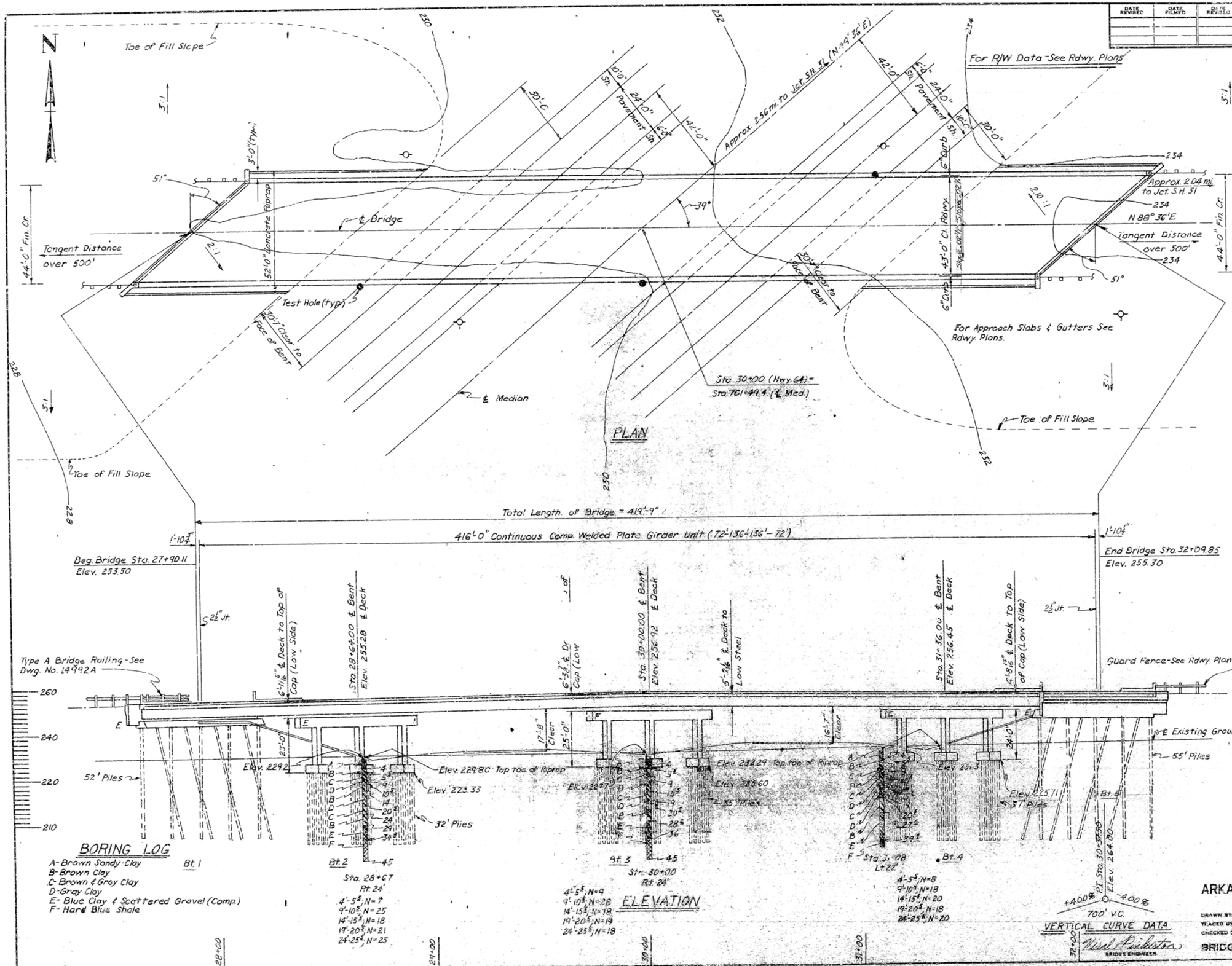
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD NO.	STATE	FED. AID PROJ.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
				6	ARK.	F-BF-021-3(32)		72	235
				JOB NO.		5608			
				① 5354 LAYOUT 16730					



GENERAL NOTES

BENCH MARK - N.W. CORNER HEADWALL 15' LEFT, STATION 20 + 58, ELEVATION 227.10.

ALL CONCRETE TO BE POURED IN THE DRY.

ALL PILING SHALL BE 10BP42 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 HARD BLUE SHALE 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.

FOR DETAILS OF END BENTS SEE DWG. NO. 16734.
FOR DETAILS OF INTERMEDIATE BENTS SEE DWG. NO 16735 - 16737

FOR DETAILS OF SUPERSTRUCTURE SEE DWG. NO. 16738 - 16741 & 16762.

SPECIFICATIONS: ARKANSAS STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 1959, THE 1966 SUPPLEMENTAL SPECIFICATIONS, AND APPLICABLE SPECIAL PROVISIONS.

DESIGN SPECIFICATIONS: AASHO 1969

LIVE LOADING: HS20
UNIT STRESSES: CLASS S CONCRETE (N=10) 1,200PSI
REINFORCING STEEL 20,000PSI
STRUCTURAL STEEL (A36) 20,000PSI
STRUCTURAL STEEL (A572) 27,000PSI
A572 STEEL IS GRADE 50

LAYOUT OF UNDERPASS
HWY. 64 INTERCHANGE
BEEBE-SEARCY BYPASS
SURFACING & INTERCHANGES
WHITE COUNTY
ROUTE 67 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: J.P.S. DATE: 10-16-69
TRACED BY: DATE:
CHECKED BY: D.R. DATE: 10-20-69
SCALE: 1" = 20'-0"

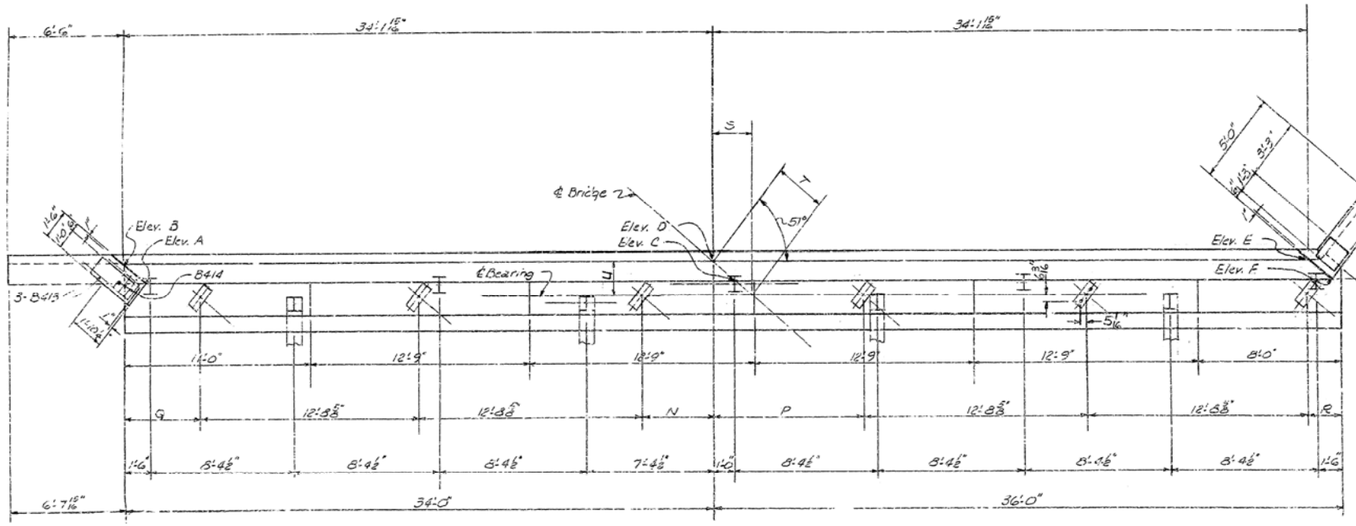
BRIDGE NO. 5354 DRAWING NO. 16730

77

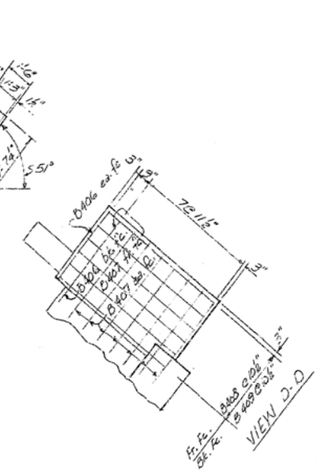
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD NO.	STATE	FED. AID PROJ.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	ARK.	F-RF 021-3(23)		76	235
JOB NO. 5608					

① 5354 END BENTS 16734



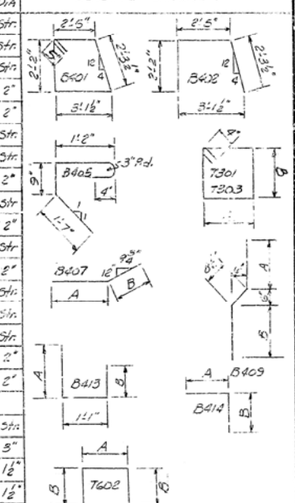
PLAN

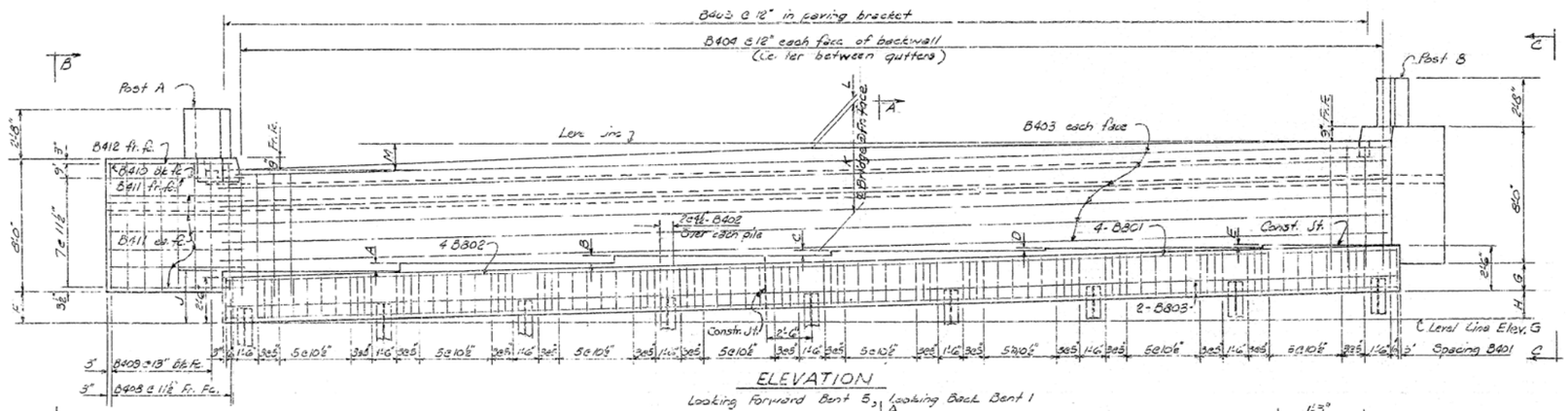


BAR LIST ONE BENT

Mk	No. Req.	Length	A	B	Gr. Dia.
B801	4	32'-4"			Str.
B802	4	40'-9"			Str.
B803	8	36'-8"			Str.
B401	100	10'-6"			2"
B402	27	6'-10"			2"
B403	24	30'-0"			Str.
B404	138	7'-9"			Str.
B405	69	4'-0			2"
B406	3	4'-7"			Str.
B407	15	6'-6"	1'-8"	4'-10"	2"
B408	16	7'-8"			Str.
B409	12	7'-10"	2'-3"	4'-11"	2"
B410	2	5'-8"			Str.
B411	13	8'-2"			Str.
B412	1	6'-11"			Str.
B413	3	6'-11"	3'-7"	2'-3"	2"
B414	3	2'-1"	1'-1"	1'-0"	2"
T601	13	5'-0"			Str.
T602	3	6'-8"	0'-8"	3'-0"	3"
T301	4	3'-10"	0'-8½"	1'-0"	1½"
T302	4	4'-11"	0'-9"	1'-6"	1½"
T303	4	3'-6"	0'-5½"	1'-0"	1½"

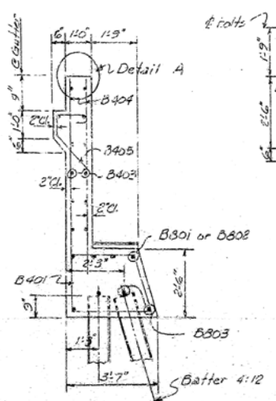
BENDING DIAGRAM





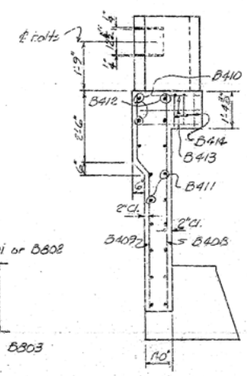
ELEVATION

Looking Forward Bent 5, Looking Back Bent 1



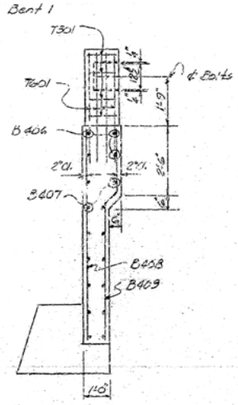
SECTION A-A

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



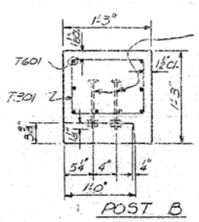
VIEW B-B

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



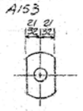
VIEW C-C

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

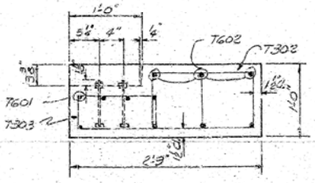


POST B

2-¾" A325 Hi-Strength Bolts 8" long with 2" threads, 2 clipped & 2 full flatwashers, 1 double washer, and 4 nuts, all galvanized in accordance with ASTM A153

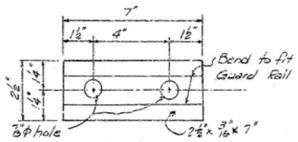


CLIPPED WASHER



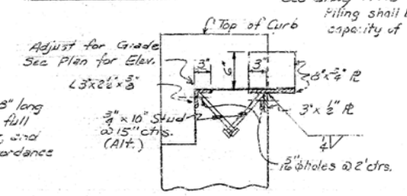
POST A

Scale: 1" = 1'-0"



DOUBLE WASHER

NOTES: All concrete shall be Class S. All exposed corners to be chamfered ¾". Reinforcing Steel shall be deformed bars of intermediate or hard grade. Shop lists and bending diagrams must be submitted and approval secured before fabrication is begun. Backwall shall not be poured until Girders have been placed on bent.
All structural steel to be ASTM A36.
Piling shall be 10 BF 42 Steel Bearing Piles.
See drwg. 14995 for details of Pile Tip Reinforcing.
Piling shall be driven to a minimum bearing capacity of 55 tons per pile.



DETAIL A

Scale: 1" = 1'-0"

VARIABLES

	Dimension		Elevation	
	Bent 1	Bent 5	Bent 1	Bent 5
A	5⅛"	4⅞"	252.93	254.35
B	5⅜"	4⅝"	252.08	256.31
C	3 9/16"	2⅞"	253.55	255.95
D	1¼"	⅞"	255.80	255.30
E	1⅜"	⅞"	253.75	255.36
F	1 11/16"	1'-0⅝"	253.82	255.38
G	11⅝"	11⅜"	243.99	246.05
H	1'-7⅝"	1'-1⅝"		
J	2'-9⅛"	2'-8⅜"		
K	5'-10 11/16"	5'-10⅝"		
L	3⅝"	3 9/16"		
M	1'-6"	1'-0½"		
N	4'-11 11/16"	4'-11 11/16"		
P	8'-7½"	8'-6½"		
Q	4'-5½"	4'-5½"		
R	1'-11 7/16"	1'-11 7/16"		
S	2'-3"	2'-2⅜"		
T	2'-10⅜"	2'-10⅜"		
U	1'-9⅜"	1'-9 9/16"		

DETAILS OF END BENTS 1 & 5
HWY. 64 INTERCHANGE
BEEBE - SEARCY BYPASS
SURFACING & INTERCHANGES
WHITE COUNTY
ROUTE 67 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: DFL DATE: 1-27-70
TRACED BY: DATE:
CHECKED BY: FMH DATE: 1-29-70
SCALE: 1" = 1'-0"

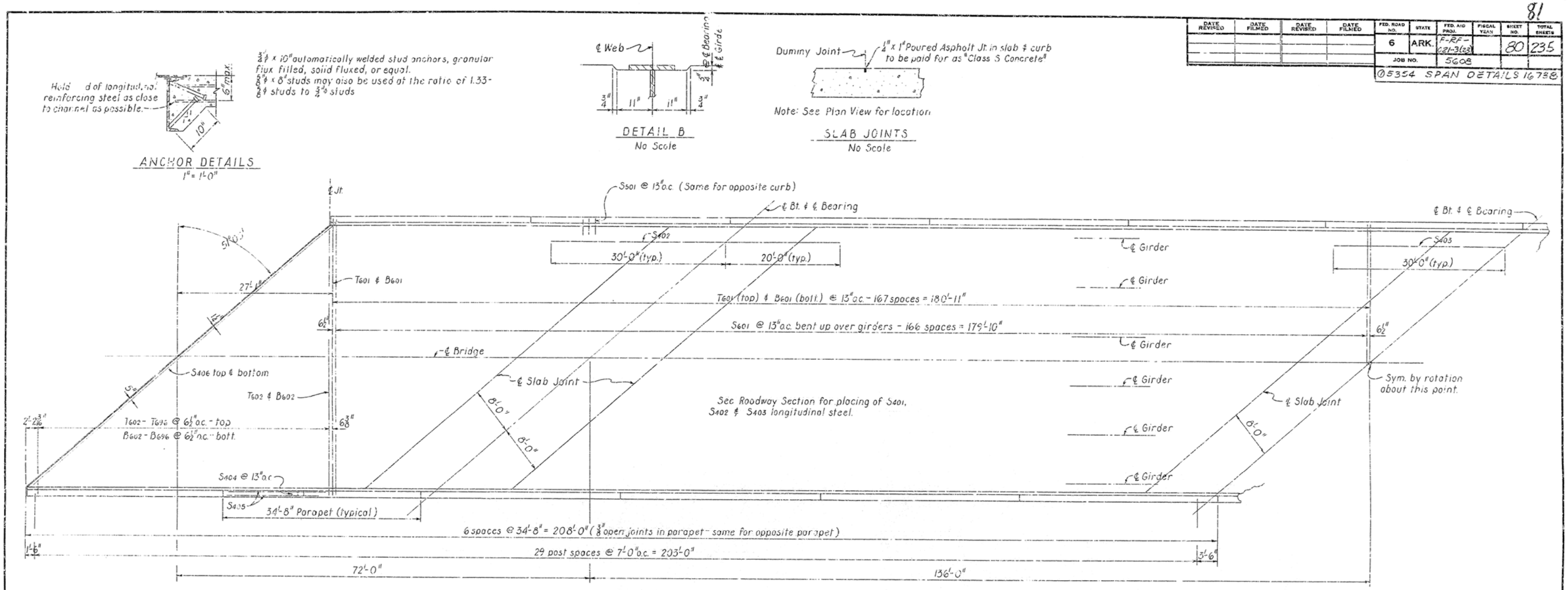
Visal Pinkerton
BRIDGE ENGINEER

BRIDGE NO. 5354 DRAWING NO. 16734

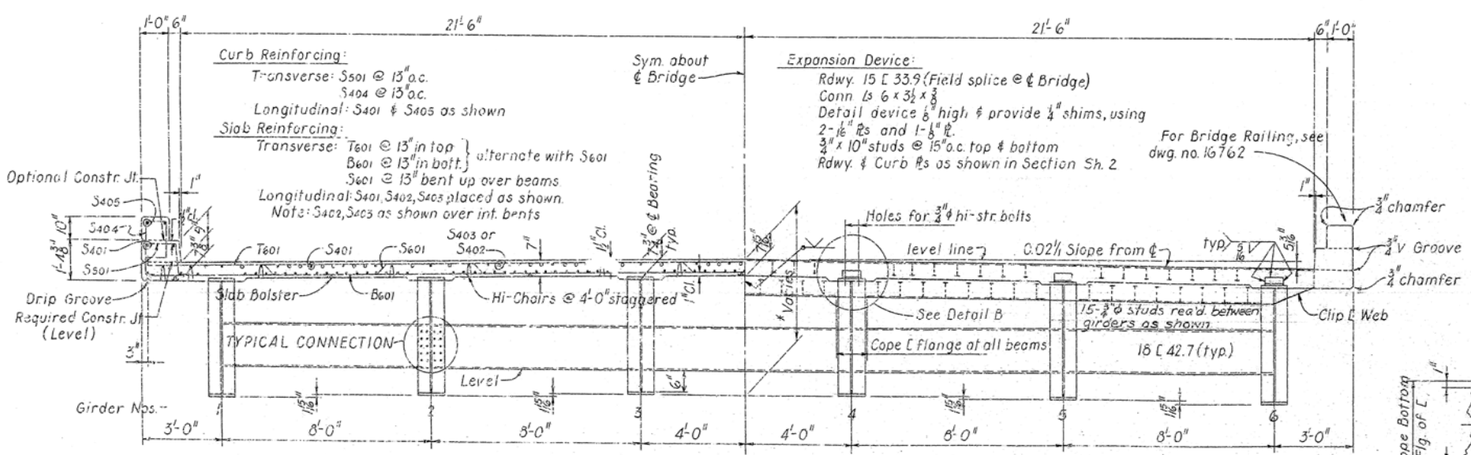
81

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD NO.	STATE	FED. AID PROJ.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
				6	ARK.	F-RF-(21-3)(23)		80	235
				JOB NO.		5608			

05354 SPAN DETAILS 16738



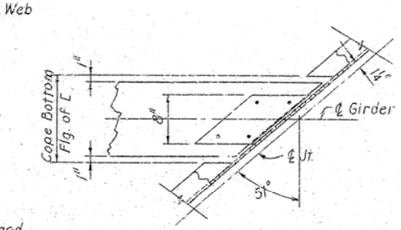
PLAN
1/8" = 1'-0"



ROADWAY SECTION
3/8" = 1'-0"

*4'-9 7/16" @ Bents 1 & 5.
4'-10 1/16" @ Bents 2 & 4.
4'-10 5/16" @ Bent 3.

For slab pouring note, dead load deflection diagram and General Notes see sheet 4 of 4.



CHANNEL CONNECTION
No Scale

BAR LIST

MK	No. Req'd.	Length	Pin Dia.	Bending Diagrams (Dimensions are out to out of bars.)
T601	335	46'-7"	3"	
B601	335	45'-6"	Str.	
S601	334	48'-1"	3"	
S401	1485	39'-4"	Str.	
S402	84	50'-0"	Str.	
S403	42	60'-0"	Str.	
S404	768	4'-6"	2"	
S405	48	34'-4"	Str.	
S501	768	4'-3"	2 1/2"	
T602 to T696	2 ea.	44'-3" to 3'-0"	3"	
B602 to B696	2 ea.	43'-10" to 2'-7"	Str.	
S406	4	36'-7"	Str.	

SHEET 1 OF 4

DETAILS OF CONTINUOUS WELDED PLATE GIRDER UNIT
HWY. 64 INTERCHANGE
BEEBE-SEARCY BYPASS
SURFACING & INTERCHANGES
WHITE COUNTY
ROUTE 67 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

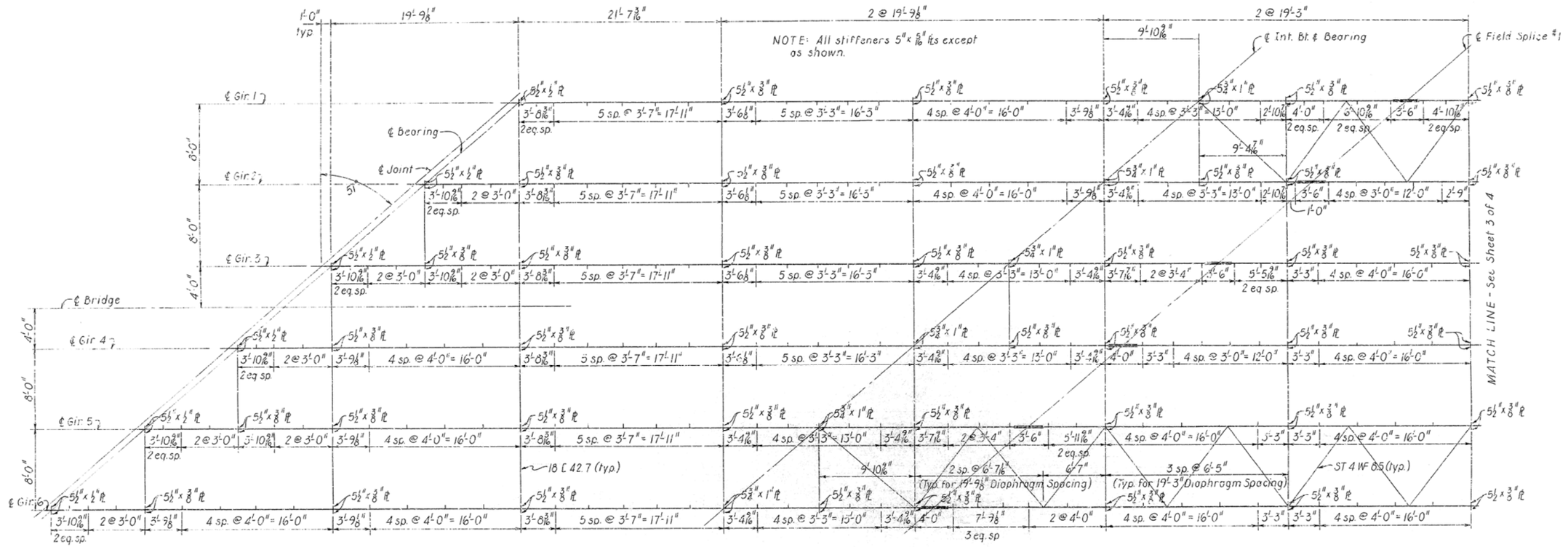
DRAWN BY: W. Maj. DATE: 1-16-70
TRACED BY: DATE:
CHECKED BY: D.F.L. DATE: 2-6-70
SCALE: As Shown

Neal Pinkston
BRIDGE ENGINEER

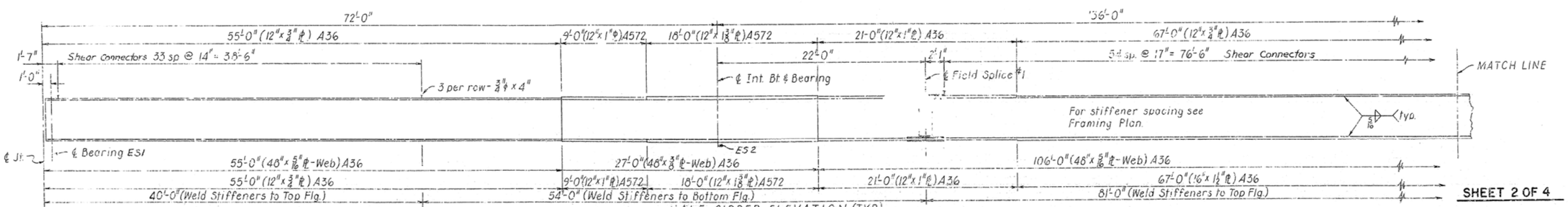
BRIDGE NO. 5354 DRAWING NO. 16738

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD NO.	STATE	FED. AID PROJ.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
				G	ARK.	F-RF-- 021-3(23)		81	235
				JOB NO.		5608			

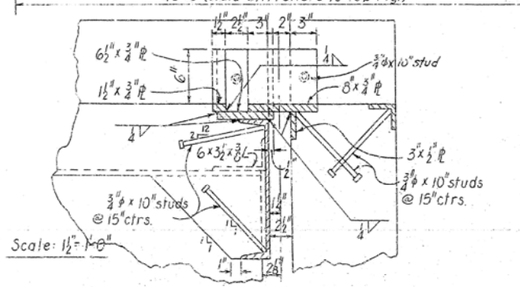
① 5354 SPAN DETAILS 16739



HALF-FRAMING PLAN
3/16" = 1'-0"



HALF-GIRDER ELEVATION (TYP.)
3/16" = 1'-0"



EXPANSION DEVICE SECTION

DESIGN SPECIFICATIONS: AASHO 1969
DESIGN LIVE LOADING: HS20
LOAD DISTRIBUTION:

	TO INTERIOR GIRDER	TO EXTERIOR GIRDER
DEAD LOAD TO GIRDER (INCLUDES 150#/FT. FOR WT. OF GIRDER)	855#/FT.	825#/FT.
DEAD LOAD TO COMPOSITE GIRDER (INCLUDES 90#/FT. FOR FUTURE WEARING SURFACE)	169#/FT.	247#/FT.
LIVE LOAD TO COMPOSITE GIRDER	1.455 WHEELS + IMPACT	1.333 WHEELS + IMPACT

UNIT STRESSES:

CLASS S CONCRETE (N-10)	1,200 PSI
REINFORCING STEEL	20,000 PSI
STRUCTURAL STEEL (A 36)	20,000 PSI
STRUCTURAL STEEL (A 572)	27,000 PSI

ALL GIRDERS SHALL BE SHOP ASSEMBLED IN THEIR TRUE POSITION, FIELD CONNECTION HOLES REAMED AND ALL PARTS MATCH MARKED. THE SHOP ASSEMBLY SHALL HAVE A MINIMUM ASSEMBLED SEQUENCE OF 3 SECTIONS.

SHEET 2 OF 4

DETAILS OF CONTINUOUS WELDED PLATE GIRDER UNIT
HWY. 64 INTERCHANGE
BEEBE-SEARCY BYPASS
SURFACING & INTERCHANGES
WHITE COUNTY
ROUTE 67 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: W. May DATE: 1-26-70
TRACED BY: DATE:
CHECKED BY: DR. DATE: 2-8-70
SCALE: As Shown

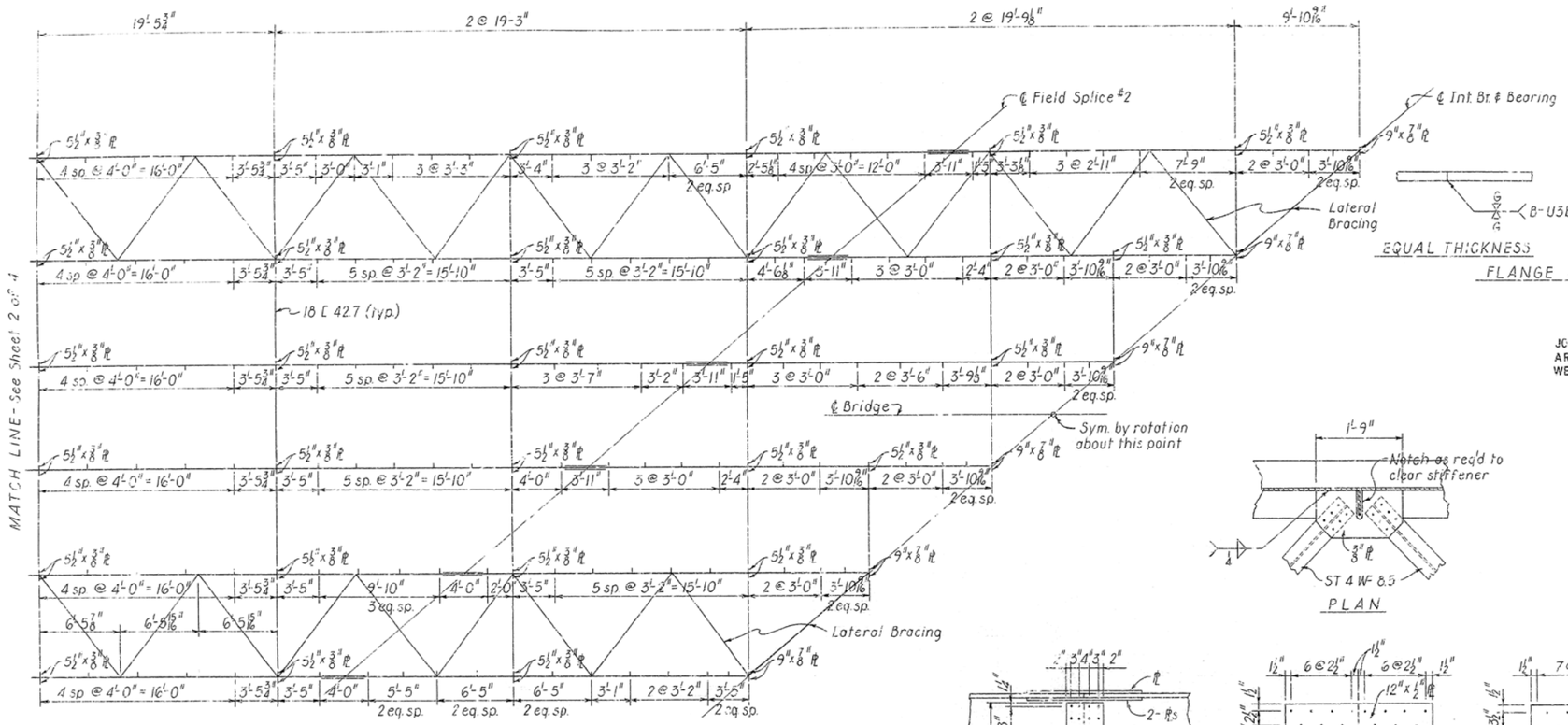
Vessal Pinkston
BRIDGE ENGINEER

BRIDGE NO. 5354 DRAWING NO. 16739

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD NO.	STATE	FED. AID PROJ.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
				6	ARK.	F.ER-021-3(23)		82	235
				JOB NO.		5608			

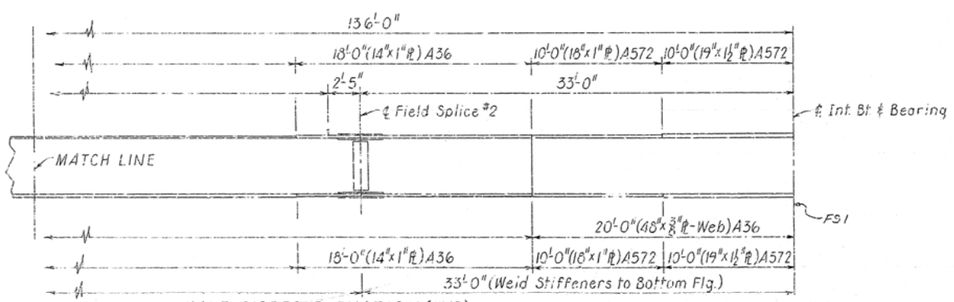
83

05354 SPAN DETAILS 16740



HALF-FRAMING PLAN

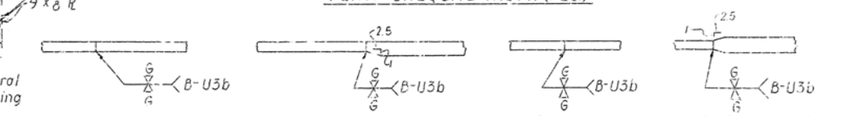
3/16" = 1'-0"



HALF-GIRDER ELEVATION (TYP.)

3/16" = 1'-0"

PLAN - UNEQUAL WIDTH (FLG.)

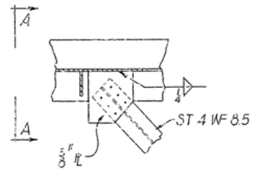


BUTT WELD DETAILS

No Scale

JOINTS SHOWN ARE FOR MANUAL SHIELDED METAL ARC WELDING. SUBMERGED ARC WELDING MAY BE USED, IN WHICH CASE, REFER TO CURRENT AMERICAN WELDING SOCIETY SPECIFICATIONS D2.0 FOR APPROPRIATE JOINT DESIGNATION.

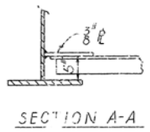
PLAN



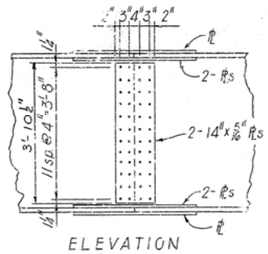
PLAN

LATERAL CONNECTIONS

No Scale



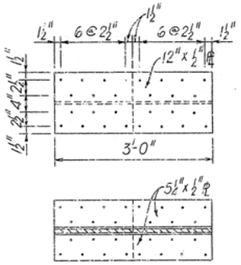
SECTION A-A



ELEVATION

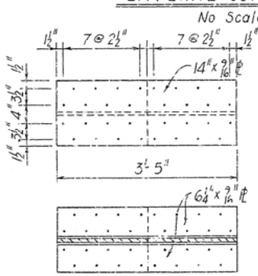
FIELD SPLICE - TYP.

1/2" = 1'-0"



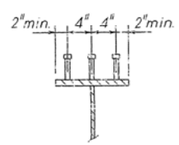
PLs - FIELD SPLICE #1

3/4" = 1'-0"



PLs - FIELD SPLICE #2

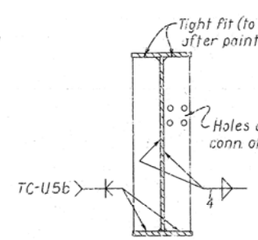
3/4" = 1'-0"



SHEAR CONNECTOR DETAIL

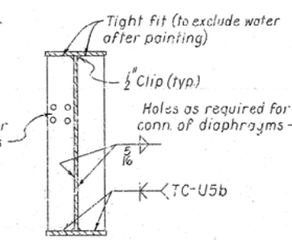
No Scale

STUD SHEAR CONNECTORS SHOWN SHALL BE 4" LONG, GRANULAR FLUX FILLED, SOLID FLUXED OR EQUAL, AND AUTOMATICALLY END WELDED TO GIRDER FLANGES IN ACCORDANCE WITH RECOMMENDATIONS OF THE MANUFACTURER. 7/8" DIAMETER STUDS MAY BE SUBSTITUTED FOR THE 3/4" DIAMETER STUDS SHOWN AT THE RATIO OF 0.73 - 7/8" STUDS IN PLACE OF 1 - 3/4" STUDS. THE 3/4" STUDS SHALL BE USED AS THE BASIS OF PAYMENT OF 61.5 LBS PER ONE HUNDRED STUDS.



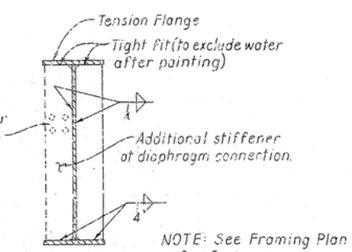
BEARING STIFFENERS AT END BENTS

No Scale



BEARING STIFFENERS AT INT. BENTS

No Scale



NOTE: See Framing Plan for PL sizes.

INTERMEDIATE STIFFENERS

No Scale

SHEET 3 OF 4

DETAILS OF CONTINUOUS WELDED PLATE GIRDER UNIT

HWY. 64 INTERCHANGE

BEEBE-SEARCY BYPASS

SURFACING & INTERCHANGES

WHITE COUNTY

ROUTE 67 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: H. May DATE: 1-29-70

TRACED BY: DATE:

CHECKED BY: DFL DATE: 2-2-70

SCALE: As Shown

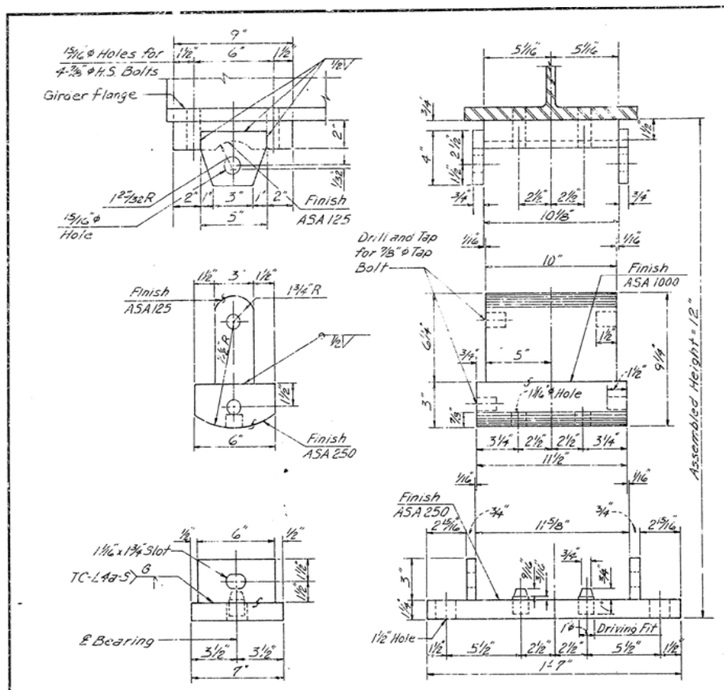
Vessel Pinkerton

BRIDGE ENGINEER

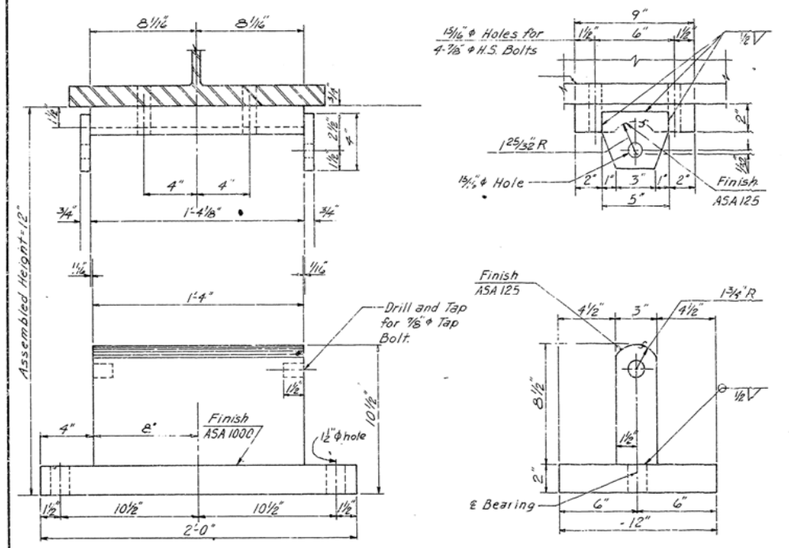
BRIDGE NO. 5354

DRAWING NO. 16740

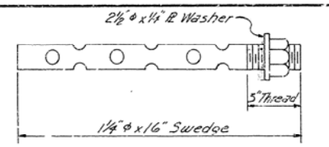
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD NO.	STATE	FED. AID PROJ.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
				6	ARK.	F-EF-021-3(23)		83	235
				JOB NO.		5608			
				① 5354 SPAN DETAILS (G74)					



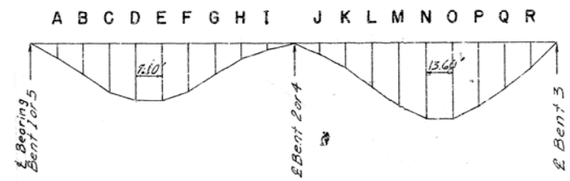
ES1
EXPANSION SHOE AT BENTS 1 & 5



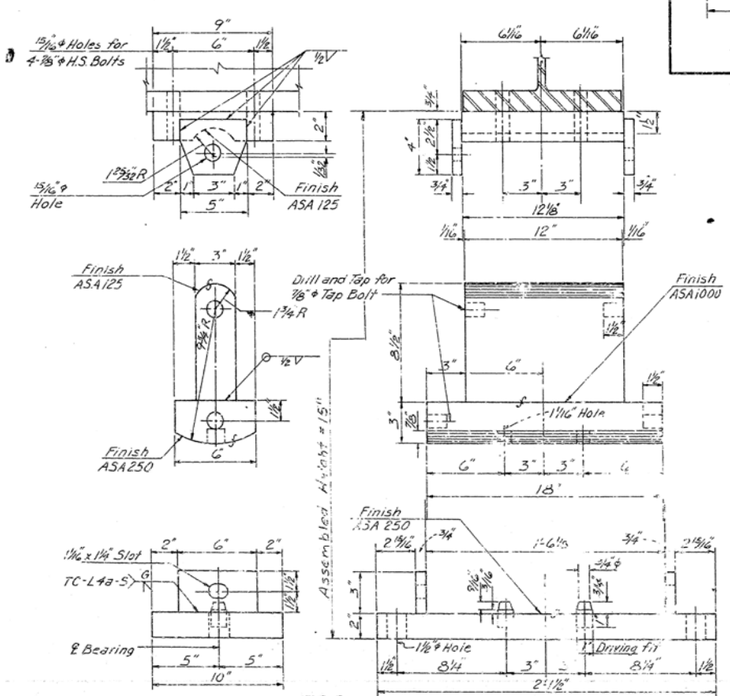
ES1
FIXED SHOE AT BENT 3



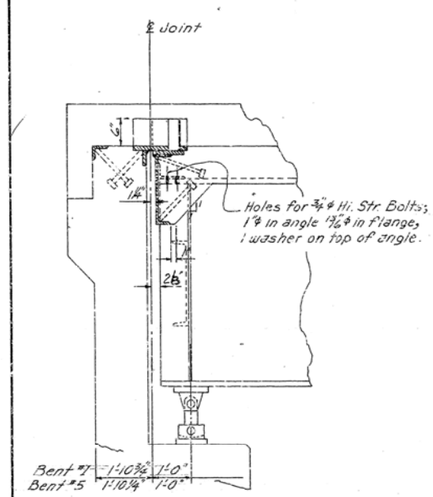
ANCHOR BOLT DETAIL



DEAD LOAD DEFLECTION



ES2
EXPANSION SHOE AT BENTS 2 & 4



JOINT AT ABUTMENTS

TABLE OF DEFLECTIONS (IN.)

Point of Deflec.	Wt. of Girder		Wt. of Girder & Slab		Wt. of Girder Slab, Parapet, Rail	
	INT	EXT	INT	EXT	INT	EXT
A	0	0	.040	.040	.050	.050
B	-.011	-.011	.054	.052	.068	.072
C	-.020	-.020	.042	.039	.057	.061
D	-.032	-.032	-.003	-.005	.008	.011
E	-.045	-.045	-.073	-.072	-.071	-.069
F	-.056	-.056	-.151	-.147	-.161	-.162
G	-.062	-.062	-.212	-.206	-.234	-.238
H	-.056	-.056	-.223	-.216	-.251	-.256
I	-.036	-.036	-.159	-.154	-.181	-.186
J	.120	.120	.590	.570	.680	.700
K	.265	.265	1.357	1.311	1.560	1.609
L	.391	.391	2.032	1.962	2.328	2.396
M	.465	.465	2.433	2.350	2.783	2.865
N	.470	.470	2.472	2.386	2.830	2.911
O	.406	.406	2.141	2.067	2.458	2.531
P	.288	.288	1.527	1.474	1.762	1.818
Q	.150	.150	.799	.772	.930	.963
R	.040	.040	.215	.207	.252	.260

Camber for Dead Load Deflection plus Vertical curve ± 1/4" tolerance. Deflections shown are from a chord from ℄ Bearing to ℄ Bearing. Vertical curve corrections not included. Negative sign (-) indicates point above chord.

GENERAL NOTES:

ALL CONCRETE TO BE CLASS (AE). ALL EXPOSED CORNERS TO BE CHAMFERED 3/4" UNLESS OTHERWISE NOTED.

FIELD CONNECTIONS TO BE BOLTED WITH HIGH STRENGTH BOLTS. BOLTS: 3/4" Ø, OPEN HOLES 13/16" Ø EXCEPT WHERE NOTED OTHERWISE. BOLT SPACING SHALL BE 2 1/2" UNLESS OTHERWISE NOTED. MINIMUM EDGE DISTANCE SHALL BE 1 1/4" UNLESS NOTED OTHERWISE. BOLTS SHALL BE PLACED WITH HEADS ON THE OUTSIDE FACE OF EXTERIOR GIRDERS AND ON BOTTOM OF GIRDER FLANGES.

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 WELDING SHALL CONFORM TO THE AMERICAN WELDING SOCIETY STANDARD SPECIFICATIONS FOR WELDED HIGHWAY AND RAILWAY BRIDGES, CURRENT EDITION.

SHOP PAINT: ALL STRUCTURAL STEEL EXCEPT GALVANIZED MEMBERS, CONTACT SURFACES OF BOLTED CONNECTIONS, AND SURFACES WITHIN 3" OF HOLES AND FIELD WELDS, AND SURFACES IN CONTACT WITH CONCRETE SHALL BE GIVEN ONE PRIME COAT AS SPECIFIED IN SPECIAL PROVISION 806-18 "PAINTING OF STEEL STRUCTURES."

FIELD PAINT: AFTER ERECTION ALL EXPOSED STEEL SURFACES WHICH DID NOT RECEIVE A COAT OF SHOP PAINT EXCEPT SURFACES IN CONTACT WITH CONCRETE SHALL BE GIVEN ONE COAT AS SPECIFIED IN SP 806-18. TWO ADDITIONAL COATS OF FIELD PAINT SHALL BE APPLIED TO ALL EXPOSED SURFACES. FIRST COAT - RED LEAD TINTED WITH LAMP BLACK; SECOND COAT - ALUMINUM PAINT. FIELD PAINT SHALL BE AS SPECIFIED IN SPECIAL PROVISION 806-18 "PAINTING OF STEEL STRUCTURES."

BEARINGS SHALL BE FINALLY SEATED IN ACCORDANCE WITH SEC. 806.54, INCLUDING ALTERNATE, OF THE STANDARD SPECIFICATIONS. THIS WORK AND MATERIAL IS TO BE CONSIDERED AS SUBSIDIARY TO THE ITEM OF "STRUCTURAL STEEL" AND WILL NOT BE PAID FOR DIRECTLY. THESE DRAWINGS SHOW 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.

FLOOR SLABS SHALL BE POURED IN ONE CONTINUOUS OPERATION OVER THE ENTIRE UNIT. A MINIMUM OF 72 HOURS SHALL ELAPSE BETWEEN COMPLETION OF THE SLAB AND THE POURING OF THE CURB SECTION. IF PARAPET IS NOT POURED WITH CURB, 72 HOURS SHALL ELAPSE BETWEEN POURING OF CURB AND PARAPET. ALL CONCRETE IN SLAB SHALL BE POURED BEFORE ANY PORTION HAS REACHED ITS INITIAL SET. THE CONCRETE DECK SHALL BE FINISHED IN ACCORDANCE WITH SECTION 802.24 OF THE STANDARD SPECIFICATIONS AND THE 1966 SUPPLEMENTAL SPECIFICATIONS. MOVEMENT OF THE FINISHING MACHINE ACROSS NEW CONCRETE SHALL BE ON PLANKS PLACED ON THE SURFACE AND SHALL BE PROHIBITED FOR 72 HOURS AFTER FINISHING THE POUR.

GIRDER WEBS MAY BE MADE BY SHOP SPLICING WITH MINIMUM LENGTH OF 25' - 0" FOR SECTIONS. FLANGE PLATES LONGER THAN 50' MAY BE MADE BY SHOP SPLICING WITH MINIMUM LENGTH OF 25' - 0" FOR SECTIONS. NO ADDITIONAL PAYMENT FOR WELDS FOR THESE SPLICES WILL BE MADE.

FLANGES NOTED ON GIRDER ELEVATION (SHEETS 2 & 3) SHALL BE HIGH STRENGTH LOW ALLOY COLUMBIUM VANDIUM STEEL, ASTM DESIGNATION A 572, GRADE 50 AND SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER POUND BID FOR "STRUCTURAL STEEL IN PLATE GIRDER SPANS A 572." ALL OTHER STRUCTURAL STEEL SHALL BE ASTM DESIGNATION A 36 AND SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER POUND BID FOR "STRUCTURAL STEEL IN PLATE GIRDER SPANS A 36."

FOR DETAILS OF BRIDGE RAILING SEE DRAWING NO. 16762

SPECIFICATIONS: ARKANSAS STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 1959, THE 1966 SUPPLEMENTAL SPECIFICATIONS NUMBER 10, AND APPLICABLE SPECIAL PROVISIONS.

SHEET 4 OF 4

DETAILS OF CONTINUOUS WELDED PLATE GIRDER UNIT

HWY 64 INTERCHANGE
BEEBE-SEARCY BYPASS
SURFACING & INTERCHANGES
WHITE COUNTY

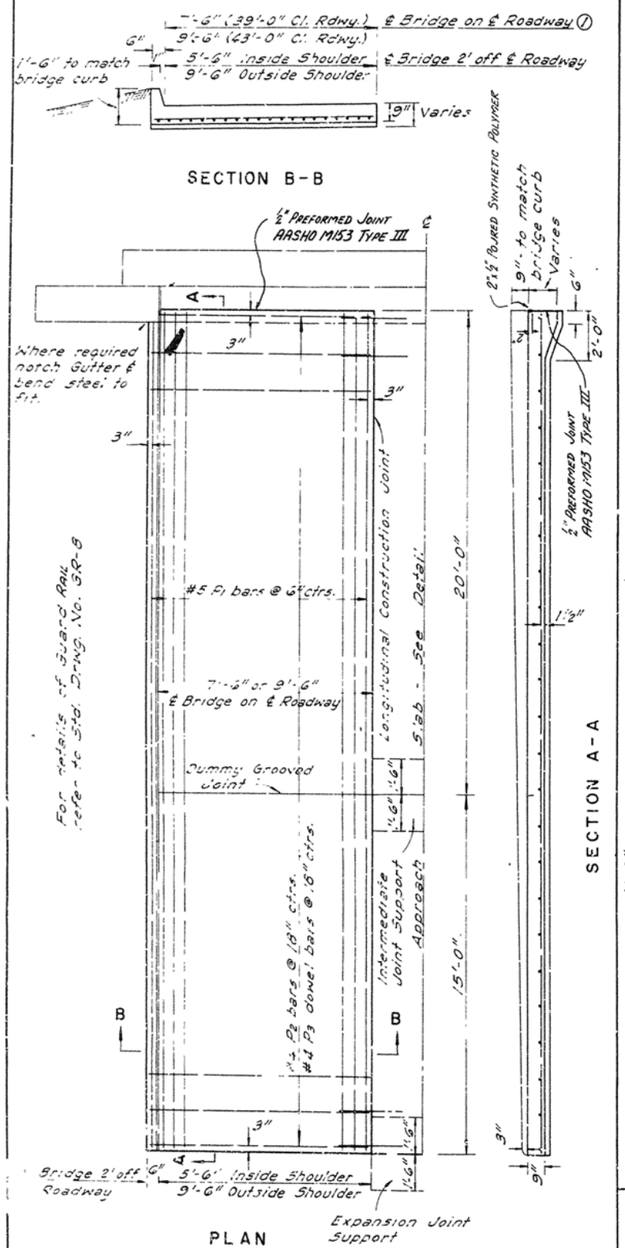
ROUTE 67 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: W.V.W. DATE: 1-28-70
TRACED BY: DATE:
CHECKED BY: F.M.H. DATE: 2-4-70
SCALE: As Noted

Neal Hankerson
BRIDGE ENGINEER

BRIDGE NO. 5354 DRAWING NO. 16741



℄ BRIDGE 2' OFF ℄ ROADWAY
BAR LIST (ONE GUTTER)

MARK	SIZE	NO.	LENGTH
* P1	#5	12	34'-8" Inside
		20	34'-8" Outside
P2	#4	24	7'-9" Inside
		24	3'-9" Outside
P3	#4	24	3'-0"

℄ BRIDGE ON ℄ OF ROADWAY
BAR LIST (ONE GUTTER)

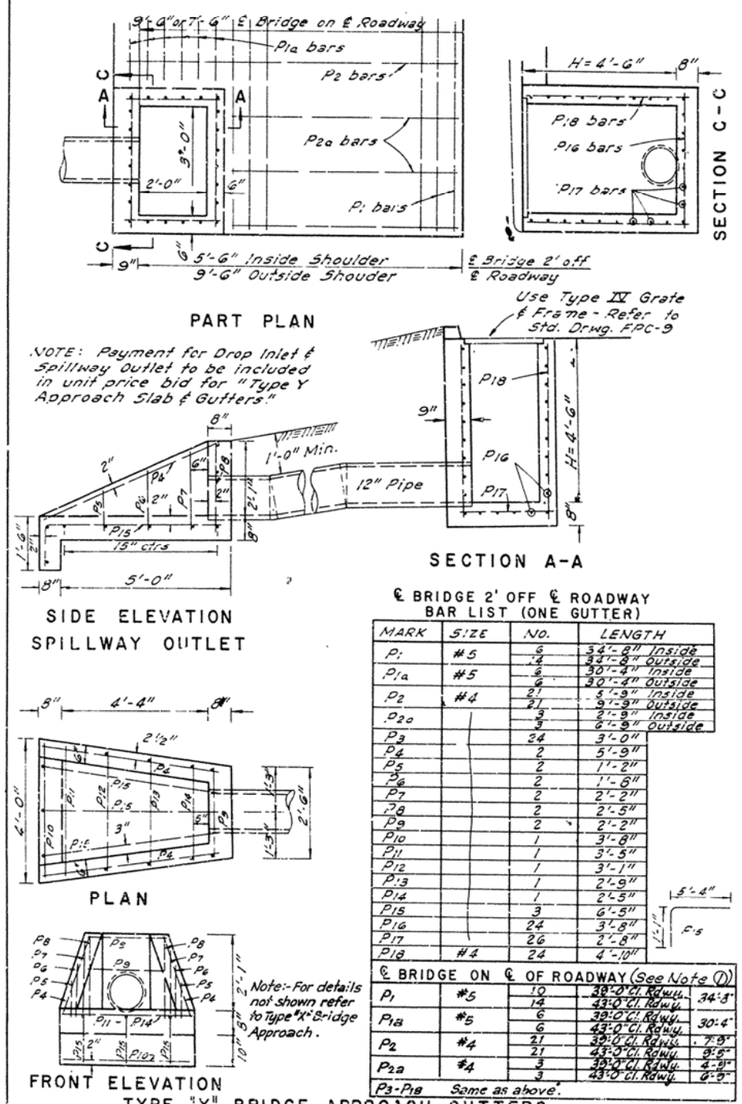
MARK	SIZE	NO.	LENGTH
* P1	#5	16 (7'-6") 20 (9'-6")	34'-8"
P2	#4	24	7'-9" 9'-9"
P3	#4	24	3'-0"

* When the bridge is skewed all P1 bars will vary in length

TYPE "X" BRIDGE APPROACH GUTTERS

SCALE: 1" = 3'

NOTE: Joint Filler around Drop Inlet to be non-extruding pre formed joint filler. A.A.S.H.O. M153 Type III.



℄ BRIDGE 2' OFF ℄ ROADWAY
BAR LIST (ONE GUTTER)

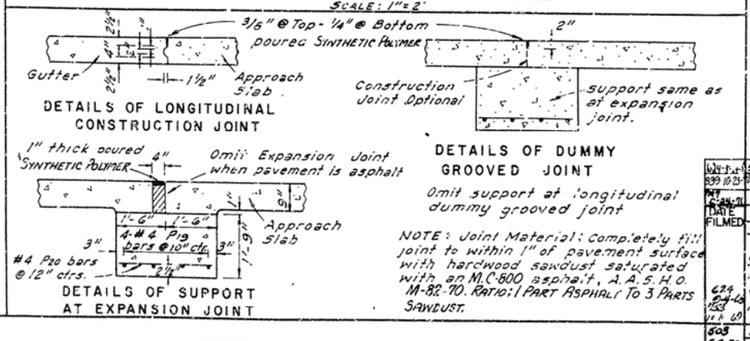
MARK	SIZE	NO.	LENGTH
P1	#5	6	34'-8" Inside
		14	34'-8" Outside
P1a	#5	6	30'-4" Inside
		6	30'-4" Outside
P2	#4	21	5'-9" Inside
		21	9'-9" Outside
P2a		3	2'-9" Inside
		3	6'-9" Outside
P3		24	3'-0"
P4		2	5'-9"
P5		2	1'-2"
P6		2	1'-6"
P7		2	2'-2"
P8		2	2'-5"
P9		2	2'-2"
P10		1	3'-8"
P11		1	3'-5"
P12		1	3'-1"
P13		1	2'-9"
P14		1	2'-5"
P15		3	6'-5"
P16		24	3'-8"
P17		26	2'-8"
P18	#4	24	4'-10"

℄ BRIDGE ON ℄ OF ROADWAY (See Note ①)

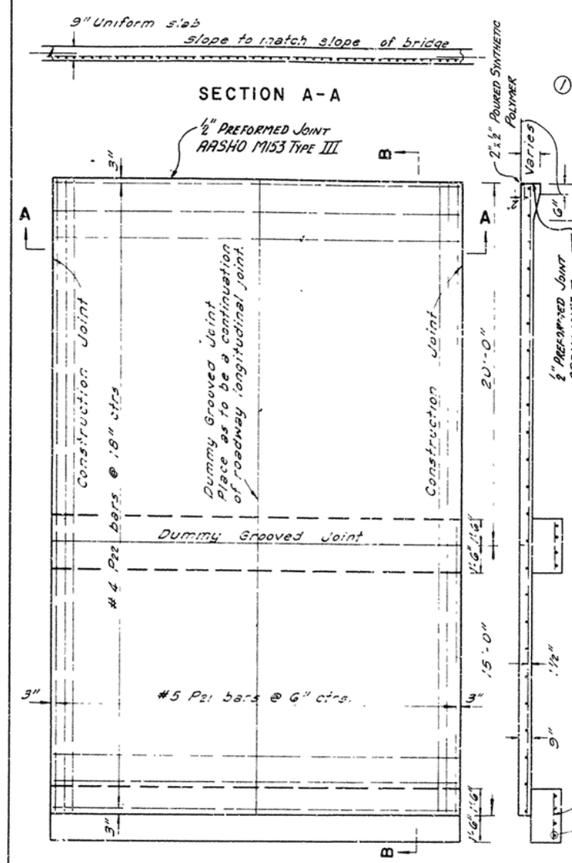
P1	#5	10	39'-0" Cl. Rdwy.	34'-8"
		14	43'-0" Cl. Rdwy.	
P1a	#5	6	39'-0" Cl. Rdwy.	30'-4"
		6	43'-0" Cl. Rdwy.	
P2	#4	21	39'-0" Cl. Rdwy.	7'-9"
		21	43'-0" Cl. Rdwy.	9'-9"
P2a	#4	3	39'-0" Cl. Rdwy.	4'-9"
		3	43'-0" Cl. Rdwy.	6'-9"
P3-P18	Same as above.			

TYPE "Y" BRIDGE APPROACH GUTTERS

SCALE: 1" = 2'

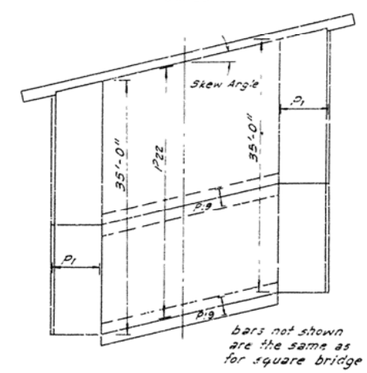


NOTE: Joint Material: Completely fill joint to within 1" of pavement surface with hardwood sawdust saturated with an M.C-800 asphalt, A.A.S.H.O. M-82-70. Ratio: 1 Part Asphalt To 3 Parts Sawdust.



PLAN - APPROACH SLAB

SCALE: 1" = 4'



SKETCH SHOWING APPROACH FOR SKEWED BRIDGE

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	TOTAL CONST. EST.	NO. SHEETS	TOTAL SHEETS
6	ARK.			20	196
JOB NO.		5635			

232

BAR LISTS
SQUARE & SKEWED SLABS

MARK	SIZE	NO.	LENGTH
22'-0" SLAB WIDTH			
P19	#4	8	21'-8" (Secant Skew &)
P20	#4	24	2'-8"
P21	#5	44	32'-8"
P22	#4	24	21'-8 (Secant Skew &)
24'-0" SLAB WIDTH			
[illegible]	#4	8	23'-8" (Secant Skew &)
[illegible]	#4	48	2'-8"
P21	#5	48	34'-8"
P22	#4	24	23'-8" (Secant Skew &)
36'-0" SLAB WIDTH			
P19	#4	8	35'-8" (Secant Skew &)
P20	#4	72	2'-8"
P21	#5	72	34'-8"
P22	#4	24	35'-8" (Secant Skew &)
48'-0" SLAB WIDTH			
P19	#4	8	47'-8" (Secant Skew &)
P20	#4	96	2'-8"
P21	#5	96	34'-8"
P22	#4	24	47'-8" (Secant Skew &)

TYPE "Z" BRIDGE APPROACH

Type "Z" Approach consists of one-half Type "Y" and one-half Type "X". Use whenever called for on the plans.

① For 63'-0" clear rdwy. use gutters shown for 39'-0" clear rdwy. For 67'-0" clear rdwy. use gutters for 43'-0" clear rdwy.

GENERAL NOTES

All concrete to be class A or S or pavement mixture. Exposed corners to be chamfered 3/4" unless otherwise shown.

Reinforcing steel to be deformed bars of A.S.T.M. A615 Grade 40.

Approach slabs and gutters for structures shall be paid for at the contract unit price each bid for "Approach Gutters" or "Approach Slabs and Gutters", of the type designated, which price shall be full compensation for furnishing all materials, including reinforcing steel and joint materials; for forms, mixing, placing and finishing, for excavation and backfill, and for all labor, tools, equipment and incidentals necessary to complete the work.

Payment for furnishing and installing corrugated metal pipe shall be made under the item of "Pipe Culverts And Storm Drains, Section 606.

DATE FILMED	DATE	REVISION
	9-18-67	Redrawn - Spillway replaced by drop inlet - Bar Lists revised.
	9-26-67	Type "Y" Bar List corrected
	11-20-67	Type "Y" P2 & P2a bar lengths rev.
624	8-25-69	Spillway Outlet Dimension Corrected
1253	10-10-69	Drop Inlet Grate Revised
503	5-6-70	Type "Y" Appr. Slab Bar List Revised.
56-70	9-3-70	Revised Appr. Slab Slope
1302	5-24-73	P.I. Sidewall To 9", Add 48" Slab Width
939 10-25	10-17-72	Updated For 1972 Spec.
947	2-24-71	Rev. Br. Designated on Type "Y" Gutter

SCALE: 1" = 10'

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF STANDARD APPROACH SLABS & GUTTERS FULL SHOULDER WIDTH STRUCTURES

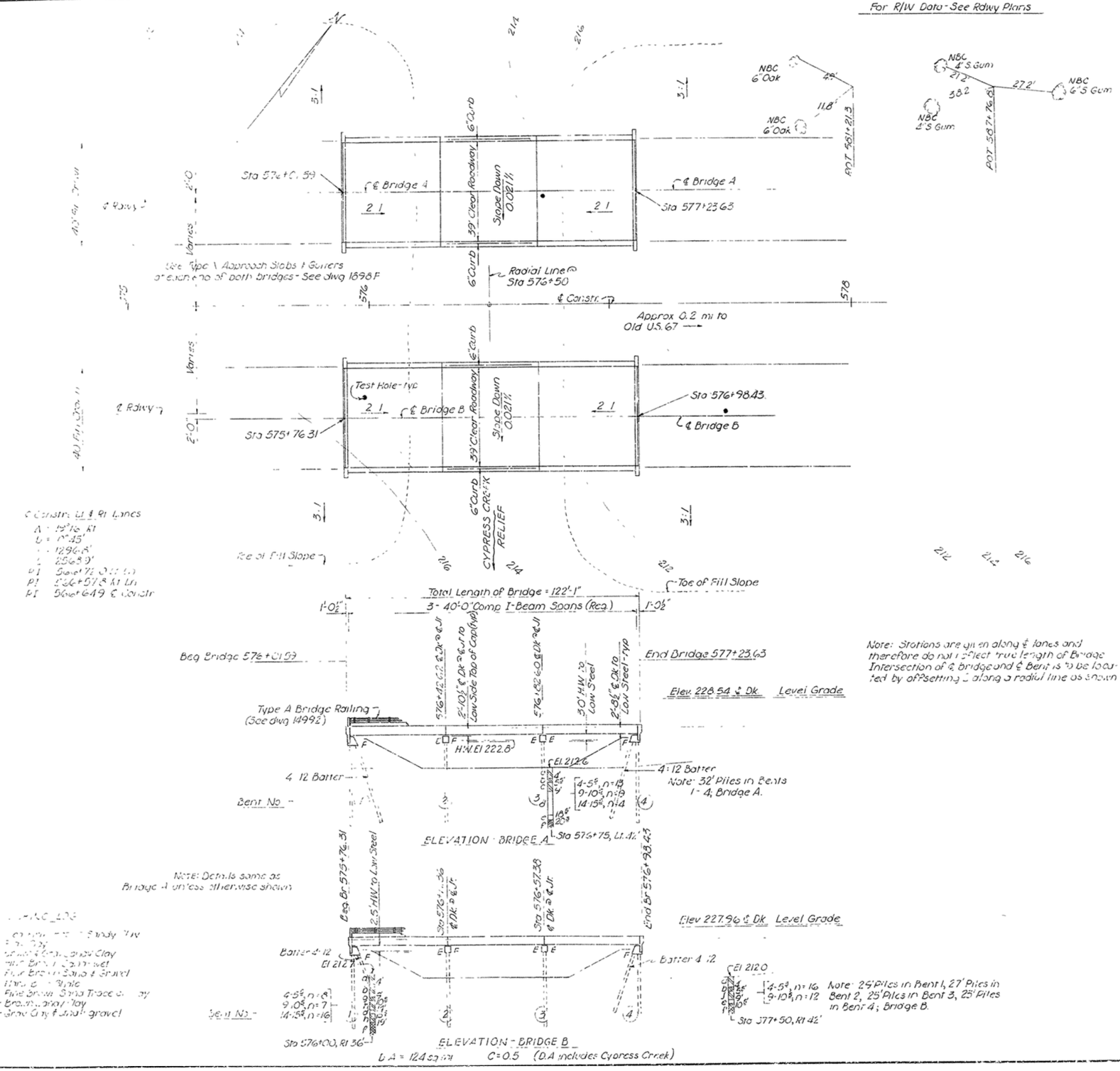
SCALE: as noted

DRAWING NO. 1898F (REV)

ORIG.

For R/W Data - See Rdwy Plans

F021-3(18) 88 330
13448



GENERAL NOTES

Bench Mark - Nail in side 6" Twin Red Oak 1' lt. Station 582 + 94; Elev. 217.78.

All concrete to be poured in the dry. All piling shall be 12BP53 and shall be driven with an approved air, steam or diesel hammer to a minimum bearing capacity of 40 tons per pile and into the shale. 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 substructure see dwg. nos. 13625
For details of superstructure see dwg. nos. 13624, 14990C

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

DESIGN SPECIFICATIONS: AASHO 1961

Live Loading: HS20

Unit Stresses:

	Class S Concrete (n=10)	1,200 psi
	Reinforcing Steel	20,000 psi
	Structural Steel (A 36)	20,000 psi

LAYOUT OF BRIDGES OVER
CYPRESS CREEK RELIEF
PULASKI CO. LINE - BEEBE
WHITE COUNTY
ROUTE 67 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

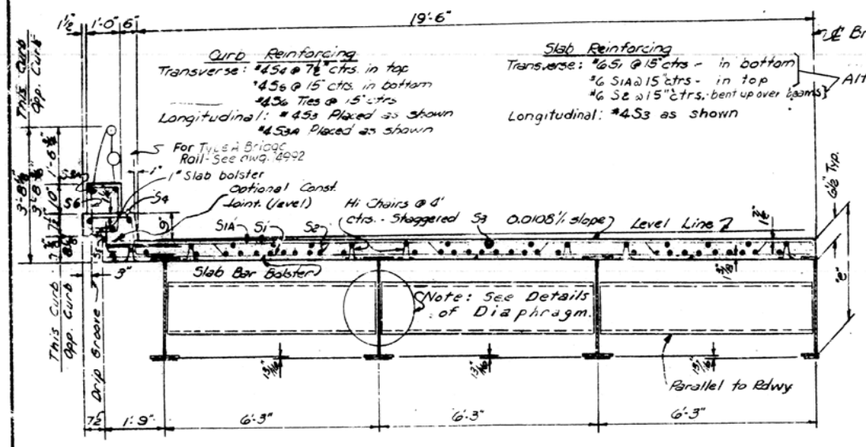
DRAWN BY: RWM DATE: 4-6-66
TRACED BY: DATE:
CHECKED BY: DEL DATE: 4-11-66
SCALE: 1"=20'

L P Carlson
BRIDGE ENGINEER

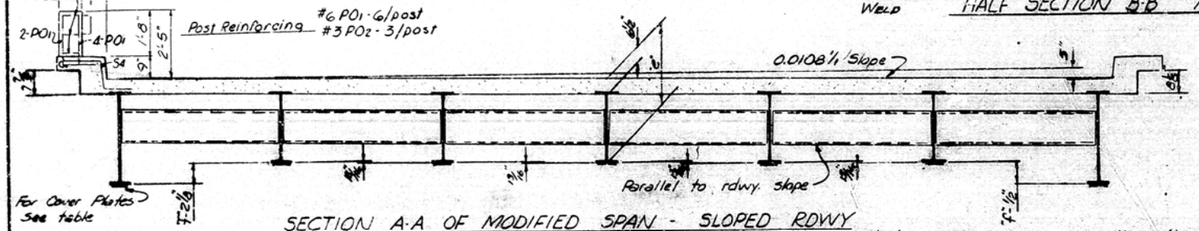
BRIDGE NO. 5088A&B DRAWING NO. 13611

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	TOTAL SHEETS
6	Ark.	F021-3(18)	20 330

ROUTE NO. 1348



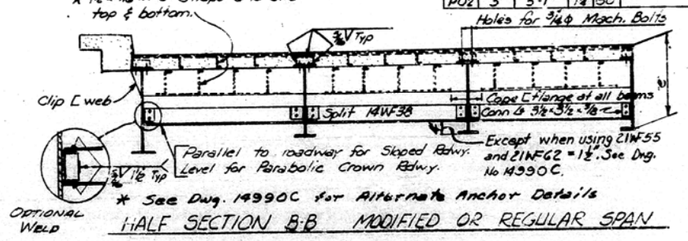
HALF SECTION A-A OF REGULAR SPAN - SLOPED RDWY.
(Regular Spans have all beams of equal depth)



SECTION A-A OF MODIFIED SPAN - SLOPED RDWY

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

Note: f = corresponding dimension for parabolic crown Roadway.



* See Dwg. 14990C for Alternate Anchor Details

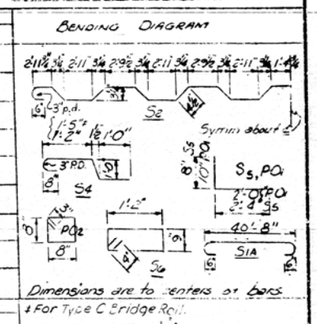
HALF SECTION B-B MODIFIED OR REGULAR SPAN

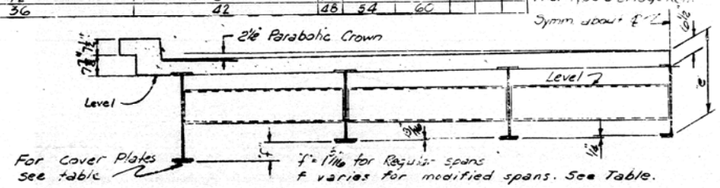
BAR LIST - ONE SPAN

Mark	Size	Length	Bend Dia	Number Required Each Span																					
				35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	55	60	65	70	75
S1	6	20'-8"	Str.																					
S1A	6	42'-0"	3"	26	29	30	31	32	32	33	34	35	36	36	37	38	39	40	40	44	48	52	56	60
S2	6	43'-0"	2¼	27	28	29	30	31	31	32	33	34	35	35	36	37	38	39	39	43	47	51	55	59
S3	4	5'-6"	Str.	102																				
S3	4	5/12+7"	Str.	204																				
S3	4	5/12+1'-0"	Str.	306																				
S4*	4	3'-11" / 4'-2"†	1½	112	116	118	122	124	128	132	134	138	140	144	148	150	154	156	160	176	192	208	224	240
S5	4	5'-0"	1½	56	58	60	62	62	64	66	66	70	72	72	74	76	78	78	80	88	96	104	112	120
S6*	4	4'-5"	1½	58	58	60	62	64	66	66	68	70	72	74	74	76	78	80	82	90	98	106	114	122
S3A†	4	5-(1'-6")/3	Str.	12																				
P01	6	2'-10"	7¼	60			72					84							96		108		120	
P02	3	3'-1"	1¼	30			36					42							48		54		60	

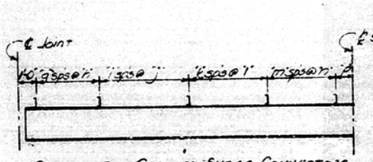
* Type A Rail only.

BENDING DIAGRAM

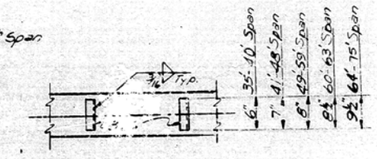




HALF SECTION A-A MODIFIED OR REGULAR SPAN PARABOLIC CROWN

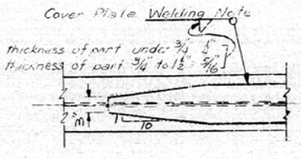


SPACING FOR CHANNEL SHEAR CONNECTORS



DETAILS OF SHEAR CONNECTORS

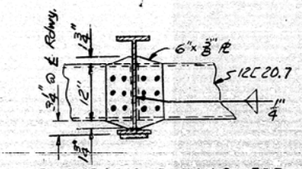
Cover Plate Welding Note



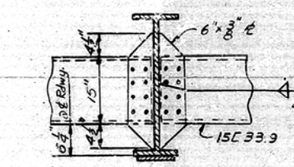
DETAILS OF COVER PLATES
No Scale

Bridge No.	Span No.	Span Length	Span Type	Interior Beam Size	Interior Beam Cover Pl. Size	Interior Beam e	Interior Beam Dead Load Deflection With Constr. Joint	Interior Beam Dead Load Deflection Without Constr. Joint	Exterior Beam Size	Exterior Beam Cover Pl. Size	Exterior Beam e	Exterior Beam Dead Load Deflection With Constr. Joint	Exterior Beam Dead Load Deflection Without Constr. Joint	Diaphragm Spacing	Post Spacing a	Post Spacing b	Post Spacing c	f	Variables of Shear Connector Spacing g	h	i	j	k	l	m	n	p
5085 A&B	1-5	40'-0"	Reg.	21WF62	6½" × 7/16" × 28'-0"	2'-2⅞"	9/16"	9/16"	21WF62	5½" × 7/8" × 25'-0"	2'-2⅞"	9/16"	3/4"	2@ 20'-0"	7'-6"	7'-6"	3	—	12	4"	14	6"	9	8"	2	12"	0"
5088 A&B	1-3	40'-0"	Reg.	21WF62	6½" × 7/16" × 28'-0"	2'-2⅞"	9/16"	9/16"	21WF62	5½" × 7/8" × 25'-0"	2'-2⅞"	9/16"	3/4"	—	—	—	—	—	12	4"	14	6"	9	8"	2	12"	0"

Added by: DFL 5-24-66
JAS 6-1-66



DIAPHRAGM DETAILS FOR 21" thru 27" WF BEAMS
Scale: 3/4" = 1'-0"



DIAPHRAGM DETAILS FOR 30" thru 36" WF BEAMS
Scale: 3/4" = 1'-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.

This drawing to be used with drawing 14990C.

DESIGN SPECIFICATIONS: AASHO 1961

Live Loading: HS20 and Special Interstate Loading of 2 - 24,000# axles spaced 64'0" ctrs.

		Interior Beam	Exterior Beam
1. DEAD LOAD (Type A Rail)			
a. To WF Beam (without const. jt.)		508 #/' + 1.15 (wt./ft. of WF)	618 #/' + 1.15 (wt./ft. of WF)
(with const. jt.)		508 #/' + 1.15 (wt./ft. of WF)	416 #/' + 1.15 (wt./ft. of WF)
b. To Composite Beam (without const. jt.)		110 #/'	110 #/ft.
(with const. jt.)		156 #/'	156 #/'
2. LIVE LOAD:	a. To ea. Composite Beam	1.136 Wheels + Impact	1.123 Wheels + Impact
UNIT STRESSES:	Class S Concrete (n=10)	1,200 psi	
	Structural Steel (A-36)	20,000 psi	
	Reinforcing Steel	20,000 psi	
1A. DEAD LOAD (Type C Rail)			
a. To WF Beam (without Constr. jt.)		508 #/' + 1.15 (wt./ft. of WF)	651 #/' + 1.15 (wt./ft. of WF)
(with Constr. jt.)		508 #/' + 1.15 (wt./ft. of WF)	416 #/' + 1.15 (wt./ft. of WF)
b. To Composite Beam (without Constr. jt.)		79 #/'	79 #/'
(with Constr. jt.)		133 #/'	133 #/'

Revision - Changed numbers of S1 & S2 bars 12-30-64 W.E.W.
Revised 1-6-65. Added S1A, added hook to S2. F.M.H. (chk'd. J.E.H.)
Revised: Added Type C Bridge Rail. 3-3-65. R.W.M. ck F.M.H.
Revised: Added Joint Sealer. 9-17-65 R.W.M.

This dwg. adapted from Std. Dwg. 15120.

DETAILS OF STANDARD
35'-75' COMPOSITE I-BEAM SPANS
39'-0" CLEAR RDWY 0'-6" CURB
2½" PARABOLIC CROWN OR 0.0108'/' SLOPE

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

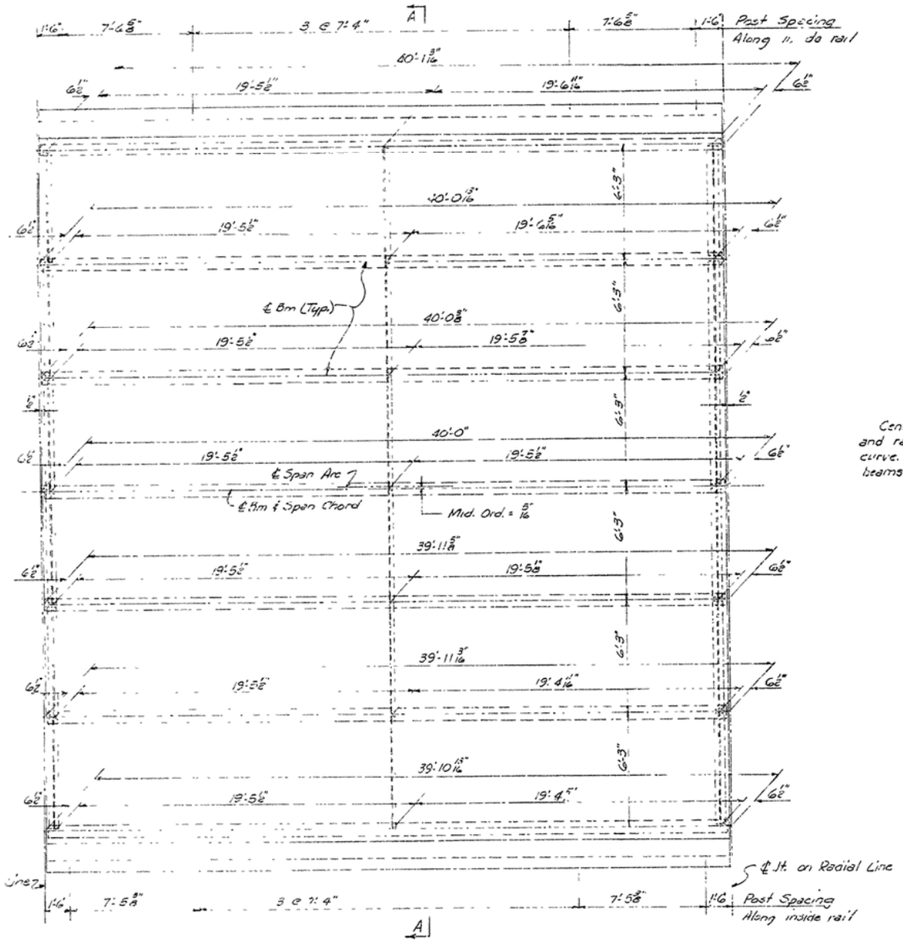
DRAWN BY: JAS DATE: 10-7-64
TRACED BY: DATE:
CHECKED BY: WEW DATE: 10-9-64
SCALE: 3/4" = 1'-0" as as shown

L P Carlson
BRIDGE ENGINEER

BRIDGE NO. 5085 A & B 5088 A & B DRAWING NO. 13613

406

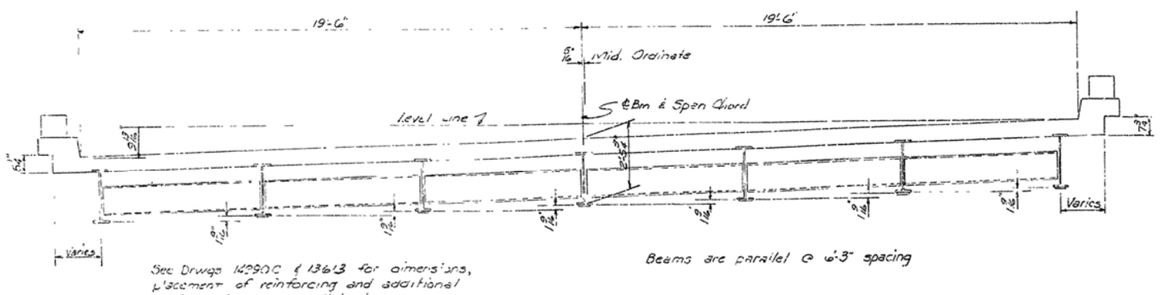
FED. ROAD NO.	STATE	FED. AID PROJ.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	ARK.	F-021-3(13)		101	320
JOB NO.		1343			



A

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

Centerline bridge is located on an arc of a 0°45' curve. Curbs and rail shall be located on curves concentric with centerline curve. Locate center beam on span chord at centerline bridge, other beams shall be placed parallel @ 6'-3" spacing.



See Drwgs 14290C & 13613 for dimensions, placement of reinforcing and additional details not shown on this drwg.

Beams are parallel @ 6'-3" spacing

SECTION A-A
Scale: 1/8" = 1'-0"

SUPPLEMENTAL SPAN DETAILS

BRIDGE A & B

CYPRESS CREEK RELIEF

PULASKI CO. LINE-BEEBE

LONOKE COUNTY

ROUTE 67 SEC. II

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: DFL DATE: 5-12-66
TRACED BY: DATE:
CHECKED BY: WAS DATE: 5-27-66
SCALE: As shown

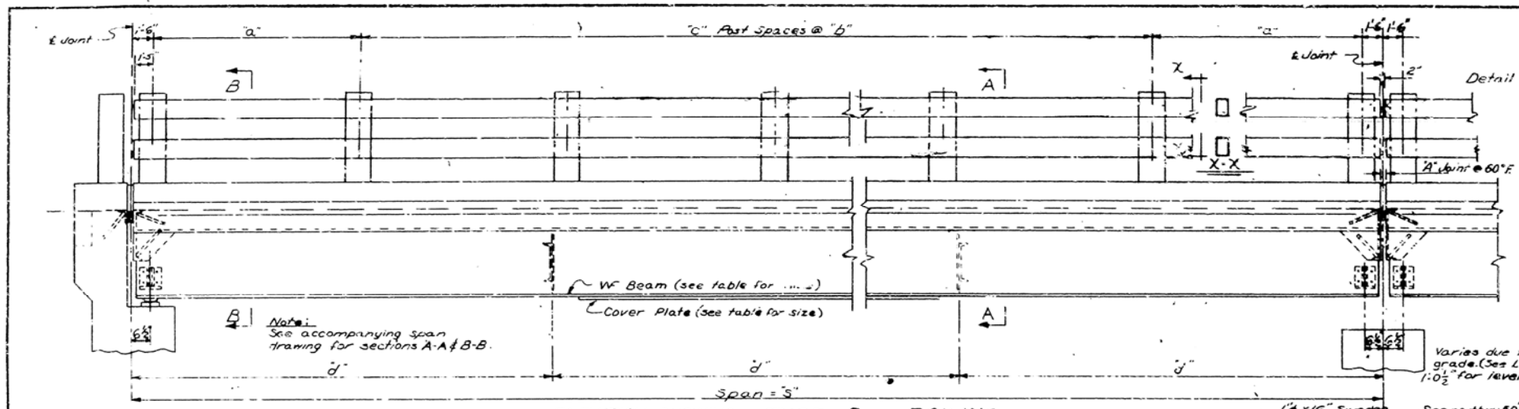
L. B. Clarkson
BRIDGE ENGINEER

BRIDGE NO. 5088 A&B DRAWING NO. 13624

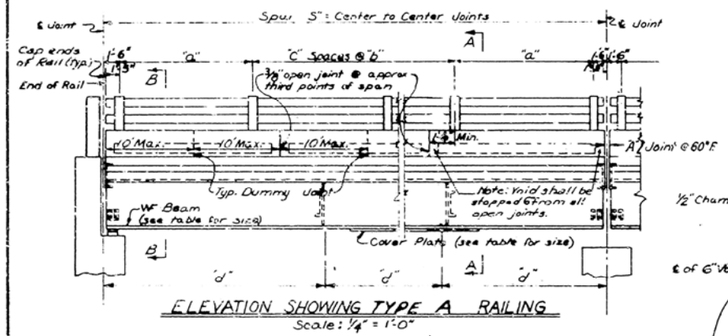
FARRELL & SCHAER 1000-H

293

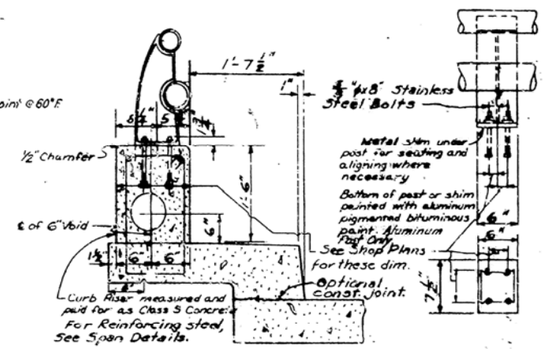
FED. ROAD DIST. NO.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	ARK				
JOB NO.					



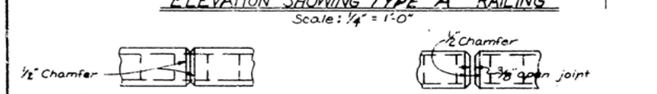
ELEVATION SHOWING TYPE B RAILING
Scale: ½" = 1'-0"



ELEVATION SHOWING TYPE A RAILING
Scale: ¼" = 1'-0"

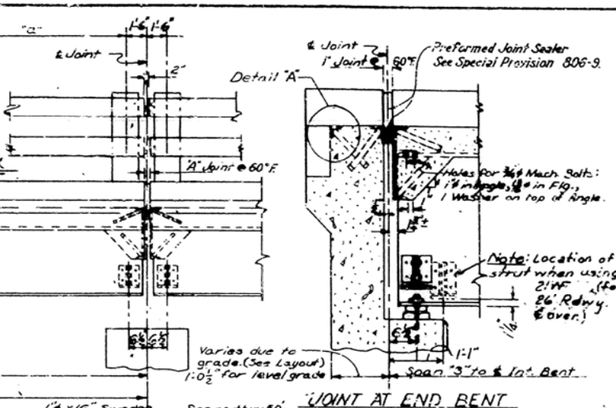


DETAILS OF TYPE A RAILING
Scale: 1" = 1'-0"

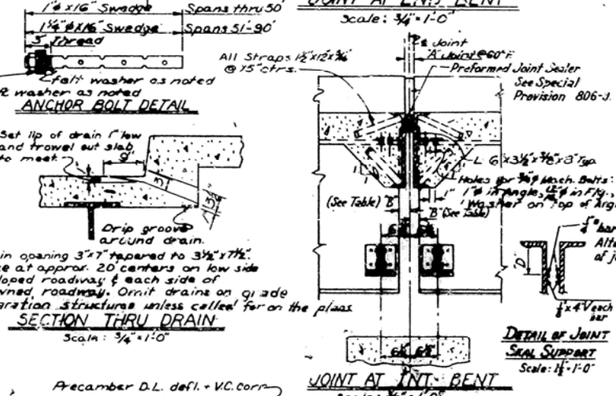


PLAN OF DUMMY JOINT

PLAN OF OPEN JOINT



JOINT AT END BENT
Scale: ¾" = 1'-0"



JOINT AT INT. BENT
Scale: ¾" = 1'-0"

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"ø, Open holes ⅞"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 ⅜" 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. 806.36, including shims, of the Std. Spcs. 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 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.

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 between completion of the slab and the pouring of the curb section if poured separately.

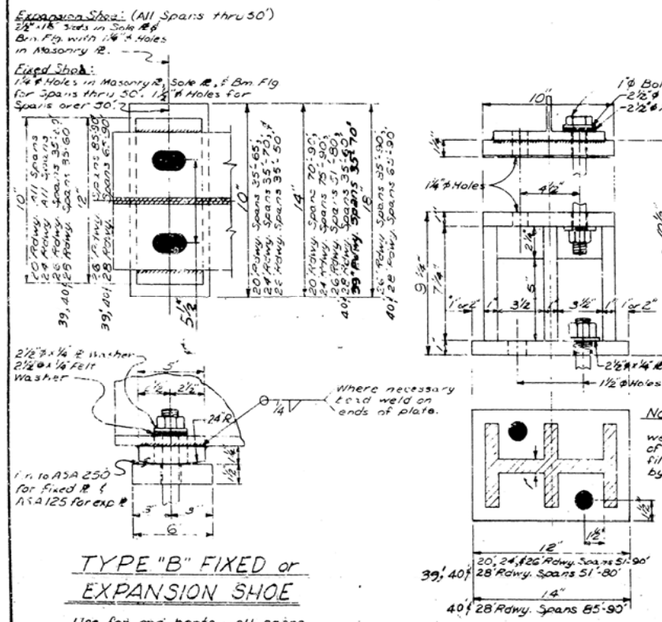
For details of Bridge Railing see Dwg. No. 14992 or 14993 as shown on Bridge Layout.

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

Span Length (Aggregate Max. Movement at Joint)	"A" (Joint Width @ 60°F)	"D"	Seal Size
To 80' and All Spans Fixed @ Abut.	1"	2½"	½" x 2"
Over 80' to 100'	1½"	2¾"	2" x 2½"
Over 100' to 140'	1¾"	3½"	2½" x 2¾"
Over 140' to 180'	2"	4½"	3" x 3½"

This Drawing is a modification of Dwg No. 14910



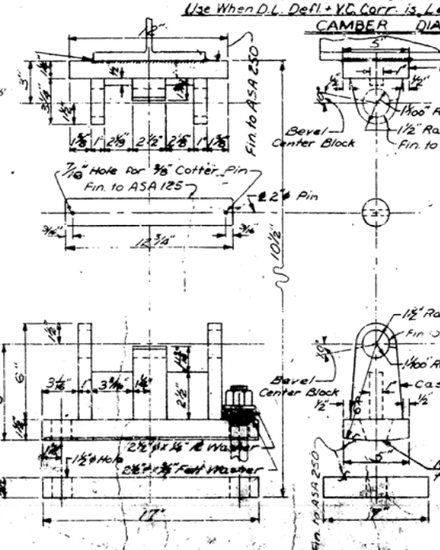
TYPE "B" FIXED or EXPANSION SHOE

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

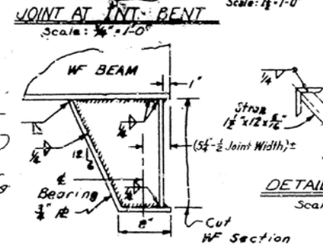
Note: If fixed shoe is made from welded plates all intersecting surfaces of 90° shall be joined by ¼ inch fillet welds, all others shall be joined by ¼ inch bead welds.

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

TYPE "A" FIXED SHOE



TYPE "A" EXPANSION SHOE

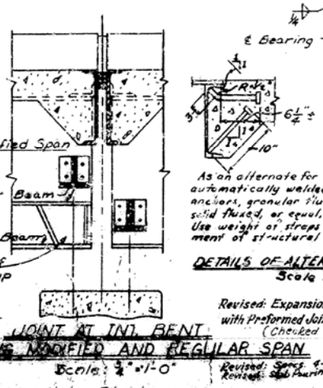


CAMBER DIAGRAMS

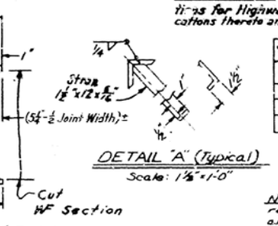
DETAIL "A" (Typical)
Scale: 1½" = 1'-0"

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

OPTIONAL BEAM BUILDUP
No Scale

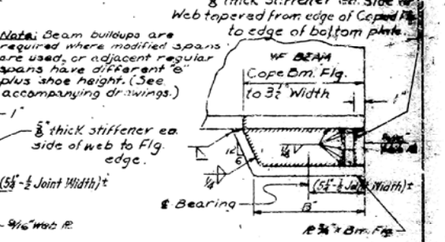


JOINT AT INT. BENT SHOWING MODIFIED AND REGULAR SPAN
Scale: ¾" = 1'-0"



DETAILS OF 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.)



As an alternate for straps, ¾"ø x 10" automatically welded stud anchors, granular flux filled, solid fused, 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"

Revised: Expansion Device for use with Preformed Joint Sealer. AJM 13-65 (Checked J.E.H. 10-15-65)

Revised: Intermediate Diaphragms 10-6-64 JAS

Revised: Bridge Railing 3-5-65 DFL

DETAILS COMMON TO STANDARD 35'-90' COMPOSITE I-BEAM SPANS 20', 24', 26', 28', 39', 40' ROADWAYS

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

Revised: Spcs. 4-7-66 AJ, Rev. 4-22-66 HB — DRAWN BY: E.T.M. DATE: 8/10/61
Revised: Bridge Railing Note 6-21-66 — CHKD. 8-17-64 JAH
Revised: — DATE:
PLANS CHECKED BY: L.H. DATE: 3-9-62
SCALE: As Shown

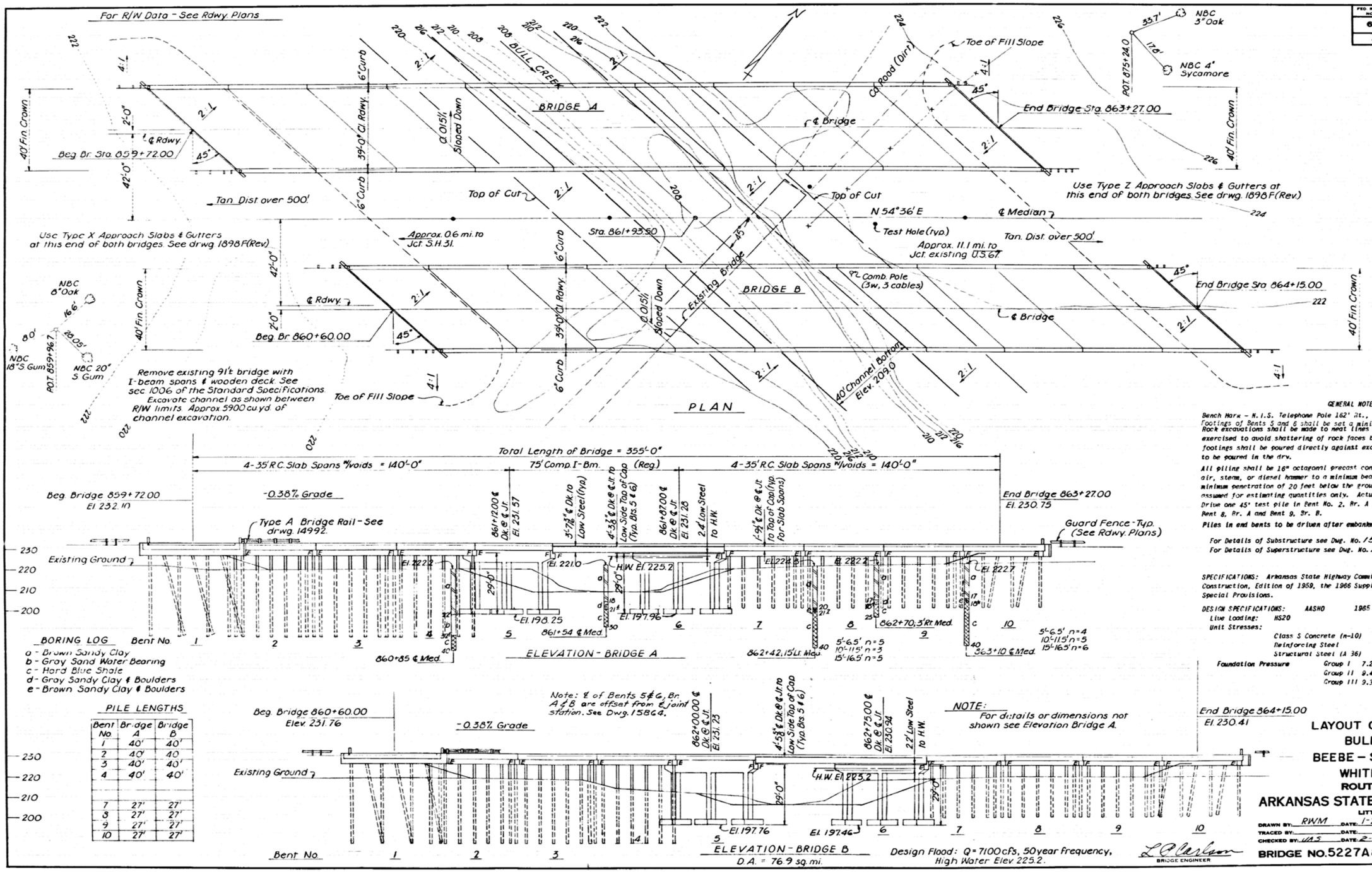
BRIDGE NO.

DRAWING NO. 14990C

Do not use 10/25/67

162

FED. ROAD NO.	STATE	FED. AID PROJ.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	ARK.	F-021-3(19)		73	332
JOB NO.		5553			



Bent No.	Bridge A	Bridge B
1	40'	40'
2	40'	40
3	40'	40'
4	40'	40'
7	27'	27'
8	27'	27'
9	27'	27'
10	27'	27'

GENERAL NOTES

Bench Mark – N.I.S. Telephone Pole 162' Rt., Station 861 + 26; Elevation 223.11.

Footings of Bents 5 and 6 shall be set a minimum of 1'-6" into Hard Blue Shale. 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. All concrete to be poured in the dry.

All piling shall be 16" octagonal precast concrete and shall be driven with an approved air, steam, or diesel hammer to a minimum bearing capacity of 44 tons per pile to a minimum penetration of 20 feet below the ground line. Lengths of piling shown are assumed for estimating quantities only. Actual lengths to be determined in the field. Drive one 45' test pile in Bent No. 2, Br. A and Bent 3, Br. B, and a 32' test pile in Bent 8, Br. A and Bent 9, Br. B.

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

For Details of Substructure see Dwg. No. 15863, 15864, & 15865
For Details of Superstructure see Dwg. No. 15074B, 14990D, 15866, & 15867.

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: HS20
Unit Stresses:

Class S Concrete (n=10)	1,200 psi
Reinforcing Steel	20,000 psi
Structural Steel (A 36)	20,000 psi

Foundation Pressure
Group I 7.24 ksf
Group II 9.46 ksf max. 1.48 ksf min.
Group III 9.36 ksf max. 5.12 ksf min.

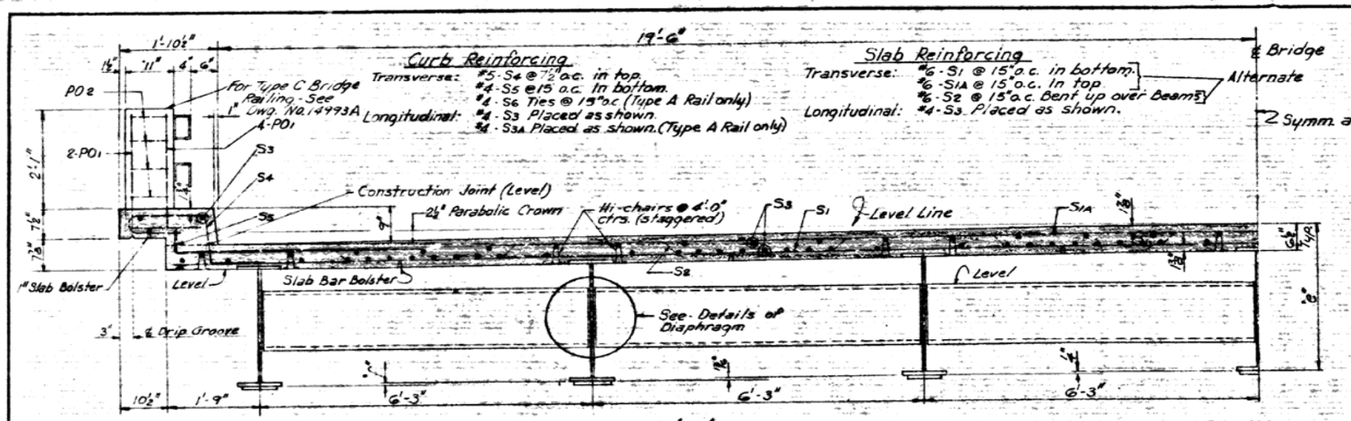
LAYOUT OF BRIDGES OVER BULL CREEK
BEEBE – SEARCY BYPASS
WHITE COUNTY
ROUTE 67 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: RWM DATE: 1-25-68
TRACED BY: DATE:
CHECKED BY: WAS DATE: 2-5-68
SCALE: 1" = 20'

L. P. Carlson
BRIDGE ENGINEER

BRIDGE NO. 5227A&B DRAWING NO. 15853

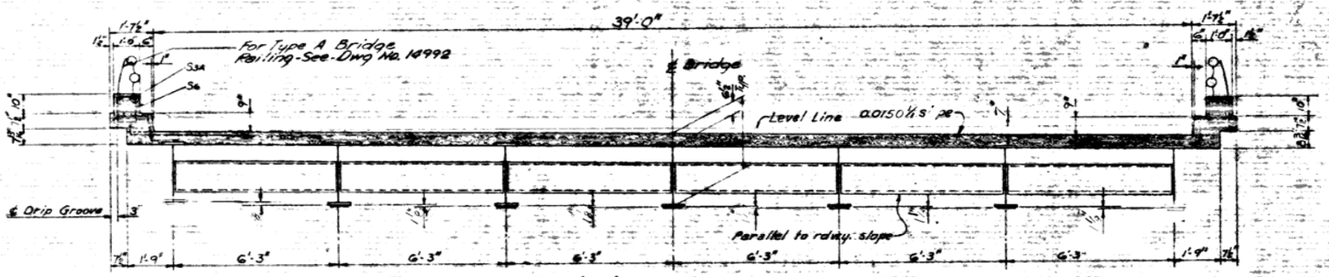
FED. ROAD NO.	STATE	FED. AID PROJ.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	ARK.	F 021 (119)		91	352
JOB NO.		5553			



HALF SECTION A-A OF REGULAR SPAN—PARABOLIC CROWN

"f" = 1⅝" for Regular Spans
"f" varies for Modified Spans-(See-Table)

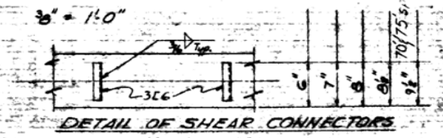
Regular Spans have all beams of equal depth.
⅜" = 1'-0"



SECTION A-A OF REGULAR SPAN—SLOPED ROADWAY

"f" = corresponding dimensions for parabolic crown Roadway

⅜" = 1'-0"



DETAIL OF SHEAR CONNECTORS

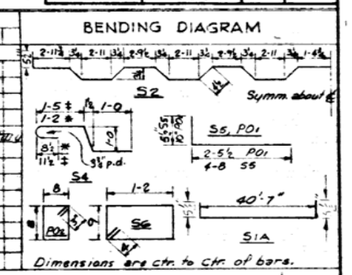
BAR LIST-PER SPAN

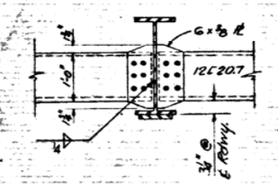
MK	SIZE	LENGTH	PIN DIA	LENGTH OF SPAN / NUMBER REQUIRED EACH SPAN
S1	6	40'-8"	Str.	
S1A	6	41'-[illegible]"	2¾"	
S2	6	4[illegible]'-7"	2¾"	
S3	4	5-6"	Str.	
S3	4	5/2+7"	Str.	
S3	4	5/3+1'-0"	Str.	
S4 ‡	5	4'-7"	1⅞"	
S5	4	5'-1"	1½"	
S6 *	4	4'-5"	1⅞"	
S3A *	4	5-(1-2)	Str.	
PO1 ‡	6	3'-3"	2¼"	
PO2 ‡	3	3'-1"	1¼"	
S4 *	5	4'-1"	1¾"	

For Type C Bridge Rail Only.
For Type A Bridge Rail Only.
Non-Pay Items

Where ‡ or * follows, of supplement details of bar list.

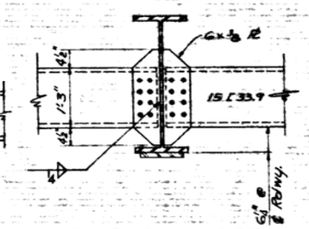
BENDING DIAGRAM





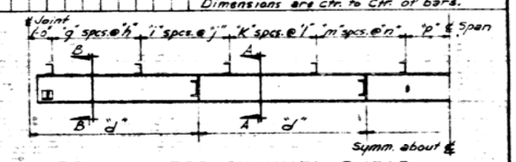
DIAPHRAGM DETAIL FOR 21WF thru 27WF

⅜" = 1'-0"



DIAPHRAGM DETAIL FOR 30WF thru 36WF

⅜" = 1'-0"



SPACING FOR CHANNEL SHEAR CONNECTORS & DIAPHRAGMS

NO SCALE

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.

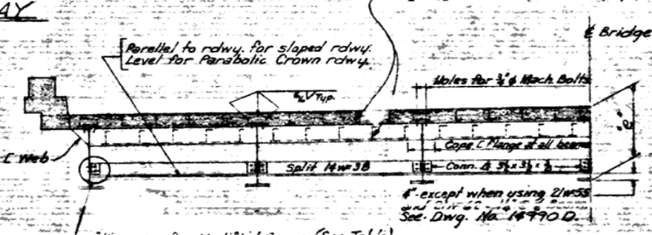
This drawing to be used with Drawing 14990D.

DESIGN SPECIFICATIONS: AASHO 1965

Live Loading: HS20 ~~and Special Interstate Loading of 2-24,000# axles spaced 6-ft apart.~~

	Interior Beam	Exterior Beam
1. Dead Load (Type A Rail)		
a. To WF Beam	500#/'+1.15(wt./ft of WF)	410#/'+1.15(wt./ft of WF)
b. To Composite Beam	140#/'	235#/'
1.A. Dead Load (Type C Rail)		
a. To WF Beam	500#/'+1.25(wt./ft of WF)	410#/'+1.15(wt./ft of WF)
b. To Composite Beam	120#/'	195#/'
2. Live Load		
a. To ea. Composite Beam	1.136 Wheels/lane	1.123 Wheels/lane

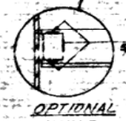
Unit Stresses: Class S Concrete (n-10) 1,200 psi
Structural Steel (A-36) 20,000 psi
Reinforcing Steel 20,000 psi



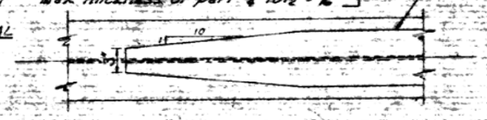
"f" varies for Modified Spans. (See-Table)
* See-Dwg. No. 14990D for Alternate Anchor Details.

HALF-SECTION B-B-MODIFIED OR REGULAR SPANS PARABOLIC CROWN

⅜" = 1'-0"



Cover Plate Welding Note:
Max. thickness of part under ¾" = ¼"
Max. thickness of part ¾" to 1½" = ⅜"



DETAIL OF COVER PLATE

1½" = 1'-0"

EXPANSION DEVICE
Roadway 15 C 33.9 x 39'-0"
Conn. ∠ 6 x 3½ x ⅜ x 0'-8"
Preformed Joint Sealer (See Special Provisions)
Detail device ⅝" high and provide ⅛" shims.
Using 2 1¼ ℞ & 1-⅛ ℞.
* 1½ x ⅝ x 1'-0" Straps @ 16" o.c. (Top & Bottom)

BRIDGE NO.	SPAN NO.	SPAN LENGTH	SPAN TYPE	INTERIOR BEAM BEAM SIZE	INTERIOR BEAM COVER PL SIZE	INTERIOR BEAM "e"	INTERIOR BEAM DEAD LOAD DEFLECTION	EXTERIOR BEAM BEAM SIZE	EXTERIOR BEAM COVER PL SIZE	EXTERIOR BEAM "e"	EXTERIOR BEAM DEAD LOAD DEFLECTION	DIAPHRAGM SPACING	POST SPACING a	POST SPACING b	POST SPACING c	"f"	VARIABLES OF SHEAR CONNECTOR SPACING g	h	i	j	k	l	m	n	p
5227A&B 5231A&B		70'-0"	Reg	33WF118	10"x1"x470	3'-2⅜"	1 7/16"	33WF118	10"x1"x470	3'-2⅜"	1 5/16"		7'-3"	7'-6"	7'	–	8	13½	6	16	3	20	6	24	0
5227A&B 5231A&B		75'-0"	Reg	33WF130	10"x1½"x500	3'-2⅜"	1 3/16"	33WF130	10"x1½"x500	3'-2⅜"	1 5/16"		8'-0"	8'-0"	7'	–	6	13½	5	16	6	18	6	24	12

Rev. for C.O. 150 Slope Rdwy. TFP
By JAS 3-27-68

L. P. Carlson
BRIDGE ENGINEER

DETAILS OF STANDARD
35'-90' COMPOSITE I-BEAM SPANS
39'-0" CLEAR RDWY. 0'-6" CURBS
2½" PARABOLIC CROWN
OR 0.015 ft/ft SLOPE
ROUTE 67 SEC. 12

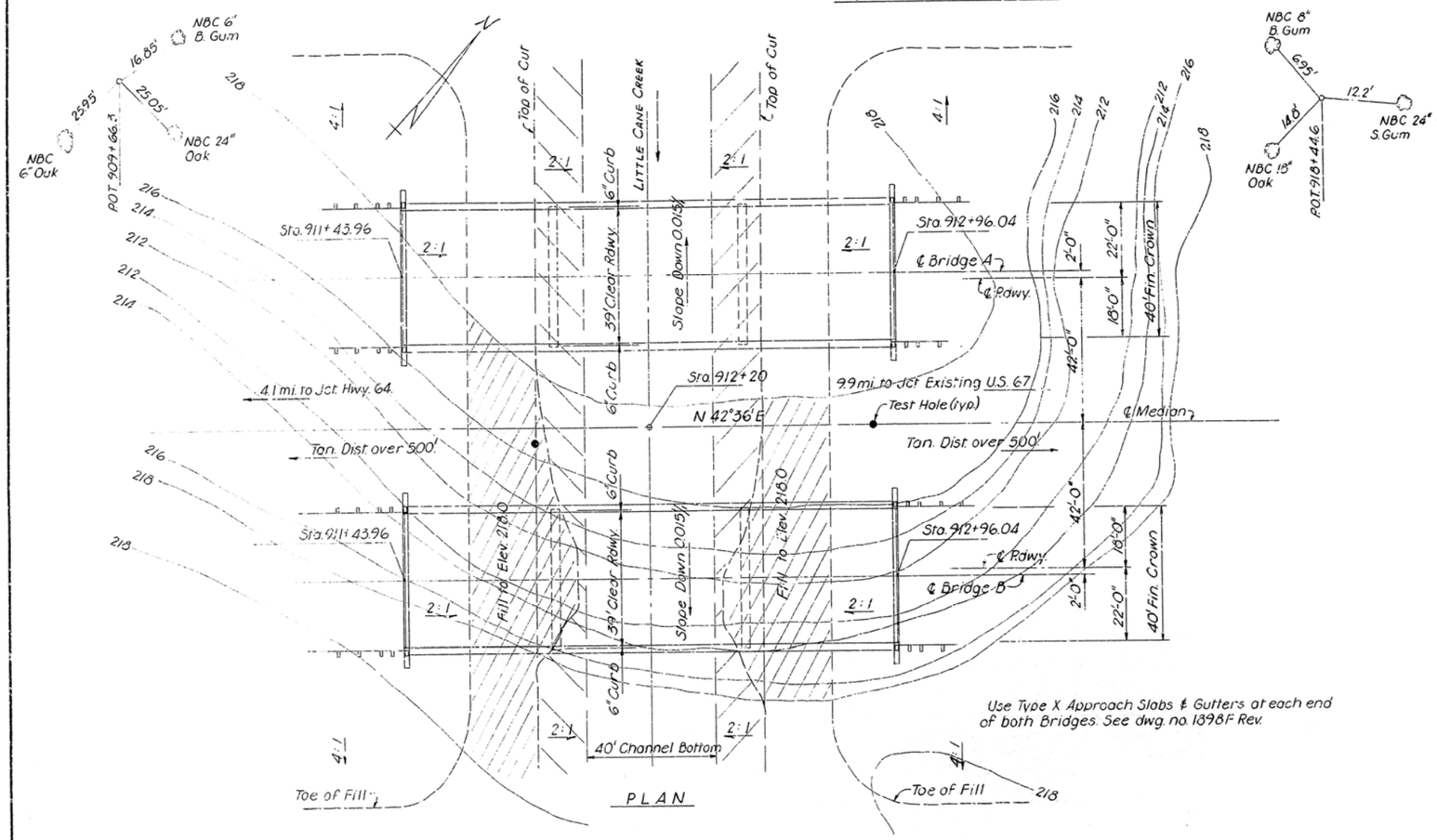
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: J.S. DATE: 9-11-67
TRACED BY: DATE:
CHECKED BY: DATE: 3-27-67
SCALE: As Noted

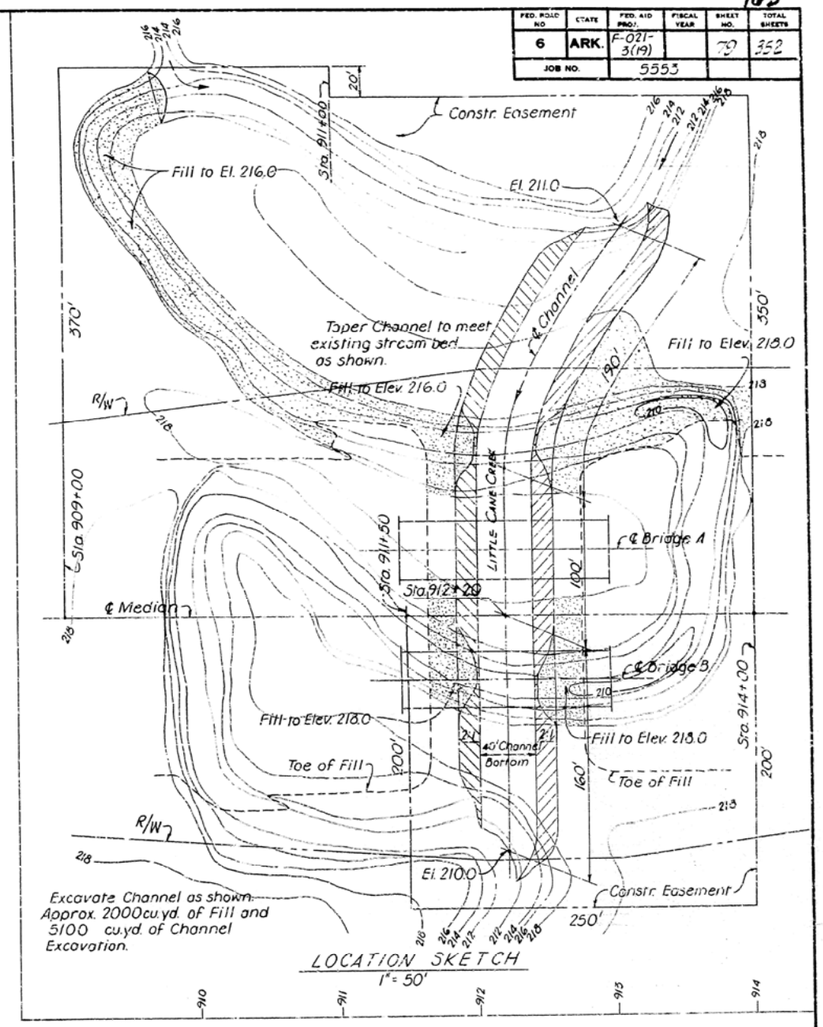
BRIDGE NO. 5227A&B 5231A&B DRAWING NO. 15866

FED. ROAD NO.	STATE	FED. AID PROJ.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	ARK.	F-021-3(19)		79	352
JOB NO.		5553			

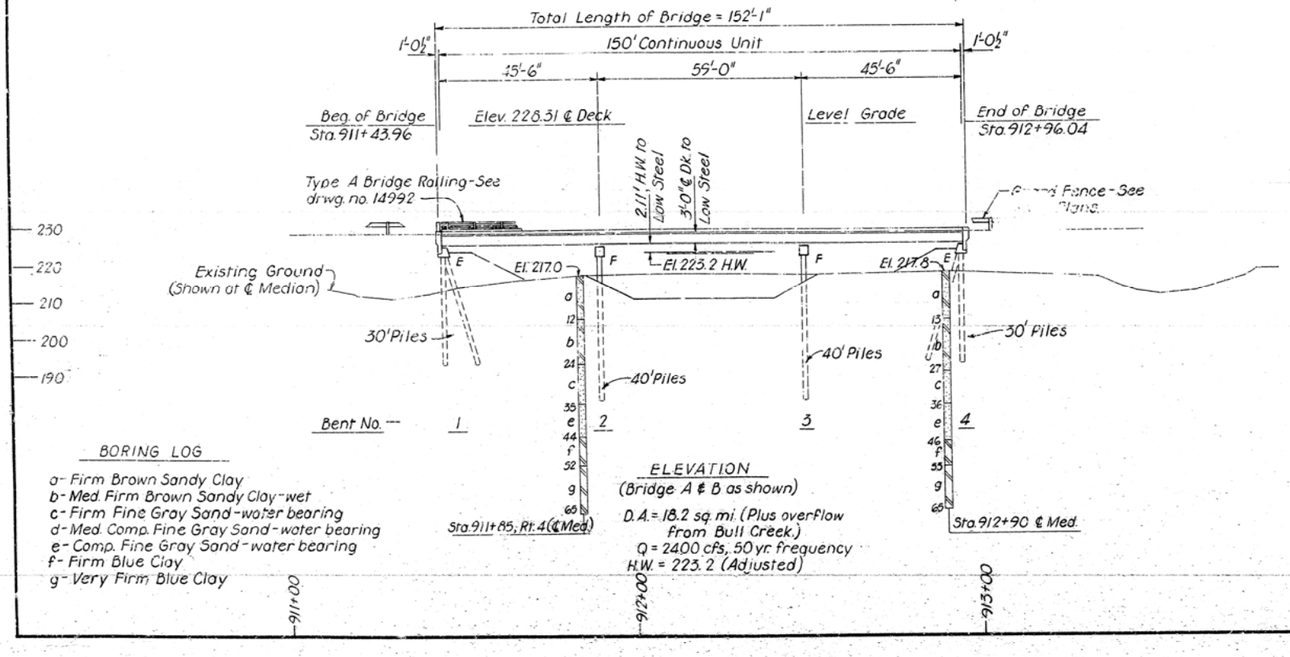
R/W Data - See Rdwy. Plans



PLAN



LOCATION SKETCH
1" = 50'



ELEVATION
(Bridge A & B as shown)
D.A. = 18.2 sq. mi. (Plus overflow from Bull Creek.)
Q = 2400 cfs, 50 yr. frequency
H.W. = 223.2 (Adjusted)

BORING LOG

a - Firm Brown Sandy Clay
b - Med. Firm Brown Sandy Clay - wet
c - Firm Fine Gray Sand - water bearing
d - Med. Comp. Fine Gray Sand - water bearing
e - Comp. Fine Gray Sand - water bearing
f - Firm Blue Clay
g - Very Firm Blue Clay

GENERAL NOTES

Bench Mark - Nail in side, 20" Sweet Gum, 4' Left, Station 913 + 83, Elevation 218.64.

All concrete to be poured in the dry.

All piling shall be 16" octagonal precast concrete and shall be driven with an approved air, steam, or diesel hammer to a minimum bearing capacity of 44 tons per pile, and to a minimum penetration of 20 feet below the ground line. Lengths of piling shown are assumed for estimating quantities only. Actual lengths to be determined in the field. Drive one 45' test pile in Bent No. 3, Bridge A, and one 43' test pile in Bent No. 2, Bridge B.

Piles in End Bents to be driven after embankment to subgrade is in place.

For Details of End Bents see Dwg. No. 15868
For Details of Intermediate Bents see Dwg. No. 15868
For Details of Precast Concrete Piling see Dwg. No. 2382
For Details of Superstructure see Dwg. No. 15869 & 15870

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:	HS20	
Unit Stresses:	Class S Concrete (n=10)	1,200 psi
	Reinforcing Steel	20,000 psi
	Structural Steel (A 36)	20,000 psi

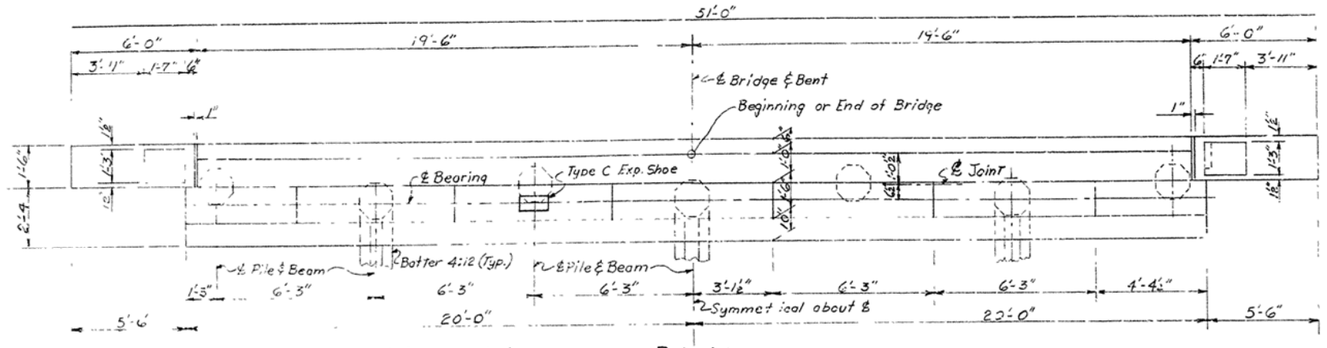
LAYOUT OF BRIDGES OVER
LITTLE CANE CREEK
BEEBE - SEARCY BYPASS
WHITE COUNTY
ROUTE 67 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: RWM DATE: 3-13-68
TRACED BY: DATE:
CHECKED BY: JKR DATE: 3-18-68
SCALE: 1" = 20

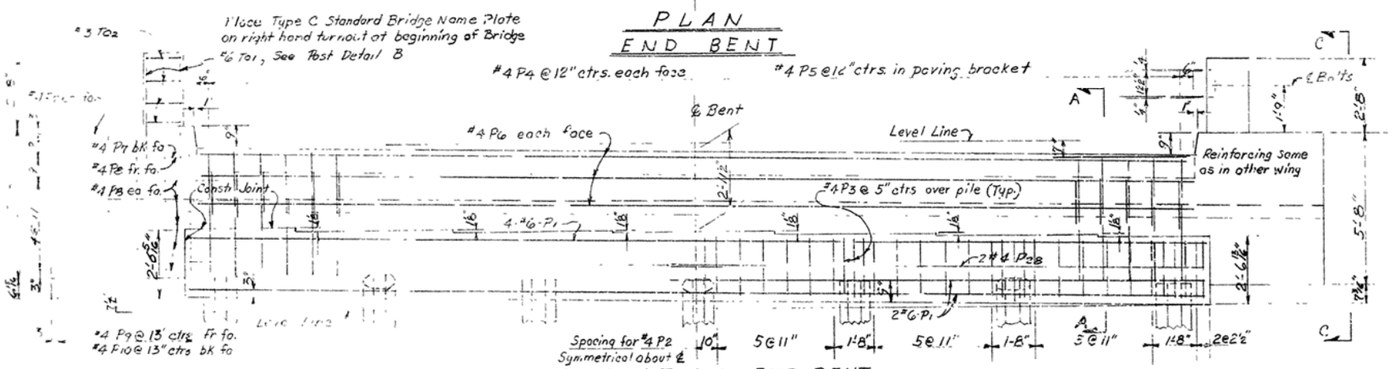
L P Carlson
BRIDGE ENGINEER

BRIDGE NO. 5228A&B DRAWING NO. 15854

FED. ROAD NO.	STATE	FED. AID PROJ.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	ARK.	F-021-3(19)		93	552
JOB NO.		5553			

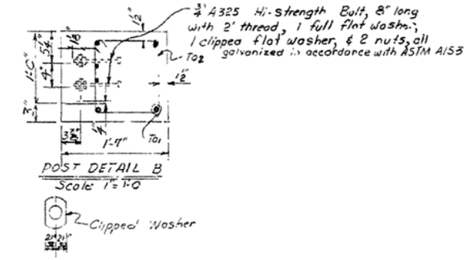


PLAN
END BENT

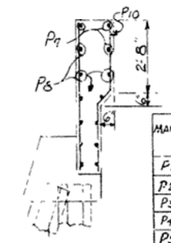


ELEVATION - END BENT

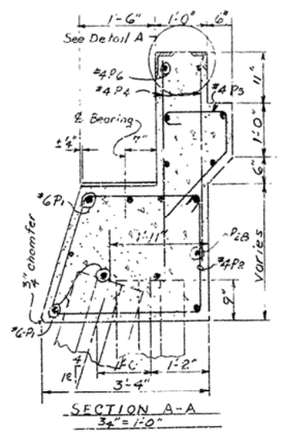
Shown for bent #1, Br. A and bent #4, Br. B
Reverse slope for bent #1, Br. B and bent #4, Br. A



POST DETAIL B
Scale: 1" = 1'-0"



END VIEW - C-C

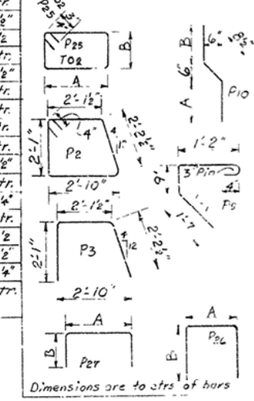


SECTION A-A
3/4" = 1'-0"

BAR LIST

MARK	SIZE	NUMBER REQUIRED END BENT	NUMBER REQUIRED INT. BENT	LENGTH	A	B	PIN DIA.
P1	6	8	-	39'-8"	-	-	Str.
P2	4	40	-	9'-10"	See Diagram		1½"
P3	4	21	-	6'-5"	See Diagram		1½
P4	4	78	-	4'-6	-	-	Str.
P5	4	39	-	4'-0"	See Diagram		1½"
P6	4	6	-	39'-0"	-	-	Str.
P7	4	6	-	5'-7"	-	-	Str.
P8	4	22	-	7'-6"	-	-	Str.
P9	4	12	-	5'-4"	-	-	Str.
P10	4	12	-	5'-6"	2'-5"	2'-5"	1½"
To1	6	12	-	5'-0"	-	-	Str.
To2	3	8	-	4'-4"	1'-0"	11½"	1¼"
P24	7	-	8	39'-8"	-	-	Str.
P25	4	-	46	8'-9"	1'-11½"	2'-1½"	1½
P26	4	-	21	6'-2"	1'-11½"	2'-1½"	1½"
P27	6	-	4	42'-6"	39'-3	1'-8"	2¼"
P28	4	4	4	20'-6"	-	-	Str.

BENDING DIAGRAM



NOTES

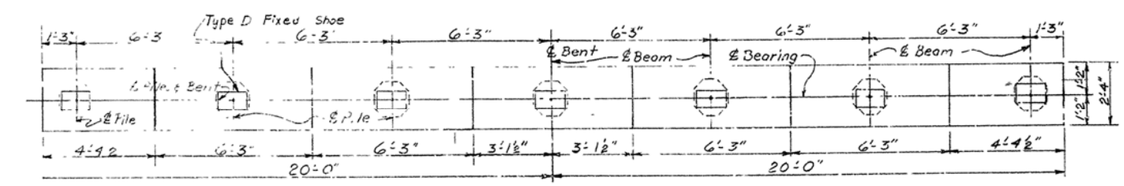
All concrete shall be Class S. All exposed corners to be chamfered 3/4".

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

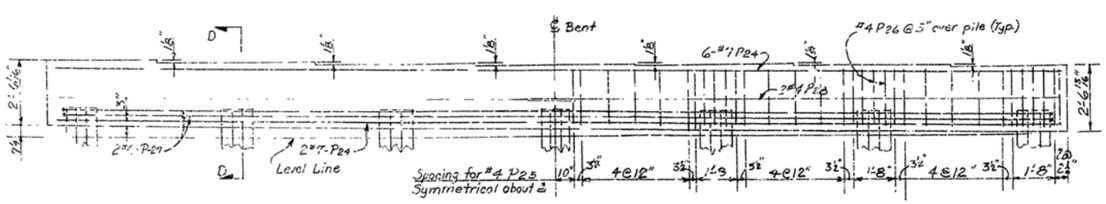
All structural steel shall be ASTM A-36.

Piling shall be 16" octagonal precast concrete piles. Piles shall be driven to a minimum bearing of 44 tons per pile.

Beams shall be in place before backfill is poured.

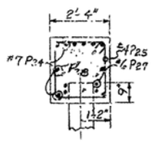


PLAN - INT. BENT

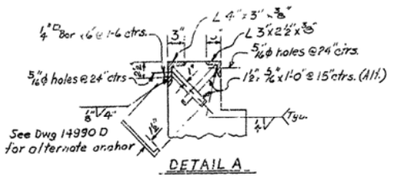


ELEVATION - INT. BENT

Shown for Bent 2 & 3, Br. B
Reverse slope for Bent 2 & 3, Br. A



SECTION D-D



DETAIL A

DETAIL OF BENTS CANE CREEK AND LITTLE CANE CREEK BEEBE-SEARCY BYPASS WHITE COUNTY

ROUTE 67 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: W.W.W. DATE: 4-10-68
TRACED BY: DATE:
CHECKED BY: W.F.L. DATE: 4-11-68

SCALE: 3/8" = 1'-0" OR NOTED

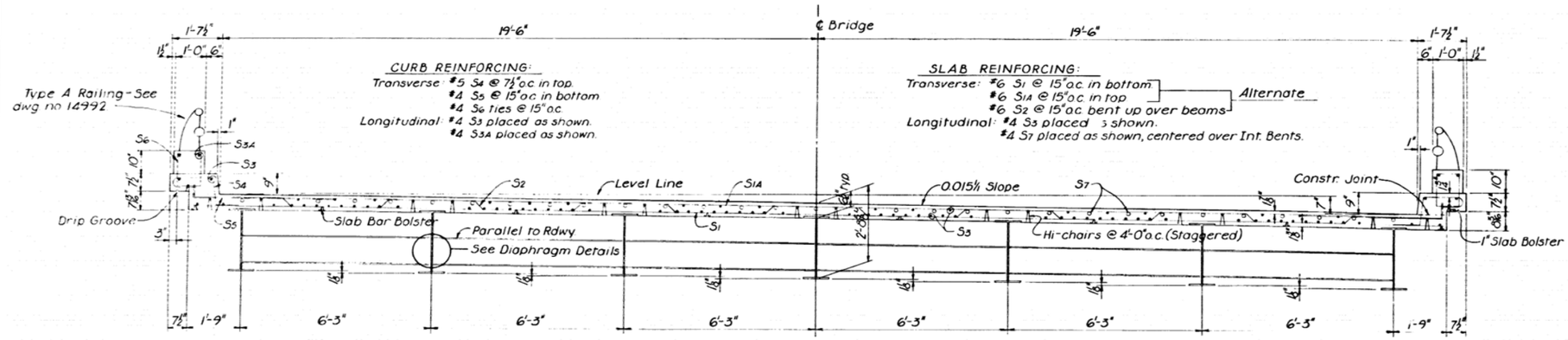
L. G. Carlson
BRIDGE ENGINEER

BRIDGE NO. 5228A&B 5229A&B

DRAWING NO. 15868

179

FED. ROAD NO.	STATE	FED. AID PROJ.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	ARK.	STP (3)(7)		25	552
JOB NO.		5553			

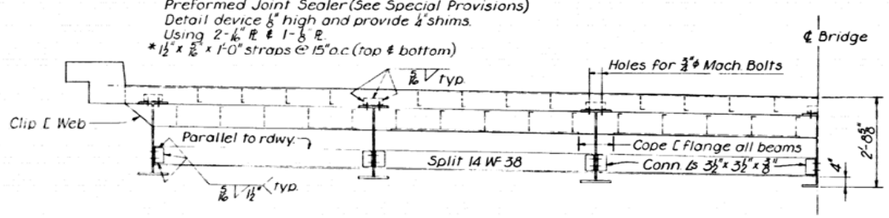


SECTION THRU ROADWAY
½" = 1'-0"

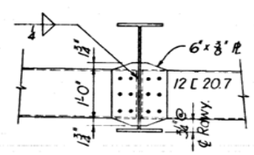
¼" x 1" poured asphalt joint in slab and curb, placed transversely 5'-0" each side of ℄ Interior Bents. Joint shall be paid for as Class S Concrete.

TRANSVERSE JOINT
No Scale

EXPANSION DEVICE:
Roadway 15 [33.9 x 39'-0"
Conn ∠s 6 x 3½ x ⅜ x 0'-8"
Preformed Joint Sealer (See Special Provisions)
Detail device ⅛" high and provide ¼" shims.
Using 2-⅝" ℞ & 1-⅝ ℞.
* 1½" x 5/16" x 1'-0" straps @ 15" o.c. (top & bottom)



HALF-SECTION THRU ROADWAY
½" = 1'-0"

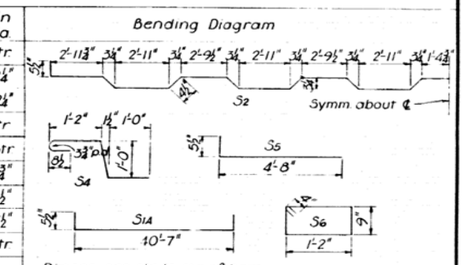


DIAPHRAGM DETAIL
¾" = 1'-0"

BAR LIST

MK	Size	No Req'd	Length	Pin Dia.
S1	6	120	40'-7"	Str.
S1A	6	120	41'-6"	2¼"
S2	6	119	42'-7"	2¼"
S3	4	408	38'-6"	Str.
S3A	4	16	37'-2"	Str.
S4	5	400	4'-1"	1¾"
S5	4	240	5'-1"	1½"
S6	4	240	4'-5"	1½"
S7	4	62	24'-0"	Str.

Bending Diagram

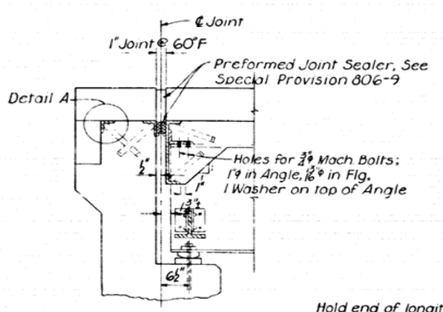


DESIGN SPECIFICATIONS: AASHO 1965

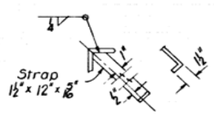
Live Loading: HS20

Load Distribution:	To Interior Beam	To Exterior Beam
Dead Load to Beam	605 #/Lin. Ft.	513 #/Lin. Ft.
Dead Load to Composite Beam	140 #/Lin. Ft.	235 #/Lin. Ft.
Live Load to Composite Beam	1.136 Wheels + Impact	1.123 Wheels + Impact

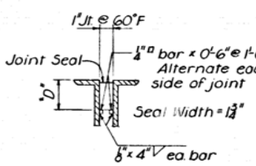
Unit Stresses:	
Class S Concrete (n=10)	1,200 psi
Structural Steel (A 36)	20,000 psi
Reinforcing Steel	20,000 psi



JOINT AT END BENT
¾" = 1'-0"

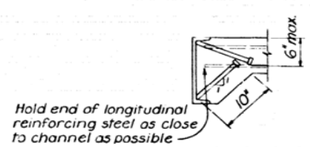


DETAIL A
1½" = 1'-0"



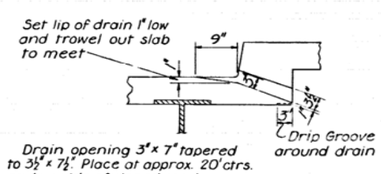
JOINT SEAL SUPPORT
1½" = 1'-0"

NOTE:
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.

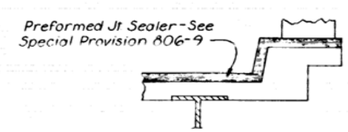


DETAILS OF ALTERNATE ANCHORS
1" = 1'-0"

* As an alternate for straps, ¾"ϕ x 10" automatically welded stud anchors, granular flux filled, solid fluxed, or equal, may be used. ¾" x 8" studs may also be used at the ratio of 1.33 - ¾"ϕ studs to 1.0 straps. Use weight of straps as basis of measurement of structural steel in anchors.



SECTION THRU DRAIN
¾" = 1'-0"



SEAL PLACEMENT IN CURB
¾" = 1'-0"

SHEET 2 of 2

DETAILS OF 150'-0" CONTINUOUS
I-BEAM UNIT
CANE CREEK & LITTLE CANE CREEK
BEEBE - SEARCY BYPASS
WHITE COUNTY
ROUTE 67 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

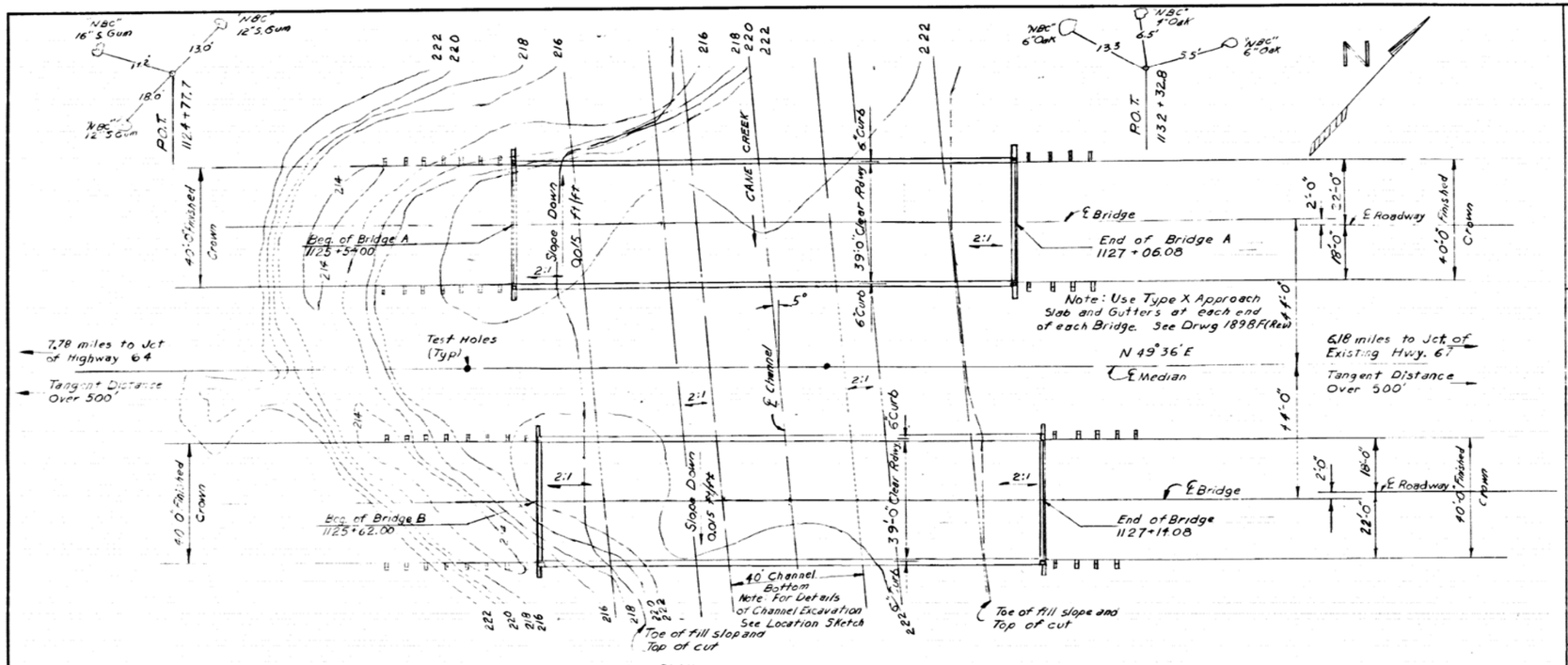
DRAWN BY: RWM DATE: 4-17-68
TRACED BY: DATE:
CHECKED BY: FMH DATE: 4-23-68
SCALE: As Shown

L. P. Nelson
BRIDGE ENGINEER

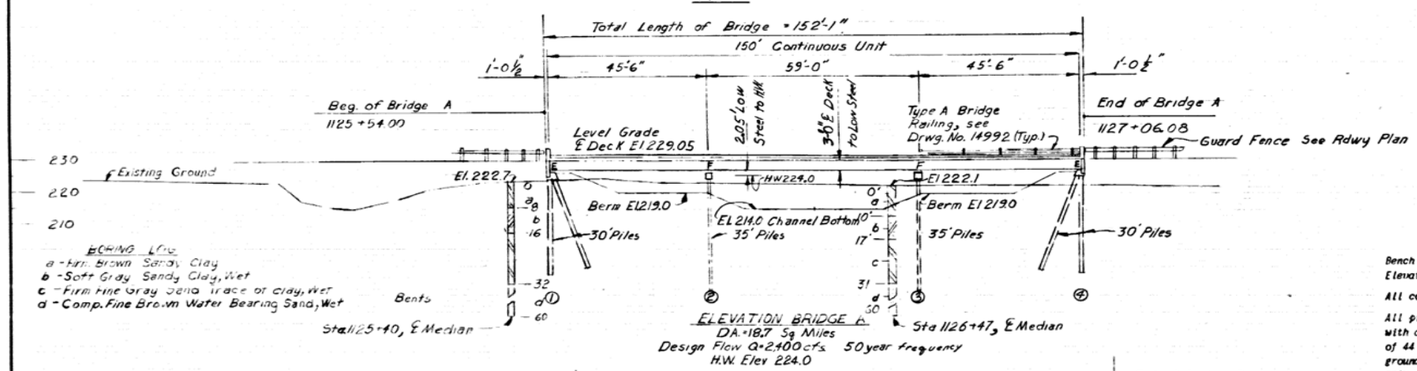
BRIDGE NO. 5228A&B 5229A&B DRAWING NO. 15870

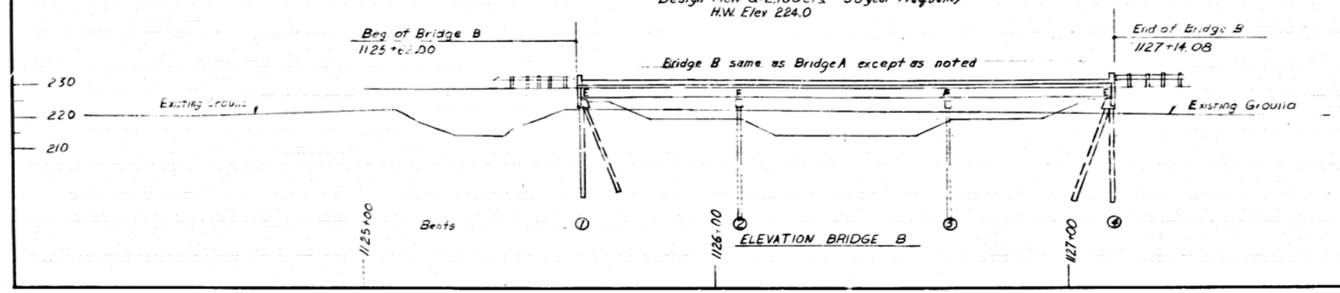
FED. ROAD NO.	STATE	FED. AID PROJ.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	ARK.	F-021-3(19)		30	552
JOB NO.		5553			

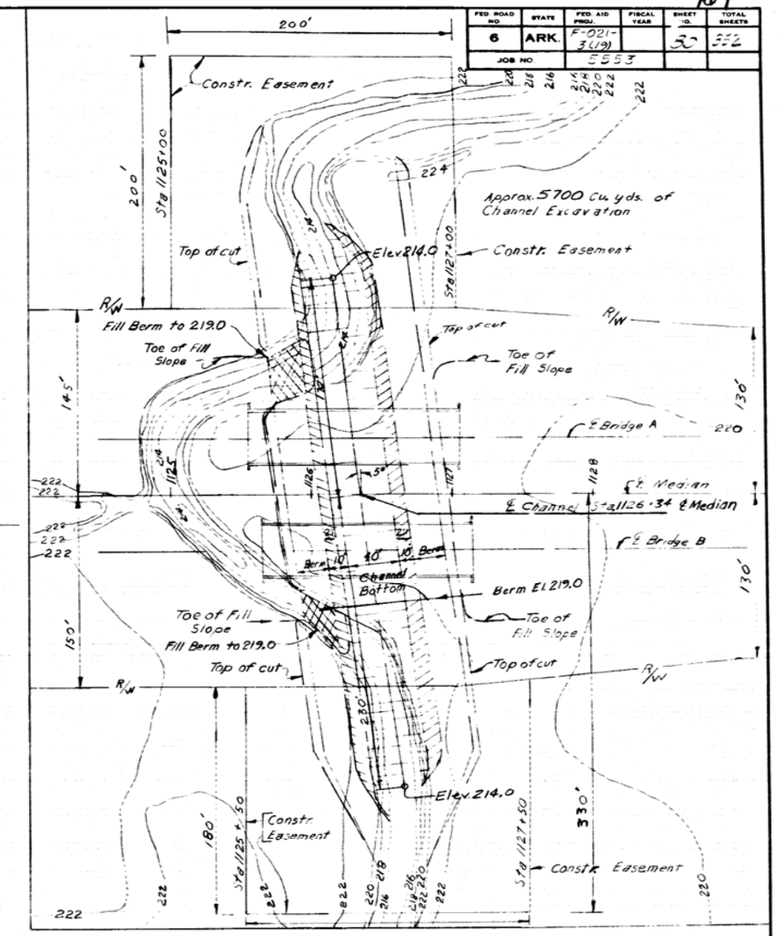
K64



PLAN







LOCATION SKETCH
Scale 1" = 50'

GENERAL NOTES

Bench Mark – "N.I.S." 30" Sweet Gum, 3' Lt., Station 1125 + 27, Elevation 222.93.

All concrete to be poured in the dry.

All piling shall be 16" octagonal precast concrete and shall be driven with an approved air, steam, or diesel hammer to a minimum bearing capacity of 44 tons per pile, and to a minimum penetration of 20 feet below the ground line. Lengths of piling shown are assumed for estimating quantities only. Actual lengths to be determined in the field. Drive one 40' test pile in Bent No. 2, Bridge A, and one 40' test pile in Bent No. 3, Bridge B.

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

For Details of End Bents see Dwg. No. 15868.
For Details of Intermediate Bents see Dwg. No. 15868
For Details of Precast Concrete Piling see Dwg. No. 2382
For Details of Superstructure see Dwg. No. 15869 & 15870

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:	HS20	
Unit Stresses:	Class S Concrete (n=10)	1,200 psi
	Reinforcing Steel	20,000 psi
	Structural Steel (A 36)	20,000 psi

L. P. Carlson
BRIDGE ENGINEER

LAYOUT OF BRIDGES OVER CANE CREEK BEEBE–SEARCY BYPASS WHITE COUNTY

ROUTE 67 SEC. 12

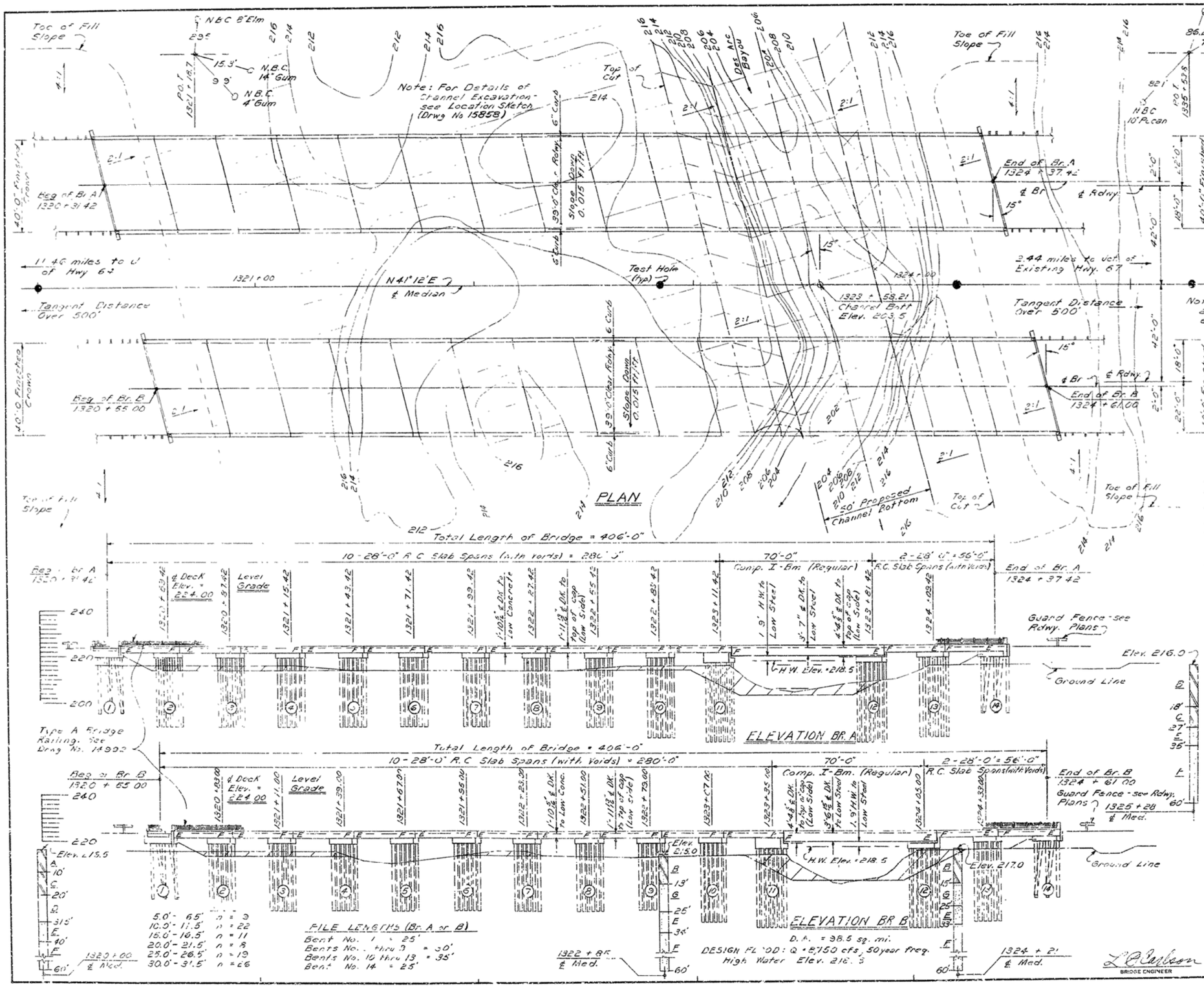
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JFP DATE: 1-31-68
TRACED BY: DATE:
CHECKED BY: FMH DATE: 1-7-68
SCALE: 1" = 20'

BRIDGE NO. 5229A&B DRAWING NO. 15855

166

FED ROAD NO	STATE	FED AID PROJ	FISCAL YEAR	SHEET NO	TOTAL SHEETS
6	ARK.	F-021 3(19)		32	255
JOB NO		5553			



BORING LOG

A - Brown Sandy Clay
B - Med. Firm Brown Sandy Clay
C - Grey Sandy Clay - wet
D - Fine Grey Water Bearing Sand
E - Med Comp Fine Gray Water Bearing Sand
F - Comp Fine Gray Water Bearing Sand
G - Firm Fine Brown Sandy Clay

GENERAL NOTES

Bench Mark - Nail in Root of 24" Sweet Gum, 201' Lt., Station 13.0 + 00, Elevation 218.14.

All concrete to be poured in the dry.

All piling shall be 16" octagonal precast concrete and shall be driven with an approved air, steam, or diesel hammer to a minimum bearing capacity of 44 tons per pile, and to a minimum penetration of 20 tons below the ground line. Lengths of piling shown are assumed for estimating quantities only. Actual lengths to be determined in the field. Drive one 35' test pile in Bent No. 2, Br. A and Bent No. 5, Br. B. Drive one 40' test pile in Bent No. 11, Br. A and Bent No. 12, Br. B.

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

For Details of End Bents see Dwg. No. 15073C
For Details of Intermediate Bents see Dwg. No. 15073C - 15871
For Details of Precast Concrete Piling see Dwg. No. 182
For Details of Superstructure see Dwg. No. 15866, 15870, 14900, & 15871A.

SPECIFICATIONS: Arkansas State Highway Commission standard specifications for Highway Construction, Edition of 1928, the 1966 Supplemental Specifications, and applicable Special Provisions.

DESIGN SPECIFICATIONS: AASHO 1965

Live Loading: H20

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

LAYOUT OF BRIDGES OVER DES ARC BAYOU BEEBE-SEARCY BYPASS WHITE COUNTY

ROUTE 67 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

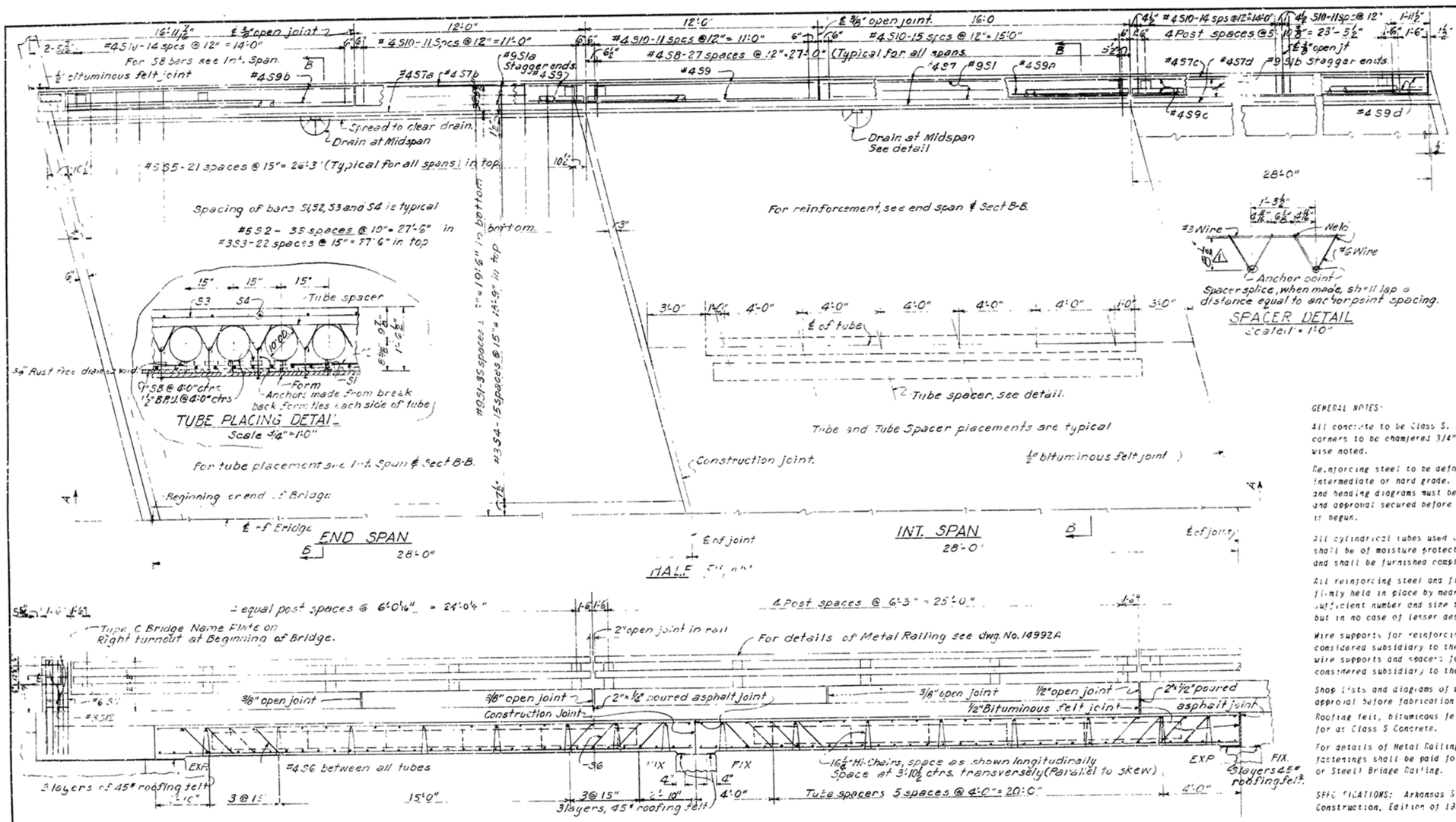
DRAWN BY JAS DATE 1-22-68
TRACED BY DATE
CHECKED BY JEP DATE 2-5-68
SCALE 1" = 20'

BRIDGE ENGINEER

BRIDGE NO. 5231A&B DRAWING NO. 15857

FED. ROAD No.	STATE	TOTAL SHEETS
6	ARK.	

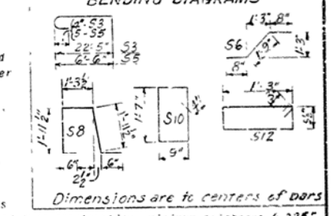
JOB No.



BAR LIST

MARK	SIZE	NO. REQD END	NO. REQD INT	LENGTH 15°SK	PIN DIA
S1	9	79	85	27'-8	Str.
S1a	9	5		28'-4	
S1b	9	3		27'-11	
S2	5	68	68	28'-10	Str.
S3	3	46	46	22'-10	2¼"
S4	3	32	32	27'-8	Str.
S5	5	44	44	7'-1	3¾"
S6	4	240	240	3'-1	1¼"
S7	4		4	27'-8	Str.
S7a		1		28'-3	
S7b		1		28'-7	
S7c		1		27'-10	
S7d		1		28'-2	Str.
S8		56	56	6'-1	1½"
S9		2	4	11'-8	Str.
S9a			4	15'-8	
S9b		2		16'-3	
S9c		2		14'-5	
S9d		2		12'-10	Str.
S10	4	54	56	5'-3	1½"
S11	6	14		4'-6	Str.
S12	3	8		3'-10	1¼"

BENDING DIAGRAMS



Dimensions 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 intermediate or hard grade. Shop lists and bending diagrams must be submitted and approval secured before fabrication is begun.

All cylindrical tubes used to form voids shall be of moisture protected, laminated type construction, minimum thickness 0.225", and shall be furnished complete with end closures.

All reinforcing steel and fiber tubes shall be accurately located in the forms and firmly held in place by means of steel wire supports and spacers for tubes of a sufficient number and size to prevent displacement during the course of construction, but in no case of lesser design than that shown.

Wire supports for reinforcing bars will not be paid for directly but will be considered subsidiary to the item "Reinforcing Steel". Tubes for forming voids and wire supports and spacers for tubes will not be paid for directly, but will be considered subsidiary to the item "Class S Concrete".

Shop lists and diagrams of wire supports and spacers for tubes shall be submitted for approval before fabrication is begun.

Roofing felt, bituminous felt and poured asphalt joints shall be measured and paid for as Class S Concrete.

For details of Metal Railing see Dwg. No. 14992A. Metal Railing including posts and fastenings shall be paid for at the unit price per linear foot bid for Metal (Aluminum or Steel) Bridge Railing.

SPECIFICATIONS: Arkansas State Highway Commission Standard Specifications for Highway Construction, Edition of 1958.

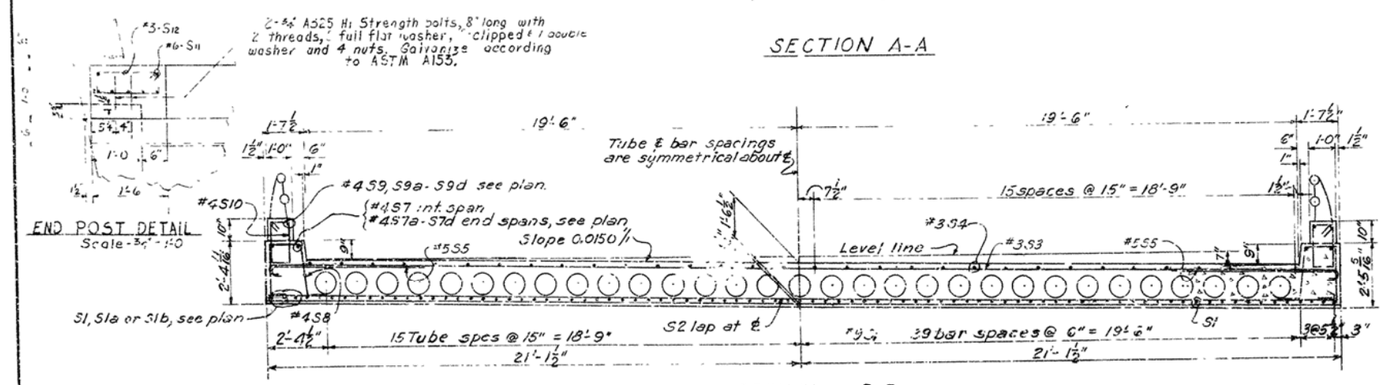
DESIGN SPECIFICATIONS: AASHO 1965

Design Live Loading: HS20 and Special Interstate Loading of two 24,000# axles spaced 4'0" on centers.

Load Distribution to Slab: Dead Load-188 psf; Live Load-0.178 wheels/ft of width plus 30% impact.

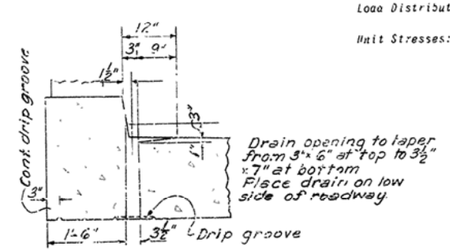
Unit Stresses: Class S Concrete (n=10) 1,200 psi
Reinforcing Steel 20,000 psi

SECTION A-A



SECTION B-B

END POST DETAIL
Scale 3/4" = 1'-0"



DRAIN DETAIL
Scale 3/4" = 1'-0"

Revised End Post Note, Added Void drains. W.W. 3-13-69

Rev. A-Rev. T. to Beam Spacer Detail Aug. 2-66 Jno. D. (CK. JWH)

DETAILS OF STANDARD
28'-0" R C SLAB SPAN (WITH VOIDS)
39'-0" CLEAR ROADWAY 2 CURBS 0'-6"
15° SKEW RT. FORWARD
ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

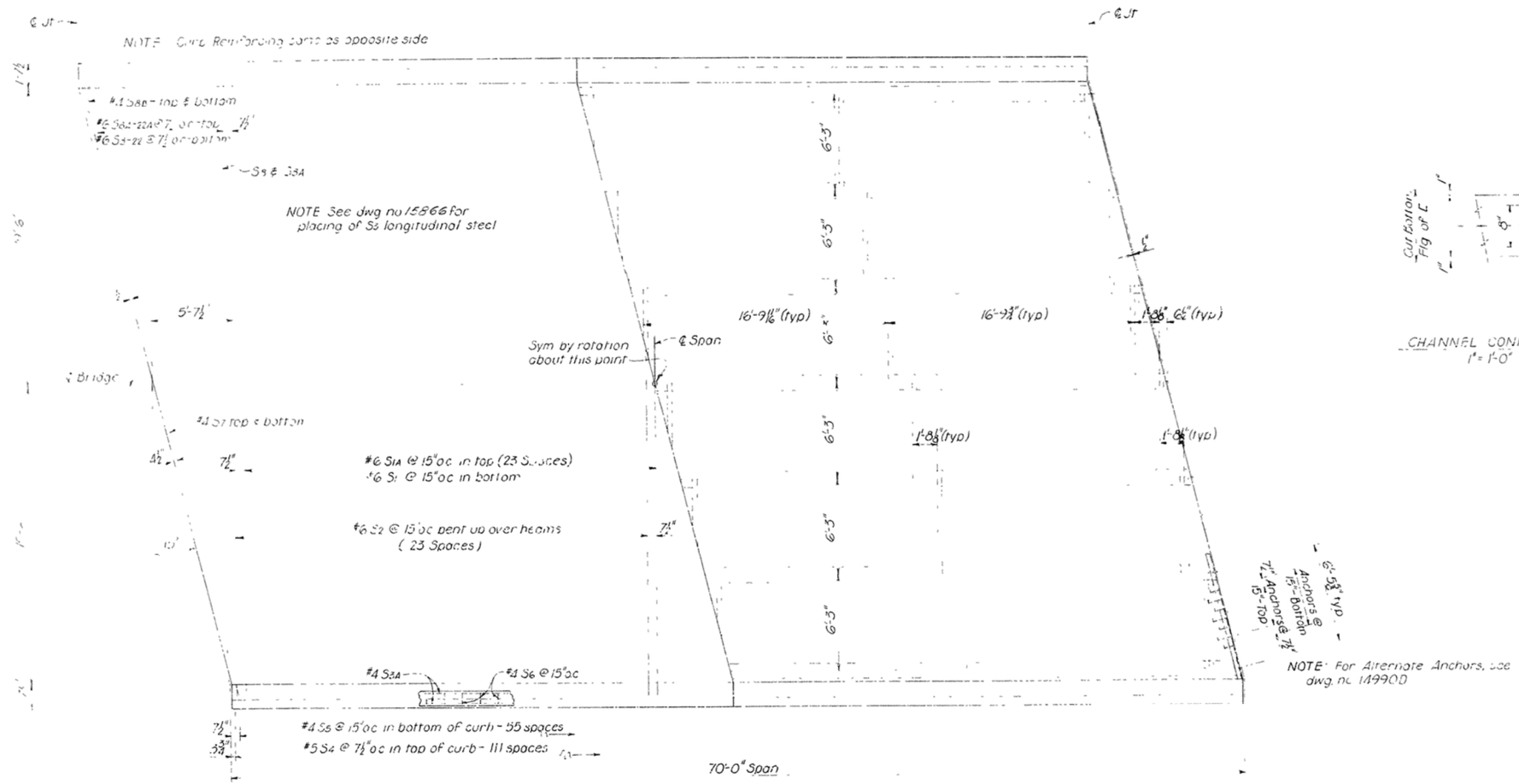
DRAWN BY: W.E.H. DATE: 1-19-65
TRACED BY: DATE:
CHECKED BY: FMH DATE: 1-19-65
SCALE: 3/8" = 1'-0" or shown

L. P. Carlson
BRIDGE ENGINEER

BRIDGE NO.

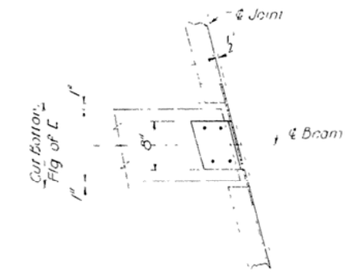
DRAWING NO. 15071 A

FED ROAD NO.	STATE	FED AID PROJ.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	ARK.	F-021-3(19)		177	255
JOB NO.		5553			

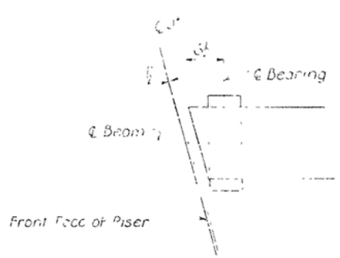


PLAN
1/4" = 1'-0"

NOTE For Alternate Anchors, see dwg. no. 14990D



CHANNEL CONNECTION
1" = 1'-0"

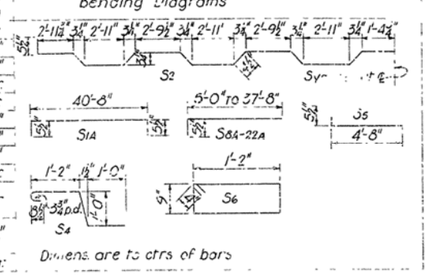


BEARING PLAN
1" = 1'-0"

BAR LIST

Mk	Size	No. Req'd.	Length	Pin Dia
S1	6	47	40'-8"	Str.
S1A	6	47	41'-5"	2½"
S2	6	43	42'-7"	2½"
S3	4	306	24'-4"	Str.
S3A	4	12	22'-10"	Str.
S4	5	224	4'-0"	1¾"
S5	4	112	5'-1"	1½"
S6	4	112	4'-5"	1½"
S7	4	8	21'-10"	Str.
S8-S22	6	2 ea.	37'-8" to 5'-0"	Str.
S8A-S22A	6	2 ea.	38'-1" to 5'-5"	2½"
S8B	4	4	2'-8"	Str.

Bending Diagrams



NOTE - For general notes and additional details, see dwg. nos. 14990D & 15866

DETAILS OF 70'-0" SPAN FOR
BRIDGES OVER DES ARC BAYOU
BEEBE - SEARCY BYPASS
WHITE COUNTY
ROUTE 67 SEC. 12

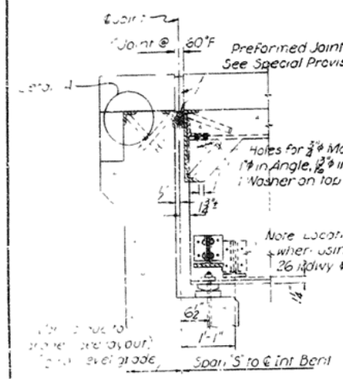
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: RWM DATE: 3-19-68
TRACED BY: DATE:
CHECKED BY: DATE: 3-28-68
SCALE: As Shown

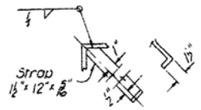
L. P. Carlson
BRIDGE ENGINEER

BRIDGE NO. 5231 A & B DRAWING NO. 15872

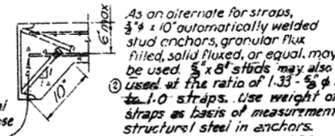
FED. ROAD DIV.	STATE	FED. AID PROJ.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	ARK.	F-021-3(19)		101	332
JOB NO.		5553			



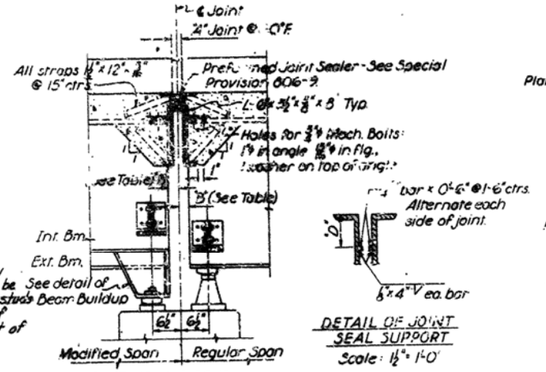
"V" AT END BENT
Scale: 1/2" = 1'-0"



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

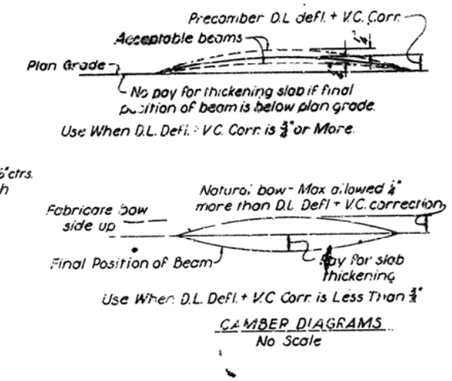


DETAILS OF ALTERNATE ANCHORS
Scale: 1" = 1'-0"

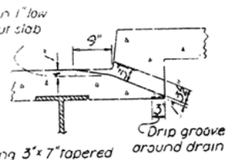


JOINT AT INT. BENT
Scale: 1/4" = 1'-0"

DETAIL OF JOINT SEAL SUPPORT
Scale: 1 1/2" = 1'-0"

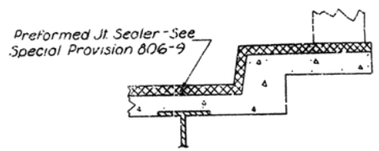


CAMBER DIAGRAMS
No Scale

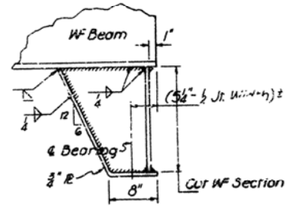


Drain opening 3" x 7" tapered to 3 1/2" x 7 1/2". Place at approx. 20' ctrs. on low side of sloped roadway & each side of crowned roadway. Omit drains on grade separation structures unless called for on the plans.

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



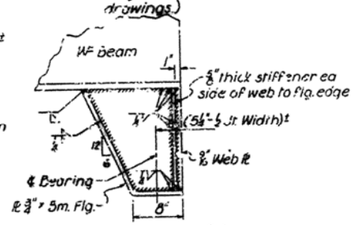
SEAL PLACEMENT IN CURB
Scale: 3/4" = 1'-0"



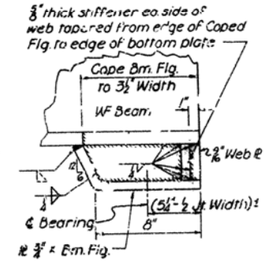
Flange Width & Thickness & Web Thickness to be equal to or greater than WF Beam Dim.

OPTIONAL BEAM BUILDUP
No Scale

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

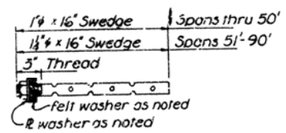


Use when difference in ("e" plus shoe height) is 5" or more.



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

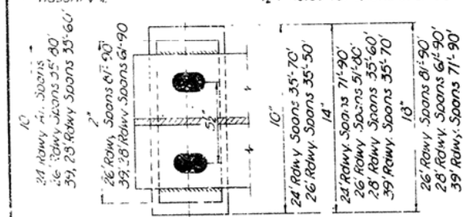
DETAILS OF BEAM BUILDUP
No Scale

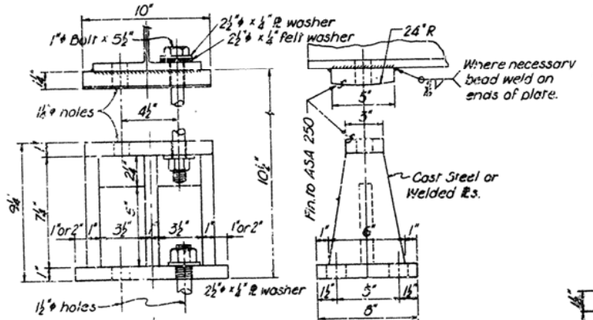


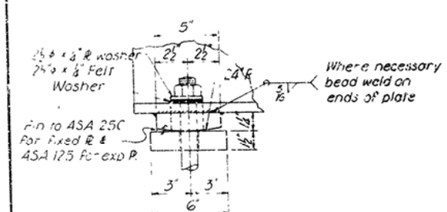
ANCHOR BOLT DETAIL - No Scale

Expansion Shoe: (All spans thru 50') 1 1/2" x 1 1/2" slots in Sole PL & Bm. Flg. with 1 1/2" ϕ holes - Masonry PL

Fixed Shoe: 1 1/2" ϕ Holes in Masonry PL, Sole PL, & Bm. Flg. for spans thru 50'. 1 1/2" ϕ holes for spans over 50'.

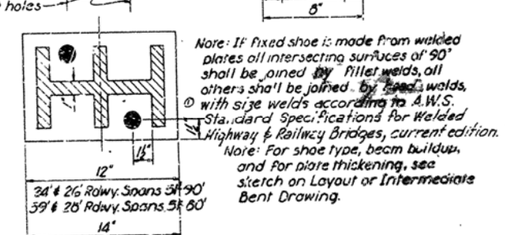






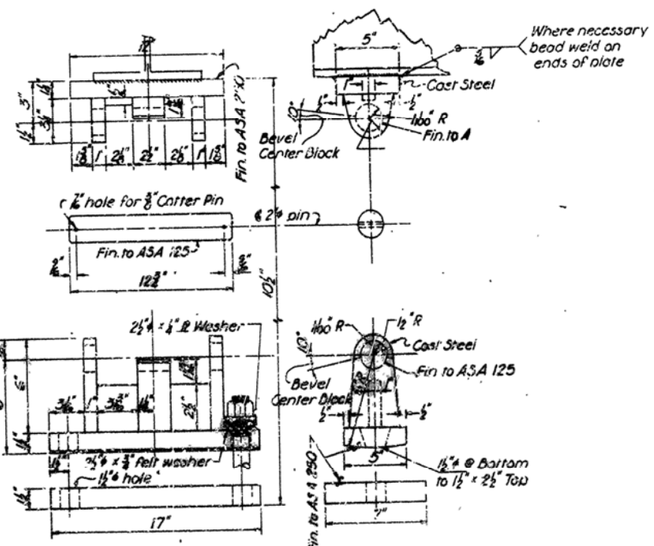
TYPE "B" FIXED OR EXPANSION SHOE - Scale: 3/4" = 1"

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



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 beed 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: 3/16" = 1"



TYPE "A" EXPANSION SHOE
Scale: 3/16" = 1"

Note: This drawing adapted from drwg. 14990C.

③ Revised note 10-25-67 FMH
② Added 5/8" x 8" Studs. 1-11-66 FMH
① Added Note 3-13-68 J.S.

L. P. Nelson
BRIDGE ENGINEER

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" 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:

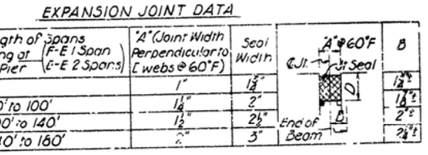
Floor slabs may be poured in one continuous operation with a strikeoff extending over the whole span length, or may be poured in increments with the center one-third to one-half span length poured first. After the center section is poured, not less than 72 hours shall elapse before pouring the end sections. 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	"A" (Joint Width Perpendicular to ℄ webs @ 60°F) (F-E 1 Span, E-E 2 Spans)	Seal Width	B
To 80'	1"	1 1/2"	1 1/2"
Over 80' to 100'	1 1/2"	2"	1 1/2"
Over 100' to 140'	1 1/2"	2 1/2"	2"
Over 140' to 180'	2"	3"	2 1/2"



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.

② 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.

DETAILS COMMON TO STANDARD 35'-90' COMPOSITE I-BEAM SPANS
21, 26, 28, 39 ROADWAYS
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: PWM DATE: 1-1-67 SCALE: As Shown
TRACED BY: DATE:
CHECKED BY: DATE: 1-5-67

BRIDGE NO. 523, 528, 529, 530, 532 DRAWING NO. 14990D

File No. Drwg. No. 15872