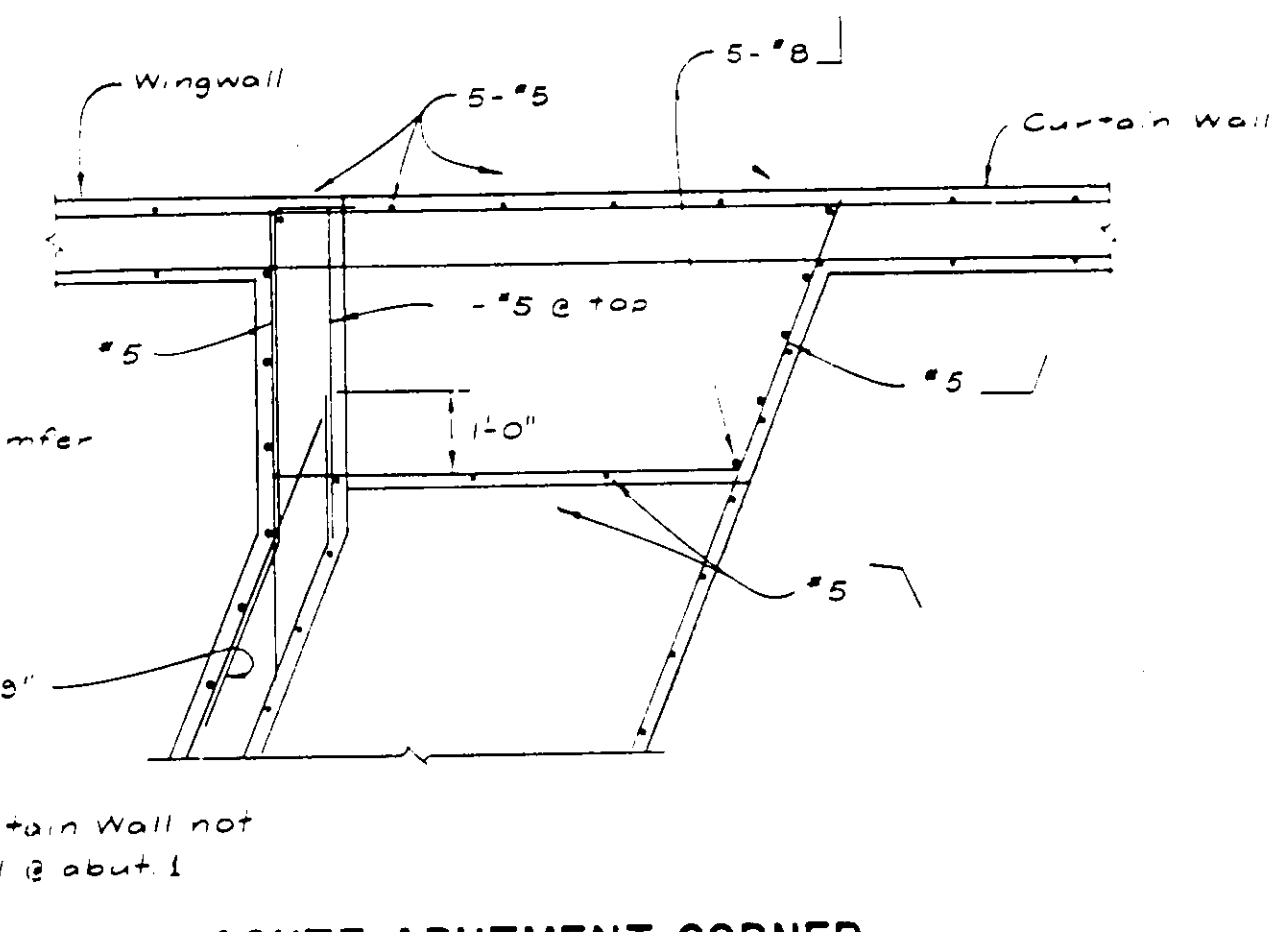
ELEVATION B-B
1/8" = 1'



ELEVATION C-C
1/8" = 1'



OBTUSE ABUTMENT CORNER
1/2" = 1'



ACUTE ABUTMENT CORNER
1/2" = 1'

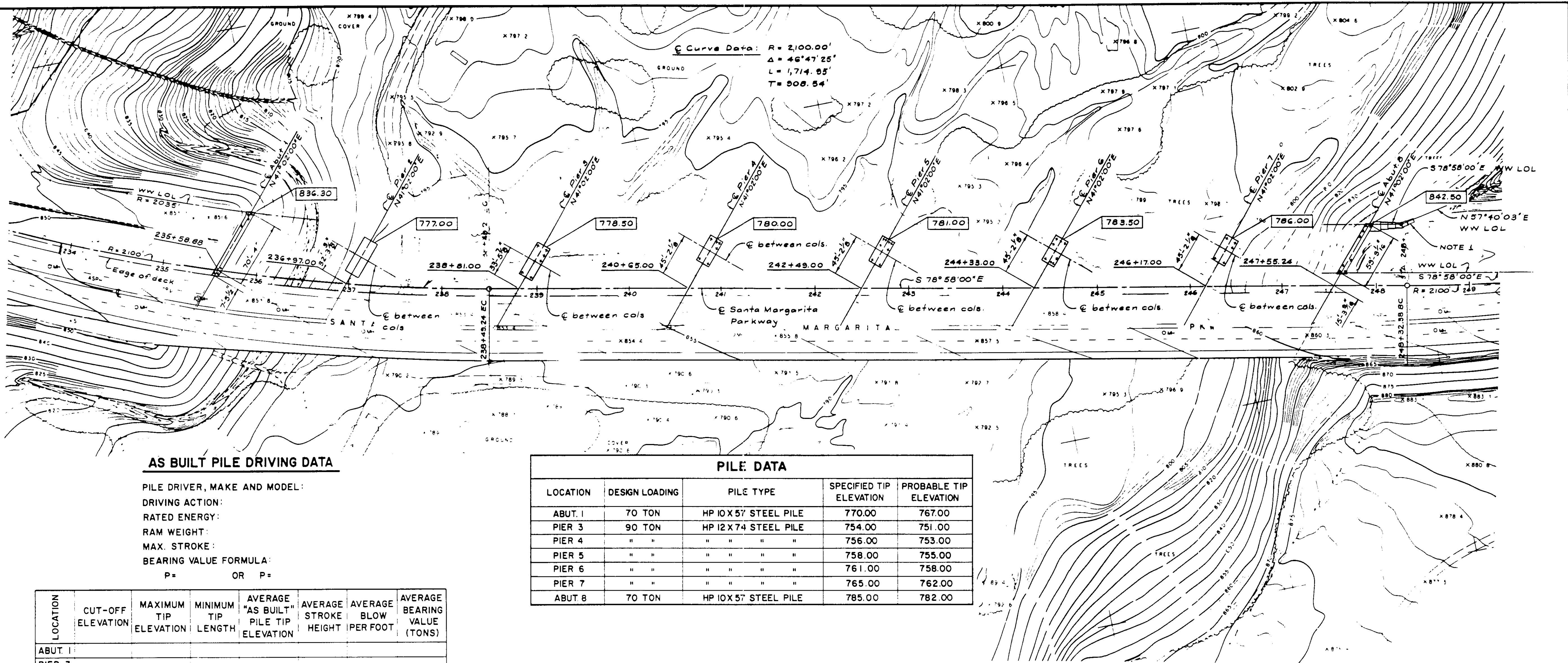


McDANIEL ENGINEERING COMPANY, INC.
3000 OLD TOWN AVE., SUITE 207B, SAN DIEGO, CA 92110 (619) 442-1820
APPROVED BY: [Signature] RCE EXPIRES: 9-30-9 DATE: 6-28-89

**SANTA MARGARITA PARKWAY BRIDGE
OVER ARROYO TRABUÇO - WIDENING**

ABUTMENT DETAILS - I

SHEET
26
OF
57
SHEETS



AS BUILT PILE DRIVING DATA

PILE DRIVER, MAKE AND MODEL:
 DRIVING ACTION:
 RATED ENERGY:
 RAM WEIGHT:
 MAX. STROKE:
 BEARING VALUE FORMULA:
 P = OR P =

LOCATION	CUT-OFF ELEVATION	MAXIMUM TIP ELEVATION	MINIMUM TIP LENGTH	AVERAGE \"AS BUILT\" PILE TIP ELEVATION	AVERAGE STROKE HEIGHT	AVERAGE BLOW PER FOOT	AVERAGE BEARING VALUE (TONS)
ABUT. 1							
PIER 3							
PIER 4							
PIER 5							
PIER 6							
PIER 7							
ABUT. 8							

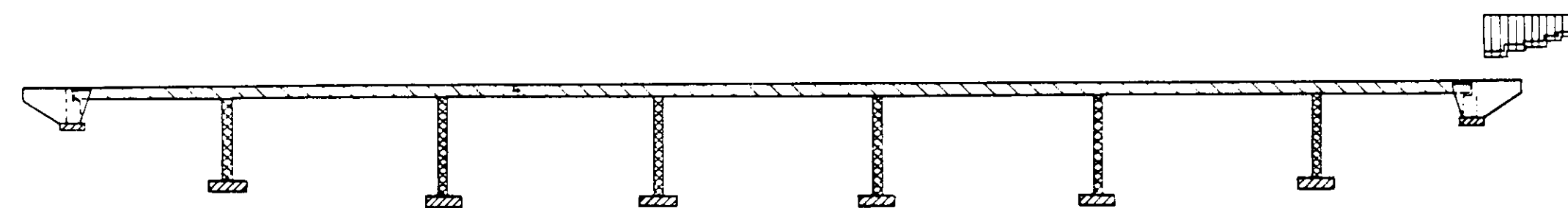
PILE DATA				
LOCATION	DESIGN LOADING	PILE TYPE	SPECIFIED TIP ELEVATION	PROBABLE TIP ELEVATION
ABUT. 1	70 TON	HP 10X57 STEEL PILE	770.00	767.00
PIER 3	90 TON	HP 12X74 STEEL PILE	754.00	751.00
PIER 4	" "	" " " "	756.00	753.00
PIER 5	" "	" " " "	758.00	755.00
PIER 6	" "	" " " "	761.00	758.00
PIER 7	" "	" " " "	765.00	762.00
ABUT. 8	70 TON	HP 10X57 STEEL PILE	785.00	782.00

GENERAL NOTES LOAD FACTOR DESIGN

DESIGN: BRIDGE DESIGN SPECIFICATIONS (1993 ASHTO with Interims and CALTRANS Supplements).
 DEAD LOAD: Includes 35 psf for future wearing surface.
 LIVE LOADING: HS20-44 and Alternative and Permit Design Load.
 REINFORCED CONCRETE:
 $f'_c = 3,250$ psi
 $f_y = 60,000$ psi
 $n = 9$
 TRANSVERSE DECK SLABS:
 $f'_c = 1,200$ psi
 $f_s = 20,000$ psi
 $n = 10$
 PRESTRESSED CONCRETE: See \"Prestressing Notes\"
 FOOTING PRESSURE (TONS PER SF): ALLOWABLE DESIGN
 PIER 2 6.0 5.6



FOUNDATION PLAN 1\"/>

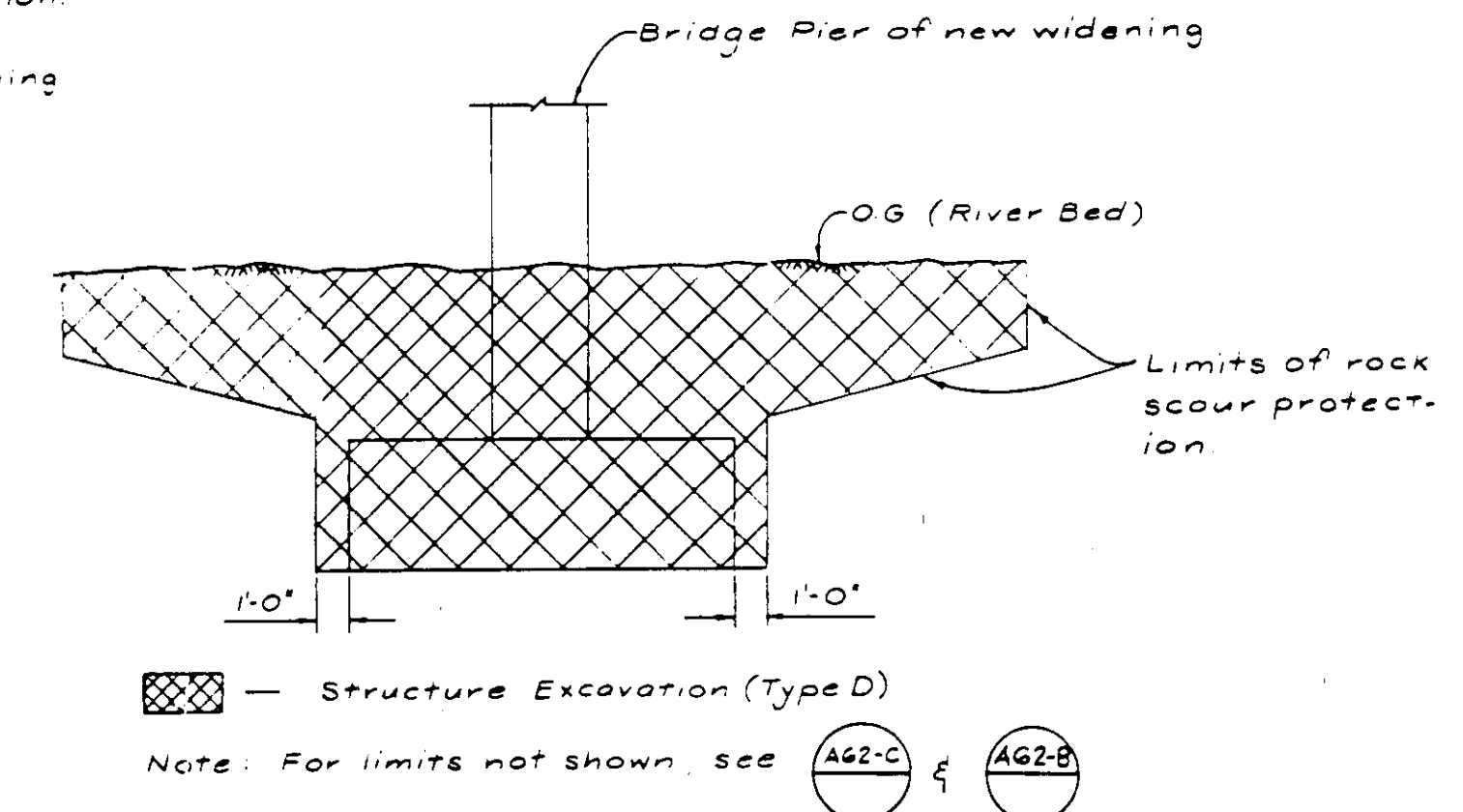


- Structural Concrete, Bridge
- Structural Concrete, Bridge (4000 psi @ 28 days)
- Structural Concrete, Bridge (3250 psi @ 28 days)
- Structural Concrete, Bridge Footing
- Structural Concrete, Retaining Wall

CONCRETE STRENGTH & TYPE LIMITS

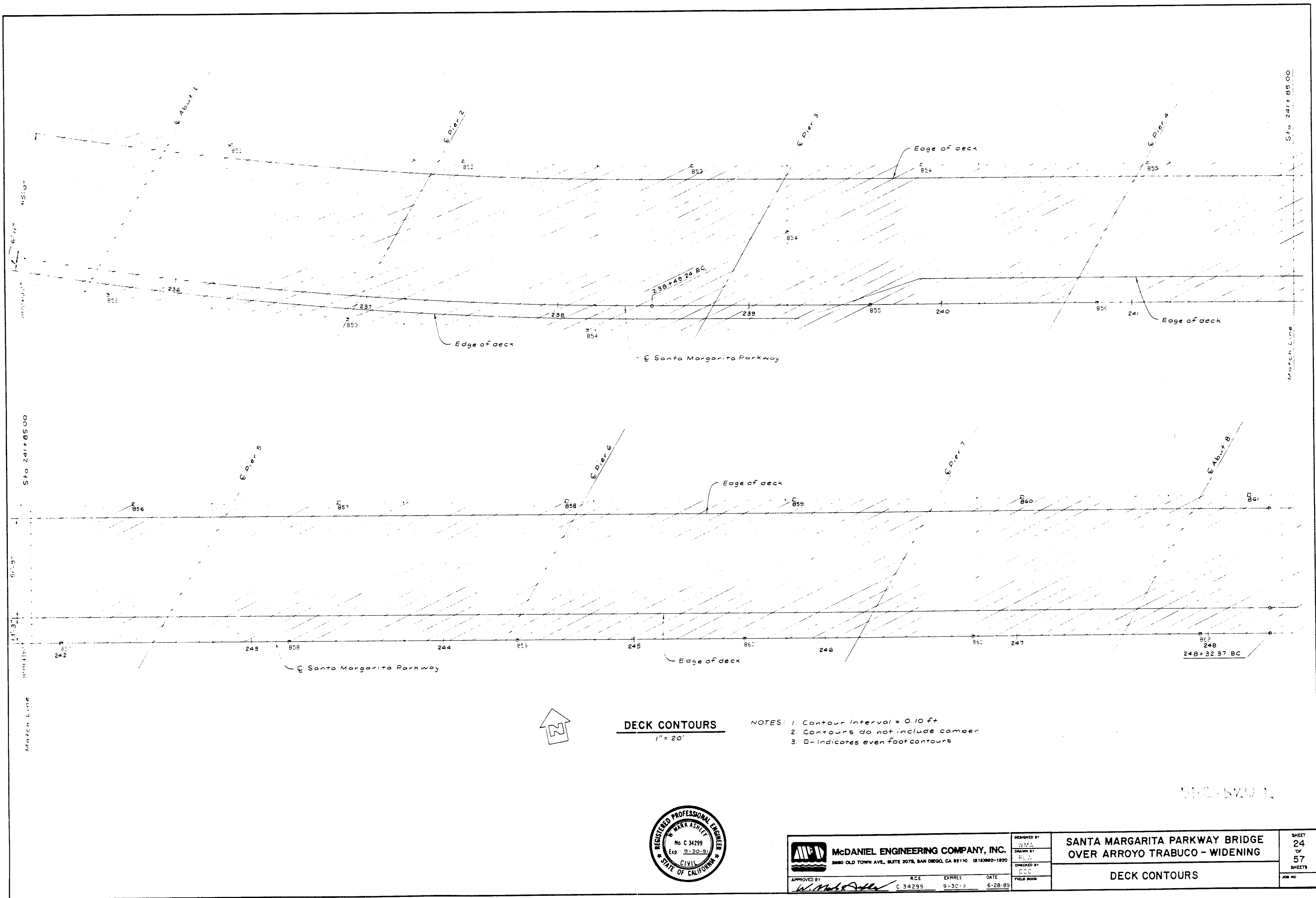


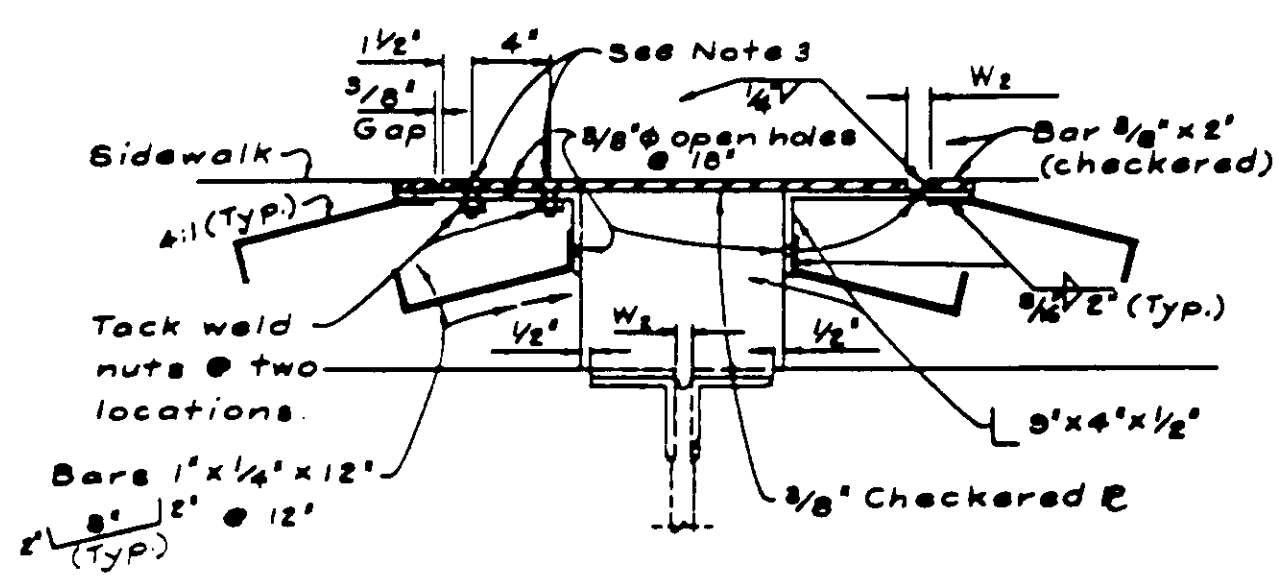
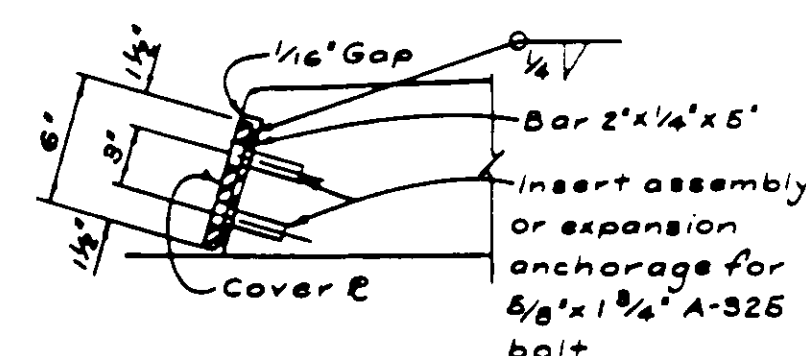
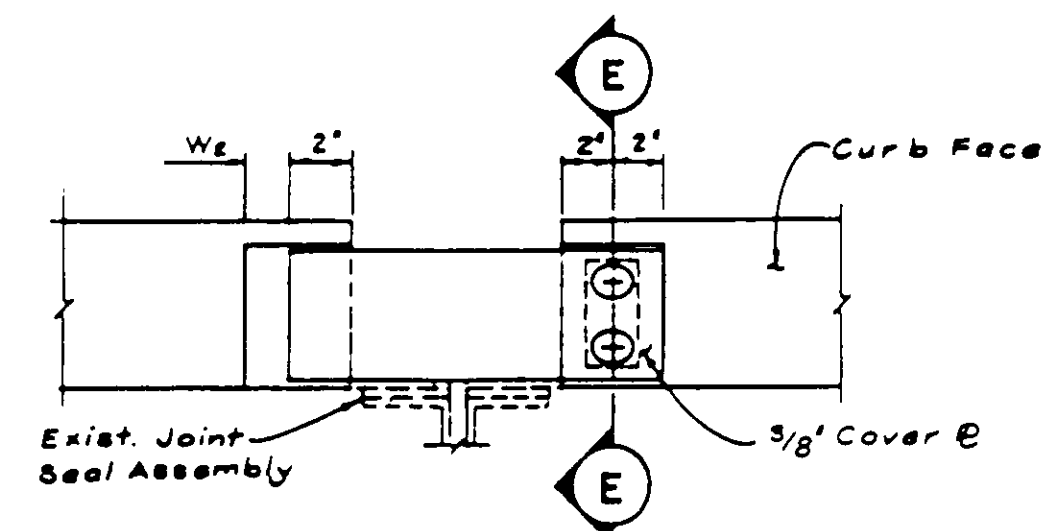
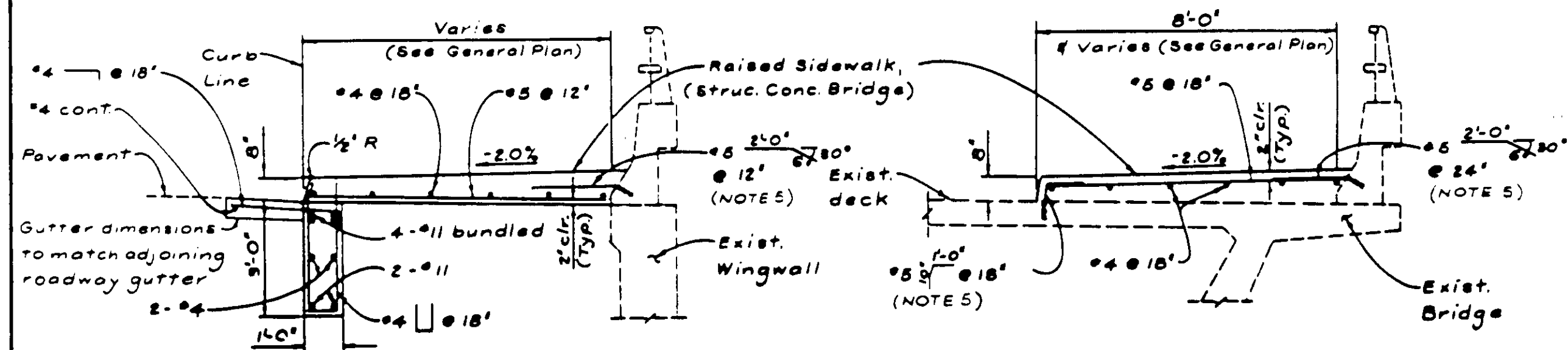
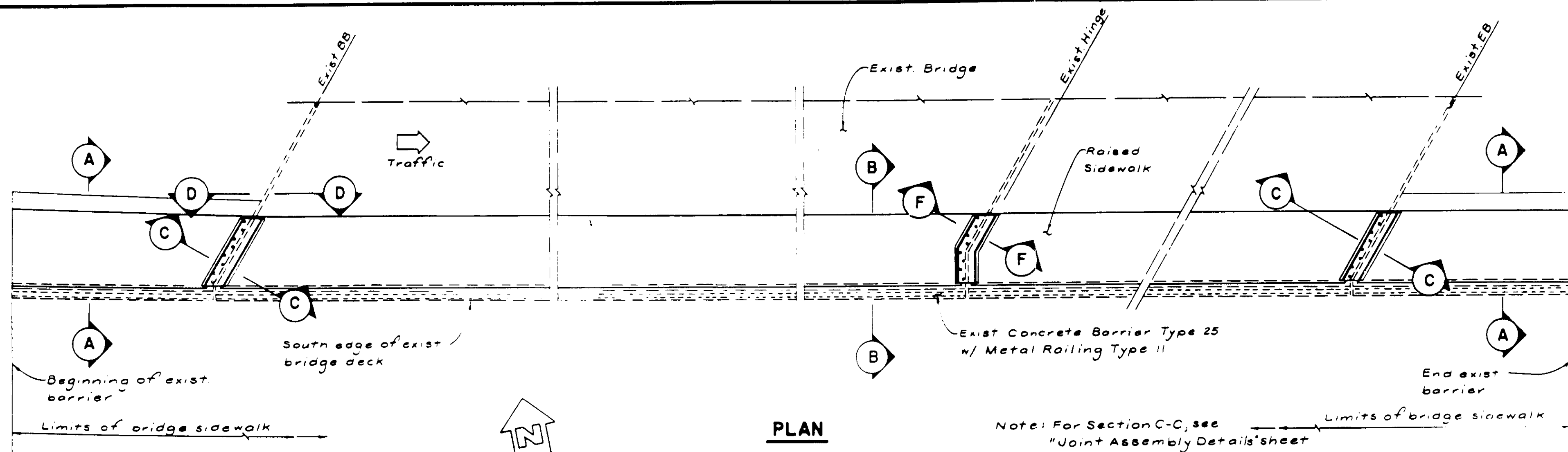
836.30 — Denotes bottom of footing elevation.
 NOTE 1: See \"Abutment Details - 2\" for retaining wall bottom of footing elevations.



LIMITS OF EXCAVATION No Scale

McDANIEL ENGINEERING COMPANY, INC. 2880 OLD TOWN AVE., SUITE 207B, SAN DIEGO, CA 92110 619-592-1000	DESIGNED BY: WMA DRAWN BY: PJA CHECKED BY: CCO FIELD BOOK:	SANTA MARGARITA PARKWAY BRIDGE OVER ARROYO TRABUCO - WIDENING	SHEET 25 OF 57 SHEETS JOB NO.
	APPROVED BY: <i>W. McDaniel</i> A.C.E. C34299 EXPIRES 9-30-9 DATE 6-28-85	FOUNDATION PLAN	

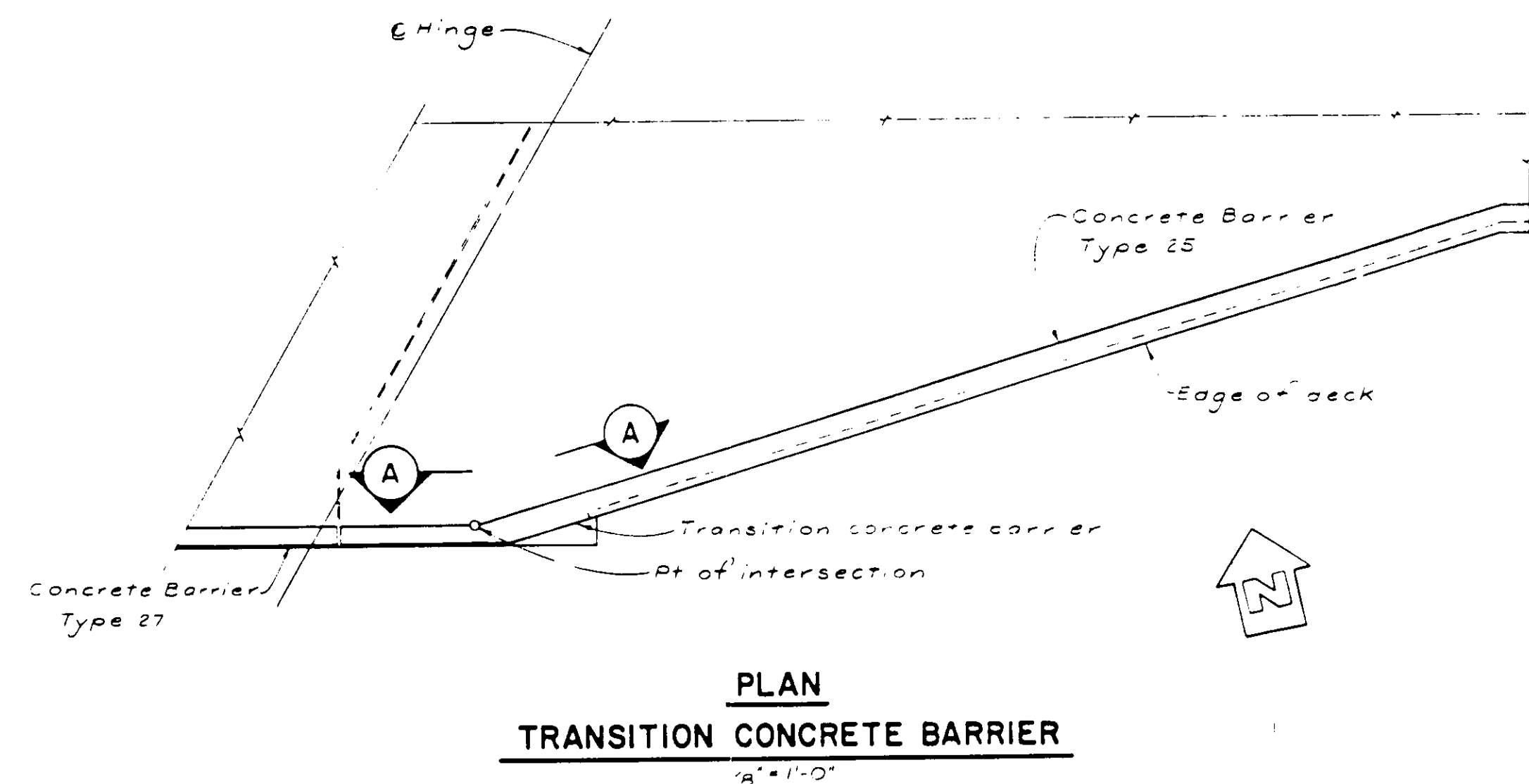
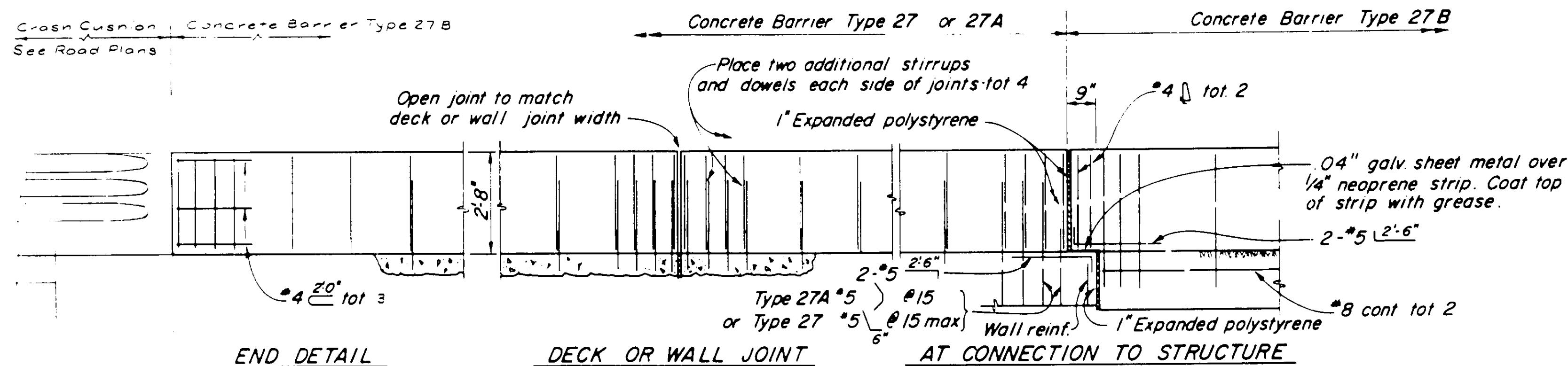
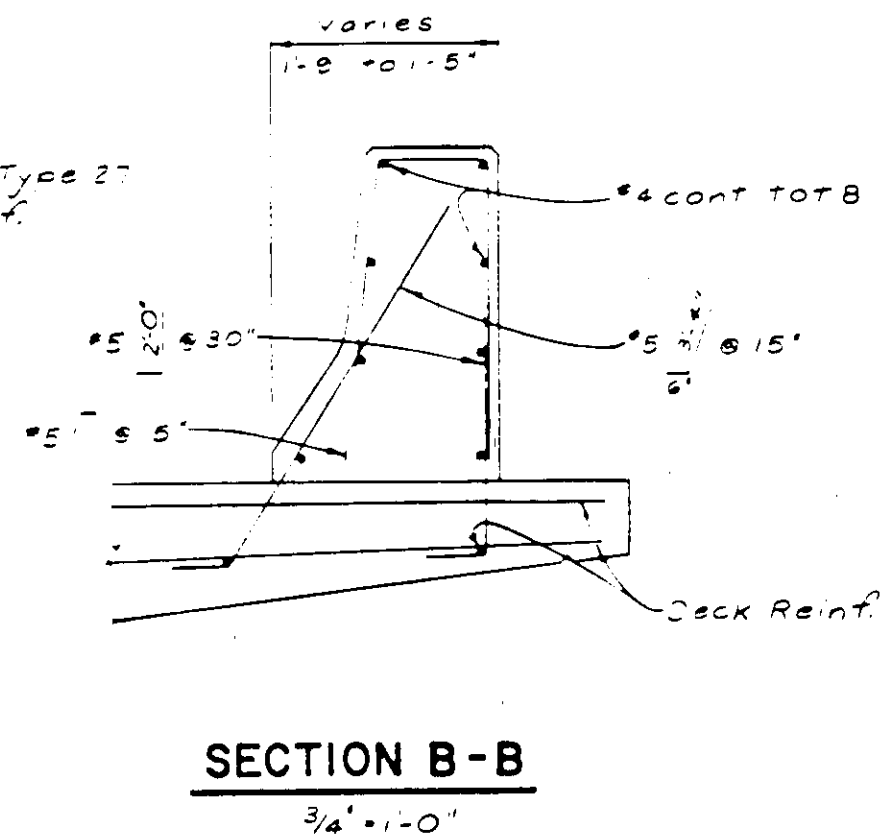
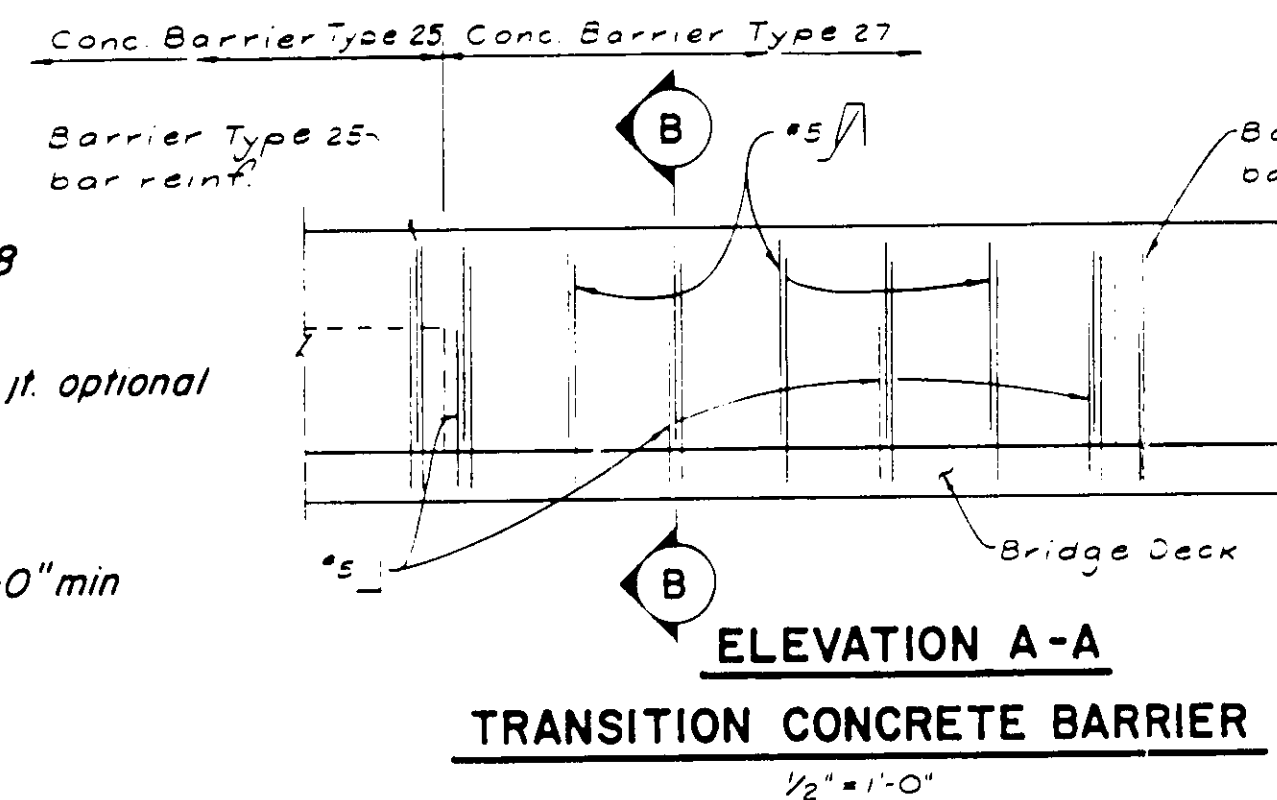
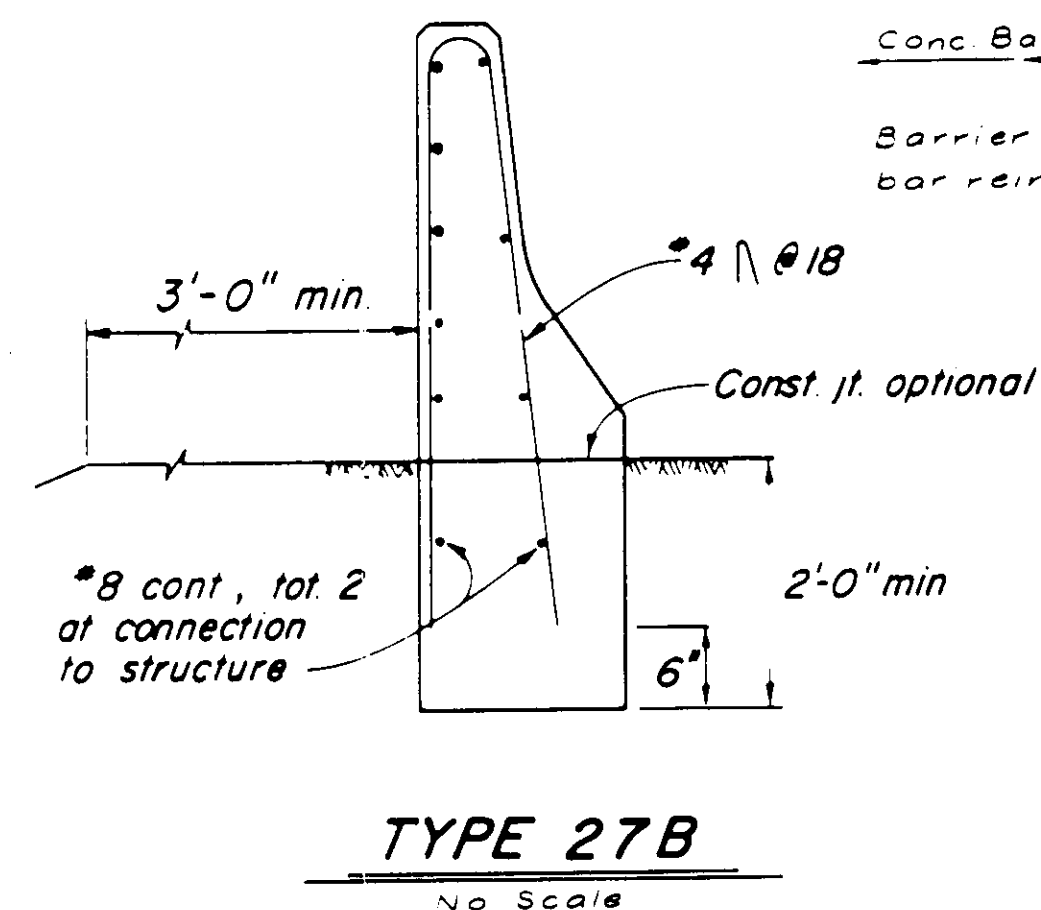
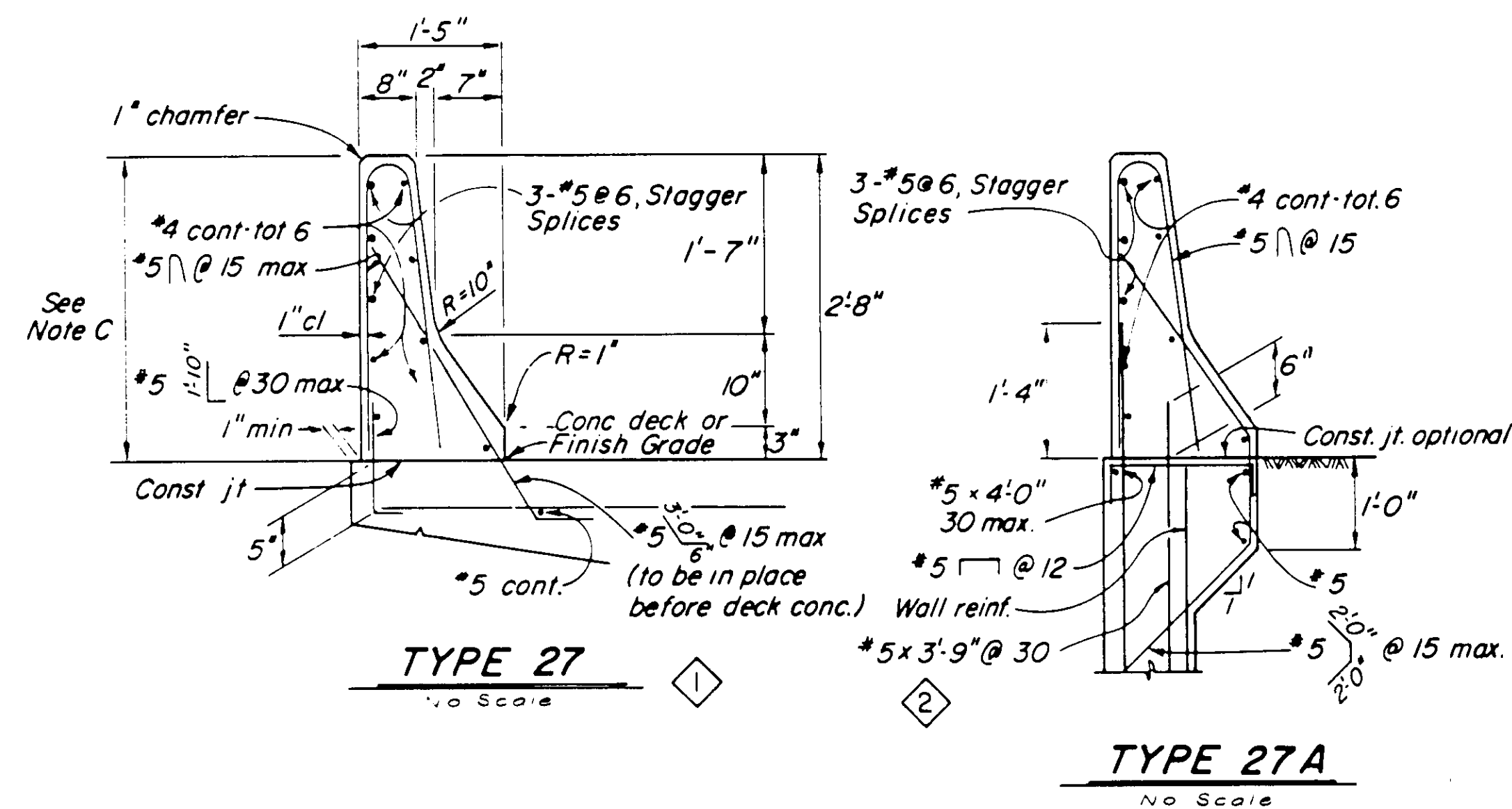




- NOTES:
1. Remove cover plate from existing barrier prior to construction of raised sidewalk
 2. Clean existing deck surface by abrasive blasting where raised sidewalk is to be constructed.
 3. $\frac{3}{8}$ " ϕ flat head machine screws, (countersink & coat with grease) @ 6" staggered
 4. All metal parts to be galvanized after fabrication
 5. Drill & grout dowels in 1" ϕ x 6" deep holes

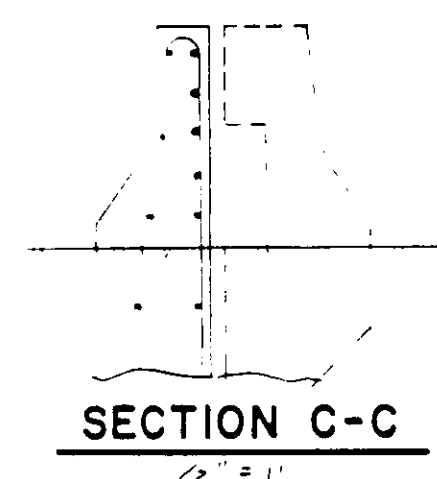
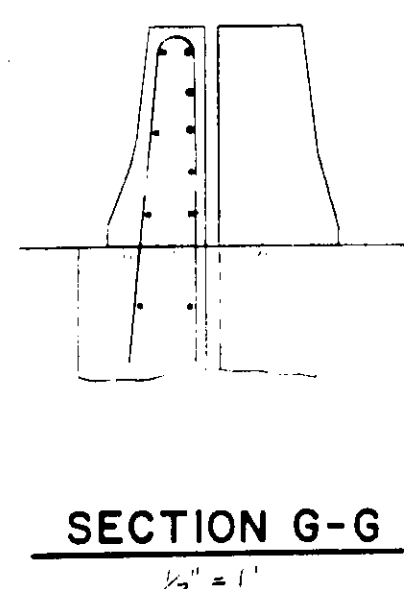
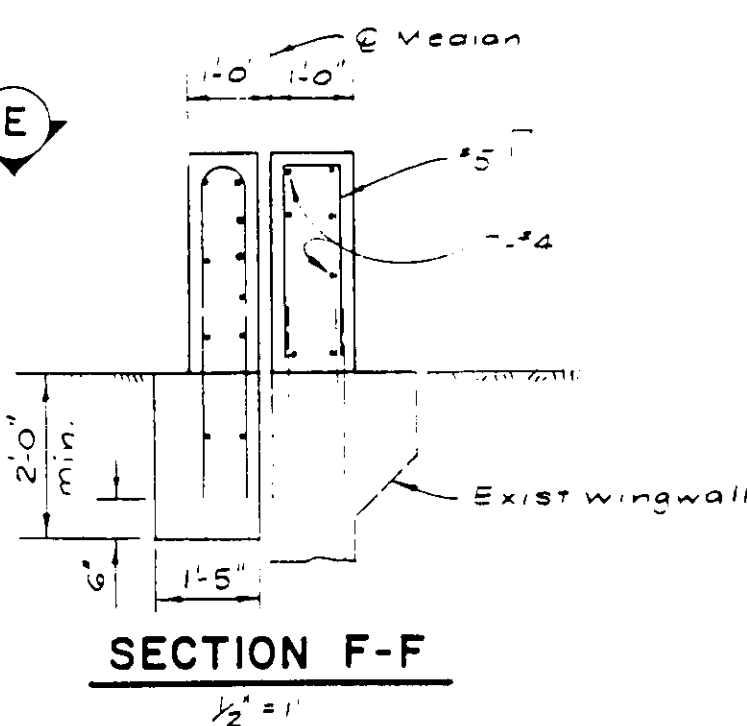
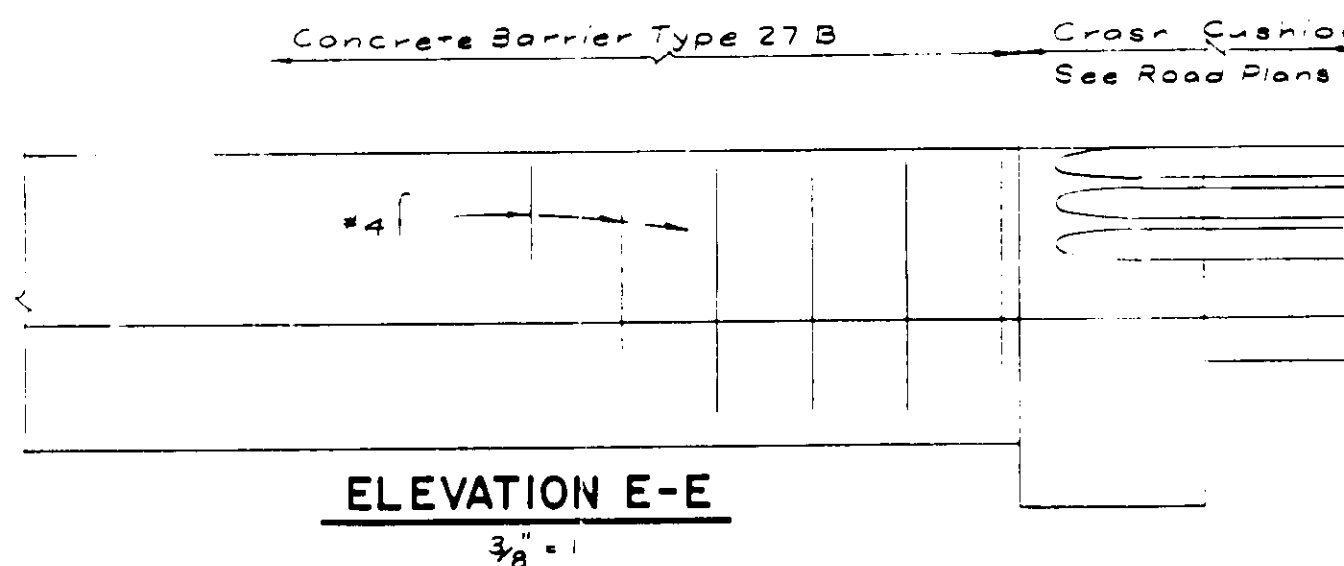
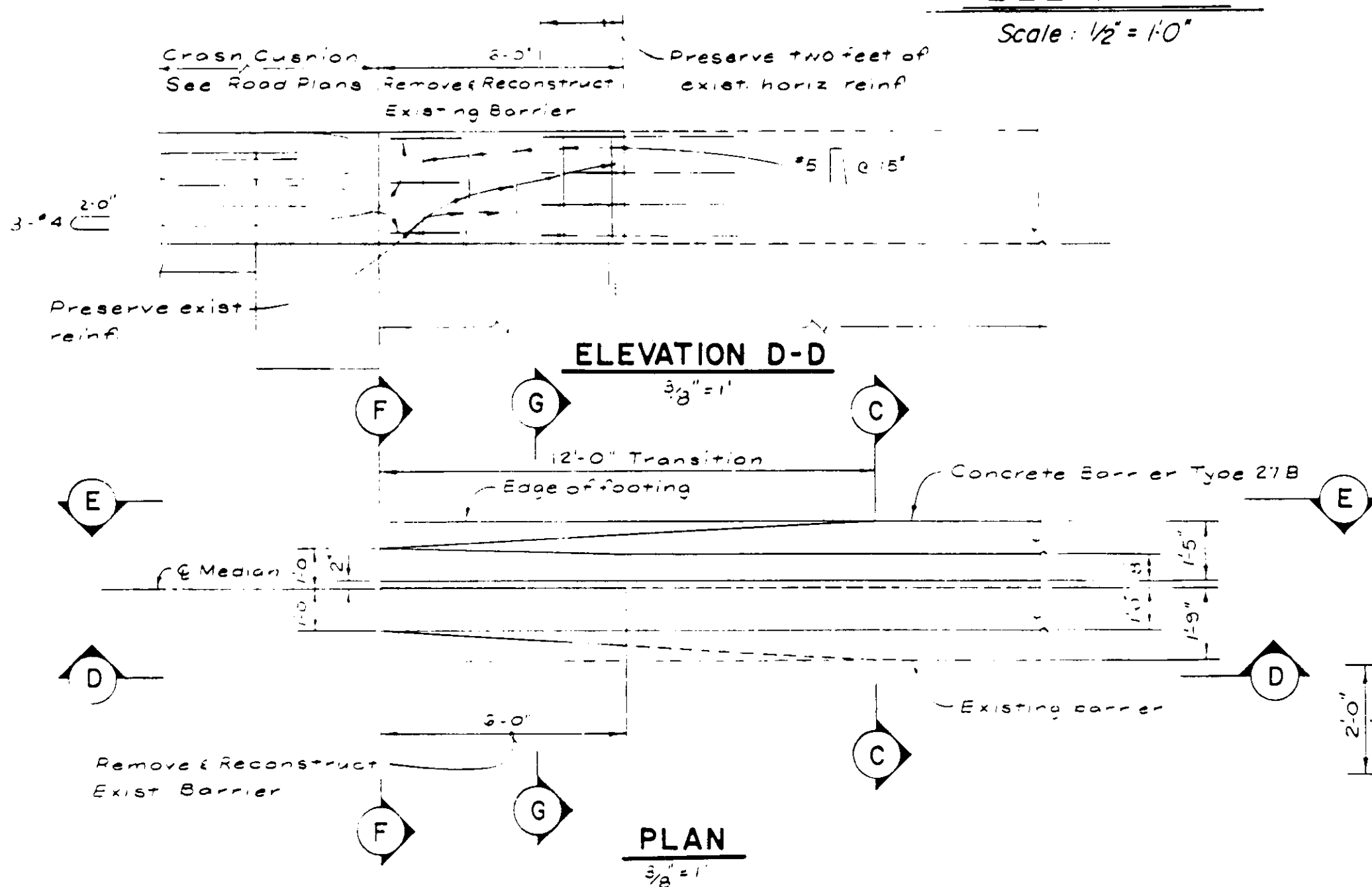


McDANIEL ENGINEERING COMPANY, INC. 2880 OLD TOWN AVE., SUITE 207E, SAN DIEGO, CA 92110 (619) 596-1980	DESIGNED BY	AMZ	SANTA MARGARITA PARKWAY BRIDGE OVER ARROYO TRABUCO - WIDENING	SHEET 41 OF 57 SHEETS
	DRAWN BY	AMZ		
APPROVED BY	DATE	6-28-89	RAISED SIDEWALK - EXISTING BRIDGE	JMS

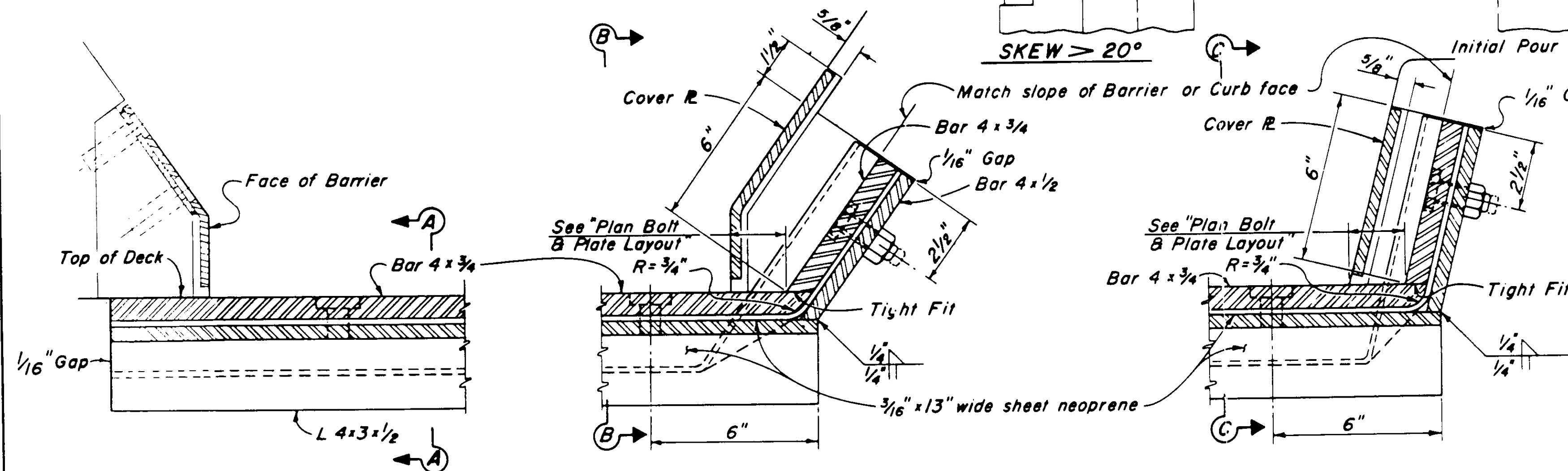


NOTES:

- Clearance to reinforcing steel in railing to be 1". Longitudinal reinforcement to stop at expansion joints, and be continuous at construction joints. Hairpin stirrups to be rotated to meet clearance.
- Rail joints shall be located at deck and principal wall joints.
- Dimension may vary with cross-slope and with certain thicknesses of surfacing. See Bridge Plans.



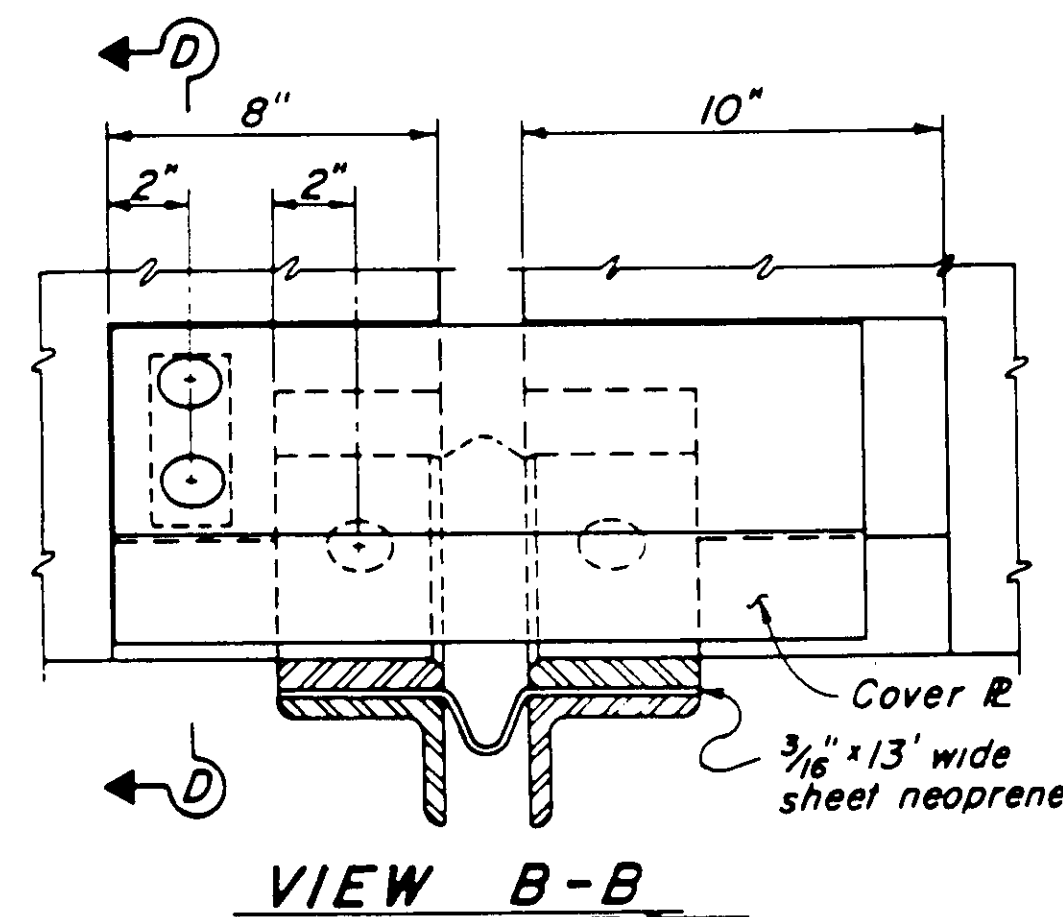
McDANIEL ENGINEERING COMPANY, INC. 3990 OLD TOWN AVE., SUITE 207B, SAN DIEGO, CA 92110 • (619) 592-1920 APPROVED BY: <i>W. Mark Ashley</i> DATE: 3-30-91	SANTA MARGARITA PARKWAY BRIDGE OVER ARROYO TRABUCO - WIDENING CONCRETE BARRIER TYPE 27	SHEET 40 OF 57 SHEETS JOB NO.
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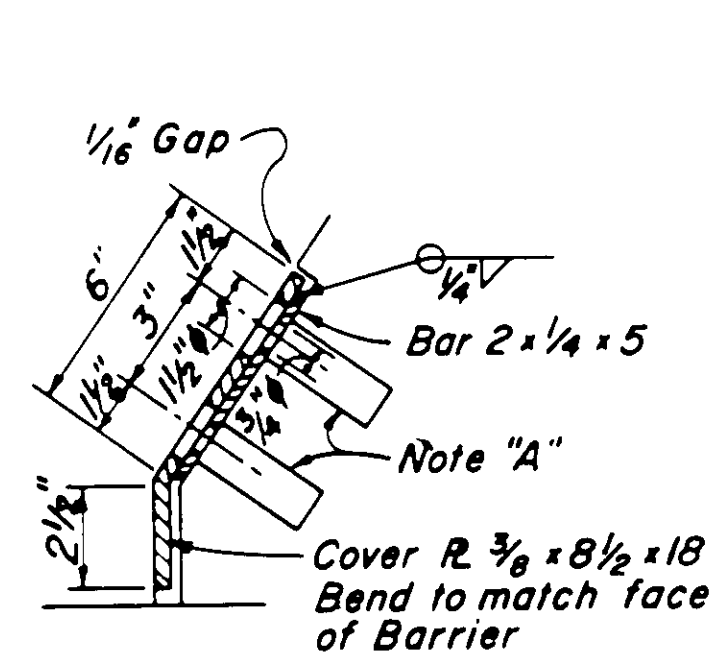
HIGH SIDE BARRIER DETAIL

LOW SIDE BARRIER DETAIL
(See Note "B")

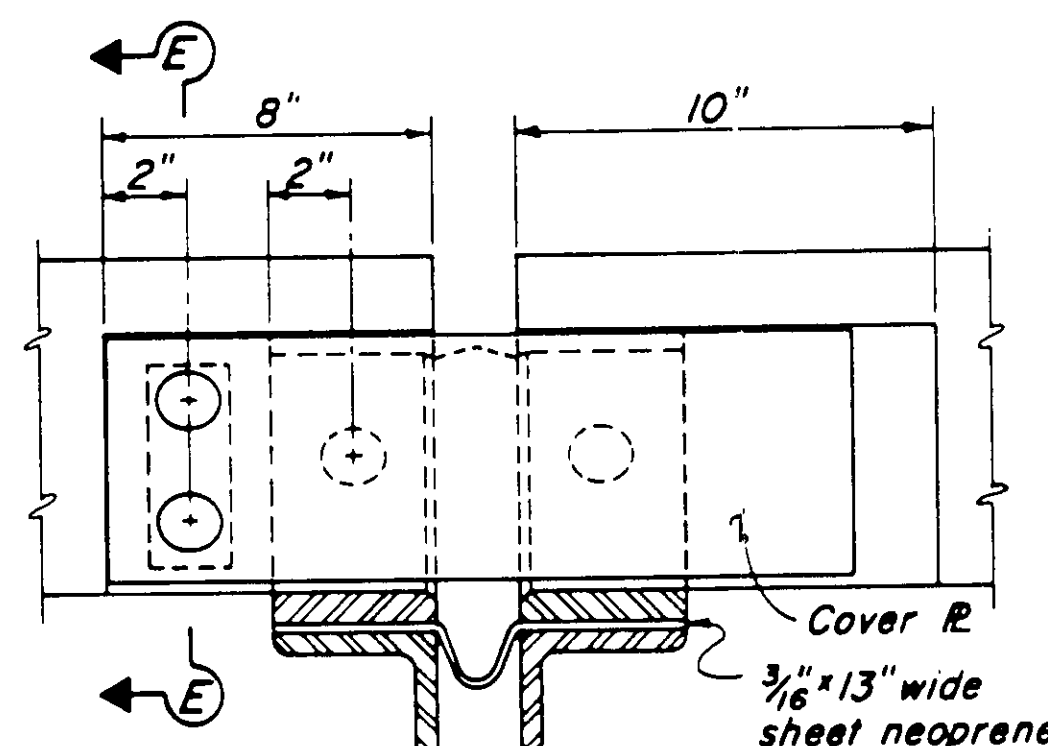
SIDEWALK DETAIL
(See Note "B")



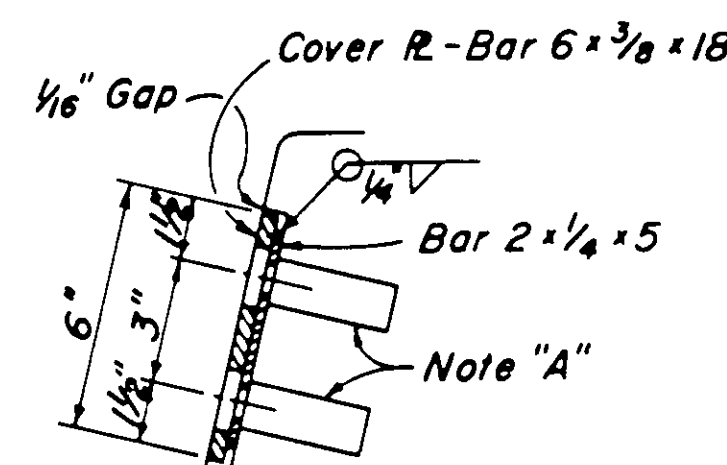
VIEW B-B



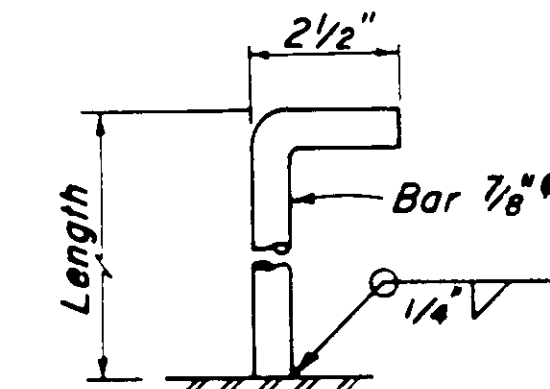
SECTION D-D



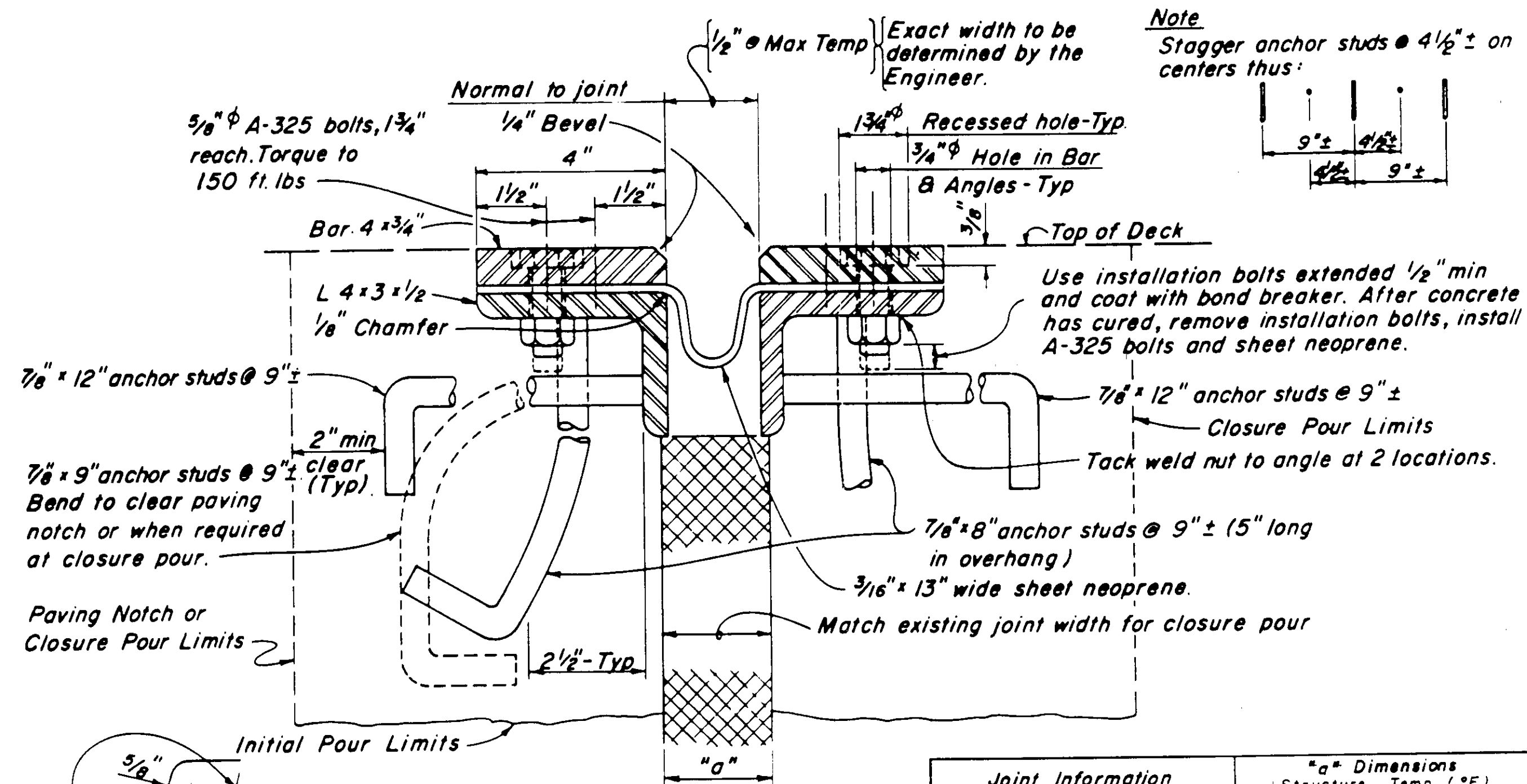
VIEW C-C



SECTION E-E



ANCHOR STUD



SECTION A-A

Joint Information			a* Dimensions Structure Temp. (°F)		
Location	Movement Rating (M.R.)	Skew	35 - 60	60 - 85	85 - 110
ABU + 1	3"	22° C20"	1 1/2"	1"	1 1/2"

Notes:

Full penetration butt welds may be substituted for the fillet welds on all anchor studs.

Alternate types of anchor studs may be permitted subject to the approval by the Engineer.

Joint seal assembly to be used in conjunction with closure pour. (See other sheets for limits). Closure pour shall not be placed until final deck surface is within the tolerance specified.

Joint seal assembly to be fabricated in 14' max lengths. Use joint at crown of roadway, at any change in transverse slope in deck, and at changes in horizontal direction. Place other joints at or near lane lines. All metal parts to be galvanized after fabrication.

Sheet neoprene shall be fabricated in one continuous piece or joints shall be vulcanized. Neoprene shall be fabricated to bend around corners. 1" holes in neoprene sheets shall be drilled or punched so that the neoprene is not distorted at the time of installation.

Note "A"
Insert assembly or expansion anchorage for $\frac{5}{8}" \times 1\frac{3}{4}"$ A-325 bolt.

Note "B"
Use the Sidewalk Detail at all sidewalk joints. Use the Barrier Detail at both sides if the roadway is crowned or if the difference in elevation between the ends of the seal is 0.5' or less.



McDANIEL ENGINEERING COMPANY, INC.

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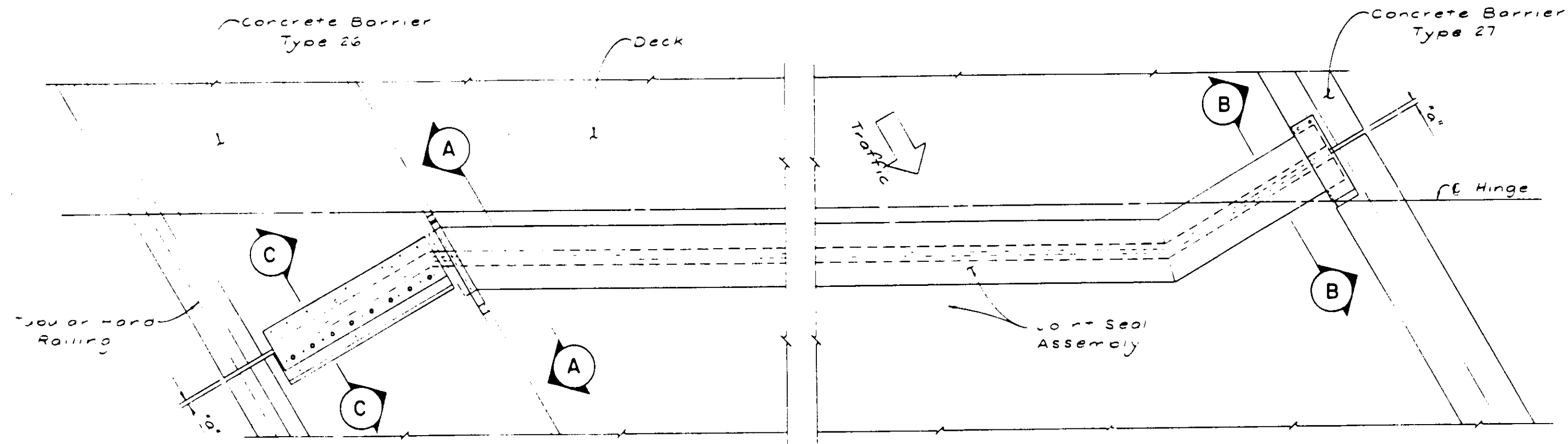
APPROVED BY	R.C.E	EXPIRES	DATE
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DESIGNED BY	WMA
DRAWN BY	OMC
CHECKED BY	CCG
FIELD BOOK	

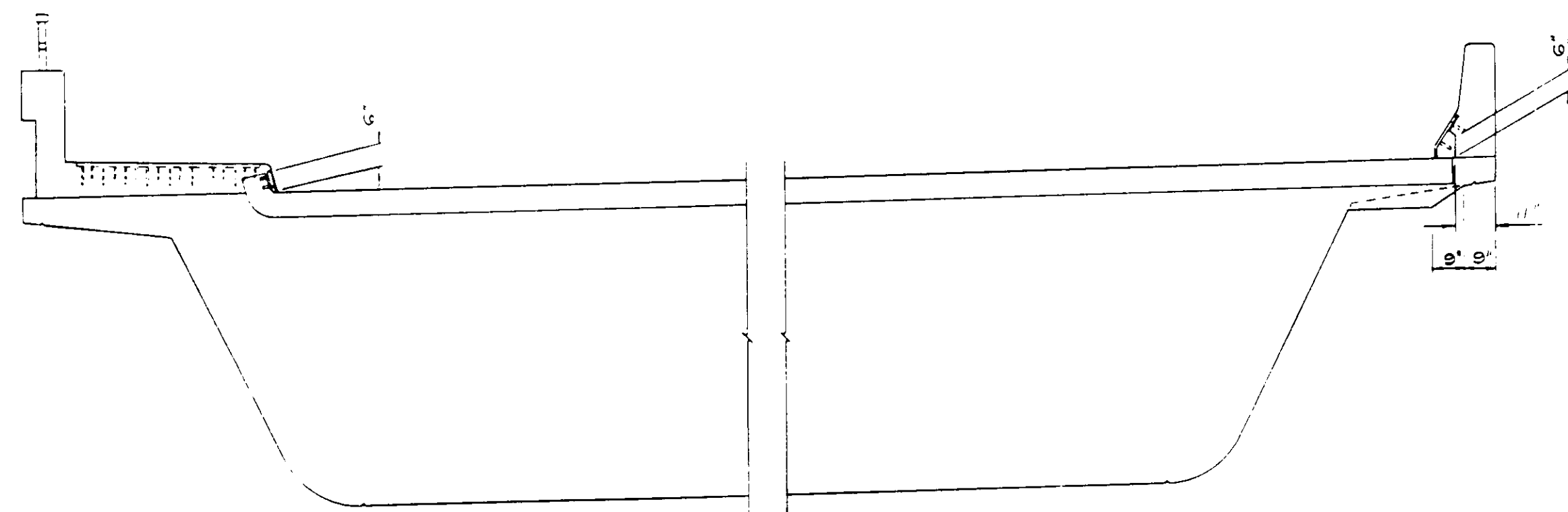
SANTA MARGARITA PARKWAY BRIDGE
OVER ARROYO TRABUCO - WIDENING

JOINT SEAL ASSEMBLY DETAILS - 2
(M.R. NOT EXCEEDING 4")

SHEET
39
OF
57
SHEETS

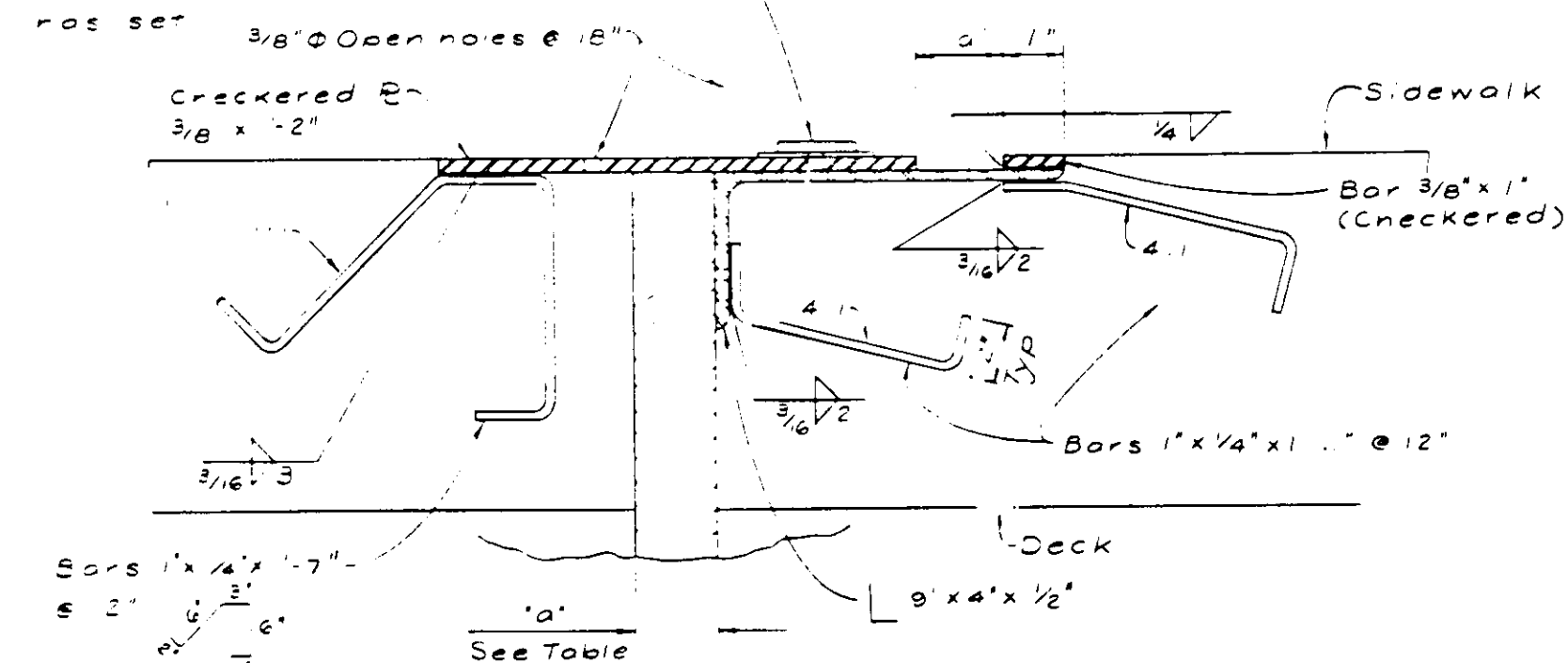


PART PLAN
1/2" = 1'-0"



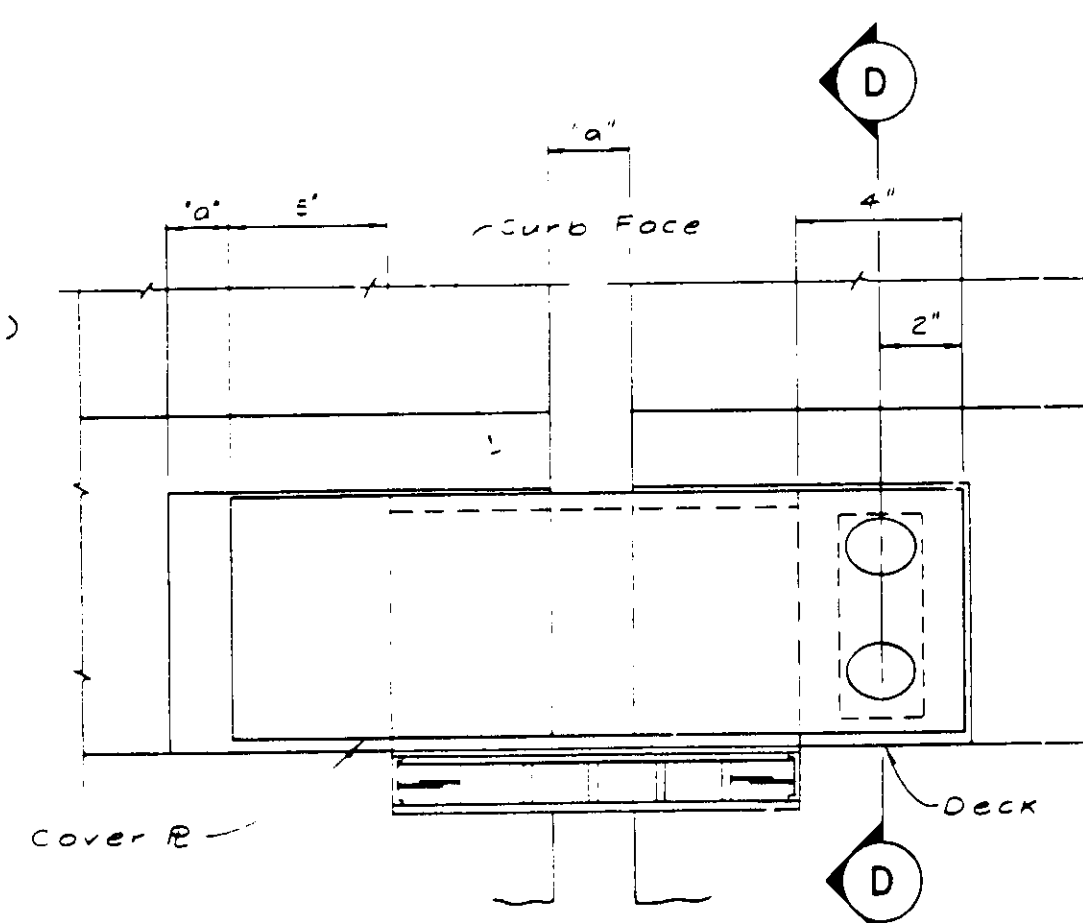
PART TYPICAL SECTION
3/8" = 1'-0"

4" Cap screw and 3" E washer @ 8" on centers 2" hole in toe E Drill and toe bottom E Remove screw and washer after concrete has set

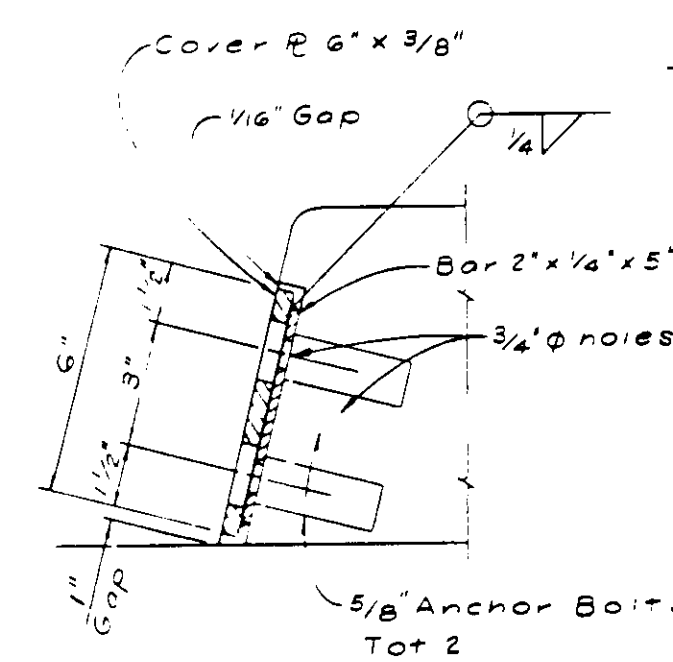


SECTION C-C
No Scale

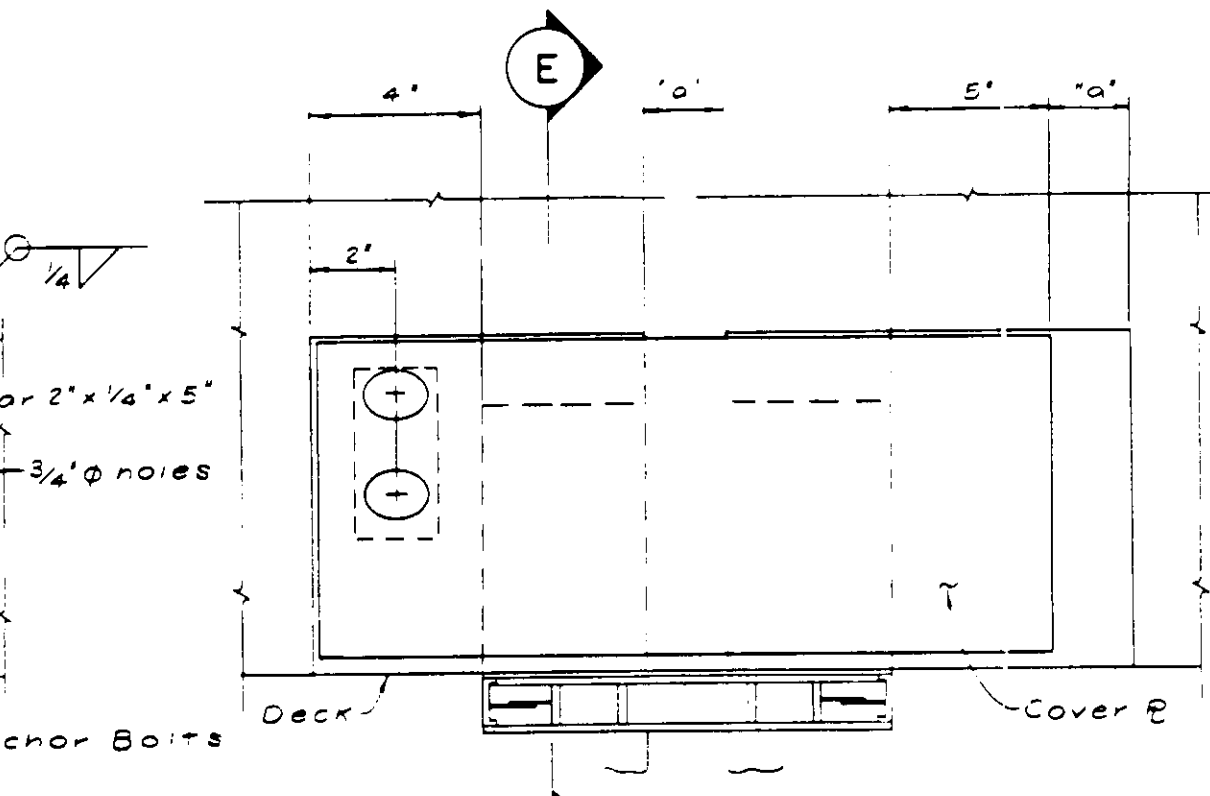
NOTE: Details at hinge shown, details at abutments similar.



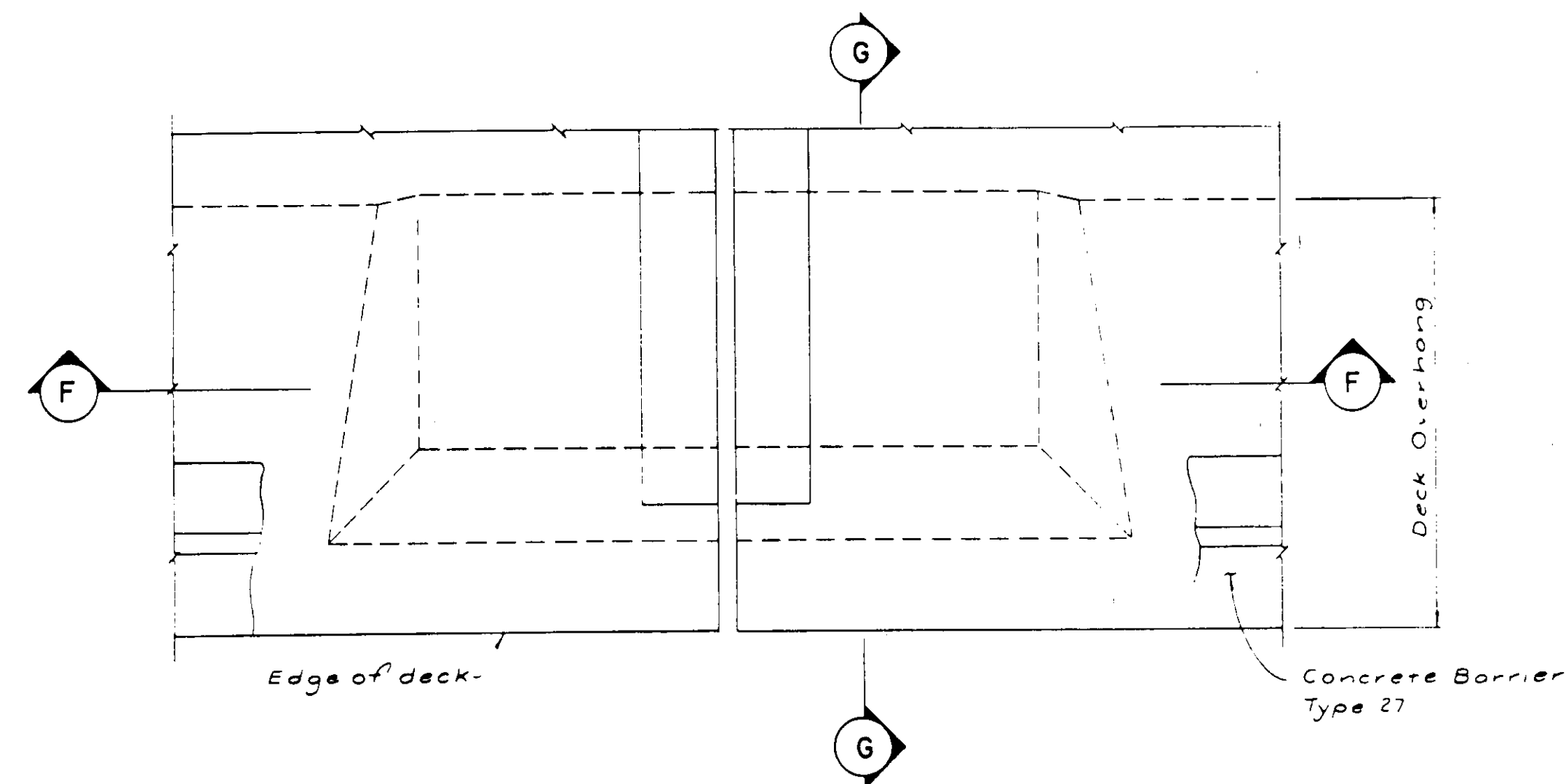
ELEVATION A-A
3" = 1'-0"



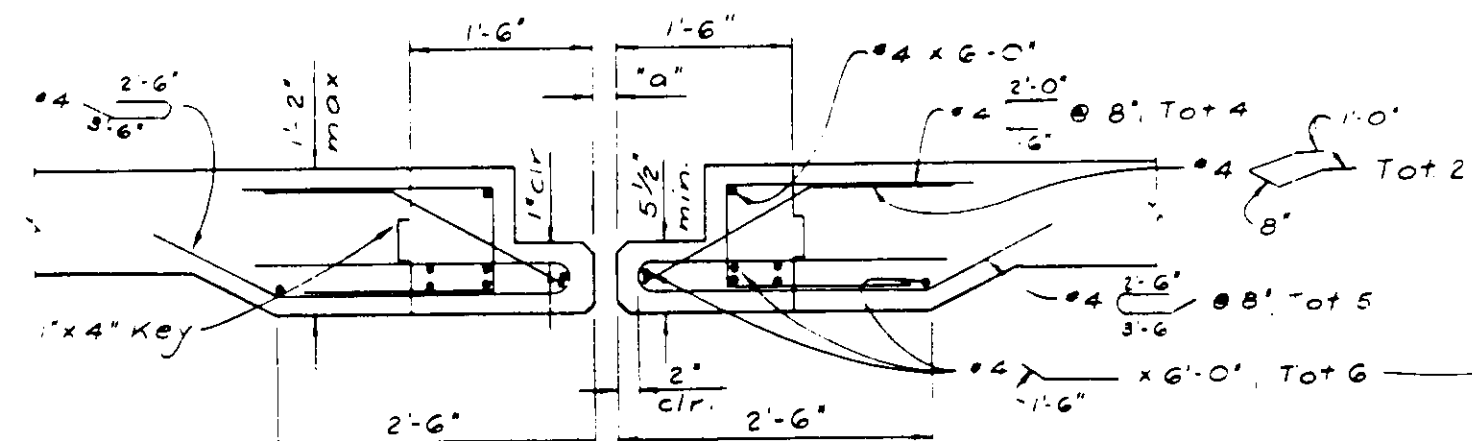
SECTION D-D
3" = 1'-0"



ELEVATION B-B
3" = 1'-0"

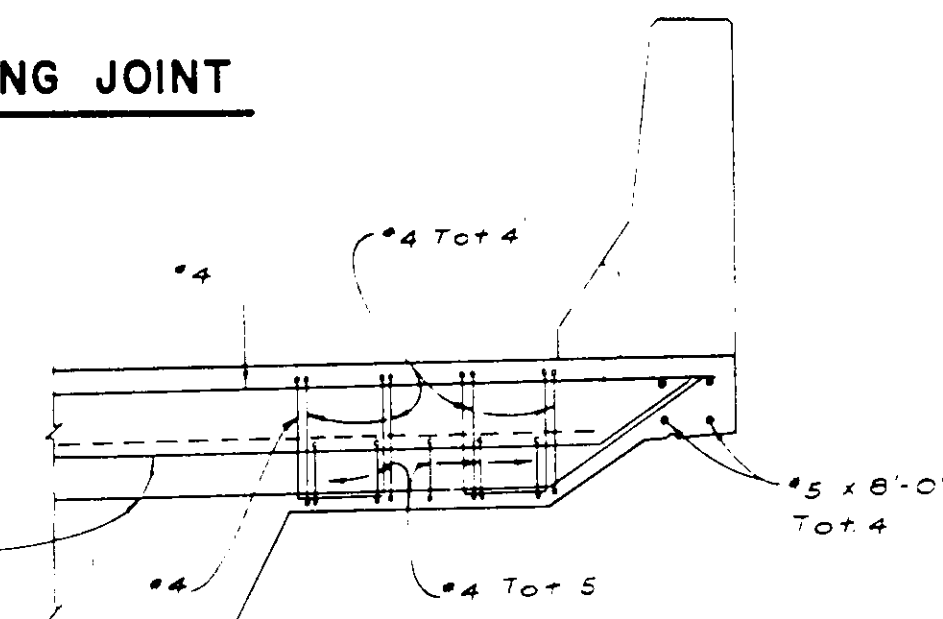


PLAN AT DECK OVERHANG JOINT
1" = 1'-0"



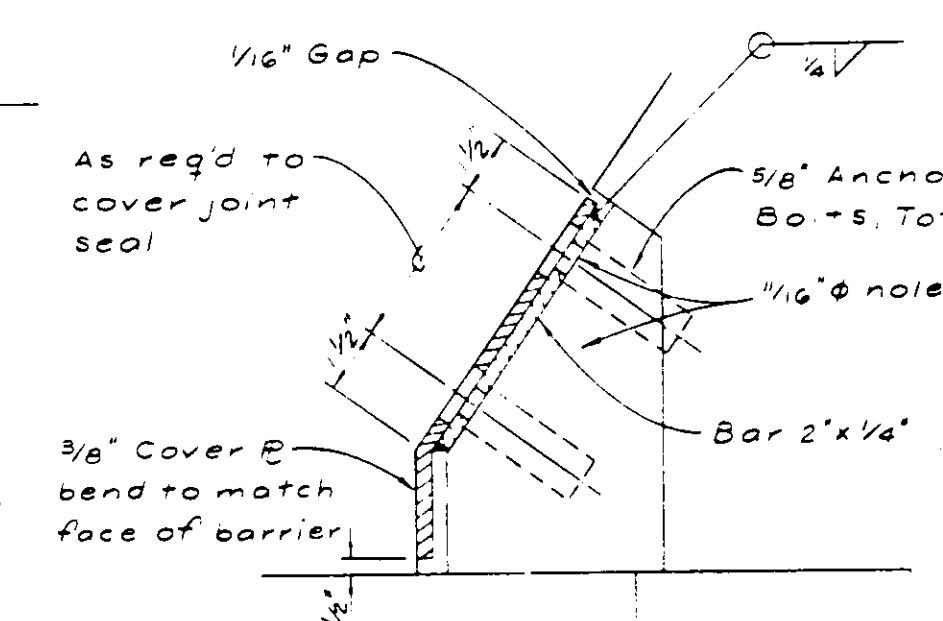
SECTION F-F
3/4" = 1'-0"

Note: Reinf. is in addition to hinge & slab reinf.



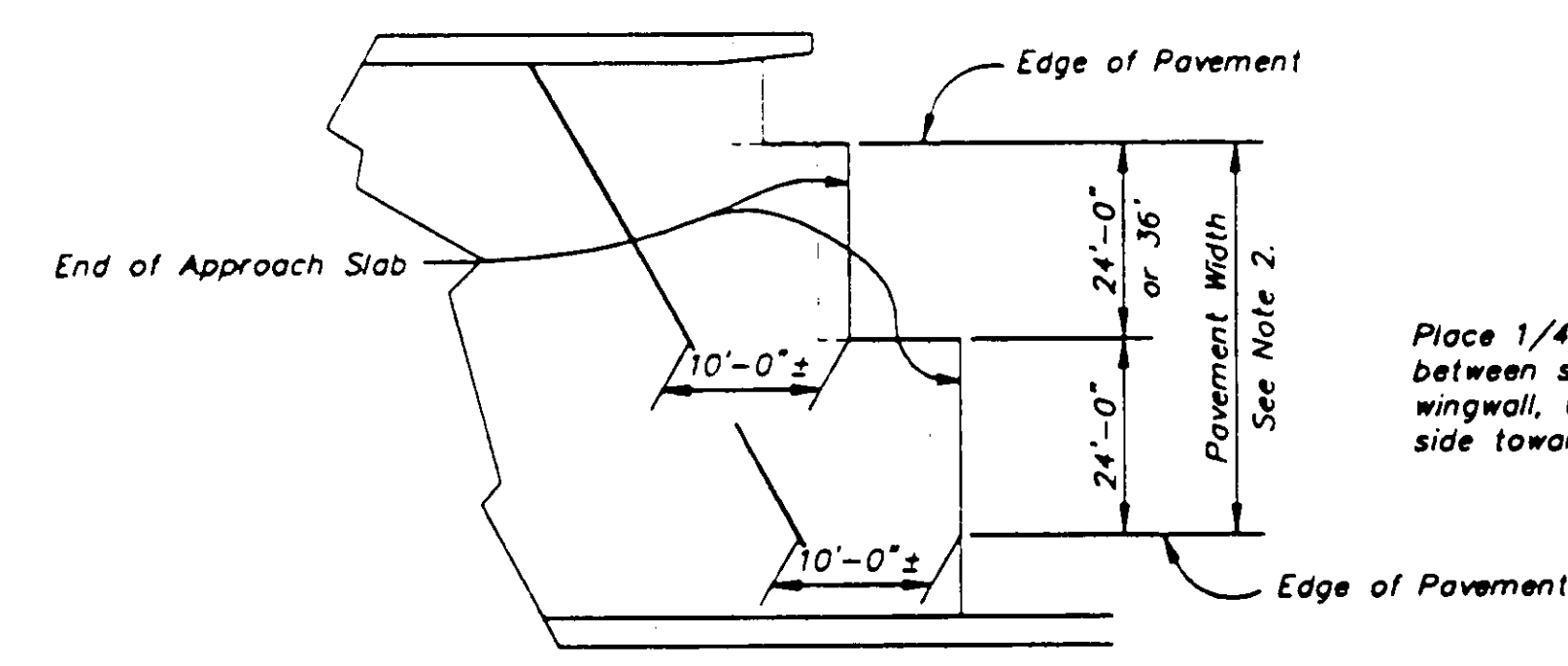
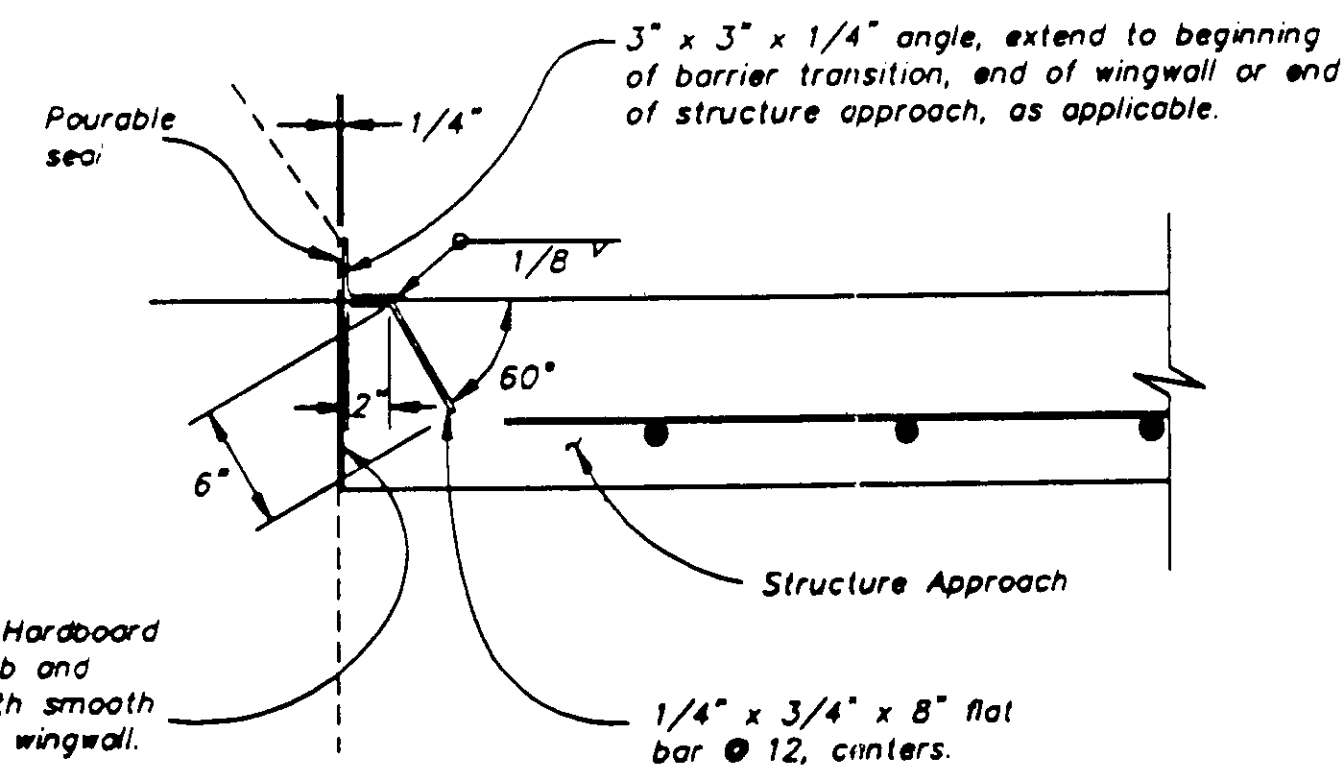
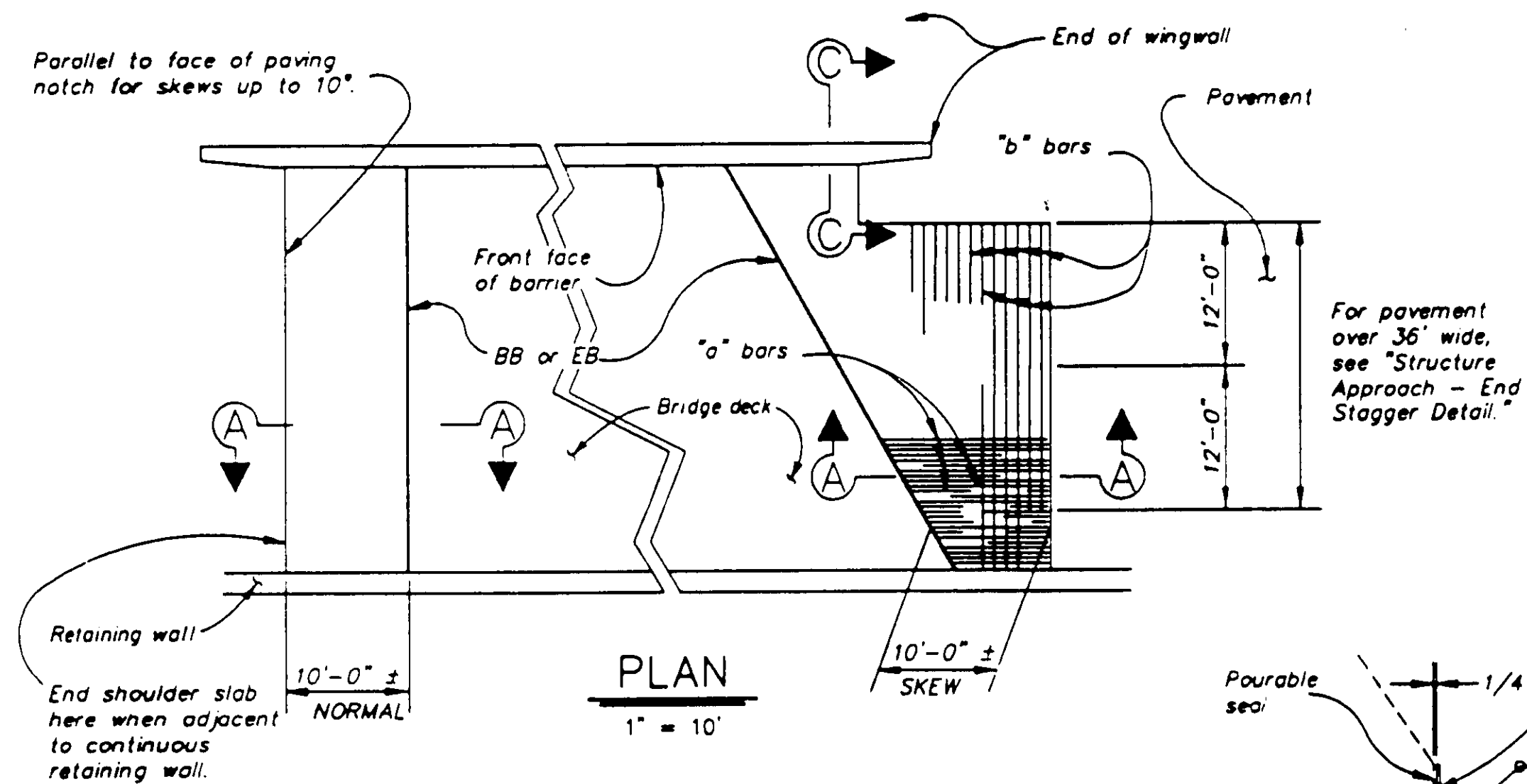
SECTION G-G
3/4" = 1'-0"

Joint Information			a" Dimensions		
Location	Movement	Skew	Structure	Temp	(°F)
Hinge	7 1/2"	30°00'00"	2 1/2"	1 3/4"	1"
Abut. 1	3"	22°02'01"	1 1/4"	1"	1/2"
Abut. 2	6"	30°00'00"	2"	1 1/2"	1"

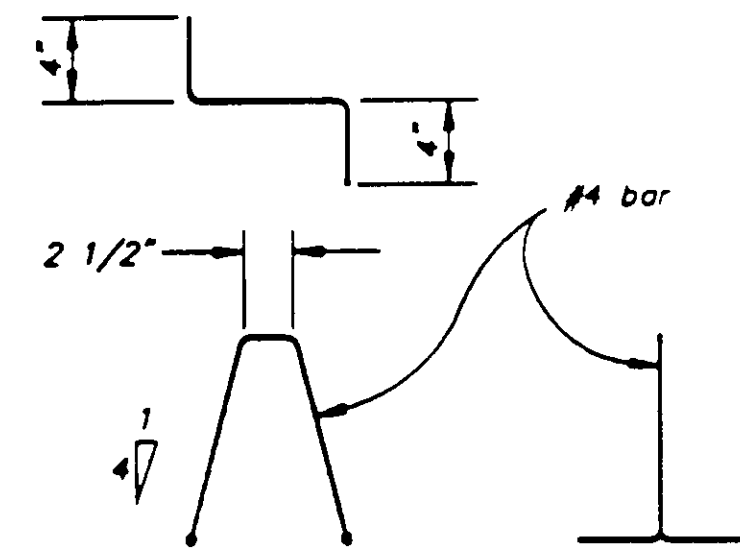


SECTION E-E
3" = 1'-0"

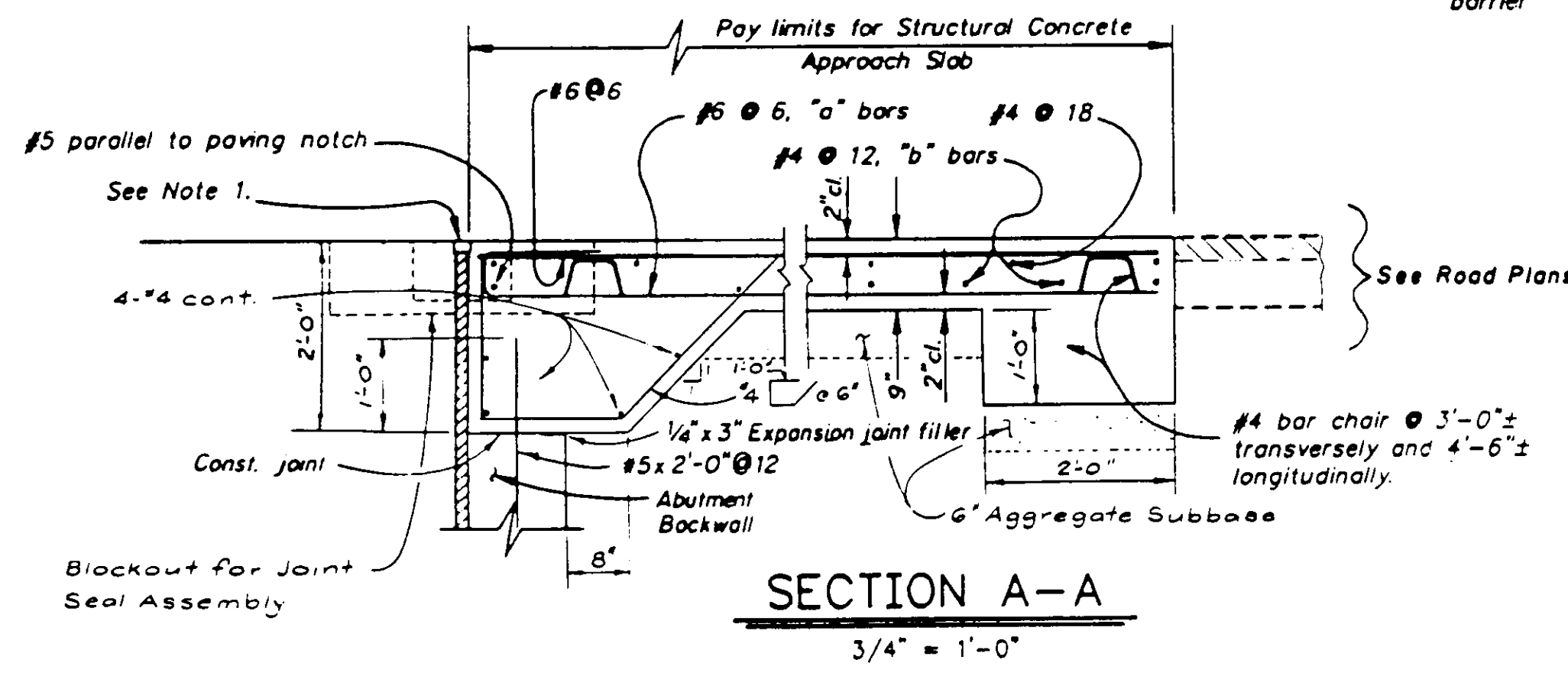
McDANIEL ENGINEERING COMPANY, INC. 2880 OLD TOWN AVE., SUITE 207B, SAN DIEGO, CA 92110 (619) 592-1920			DESIGNED BY WMA DRAWN BY DMC CHECKED BY CCC FIELD BOOK	SANTA MARGARITA PARKWAY BRIDGE OVER ARROYO TRABUCO - WIDENING JOINT SEAL ASSEMBLY DETAILS - I	SHEET 38 OF 57 SHEETS JOB NO.
APPROVED BY 	RCE C34299	EXPIRES 3-30-91	DATE 3-28-89		



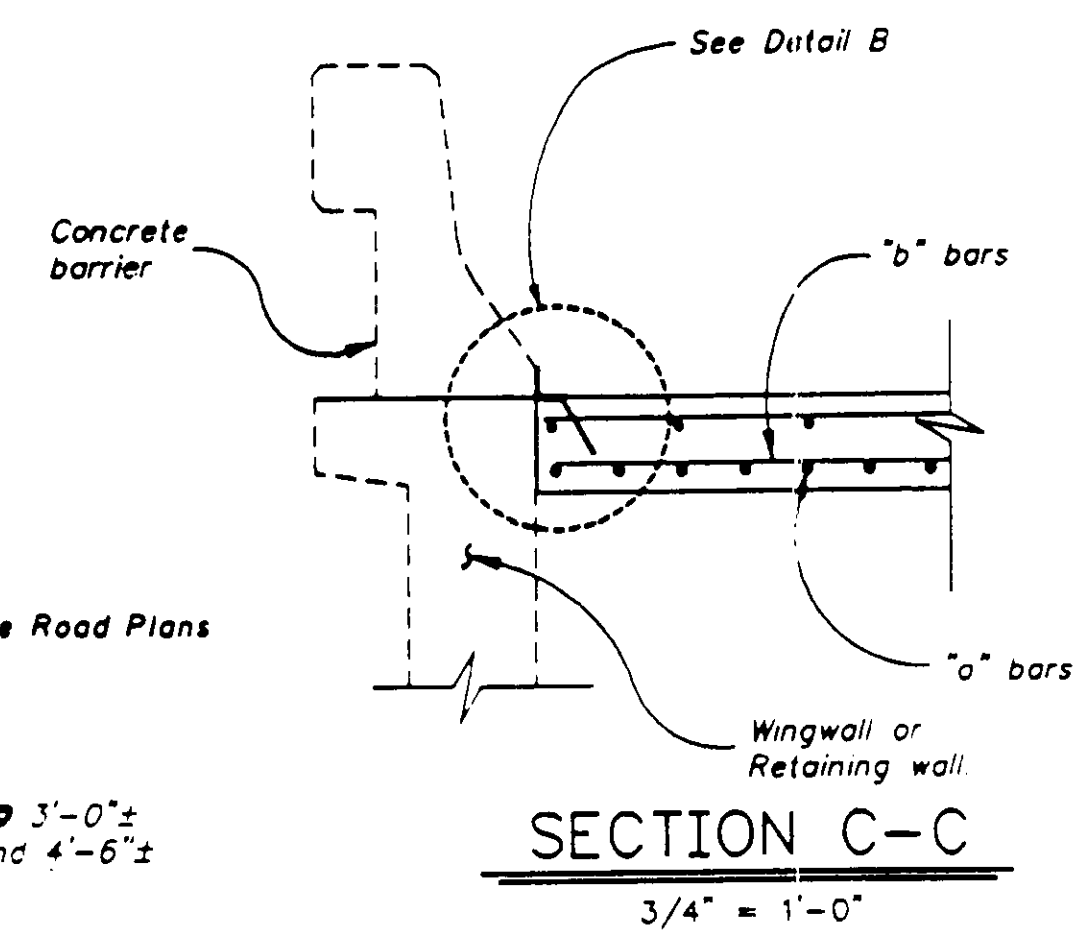
STRUCTURE APPROACH - END STAGGER DETAIL
No Scale



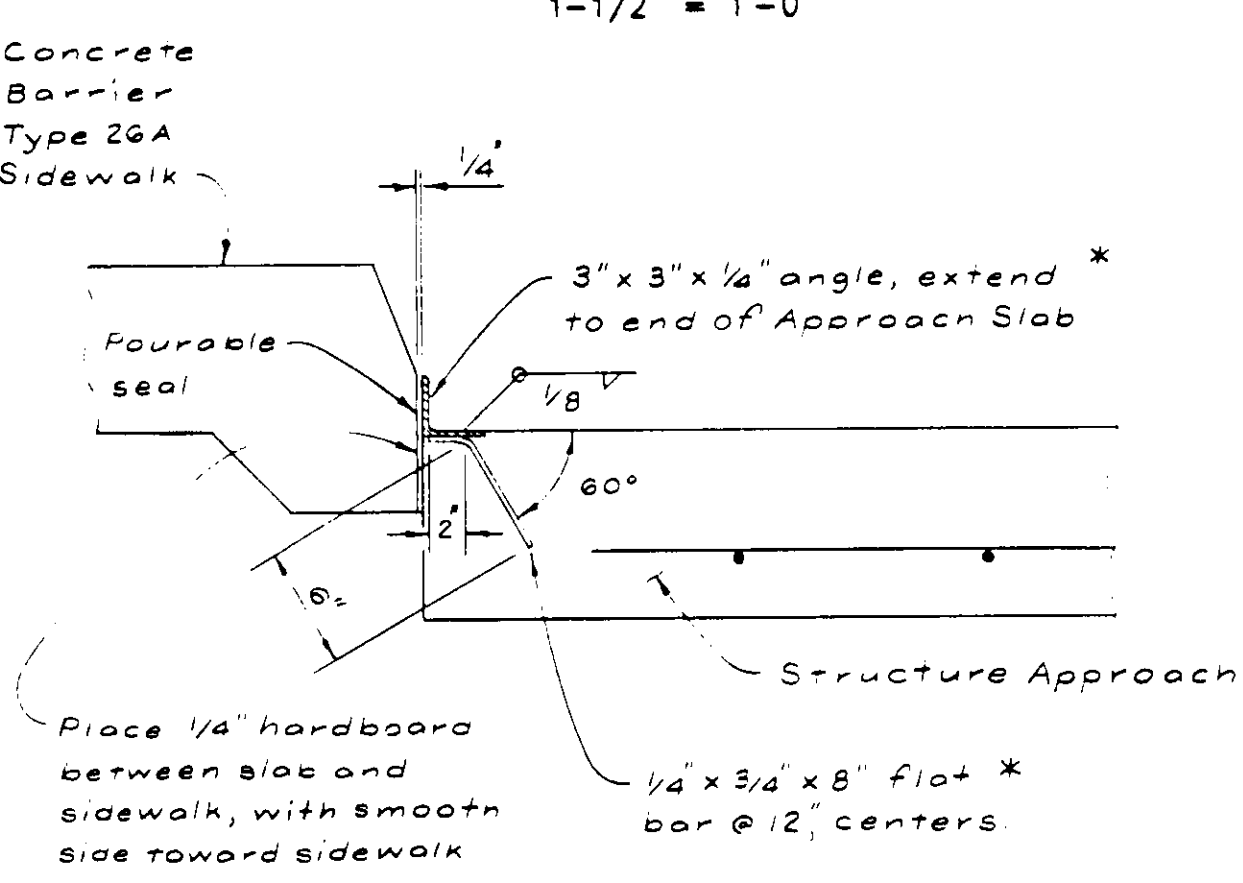
BAR CHAIR DETAIL
1-1/2" = 1'-0"



SECTION A-A
3/4" = 1'-0"



SECTION C-C
3/4" = 1'-0"



DETAIL D
1/2" = 1'-0"

NOTES

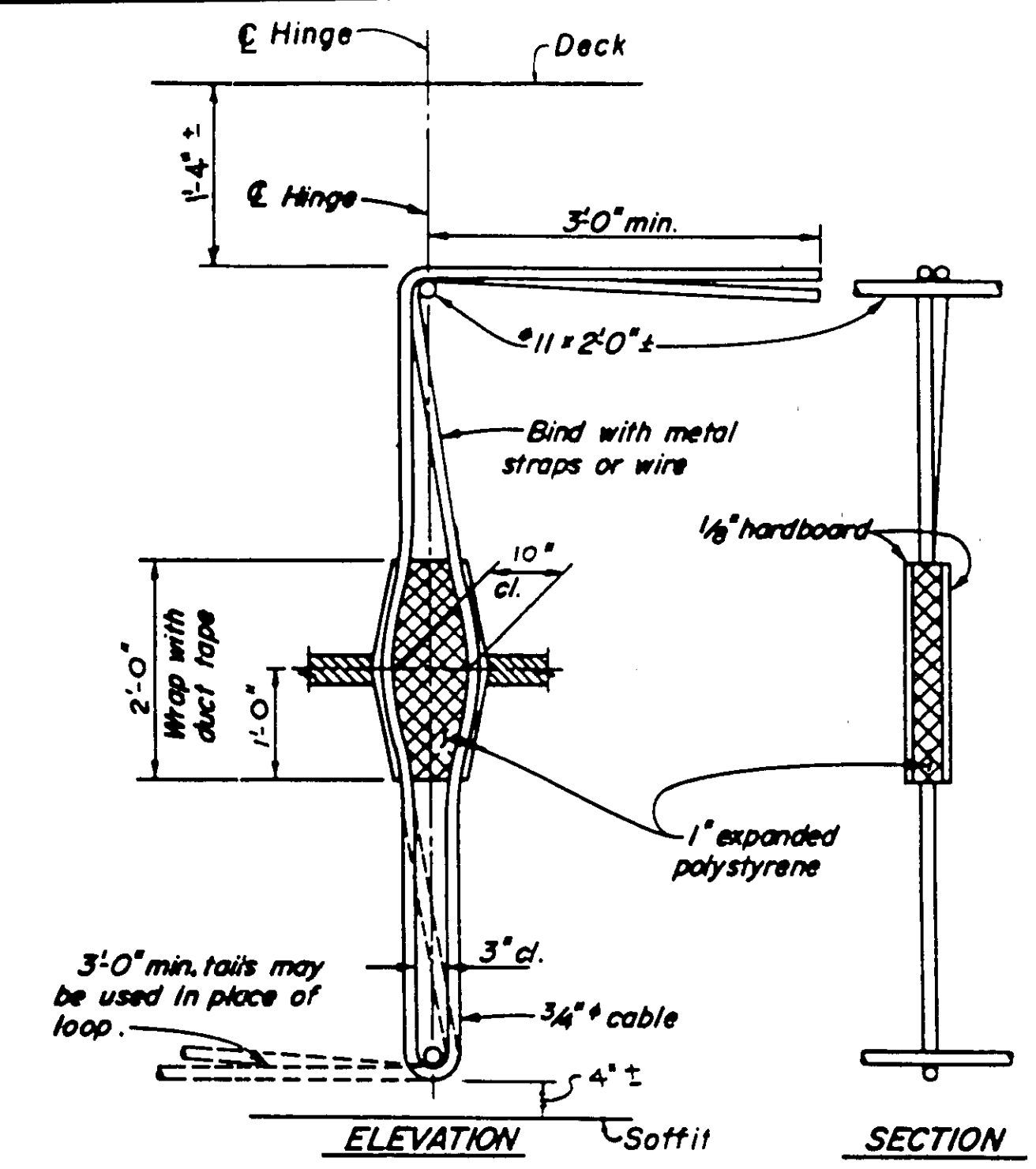
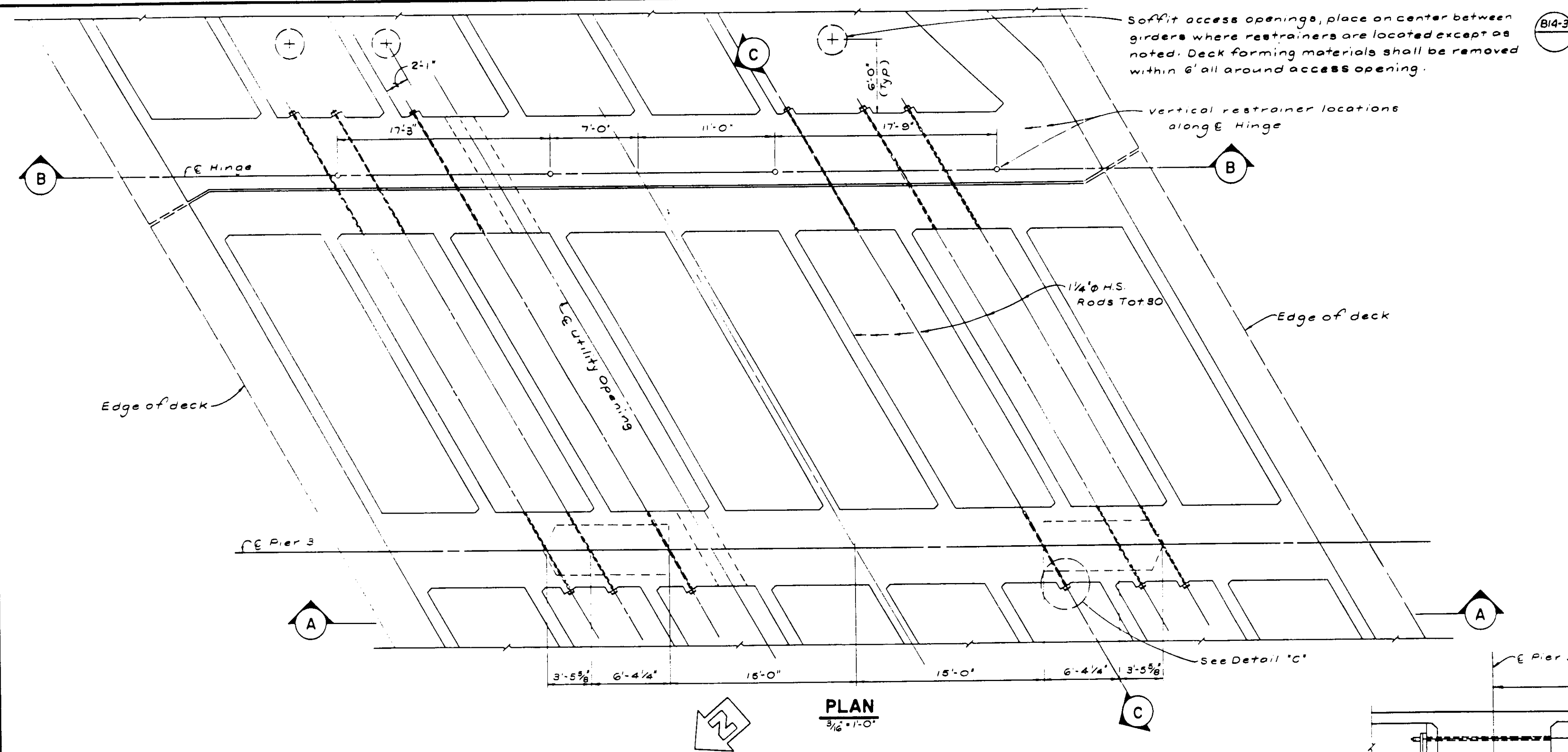
1. For details not noted or shown, see "Abutment" details on Project Plans. Adjust bar reinforcement to clear a sawcut for sealed joint, when required.
2. Approach Slabs to skewed structures shall be staggered at lane lines. Staggered lines may be 24' or 36' apart for skews of 45° or less and at each lane line for skews greater than 45°.
3. For transverse contact joint with new PCC paving, refer to Standard Plan A35-A.
4. Longitudinal construction joints shall be permitted as approved by the Engineer.



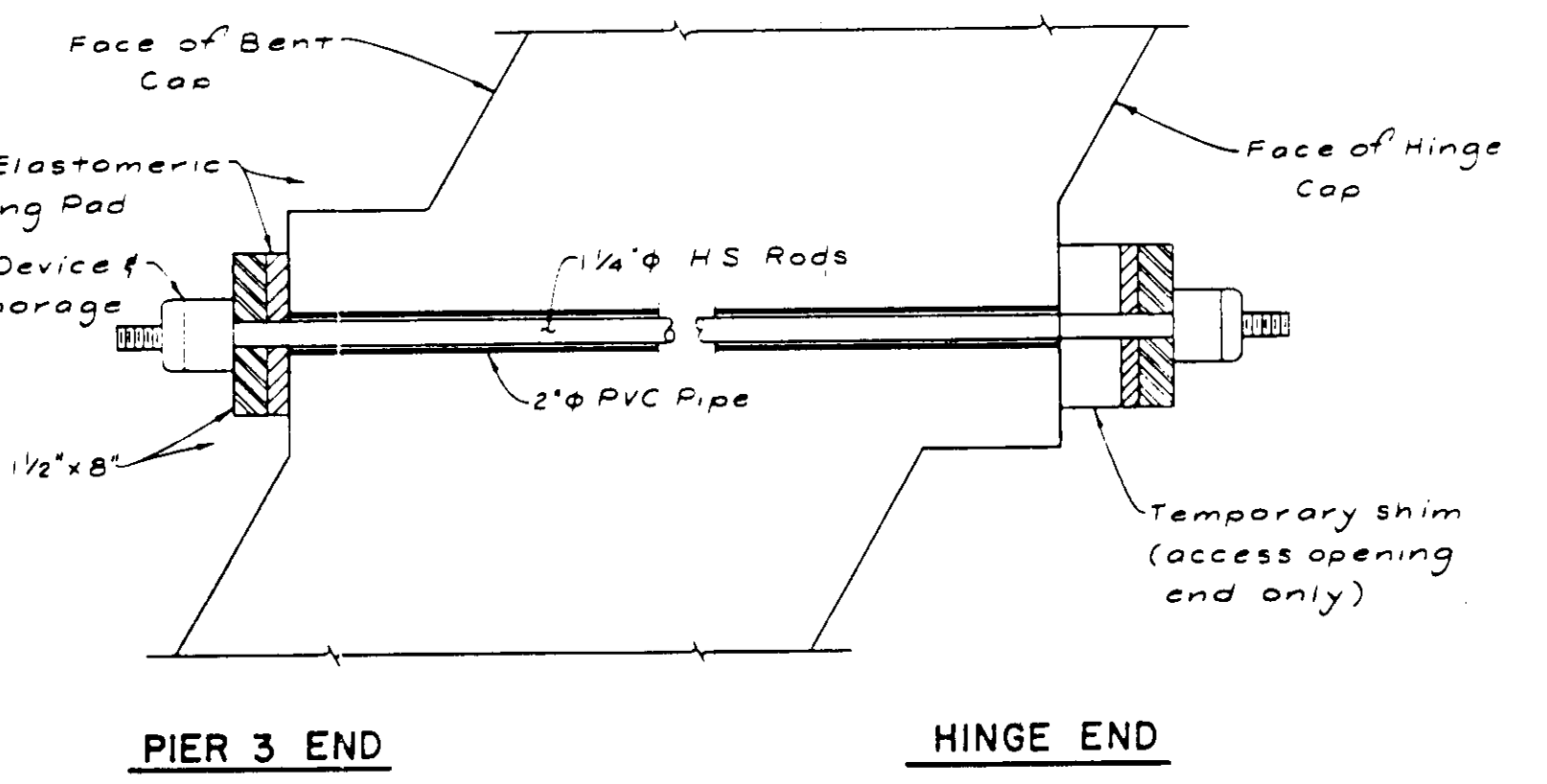
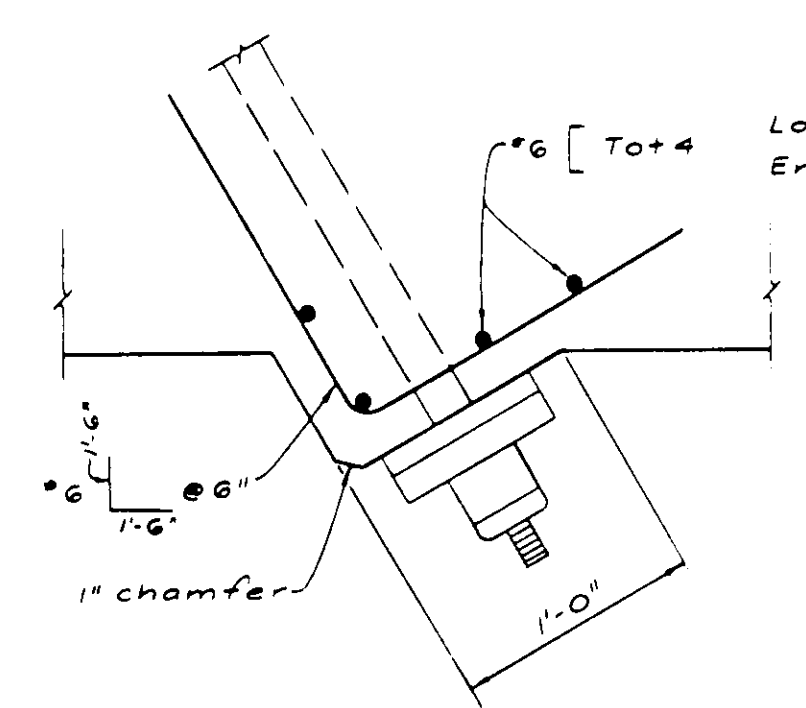
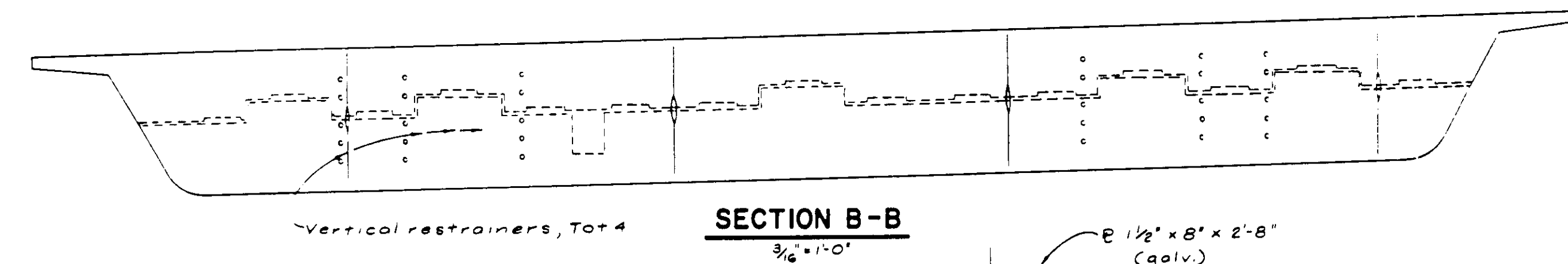
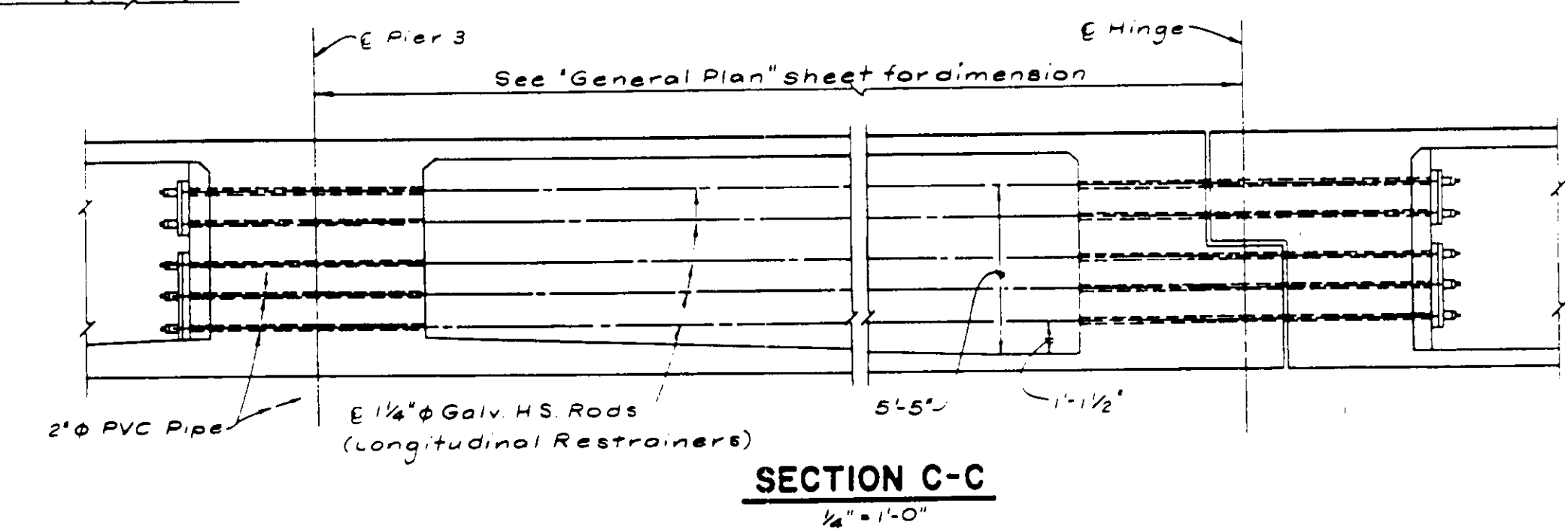
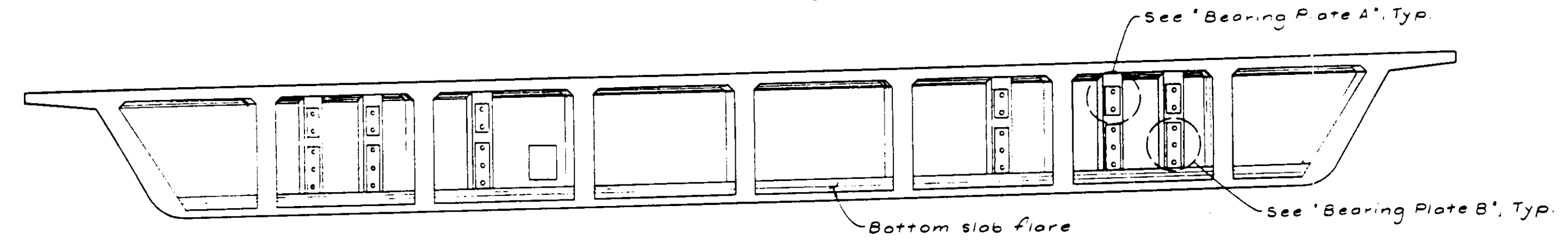
McDANIEL ENGINEERING COMPANY, INC.
3000 OLD TOWN AVE., SUITE 207B, SAN DIEGO, CA 92110 (619) 592-1820
APPROVED BY: [Signature] RCE C 34299 EXPIRES: 9-30-89 DATE: 6-28-89

**SANTA MARGARITA PARKWAY BRIDGE
OVER ARROYO TRABUCO - WIDENING**
PCC APPROACH SLAB

SHEET 37 OF 57 SHEETS
JOB NO.



VERTICAL RESTRAINER
No Scale

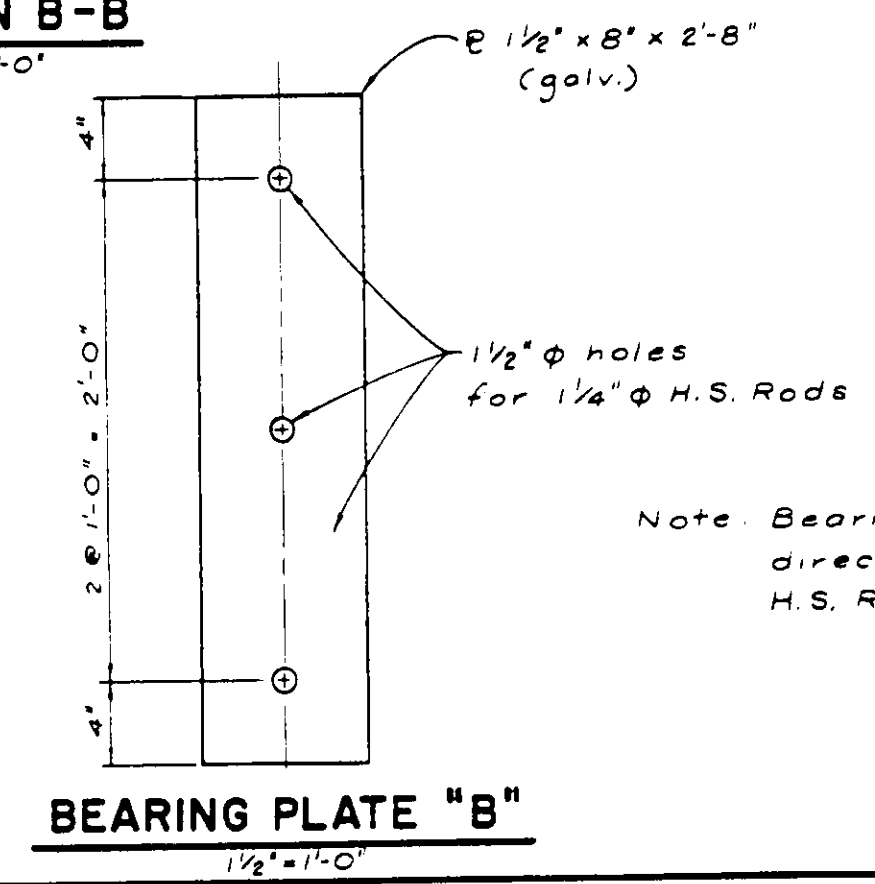


ROD DETAIL
1/2" = 1'-0"

- NOTES:
1. Rods, hardware and bearing plates shall be galvanized
 2. Snug end anchorage, lock and remove shims after falsework is removed
 3. Shim thickness to be determined by the engineer.



BEARING PLATE "A"
1/2" = 1'-0"



Note: Bearing plates may be adjusted as directed by the Engineer so that H.S. Rods clear column reinf.

McDANIEL ENGINEERING COMPANY, INC.
3990 OLD TOWN AVE., SUITE 207B, SAN DIEGO, CA 92110 (619) 992-1920

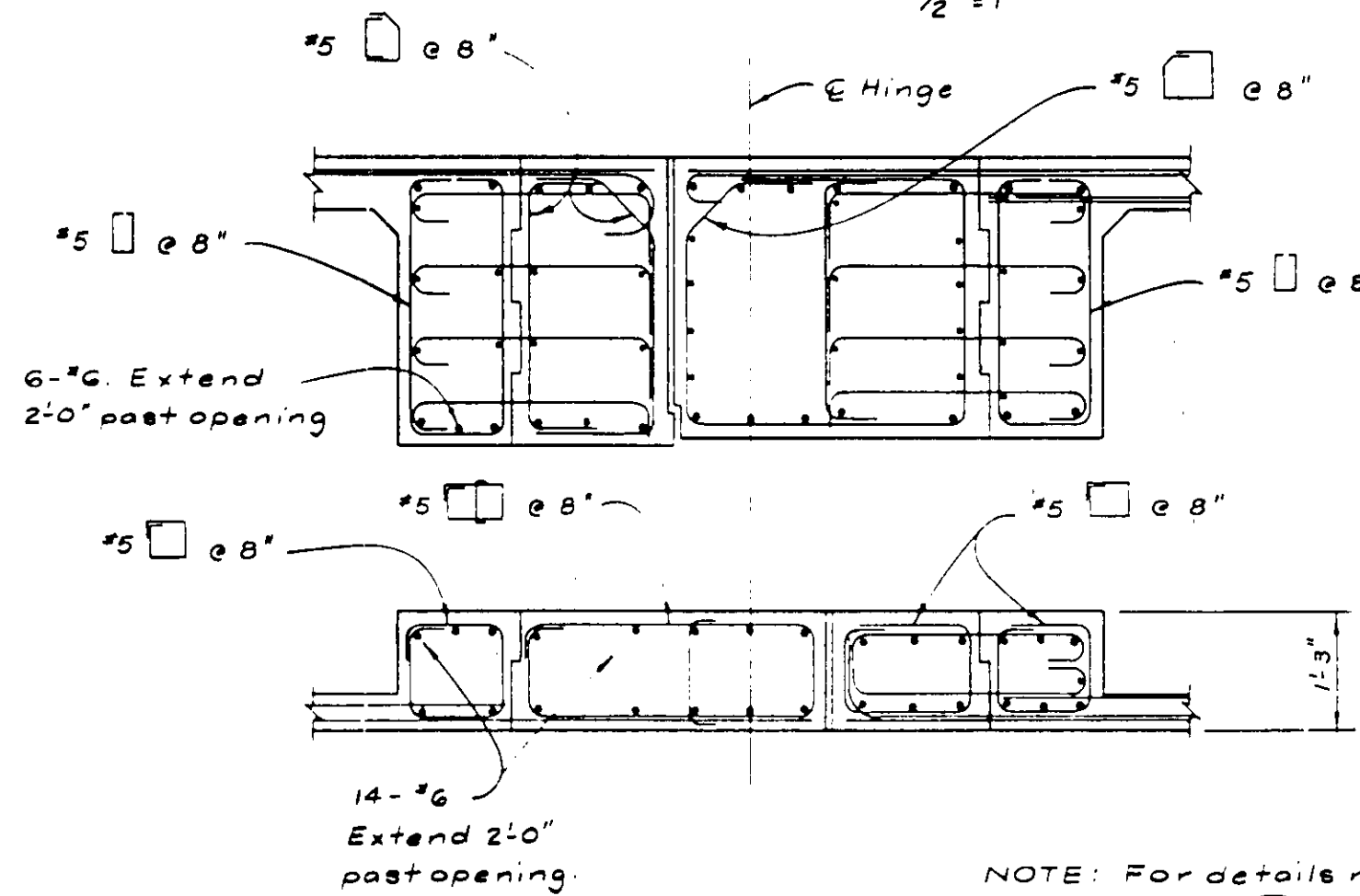
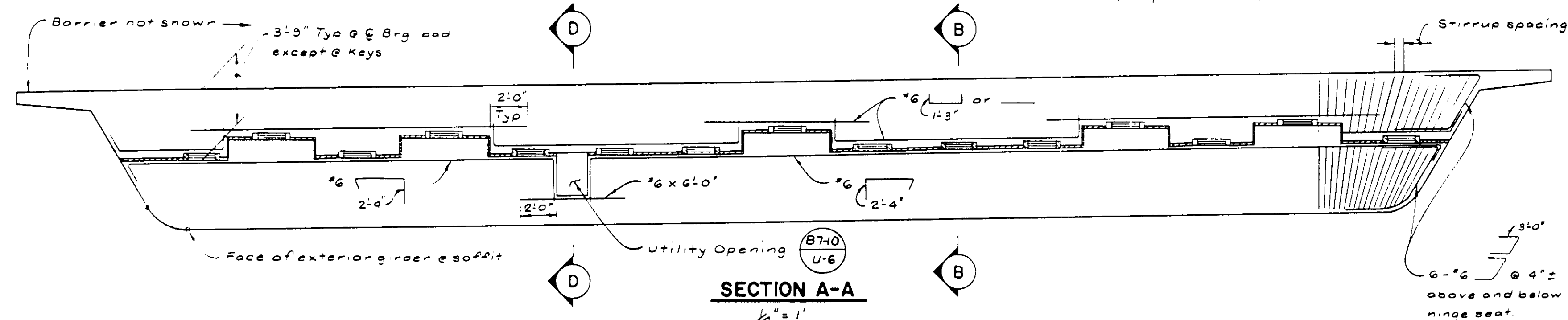
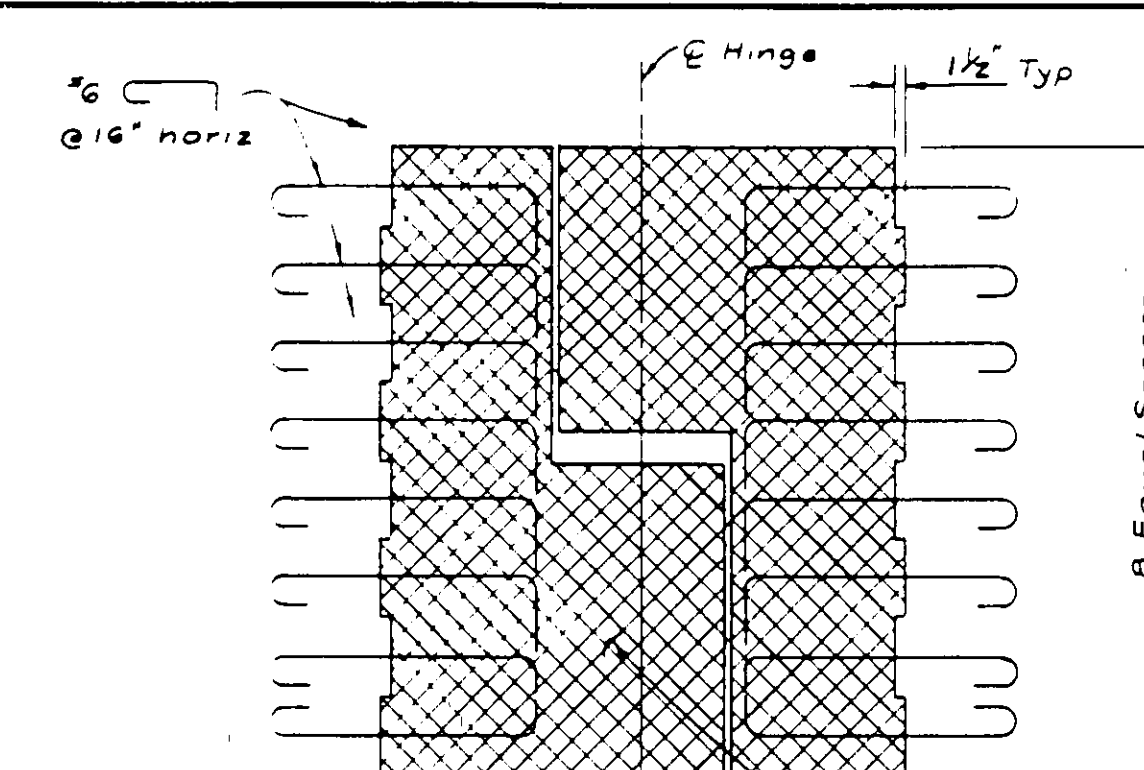
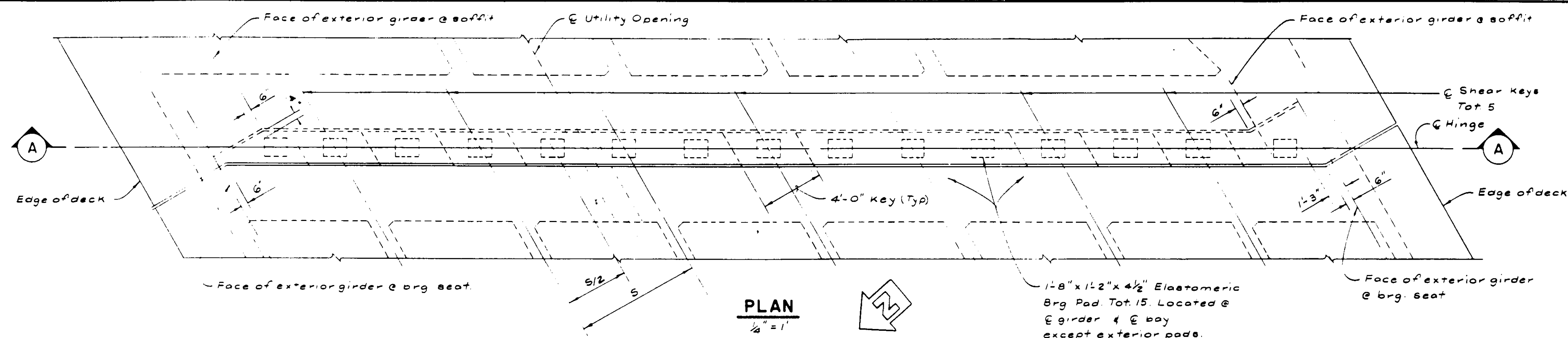
APPROVED BY: *[Signature]* RCE C34299 EXPIRES 9-30-91 DATE 6-28-89

DESIGNED BY: WMA
DRAWN BY: OMC
CHECKED BY: CCC
FIELD BOOK

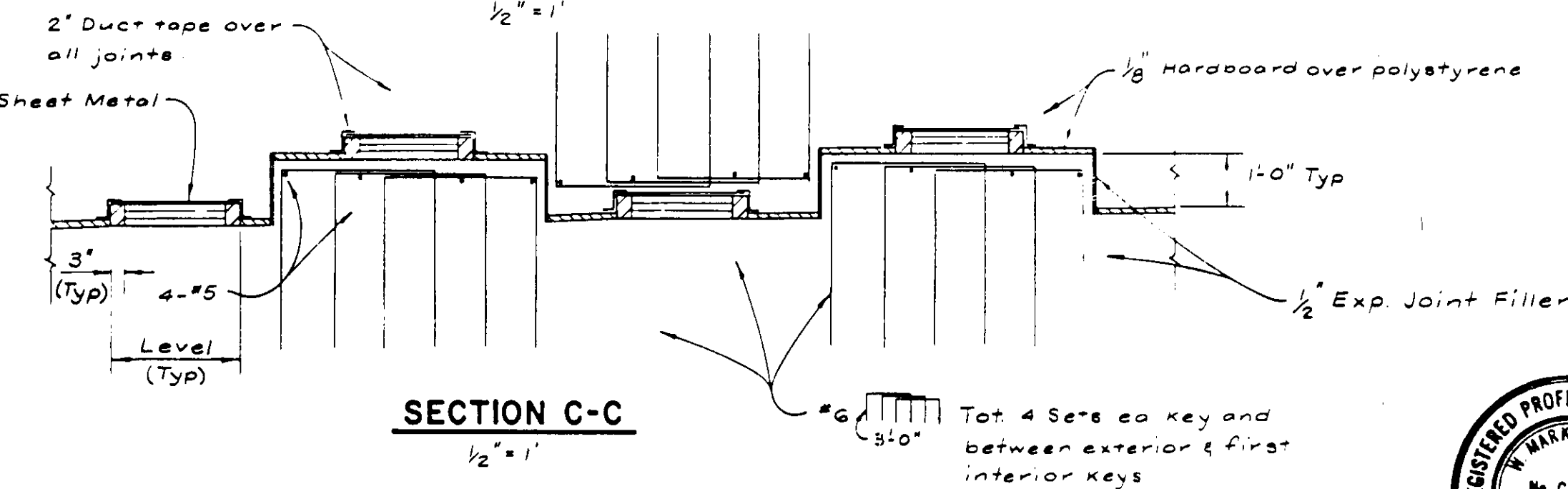
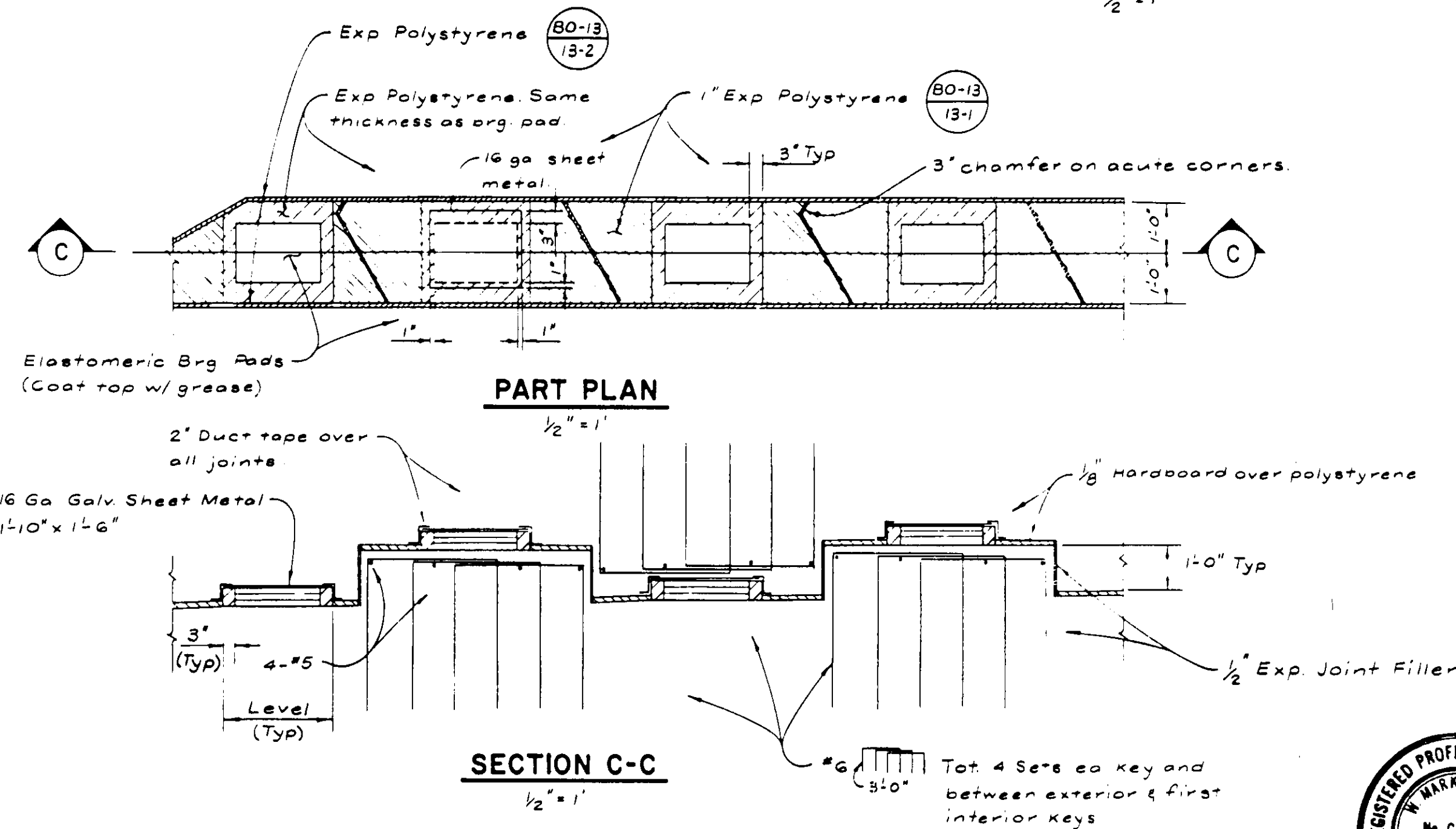
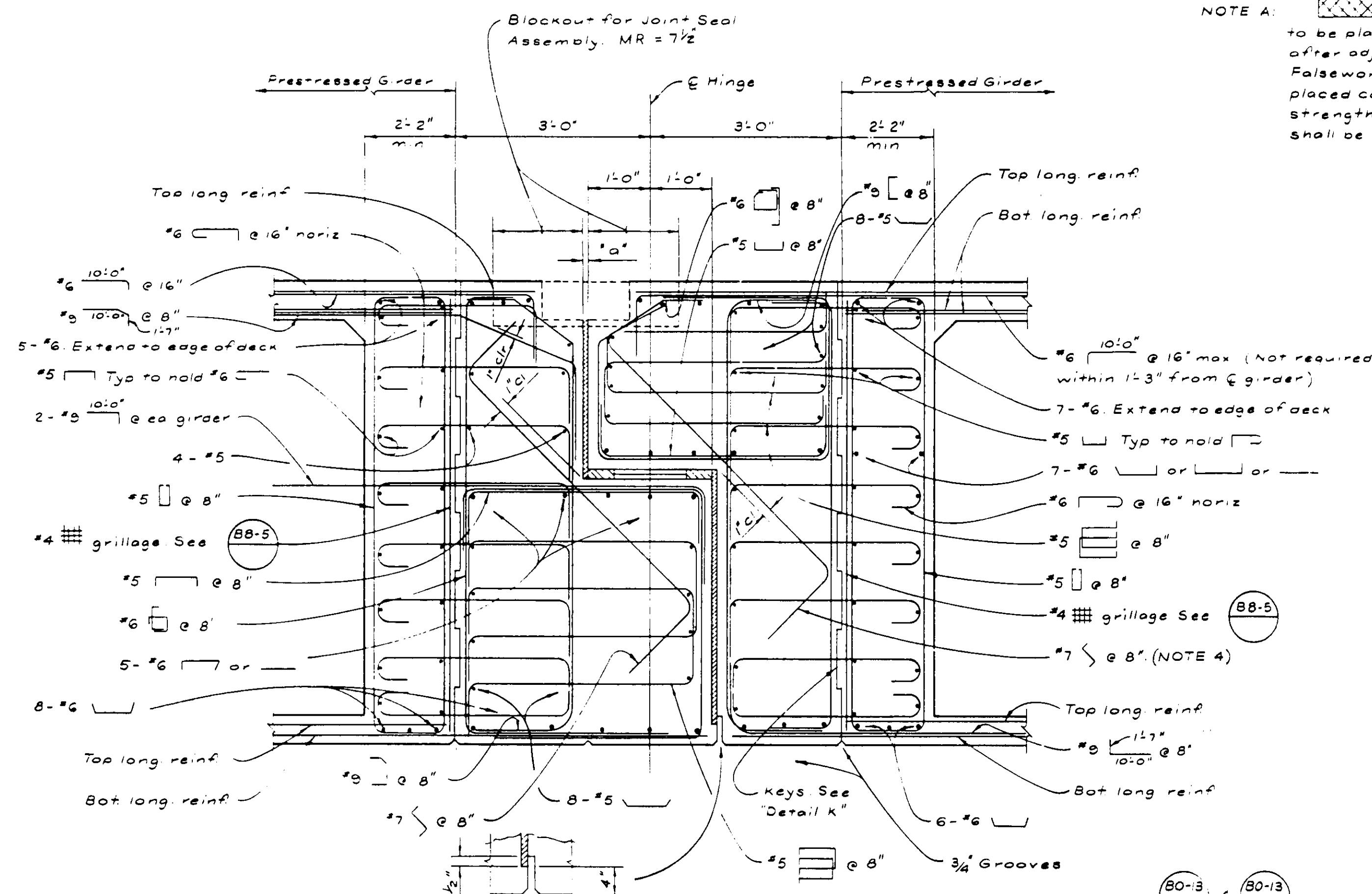
**SANTA MARGARITA PARKWAY BRIDGE
OVER ARROYO TRABUCO - WIDENING**

RESTRAINER DETAILS

SHEET 36 OF 57 SHEETS



NOTE A:  Indicates C.I.P Concrete to be placed in 2 stages not sooner than 60 days after adjacent prestressing is accomplished. Falsework shall remain in place until last placed concrete has attained a compressive strength of 3,000 psi. Supporting side of hinge shall be constructed first.



BEARING SEAT DETAILS

NOTES:

1. See Bridge Details (13-1) & (13-2)
2. To provide for free movement of the completed hinge, concrete is to be excluded from the joint by sealing all openings.
3. Bars may be placed w/ horizontal if required for clearance.
4. Adjust angle of bars at Key to clear.
5. Reinf. shall be spaced along C of hinge & placed parallel to C structure.

SECTION B-B
 $\frac{3}{4}" = 1'$

McDANIEL ENGINEERING COMPANY, INC.
2880 OLD TOWN AVE., SUITE 207R, SAN DIEGO, CA 92110 (619)892-1850

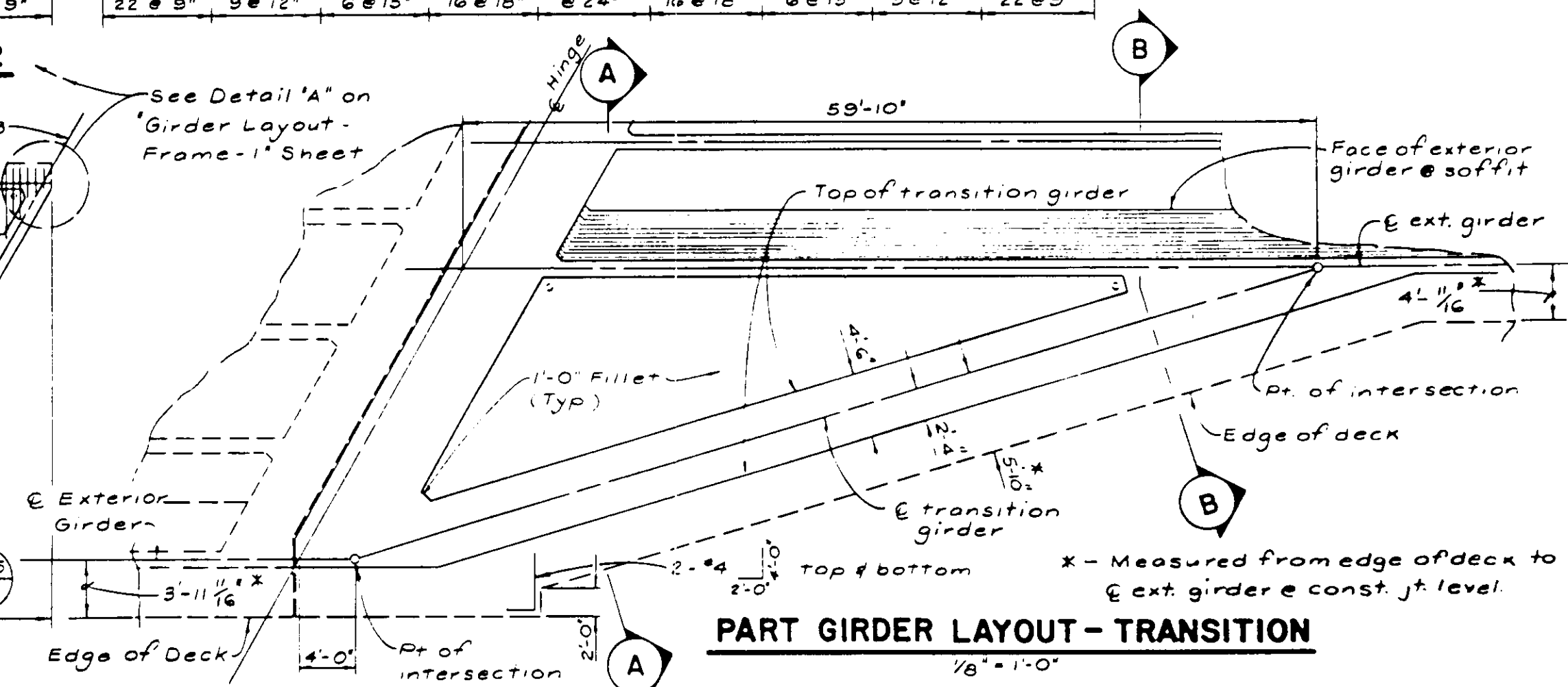
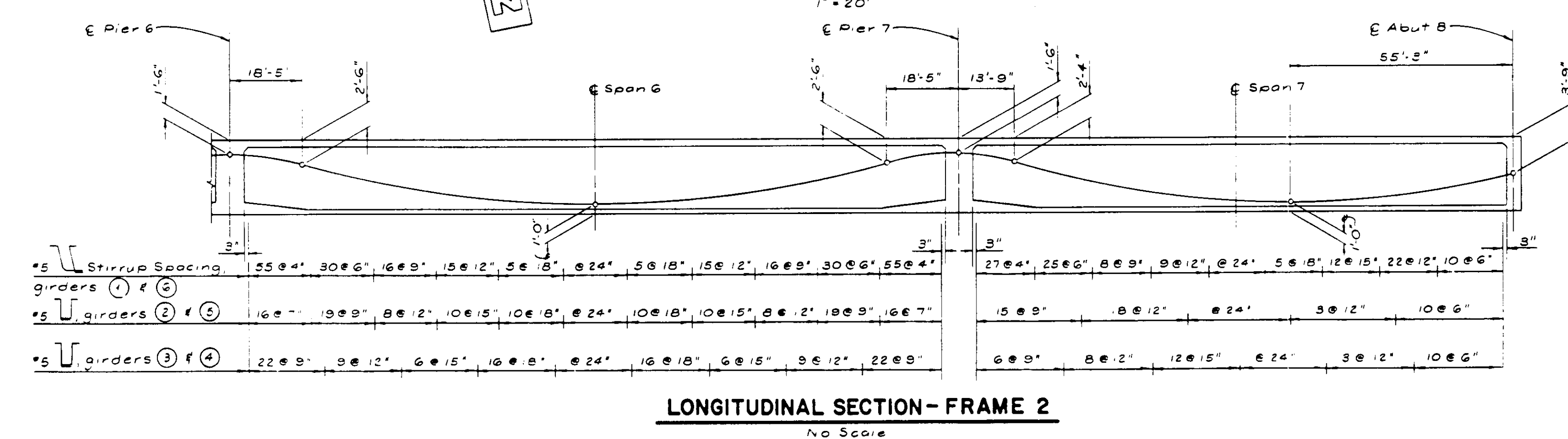
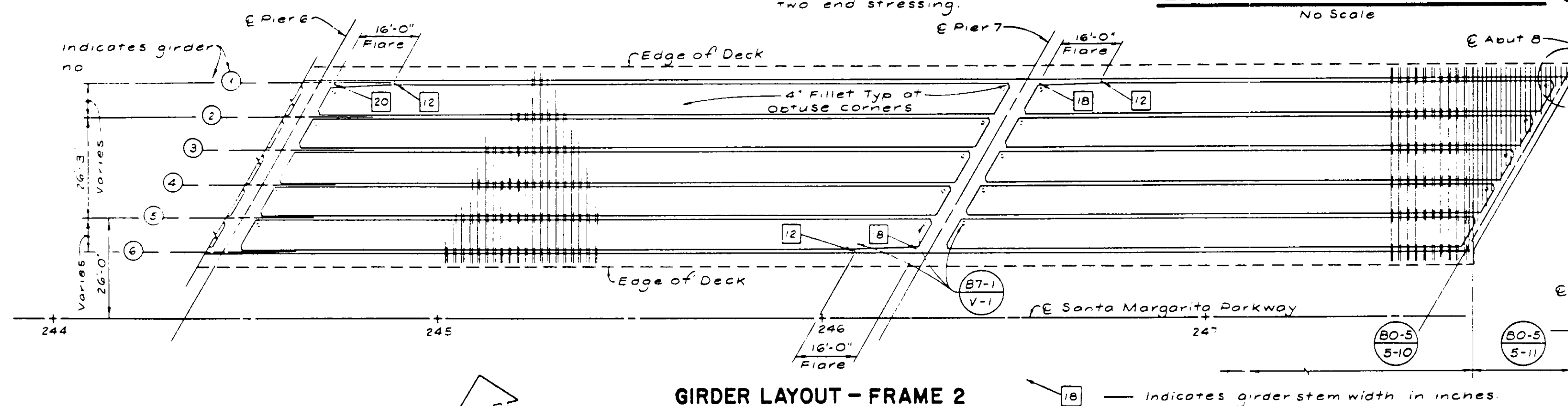
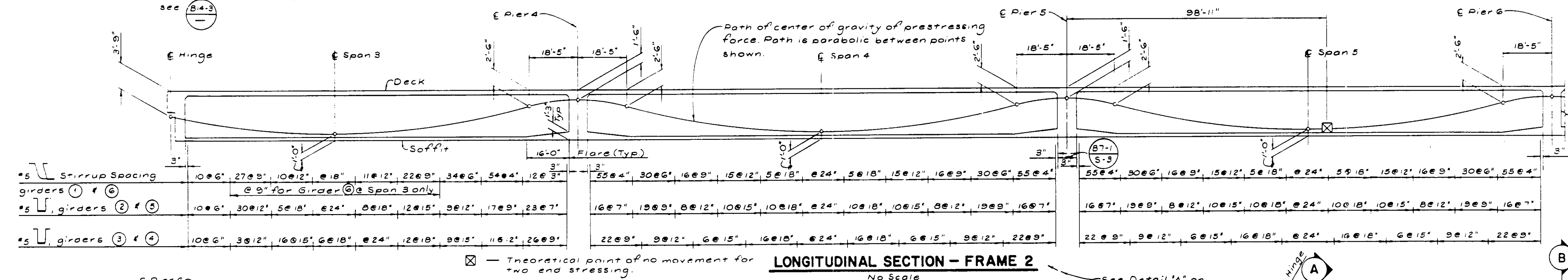
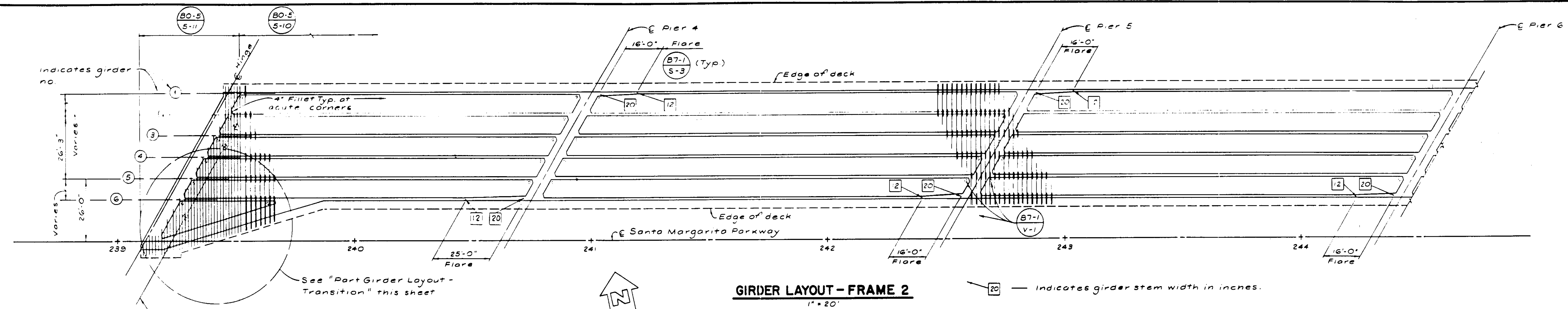
APPROVED BY: *[Signature]* R.C.E. EXPIRES DATE
C34299 9-30-91 6:28:85

**SANTA MARGARITA PARKWAY BRIDGE
OVER ARROYO TRABUCO - WIDENING**

HINGE DETAILS

SHEET
35
OF
57
SHEETS

JOB NO.



PRESTRESSING NOTES - FRAME 2:

270 KSI Low Relaxation Strand:

$P_{back} = 13.556$ kips

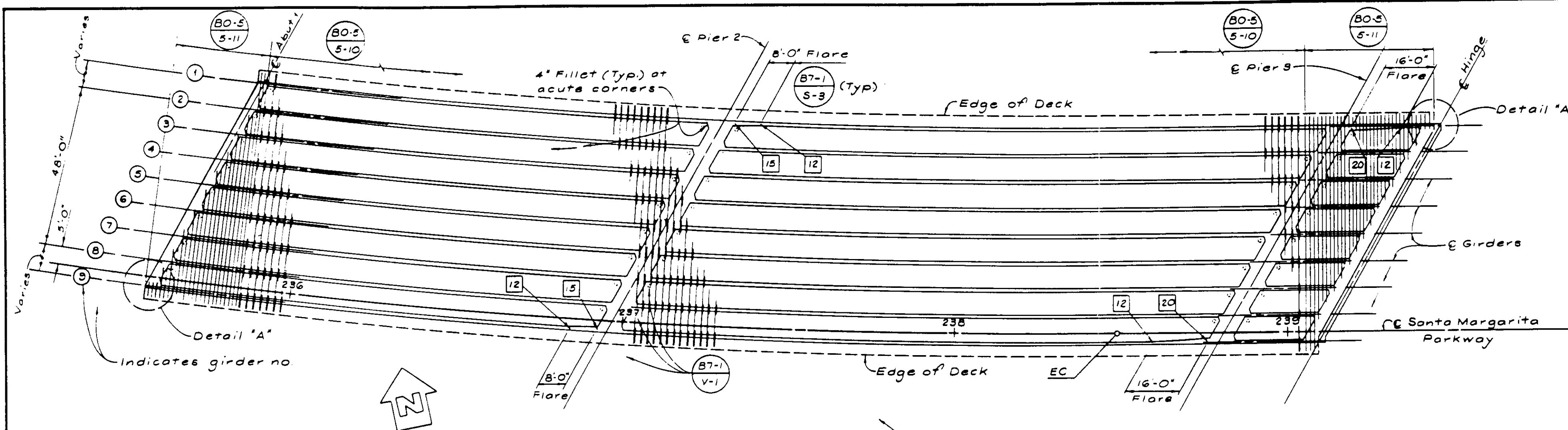
$$A = 67 \text{ in}^2$$

Anchor Set = 3/8 in

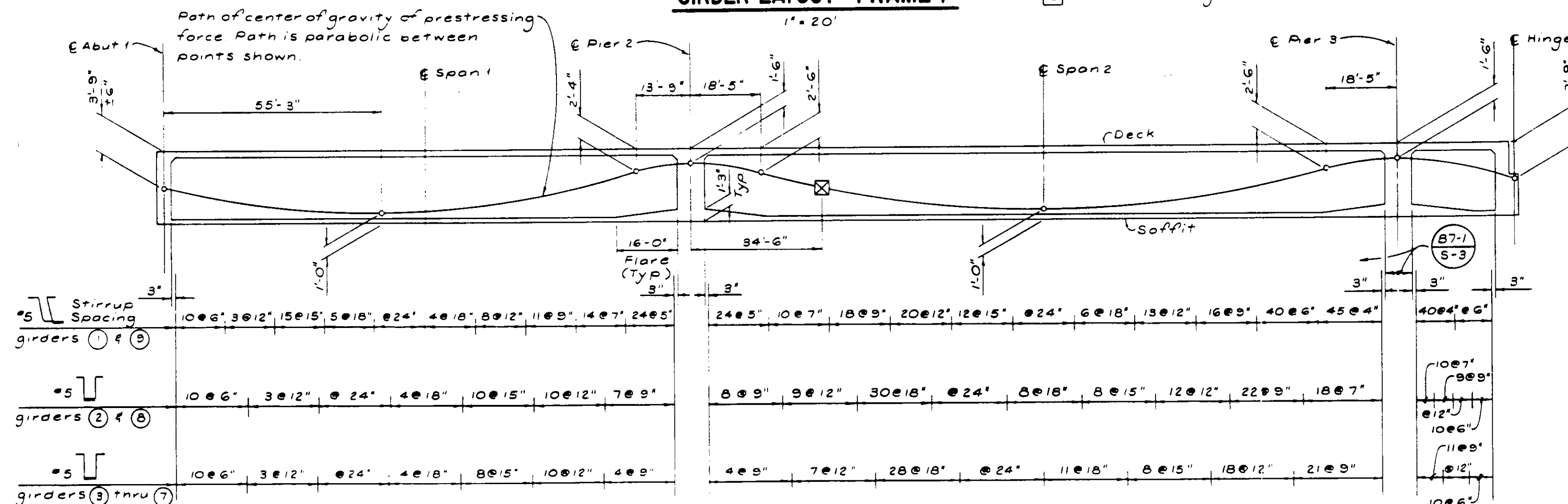
Distribution of prestress force (Pjack) between girders shall not exceed the ratio of 3:2. Maximum fipal force variation between girders shall not exceed 725^K.

Concrete: $f'_c = 4000$ psi @ 28 days
 $f'_{ci} = 3500$ psi @ time of stressing

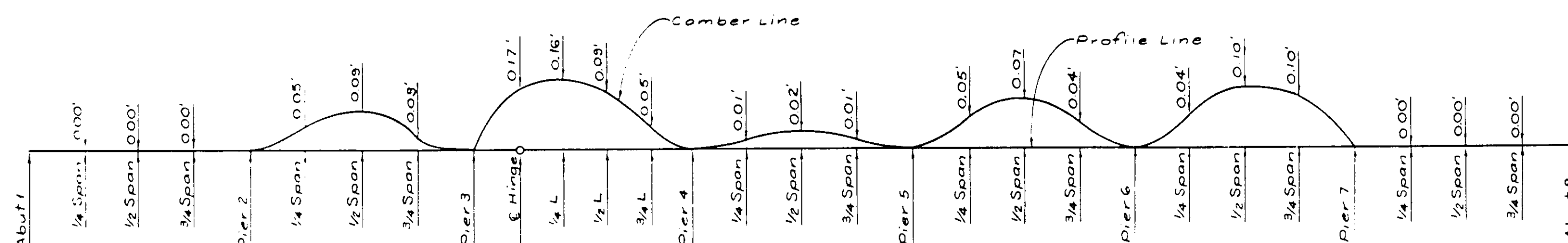
Contractor shall submit elongation calculations based on initial stress at $X = 0.737$ times jacking stress. *nd*



GIRDER LAYOUT - FRAME 1



LONGITUDINAL SECTION - FRAME 1



CAMBER DIAGRAM

(Does not include allowance for falsework takeup or settlement if any.)

PRESTRESSING NOTES - FRAME 1:

270 KSI Low Relaxation Strand:

$$P_{jack} = 12.044 \text{ kips}$$

$$A_s = 25 \text{ in}^2$$

$$\text{Anchor Set} = 2/8 \text{ in}$$

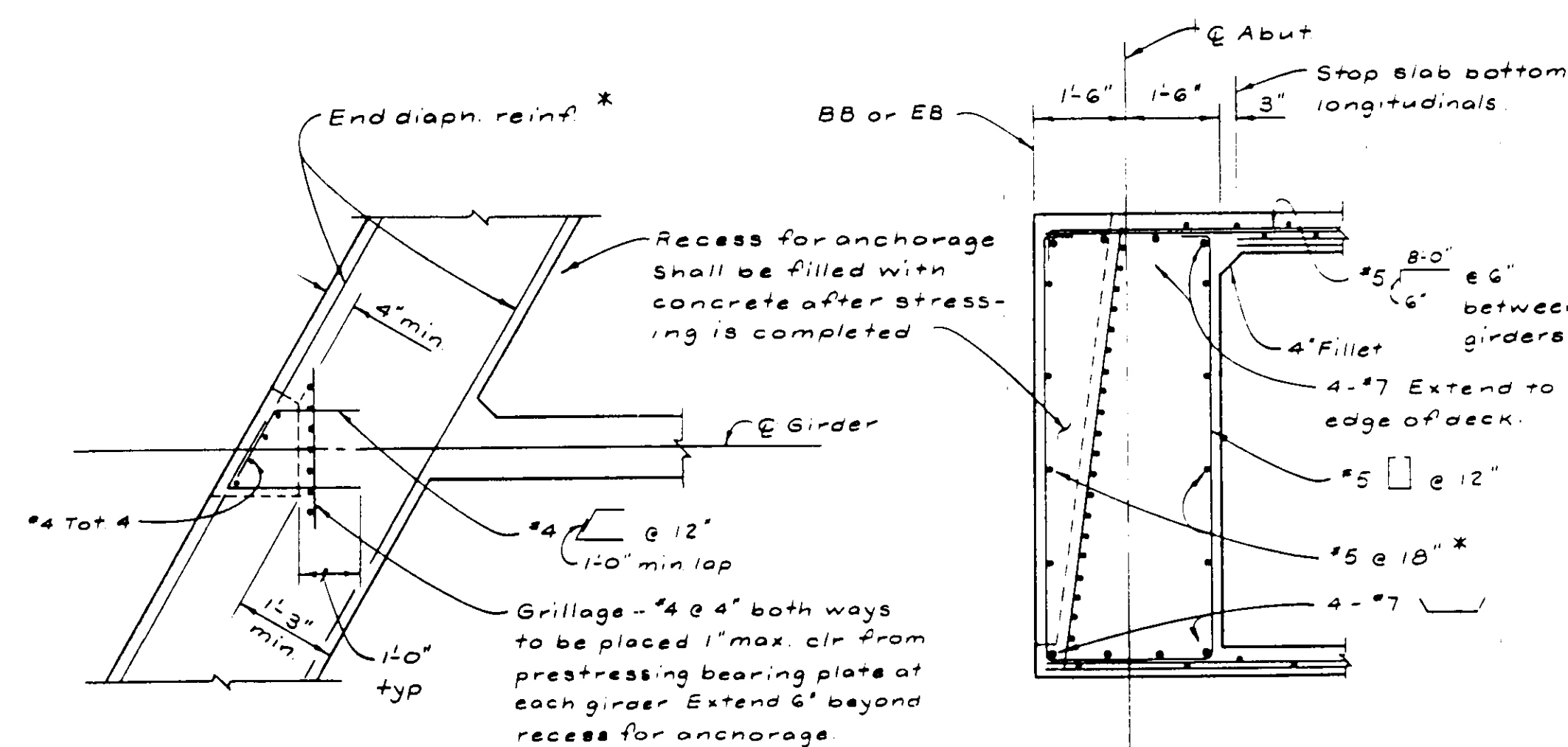
Distribution of prestress force (P_{jack}) between girders shall not exceed the ratio of 3:2. Maximum final force variation between girders shall not exceed 725'.

$$\text{Concrete: } f'_c = 4000 \text{ psi @ 28 days}$$

$$f'_{ci} = 3500 \text{ psi @ time of stressing}$$

Contractor shall submit elongation calculations based on initial stress at $\sigma_i = 0.825$ times jacking stress.

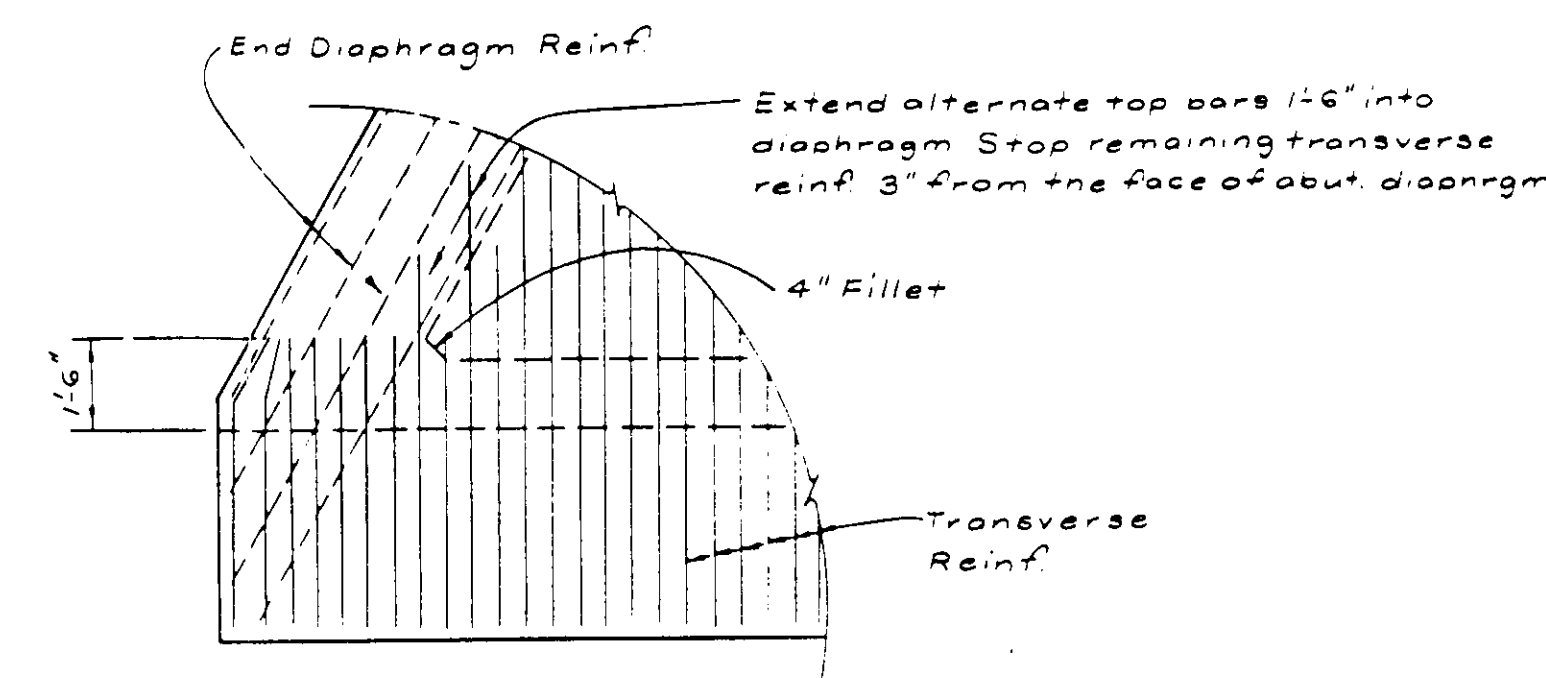
For details not shown, see 88-5



PLAN
1/2" = 1'

SECTION
1/2" = 1'

END DIAPHRAGM DETAILS



DETAIL "A"
3/8" = 1'



McDANIEL ENGINEERING COMPANY, INC.
2000 OLD TOWN AVE., SUITE 207B, SAN DIEGO, CA 92110 (619) 592-1920

APPROVED BY	RGE	EXPIRES	DATE
<i>[Signature]</i>	C 34299	9-30-91	6-28-89

**SANTA MARGARITA PARKWAY BRIDGE
OVER ARROYO TRABUCO - WIDENING**

GIRDER LAYOUT - FRAME 1

SHEET
33
OF
57
SHEETS

TYPE	36"	BACKHOE BUCKET	ELEVATION	794.5 feet	BORING	TP-1
TYPE						
RELATIVE						
COMPACTION						
DRY DENSITY						
(LB/CU.FT.)						
MOISTURE						
(%)						
BLDG./FOOT						
SAMPLE SIZE						
(INCHES)						
SAMPLE No.						
DEPTH IN						
FEET						
WATER						
CONTENT						
(%)						
LOGGED BY	JBS					
DATE	6-23-89					

TEST PIT -1

TYPE	36"	BACKHOE BUCKET	ELEVATION	794.5 feet	BORING	TP-2
TYPE						
RELATIVE						
COMPACTION						
DRY DENSITY						
(LB/CU.FT.)						
MOISTURE						
(%)						
BLDG./FOOT						
SAMPLE SIZE						
(INCHES)						
SAMPLE No.						
DEPTH IN						
FEET						
WATER						
CONTENT						
(%)						
LOGGED BY	JBS					
DATE	6-23-89					

TEST PIT -2

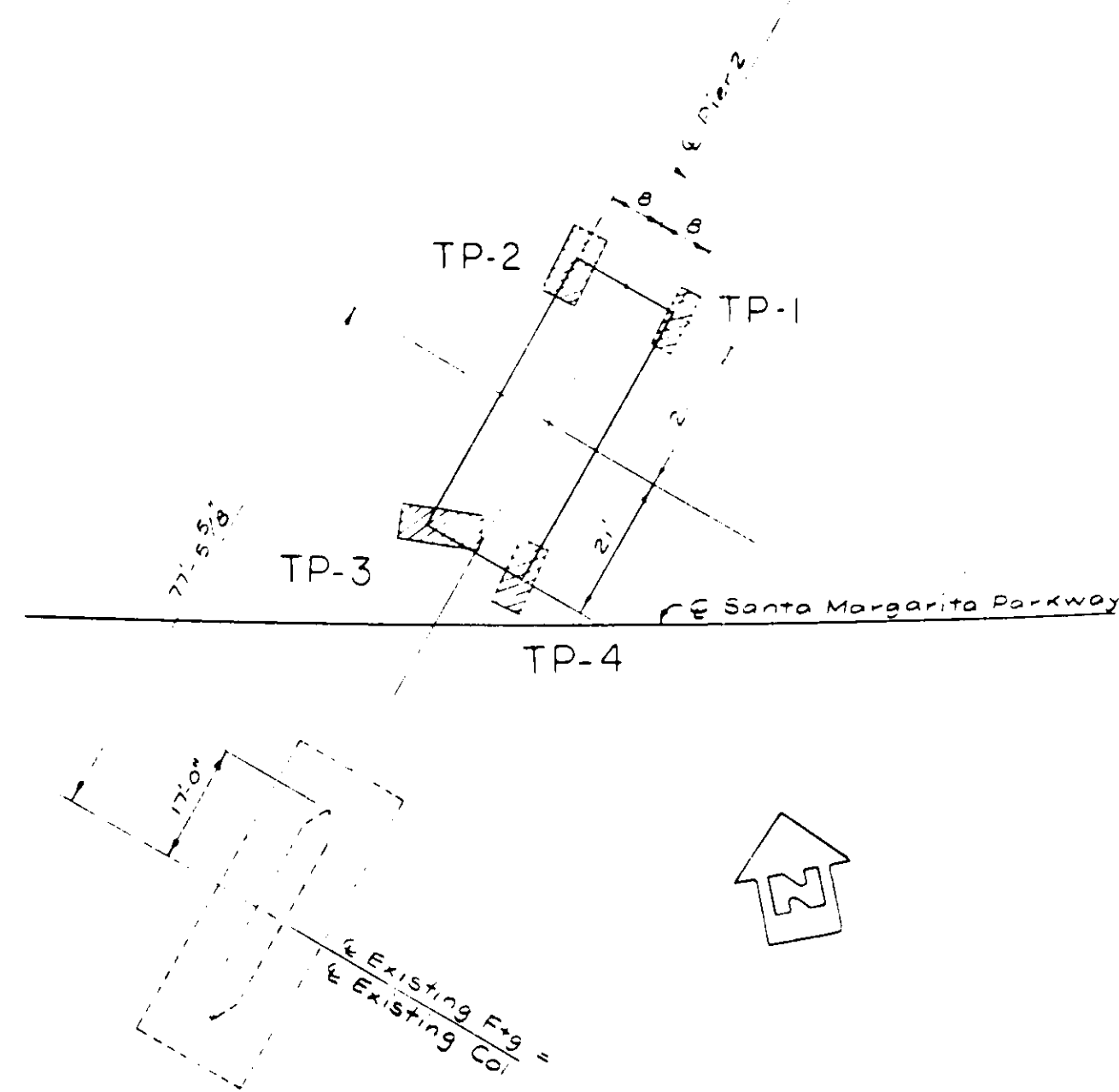
TYPE	36"	BACKHOE BUCKET	ELEVATION	795.5 feet	BORING	TP-3
TYPE						
RELATIVE						
COMPACTION						
DRY DENSITY						
(LB/CU.FT.)						
MOISTURE						
(%)						
BLDG./FOOT						
SAMPLE SIZE						
(INCHES)						
SAMPLE No.						
DEPTH IN						
FEET						
WATER						
CONTENT						
(%)						
LOGGED BY	JBS					
DATE	6-23-89					

TEST PIT -3

TYPE	36"	BACKHOE BUCKET	ELEVATION	795.0 feet	BORING	TP-4
TYPE						
RELATIVE						
COMPACTION						
DRY DENSITY						
(LB/CU.FT.)						
MOISTURE						
(%)						
BLDG./FOOT						
SAMPLE SIZE						
(INCHES)						
SAMPLE No.						
DEPTH IN						
FEET						
WATER						
CONTENT						
(%)						
LOGGED BY	JBS					
DATE	6-23-89					

TEST PIT -4

GEOTECHNICAL INVESTIGATION PERFORMED BY:
MOORE & TABER
GEOTECHNICAL ENGINEERS & GEOLOGISTS
4530 East La Palma Avenue
Anaheim, California 92807
Telephone (714) 779-2591



LOCATION OF TEST PITS
1" = 20'

McDANIEL ENGINEERING COMPANY, INC. 3990 OLD TOWN AVE., SUITE 207B, SAN DIEGO, CA 92110 (619) 692-1920	DESIGNED BY WMA	SANTA MARGARITA PARKWAY BRIDGE OVER ARROYO TRABUCO - WIDENING	SHEET 45 OF 57 SHEETS
	APPROVED BY 		
CHECKED BY C.C.	FIELD BOOK	LOG OF TEST BORINGS - 3	JOB NO.

UNIFIED SOIL CLASSIFICATION

PT	OH	CH	MH	OL	CL	ML	SC	SM	SP	SW	GC	GM	GP	GW
Soils are classified into one of the following categories based on the results of the liquid limit (LL) and plastic limit (PL) tests. The classification is indicated by the letters in the boxes above. The first letter indicates the consistency of the soil at liquid limit, and the second letter indicates the plasticity of the soil. The numbers in the boxes indicate the percentage of fines (passing No. 200 sieve) in the soil.														

LABORATORY CLASSIFICATION CRITERIA

LL	PL	Classification
LL > 25	PL > 7	CL or CL-ML
LL > 25	PL < 7	CH or CH-ML
LL < 25	PL > 7	CL or CL-ML
LL < 25	PL < 7	CH or CH-ML

CONSISTENCY CLASSIFICATION FOR SOILS

Consistency	Very soft	Soft	Stiff	Very stiff	Hard	Very hard
Penetration (mm)	> 25	10-25	5-10	2-5	< 2	< 1

LEGEND OF BORING

Symbol	Description
○	Rotary Boring (Wet)
□	Auger Boring (Dry)

LEGEND OF PENETRATION TEST

Symbol	Description
○	Penetration Test
□	Penetration Test

TYPE 24" Bucket Auger										BORING B-4	
										ELEVATION 795.4	
										Bag 1	
										12.0	
										Bag 2	
										10.0	
										Bag 3	
										11.1	
										Bag 4	
										11.2	
										Bag 5	
										Bag 6	
										Notes:	
										1) No groundwater encountered.	
										2) Boring open to 20'.	
										3) Backfilled 5/31/88.	
										LOGGED BY JBS	
										DATE 5/31/88	

TEST BORING LOG B-4

TYPE 24" Bucket Auger										BORING B-5	
										ELEVATION 795.0	
										Bag 1	
										5	
										Notes:	
										1) Boring stopped due to refusal at six feet.	
										2) No groundwater encountered.	
										LOGGED BY JBS	
										DATE 5/31/88	

TEST BORING LOG B-5

TYPE 24" Bucket Auger										BORING B-6	
										ELEVATION 798.5	
										Bag 1	
										5	
										Bag 2	
										10	
										Bag 3	
										15	
										Bag 4	
										20	
										Bag 5	
										25	
										Notes:	
										1) Groundwater seepage at 12.5'.	
										2) Total depth of boring 23' cased to 19'.	
										3) Backfilled 6/1/88.	
										LOGGED BY JBS	
										DATE 6/1/88	

TEST BORING LOG B-6

GEOTECHNICAL INVESTIGATION PERFORMED BY:
MOORE & TABER
GEOTECHNICAL ENGINEERS & GEOLOGISTS
4530 East La Palma Avenue
Anaheim, California 92807
Telephone (714) 779-2591

McDANIEL ENGINEERING COMPANY, INC.

3090 OLD TOWN AVE., SUITE 207B, SAN DIEGO, CA 92110 (619) 592-1820

DESIGNED BY

WMA

DRAWN BY

OMC

CHECKED BY

CCC

FIELD NO.

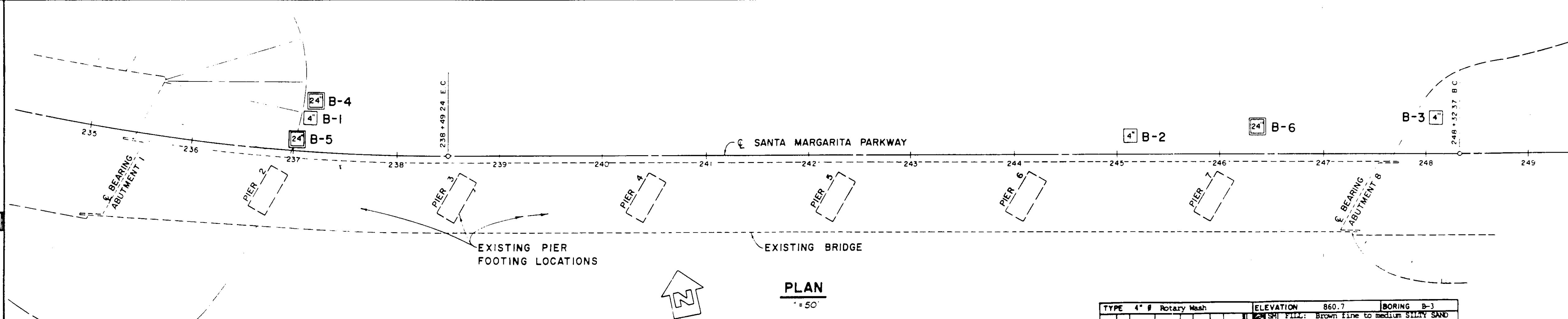
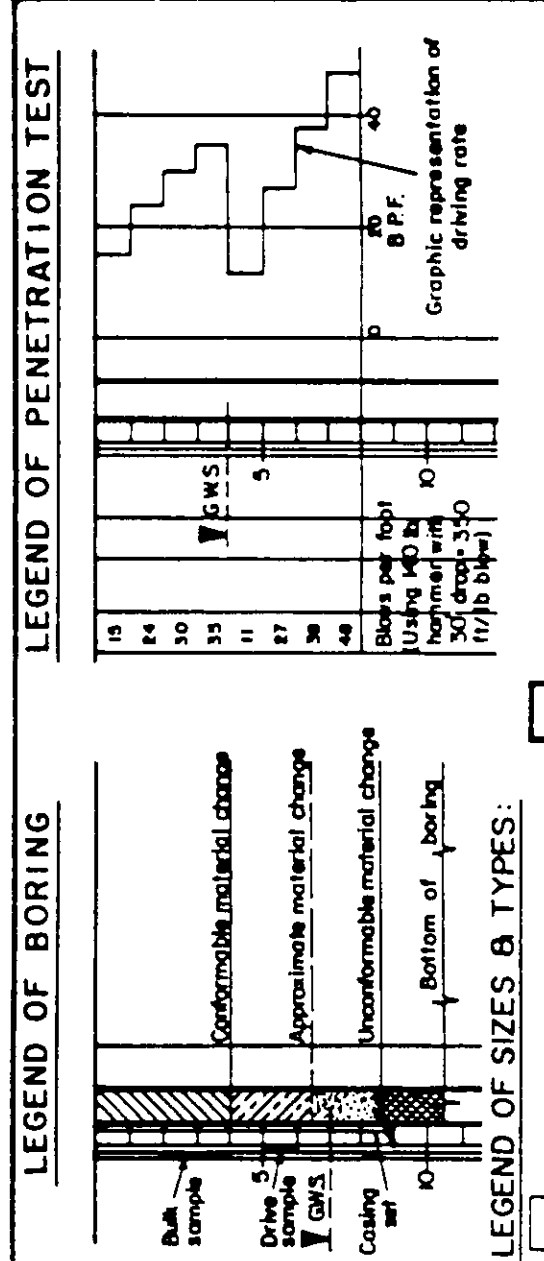
SANTA MARGARITA PARKWAY BRIDGE
OVER ARROYO TRABUCO - WIDENING

LOG OF TEST BORINGS-2

SHEET
44
OF
57
SHEETS

JOB NO.

ClibPDF - www.fastio.com



TYPE 4" x 8 Rotary Mast.										ELEVATION 794.8		BORING B-1	
DEPTH FEET	CORRECTION FEET	RELATIVE CORRECTION FEET	BPT DEPTH FEET	MOISTURE %	RHOBY FEET	SAMPLE SIZE (INCHES)	SAMPLE NO	DEPTH IN FEET	MATERIAL UNITED SOIL				
17										SC	NATIVE: Brown fine to medium CLAYEY SAND with GRAVEL and scattered cobbles in upper two feet ... with GRAVEL and cobbles ... decreasing CLAY with depth		
	109	15.1	10	2.5	1	30	1.4	2	5	SV	Grayish brown fine SILTY SAND		
										TV	Weathered gray fine friable SANDSTONE		
			50	1.4	4	8"			15				
										TV	Brown SANDY SILTSTONE		
	126	12.7	100	2.5	5	50	1.4	4	20				
										TV	Gray SANDSTONE		
			50	1.4	6	8"			25				
										TV	Brown SILTSTONE		
			50	1.4	7	8"			30				
10										TV	... mottled reddish brown and gray with varying amounts of SAND		
	103 109	17.2 17.5	50 5"	1.4 8	4 8				35				
										TV	Brown SANDY SILTSTONE		
	110 111	11.1 14.9	p* 14.9	3.0 9					40				
										NOTES: 1. Casing installed to about 10 feet. 2. Caving to 24' after casing removed. 3. Boring backfilled 3/8/88. 4. Possible seepage at about 6 feet.			
THIS BORING LOG SUMMARY APPLIES ONLY AT THE TIME AND LOCATION INDICATED. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER SUBSURFACE CONDITIONS AND TIMES.													
LOGGED BY GPH										DATE 3/7/88			

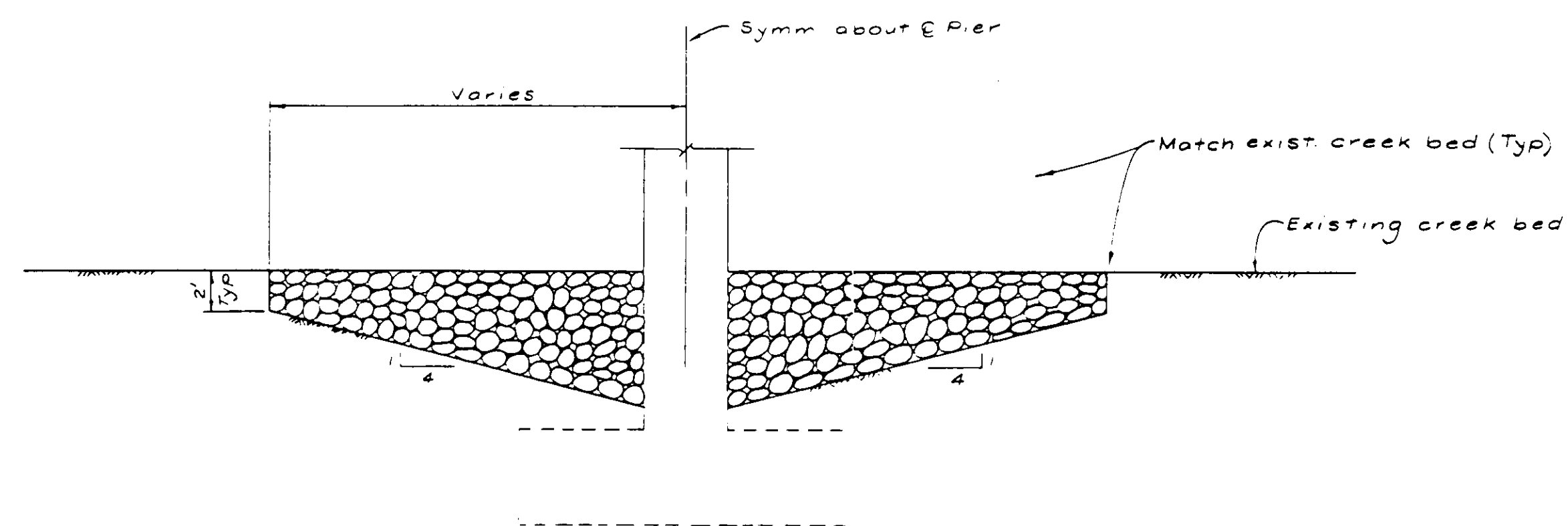
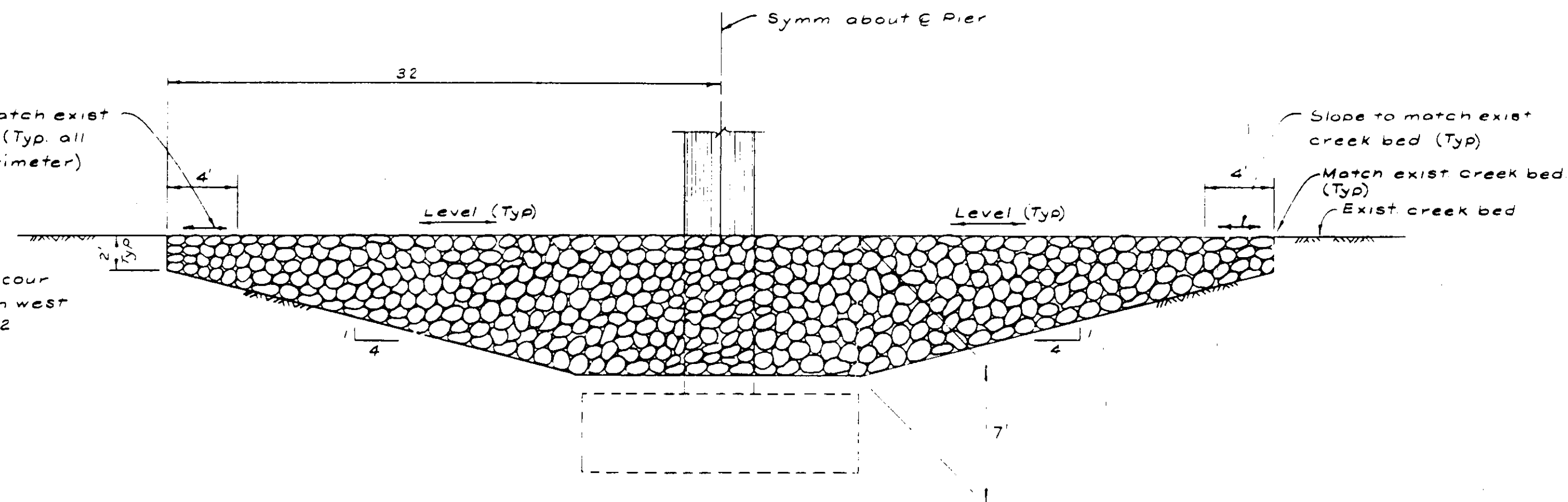
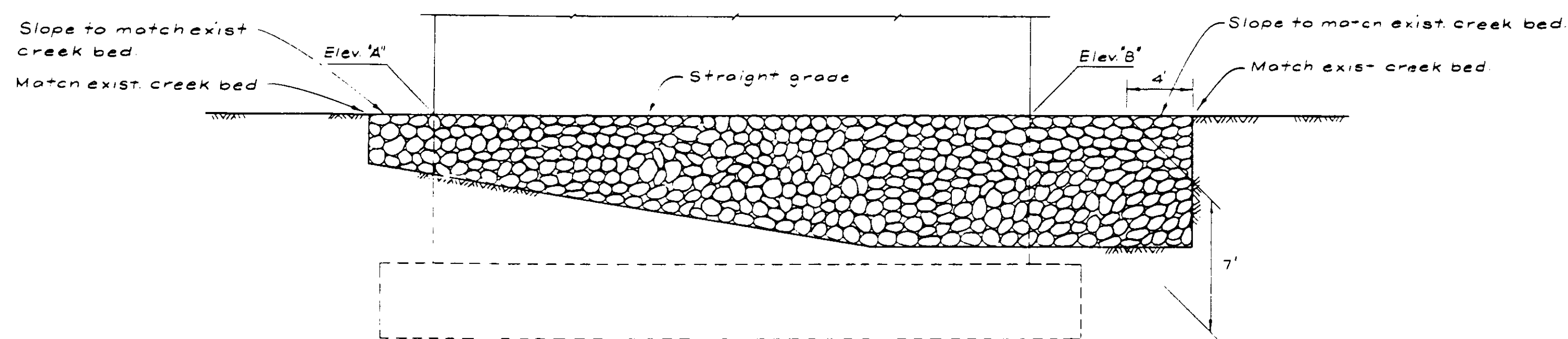
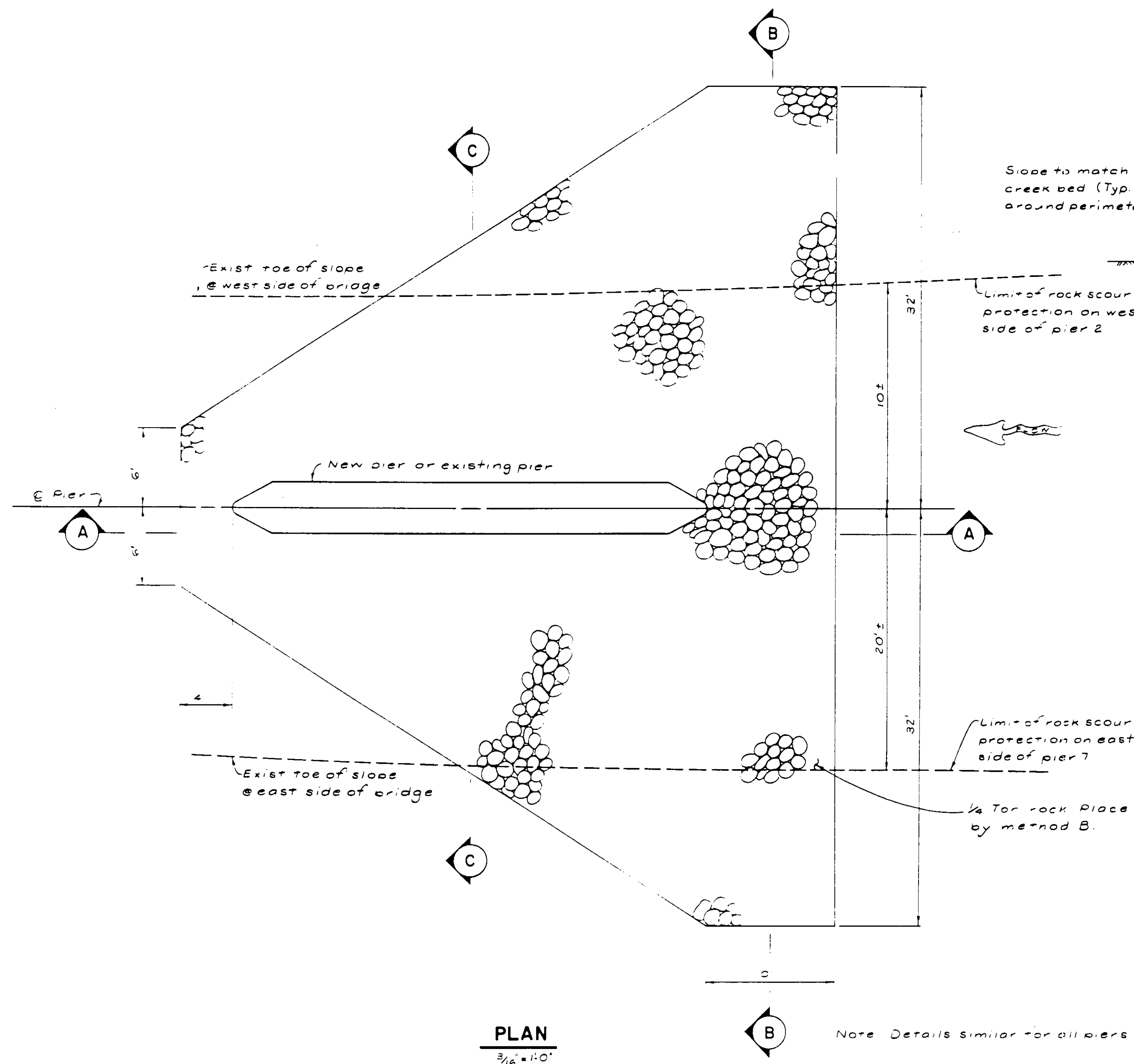
TYPE 4" Ø Rotary Wash				ELEVATION 796.4		BORING B-2	
1.0	-	disturbed	23	1.4	1	25 SP ... decreasing SILT content with depth ... increasing GRAVEL and cobbles	5 10 15 20 25 30 35 40
			50	2.5	2		
			10	1.4	3		
			4"	1.4	3		
			50	1.4	4		
			4"	1.4	4		
			80	2.5	5		
			100	2.5	6		
			6"	2.5	6		
			14	110	13.9		
108	14.5	p*	3.0	7			
50	1.4	8					
4"	1.4	8					
10.7	p*	3.0	9				
18+	123	10.7	50	1.4	10		
132	10.9	2.5	10				
NOTES:							
1. Caving below 7 feet.							
2. Casing installed to 25' was pulled to 17' after drilling.							
3. Groundwater measured at 14' 13.5 hours and 15 days after drilling.							
4. Boring open to 35' after removing casing.							
* Pitcher sample taken							
PROCTOR COMPACTION RELATIVE DENSITY (LABORATORY)	BLOW / FOOT 60 INCHES SAMPLES PER FEET	WATER CONTENT (%)	NATURAL MOISTURE (%)	SAMPLES PER FEET	THIS BORING LOG SUMMARY APPLIES ONLY AT THE TIME AND LOCATION INDICATED. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND TIMES.		
LOGGED BY: GPH					DATE 3/14/88		

TYPE	4" #	Rotary Wash	ELEVATION	BORING B-3
		Bag 1	860.7	
120	11.7	11 2.5 2	SM	FILL: Brown fine to medium SILTY SAND with GRAVEL and cobbles
		20 1.4 3	ML	Reddish-brown fine SILTY SAND
			5	Brown CLAYEY SILT with minor amounts of SAND
128	8.7	33 2.5 4	SP SM	NATIVE: Tan fine to coarse GRAVELLY SAND with varying amounts of SILT and CLAY
		35 1.4 5		... with increased GRAVEL and scattered cobbles
			CL	Brown SANDY CLAY
110	17.8	80 2.5 6	SC	Reddish brown fine CLAYEY SAND with GRAVEL and scattered cobbles
		50 1.4 7	SP SC	Tan fine to coarse GRAVELLY SAND with scattered cobbles and varying amounts of CLAY
		50 1.4 8		... increased GRAVEL and cobble content
		35 1.4 9		
		47 1.4 10	ML	Brown CLAYEY SILT with varying amounts of SAND and scattered GRAVEL
		Bag 11	SH	Light brown fine SILTY SAND
88	1.4	12		
		76 1.4 13	SP SM	Gray fine SAND with SILT nodules ... scattered GRAVEL and cobbles between 53.5' and 55'
		45 1.4 14		... with SILTY SAND interlayers
			60	
			65	
			70	
			75	Tan GRAVELLY SAND with cobbles
50	1.4	15	TV	Weathered brown SILTY SANDSTONE
4"				
			80	
				NOTES: 1. Boring open to 50' after caving overnight. 2. Boring backfilled 3/16/88.
RELATIVE COMPACTION	DRY DENSITY (LB/CU FT)	WET DENSITY (PCF)	DEPTH IN FEET	MATERIAL IDENTIFIED BY CLASS
				THIS BORING LOG SUMMARY APPLIES ONLY AT THE TIME AND LOCATION INDICATED. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND TIMES.
			LOGGED BY GPH	DATE 3/15/88

TEST BORING LOG B-3

GEOTECHNICAL INVESTIGATION PERFORMED BY :
MOORE & TABER
GEOTECHNICAL ENGINEERS & GEOLOGISTS
4530 East La Palma Avenue
Anaheim, California 92807
Telephone (714) 779-2591

 McDANIEL ENGINEERING COMPANY, INC. 3880 OLD TOWN AVE., SUITE 307B, SAN DIEGO, CA 92110 (619)882-1920	DESIGNED BY WMA	SANTA MARGARITA PARKWAY BRIDGE OVER ARROYO TRABUCO - WIDENING	SHEET '03 OF 57 SHEETS
	DRAWN BY OMC		
APPROVED BY 	R.C.E. C 34299	EXPIRES 9-30-83	DATE 6-28-89
FIELD BOOK		LOG OF TEST BORINGS - I	JOB NO.



LOCATION	NEW WIDENING		EXISTING BRIDGE	
	Elev. "A"	Elev. "B"	Elev. "A"	Elev. "B"
PIER 2	795.5'	795.5'	791.0'	792.0'
PIER 3	791.5'	792.5'	789.0'	790.5'
PIER 4	792.5'	793.5'	793.0'	793.0'
PIER 5	793.5'	794.0'	792.0'	792.0'
PIER 6	795.5'	796.0'	793.0'	794.0'
PIER 7	798.5'	798.5'	796.0'	797.0'



McDANIEL ENGINEERING COMPANY, INC.
3880 OLD TOWN AVE., SUITE 207B, SAN DIEGO, CA 92110 (619) 692-1920

APPROVED BY: *[Signature]* RCE
C34299

EXPIRES: 9-30-91
DATE: 6-28-91

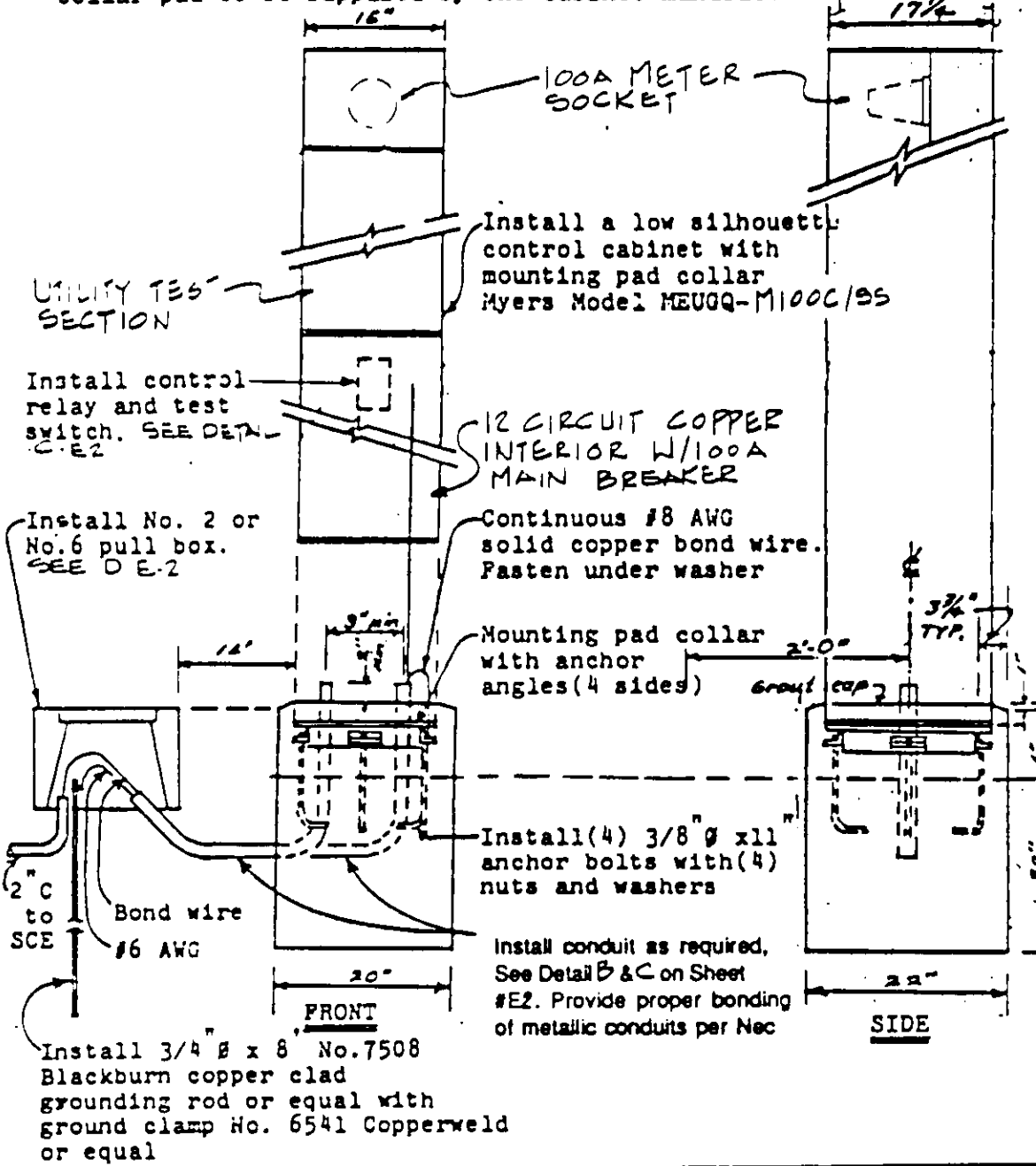
DESIGNED BY: WMA
DRAWN BY: RL A
CHECKED BY: CCC
FIELD BOOK

**SANTA MARGARITA PARKWAY BRIDGE
OVER ARROYO TRABUCO - WIDENING**

ROCK SCOUR PROTECTION DETAILS

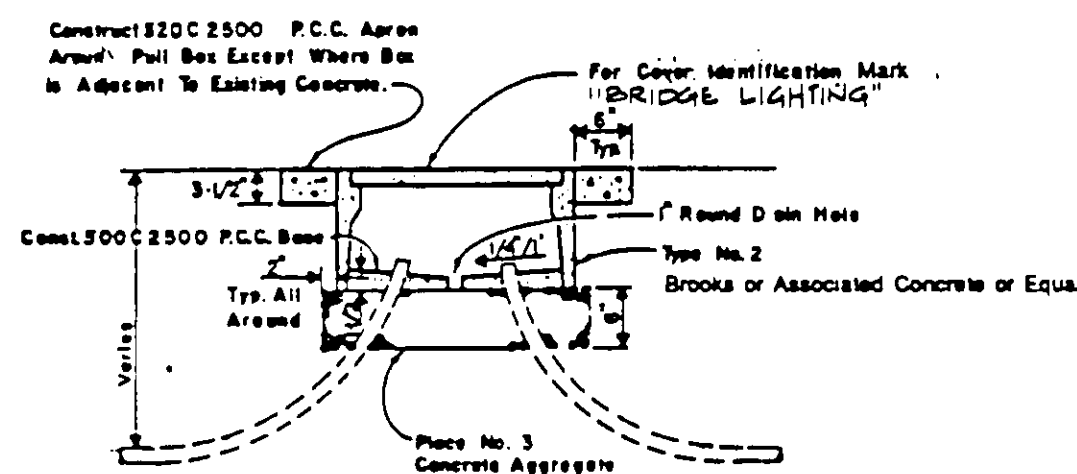
SHEET 42 OF 57 SHEETS
JOB NO.

1. Contractor shall provide 2 ea. renewable padlocks as required. PSI-Best Co.
2. Hinged access door.
3. Contractor to furnish Photo Cell.
4. Contractor to furnish one 15A circuit breaker for control circuit and three #12 THW stranded conductors with tracers.
5. The control cabinet shall be mounted on a 12-1/2 x 14-1/4 mounting collar pad to be supplied by the cabinet manufacturer.



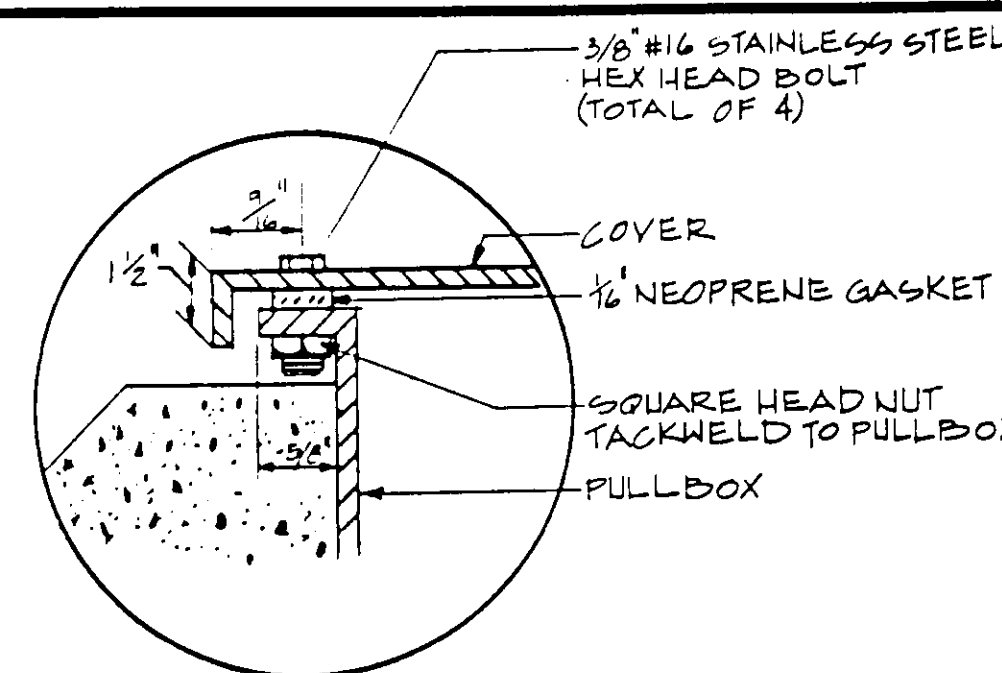
MULTIPLE CIRCUIT CONTROL CABINET & FOUNDATION

A
E2



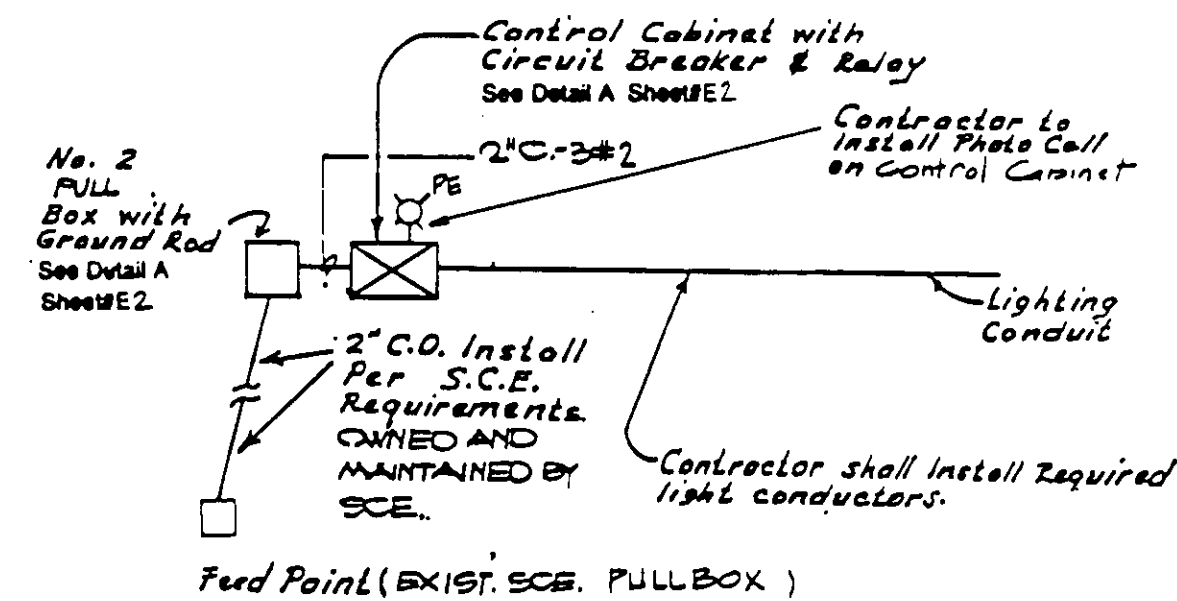
TYPICAL PULL BOX INSTALLATION

D
E2



DETAIL F NTS

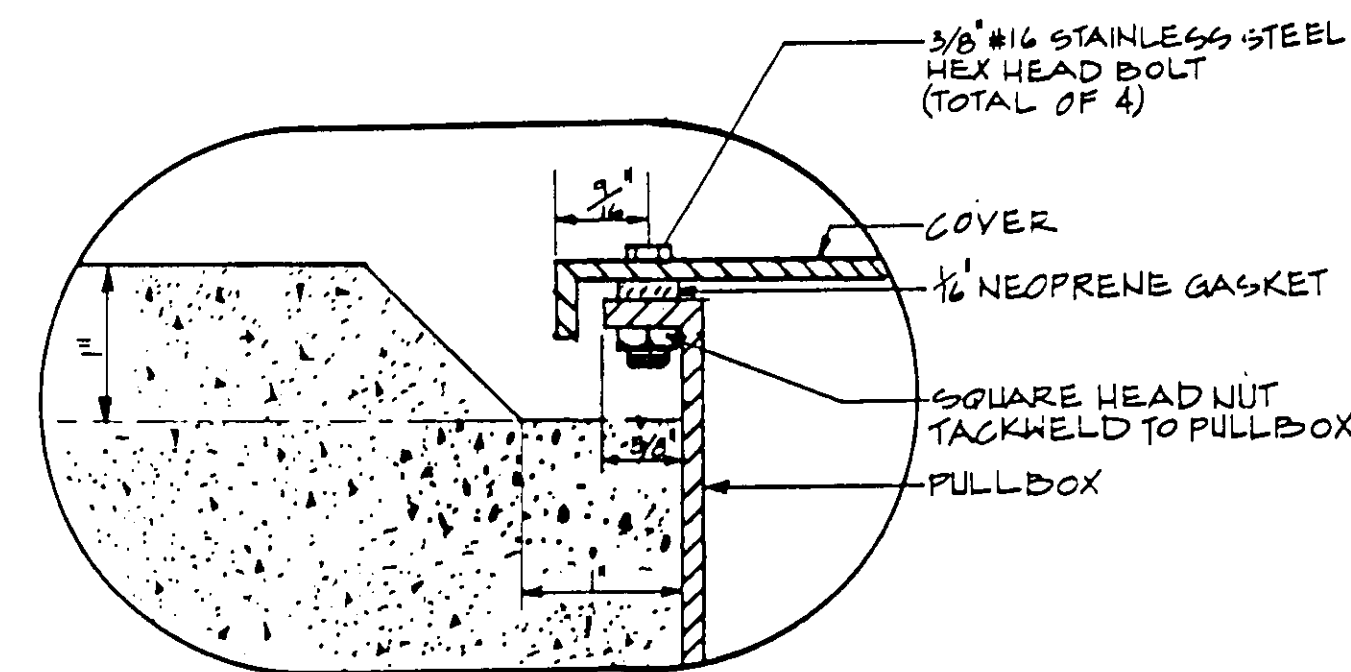
F
E2



Note: All wires shall be THW 600 Volts

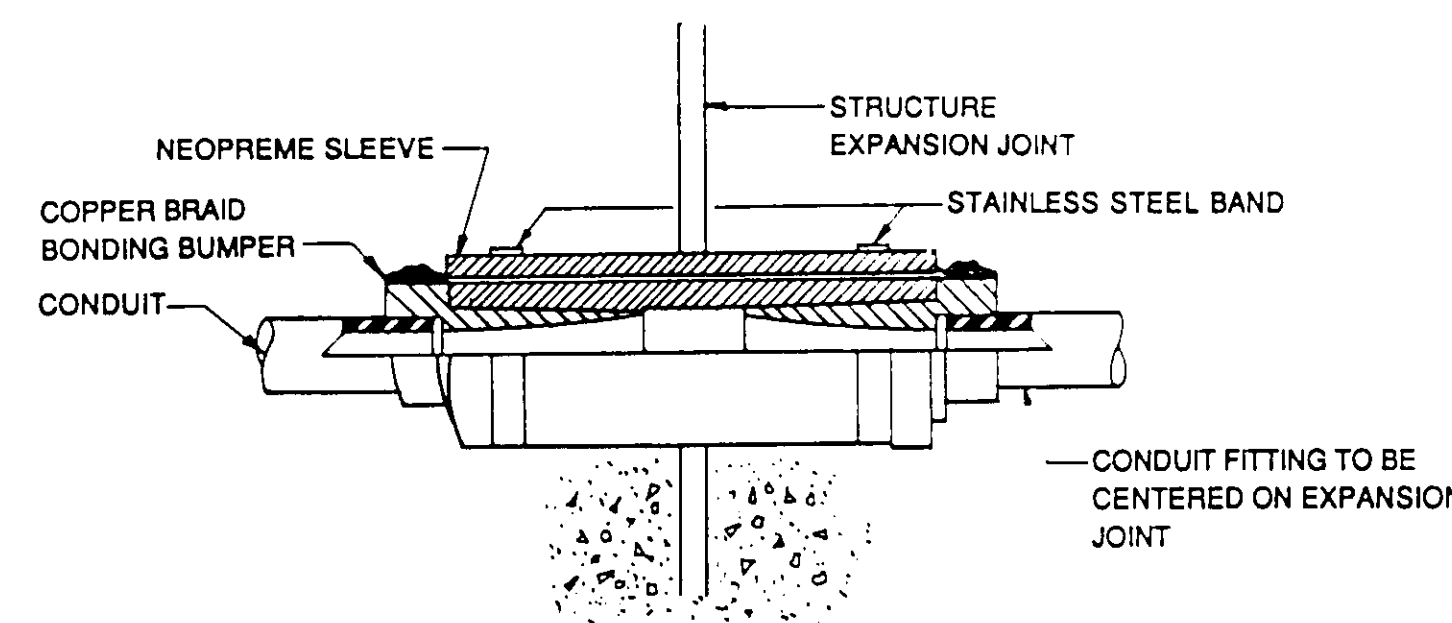
DETAIL OF FEED POINT W/ P.E.

B
E2



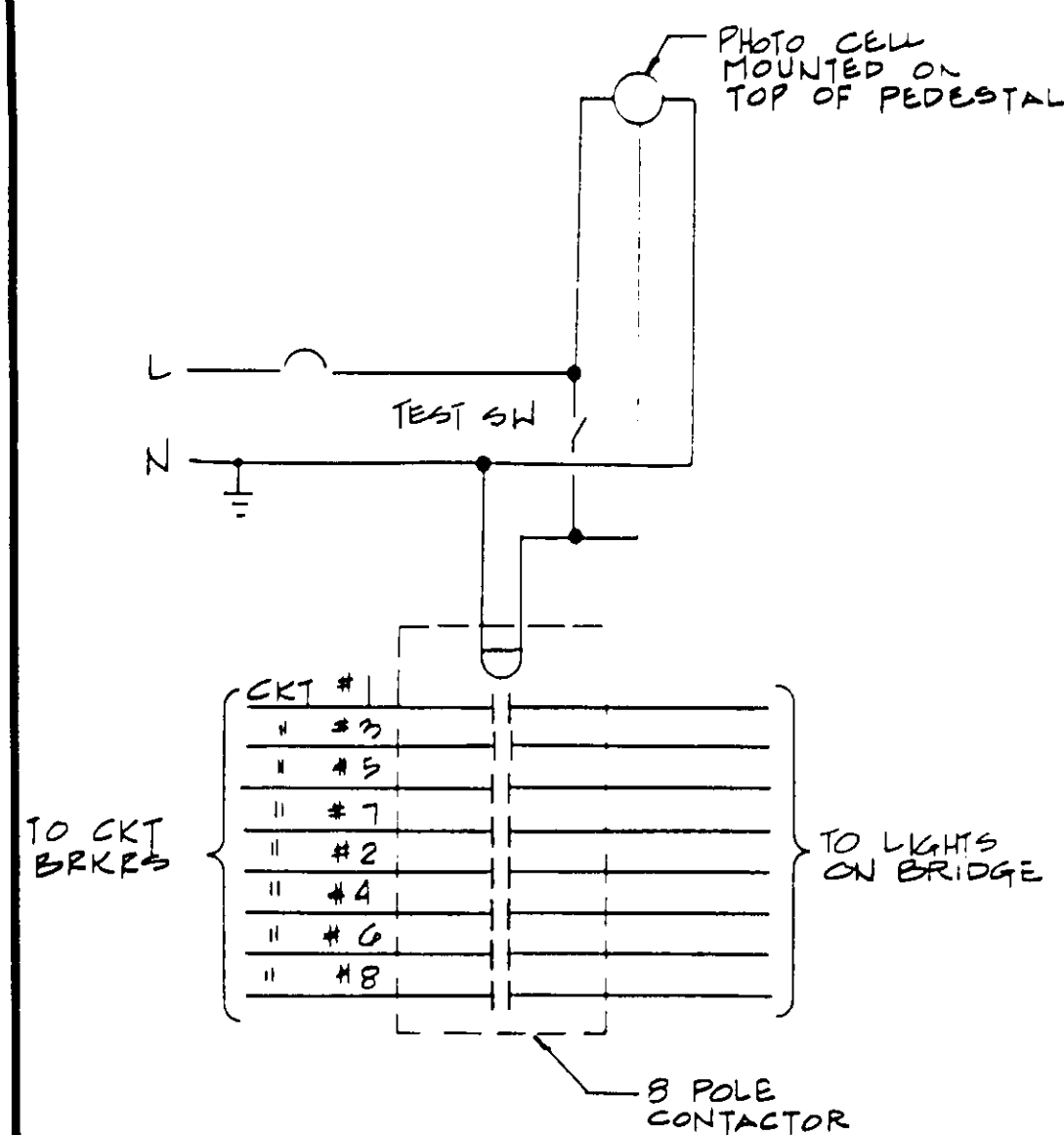
DETAIL E NTS

E
E2



DETAIL Y CONDUIT EXPANSION DEFLECTION FITTING

G
E2

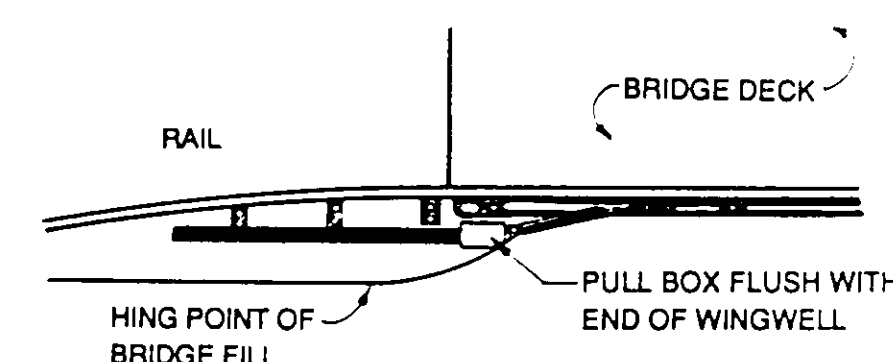


CONTROL DIAGRAM

C
E2

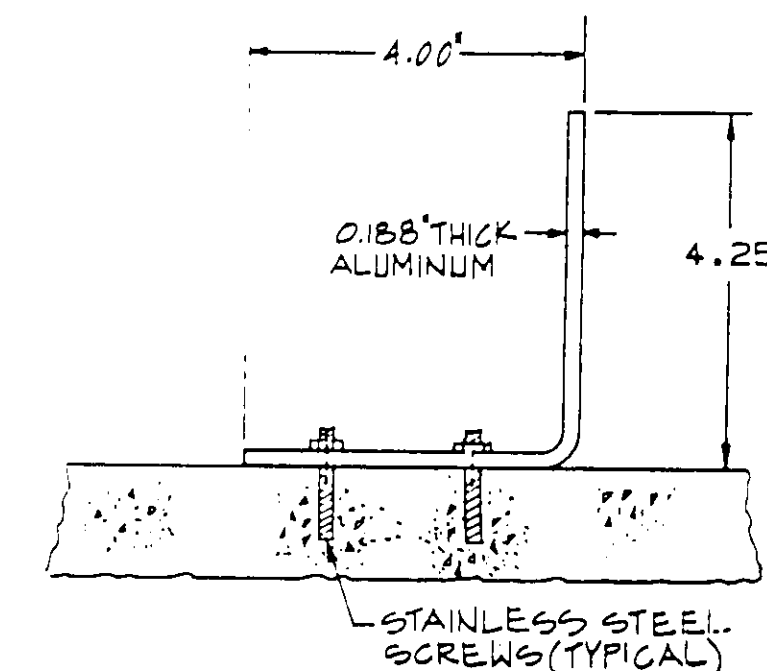
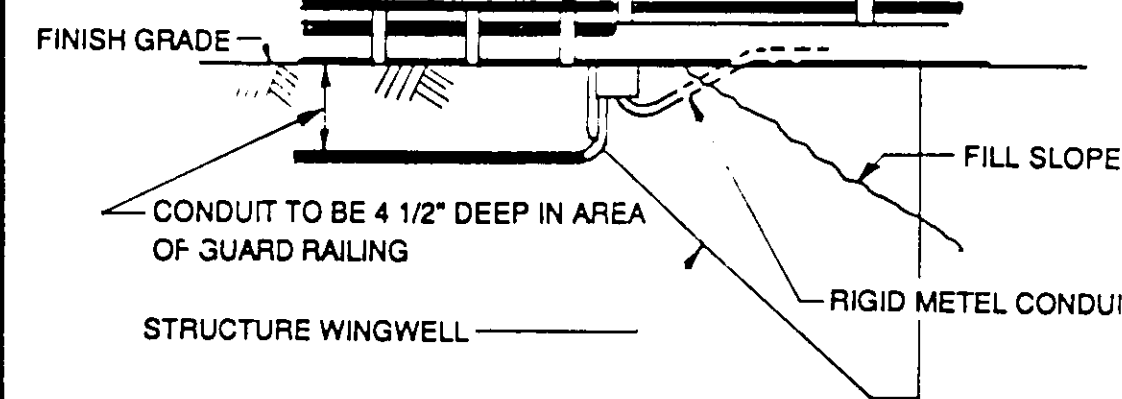
PANEL A LOCATION: WEST END OF BRIDGE MOUNTING: PEDESTAL													
VOLTAGE/PHASE: 120/240V 1Ø 3W BUS AMPS: 100 MAIN BREAKER: 100A 2P													
REMARKS	LTO	REC	MISC	A	B	CKT	POLE	A	B	BRKR/	WATTS/YA	OUTLETS	REMARKS
WEST SIDE SOUTH	22			1485	X	1-	20/2	---	20/2	2-	1890	X	22 WEST SIDE SOUTH
				X	1485	3-	---	---	4-	X	1890		
				X	X	5-	---	---	20/2	6-	1350	X	22 WEST SIDE NORTH
				X	X	7-	---	---	8-	X	1350		
CONTROL CKT				100	X	9-	20/1	---	---	10-	X	X	
				X	X	11-	---	---	12-	X	X		
TOTAL #A = 4825 WATTS													
TOTAL #B = 4725 WATTS													
LCL = 2802 WATTS													
TOTAL 12352 W/YA @ 240V 1Ø = 51.5 AMPS													

PANEL B LOCATION: EAST END OF BRIDGE MOUNTING: PEDESTAL													
VOLTAGE/PHASE: 120/240V 1Ø 3W BUS AMPS: 100 MAIN BREAKER: 100A 2P													
REMARKS	LTO	REC	MISC	A	B	CKT	POLE	A	B	BRKR/	WATTS/YA	OUTLETS	REMARKS
EAST SIDE SOUTH	22			1485	X	1-	20/2	---	20/2	2-	1755	X	26 EAST SIDE CENTER
				X	1485	3-	---	---	4-	X	1755		
EAST SIDE CENTER	29			1958	X	5-	20/2	---	20/2	6-	1283	X	19 EAST SIDE NORTH
				X	1958	7-	---	---	8-	X	1283		
CONTROL CKT				100	X	9-	20/1	---	---	10-	X	X	
				X	X	11-	---	---	12-	X	X		
TOTAL #A = 6581 WATTS													
TOTAL #B = 6481 WATTS													
LCL = 2835 WATTS													
TOTAL 15897 W/YA @ 240V 1Ø = 66.4 AMPS													



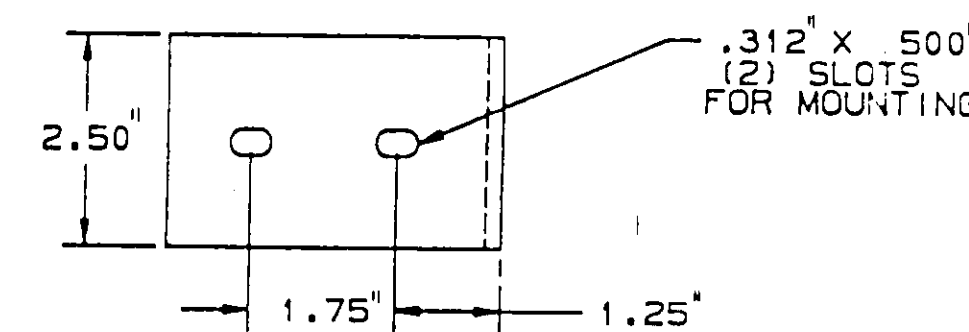
DETAIL I CONDUIT TERMINATION

H
E2



MOUNTING BRACKET DETAIL

I
E2



SPARVAN INCORPORATED
ELECTRICAL & CONTROL SYSTEM ENGINEERS
4140 NORSE WAY
LONG BEACH, CA 90808
PHONE (310) 425-1233

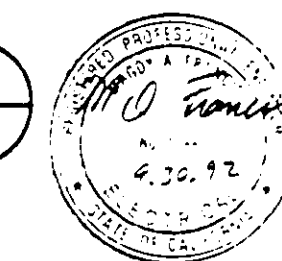
JUNE 28, 1989

SANTA MARGARITA PARKWAY BRIDGE
OVER ARROYO TRABUCO - WIDENING

BRIDGE LIGHTING DETAILS
AND PANEL SCHEDULES

SHEET
47
OF
57

JOB NO.



BRIDGE REPORT

14W24

Bridge No. 55C - 520

DS-M58 (REV. 4/90)

Location 12 - Ora - FAS W458-CR
Dist Co Rte City

REVISED ORIGINAL REPORT

Date of Investigation May 18, 1990

Name ARROYO TRABUCO (Santa Margarita Parkway, 2.7 miles southeast of El Toro Road)

Lat. 33° - 38.3'N Long. 117° - 36.8'W

Custodian County of Orange Owner County of Orange

STRUCTURAL DATA AND HISTORY

Year Built 1984 By Orange County Contract No. Unknown

Designed by: Wheeler & Gray Consulting Engrs. Plans Avail. @ DOS

Description: 7 span continuous CIP PS concrete box girder (7 cells) supported by "Y" shaped single column bents and open end RC seated abutments, all on steel piles.

Spans (W) 136'; 5 @ 184'; 136' (E)

Length 1,200' NBIS Bridge Length Yes Skew 30°± Right & Varies

Number Of Intermediate Joints: @Hinges 1 @Bents N

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

Design Live Load HS20-44 & Alt & Permit Des. Ld. Design Method Unknown

DESCRIPTION - ON STRUCTURE

Bridge Width (S) 1.7'br; 30'; 5'm; 30'; 1.7'br (N)

Total Width 67.5' Net Width 65' Lanes 4 Tracks None

Median Double double painted stripe Rail Type 25 modified 1111

Vert. Clearance over deck Unimpaired Appr. Rdwy. Width 68'

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

Alignment Tangent and R = 2100' in west 2 end spans

DESCRIPTION - UNDER STRUCTURE

Roadway Section None

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

Lanes Tracks

Facilities Crossed Arroyo Trabuco (L02)

May 18, 1990

DESCRIPTION - HYDRAULICS

Channel Open natural ravine

Navigable: Yes ☐ No ☒ Clearances: Vert.

Horiz.

Pier/Abutment Protection (For Navigation) ☐

TRAFFIC INFORMATION

	DECK	YEAR	UNDER	YEAR
Average Daily Traffic & Year :	30,000	1989	N	
Average Daily Traffic (Future) :	40,000 Est	2010	N	
Average Daily Trucks (% OF ADT) :	3% Est		N	
Bypass Detour Length	10 miles		N	
Shell Route:	No		N	
Functional Classification :	07		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
-------------------	---	----------------------------	---

Date of Revisions

DISCUSSION:

On date of this inspection, a twin bridge is under construction adjacent to this bridge on the north side.

CONDITION OF STRUCTURE:

There is light cracking in longitudinal direction of the concrete bridge deck, mostly in the westbound lanes.

At southwest corner of the bridge, there is a moderate concrete fracture with an incipient spall of 2'± x 2'± x 1'± deep. The fracture is in soffit and exterior of south exterior girder at west abutment seat just outside of its bearing plate. This portion of concrete appears to be part of the "prestress anchorage blackout" closure. Cause of this fracture may be due to the bridge movement

May 18, 1990

resulting in the binding between exterior girder and the raised concrete key of the abutment; or due to earthquake forces, in view of the vertical earthquake restrainer cable within 3 feet of this location is frailed.

Condition of the structure is good.

WORK DONE:

Previously noted erosion deficiencies under east bridge abutment has been corrected --- sand bags are placed to increase depth of interceptor ditch in front of the abutment and eroded embankment slope has been repaired.

WORK RECOMMENDED:

Pressure epoxy inject crack fracture of the south exterior girder at west abutment seat. SUPL

Henry Ma



HM:ms

cc: INagai (2)
County of Orange

ORANGE COUNTY
ENVIRONMENTAL MANAGEMENT AGENCY

SANTA ANA, CALIFORNIA
E. SCHNEIDER, DIRECTOR

PLANS FOR CONSTRUCTION OF
BRIDGE, GRADING, STORM DRAIN
AND STREET IMPROVEMENTS

FOR

SANTA MARGARITA PARKWAY

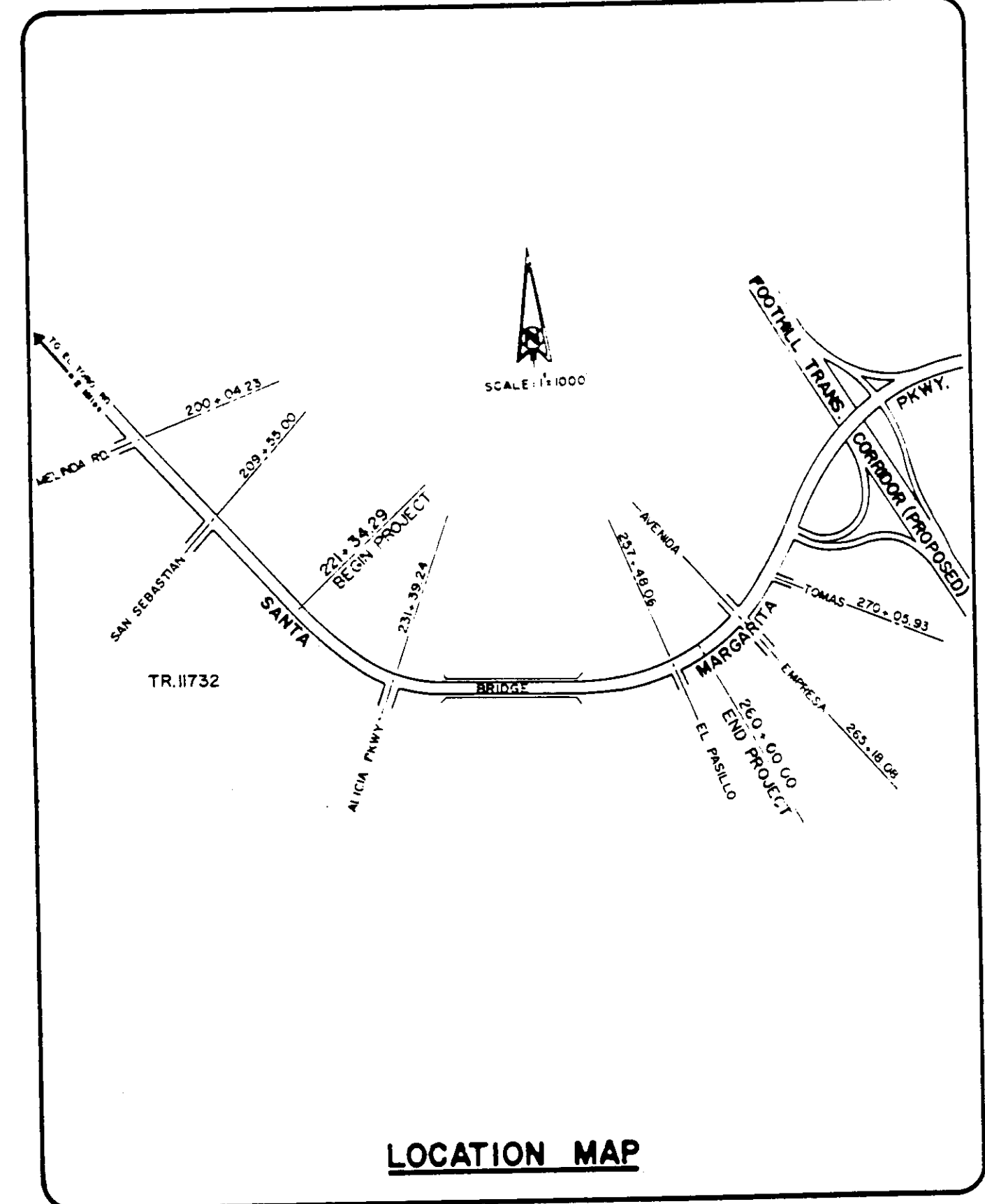
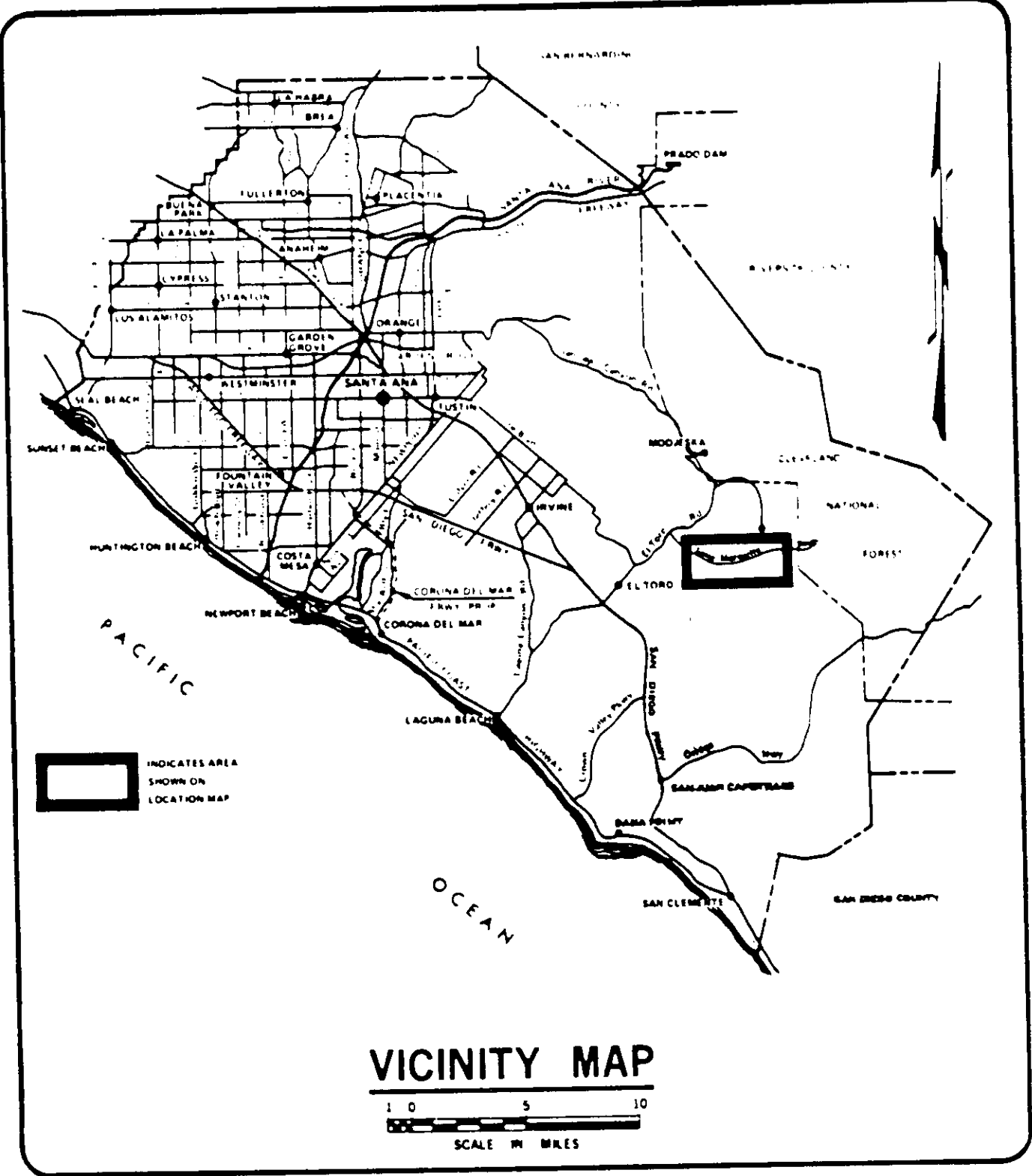
FROM

2130.06 FEET E/O MELINDA ROAD

TO

518.08 FEET W/O AVENIDA EMPRESA

TOTAL LENGTH = 0.73 MILES



SHEET	INDEX OF SHEETS	DESCRIPTION
1.	PROJECT TITLE SHEET	
2.	TYPICAL SECTIONS AND CONSTRUCTION NOTES	
3.	SANTA MARGARITA PARKWAY STA. 221+34.29 TO STA. 227+99.13	
4.	SANTA MARGARITA PARKWAY STA. 227+99.13 TO STA. 237+00.00	
5.	SANTA MARGARITA PARKWAY STA. 237+00.00 TO STA. 254+50.00	
6.	SANTA MARGARITA PARKWAY STA. 254+50.00 TO STA. 260+00.00	
7.	MEDIAN TRANSITION, GUARD RAIL FLARE AND SIDEWALK DETAILS	
8.	CURB TRANSITION, LOCAL DEPRESSIONS AND MISCELLANEOUS DETAILS	
9.	VEGETATION SURVEY AND TREE REMOVAL PLAN	
10.-11.	SIGNING AND STRIPING PLANS	
12.-13.	ALICIA PARKWAY AND SANTA MARGARITA PARKWAY TRAFFIC SIGNAL MODIFICATION PLANS	
14.-17.	TRAFFIC CONTROL PLANS	
18.	GRADING PLAN FOR TEMPORARY ACCESS ROAD	
19.-20.	SANTA MARGARITA PARKWAY EROSION CONTROL PLANS	
21.	TEMPORARY ACCESS ROAD EROSION CONTROL PLAN	
22.	BRIDGE TITLE SHEET	
23.	GENERAL PLAN	
24.	DECK CONTOURS	
25.	FOUNDATION PLAN	
26.-27.	ABUTMENT DETAILS	
28.	PIER 2 DETAILS	
29.	PIER 3 DETAILS	
30.	PIER 4, 5, 6 AND 7 DETAILS	
31.	TYPICAL SECTION - FRAME 1	
32.	TYPICAL SECTION - FRAME 2	
33.	GIRDER LAYOUT - FRAME 1	
34.	GIRDER LAYOUT - FRAME 2	
35.	HINGE DETAILS	
36.	RESTRAINER DETAILS	
37.	P.C.C. APPROACH SLAB	
38.	JOINT SEAL ASSEMBLY DETAILS - 1	
39.	JOINT SEAL ASSEMBLY DETAILS - 2	
40.	CONCRETE BARRIER TYPE 27	
41.	RAISED SIDEWALK - EXISTING BRIDGE	
42.	ROCK SCOUR PROTECTION DETAILS	
43.-45.	LOG OF TEST BORINGS	
46.-48.	BRIDGE LIGHTING PLANS	
49.	VEHICLE CRASH CUSHION (G.R.E.A.T.)	
50.-57.	SANTA MARGARITA PARKWAY CROSS-SECTIONS	

UTILITY	CONTACTS	PHONE No.
PAC. BELL TELEPHONE	ROY FUJIMORI	(714) 259-4443
SOUTHERN CAL. EDISON	BILL VANDERZIEL	(714) 458-4440
SOUTHERN CALIF. GAS Co.	DOMINICK SORINO	(714) 364-2170
SANTA MARGARITA WATER DISTRICT	DAN FERONS	(714) 582-3204
SANTA MARGARITA CABLEVISION	JOE TRAHAN	(714) 858-4937
UNDERGROUND SERVICE ALERT		(800) 422-4133

BENCH MARK:
O.C.S. BENCH MARK DESIGNATION 388-1-69 LOCATED IN THE NORTHEAST PART OF THE INTERSECTION OF MARGUERITE PARKWAY AND AVERA PARKWAY 85 FEET NORTH FROM THE CENTERLINE OF AVERA, 37.5 FEET EAST FROM THE CENTER OF THE MEDIAN OF MARGUERITE PARKWAY, SET ON THE TOP NORTHWEST CORNER OF A 3.5 BY 4.5 FOOT CONCRETE CATCH BASIN, LEVEL WITH THE SIDEWALK.
1976 ADJUSTED ELEVATION = 243.318

BASIS OF BEARING:
THE BEARINGS SHOWN ON THE PLANS ARE BASED UPON THE LINE BETWEEN TRIANGULATION STATIONS (NGS BRASS CAP STAMPED PLANO 1939) AND (O.C.S. 6-7-10) BEING N99°13'22"E PER THE CALIFORNIA COORDINATE SYSTEM, ZONE VI, 1973 DATUM ON FILE IN THE OFFICE OF THE ORANGE COUNTY SURVEYOR.

EMA-TRAFFIC ENGINEERING DIVISION
APPROVED: *[Signature]* DATE 8/3/89
R.C.E. 34205 EXP. DATE 9/30/91
THIS PLAN IS SIGNED BY EMA/TED FOR CONCEPT AND ADHERENCE TO COUNTY TRAFFIC SIGNAL, SIGNING AND STRIPING STANDARDS AND REQUIREMENTS ONLY. EMA/TED IS NOT RESPONSIBLE FOR DESIGN ASSUMPTIONS OR ACCURACY.

NOTE:
HORIZONTAL ALIGNMENT FOR SANTA MARGARITA PARKWAY (FORMERLY - PORTOLA PARKWAY) IS BASED ON S.M. 81-4A

OWNER / DEVELOPER
COUNTY OF ORANGE ENVIRONMENTAL MANAGEMENT AGENCY PUBLIC WORKS
400 CIVIC CENTER DRIVE WEST
SANTA ANA, CALIF. 92702
(714) 834-2300

FUNDED BY:
COMMUNITY FACILITIES DISTRICT No. 86-2

EMA - PUBLIC WORKS
APPROVED FOR CONTRACT ADMINISTRATION
[Signature] 7/31/89
DIRECTOR OF PUBLIC WORKS

WILLIAMSON & SCHMID
17785 MAY FAIR BOULEVARD, IRVINE, CALIFORNIA 92714 (714) 261-2272
UNDER THE SUPERVISION OF:
[Signature] 5/8/89
STEPHEN C. CHIU R.C.E. 29048
REGISTERED PROFESSIONAL ENGINEER
EXPIRATION DATE 3-31-91

NO.	DESCRIPTION	SHT.	APPROVED	DATE
REVISIONS				

W.O. NO. TD 2502
DWG. NO.

SHEET 1 OF 57

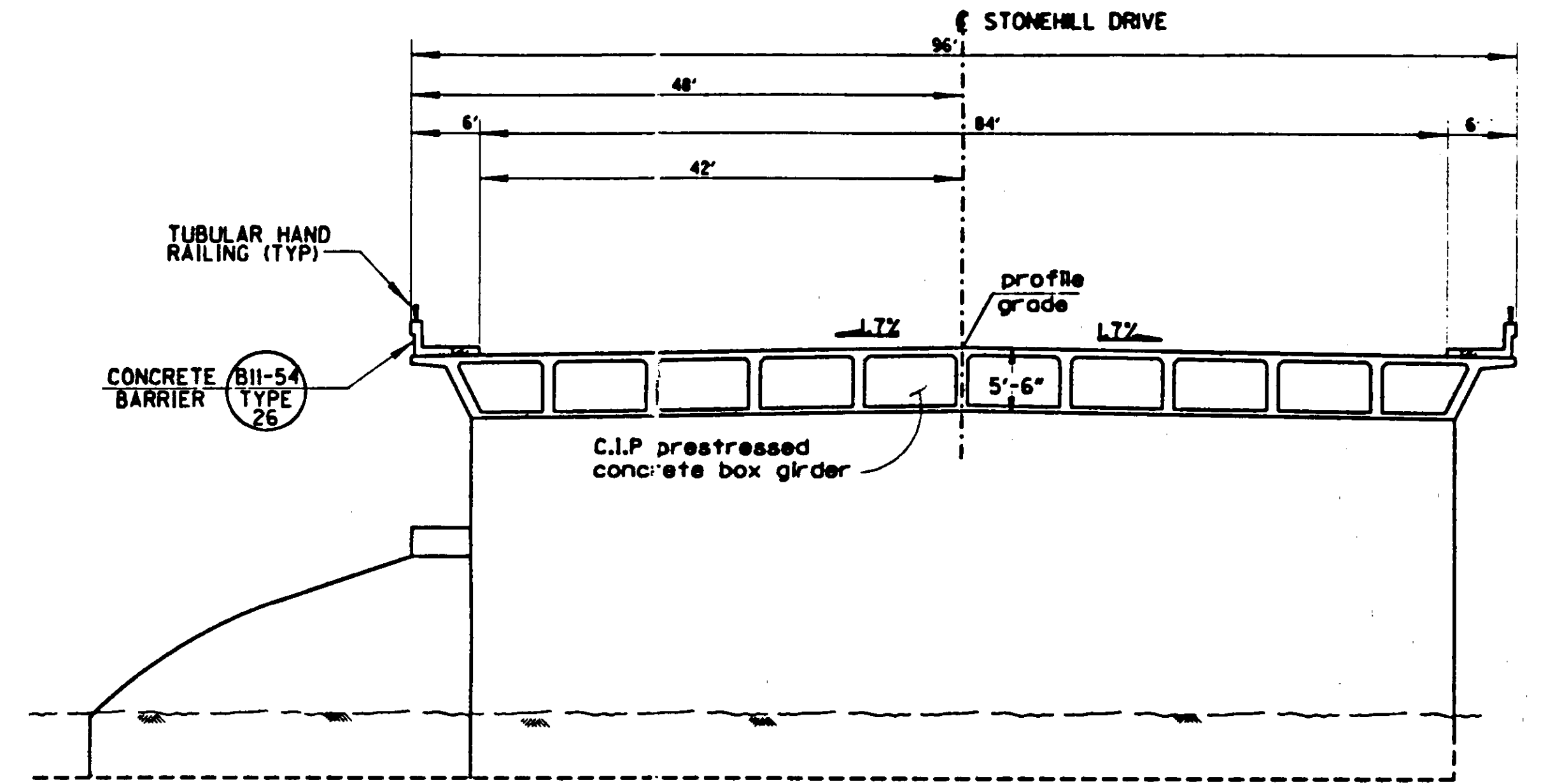
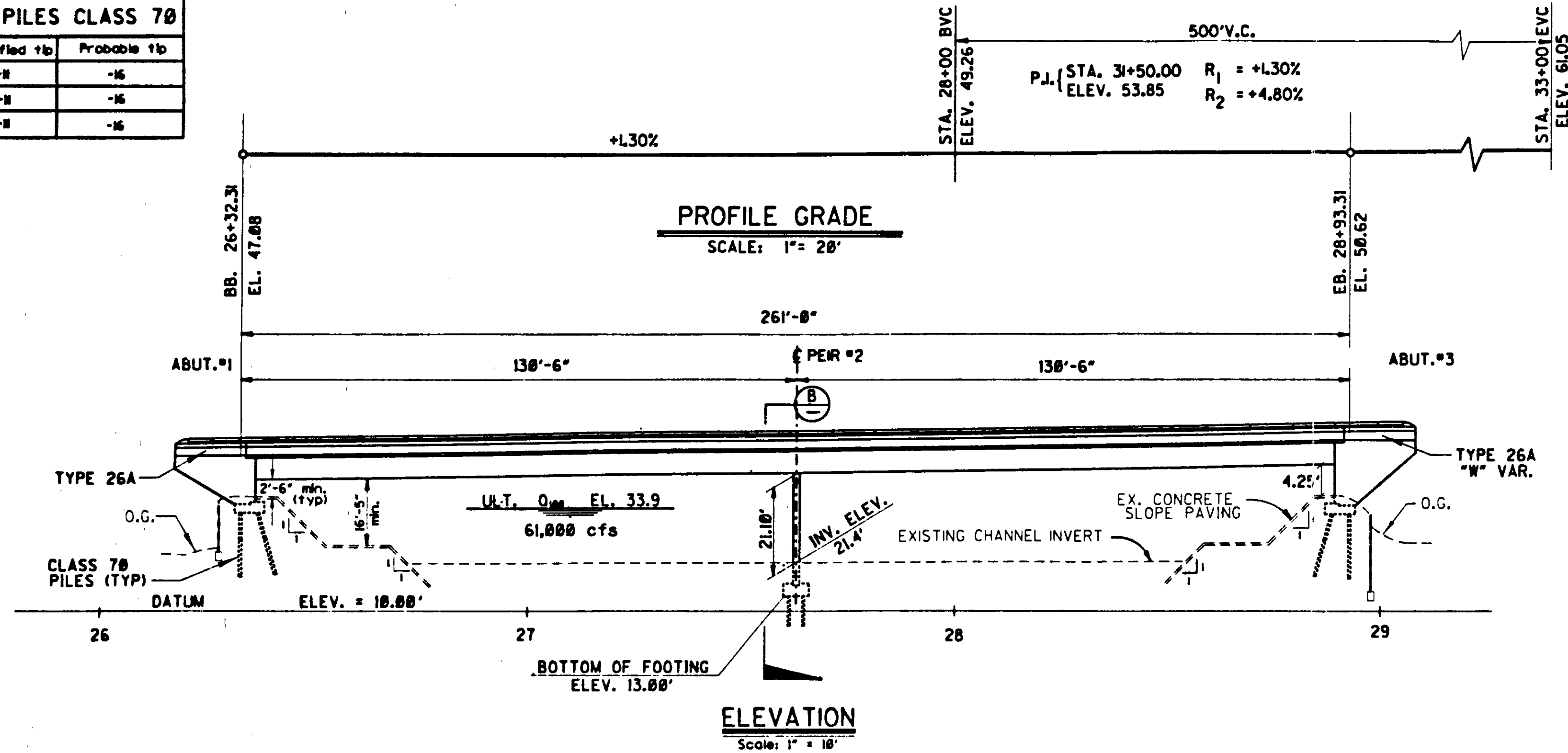
J.N. 87283.4

ARROYO TRABUCO

1991

CONCRETE PILES CLASS 70

	Specified 1b	Probable 1b
Abut. 1	-11	-15
Pier 2	-11	-15
Abut. 3	-11	-15



TYPICAL SECTION

Scale: 1" = 10'

BRIDGE QUANTITIES

(F)	structural excavation	750 C.Y.
(F)	structural backfill	565 C.Y.
(F)	pervious backfill	70 C.Y.
(F)	structural concrete	2300 C.Y.
(F)	reinforcing steel	550,000 LBS.
(F)	joint seal, Type B	196 L.F.
(F)	furnish concrete piling, class 70	4650 L.F.
(F)	drive concrete piles, class 70	134 EA.
(F)	tubular hand railing	602 L.F.
(F)	type 26 barrier	602 L.F.
(F)	bearing pads	22 EA.
(F)	prestressing	L.S.
(F)	bridge lighting	L.S.

CALTRANS STD. PLANS USED:

B8-1	Bridge Details
B8-3	Bridge Details
B8-5	Bridge Details
B8-13	Bridge Details
B2-5	Pile details - Class 45 and Class 70
B6-21	Joint Seals
B7-1	Box Girder Details
B8-5	Cast-in-place Prestressed Girder Details
BII-51	Tubular Hand Railing
BII-54	Concrete Barrier Type 26

55C-607

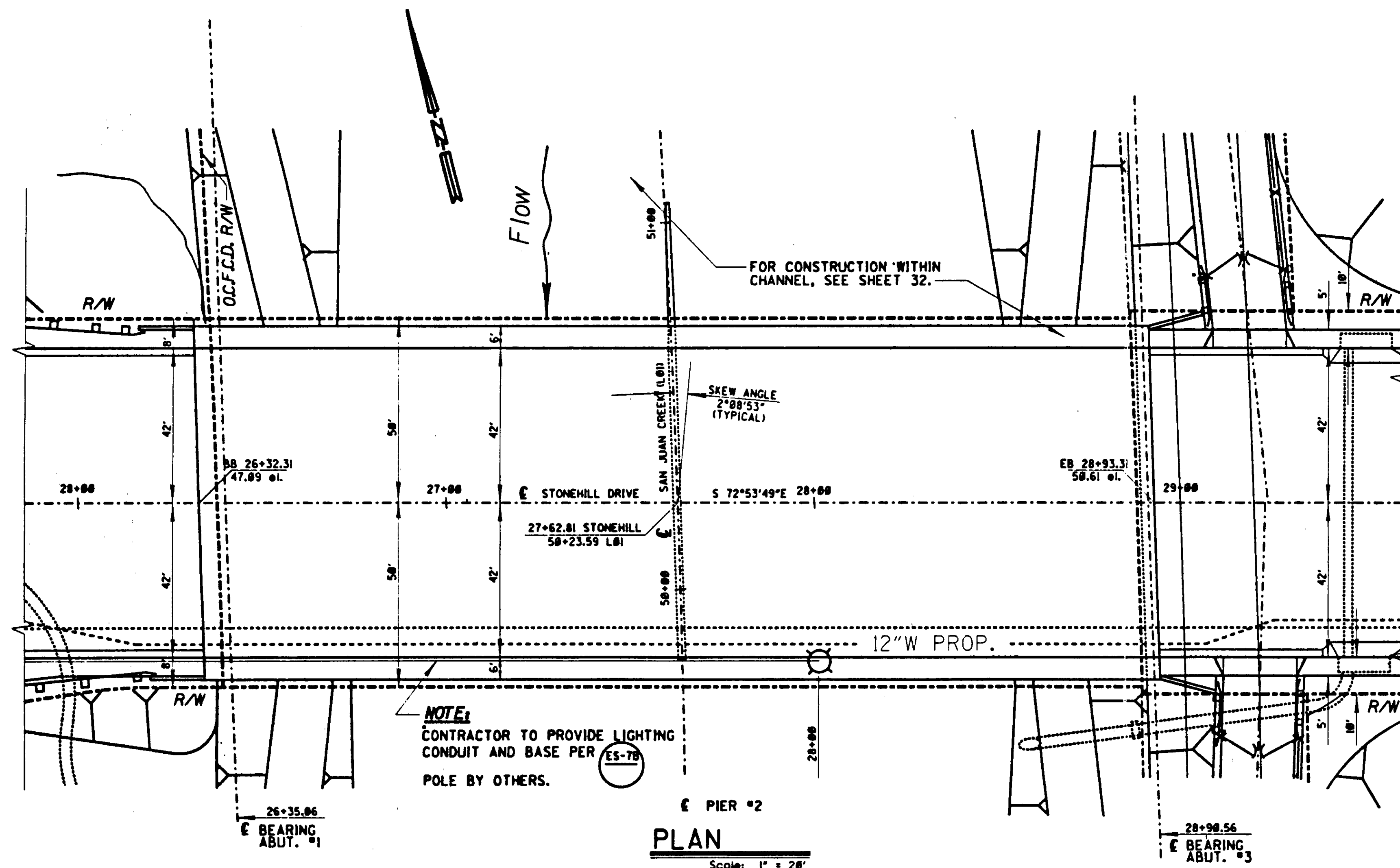
SAN JUAN CREEK CHANNEL

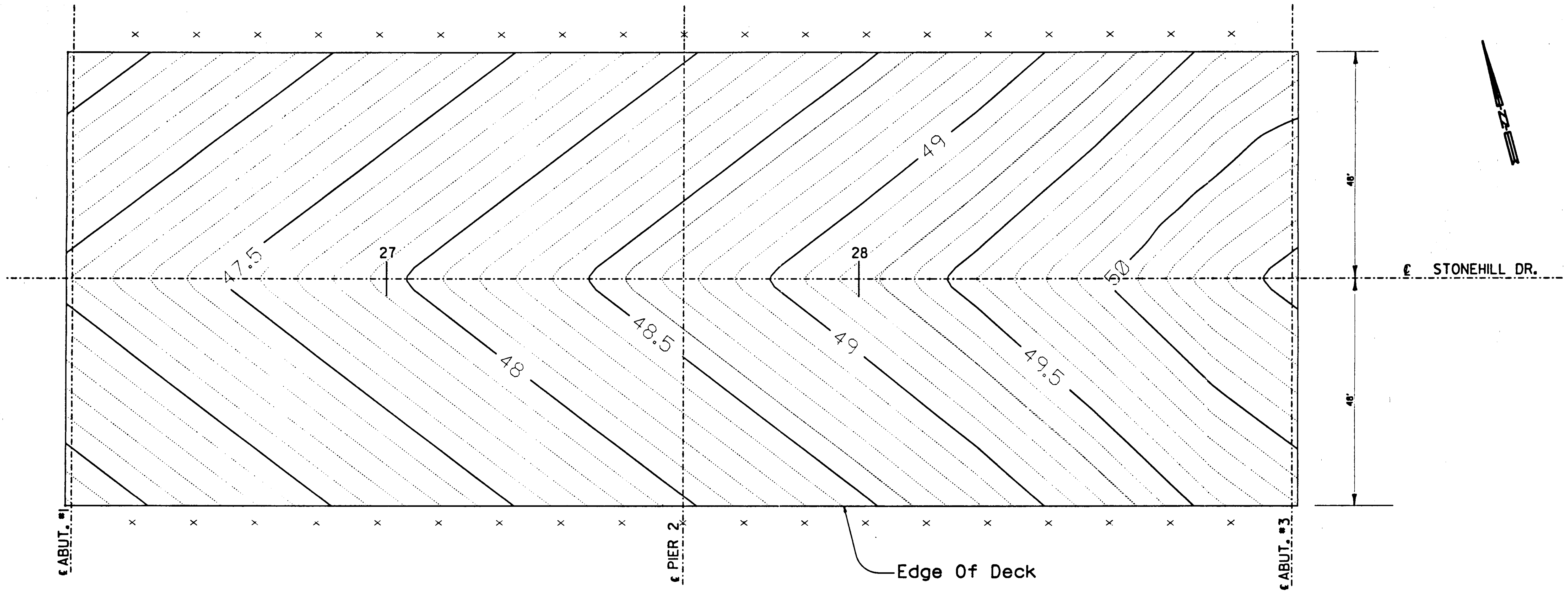
1 1/2" = 0' 3" on original drawing 1792

BRIDGE CONSTRUCTION TO BE
ACCORDING TO THE SPECIAL
PROVISIONS AND:

- CALTRANS STANDARD SPECIFICATIONS
DATED JANUARY 1988.
- CALTRANS STANDARD PLANS DATED
JANUARY 1988.

ORANGE COUNTY ENVIRONMENTAL MANAGEMENT AGENCY	
STONEHILL DRIVE	
GENERAL PLAN	
BRIDGE AT SAN JUAN CREEK (LBI)	
DATE	DESCRIPTION
REVISIONS	
PREPARED BY	DATE
CHECKED BY	DATE
DESIGNED BY	DATE
SCALE	DATE
AS SHOWN	DEC '90
BRASSING NO.	
SHEET	10
OF 65	





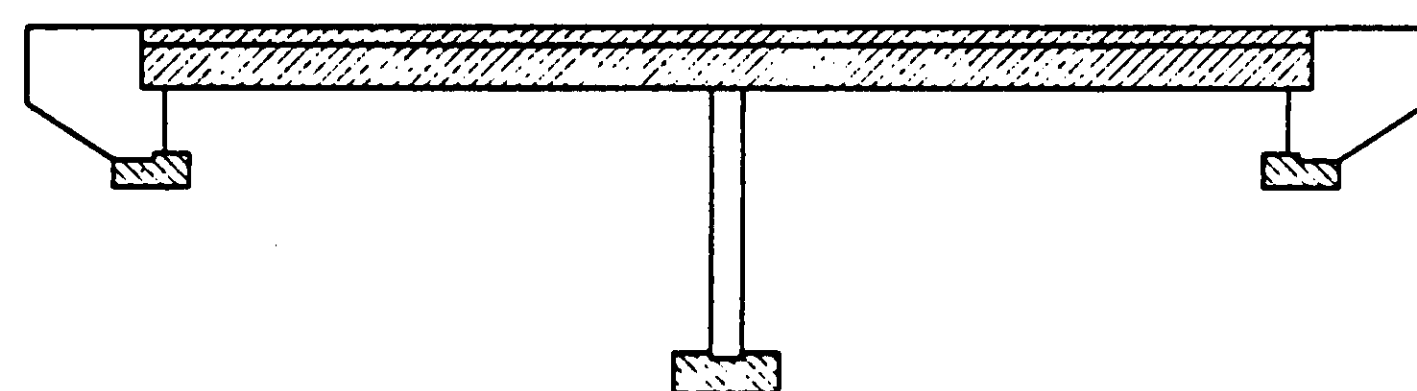
Notes:

- Indicates half foot contours
- × Indicates 1/16 points along span
- Contour Interval is .10'

SCALE: 1"=10'

55C-607

1 1/2 0 1 2
3 inches on original drawing



- STRUCTURAL CONCRETE, BRIDGE (4000 PSI @ 28 DAYS)
- POST TENSION BOX GIRDER CONCRETE (f'ci = 4000 PSI, f'c = 4000 PSI @ 28 DAYS)
- STRUCTURAL CONCRETE, FOOTING (4000 PSI @ 28 DAYS)

CONCRETE STRENGTH AND LIMITS

SETTLEMENT PIN ELEVATION **		
LEFT SIDE (DECK PIN)	LOCATIONS	RIGHT SIDE (DECK PIN)
	ABUTMENT # 1	
	SPAN # 1	
	PIER # 2	
	SPAN # 2	
	ABUTMENT # 3	
DESCRIPTION OF DATUM :		

**INFORMATION TO BE PROVIDED IN AS-BUILTS.

GENERAL NOTES LOAD FACTOR DESIGN

DESIGN: AASHTO DATED 1985 AS SUPPLEMENTED BY
BRIDGE DESIGN SPECIFICATIONS INSERTS, (CALTRANS)

DEAD LOAD: INCLUDES 35 PSF FOR FUTURE WEARING SURFACE.

LIVE LOADING: HS20-44 AND ALTERNATIVE AND PERMIT DESIGN LOAD P-13

REINFORCED CONCRETE: $f_y = 60000$ psi
 $f'_c = 4000$ psi
 $n = 8$

TRANSVERSE DECK SLABS (WORKING STRESS DESIGN)
 $f_s = 20000$ psi
 $f'_c = 1200$ psi
 $n = 10$

PRESTRESSED CONCRETE: SEE "GRIDDER LAYOUT" SHEET

ORANGE COUNTY ENVIRONMENTAL MANAGEMENT AGENCY	
STONEHILL DRIVE	
DECK CONTOURS	
BRIDGE AT SAN JUAN CREEK (L.B.)	
REVISIONS	DATE
PREPARED BY: RICHARD HART	DATE: DEC '90
SCALE: AS SHOWN	DATE: DEC '90
SHEET 11 OF 65	

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
SUPPLEMENTARY BRIDGE REPORT
DS-M19 (REV. 2/75)

Bridge No. 55C-520 R
Location 7-Ora-FAS W458-CR
Dist - Co - Rte - PM - City
Date of Investigation May 18, 1988

Name ARROYO TRABUCO (Santa Margarita Parkway, 2.7 miles SE of El Toro Rd.)

CONDITION RATING:

APPRAISAL RATING:

Deck <u>8</u>	Superstructure <u>8</u>	Substr. & Pipes <u>8</u>	Overall <u>8</u>
Channel & Channel Protection <u>8</u>	Retaining Walls <u>N</u>		

Widenable? Yes ☒ No ☐ Conditional ☐

Action Required by COUNTY Yes ☒ No ☐

REVISION:

Name: ARROYO TRABUCO (Santa Margarita Parkway, 2.7 miles southeast of El Toro Road)

Condition Rating: Deck - 8
Superstructure - 8
Substructure & Pipes - 8

Appraisal Rating: Overall 8

Bridge Width: (S) 1.7' br, 30', 5'm, 30', 1.7' br (N)

Median: Double-double painted stripe with flexible delineators.

Lanes: 4

Approach Roadway Width: 68'

Average Daily Traffic: 16,000 (1987)

CONDITION OF STRUCTURE:

Eroded east abutment embankment slope under the bridge, caused by deck run-off, remains the same as previously reported.

Two northerly hinge restrainer cables of the east abutment are frayed (wires in strand are unwound), but still under tension. Also there is evidence of hinge restrainer movement of the west abutment, as evidenced in minor spalled concrete around cable of 1st, 2nd and 6th restrainer from south and one broken wire in the cable of the 6th restrainer from south.

Condition of the structure is good.

Br. No. 55C-520
Sheet 2
May 18, 1988

RECOMMENDED POSTING:

None

WORK RECOMMENDED:

Clean-out or increase depth of interceptor ditch along east abutment face below soffit to prevent water top-over and eroding the embankment. MSCL

Repair embankment erosion under the east end span. MSCL

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

Henry Ma



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
SUPPLEMENTARY BRIDGE REPORT
DH-08 (REV. 1/74)

55C-520

Bridge No. _____
7-Ora-FAS W458-CR
Location _____
Stat - Co - Pct - Mile - City
Date of Investigation June 9, 1986

Name ARROYO TRABUCO (Alicia Parkway, 2.7 miles southeast of El Toro Road)

CONDITION RATING:

APPRAISAL RATING:

Deck 9 Superstructure 9 Substr. & Pipes 9 Overall 9
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:

Name - ARROYO TRABUCO (Alicia Parkway, 2.7 miles southeast of El Toro Road)

CONDITION OF STRUCTURE:

There is erosion of embankment slope under the east end span near g structure. This appears to be the result of water runoff from open abutment deck joint which toppled the paved drainage ditch at the face of abutment below soffit.

Otherwise, the structure is in good condition.

RECOMMENDED POSTING:

None

WORK RECOMMENDED:

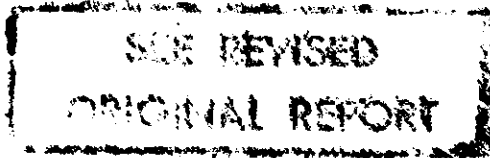
Increase the depth of interceptor ditch along east abutment face below soffit to prevent water top-over. C

Repair embankment erosion under the east end span. C

HM:pht

cc: INagai (2)
Orange County (2)

Henry Ma
C-36817



Bridge No. 55C-520
Other No. _____
P.U.C. No. _____
Location 7-Ora-FAS W458-CR (On Deck)
Dist - Co - Rte - PM - City
Date of Investigation June 14, 1984

Name ARROYO TRABUCO (Alicia Parkway, 2.3 miles E. of Los Alisos Blvd.)
Lat. N 33°- 38.3' Long. W 117°- 36.8'

STRUCTURAL DATA AND HISTORY

Year Built 1984 By Orange County Contract No. Unknown

Date of Revisions _____

Designed by: B.D. ☐ Wheeler & Gray Consulting Engrs.,
Tustin, CA Plans Avail. @ B.D.

Description: Continuous 7 span CIP post-tensioned box girder (7 cells) bridge with a single hinge in span No. 4, supported by wye shaped columns on pier walls at the bents, seated abutments, all supported on steel piling.

Spans 1 @ 136', 5 @ 184', 1 @ 136' (c-c)
Length 1200' Skew Varies Design LL HS 20-44 & Alt. & Permit Design Load

Ratings: Inventory HS 20 Min by _____ Operating HS 33 Min by _____ Permit PPPPP/By Design
Design Design

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

Bridge Width (S) 1.7'br, 20.0'sh, 2 @ 12.0', 20.0'sh, 1.7'br. (N)

Total Width 67.5' Lanes 2 Tracks None

Median Single yellow stripe Rail Type Modified Type 25 (1111)

Vert. Clearance over deck Unimpaired Appr. Rdwy. Width 44.0'

Wearing Surface None Deck Prot. Sys. None

Alignment Tangent with R= 2100' on the west end.

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

Roadway Section None

Clearances: Vert. 25'+ Horiz.: N Lt. N Rt.

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

Facilities Crossed Arroyo Trabuco (LO 2) (O'Neill Regional Park)

cc:

DESCRIPTION - HYDRAULICSChannel Large flood plane trapezoidal shapeNavigable: Yes ☐ No ☒ Clearances: Vert. _____ Horiz. _____**MAINTENANCE**Custodian Orange County Owner Orange County**ORIGINAL
CONDITION RATING**

Deck	<u>9</u>
Superstructure	<u>9</u>
Substructure & Pipes	<u>9</u>
Channel & Channel Protection	<u>8</u>
Retaining Walls	<u>N</u>
Approach Rdwy. Alignment	<u>8</u>
Estimated Remaining Life	<u>50</u>

**ORIGINAL
APPRAISAL**

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

Widenable? Yes ☒ No ☐ Conditional ☐Average Daily Traffic & Year 500 Est. 1984Bypass Detour Length 15 miles

Seismic Retrofit Not applicable

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

ENCROACHMENTS: Utility placement is unknown and will be reported at a later date as the area is developed.

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

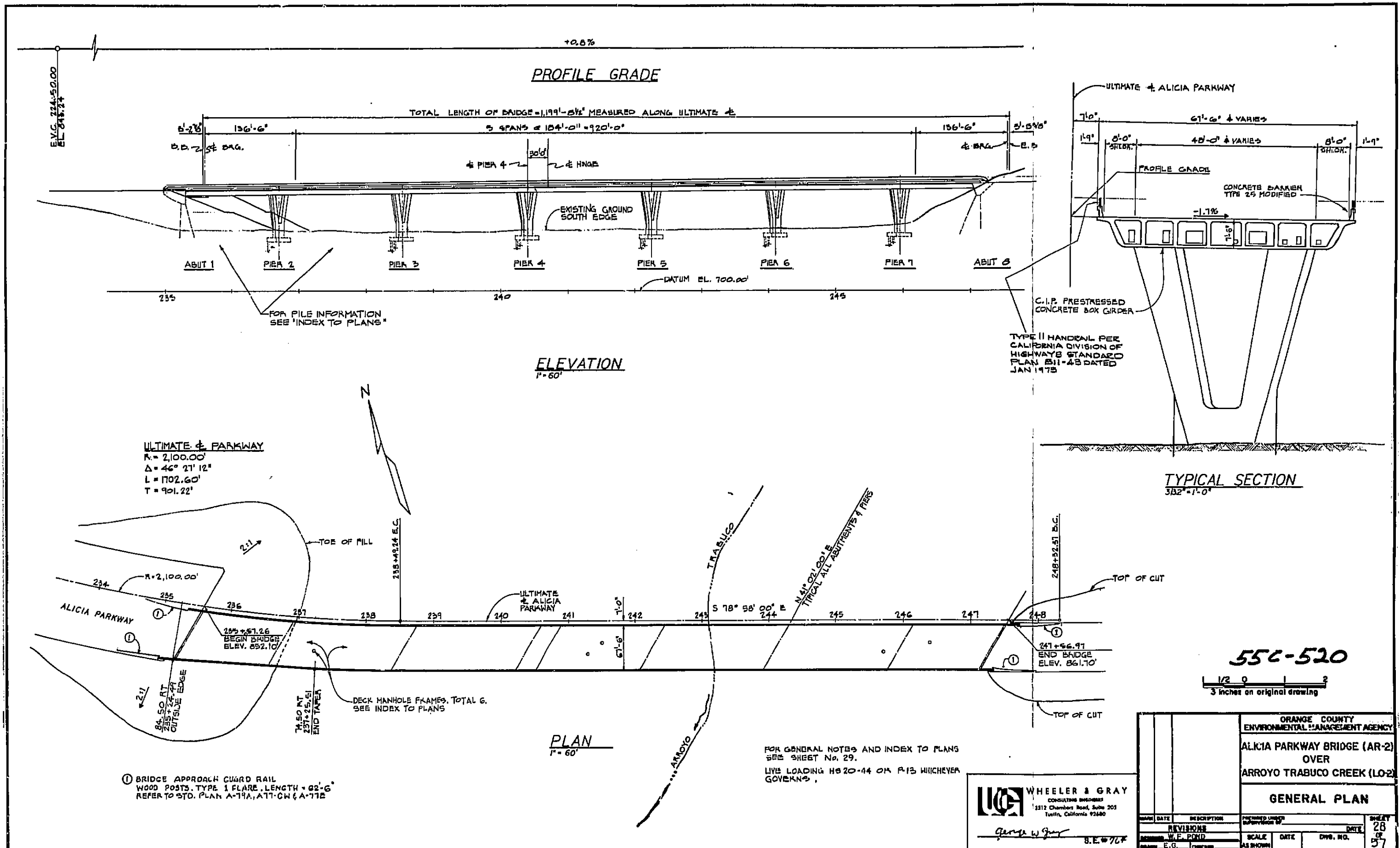
LOAD CAPACITY: The inventory, operating and permit ratings shown are based on the minimum loads the structure is designed to carry.

RECOMMENDATION: None

*E. L. Neff*E. L. Neff
C-28703

ELN:pdh

cc: DRHiggins (2)
Orange County (2)



S BUILT PLANS
Contract No. UNKNOWN
ate Completed
Document No. 70008531

12X

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: 8/2/84
DAS-SS-78

SIGNATURE: Donald Blackford

TITLE: SUPERVISOR OF MICROFILM SERVICES

FURNISH STEEL PILING (HP10 x 42) _____	2,580	L. F.
FURNISH STEEL PILING (HP 12 x 74) _____	6,780	L. F.
DRIVE STEEL PILE (HP 10 x 42) _____	60	EA.
DRIVE STEEL PILE (12 x 74) _____	360	EA.
PRESTRESSING CAST-IN-PLACE CONCRETE _____		L.S.
JOINT SEAL ASSEMBLY (MR = 4") _____	74	L.F.
CONCRETE BARRIER (TYPE 25 MODIFIED) _____	2,480	L.F.

DESIGN: AASHTO DATED 1977 WITH INTERIMS AND AS SUPPLEMENTED BY
BRIDGE DESIGN SPECIFICATIONS INSERTS.

DEAD LOAD: INCLUDES 55 PSF FOR FUTURE WEARING SURFACE.

LIVE LOADING: HS20-44 AND ALTERNATIVE AND PERMIT DESIGN LOAD P-13

REINFORCED CONCRETE: $f_y = 60,000$ PSI
 $f'_c = 3,500$ PSI
 $n = 9$
TRANSVERSE DECK SLABS (WORKING STRESS DESIGN)
 $f_s = 20,000$ PSI
 $f'_c = 12,000$ PSI
 $n = 10$

PRESTRESSED CONCRETE: SEE "GIRDER LAYOUT"

STRUCTURE EXCAVATION (BRIDGE)-----	2,900	C.Y.
STRUCTURE BACKFILL (BRIDGE)-----	1,650	C.Y.
STRUCTURAL CONCRETE, BRIDGE FOOTING-----	950	C.Y.
STRUCTURAL CONCRETE, BRIDGE-----	8,100	C.Y.
BAR REINFORCING STEEL (BRIDGE)-----	1,800,000	LBS.
MISCELLANEOUS METAL (BRIDGE)-----	12,400	LBS.
MISCELLANEOUS METAL (RESTRAINER)-----	6,000	LBS.
MISCELLANEOUS IRON AND STEEL-----	1,176	LBS.

<u>LOCATION</u>	<u>PILE TYPE</u>	<u>BEARING</u>	<u>EI</u>
ABUTMENT 1	HP 10 X 42	45T	776
PIER 2	HP 12 X 74		764
PIER 3	HP 12 X 74		757
PIER 4	HP 12 X 74	90T	755
PIER 5	HP 12 X 74		760
PIER 6	HP 12 X 74		768
PIER 7	HP 12 X 74		772
ABUTMENT 8	HP 10 X 42	45T	827

1. STA. 236 + 22.95 -31 FT. RIGHT, WATER
2. STA. 237 + 23.71 -50 FT. RIGHT, SEWER
3. STA. 241 + 29.90 -50 FT. RIGHT, SEWER
4. STA. 241 + 49.50 -31 FT. RIGHT, WATER
5. STA. 245 + 70.72 -50 FT. RIGHT, SEWER
6. STA. 246 + 39.50 -31 FT. RIGHT, WATER

CONTRACTOR SHALL FURNISH AND INSTALL
MANHOLE FRAMES AT THESE LOCATIONS.
MANHOLE COVERS WILL BE FURNISH BY
THE SANTA MARGARITA WATER DISTRICT.

FOR MANHOLE DETAILS AND FOR DECK DETAILS
AT MANHOLES, SEE STANDARD PLAN B7-11 "UTILITIES DETAILS".

<u>SHEET NO.</u>	<u>TITLE</u>
28	GENERAL PLAN
29	INDEX TO PLANS
30	DECK CONTOURS
31	FOUNDATION PLAN
32	ABUTMENT 1
33	ABUTMENT 8
34	ABUTMENT DETAILS
35	PIERS
36	PIER DETAILS 1
37	PIER DETAILS 2
38	TYPICAL SECTION
39	GIRDER LAYOUT
40	PRESTRESSED GIRDER DETAILS
41	HINGE DETAILS
42	JOINT SEAL ASSEMBLY
43	MISCELLANEOUS DETAILS 1
44	MISCELLANEOUS DETAILS 2
45	RESTRAINER DETAILS
46	CONCRETE BARRIER TYPE 25
47	LOG OF TEST BORINGS

55C-520

1/2 0 2
3 inches on original drawing

WHEELER & GRAY
CONSULTING ENGINEERS
2312 Chambers Road, Suite 203
Tustin, California 92680

George W. Gray S.E. #768

		ORANGE COUNTY ENVIRONMENTAL MANAGEMENT AGENCY						SHEET 29 OF 37
		ALICIA PARKWAY BRIDGE (AR-2) OVER ARROYO TRABUCO CREEK (LO-2)						
		INDEX TO PLANS						
MARK	DATE	DESCRIPTION	APPROVED UNDER SPECIFICATION	SCALE	DATE	DWG. NO.		
REVISIONS								
		W.C. PERRY						
		F.B. GRIFFIN						

AS BUILT PLANS
Contract No. UNKNOWN
Date Completed _____
Document No. 70008531

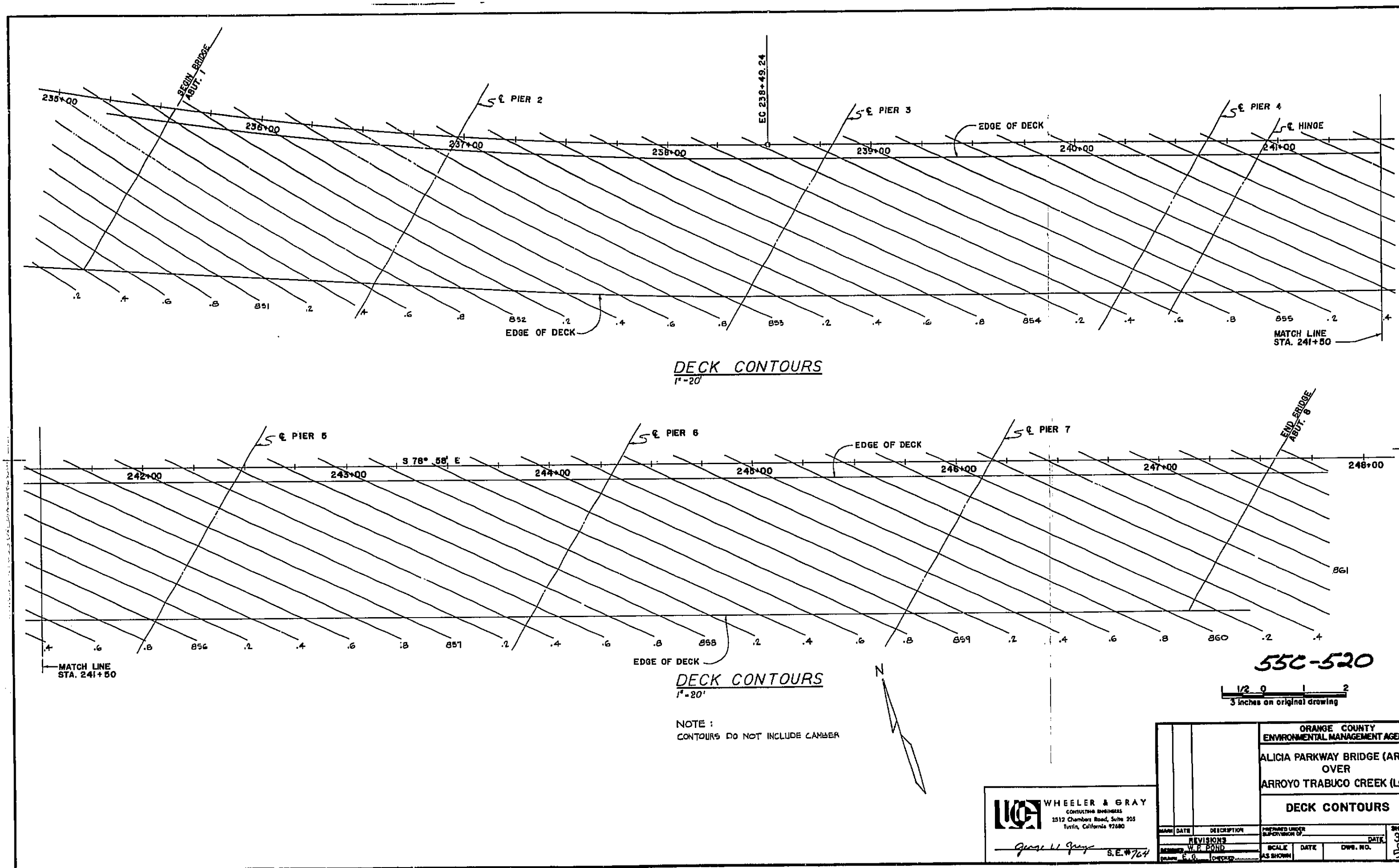
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DATE 8/2/84

SIGNATURE Donald Blackford

0	TITLE SUPERVISOR OF MICROFILM SERVICES
---	--



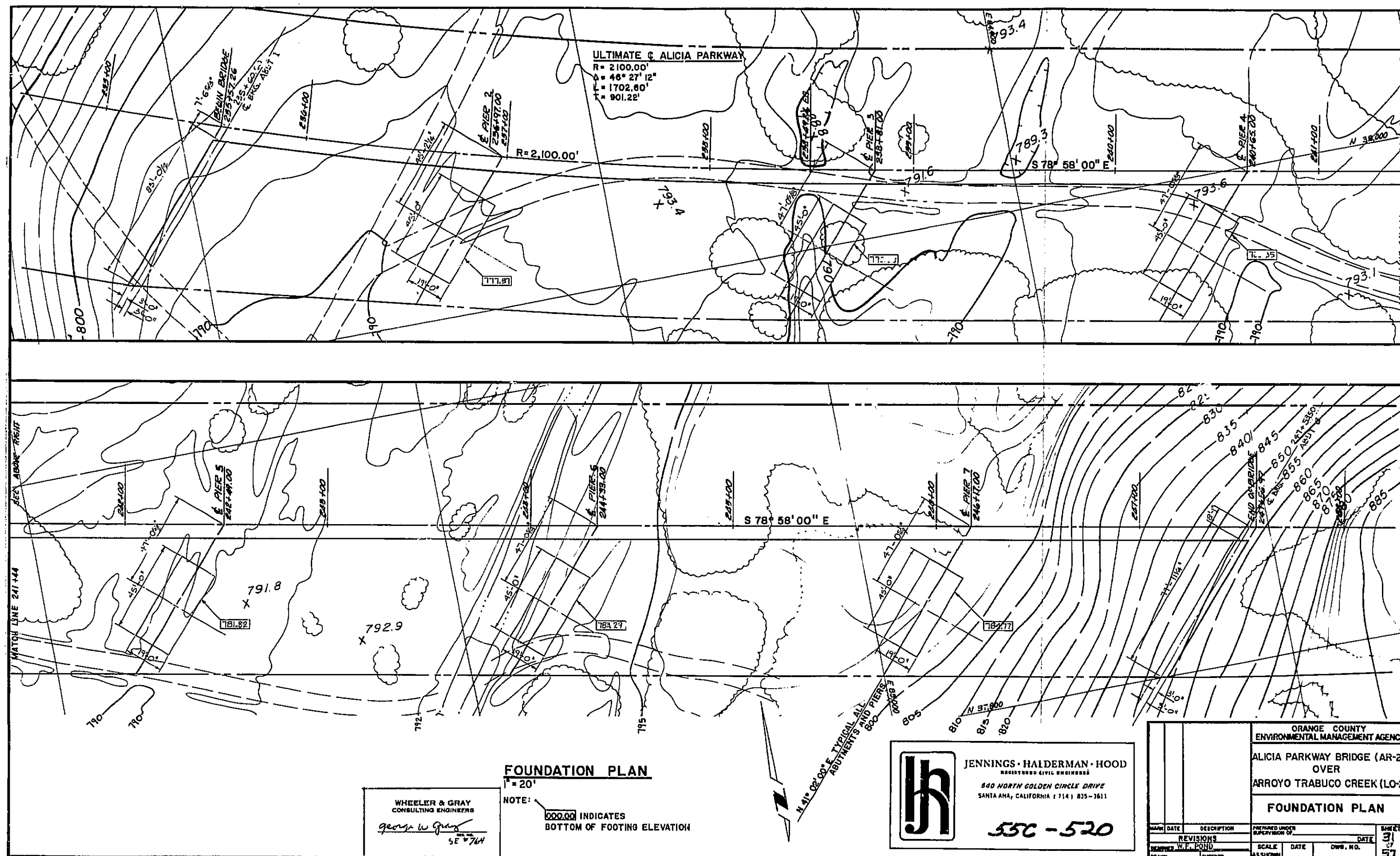
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 Contract No. UNKNOWN
 Date Completed _____
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DATE <u>8/2/84</u>	SIGNATURE <u>Donald Blackford</u>	TITLE <u>SUPERVISOR OF MICROFILM SERVICES</u>
-----------------------	--------------------------------------	--

DAS-88-78



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 Document No. 70008531

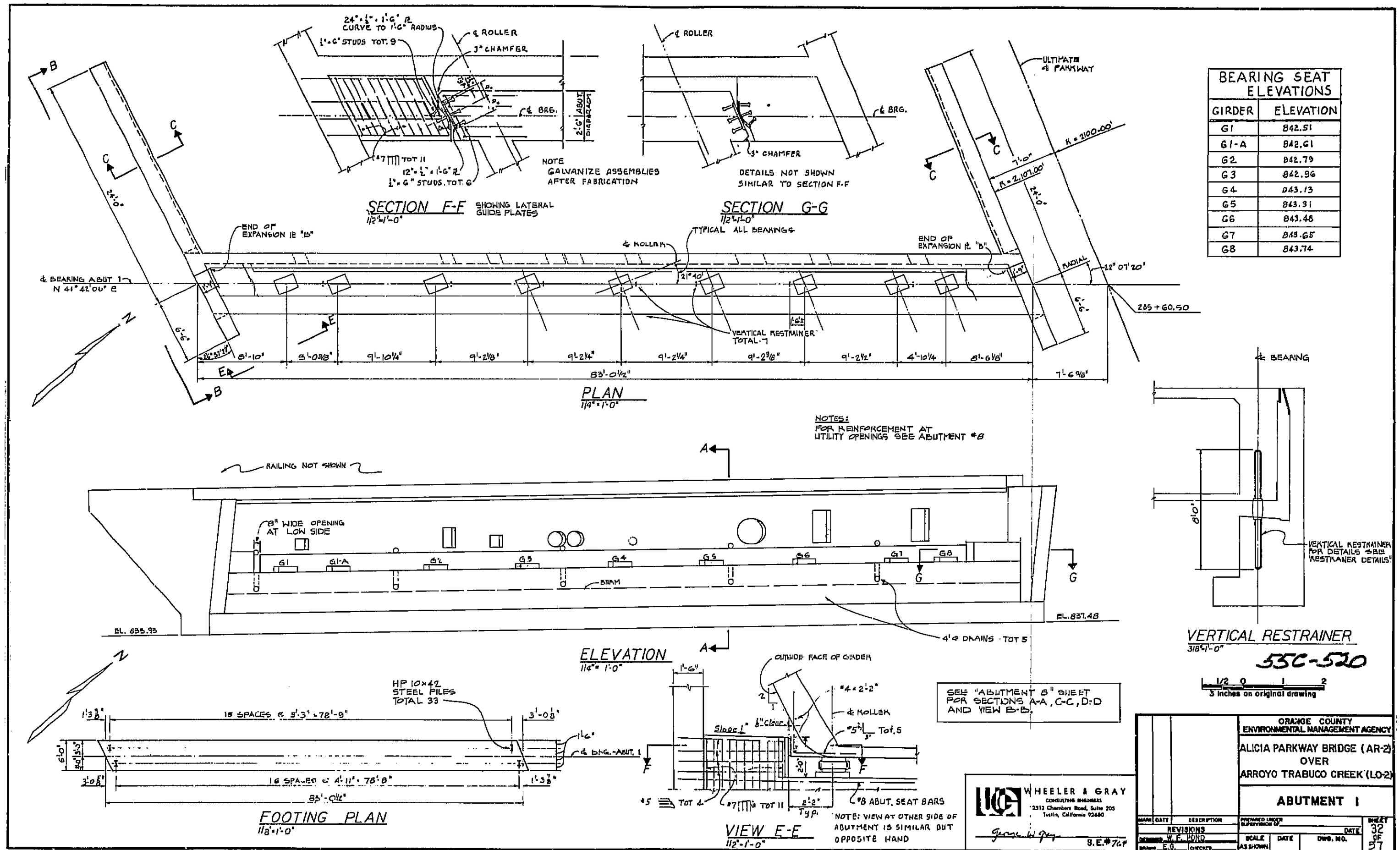
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DATE 8/2/84
 DESIGNED BY
 CHECKED BY

SIGNATURE Donald Blackford

TITLE SUPERVISOR OF
MICROFILM SERVICES



AS BUILT PLANS
 Contract No. UNKNOWN
 Date Completed
 Document No. 70008531

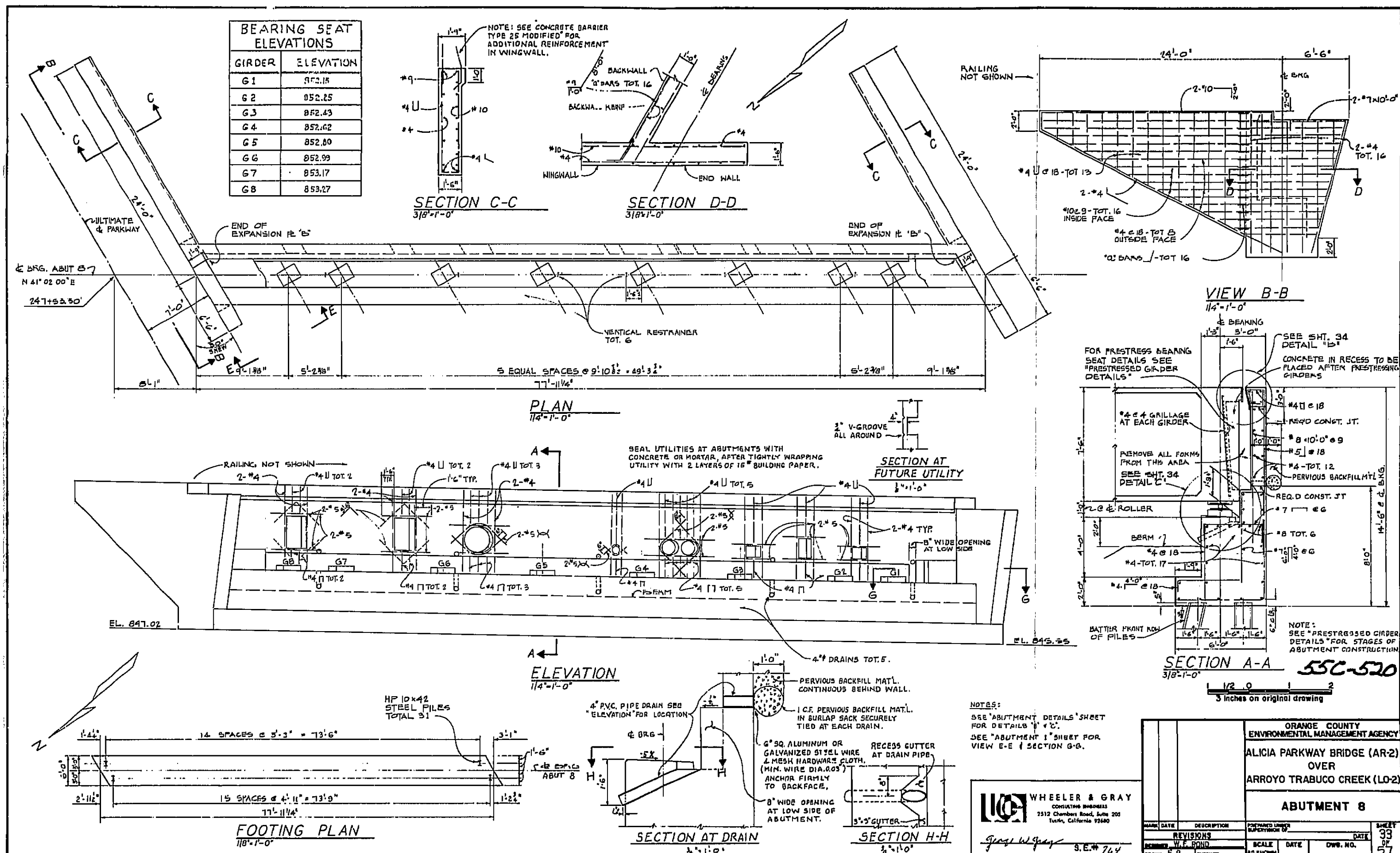
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DATE 8/2/84
 DAS-85-78

SIGNATURE Donald Blackford

TITLE SUPERVISOR OF MICROFILM SERVICES

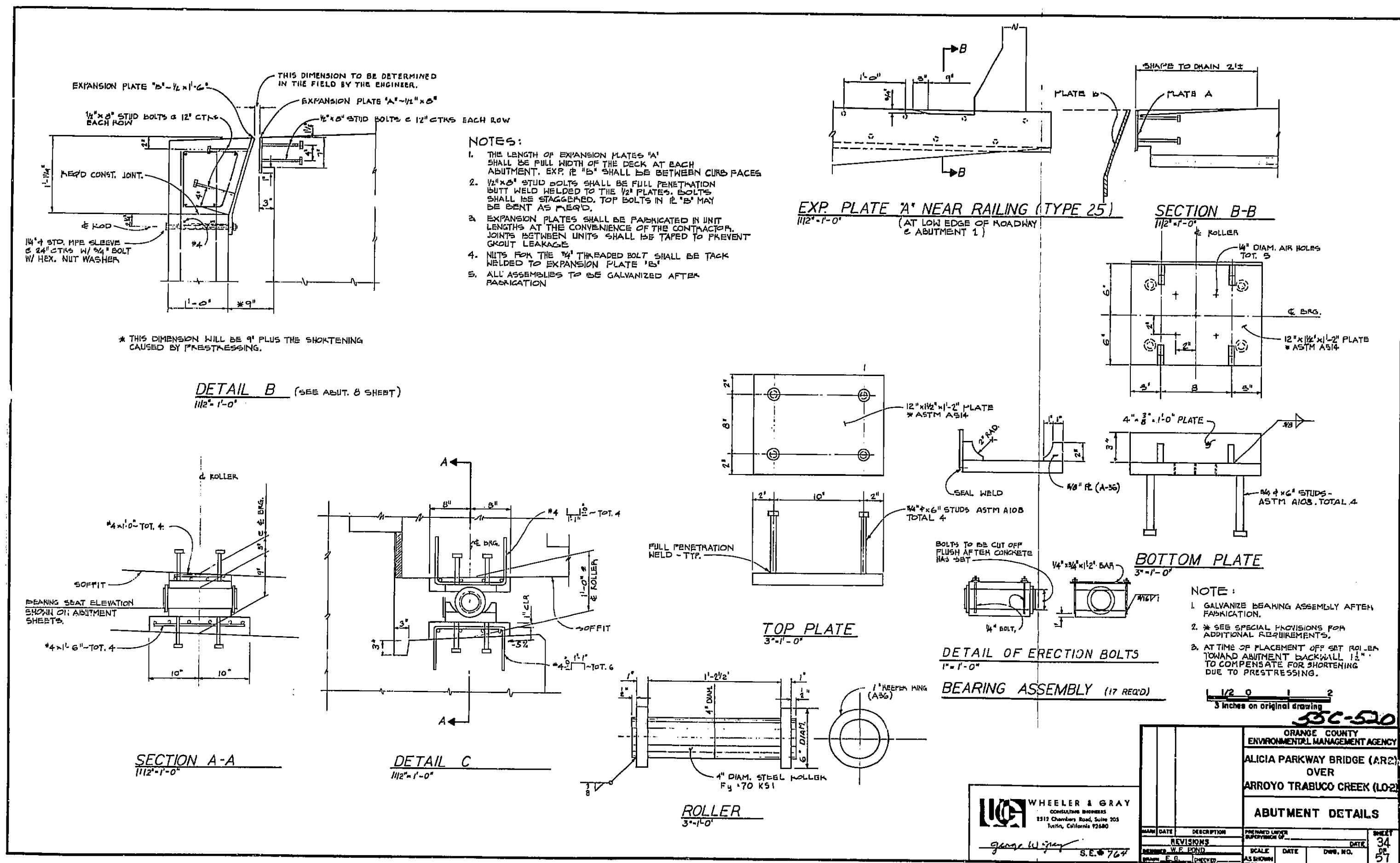


AS BUILT PLANS
Contract No. UNKNOWN
Date Completed
Document No. 70008531

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DATE 8/2/84 SIGNATURE Donald Blackford TITLE SUPERVISOR OF MICROFILM SERVICES

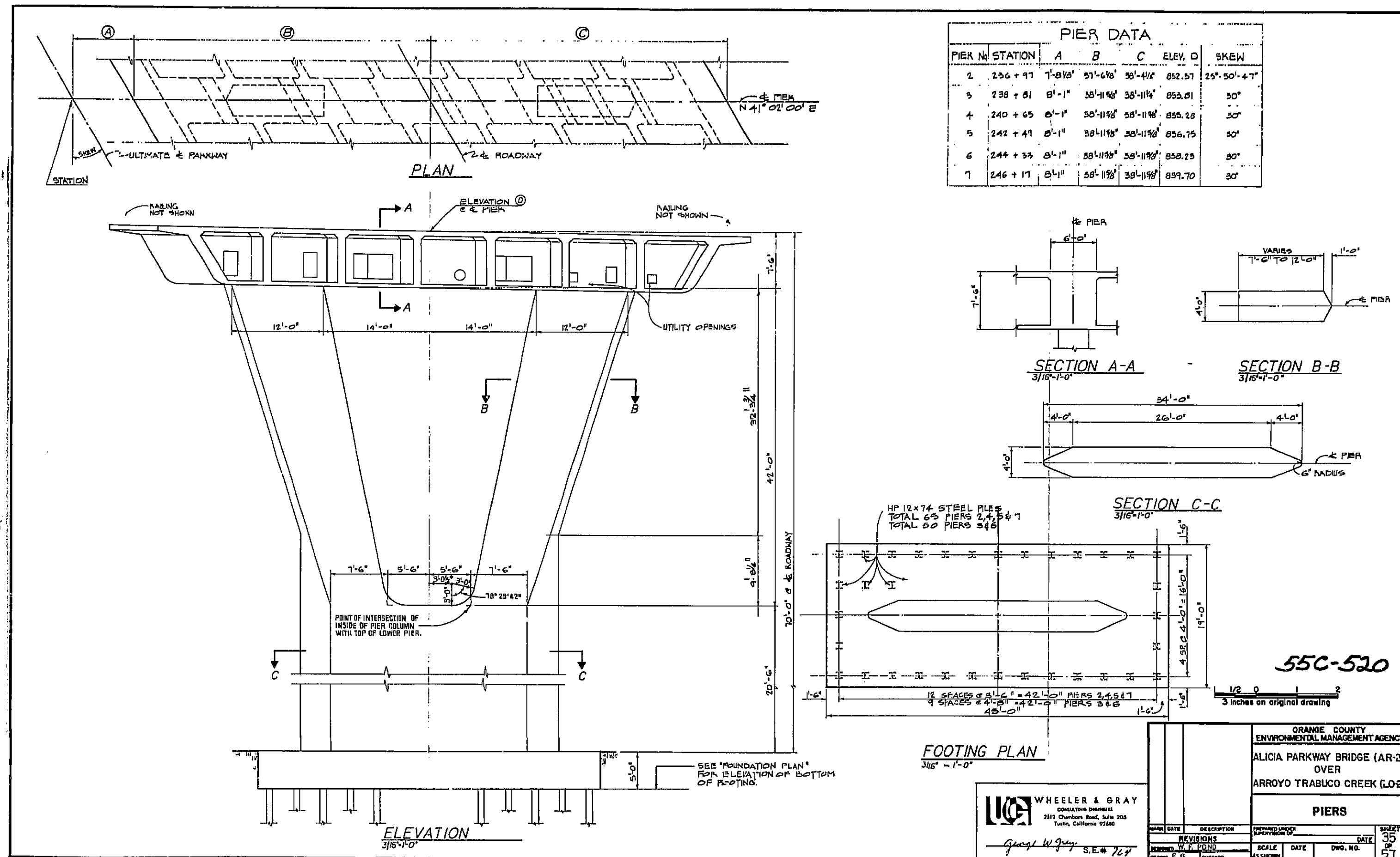


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DATE 8/2/84 SIGNATURE Donald Blackford TITLE SUPERVISOR OF MICROFILM SERVICES



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Contract No. UNKNOWN
Date Completed
Document No. 70008531

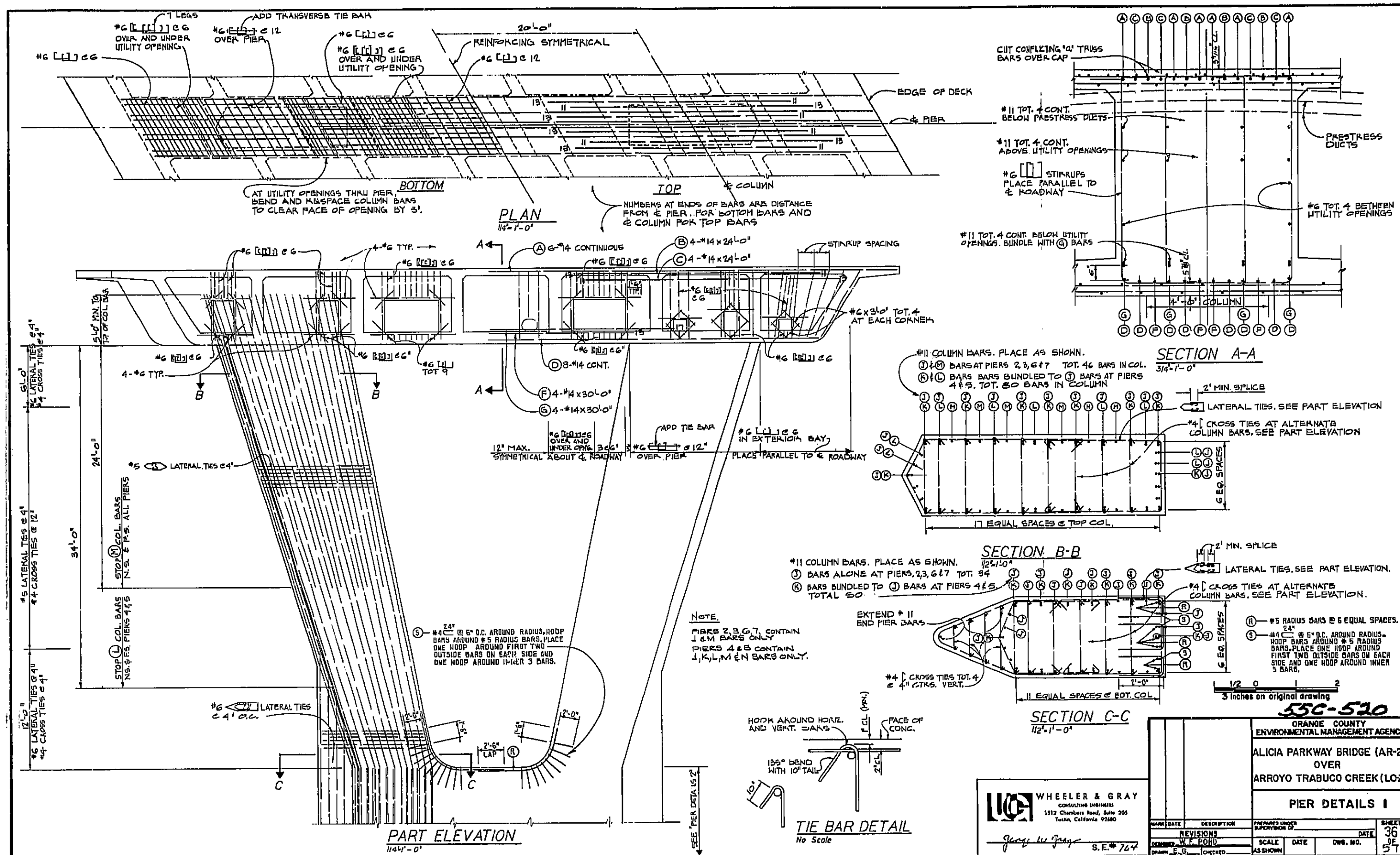
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DATE 8/2/84
DA3-58-78

SIGNATURE Donald Blackford

TITLE SUPERVISOR OF MICROFILM SERVICES



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Contract No. UNKNOWN
Date Completed
Document No. 70008531

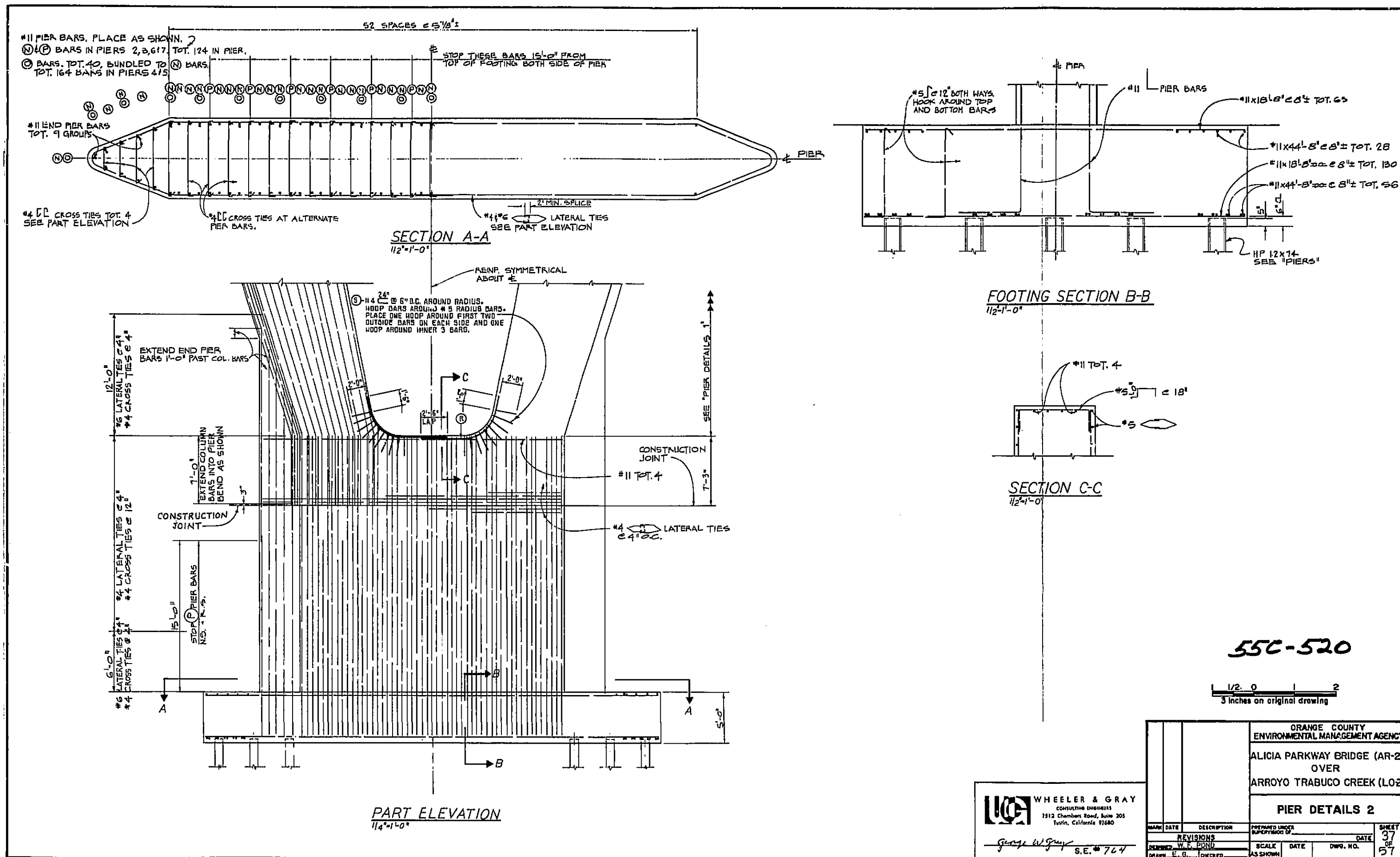
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DATE 8/2/84
DA5-58-70

SIGNATURE Donald Blackford

TITLE SUPERVISOR OF MICROFILM SERVICES

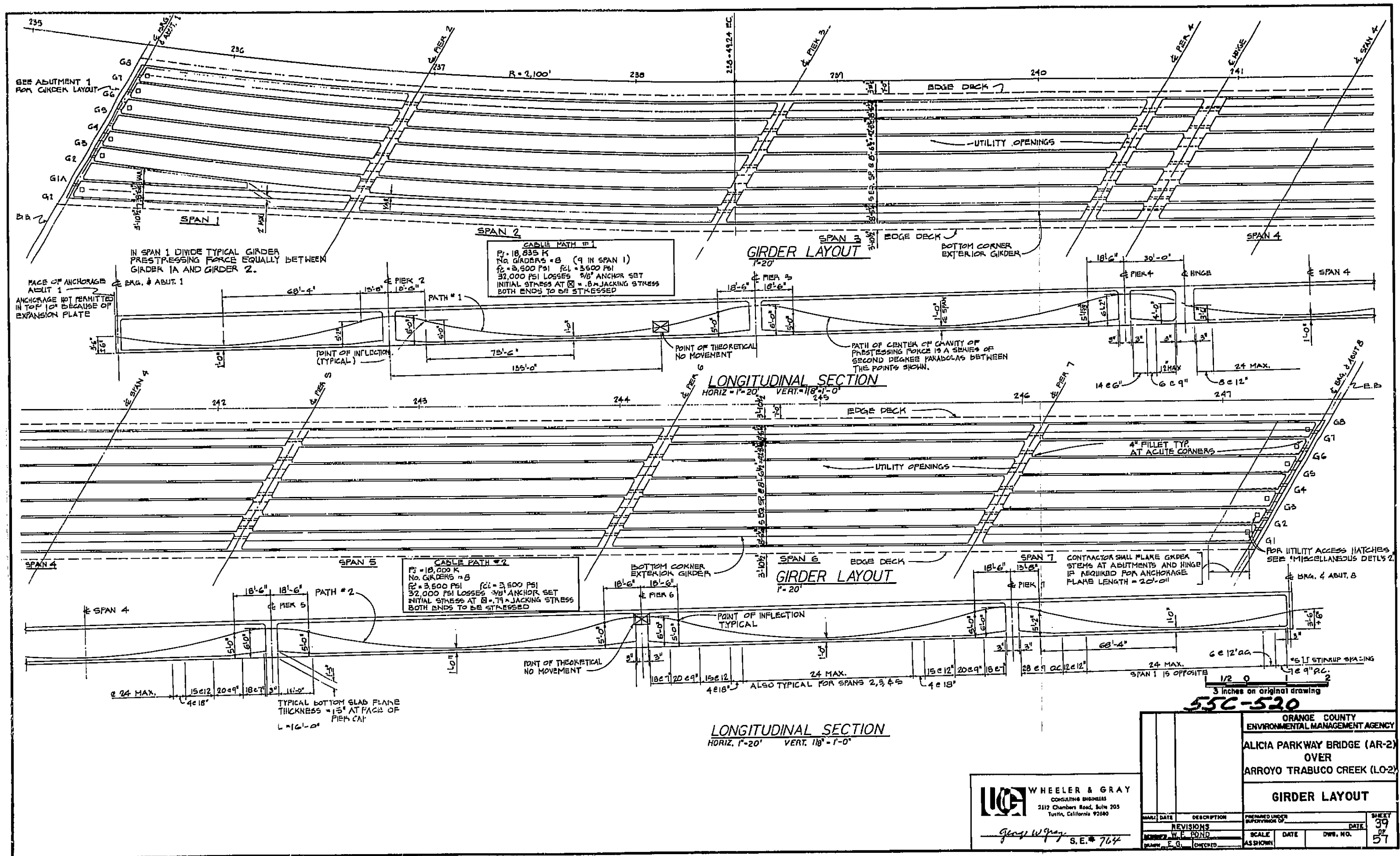


AS BUILT PLANS
Contract No. UNKNOWN
Date Completed
Document No. 70008531

12 X

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DATE 8/2/84 SIGNATURE Donald Blackford TITLE SUPERVISOR OF MICROFILM SERVICES



AS BUILT PLANS
 Contract No. UNKNOWN
 Date Completed 7/20/84
 Document No. 70008531

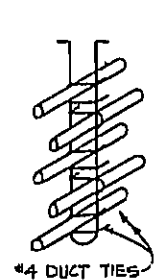
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DATE 8/2/84 SIGNATURE Donald Blackford TITLE SUPERVISOR OF MICROFILM SERVICES
 DAS-55-70

WHEELER & GRAY
 CONSULTING ENGINEERS
 2112 Chambers Road, Suite 205
 Turin, California 92680

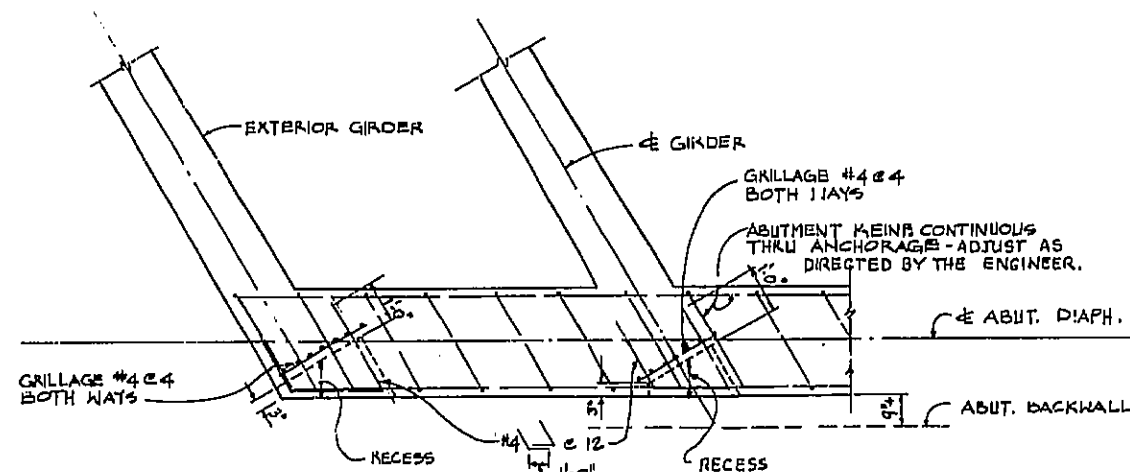
ORANGE COUNTY ENVIRONMENTAL MANAGEMENT AGENCY			
ALICIA PARKWAY BRIDGE (AR-2) OVER ARROYO TRABUCO CREEK (LO-2)			
GIRDER LAYOUT			
NO.	DATE	DESCRIPTION	APPROVED BY
1		REVISIONS	
2		W. C. HOND	
3		F. G. HOND	
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NOTE: PLACE CLOSED END OF DUCT TIES IN DIRECTION OF FLARE

Diagram illustrating the layout of a cable path. The diagram shows a horizontal line representing the cable path, with a sag curve indicated by a dashed line. The cable path is labeled "CABLE SHALL NOT VARY MORE THAN 2° FROM A PERPENDICULAR TO THE R.R." and "START FLARES TO BRG. R.R'S." The sag curve is labeled "SINGLE OR COMMON BRG. R.R'S." and "NOTE: SUFFICIENT POINTS TO BE SHOWN TO PLACE DUCTS ACCURATELY." The distance between the start and end points of the cable path is labeled "G.I.L. MIN." and "LOW POINT OF CABLE PATH (C.G.)".

BEARING PLATE PRESTRESSING PATH



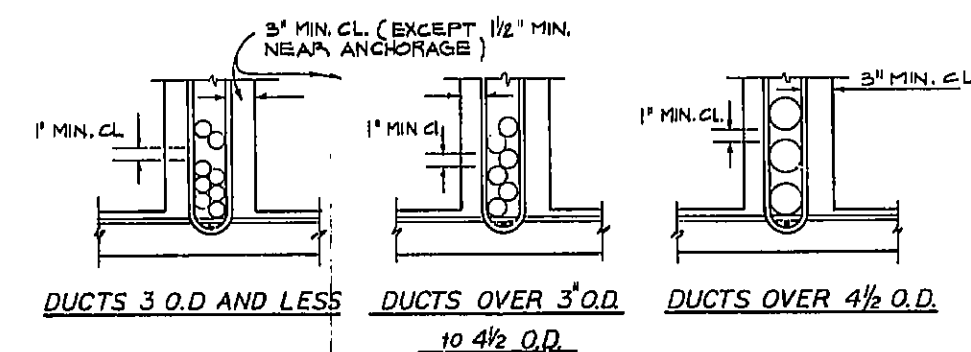
PLAN PRESTRESS BEARING SEATS

NOTES:

RECESS FOR ANCHORAGE TO BE FILLED
WITH CONCRETE.

EDGE DISTANCE OF BEARING PLATES SHALL
BE 1 1/2" MIN.

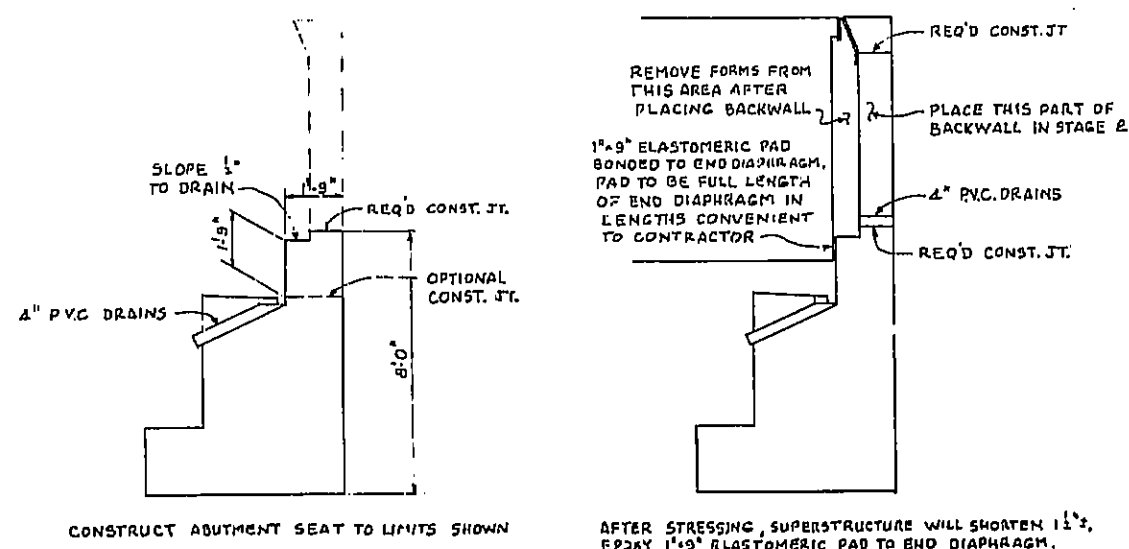
CONTRACTOR TO SUBMIT WORKING DRAWINGS
TO THE ENGINEER FOR APPROVAL.



CLEARANCE REQUIREMENTS FOR DUCTS

1. DUCT PATTERNS SHOWN ARE FOR A 12" WIDE GIKDER STEM; FOR OTHER WIDTHS THE MINIMUM CLEARANCES MUST BE MAINTAINED.
2. GIKDER STRAPUPS MUST BE BENT TO FIT THE DUCT SIZE USED, OR U OR J STRAPUPS MAY BE USED. A REINFORCING BAR MUST BE PLACED INSIDE OF EACH STRAPUP HOOK OR 90° BEND.
3. APPROVAL OF THE ENGINEER IS REQUIRED FOR DEVIATIONS.

55C-520



<u>STAGE 1</u>	<u>STAGE 2</u>
<u>STAGE CONSTRUCTION AT ABUTMENTS</u>	

WHEELER & GRAY
CONSULTING ENGINEERS
2512 Chambers Road, Suite 203
Tustin, California 92680

George W. Gray SE # 7644

		ORANGE COUNTY ENVIRONMENTAL MANAGEMENT AGENCY	
		ALICIA PARKWAY BRIDGE (ARROYO) OVER ARROYO TRABUCO CREEK (LOS ANGELES RIVER)	
		PRESTRESSED GIRDER DETAILS	
NAME	DATE	DESCRIPTION	APPROVED (PRINT NAME) RECEIVED OF DATE
REVISIONS			
1. W. F. FORD			
2. E. G. JORDAN			
SCALE	DATE	DWG. NO.	SHEET NO.
AS SHOWN			52

12X

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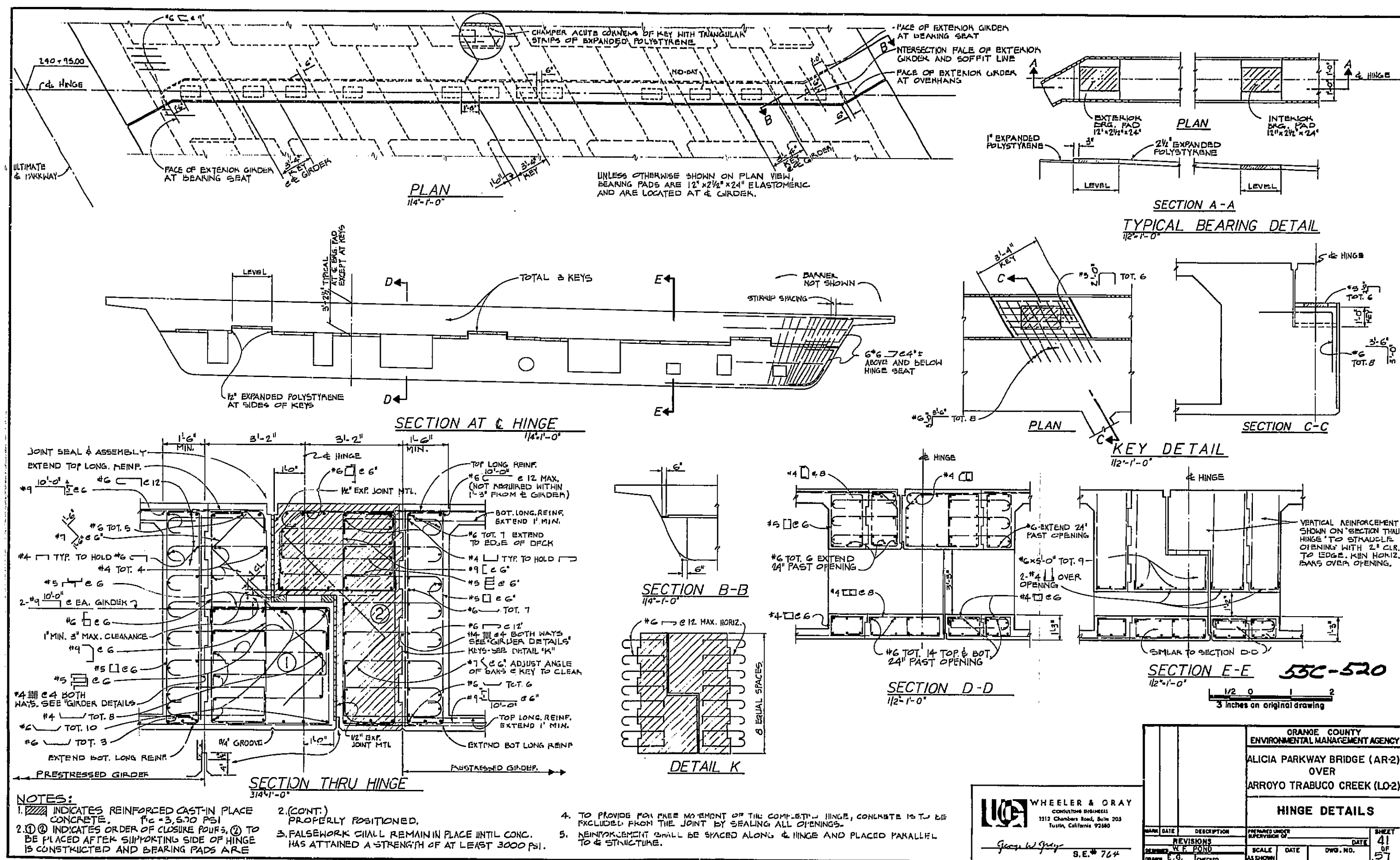
DATE 8
DAS-88-7

SIGNATURE _____

SIGNATURE Donald Blackford

A	TITLE

~~SUPERVISOR OF
MICROFILM SERVICES~~



AS BUILT PLANS
Contract No. UNKNOWN
Date Completed 7/20/85
Document No. 70008531

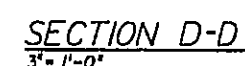
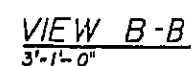
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DATE 8/2/84
DAS-88-78

SIGNATURE Donald Blackford

TITLE SUPERVISOR OF MICROFILM SERVICES



ANCHOR STUD

NOTES

1. FULL PENETRATION BUTT WELDS MAY BE SUBSTITUTED FOR THE FILLET WELDS ON ALL ANCHOR STUDS.
2. ALTERNATE TYPES OF ANCHOR STUDS MAY BE PERMITTED SUBJECT TO THE APPROVAL BY THE ENGINEER.
3. JOINT SEAL ASSEMBLY TO BE USED IN CONJUNCTION WITH CLOSURE FOUR. (SEE OTHER SHEETS FOR LIMITS). CLOSURE FOUR SHALL NOT BE PLACED UNTIL DECK SURFACE IS WITHIN THE TOLERANCE SPECIFIED.
4. JOINT SEAL ASSEMBLY TO BE FABRICATED IN 14' MAX. LENGTHS. USE JOINT AT CROWN OF ROADWAY, AT ANY CHANGE IN TRANSVERSE SLOPE IN DECK, AND AT CHANGES IN HORIZONTAL DIRECTION. PLACE OTHER JOINTS AT OR NEAR LANE LINES. ALL METAL PARTS TO BE GALVANIZED AFTER FABRICATION.
5. SHEET NEOPRENE SHALL BE FABRICATED IN ONE CONTINUOUS PEECE OR JOINTS SHALL BE VULCANIZED. NEOPRENE SHALL BE FABRICATED WITHIN 48" OF CORNERS. 1" HOLES IN NEOPRENE SHEETS SHALL BE DRILLED OR PUNCHED SO THAT THE NEOPRENE IS NOT DISTURBED AT THE TIME OF INSTALLATION.

NOTE "A"

INSERT ASSEMBLY OR EXPANSION ANCHORAGE FOR 5/8"x1 1/4" A-325 BOLT.

3 inches on original drawing

55C-520

ORANGE COUNTY
ENVIRONMENTAL MANAGEMENT AGENCY
ALICIA PARKWAY BRIDGE (AR-2)
OVER
ARROYO TRABUCO CREEK (I.O2)

JOINT SEAL ASSEMBLY

MARK	DATE	DESCRIPTION	PREPARED UNDER SUPERVISION OF		SHEET
REVISONS			DATE		42
DESIGNED	W.F. POND	SCALE	DATE	DWG. NO.	OF
BY	E.G. JONES	AS SHOWN			5

Document No. 70008531

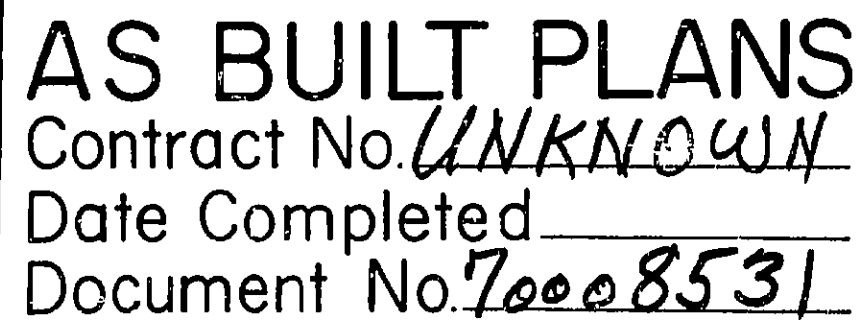
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DATE 8/2/84

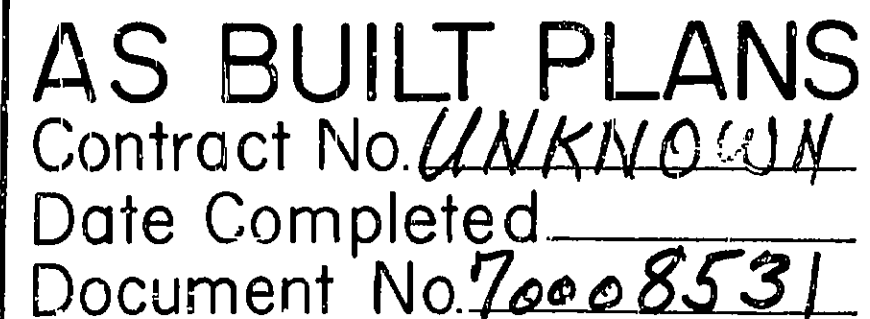
SIGNATURE Donald Blackford

TITLE: SUPERVISOR OF
MICROFILM SERVICES



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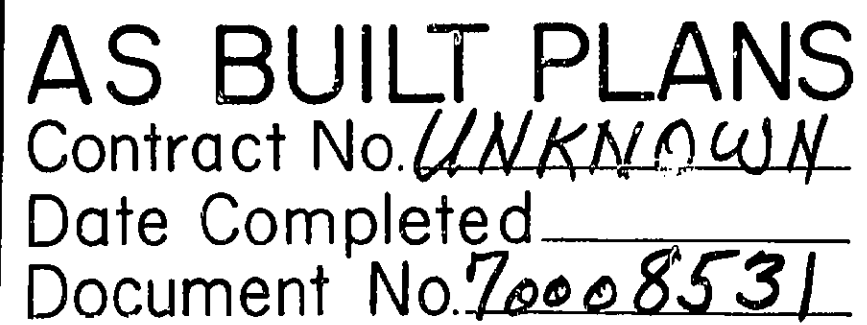
DATE 8/2/84	SIGNATURE Donald Blackford	TITLE SUPERVISOR OF MICROFILM SERVICES
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DATE 8/2/84

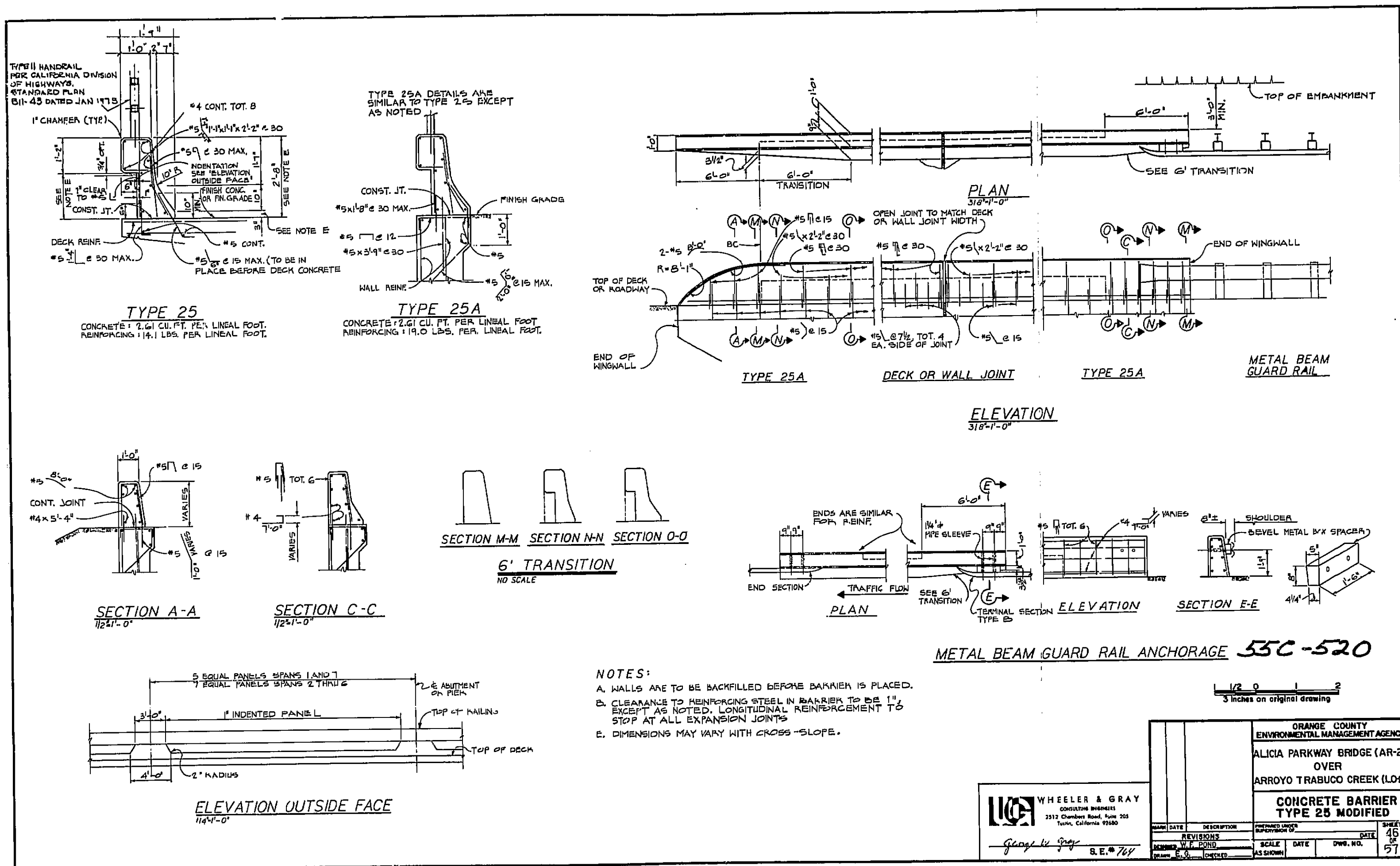
SIGNATURE Donald Blackford

TITLE ~~*****~~ SUPERVISOR OF
MICROFILM SERVICES



12X

DATE 8/2/84	SIGNATURE Donald Blackford	TITLE SUPERVISOR OF MICROFILM SERVICES
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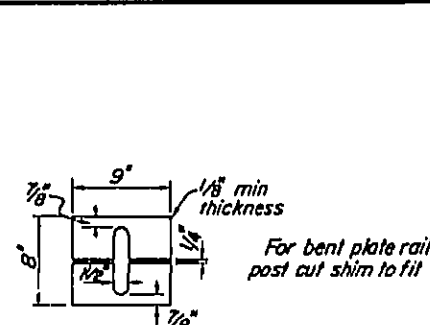


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Contract No. UNKNOWN
Date Completed
Document No. 70008531

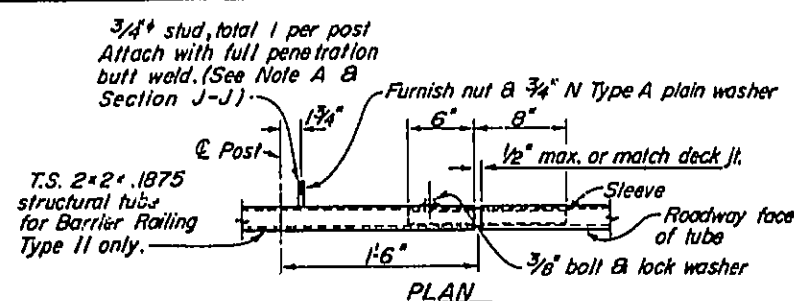
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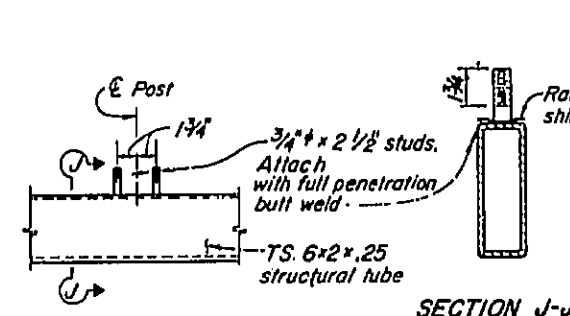
DATE 8/2/84 SIGNATURE Donald Blackford TITLE SUPERVISOR OF MICROFILM SERVICES



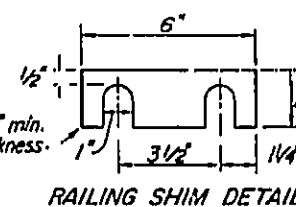
POST SHIM DETAIL



PLAN



SECTION J-J



RAILING SHIM DETAIL

Tack weld 3/8" nut inside of sleeve for 3/8" hex bolt with lock washer. (total 1) See Note B.

Sleeve formed of 3/16" R, bent thus: 51° for sliding fit inside of rail tube.

Note A:

3/8" studs may be used with 2x2 tube in lieu of 3/4" studs. Decrease post slotted hole size to 3/8" x 1 1/8" and use 3/8" W Type A plain washers.

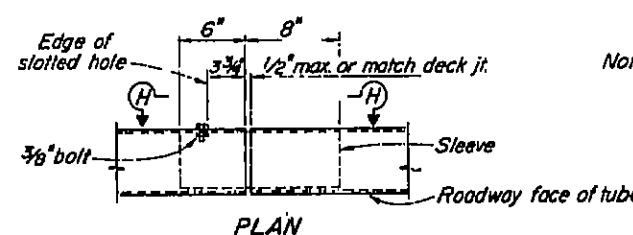
Note B:

3/8" hex nut tack welded to inside of sleeve may be replaced by a drilled and tapped hole to accept the 3/8" bolt.

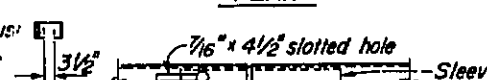


SLEEVE

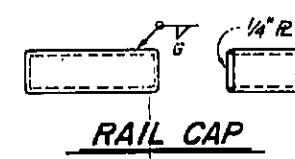
STUD BOLT DETAILS



PLAN

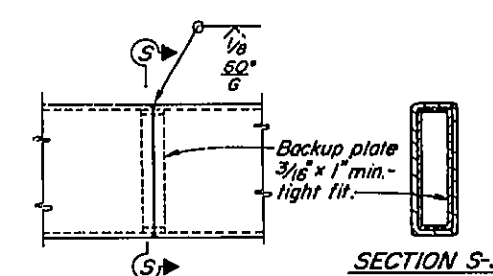


VIEW H-H



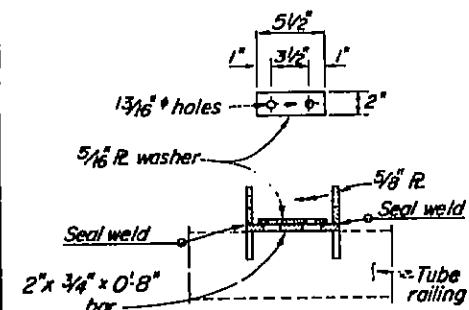
RAIL CAP

Note: Contractor may submit alternative detail for approval. Typical for 2x2 tube also.

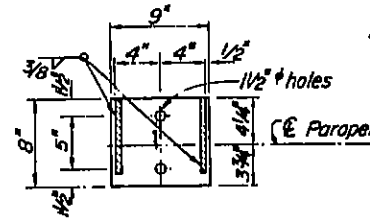


SECTION S-S

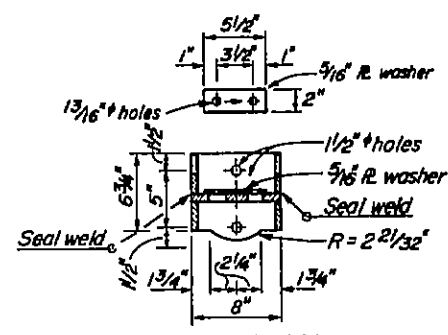
TUBE - WELDED SPLICE



SECTION E-E

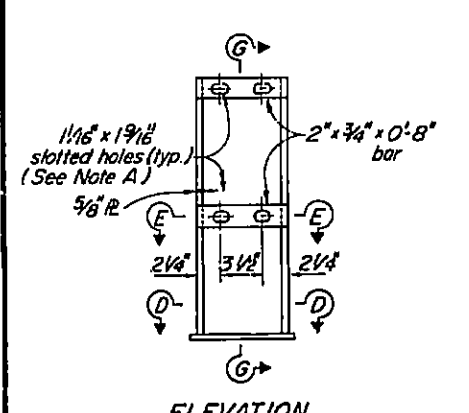


SECTION D-D



SECTION M-M

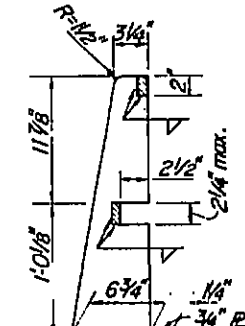
DETAIL A - TUBE SPLICE



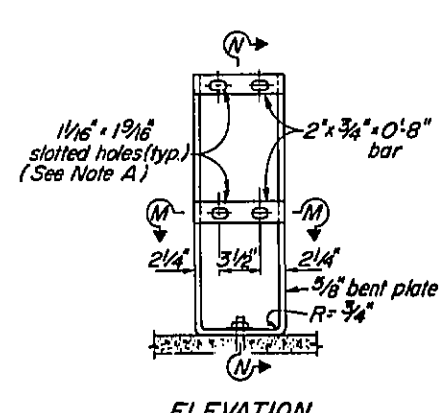
ELEVATION

RAIL POST DETAILS TYPE II

These details apply to Barrier Railing Types II & 9-II

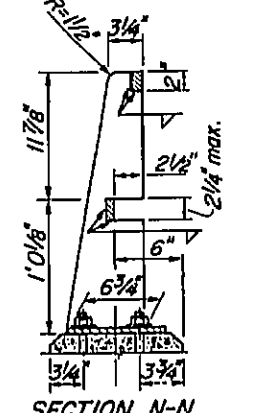


SECTION G-G



ELEVATION

ALTERNATIVE RAIL POST DETAILS TYPE II



SECTION N-N

55C-520

1/2 0 1 2
3 inches on original drawing

WHEELER & GRAY CONSULTING ENGINEERS		ORANGE COUNTY ENVIRONMENTAL MANAGEMENT AGENCY	
DATE 8/2/84		ALICIA PARKWAY BRIDGE (AR-2) OVER ARROYO TRABUCO CREEK (LO-2)	
REVISIONS		METAL RAILING DETAILS TYPE II	
DESIGNED BY W.F. ROND	SCALE 1/2" = 1'-0"	DATE 4/8/84	SHEET 46A
DRAWN BY J.D.	APPROVED BY J.D.	DATE 4/8/84	57

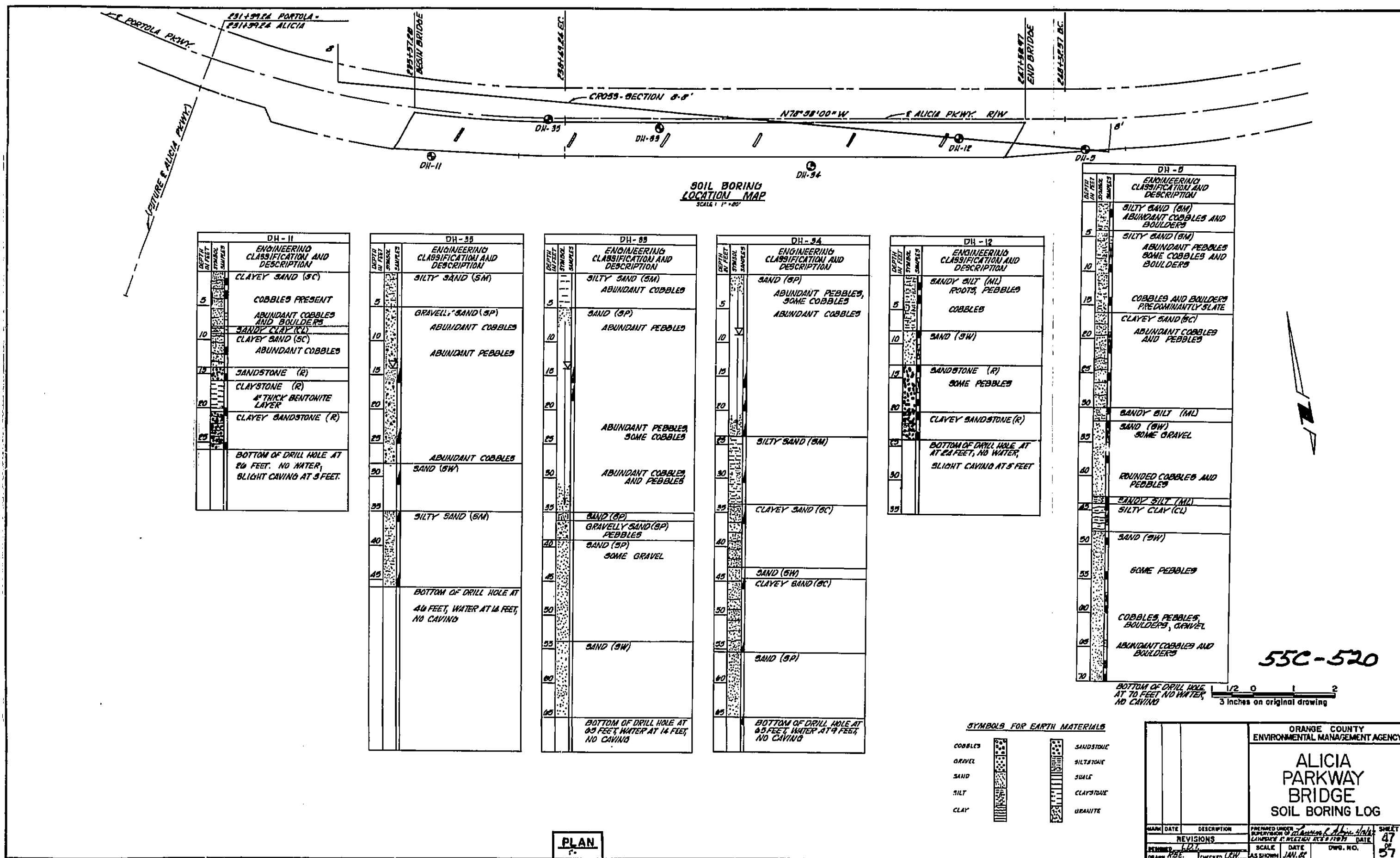
11.11.11 JOB NO. 2055

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Contract No. UNKNOWN
Date Completed
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DAS-88-7B