DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090450	1	55
						District Nine Bridge Painting (S)		

BRIDGE DATA:

1 Bridge No. 04231
SH 102, Sec. 01, LM 2.60
Four 60' Composite W-Beam Spans
with 24' Clear Roadway.
Lat. 36° 21' 54" Long. 94° 33' 05"

2 Bridge No. 02597
US 62, Sec. 03, LM 4.31
787'-4" Deck Truss and I-Beam Spans
with 26' Clear Roadway.
Lat. 36° 27' 00" Long. 93° 49' 24"

3 Bridge No. 03345
US 412, Sec. 04, LM 2.55
357'-2" Composite I-Beam
with 28' Clear Roadway.
Lat. 33° 07' 12" Long. 93° 41' 36"

4 Bridge No. 05883
SH 143, Sec. 01, LM 5.76
227'-4" Composite W-Beam
with 28' Clear Roadway.
Lat. 36° 27' 54" Long. 93° 36' 48"

5 Bridge No. 05082
SH 103, Sec. 04, LM 6.81
298'-1" Composite W-Beam
with 28' Clear Roadway.
Lat. 36° 15' 6" Long. 93° 26' 48"

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT

MAINTENANCE PLANS

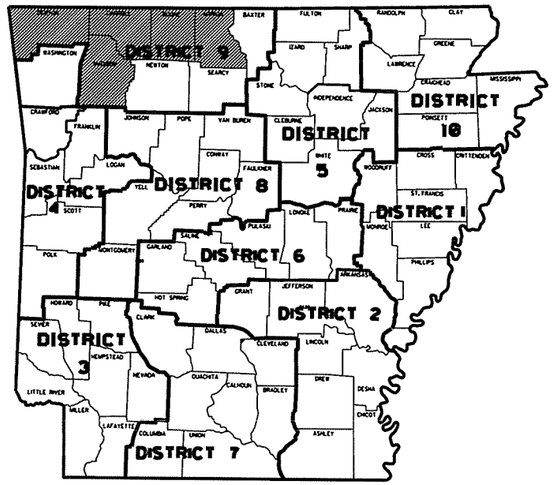
District Nine Bridge Painting (S)

BENTON, BOONE, CARROLL, MADISON & MARION

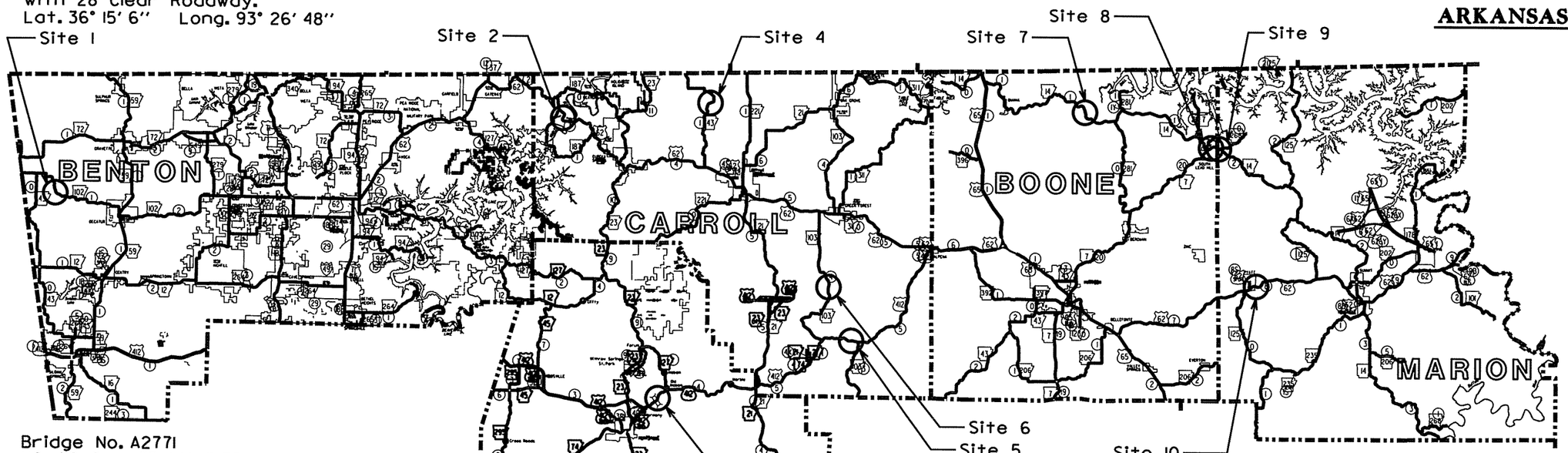
FEDERAL AID PROJ. STPF-0076(114)

JOB 090450

Various Routes



ARKANSAS HIGHWAY DIST. 9



6 Bridge No. A2771
US 412, Sec. 05, LM 9.78
441'-2" Composite W-Beam
with 34' Clear Roadway.
Lat. 36° 11' 18" Long. 93° 24' 54"

7 Bridge No. 02674
SH 14, Sec. 01, LM 12.01
461'-0" Cantilever I-Beam Spans
with 22' Clear Roadway.
Lat. 36° 27' 00" Long. 93° 04' 32"

8 Bridge No. 02677
SH 14, Sec. 01, LM 24.94
252'-0" Cantilever I-Beam Spans
with 22' Clear Roadway.
Lat. 36° 24' 24" Long. 92° 53' 43"

9 Bridge No. 02678
SH 14, Sec. 02, LM 0.11
341'-0" Cantilever I-Beam Spans
with 22' Clear Roadway.
Lat. 36° 24' 21" Long. 92° 53' 06"

10 Bridge No. 02469
SH 62, Sec. 08, LM 3.22
471'-0" Suspended Deck Truss and I-Beam Spans
with 26' Clear Roadway.
Lat. 36° 14'46" Long. 92° 50' 09"

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7527
JOSEPH A. SARTIN
12-4-14

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090450	2	55
				①		Index of Sheets & Gov. Specs.		

INDEX OF SHEETS

SHEET NO.	TITLE	DRAWING NO.	DATE
1.	TITLE SHEET		
2.	INDEX OF SHEETS AND GOVERNING SPECIFICATIONS		
3.	QUANTITIES AND GENERAL NOTES		
4.	SUMMARY OF QUANTITIES AND REVISIONS		
5.	ROUTE AND SECTION MAP - BENTON COUNTY		
6.	ROUTE AND SECTION MAP - BOONE COUNTY		
7.	ROUTE AND SECTION MAP - CARROLL COUNTY		
8.	ROUTE AND SECTION MAP - MADISON COUNTY		
9.	ROUTE AND SECTION MAP - MARION COUNTY		
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11.	BRIDGE PICTURES (2 OF 2)		
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13.	I-BEAM SPAN DETAILS OF BRIDGE NO. 04231 - FOR INFORMATION ONLY		
14.	I-BEAM SPAN DETAILS OF BRIDGE NO. 04231 - FOR INFORMATION ONLY		
15.	LAYOUT OF BRIDGE NO. 02597 - FOR INFORMATION ONLY		
16.	I-BEAM SPAN DETAILS OF BRIDGE NO. 02597 - FOR INFORMATION ONLY		
17.	I-BEAM SPAN DETAILS OF BRIDGE NO. 02597 - FOR INFORMATION ONLY		
18.	TRUSS DETAILS OF BRIDGE NO. 02597 - FOR INFORMATION ONLY		
19.	TRUSS DETAILS OF BRIDGE NO. 02597 - FOR INFORMATION ONLY		
20.	TRUSS DETAILS OF BRIDGE NO. 02597 - FOR INFORMATION ONLY		
21.	LAYOUT OF BRIDGE NO. 03345 - FOR INFORMATION ONLY		
22.	I-BEAM SPAN DETAILS OF BRIDGE NO. 03345 - FOR INFORMATION ONLY		
23.	I-BEAM SPAN DETAILS OF BRIDGE NO. 03345 - FOR INFORMATION ONLY		
24.	LAYOUT OF BRIDGE NO. 05883 - FOR INFORMATION ONLY		
25.	W-BEAM SPAN DETAILS OF BRIDGE NO. 05883 - FOR INFORMATION ONLY		
26.	W-BEAM SPAN DETAILS OF BRIDGE NO. 05883 - FOR INFORMATION ONLY		
27.	LAYOUT OF BRIDGE NO. 05082 - FOR INFORMATION ONLY		
28.	I-BEAM SPAN DETAILS OF BRIDGE NO. 05082 - FOR INFORMATION ONLY		
29.	I-BEAM SPAN DETAILS OF BRIDGE NO. 05082 - FOR INFORMATION ONLY		
30.	LAYOUT OF BRIDGE NO. 2771A - FOR INFORMATION ONLY		
31.	I-BEAM SPAN DETAILS OF BRIDGE NO. 2771A - FOR INFORMATION ONLY		
32.	I-BEAM SPAN DETAILS OF BRIDGE NO. 2771A -FOR INFORMATION ONLY		
33.	LAYOUT OF BRIDGE NO. 02674 - FOR INFORMATION ONLY		
34.	I-BEAM SPAN DETAILS OF BRIDGE NO. 02674 - FOR INFORMATION ONLY		
35.	I-BEAM SPAN DETAILS OF BRIDGE NO. 02674 - FOR INFORMATION ONLY		
36.	LAYOUT OF BRIDGE NO. 02677 - FOR INFORMATION ONLY		
37.	I-BEAM SPAN DETAILS OF BRIDGE NO. 02677 - FOR INFORMATION ONLY		
38.	I-BEAM SPAN DETAILS OF BRIDGE NO. 02677 - FOR INFORMATION ONLY		
39.	I-BEAM SPAN DETAILS OF BRIDGE NO. 02677 - FOR INFORMATION ONLY		
40.	LAYOUT OF BRIDGE NO. 02678 - FOR INFORMATION ONLY		
41.	I-BEAM SPAN DETAILS OF BRIDGE NO. 02678 - FOR INFORMATION ONLY		
42.	I-BEAM SPAN DETAILS OF BRIDGE NO. 02678 - FOR INFORMATION ONLY		
43.	LAYOUT OF BRIDGE NO. 02469 - FOR INFORMATION ONLY		
44.	TRUSS DETAILS OF BRIDGE NO. 02469 - FOR INFORMATION ONLY		
45.	TRUSS DETAILS OF BRIDGE NO. 02469 - FOR INFORMATION ONLY		
46.	TRUSS DETAILS OF BRIDGE NO. 02469 - FOR INFORMATION ONLY		
47.	TRUSS DETAILS OF BRIDGE NO. 02469 - FOR INFORMATION ONLY		
48.	TRUSS DETAILS OF BRIDGE NO. 02469 - FOR INFORMATION ONLY		
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51.	I-BEAM SPAN DETAILS OF BRIDGE NO. 02469 - FOR INFORMATION ONLY		
52.	I-BEAM SPAN DETAILS OF BRIDGE NO. 02469 - FOR INFORMATION ONLY		
53.	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	TC-1	9-2-15
54.	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	TC-2	9-2-15
55.	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	TC-3	9-2-15

GOVERNING SPECIFICATIONS

ARKANSAS STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 2014, AND THE FOLLOWING SPECIAL PROVISIONS AND SUPPLEMENTAL SPECIFICATIONS:

NUMBER	TITLE
ERRATA	ERRATA FOR THE BOOK OF STANDARD SPECIFICATIONS
FHWA-1273	REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - NOTICE TO CONTRACTORS
FHWA-1273	SUPPLEMENT - SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES (23 U.S.C. 140)
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - GOALS AND TIMETABLES
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY – FEDERAL STANDARDS
FHWA-1273	SUPPLEMENT - POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS
FHWA-1273	SUPPLEMENT - WAGE RATE DETERMINATION
100-3	CONTRACTOR'S LICENSE
108-1	LIQUIDATED DAMAGES
JOB 090450	BIDDING REQUIREMENTS AND CONDITIONS
JOB 090450	CLEANING AND PAINTING EXISTING STRUCTURAL TRUSS STEEL
JOB 090450	CONTAINMENT SYSTEM
JOB 090450	CONTRACTOR CERTIFICATION
JOB 090450	DOCUMENTATION OF PAYMENTS MADE TO DISADVANTAGED BUSINESS ENTERPRISES
JOB 090450	INSPECTOR'S PERSONAL PROTECTION CLOTHING
JOB 090450	INSURANCE, CONSTRUCTION, AND FLAGGING REQUIREMENTS ON RAILROAD PROPERTY (M&NA)
JOB 090450	MANDATORY ELECTRONIC CONTRACT
JOB 090450	NESTING SITES OF MIGRATORY BIRDS
JOB 090450	PAINT CONTRACTOR LABEL

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7527
JOSEPH A. SARTINI

JOB NO. 090450
DISTRICT NINE BRIDGE PAINTING (S)

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
12/22/15				6	ARK.			
				JOB NO.		090450	3	55
				① Quantities & General Notes				

CLEANING AND PAINTING EXISTING STRUCTURAL STEEL (TYPE II)

DESCRIPTION	QUANTITY	UNIT
BRIDGE NO. 04231	69	TON
BRIDGE NO. 02597	52	TON
BRIDGE NO. 03345	135	TON
BRIDGE NO. 05883	66	TON
BRIDGE NO. 05082	110	TON
BRIDGE NO. A2771	204	TON
BRIDGE NO. 02674	127	TON
BRIDGE NO. 02677	85	TON
BRIDGE NO. 02678	94	TON
BRIDGE NO. 02469	37	TON
TOTAL JOB	979	TON

CLEANING AND PAINTING EXISTING STRUCTURAL TRUSS STEEL (TYPE II)

DESCRIPTION	QUANTITY	UNIT
BRIDGE NO. 02597	317	TON
BRIDGE NO. 02469	184	TON
TOTAL JOB	501	TON

*DISPOSAL OF HAZARDOUS WASTE

DESCRIPTION	QUANTITY	UNIT
BRIDGE NO. 04231 (Site No. 1)	1.00	LUMP SUM
BRIDGE NO. 02597 (Site No. 2)	1.00	LUMP SUM
BRIDGE NO. 03345 (Site No. 3)	1.00	LUMP SUM
BRIDGE NO. 05883 (Site No. 4)	1.00	LUMP SUM
BRIDGE NO. 05082 (Site No. 5)	1.00	LUMP SUM
BRIDGE NO. A2771 (Site No. 6)	1.00	LUMP SUM
BRIDGE NO. 02674 (Site No. 7)	1.00	LUMP SUM
BRIDGE NO. 02677 (Site No. 8)	1.00	LUMP SUM
BRIDGE NO. 02678 (Site No. 9)	1.00	LUMP SUM
BRIDGE NO. 02469 (Site No. 10)	1.00	LUMP SUM

* Potential hazardous waste in the form of lead paint debris will be removed from this structure and sent to an appropriate treatment facility as per Code of Federal Regulations 40 CFR Part 260.

MOBILIZATION

DESCRIPTION	QUANTITY	UNIT
ENTIRE PROJECT	1.00	LUMP SUM
TOTAL JOB	1.00	LUMP SUM

**MAINTENANCE OF TRAFFIC

DESCRIPTION	QUANTITY	UNIT
ENTIRE PROJECT	1.00	LUMP SUM
TOTAL JOB	1.00	LUMP SUM

** All traffic control devices and/or pavement markings will be placed if and where approved by the Engineer. All items necessary for traffic control is subsidiary to the item of "Maintenance of Traffic".

GENERAL NOTES

1 TOTAL ALLOWABLE WORKING DAYS: 160 days

2 PAINT SYSTEM: SEE SECTION 807 AND 820 OF THE STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.
PRIME COAT: ONE COAT OF INORGANIC ZINC, 3 MIL DFT MINIMUM UNLESS NOTED.
INTERMEDIATE EPOXY TIE COAT: 2 MIL DFT MINIMUM
FINISH COAT: ONE COAT URETHANE, 3 MIL DFT MINIMUM, GRAY - FEDERAL STANDARD 595B COLOR CHIP 36270
EXCEPT THAT BRIDGE 02597 SHALL BE GREEN - COLOR CHIP 14109.
MAXIMUM DFT FOR EACH COAT AS RECOMMENDED BY COATING MANUFACTURER.

3 ALL SURFACES TO BE PAINTED SHALL BE CLEAN AND FREE OF DUST OR OTHER OBJECTIONABLE MATTER.

4 CONTRACTOR IS RESPONSIBLE FOR BEING FAMILIAR WITH THE LOCATION OF ALL UTILITIES ON THE BRIDGES BEFORE BIDDING.

5 UTILITIES ON BRIDGES SHOULD BE PROTECTED DURING THE CLEANING AND PAINTING OPERATION.

6 CONTAINMENT REQUIRED :

BRIDGE NUMBER	CLASS OF CONTAINMENT	MIGRATORY BIRDS
04231	4	No
02597	4	Yes
03345	4	Yes
05883	4	Yes
05082	4	Yes
A2771	4	Yes
02674	4	Yes
02677	4	Yes
02678	4	Yes

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7527
JOSEPH A. SARTINI
12-23-15

JOB NO. 090450
DISTRICT NINE BRIDGE PAINTING (S)

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.ROAD DIST.NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
12/22/15				6	ARK.			
				JOB NO.		090450	4	55
				1	Summary of Quantities & Revisions			

SUMMARY OF QUANTITIES

LOCATION			BRIDGE DATA		ITEM NO.	820	SP & 820	601	603	820
BRIDGE NUMBER	RT/SEC/ LOG MILE	COUNTY	ROADWAY WIDTH (FT)	ROADWAY LENGTH (FT)	PAY ITEM / BRIDGE NAME / UNIT	CLEANING AND PAINTING EXISTING STRUCTURAL STEEL (TYPE II)	CLEANING AND PAINTING EXISTING STRUCTURAL TRUSS STEEL (TYPE II)	MOBILIZATION	MAINTENANCE OF TRAFFIC	DISPOSAL OF HAZARDOUS WASTE (SITE NO.)
					UNIT	TON	TON	LUMP SUM	LUMP SUM	LUMP SUM
04231	102/01/2.60	BENTON	24	240	Spavinaw Creek	69				SITE NO. 1 - 1.00
02597	62/03/4.31	CARROLL	26	787	White River	52	317			SITE NO. 2 - 1.00
03345	412/04/2.55	MADISON	28	357	War Eagle Creek	135				SITE NO. 3 - 1.00
05883	143/01/5.76	CARROLL	28	227	Flat Rock Creek	66				SITE NO. 4 - 1.00
05082	103/04/6.81	CARROLL	28	298	Osage Creek	110				SITE NO. 5 - 1.00
A2271	412/05/9.78	CARROLL	34	441	Osage Creek	204				SITE NO. 6 - 1.00
02674	14/01/12.01	BOONE	22	461	Bear Creek	127				SITE NO. 7 - 1.00
02677	14/01/24.94	BOONE	22	252	Deschield Creek	85				SITE NO. 8 - 1.00
02678	14/02/0.11	MARION	22	341	East Sugar Loaf Creek	94				SITE NO. 9 - 1.00
02469	62/08/3.22	MARION	26	471	Crooked Creek & R.R.	37	184			SITE NO. 10 - 1.00
					TOTAL JOB NO. 090450	979	501	1.00	1.00	

REVISIONS

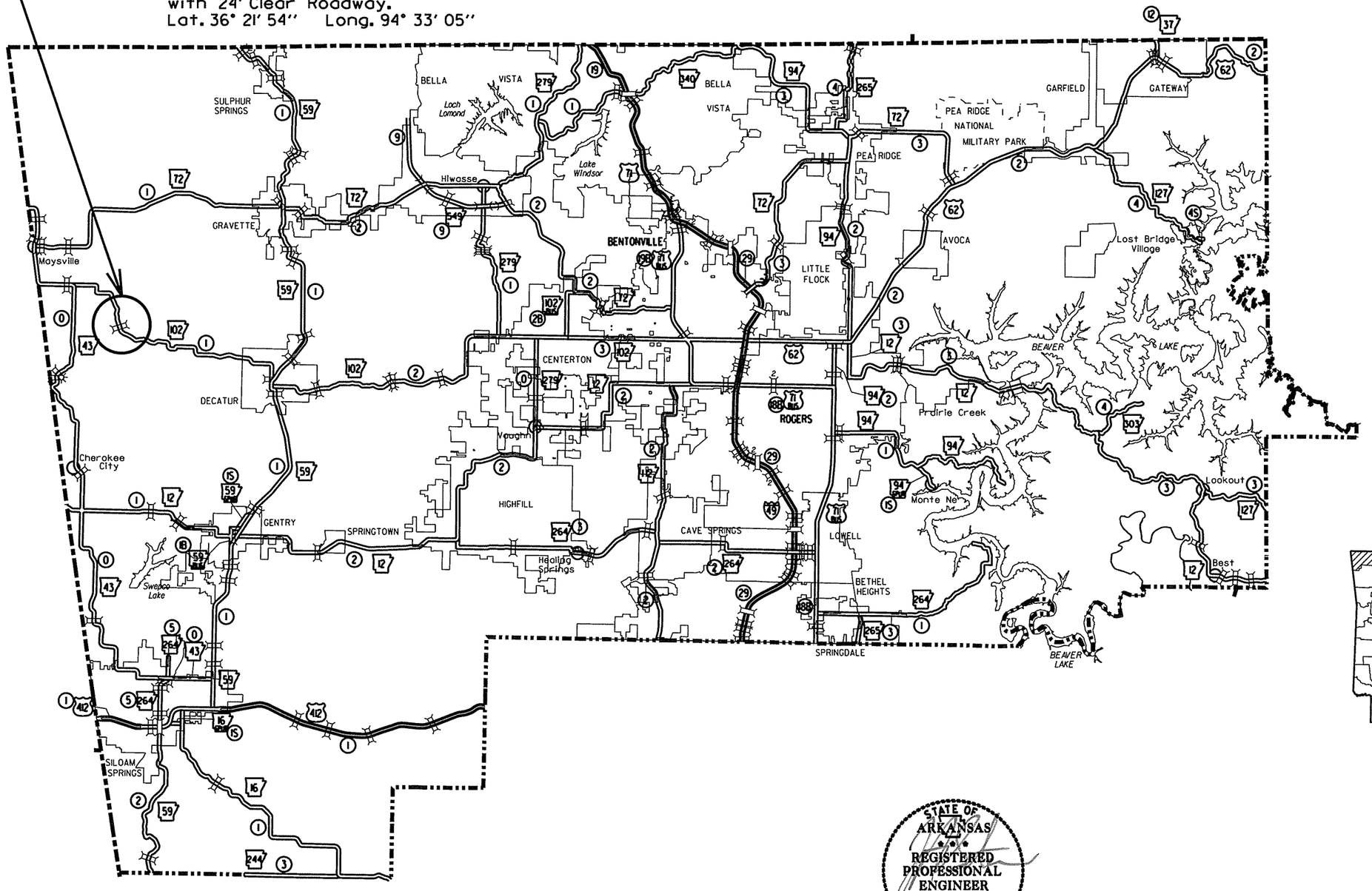
DATE	REVISION	SHEET NO.
12/22/2015	The total contract time was corrected to 160 Working Days	3 and 4

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7527
12-23-15
JOSEPH A. SARTINI

JOB NO. 090450
DISTRICT NINE BRIDGE PAINTING (S)

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090450	5	55
				①	Route & Section Map - Benton Co.			

Site 1 Bridge No. 04231
SH 102, Sec. 01, LM 2.60
Four 60' Composite W-Beam Spans
with 24' Clear Roadway.
Lat. 36° 21' 54" Long. 94° 33' 05"



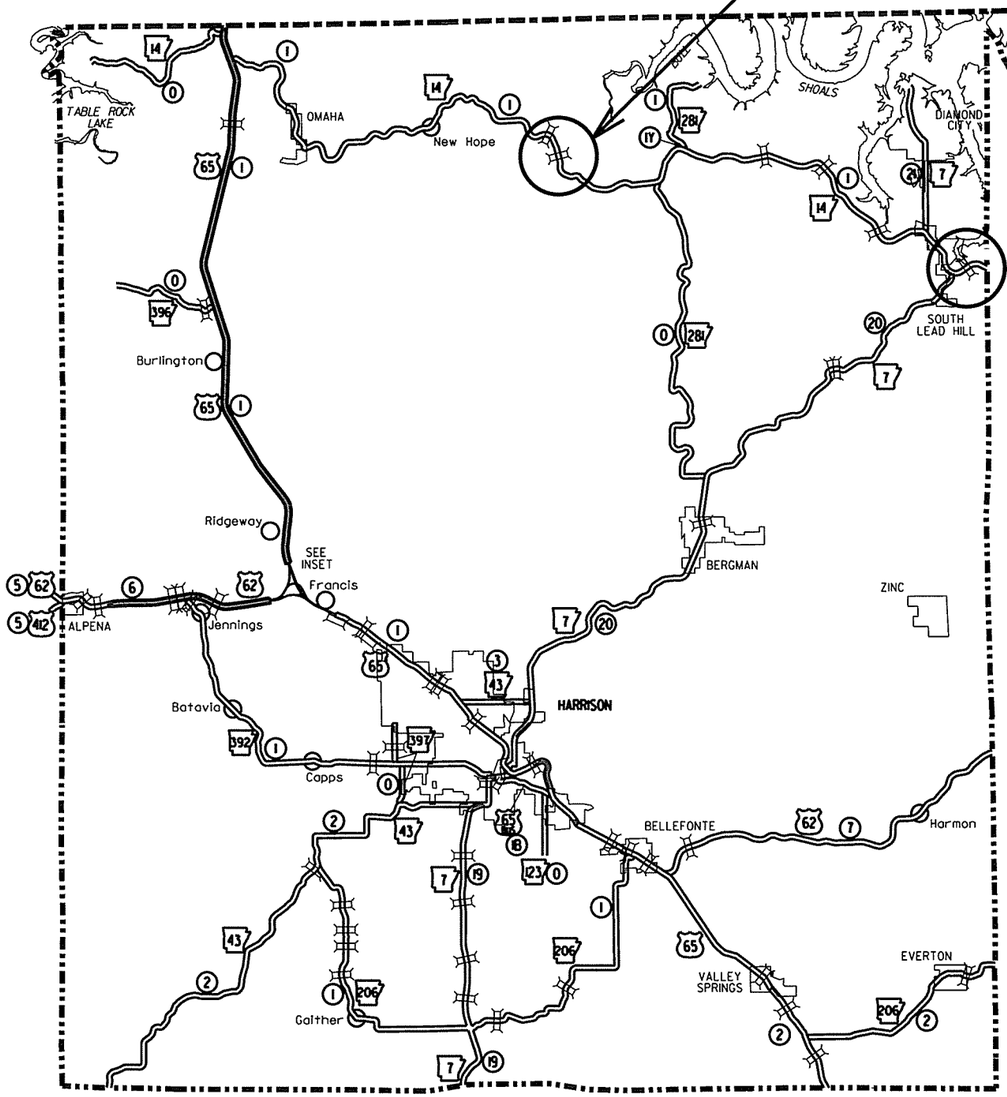
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7527
JOSEPH A. SARTINI
12-4-11

JOB NO. 090450
BENTON COUNTY
DISTRICT NINE BRIDGE PAINTING (S)

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.ROAD DIST.NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090450	6	55
				1	Route & Section Map - Boone Co.			

Site 7 Bridge No. 02674
SH 14, Sec. 01 LM 12.01
461'-0" Cantilever I-Beam Spans
with 22' Clear Roadway.
Lat. 36° 27' 00" Long. 93° 04' 32"

Site 8 Bridge No. 02677
SH 14, Sec. 01, LM 24.97
252'-0" Cantilever I-Beam Spans
with 22' Clear Roadway.
Lat. 36° 24' 24" Long. 92° 53' 43"

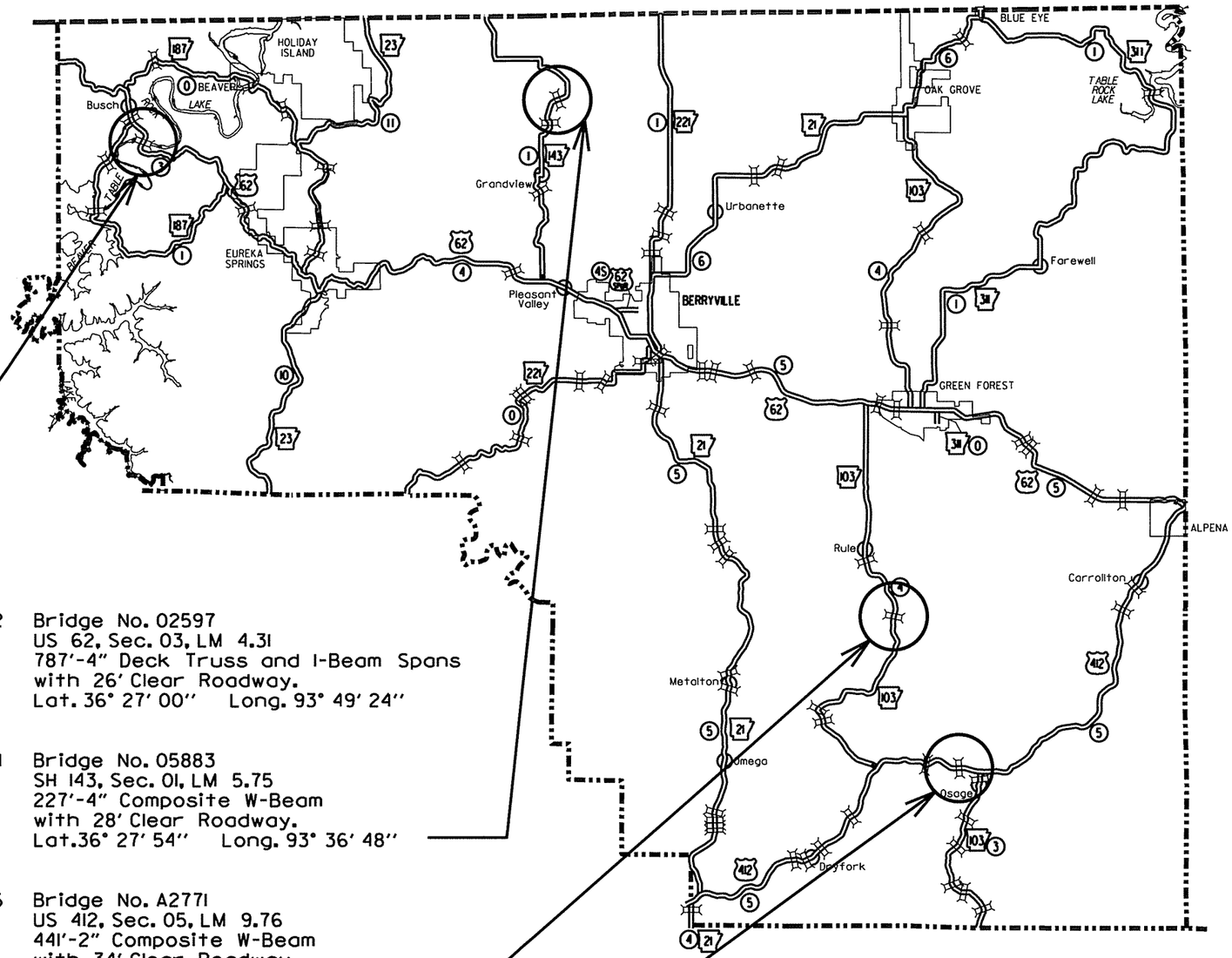


STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7527
JOSEPH A. SARTIN
12-4-02

JOB NO. 090450
BOONE COUNTY
DISTRICT NINE BRIDGE PAINTING (S)

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.ROAD DIST.NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090450	7	55

1 Route & Section Map - Carroll Co.



Site 2 Bridge No. 02597
US 62, Sec. 03, LM 4.31
787'-4" Deck Truss and I-Beam Spans
with 26' Clear Roadway.
Lat. 36° 27' 00" Long. 93° 49' 24"

Site 4 Bridge No. 05883
SH 143, Sec. 01, LM 5.75
227'-4" Composite W-Beam
with 28' Clear Roadway.
Lat.36° 27' 54" Long. 93° 36' 48"

Site 6 Bridge No. A2771
US 412, Sec. 05, LM 9.76
441'-2" Composite W-Beam
with 34' Clear Roadway.
Lat.36° 11' 18" Long. 93° 24' 54"

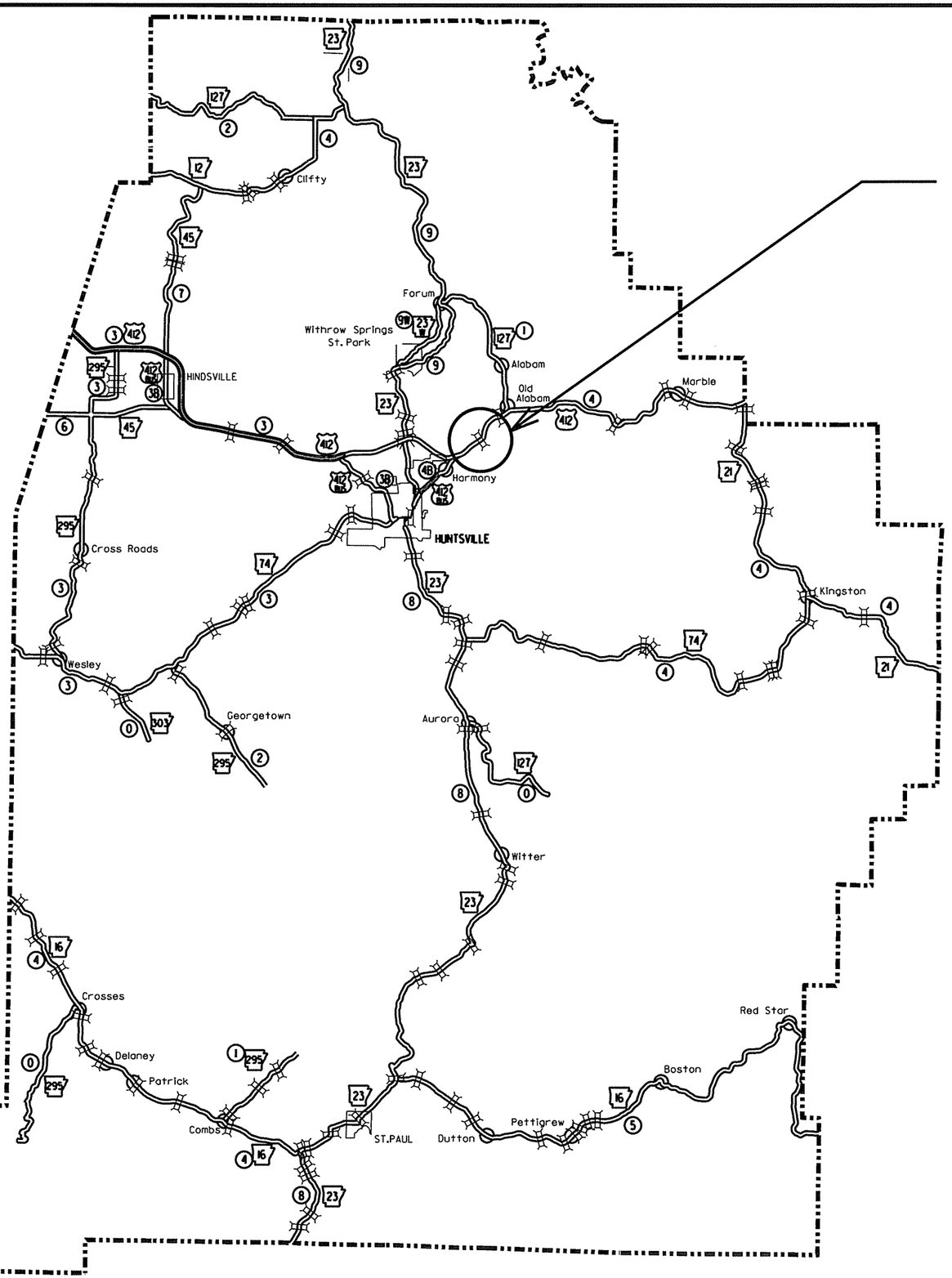
Site 5 Bridge No. 05082
SH 10, Sec. 04, LM 6.81
298'-1" Composite W-Beam
with 28' Clear Roadway.
Lat.36° 15' 6" Long. 93° 26' 48"

JOB NO. 090450
CARROLL COUNTY
DISTRICT NINE BRIDGE PAINTING (S)

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090450	8	55

1 Route & Section Map - Madison Co.

Site 3 Bridge No. 03345
US 412, Sec. 04, LM 2.55
357'-2" Composite I-Beam
with 28' Clear Roadway.
Lat. 33° 07' 12" Long. 93° 41' 36"



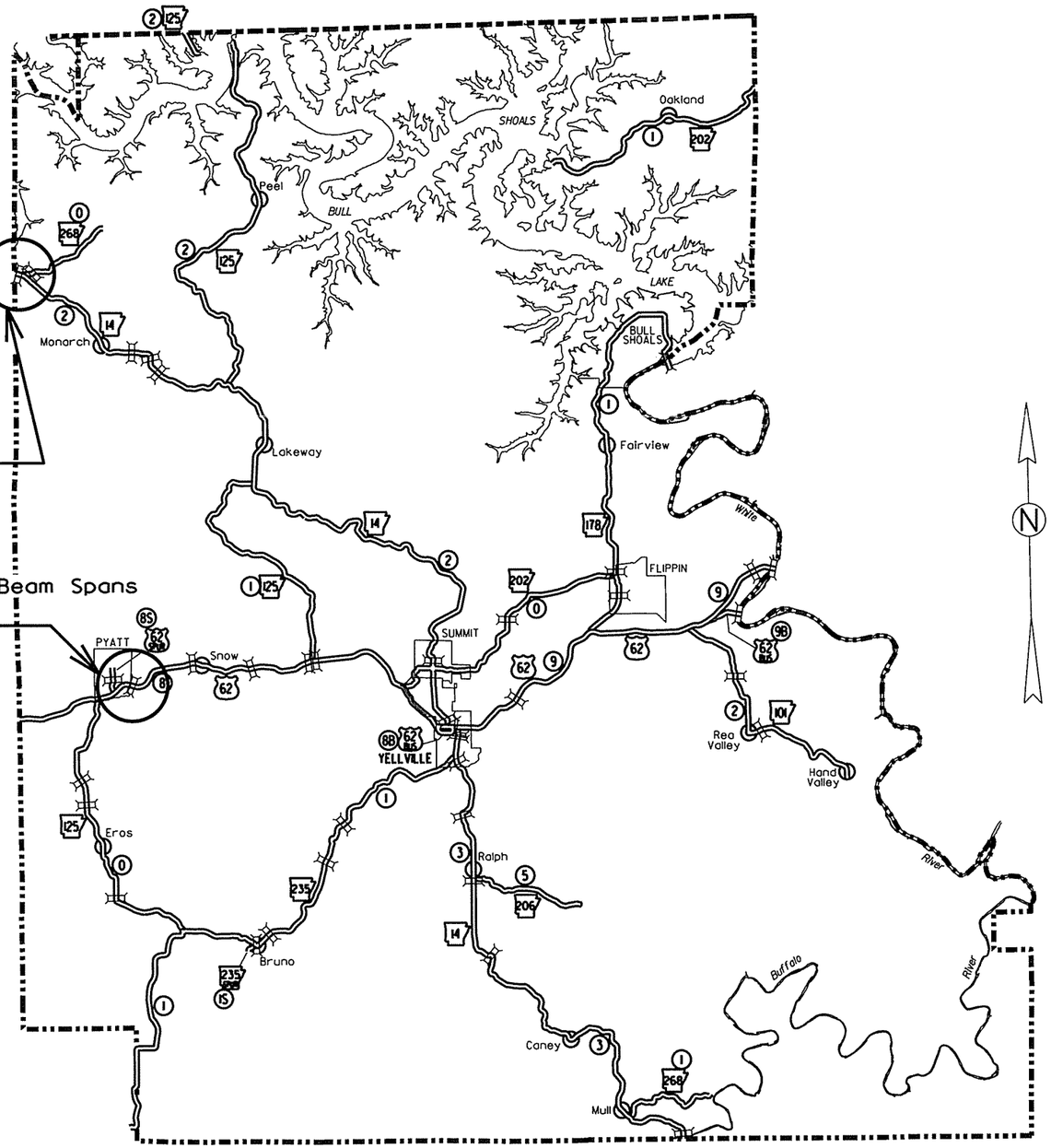
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7527
JOSEPH A. SARTINI
12-24-15

JOB NO. 090450
MADISON COUNTY
DISTRICT NINE BRIDGE PAINTING (S)

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090450	9	55
				(1)	Route & Section Map - Marion Co.			

Site 9 Bridge No. 02678
SH 14, Sec. 02 LM 0.11
341'-0" Cantilever I-Beam Spans
with 22' Clear Roadway.
Lat. 36° 24' 21" Long. 92° 53' 06"

Site 10 Bridge No. 02469
SH 62, Sec. 08 LM 3.22
471'-0" Suspended Deck Truss and I-Beam Spans
with 26' Clear Roadway.
Lat. 36° 14'46" Long. 92° 50' 09"

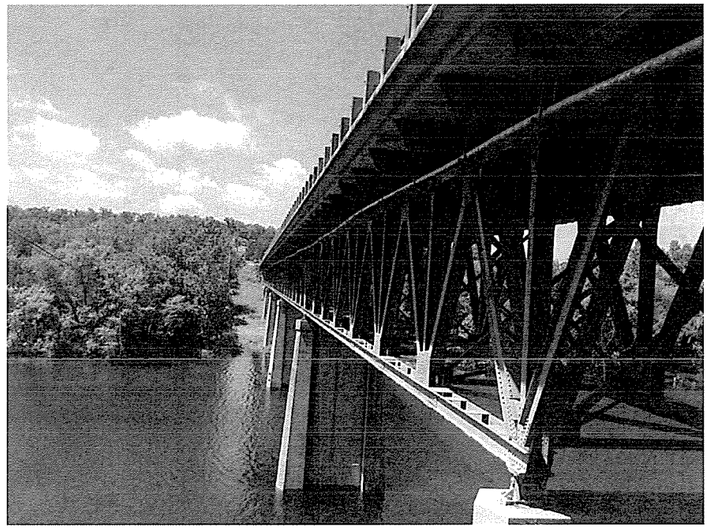


STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7527
JOSEPH A. SARTINI
12-4-11

JOB NO. 090450
MARION COUNTY
DISTRICT NINE BRIDGE PAINTING (S)

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090450	10	55
				①	Bridge Pictures			

Site 1 - Bridge No. 04231



Site 2 - Bridge No. 02597

Site 3 - Bridge No. 03345

Site 4 - Bridge No. 05883

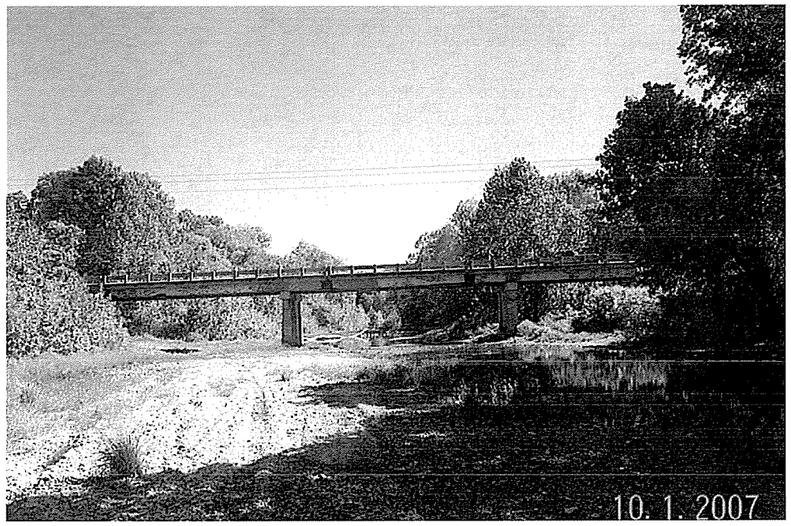
Site 5 - Bridge No. 05082

Site 6 - Bridge No. A2771

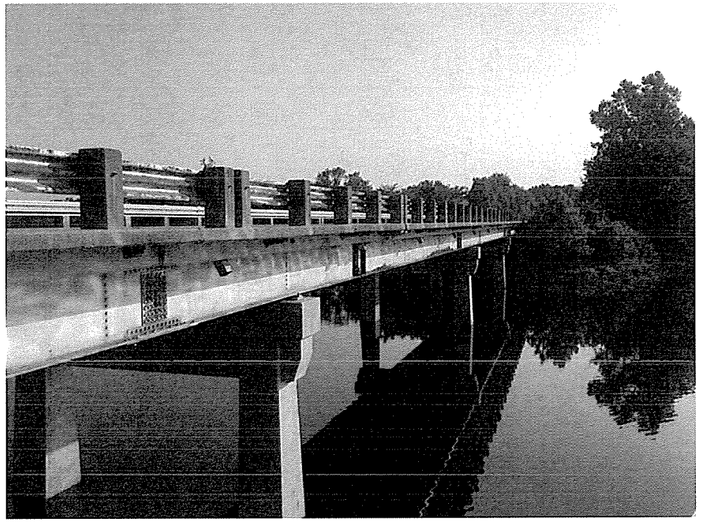
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7527
JOSEPH A. SARTINI
12-4-06

JOB NO. 090450
BRIDGE PICTURES (1 OF 2)
DISTRICT NINE BRIDGE PAINTING (S)

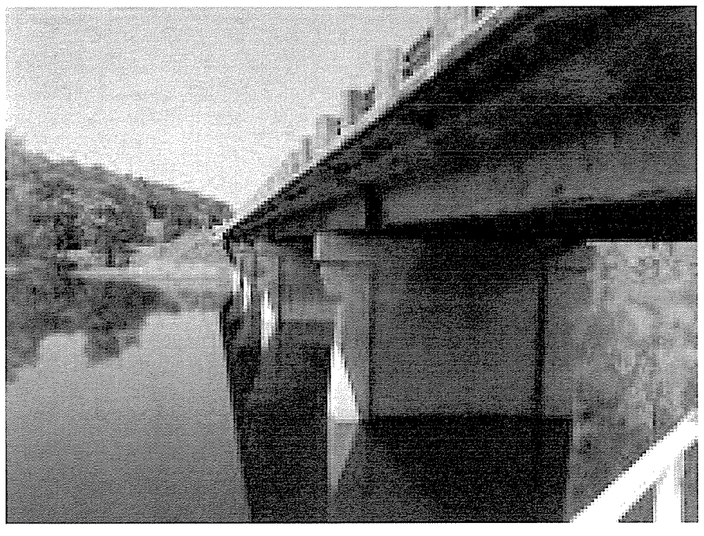
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090450	11	55
				Bridge Pictures				



Site 7 - Bridge No. 02674



Site 8 - Bridge No. 02677



Site 9 - Bridge No. 02678

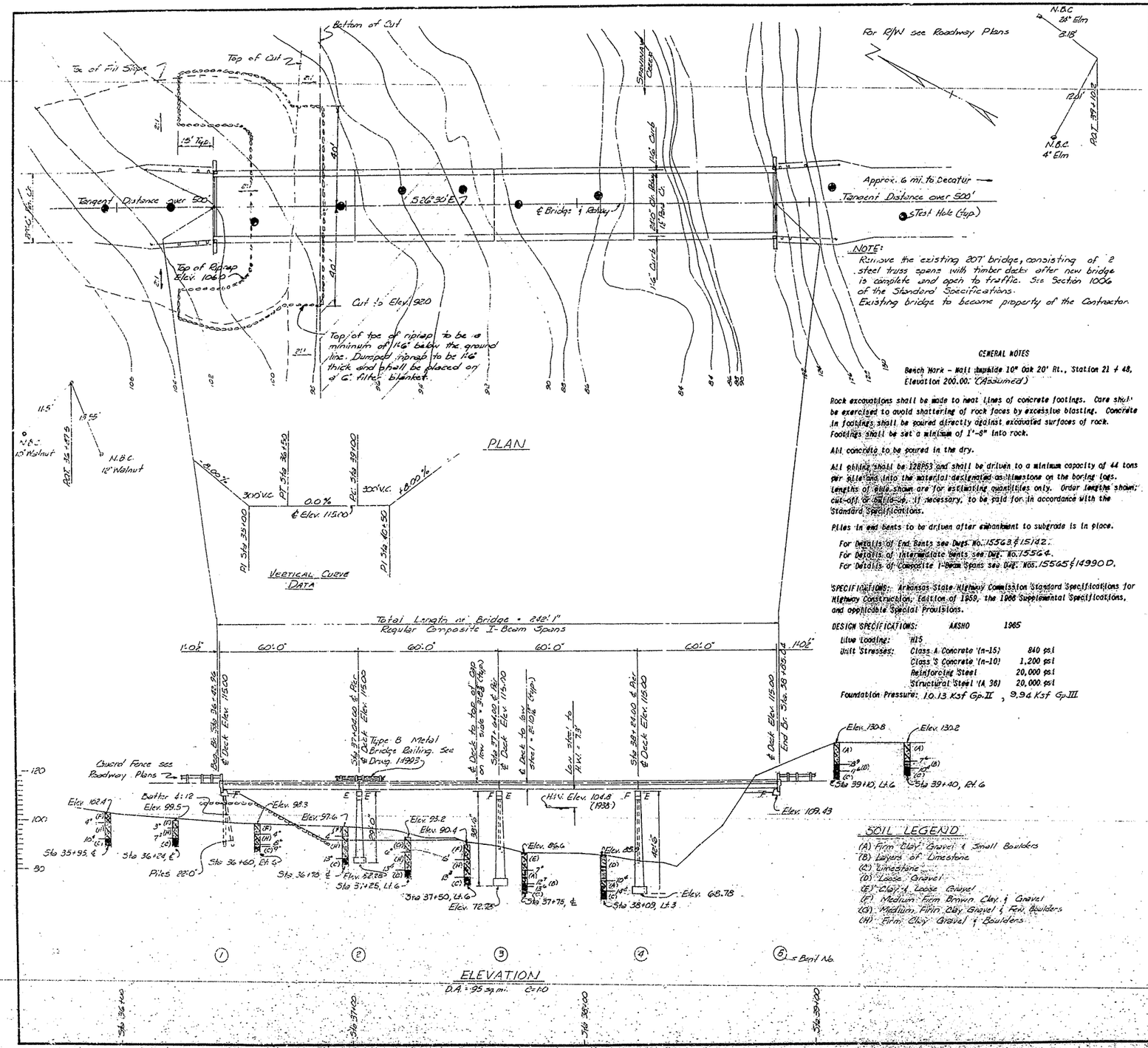
Site 10 - Bridge No. 02469

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7527
JOSEPH A. SARTINI
12-31-

JOB NO. 090450
BRIDGE PICTURES (2 OF 2)
DISTRICT NINE BRIDGE PAINTING (S)

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090450	12	55

(1) Layout of Bridge No. 04231



NOTE:
Remove the existing 207' bridge, consisting of 2 steel truss spans with timber decks after new bridge is complete and open to traffic. See Section 1006 of the Standard Specifications. Existing bridge to become property of the Contractor.

GENERAL NOTES

Bench Mark - Nail in spikside 10" Oak 20' Rt., Station 21 + 48, Elevation 200.00' (Assumed)

Rock excavations shall be made to neat lines of concrete footings. Care shall be exercised to avoid shattering of rock faces by excessive blasting. Concrete in footings shall be poured directly against excavated surfaces of rock. Footings shall be set a minimum of 1'-6" into rock.

All concrete to be poured in the dry.

All piling shall be 12BP53 and shall be driven to a minimum capacity of 44 tons per sq. in. and into the material designated as limestone on the boring logs. Lengths of pile shown are for estimating quantities only. Order length as shown; cut-off or build-up, if necessary, to be paid for in accordance with the Standard Specifications.

Piles in end bents to be driven after embankment to subgrade is in place.

For Details of End Bents see Dwgs. No. 15563 & 15142.
For Details of Intermediate Bents see Dwg. No. 15564.
For Details of Composite I-Beam Spans see Dwg. Nos. 15565 & 14990D.

SPECIFICATIONS: Arkansas State Highway Commission Standard Specifications for Highway Construction, Edition of 1959, the 1966 Supplemental Specifications, and applicable Special Provisions.

DESIGN SPECIFICATIONS: AASHO 1965

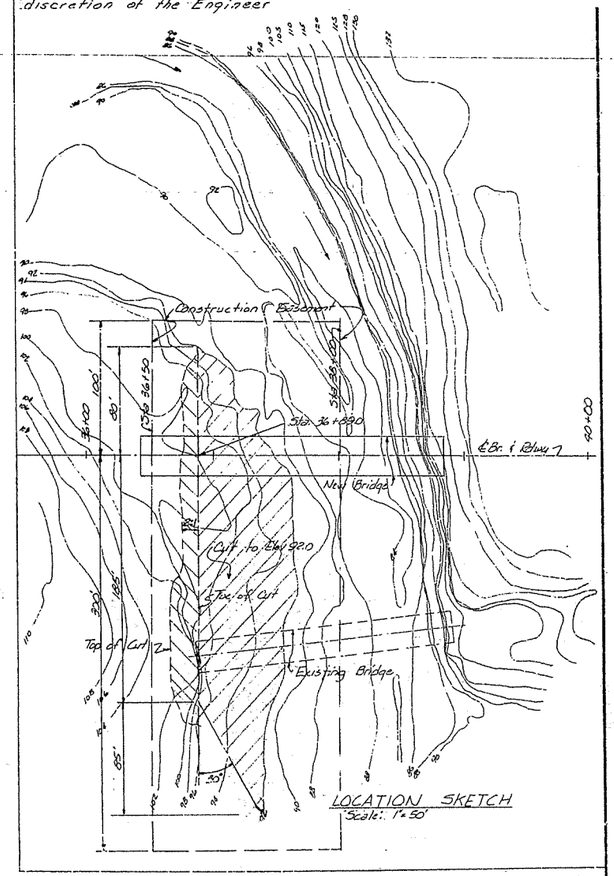
Live Loading:	HS	
Unit Stresses:	Class A Concrete (n=15)	840 psi
	Class S Concrete (n=10)	1,200 psi
	Reinforcing Steel	20,000 psi
	Structural Steel (A 36)	20,000 psi

Foundation Pressure: 10.13 Ksf Gp. II , 9.94 Ksf Gp. III

SOIL LEGEND

(A) Firm Clay, Gravel & Small Boulders
(B) Layers of Limestone
(C) Limestone
(D) Loose Gravel
(E) Clay & Loose Gravel
(F) Medium Firm Brown Clay & Gravel
(G) Medium Firm Clay Gravel & Few Boulders
(H) Firm Clay Gravel & Boulders

Excavate Channel as shown to Elev. 920 with 2:1 side slopes. Approximately 2300 cu yds of Channel Excavation Material to be used at the discretion of the Engineer



FOR INFORMATION ONLY

LAYOUT OF BRIDGE
OVER SPAVINAW CREEK
SPAVINAW CREEK BRIDGE & APPROACHES
BENTON COUNTY
FA ROUTE 1002 SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: DFL DATE: 5-2-67
TRACED BY: DATE: SCALE: 1" = 20'
CHECKED BY: FWH DATE: 5-22-67

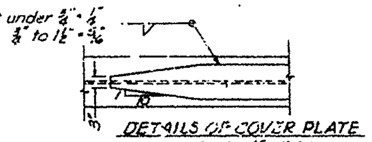
L O Carlson
BRIDGE ENGINEER

BRIDGE NO. 4231 DRAWING NO. 15562

HARRELL & SCHAER 10008

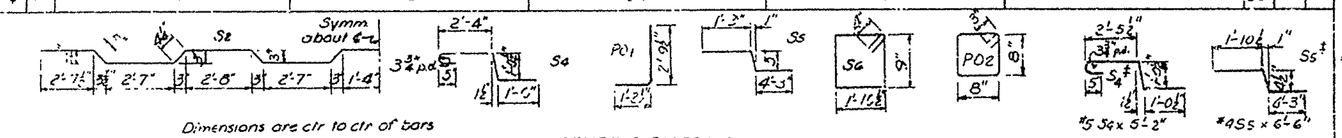
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090450	13	55

① I-Bm. Span Details of Br. No. 04231



BAR [illegible] ONE SPAN

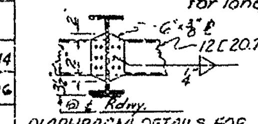
Mk	Size	Length	Pin Dia	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	80	85	90
				Number Required Each Span																																											
S1	5	25'-8	Str	[illegible]	62	64	66	68	70	72	72	74	76	78	80	82	84	84	86	88	90	92	94	96	96	98	100	102	104	106	108	108	110	112	114	116	118	120	120	122	124	126	126	130	138	146	154
S2	[illegible]	26'-5"	1⅜"	[illegible]	30	31	32	33	34	35	35	36	37	38	39	40	41	41	42	43	44	45	46	47	47	48	49	50	51	52	53	53	54	55	56	57	58	59	59	60	61	62	63	64	68	72	76
S3	4	5'-6	Str	60																																											
S3	4	[illegible]	Str							120																																					
S3	4	[illegible]	Str																									180																			
S6	5	[illegible]	[illegible]	106	108	112	114	118	[illegible]	[illegible]	126	130	[illegible]	136	138	142	144	148	[illegible]	154	156	[illegible]	[illegible]	[illegible]	[illegible]	172	174	178	180	184	186	190	192	196	198	202	204	208	210	214	216	220	222	226	240	256	270
S5	4	[illegible]	1½"	58	60	62	64	66	68	70	70	72	74	76	78	80	82	82	84	86	88	90	92	94	94	96	98	100	102	104	106	106	108	110	112	114	116	118	118	120	122	124	126	128	136	144	152
S4	4	10'	[illegible]	[illegible]	96	[illegible]	[illegible]	[illegible]	[illegible]	98	102	104	106	108	110	114	116	118	120	122	126	128	130	132	134	138	140	142	144	146	150	152	154	156	158	162	164	166	168	170	174	176	178	180	192	204	216
S10	4	[illegible]	Str	12																																											
[illegible]	[illegible]	[illegible]	[illegible]	60	72								84								96								108								120								132	144	144
[illegible]	[illegible]	[illegible]	1¼	40	48								56								64								72								80								88	96	96

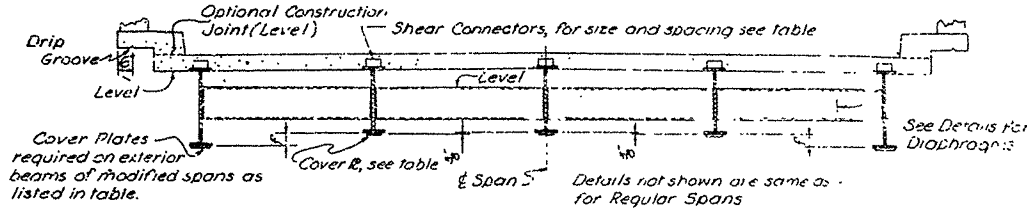


Dimensions are ctr to ctr of bars

BENDING DIAGRAM

‡ For Type B Bridge Rail.

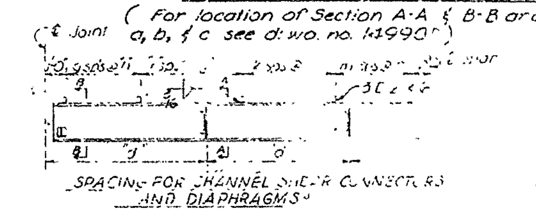


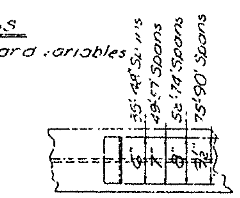


Interior beams are same as in Regular Spans. Exterior beams are the lightest section of same nominal depth as beams for longest span shown on Bridge Layout.

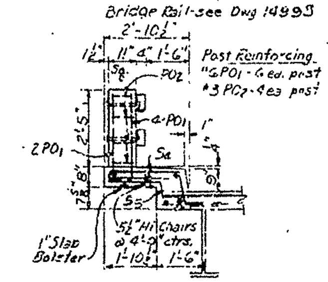
SECTION A-A MODIFIED SPANS

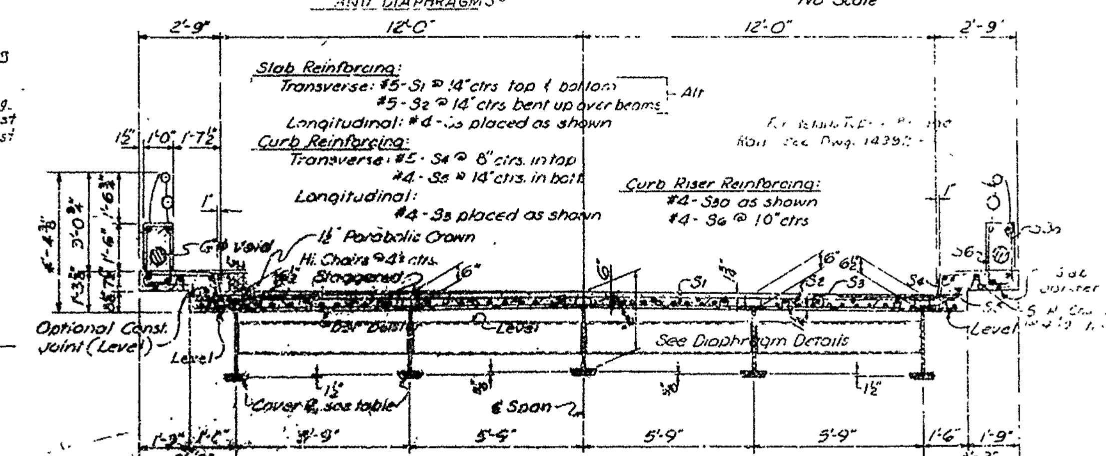
(For location of Section A-A & B-B and variables a, b, & c see dwg. no. 14990)





For details Type B Bridge Rail-see Dwg 14993





SECTION A-A OF REGULAR SPAN

(Regular spans have all beams of equal depth)

[illegible]	[illegible]	Interior Beam: Beam Size	Cover PL Size	e	Dead Load Deflection: With Constr. Joint	Without Constr. Joint	Exterior Beam: Beam Size	Cover PL Size	e	Dead Load Deflection: With Constr. Joint	Without Constr. Joint	Diaphragm Spacing	Post Spacing: a	b	c	f	Variables of Shear Connector Spacing: g	h	i	j	k	l	m	n	p
[illegible]	[illegible]	27WF84	7 [illegible]	[illegible]	½"	[illegible]	27W 34	8 [illegible]	2'-8⅝	5/16"	[illegible]	3 @ 20'-6	7'-0"	7'-2"	6	1½"	7	11"	7	14"	4	18"	4	22"	15"

Table Data by EMH. 5-22-67.
ck JAS 5-24-67

NOTE: Stud shear connectors, [illegible] fillet, [illegible] or [illegible] may be used in place of the [illegible] at the following ratios: 3/4" diameter stud in place of 1.82 inches of channel, 7/8" diameter stud in place of 2.52 inches of channel. The studs shall be [illegible] and automatically end welded to the beam flanges in accordance with recommendations of the manufacturer.

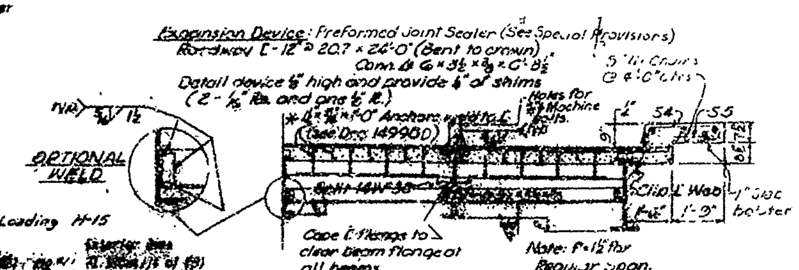
[illegible] will be used as basis for measurement of structural steel in shear connectors.

This drawing to be used with Drawing 14990.

All steel shall be A-36 steel unless otherwise noted.

[illegible] Live Loading H-15

	Interior Beam	Exterior Beam
I. Dead Loads (Type B Rail)		
a. To WF Beam (without const. jt)	[illegible]	[illegible]
(with const. jt)	437 #/l + 1.15 (wt/ft. of WF)	363 #/l + 1.15 (wt/ft. of WF)
b. To Comp. Beam (with const. jt)	[illegible] #/l	253 #/l
(without const. jt)	[illegible]	744 #/l
[illegible]	[illegible]	1.048 [illegible]
II. Dead Loads (Type B Rail)		
a. To WF Beam (without const. jt)	437 #/l + 1.15 (wt/ft. of WF)	758 #/l + 1.15 (wt/ft. of WF)
(with const. jt)	437 #/l + 1.15 (wt/ft. of WF)	363 #/l + 1.15 (wt/ft. of WF)
b. To Comp. Beam (without const. jt)	81 #/l	81 #/l
(with const. jt)	200 #/l	200 #/l



HALF-SECTION B-B FOR MODIFIED OR REGULAR SPANS

* See Dwg. 14990 for Alternate Anchor Details

Diaphragm Spacing 1-5-67 RWM
Revised 7-19-65 Added Type B Bridge Rail. FMH.

Revised: Added Joint Sealer. 9-17-65. RWM

This drawing adapted from Std. [illegible]

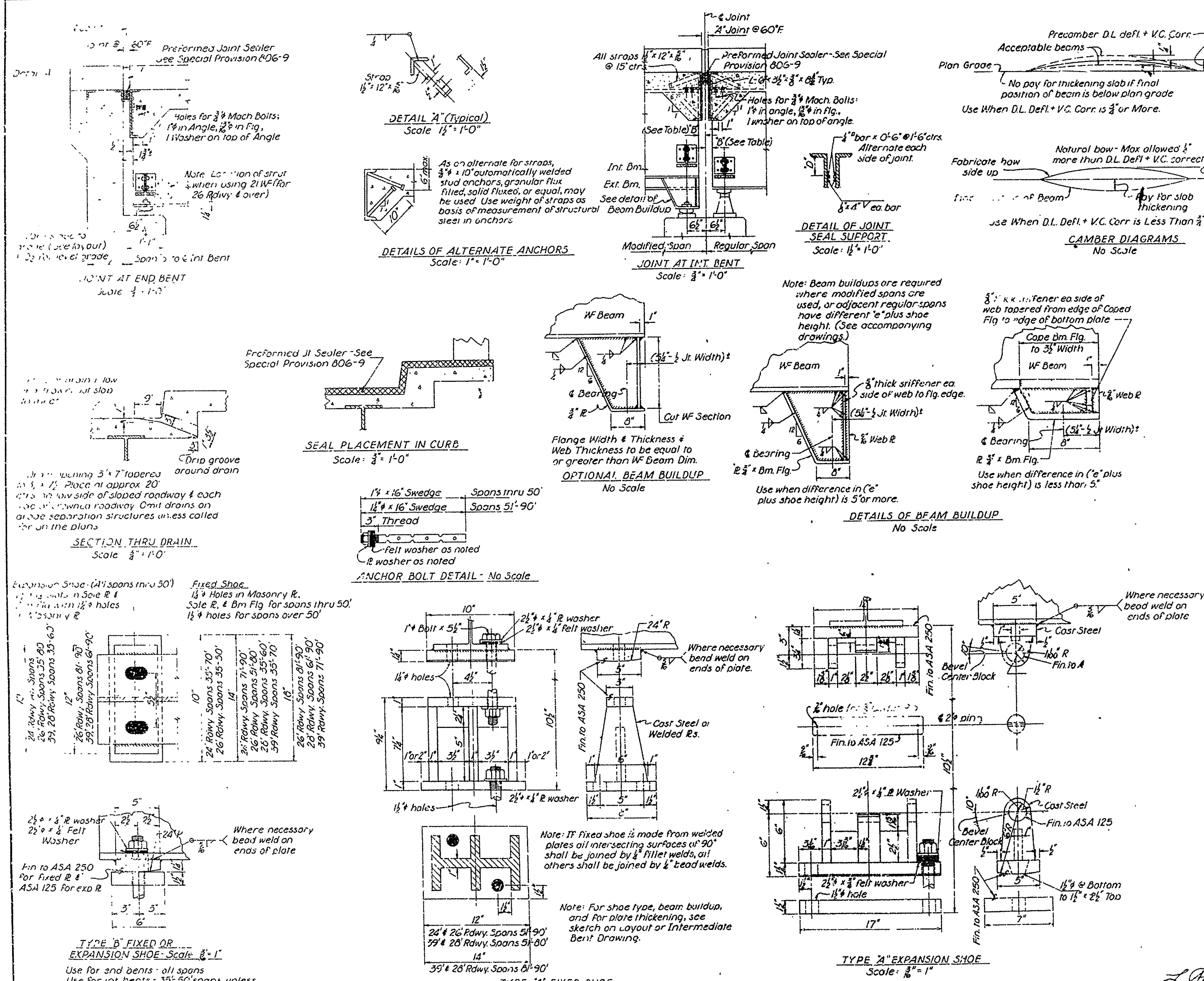
DETAILS OF STANDARD
35'-90' COMPOSITE I-BEAM SPANS
24'-0" CLEAR RDWY. 1'-6" OR 1'-7½" CURBS

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

REDRAWN BY: JAS DATE: 10-6-64
TRACED BY: DATE:
CHECKED BY: [illegible] DATE: 10-6-64
SCALE: ⅛" = 1'-0" or as shown

BRIDGE NO. 4231 DRAWING NO. 15565



Preformed Joint Sealer See Special Provision 806-9
Holes for 3/4" ϕ Mach Bolts: 1" ϕ in Angle, 13/16" ϕ in Flg., 1 Washer on top of Angle
JOINT AT END BENT
Scale 3/4" = 1'-0"
Strap 1/2" × 12" × 3/8"
DETAIL "A" (Typical)
Scale 1 1/2" = 1'-0"
As an alternate for straps, 3/4" ϕ × 10" automatically welded stud anchors, granular flux filled, solid fluxed, or equal, may be used. Use weight of straps as basis of measurement of structural steel in anchors.
DETAILS OF ALTERNATE ANCHORS
Scale: 1" = 1'-0"
℄ Joint
"A" Joint @ 60°F
All straps 1/2" × 12" × 3/8" @ 15" ctrs.
Preformed Joint Sealer - See Special Provision 806-9
Holes for 3/4" ϕ Mach. Bolts: 1" ϕ in angle, 13/16" ϕ in Flg., 1 washer on top of angle.
(See Table) "B"
"B" (See Table)
Int. Bm.
Ext. Bm.
See detail of Beam Buildup
Modified Span
Regular Span
JOINT AT INT. BENT
Scale: 3/4" = 1'-0"
Alternate each side of joint.
DETAIL OF JOINT SEAL SUPPORT
Scale: 1 1/2" = 1'-0"
Precamber D.L. defl. + V.C. Corr.
Acceptable beams
Plan Grade
No pay for thickening slab if final position of beam is below plan grade
Use When D.L. Defl. + V.C. Corr. is 3/4" or More.
Fabricate bow side up
Natural bow - Max allowed 1/4" more than D.L. Defl. + V.C. correction
Pay for slab thickening
Use When D.L. Defl. + V.C. Corr. is Less Than 3/4"
CAMBER DIAGRAMS
No Scale
Drip groove around drain
SECTION THRU DRAIN
Scale 3/4" = 1'-0"
Preformed Jt Sealer - See Special Provision 806-9
SEAL PLACEMENT IN CURB
Scale: 3/4" = 1'-0"
WF Beam
℄ Bearing
Cut WF Section
Flange Width & Thickness & Web Thickness to be equal to or greater than WF Beam Dim.
OPTIONAL BEAM BUILDUP
No Scale
Note: Beam buildups are required where modified spans are used, or adjacent regular spans have different "e" plus shoe height. (See accompanying drawings.)
3/8" thick stiffener ea. side of web to flg. edge.
Use when difference in ("e" plus shoe height) is 5" or more.
Cope Bm. Flg. to 3 1/2" Width
Use when difference in ("e" plus shoe height) is less than 5."
DETAILS OF BEAM BUILDUP
No Scale
1 1/4" × 16" Swedge — Spans thru 50'
1 1/2" ϕ × 16" Swedge — Spans 51'-90'
3" Thread
Felt washer as noted
ℙ washer as noted
ANCHOR BOLT DETAIL - No Scale
Fixed Shoe
1 3/8" ϕ Holes in Masonry ℙ, Sole ℙ, & Bm Flg for spans thru 50'. 1 1/2" ϕ holes for spans over 50'
Where necessary bead weld on ends of plate
TYPE "B" FIXED OR EXPANSION SHOE - Scale 3/4" = 1"
Use for end bents - all spans
Use for int bents - 35'-50' spans, unless otherwise shown
1" ϕ Bolt × 5 1/2"
Cast Steel or Welded ℙs.
Note: If fixed shoe is made from welded plates all intersecting surfaces of 90° shall be joined by 1/4" fillet welds, all others shall be joined by 1/4" bead welds.
Note: For shoe type, beam buildup, and for plate thickening, see sketch on Layout or Intermediate Bent Drawing.
24" & 26' Rdwy. Spans 51'-90'
39' & 28' Rdwy. Spans 51'-80'
39' & 28' Rdwy. Spans 81'-90'
TYPE "A" FIXED SHOE
Scale: 3/8" = 1"
Fin. to ASA 250
Fin. to ASA 125
Cast Steel
Bevel Center Block
℄ 2" ϕ pin
TYPE "A" EXPANSION SHOE
Scale: 3/8" = 1"

Note: This drawing adapted from drwg. 14990C.

GENERAL NOTES

All concrete to be Class S. All exposed corners to be chamfered 3/4" unless otherwise noted.

Field connections to be riveted or ... with high strength bolts.

Rivets: 3/4" ϕ, open holes 13/16" ϕ except where noted otherwise.

Structural shapes of equal or greater strength may be substituted for shapes shown, but payment will be made on the basis of shapes shown or those actually used, whichever is less.

All welded connections to be 5/16" fillet shop welds except as noted. All welding shall conform to the American Welding Society Standard Specifications for Welded Highway and Railway Bridges, current edition.

Shop Paint: All structural steel except surfaces in contact with concrete shall be given one coat of red lead and raw linseed oil before shipment.

Field Paint: First coat-red lead tinted with lamp black. Second coat-aluminum paint.

All metal bearing and roadway expansion devices to be paid for as "Structural Steel in Beam Spans." Bearings shall be finally seated in accordance with Sec. 806.54, including alternate, of the Standard Specifications. This work and material are to be considered as subsidiary to the item "Structural Steel in Beam Spans" and will not be paid for directly.

This drawing shows general features of design only. Shop drawings shall be made in accordance with the Specifications, submitted and approval secured before fabrication is begun.

All steel shall be ASTM A-36 unless otherwise noted.

Anchor bolts shall be galvanized to conform to ASTM Specification, Designation A153.

Reinforcing steel to be deformed bars of intermediate or hard grade. The reinforcing steel is to be accurately located in the forms and firmly held in place by steel wire, supports, sufficient in number and size to prevent displacement during the course of construction. The wire supports will not be paid for directly but will be considered subsidiary to the item of "Reinforcing Steel."

Shop lists and bending diagrams of reinforcing steel, including wire supports, shall be submitted and approval secured before fabrication is begun.

Slab Pouring Note:

Floor slabs may be poured in one continuous operation with a strikeoff extending over the whole span length, or may be poured in increments with the center one-third to one-half span length poured first. After the center section is poured, not less than 72 hours shall elapse before pouring the end sections. End sections may be poured simultaneously. If not poured simultaneously, 48 hours shall elapse between end section pours. A minimum of 72 hours shall elapse (1) between completion of the slab and the pouring of the curb section if poured separately, and (2) between the completion of the curb and the pouring of the type A rail parapet. Posts for Type B or C rail may be poured 24 hours after completion of the curb.

For details of Bridge Railing see Dwg. No. 14992 or 14993 as shown on bridge layout.

SPECIFICATIONS: Arkansas State Highway Commission Standard Specifications for Highway Construction Edition of 1959, the 1966 Supplemental Specifications thereto and applicable Special Provisions.

EXPANSION JOINT DATA

Total Length of Spans Expanding at Bent or Pier (F-E 1 Span, E-E 2 Spans)	"A" (Joint Width Perpendicular to ℄ webs @ 60°F)	Seal Width	B
To 80'	1"	1 3/4"	1 3/4"±
Over 80' to 100'	1 1/4"	2"	1 7/8"±
Over 100' to 140'	1 1/2"	2 1/2"	2"±
Over 140' to 180'	2"	3"	2 1/4"±

Note: All joints at Abutments and at Fix-Fix joints shall be 1".
The Dimension "D" shall conform to the recommendations of the seal manufacturer as approved by the Bridge Engineer. The depth of the seal shall be approximately equal to the uncompressed width of the seal.

FOR INFORMATION ONLY

DETAILS COMMON TO STANDARD 35'-90' COMPOSITE I-BEAM SPANS 24, 26, 28, 39 ROADWAYS

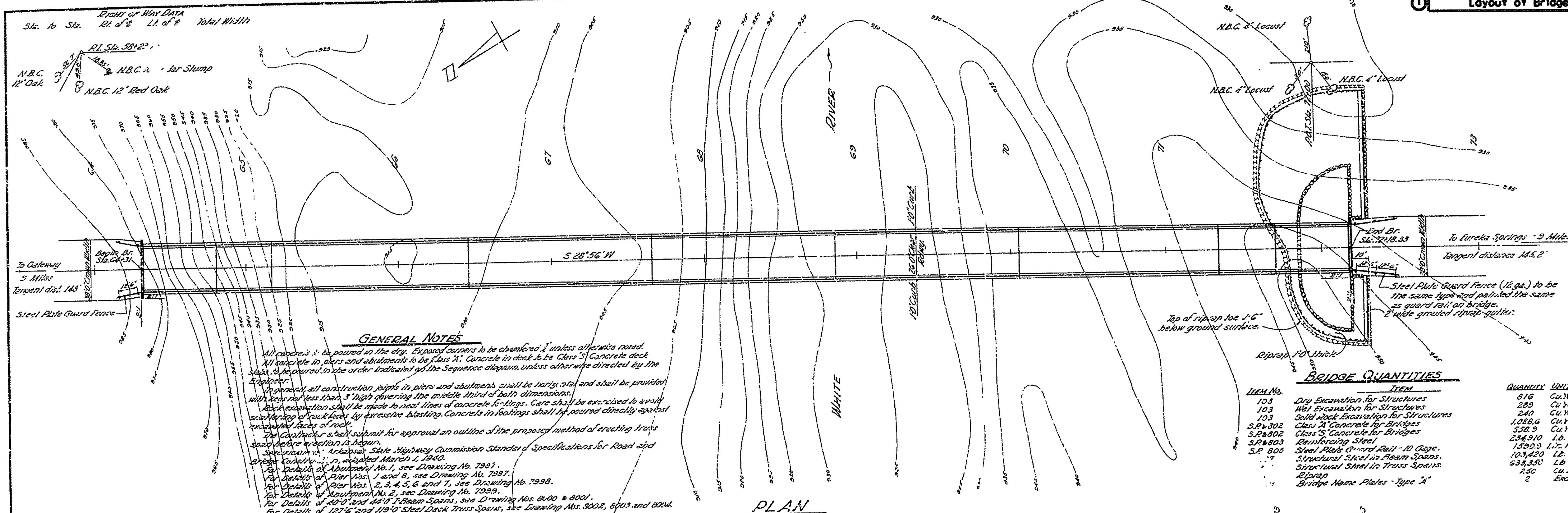
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: RWM DATE: 1-4-67
TRACED BY: DATE:
CHECKED BY: DFL DATE: 1-5-67
SCALE: As Shown

L. R. Carlson
BRIDGE ENGINEER

BRIDGE NO. 4231 DRAWING NO. 14990D



General Notes

All concrete to be poured in the dry. Exposed corners to be chamfered ¾" unless otherwise noted.

All concrete in piers and abutments to be Class "A". Concrete in deck to be Class "S". Concrete deck slabs to be poured in the order indicated on the Sequence diagram, unless otherwise directed by the Engineer.

In general, all construction joints in piers and abutments shall be horizontal and shall be provided with keys not less than 3" high covering the middle third of both dimensions.

Rock excavation shall be made to neat lines of concrete footings. Care shall be exercised to avoid shattering of rock faces by excessive blasting. Concrete in footings shall be poured directly against excavated faces of rock.

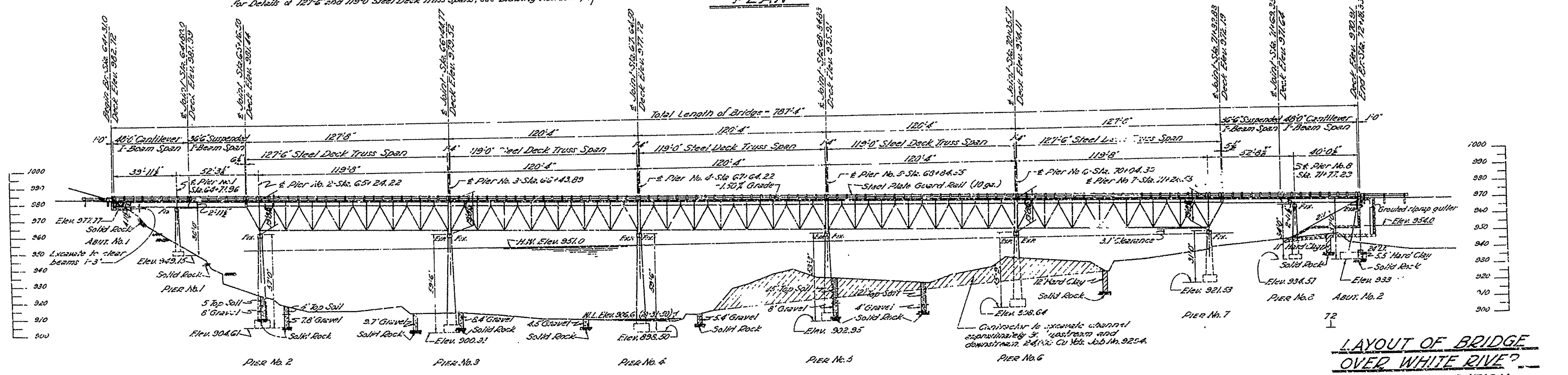
The Contractor shall submit for approval an outline of the proposed method of erecting truss span before erection is begun.

Specifications: Arkansas State Highway Commission Standard Specifications for Road and Bridge Construction, adopted March 1, 1940.

For Details of Abutment No. 1, see Drawing No. 7997.
For Details of Pier Nos. 1 and 8, see Drawing No. 7997.
For Details of Pier Nos. 2, 3, 4, 5, 6 and 7, see Drawing No. 7998.
For Details of Abutment No. 2, see Drawing No. 7999.
For Details of 40'-0" and 44'-0" I-Beam Spans, see Drawing Nos. 8000 & 8001.
For Details of 127'-6" and 119'-0" Steel Deck Truss Spans, see Drawing Nos. 8002, 8003 and 8004.

Bridge Quantities

Item No.	Item	Quantity	Unit
103	Dry Excavation for Structures	816	Cu. Yd.
103	Wet Excavation for Structures	289	Cu. Yd.
103	Solid Rock Excavation for Structures	240	Cu. Yd.
S.P. & 802	Class "A" Concrete for Bridges	1,088.6	Cu. Yd.
S.P. & 802	Class "S" Concrete for Bridges	558.9	Cu. Yd.
S.P. & 803	Reinforcing Steel	234,910	Lb.
S.P. 805	Steel Plate Guard Rail - 10 Gage.	1590.9	Lin. Ft.
[illegible]	Structural Steel in Beam Spans.	103,420	Lb.
[illegible]	Structural Steel in Truss Spans.	633,350	Lb
[illegible]	Riprap	250	Cu. Yd.
[illegible]	Bridge Name Plates - Type "A"	2	Each



FOR INFORMATION ONLY

Design Live Load ~ H-20 Loading A.A.S.H.O. 1949

Unit Stresses:

Class "A" Concrete (n=15)	840# /"
Class "S" Concrete (n=10)	1200# /"
Reinforcing Steel - Int. Grade	20,000# /"
Structural Steel	18,000# /"

Maximum Foundation Pressures:

Abutment No. 1	1.3 Tons /"
Pier No. 1	2.5 "
Pier No. 2	3.5 "
Pier No. 3 & 4	4.5 "
Pier No. 5	4.2 "
Pier No. 6	3.8 "
Pier No. 7	4.1 "
Pier No. 8	2.6 "
Abutment No. 2	4.0 Tons /"

Drainage Area
1210 Sq. Miles, C=1.0

B.M. Elev. 982.66
Nail in 16" Oak 32 Lt. of Sta. 64+30

Layout of Bridge over White River
Busch Relocation
Carroll County
Route 62 Sec. 3

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

Drawn By: H.B. Date: 4-18-51.
Traced By: A.J.J. Date: 5-15-51.
Checked By: J.H.K. Date: 5-8-51.
Scale: 1 in. = 30 ft. 0 in.

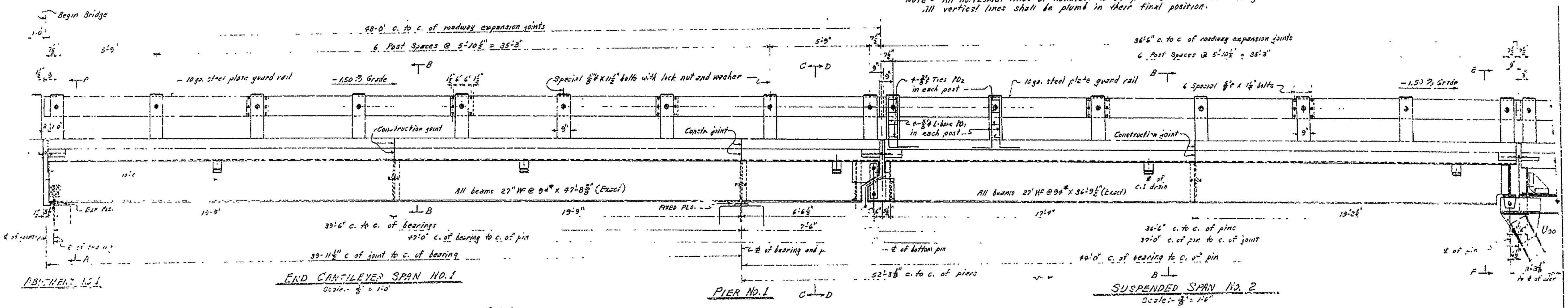
Bridge Design Engineer

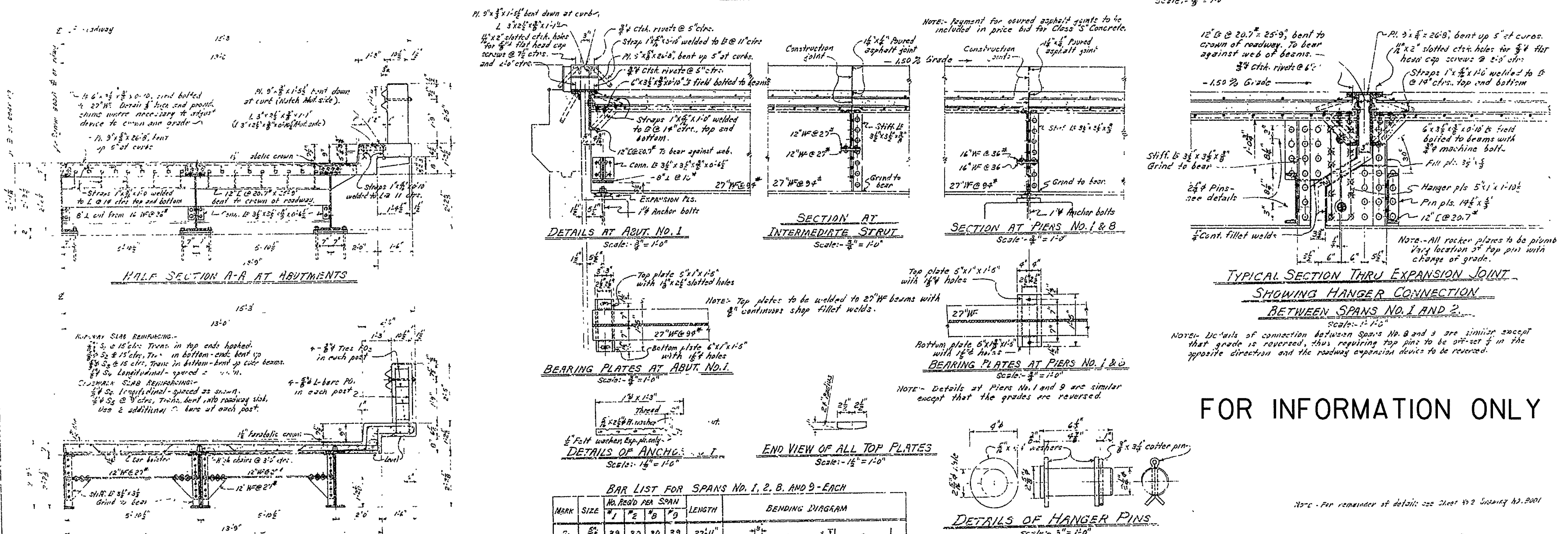
BRIDGE NO. 2597 DRAWING NO. 7996

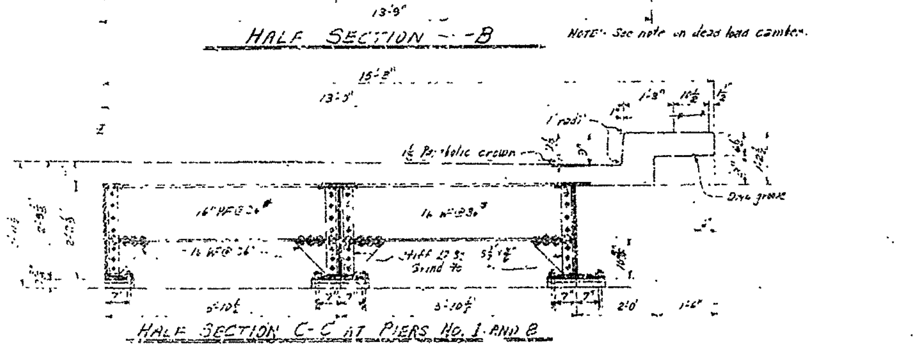
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090450	16	55

(1) I-Bm. Span Details of Br. No. 02597

NOTE:- All horizontal lines of handrail to be parallel to the finished grade. All vertical lines shall be plumb in their final position.







FOR INFORMATION ONLY

BAR LIST FOR SPANS NO. 1, 2, 8, AND 9 - EACH

MARK	SIZE	No. REQ'D PER SPAN #1	#2	#8	#9	LENGTH	BENDING DIAGRAM
S_1	⅝"φ	39	30	30	39	27'-11"	
S_2	⅝"φ	39	30	30	39	29'-0"	
S_3	⅝"φ	38	29	29	38	28'-7"	
S_4	½"φ	51	—	—	51	22'-0"	Strait
		51	—	—	51	27'-3"	
		—	51	51	—	19'-9"	
		—	51	51	—	18'-9"	
S_5	½"φ	164	126	126	164	5'-9"	
S_6	½"φ	8	8	8	8	4'-0"	
PO_1	⅝"φ	72	56	56	72	4'-0"	
PO_2	⅜"φ	72	56	56	72	2'-9"	

NOTE:- Dimensions relating to reinforcing steel are to centers of bars.

Note - For remainder of details see Sheet No. 2 Drawing No. 8001

SHEET NO. 1 OF 2 OF

DETAILS OF 40'-0" AND 44'-0" CANTILEVER I-BEAM SPAN UNITS

26'-0" CLEAR ROADWAY 2 CURBS @ 1'-0"

5 GIRDER TYPE

ROUTE SEC

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

Drawn By: W.C.H. Date. 9-27-5_
Traced By: ____ Date: ____
Checked By: J.R.K. Date. 5-7-51

Scale:- ⅛" = 1'-0" EXCEPT AS NOTED

BRIDGE DESIGN ENGINEER

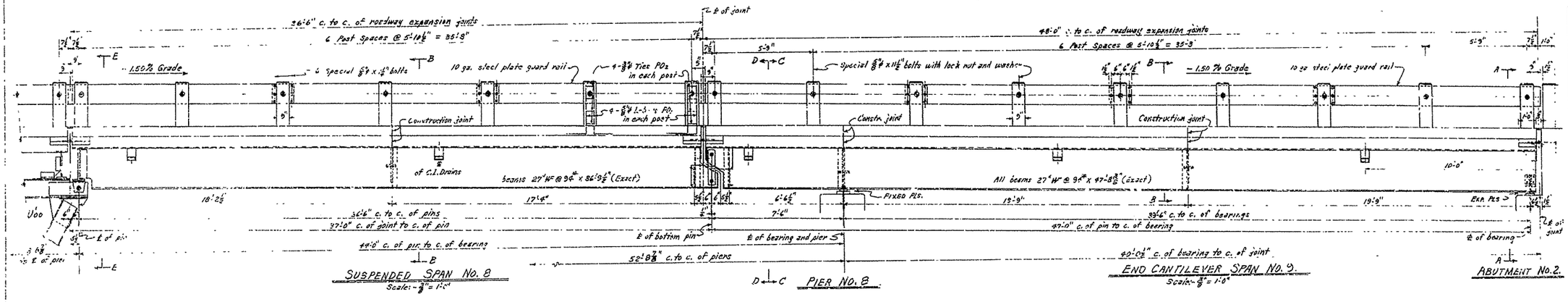
BRIDGE NO. 2597 DRAWING NO. 8000

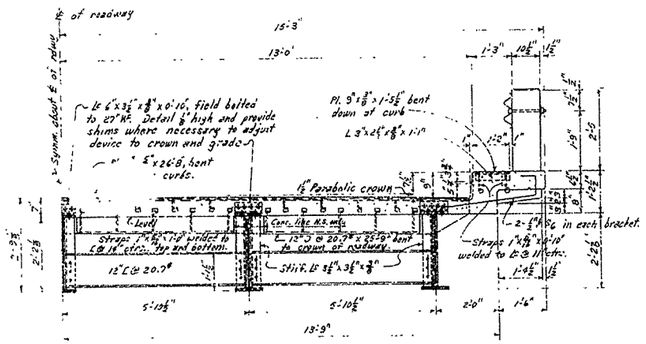
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

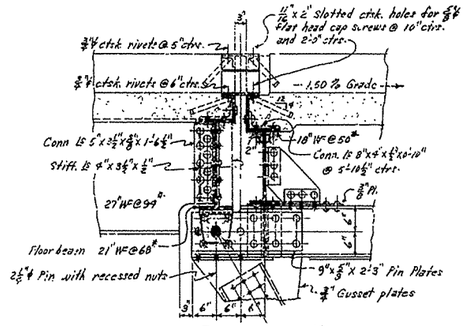
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		090450	17	55

① I-Bm. Span Details of Br. No. 02597

NOTE:- All horizontal lines of handrail to be parallel to the finished grade. All vertical lines shall be plumb in their final position.

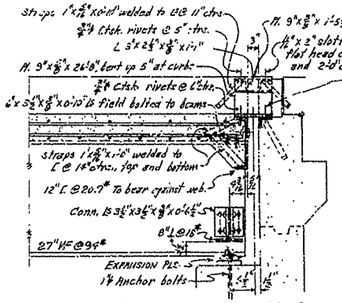


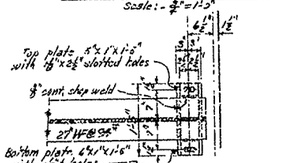




NOTE:- Details at U00 are similar except that the grade is reversed, thus requiring that the roadway expansion device be fixed on the truss side of the joint.

STEEL PLATE GUARD RAIL NOTE:- The steel plate guard rail shall be of the type shown or an equivalent rigid type as approved by the Engineer. The steel plate guard rail, including all concrete posts, shall be paid for at the unit price bid per linear foot for "Steel Plate Guard Rail", to be painted same as structural steel.





GENERAL NOTES

All concrete to be Class "S". All exposed corners to be chamfered ¾" unless otherwise noted.

Rivets ¾" ℄. Open holes ⅞". Use machine bolts where both are indicated.

Ends of all stiffener angles shall be ground to bear against beam flanges.

Structural shapes of equal or greater strength may be substituted for shapes shown but payment will be made on shapes shown or actually used whichever is the lesser.

All weld connections to be ⅜" fillet shop welds, except as noted. Welding to be by the electric arc process in accordance with current specifications for Welded Highway and Railway Bridges of the American Welding Society.

All bearing plates are to be structural steel. All top plates to be shop welded to 29" mat. with ⅜" fillet welds extending entire length of all edges and surfaces in contact. Masonry plates to be seated on 3 layers of burlap saturated with red lead.

All bearing and roadway expansion devices to be paid for at the unit price bid for "Structural Steel in Beam Spans".

Shop Paint:- All structural steel shall be given one coat of red lead and raw linseed oil before shipment, except surfaces in contact with concrete.

Field Paint:- 1st coat, units load stated with lamp black. 2nd coat, aluminum paint.

Cast iron drains to be paid for as "Reinforcing Steel" and are to be painted same as structural steel.

Reinforcing steel to be determined bars of intermediate grade. Shop lists and bending diagrams must be submitted and approval secured before fabrication is begun.

All reinforcing steel shall be accurately located in the forms and firmly held in place by means of steel wire supports, sufficient in number and size, to prevent displacement during the course of construction and to keep the steel a proper distance from the forms.

Wire supports will not be paid for directly but will be considered subsidiary to the item of "Reinforcing Steel". Shop lists and diagrams must be submitted for approval.

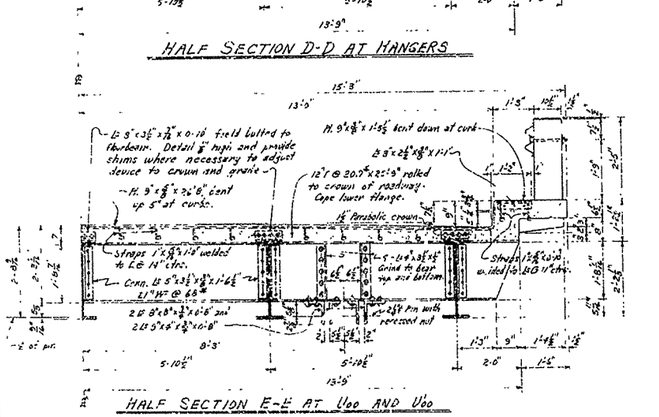
No tolerance will be permitted in the angle between flange and web of beams at points of bearing.

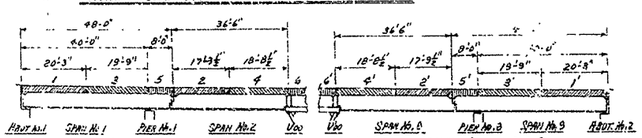
CAMBER:- To provide for dead load deflection of the steel beams the slab is to be approximately ¾" thicker at mid-span and ½" thicker at the quarter points. For cambering the span length shall be the distance center to center of piers.

Slab pours are to be made as scheduled by number in pouring schedule at left.

This drawing shows general features of design only. Shop drawings shall be made in accordance with the specifications submitted and approval secured before fabrication is begun.

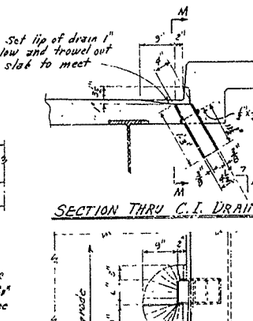
SPECIFICATIONS:- Arkansas State Highway Commission Standard Specifications for Road and Bridge Construction adopted March 1, 1940.





SLAB POURING SCHEDULE FOR I-BEAM SPANS No. 1, 2, 8, & 9

Slab pours are to be made as scheduled by number as shown on schedule above.



NOTE:- Place drains on each side of roadway @ 17'-9" ctrs., beginning 10'-8" from ℄ of joint at abutments. See Elevation of each span.

Cast iron drains are to be paid for as "Reinforcing Steel" and are to be painted same as structural steel. Weight of each drain = 29 Lbs.

DETAILS OF C. I. ROADWAY DRAINS
Scale:- ½" = 1'-0"

DESIGN LIVE LOAD H-20 LOADING A.A.S.H.O. 1949

Load distribution to Interior Beams:- Dead Load 665# / Lin. Ft.
Live Load 1.105 Wheels 33% Impact

Load distribution to Outside Beams:- Dead Load 675# / Lin. Ft.
Live Load 0.872 Wheels. 50% Impact

UNIT STRESSES:- Class "S" Concrete (n=12) 1200#/in²
Reinforcing Steel-Int. Grade 20,000 #/in²
Structural Steel 18,000 #/in²

FOR INFORMATION ONLY

NOTE:- For remainder of details see Sheet No. 1, Drawing No. 8000.

SHEET NO. 2 OF 2 OF

DETAILS OF 40'-0" AND 47'-0" CANTILEVER I-BEAM SPAN UNITS

26'-0" CLEAR ROADWAY 2 CURBS @ 1'-0"

5 GIRDER TYPE

ROUTE SEC

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

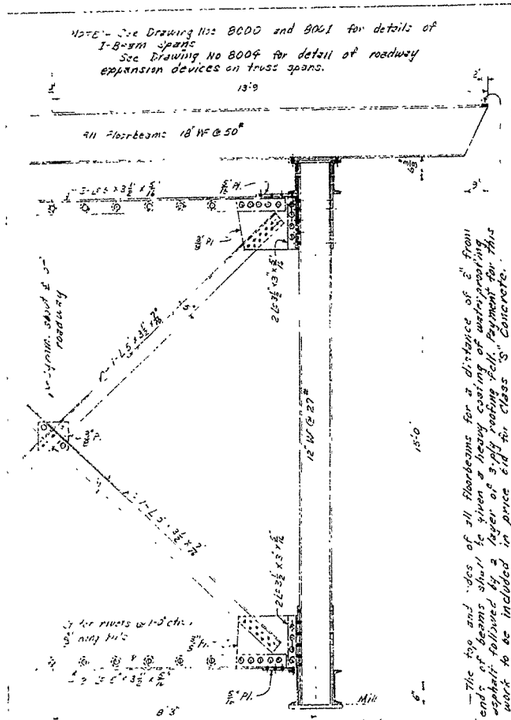
Drawn By: W.C.D. Date: 4-30-51. Scale:- ½" = 1'-0"
Traced By: ___ Date: ___ EXCEPT AS NOTED
Checked By: J.H.G. Date: 5-8-51.

BRIDGE No. 2597 DRAWING NO. 8001

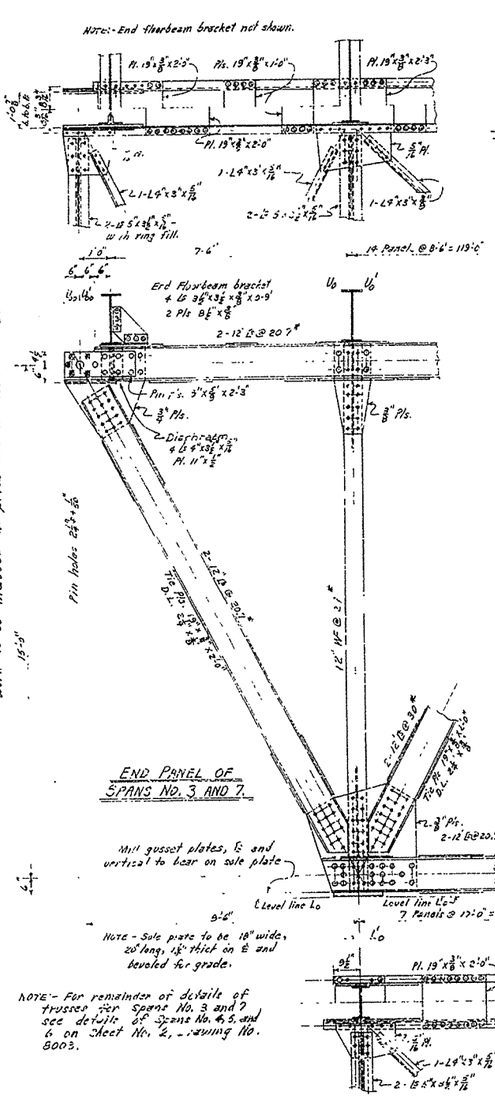
Wade Goodman
BRIDGE DESIGN ENGINEER

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090450	18	55

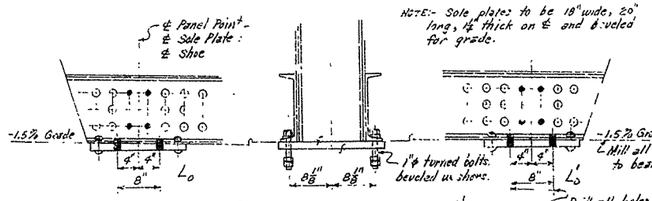
(1) Truss Details of Bridge No. 02597



HALF CROSS FRAME AT U_0-L_0 AND U_0'-L_0'

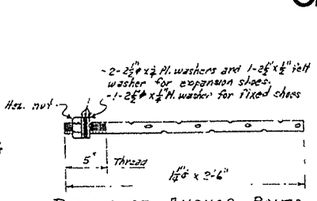


END PANEL OF SPANS NO. 3 AND 7.



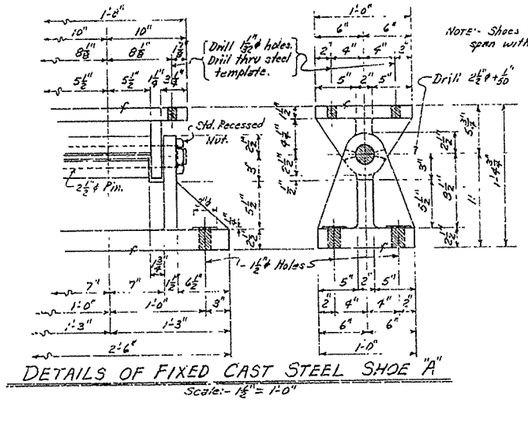
SOLE PLATES AT L_0 AND L_0' AT PIERS NO. 2 & 7

Scale:- 1"=1'-0"



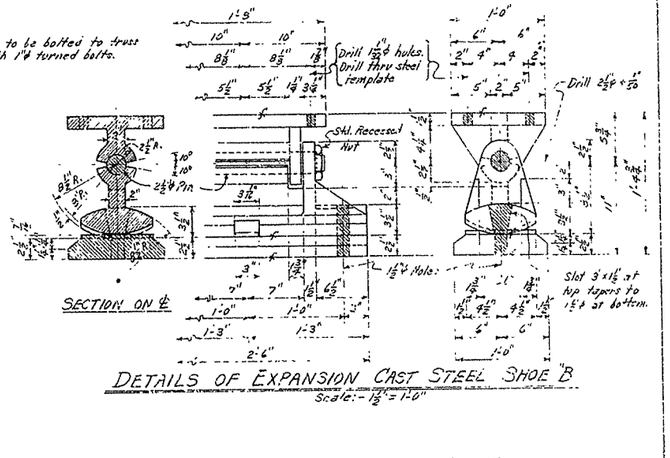
DETAIL OF ANCHOR BOLTS

Scale:- 1½" = 1'-0"



DETAILS OF FIXED CAST STEEL SHOE "A"

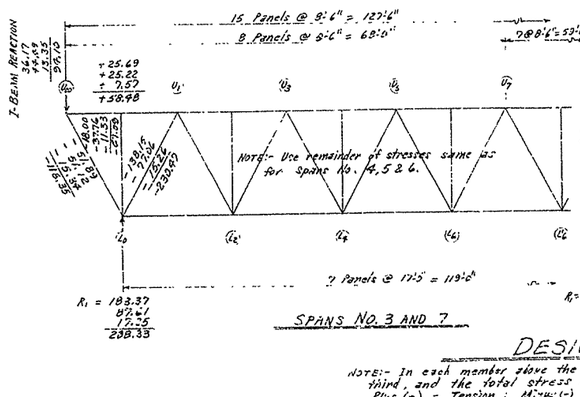
Scale:- 1½" = 1'-0"



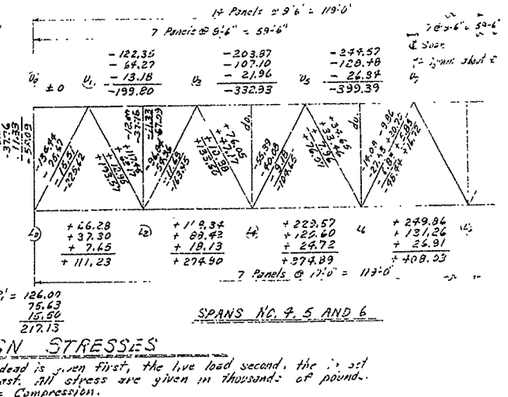
SECTION ON ℄

DETAILS OF EXPANSION CAST STEEL SHOE "B"

Scale:- 1½" = 1'-0"



SPANS NO. 3 AND 7



SPANS NO. 4, 5 AND 6

DESIGN STRESSES

NOTE:- In each member above the dead is given first, the live load second, the impact third, and the total stress last. All stress are given in thousands of pounds.
Plus (+) = Tension ; Minus (-) = Compression.
For all verticals not shown otherwise:-

Dead Load	= - 18.00
Live Load	= - 28.89
Impact	= - 8.67
	- 55.56

FLOOR BEAM DATA

	POSITIVE	NEGATIVE
Dead Load Moment	52,260	311,200
Live Load Moment	939,660	603,760
30% Impact	296,960	131,130
Totals =	1,333,700#	856,090#
Section Modulus required =	74.4	46.6
Use 18" WF @ 50#	S = 89.0	

NOTE:- For remainder of details see Sheet Nos. 2 & 3, Drawing Nos. 9003 and 9039.

GENERAL NOTES

Concrete Deck:- All concrete in roadway slab, sidewalk slab, and rail posts and brackets to be class "S". All exposed corners to be chamfered ¾" unless otherwise noted.
Rivets - In truss, floorbeams, cross frames, and lateral bracing use ¾" ø. Use machine bolts where bolts are indicated, unless otherwise noted.
Holes:- All holes, unless otherwise noted, shall be punched to a ¾" less diameter than nominal size of rivets, and reamed to a diameter ⅛" larger than nominal size of rivet.
Camber:- Trusses shall be cambered to compensate for deflection due to dead load.
Shop Paint:- All parts which come in contact shall be painted one coat of red lead and raw linseed oil before they are riveted together. When assembled and after all shop work has been completed, all steel shall be given one coat of red lead and raw linseed oil before shipment.
Field Paint:- 1st coat, white lead tinted with lamp black, 2nd coat, aluminum paint.
Shapes with equal or greater strength may be substituted for those shown. Payment, however will be based upon the shapes shown or actually used, whichever is the lesser.
All welded connections to bear ⅝" fillet shop welds, except as noted. Welding to be by the electric arc process in accordance with current specifications for Welded Highway and Railway Bridges of the American Welding Society.
This drawing shows general features of design only. Shop drawings shall be made in accordance with specifications, submitted and approval secured before fabrication is begun.
Specifications:- Arkansas State Highway Commission Standard Specifications for Road and Bridge Construction adopted March 1, 1960.

DESIGN LIVE LOAD: H-20 LOADING A.A.S.H.O. 1949

UNIT STRESSES:-

Class "S" Concrete (1:2:4)	1200 #/□"
Reinforcing Steel (Int. grade)	20,000 #/□"
Structural Steel	18,000 #/□"
Cast Steel	13,500 #/□"

FOR INFORMATION ONLY

SHEET NO. 1 OF

DETAILS OF DECK TRUSSES
127'-6" AND 119'-0" SPANS
BRIDGE OVER WHITE RIVER
BUSCH RELOCATION
CARROLL COUNTY
ROUTE 62 SEC. 3

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

Drawn By: W.S.H. Date: 5-7-51.
Traced By: Date:
Checked By: J.H.K. Date: 5-9-51

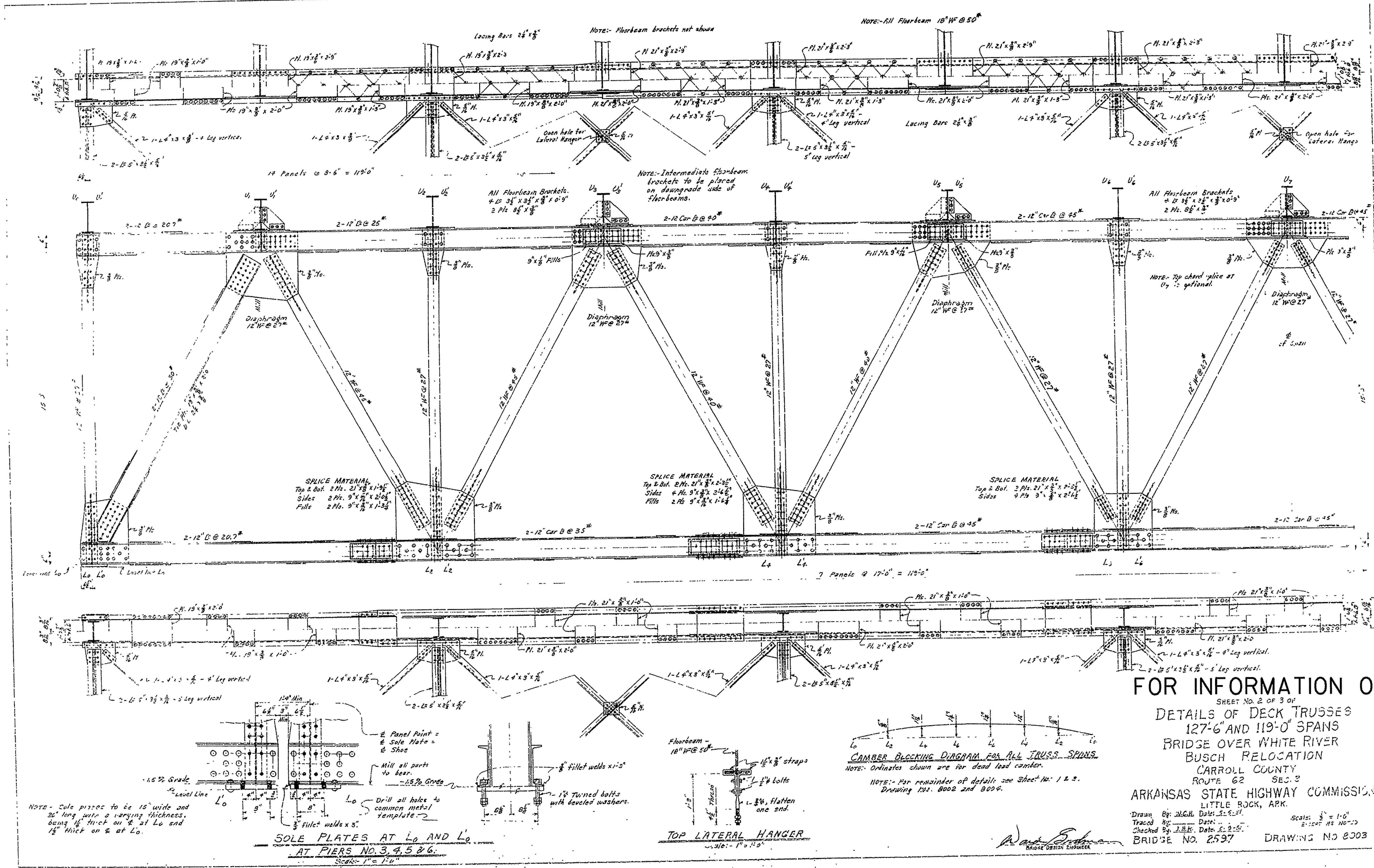
Scale: 1/2" = 1'-0"
Ex: " AS NOTED.

BRIDGE NO. 2597 DRAWING NO. 9002

Bridge Design Engineer

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090450	19	55

Truss Details of Bridge No. 02597



FOR INFORMATION ONLY

SHEET No. 2 OF 3 OF

DETAILS OF DECK TRUSSES

127'-6" AND 119'-0" SPANS

BRIDGE OVER WHITE RIVER

BUSCH RELOCATION

CARROLL COUNTY

ROUTE 62 SEC. 3

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

Drawn By: W.C.H. Date: 5-9-51
Traced By: ____ Date: ____
Checked By: J.B.F. Date: 5-9-51

Scale: ⅜" = 1'-0" Except as noted

BRIDGE NO. 2597

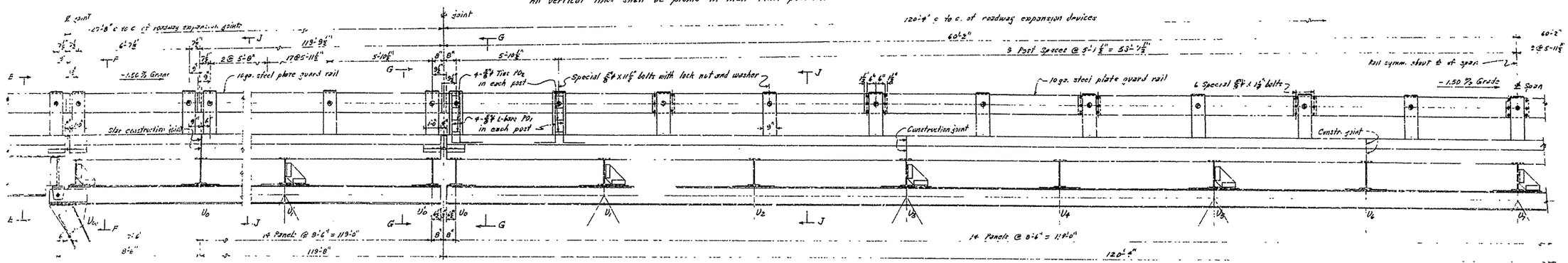
DRAWING NO. 8003

BRIDGE DESIGN ENGINEER

DATE REVISED	DATE FILED	DATE REVISED	DATE FILED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090450	20	55

(1) Truss Details of Bridge No. 02597

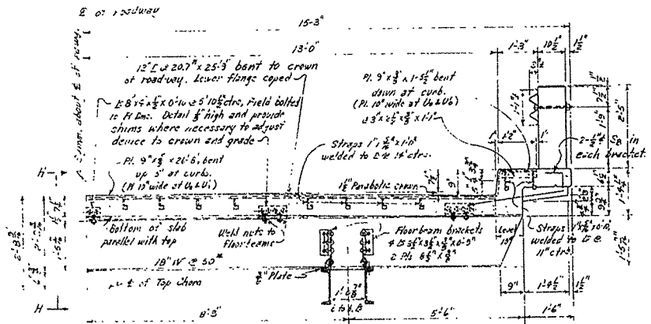
NOTE:- All horizontal lines of handrail to be parallel to the finished grade. All vertical lines shall be plumb in their final position.



PART SIDE ELEVATION OF TRUSS SPANS - SHOWING RAIL POST SPACING AND LOCATION OF FLOORBEAM BRACKETS

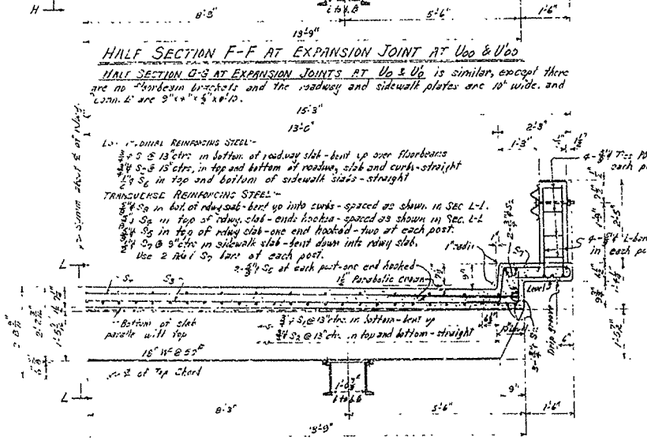
Scale:- ⅛" = 1'-0"

NOTE:- Place intermediate floorbeam brackets on downgrade side of odd numbered panel points only.



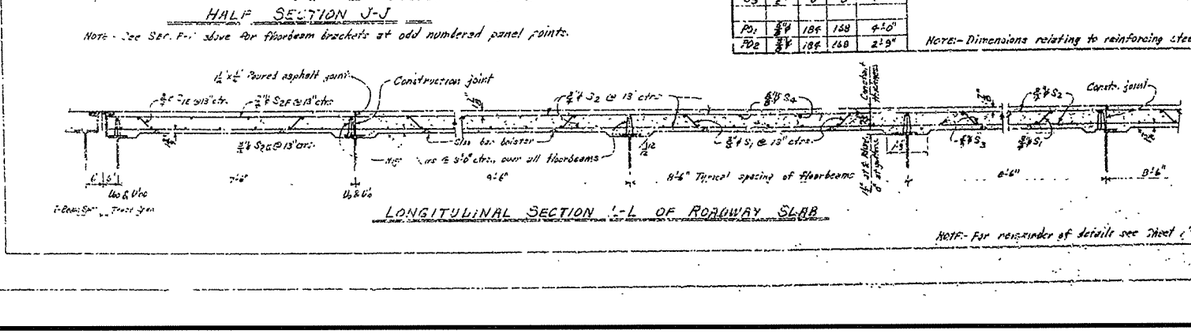
HALF SECTION F-F AT EXPANSION JOINT AT U_{0G} & U_{0D}

HALF SECTION G-G AT EXPANSION JOINTS AT U_0 & U_8 is similar, except there are no floorbeam brackets and the roadway and sidewalk plates are 10" wide, and conn. L's are 9"x4"x⅝"x8'-10".



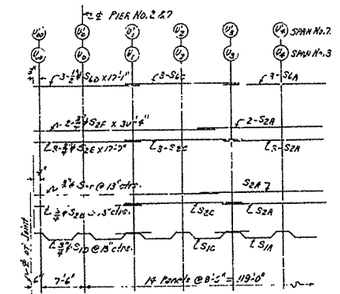
HALF SECTION J-J

Note:- See Sec. F-F above for floorbeam brackets at odd numbered panel points.



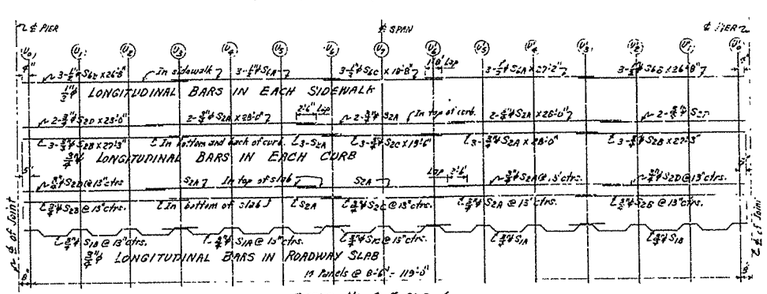
LONGITUDINAL SECTION L-L OF ROADWAY SLAB

Note:- See Sheet No. 1 & 2, Drawing No. 8002 and 8003.



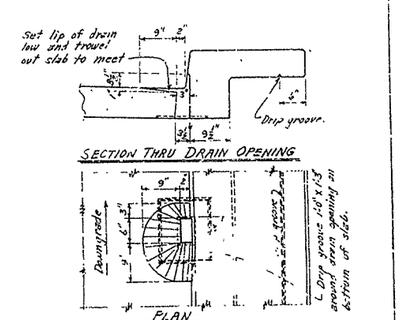
PART SPANS No. 3 AND 7.

NOTE:- Remainder of bars same as for Spans No. 4, 5, or 6.



SPANS No. 4, 5 AND 6

LAYOUT OF LONGITUDINAL SLAB BARS



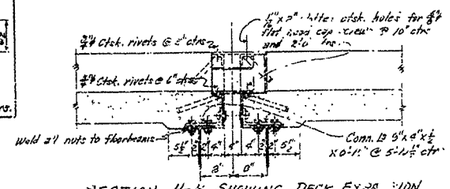
DETAILS OF DRAIN OPENING Scale: ¾"=1'-0"

Note:- Place drain openings, on each side of roadway, at center of panel in every other panel beginning with panel 1-2 and ending with panel 1-0.

BAR LIST FOR SPANS NO. 3, 4, 5, 6 & 7 - EACH

MARK	SIZE	No. REQ'D PER SPAN S&7	No. REQ'D PER SPAN S2&6	LENGTH	BENDING DIAGRAM A	B	b	C	d	e	f	g	h	i	j	k	l	m
S1B	⅝"	68	68	9'-1"	10'-9"	4'-2"	4"	6'-4"	4"	3'-6"	4"	3'-6"	4"	3'-6"	4"	4'-6"	4"	4'-2"
S1B	⅝"	29	92	23'-1"	23'-6"	2'-2"	4"	11'-9"	4"	5'-6"	4"	5'-6"	4"	3'-6"	4"	5'-6"	4"	4'-2"
S1C	⅝"	98	24	22'-6"	21'-4"	4'-2"	4"	11'-9"	4"	5'-6"	4"	3'-6"	4"	4'-6"	4"	5'-6"	4"	4'-2"
S1A	⅝"	24	—	19'-9"	18'-9"	1'-1"	4"	4'-9"	4"	3'-6"	4"	4'-9"	4"	3'-2"	—	—	—	—
S2A	⅝"	149	142	28'-0"	Straight													
S2B	⅝"	31	62	27'-5"														
S2C	⅝"	62	31	19'-6"														
S2D	⅝"	29	58	23'-0"														
S2E	⅝"	31	—	17'-7"														
S2F	⅝"	29	—	30'-9"														
S3	⅝"	105	98	29'-2"														
S4	⅝"	76	71	27'-5"														
S5	⅝"	92	89	6'-6"														
S6A	⅝"	12	12	27'-2"														
S6B	⅝"	6	12	24'-8"														
S6C	⅝"	12	6	18'-10"														
S6D	⅝"	6	—	17'-1"														
S7	⅝"	432	404	5'-10"														
S8	⅝"	8	8	4'-0"														
P01	⅞"	184	168	4'-10"	Straight													
P02	⅞"	184	168	2'-9"	Straight													

NOTE:- Dimensions relating to reinforcing steel are to centers of bars.



SECTION H-H SHOWING DECK EXPANSION OVER PIERS No. 3, 4, 5 AND 6

Scale:- ½"=1'-0"

NOTE:- For expansion device at U0G and U8G, see Drawing No. 8001.

GENERAL NOTES

All concrete to be Class 'S'. All exposed corners to be chamfered ¾" unless otherwise noted. Reinforcing steel to be deformed bars of intermediate grade. Shop list and bending diagrams must be submitted and approval secured before fabrication is begun.

All reinforcing steel shall be accurately located in the forms and firmly held in place by means of steel wire supports sufficient in number and size to prevent displacement during the course of construction and to keep the steel a proper distance from the forms.

Wire supports will not be paid for directly but will be considered subsidiary to the item of "Reinforcing Steel."

Shop lists and diagrams of type to be used must be submitted for approval.

All weld connections to be ⅜" fillet shop welds, except as noted. Welding to be by the electric arc process in accordance with current specifications for Welded Highway and Railway Bridges of the American Welding Society.

The steel plate guard rail shall be of the type shown or an equivalent rigid type as approved by the Engineer. The steel plate guard rail, including all concrete posts, shall be paid for at the unit price bid per linear foot for "Steel Plate Guard Rail". To be painted same as structural steel.

Rivets: ⅞". Open holes: 1⅛". Where bolts are indicated use machine bolts.

FOR INFORMATION ONLY

DESIGN LIVE LOAD: H-20 LOADING. H.A.S.H.O. 1949

UNIT STRESSES:- Class 'S' Concrete (n=12) 1200 #/□"
Reinforcing Steel (Intermediate) 20,000 #/□"
Structural Steel 18000 #/□"

SHEET NO. 3 OF 3 OF

TYPICAL DECK DETAILS FOR 127'-6" AND 119'-0" DECK TRUSS SPANS BRIDGE OVER WHITE RIVER BUSCH RELOCATION CARROLL COUNTY ROUTE 62 SEC. 3

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

Drawn By: W.C.H. Date: 5-8-51
Traced By: ___ Date: ___
Checked By: J.H.K. Date: 5-10-51

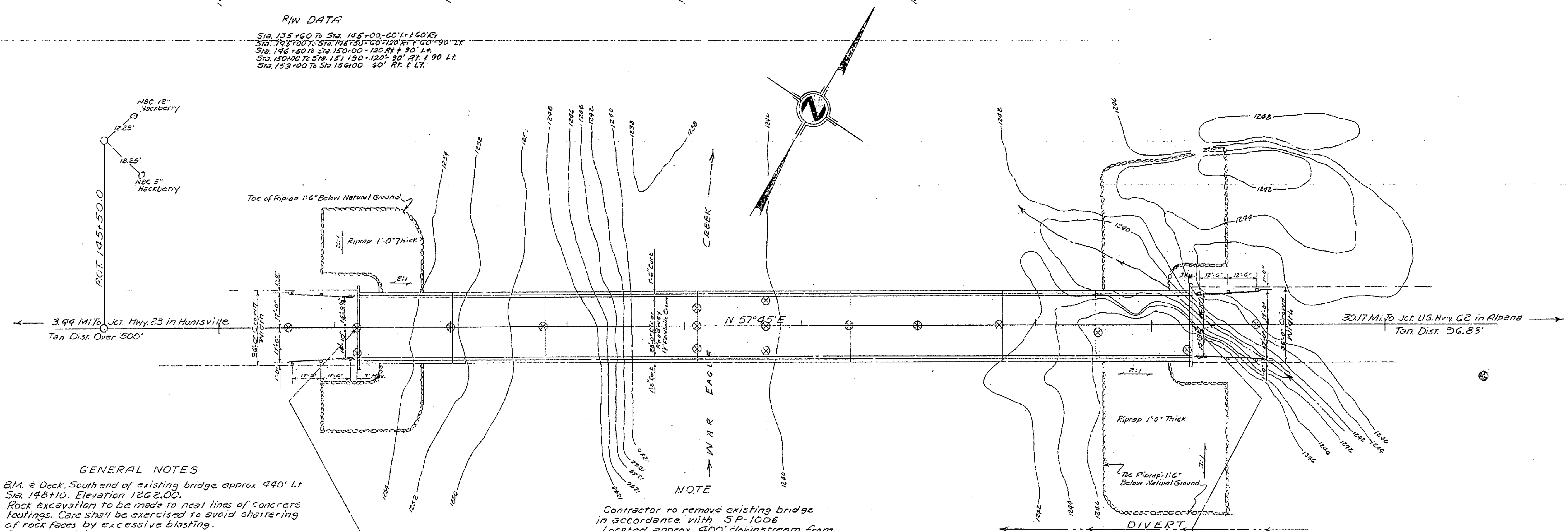
Scale: ¾"=1'-0" EXCEPT AS NOTED

BRIDGE NO. 2597 DRAWING No. 8004

BRIDGE DESIGN ENGINEER

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090450	21	55

① Layout of Bridge No. 03345



GENERAL NOTES

B.M. ¢ Deck, South end of existing bridge approx 440' Lt Sta. 148+10. Elevation 1262.00.
Rock excavation to be made to neat lines of concrete footings. Care shall be exercised to avoid shattering of rock faces by excessive blasting.
Concrete in footings to be poured directly against excavated faces of rock. All concrete to be poured in the dry.

For details of End Bents, See Standard Drwg. No. 5477A
For details of All Piers, See Drawing No. 10681
For details of I Beam Spans, See Drawings No. 5477 & 5462
SPECIFICATIONS: Arkansas State Highway Commission Standard Specifications for Road & Bridge Construction, adopted March 1, 1940; and Designated Special Provisions.

NOTE

Contractor to remove existing bridge in accordance with SP-1006
Located approx 400' downstream from proposed bridge No. 3345.
205.2' Long, 15' Clear Roadway
Concrete Arch Type Construction
2-70' Arch Spans & 2-30' Approach Spans
All material from the existing bridge shall become the property of the contractor.

DESIGN SPECIFICATIONS: A.A.S.H.O. 1957
LIVE LOADING: H20-S16

UNIT STRESSES

Class A Concrete (n=15) --- 840 p.s.i.
Class S Concrete (n=10) --- 1,200 p.s.i.
Reinforcing Steel ---- 20,000 p.s.i.
Structural Steel ---- 18,000 p.s.i.

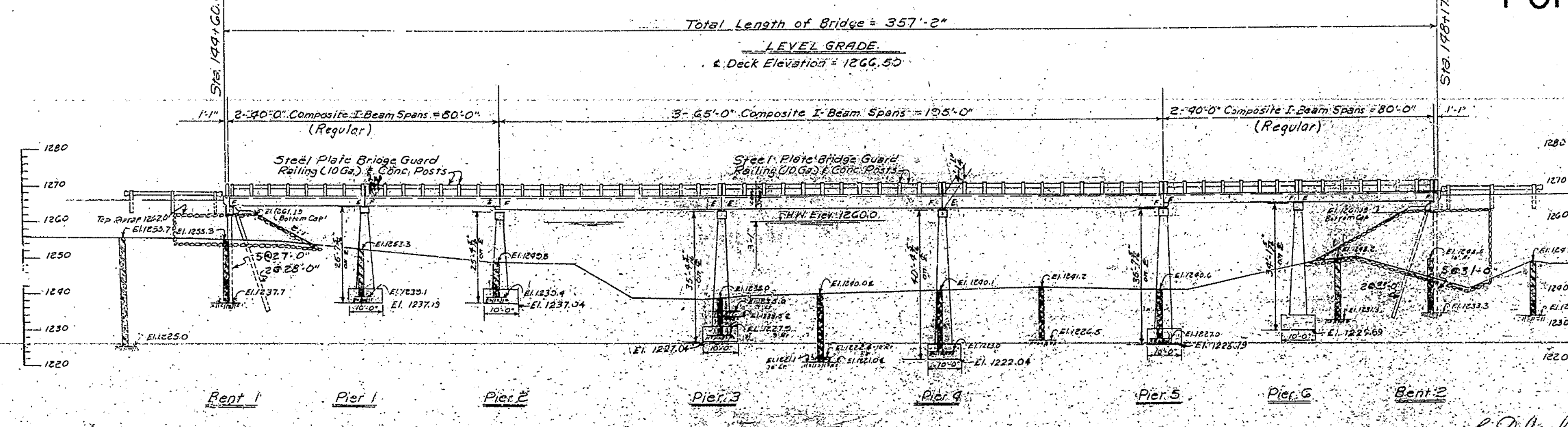
PILING NOTES

All piling to be driven after embankment at bridge ends is in place.
All piling to be 12" H @ 53#/' Steel bearing piling driven to refusal into the material designated as solid rock on the boring logs with a minimum bearing capacity of 36 tons per pile.
Order lengths shown. Payment for cut-off and build-up, where necessary, to be in accordance with SP-804.

FOR INFORMATION ONLY

⊗ Test hole Symbol

Boring Log
- Firm, Sandy Clay
- Compacted, Sandy Clay With Gravel & Small Boulders
- Solid Rock



Note:
Foundation Pressure (Calculated) under Pier #4 = 2.0 Tons/Ft² (LL+DL)

ELEVATION

LAYOUT OF BRIDGE OVER WAR EAGLE CREEK
MADISON COUNTY
ROUTE 68 SEC. 3
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

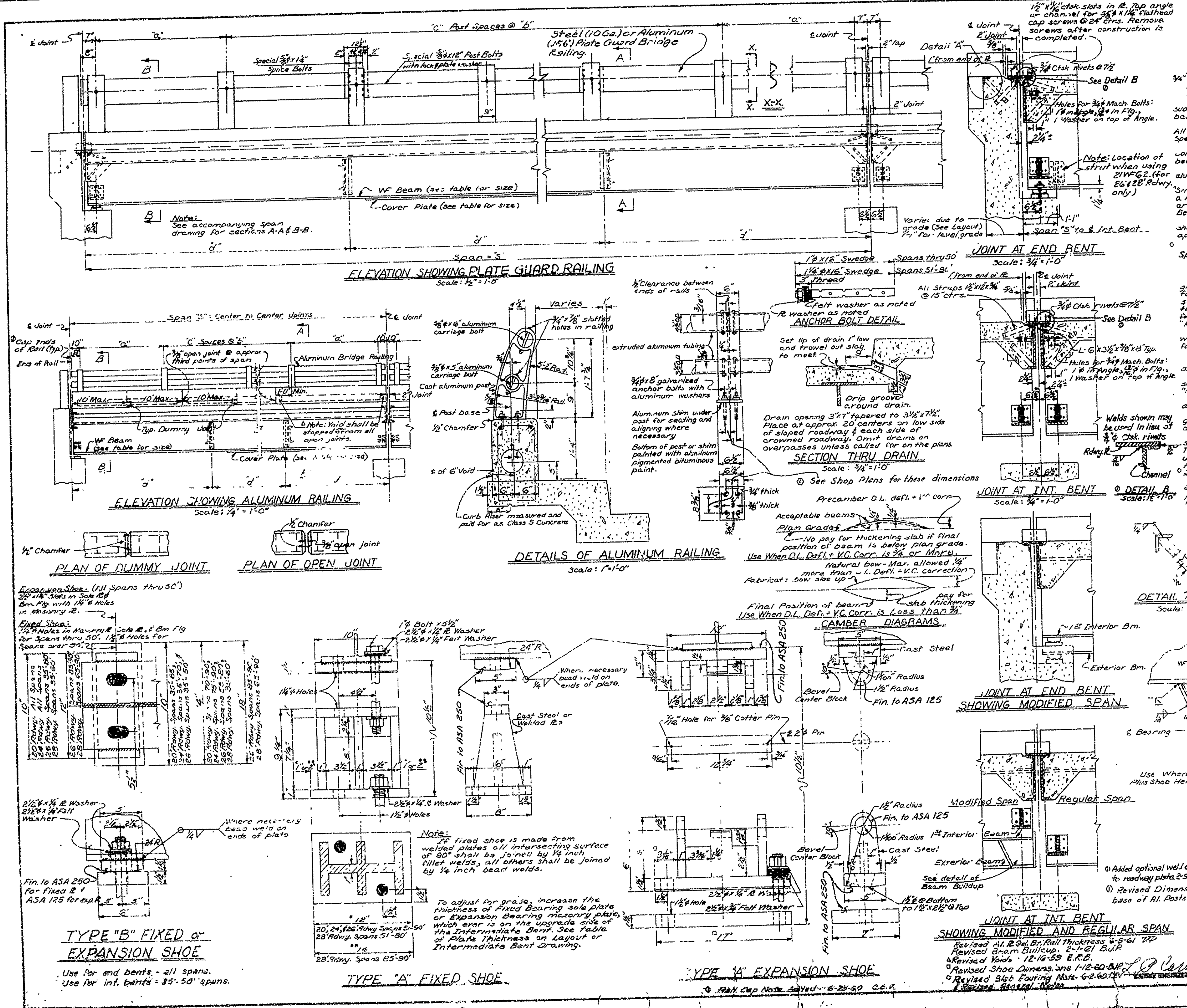
Drawn By: J.B.C. Date: 9-15-59
Checked By: GM Date: 6 Nov 59
Scale: 1" = 20'

L. P. Carlson
Bridge Engineer

BRIDGE NO. 3345 DRWG. NO. 10680

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090450	22	55

① I-Bm. Span Details of Br. No. 03345



GENERAL NOTES

All concrete to be Class S. All exposed corners to be chamfered ¾" unless otherwise noted.

Field connections to be riveted or bolted with high strength bolts. Rivets ¾"φ, Open holes 13/16"φ except where noted otherwise.

Struc[tural] shapes of equal or greater strength may be substitut[ed fo]r shapes shown, but payment will be made on the basis of shapes shown or those actually used, whichever is less.

All welded connections to be 5/16" fillet shop welds except as noted. All welding shall conform to the American Welding Society Standard Specifications for Welded Highway and Railway Bridges, 5th Edition.

Shop Paint: All structural steel except surfaces in contact with concrete shall be given one coat of red lead and raw linseed oil before shipment.

Field Paint: First coat - red lead tinted with lamp black. Second coat aluminum paint.

All bearing plates and roadway expansion devices to be paid for as "Structural Steel in Beam Spans." Bearings shall be finally seated in a manner set forth in the Specifications. This work and material are to be considered as subsidiary to the item "Structural Steel in Beam Spans" and will not be paid for directly.

This drawing shows general features of design only. Shop drawings shall be made in accordance with the Specifications, submitted and approval secured before fabrication is begun.

○ Anchor bolts shall be galvanized to conform to ASTM Specification, Designation A 153.

Reinforcing steel to be deformed bars of intermediate or hard grade. The reinforcing steel is to be accurately located in the forms and firmly held in place by steel wire supports sufficient in number and size to prevent displacement during the course of construction. The wire supports will not be paid for directly but will be considered subsidiary to the item of "Reinforcing Steel."

Shop lists and bending diagrams of reinforcing steel, including wire supports, shall be submitted and approval secured before fabrication is begun.

All chamfers on concrete riser for rail are to be ½".

Shop drawings showing details of railing shall be submitted and approval secured before fabrication is begun.

The aluminum bridge railing, including posts and fasteners, shall be paid for at the unit price bid per linear foot for "Aluminum Bridge Railing."

A rail connection utilizing set screws is an acceptable alternate and may be supplied at the Contractor's option.

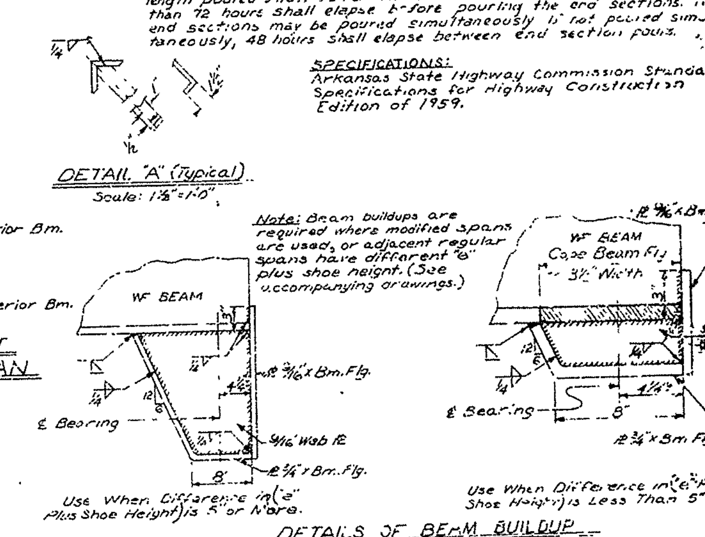
Outside surfaces of flanges of cast aluminum posts shall be given a No. 220 grit belt finish after which all exposed surfaces of posts shall receive one coat of clear lacquer.

If Steel or Aluminum Plate Guard Bridge Railing is used it shall be the type shown or an equivalent rigid type as approved by the Engineer. The rail including posts and fastenings shall be paid for at the unit price bid per linear foot for "Steel or Aluminum Plate Guard Bridge Railing."

○ Slab Pouring Note:

Floor slabs may be poured in one continuous operation with a strikeoff extending over the whole span length, or may be poured in increments with the center one-third to one-half span length poured first. After the center section is poured not less than 72 hours shall elapse before pouring the end sections. The end sections may be poured simultaneously. If not poured simultaneously, 48 hours shall elapse between end section pours.

SPECIFICATIONS:
Arkansas State Highway Commission Standard Specifications for Highway Construction Edition of 1959.



① Added optional weld of channel to roadway plate 2-9-61 F.M.H.
Ⓛ Revised Dimensions for base of Al. Posts 7-17-61 E.R.B.

Revised Al. & Stl. Br. Rail Thickness 6-8-61
Revised Beam Buildup 2-1-61 B.J.P.
Revised Yards 12-16-59 E.R.B.
Revised Shoe Dimensions 1-12-60
Revised Slab Pouring Note 6-2-60
Revised General Notes
Rail Cap Note Added 6-23-60 C.E.V.

DETAILS COMMON TO STANDARD 35'-90' COMPOSITE I-BEAM SPANS

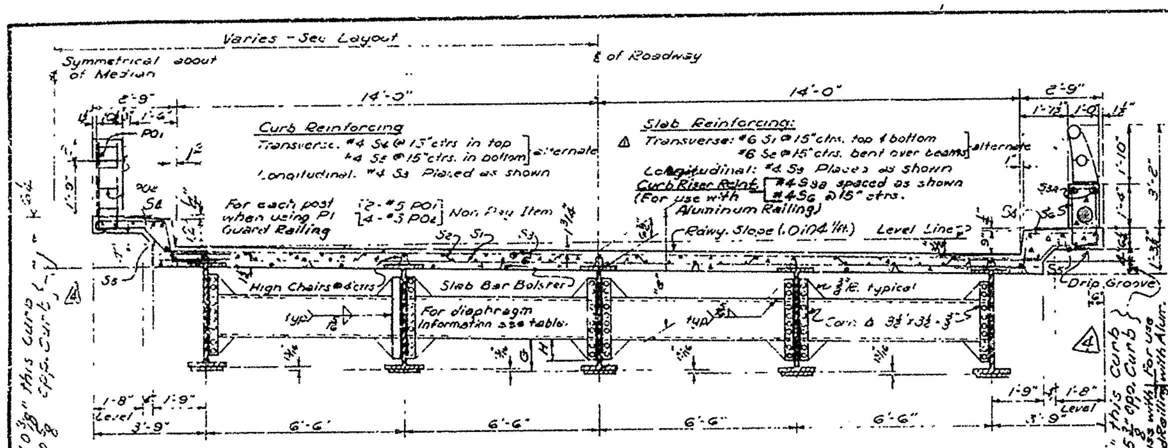
20', 24', 26', AND 28' ROADWAYS

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY B.J.P. DATE 5-15-59
TRACED BY
CHECKED BY E.R.B. DATE 5-18-59
SCALE: As Shown

BRIDGE NO. DRAWING NO. 546

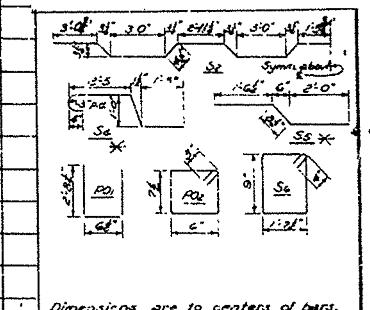
FOR INFORMATION ONLY



SECTION A-A OF REGULAR SPAN - SLOPED RDWY.
(Regular Spans Have All Beams of Equal Depth)

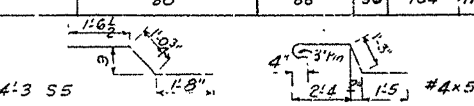
BAR LIST - ONE SPAN

Mark	Size #	Length	Pin Dia.	35'	36'	37'	38'	39'	40'	41'	42'	43'	44'	45'	46'	47'	48'	49'	50'	51'	52'	53'	54'	55'	56'	57'	58'	59'	60'	65'	70'	75'	80'	85'	90'
Δ S1	6	29'-2"	Str.	58	58	60	62	64	66	66	68	70	72	74	74	76	78	80	82	82	84	86	88	90	90	92	94	96	98	106	114	122	130	138	146
Δ S2	6	29'-10"	2 1/4	28	28	29	30	31	32	32	33	34	35	36	36	37	38	39	40	40	41	42	43	44	44	45	46	47	48	52	56	60	64	68	72
S3	4	S-6"	Str.	53																															
S3	4	S/3 + 7"	Str.						106																										
S3	4	S/3 + 1'-0	Str.																											159					
S4*	4	5'-3"	1 1/2"	58	58	60	62	64	66	66	68	70	72	74	74	76	78	80	82	82	84	86	88	90	90	92	94	96	98	106	114	122	130	138	146
S5*	4	4'-3"	1 1/2"	56	56	58	60	62	64	64	66	68	70	72	72	74	76	78	80	80	82	84	86	88	88	90	92	94	96	104	112	120	128	136	144
S6	4	5'-4"	1 1/2"	58	58	60	62	64	66	66	68	70	72	74	74	76	78	80	82	82	84	86	88	90	90	92	94	96	98	106	114	122	130	138	146
S3A	4	(S-(1'-8))/3	Str														12																		
PO1	5	5'-10"	4"	28				32						36							40						44			48	52		56	60	64
PO2	3	2'-8"	1 1/4"	56				64						72							80						88			96	104		112	120	128



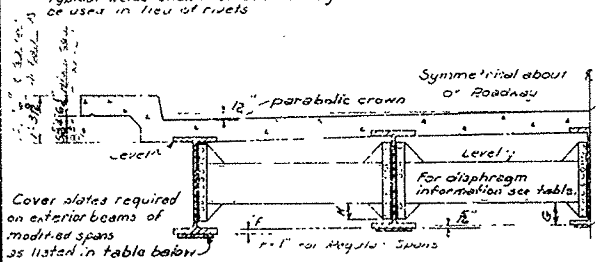
Dimensions are to centers of bars.

BENDING DIAGRAM

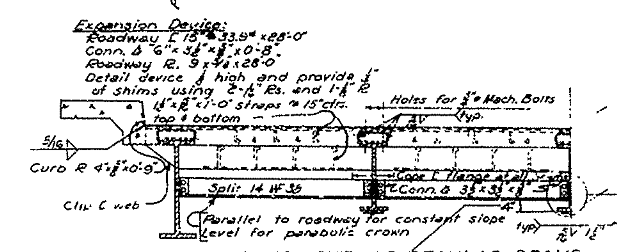


#4x4'-3 S5 #4x5'-5 S4

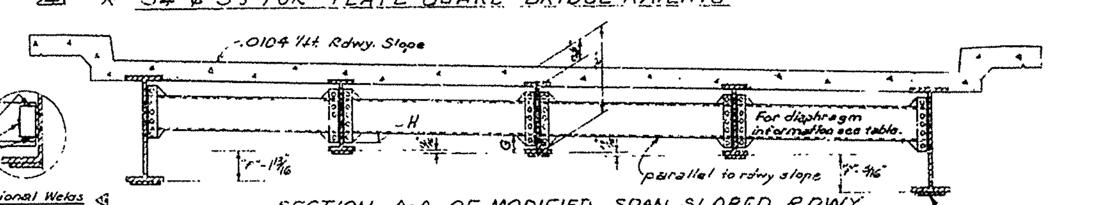
Δ * S4 & S5 FOR PLATE GUARD BRIDGE RAILING



HALF SECTION A-A MODIFIED OR REGULAR SPAN PARABOLIC CROWN



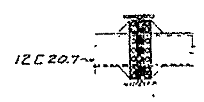
HALF SECTION B-B MODIFIED OR REGULAR SPANS



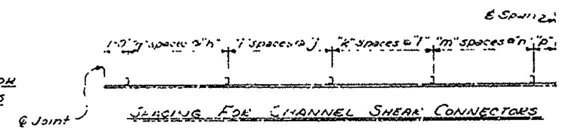
SECTION A-A OF MODIFIED SPAN SLOPED RDWY.

Interior Beams are same as in Regular Spans. Exterior Beams are of same nominal depth as beams for longest span shown on Bridge Layout.

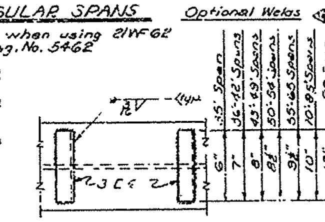
Cover plates required only on the beams listed in the table under Modified Span.



DIAPHRAGM FOR 43'-49 SPANS



SPACING FOR CHANNEL SHEAR CONNECTORS



DETAILS OF SHEAR CONNECTORS
Scale 1" = 1'-0"

Note: These dimensions are for interior beams. For exterior beams these dimensions shall be shortened by 1".

VARIABLES OF SHEAR CONNECTOR SPACING

Span	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	65	70	75	80	85	90
"g"	12	9	9	10	8	9	10	10	8	8	8	8	9	8	8	15	8	11	10	10	6	7	7	7	7	9	10	6	9	10	12	7
"h"	4"	5"	5"	5"	5"	5"	5"	5"	7"	7"	7"	7"	6"	6"	6"	7"	8"	7"	7"	7"	9"	9"	9"	9"	9"	9"	9"	11"	11"	11"	11"	15"
"i"	12	9	9	11	13	13	12	13	9	7	9	8	7	8	8	8	12	10	9	9	8	9	7	8	7	7	9	10	9	10	8	9
"j"	5"	5"	6"	6"	6"	6"	6"	6"	8"	8"	8"	8"	7"	8"	7"	9"	9"	9"	9"	9"	11"	11"	11"	11"	11"	11"	11"	13"	13"	13"	13"	17"
"k"	10	9	7	7	8	5	6	6	7	8	7	8	10	9	10	6	8	9	9	7	7	7	9	6	8	9	8	7	6	6	5	6
"l"	7"	8"	8"	8"	8"	7"	7"	7"	10"	10"	10"	9"	9"	9"	9"	12"	11"	11"	11"	11"	14"	14"	14"	14"	14	14"	13"	16"	16"	16"	16"	21"
"m"	3	3	5	4	4	7	7	7	4	5	5	6	7	7	8	3	2	2	4	6	4	4	4	5	5	4	5	5	6	6	3	6
"n"	10"	11"	11"	11"	10"	10"	10"	10"	12"	12"	12"	12"	11"	11"	11"	13"	1"	17"	14"	16"	15"	16"	16"	16"	16"	16"	17"	20"	21	22	21"	24"
"p"	0	0	0	0	0	0	0	0	0	0	0	0	0	6"	0	0	0	0	0	0	0	0	0	10"	10"	0	0	0"	0	0	0	0

Note: Stud shear connectors, granular flux filled, solid fluxed, or equal may be used in place of the channels shown at the following ratios: 3/4" diameter stud in place of 1.82 inches of channel; 7/8" diameter stud in place of 2.52 inches of channel. The studs shall be 4" long and automatically end welded to the beam flanges in accordance with recommendations of the manufacturer. Channel sections will be used as basis for measurement of structural steel in shear connectors.

Note: Typical welds shown for Conn. Ɫ may be used in lieu of rivets.

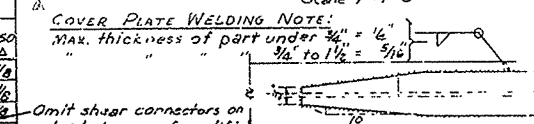
Note: See Dr. 5462 for location of Section ... Section B-B and Var. ... and d.

Deflection of exterior beam is for regular spans only.

Span	Regular Span Beam	Cover Plate Interior	Cover Plate Exterior	Post Spacing for Alum. Railing a	b	c	Modified Spans, Exterior Beams Requiring Cover Pl. Beam	Cover Pl.	Post Spacing for Pl. Guard Railing a	b	c	"e"	Dead Load Deflection Int.	Ext.	Strut Spacing No. @ "d"	24WF76 f	Δ	27WF94 f	Δ	30WF108 f	Δ	33WF130 f	Δ	36WF150 f	Δ
35	21WF62	7x5/8x24'-0	7x1/2x21'-0"	8'-1	8'-4	2	24WF76 Δ	4x3/4x12'-0	5'-7	5'-8"	4	2'-2 7/8"	3/8"	1/2"	2@17'-...	1 13/16	3/8	6 3/4	1/4	9 3/4	5/16	12 7/8	1/8	13 9/16	1/8
36	24WF76*	4x1/2x18'-0"	4x3/8x15'-0"	6'-9"	7'-0"	3			5'-7"	5'-11"	4	2'-5 11/16"	5/16"	7/16"	2@18'-0"			3 13/16	3/16	6 13/16	1/4	10 1/16	3/16	12 3/4	1/8
37		7x5/8x20'-0"	5x5/8x17'-0"	7'-2"	7'-0	3			6'-1"	5'-11"	4		5/16"	1/2"	2@18'-6"				3/4		1/4		3/16		1/8
38		7x5/8x22'-0"	5x1/2x19'-0"	7'-2"	7'-4"	3			6'-1"	6'-2"	4		3/8"	1/2"	2@19'-0"				3/8		7/16		3/16		1/8
39		8x5/8x24'-0"	5x5/8x21'-0"	7'-8"	7'-4"	3			5'-7"	5'-4"	5		3/8"	9/16"	2@19'-6"				7/16		5/16		1/4		3/16
40		6x5/8x25'-0"	6x1/2x23'-0"	7'-8"	7'-8"	3	27WF94 Δ	4x3/8x13'-0	5'-8"	5'-6"	5		7/16"	5/8"	2@20'-0"				7/16		3/8		1/4		3/16
41		8x5/8x27'-0"	6x3/4x25'-0"	7'-8	8'-0"	3	27WF94 Δ	4x3/8x15'-0	5'-9"	5'-8"	5		7/16"	5/8"	3@13'-8"				1/2		3/8		1/4		3/16
42	24WF76	8x5/8x28'-0"	7x5/8x26'-0"	8'-2"	8'-0"	3	27WF94 Δ	5x3/4x17'-0	5'-10"	5'-10"	5	2'-5 11/16"	1/2"	11/16"	3@14'-0"			3 13/16	9/16	6 13/16	7/16	10 1/16	5/16	12 3/4	1/4
43	27WF94	7x5/8x22'-0"	6x5/8x19'-0"	8'-2"	8'-4"	3			5'-11"	6'-0"	5	2'-8 3/8"	7/16"	9/16"	3@14'-4"					4	1/2	7 5/8	5/16	9 3/8	1/4
44		7x5/8x24'-0"	6x5/8x21'-0"	8'-5"	8'-6"	3			6'-2 5/8	6'-1"	5		7/16"	5/8"	3@14'-8"						1/2		3/8		1/4
45		8x5/8x25'-0"	6x5/8x23'-0"	7'-6"	7'-1"	4	30WF108 Δ	4x3/8x12'-0	5'-5	5'-6"	6		7/16"	5/8"	3@15'-0"						9/16		3/8		5/16
46		9x1/2x27'-0"	6x5/8x26'-0"	7'-6"	7'-4"	4	30WF108 Δ	4x3/8x17'-0	5'-8"	5'-7"	6		1/2"	11/16"	3@15'-4"						9/16		7/16		5/16
47		7x5/8x29'-0"	8x5/8x27'-0"	7'-6"	7'-7"	4	30WF108	6x3/8x20'-0	5'-8"	5'-9"	6		9/16"	5/8"	3@15'-8"						5/8		1/2		3/8
48		8x5/8x30'-0"	7x5/8x28'-0	7'-8"	7'-9"	4	30WF108	7x3/8x22'-0	5'-11"	5'-10	6		9/16"	13/16"	3@16'-0"						11/16		1/2		3/8
49	27WF94	9x5/8x32'-0"	9x11/16x30'-0"	7'-8"	8'-0"	4	30WF108	7x1/2x25'-0	5'-11"	6'-0"	6	2'-8 3/8"	5/8"	7/8"	3@16'-4"					4	11/16	7 5/8	9/16	9 3/8	7/16
50	30WF108	8x1/2x27'-0"	8x1/2x26'-0"	7'-10"	8'-2"	4			5'-11"	6'-2"	6	2'-11 5/8"	9/16"	5/8"	3@16'-8"							4 1/8	5/8	6 7/8	7/16
51		7x11/16x28'-0"	7x11/16x28'-0"	8'-0"	8'-4"	4	33WF130 Δ	4x3/4x10'-0	6'-2"	6'-3"	6		9/16"	13/16"	3@17'-0"								5/8		1/2
52		7x5/8x30'-0"	8x11/16x30'-0"	8'-2"	8'-6"	4	33WF130 Δ	4x3/8x13'-0	5'-7"	5'-8"	7		5/8"	13/16"	3@17'-4"								11/16		5/16
53		5x3/4x32'-0"	9x11/16x31'-0"	7'-4"	7'-4"	5	33WF130 Δ	4x3/8x17'-0	5'-9 1/2	5'-9"	7		5/8"	7/8"	3@17'-8"								3/4		9/16
54	30WF108	9x5/8x33'-0"	9x5/8x33'-0"	7'-5"	7'-6	5	33WF130	6x3/8x20'-0	6'-0"	5'-10	7	2'-11 5/8"	11/16"	15/16"	3@18'-0"							4 1/8	3/4	6 13/16	5/8
55	33WF130	7x5/8x23'-0"	6x1/2x23'-0"	7'-6	7'-8	5			5'-11	6'-0"	7	3'-2 1/4"	5/8"	15/16"	3@18'-4"									3 3/16	11/16
56		9x1/2x25'-0"	7x1/2x26'-0"	7'-7"	7'-10	5			5'-10"	6'-2"	7		5/8"	7/8"	3@18'-8"										3/4
57		8x1/2x27'-0"	7x5/8x28'-0"	7'-8"	8'-0"	5	36WF150 Δ	4x3/8x8'-0	6'-2 5/8	6'-3"	7		11/16"	7/8"	3@19'-0"										3/4
58		7x5/8x29'-0"	8x5/8x30'-0"	7'-9	8'-2"	5	36WF150 Δ	4x3/8x14'-0	5'-9"	5'-8"	8		11/16"	15/16"	3@19'-4"										13/16
59		8x5/8x31'-0"	9x5/8x31'-0"	7'-10"	8'-4	5	36WF150 Δ	5x3/8x20'-0	5'-11	5'-9"	8		3/4"	1"	3@19'-8"										7/8
60		9x5/8x33'-0"	10x5/8x33'-0	7'-11"	8'-6"	5	36WF150 Δ	6x3/8x22'-0	5'-11	5'-10 1/2	8		3/4"	1 1/16"	3@20'-0"										7/8
65	33WF130	10x5/8x41'-0	10x1"x41'-0"	7'-8"	8'-0	6	36WF15[illegible]	[illegible]x5/8x33'-0	5'-8"	5'-10"	9	3'-2 1/4"	1"	1 5/16"	4@16'-3"									2 11/16	1 1/8
70	36WF150	9x5/8x40'-0"	9x1"x42'-0"	7'-11"	8'-9"	6			5'-8"	5'-9"	10	3'-5 7/8"	1 1/8"	1 7/16"	4@17'-6"										
75	36WF160 / 36WF170	11x5/8x45'-0"	11x15/16x44'-0"	7'-9 1/2	8'-3"	7			6'-1"	6'-2"	10	3'-5 5/8"	1 1/4"	1 3/4"	4@18'-9"										
80	36WF182	11x[illegible]x48'-0"	11x1 1/8x49'-0"	8'-3"	8'-10"	7			5'-11 1/2	6'-1"	11	3'-5 1/4"	1 1/2"	1 7/8"	4@20'-0"										
85	36WF194	*11x1 1/4x52'-0	*11x1 1/2x55'-0	8'-0					5'-11	6'-0"	12	3'-5 3/4	1 3/4"	2 1/4"	5@17'-0										
90	36WF230	14x5/8x50'-0"	15x1"x53'-0"	8'-6"	8'-11	8			5'-11 1/2	5'-11	13	3'-5 7/8	2 1/16"	2 5/8"	5@18'-0"										

*Steel for these beams and cover plates shall conform to the specifications for Structural Steel for Welding, A.S.T.M. Designation A373.

Omit shear connectors on outside beams of modified spans when using beams shown to right of heavy line.



COVER PLATE WELDING NOTE:
Max. thickness of part under 3/4" = 1/4"
3/4" to 1 1/2" = 5/16"

DETAILS OF COVER PLATES
Scale: 3/4" = 1'-0"

LOADING: H20-S16 (A.A.S.H.O. 1957) and Special Interstate Loading [2-24,000# axles spaced @ 4'-0 centers]

	Interior Beam	Exterior Beam
1. Dead Load:		
a. To WF Beam -	526#/' + 1.1 (wt./ft. of WF)	769#/' + 1.1 (wt./ft. of WF)
b. To Composite Beam		
(1) Plate Guard Br. Railing	90#/'	90#/'
(2) Aluminum Br. Railing -	142#/'	142#/'
2. Live Load:		
a. To each Comp. Beam -	1.182 wheels + Impact	1.156 wheels + Impact

UNIT STRESSES

Class S Concrete (n=10)	1,200 psi
Structural Steel	18,000 psi
Reinforcing Steel	20,000 psi

DIAPHRAGM TABLE

SPAN LENGTHS	Channel Size	Regular Span Ext. Bm. No. Rivets	Regular Span Int. Bm. No. Rivets	Modified Span Ext. Bm. No. Rivets	Modified Span Int. Bm. No. Rivets	G	H
35-42	12 [20.7	5	5	5	5	3 1/2"	2 1/4"
43-49	12 [20.7	7	7	7	7	7"	5"
50-75	15 [33.9	8	8	8	8	7"	5"
80-90	15 [33.9	8	8	8	8	8"	5"

NOTE

This drawing is to be used with drawing no. 5462.
For General notes see drawing no. 5462.

Δ Changed reinforcing bars S1 & S2 from ... 3-16-60 ...
Δ Changed Shear Connector for 85' Span from 12" to 10" 4-27-60 ...
Δ Revised Cover Plate Welding Note & Cover Pl. sizes ... CFRB
Δ Changed curb for Plate Guard Bridge Railing. NEW 5-29-61. CK'd CEV 5-29-61

FOR INFORMATION ONLY

DETAILS OF STANDARD
35'-90 COMPOSITE I-BEAM SPANS
28' CLEAR ROADWAY 1'-6" & 1'-7 1/2" CURBS
ROADWAY: 1 1/2" Parabolic Crown 0.0104'/' SLOPE
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

L. P. Carlson
BRIDGE ENGINEER

DRAWN BY: F.D.N. DATE: 4-22-59
TRACED BY: DATE:
CHECKED BY: F.R.B. DATE: 6-12-59
SCALE: 1/2" = 1'-0" or As Shown

BRIDGE NO.

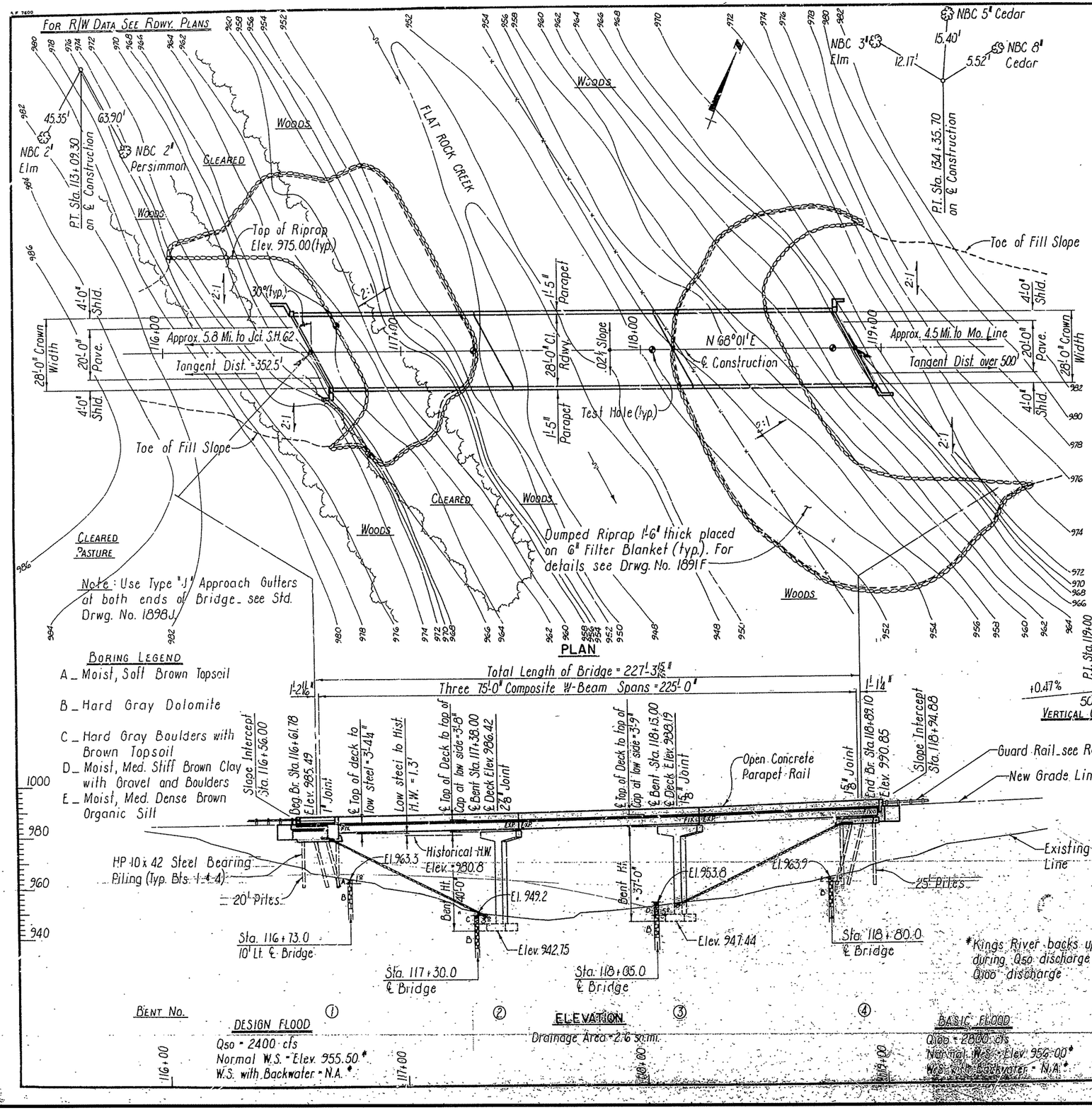
DRAWING NO. 5477

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090450	24	55

1 Layout of Bridge No. 05883

A.F. 7609

FOR R/W DATA SEE RDWY. PLANS



BORING LEGEND

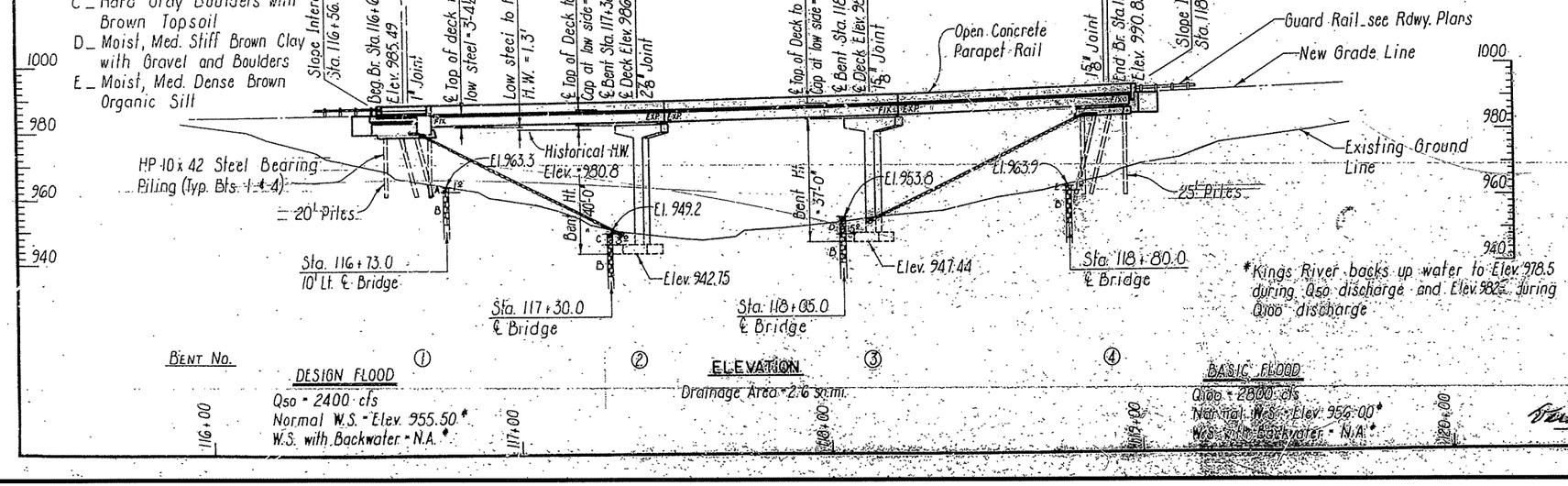
A - Moist, Soft Brown Topsoil

B - Hard Gray Dolomite

C - Hard Gray Boulders with Brown Topsoil

D - Moist, Med. Stiff Brown Clay with Gravel and Boulders

E - Moist, Med. Dense Brown Organic Silt



*Kings River backs up water to Elev. 978.5 during Q50 discharge and Elev. 982.5 during Q100 discharge

BENT NO. ① ② ③ ④

DESIGN FLOOD
Q50 = 2400 cfs
Normal W.S. = Elev. 955.50'
W.S. with Backwater = N.A.'

ELEVATION
Drainage Area = 2.6 sq. mi.

BASIC FLOOD
Q100 = 2800 cfs
Normal W.S. = Elev. 956.00'
W.S. with Backwater = N.A.'

GENERAL NOTES

BENCH MARK: N.I.S. 8" CEDAR, 2' LT. CENTERLINE CONST., STA. 118+02, ELEV. 953.73

ALL CONCRETE SHALL BE POURED IN THE DRY. ALL EXPOSED CORNERS TO BE CHAMFERED 3/4" UNLESS OTHERWISE NOTED.

PILING IN END BENTS SHALL BE DRIVEN AFTER EMBANKMENT TO BOTTOM OF CAP IS IN PLACE. THE PILING SHALL BE HP10X42 AND SHALL BE DRIVEN WITH AN APPROVED AIR, STEAM, OR DIESEL HAMMER TO A MINIMUM BEARING CAPACITY OF 55 TONS PER PILE AND INTO MATERIAL DESIGNATED AS HARD GRAY DOLOMITE ON THE BORING LOGS. LENGTHS OF PILING SHOWN ARE FOR ESTIMATING QUANTITIES ONLY. ORDER LENGTHS SHOWN; CUT-OFF OR BUILD-UP, IF NECESSARY, TO BE PAID FOR IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

FOOTINGS FOR BENTS 2 & 3 SHALL BE SET A MINIMUM OF 1'-6" INTO MATERIAL DESIGNATED AS HARD GRAY DOLOMITE ON THE BORING LOGS. FOUNDATIONS FOR FOOTINGS SHALL BE PREPARED IN ACCORDANCE WITH SUBSECTION 801.04 OF THE STANDARD SPECIFICATIONS.

FOR DETAILS OF END BENT 1, SEE DWG. NO. 23844
FOR DETAILS OF END BENT 4, SEE DWG. NO. 23844
FOR DETAILS OF INT. BENTS, SEE DWG. NO. 23845
FOR DETAILS OF 75' COMPOSITE W-BEAM SPANS, SEE DWG. NO. 23846 & 23847
FOR DETAILS OF ELASTOMERIC BEARINGS, SEE DWG. NO. 23848

SPECIFICATIONS: ARKANSAS STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 1978 AND APPLICABLE SPECIAL PROVISIONS.

DESIGN SPECIFICATIONS: AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 1977 EDITION WITH CURRENT INTERIMS.

LIVE LOADING: H20

METHOD OF DESIGN: LOAD FACTOR

AFTER TRAFFIC IS ALLOWED ON THE NEW BRIDGE, EXISTING BRIDGE NO. M2025 SHALL BE REMOVED AND SHALL BECOME THE PROPERTY OF THE CONTRACTOR. THE EXISTING BRIDGE CONSISTS OF AN OAK DECK SUPPORTED BY I-BEAM STRINGERS AND CONCRETE PIER AND ABUTMENTS. BRIDGE LENGTH IS 49 FEET. SEE SECTION 205 OF THE STANDARD SPECIFICATIONS.

NOTE: IN ORDER TO COMPLY WITH THE NATIONWIDE PERMIT UNDER SECTION 404 OF THE FEDERAL WATER POLLUTION CONTROL ACT AMENDMENTS OF 1972, THE CONTRACTOR SHALL LIMIT THE AMOUNT OF FILL AND/OR DREDGED MATERIAL PLACED IN THE STREAM BELOW THE PLANE OF THE ORDINARY HIGH WATER MARK TO LESS THAN 200 CUBIC YARDS.

ELEVATION OF ORDINARY HIGH WATER IS ASSUMED TO BE 951.0.

FOR INFORMATION ONLY

LAYOUT OF BRIDGE
OVER FLAT ROCK CREEK
GRANDVIEW - NORTH
CARROLL COUNTY

ROUTE 143 SEC. 1

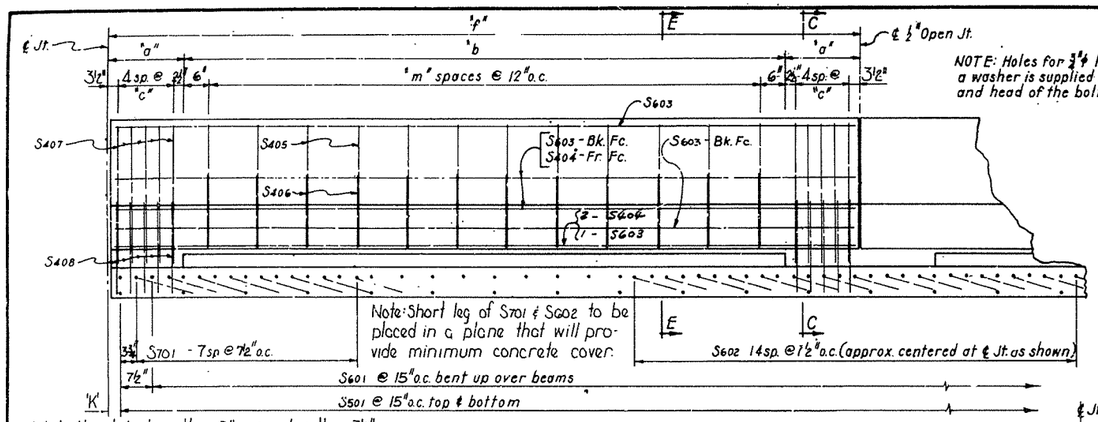
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: K.M.G. DATE: 25 MAR 80 SCALE: 1" = 20'
CHECKED BY: J.C.S. DATE: 3/26/80
DESIGNED BY: C.E.S. DATE: 3/26/80

BRIDGE NO. 5883 DRAWING NO. 23843

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090450	25	55

W-Bm. Span Details of Br. No. 05883



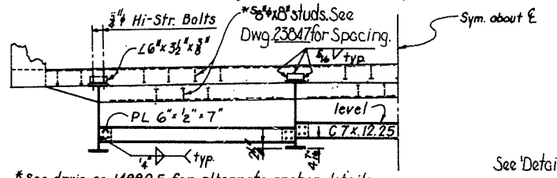
LONGITUDINAL SECTION AT CURB FOR OPEN PARAPET RAIL

¾" = 1'-0"

NOTE: Boiled Linseed Oil Treatment shall be applied to the roadway surface and the face and top of concrete parapet rail.

Expansion Device:
Roadway C15 x 33.9
Conn. Ls G" x 3½" x ⅜"
Preformed Joint Sealer supported by ½" ø bars
Detail device ½" high & provide ½" shims; using 2-½" Pls & 1-⅝" Pl.
* ⅞" x 8" studs @ 12" o.c. top & bottom

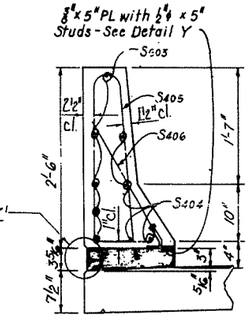
NOTE: Holes for ¾" hi-str. bolts may be 15/16" if a washer is supplied for use under both the nut and head of the bolt.



*See drwg. no. 14990F for alternate anchor details.

HALF-SECTION AT ℄ JOINT

⅜" = 1'-0"

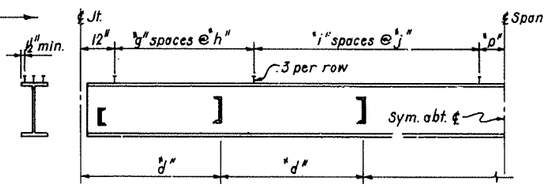


SECTION E-E

1" = 1'-0"

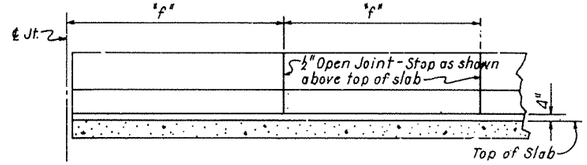
SECTION C-C

1" = 1'-0"



SPACING FOR ¾" STUD SHEAR CONNECTORS & DIAPHRAGMS

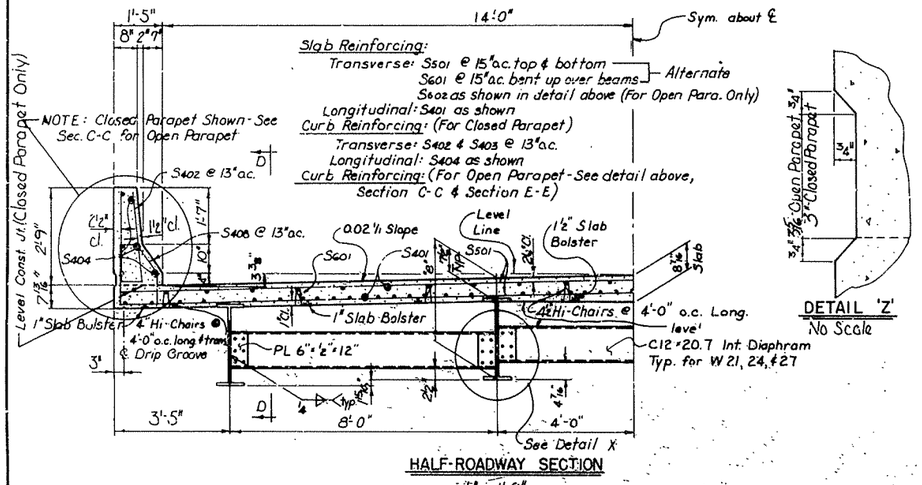
N.T.S.



SECTION D-D

N.T.S.

NOTE: 7/8" STUDS MAY BE USED IN PLACE OF THE 3/4" STUDS THAT ARE SHOWN, AT THE RATIO OF 0.735 - 7/8" STUD IN PLACE OF ONE 3/4" STUD. THE STUD CONNECTORS SHALL BE 4" LONG AND MAY BE GRANULAR FLUX FILLED, SOLID FLUXED, OR EQUAL, AND AUTOMATICALLY END WELDED TO THE BEAM FLANGES IN ACCORDANCE WITH RECOMMENDATIONS OF THE MANUFACTURER. 3/4" STUDS WILL BE USED AS BASIS FOR MEASUREMENT OF STRUCTURAL STEEL IN SHEAR CONNECTORS.

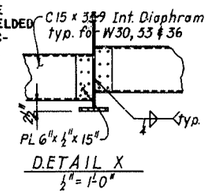


HALF-ROADWAY SECTION

½" = 1'-0"

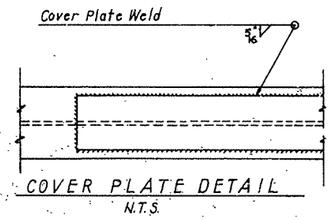
DETAIL 'Z'

No Scale



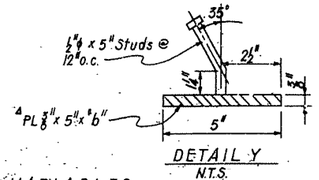
DETAIL X

½" = 1'-0"



COVER PLATE DETAIL

N.T.S.



DETAIL Y

N.T.S.

△Note: The surfaces of the ⅜" Plates which will not be in contact with Concrete shall receive two coats of paint in the Shop. These coats shall be those specified as First Shop Coat and Second Field Coat in Sub-section 807.59(b) & 807.59(c)

GENERAL NOTES

ALL STRUCTURAL STEEL SHALL BE PAID FOR AT THE PRICE BID PER POUND FOR "STRUCTURAL STEEL IN BEAM SPANS (A572, GRADE 50)".

THIS DRAWING TO BE USED WITH DRAWING NO. 14990F.

LOADING: SEE LAYOUT.
DESIGN SPECIFICATIONS: AASHTO 1977 WITH 1978 THRU 1979 INTERIMS.

DEAD LOAD:	INTERIOR BEAM	EXTERIOR BEAM
a. TO WF BEAM	765 #'/'+1.30 (WT/FT OF WF)	688 #'/'+1.30 (WT/FT OF WF)
b. TO COMPOSITE BEAM*	352 #'/' (OPEN BARRIER)	352 #'/' (OPEN BARRIER)
LIVE LOAD: TO EACH COMPOSITE BEAM	1.455 WHEELS + IMPACT	1.333 WHEELS + IMPACT

CLASS S(AE) CONCRETE (N=9) f'c = 3500 PSI
STRUCTURAL STEEL (A36) fy = 36,000 PSI
REINFORCING STEEL (A615, GRADE 60) fy = 60,000 PSI

BEAM AND COVER PLATES SHALL BE A572. ALL OTHER STRUCTURAL STEEL SHALL BE A36.
ALL REINFORCING STEEL SHALL BE A615 OR A617 GRADE 60.

*INCLUDES 175 #'/'FT. FUTURE WEARING SURFACE

ALL W-BEAMS AND COVER PLATES ARE CONSIDERED MAIN LOAD CARRYING MEMBERS AND SHALL MEET THE LONGITUDINAL CHARPY V-NOTCH TEST SPECIFIED IN SECT. 807.05 OF THE STANDARD SPECS.

METHOD OF DESIGN: LOAD FACTOR

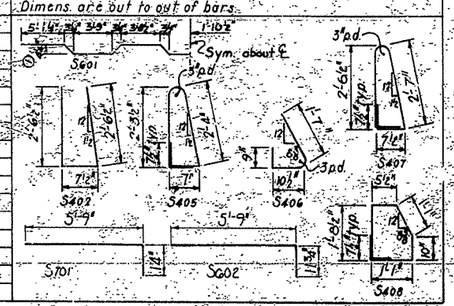
MINIMUM YIELD STRENGTH OF A572-50 = 50,000 PSI.

REINFORCING STEEL PER SPAN

MK	Size	Length Closed Parapet Rail	Length Open Parapet Rail	Pin Dia.	Span Length 75'-0" No. Required
S601	6	31'-2"	31'-2"	3¾"	
S602	6	-	C.-7"	3¾"	
S603	6	-	"f"-6"	Str.	
S501	5	30'-C."	30'-C."	Str.	
S401 *	4	S-6"	S-6"	Str.	
S401 **	4	⅜ + 7"	⅜ + 7"	Str.	
S401 ***	4	⅜ + 12"	⅜ + 12"	Str.	
S402	4	5'-6"	-	2"	
S404	4	"f"-6"	"f"-6"	Str.	
S405	4	-	6'-4"	2"	
S406	4	-	3'-2"	2"	
S407	4	-	6'-10"	2"	
S408	4	-	6'-0"	2"	
S701	7	-	C.-9"	5¼"	

SEE DWG. NO. 23847

Bending Diagrams
Dimens. are out to out of bars.



* Use for Span Lengths thru 40'
** " " " " 41' thru 78'
*** " " " " 79' thru 90

△½" Overtolerance; No Undertolerance.

TABLE OF VARIABLES

Br. No.	Span No.	Span Length	Span Type	Interior Beam Beam Size	Interior Beam Cover Pl. Size	Interior Beam "c"	Interior Beam Dead Load Defl.	Exterior Beam Beam Size	Exterior Beam Cover Pl. Size	Exterior Beam "c"	Exterior Beam Dead Load Defl.	Diaphragm Spacing "d"	Variable Of Shear Connector Spacing "g"	"h"	"i"	"j"	Parapet Joint Spacing "o"	Variable of Open Parapet Rail No @ "p"	"a"	"b"	"c"	"k"	"m"
	123	75'-0"	Rec.	W30X99	⅞" x 9" x 56'-0"	3'-0⅛	SEE DWG. NO. 23847	W30X99	⅞" x 9" x 56'-0"	3'-0⅛	SEE DWG. NO. 23847	SEE DWG. NO. 23847	13	14	14	18	4"	5@15'-0	2'-6	10'-0	6"	-	9

Tabular Data By: W.S.B. Date: 5-30-80
Checked By: C.E.S. Date: 6-4-80

FOR INFORMATION ONLY

DETAILS OF STANDARD
35'-90' COMPOSITE W-BEAM SPANS
CONC. PARAPET RAIL (OPEN OR CLOSED)
28'-0" CL. RDWY. 0.02" PEAKED CROWN
ROUTE 143 SEC. 1

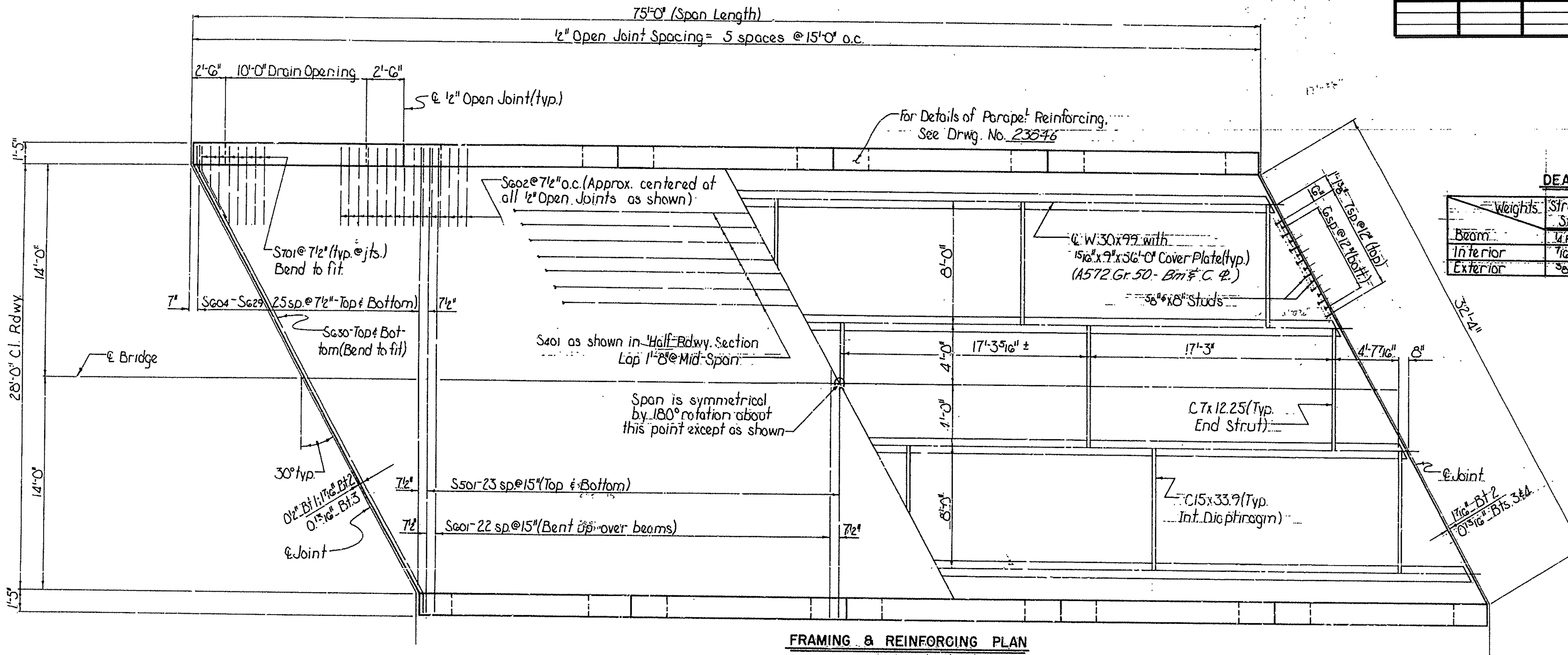
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: J.B.M. DATE: 10-13-77
CHECKED BY: C.E.S. DATE: 12-2-77 SCALE: As Shown
DESIGNED BY: W.S.M. DATE: Oct. 77

BRIDGE NO. 5883 DRAWING NO. 23846

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090450	26	55

① W-Bm. Span Details of Br. No. 05883

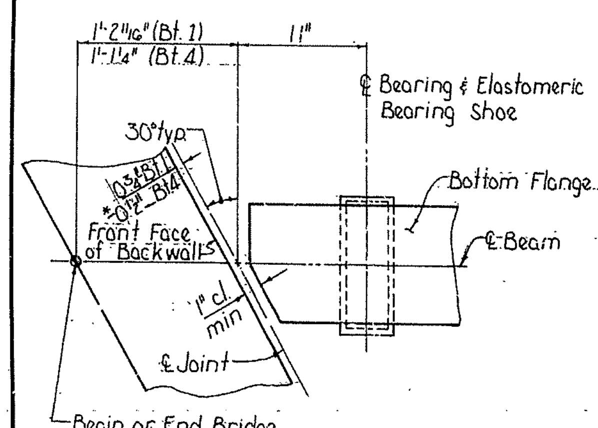


FRAMING & REINFORCING PLAN

Scale ¼" = 1'-0"

DEAD-LOAD DEFLECTIONS

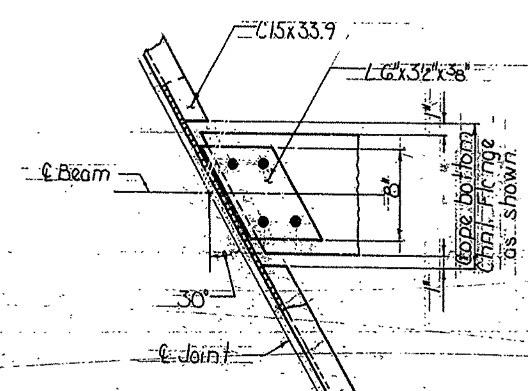
Weights / Beam	Structural Steel		Structural Steel + Slab		Structural Steel + Slab + Parapet	
	¼ PT.	½ PT.	¼ PT.	½ PT.	¼ PT.	½ PT.
Interior	7/16"	5/8"	2¾"	3 13/16"	3"	4 3/16"
Exterior	3/8"	9/16"	2½"	3½"	2¾"	3 13/16"



PLAN OF BEARING AT END BENTS

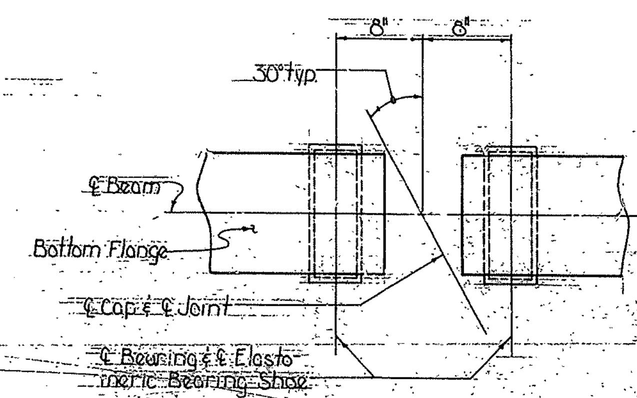
Scale ½" = 1'-0"

*℄ Joint @ Bent 4 is located ½" behind Front Face of Backwall.



CHANNEL CONNECTION DETAILS

Scale 1½" = 1'-0"



PLAN OF BEARINGS AT INT. BENTS

Scale ½" = 1'-0"

BAR LIST - PER SPAN

MARK	NO. REQ'D	LENGTH	P. D.	BENDING DIAGRAMS
S401	142	38'-1"	Str.	For Details of Bending Diagrams, See Dwg. No. 23846
S404	40	14'-6"	Str.	
S405	100	16'-4"?	2"	
S406	100	3'-2"	2"	
S407	100	16'-10"?	2"	
S408	100	16'-0"	2"	
S501	94	30'-6"	Str.	
S601	46	31'-2"	3¾"?	
S602	120	6'-7"	3¾"?	
S603	50	14'-6"	Str.	
S604 - S629	4 each	Var. 1'-9" to 28'-10"	Str.	
S630	4	[illegible]	Str.	
S701	32	6'-9"	5¼"?	

FOR INFORMATION ONLY

SUPPLEMENTAL DETAILS OF 75'-0" WBM. SPANS

GRANDVIEW - NORTH

CARROLL COUNTY

ROUTE 143 SEC. 1

ARKANSAS STATE HIGHWAY COMMISSION

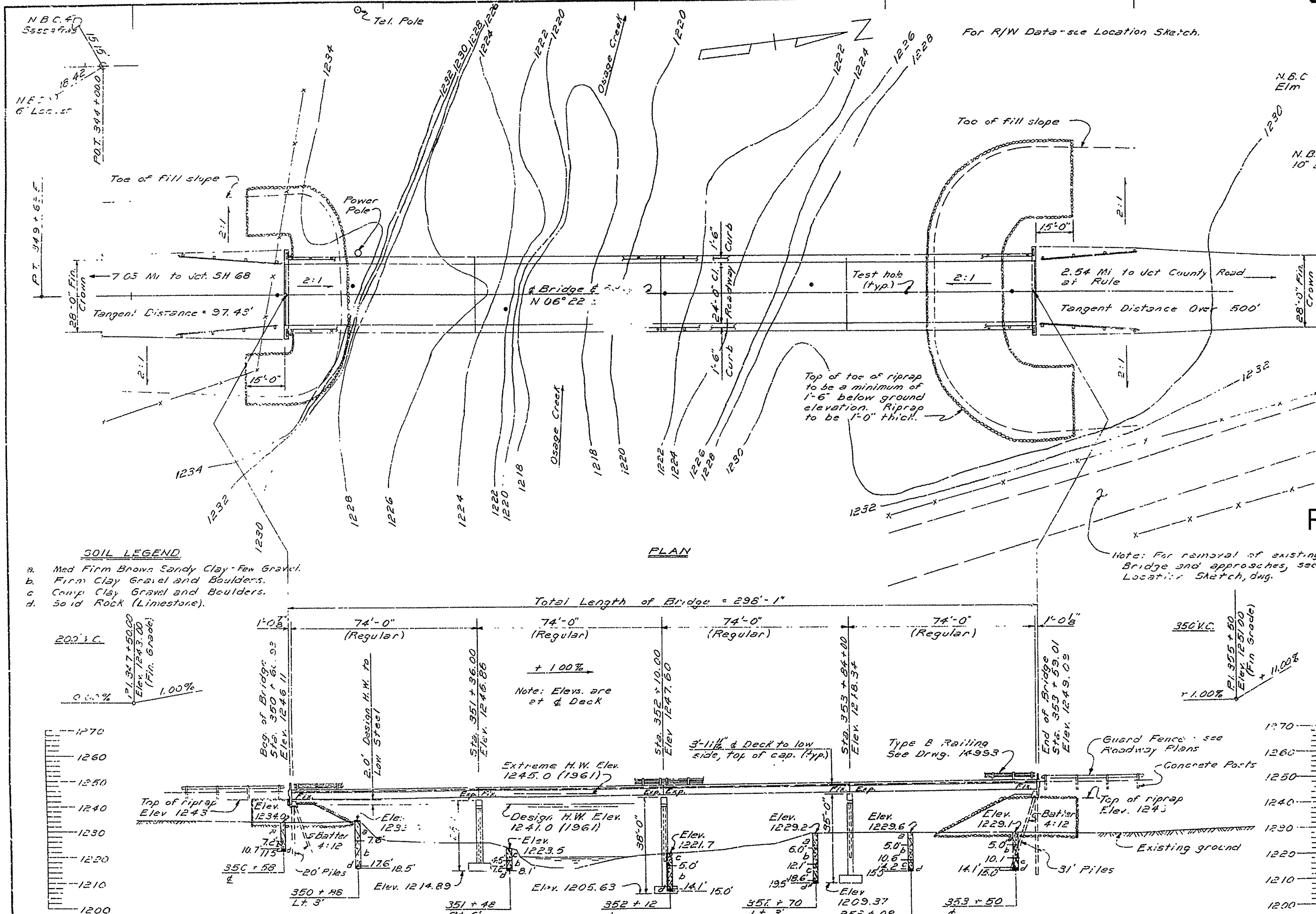
LITTLE ROCK, ARK.

DRAWN BY Kdh DATE 6 May 80

CHECKED BY CES DATE 5/20/80 SCALE As Shown

REVISED BY CES DATE 5/80

BRIDGE NO. 5883 DRAWING NO. 23847



NOTE: ALL MATERIAL FROM THE EXISTING BRIDGE EXCEPT THE STEEL IN THE 24" I-BEAM SPANS SHALL BECOME THE PROPERTY OF THE CONTRACTOR.

FOR INFORMATION ONLY

GENERAL NOTES

T.B.M. - Spike . . . is of 30" Elm 3' Rt. Centerline Station 352 + 53. Elevation 1227 . .

All concrete to be poured in the dry.

Rock excavations shall be made to neat lines of concrete footings. Care shall be exercised to avoid shattering of rock faces by excessive blasting. Concrete in footings shall be poured directly against excavated surfaces of rock., Footings shall be set a minimum of 2' into rock.

All piling shall be 12" BP 53# and shall be driven with an approved air, steam or diesel hammer to a minimum capacity of 38 tons per pile and into the material designated as rock on the boring logs. Lengths of piling shown are for estimating quantities only. Order lengths shown; cut-off or build-up, if necessary, to be paid for in accordance with the Standard Specifications.

Piles in End Bents shall be driven after embankment is in place.

For Details of End Bents see Dwg. No. 15142
For Details of Piers see Dwg. No. 13600
For Details of Composite I-Beam Spans see Dwg. Nos. 14990C, 14993, and 13601
For Location Sketch see Dwg. No. 13598 .

SPECIFICATIONS: Arkansas State Highway Commission Standard Specifications for Highway Construction, Edition of 1959, The 1966 Supplemental Specifications thereto, and the applicable Special Provisions.

DESIGN SPECIFICATIONS: AASHO 1961
Live Loading: H15
Unit Stresses: Class A Concrete (n-15) 840 psi
Class S Concrete (n-10) 1,200 psi
Reinforcing Steel 20,000 psi
Structural Steel (A36) 20,000 psi
Foundation Pressure - 10,280 psf Gp. II

LAYOUT OF BRIDGE OVER OSAGE CREEK

OSAGE CREEK BRIDGE AND APPROACHES

CARROLL COUNTY

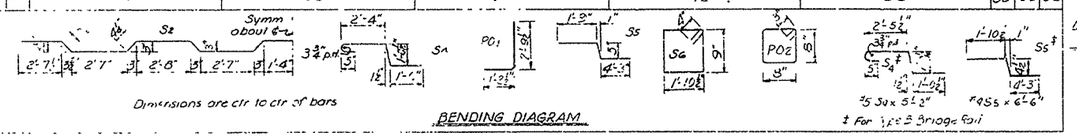
ROUTE 103 SEC. 3

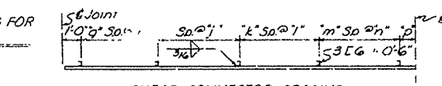
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

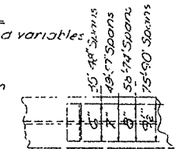
DRAWN BY: JAS DATE: 4-26-66
TRACED BY: DATE:
CHECKED BY: EMH DATE: 4-28-66
SCALE: 1" = 20'-0"

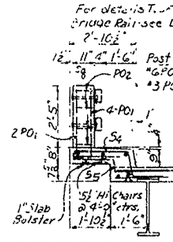
BRIDGE ENGINEER

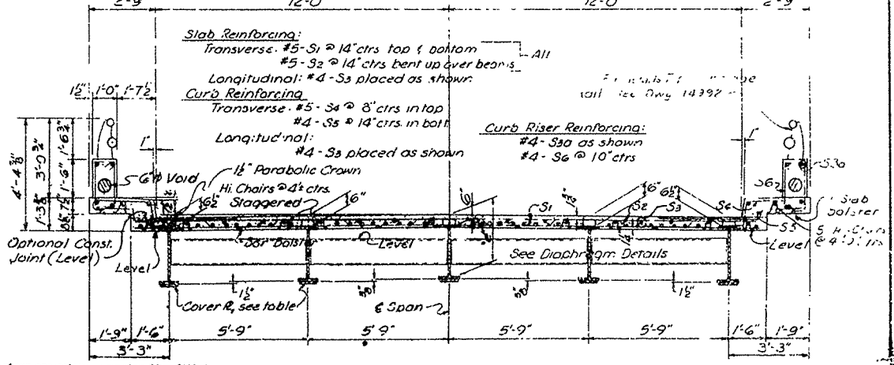
BRIDGE NO. 5082 DRAWING NO. 13599











DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090450	28	55

① I-Bm. Span Details of Br. No. 05082

BAR LIST - ONE SPAN

Mk	Size	Length	Pin Dia	Number Required Each Span																																											
				35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	80	85	90
S1	5	25'-8"	Str	60	62	64	66	68	70	72	72	74	76	78	80	82	84	84	86	88	90	92	94	96	96	98	100	102	104	106	108	108	110	112	114	116	118	120	120	122	124	126	128	130	138	146	154
S2	5	26'-5"	1¾"	[illegible]	30	[illegible]	32	33	34	35	35	36	37	38	39	40	41	[illegible]	42	43	44	45	46	47	47	48	49	50	51	52	53	53	54	55	56	57	58	59	59	60	61	62	63	64	68	72	76
S3	4	5'-6	Str	60																																											
S2	4	[illegible]	Str	120																																											
S3	4	[illegible]	[illegible]																										180																		
S4	5	[illegible]	[illegible]	106	[illegible]	112	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	136	138	142	144	148	[illegible]	154	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	172	174	178	180	184	186	190	192	[illegible]	198	[illegible]	204	[illegible]	210	214	216	220	222	226	240	256	270
S5	4	[illegible]	½"	58	60	62	64	66	68	70	70	72	74	76	78	80	82	82	84	86	88	90	92	94	94	96	98	100	102	104	106	106	108	110	112	114	116	118	118	120	122	124	126	128	136	144	152
S6	4	[illegible] 10"		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	110	114	[illegible]	[illegible]	[illegible]	122	[illegible]	[illegible]	[illegible]	[illegible]	134	138	[illegible]	142	144	146	[illegible]	152	154	156	158	162	164	[illegible]	[illegible]	170	174	[illegible]	[illegible]	[illegible]	[illegible]	204	[illegible]
S3a	[illegible]	[illegible]	Str	12																																											
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]								84								96								108								120								132	144	144
[illegible]	[illegible]	[illegible]	1½	4"	[illegible]								56								[illegible]								72								80								88	96	96

Dimensions are ctr to ctr of bars

BENDING DIAGRAM

‡ For Type B Bridge Rail

DETAILS OF COVER PLATE
Scale: ½"=1'-0"

DIAPHRAGM DETAILS FOR 30"-36" WF BMS.

Interior beams are same as in Regular Spans. Exterior beams are the lightest section of same nominal depth as beams for longest span shown on Bridge Layout

SECTION A-A MODIFIED SPANS
(For location of Section A-A & B-B and variables a, b & c see drwg. no 14990C)

DIAPHRAGM DETAILS FOR 21"-27" WF BMS.

SHEAR CONNECTOR SPACING
No Scale

DETAILS OF SHEAR CONN.
No Scale

CURB SECTION - Type B Rail

SECTION A-A OF REGULAR SPAN
(Regular spans have all beams of equal depth)

						e	Dead Load Deflection		Exterior Beam					Diaphragm Spacing	Post Spacing			f	Variables of Shear Connector Spacing								
							With Const. Joint	Without Const. Joint	Beam Size	Cover ℞ Size	e	Dead Load Deflection With Const. Joint	Without Const. Joint		a	b	c		g	h	i	j	k	l	m	n	p
[illegible]	-4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2 5/16	[illegible]	30WF108	9"×1⅛"×43'-0"	2'-11⅛"	2"	[illegible]	4@18'-6"	7'-6"	8'-0"	7	1½"	9	11"	7	14"	6	18"	5	25	12"

Table Data: JAS (4-29-66)
Chk. FMH (4-29-66)

NOTE: Stud shear connectors, granular flux filled, solid fluxed, or equal may be used in place of the channels shown at the following ratios: 3/4" diameter stud in place of 1.92 inches of channel, 7/8" diameter stud in place of 2.52 inches of channel. The studs shall be 4" long and automatically end welded to the beam flanges in accordance with recommendations of the manufacturer.

Channel sections will be used as basis for measurement of structural steel in shear connectors.

This drawing to be used with Drawing 14990C

All steel shall be A-36 steel unless otherwise noted.

DESIGN SPECIFICATIONS: AASHO 1961 Live Loading H-15

1. Dead Load: (Type A Rail)	Interior Beam	Exterior Beam
a. To WF Beam (without const. jt.)	437#/l + 1.15(wt/ft of WF)	722#/l + 1.15(wt/ft of WF)
(with const. jt.)	437#/l + 1.15(wt/ft of WF)	363#/l + 1.15(wt/ft of WF)
b. To Composite Beam (with const. jt.)	283#/l	253#/l
(without const. jt.)	144#/l	144#/l

2. Live Load a. To Composite Beam 1.045 wheels + impact 1.045 wheels + impact

Unit Stresses:
Class X Concrete [illegible] 1,200 psi
Structural Steel (A-36) 20,000 psi
Reinforcing Steel 20,000 psi

1A. Dead Load: (Type B Rail)	Interior Beam	Exterior Beam
a. To WF Beam (without constr. jt)	437#/l + 1.15(wt/ft of WF)	758#/l + 1.15(wt/ft of WF)
(with constr. jt)	437#/l + 1.15(wt/ft of WF)	363#/l + 1.15(wt/ft of WF)
b. To Comp. Beam (without constr. jt)	81#/l	81#/l
(with constr. jt)	200#/l	200#/l

Expansion Device: Preformed Joint Sealer (See Special Provisions)
Roadway [-12" @ 20.7 × 24'-0" (Bent to crown)
Conn. ∠s 6×3½×⅜×0'-8"
Detail device ⅞" high and provide ¼" of shims
(2 - 1/16" ℞s and one ⅛" ℞.)

HALF-SECTION B-B FOR MODIFIED OR REGULAR SPANS
* See Dwg. 14990C for Alternate Anchor Details

Revised 2-13-65 Added Type B Bridge Rail. FMH

Revised Added Joint Sealer 9-17-65 RWM

This drawing adapted from Std. Dwg. 15140.

BRIDGE ENGINEER

DETAILS OF STANDARD
35'-90' COMPOSITE I-BEAM SPANS
24'-0" CLEAR RDWY. 1'-6" OR 1'-7½" CURBS

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

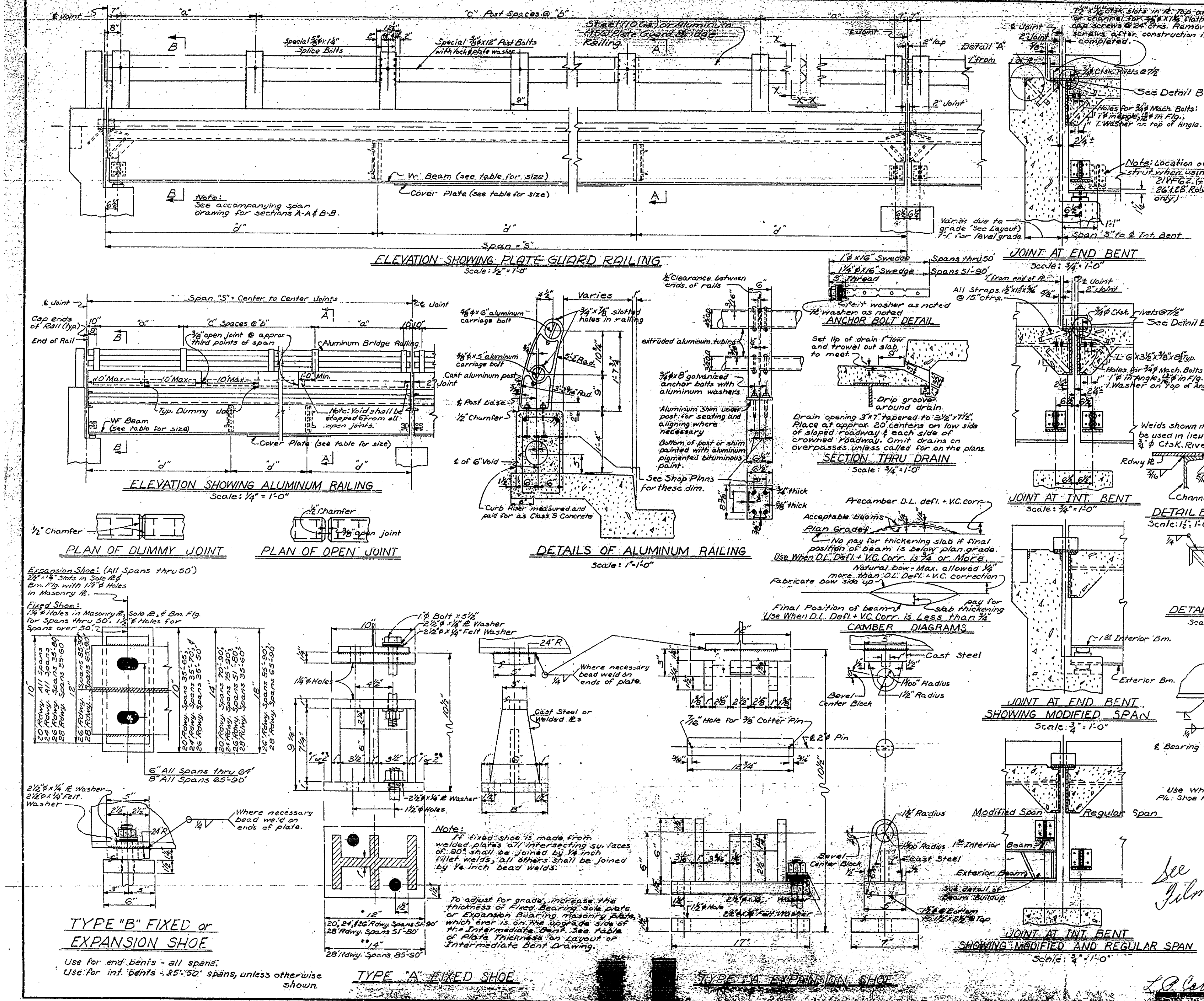
REDRAWN BY: JAS DATE: 10-5-64
TRACED BY: DATE:
CHECKED BY: HCW DATE: 10-6-64
SCALE: ⅜"=1'-0" or as shown

BRIDGE NO. 5082 DRAWING NO. 13601

FOR INFORMATION ONLY

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090450	29	55

(1) I-Bm. Span Details of Br. No. 05082



GENERAL NOTES

All concrete to be Class S. All exposed corners to be chamfered ¾" unless otherwise noted.

Field connections to be riveted or bolted with high strength bolts. Rivets: ¾"φ, Open holes 13/16"φ except where noted otherwise.

Structural shapes of equal or greater strength may be substituted for shapes shown, but payment will be made on the basis of shapes shown or those actually used, whichever is less.

All welded connections to be 5/16" fillet shop welds except as noted. All welding shall conform to the American Welding Society Standard Specifications for Welded Highway and Railway Bridges, current edition.

Shop Paint: All structural steel except surfaces in contact with concrete shall be given one coat of red lead and raw linseed oil before shipment.

Field Paint: First coat - red lead tinted with lamp black. Second coat - aluminum paint.

All metal bearing and roadway expansion devices to be paid for as "Structural Steel in Beam Spans." Bearings shall be finally seated in a manner set forth in the Specifications. This work and material are to be considered as subsidiary to the item "Structural Steel in Beam Spans" and will not be paid for directly.

This drawing shows general features of design only. Shop drawings shall be made in accordance with the Specifications, submitted and approval secured before fabrication is begun.

All Steel shall be ASTM A-36 unless otherwise noted.

Reinforcing steel to be deformed bars of intermediate or hard grade. The reinforcing steel is to be accurately located in the forms and firmly held in place by steel wire supports, sufficient in number and size to prevent displacement during the course of construction. The wire supports will not be paid for directly but will be considered subsidiary to the item of "Reinforcing Steel."

Shop lists and bending diagrams of reinforcing steel, including wire supports, shall be submitted and approval secured before fabrication is begun.

All chamfers on concrete riser for rail are to be ½".

Shop drawings showing details of railing shall be submitted and approval secured before fabrication is begun.

The aluminum bridge railing, including posts and fasteners, shall be paid for at the unit price bid per linear foot for "Aluminum Bridge Railing."

A rail connection utilizing set screws is an acceptable alternate and may be supplied at the Contractor's option.

Outside surfaces of flanges of cast aluminum posts shall be given a No. 220 grit belt finish after which all exposed surfaces of posts shall receive one coat of clear lacquer.

If Steel or Aluminum Plate Guard Bridge Railing is used it shall be the type shown or an equivalent rigid type as approved by the Engineer. The rail including posts and fastenings shall be paid for at the unit price bid per linear foot for "Steel or Aluminum Plate Guard Bridge Railing."

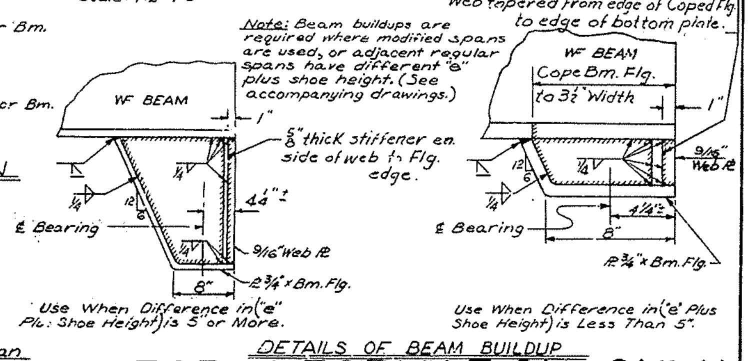
Slab Pouring Note:

Floor slabs may be poured in one continuous operation with a strike off extending over the whole span length, or may be poured in increments with the center one-third to one-half span length poured first. After the center section is poured not less than 72 hours shall elapse before pouring the end sections. End sections may be poured simultaneously. If not poured simultaneously, 48 hours shall elapse between end section pours.

SPECIFICATIONS:

Arkansas State Highway Commission Standard Specifications for Highway Construction Edition of 1959.

This Drawing is a modification of Dwg No. 5462.



FOR INFORMATION ONLY

DETAILS COMMON TO STANDARD 35'-90' COMPOSITE I-BEAM SPANS 20', 24', 26', AND 28' ROADWAYS

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

RE-DRAWN BY: GM DATE: 8 MAR '62
TRACED BY: DATE:
RE-CHECKED BY: L.K. DATE: -9-62
SCALE: As Shown

See Film

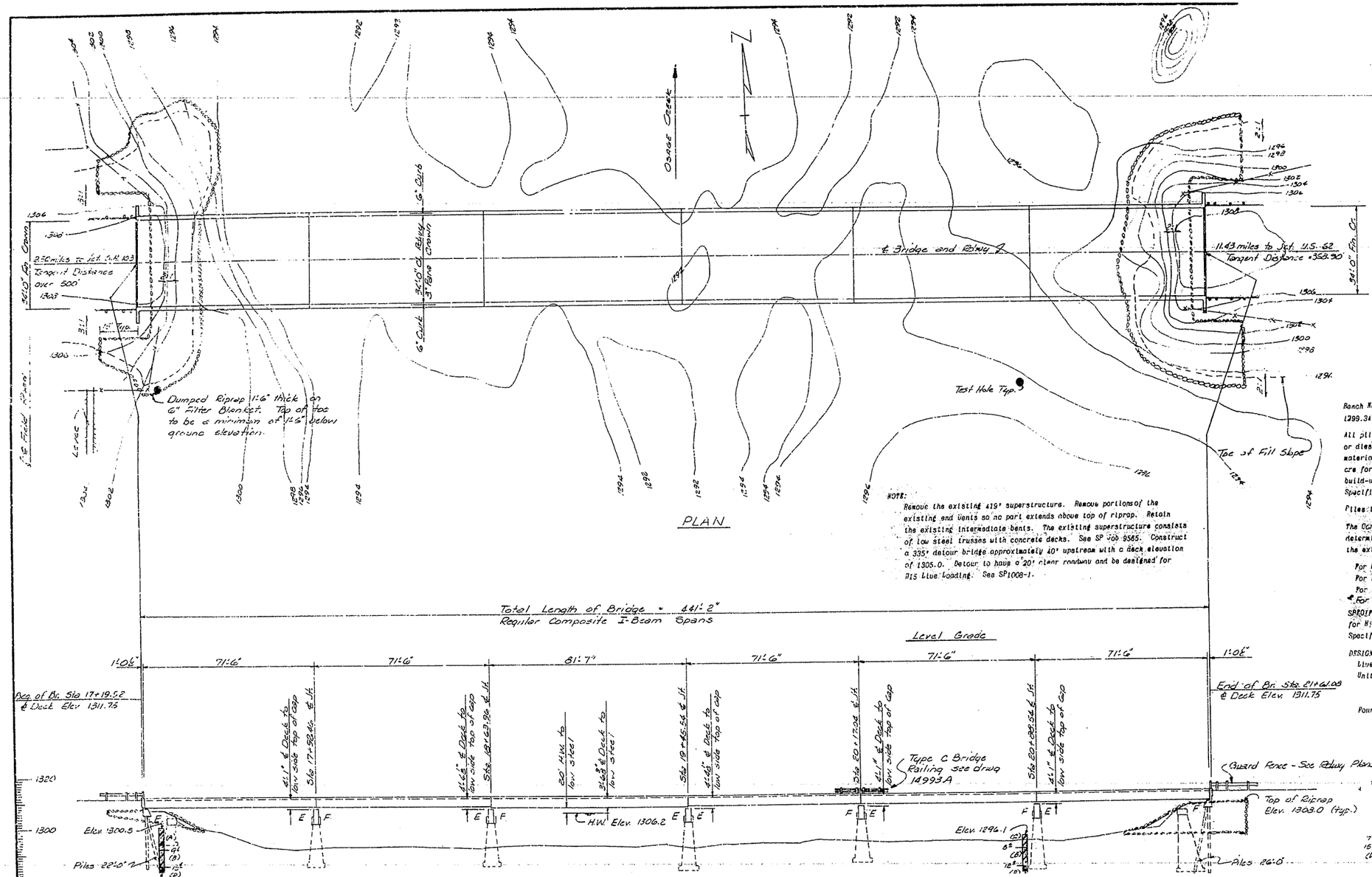
BRIDGE NO.

DRAWING NO. 14990

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		090450	30	55

Layout of Bridge No. 2771A



NOTE:
Remove the existing 419' superstructure. Remove portions of the existing end bents so no part extends above top of riprap. Retain the existing intermediate bents. The existing superstructure consists of low steel trusses with concrete decks. See SP Job 9565. Construct a 335' detour bridge approximately 40' upstream with a deck elevation of 1305.0. Detour to have a 20' clear roadway and be designed for H15 Live Loading. See SP1008-1.

GENERAL NOTES

Bench Mark - Nail in root 30" Elm, 60' Rt., Station 17 + 80. Elevation 1299.34.

All piling shall be 12BP53 and shall be driven with an approved air, steam, or diesel hammer to a minimum capacity of 55 tons per pile and into the material designated as limestone on the boring logs. Lengths of pile shown are for estimating quantities only. Order lengths shown: cut-off or build-up, if necessary, to be paid for in accordance with the Standard Specifications.

Piles in end bents to be driven after embankment to subgrade is in place.

The Contractor shall make check measurements of the existing structure and determine all dimensions and adjustments necessary to fit the new work to the existing construction.

For Details of End Bents see Dwg. No. 15943
For Details of Intermediate Bents see Dwg. No. 15944
For Details of Composite I-Beam Spans see Dwg. Nos. 15945 and 149900
* For Details of Existing Substructure see Dwg. No. 8059

SPECIFICATIONS: Arkansas State Highway Commission Standard Specifications for Highway Construction, Edition of 1959, the 1966 Supplemental Specifications, and applicable Special Provisions.

DESIGN SPECIFICATIONS: AASHO 1965
Live Loading: H20
Unit Stresses:
- Class S Concrete (n=10) 1200 psi
- Reinforcing Steel 20,000 psi
- Structural Steel (A-36) 20,000 psi

Foundation Pressure:

Group I	4.70 ksf	
Group II	6.7 ksf Max.	1.5 ksf min.
Group III	7.0 ksf Max.	2.8 ksf min.

* Other Existing Details available on request

SOIL LEGEND

(A) Firm Brown Clay Gravel & Few Boulders
(B) Comp. Clay Gravel & Boulders
(C) Loose Sandy Clay & Gravel
(D) Solid Limestone

ELEVATION

D.A. = 85 sq. mi.
50 year frequency flood = 27,200 cfs
Very extreme H.W. = Elev. 1314.0
Extreme H.W. = Elev. 1306.2
Normal H.W. = Elev. 1302.5
50 year frequency H.W. = Elev. 1303.6

Rev. Slopes at Bent 7 18-8-68 JAS

FOR INFORMATION ONLY

L. G. Carlson
BRIDGE ENGINEER

LAYOUT OF BRIDGE OVER OSAGE CREEK

OSAGE CREEK BRIDGE & APPROACHES

CARROLL COUNTY
ROUTE 68 SEC. 4
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

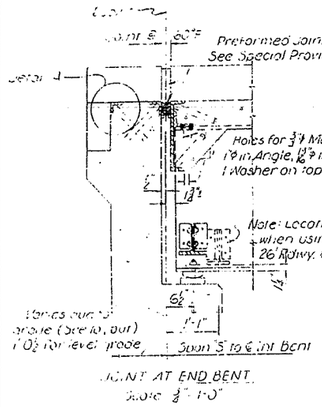
DRAWN BY: OFL DATE: 7-7-68
TRACED BY: DATE: SCALE: 1"=20'
CHECKED BY: LJAS DATE: 7-11-68

BRIDGE NO. 2771A DRAWING NO. 15942

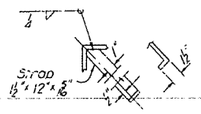
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090450	31	55

(1) I-Bm. Span Details of Br. No. 2771A

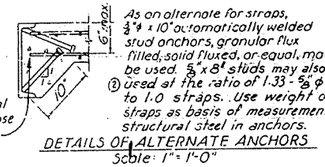
2-26-69 772 2-26-69



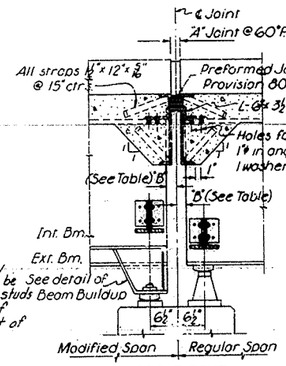
JOINT AT END BENT
Scale ¾" = 1'-0"



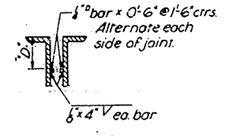
DETAIL "A" (Typical)
Scale 1½" = 1'-0"



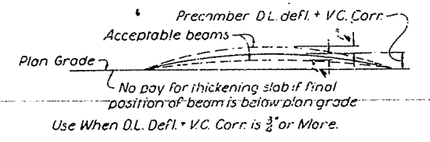
DETAILS OF ALTERNATE ANCHORS
Scale 1" = 1'-0"

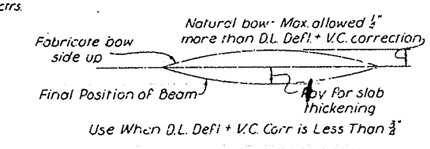


JOINT AT INT. BENT
Scale ¾" = 1'-0"



DETAIL OF JOINT SEAL SUPPORT
Scale 1½" = 1'-0"





CAMBER DIAGRAMS
No Scale

GENERAL NOTES

All concrete to be Class S. All exposed corners to be chamfered 3/4" unless otherwise noted.

Field connections to be riveted or bolted with high strength bolts.

Rivets: 3/4"ø, open holes 13/16"ø except where noted otherwise.

Structural shapes of equal or greater strength may be substituted for shapes shown, but payment will be made on the basis of shapes shown or those actually used, whichever is less.

All welded connections to be 5/16" fillet shop welds except as noted. All welding shall conform to the American Welding Society Standard Specifications for Welded Highway and Railway Bridges, current edition.

Shop Paint: All structural steel except surfaces in contact with concrete shall be given one coat of red lead and raw linseed oil before shipment.

Field Paint: First coat-red lead tinted with lamp black. Second coat-aluminum paint.

All metal bearing and roadway expansion devices to be paid for as "Structural Steel in Beam Spans." Bearings shall be finally seated in accordance with Sec. 806.54, including alternate, of the Standard Specifications. This work and material are to be considered as subsidiary to the item "Structural Steel in Beam Spans" and will not be paid for directly.

This drawing shows general features of design only. Shop drawings shall be made in accordance with the Specifications, submitted and approval secured before fabrication is begun.

All steel shall be ASTM A-36 unless otherwise noted.

Anchor bolts shall be galvanized to conform to ASTM Specification, Designation A153.

Reinforcing steel to be deformed bars of intermediate or hard grade. The reinforcing steel is to be accurately located in the forms and firmly held in place by steel wire supports, sufficient in number and size to prevent displacement during the course of construction. The wire supports will not be paid for directly but will be considered subsidiary to the item of "Reinforcing Steel."

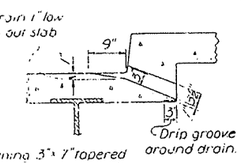
Shop lists and bending diagrams of reinforcing steel, including wire supports, shall be submitted and approval secured before fabrication is begun.

Slab Pouring Note:

Floor slabs may be poured in one continuous operation with a strikeoff extending over the whole span length, or may be poured in increments with the center one-third to one-half span length poured first. After the center section is poured, not less than 72 hours shall elapse before pouring the end sections. End sections may be poured simultaneously. If not poured simultaneously, 48 hours shall elapse between end section pours. A minimum of 72 hours shall elapse (1) between completion of the slab and the pouring of the curb section if poured separately, and (2) between the completion of the curb and the pouring of the type A rail parapet. Posts for Type B or C rail may be poured 24 hours after completion of the curb.

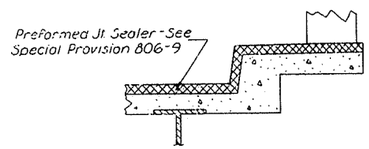
For details of Bridge Railing see Dwg. No. 14992 or 14993 as shown on Bridge Layout.

SPECIFICATIONS: Arkansas State Highway Commission Standard Specifications for Highway Construction Edition of 1959, the 1966 Supplemental Specifications thereto and applicable Special Provisions.

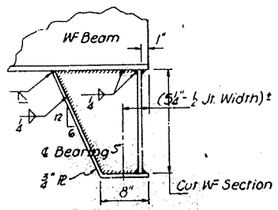


Drain opening 3" x 7" tapered to 3½" x 7½". Place at approx. 20' ctrs. on low side of sloped roadway & each side of crowned roadway. Omit drains on grade separation structures unless called for on the plans.

SECTION THRU DRAIN
Scale ¾" = 1'-0"



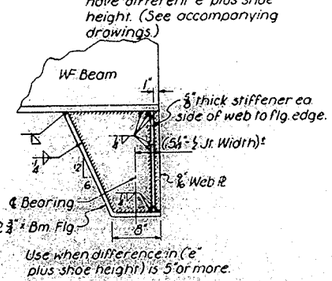
SEAL PLACEMENT IN CURB
Scale ¾" = 1'-0"



Flange Width & Thickness & Web Thickness to be equal to or greater than WF Beam Dim.

OPTIONAL BEAM BUILDUP
No Scale

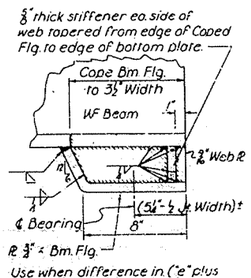
Note: Beam buildups are required where modified spans are used, at adjacent regular spans have different "e" plus shoe height. (See accompanying drawings)



Use when difference in ("e" plus shoe height) is less than 5".

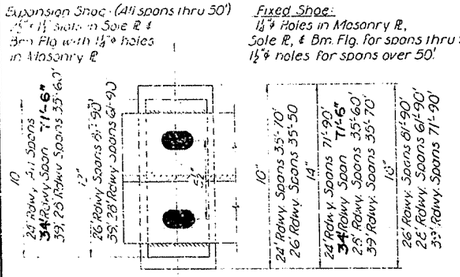
Use when difference in ("e" plus shoe height) is 5" or more.

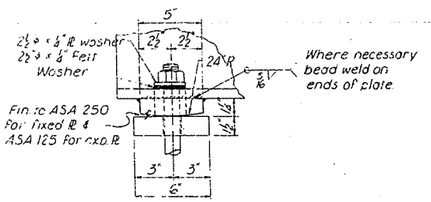
DETAILS OF BEAM BUILDUP
No Scale



Use when difference in ("e" plus shoe height) is less than 5".

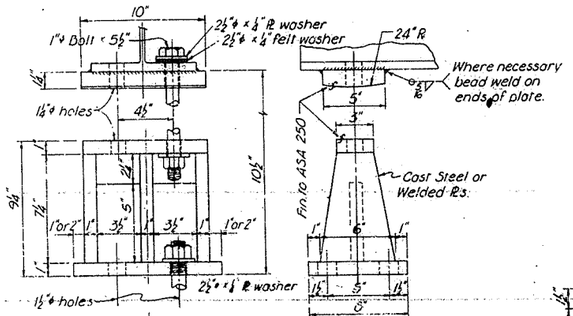
ANCHOR BOLT DETAIL - No Scale

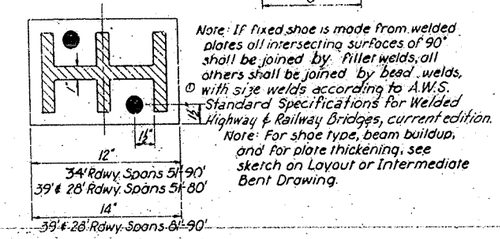




TYPE "B" FIXED OR EXPANSION SHOE - Scale: 1½" = 1"

Use for end bents - all spans
Use for int. bents - 35'-50' spans, unless otherwise shown.

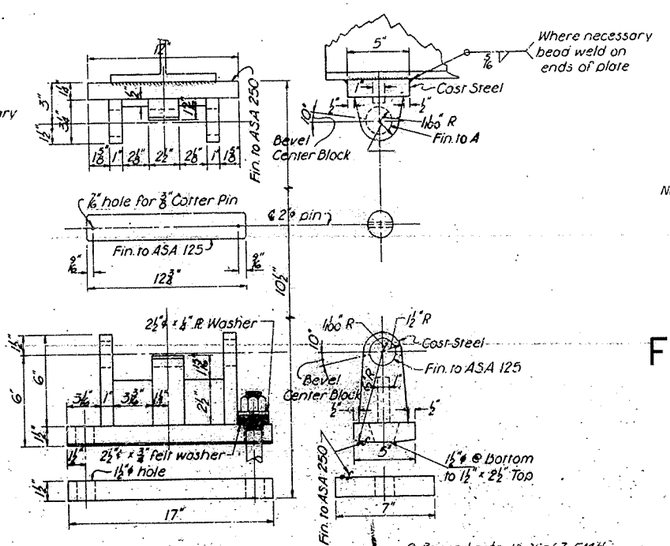




Note: If fixed shoe is made from welded plates all intersecting surfaces of 90° shall be joined by Fillet welds, all others shall be joined by bead welds, with size welds according to A.W.S. Standard Specifications for Welded Highway & Railway Bridges, current edition.

Note: For shoe type, beam buildup, and for plate thickening, see sketch on Layout or Intermediate Bent Drawing.

TYPE "A" FIXED SHOE
Scale: 1⅛" = 1"



TYPE "A" EXPANSION SHOE
Scale: 1⅛" = 1"

① Revised note 10-25-67 FMH
② Added ⅝" x 8" Studs 1-11-68 FMH
③ Added Note - 3-13-68 J.S.

Note: This drawing adapted from drwg. 14990C.

EXPANSION JOINT DATA

Total Length of Spans Expanding at Bent or Pier (F-E 1 Span, E-E 2 Spans)	"A" Joint Width Perpendicular to ℄ Webs @ 60° F	Seal Width	"A" @ 60° F ℄ Jt. — Jt. Seal — End of Beam — "B"
To 80'	1"	1½"	1½"
Over 80' to 100'	1½"	2"	1¾"
Over 100' to 140'	1½"	2½"	2"
Over 140' to 180'	2"	3"	2½"

Note: All joints at Abutments and at Fix-Fix joints shall be 1".
The Dimension "D" shall conform to the recommendations of the seal manufacturer as approved by the Bridge Engineer. The depth of the seal shall be approximately equal to the uncompressed width of the seal.

③ Joints shown are to be used at skew angles up to and including 15°. For joints to be used at skew angles greater than 15°, see supplemental details.

FOR INFORMATION ONLY

DETAILS COMMON TO STANDARD 35'-90' COMPOSITE I-BEAM SPANS 34, 24, 26, 28, 39' ROADWAYS

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: FWM DATE: 1-4-67
TRACED BY: DATE:
CHECKED BY: DFL DATE: 1-5-67
SCALE: As Shown

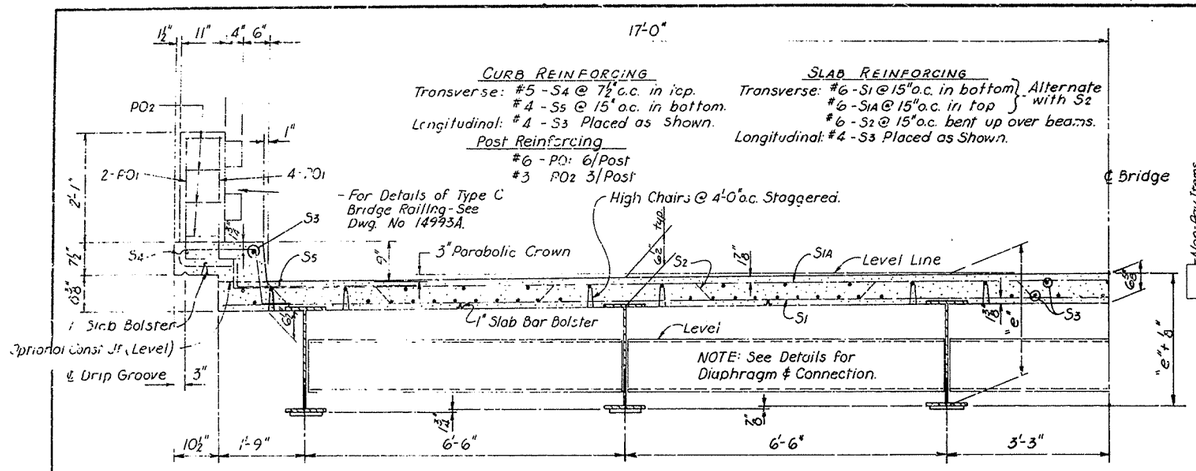
L. Pierson
BRIDGE ENGINEER

BRIDGE NO. 2771A DRAWING NO. 14990D

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	ROAD SHEETS
				6	ARK.			
				JOB NO.		090450	32	55

1 I-Bm. Span Details of Br. No. 2771A

2-20-69 770 3-2642



HALF-SECTION A-A OF REGULAR SPAN - PARABOLIC CROWN

Regular Spans have all Beams of Equal Depth

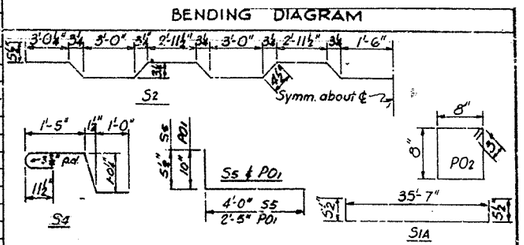
¾" = 1'-0"

Table Data 1-27-69 FMH

BAR LIST

MK	SIZE	LENGTH	PIN DIA.	LENGTH OF SPAN 0'-0	LENGTH OF SPAN 8'-6	BENDING DIAGRAM
				NUMBER REQUIRED EACH SPAN		
S1	6	35'-8"	Str.	57	65	
S1A	6	36'-6"	2¼"	57	65	
S2	6	37'-4"	2¼"	57	65	
S5	4	5'-6"	Str.	-	-	
S3	4	5½ + 7"	Str.	-	-	
S3	4	5½ + 1'-0"	Str.	261	261	
S4	5	4'-7"	1¾"	228	260	
S5	4	4'-5"	1¼"	116	130	
PO1	6	3'-3"	2¼"	120	132	
PO2	3	3'-1"	1¼"	80	86	

Non-Pay Items



Dimensions are ctr. to ctr. of bars.

BRIDGE NO. 2771A	SPAN NO.	SPAN LENGTH	SPAN TYPE	INTERIOR BEAM SIZE	INTERIOR BEAM COVER PL SIZE	INTERIOR BEAM e	INTERIOR BEAM DEAD LOAD DEFLECTION WITH CONST. JT.	INTERIOR BEAM DEAD LOAD DEFLECTION WITHOUT CONST. JT.	EXTERIOR BEAM SIZE	EXTERIOR BEAM COVER PL SIZE	EXTERIOR BEAM e	EXTERIOR BEAM DEAD LOAD DEFLECTION WITH CONST. JT.	EXTERIOR BEAM DEAD LOAD DEFLECTION WITHOUT CONST. JT.	DIAPHRAGM SPACING	POST SPACING a	POST SPACING b	POST SPACING c	f	VARIABLES of SHEAR CONNECTOR SPACING q	h	i	j	p
2771A	2	71'-6"	Reg.	30WF108	9x1 11/16 x 48'-0	2'-11⅞"	2 1/16"	2"	30WF108	9x1 5/16 x 48'-0	2'-11⅞"	1 7/16"	2 1/4"	4@17'-10½"	7'-8½"	7'-7"	7'	0	20	20	1	17	0
	3	81'-6"	Reg.	33WF130	10x1 1/16 x 52'-0	3'-2⅜"	2 1/16"	2½"	33WF130	10x⅞ x 52'-0	3'-2⅜"	2⅜"	3⅛"	4@20'-4½"	7'-11"	7'-10"	8'	0	22	21	1 3/5	15	0

LOADING: H20 (AASHO 1965)

1. Dead Load: (Type A Rail)
   - a. To WF Beam
     - (Without Const. Jt.): Interior Beam 8/' + 1.15(wt/ft of WF); Exterior Beam 8/' + 1.15(wt/ft of WF)
     - (With Const. Jt.): Interior Beam 8/' + 1.15(wt/ft of WF); Exterior Beam 8/' + 1.15(wt/ft of WF)
   - b. To Composite Beam
     - (Without Const. Jt.): Interior Beam 8/'; Exterior Beam 8/'
     - (With Const. Jt.): Interior Beam 8/'; Exterior Beam 8/'

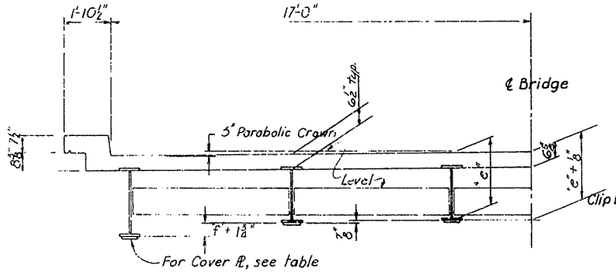
1A. Dead Load: (Type C Rail)
   - a. To WF Beam
     - (Without Const. Jt.): Interior Beam 526#/' + 1.15(wt/ft of WF); Exterior Beam 664#/' + 1.15(wt/ft of WF)
     - (With Const. Jt.): Interior Beam 528#/' + 1.15(wt/ft of WF); Exterior Beam 426#/' + 1.15(wt/ft of WF)
   - b. To Composite Beam
     - (Without Const. Jt.): Interior Beam 869#/'; Exterior Beam 1018#/'
     - (With Const. Jt.): Interior Beam 1338#/'; Exterior Beam 1968#/'

2. Live Load:
   - a. To each Composite Beam: Interior Beam 1.182 wheels + impact; Exterior Beam 1.156 wheels + impact

Unit Stresses:

Class S Concrete (f'c=3K)	1,200 psi
Structural Steel (Fy=36K)	20,000 psi
Reinforcing Steel	20,000 psi

FOR INFORMATION ONLY



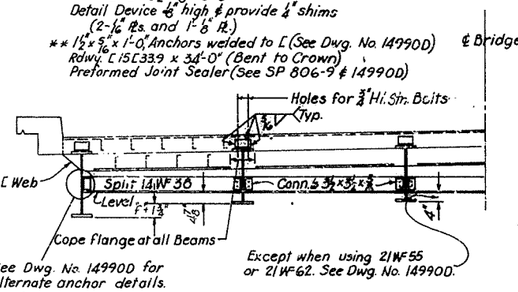
HALF-SECTION A-A OF MODIFIED SPAN - PARABOLIC CROWN

⅜" = 1'-0"

Note "f" = difference in "e" for Interior and Exterior Beams

EXPANSION DEVICE

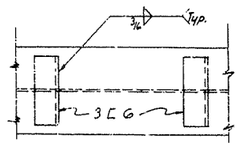
Conn. ⊥S 6 x 3½ x ⅜ x 0'-8"
Detail Device 4⅝" high ℄ provide ¼" shims (2-1/16" Rs. and 1-⅛" R.)
** 1½" x 5/16 x 1'-0" Anchors welded to ⊥ (See Dwg. No. 149900)
Rdwy. ⊥ 15C33.9 x 34'-0" (Bent to Crown)
Preformed Joint Sealer (See SP 806-9 ℄ 149900)



HALF-SECTION B-B + MODIFIED OR REGULAR SPANS

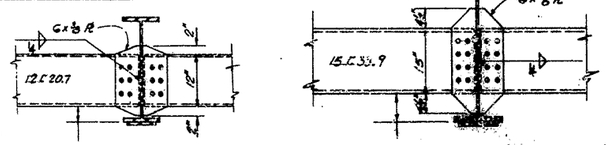
⅜" = 1'-0"

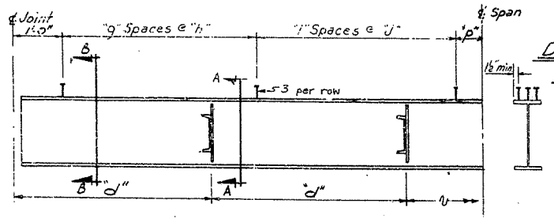
NOTE: For modified spans interior beams are same as regular spans, exterior beams are lightest section of same nominal depth as beams for longest span shown on Bridge Layout.



OPTIONAL CHANNEL SHEAR CONNECTORS

OPTIONAL WELDS



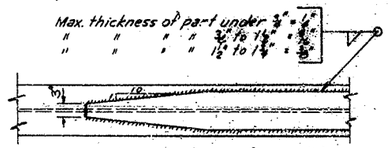


SPACING FOR ¾" STUD SHEAR CONNECTORS & DIAPHRAGMS

DIAPHRAGM DETAIL FOR 21WF THRU 27WF BEAMS

¾" = 1'-0"

Max. thickness of part under ¾" = ¼"
" " " " ¾" to 1⅛" = ⅜"
" " " " 1½" to 1⅞" = ½"



DETAIL OF COVER PLATES

⅜" = 1'-0"

NOTE: 7/8" studs or 3 ⊥ 6 channels may be used in place of the 3/4" studs that are shown, at the ratio of 0.735-7/8" stud or 2.0 inches of 3 ⊥ 6.0 channel in place of one 3/4" stud. The stud connectors shall be 4" long and may be granular flux filled, solid fluxed, or metal, and automatically end welded to the beam flanges in accordance with recommendations of the manufacturer. 3/4" studs will be used as basis for measurement of structural steel in shear connectors.

DETAILS OF STANDARD
35'-90' COMPOSITE I-BEAM SPANS
34'-0" CLEAR RDWY. 6" CURBS
3" PARABOLIC CROWN
ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DESIGN BY: RHM DATE: 6-21-68
TRACED BY: DATE: SCALE: As Noted
CHECKED BY: DFL DATE: 6-25-68

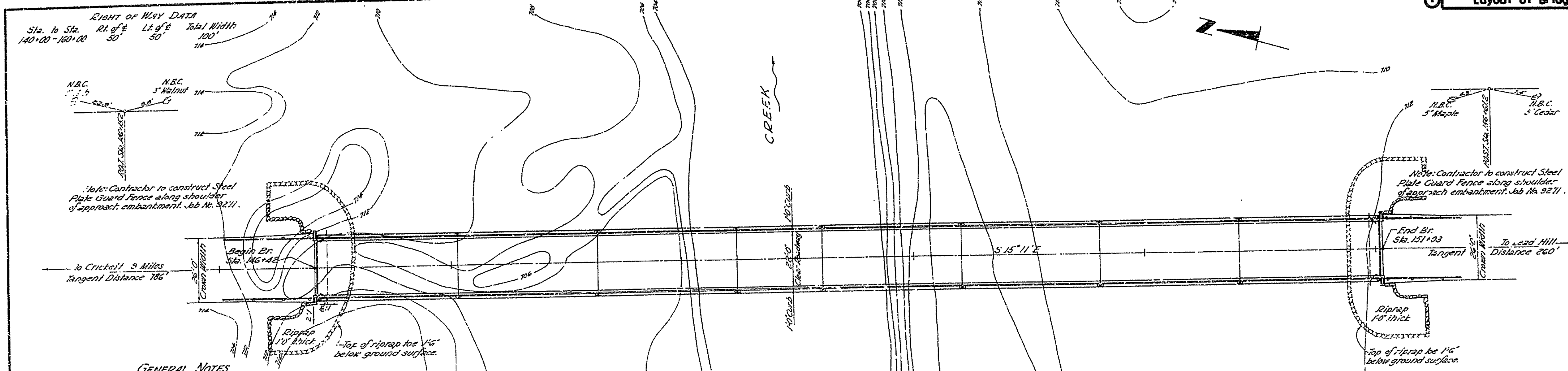
CK. DFL 1/26/69

L.R. Carlson
BRIDGE ENGINEER

BRIDGE NO. 2771A DRAWING NO. 15945

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090450	33	55

Layout of Bridge No. 02674



GENERAL NOTES

All concrete to be poured in the dry. Exposed corners to be chamfered ¾" unless otherwise noted.

Rock excavation shall be made to neat lines of concrete footings. Care shall be exercised to avoid shattering of rock faces by excessive blasting. Concrete in footings shall be poured directly against excavated surfaces of rock.

In general, all construction joints in abutments and piers shall be horizontal and shall be provided with keys not less than 3" high covering the middle third of both dimensions.

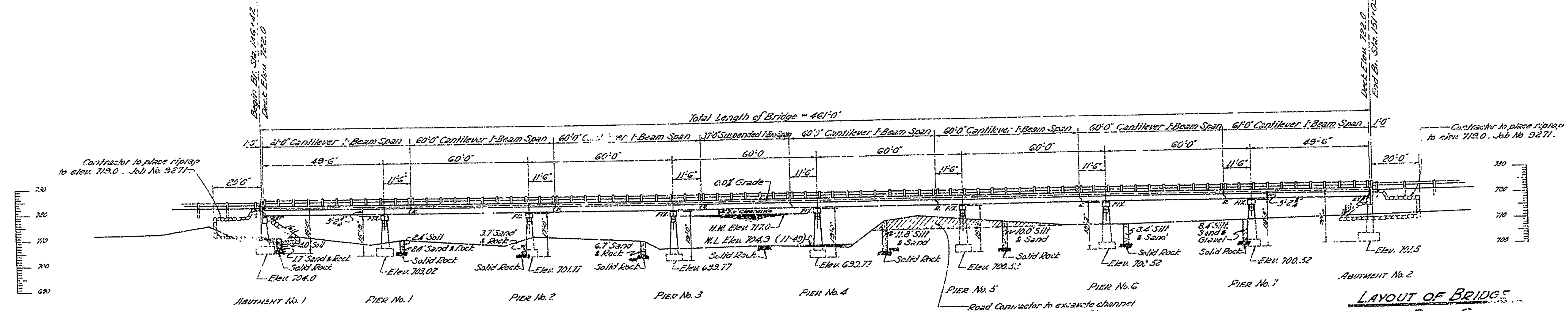
SPECIFICATIONS:- Arkansas State Highway Commission Standard Specifications for Road and Bridge Construction, adopted March 1, 1946.

For Details of Abutment No. 1, see Dwg. No. 7879.
For Details of Piers, see Dwg. No. 7880.
For Details of Abutment No. 2, see Dwg. No. 7881.
For Details of I-Beam Spans, see Dwg. No. 5081-A & 5081-B

QUANTITIES

ITEM No.	ITEM	QUANTITY	UNIT
103	Dry Excavation for Structures	170.0	Cu. Yds.
103	Wet Excavation for Structures	237.0	Cu. Yds.
103	Solid Rock Excavation for Structures	43.0	Cu. Yds.
S.P. & 802	Class "A" Concrete for Bridges	226.60	Cu. Yds.
S.P. & 802	Class "S" Concrete for Bridges	274.10	Cu. Yds.
803	Reinforcing Steel	75,770.0	Lbs.
S.P.-805	Steel Plate Guard Rail (10 Ga.)	932.66	Lin. Ft.
929	Bridge Name Plates - Type "B"	2	Each
807	Structural Steel in Beam Spans	254,260.0	Lbs.

PLAN



ELEVATION

Drainage Area
130 Sq. Miles C = 0.8

B.M. Elev. 709.56
Nail in root of 48" Post Oak
85' left of Sta. 150+10

Design Live Load H-15 Loading A.A.S.H.O. 1948

Unit Stresses:-

Class "A" Concrete (n=15)	700 Lbs./□"
Class "S" Concrete (n=10)	1,000 Lbs./□"
Reinforcing Steel	18,000 Lbs./□"
Structural Steel	18,000 Lbs./□"

Maximum Foundation Pressures

Abutment No. 1	2.6 Tons/Sq. Ft.
Piers	2.3 Tons/Sq. Ft.
Abutment No. 2	3.0 Tons/Sq. Ft.

LAYOUT OF BRIDGE
OVER BEAR CREEK
LEAD HILL - EAST & WEST ROAD
BOONE COUNTY
ROUTE 14 SEC. 1

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

Drawn By: H.B. Date: 12-5-49
Traced By: Jay Date: 6-16-50
Checked By: ____ Date: ____
Scale: 1 in. = 20 ft. 0 in.

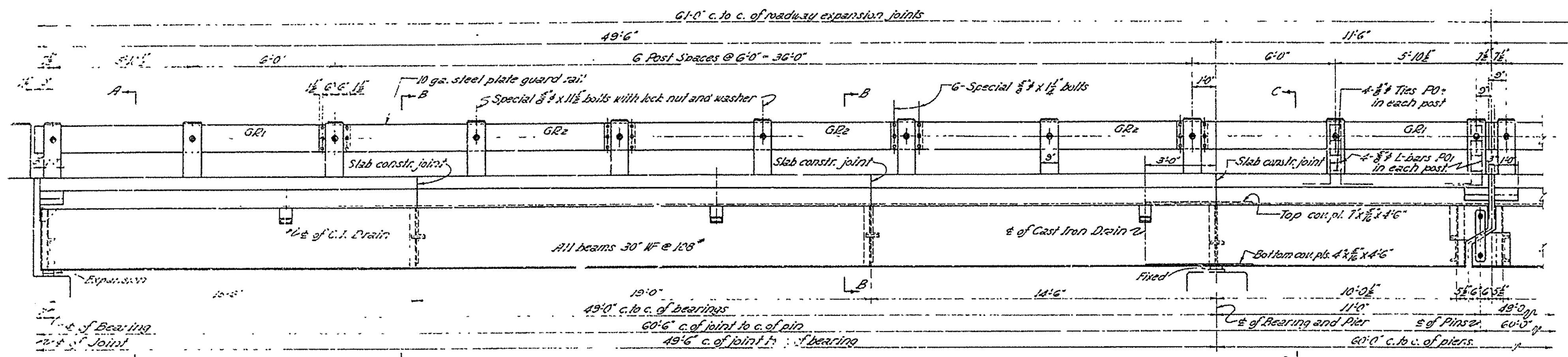
BRIDGE NO. 2674 DRAWING NO. 7878

BRIDGE DESIGN ENGINEER

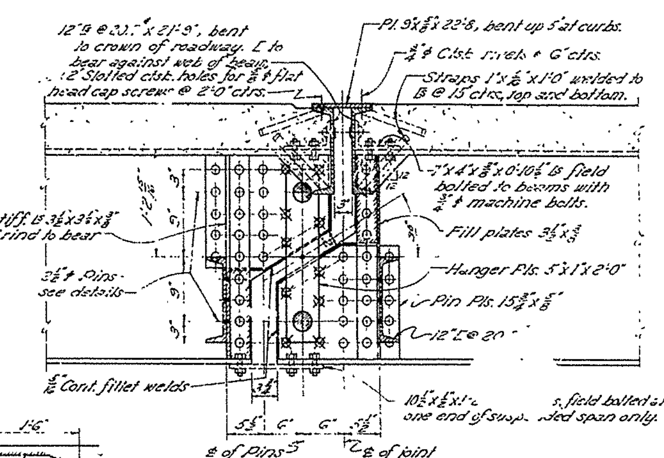
FOR INFORMATION ONLY

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090450	34	55

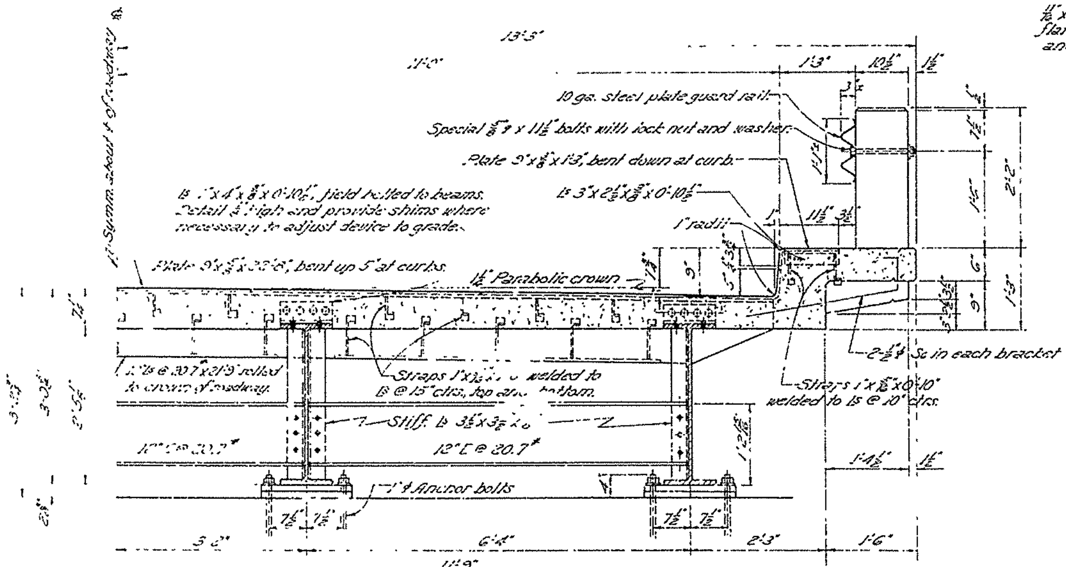
(1) I-Bm. Span Details of Br. No. 02674



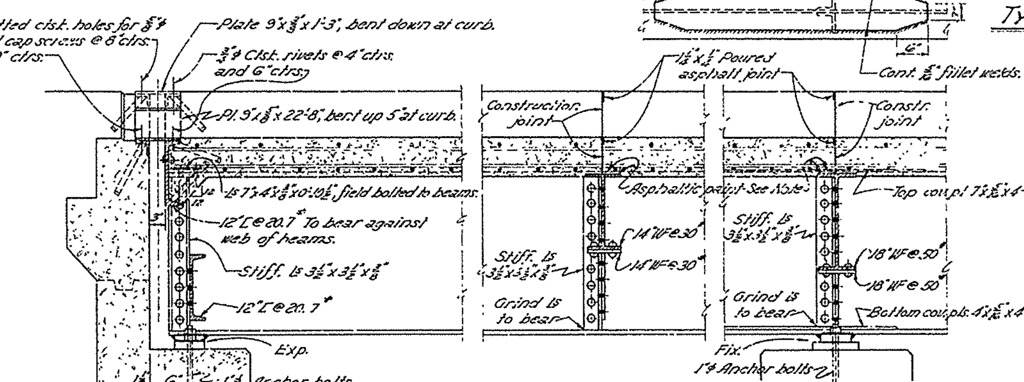
END CANTILEVER SPAN
SIDE ELEVATION
Scale: 1/8" = 1'-0"



TYPICAL SECTION THRU EXPANSION JOINT
SHOWING HANGER CONNECTION
Scale: 1" = 1'-0"



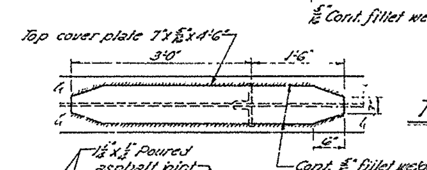
HALF SECTION A-A
Scale: 3/4" = 1'-0"

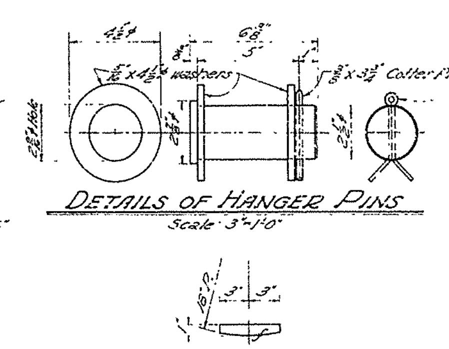


SECTION AT ABUTMENTS
Scale: 3/4" = 1'-0"

SECTION AT INTERMEDIATE CONSTR. JOINTS
Scale: 3/4" = 1'-0"

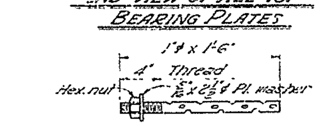
SECTION AT PIERS
Scale: 3/4" = 1'-0"



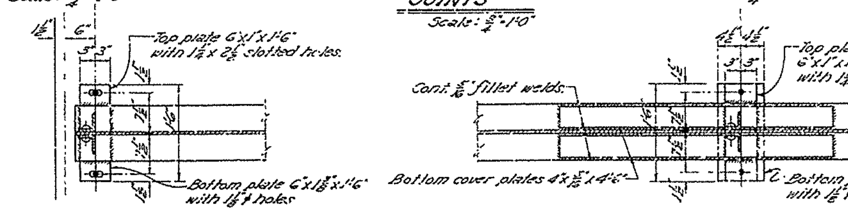


DETAILS OF HANGER PINS
Scale: 3" = 1'-0"

END VIEW OF ALL TOP BEARING PLATES



DETAIL OF ANCHOR BOLT
Scale: 1 1/2" = 1'-0"



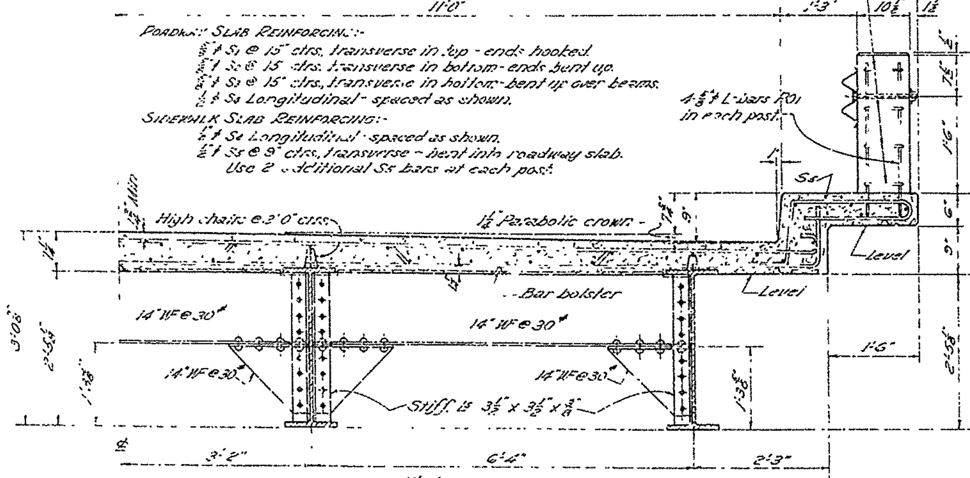
BEARING PLATES AT ABUTMENTS
Scale: 3/4" = 1'-0"

BEARING PLATES AT PIERS
Scale: 3/4" = 1'-0"

NOTE:- Weld top bearing plates to beams with 3/8" continuous fillet welds.
Omit stiffener I3 on outside of outside stringers.

ASPHALTIC PAINT NOTE:
Field paint edges and top surfaces of flanges of struts and beams for width of strut flange with an asphaltic paint; this work and material not to be paid for directly but to be considered subsidiary to the item of Class "S" Concrete.

ROADWAY SLAB REINFORCING:-
5/8"φ S1 @ 15" ctrs. transverse in top - ends hooked.
5/8"φ S2 @ 15" ctrs. transverse in bottom - ends bent up.
5/8"φ S3 @ 15" ctrs. transverse in bottom - bent up over beams.
1/2"φ S4 Longitudinal - spaced as shown.
SIDEWALK SLAB REINFORCING:-
1/2"φ S6 Longitudinal - spaced as shown.
1/2"φ S5 @ 9" ctrs. transverse - bent into roadway slab.
Use 2 additional S5 bars at each post.

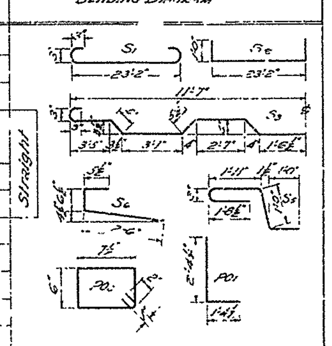


HALF SECTION B-B
Scale: 3/4" = 1'-0"

NOTE:- See note on dead load camber.

BAR LIST PER SPAN

MARK	SIZE	NUMBER REQUIRED PER CANTILEVER SPAN END	CANTILEVER SPAN INTER.	SUSPENDED SPAN	LENGTH
S1	5/8"φ	.	48	30	23'-11"
S2	5/8"φ	49	48	30	25'-2"
S3	5/8"φ	48	47	29	24'-8"
S4	1/2"φ	42			36'-6"
		42	42		25'-9"
			42		35'-6"
				42	36'-6"
S5	1/2"φ	206	204	126	5'-9"
S6	1/2"φ	8	8	8	5'-.."
P01	5/8"φ	88	88	56	3'-9"
P02	3/8"φ	88	88	56	2'-8"



NOTE:- Dimensions relating to reinforcing steel are to centers of bars.

FOR INFORMATION ONLY

SHEET No. 1 OF 2

DETAILS OF STANDARD
60'-0"
CANTILEVER I-BEAM SPAN UNITS
22'-0" CLEAR ROADWAY 2 CURBS @ 1'-0"
4 GIRDER TYPE

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

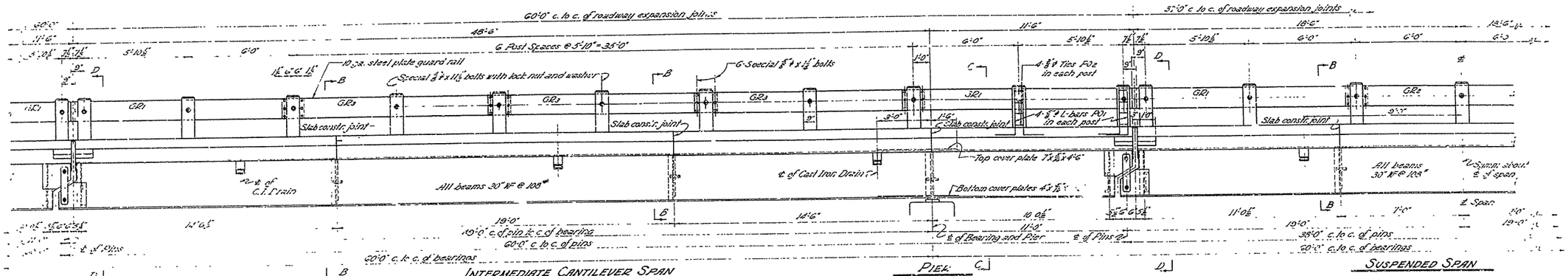
Drawn By: W.C.H. Date: 8-7-50
Traced By: Jan Date: 8-22-50
Checked By: H. S. Date: 9-9-50
Scale: As Noted

BRIDGE DESIGN ENGINEER

BRIDGE NO. DRAWING NO. 5081-A.

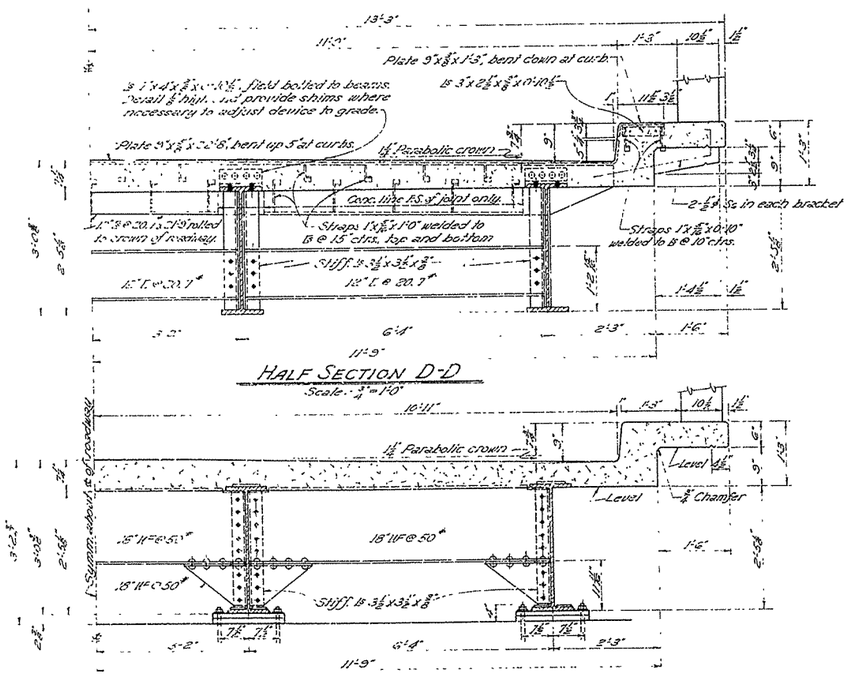
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090450	35	55

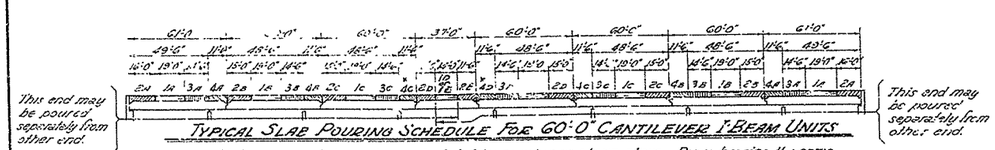
1-Bm. Span Details of Br. No. 02674



SIDE ELEVATION

Scale: ⅜" = 1'0"





TYPICAL SLAB POURING SCHEDULE FOR 60'-0" CANTILEVER I-BEAM UNITS

Slab pours are to be made as scheduled by number as shown above. Pours bearing like same number may be made separately or simultaneously, but shall always be poured in order of their subscript letter. After three consecutive pours of the first series from one end have been made, pours of the second series may be begun. Pours of the first series however are to be kept three pours ahead of the second series, until completed. This pouring procedure to apply to remaining series also.

Pours 4c and 4D to be the last pours.

GENERAL NOTES

All concrete to be Class S". All exposed corners to be chamfered ¾" unless otherwise noted.

Rivets ¾" ø. Open holes, ⅞" ø. Use machine bolts where bolts are indicated.

Ends of all stiffener angles shall be ground to bear against beam flanges.

Cross beams and strut connections are to be sub-punched to ⅝" and reamed to a metal template.

Structural shapes of equal or greater strength may be substituted for shapes shown but payment will be made on shapes shown or actually used whichever is the lesser.

All weld connections to be ⅜" fillet shop welds, except as noted. Welding to be by the electric arc process in accordance with current specifications for Welded Highway and Railway Bridges of the American Welding Society.

All bearing plates are to be structural steel. All top plates to be shop welded to I-Beams with ⅜" fillet welds extending entire length of all edges and surfaces in contact. No toler-ance will be permitted in angle between flange and web of beams at points of bearing.

Masonry plates to be sealed on 3 layers of burlap saturated with red lead.

All bearing and roadway expansion devices are to be paid for at the unit price bid per pound for Structural Steel in Beam Spans.

Shop Paint:- All structural steel shall be given one coat of red lead and raw linseed oil before shipment, except surfaces in contact with concrete.

Field Paint:- 1st coat, white lead tinted with lamp black. 2nd coat, aluminum paint.

Reinforcing steel to be deformed bars of structural or intermediate grade. Shop lists and bending diagrams must be submitted and approval secured before fabrication is begun.

All reinforcing steel shall be accurately located in the forms and firmly held in place by means of steel wire supports, sufficient in number and size, to prevent displacement during the course of construction and to keep the steel a proper distance from the forms.

Wire supports will not be paid for directly but will be considered subsidiary to the item of 'Reinforcing Steel.' Shop lists and diagrams must be submitted for approval.

Beams in all spans to be erected before pouring of concrete slab begins.

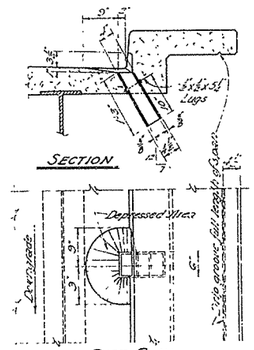
CAMBER:- Unless camber is provided for bridges on a vertical curve the slab is to be approximately ⅜" thicker at mid-span and ¾" thicker at the quarter points to provide for dead load deflection of steel beams. For camber-ing, the span length shall be the distance center to center of piers.

The steel plate guard rail shall be of the type shown or an equivalent rigid type as approved by the Engineer. The steel plate guard rail, including all concrete posts, shall be paid for at the unit price bid per linear foot for "Steel Plate Guard Rail." To be painted the same as structural steel.

Cast iron drains are to be paid for as 'reinforcing steel' and to be painted the same as structural steel.

This drawing shows general features of design only. Shop drawings shall be made in accordance with the specifications, submitted and approval secured before fabrication is begun.

SPECIFICATIONS:- Arkansas State Highway Commission Standard Specifications for Road and Bridge Construction, adopted March 1, 1940.



DETAILS OF C.I. DRAINS

Scale: ¾" = 1'0"

Note:- Place drain openings on each side of roadway at 15'-0" ctrs. beginning 3'0" from ℄ of piers for cantilever spans and 9'0" from ℄ of suspended span. Omit the two drains near-est abutments if the end spans are above a high fill.

Set lip of drains 1" low and trowel oil slab to meet. Weight of drain = 29#.

DESIGN LIVE LOAD - H-15 LOADING A.S.H.O. 1949

Load Distribution to Interior Beams:- Dead Load [illegible] Lin. Ft.
Live Load 12.1 Wheels or 0.633 Lane ... Impact

Load Distribution to Outside Beams:- Dead Load 990# / Lin. Ft.
Live Load 0.92 Wheels or 0.49 Lanes, 30% Impact.

UNIT STRESSES:-

Class S" Concrete (n=10)	1000# / □"
Reinforcing Steel	18000# / □"
Structural Steel	18000# / □"

Revisions:
Pouring Schedule H.B. 3-17-51.

BRIDGE DESIGN ENGINEER

FOR INFORMATION ONLY

SHEET No. 2 OF 2

DETAILS OF STANDARD 60'-0" CANTILEVER I-BEAM SPAN UNITS

22'-0" CLEAR ROADWAY 2 CURBS @ 1'-0"

4 GIRDER TYPE

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

Drawn By: W.C.H. Date: 5-10-50.
Traced By: Jap Date: 6-25-50.
Checked By: [illegible] Date: [illegible]

Scale: in. = ft. As Noted.

BRIDGE NO.

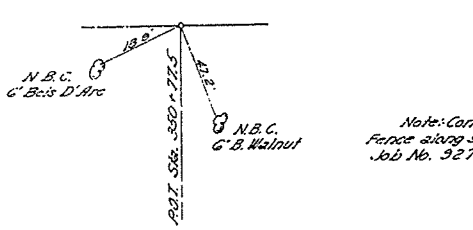
DRAWING NO. 5081-B

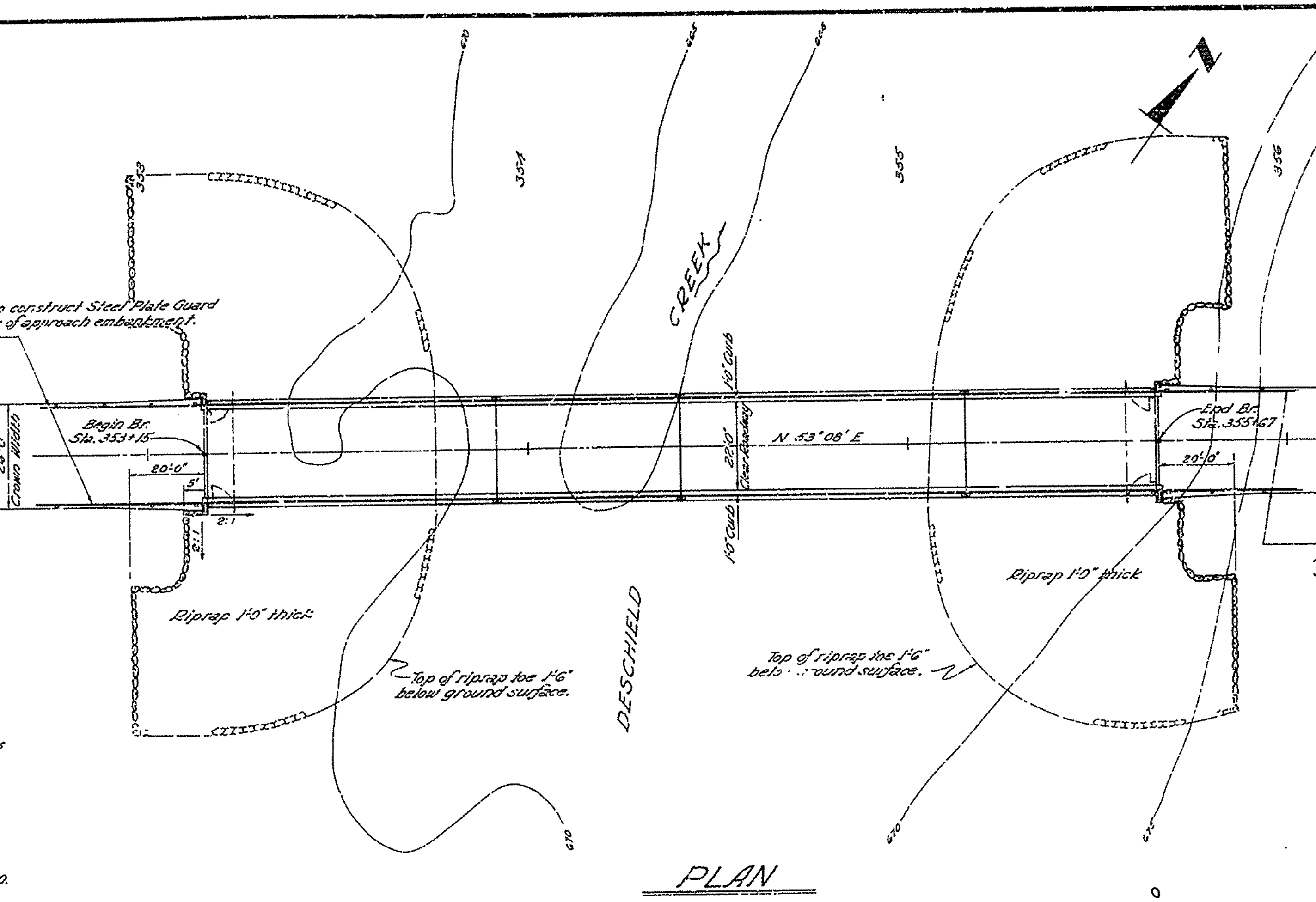
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090450	36	55

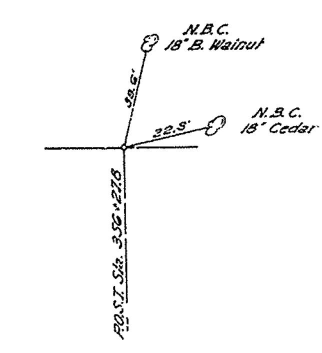
Layout of Bridge No. 02677

RIGHT OF WAY DATA

Sta. to	Sta.	Rt. of ℄	Lt. of ℄	Width
350+00	357+00	70'	60'	30'







GENERAL NOTES

All concrete to be poured in the dry. Exposed corners to be chamfered ¾" unless otherwise noted.

Rock excavation shall be made to neat lines of concrete footings. Care shall be exercised to avoid shattering of rock faces by excessive blasting. Concrete in footings shall be poured directly against excavated surfaces of rock.

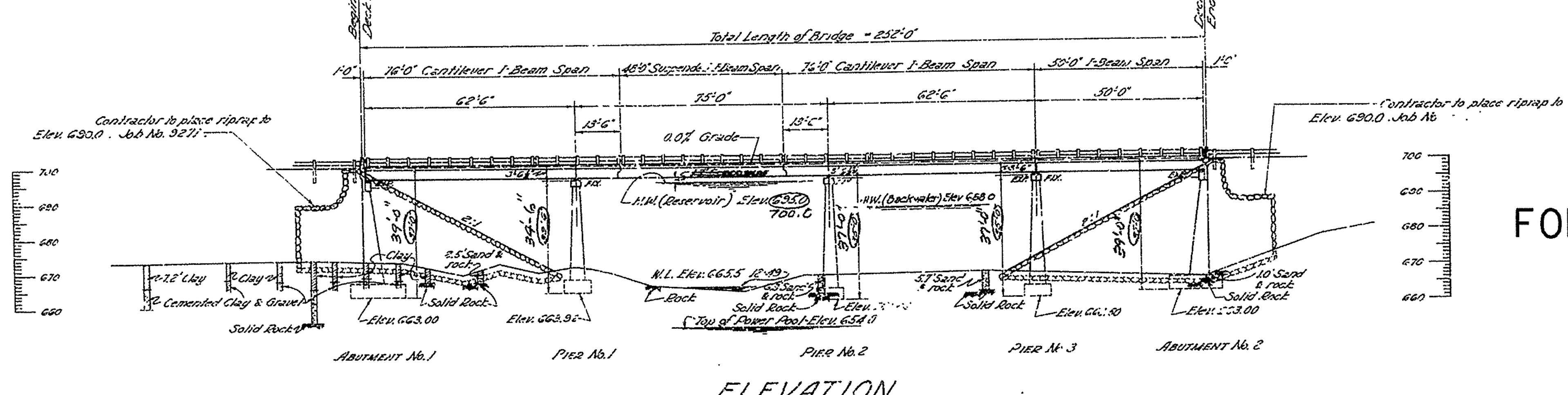
In general, all construction joints in abutments and piers shall be horizontal and shall be provided with keys not less than 3" high covering the middle third of both dimensions.

Specifications: Arkansas State Highway Commission Standard Specifications for Road and Bridge Construction, adopted March 1, 1940.

For Details of Abutments No. 1 and No. 2, see Dwg. No. 7890.
For Details of Piers, see Dwg. No. 7891.
For Details of 50'0" I-Beam Span, see Dwg. No. 5082.
For Details of 75'0" Cantilever I-Beam Span Units, see Dwg. No. 5083-A and 5083-B.

QUANTITIES

ITEM No.	ITEM		QUANTITY	UNIT
103	Dry Excavation for Structures		173.0	Cu. Yds.
103	Wet Excavation for Structures		96.0	Cu. Yds.
103	Solid Rock Excavation for Structures		58.0	Cu. Yds.
S.P. & 802	Class "A" Concrete for Bridges	285.34	272.60	Cu. Yds.
S.P. & 802	Class "S" Concrete for Bridges		150.20	Cu. Yds.
803	Reinforcing Steel	62050	60,910.0	Lbs.
S.P.-805	Steel Plate Guard Rail (10 Ga.)		514.66	Lin. Ft.
807	Structural Steel in Beam Spans		169,500.0	Lbs.
929	Bridge Name Plates - Type "B"		2	Each



FOR INFORMATION ONLY

Revision: Grade raised 2' 8 7-14-52

Design Live Load - H-15 Loading A.A.S.H.O. 1948

Unit Stresses:

Class "A" Concrete (n=15)	700 Lbs./□"
Class "S" Concrete (n=10)	1000 Lbs./□"
Reinforcing Steel	18000 Lbs./□"
Structural Steel	18000 Lbs./□"

Maximum Foundation Pressures:

Abutments	4.0	Tons/Sq. Ft.
Piers	3.3	"

Drainage Area
9.0 Sq. Miles, C=1.0

B.M. Elev. 700.06
Nail in root of 30" Red Oak
30' Left of Sta. 348+20.

353 354 355 356

Bridge Design Engineer

LAYOUT OF BRIDGE
OVER DESCHIELD CREEK
LEAD HILL-EAST & WEST ROAD
BOONE COUNTY

ROUTE SEC.

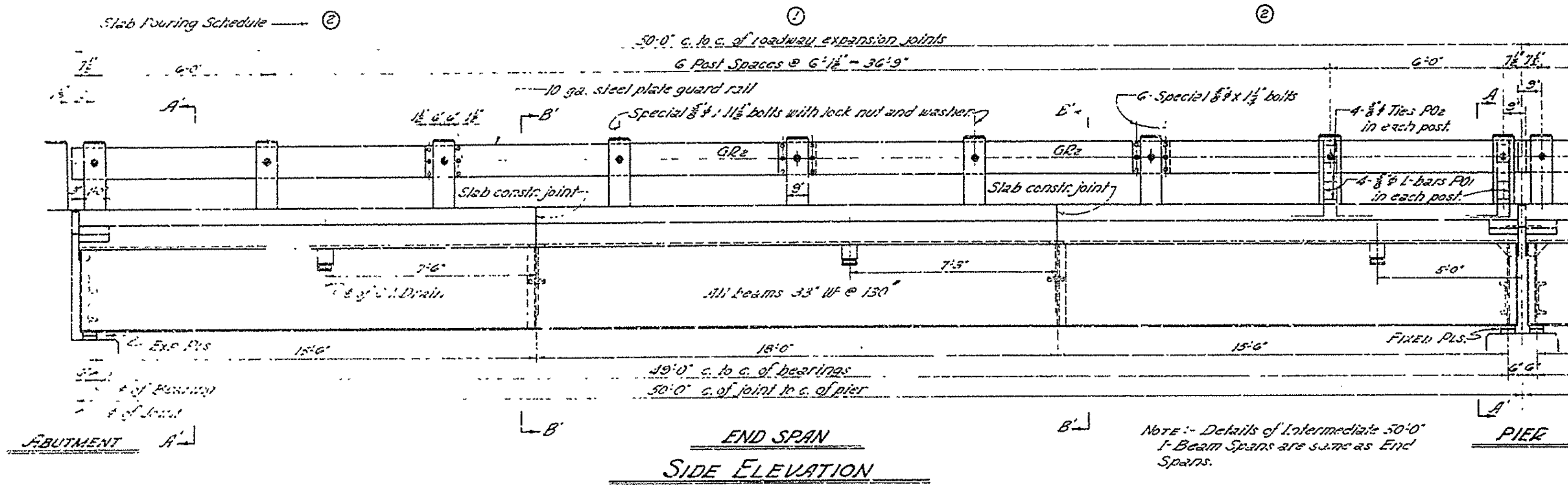
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

Drawn By: H.B. Date: 11-28-49
Traced By: R.W. Date: 5-7-50
Checked By: Date:
Scale: 1 in. = 20 ft. 0 in.

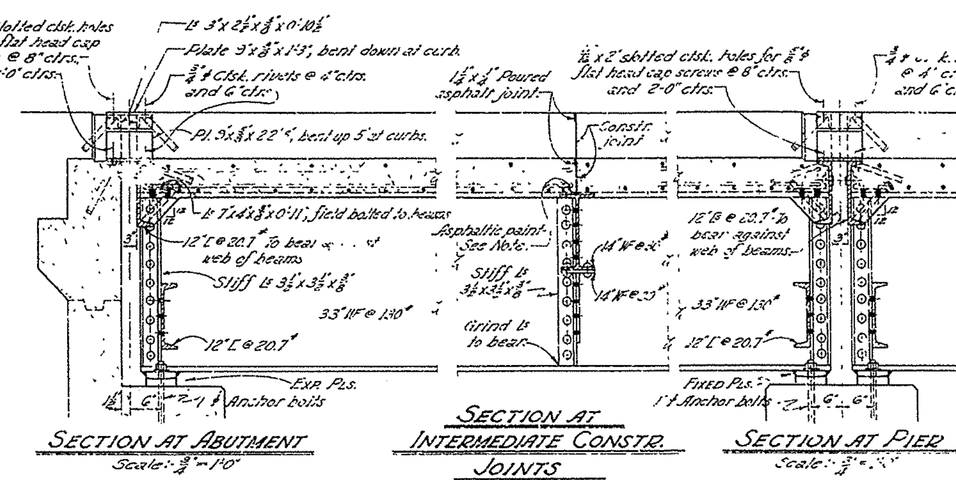
BRIDGE NO. 2677 DRAWING NO. 7883

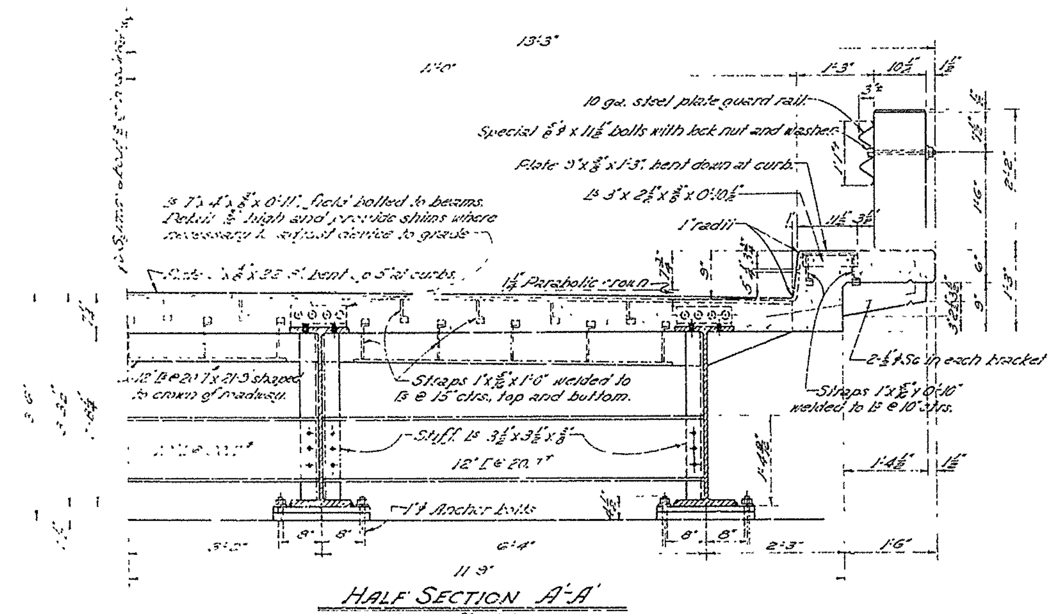
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090450	37	55

① I-Bm Span Details of Br. No. 02677



NOTE:- Details of Intermediate 50'-0" I-Beam Spans are same as End Spans.

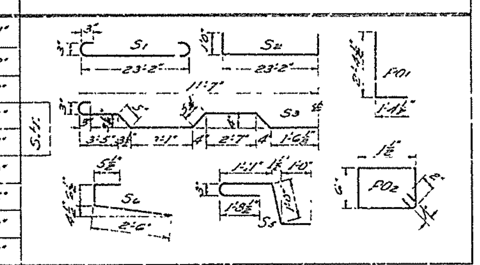




BAR LIST PER SPAN

MARK	SIZE	No. REQ'D.	LENGTH
S1	5/8" ⌀	40	23'-11"
S2	5/8" ⌀	40	25'-2"
S3	5/8" ⌀	39	24'-8"
S4	1/2" ⌀	42	21'-6"
		84	15'-8"
S5	1/2" ⌀	168	5'-9"
S6	1/2" ⌀	8	3'-6"
PO1	5/8" ⌀	72	3'-9"
PO2	3/8" ⌀	72	2'-8"

BENDING DIAGRAM



NOTE:- Dimensions relating to reinforcing steel are to centers of bars

GENERAL NOTES

All concrete to be Class "S." All exposed corners to be chamfered 3/4" unless otherwise noted.

Rivets, 3/4" ⌀. Open holes, 13/16" ⌀. Use machine bolts where bolts are indicated.

Ends of all stiffener angles shall be ground to bear against beam flanges.

Structural shapes of equal or greater strength may be substituted for shapes shown but payment will be made on shapes shown or actually used whichever is the lesser.

All weld connections to be 5/16" fillet shop welds, except as noted. Welding to be by the electric arc process in accordance with current specifications for "Welded Highway and Railway Bridges" of the American Welding Society.

All bearing plates are to be structural steel. All top plates to be shop welded to I-Beams with 3/8" fillet welds extending entire length of all edges and surfaces in contact. No tolerance will be permitted in angle between flange and web of beams at points of bearing. Masonry plates to be seated on 3 layers of burlap saturated with red lead.

All bearing and roadway expansion devices are to be paid for at the unit price bid per pound for "Structural Steel in Beam Spans".

Cast iron drains are to be paid for as "reinforcing steel" and are to be painted same as structural steel.

Shop Paint:- All structural steel shall be given one coat of red lead and raw linseed oil before shipment, except surfaces in contact with concrete.

Field Paint:- 1st coat, white lead tinted with lamp black. 2nd coat, aluminum paint.

Reinforcing steel to be deformed bars of structural or intermediate grade. Shop lists and bending diagrams must be submitted and approval secured before fabrication is begun.

All reinforcing steel shall be accurately located in the forms and firmly held in place by means of steel wire supports, sufficient in number and size, to prevent displacement during the course of construction and to keep the steel a proper distance from the forms.

Wire supports will not be paid for directly but will be considered subsidiary to the item of "reinforcing steel". Shop lists and diagrams must be submitted for approval.

CAMBER:- Unless camber is provided for bridge on a vertical curve the slab is to be approximately 1/2" thicker at mid-span and 3/8" thicker at the quarter points to provide for dead load deflection of steel beams.

Slab pours are to be made as scheduled by number as shown above the Elevation above. Pours bearing the same number may be made separately or simultaneously.

The steel plate guard rail shall be of the type shown or an equivalent rigid type as approved by the Engineer. The steel plate guard rail, including all concrete posts, shall be paid for at the unit price bid per linear foot for "Steel Plate Guard Rail." To be painted the same as structural steel.

This drawing shows general features of design only. Shop drawings shall be made in accordance with the specifications, submitted and approval secured before fabrication is begun.

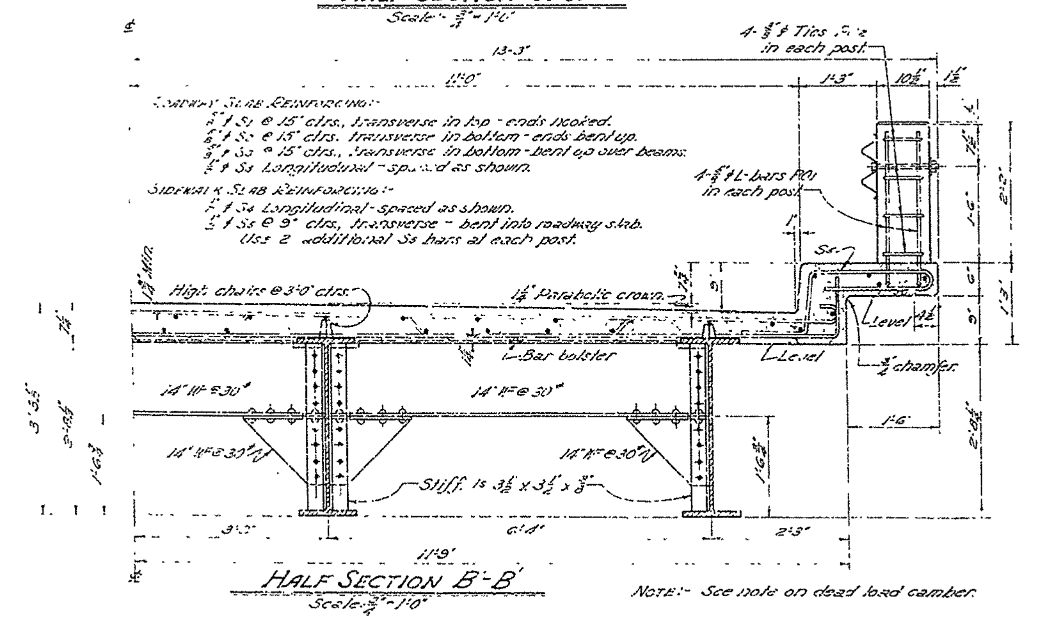
Cross beams and strut connections are to be sub-punched to 11/16" ⌀ and reamed to a metal template

SPECIFICATIONS:- Arkansas State Highway Commission Standard Specifications for Road and Bridge Construction, adopted March 1, 1940.

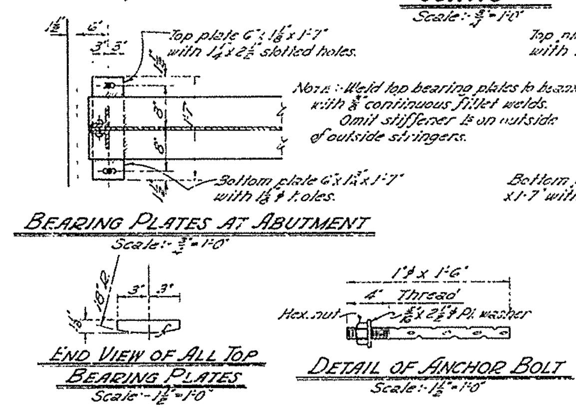
DESIGN LIVE LOAD - H-15 LOADING A.A.S.H.O. 1949

Load Distribution to Interior Beams:- Dead Load 790#/Lin.Ft.
Live Load 1.27 Wheels or 0.633 Lanes, 30% Impact

Load Distribution to Outside Beams:- Dead Load 1015#/Lin.Ft.
Live Load 0.98 Wheels or 0.49 Lanes, 30% Impact.

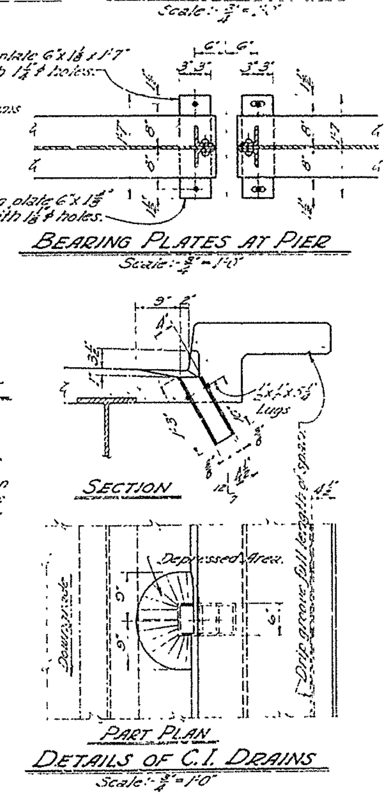


NOTE:- See note on dead load camber.



ASPHALTIC PAINT NOTE:
Field paint edges and top surfaces of flanges of struts and beams for width of strut flange with an asphaltic paint; this work and material not to be paid for directly but to be considered subsidiary to the item of "Class S" Concrete.

NOTE: Place drain openings on each side of roadway at 18'-3" ctrs. beginning 5'-0" from ℄ of expansion joint at pier. Omit the two drains nearest abutment if the span is above a high fill. Set lip of drains 1" low and trowel out slab to meet. Weight of drain = 29#.



UNIT STRESSES

Class "S" Concrete (n=10)	1000#/□"
Reinforcing Steel	18000#/□"
Structural Steel	18000#/□"

NOTE:- This Standard may be used separately or in conjunction with the Standard 75'-0" Cantilever I-Beam Span Units, Drawing Nos. 5083-A and 5083-B.

FOR INFORMATION ONLY

DETAILS OF STANDARD
50'-0" I-BEAM SPAN
22'-0" CLEAR ROADWAY 2 CURBS @ 1'-0"
4 GIRDER TYPE

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

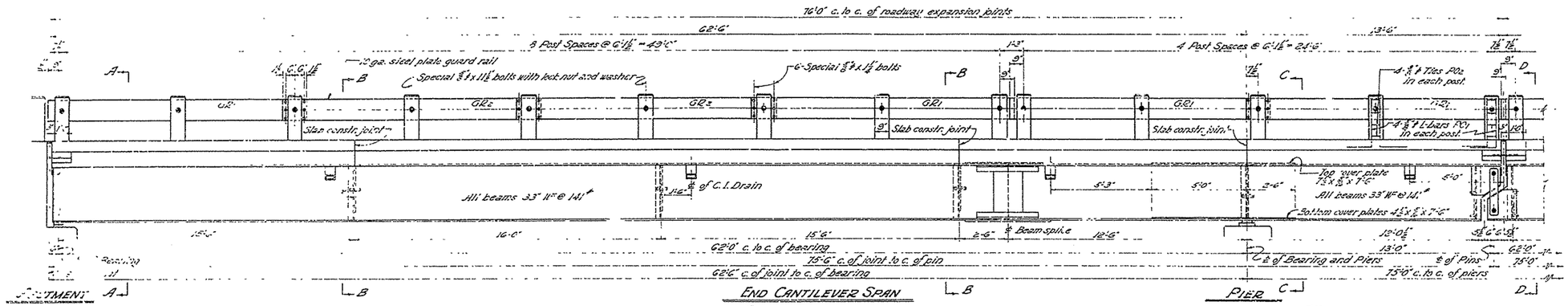
Drawn By: W.C.H. Date: 8-15-50
Traced By: A.J.J. Date: 9-12-50
Checked By: ____ Date: ____
Scale: As Noted

BRIDGE DESIGN ENGINEER

BRIDGE NO. DRAWING NO. 5082

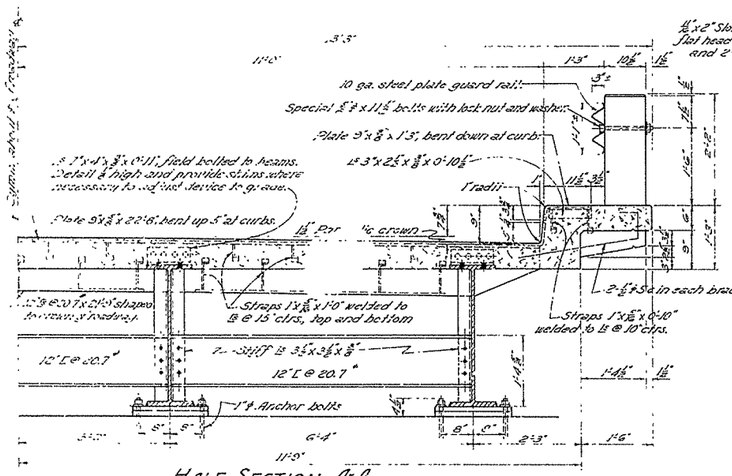
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090450	38	55

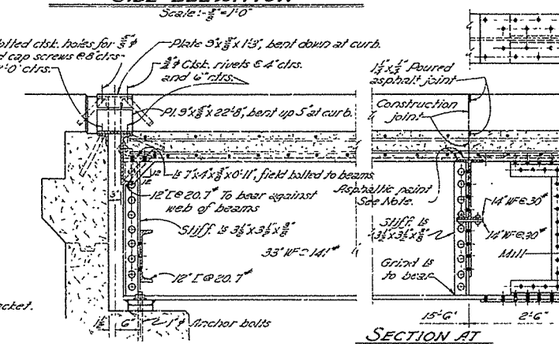
1-Bm Span Details of Br. No. 02677

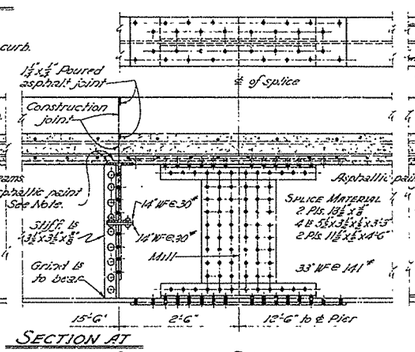


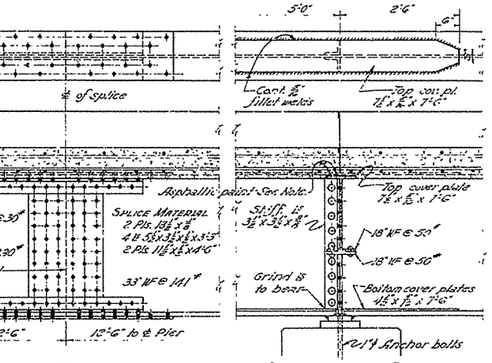
SIDE ELEVATION

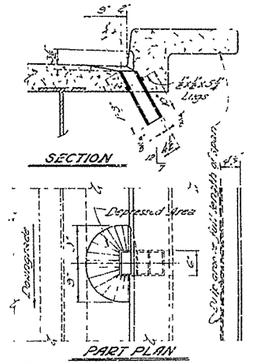
Scale:- ⅜" = 1'-0"



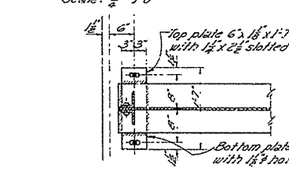




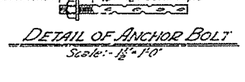


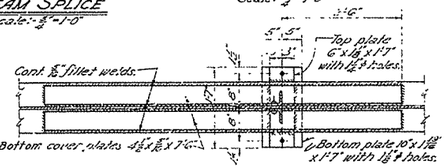


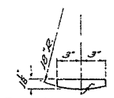
Note:- Place drain openings on each side of roadway at 18'9" clrs, beginning 19'3" from ℄ of suspended span or 5'0" from ℄ of roadway expansion joint on cantilever end of cantilever spans. Omit the two drains nearest abutments of the end spans are above a high fill.
Set lip of drains 1" low and trowel cu. slab to meet. Weight of drain = 23#.



Note:- Weld top bearing plates to beams with ⅜" continuous fillet welds. Omit stiffener b on outside of outside stringers.







BAR LIST PER SPAN

MARK	SIZE	NUMBER REQUIRED PER: CANTILEVER SPAN END	CANTILEVER SPAN INTER.	SUSPENDED SPAN	LENGTH	BENDING DIAGRAM
S1	⅝"ø	61	60	39	23'-1"	
S2	⅝"ø	61	60	33	25'-2"	
S3	⅝"ø	60	59	38	24'-8"	
S4	⅝"ø	42	——	——	15'-8"	Straight
		42	42	——	35'-0"	
		42	42	——	28'-2"	
		——	42	84	14'-8"	
		——	——	42	21'-6"	
S5	½"ø	253	256	164	5'-9"	
S6	½"ø	8	8	8	3'-6"	
PO1	⅞"ø	112	112	72	3'-9"	
PO2	⅞"ø	112	112	72	2'-8"	

Note:- Dimensions relating to reinforcing steel are to centers of bars.

Asphaltic Paint Note:
Field paint edges and top surfaces of flanges of struts and beams for width of strut flange with an asphaltic paint; this work and material not to be paid for directly but to be considered subsidiary to the item of Class S Concrete.

FOR INFORMATION ONLY

Sheet No. 1 of 2

DETAILS OF STANDARD 75'-0" CANTILEVER I-BEAM SPAN UNITS 22'-0" CLEAR ROADWAY 2 CURBS @ 1'-0" A GIRDER TYPE

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

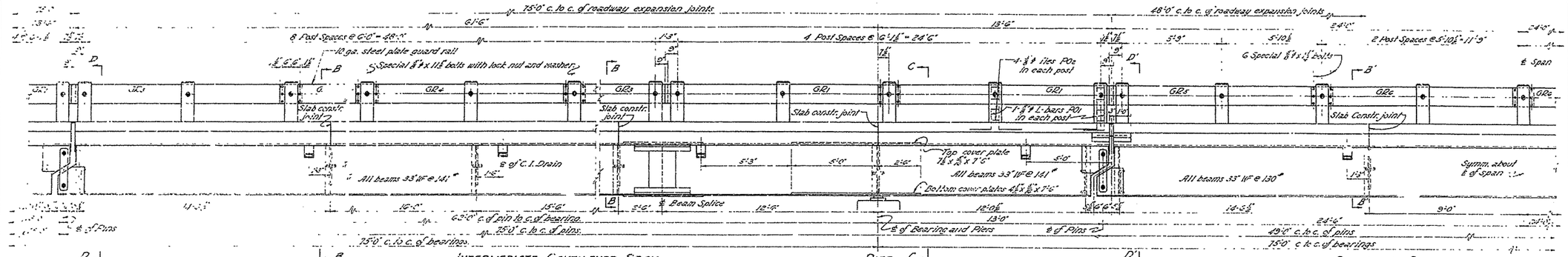
Drawn By: W.C.H. Date: 8-15-50
Traced By: Jan Date: 8-21-50
Checked By: H.B. Date: 9-11-50
Scale: 1" = As Noted ft.

BRIDGE NO. DRAWING NO. 5083-A

Bridge Design Engineer

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090450	39	55

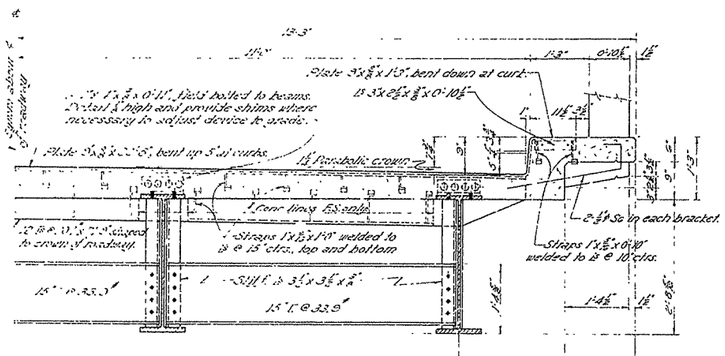
1 I-Bm Span Details of Br. No. 02677



SIDE ELEVATION

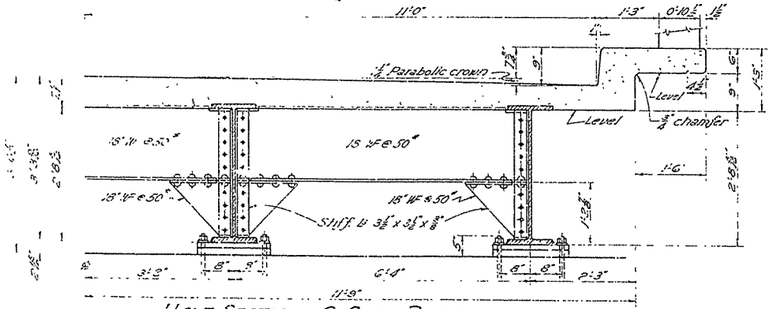
Scale: ⅜" = 1'0"

Note:- Section B'B' and D'D' are similar to Sections B-B and D-D, respectively, except for difference due to depths of 33"WF beams



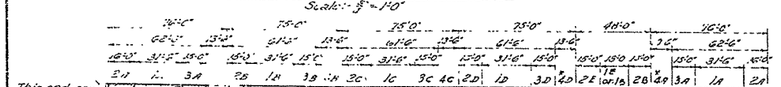
HALF SECTION D-D

Scale: ⅜" = 1'0"



HALF SECTION C-C AT PIERS

Scale: ⅜" = 1'0"



TYPICAL SLAB POURING SCHEDULE FOR 75'-0" CANTILEVER I-BEAM UNITS

Slab pours are to be made as scheduled by number as shown above. Pours bearing the same number may be made separately or simultaneously, but shall always be poured in order of their subscript letter. After three consecutive pours of the first series from one end have been made, pours of the second series may be begun. Pours of the first series however are to be kept three pours ahead of the second series, until completed. This pouring procedure to apply to remaining series also.
* Pours 4A and 4C to be the last pours.

GENERAL NOTES

All concrete to be Class 'S'. All exposed corners to be chamfered ¾" unless otherwise noted.
Rivets, ¾" ø. Open holes, ⅞" ø. Use machine bolts where bolts are indicated.
Ends of all stiffener angles shall be ground to bear against beam flanges.
Structural shapes of equal or greater strength may be substituted for shapes shown but payment will be made on shapes shown or actually used whichever is the lesser.
All weld connections to be ⅜" fillet shop welds; except as noted. Welding to be by the electric arc process in accordance with current specifications for Welded Highway and Railway Bridges of the American Welding Society.
All bearing plates are to be structural steel. All top plates to be shop welded to I-Beams with ⅜" fillet welds extending entire length of all edges and surfaces in contact. No tolerance will be permitted in angle between flange and web of beams at points of bearing. Masonry plates to be seated on 3 layers of burlap saturated with red lead.
All bearing and roadway expansion devices are to be paid for at the unit price bid per pound for 'Structural Steel in Beam Spans'.
Cast iron drains are to be paid for as 'reinforcing steel' and to be painted same as structural steel.
Shop Paint:- All structural steel shall be given one coat of red lead and raw linseed oil before shipment, except surfaces in contact with concrete.
Field Paint:- 1st coat, white lead tinted with lamp black. 2nd coat, aluminum paint.
Reinforcing steel to be deformed bars of structural or intermediate grade. Shop lists and bending diagrams must be submitted and approval secured before fabrication is begun.
All reinforcing steel shall be accurately located in the forms and firmly held in place by means of steel wire supports, sufficient in number and size, to prevent displacement during the course of construction and to keep the steel a proper distance from the forms.
Wire supports will not be paid for directly, but will be considered subsidiary to the item of 'Reinforcing Steel'. Shop lists and diagrams must be submitted for approval.
Beams in all spans to be erected before pouring of concrete slab begins.
Camber:- Unless camber is provided for bridges on a vertical curve, the slab is to be approximately ½" thicker at mid-span and ⅝" thicker at the quarter points to provide for dead load deflection of steel beams. For cambering, the span length shall be the distance center to center of piers.
The steel plate guard rail shall be of the type shown or an equivalent rigid type as approved by the Engineer. The steel plate guard rail, including all concrete posts, shall be paid for at the unit price bid per linear foot for 'Steel Plate Guard Rail'. To be painted the same as structural steel.
This drawing shows general features of design only. Shop drawings shall be made in accordance with the specifications, submitted and approval secured before fabrication is begun.
The holes for all beam splices shall be sub-punched or drilled to ⅝" ø and reamed to ¾" ø while beams are assembled in the shop. While assembled for reaming all parts are to be match-marked. A match-marking system shall be such as to prevent interchange or reversal of splice material. A match-marking diagram shall be furnished the Engineer.
Cross beam and strut connections are to be sub-punched to ⅞" ø and reamed to ¾" ø a metal template.
Specifications:- Arkansas State Highway Commission Standard Specifications for Road and Bridge Construction, adopted March 1, 1930.

DESIGN LIVE LOAD - H-15 LOADING A.A.S.H.O. 1929

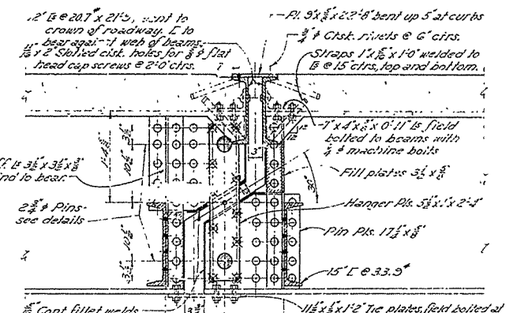
Load Distribution to Interior Beams:- Dead Load 900 # / Lin. Ft.
Live Load 1.27 Wheels or 0.33 Lanes 27'-30" Imp.
Load Distribution to Outside Beams:- Dead Load 1065 # / Lin. Ft.
Live Load 0.92 Wheels or 0.49 Lanes 27'-30" Imp.

UNIT STRESSES:-

Class 'S' Concrete (n=10):		1000 #/□"
Reinforcing Steel		18000 #/□"
Structural Steel		18000 #/□"

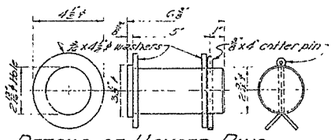
Revision:
Pouring Schedule H.B. 3-51

BRIDGE DESIGN ENGINEER



TYPICAL SECTION THRU EXPANSION JOINT SHOWING HANGER CONNECTION

Scale: 1" = 1'0"



DETAILS OF HANGER PINS

Scale: 3" = 1'0"

FOR INFORMATION ONLY

SHEET No. 2 OF 2

DETAILS OF STANDARD 75'-0" CANTILEVER I-BEAM SPAN UNITS 22'-0" CLEAR ROADWAY, 2 CURBS @ 1'0" A GIRDER TYPE

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

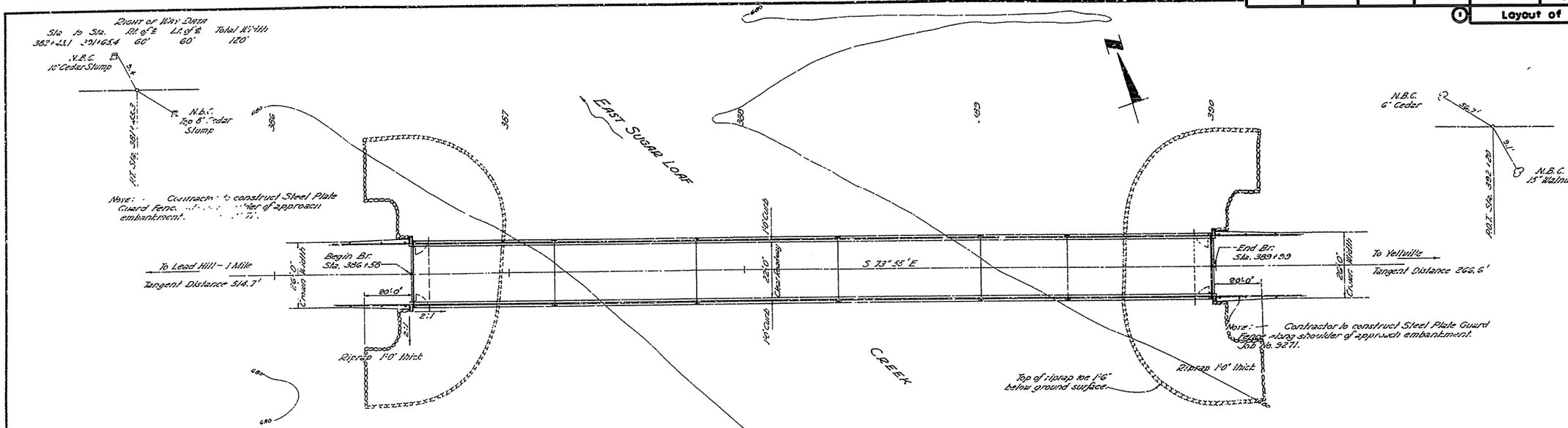
Drawn By: W.C.H. Date: 8/17/50
Traced By: Jap Date: 9-1-50
Checked By: H.B. Date: 9-1-50

Scale: In. = Ft. As Noted

BRIDGE NO. 2[illegible] DRAWING NO. 5083-B

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	NO. SHEETS
				6	ARK.			
				JOB NO.		090450	40	55

Layout of Bridge No. 02678



PLAN

General Notes

All concrete to be poured in the dry. Exposed corners to be chamfered ¾" unless otherwise noted.

Rock excavation shall be made to neat lines of concrete footings. Care shall be exercised to avoid shattering of rock faces by excessive blasting. Concrete in footings shall be poured directly against excavated surfaces of rock.

In general, all construction joints in abutments and piers shall be horizontal and shall be provided with keys not less than 3" high covering the middle third of both dimensions.

Specifications: Arkansas State Highway Commission Standard Specifications for Road and Bridge Construction, adopted March 1, 1940.

For Details of Abutment No. 1, see Dwg. No. 7893.
For Details of Piers, see Dwg. No. 7894.
For Details of Abutment No. 2, see Dwg. No. 7895.
For Details of 60'-0" Cantilever I-Beam Span Units, see Dwg. No. 5061-A and 5081-B.

Quantities

Item No.	Item	Quantity	Unit
103	Dry Excavation for Structures.	138.0	Cu. Yds.
103	Wet Excavation for Structures.	261.0	Cu. Yds.
103	Solid Rock Excavation for Structures.	49.0	Cu. Yds.
S.P. & 802	Class "A" Concrete for Bridges.	257.57 245.0	Cu. Yds.
S.P. & 802	Class "S" Concrete for Bridges.	202.50	Cu. Yds.
803	Reinforcing Steel	45970 66770.0	Lbs.
S.P. - 805	Steel Plate Guard Rail (10 Ga.).	632.66	L.Ft.
801	Structural Steel in Beam Spans.	188,120.0	Lbs.
929	Bridge Name Plates - Type "B"	2	Each.

Design Live Load - H-15 Loading - A.A.S.H.O. Ed. 8

Unit Stresses:

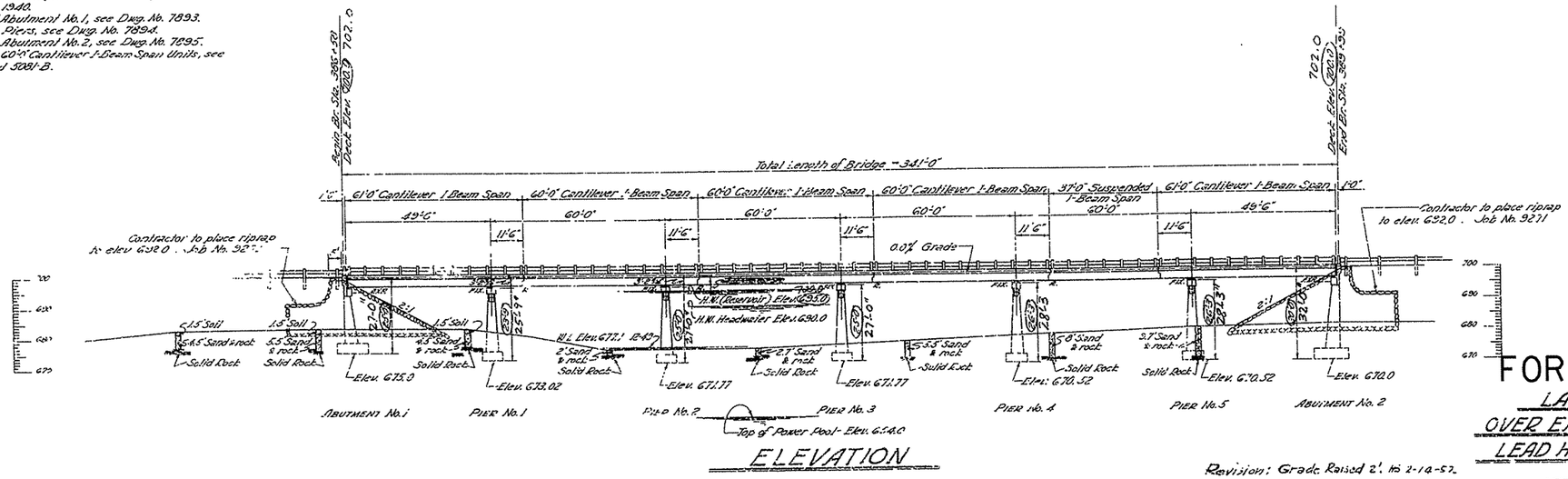
Class "A" Concrete (n=15)	700 #/"
Class "S" Concrete (n=10)	1000 #/"
Reinforcing Steel	18000 #/"
Structural Steel	18000 #/"

Maximum Foundation Pressures:

Abutment No. 1	3.1 Tons / Sq. Ft.
Piers	2.7 Tons / Sq. Ft.
Abutment No. 2	3.4 Tons / Sq. Ft.

Drainage Area 30 Sq. Miles C=1.0

B.M. Elev. 691.45
Nail in root of 14" Hickory 60' left of Sta. 373+00



ELEVATION

Revision: Grade Raised 2' in 2-14-52.

FOR INFORMATION ONLY

LAYOUT OF BRIDGE
OVER EAST SUGAR LOAF CREEK
LEAD HILL - EAST & WEST ROAD
MARION COUNTY
ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

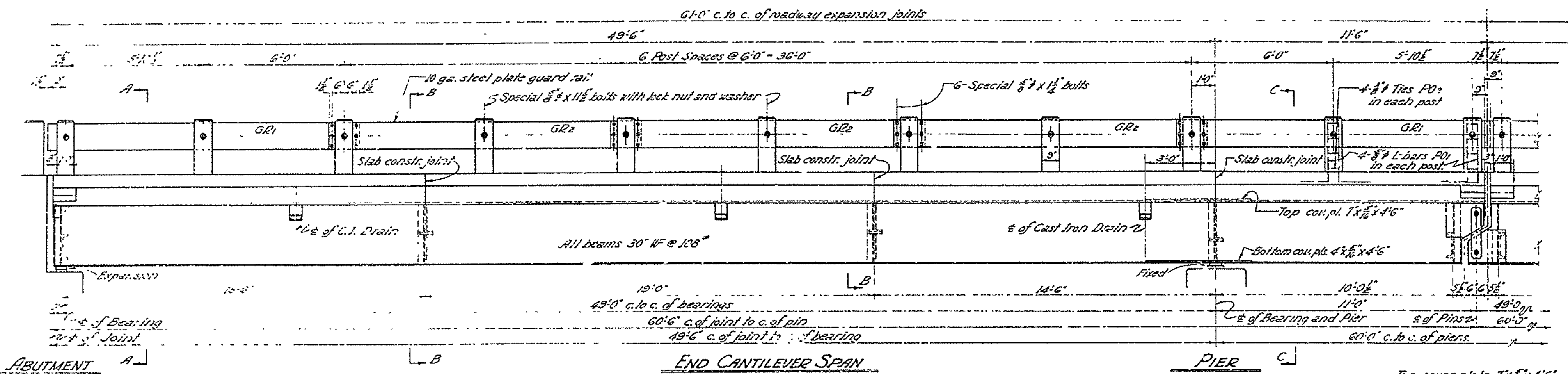
Drawn By: H.B. Date: 12-2-49
Traced By: Jan Date: 8-8-50
Checked By: Date:
Scale: 1 in. = 20 ft. 0 in.

BRIDGE NO. 2678 DRAWING NO. 7892

BRIDGE DESIGN ENGINEER

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090450	41	55

(1) I-Bm. Span Details of Br. No. 02678



ABUTMENT

END CANTILEVER SPAN SIDE ELEVATION

Scale:- ⅛" = 1'-0"

PIER

HALF SECTION A-A

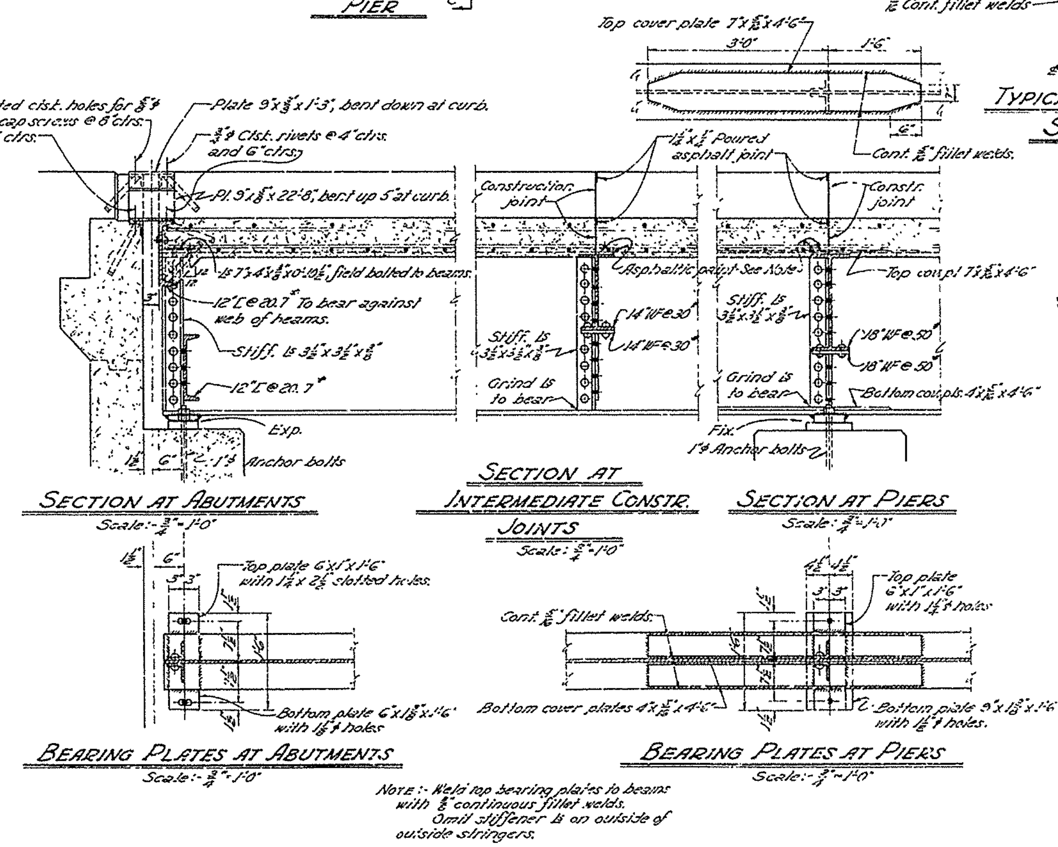
Scale:- ½" = 1'-0"

ROADWAY SLAB REINFORCING:
⅝"∅ S1 @ 15" ctrs. transverse in top - ends hooked.
⅝"∅ S2 @ 15" ctrs. transverse in bottom - ends bent up.
⅝"∅ S3 @ 15" ctrs. transverse in bottom - bent up over beams.
½"∅ S4 Longitudinal - spaced as shown.
SIDEWALK SLAB REINFORCING:
½"∅ S4 Longitudinal - spaced as shown.
½"∅ S5 @ 9" ctrs. transverse - bent into roadway slab.
Use 2 additional S5 bars at each post.

HALF SECTION B-B

Scale:- ½" = 1'-0"

NOTE:- See note on dead load camber.



SECTION AT ABUTMENTS

Scale:- ½" = 1'-0"

SECTION AT INTERMEDIATE CONSTR. JOINTS

Scale:- ½" = 1'-0"

SECTION AT PIERS

Scale:- ½" = 1'-0"

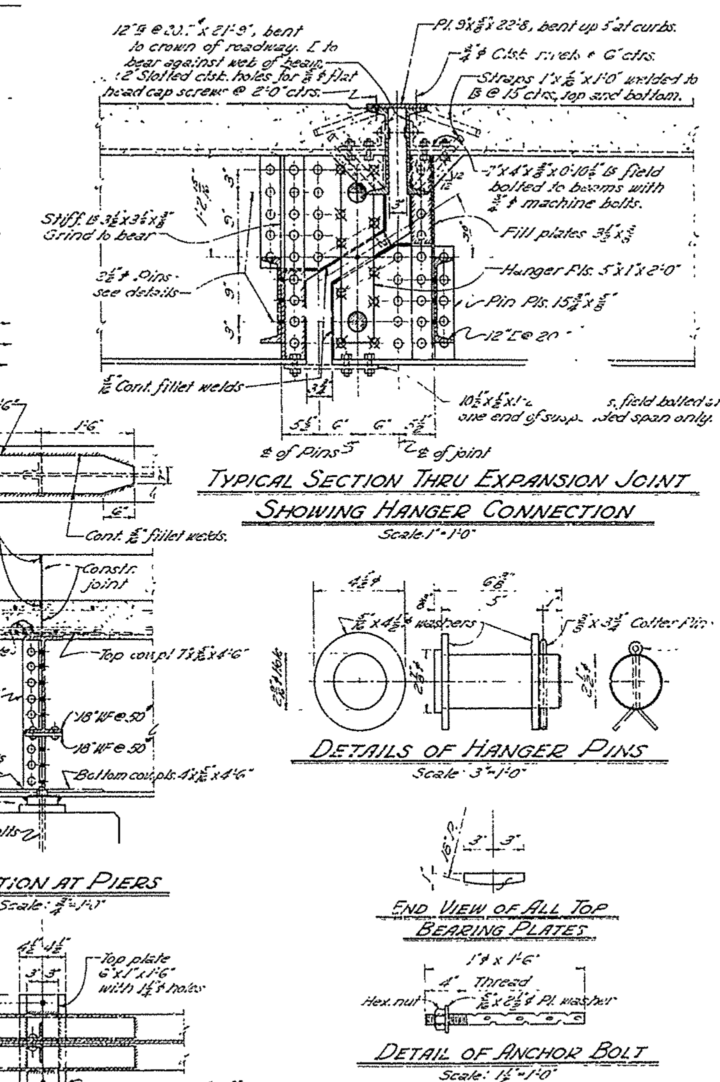
BEARING PLATES AT ABUTMENTS

Scale:- ¾" = 1'-0"

NOTE:- Weld top bearing plates to beams with ⅜" continuous fillet welds.
Omit stiffener ⅃ on outside of outside stringers.

BEARING PLATES AT PIERS

Scale:- ¾" = 1'-0"



TYPICAL SECTION THRU EXPANSION JOINT SHOWING HANGER CONNECTION

Scale: 1" = 1'-0"

DETAILS OF HANGER PINS

Scale: 3" = 1'-0"

END VIEW OF ALL TOP BEARING PLATES

DETAIL OF ANCHOR BOLT

Scale: 1½" = 1'-0"

ASPHALTIC PAINT NOTE:
Field paint edges and top surfaces of flanges of struts and beams for width of strut flange with an asphaltic paint; this work and material not to be paid for directly but to be considered subsidiary to the item of Class "S" Concrete.

BAR LIST PER SPAN

MARK	SIZE	NUMBER REQUIRED PER CANTILEVER SPAN END	CANTILEVER SPAN INTER.	SUSPENDED SPAN	LENGTH	BENDING DIAGRAM
S1	⅝"∅		48	30	23'-11"	
S2	⅝"∅	49	48	30	25'-2"	
S3	⅝"∅	48	47	29	24'-8"	
S4	½"∅	42			36'-6"	Straight
		42	42		25'-9"	Straight
			42		35'-6"	Straight
				42	36'-6"	Straight
S5	½"∅	206	204	126	5'-9"	
S6	½"∅	8	8	8	5'-.."	
P01	⅝"∅	88	88	56	3'-9"	
P02	⅜"∅	88	88	56	2'-8"	

NOTE:- Dimensions relating to reinforcing steel are to centers of bars.

... remainder of details and General Notes, ... Sheet No. 2, Drawing No. 5081-B.

FOR INFORMATION ONLY

SHEET No. 1 OF 2

DETAILS OF STANDARD
60'-0"
CANTILEVER I-BEAM SPAN UNITS
22'-0" CLEAR ROADWAY 2 CURBS @ 1'-0"
4 GIRDER TYPE

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

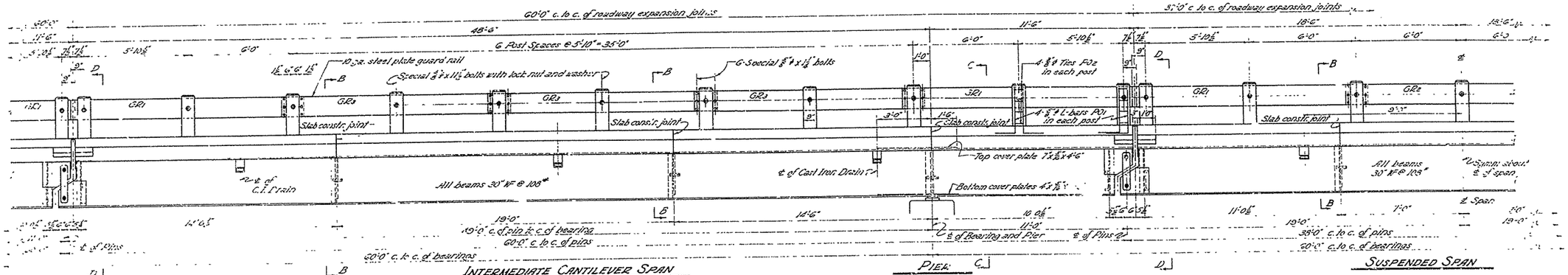
Drawn By: W.C.H. Date: 8-7-50
Traced By: Jan Date: 8-23-50
Checked By: H.S. Date: ..-..-50
Scale: As Noted

BRIDGE DESIGN ENGINEER

BRIDGE NO. DRAWING NO. 5081-A.

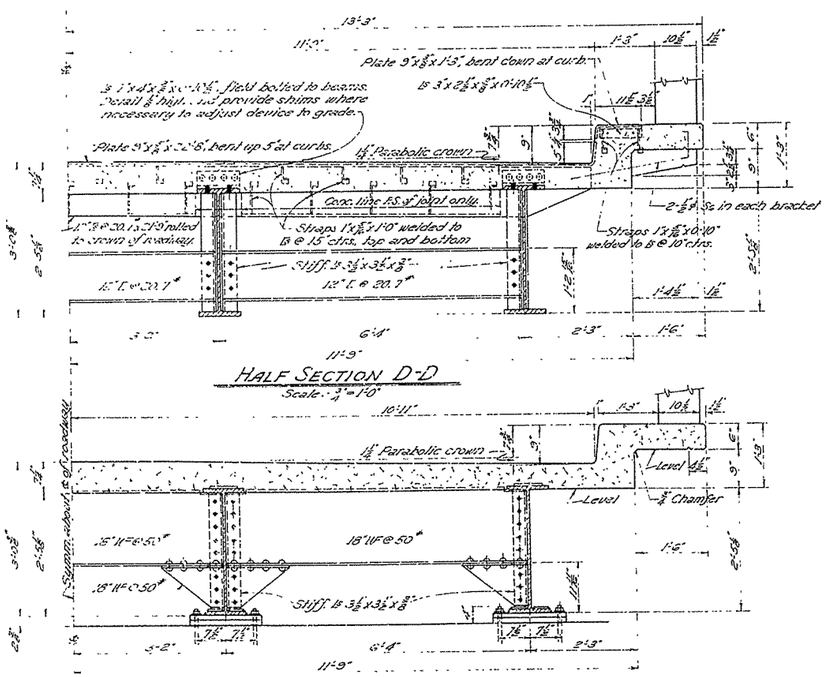
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090450	42	55

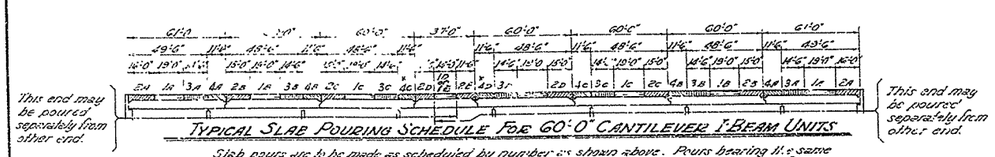
(1) I-Bm. Span Details of Br. No. 02678



SIDE ELEVATION

Scale:- ⅜" = 1'0"





TYPICAL SLAB POURING SCHEDULE FOR 60'-0" CANTILEVER I-BEAM UNITS

Slab pours are to be made as scheduled by number as shown above. Pours bearing like same number may be made separately or simultaneously, but shall always be poured in order of their subscript letter. After three consecutive pours of the first series from one end have been made, pours of the second series may be begun. Pours of the first series however are to be kept three pours ahead of the second series until completed. This pouring procedure to apply to remaining series also. Pours 4c and 4d to be the last pours.

GENERAL NOTES

All concrete to be Class S". All exposed corners to be chamfered ¾" unless otherwise noted.
Rivets, ⅞" ø. Open holes, ⅞" ø. Use machine bolts where bolts are indicated.
Ends of all stiffener angles shall be ground to bear against beam flanges.
Cross beams and strut connections are to be sub-punched to ⅝" and reamed to a metal template.

Structural shapes of equal or greater strength may be substituted for shapes shown but payment will be made on shapes shown or actually used whichever is the lesser.

All weld connections to be ⅜" fillet shop welds, except as noted. Welding to be by the electric arc process in accordance with current specifications for Welded Highway and Railway Bridges of the American Welding Society.

All bearing plates are to be structural steel. All top plates to be shop welded to I-Beams with ⅜" fillet welds extending entire length of all edges and surfaces in contact. No tolerance will be permitted in angle between flange and web of beams at points of bearing.

Masonry plates to be sealed on 3 layers of burlap saturated with red lead.

All bearing and roadway expansion devices are to be paid for at the unit price bid per pound for "Structural Steel in Beam Spans."

Shop Paint:- All structural steel shall be given one coat of red lead and raw linseed oil before shipment, except surfaces in contact with concrete.

Field Paint:- 1st coat, white lead tinted with lamp black. 2nd coat, aluminum paint.

Reinforcing steel to be deformed bars of structural or intermediate grade. Shop lists and bending diagrams must be submitted and approval secured before fabrication is begun.

All reinforcing steel shall be accurately located in the forms and firmly held in place by means of steel wire supports sufficient in number and size, to prevent displacement during the course of construction and to keep the steel a proper distance from the forms.

Wire supports will not be paid for directly but will be considered subsidiary to the item of "Reinforcing Steel." Shop lists and diagrams must be submitted for approval.

Beams in all spans to be erected before pouring of concrete slab begins.

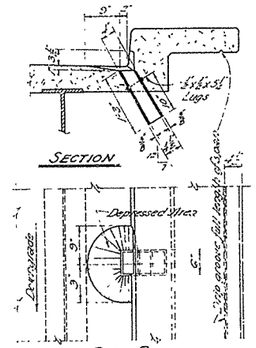
Camber:- Unless camber is provided for bridges on a vertical curve the slab is to be approximately ⅜" thicker at mid-span and ⅜" thicker at the quarter points to provide for dead load deflection of steel beams. For cambering, the span length shall be the distance center to center of piers.

The steel plate guard rail shall be of the type shown or an equivalent rigid type as approved by the Engineer. The steel plate guard rail, including all concrete posts, shall be paid for at the unit price bid per linear foot for "Steel Plate Guard Rail." To be painted the same as structural steel.

Cast iron drains are to be paid for as "reinforcing steel" and to be painted the same as structural steel.

This drawing shows general features of design only. Shop drawings shall be made in accordance with the specifications, submitted and approval secured before fabrication is begun.

Specifications:- Arkansas State Highway Commission Standard Specifications for Road and Bridge Construction, adopted March 1, 1940.



DETAILS OF C.I. DRAINS

Scale:- ¾" = 1'0"

NOTE:- Place drain openings on each side of roadway at 15'0" ctrs. beginning 3'0" from ℄ of piers for cantilever spans and 9'0" from ℄ of suspended span. Omit the two drains near each abutment of the end spans are above a high fill.

Set lip of drains 1" low and trowel out slab to meet. Weight of drain = 29#.

DESIGN LIVE LOAD - H-15 LOADING A.S.H.O. 1949

Load Distribution to Interior Beams:- Dead Load [illegible] Impact
Live Load 1.2 Wheels or 0.633 Lane ... Impact

Load Distribution to Outside Beams:- Dead Load 990# / Lin. Ft.
Live Load 0.92 Wheels or 0.49 Lanes, 30% Impact.

UNIT STRESSES:-

Class S" Concrete (n=10)	1000#/□"
Reinforcing Steel	18000#/□"
Structural Steel	18000#/□"

REVISIONS:
Pouring Schedule 4d 3-17-51.

BRIDGE DESIGN ENGINEER

FOR INFORMATION ONLY

SHEET No. 2 OF 2

DETAILS OF STANDARD 60'-0" CANTILEVER I-BEAM SPAN UNITS

22'-0" CLEAR ROADWAY 2 CURBS @ 1'-0"

4 GIRDER TYPE

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

Drawn By: W.C.H. Date: 5-10-50.
Traced By: Jan Date: 6-25-50.
Checked By: [illegible] Date: [illegible]

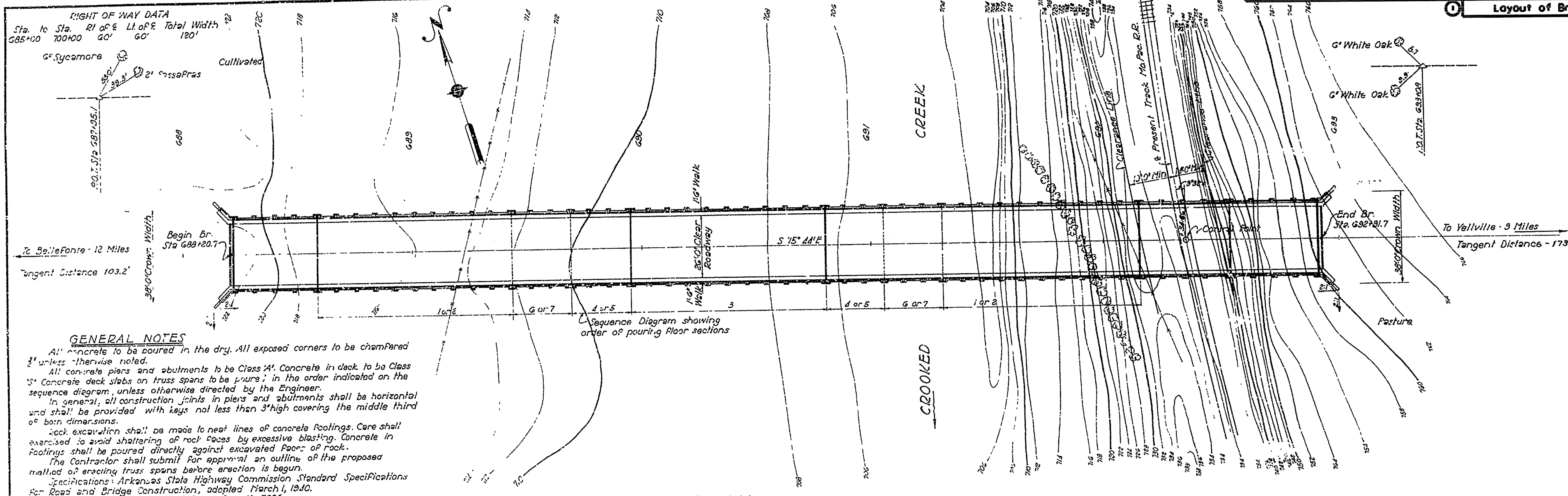
Scale: In. = 1 ft. As Noted.

BRIDGE NO.

DRAWING NO. 5081-B

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090450	43	55

Layout of Bridge No. 02469



GENERAL NOTES

All concrete to be poured in the dry. All exposed corners to be chamfered ¾" unless otherwise noted.

All concrete piers and abutments to be Class 'A'. Concrete in deck to be Class 'S'. Concrete deck slabs on truss spans to be poured in the order indicated on the sequence diagram, unless otherwise directed by the Engineer.

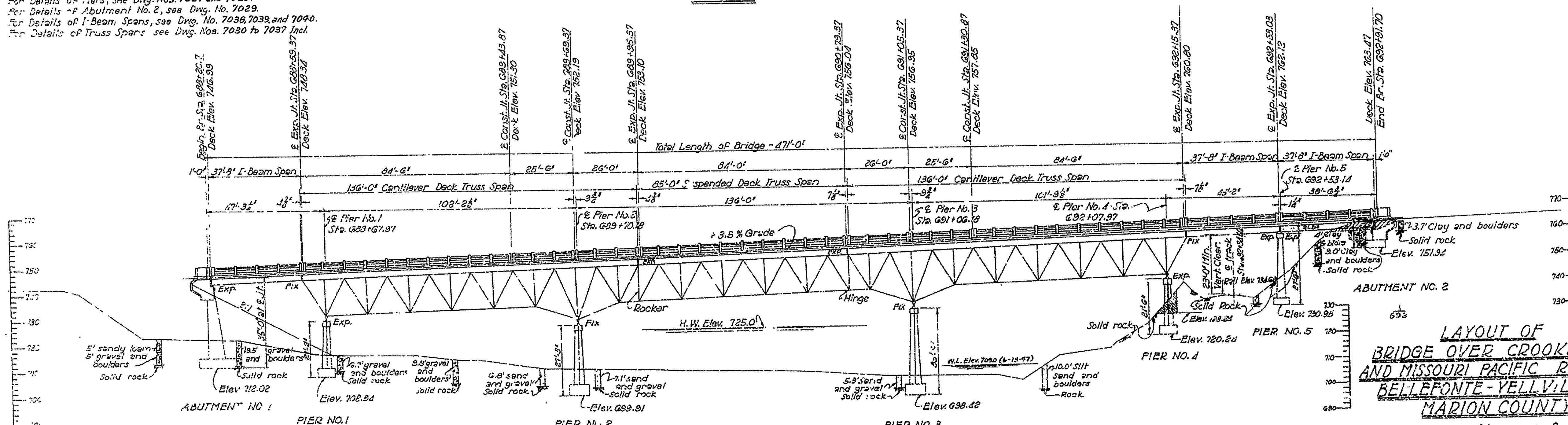
In general, all construction joints in piers and abutments shall be horizontal and shall be provided with keys not less than 3" high covering the middle third of both dimensions.

Rock excavation shall be made to neat lines of concrete footings. Care shall exercised to avoid shattering of rock faces by excessive blasting. Concrete in footings shall be poured directly against excavated faces of rock.

The Contractor shall submit for approval an outline of the proposed method of erecting truss spans before erection is begun.

Specifications: Arkansas State Highway Commission Standard Specifications For Road and Bridge Construction, adopted March 1, 1940.

For Details of Abutment No. 1, see Dwg. No. 7026.
For Details of Piers, see Dwg. Nos. 7027 and 7028.
For Details of Abutment No. 2, see Dwg. No. 7029.
For Details of I-Beam Spans, see Dwg. No. 7038, 7039, and 7040.
For Details of Truss Spans see Dwg. Nos. 7030 to 7037 Incl.



Design Live Load - H20 Loading A.A.S.H.O 1944

Unit Stresses

Class 'A' Concrete (n=15)	700#/sq. in.
Class 'S' Concrete (n=10)	1000#/sq. in.
Reinforcing Steel	18,000#/sq. in.
Structural Steel	18,000#/sq. in.

Maximum Foundation Pressures

Abutment No. 1	4.0	Tons/sq. ft.
Pier No. 1 & 4	3.2	" " (3.6 Tons/sq. ft. DL, LL + WL)
Pier No. 2 & 3	3.6	" " (5.9 " " " " " ")
Pier No. 5	2.7	" "
Abutment No. 2	5.8	" "

Drainage Area
210 Sq. Miles - Mountainous - Cavernous
B.M. Elev. 715.80
Nail in root of 18" Elm 100' right of Sta. G88+60

LAYOUT OF BRIDGE OVER CROOKED CREEK AND MISSOURI PACIFIC RAILROAD BELLEFONTE - YELLVILLE ROAD MARION COUNTY

ROUTE 62 SEC. 8

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

Drawn By: B. Date: 4-1-47
Traced By: E.B.S. Date: 5-3-47
Checked By: Date:
Scale: 1" in. = 20 ft.

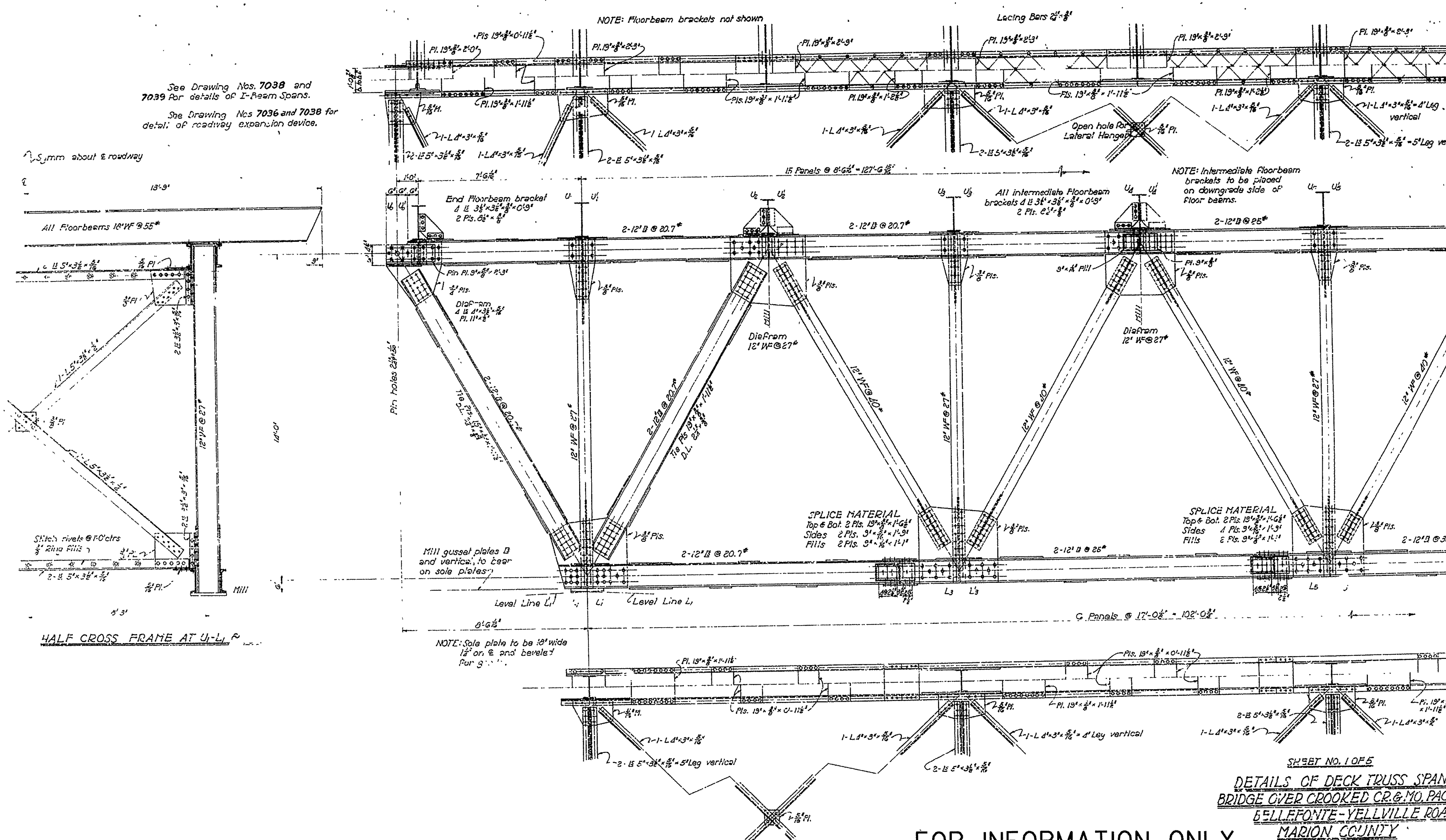
BRIDGE NO. 2469 DRAWING No 7025

PRINCIPAL HIGHWAY ENGINEER (BRIDGES)

FOR INFORMATION ONLY

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090450	44	55

Truss Details of Bridge No. 02469



SHEET NO. 1 OF 5

DETAILS OF DECK TRUSS SPANS
BRIDGE OVER CROOKED CR. & MO. PAC. R.R.
BELLEFONTE-YELLVILLE ROAD
MARION COUNTY
ROUTE SEC.

FOR INFORMATION ONLY

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

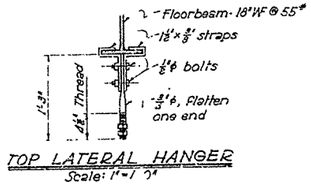
Drawn by: W.C.H. Date: 5-26-47
Traced By: A.B.S. Date: 6-9-47
Checked By: Date:
Scale: ⅛ in. = 1'-0"

N. B. Garver
PRINCIPAL HIGHWAY ENGINEER (BRIDGE)

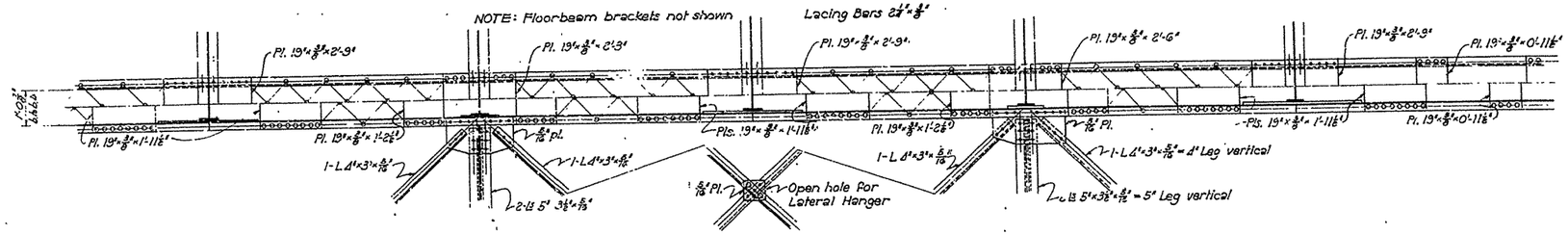
BRIDGE No. 2469 DRAWING No. 7031

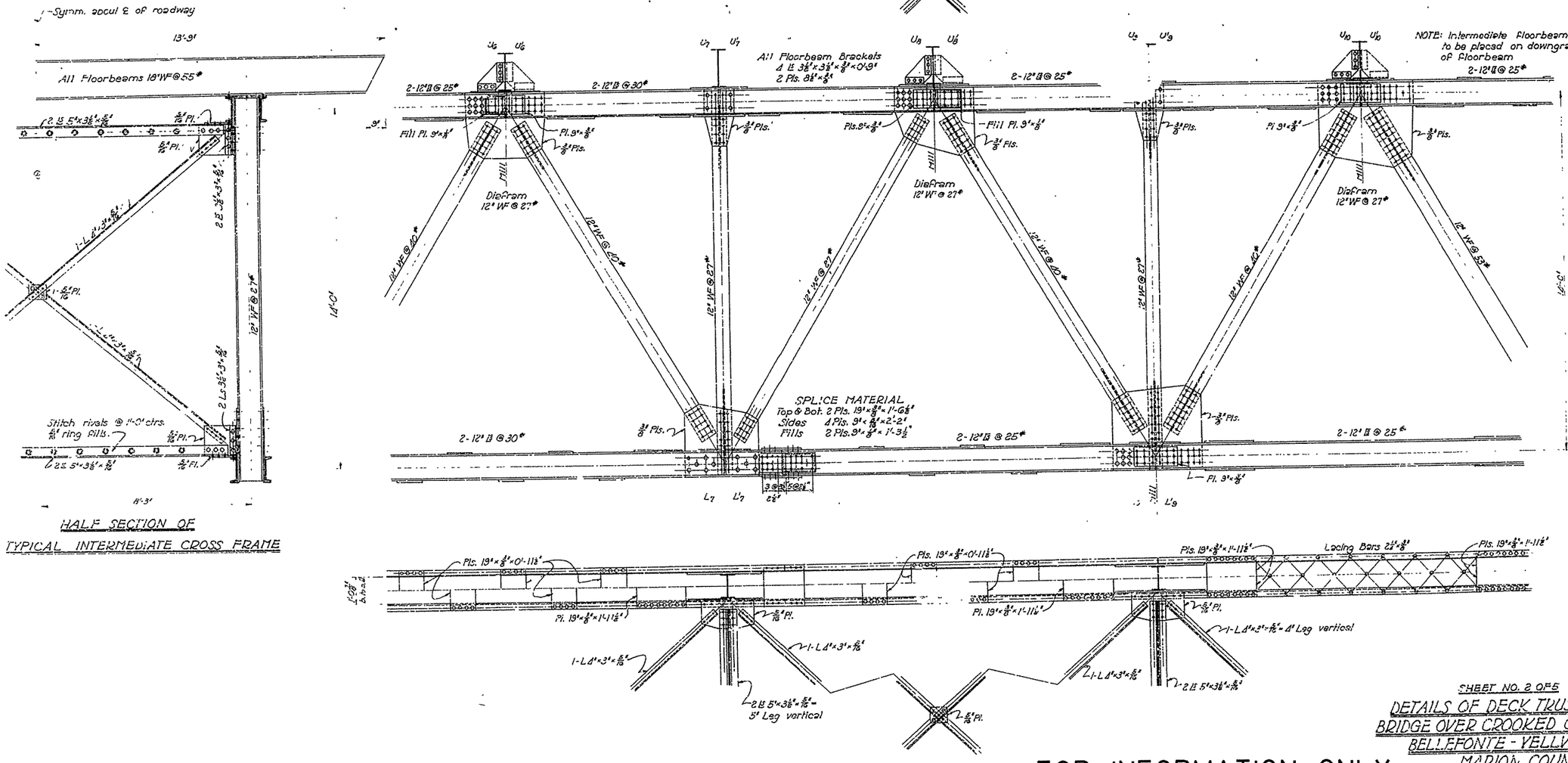
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090450	45	55

Truss Details of Bridge No. 02469



TOP LATERAL HANGER
Scale: 1"=1'-0"





HALF SECTION OF
TYPICAL INTERMEDIATE CROSS FRAME

SHEET NO. 2 OF 5

DETAILS OF DECK TRUSS SPANS
BRIDGE OVER CROOKED CREEK & M.O.P.AC. R.R.
BELLEFONTE - YELLVILLE ROAD
MARION COUNTY
ROUTE SEC.

FOR INFORMATION ONLY

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

Drawn By: W.C.H. Date: 6-12-47
Traced By: E.S.S. Date: 6-12-47
Checked By: Date:

Scale: 1/4 in. = 1 ft. Except as Shown

BRIDGE No. 2469

DRAWING No. 7032

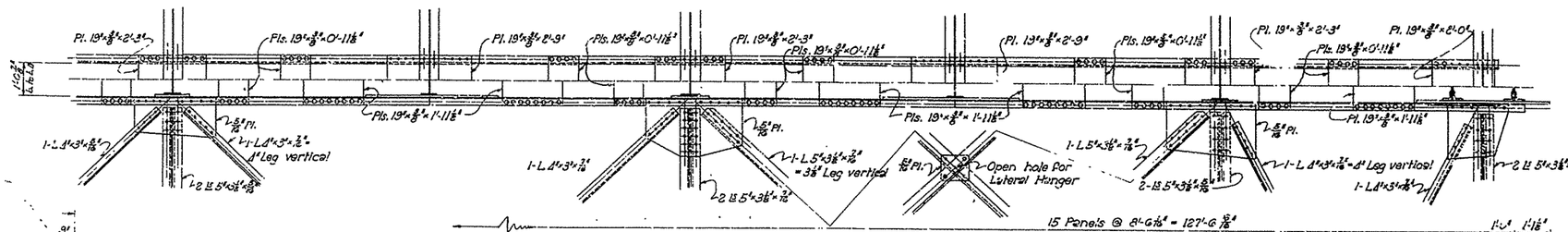
Revisions- Splice - L_7-L_8 & L_7-L_8. W.C.H. 8-22-47.

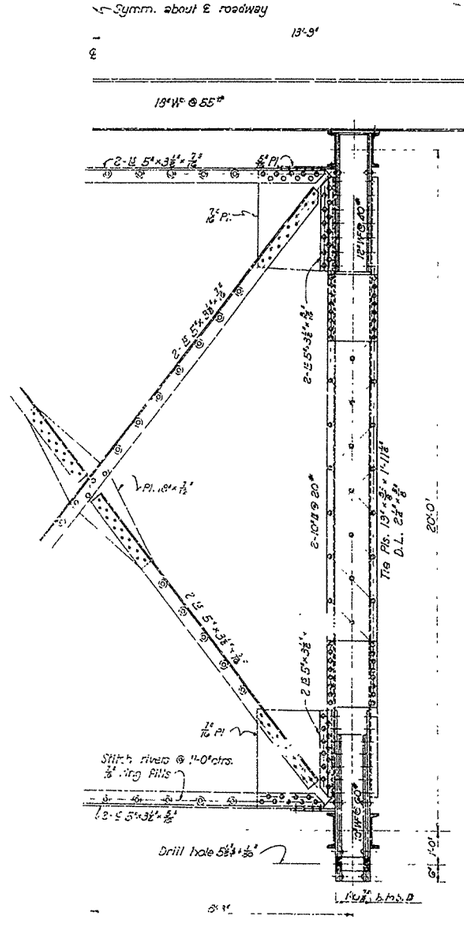
R. B. Harvey
PRINCIPAL HIGHWAY ENGINEER (BRIDGE)

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090450	46	55

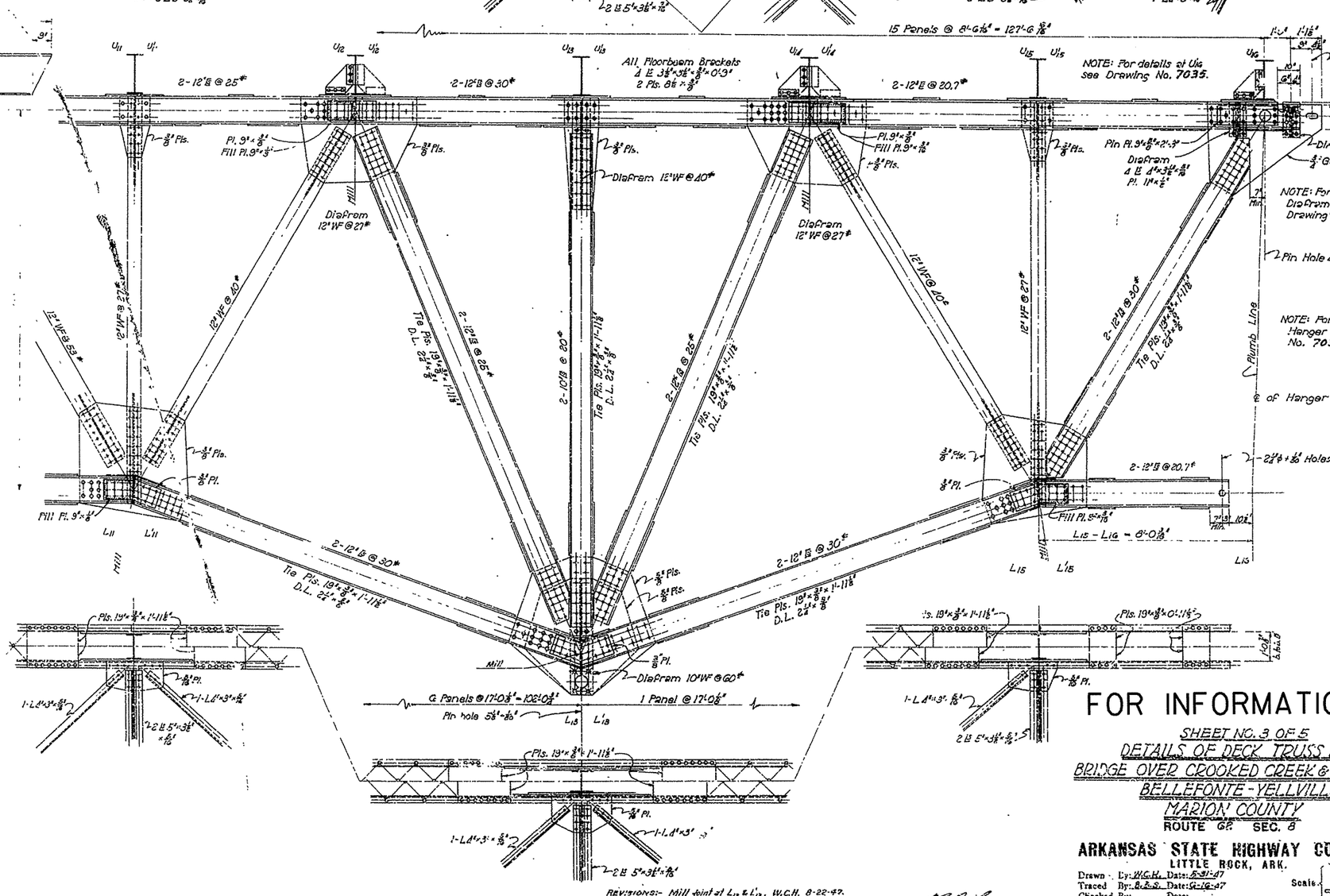
Truss Details of Bridge No. 02469

NOTE: Floorbeam brackets not shown





HALF SECTION OF
CROSS FRAME AT U_{13}-L_{13} & U'_{13} & L'_{13}



FOR INFORMATION ONLY

SHEET NO. 3 OF 5
DETAILS OF DECK TRUSS SPANS
BRIDGE OVER CROOKED CREEK & MO. PAC. R.R.
BELLEFONTE - YELLVILLE ROAD
MARION COUNTY
ROUTE 62 SEC. 8

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

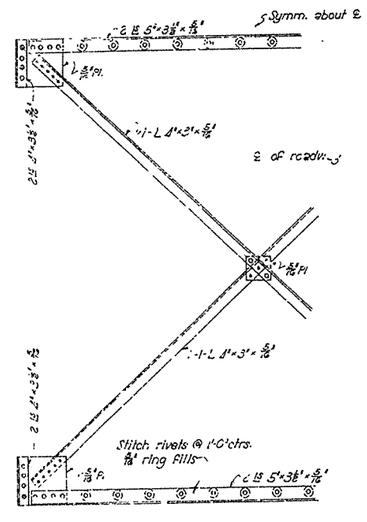
Drawn By: W.C.H. Date: 5-31-47
Traced By: B.L.S. Date: 6-16-47
Checked By: Date:
Scale: ½ in. = 1 ft.

BRIDGE No. 2169 DRAWING No. 7033

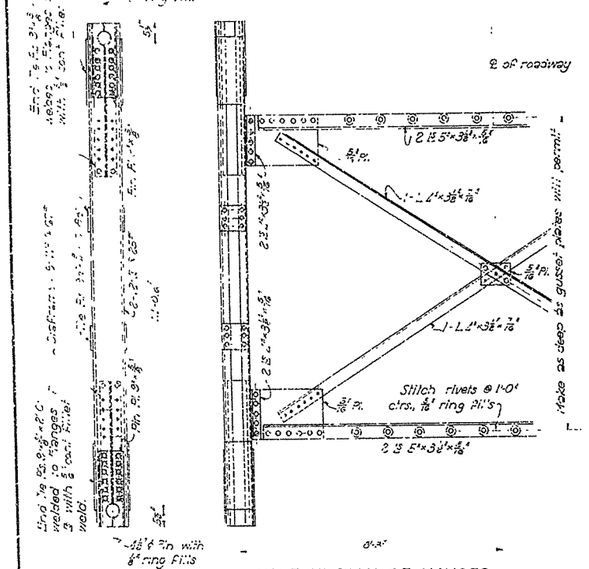
PRINCIPAL HIGHWAY ENGINEER (BRIDGE)

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090450	47	55

(1) Truss Details of Bridge No. 02469

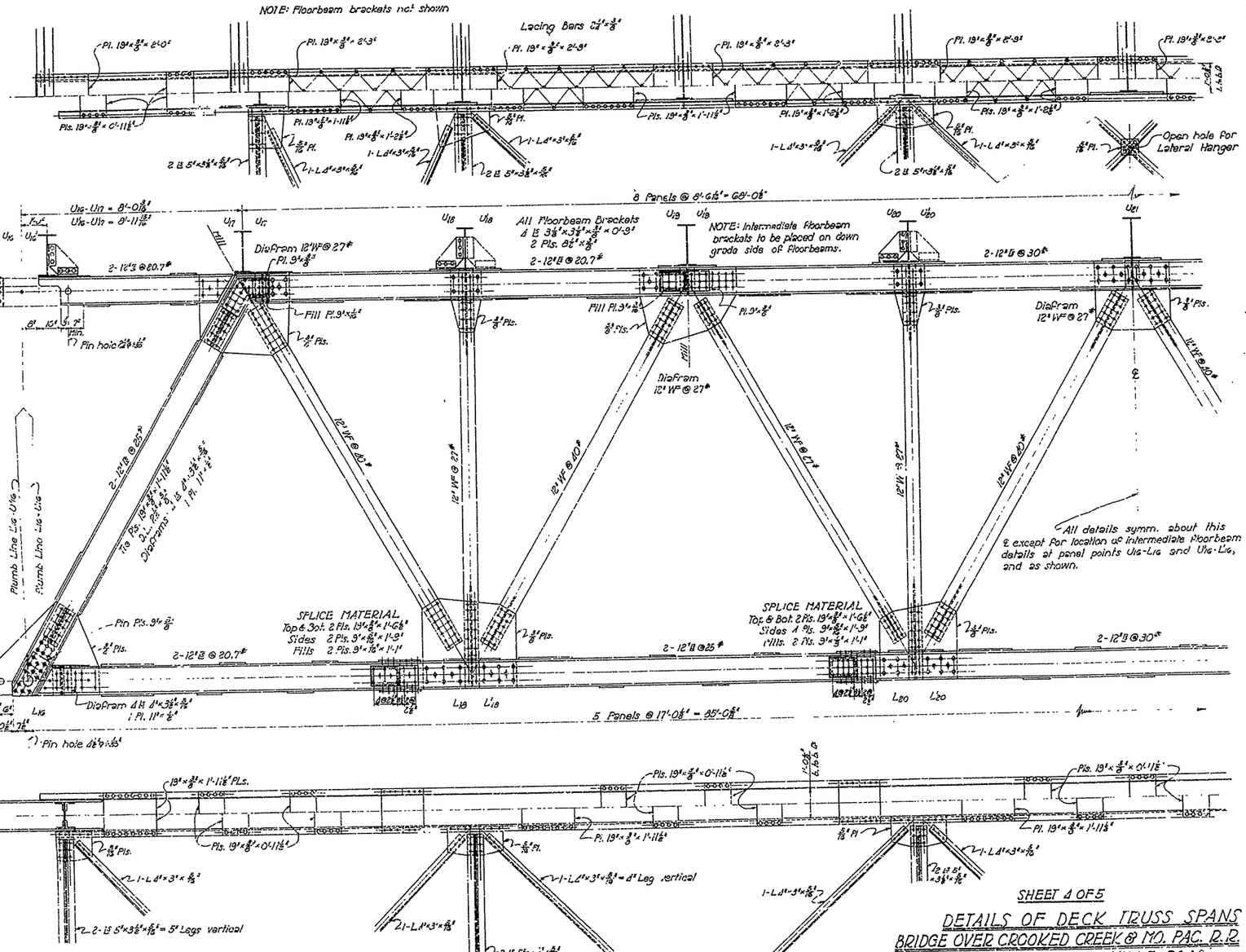


HALF PORTAL CROSS FRAME
AT L_{11}-U_{17} AND L'_{11}-U'_{17}



HALF SECTION OF HANGER
CROSS FRAME AT U_{16}-L_{16}

NOTE: Weld edges of pin plates and diaphram flanges outside pin hole with ⅝" cont. fillet welds.



All details symm. about this ℄ except for location of intermediate floorbeam details at panel points U_{16}-L_{16} and U_{16}-L'_{16}, and as shown.

SHEET 4 OF 5

DETAILS OF DECK TRUSS SPANS
BRIDGE OVER CROOKED CREEK & MO. PAC. R.R.
BELLEFONTE-YELLVILLE ROAD
MARION COUNTY

ROUTE 62 SEC. B

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

Drawn By: W.C.H. Date: 6-5-47
Traced By: E.E.S. Date: 6-19-47
Checked By: Date:
Scale: ⅛ in. = 1 ft.

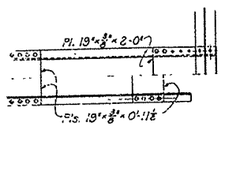
BRIDGE NO. 2469 DRAWING NO. 7034

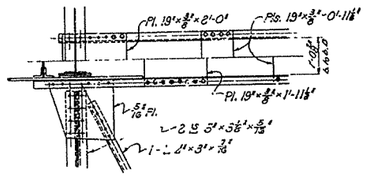
N.G. Gaver
PRINCIPAL HIGHWAY ENGINEER (BRIDGES)

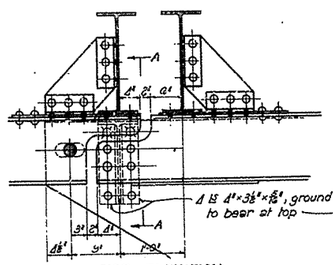
FOR INFORMATION ONLY

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090450	48	55

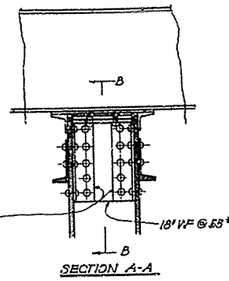
1 Truss Details of Bridge No. 02469



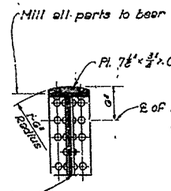




SIDE ELEVATION



SECTION A-A

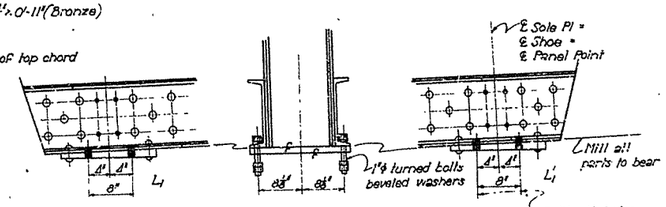


SECTION B-B

DETAIL OF DIAPHRAM 'A' AT PANEL POINTS U16 AND U16'

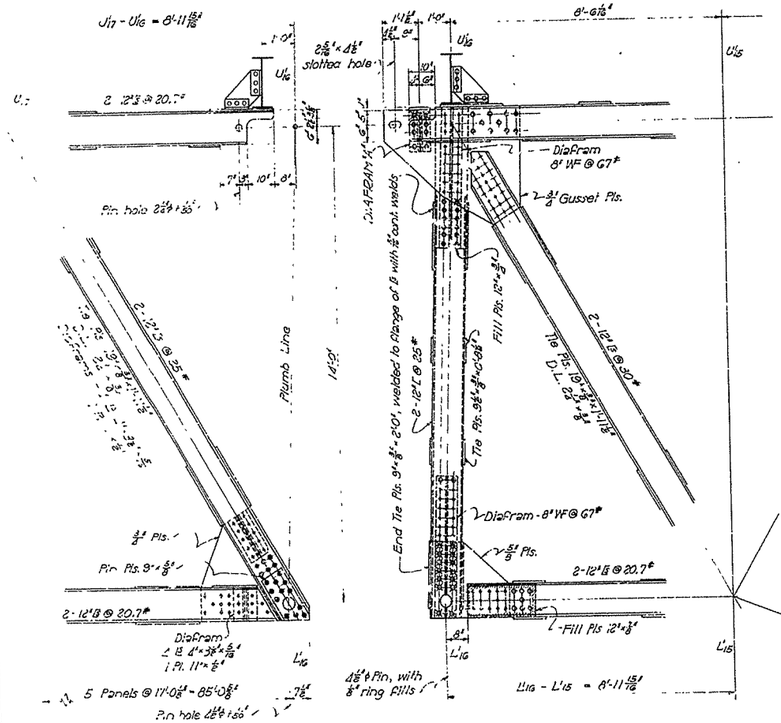
Scale: 1" = 1'-0"

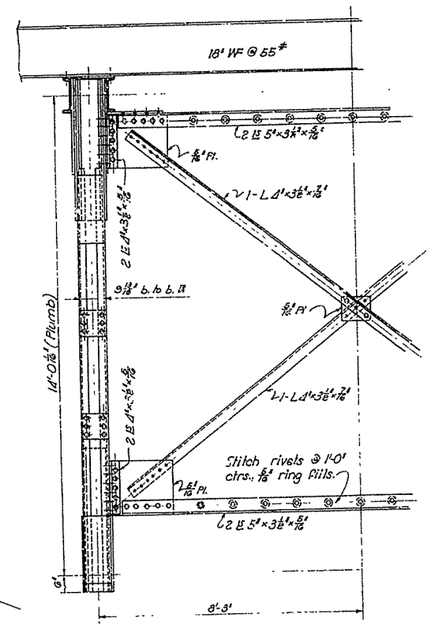
NOTE: Sole Plates to be 18" wide 1½" thick an ℄ and 19" long.



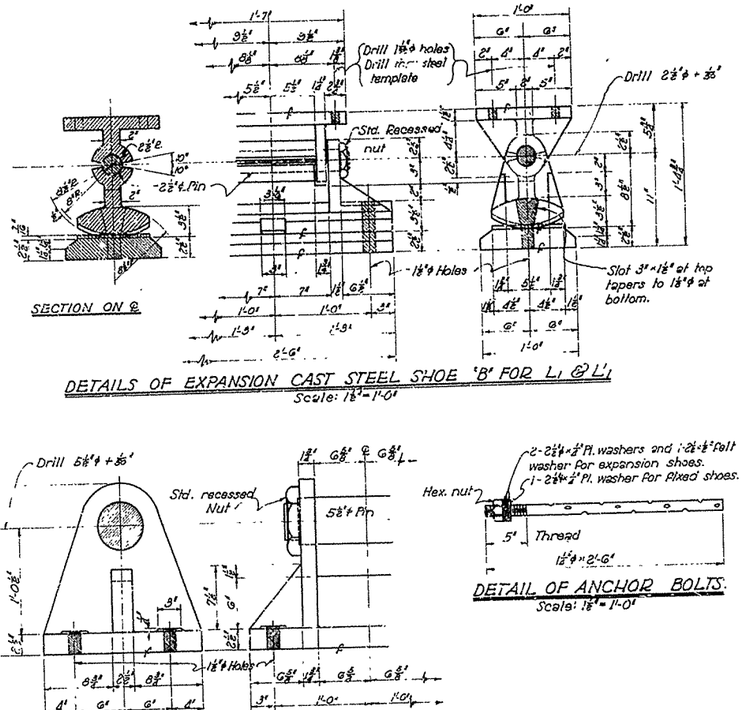
SOLE PLATES AT L1 AND L1'

Scale: 1" = 1'-0"





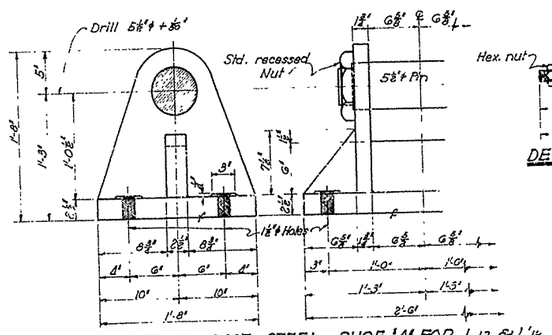
HALF SECTION OF HANGER CROSS FRAME U16 - L16



SECTION ON ℄

DETAILS OF EXPANSION CAST STEEL SHOE 'B' FOR L1 & L1'

Scale: 1⅝" = 1'-0"

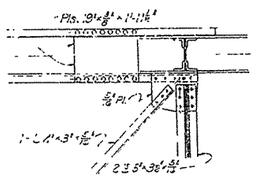


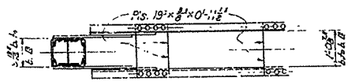
DETAIL OF FIXED CAST STEEL SHOE 'A' FOR L13 & L13'

Scale: 1⅝" = 1'-0"

DETAIL OF ANCHOR BOLTS

Scale: 1⅝" = 1'-0"





FOR INFORMATION ONLY

SHEET NO. 5 OF 5

DETAILS OF DECK TRUSS SPANS
BRIDGE OVER CROOKED CR. & MO. PAC. R.R.
BELLFONTE - YELLVILLE ROAD
MARION COUNTY

ROUTE G2 SEC. C

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

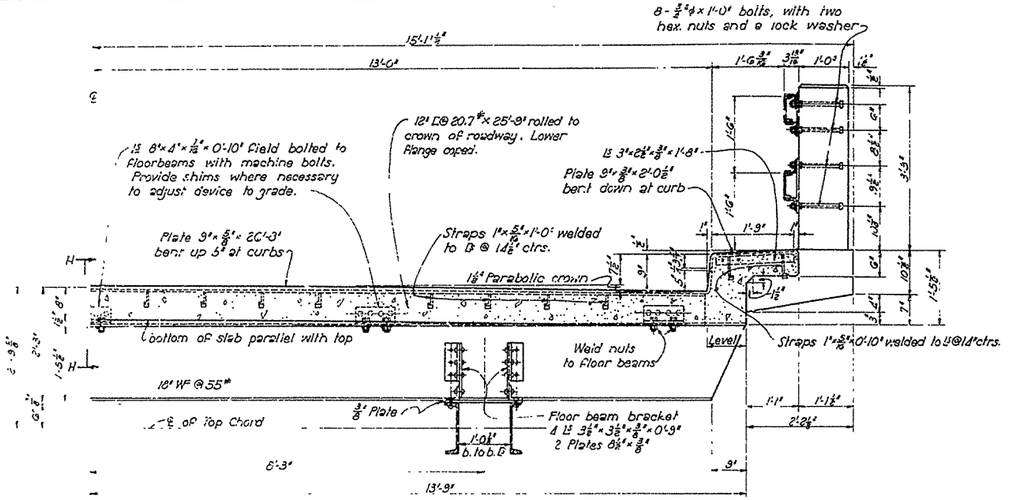
Drawn By: W.C.H. Date: 6-14-47
Traced By: B.B.S. Date: 6-22-47
Checked By: ____ Date: ____
Scale: ½ in. = 1 ft. EXCEPT AS NOTED

BRIDGE NO. 2469 DRAWING NO. 7035

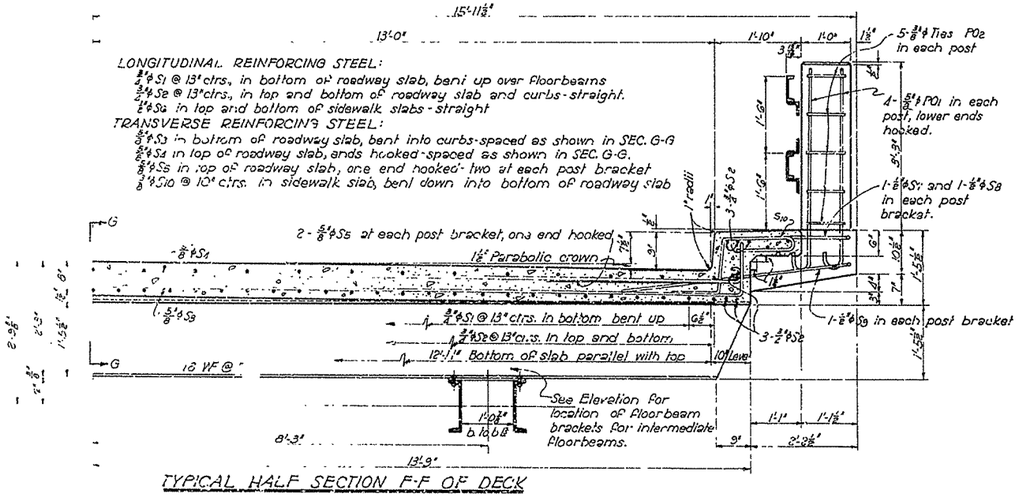
M. G. Garver
PRINCIPAL HIGHWAY ENGINEER (BRIDGE)

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090450	49	55

Truss Details of Bridge No. 02469



HALF SECTION E-E AT EXPANSION JOINTS



TYPICAL HALF SECTION F-F OF DECK

LONGITUDINAL REINFORCING STEEL:
3/4"ϕ S1 @ 13" ctrs., in bottom of roadway slab, bent up over Floorbeams
5/8"ϕ S2 @ 13" ctrs., in top and bottom of roadway slab and curbs - straight.
5/8"ϕ S3 in top and bottom of sidewalk slabs - straight

TRANSVERSE REINFORCING STEEL:
5/8"ϕ S3 in bottom of roadway slab, bent into curbs - spaced as shown in SEC. G-G
5/8"ϕ S4 in top of roadway slab, ends hooked - spaced as shown in SEC. G-G.
5/8"ϕ S5 in top of roadway slab, one end hooked - two at each post bracket
3/4"ϕ S10 @ 10" ctrs. in sidewalk slab, bent down into bottom of roadway slab

BAR LIST FOR TRUSS SPANS

BENT BARS																		STRAIGHT BARS			
MARK	SIZE	NO. REQ'D	LENGTH	BENDING DIAGRAM														MARK	SIZE	NO. REQ'D	LENGTH
				A	a	b	c	d	e	f	g	h	i	j	k	l	m				
S1A	3/4"ϕ	192	31'-2 1/2"	30'-4"	4'-1 1/8"	4 1/2"	4'-3 1/2"	4 1/2"	3'-5"	4 1/2"	4'-3 1/2"	4 1/2"	3'-5"	4 1/2"	4'-1 1/2"	4 1/2"	4'-1 1/2"	S2A	5/8"ϕ	102	28'-0"
S1B	3/4"ϕ	48	26'-7 7/8"	25'-9"	1'-7 1/8"	"	"	"	"	"	"	"	3'-5"	4 1/2"	4'-3 1/2"	4 1/2"	2'-0 3/4"	S2B	5/8"ϕ	12	25'-9"
S1C	3/4"ϕ	48	19'-11"	19'-1"	1'-1 1/2"	"	"	"	"	"	"	"	1'-1 1/2"					S2C	5/8"ϕ	62	18'-2"
S1D, S1E S1F	3/4"ϕ	96	* 19'-1"	* 18'-3"	* 1'-0 1/2"	4 1/2"	4'-3 1/2"	4 1/2"	3'-5"	4 1/2"	4'-3 1/2"	4 1/2"	4'-1 1/2"					S2D	5/8"ϕ	12	17'-8"
S3	5/8"ϕ	284	28'-4"															S2E	5/8"ϕ	12	30'-4"
S4	5/8"ϕ	217	27'-11"															S2F	5/8"ϕ	62	30'-10"
S5	5/8"ϕ	49	4'-6"																		
S7	5/8"ϕ	98	10'-6"															S6A	5/8"ϕ	32	27'-3"
S8	5/8"ϕ	98	10'-6"															S6B	5/8"ϕ	8	25'-8"
S9	5/8"ϕ	98	10'-6"															S6C	5/8"ϕ	8	17'-9"
S10	3/4"ϕ	854	5'-0"															S6D	5/8"ϕ	16	17'-2"
P01	5/8"ϕ	392	4'-5"																		
P02	5/8"ϕ	490	3'-5"																		

* Dimensions of S1e are 6" less than S1a, while those of S1f are 6" more

NOTE: Dimensions relating to reinforcing steel are to centers of bars

GENERAL NOTES

All concrete to be Class 'S'. All exposed corners to be chamfered 3/4" unless otherwise noted.

Reinforcing steel to be deformed bars of structural or intermediate grade. Shop lists and bending diagrams must be submitted and approval secured before fabrication is begun.

All reinforcing steel shall be accurately located in the forms and firmly held in place by means of steel wire supports, sufficient in number and size to prevent displacement during the course of construction and to keep the steel a proper distance from the forms.

Wire supports will not be paid for directly but will be considered subsidiary to the item of 'reinforcing steel'. Shop lists and diagrams of type to be used must be submitted for approval.

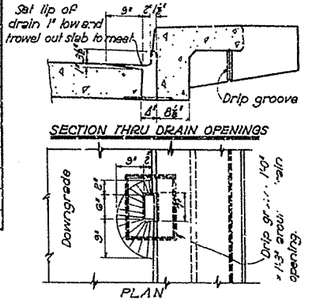
Rivets: 7/8". Open holes: 15/16". Where bolts are indicated, use machine bolts.

All welded connections to be 5/16" shop fillet welds unless otherwise noted.

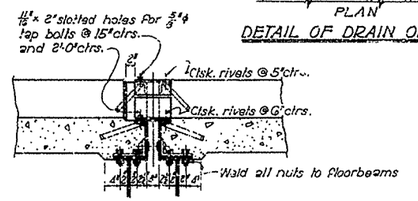
DESIGN LIVE LOAD: H-20 LOADING A.A.S.H.O. 1944

UNIT STRESSES: Class 'S' Concrete (n=10) 1000#/in²
Reinforcing Steel 18000#/in²
Structural Steel 18000#/in²

NOTE: Place drain openings on each side of roadway at center of panel in every other panel beginning with panel 0-1 and ending with panel 2-1'.

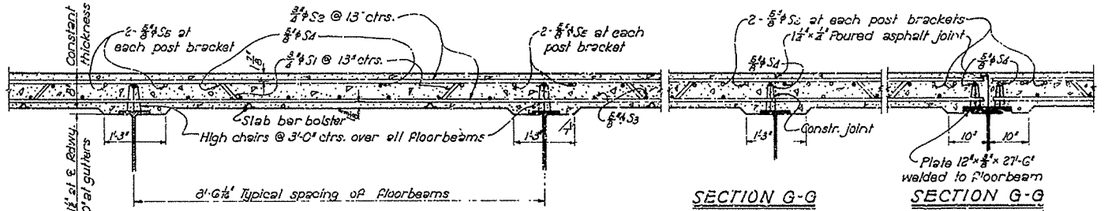


DETAIL OF DRAIN OPENING



SECTION H-H SHOWING DECK EXPANSION DEVICE AT PANEL POINTS U16 & U16

NOTE: For expansion devices at U0, see Drawing No. 7038 and at U8, see Drawing No. 7039.

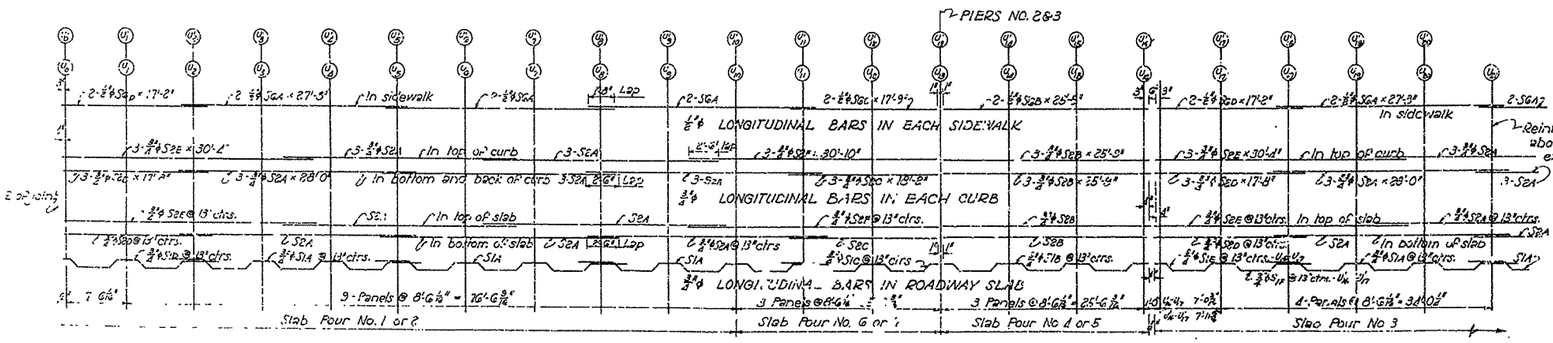


LONGITUDINAL SECTION G-G OF ROADWAY SLAB

SECTION G-G AT U10 AND U16

SECTION G-G AT U18 AND U18

NOTE: See Drawing No. 7037 for Elevation and details of hand rail for Truss Spans



LAYOUT OF LONGITUDINAL SLAB BARS & SLAB POURING SEQUENCE

FOR INFORMATION ONLY

TYPICAL DECK DETAILS
FOR DECK CANTILEVER TRUSS SPANS
BRIDGE OVER CROOKED CREEK
AND MISSOURI PACIFIC RAILROAD
BELLEFONTE-YELLVILLE RO. 4 D
MARION COUNTY
ROUTE 62 SEC. B

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

Drawn By: W.G.H. Date: 5-19-47
Traced By: R.B.S. Date: 6-3-47
Checked By: Date:
Scale: 3/4 in. = 1 ft.

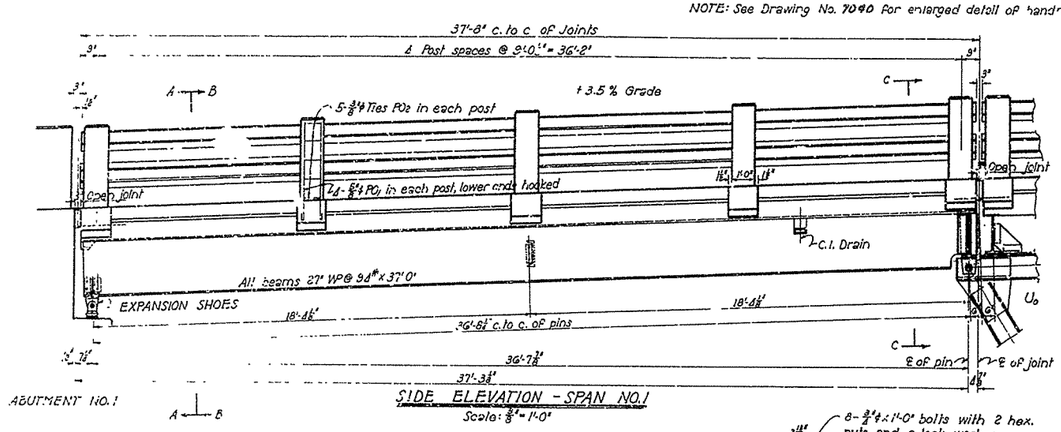
BRIDGE NO. 2469 DRAWING NO. 7036

H. G. Hoover
PRINCIPAL HIGHWAY ENGINEER (BRIDGES)

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090450	50	55

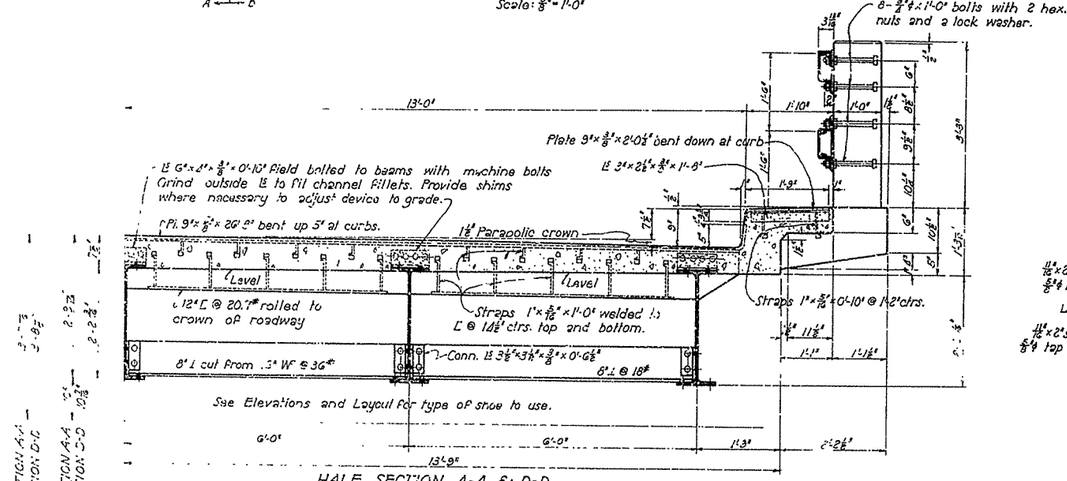
1-Bm. Span Details of Br. No. 02469

NOTE: See Drawing No. 7040 for enlarged detail of handrail.

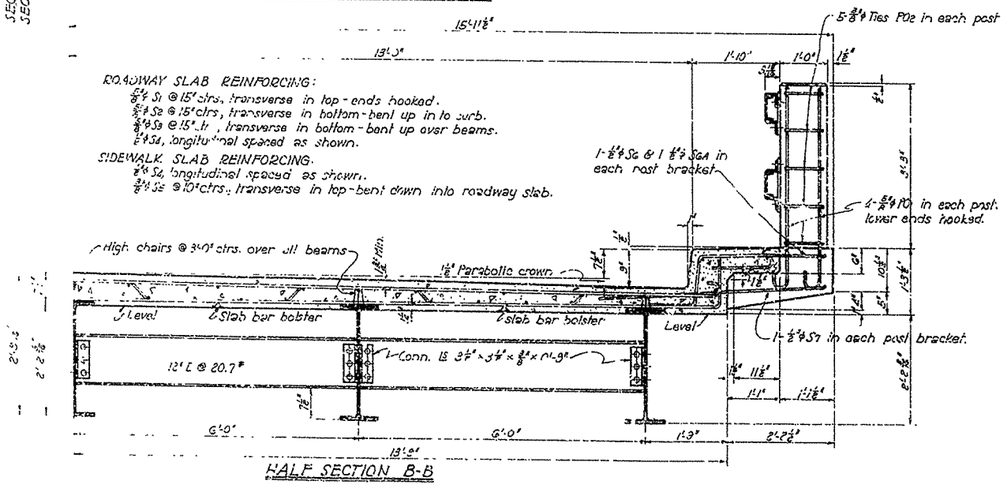


SIDE ELEVATION - SPAN NO. 1

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

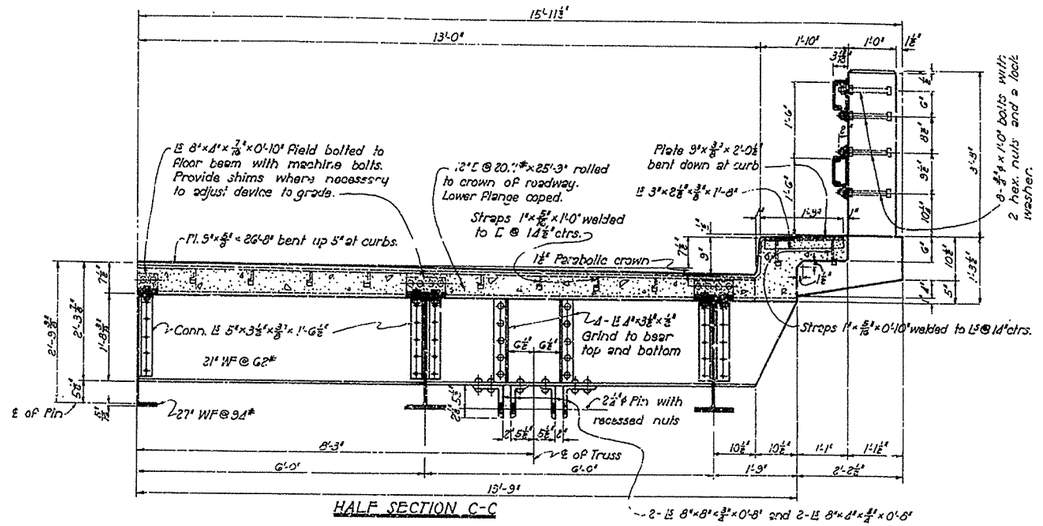


HALF SECTION A-A & D-D

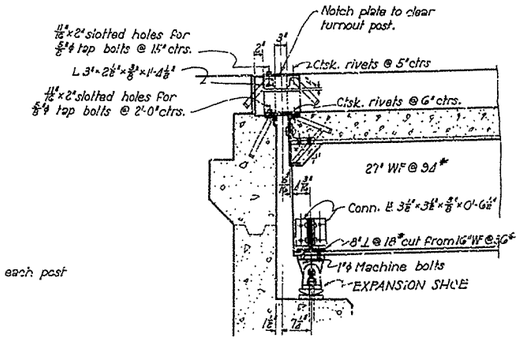


HALF SECTION B-B

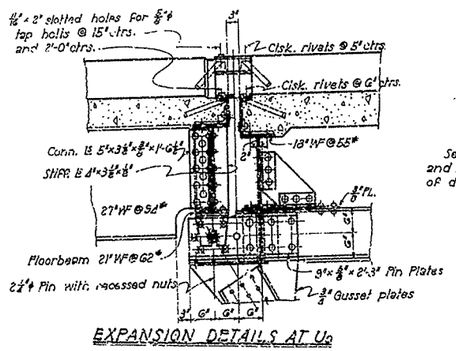
SECTION A-A
SECTION D-D
SECTION A-A
SECTION B-B
SECTION C-C



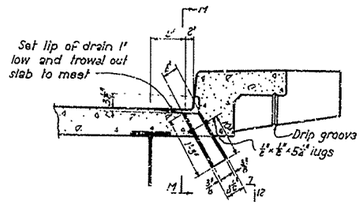
HALF SECTION C-C



EXPANSION DETAILS AT ABUTMENT NO. 1

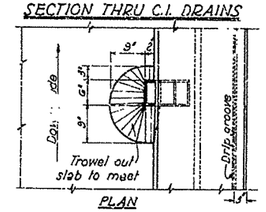


EXPANSION DETAILS AT U₀



SECTION THRU C.I. DRAINS

SECTIONAL VIEW M-M



PLAN

DETAIL OF C.I. ROADWAY DRAINS

NOTE: Place drains on each side of roadway approx 7'-6" From ℄ of roadway expansion joints, as shown on Elevation of each span.
Cast iron drains are to be paid for as Structural Steel in Beam Spans and are to be painted same as structural steel.
Weight of each drain = 29 lbs.

See Drawings No. 7039 and 7040 for remainder of details.

SHEET NO. 1 OF 3 OF

DETAILS OF I-BEAM SPANS
2G-0" CLEAR ROADWAY - 2 SIDEWALKS @ 1'-6"
5 GIRDER TYPE

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

Drawn By: WGH Date: 5-6-57
Traced By: B.R.C Date: 5-20-57
Checked By: Date:

Scale: 3/4" in. = 1' ft. EXCEPT AS NOTED

BRIDGE NO. 2469 DRAWING NO. 7038

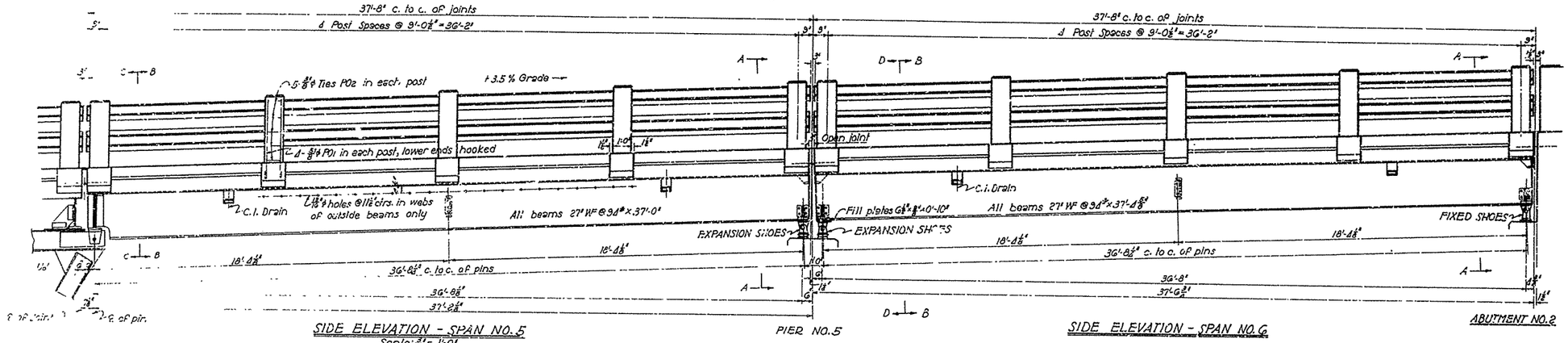
M. G. Garver
PRINCIPAL HIGHWAY ENGINEER-DIRECTOR

FOR INFORMATION ONLY

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090450	51	55

1 I-Bm. Span Details of Br. No. 02469

NOTE: See Drawing No. 7040 For enlarged details of handrail.



SIDE ELEVATION - SPAN NO. 5
Scale: ⅜" = 1'-0"

SIDE ELEVATION - SPAN NO. 6

NOTE: For details of blast plate for Span No. 5, see Drawing No. 7040.

EXPANSION DETAILS AT U6'

EXPANSION DETAILS AT PIER NO. 5

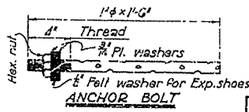
EXPANSION DETAILS AT ABUTMENT NO. 2

SHOE NOTES. All shoes to be built from structural steel plates and shapes. All material to be welded together with ⅜" Fillet welds extending entire length of all edges and surfaces in contact. Surfaces in contact to be milled to bear before welding.

Masonry plates shall be finally seated on 3 layers of burlap saturated with red lead. This work and material to be included in the unit price bid for "Structural Steel in Beam Spans".

NOTE: All shoes to be Field bolted to 27" C.B's with 1" ϕ machine bolts.

DETAILS OF SHOES
Scale: 3" = 1'-0"



ANCHOR BOLT

BAR LIST FOR SPANS NO. 1, 5 AND 6 - EACH

MARK	SIZE	NO. REQ'D	LENGTH	BENDING DIAGRAM
S1	⅝" ϕ	31	27'-11"	
S2	⅝" ϕ	31	28'-2"	
S3	⅝" ϕ	[illegible]	28'-11⅛"	
S4	½" ϕ	82	STRAIGHT 19'-6"	
S5	⅝" ϕ	90	4'-11"	
S6	⅝" ϕ	10	10'-5"	
S6A	⅝" ϕ	10	3'-11"	
S7	⅝" ϕ	10	10'-6"	
P01	⅝" ϕ	40	2'-5"	
P02	⅝" ϕ	50	3'-5"	

NOTE: Dimensions relating to reinforcing steel are to centers of bars.

GENERAL NOTES

All concrete to be Class "S". All exposed corners to be chamfered ¾" unless otherwise noted.

Reinforcing steel to be deformed bars of structural or intermediate grade. Shop lists and bending diagrams must be submitted and approval secured before fabrication is begun.

All reinforcing steel shall be accurately located in the forms and firmly held in place by means of steel wire supports, sufficient in number and size, to prevent displacement during the course of construction and to keep the steel a proper distance from the forms.

Wire supports will not be paid for directly but will be considered subsidiary to the item of "reinforcing steel". Shop lists and diagrams of the type to be used must be submitted for approval.

Rivets - ¾" ϕ. Open holes - ⅞" ϕ. Where holes are indicated, use machine bolts. Use ¾" ϕ rivets in handrail.

Structural shapes, of equal or greater [illegible] may be substituted for shapes shown, but payment will be made on shapes shown or actually [illegible] is the lesser.

All welded connections to be ⅜" min. fillet welds, except as noted for shoes. Welding to be by the electric arc process.

Ends of stiffener angles to be ground to bear against beam flanges.

All bearing and roadway expansion devices to be paid for at the unit price bid for "Structural Steel in Beam Spans".

Cast iron drains to be paid for at the unit price bid for "Structural Steel in Beam Spans", and are to be painted the same as structural steel.

Shop Paint:- All structural steel shall be given one coat of red lead and raw linseed oil before shipment, except surfaces in contact with concrete.

Field Paint:- 1st coat, white lead tinted with lamp black; 2nd coat, aluminum paint.

To provide for deflection of girders due to dead load, the slab shall be approximately ¾" thicker at mid-span and 4" thicker at the quarter points.

This drawing shows general features of design only. Shop drawings shall be made in accordance with the specification, and shall be submitted and approval secured before fabrication is begun.

SPECIFICATIONS: Arkansas State Highway Commission Standard Specifications for Road and Bridge Construction, adopted March 1, 1940.

DESIGN LIVE LOAD: H-20 LOADING A.A.S.H.O. 1944

Load Distribution to Interior Beams:- Dead Load 710 #/Lin. Ft.
Live Load 1.20 Wheels 30% Impact

Load Distribution to Outside Beams: Dead Load 990 #/Lin. Ft.
Live Load 0.833 Wheels 30% Impact

UNIT STRESSES: Class "S" Concrete (n=10) 1000 #/□"
Reinforcing Steel 18000 #/□"
Structural Steel 18000 #/□"

FOR INFORMATION ONLY

SHEET NO. 2 OF 3 OF
DETAILS OF T-BEAM SPANS
26'-0" CLEAR ROADWAY - 2 SIDEWALKS
5 GIRDER TYPE

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

Drawn By: W.C.H. Date: 5-10-47
Traced By: B.B.J. Date: 5-23-47
Checked By: Date:

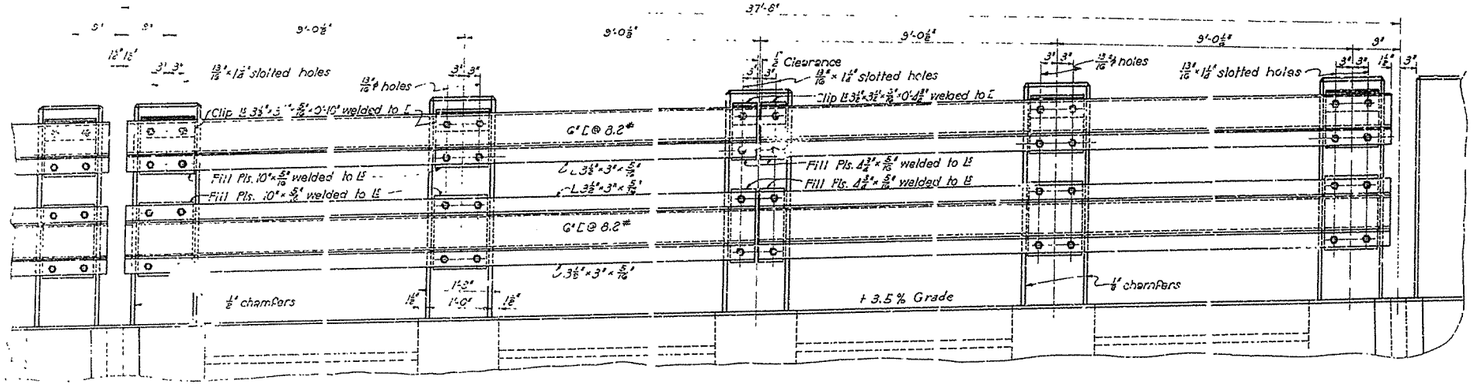
Scale: ½" = 1'-0" EXCEPT AS NOTED

BRIDGE NO. 2469 DRAWING NO. 7039

M. G. Garver
PRINCIPAL HIGHWAY ENGINEER (BRIDGE)

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090450	52	55

1-Bm. Span Details of Br. No. 02469



END POST AT EXP. JOINTS — INTERMEDIATE POST — INTERMEDIATE POST AT RAIL SPLICE — INTERMEDIATE POST — END POST

INSIDE ELEVATION OF HANDRAIL
Scale: 1"-1'-0"

BLAST PLATE NOTES:

The blast plates are to be made of wrought iron or alloy steel U.S.S. Cor-Ten or Mayari R, and are to be paid for at the unit price bid per pound for 'Blast Plates'. Blast plates are to be painted the same as structural steel.

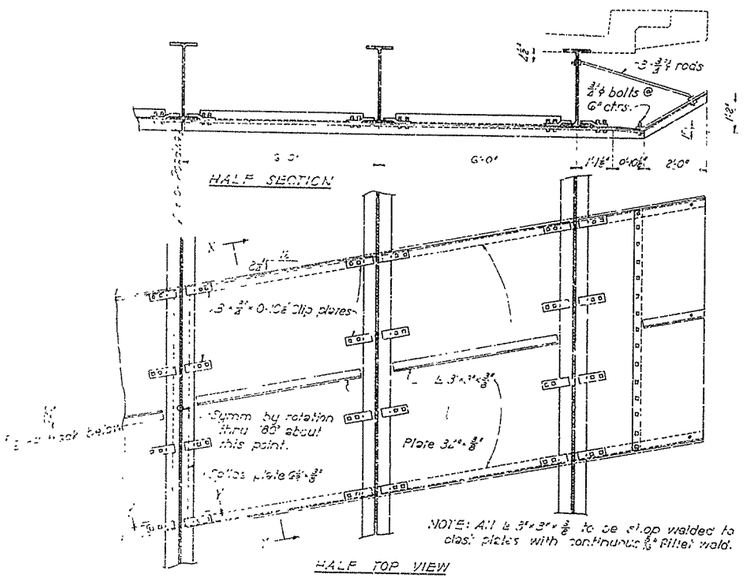
HANDRAIL NOTES:

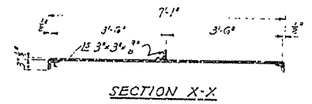
The concrete rail posts and structural steel rail members shall be paid for at the unit price bid per linear foot foot for 'Concrete and Structural Steel Railing'.

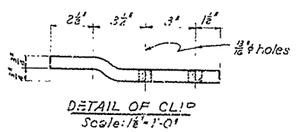
Handrail members to extend over two panels.

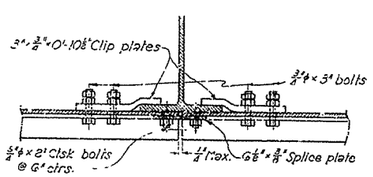
All horizontal lines of handrail to be parallel to the finished grade.

All vertical lines shall be plumb in their final position, except sides of post brackets adjacent to roadway expansion joints.









DETAILS OF BLAST PLATES

FOR INFORMATION ONLY

SHEET 3 OF 3 OF

DETAILS OF HANDRAIL & BLAST PLATES
FOR I-BEAM SPANS
26'-0" CLEAR ROADWAY 2 SIDEWALKS @ 1'-6"
5 GIRDER TYPE

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

Drawn By: W.C.H. Date: 5-12-47
Traced By: B.B.S. Date: 5-22-47
Checked By: Date:

Scale: ½ in. = 1'-0" EXCEPT AS NOTED

BRIDGE NO. 2469 DRAWING NO. 7040

R. G. Bartlett
PRINCIPAL HIGHWAY ENGINEER (BRIDGE)

R1-1

STANDARD 30"X30"
EXPRESSWAY 36"X36"
SPECIAL 48"X48"

R1-2

STD. 36"X36"X36"
EXPWY. 48"X48"X48"
FWY. 60"X60"X60"

R2-1

STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

W3-5

STD. 36"X36"
EXPWY. 48"X48"
FWY. 48"X48"

W3-5a

STD. 36"X36"
EXPWY. 48"X48"
FWY. 48"X48"

R4-1

STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R4-2

STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

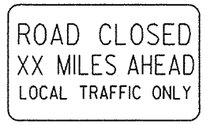
R5-1

STD. 30"X30"
EXPWY. 36"X36"
SPECIAL 48"X48"

R11-2

48"X30"

R11-3A



60"X30"

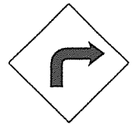
R11-4

60"X30"

RSP-1

48"X30"

W1-1



STD. 36"X36"
FWY. 48"X48"

W1-2

STD. 36"X36"
FWY. 48"X48"

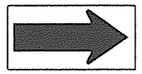
W1-3

STD. 48"X48"

W1-4

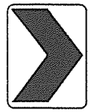
STD. 48"X48"

W1-6



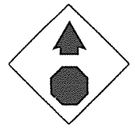
STD. 48"X24"
SPECIAL 60"X30"

W1-8



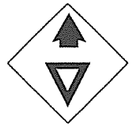
STD. 18"X24"
SPECIAL 24"X30"
EXPWY. 30"X36"
FWY. 36"X48"

W3-1



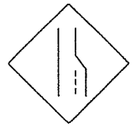
STD. 36"X36"
SPECIAL 48"X48"

W3-2



STD. 36"X36"
SPECIAL 48"X48"

W4-2



STD. 36"X36"
FWY. 48"X48"

W5-1

STD. 36"X36"
SPECIAL 48"X48"

W6-3

EXPWY. 36"X36"
SPECIAL 48"X48"

W8-7

EXPWY. 36"X36"
FWY. 48"X48"

W9-2

STD. 36"X36"
FWY. 48"X48"

W13-1

STD. 24"X24"

W20-1

STD. 48"X48"

W20-2

STD. 48"X48"

W20-3

STD. 48"X48"

W20-4

STD. 48"X48"

W20-5

STD. 48"X48"

W20-7a

STD. 36"X36"
FWY. 48"X48"

W21-2

STD. 30"X30"
SPECIAL 36"X36"

W21-5

STD. 30"X30"
SPECIAL 36"X36"

W24-1

STD. 36"X36"

W1-4b

STD. 48"X48"

R56-1

STD. 18"X18"

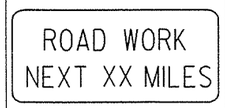
W8-11

STD. 36"X36"
FWY. 48"X48"

W8-9

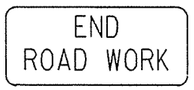
STD. 36"X36"
FWY. 48"X48"

G20-1



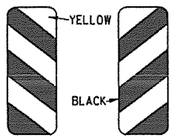
60"X24"

G20-2



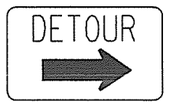
48"X24"

OM-3L OM-3R



12"X36"

M4-9

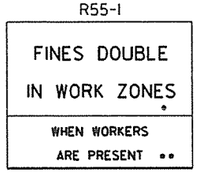


STD. 30"X24"
SPECIAL 48"X36"
SPECIAL 60"X48"

M4-10

48"X18"

R55-1



36"X60"

• USE 6" C LETTERS
•• USE 4" D LETTERS

ADVANCE DISTANCES
(XXXX)

500 FT	½ MILE
1000 FT	¾ MILE
1500 FT	1 MILE AHEAD

GENERAL NOTES:

1. ALL TRAFFIC CONTROL DEVICES USED ON ROAD CONSTRUCTION SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION, AND TO THE STANDARD HIGHWAY SIGNS, LATEST EDITION, OR AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION.
2. TRAFFIC CONTROL DEVICES SHALL BE SET UP JUST BEFORE THE START OF CONSTRUCTION OPERATIONS AND SHALL BE PROPERLY MAINTAINED DURING THE TIME SUCH CONDITIONS EXIST. THEY SHALL REMAIN IN PLACE ONLY AS LONG AS NEEDED AND REMOVED THEREAFTER.
3. EXISTING SIGNS AND CONSTRUCTION SIGNS SHALL BE KEPT IN PROPER POSITION, AND BE CLEAN AND LEGIBLE AT ALL TIMES. SIGNS THAT DO NOT APPLY TO EXISTING CONDITIONS SHALL BE REMOVED. SIGNS THAT ARE DAMAGED, DEFACED, OR THAT ACCUMULATE DIRT DURING CONSTRUCTION SHALL BE CLEANED, REPAIRED, OR REPLACED.
- 4. SIGNS ARE USUALLY MOUNTED ON A SINGLE POST, ALTHOUGH THOSE WIDER THAN 36" OR LARGER THAN 10 SQ. FT. SHALL BE MOUNTED ON TWO POSTS OR ABOVE A TYPE III BARRICADE.
- 5. SIGN POSTS DIRECT BURIED IN SOIL SHALL BE 2 LB. MINIMUM CHANNEL POST OR 4"x4" WOOD POSTS. CHANNEL POSTS SHALL BE PAINTED GREEN. WOOD POSTS SHALL BE PAINTED WHITE. ALL POSTS SHALL BE NEATLY CONSTRUCTED, AND SHALL BE REPLUMBED, CLEANED, OR REPAIRED AS NEEDED FOR THE DURATION OF THE JOB. THERE SHALL NOT BE MORE THAN 2 POSTS IN A 7' PATH FOR WOOD OR CHANNEL POSTS. ANY CHANNEL POST SPLICE SHALL BE IN ACCORDANCE WITH STANDARD DRAWING TC-3.
6. POST MOUNTED SIGNS IN RURAL AREAS SHALL BE CONSTRUCTED WITH THE NEAR EDGE OF THE SIGN FROM 6 TO 12 FEET FROM THE PAVEMENT EDGE. SIGNS IN URBAN AREAS AND BARRICADE MOUNTED SIGNS SHALL BE MOUNTED A MINIMUM OF 2 FEET FROM THE PAVEMENT EDGE.
7. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN URBAN AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN RURAL AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE, EXCEPT A MINIMUM OF 6' SHALL BE USED WHEN MOUNTING AN ADVISORY SIGN BELOW A WARNING SIGN. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR INTERMEDIATE TERM STATIONARY WORK CONDITIONS. THE SIGNS MINIMUM MOUNTING HEIGHT SHALL BE 5'. RETROREFLECTIVE DEVICES SHALL BE USED. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR SHORT-TERM, SHORT DURATION, AND MOBILE CONDITIONS. THEY SHALL BE NO LESS THAN ONE (1) FOOT ABOVE THE TRAVELED WAY. LONG-TERM STATIONARY SIGNS SHALL BE DIRECT BURIED IN SOIL, UNLESS CONDITIONS NECESSITATE THE USE OF PORTABLE SIGNS, OR AS APPROVED BY THE ENGINEER. CONCRETE PADS, CONCRETE OR ROCK BALLAST, OR OTHER SOLID MATERIALS SHALL NOT BE UTILIZED WITH PORTABLE SIGN SUPPORTS.
8. FLAGGERS SHALL USE REFLECTORIZED STOP-SLOW PADDLES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.
9. MOST OF THE SIGNS SHOWN ARE ORIENTED TO THE RIGHT, HOWEVER, THIS DOES NOT PRECLUDE THE USE OF MIRROR IMAGES OF THESE SIGNS WHERE THE REVERSE ORIENTATION MIGHT BETTER CONVEY TO MOTORISTS THE PROPER DIRECTION OF MOVEMENT.
10. R55-1 SIGNS SHALL BE PLACED AT LEAST 1500' BUT NOT MORE THAN 1 MILE IN ADVANCE OF THE WORK ZONE. IF A SPEED LIMIT REDUCTION IS IN EFFECT, THE SIGN SHALL BE PLACED A MINIMUM OF 500' IN ADVANCE OF THE "REDUCED SPEED AHEAD" SIGN.

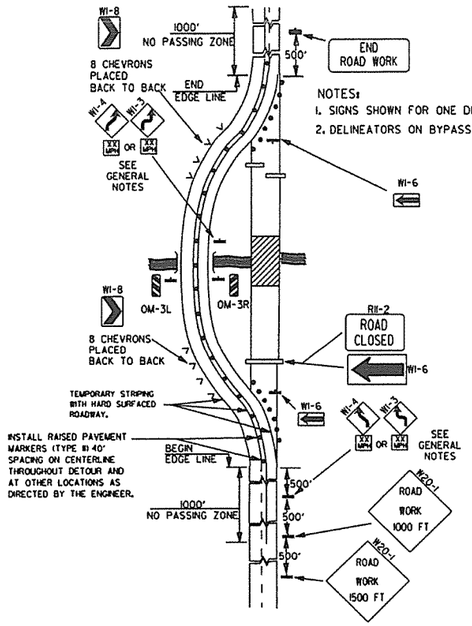
• NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) IS REQUIRED FOR ALL PROJECTS.

DATE	REVISION	FILMED
9-2-15	REVISED REDUCED SPEED LIMIT AHEAD SIGNS REVISED ROAD WORK NEXT XX MILES	
12-15-11	REVISED W24-1	
11-17-10	DELETED W8-9a & ADDED W8-9	
10-15-09	ADDED REFERENCE TO MASH & ADDED SIGN W24-1	
4-17-08	REVISED SIGN DESIGNATIONS	
11-18-04	REVISED NOTES	
10-9-03	REVISED NOTE 1	
11-16-01	REVISED NOTE 7	
9-28-00	REVISED NOTE	
11-18-98	ADDED NOTE	
6-26-97	REVISED NOTE 5	
4-03-97	REVISED NOTE 5	
10-18-96	ADDED CONTROLLED ACCESS HWY. SIGN & TO NOTE 7	
10-12-95	ADDED R55-1	
6-8-95	REVISED TO CORRECT SIGN ILLUSTRATIONS	6-8-95
2-2-95	REVISED PER PART VI, MUTCD SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

ARKANSAS STATE HIGHWAY COMMISSION

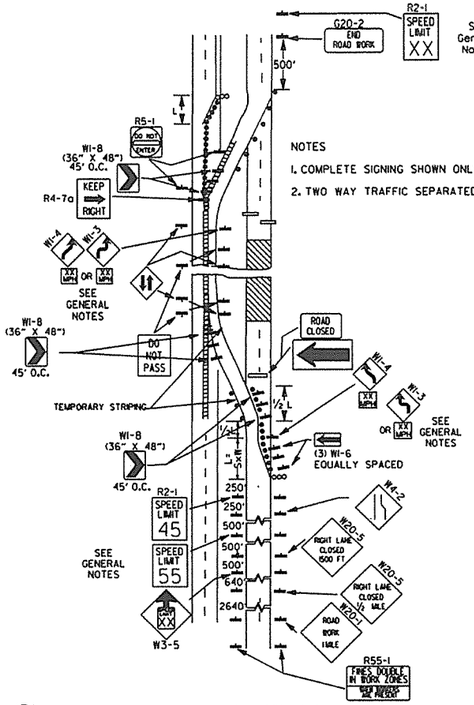
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-1



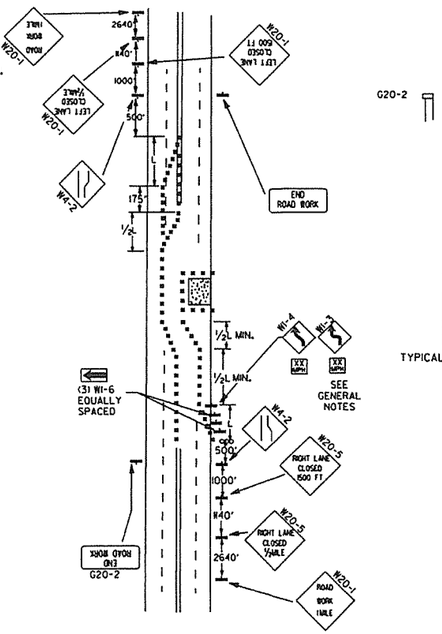
NOTES:
1. SIGNS SHOWN FOR ONE DIRECTION OF TRAVEL ONLY.
2. DELINEATORS ON BYPASS WHERE NEEDED.

(A) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON A 2-LANE HIGHWAY WHERE THE ENTIRE ROADWAY IS CLOSED AND A BYPASS DETOUR IS PROVIDED.

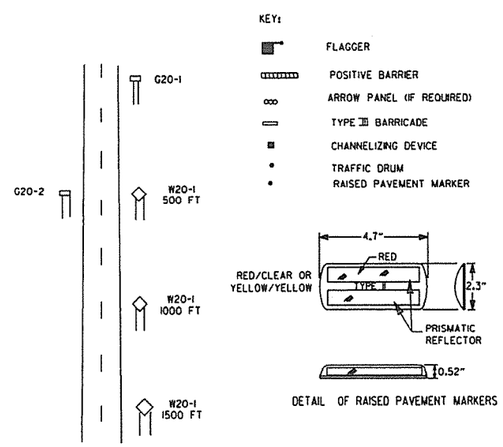


NOTES
1. COMPLETE SIGNING SHOWN ONLY IN CROSSOVER DIRECTION.
2. TWO WAY TRAFFIC SEPARATED WITH POSITIVE BARRIER.

(B) TYPICAL APPLICATION - 4-LANE DIVIDED ROADWAY WHERE ONE ROADWAY IS CLOSED.



(C) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



TYPICAL ADVANCE WARNING SIGN PLACEMENT

TAPER FORMULAE:

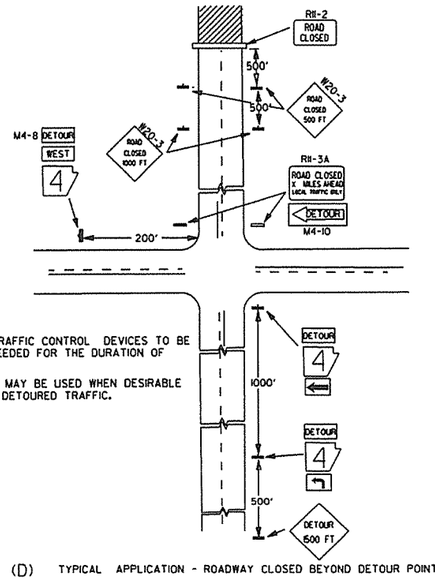
L=SXW FOR SPEEDS OF 45MPH OR MORE.

$L = \frac{WS^2}{60}$ FOR SPEEDS OF 40MPH OR LESS.

WHERE:
L= MINIMUM LENGTH OF TAPER.
S= NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK OR 85TH PERCENTILE SPEED.
W= WIDTH OF OFFSET.

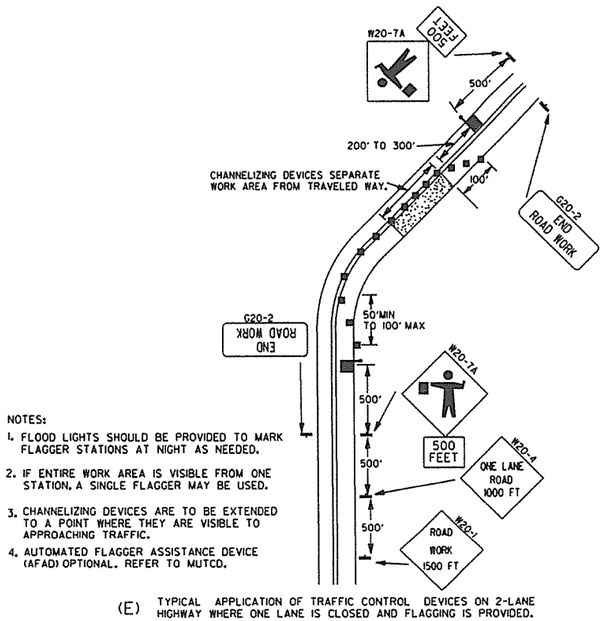
GENERAL NOTES:

1. ADVISORY SPEED POSTED ON W1-3 OR W1-4 CURVE WARNING SIGNS TO BE DETERMINED AT SITE. USE W1-4 WHEN SPEED IS GREATER THAN 30MPH AND W1-3 WHEN 30MPH OR LESS.
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-1(55) SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-1 45MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
3. WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-1(45) SHALL BE OMITTED. ADDITIONAL R2-1 55MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
4. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT, OR AS DIRECTED BY THE ENGINEER.
5. WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
6. PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
7. TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE DELINEATED BY AFFIXING CONSPICUITY MATERIAL IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER. WHEN PLACED ON OR ADJACENT TO THE SHOULDER AND NOT BEHIND A POSITIVE BARRIER, THESE DEVICES SHALL BE DELINEATED BY PLACING FIVE (5) TRAFFIC DRUMS, EQUALLY SPACED ALONG THE TRAFFIC SIDE OF THE DEVICE.
8. DIMENSIONS SHOWN FOR RAISED PAVEMENT MARKERS ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR MARKERS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR SIMILAR MARKERS MAY BE MADE BY REFERRING TO THE AHTD QUALIFIED PRODUCTS LIST.



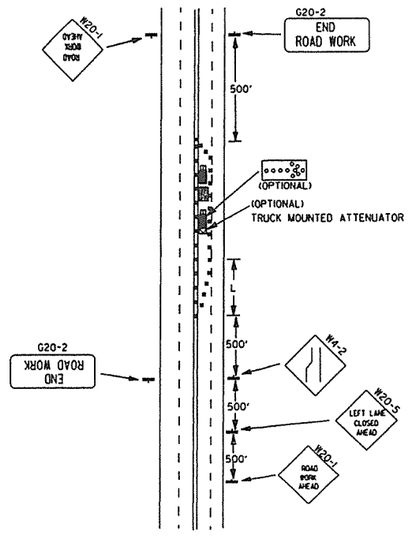
NOTES:
1. REGULATORY TRAFFIC CONTROL DEVICES TO BE MODIFIED AS NEEDED FOR THE DURATION OF THE DETOUR.
2. STREET NAMES MAY BE USED WHEN DESIRABLE FOR DIRECTING DETOURED TRAFFIC.

(D) TYPICAL APPLICATION - ROADWAY CLOSED BEYOND DETOUR POINT.



NOTES:
1. FLOOD LIGHTS SHOULD BE PROVIDED TO MARK FLAGGER STATIONS AT NIGHT AS NEEDED.
2. IF ENTIRE WORK AREA IS VISIBLE FROM ONE STATION, A SINGLE FLAGGER MAY BE USED.
3. CHANNELIZING DEVICES ARE TO BE EXTENDED TO A POINT WHERE THEY ARE VISIBLE TO APPROACHING TRAFFIC.
4. AUTOMATED FLAGGER ASSISTANCE DEVICE (AFAD) OPTIONAL. REFER TO MUTCD.

(E) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON 2-LANE HIGHWAY WHERE ONE LANE IS CLOSED AND FLAGGING IS PROVIDED.



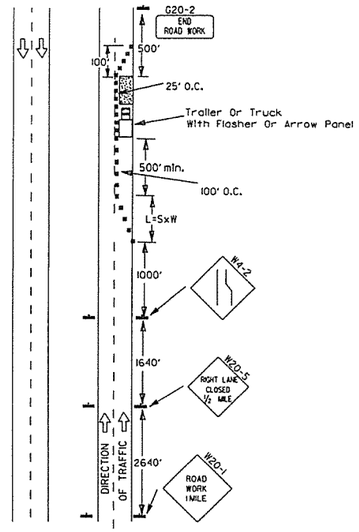
(F) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WITH INSIDE LANE CLOSED.

DATE	REVISION	FHWA
9-2-15	REVISED NOTE 2, ADDED NOTE 8, REVISED DRAWING (A) & REPLACED R2-5A WITH W3-5	
9-12-13	REVISED DETAIL OF RAISED PAVEMENT MARKERS	
3-8-10	ADDED (AFAD)	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED GENERAL NOTE	
10-18-96	ADDED R55-1	
4-26-96	CORRECTED (G) BEHIND G20-2	
6-8-95	CORRECTED SIGN IDENT. ON W1-4A	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

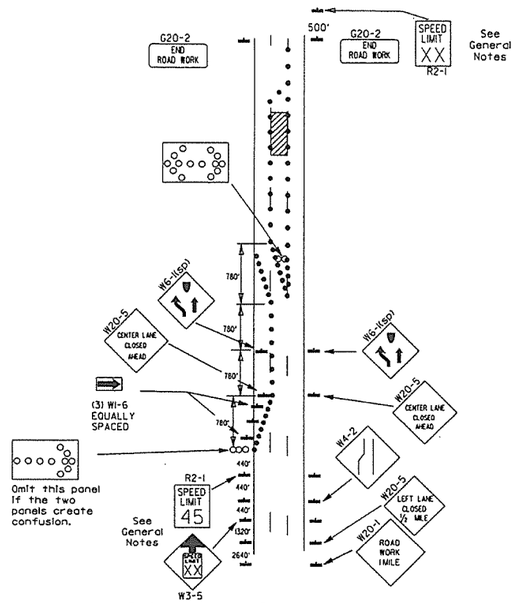
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

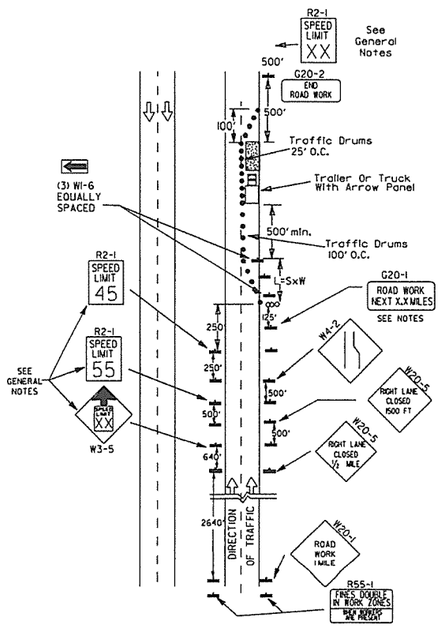
STANDARD DRAWING TC-2



(A) Typical application - daytime maintenance operations of short duration on a 4-lane divided roadway where half of the roadway is closed.



(B) Typical application - 3-lane oneway roadway where center lane is closed.



(C) Typical application - construction operations of intermediate to long term duration on a 4-lane divided roadway where half of the roadway is closed.

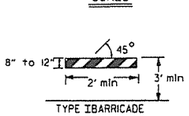
KEY:

- ○○○ Arrow Panel (If Required)
- ■ Channelizing Device
- ● Traffic drum

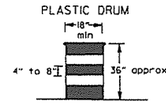
GENERAL NOTES:

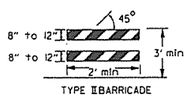
1. A speed limit reduction may be implemented ONLY when designated in the plan or when recommended by the Roadway Design Division.
2. When the existing speed limit is 55mph and the plans require a speed limit of 45mph, the R2-1(55) shall be omitted and the W3-5 shall be installed at that location. Additional R2-1 45mph speed limit signs shall be installed at a maximum of 1 mile intervals. At the end of the work area a R2-1(XX) shall be installed to match original speed limit.
3. When the existing speed limit is 65mph and the plans require a speed limit of 55mph, the R2-1(45) shall be omitted. Additional R2-1 55mph speed limit signs shall be installed at a maximum of 1 mile intervals. At the end of the work area a R2-1(XX) shall be installed to match original speed limit.
4. The maximum spacing between channelizing devices in a taper should be approximately equal in feet to the speed limit. Beyond the taper, maximum spacing shall be two times the speed limit or as directed by the Engineer.
5. Warning lights and/or flags may be mounted to signs or channelizing devices at night as needed.
6. Pavement markings no longer applicable which might create confusion in the minds of vehicle operators shall be removed or obliterated as soon as practicable.
7. The G20-1 sign will be required on jobs of over two miles in length. When the lane closure is not at the beginning of the project, the G20-1 sign shall be erected 125' in advance of the job limit. Additional W20-1 (1 MILE) signs are not required in advance of lane closures that begin inside the project limits.
8. Flaggers shall use STOP/SLOW paddles for controlling traffic through work zones. Flags may be used only for emergency situations.
9. All plastic drums and cones shall meet the requirements of NCHRP-350 or Manual For Assessing Safety Hardware (MASH).
10. Trailer mounted devices such as arrow panels and portable changeable message signs shall be delineated by affixing conspicuity material in a continuous line on the face of the trailer. When placed on or adjacent to the shoulder and not behind a positive barrier, these devices shall be delineated by placing five (5) traffic drums, equally spaced along the traffic side of the device.

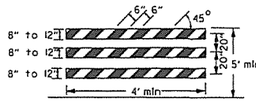
Channelizing devices



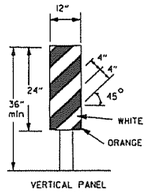
* When cones are used on freeways and multi-lane highways, they shall be 28" min. During hours of darkness, 28" cones shall be used on all roadways, and shall be reflectorized in accordance with the M.U.T.C.D.







NOTE:
For all road closures, the Type III barricades shall be of sufficient length to extend across entire roadway.

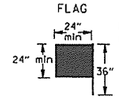


TRAFFIC CONTROL DEVICES FOR VERTICAL PAVEMENT DIFFERENTIALS

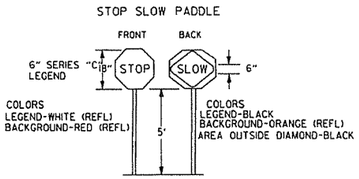
VERTICAL DIFFERENTIAL	LOCATIONS	TRAFFIC CONTROL
1" to 3"	Centerline, lane lines	W8-11
1" to 3"	Edge of shoulder	W8-9
Greater than 3"	Lane lines	Standard lane closure required
Greater than 3"	Edge of traveled lane	*RSP-1 and vertical panels, drums or concrete barrier
Greater than 3"	Edge of shoulder	*Vertical panels, drums or concrete barrier

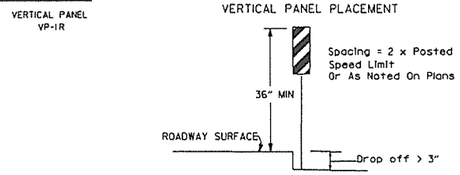
* When shown on the plans concrete barrier will be used.

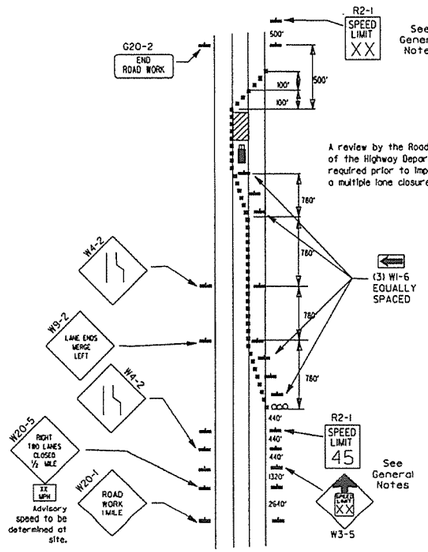
When the shoulder area is used as part of the traveled lane and there is insufficient width to place drums on the remaining shoulder width, then vertical panels shall be used.



Flag shall be of good grade red material







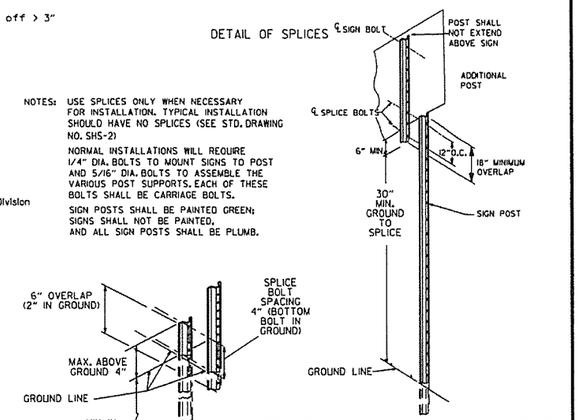
(D) Typical application - closing multiple lanes of a multilane highway.

DETAIL OF SPLICES

NOTES: USE SPLICES ONLY WHEN NECESSARY FOR INSTALLATION. TYPICAL INSTALLATION SHOULD HAVE NO SPLICES (SEE STD. DRAWING NO. SHS-2)

NORMAL INSTALLATIONS WILL REQUIRE 1/4" DIA. BOLTS TO MOUNT SIGNS TO POST AND 5/16" DIA. BOLTS TO ASSEMBLE THE VARIOUS POST SUPPORTS. EACH OF THESE BOLTS SHALL BE CARRIAGE BOLTS.

SIGN POSTS SHALL BE PAINTED GREEN; SIGNS SHALL NOT BE PAINTED, AND ALL SIGN POSTS SHALL BE PLUMB.



DATE	REVISION	FILMED
9-2-15	REVISED NOTE 2 & REPLACED R2-5A WITH W3-5	
10-15-09	ADDED REFERENCE TO MASH	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED NOTE	
10-1-98	ADDED NOTE	
4-03-97	ADDED (SP) TO W6-1 & REVISED TRAFFIC CONTROL DEVICES NOTE	
10-18-96	ADDED R55-1	
10-12-95	MOVED UPPER SPLICE	
6-8-95	REVISED SPLICE DETAIL, TEXT	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-3