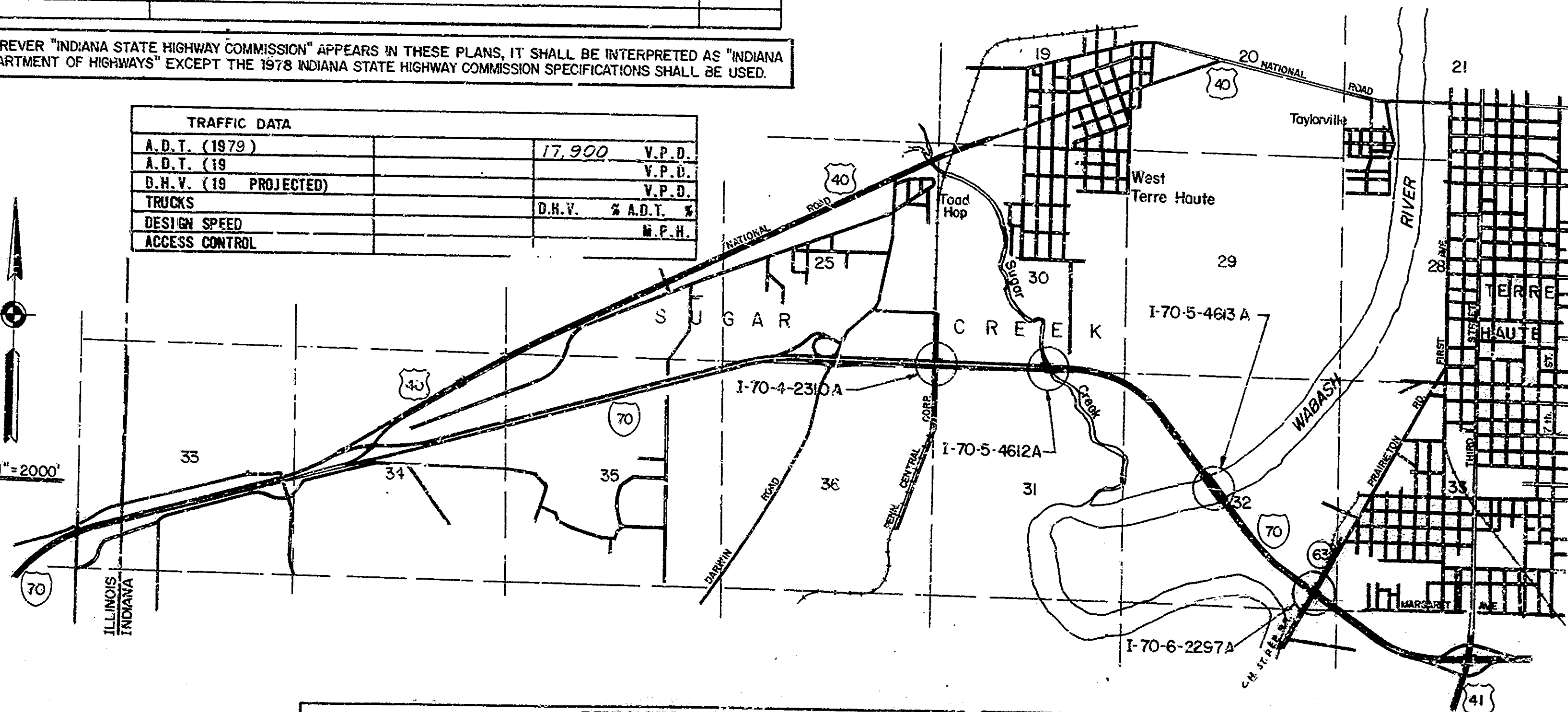
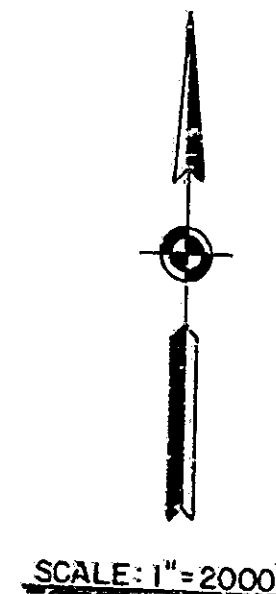


CONTRACT NO. B - 13920

INDEX				
PROJECT	STRUCTURE	TYPE	SPAN	OVER
IR-70-1(64)A	I-70-4-2310A I-70-5-4613A I-70-5-4612A I-70-6-2297A	SEE GENERAL PLAN	See General Plan	Penn. Cent. & Access Rd. Wabash River Sugar Creek SR 65, CMST. & PP. P.R.
SHEET NO.	SHEET DESIGNATION	SUBJECT		F.H.W.A. APPROVAL
1		TITLE AND INDEX SHEET		
2		MAINTENANCE OF TRAFFIC DETAILS - PHASE I		
3		MAINTENANCE OF TRAFFIC DETAILS - PHASE II		
4		MAINTENANCE OF TRAFFIC DETAILS		
5	D1	GENERAL PLAN (-2310A)		
6	D2	GENERAL PLAN (-4612A)		
7	D3	GENERAL PLAN (-4613A)		
8	D4	GENERAL PLAN (-4613A)		
9	D5	GENERAL PLAN (-2297A)		
10	D6	CONSTRUCTION PROCEDURES, GENERAL NOTES, MATERIAL NOTES AND STANDARD DRAWING TABLE		
10A	D6A	GUARD RAIL BRACKET DETAILS (-2310A, -4612A, -2297A)		
11	D7	BARRIER RAILING TYPE "X" DETAILS (-2310A, -4612A, -2297A)		
12	D8	EXPANSION JOINT CLASS "S-S" AT BENTS NO. I AND NO. 6 (-4612A)		
13	D9	EXPANSION JOINTS CLASS "S-S" (-4612A, -2297A)		
14	D10	MODULAR EXPANSION JOINT AT BENTS NO. I AND NO. 22 (-4613A)		
15	D11	MODULAR EXPANSION JOINT AT PIER NO. 6 (-4613A)		
16	D12	MODULAR EXPANSION JOINT AT PIERS NO. II AND NO. 16 (-4613A)		
17	D13	MODULAR EXPANSION JOINT DETAILS (-4613A)		
18	D14	EXPANSION JOINT CLASS "S-S" (-2297A)		
19	D15	MISCELLANEOUS DETAILS		
20	D16	MISCELLANEOUS DETAILS		
21		ESTIMATE OF QUANTITIES		
13A	D9A	EXPANSION JOINTS CLASS "S-S" (-4612A, -2297A)		
20A	D16A	Girder Crack Repair Plan		

NOTE:— WHEREVER "INDIANA STATE HIGHWAY COMMISSION" APPEARS IN THESE PLANS, IT SHALL BE INTERPRETED AS "INDIANA DEPARTMENT OF HIGHWAYS" EXCEPT THE 1978 INDIANA STATE HIGHWAY COMMISSION SPECIFICATIONS SHALL BE USED.

TRAFFIC DATA		
A.D.T. (1979)	17,900	V.P.D.
A.D.T. (19)		V.P.D.
D.H.V. (19 PROJECTED)		V.P.D.
TRUCKS		V.P.D.
DESIGN SPEED	D.H.V. % A.D.T. %	
ACCESS CONTROL		M.P.H.



STATE OF INDIANA  
INDIANA STATE HIGHWAY COMMISSION

# BRIDGE PLANS FOR SPANS OVER 20 FEET ON INTERSTATE ROUTE NO. 70

PROJECT NO. IR-70-1(644)

Deck repair and overlay to the following I-70 bridges

- I-70-4-2310A - I-70 over Penn. Central RR & access road located in Sect. 25, T12N, R10W and Sect. 30, T12N, R9W Sugar Creek Twp., Vigo County.
- I-70-5-4612A - I-70 over Sugar Creek located in Section 30, T12N, R9W, in Sugar Creek Twp., Vigo County.
- I-70-5-4613A - I-70 over Wabash River located in Section 32, T12N, R9W in Sugar Creek & Harrison Townships, Vigo County.
- I-70-6-2297A - I-70 over CM.ST. & PP. RR. & SR. 65, located in Section 32, T12N, R9W in Harrison Township, Vigo County.

FEDERAL PROJECT NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	IND.	IR-70-1644		J	45

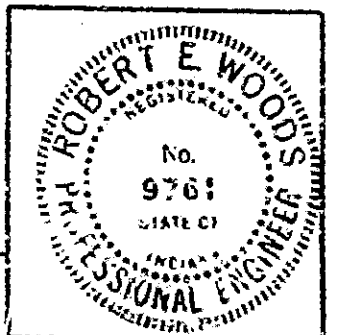
INDEX CONTINUED			
SHEET NO.	SHEET DESIGNATION	SUBJECT	F.H.W.A. APPROVAL
22	BRIDGE STD. BR1	ALUMINUM BRIDGE RAILING	12-10-80 R11-3-80
23	BRIDGE STD. BR2	ALUMINUM BRIDGE RAILING DETAILS	5-10-79 R12-1-78
	BRIDGE STD. BR3	STEEL BRIDGE RAILING	
	BRIDGE STD. BR4	STEEL BRIDGE RAILING DETAILS	
	BRIDGE STD. BR5	RAILING CONNECTION DETAILS	
	BRIDGE STD. BR6	RAILING CONNECTION DETAILS	
24	BRIDGE STD. C1	MISCELLANEOUS DETAILS	12-21-81 R12-7-81
	BRIDGE STD. C2	MISCELLANEOUS DETAILS	
25	BRIDGE STD. C3	MISCELLANEOUS DETAILS	12-21-81 R12-7-81
	BRIDGE STD. C4	MISCELLANEOUS DETAILS	
	BRIDGE STD. D	CASTING DETAILS ROADWAY DRAINS	
26	BRIDGE STD. D1	ADJUSTING FRAME DETAILS FOR ROADWAY DRAINS	R7-1-77
	BRIDGE STD. PB	PRESTRESSED CONCRETE TYPE I-BEAMS	
	BRIDGE STD. PP	PRESTRESSED CONCRETE TYPE I-BEAMS	
	BRIDGE STD. P66	PRESTRESSED BOX BEAMS	
	BRIDGE STD. P8	PRESTRESSED COMPOSITE BOX BEAMS WIDE	
	BRIDGE STD. P8	PRESTRESSED COMPOSITE BOX BEAMS WIDE	
	BRIDGE STD. P810	TOLERANCES FOR FABRICATION OF PRESTRESSED BEAMS	
	BRIDGE STD. P811	ELASTOMERIC BEARING PAD DETAILS	
26A	BRIDGE STD. R1-C (OBSOLETE)	ALUMINUM RAILING-TYPE 5	A-429-62
26B	BRIDGE STD. R1-E (OBSOLETE)	ALUMINUM RAILING DETAIL 5	A-429-62
	BRIDGE STD. R2A	BRIDGE LIGHTING DETAILS	
	BRIDGE STD. S1	MISCELLANEOUS DETAILS	
	BRIDGE STD. SH1	STEEL SHOE DETAILS	
	BRIDGE STD. T SHEET A	STANDARD TEMPORARY BRIDGE	
	BRIDGE STD. T SHEET B	STANDARD TEMPORARY BRIDGE	
	BRIDGE STD.		
	BRIDGE STD.		
	BRIDGE STD.		
	BRIDGE STD.		
27	ROAD STD. SHEET A	STANDARD PAVEMENT JOINTS	R4-1-81
	ROAD STD. SHEET B	STANDARD PAVEMENT JOINTS	
28	ROAD STD. SHEET MA	MISCELLANEOUS STANDARDS	6-22-82 R5-3-82
	ROAD STD. SHEET MB	MISCELLANEOUS STANDARDS	
	ROAD STD. SHEET MC	MISCELLANEOUS STANDARDS	
	ROAD STD. SHEET MD	MISCELLANEOUS STANDARDS	
	ROAD STD. SHEET ME	MISCELLANEOUS STANDARDS	
	ROAD STD. SHEET MF	MISCELLANEOUS STANDARDS	
	ROAD STD. SHEET MG	MISCELLANEOUS STANDARDS	
	ROAD STD. SHEET MH	MISCELLANEOUS STANDARDS	
	ROAD STD. SHEET MI	MISCELLANEOUS STANDARDS	
	ROAD STD. SHEET MJ	MISCELLANEOUS STANDARDS	
	ROAD STD. SHEET MK	MISCELLANEOUS STANDARDS	
	ROAD STD. SHEET ML	MISCELLANEOUS STANDARDS	
	ROAD STD. SHEET MN	MISCELLANEOUS STANDARDS	
	ROAD STD. SHEET MO	MISCELLANEOUS STANDARDS	
	ROAD STD. SHEET MP	MISCELLANEOUS STANDARDS	
	ROAD STD. SHEET MQ	MISCELLANEOUS STANDARDS	
	ROAD STD. SHEET MR	MISCELLANEOUS STANDARDS	
29	ROAD STD. SHEET CB 2	TEMPORARY CONCRETE BARRIER	6-3-81 R4-1-81
	ROAD STD.	STANDARD REINF. CONCRETE BOX CULVERTS	
	ROAD STD.	STANDARD REINF. CONCRETE CULVERTS	
30	ROAD STD. SHEET GR 2	GUARD RAIL CLASS BS, BE	5-21-82 R4-1-82
	ROAD STD. SHEET GR 3	GUARD RAIL CLASS BA, BST, CA, CST, EA, FA AND FST	5-21-82 R4-1-82
32	ROAD STD. SHEET GR 4	GUARD RAIL CLASS GA OR GST	R4-1-82
33	ROAD STD. SHEET GR5	ALUMINUM GUARD RAIL DETAILS	5-21-82 R4-1-82
34	ROAD STD. SHEET GR 6	STEEL TUBE GUARD RAIL DETAILS	5-21-82 R4-1-82
35	ROAD STD. SHEET GR 7	GUARD RAIL PIER CONNECTION DETAILS	5-21-82 R4-1-82
36	ROAD STD. SHEET GR 8	ALUMINUM BEAM GUARD RAIL CLASS DA	5-21-82 R4-1-82
37	ROAD STD. SHEET GR10	GUARD RAIL BREAKAWAY CABLE TERMINAL	5-21-82 R4-1-82
38	ROAD STD. SHEET GR15A	GUARD RAIL BREAKAWAY CABLE TERMINAL	5-21-82 R4-1-82
39	SHEET 9	TRAFFIC SIGN DETAILS	R4-1-79
40	ROAD STD. SHEET 1 DETOURS	STANDARD DETOUR SIGNS	10-18-82 R7-1-82
41	ROAD STD. SHEET 1B DETOURS	STANDARD DETOUR SIGNS	10-18-82 R7-1-82
42	ROAD STD. SHEET 2 DETOURS	STANDARD DETOUR SIGNS	10-18-82 R7-1-82
43	ROAD STD. SHEET 2A DETOURS	STANDARD DETOUR SIGNS	10-18-82 R7-1-82
44	ROAD STD. SHEET 3 DETOURS	STANDARD DETOUR SIGNS	8-30-82 R7-1-82
45	ROAD STD. SHEET 3A DETOURS	STANDARD DETOUR SIGNS	8-30-82 R7-1-82
	ROAD STD. SHEET 5 DETOURS	STANDARD DETOUR SIGNS	12-27-82 R10-1-82
	ROAD STD. SHEET 5A DETOURS	STANDARD DETOUR SIGNS	



These Plans Prepared by  
**Robert E. Woods**  
CONSULTING ENGINEERS  
3600 WEST 90TH STREET  
INDIANAPOLIS, INDIANA 46226  
Certified by **Shirley E. Tostwell**  
Date August 4, 1981

APPROVED: **2-17-81**  
*Frank Hall*  
CHIEF HIGHWAY ENGINEER—INDIANA STATE HIGHWAY COMMISSION

RECOMMENDED FOR APPROVAL: **2-15-82**  
*Robert E. Woods*  
MEMBER OF INDIANA STATE HIGHWAY COMMISSION

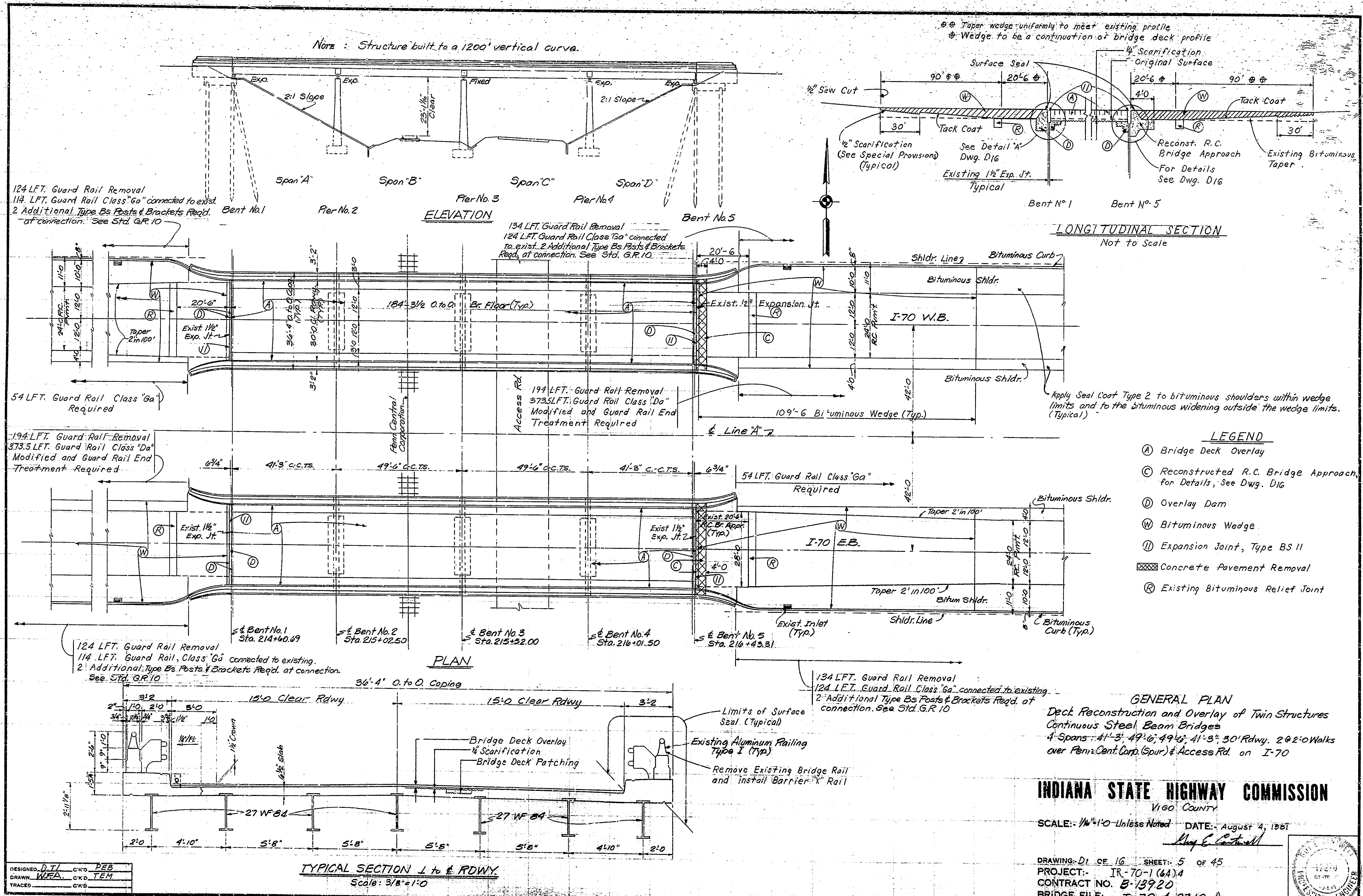


FEDERAL HIGHWAY ADMINISTRATION  
DEPARTMENT OF TRANSPORTATION  
APPROVED: \_\_\_\_\_  
DIVISION ADMINISTRATOR \_\_\_\_\_ DATE \_\_\_\_\_

INDIANA STATE HIGHWAY COMMISSION  
STANDARD SPECIFICATIONS DATED 1978  
TO BE USED WITH THESE PLANS.

DATE	REVISIONS	SHEET NO.
1-19-83	1, 2, 3, 4, 10, 21; Delete Sheets 13, 33; Add Sheet 13A	
9-15-83	1; Add Sheet 20A	
9-29-83	1; 20A	

DATE	REVISIONS	SHEET NO.



**CONSTRUCTION PROCEDURE**

1. Construct all bituminous widening, install temporary barrier railing and other traffic control devices to divert traffic to one lane of travel.
2. Remove the slab full depth at locations shown on details. Scarify the remaining bridge deck to a minimum of 1/4". Scarify additional areas of the bridge deck an additional 1/4" as directed by Engineer. Remove scarified dust.
3. Remove all deteriorated concrete from all areas of the bridge floor and around all exposed reinforcing as directed by the Engineer and in accordance with the Special Provisions
4. Preset expansion joint extrusions. Repour the full depth slab removal areas and Overlay Dams to level of scarification as shown on plans. Repour portions of reinforced concrete bridge approach. On -4613A adjust roadway drain castings to grade.
5. Blast and clean all repoured deck areas and all scarified and removal areas.
6. Place Bridge Deck Patching and Bridge Deck Overlay as shown on the plans and in accordance with the Special Provisions.
7. Install Expansion Joint Seals Class S-S, Type BS, and Modular.
8. Construct bituminous wedge. Seal Coat Type 2 to be applied to bituminous shoulders and widening within the limits indicated on the plans.
9. Update guard rail at approaches to bridge.
10. Clean and seal roadway face, top and coping face of curbs and parapet walls to drip bead, exposed surfaces of Barrier "X" Rail Brackets and concrete end railings, top surface of mudwall and top of overlay dams on approaches.
11. Remove and replace the approach slabs and portions of the approach slabs as shown on the plans.
12. Repair slope wall and reshape and compact spill slope as indicated on the plans. (-4613A, -2297A)
13. Patch curbs with Special Class "A" Concrete. (-2297A, -4612A and -4613A)
14. Replace damaged end railing. (-2297A)
15. Remove existing bridge rail and install Barrier "X" Rail. (-4612A, -2297A, and -2310A)
16. Reset bridge railing so that the face of the railing is 3 inches behind the curb line and replace the damaged bridge rail. (-4613A)
17. Use a three phase traffic maintenance procedure for the installation of Barrier "X" Rail. During Phase I prepare the parapet wall for the installation of the barrier railing. Do not install the brackets or railing adjacent to the lane being overlaid during this phase. Phase II consists of the installation of the brackets and railing adjacent to the lane being overlaid during Phase II. During Phase III install the brackets and railing adjacent to the lane overlaid during Phase I. (See Sheet #)
18. Perform all other work as shown on the plans.
19. Reset traffic control devices to divert traffic to completed lane and repeat steps 2 to 18, where applicable. When all work is completed open structure to traffic.

(The numbers do not necessarily indicate the sequence of operation)

DESIGNED	CKD
DRAWN	D.T.L. CKD
TRACED	CKD

**GENERAL NOTES**

- Plans for existing structures are on file and are available upon request in the Bridge Department, Indiana State Highway Commission as follows.  
F.A. Project No. Bridge File No.  
I-70-1(2)4 I-70-4-2310  
I-70-1(2)4 I-70-5-4612  
I-70-1(12)5 I-70-5-4613  
I-70-1(13)6 I-70-6-2297
- All concrete in structure to be Class "A".
- Where new work is fitted to old work, The Contractor shall check all dimensions and conditions in the field and report any errors or discrepancies to the Engineer and assume responsibility for their correctness and the fit of the new part to the old.
- The handchipping and cleaning of deteriorated deck areas shall be as directed by the Engineer. It is the intent of these plans that all such deteriorated concrete be removed and should there be any doubt as to the quality of the concrete, removal shall continue until perfectly sound concrete is exposed. All existing deck patches are to be removed to sound original concrete.
- Concrete in patches for deteriorated areas to scarified surface to be Special Class "A" Concrete bonded with epoxy bonding compound or Modified Portland Cement Concrete. See Special Provisions.
- All bituminous material required in this Contract to be included in the pay item "Bituminous Mixture for Approaches", except "Tack Coat" and "Seal-Coat Type 2" which shall be separate pay items in Square Yards.
- The boundaries of full depth removal areas shall be saw cut. Saw cuts shall be made to a minimum depth of 1 inch below the original surface or to the top of the reinforcing steel if cover is less than 1 inch.
- See Special Provisions for composition of concrete in Overlay Dams.
- The quantity of bituminous wedging shown on the plans is based on the thickness of the Mod. P.C.C. Overlay. If the Dense P.C.C. Overlay is used, the length of the wedge shall be increased to 155 feet. See Special Provisions for wedging pay quantity adjustments.
- The pay item for Full Depth Deck Patching includes the cost of removal of existing concrete, cleaning reinforcing steel, forming underside of deck, and furnishing and pouring Class A Concrete in floor cavity up to the level of scarification.
- All removal equipment used for partial concrete removals of bridge structures shall be hand held. Pneumatic hammers, 30 lbs. maximum weight shall be used for all removal areas to be patched and all areas within 24 inches of full depth removal lines. Pneumatic hammers up to 90 lbs. maximum weight may be used for all other removals outside these limits. Deck areas that are to be removed full depth shall be completely separated from adjacent concrete before hammers heavier than 30 lbs. may be used.
- Post spacing, alignment and details of the Class "Da" (Modified) Guard Rail shall be as shown for Class "Da" Guard Rail on Rd. Std. GR 9 except the rail elements shall be connected to the Barrier "X" railing on the structure (or Bridge Railing Type 5 on Structure -4613A) with a transition splice bar as shown on Road Standard GR4 rather than connected to the concrete railing.
- All removed bridge rail shall remain the property of I.S.H.C.

**MATERIAL NOTES**

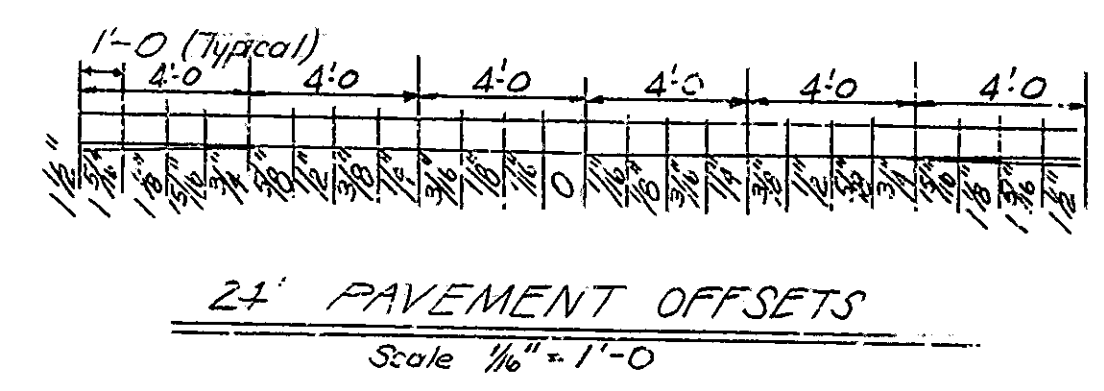
Bridge Deck Overlay: 1 3/4" Modified Portland Cement Concrete or 2 1/2" Dense Portland Cement Concrete. (See Special Provisions) Top of 1 3/4" Mod. P.C.C. Overlay to be 1/2" above exist. bridge floor. Top of 2 1/2" Dense P.C.C. Overlay to be 2 1/4" above exist. bridge floor.

-2310A	-4612A	-4613A	-2297A	
540	545	577	539	Tons - Bituminous Widening: 990 Lbs./Syd. Bituminous Base, Type 5D
105	115	110	105	Tons - Bituminous Wedge: 110 Lbs./Syd. Bituminous Surface, Type 11B over Variable Depth Bituminous Binder or Base.

645 \* 660 + 687 \* 644 = 2636 Tons - Bituminous Mixture for Approaches

\* The maximum depth of Bitum. Surface Type 11B shall not exceed 1 1/2 inches. At all locations where total wedge thickness will exceed 1 1/2 inches, bituminous binder shall be placed as a first course to within one inch of finished grade.

STANDARD DRAWING TABLE		
BRIDGE STD.	ROAD STD.	PURPOSE
BR 1		Aluminum Bridge Railing Details
BR 2		Aluminum Bridge Railing Details
C 1		Bar Bending Details, Rebar Notes
C 3		Type IA Joint, Notch at end of slab
D 1		Adjusting Frame Details
	GR 2	Guard Rail, Class Es
	GR 3	Guard Rail, Class Ea
	GR 4	Guard Rail, Class Ga
	GR 5	Aluminum Guard Rail Details
	GR 6	Steel Post Paddle
	GR 7	Pier Connection Details
	GR 9	Guard Rail, Class Da
	GR 10	Buried End, Steel to Alum. G.R. Connection
	CB 2	Temporary Concrete Barrier
	Sht. 1 Detours	Application of traffic control devices
	Sht. 1B Detours	Daylight Hour Operation - Traffic Control
	" 2A "	Barricade Details
	" 9 "	Standard Detour Signs
	" 4 "	Standard Detour Signs
	" 5A "	Sign Design Details
	A	Longitudinal Joint Details
	Sht. 9	Traffic Sign Details
	MA	R.C. Bridge Approach Details

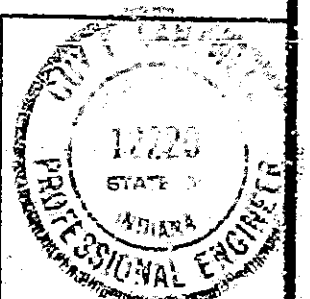


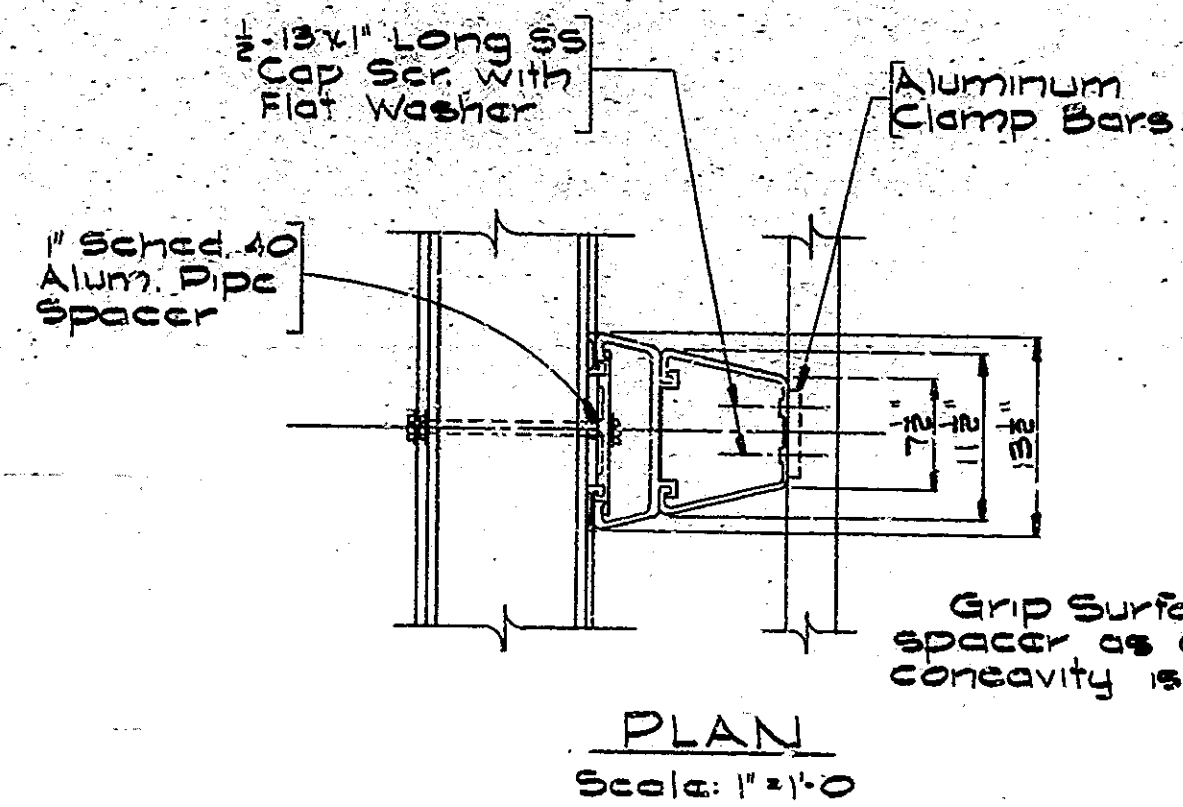
**CONSTRUCTION PROCEDURE, GENERAL NOTES, MATERIAL NOTES, and STANDARD DRAWING TABLE**

**INDIANA STATE HIGHWAY COMMISSION**

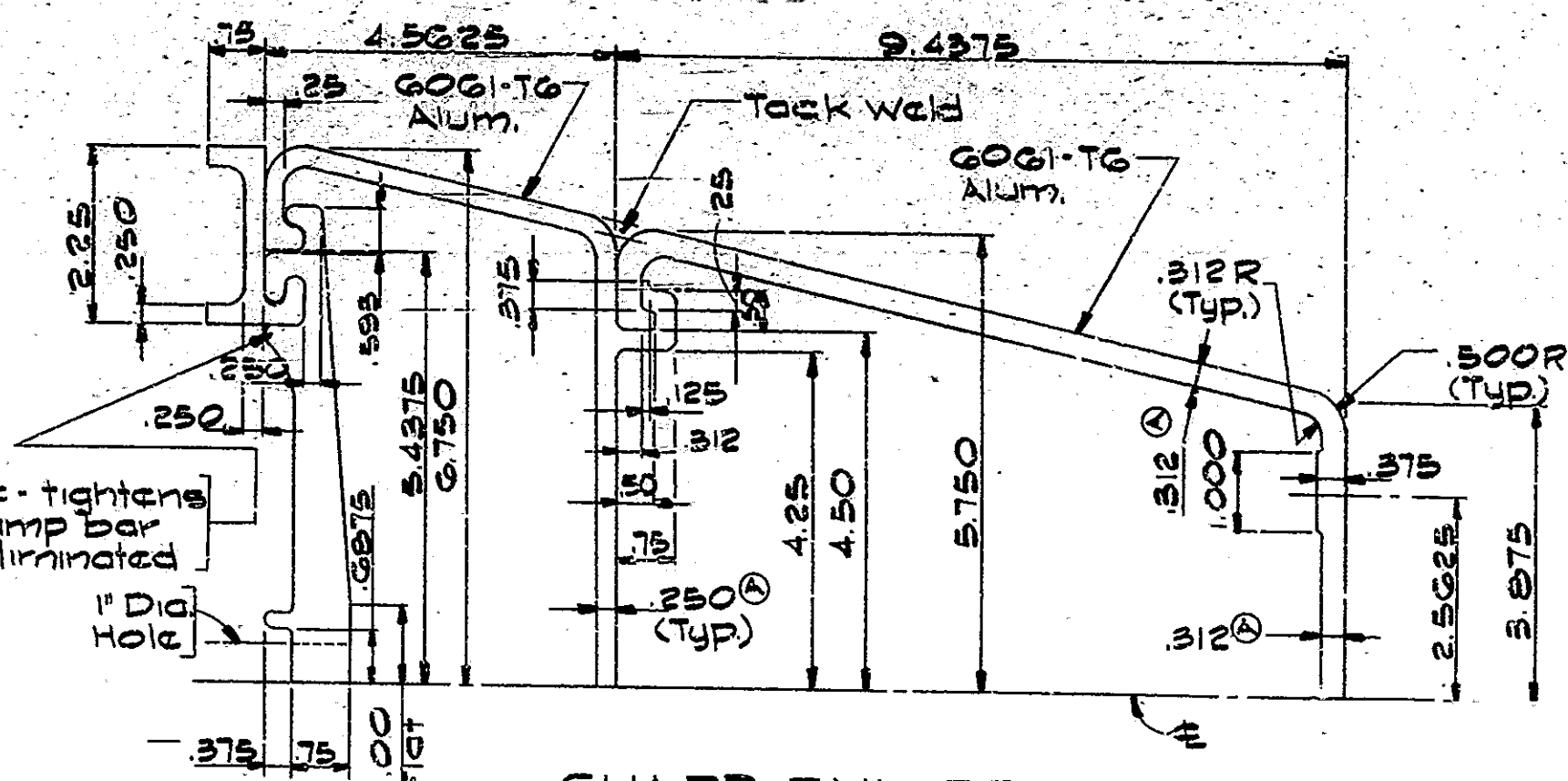
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By: E. Cottrell

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PROJECT: IR-70-1 (64) 4  
CONTRACT NO. B-13720  
BRIDGE FILE: I-70-4-2310A; I-70-5-4612A;  
I-70-5-4613A; I-70-6-2297A

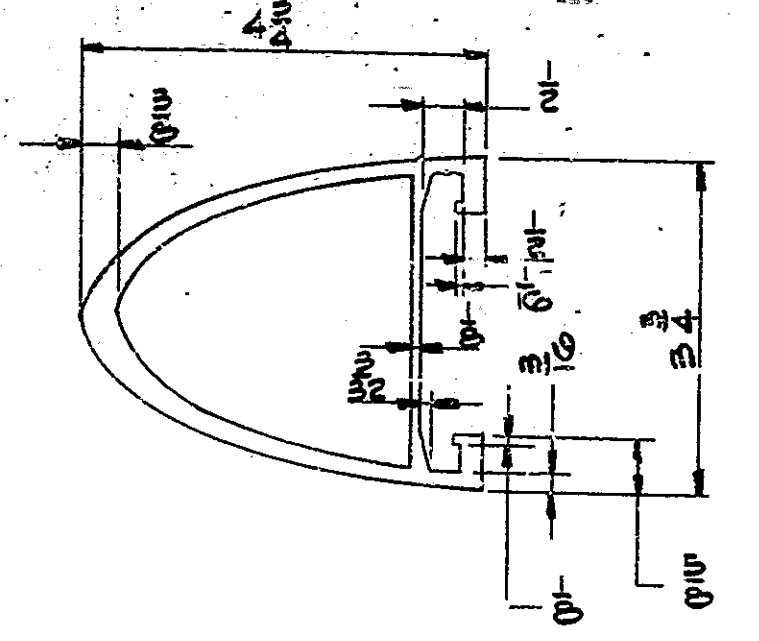




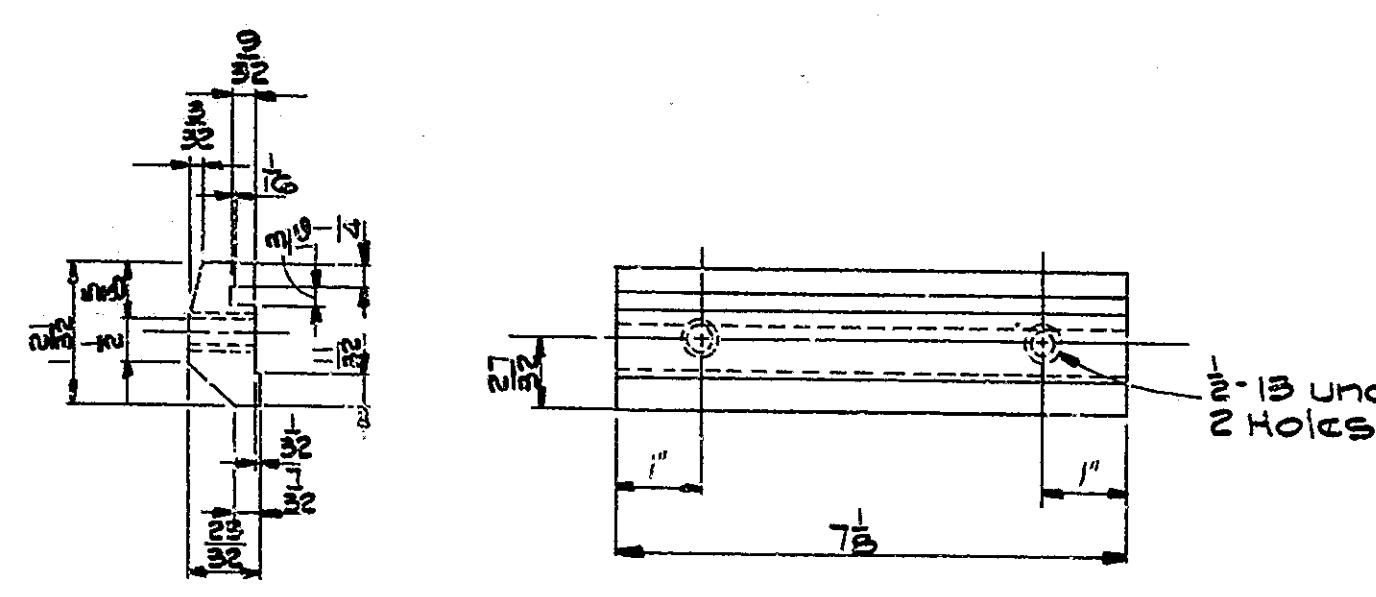
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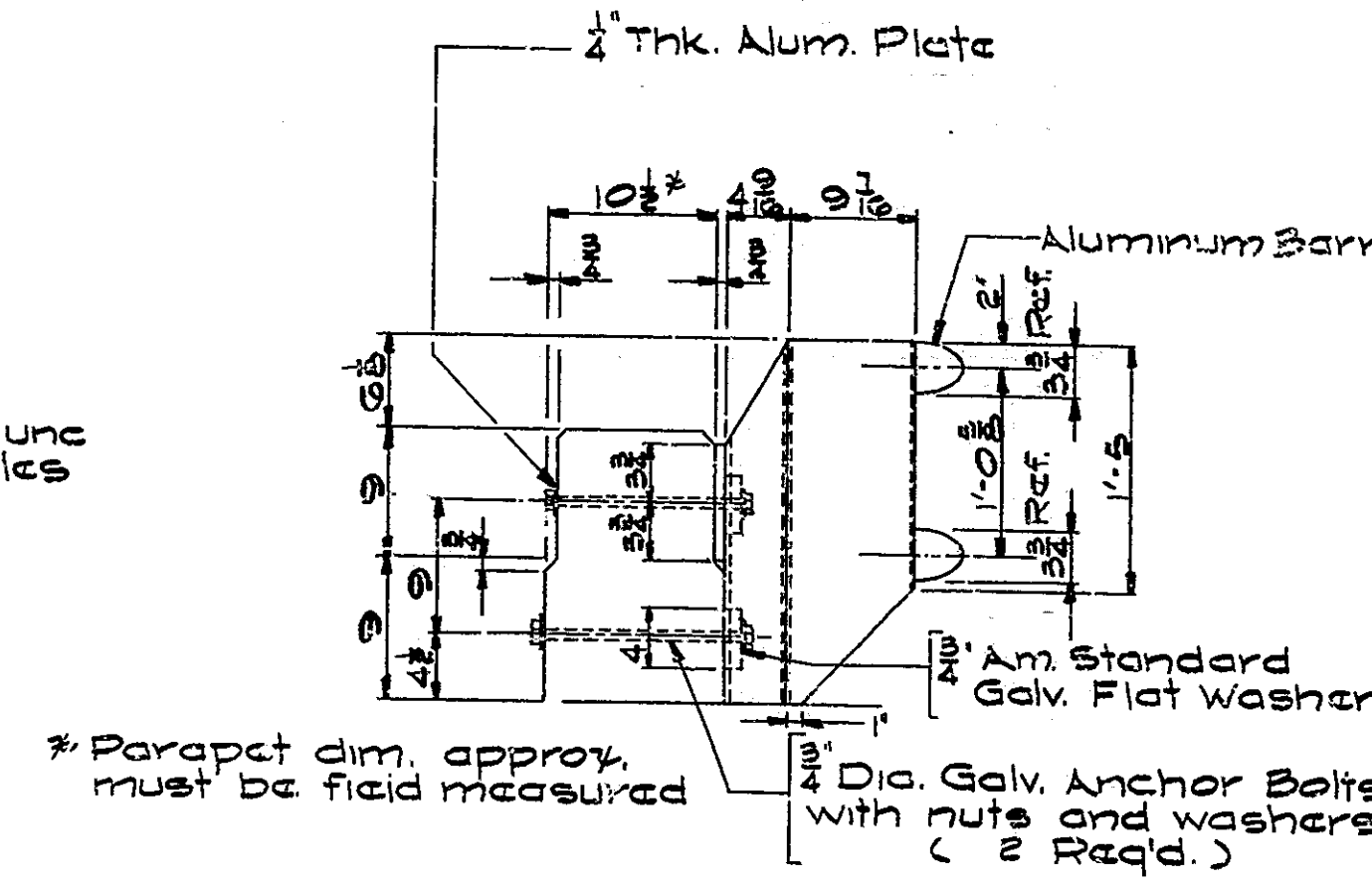
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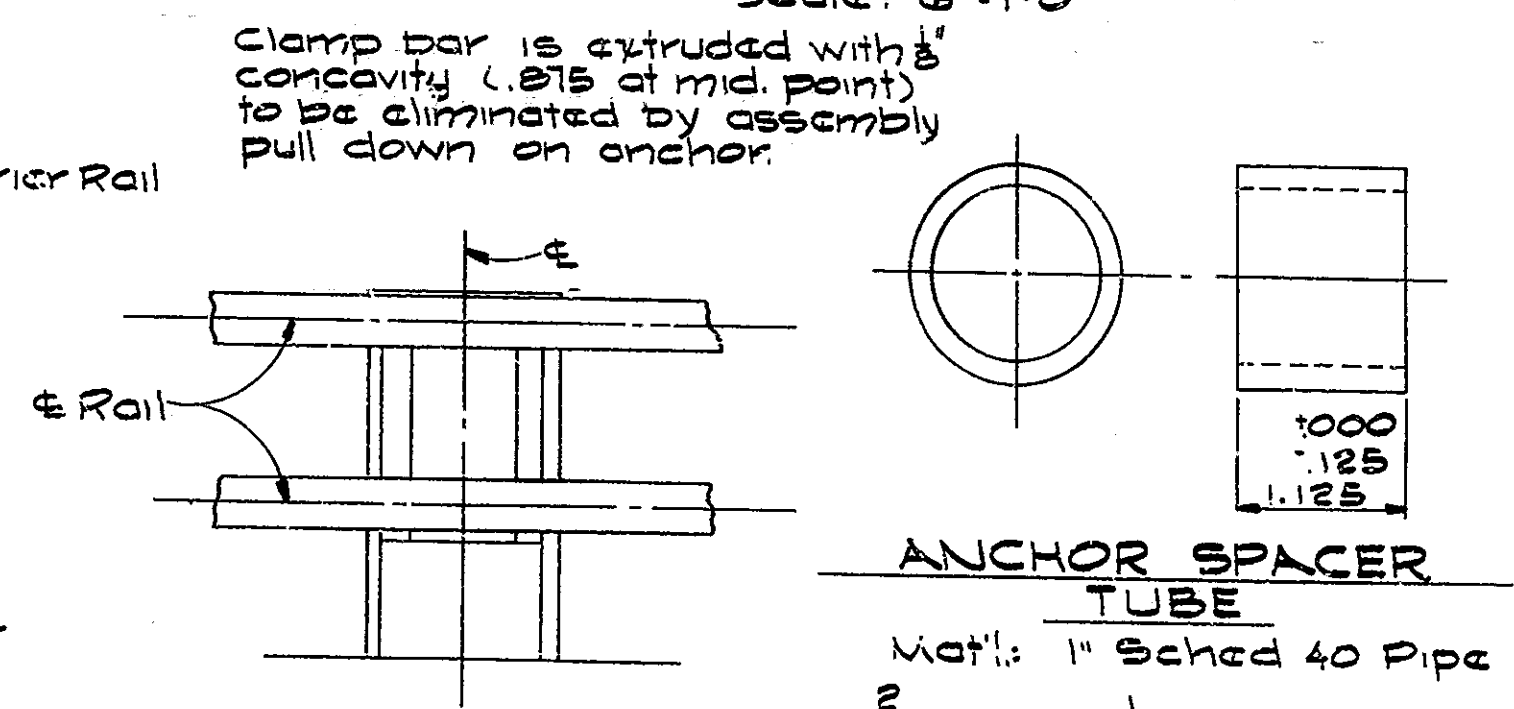
RAIL SECTION  
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CLAMP BAR  
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SIDE  
Scale: 1"=1'-0"



ANCHOR SPACER  
TUBE  
Scale: 1"=1'-0"



FRONT  
Scale: 1"=1'-0"

ALUM. PLATE  
6061-T6

NOTES

Mat'l. except as noted 6061-T6 Alum.  
Bracket may be used as an alternate to  
precast or cast in place concrete bracket.  
See Bridge Standards BR1 and BR2 for  
Guard Rail notes and details.  
Standard Drawings required BR1 and  
BR2.

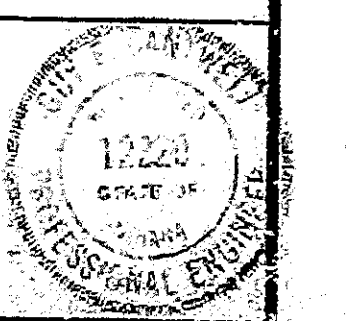
GUARD RAIL BRACKET DETAILS  
INDIANA STATE HIGHWAY COMMISSION

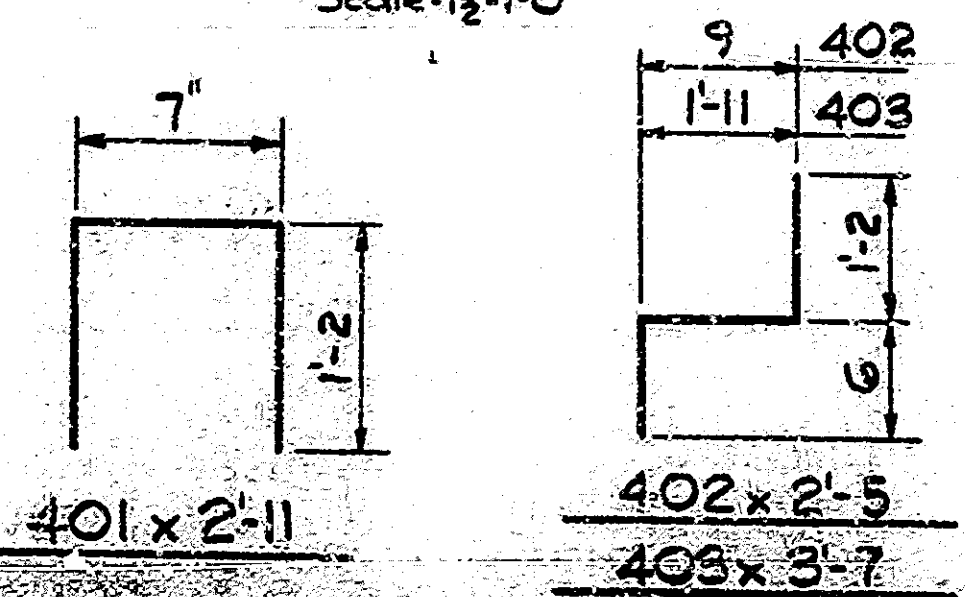
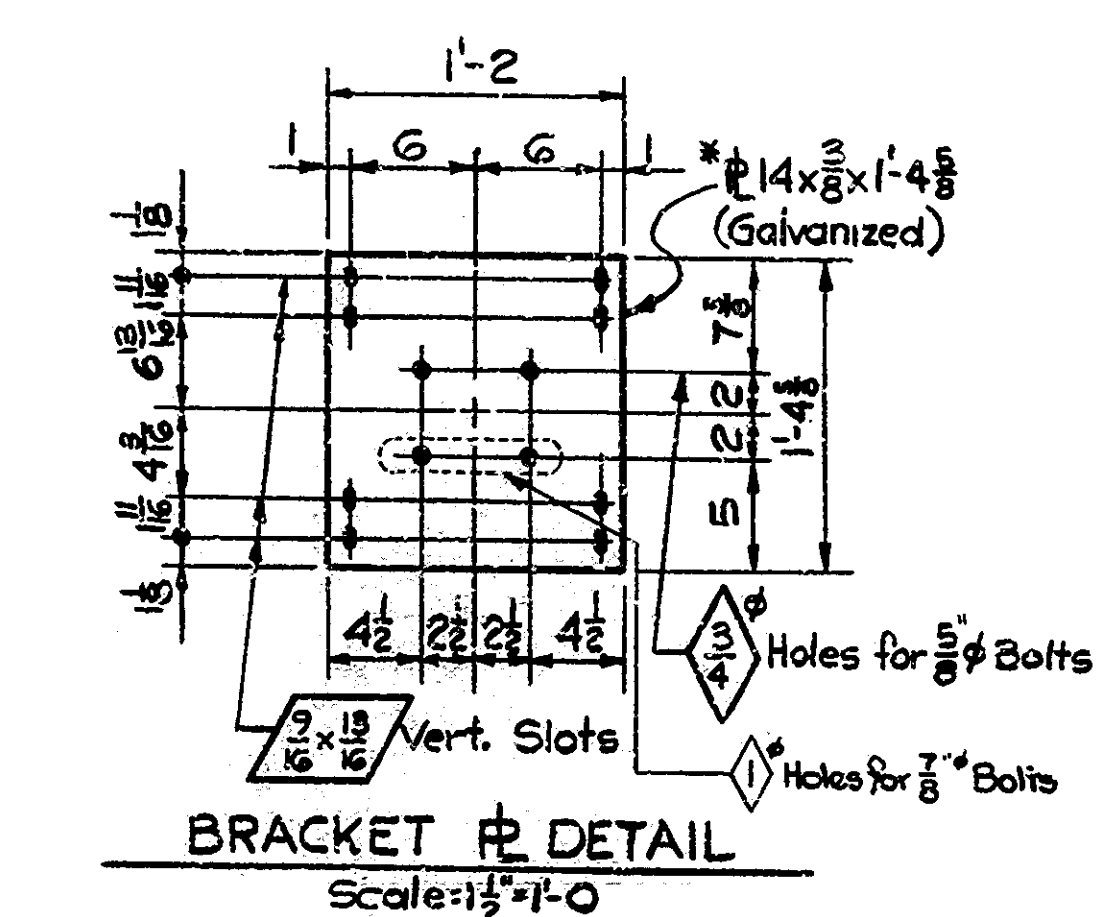
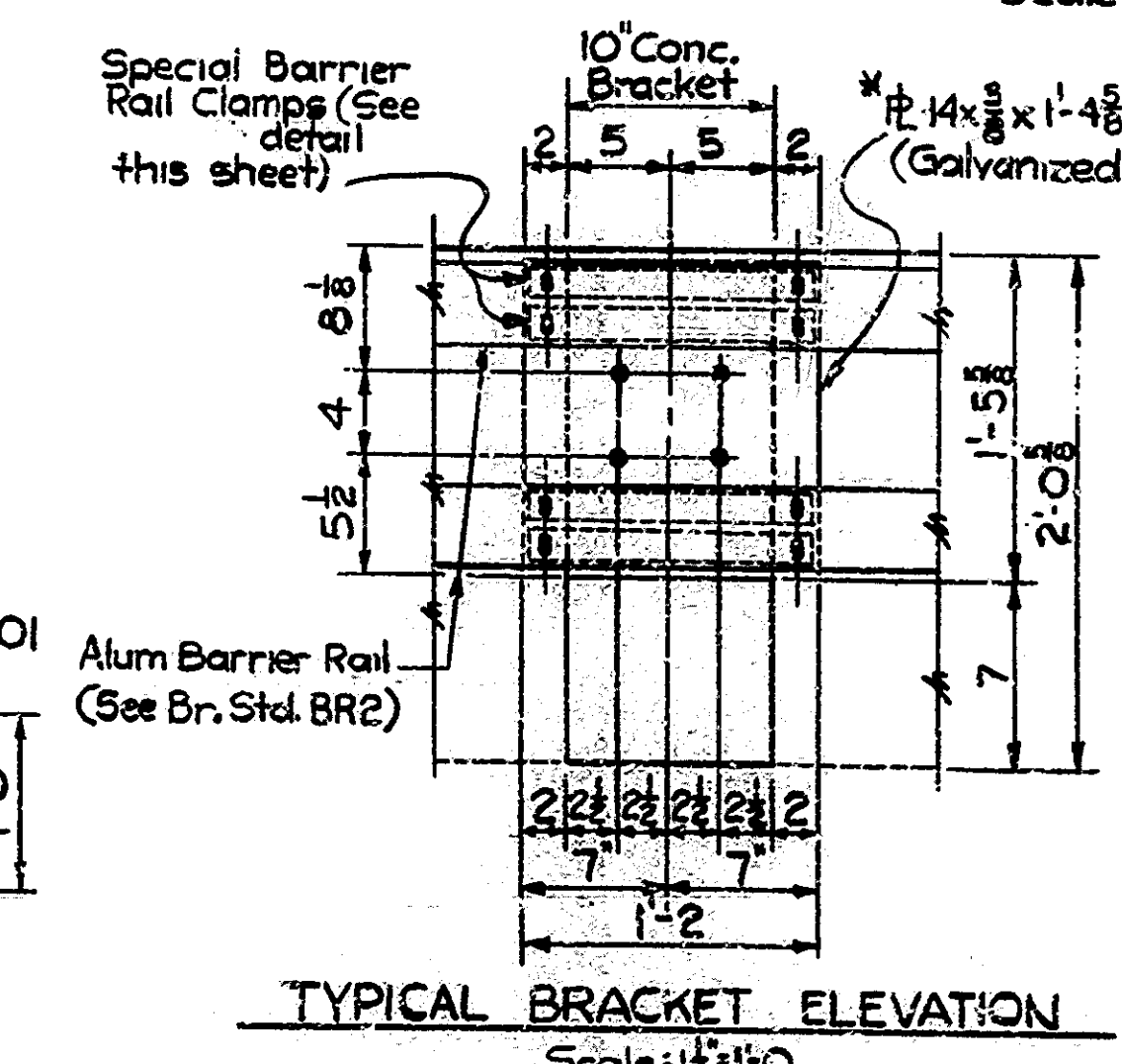
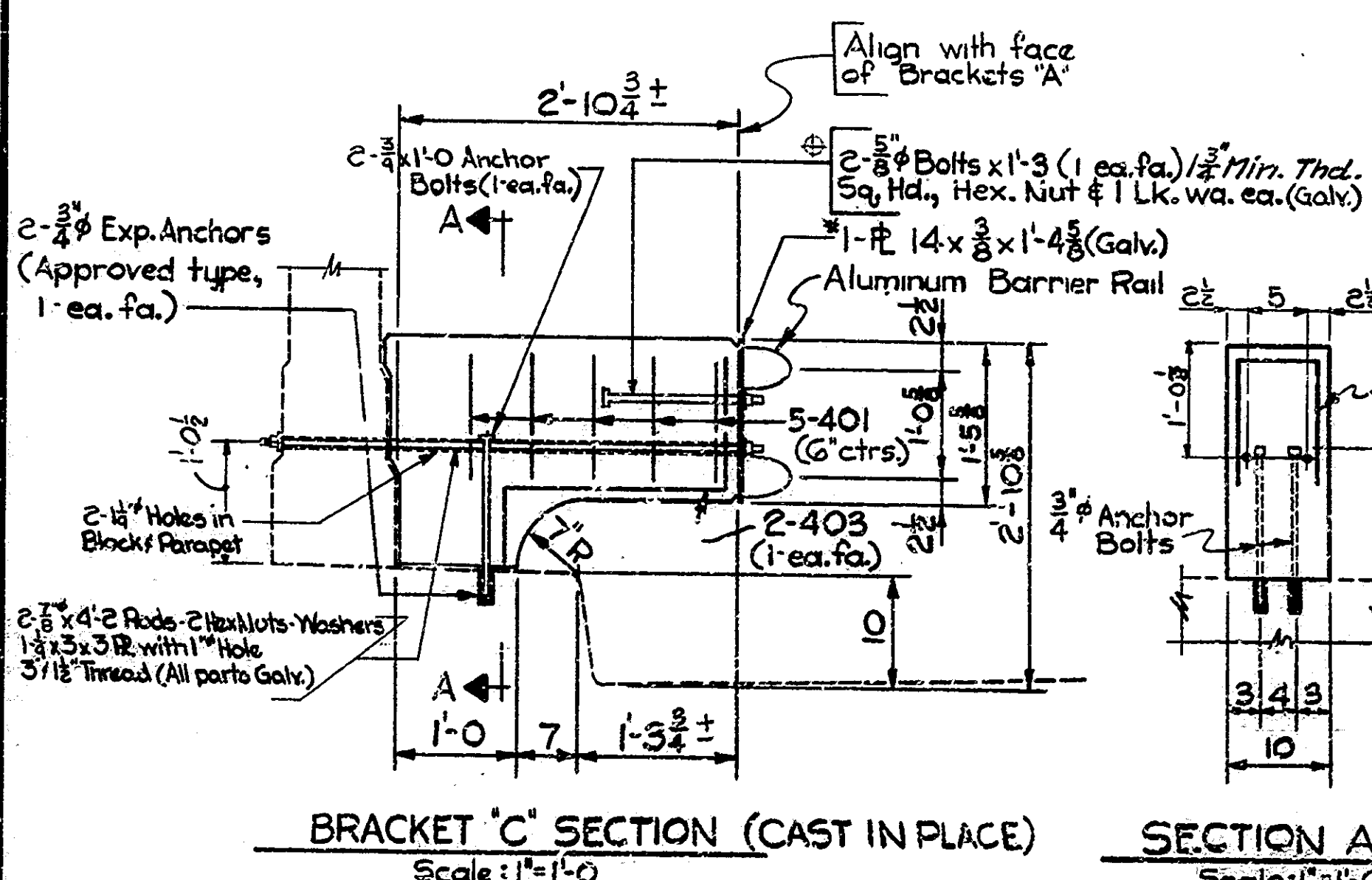
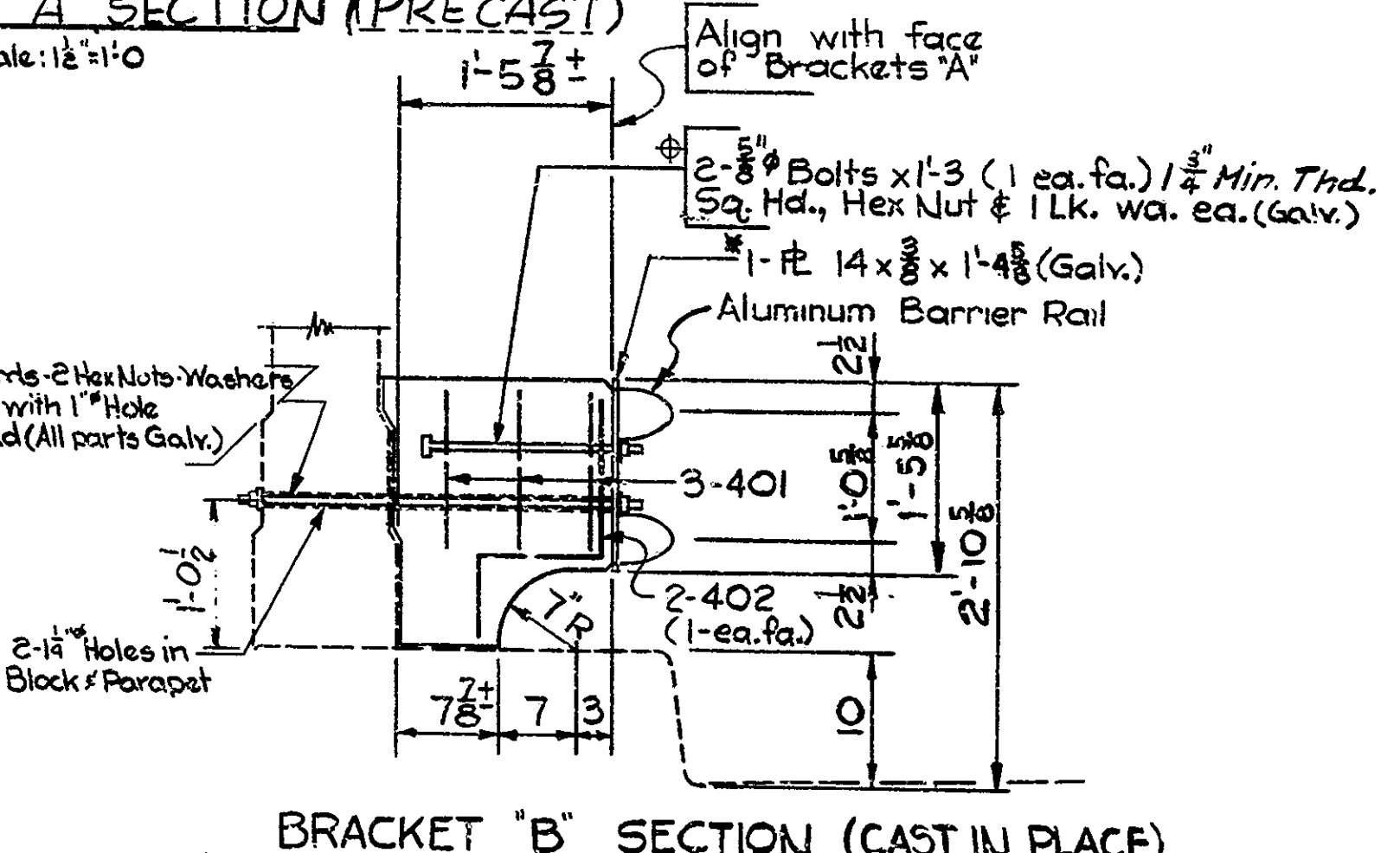
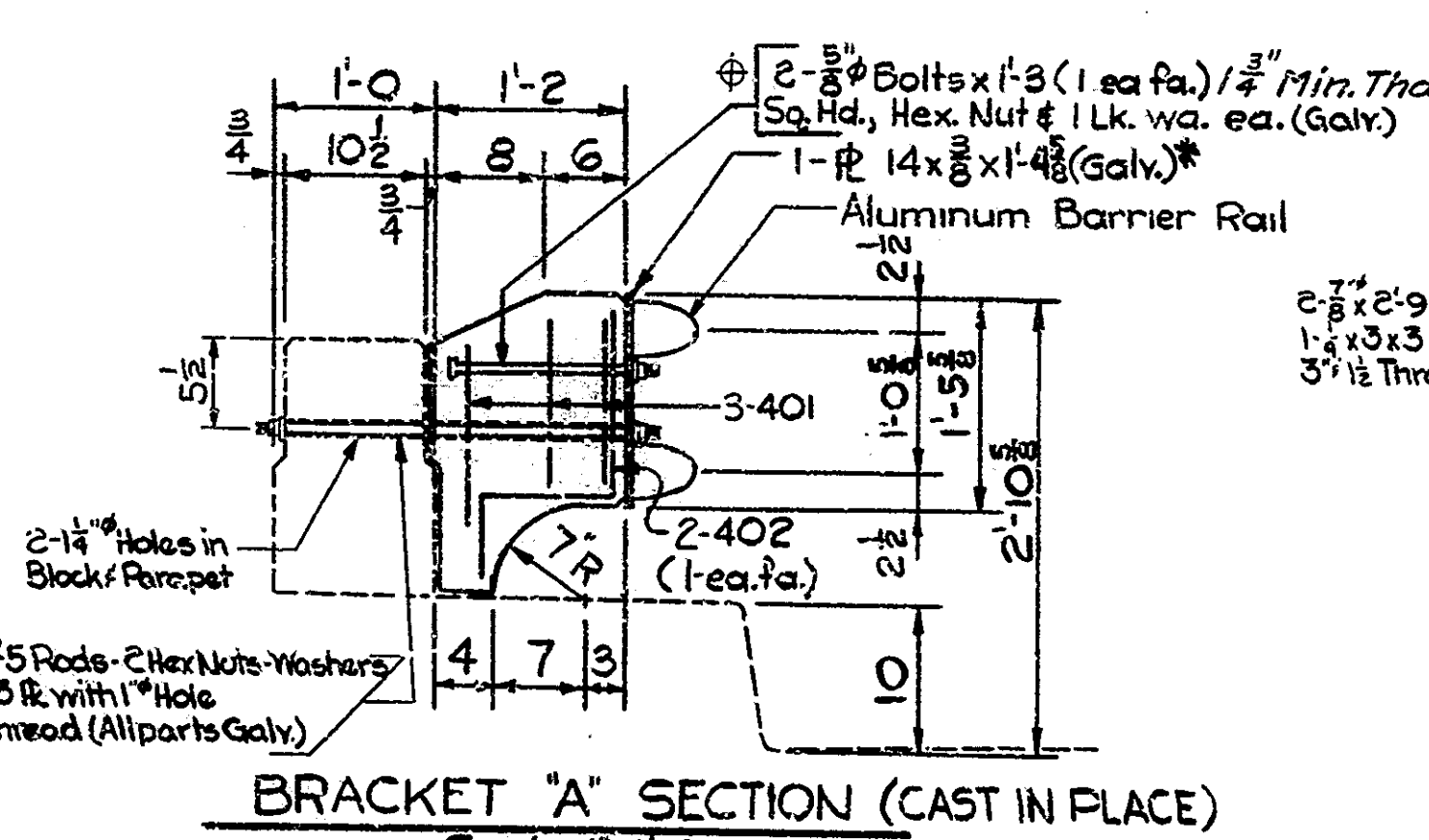
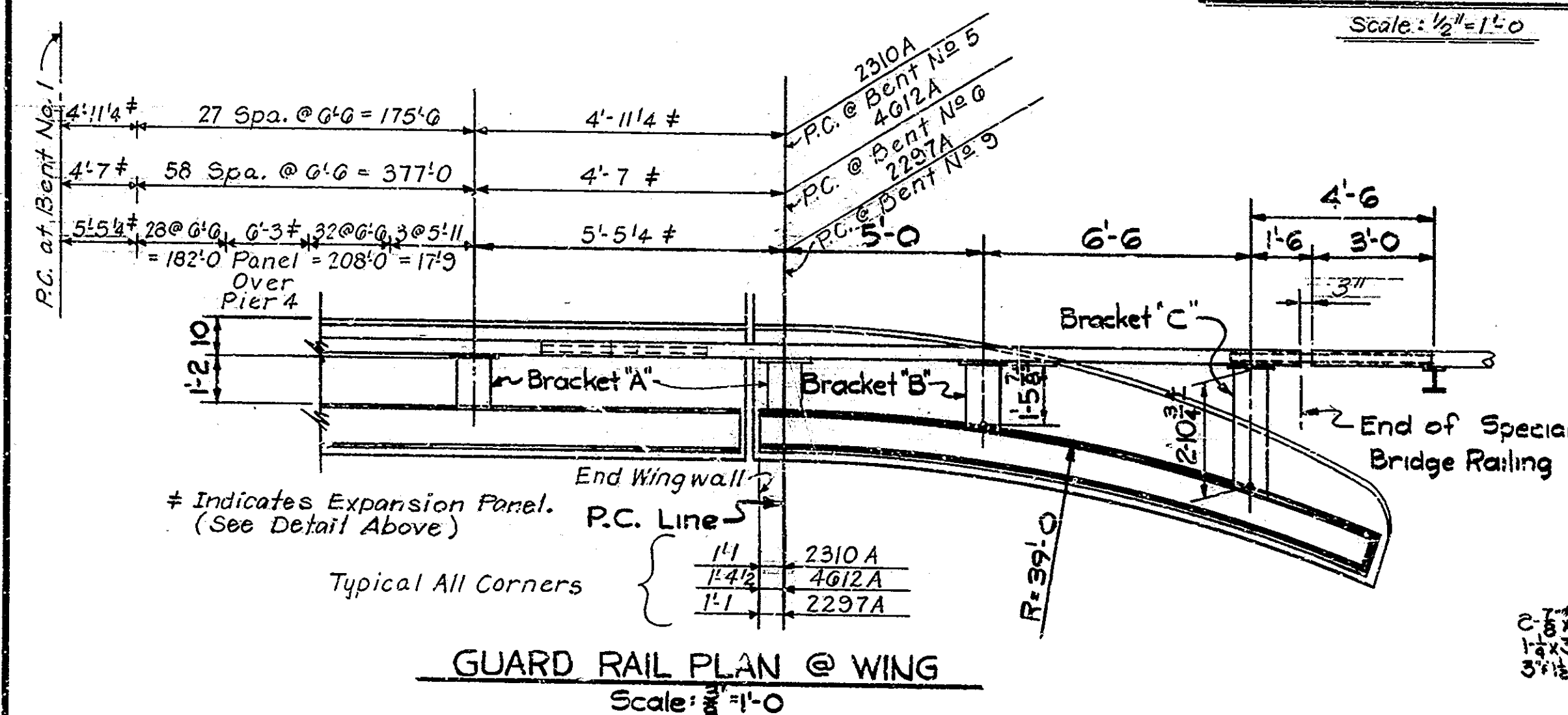
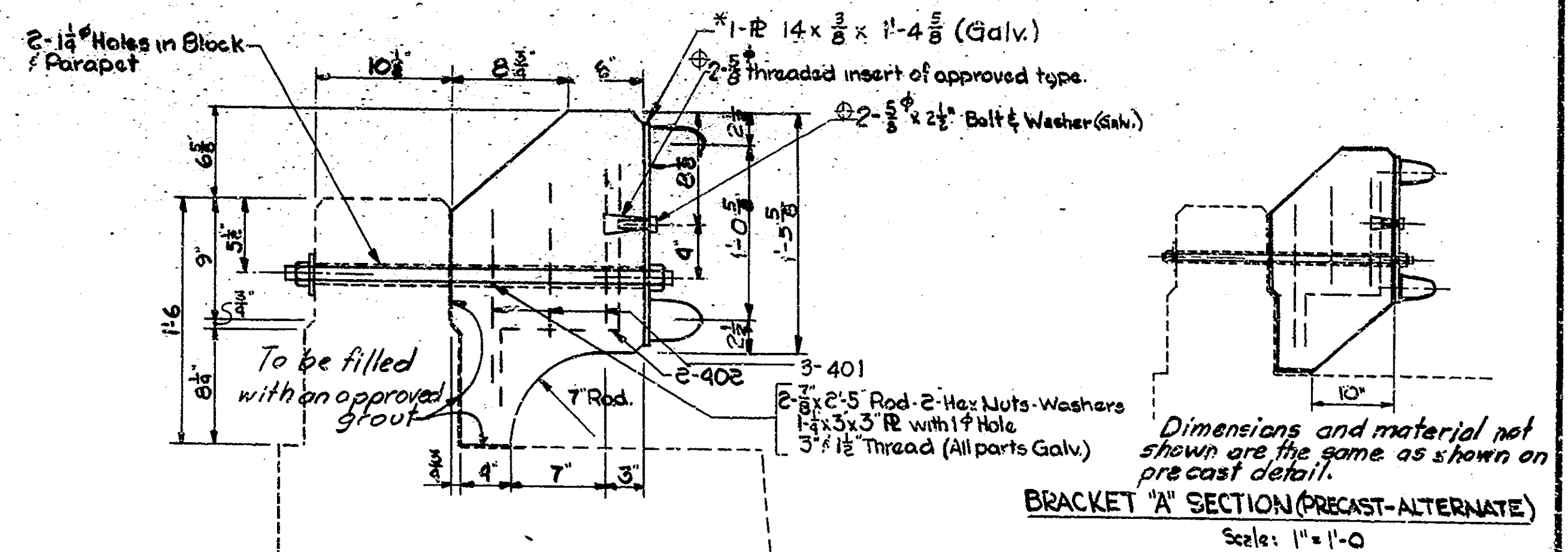
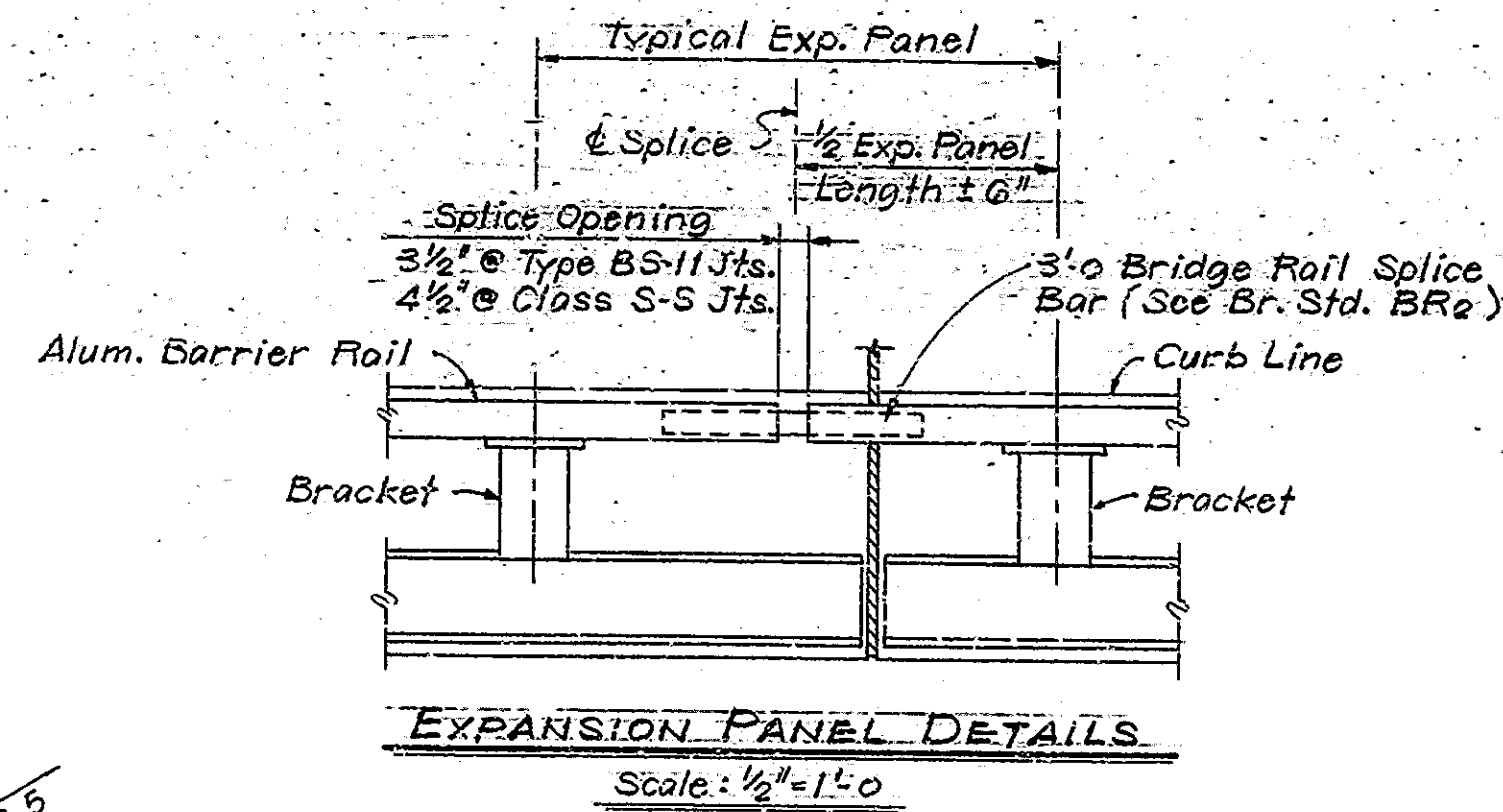
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*Ray E. Cartwright*

DESIGNED	CTD
DRAWN	LAS BJS
TRACED	CRD

DRAWING: DGAOF 16 SHEET: 10A OF 45  
PROJECT: IR-70-1(64)4  
CONTRACT NO. B-13720  
BRIDGE FILE: I-70-4-2810A; I-70-5-4612A;  
I-70-9-2297A





NOTES:  
 Material in 5/8" Steel Rods and 3/4" R's to be A-36, 5/8" and 3/4" bolts shall conform to ASTM A-307.  
 3/4" Expansion Anchors shall be of a type approved by the Engineer. They shall be a minimum of 3 inches in length and capable of a pull-out test of 12,000 pounds.  
 Concrete in Brackets to be Class "A".  
 Chamfer exposed concrete edges 3/8 inch.  
 See Br. Stds. BR1 & BR2 for Guard Rail notes and details.  
 Alternate Precast Brackets may be used. If the Precast Bracket is used, details of the proposed Bracket shall be submitted to the Engineer for approval.  
 \*As an alternate, an aluminum plate may be used. If used, it shall be aluminum alloy 6061-T6 conforming to ASTM B-209. Plates shall be free of sharp edges and irregularities.  
 For details of allowable alternate aluminum bracket, see Drawg. DGA Standard drawings read: BR1, BR2, C1.  
 WHERE EITHER THE 5/8" BOLT OR 3/4" PLATE THREADED INSERT IS SPECIFIED, THE OTHER MAY BE SUBSTITUTED AT THE CONTRACTOR'S OPTION.

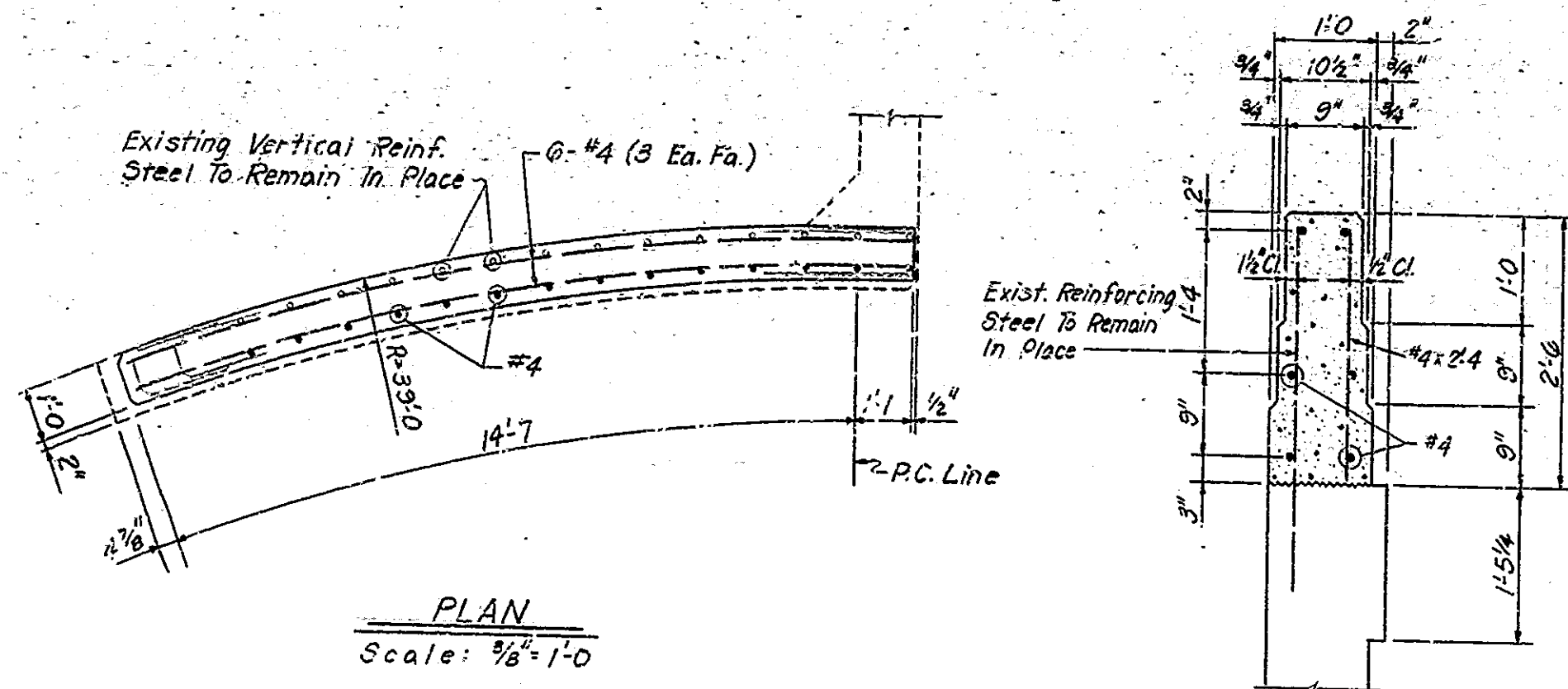
PAY ITEMS	2310A	4612A	2297A	TOTAL
REMOVAL OF PRESENT RAILING, TYPE "X"	731	1532	1288	3551
BARRIER RAILING, TYPE "X"	844	1647	1822	4293

**BARRIER RAILING, TYPE "X" DETAILS**  
**INDIANA STATE HIGHWAY COMMISSION**  
 SCALE: As Noted DATE: August 4, 1981  
 RECOMMENDED FOR APPROVAL: *Ray E. Cottrell*  
 DRAWING: D7 OF 16 SHEET: 11 OF 45  
 PROJECT: I-70-1(62)4  
 CONTRACT NO. B-13920  
 BRIDGE FILE: I-70-A-2310A; I-70-S-4612A; I-70-G-2297A

REV 1-31-74 RWB/RWH/MSJ  
 6-14-74 RWB/RWH/MSJ

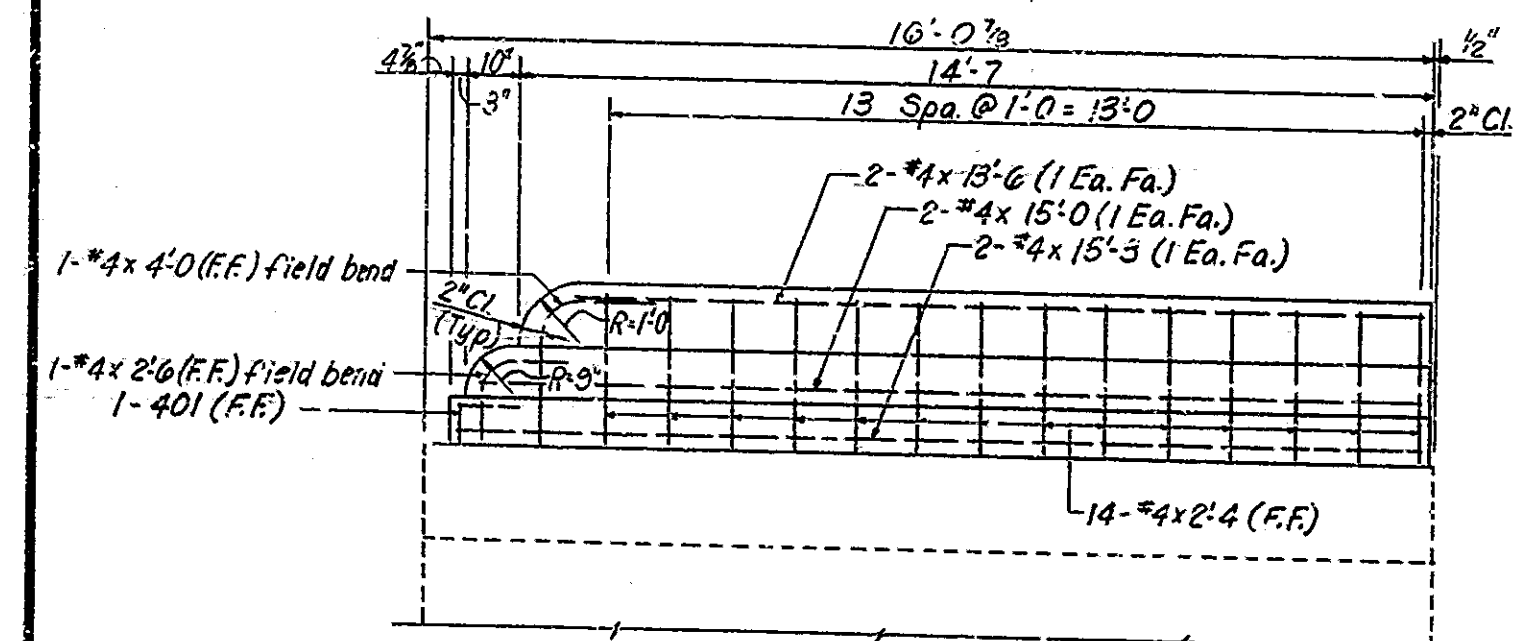
DESIGNED: RDS 3-17-78 CKD WEG 3-17-78  
 DRAWN: CKD  
 TRACED: CKD

REV. 9-10-80 5/8" BOLT OR THREADED INSERT SUBSTITUTION NOTE NOTED  
 REV. 1-31-74 Railing Height REV. 6-14-74 Anchor Rods Detail REV. 4-1-77 Material Notes



PLAN  
Scale: 3/8" = 1'-0"

SECTION  
Scale: 3/4" = 1'-0"

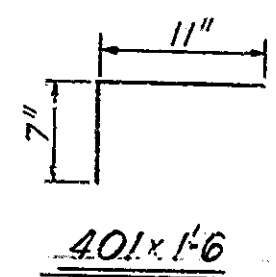


ELEVATION  
Scale: 3/8" = 1'-0"

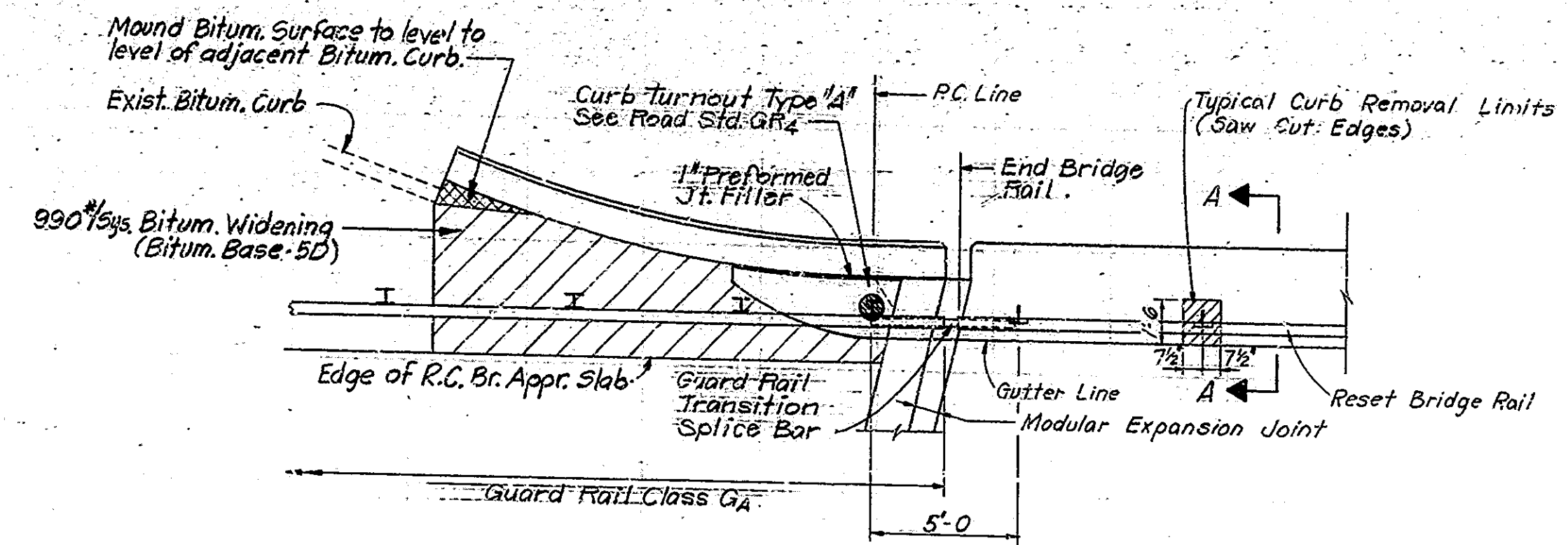
**BILL OF MATERIALS**

REINFORCING STEEL			
Mark Or Size	No. Of Bars	Length	Weight (Lbs)
401	1	1'-6"	
#4	2	15'-3"	
#4	2	15'-0"	
#4	2	15'-6"	
#4	1	4'-0"	
#4	1	2'-6"	
#4	14	2'-4"	
Total Reinforcing Steel			86
CONCRETE			
Class "A" Concrete Railing			1.2 Cys

- NOTES**
- See Bridge Standard Sheet CI for reinforcing bar notes.
  - Chamfer exposed edges 1 inch.
  - Existing reinforcing steel which is to remain in place shall be cleaned and realigned.
  - All contact surfaces of existing concrete to be coated with epoxy bonding compound prior to pouring new concrete.



CONCRETE END RAIL RECONSTRUCTION  
S.W. CORNER W.B.L. (-2297A)



PLAN - N.W. CORNER (Other Corners Similar) (-4613A)  
SHOWING RAILING INSTALLATION  
Scale: 1/4" = 1'-0"

**NOTES FOR "RESET EXISTING BRIDGE RAIL"**

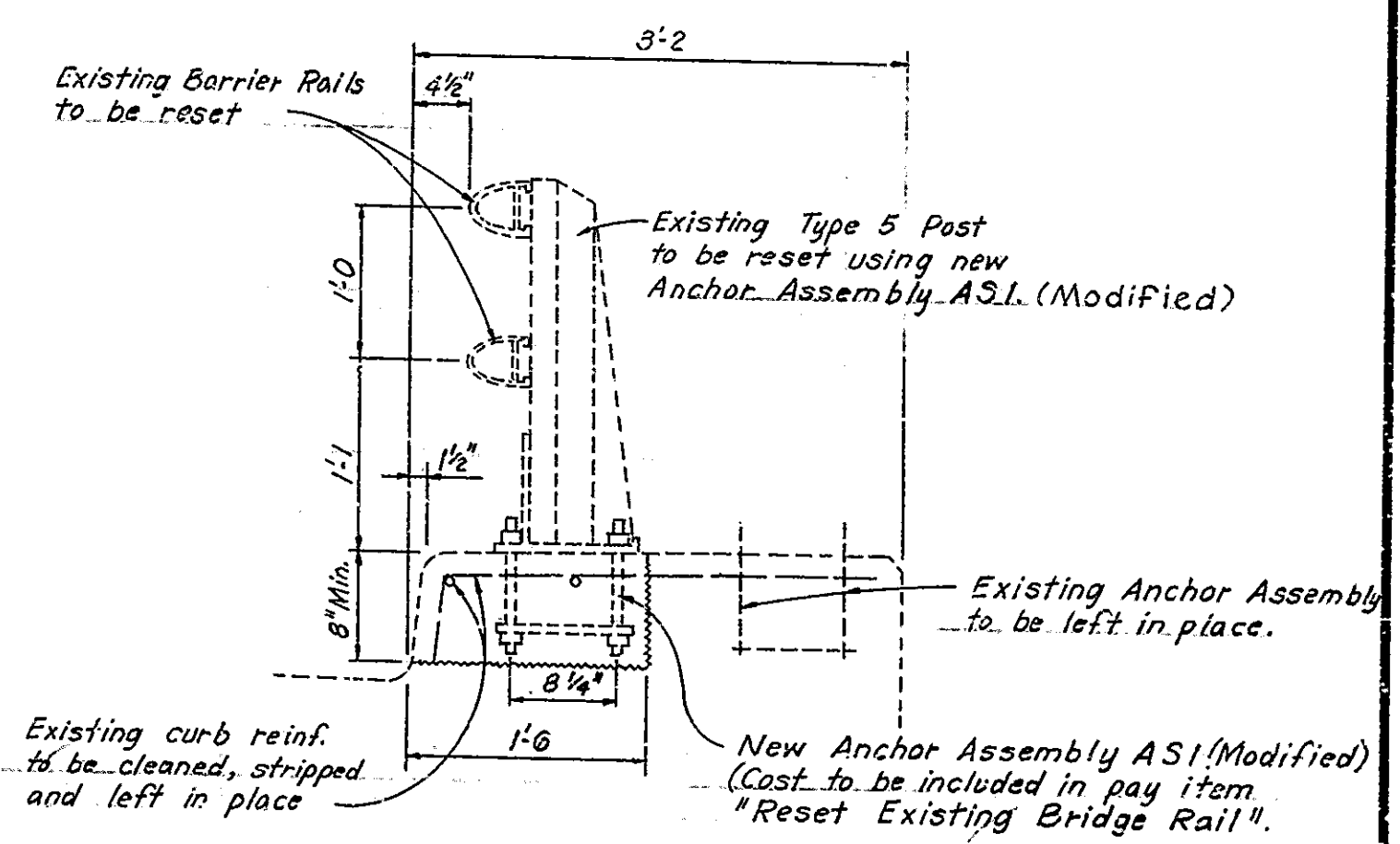
The linear foot pay item "Reset Existing Bridge Rail" shall include all costs of materials and labor required to remove the aluminum rail tubes and posts, sawcut the edges and remove portions of the existing curb at each post location, preset new modified anchor assemblies (AS1-Modified) at each post location, repour portions of the curb with Class "A" Concrete bonded to existing concrete with epoxy bonding compound and to reassemble the existing aluminum posts and rail tubes.

New Anchor Assembly AS1 (Modified) to be used with the reset railing shall be as shown on Bridge Standard Sheets BR1 and BR 2 except the length of the piece "mb" shall be increased to 10" and the center to center hole dimension shall be increased from 8 to 8 1/4 inches.

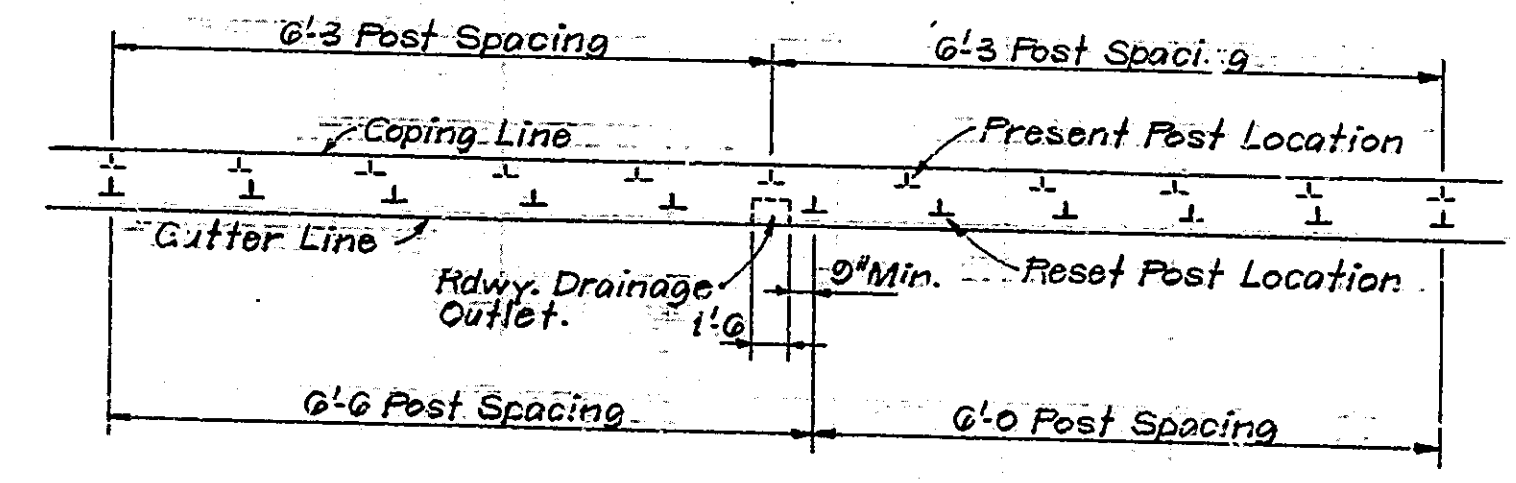
Railing posts shall be reset to a position directly in front of the existing posts, maintaining the present post spacing. The following exception will be allowed:

a) If the reset end post in any continuous unit will fall partially over the modular joint slider plate assembly, the post shall be shifted to clear the plates. No post spacing shall exceed 6'-0".

b) Spans A thru U and P thru V have roadway drainage outlets recessed in the curb. The post spacing thruout is 6'-3" center to center. If any reset post will fall directly over or within 9 inches of the edge of the drain, the post shall be set so that the distance from the center line of the post to the edge of the drain is 9 inches minimum. The adjacent post spacings shall be increased or decreased a maximum of 3 inches (6'-0" MAX. and 6'-0" MIN.) in order to reestablish the new and reset post alignment. (See Sketch Below.)



SECTION "A-A"  
Scale: 1 1/2" = 1'-0"

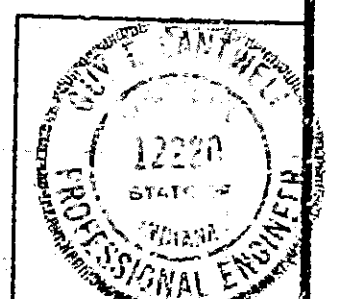


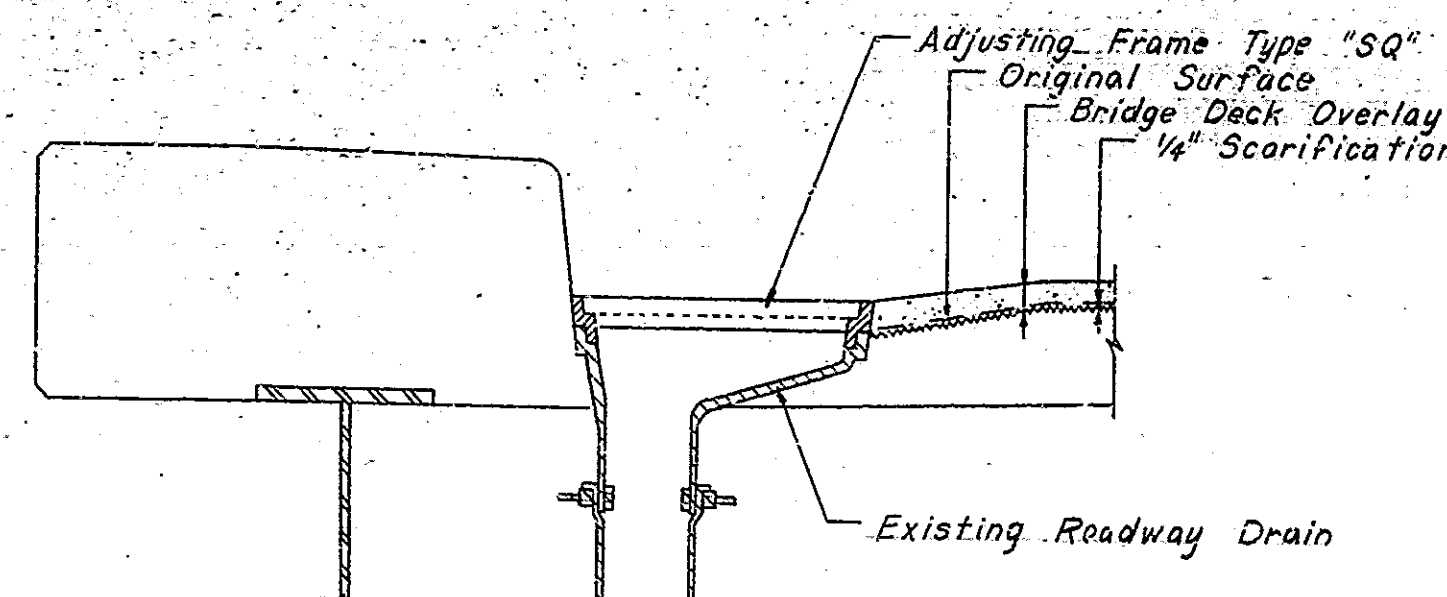
Not to Scale

MISCELLANEOUS DETAILS  
**INDIANA STATE HIGHWAY COMMISSION**

SCALE: AS NOTED DATE: August 4, 1981  
By: E. C. Smith

DRAWING: D15 OF 16 SHEET: 19 OF 45  
PROJECT: IR-70-1(64)A  
CONTRACT NO. B-13920  
BRIDGE FILE: I-70-5-4613 A; I-70-6-2297A

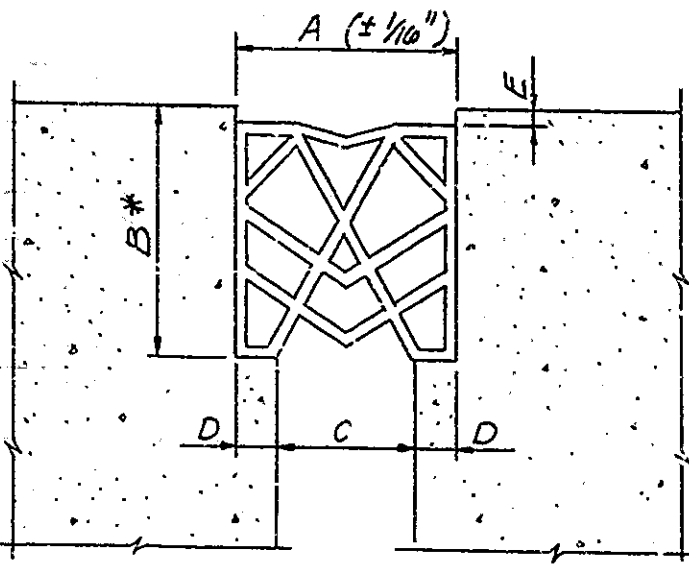




DETAIL OF ADJUSTED ROADWAY DRAIN (-4613A)  
(Beam Span Shown - Girder Span Similar)  
Scale: 1"=1'-0"

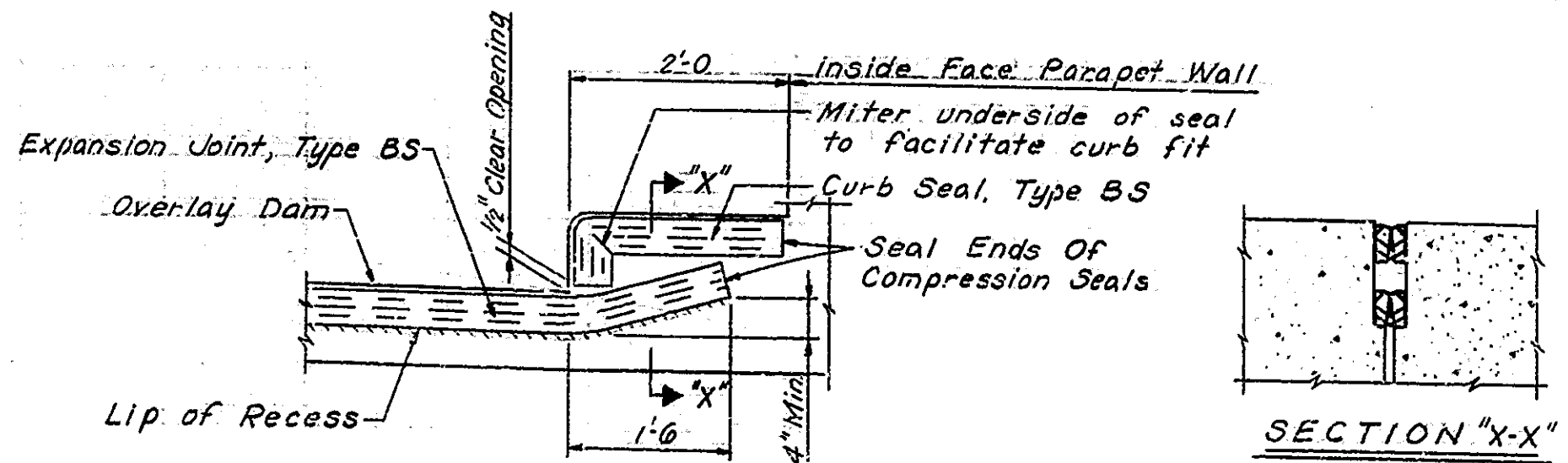
\* To be determined in the field. See the Special Provisions.

Note: Clean out & rebuild existing curb joints to accommodate joint seal. Such work to be included in cost of Expansion Joint, Type BS.

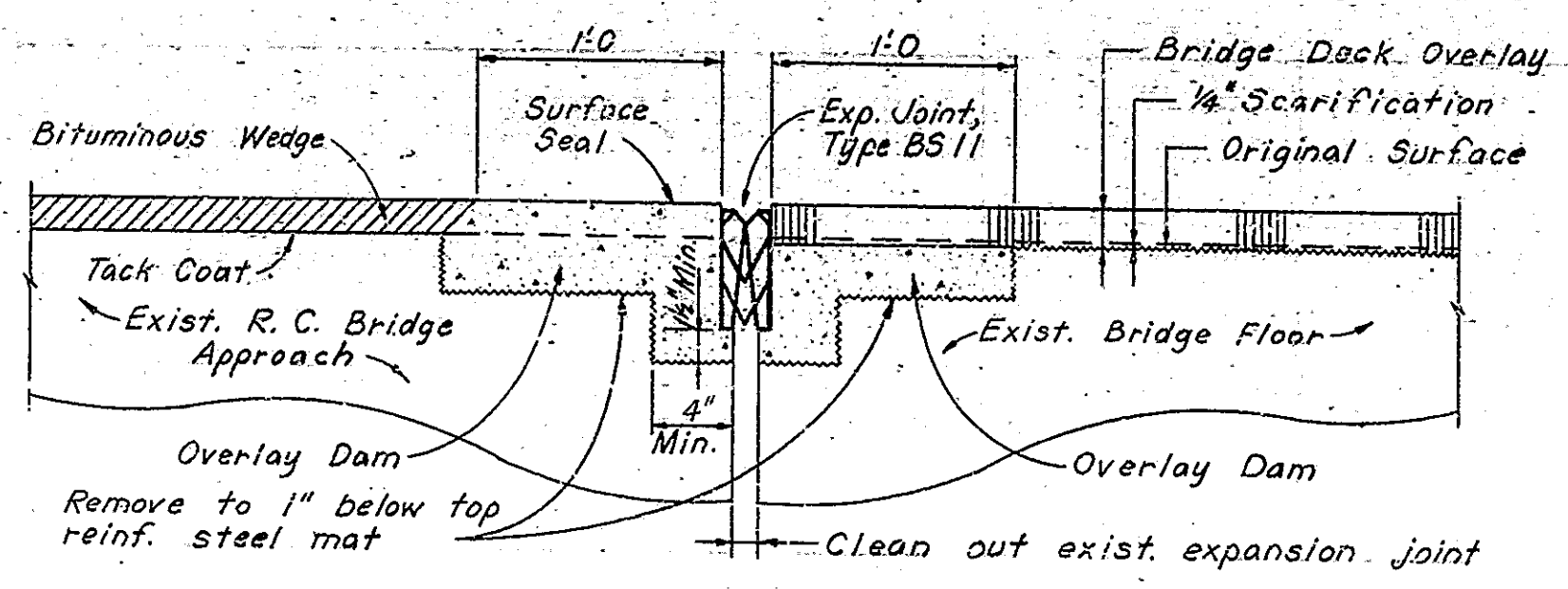


Bridge Seal	A	B	C	D	E
BS.11	3 1/8"	#	2 1/2"	1/2"	3/4"

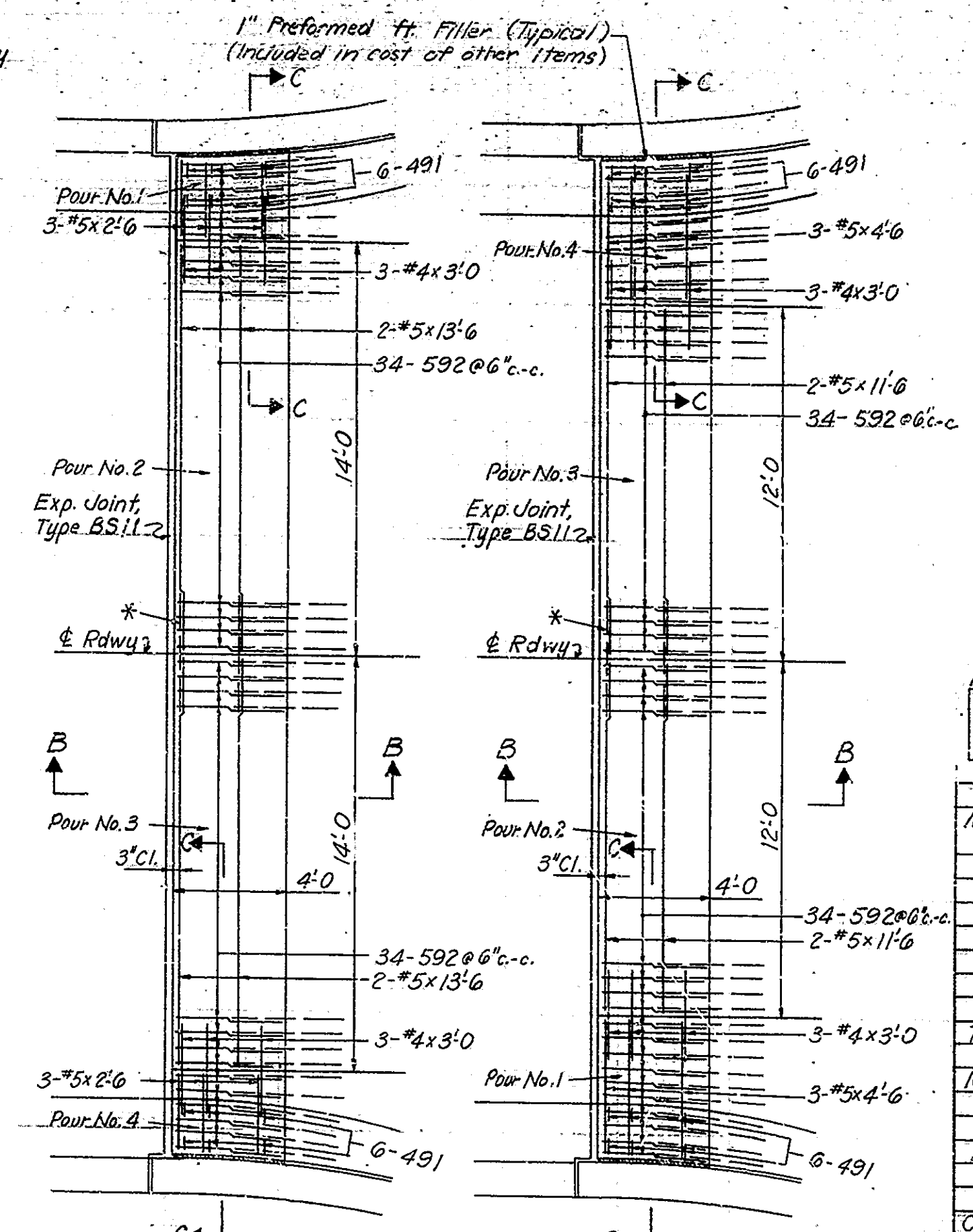
EXPANSION JOINT TYPE BS (2310A, -2297A)  
Not To Scale



TYPICAL BS JOINT INSTALLATION AT CURBS (-2310A, -2297A)  
Not To Scale



DETAIL "A" (-2310A)  
Scale: 1/2"=1'-0"



PLAN RECONSTRUCT R.C. BR APPR  
Scale: 1/4"=1'-0"

RECONSTRUCTED R.C. BR. APPROACH  
East Appr. EBL Str. -2310A  
West Appr. WBL Str. -2297A  
East Appr. EBL Str. -2297A  
Quantities For One Approach

REINFORCING STEEL			
Mark Or. Size	No. Of Bars	Length	Weight (Lbs)
592	68	4'-0"	
#5	4	13'-6"	
#5	6	2'-6"	
Total #5			356
491	12	2'-3"	
#4	6	3'-0"	
Total #4			30
Total Reinforcing Steel			386

CONCRETE  
10" Reinforced Concrete Pavement  
Pour No. 1 1.3 Sys  
Pour No. 2 0.2 Sys  
Pour No. 3 0.2 Sys  
Pour No. 4 1.3 Sys  
Total 10" R.C. Pvm't. 3.0 Sys  
Class "A" Concrete In Structures 0.5 Cys

MISCELLANEOUS  
6" Type "O" Comp. Aggr. Base 4 Tons  
Removal Of Pavement 15 Sys

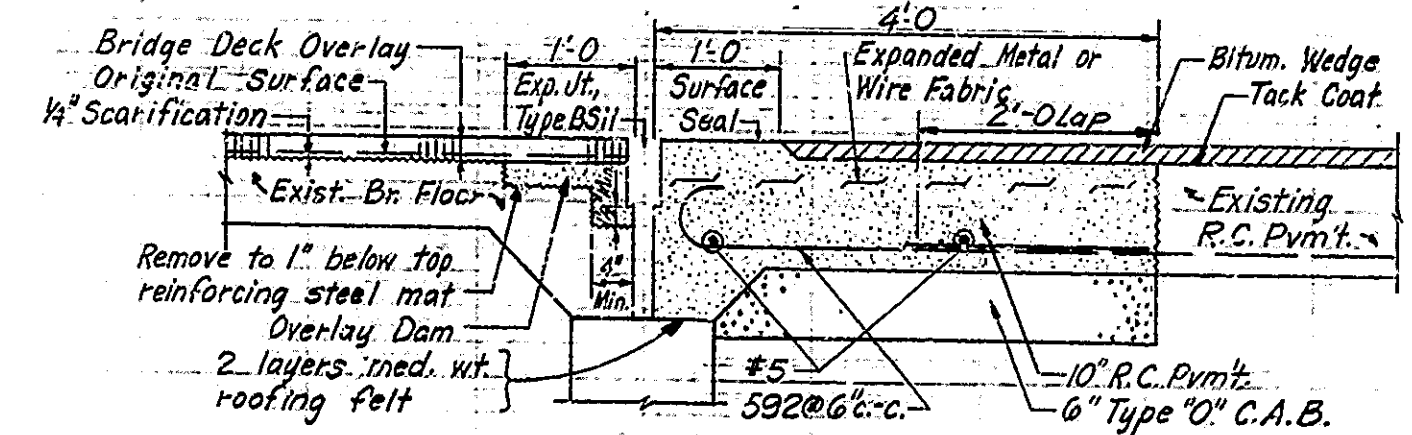
- NOTES
- For Reinforcing Bar Notes, See Bridge Std. Sht. C-1.
  - Clean and straighten existing reinf. steel to remain in place.
  - Cut off exist. bottom steel 2'-0" from each side of const. joint and lap with new reinf. steel.
  - All contact surfaces between new and existing concrete to be coated with epoxy bonding compound prior to pouring new concrete.

RECONSTRUCTED R.C. SR. APPROACH  
East Appr. WBL Str. -2310A  
East Appr. WBL Str. -2297A  
West Appr. EBL Str. -2297A  
Quantities For One Approach

REINFORCING STEEL			
Mark Or. Size	No. Of Bars	Length	Weight (Lbs)
592	68	4'-0"	
#5	4	11'-6"	
#5	6	4'-6"	
Total #5			360
491	12	2'-3"	
#4	6	3'-0"	
Total #4			30
Total Reinforcing Steel			390

CONCRETE  
10" Reinforced Concrete Pavement  
Pour No. 1 2.2 Sys  
Pour No. 2 0.3 Sys  
Pour No. 3 0.3 Sys  
Pour No. 4 2.2 Sys  
Total 10" R.C. Pvm't. 5.0 Sys  
Class "A" Concrete In Structures 0.5 Cys

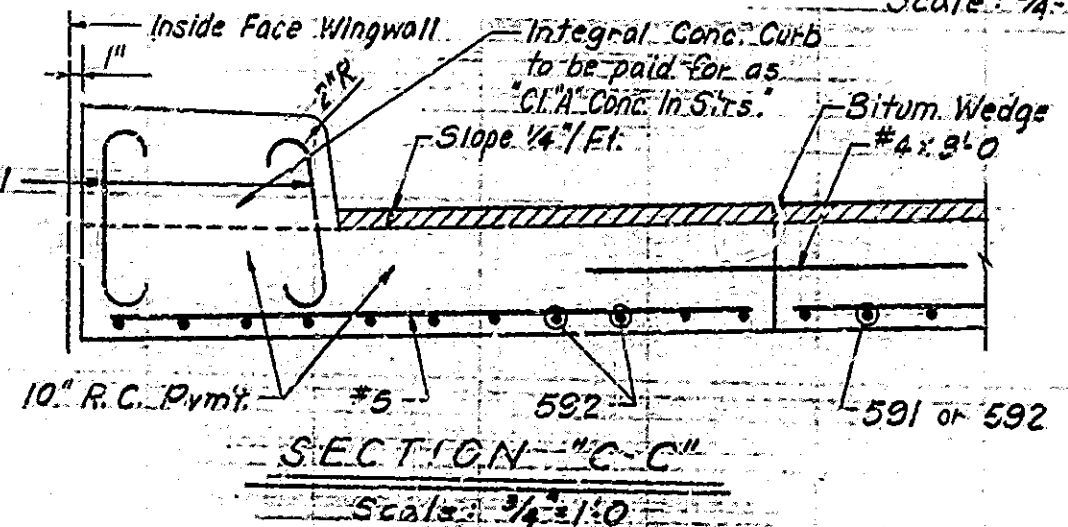
MISCELLANEOUS  
6" Type "O" Comp. Aggr. Base 4 Tons  
Removal Of Pavement 15 Sys



SECTION "B-B"  
Scale: 3/4"=1'-0"

MISCELLANEOUS DETAILS  
INDIANA STATE HIGHWAY COMMISSION

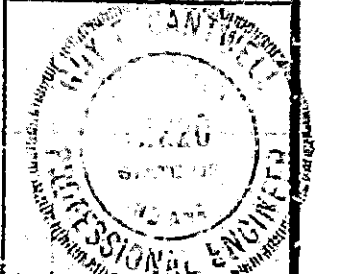
SCALE: As Noted DATE: August 4, 1981  
M. E. Cantwell



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

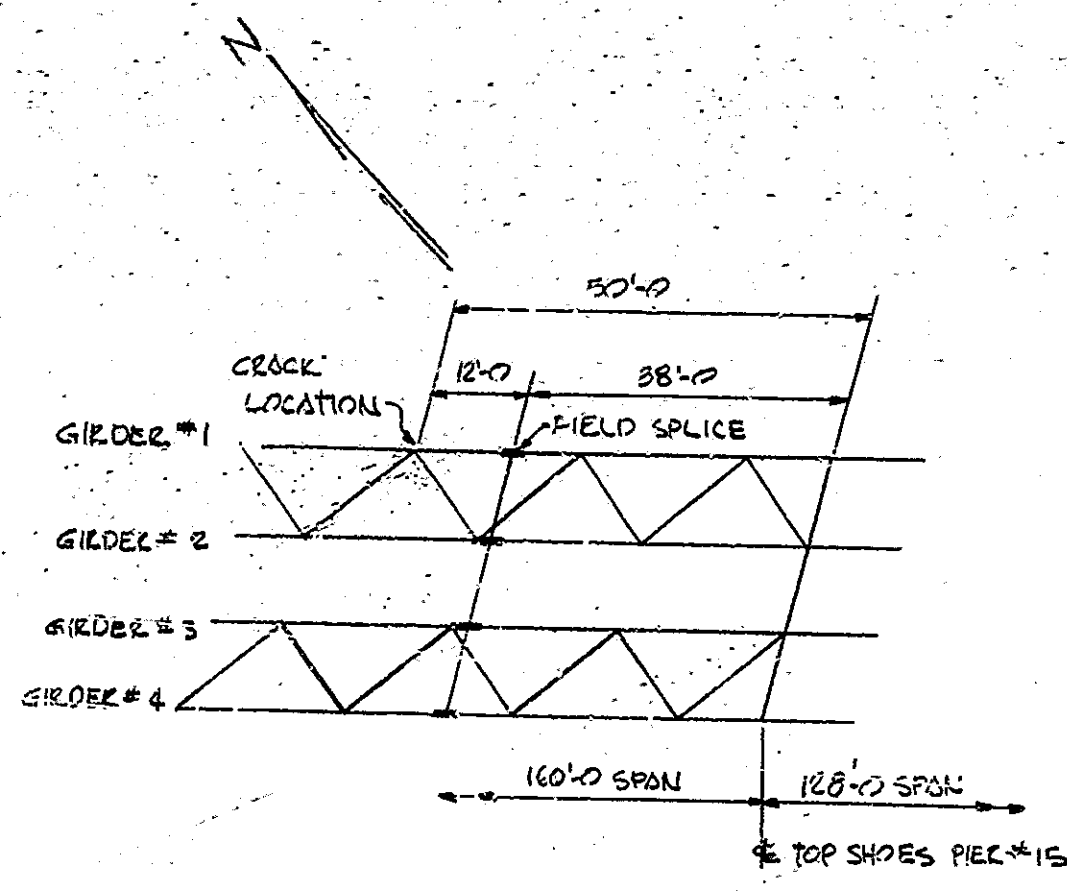
DESIGNED: PEB CKD: TLH  
DRAWN: PEB CKD: TLH  
TRACED: CKD

DRAWING: D16 OF 16 SHEET: 20 OF 45  
PROJECT: IR-70-1(64)4  
CONTRACT NO. B-13920  
BRIDGE FILE: I-70-4-2310A I-70-5-4612 A  
I-70-5-4613A I-70-6-2297A



**GENERAL PROCEDURE NOTES**

1. DRILL HOLE AT END OF CRACK IN WEB AND FLANGE.
2. REMOVE LONGITUDINAL & VERTICAL STIFFENERS AS SHOWN ON DRAWING. GRIND SMOOTH ALL SURFACES ON WEB.
3. CONNECT WEB SPlice PLATES TO WEB.
4. CONNECT FLANGE SPlice PLATES TO BOTTOM FLANGE.
5. PAINT ALL SURFACES WITH ONE COAT INORGANIC ZINC TYPE PAINT & ONE COAT VINYL (SEE SPECIAL PROVISIONS).

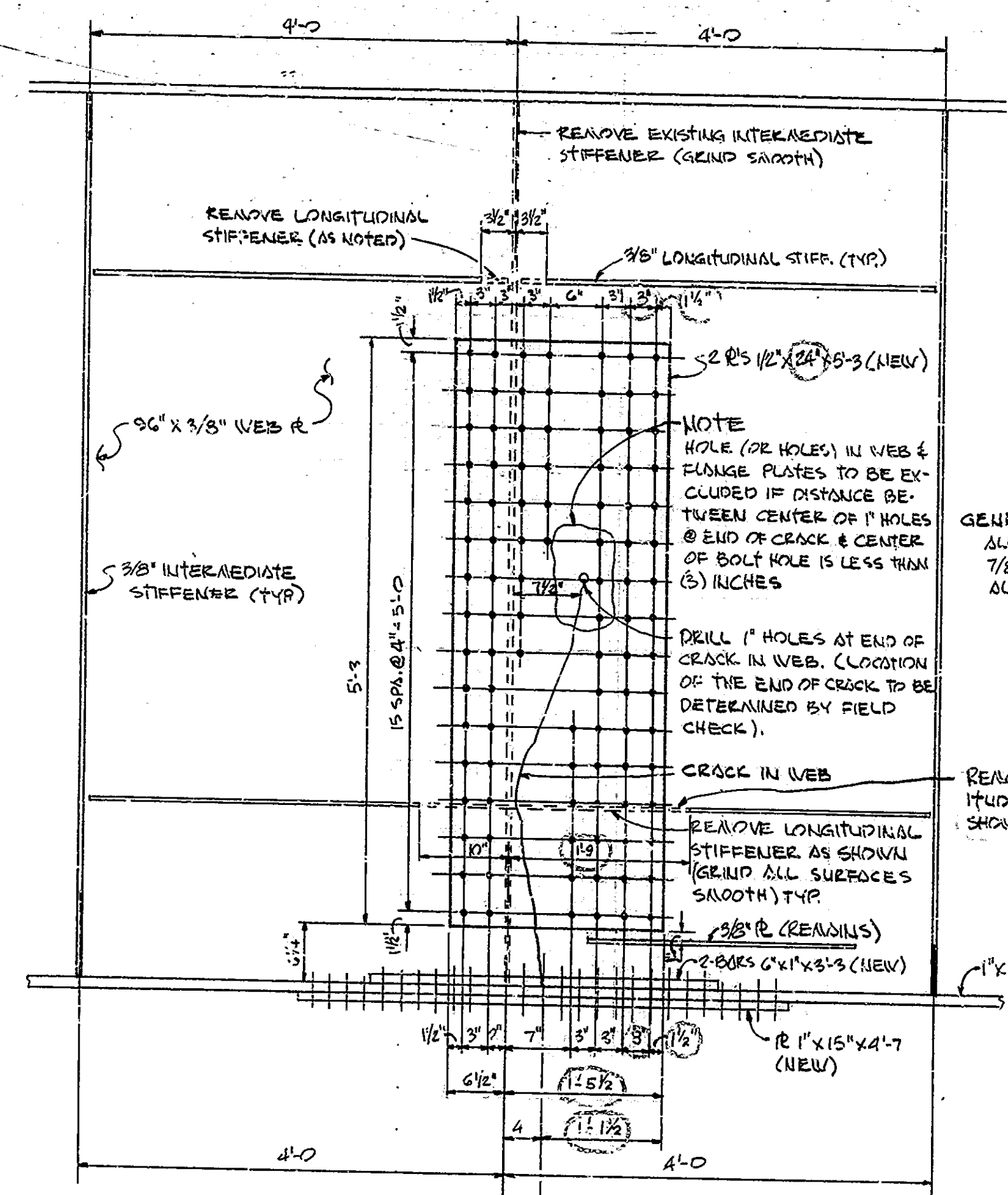


**PARTIAL FRAMING PLAN**  
SCALE: 1" = 20'-0"  
(SOUTH STRUCTURE)

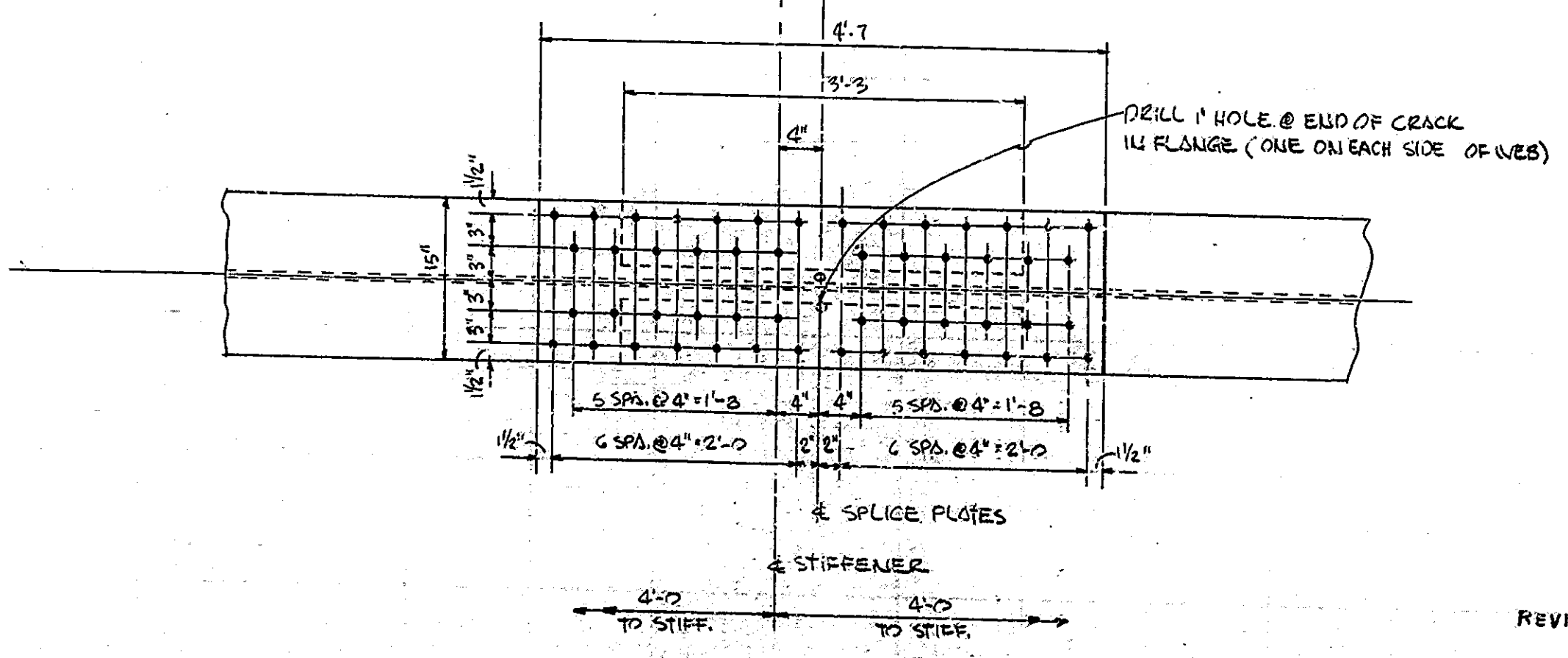
GENERAL NOTES:  
ALL HOLES TO BE DRILLED IN THE FIELD  
7/8" BOLTS & 3/8" 15/16" HOLES  
ALL STEEL TO BE A36

**ESTIMATE OF QUANTITIES**

ITEM	UNIT	QUAN.
2 1/2" x 24" x 5'-3" WEB PLATES	LBS.	428
(1) 1" x 15" x 4'-7" FLANGE PLATE	LBS.	294
(2) 1" x 6" x 3'-3" FLANGE BARS	LBS.	181
<b>TOTAL STEEL</b>	<b>LBS.</b>	<b>793</b>
FIELD DRILLED HOLES		102
WEB		52
FLANGE		50
<b>TOTAL</b>		<b>154</b>



**ELEVATION**  
SCALE: 1" = 1'-0"



**BOTTOM PLAN**  
SCALE: 1" = 1'-0"

REVISION NOTE: ALL DIMENSIONS AND NOTES CIRCLED IN HEAVY LINES

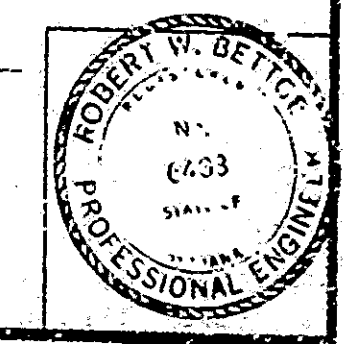
**GIRDER CRACK REPAIR PLAN**

**INDIANA DEPARTMENT OF HIGHWAYS**

SCALE: AS SHOWN DATE: 9-15-83

*Robert W. Betty*  
SENIOR DESIGNER

DRAWING: D16 OF 16 SHEET: 20A OF 45  
PROJECT: 12-70-1(64)4  
CONTRACT NO. B-13920  
BRIDGE FILE: 1-70-5-4613A



DESIGNED: CKD  
DRAWN: SJB/SCKD  
TRACED: CKD

REVISION DATE 9-26-83



**ESTIMATE OF QUANTITIES**

Code Number	Item	Funding			Unit	2310A	4612A	4613A	2297A	Total
		90710	75725	40730						
51001	Concrete Class "A" In Superstructure	✓			CYS		3.6	48.8	73.6	72.0
51005	Concrete Class "A" In Substructure	✓			CYS		24.0	24.0		48.0
51875	Special Class "A" Concrete	✓			SFT		25	100	25	150
51030	Reinforcing Steel	✓			LBS	776	5952	7632	2284	17,254
51100	Cast Iron Drain Pipe, 6"			✓	LBS			73		73
51110	Cast Iron Grates, Basins And Fittings	✓			LBS			8352		8352
51134	Removal Of Present Railing	✓			LFT	731	1532		1688	3851
	Surface Seal (Structure 2297A)	✓			LSUM				1	1
	Bridge Railing Type 5	✓			LFT			15		15
	Reset Existing Bridge Rail	✓			LFT			7811		7811
51131	Barrier Railing Type "X"	✓			LFT	844	1647		1802	4293
	Class "A" Concrete Railing	✓			CYS				2.1	2.1
	Curb Turnout Type A	✓			EA				8	8
	Surface Seal (Structure 4613A)	✓			LSUM				1	1
51890	Expansion Joint Type BS-11	✓			LFT	154			153	307
51925	Expansion Joint Class S-S	✓			LFT		152		74	226
	Expansion Joint Modular MJ-780	✓			LFT			340		340
	Surface Seal (Structure 4612A)	✓			LSUM		1			1
	Removal of Present Structure (Rothens) (4612A)	✓			L.S.		1			1
	Removal of Present Structure (Rothens) (4613A)	✓			L.S.			1		1
	Removal of Present Structure (Rothens) (2297A)	✓			L.S.				1	1
	Reshape Spill/lope		✓		L.S.				1	1
	Special Concrete		✓		CYS			5	12	17
	Surface Seal (Structure 2310A)	✓			LSUM				1	1
51842	Bridge Deck Overlay	✓			SYS	1229	2554	13023	2824	19630
51858	Finishing And Curing	✓			SYS	1229	2554	13023	2824	19630
	Overlay Dam	✓			SFT	180			120	300
51843	Bridge Deck Patching	✓			SFT	332	795	10422	6284	17833
	Foil Depth Deck Patching	✓			SFT				15	15
51833	Concrete Scarifying	✓			SYS	1549	2844	13227	3113	20733
51840	Additional Concrete Scarifying	✓			SYS	1229	2554	13023	2824	19630
51837	Blasting And Cleaning	✓			SYS	1229	2554	13023	2824	19630
52255	"B" Borrow For Structure Backfill	✓			CYS		28	20		48
52303	Removal Of Pavement	✓			SYS	30	50	105	60	245
52375	Concrete Class "A" In Structures	✓			CYS	1.0	1.6		2.0	4.6
52300	Concrete Pavement Reinforced 10"	✓			SYS	30	44	36	60	170
52308	Type "O" Compacted Aggregate For Base (#53)	✓			TONS	8			16	24
50450	Bituminous Material For Tack Coat	✓			SYS	1849	1829	1908	1849	7435
04348	Seal Coat Type 2	✓			SYS	1352	1368	1363	1347	5430
52470	*Bituminous Mixture For Approaches	✓			TONS	645	660	687	644	2636
52535	Removal Of Guard Rail	✓			LFT	904	884	884	1274	3946
	Guard Rail Post & Bracket, Class "Bs"	✓			EA	8	3	8	8	32
	Guard Rail Class "Da" Modified	✓			LFT	747	747	747	747	2988
52520	Guard Rail Type "E"	✓			LFT				632	632
52530	Guard Rail Type "G"	✓			LFT	584	584	564	564	2276
	Guard Rail End Treatment Type I	✓			EA	2	2	2	2	12
52640	Maintaining Traffic	✓			L.S.					1
52340	Construction Sign Type "A"	✓			EA	17			17	34
52345	Construction Sign Type "B"	✓			EA	2			2	4
	Standard Barricade Type III-B	✓			EA	8	16	16	16	56
52821	Flashing Arrow Sign	✓			WKS	20			20	40
52830	Temporary Concrete Barrier	✓			LFT	1120	1540	4880	1800	8940
52806	Temporary Pavement Marking Tape	✓			LFT	7330	6080	12360	7500	33270
06710	Removal Of Line, Solid, White, 4"	✓			LFT	1710	2140	5280	2130	11320
06717	Removal Of Line, Solid, Yellow, 4"	✓			LFT	900	900	900	900	3600
	Removal Of Thermoplastic Line, Skip, White, 5"	✓			LFT	288			165	453
06713	Line, Solid, White, 4"	✓			LFT	1710	2140	5280	2130	11320
06714	Line, Solid, Yellow, 4"	✓			LFT	1710	2140	5280	2130	11320
06702	Thermoplastic Line, Skip, White, 5"	✓			LFT	490	310	1095	488	2383

(A) See Br. Std. RI-C and RI-E for details of Type 5 Railing.

END STR

**ESTIMATE OF QUANTITIES**

**INDIANA STATE HIGHWAY COMMISSION**

\*The Estimated Quantities are:-  
 2310A - 8813  
 4612A - 22491 (See the Special Provisiona)  
 4613A - 47395  
 2297A - 18278

\* For Breakdown, See Dwg. Dg.

SCALE:- DATE:- August 4, 1981  
*Aug. E. Cantrell*

DRAWING: OF SHEET- 21 OF 45  
 PROJECT: IR-70-1(64)4  
 CONTRACT NO. B-13920  
 BRIDGE FILE: I-70-4-2310A; I-70-5-4612A;  
 I-70-5-4613A; I-70-6-2297A

DESIGNED: *REB* CKD TEM  
 DRAWN: *REB* CKD TEM  
 TRACED: CKD