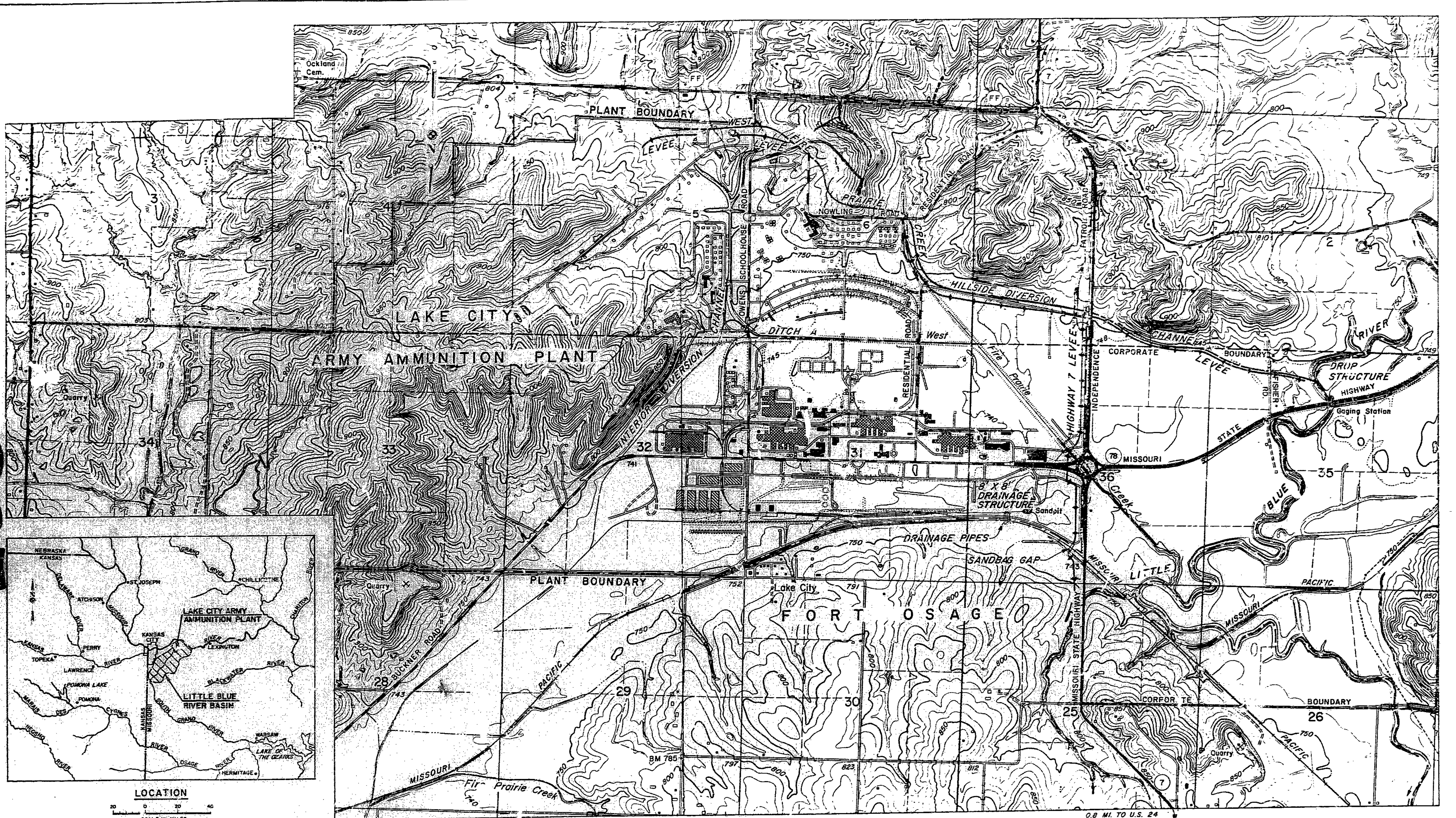


200



SYM.	DESCRIPTION	DATE	APP'D.
	REVISIONS		

LITTLE BLUE RIVER
 VICINITY OF KANSAS CITY, MISSOURI
 STAGE V-LAKE CITY ARMY AMMUNITION PLANT
 FLOOD PROTECTION PROJECT
 PHASE II

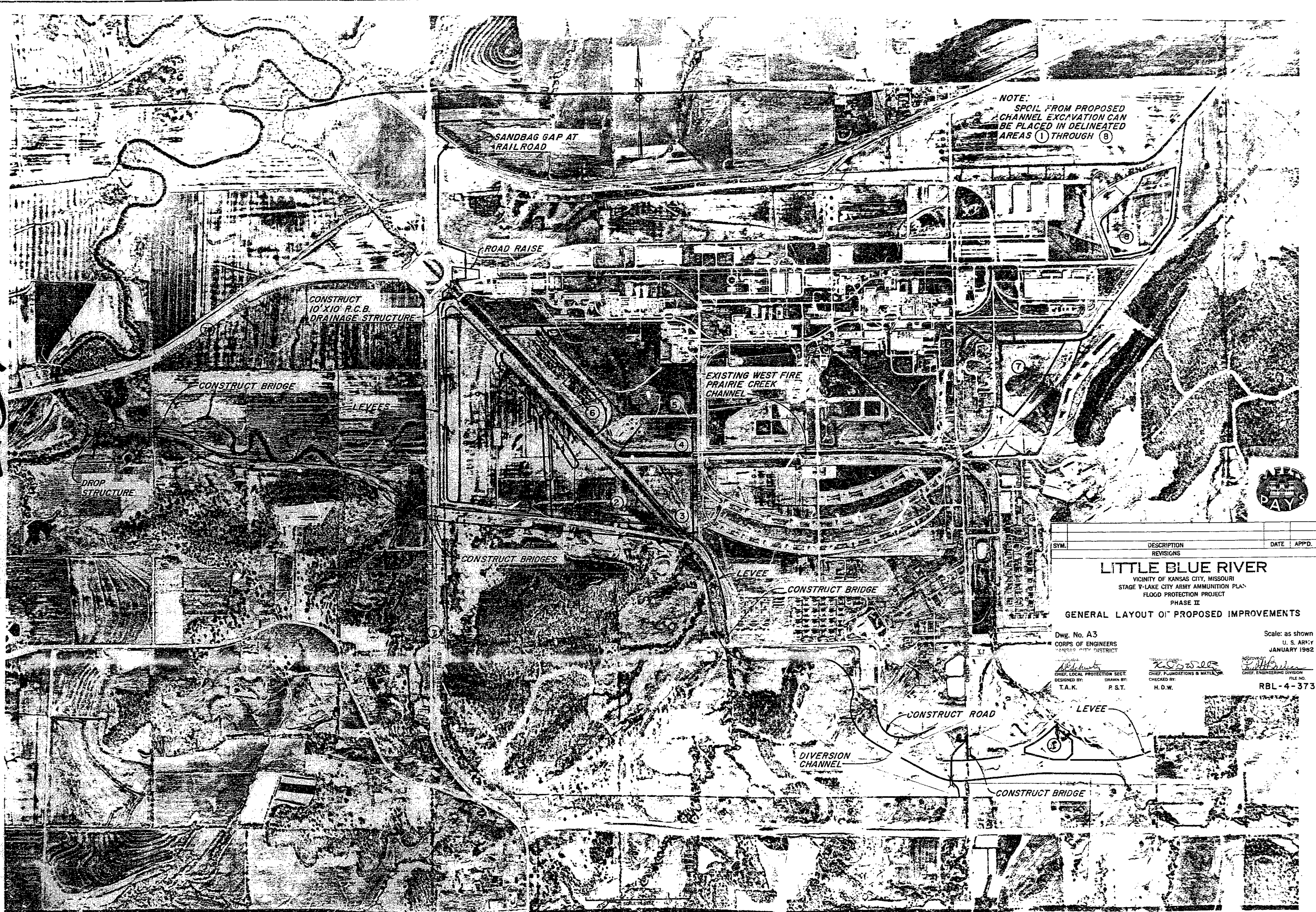
LOCATION AND VICINITY
Jackson Co.

Dwg. No. A2
 CORPS OF ENGINEERS
 KANSAS CITY DISTRICT
 Submitted: *cc. [unclear]*
 Checked by: T.A.K. P.S.T. F.D.W.
 Recommended by: *[Signature]*
 Chief, Foundations & Mats. Div.
 Approved: *[Signature]*
 Chief, Engineering Division
 Scale: as shown
 U. S. ARMY
 JAN/JARY 1982
 FILE NO. A-4296 RBL-4-372

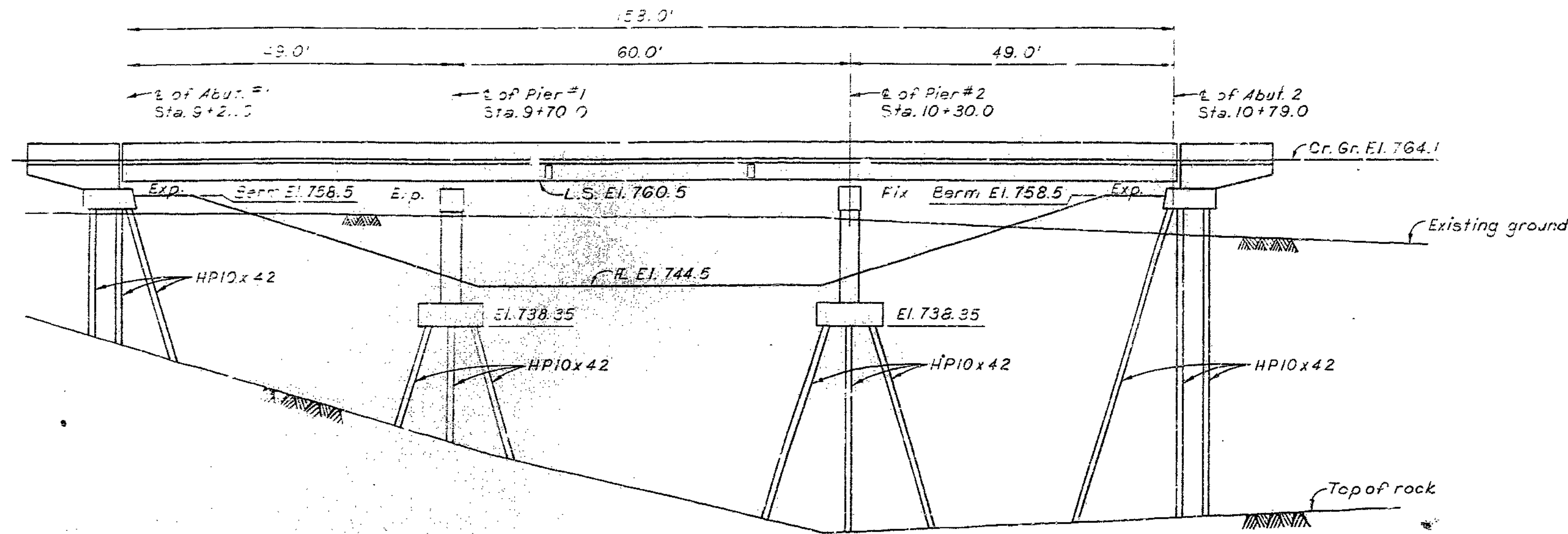
Const. Plans - Not Final
Sheet 1 of 10

VALUE ENGINEERING PAYS

201



SYM.	DESCRIPTION	DATE	APP'D.
REVISIONS			
LITTLE BLUE RIVER			
VICINITY OF KANSAS CITY, MISSOURI			
STAGE T-LAKE CITY ARMY AMMUNITION PLANT			
FLOOD PROTECTION PROJECT			
PHASE II			
GENERAL LAYOUT OF PROPOSED IMPROVEMENTS			
Dwg. No. A3		Scale: as shown	
CORPS OF ENGINEERS		U. S. ARMY	
KANSAS CITY DISTRICT		JANUARY 1962	
<i>T.A.K.</i>	DESIGNED BY:	<i>H.O.W.</i>	CHECKED BY:
	T.A.K.	P.S.T.	H.O.W.

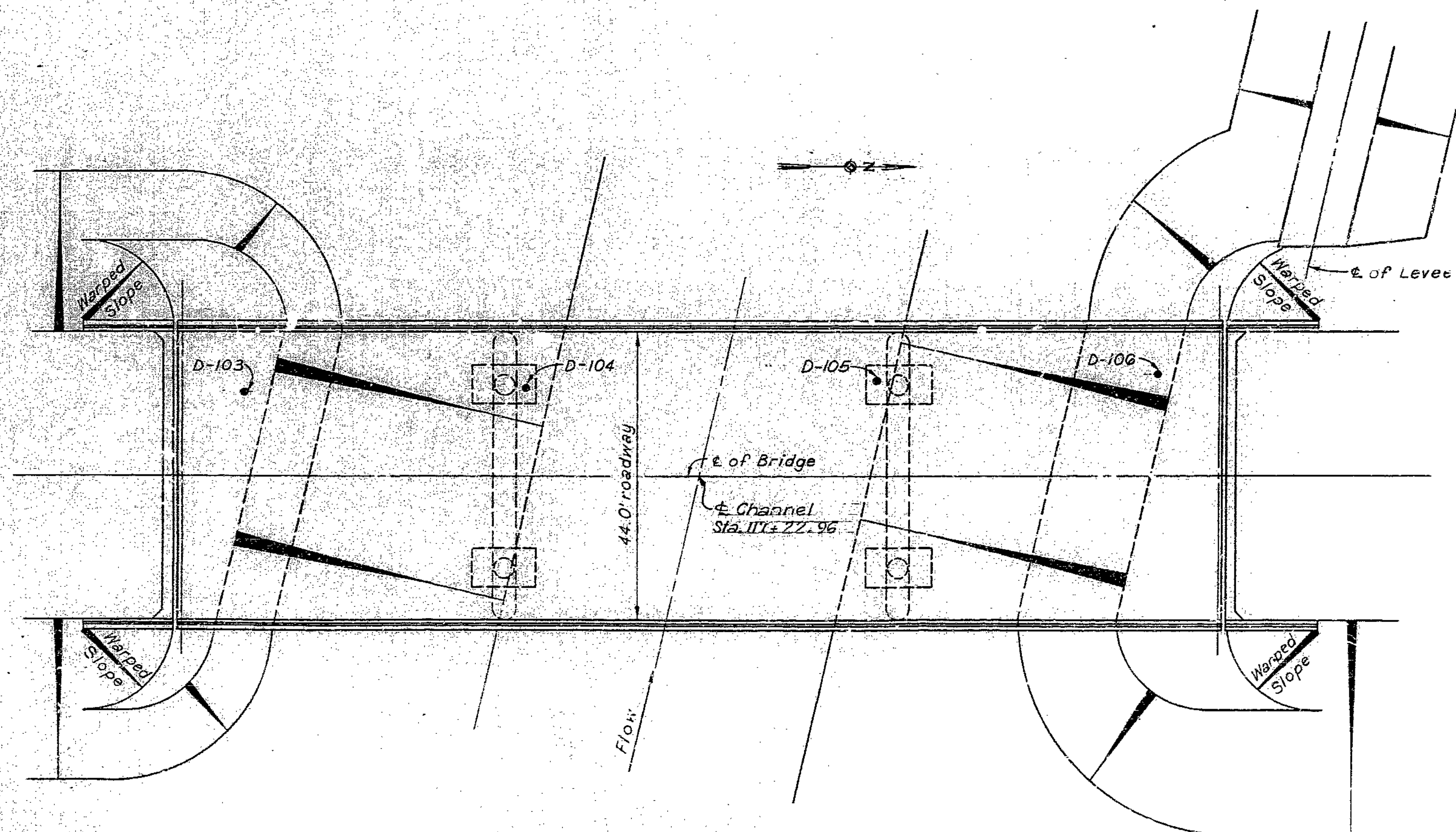


ELEVATION
Scale: 1"=10'

PILE DATA				
Abutment or Pier No.	Abut. #1	Pier #1	Pier #2	Abut. #2
Pile Type & Size	HP10x42	HP10x42	HP10x42	HP10x42
Number	7	12	12	7
Minimum Length Ft.	27	23	34	50
Design Bearing Tons	55	55	55	55
Min. Hammer Energy Req'd Ft. lb.	15,000	15,000	15,000	15,000
Moving Parts Wt. Lbs. (Min.)	5,000	5,000	5,000	5,000

QUANTITIES	
	Concrete Cubic Yds.
Abutment #1	45.1
Pier #1	44.4
Pier #2	44.4
Abutment #2	45.1
Superstructure	266.9
Total	455.9
Structural Steel Lbs.	89,200
Reinforcement Lbs.	132,400

202



PLAN
Scale: 1"=10'

GENERAL NOTES:
 Design Specifications: AASHTO Standard
 Specifications for Highway Bridges 1977
 Design Loading: HS 20
 Structural steel (A. S. T. M. A36) $f_y = 20,000$ psi
 Steel pile (A. S. T. M. A36)
 Concrete: $f_c = 1600$ psi

Reinforcing Steel $f_y = 60,000$ psi
 Piling: All piles shall be driven to refusal on or into solid rock or shale
 Compacted roadway fill (full roadway width) shall be placed up to elevation of bottom of concrete beam in front of and not less than 75' in back of each abutment before piles are driven.
 C.J. = Construction Joint
 All reinforcing bar laps shall be 30 bar diameters unless otherwise noted.
 Exposed edges of concrete shall be chamfered 3/4" unless otherwise noted.
 Boring Details and top of rock profiles, see Dwg. A14.
 Field connections 7/8" high strength bolts, 1 5/16" open holes unless otherwise noted.
 For bridge location and earth slopes, see Dwg. 47, A15 & A16.
 Bearing areas for bridge bearings shall be poured 1/8" high and ground to finished bearing elevations. See Specifications.

SYN.	DESCRIPTION	DATE	APP'D.
	REVISIONS		

LITTLE BLUE RIVER

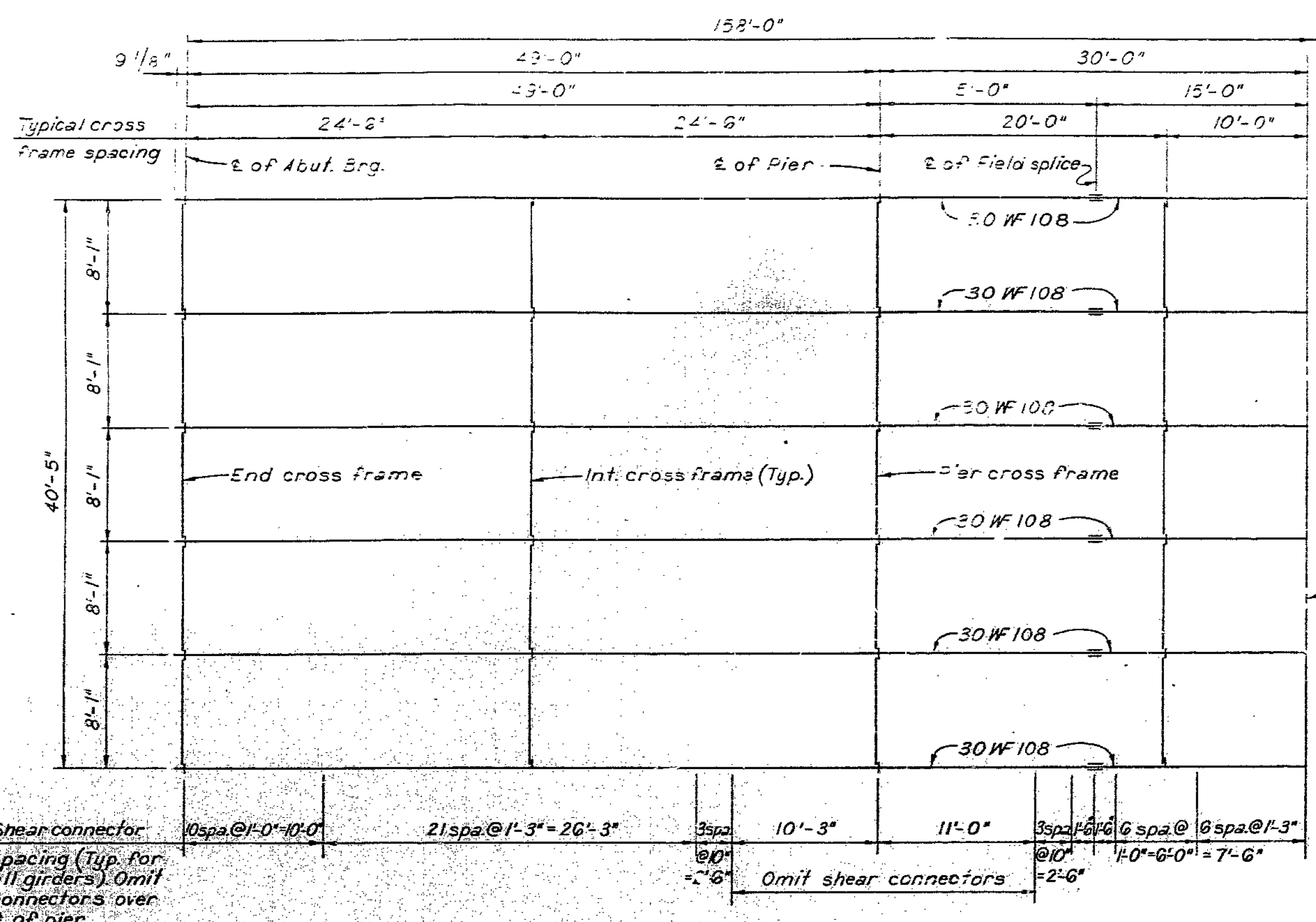
VICINITY OF KANSAS CITY, MISSOURI
 STAGE T-LAKE CITY ARMY AMMUNITION PLANT
 FLOOD PROTECTION PROJECT
 PHASE II

MISSOURI STATE HIGHWAY 7 BRIDGE
 PLAN AND ELEVATION

Dwg. No. D39
 CORPS OF ENGINEERS
 KANSAS CITY DISTRICT
 U. S. ARMY
 JANUARY 1982
 Scale: as shown
 Jackson Co.
 DESIGNED BY: R.C.L.
 DRAWN BY: P.W.M.
 CHECKED BY: R.S.H.
 FILE NO. A-4296 RBL-4-445

Bridge over West Fine
 Prairie Creek Diversion
 Channel (Little Blue River)
 Sheet 3 of 10

Const. Plans - Not Final Jackson County A-4296



FRAMING PLAN
Scale: 3/16"=1'-0"

EXPANSION DEVICE TABLE

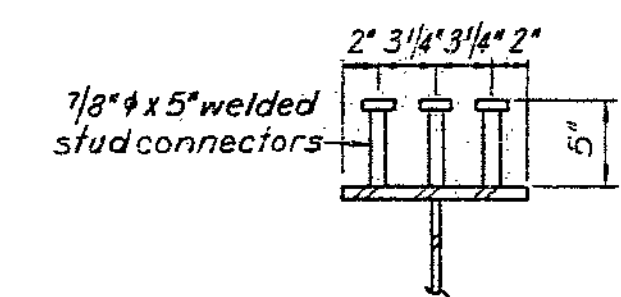
a	b	c	d	e
17/8	9	3 1/2	6	4 1/2

* @ 60°F
For Expansion device see Dwg. D45

TABLE OF BEARING VARIABLES

Exp.	A	B	C	D	E	G	H	J	K	L	M	N	P	R	S	T
Abut. 1	3 1/2"	14"	18"	1 1/2"	10"	3 1/2"	2 3/4"	13/4"	13/4"		11 7/8"	1 1/2"		2'-4"	1 1/4"	4 1/4"
Abut. 2	9 1/2"	14"	18"	1 1/2"	10"	3 1/2"	2 3/4"	13/4"	13/4"		11 7/8"	1 1/2"		2'-4"	1 1/4"	4 1/4"
Pier 1	9 1/2"	14"	18"	1 1/2"	10"	3 1/2"	2 3/4"	13/4"	2"		11 7/8"	1 1/2"		2'-4"	1 1/4"	4 1/4"
Pier 2	9 1/2"	14"	18"	1 1/2"	10"	3 1/2"	2 3/4"	13/4"	2"		11 7/8"	1 1/2"		2'-4"	1 1/4"	4 1/4"

Note:
For Bearings, see Dwg. D45

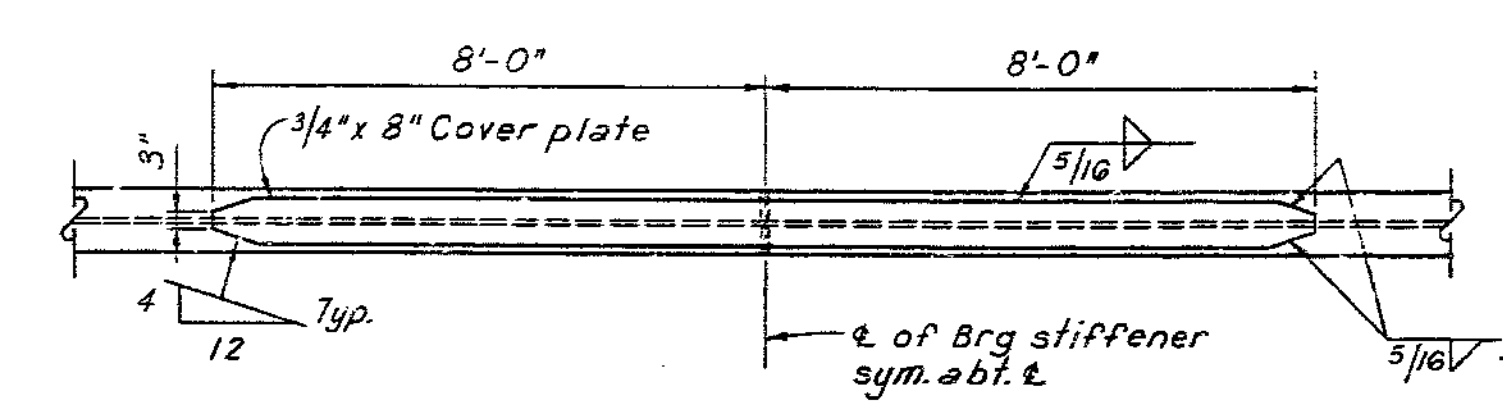
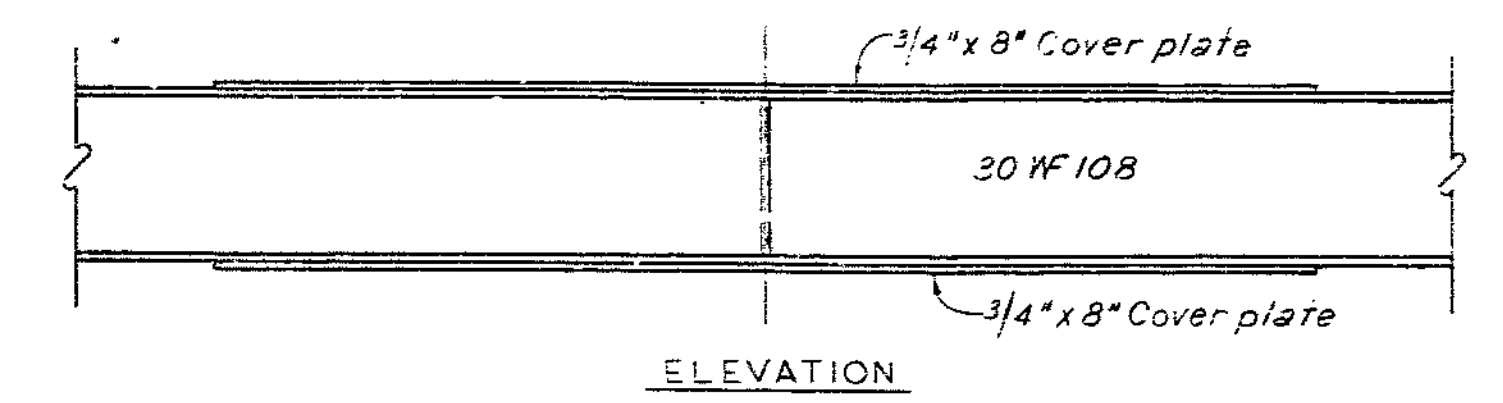


SHEAR CONNECTOR DETAIL
Not to Scale

ROCKER SETTING & ELASTO JOINT GAP

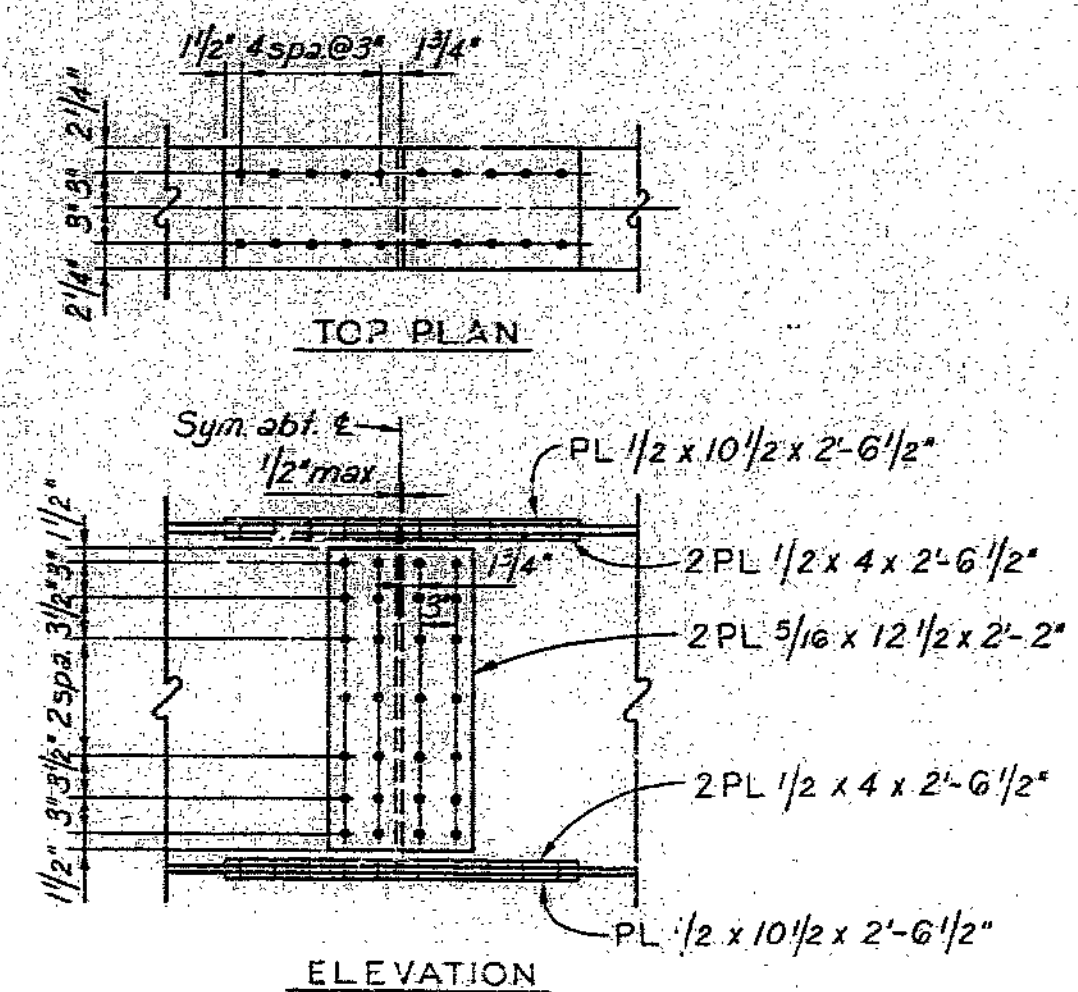
	ABUTMENT	ABUT#1	PIER#1	ABUT#2	ABUTMENT
Temp. at time of setting					
10°F	2 3/16"	7/16"	1/4"	3/16"	2 1/16"
60°F	1 7/8"	0	0	0	1 7/8"
110°F	1 1/16"	-7/16"	-1/4"	-3/16"	1 1/16"

Notes:
Axis of rocker is vertical at 60°F. For temperatures other than those shown, use straight line interpolation or extrapolation to determine proper position.

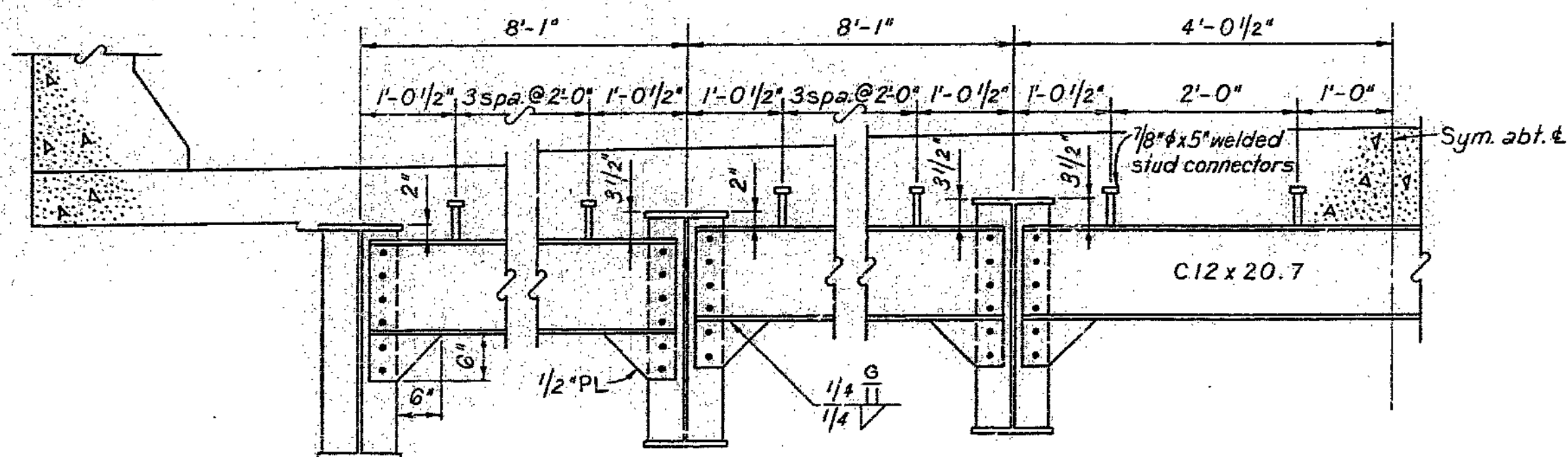


COVER PLATE DETAIL
Scale: 1/2"=1'-0"

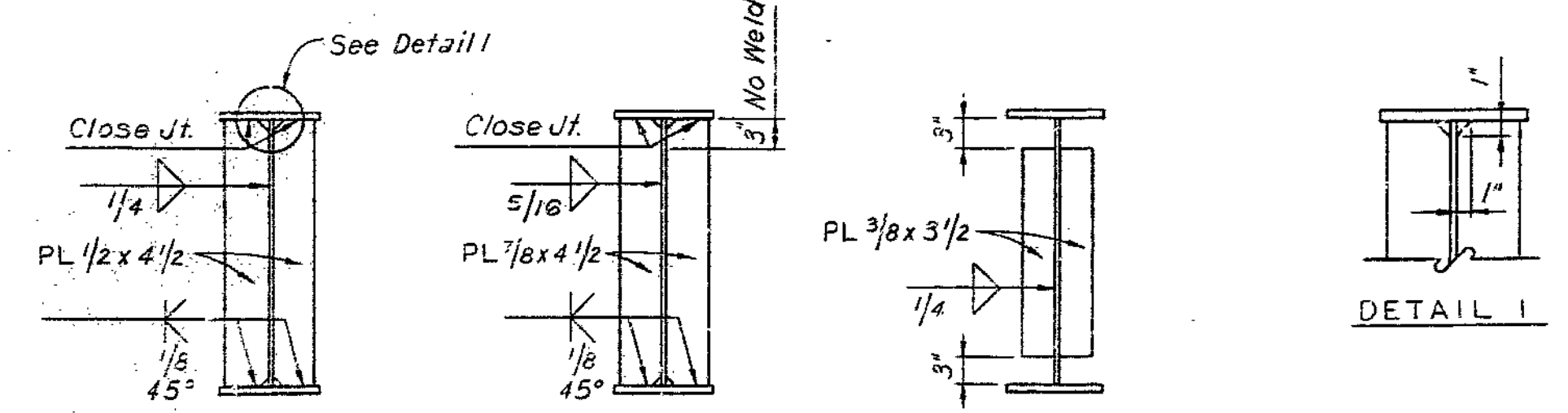
203



FIELD SPLICE DETAILS
Scale: 1"=1'-0"



END CROSS FRAME
Scale: 1"=1'-0"



WELDING DETAILS
Not to Scale

GENERAL NOTES FOR STRUCTURAL STEEL
All material shall be ASTM A36 unless otherwise noted.
Field connections shall be made with 7/8" high strength bolts, open holes shall be 15/16" reamed. Edge distance shall be 1 1/2" to a sheared edge, 1 1/4" to a finished edge unless otherwise noted.
All wide flange beams and welded flange plates, shall have a charpy V notch toughness of fifteen foot pounds at 40°F.

SYM.	DESCRIPTION	DATE	APPD.
REVISIONS			

LITTLE BLUE RIVER
VICINITY OF KANSAS CITY, MISSOURI
STAGE V LAKE CITY ARMY AMMUNITION PLANT
FLOOD PROTECTION PROJECT
PHASE II

MISSOURI STATE HIGHWAY 7 BRIDGE
STRUCTURAL STEEL DETAILS
JACKSON Co.

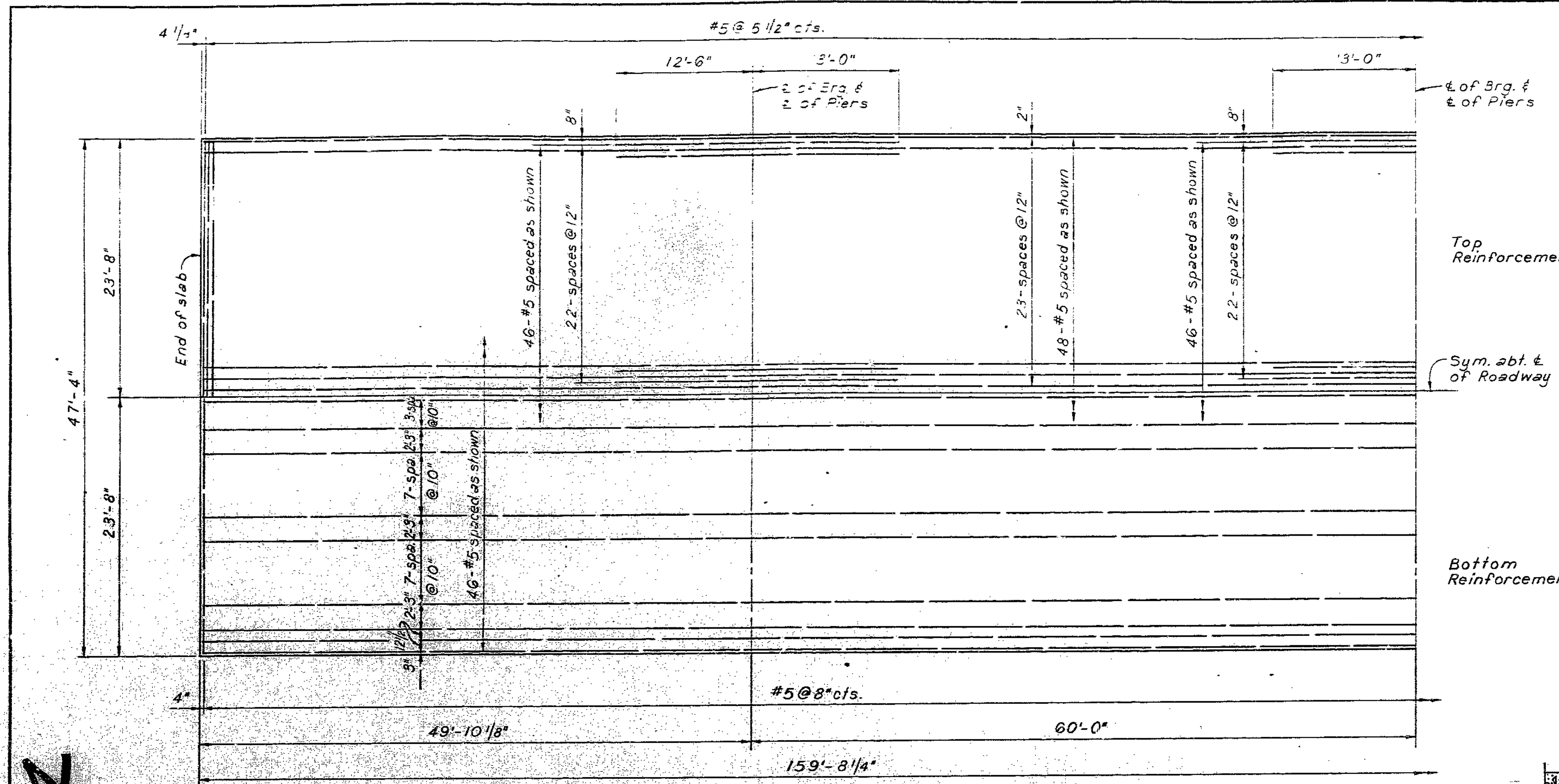
Dwg. No. D40
CORPS OF ENGINEERS
KANSAS CITY DISTRICT

Submitted: [Signature]
Checked by: [Signature]
R.C.L.

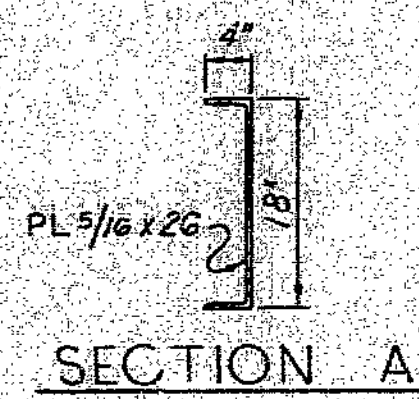
Recommended: [Signature]
Checked by: [Signature]
R.S.H.

Scale: as shown
U. S. ARMY
JANUARY 1982

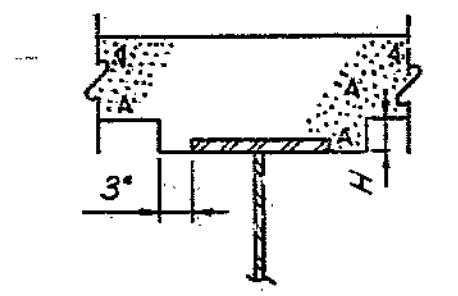
FILE NO. A-4296 RBL-4-446



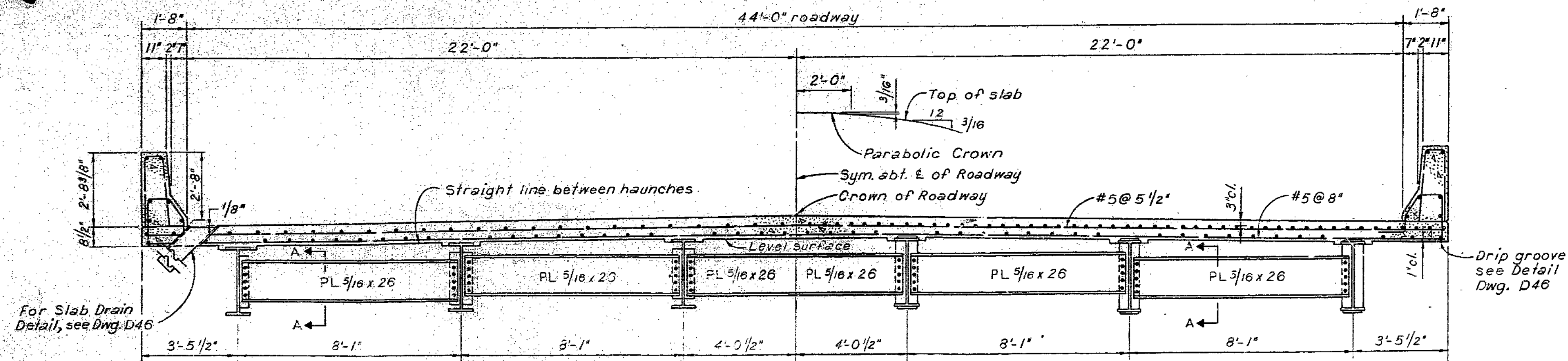
PART PLAN OF SLAB SHOWING REINFORCEMENT



SECTION A



HAUNCH DETAIL

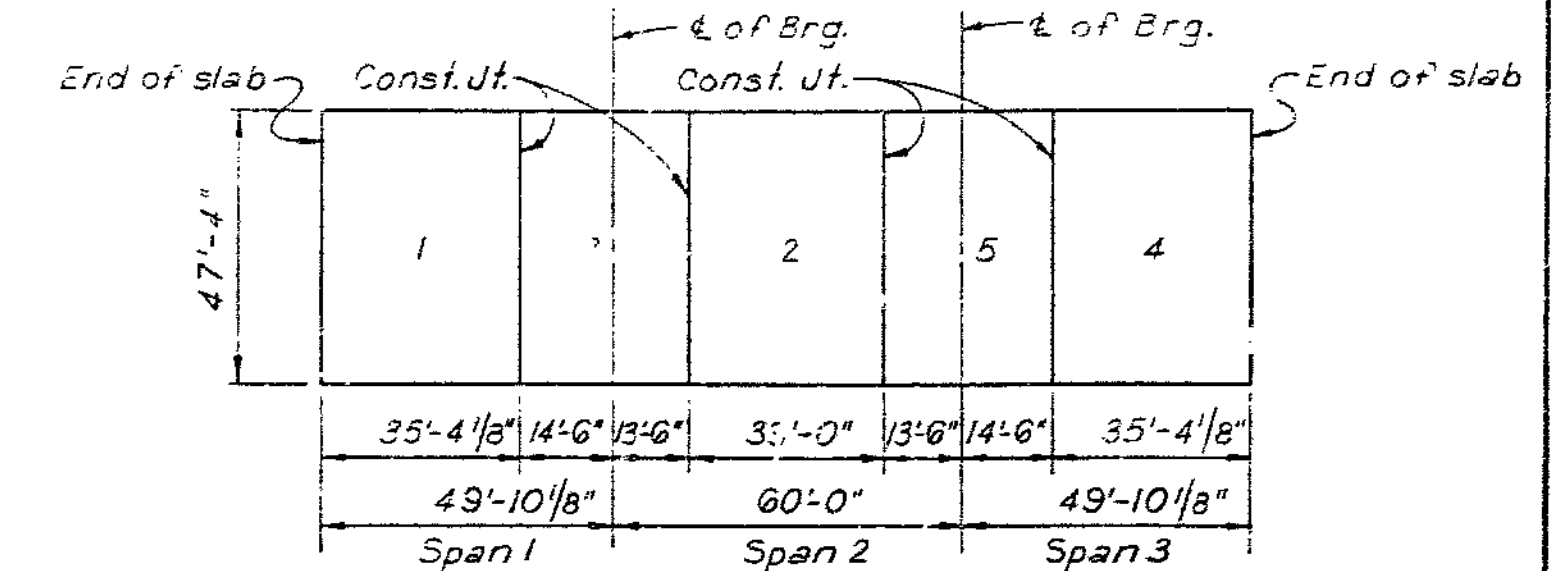


HALF SECTION AT INT. CROSS FRAME

HALF SECTION AT PIER

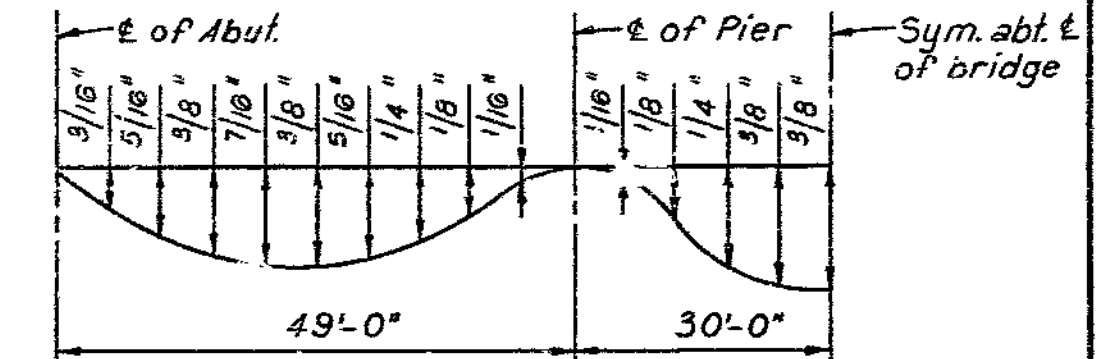
TYPICAL ROADWAY SECTION

Note:
 For structural steel details not shown, see Miscellaneous Details D40.
 For drain, parapet and Slab Construction Joint Detail, see Dwg. D46.
 Top mat of slab reinforcement shall be epoxy coated.

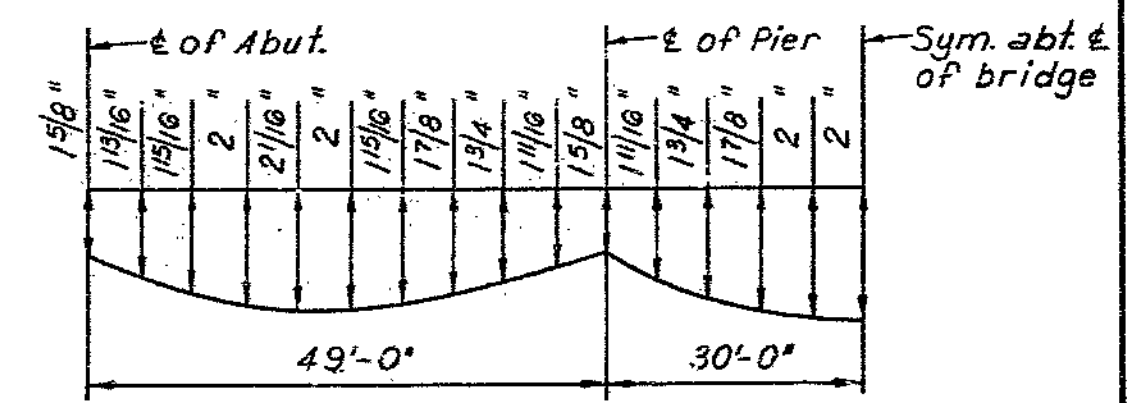


CONCRETE PLACING SEQUENCE

Note:
 The Contractor shall observe the basic slab placing sequence unless he is prepared to place and finish longer sections. Several sections may be combined provided the placing rate is approved and the placing does not end with a section over a pier. Alternate placing sequences shall be as approved and placing of longer sections may require the use of a retarder at the Contractor's expense. Curbs shall be placed independently of slab and may be placed continuously. If curbs are placed in sections, joints shall be located over roadway slab joints.



DEAD LOAD DEFLECTION DIAGRAM



SLAB HAUNCHING DIAGRAM(H)

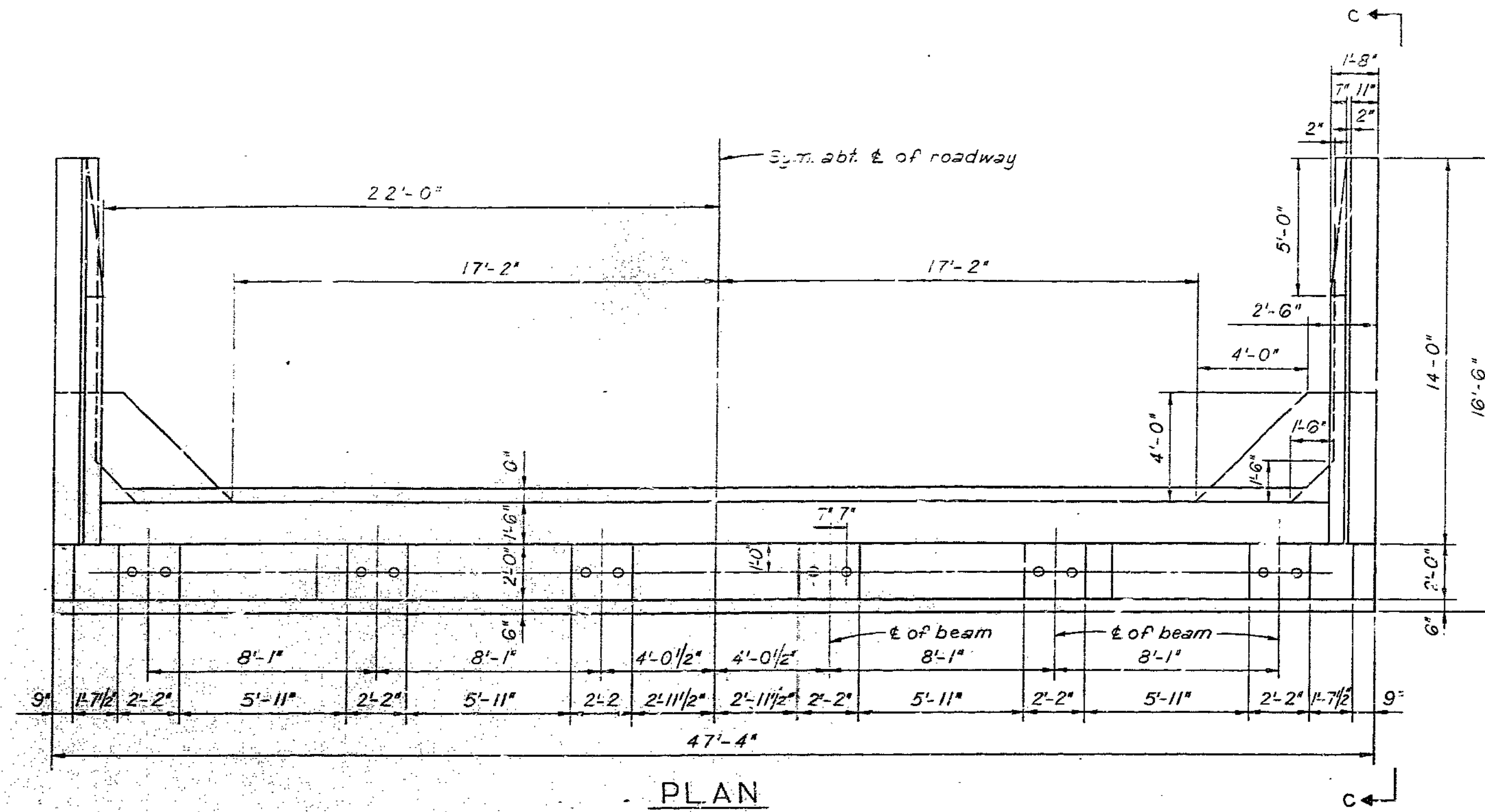
NOTES:
 Haunch dimensions shown in diagram are theoretical and shall be adjusted for variation in the top of the girder elevations. The concrete haunch dimensions shall be determined from elevations taken on top of the girders at ten'h points of each span after steel is erected.

SYM.	DESCRIPTION	DATE	APPD.
	REVISIONS		
LITTLE BLUE RIVER			
VICINITY OF KANSAS CITY, MISSOURI			
STAGE V-LAKE CITY ARMY AMMUNITION PLANT			
FLC 'D PROTECTION PROJECT			
PHASE II			
MISSOURI STATE HIGHWAY 7 BRIDGE			
REINFORCEMENT DETAILS			
Jackson Co.			
Dwg. No. D41	CORPS OF ENGINEERS	KANSAS CITY DISTRICT	Scale: as shown
Submitted by: <i>Robert D. Nixon</i>	Checked by: <i>Bryan Riche</i>	Approved by: <i>Carl H. Bunker</i>	U. S. ARMY
DESIGNED BY: R.C.L.	DRAWN BY: P.W.M.	CHECKED BY: R.S.H.	JANUARY 1982
A-42961RBL-4-447			

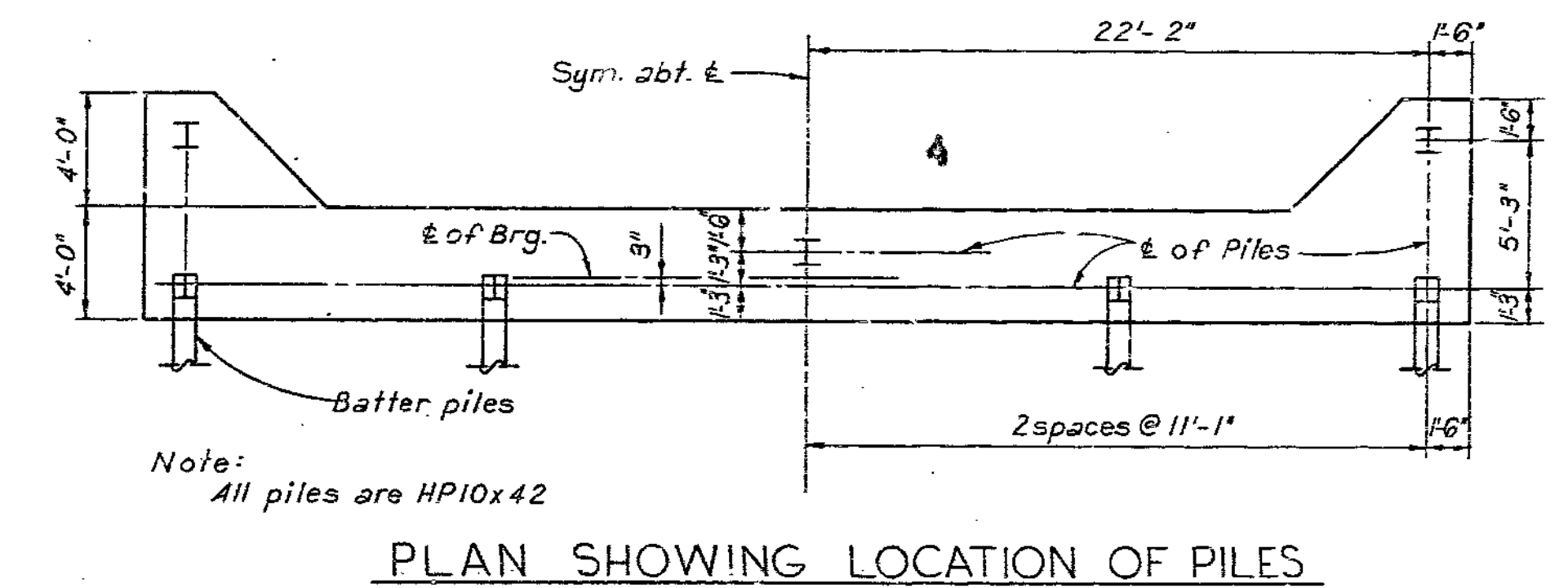
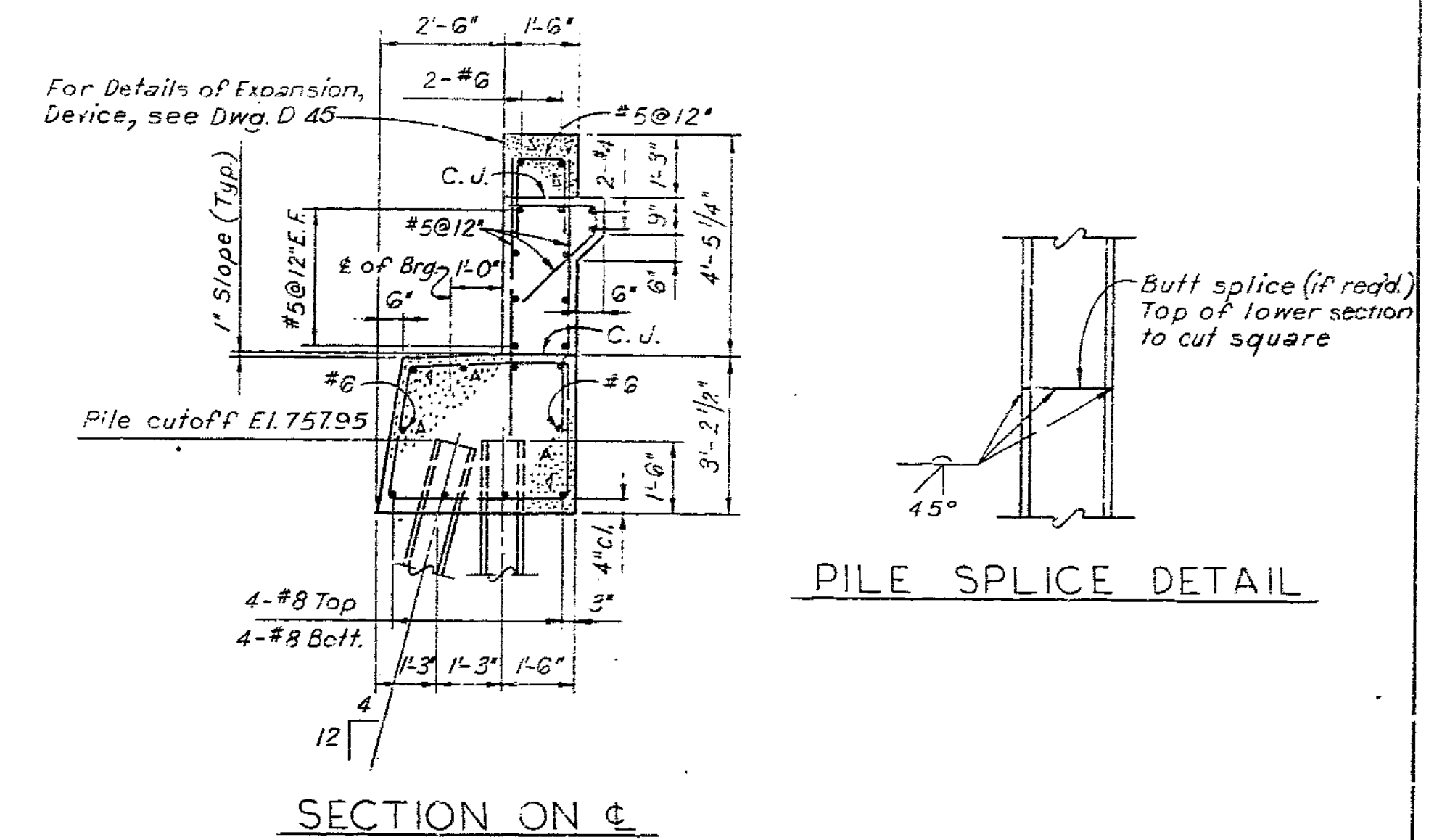
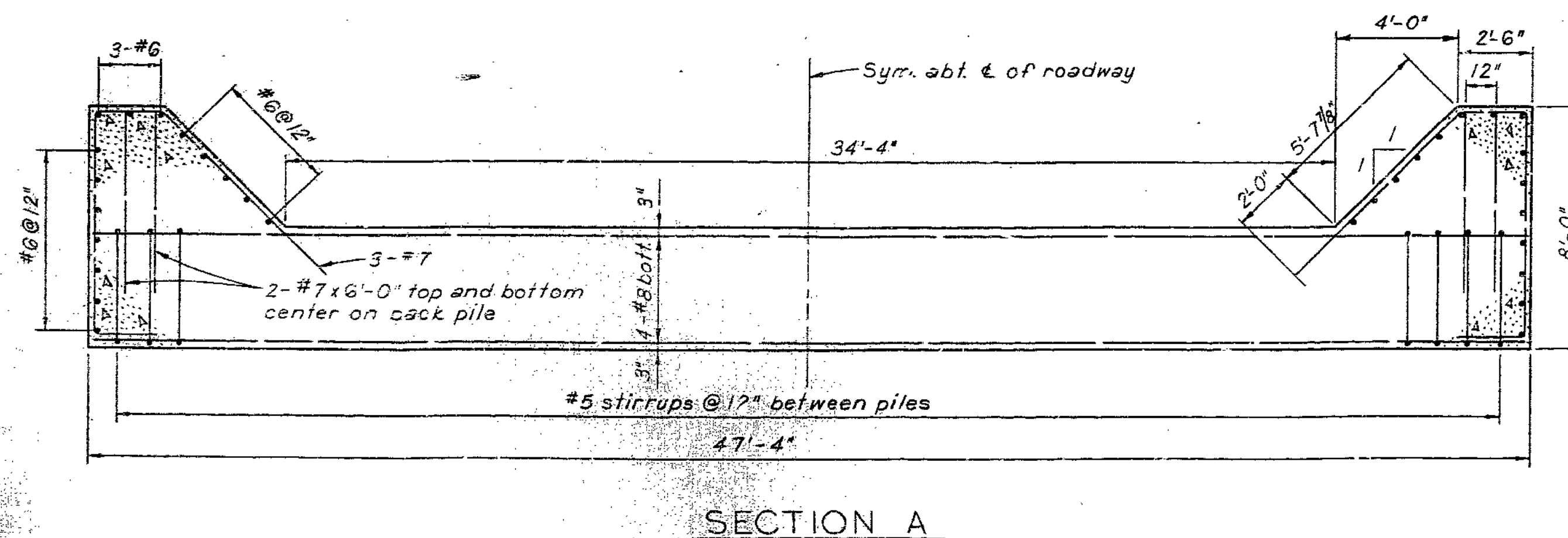
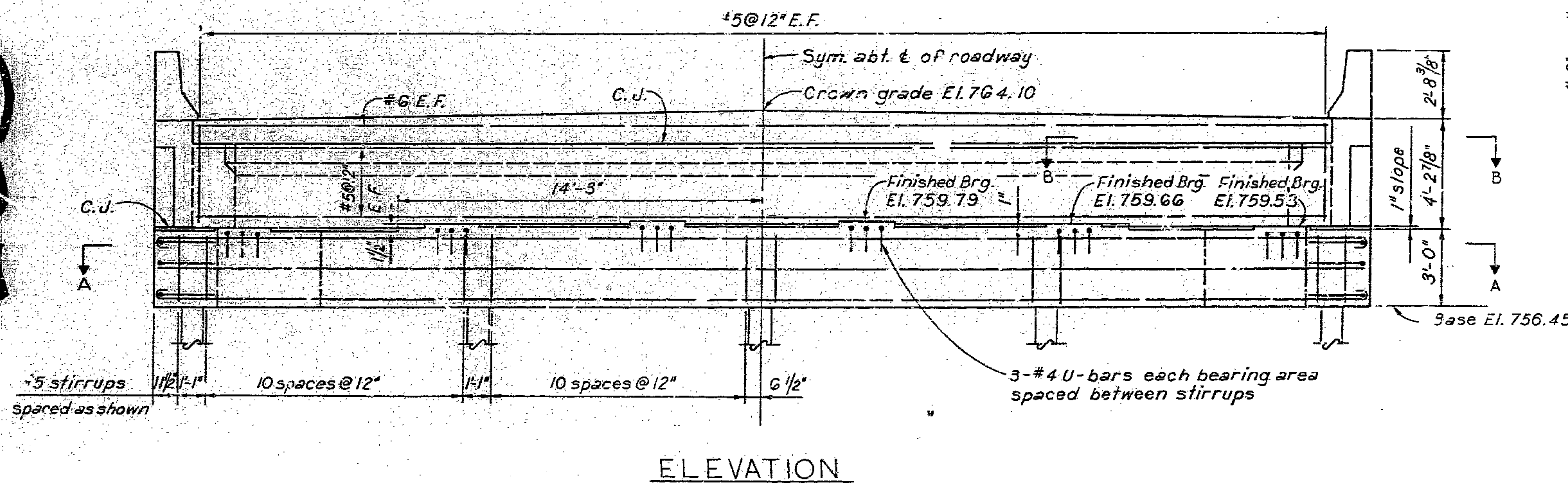
Sheet 5 of 10
 Note: This drawing is not to scale. Follow dimensions.

204

VALUE ENGINEERING PAYS



205

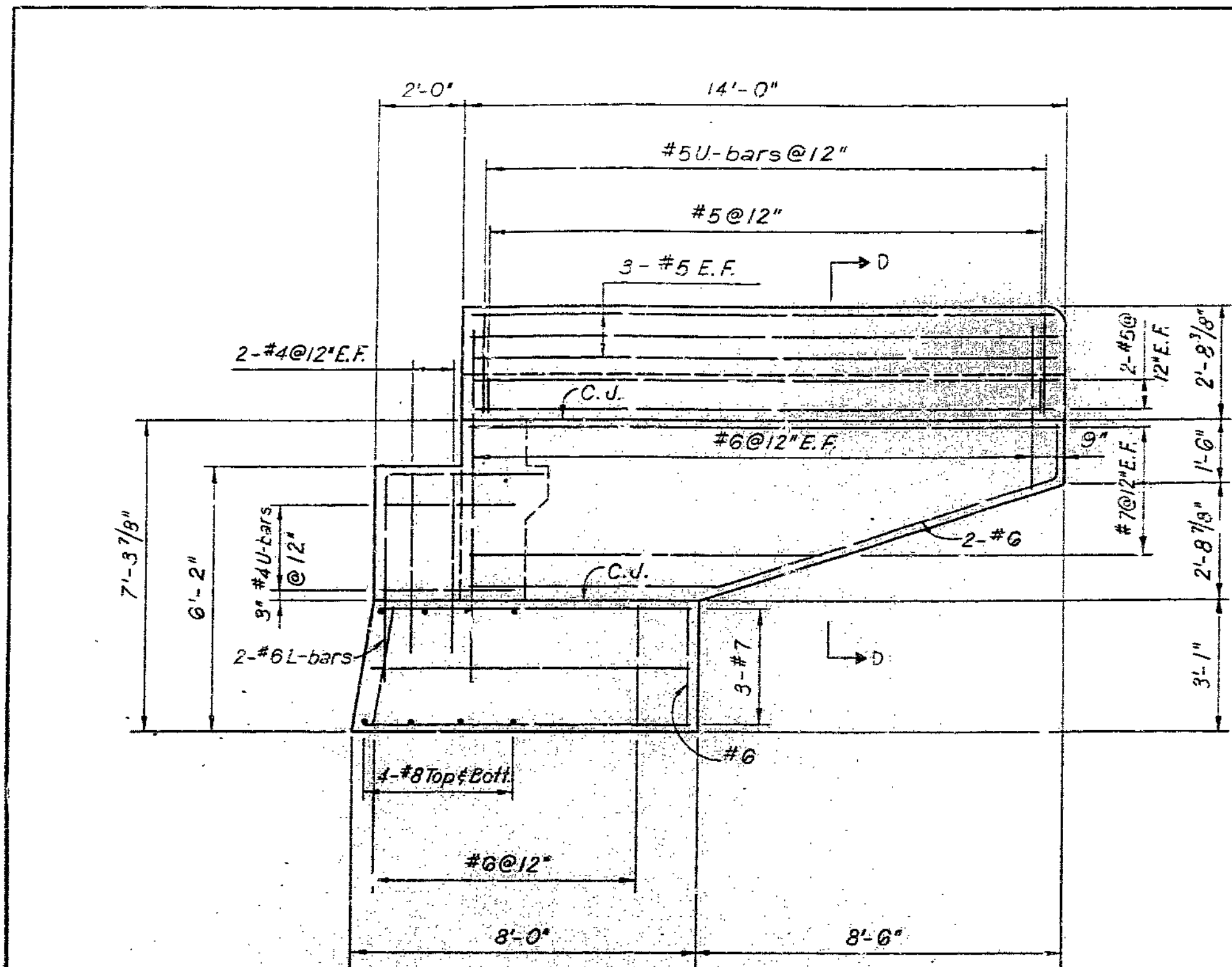


NOTES:
 Clear distance of reinforcement from surface of concrete shall be 2" unless otherwise noted.
 For details of Abutment Bearing, Section B and Elevation C see Dwg. D43.
 Top of back wall and expansion device for abutments to conform to crown of roadway slab.
 For Anchor Bolt Wall Details, see Dwg. D43.

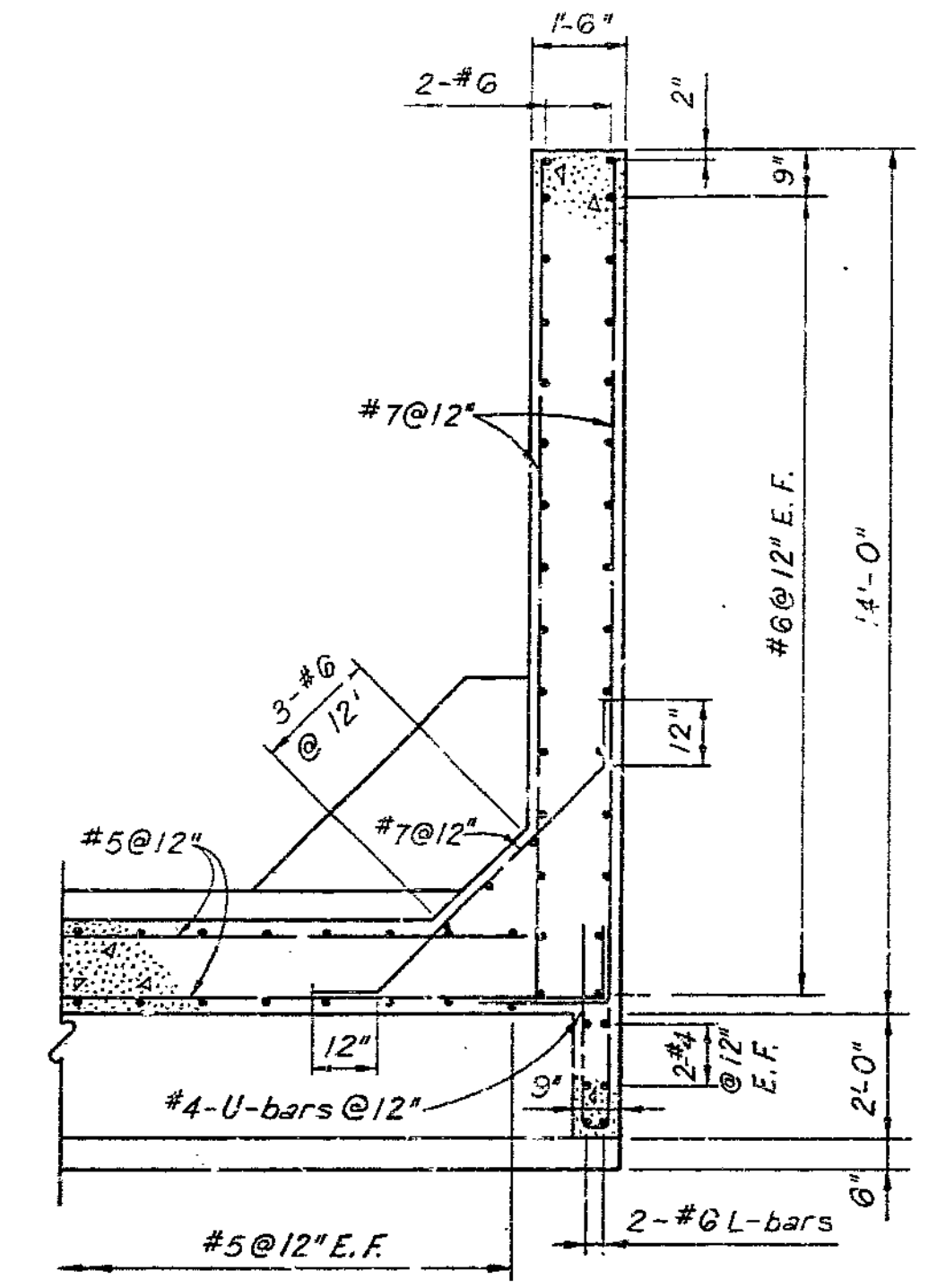
Note: This drawing is not to scale. Follow dimensions. Sheet 6 of 10

SYM.	DESCRIPTION	DATE	APP'D.
	REVISIONS		
LITTLE BLUE RIVER VICINITY OF KANSAS CITY, MISSOURI STAGE 7-LAKE CITY ARMY AMMUNITION PLANT FLOOD PROTECTION PROJECT PHASE II MISSOURI STATE HIGHWAY 7 BRIDGE ABUTMENT DETAILS Jackson Co.			
Dwg. No. D42		Scale: as shown	
CORPS OF ENGINEERS		U. S. ARMY	
KANSAS CITY DISTRICT		JANUARY 1982	
Submitted:	Recommended:	Checked:	Approved:
<i>Calvin D. Miller</i>	<i>Raymond B. Binkley</i>	<i>Robert B. Binkley</i>	<i>Robert B. Binkley</i>
DESIGNED BY:	CHECKED BY:	DESIGNED BY:	CHECKED BY:
R.C.L.	P.W.M.	R.S.H.	A-4296 RBL-4-448

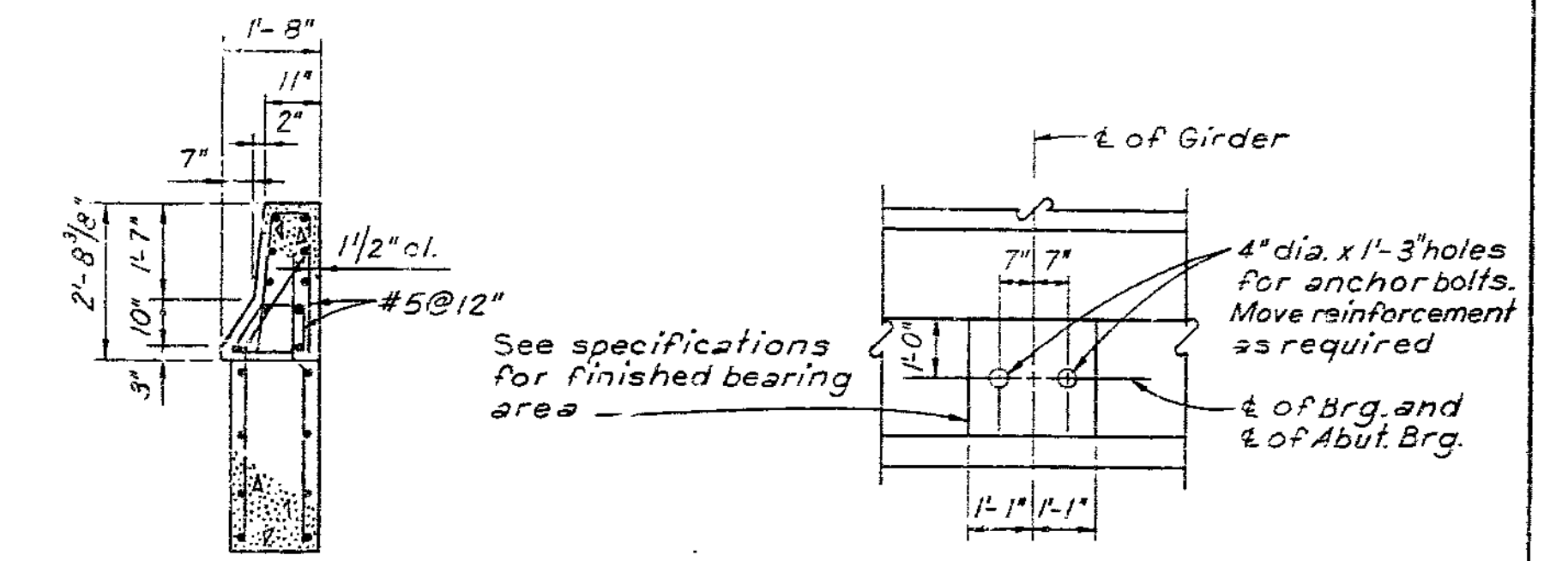




ELEVATION C

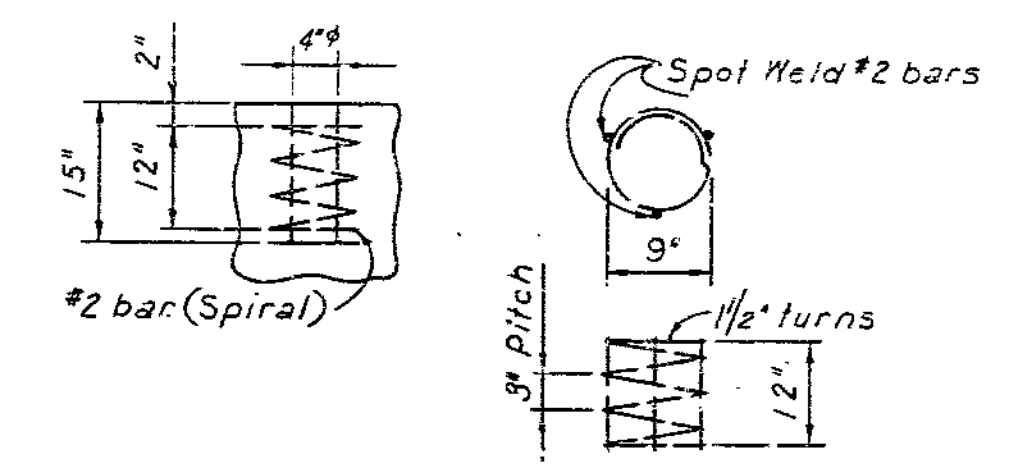


SECTION B



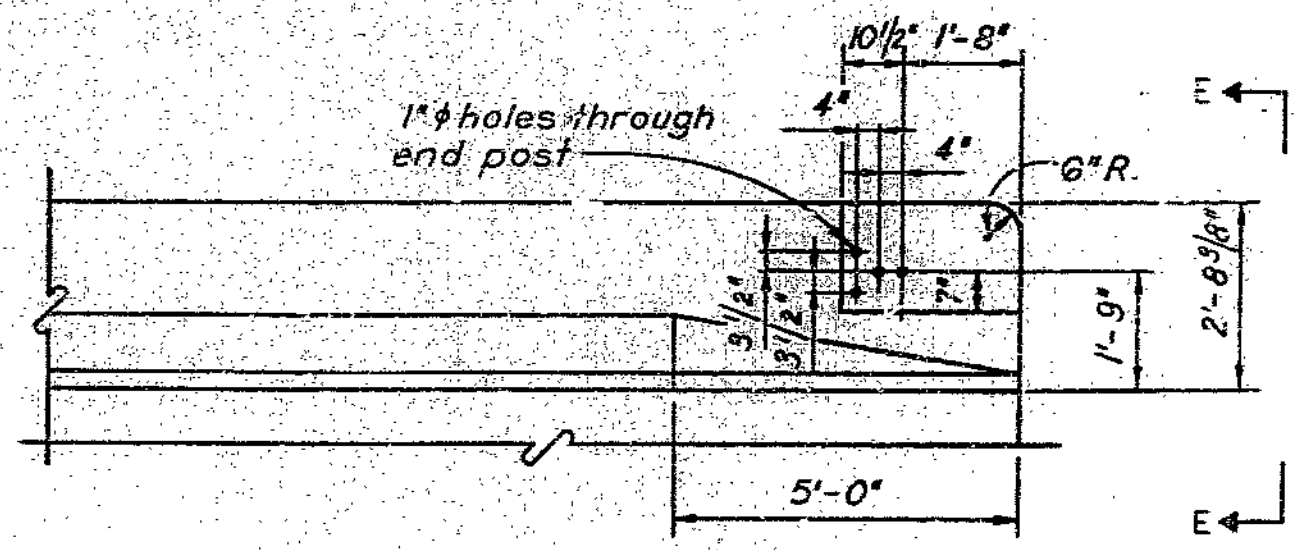
SECTION D

DETAIL OF ABUTMENT BEARING AREA

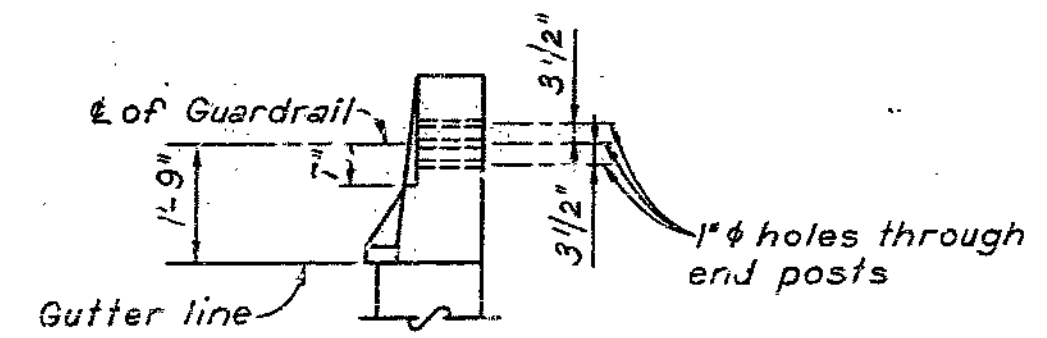


DETAIL OF ANCHOR BOLT WELLS

206



END POST DETAIL



ELEVATION E

NOTES:
 Clear distance of reinforcement from surface of concrete shall be 2" unless otherwise noted.
 For details of guardrail connection to end post, see Dwg. R3

SYM.	DESCRIPTION	DATE	APP'D.
REVISIONS			

LITTLE BLUE RIVER

VICINITY OF KANSAS CITY, MISSOURI
 STAGE 7-LAKE CITY ARMY AMMUNITION PLANT
 FLOOD PROTECTION PROJECT
 PHASE II

**MISSOURI STATE HIGHWAY 7 BRIDGE
 ABUTMENT DETAILS**

Dwg. No. D43
 CORPS OF ENGINEERS
 KANSAS CITY DISTRICT

Jackson Co.

Scale: as shown
 U. S. ARMY
 JANUARY 1982

Submitted: *[Signature]*
 Chief, General Structural Sect.
 Designed by: *[Signature]*
 R.C.L.

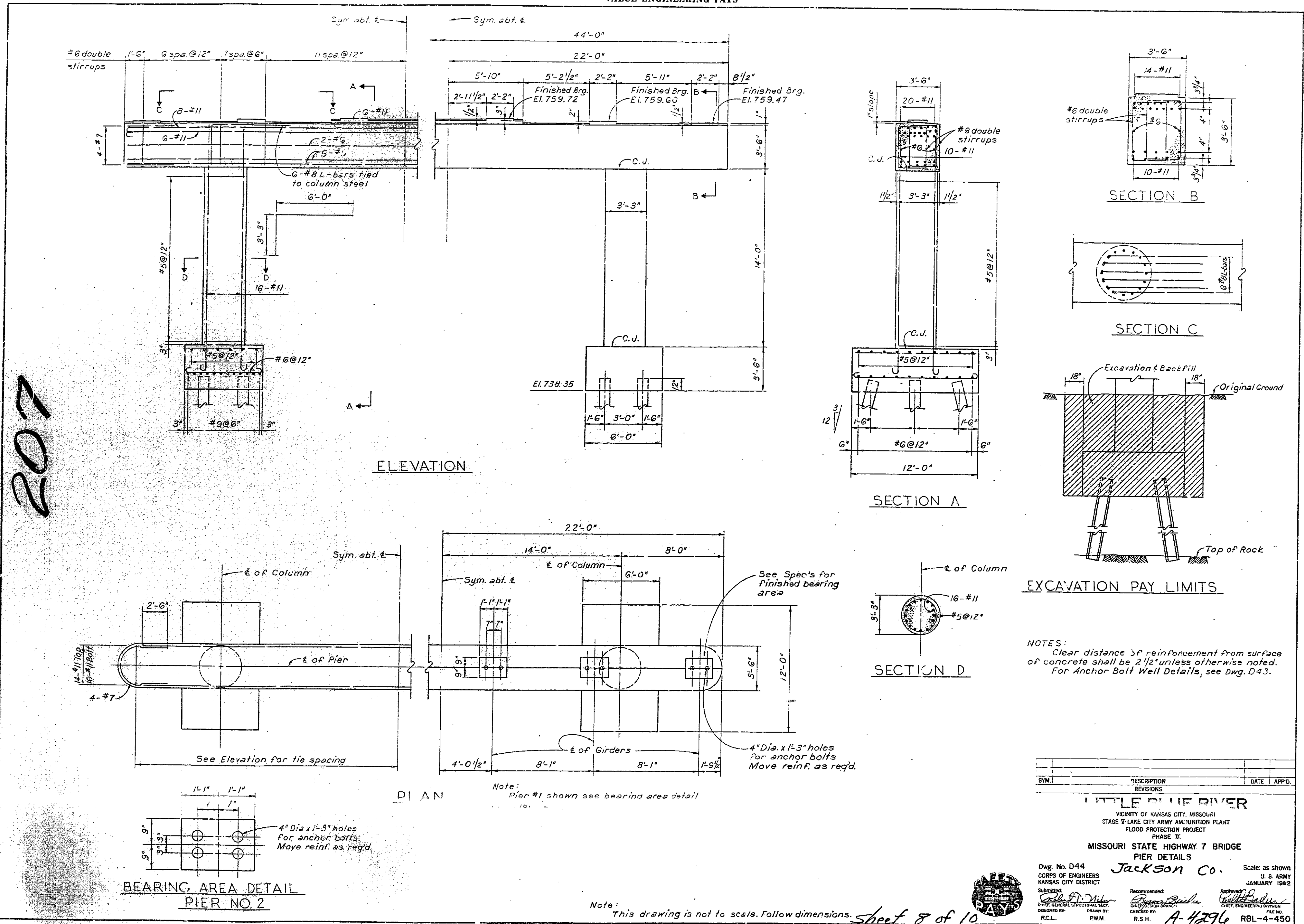
Reviewed: *[Signature]*
 Chief, Design Branch
 P.W.M.

Approved: *[Signature]*
 Chief, Engineering Division
 R.S.H.

FILE NO. A-42961 ROL-4-449

Note: This drawing is not to scale. Follow dimensions. Sheet 7 of 10

VALUE ENGINEERING PAYS



SYM.	DESCRIPTION	DATE	APP.
	REVISIONS		

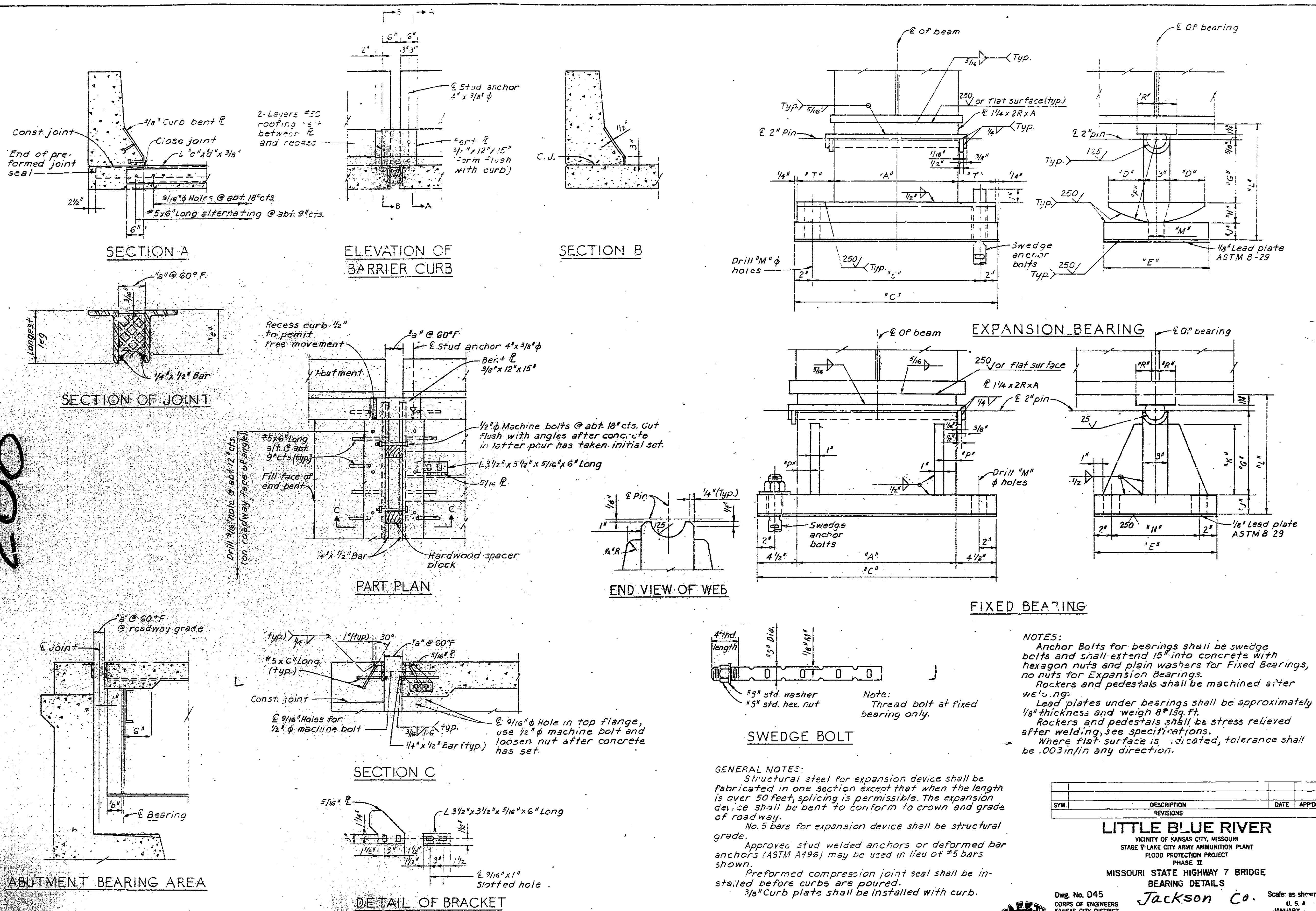
LITTLE BLUE RIVER
 VICINITY OF KANSAS CITY, MISSOURI
 STAGE T-LAKE CITY ARMY AMMUNITION PLANT
 FLOOD PROTECTION PROJECT
 PHASE II
 MISSOURI STATE HIGHWAY 7 BRIDGE
 PIER DETAILS

Dwg. No. D44
 CORPS OF ENGINEERS
 KANSAS CITY DISTRICT

Scale: as shown
 U. S. ARMY
 JANUARY 1962

Submitted by: *John P. Miller*
 Checked by: *R.C.L.*
 Recommended by: *James R. ...*
 Approved by: *...*

FILE NO. **A-4296** RBL-4-450



208

NOTES:
 Anchor Bolts for bearings shall be swedge bolts and shall extend 15" into concrete with hexagon nuts and plain washers for Fixed Bearings, no nuts for Expansion Bearings.
 Rockers and pedestals shall be machined after welding.
 Lead plates under bearings shall be approximately 1/8" thickness and weigh 8#13q. ft.
 Rockers and pedestals shall be stress relieved after welding, see specifications.
 Where flat surface is indicated, tolerance shall be .003 in/in any direction.

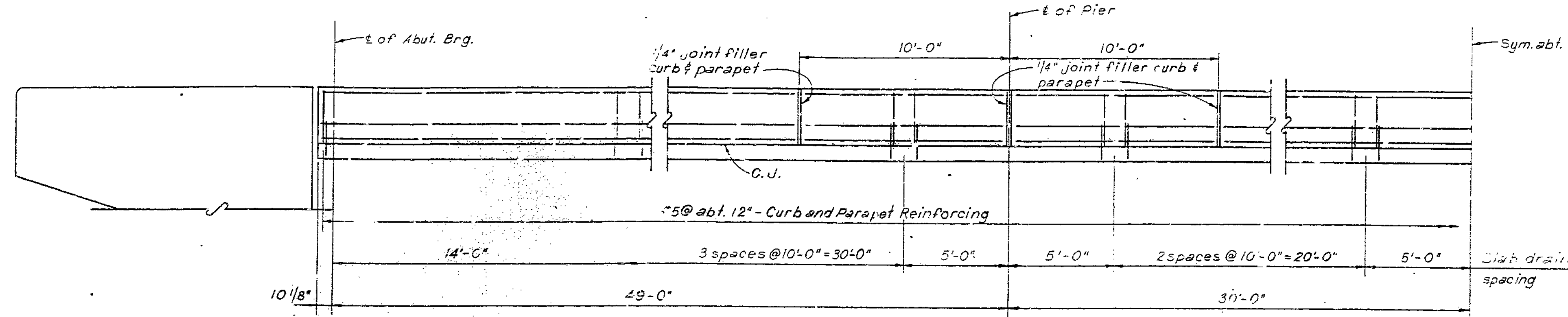
GENERAL NOTES:
 Structural steel for expansion device shall be fabricated in one section except that when the length is over 50 feet, splicing is permissible. The expansion device shall be bent to conform to crown and grade of roadway.
 No. 5 bars for expansion device shall be structural grade.
 Approved stud welded anchors or deformed bar anchors (ASTM A496) may be used in lieu of #5 bars shown.
 Preformed compression joint seal shall be installed before curbs are poured.
 3/8" Curb plate shall be installed with curb.

Note:
 This drawing is not to scale. Follow dimensions

SYM.	DESCRIPTION	DATE	APP'D.
REVISIONS			

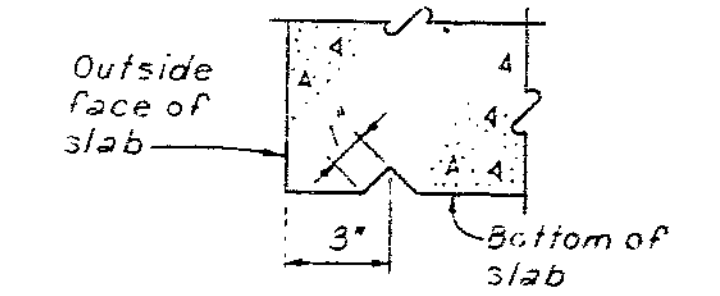
LITTLE BLUE RIVER
 VICINITY OF KANSAS CITY, MISSOURI
 STAGE Y-LAKE CITY ARMY AMMUNITION PLANT
 FLOOD PROTECTION PROJECT
 PHASE II
 MISSOURI STATE HIGHWAY 7 BRIDGE
 BEARING DETAILS

Dwg. No. D45
 CORPUS OF ENGINEERS
 KANSAS CITY DISTRICT
 Submitted: *Robert D. Miller*
 Chief, GENERAL STRUCTURAL SECT.
 Recommended: *Benjamin C. Fisher*
 Chief, DESIGN BRANCH
 Checked by: *Robert D. Miller*
 Chief, ENGINEERING DIVISION
 Scale: as shown
 U.S.A.
 JANUARY 1960
 R.C.L. P.W.M. R.S.H. A-4296 RBL-4-451

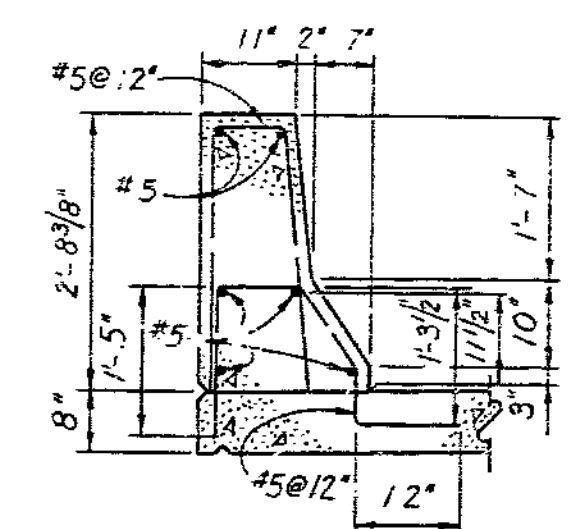


PARAPET ELEVATION
OUTLETS AND REINFORCEMENT SPACING

Note:
Splice parapet longitudinal bars where length exceeds 35'-0". Lap for splice shall be 30 bar diameters.
Omit drains over t of piers

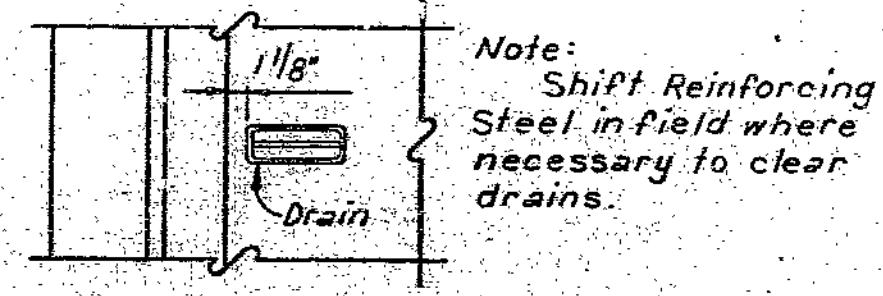


Drip groove, continuous length of bridge both sides
DRIP GROOVE DETAIL

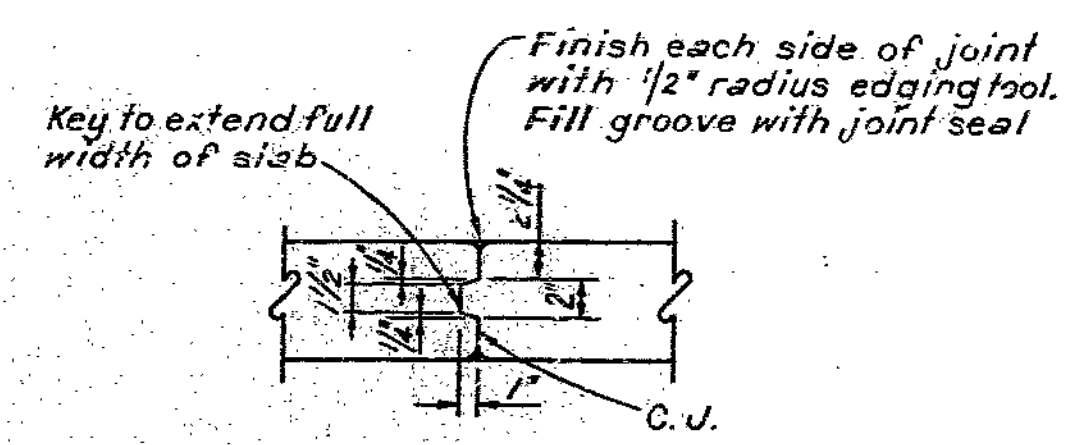


PARAPET DETAIL

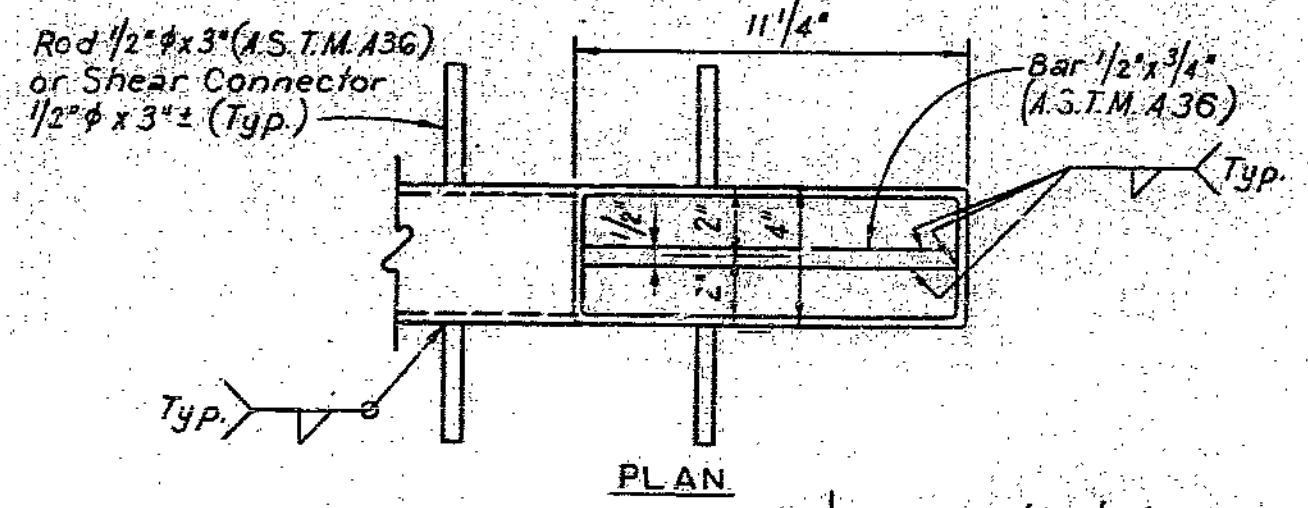
209



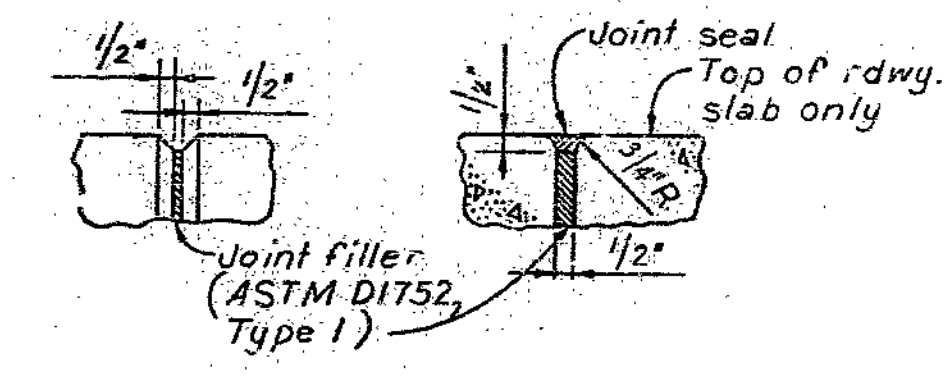
TYPICAL DRAIN LOCATION



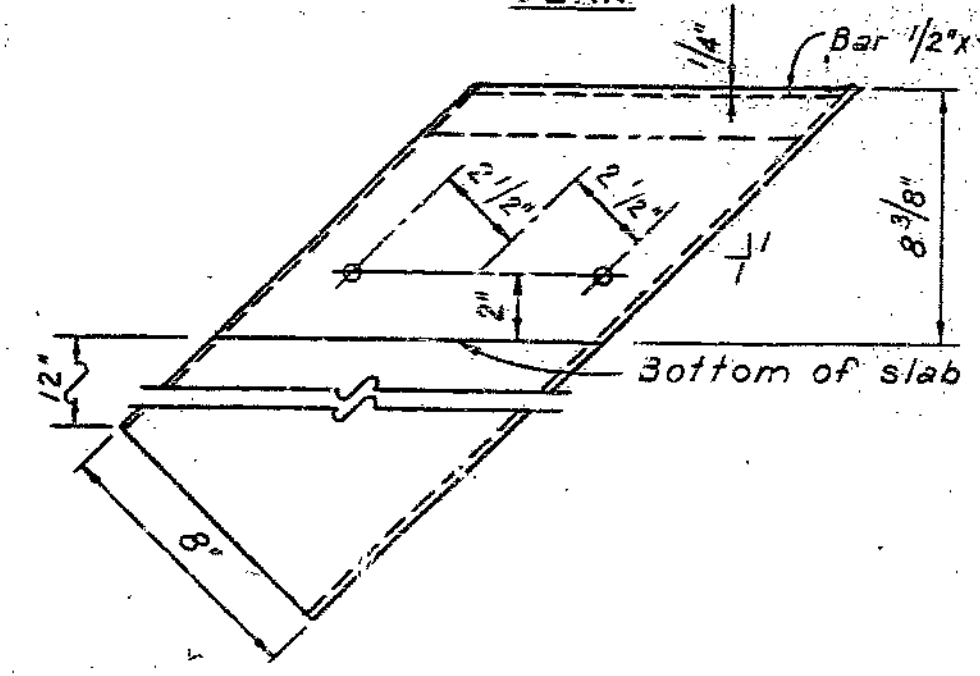
SLAB CONSTRUCTION JOINT DETAIL



PLAN



FILLED JOINT DETAILS



ELEVATION
SLAB DRAIN DETAILS

Drain Notes:
Slab Drains may be fabricated of either 1/4" welded sheets of A.S.T.M. A36 Steel or from 1/4" Structural Steel Tubing A.S.T.M. A500 Grade B.
Outside dimensions of drains are 8" x 4"
The slab drains shall be cast in the concrete. Locate slab drains in slab by dimensions shown. Cost of furnishing, fabricating and erecting of drains, complete in place, shall be included in the bid price for other items.
The slab drains shall be galvanized in accordance with ASTM 123 after fabrication.

NOTES:
Top of curbs and parapets to be built parallel to grade. Vertical faces of end post to be vertical. All exposed edges of end posts, parapets and curbs shall have 1/2" radius.

SYM	DESCRIPTION	DATE	APPD.
REVISIONS			
LITTLE BLUE RIVER			
VICINITY OF KANSAS CITY, MISSOURI			
STAGE 7-LANE CITY ARMY / MUNICIPAL PLANT			
FLOOD PROTECTION PROJECT			
PHASE II			
MISSOURI STATE HIGHWAY 7 BRIDGE			
OUTLETS AND CURBS			
Jackson Co.			
Dwg. No. D46		Scale: as shown	
CORPS OF ENGINEERS		U. S. ARMY	
KANSAS CITY DISTRICT		JANUARY 1982	
Submitted:	Recommended:	Approved:	
<i>Carl D. Mohr</i>	<i>Robert Bunker</i>	<i>Carl Bunker</i>	
DESIGNED BY:	CHEF DESIGN BRANCH	CHIEF ENGINEERING DIVISION	
CHECKED BY:	R.S.H.	FILE NO.	
R.C.L.	P.W.M.	A-4296 RBL-4-452	

Note: This drawing is not to scale. Follow dimensions. Sheet 10 of 10

