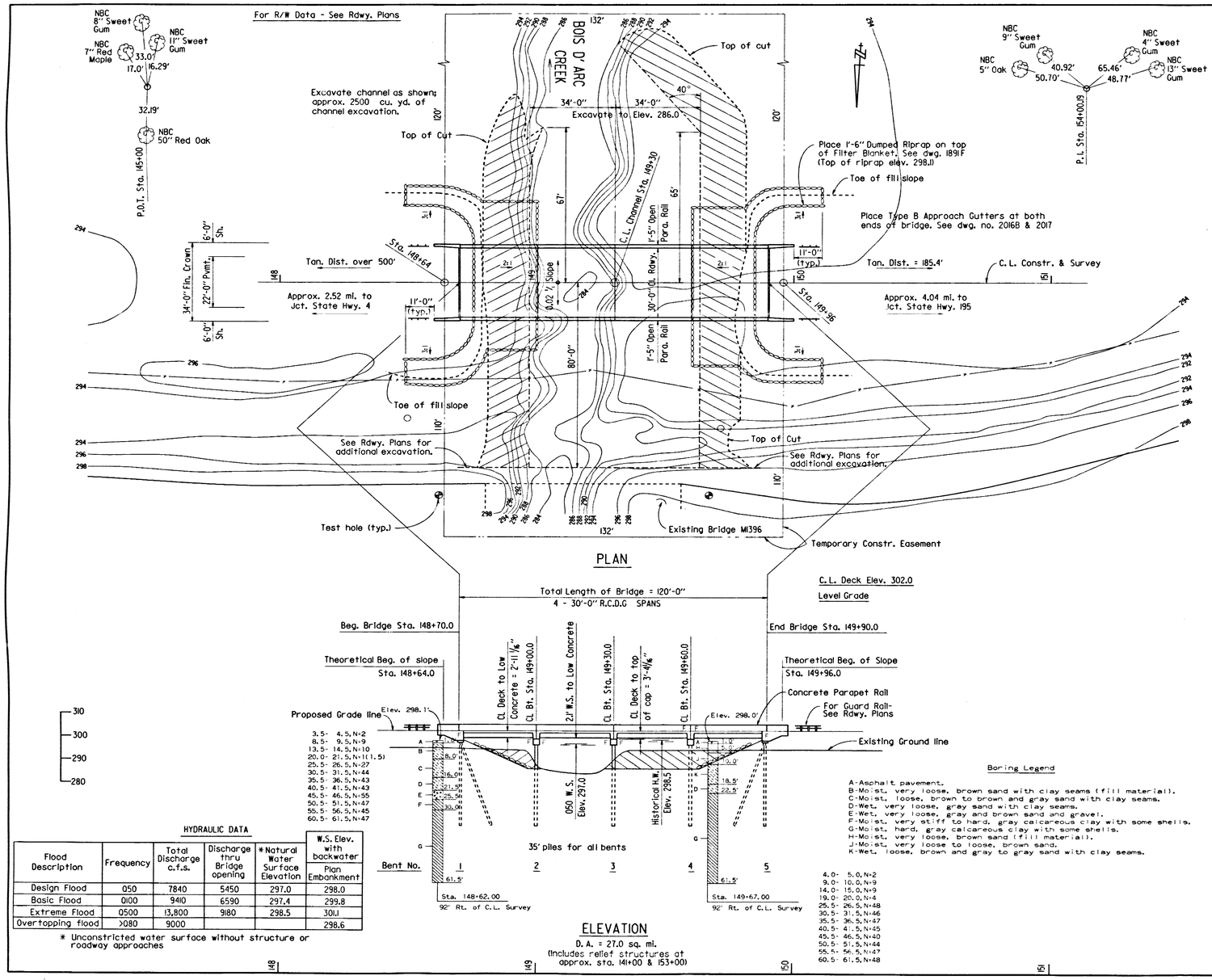
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				6	ARK.			
				JOB NO.		030089	28	48
				1	6580	LAYOUT	34890	



HYDRAULIC DATA

Flood Description	Frequency	Total Discharge c.f.s.	Discharge thru Bridge opening	*Natural Water Surface Elevation	W.S. Elev. with backwater Plan Embankment
Design Flood	Q50	7840	5450	297.0	298.0
Basic Flood	Q100	9410	6590	297.4	299.8
Extreme Flood	Q500	13,800	9180	298.5	301.1
Overtopping flood	>Q80	9000			298.6

* Unconstricted water surface without structure or roadway approaches

Boring Legend

A-Asphalt pavement.
B-Moist, very loose, brown sand with clay seams (fill material).
C-Moist, loose, brown to brown and gray sand with clay seams.
D-Wet, very loose, gray sand with clay seams.
E-Wet, very loose, gray and brown sand and gravel.
F-Moist, very stiff to hard, gray calcareous clay with some shells.
G-Moist, hard, gray calcareous clay with some shells.
H-Moist, very loose, brown sand (fill material).
J-Moist, very loose to loose, brown sand.
K-Wet, loose, brown and gray to gray sand with clay seams.

4.0- 5.0, N-2
9.0- 10.0, N-9
14.0- 15.0, N-9
19.0- 20.0, N-4
25.5- 26.5, N-48
30.5- 31.5, N-46
35.5- 36.5, N-47
40.5- 41.5, N-45
45.5- 46.5, N-40
50.5- 51.5, N-44
55.5- 56.5, N-47
60.5- 61.5, N-48

GENERAL NOTES

BENCH MARK: NIS 24" Oak, 139' RT. CL Sta. 150+73, Elev. 297.44.

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction, 1993 edition, with applicable supplemental specifications and special provisions.

DESIGN SPECIFICATIONS: AASHTO Standard Specifications for Highway Bridges, 1992 with current interim specifications.

LIVE LOADING: HS20 METHOD OF DESIGN: Load Factor
SEISMIC PERFORMANCE CATEGORY: A

MATERIALS AND STRENGTHS:

Class S(AE) Concrete (Superstructure)	f'c = 4,000 psi
Class S Concrete (Substructure)	f'c = 3,500 psi
Reinforcing Steel (A615 or A617, GR. 60)	Fy = 60,000 psi
Structural Steel (A36)	Fy = 36,000 psi

BORING LOGS: Boring logs may be obtained from the Programs and Contracts Division.

BRIDGE DECK: The concrete bridge deck shall be given a fine finish as specified for final finishing in subsection 802.20 for Class 5 Bridge Roadway Surface Finish.

CONCRETE PILING:
Piling for Bents 1 and 5 shall be be 14" square precast concrete and shall be driven with an approved air, steam, or diesel hammer to a minimum ultimate bearing capacity of 110 tons per pile. Drive all piles to minimum penetration of 20' below natural ground. Drive one 40' test pile in Bent 1. Piles in end bents to be driven after embankment to bottom of cap is in place.
Piling for Bents 2, 3 & 4 shall be 16" square precast concrete and shall be driven with an approved air, steam, or diesel hammer to a minimum ultimate bearing capacity of 110 tons per pile and to a tip elevation of 263.0 or lower. Drive one 45' test pile in Bent 3.
Lengths of piling shown are assumed for estimating quantities only. Actual lengths to be determined in the field.

Preboring will be required to obtain minimum tip elevation at bents 2, 3 and 4. Any cost shall be included in the item "Preboring". Preboring, as approved by the Engineer, may be required to obtain minimum penetration noted for piling in bents 1 & 5. Any cost shall be included in the item "Concrete Piling (14" Sq.)". Size and depth of all preboring shall be approved by the Engineer.

DRIVING SYSTEM: The driving system approval and the ultimate bearing capacity determination for piling shall be based on the requirements of Section 805.06 (b) "Method B-Wave Equation Analysis" of the Standard Specifications. It is estimated that the minimum required rated energy of the hammer to obtain the minimum ultimate bearing capacity will be 12,500 foot pounds per blow on Bents 1 & 5 and 20,000 foot pounds per blow on Bents 2, 3 & 4.

PILE DESIGN BEARING CAPACITY: 16" Sq. or 14" Sq. = 40 Tons/pile.

BOILED LINSEED OIL: Boiled linseed oil treatment shall be applied to the roadway surface and to the face and top of the concrete parapet rail.

DETAIL DRAWINGS:

	DRAWING NO.
End Bents	34891
Intermediate Bents	34891
30' R.C. Deck Girder Spans	34892-34893
Concrete Piling	2383
Type C Bridge Name Plate	2389A
Embankment Construction	1888A
Dumped Riprap and Filter Blanket	1891F
Computing Excavation for Structures	1891F
Type B Approach Gutters	2016B, 2017

EXISTING BRIDGE: The existing bridge No. MI396 (log mile 11.73) is 23.5' wide and 76' long. The superstructure consists of precast concrete spans. The substructure consists of concrete abutments and timber pile bents with concrete caps. The existing bridge is located approx. 100' right of CL Constr.

REMOVAL AND SALVAGE: After the new bridge is opened to traffic, the existing bridge MI396 shall be removed in accordance with Section 205 of the Standard Specifications. All material from the existing bridge shall become the property of the contractor.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 2168
DALE F. LOE
BRIDGE ENGINEER

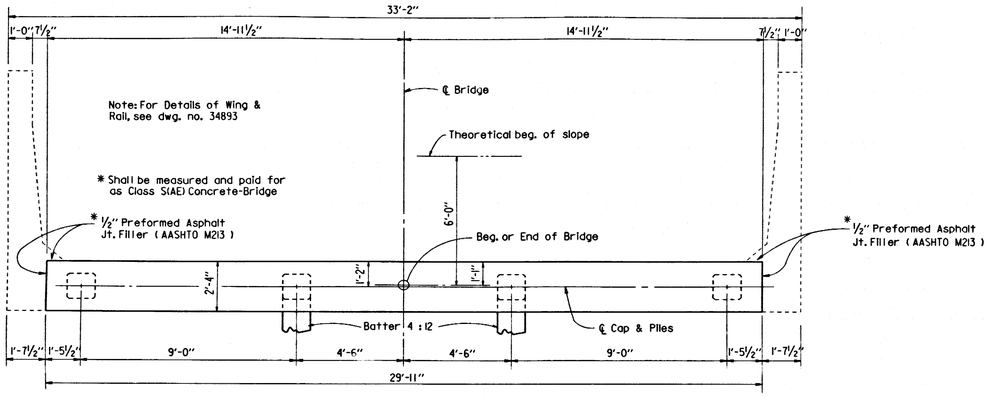
LAYOUT OF BRIDGE OVER BOIS D' ARC CREEK
CROSS ROADS - HWY. 4 (S)
HEMPSTEAD COUNTY
ROUTE 73 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: LM DATE: 10-18-93
CHECKED BY: DHP DATE: 12-20-93 SCALE: 1"=20'
DESIGNED BY: CJF DATE: 11-18-93
BRIDGE NO. 6580 DRAWING NO. 34890

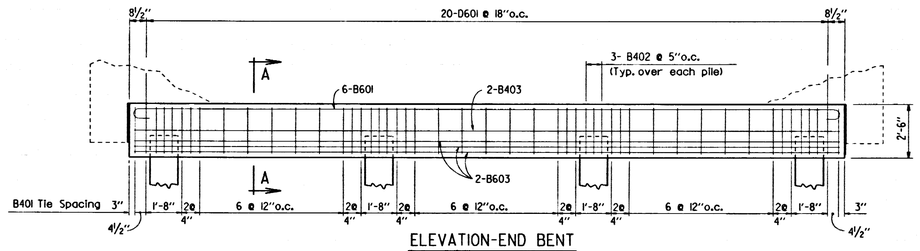
lmme547 b30089.l4

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TAMERAN

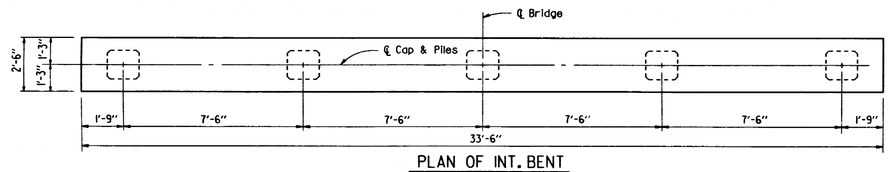
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				6	ARK.			
				JOB NO.		030089	29	158
				6580		BENT	34891	



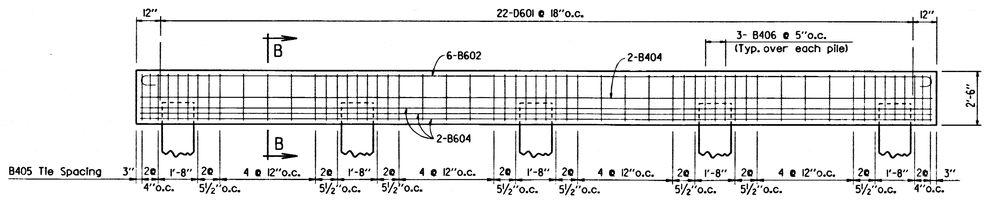
PLAN OF END BENT



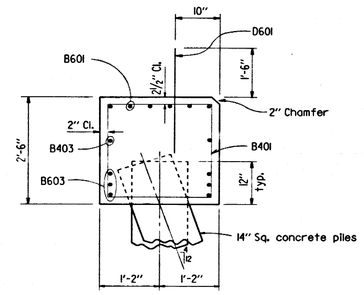
ELEVATION-END BENT



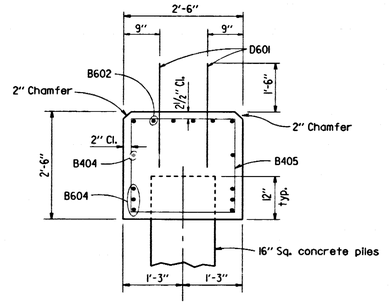
PLAN OF INT. BENT



ELEVATION-INT. BENT



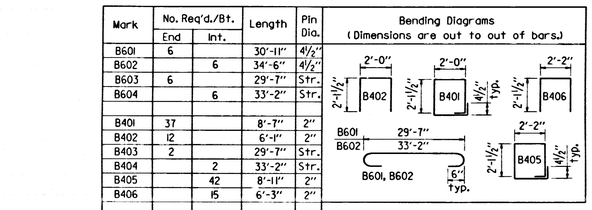
SECTION A-A
¾" = 1'-0"



SECTION B-B
¾" = 1'-0"

BAR LIST PER BENT

Mark	No. Req'd./Bt. End	No. Req'd./Bt. Int.	Length	Pin Dia.	Bending Diagrams (Dimensions are out to out of bars.)
B601	6		30'-11"	4½"	
B602		6	34'-6"	4½"	
B603	6		29'-7"	Str.	
B604		6	33'-2"	Str.	
B401	37		8'-7"	2"	
B402	12		6'-1"	2"	
B403	2		29'-7"	Str.	
B404		2	33'-2"	Str.	
B405		42	8'-11"	2"	
B406		15	6'-3"	2"	
D601	20	44	3'-0"	Str.	



All Concrete shall be Class S and be poured in the dry. All exposed corners to be chamfered ¾" unless otherwise noted.

All Reinforcing steel shall conform to ASTM A615 or A617, Grade 60.

For additional information, see Layout.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 21681
DALE P. LOE
BRIDGE ENGINEER

DETAILS OF STD. PILE BENTS FOR 30'-0" R.C.D.G. SPANS 30' CLEAR ROADWAY

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

ALTERED BY: LM DATE: 10-26-93
CHECKED BY: DHP DATE: 12-20-93
DESIGNED BY: Std. DATE:

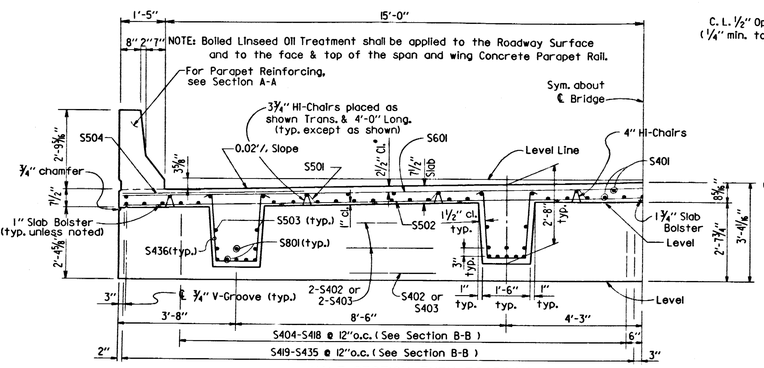
SCALE: ⅜" = 1'-0" or as shown

BRIDGE NO. 6580 DRAWING NO. 34891

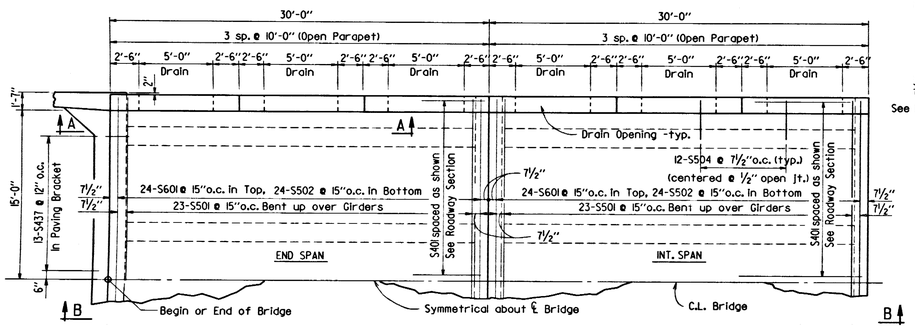
LMME547 B30089.BI

D C B A 0 A B C D
TAMERAN

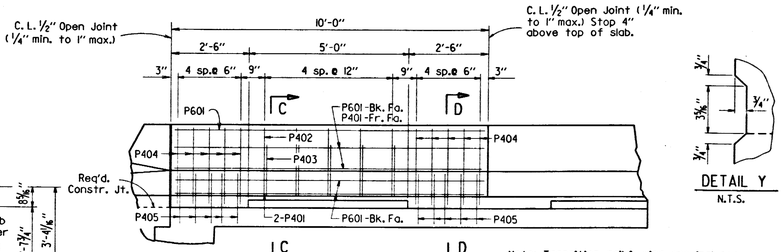
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				JOB NO.		030089	30	163
				① 6580		SPANS		34892



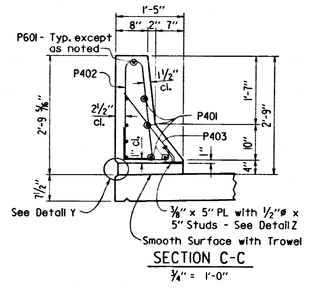
HALF-SECTION THRU ROADWAY
½" = 1'-0"



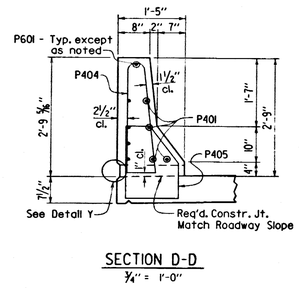
HALF-ROADWAY PLAN
N.T.S.



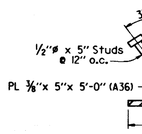
SECTION A-A
N.T.S.



SECTION C-C
¾" = 1'-0"



SECTION D-D
¾" = 1'-0"



DETAIL Z
No Scale

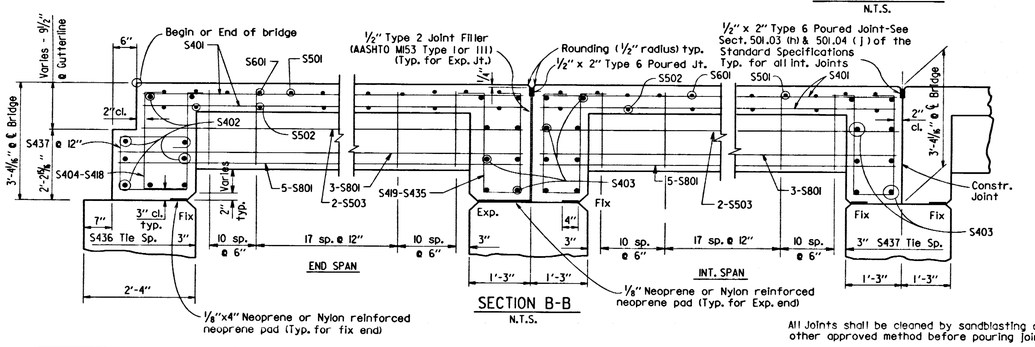
Note:
Parapet studs shall be 5" long, granular flux filled, solid fluxed, or equal and automatically end welded to the plate. Studs and plate shall meet the requirements of Section 807. Studs and plates shall be measured and paid for as Structural Steel or Class S(AE) Concrete-Bridge.

The surfaces of the ⅜" plates which will not be in contact with concrete shall be painted in accordance with Section 638, or as approved by the Engineer. Only one coat is required and shall be applied in the fabricator's shop. Painting will not be paid for directly, but will be considered subsidiary to Structural Steel or Class S(AE) Concrete-Bridge.

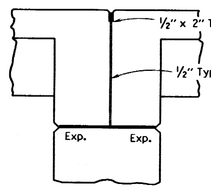
DETAIL Y
N.T.S.

Note: Transition rail & wing are included in end span construction and end span quantities. See dwg. no. 34893

CAMBER DIAGRAM
N.T.S.



SECTION B-B
N.T.S.



Note: For dimensions and reinforcing not shown, see Section B-B.

DETAIL OF EXP-EXP JT.
N.T.S.

All joints shall be cleaned by sandblasting or other approved method before pouring joint.

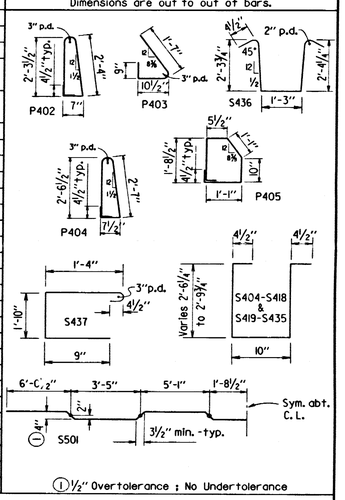
TABLE OF QUANTITIES

Span	Class S(AE) Concrete	Reinforcing Steel	Structural Steel **
End	56.4 *	10,872 *	20l.3
Int.	49.2	9,674	20l.3

* Includes wing & rail quantities
** For information Only

BAR LIST PER SPAN

MK	No. Required End	No. Required Int.	Length	Pin Dia.	Bending Diagrams Dimensions are out to out of bars.
S401	67	67	29'-8"	Str.	
S402	9	—	32'-10"	Str.	
S403	8	16	32'-6"	Str.	
S404-S418	2 ea.	—	6'-4" to 6'-11"	2"	
S419-S435	2 ea.	4 ea.	6'-4" to 6'-11"	2"	
S436	152	152	6'-6"	2"	
S437	26	—	4'-4"	2"	
S501	23	23	33'-2"	3"	
S502	24	24	32'-6"	Str.	
S503	8	8	29'-7"	Str.	
S504	48	48	4'-9"	Str.	
S601	24	24	32'-6"	Str.	
S801	32	32	29'-7"	Str.	
P401	24	24	9'-8"	Str.	
P402	30	30	5'-10"	2"	
P403	30	30	3'-2"	2"	
P404	60	60	6'-4"	2"	
P405	60	60	5'-6"	2"	
P601	30	30	9'-8"	Str.	



① ½" Overtolerance ; No Undertolerance

GENERAL NOTES

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

The concrete in the girders, end diaphragms, and deck shall be placed in one continuous pour for the interior spans. The concrete in the girders, end diaphragms, deck, and wings shall be placed in one continuous pour for the end spans.

Reinforcing steel to be ASTM A615 or A617, Grade 60. Bar supports for reinforcing bars will not be paid for directly, but shall be considered subsidiary to the item "Reinforcing Steel- Bridge ."

Neoprene Pad, Type 2 joint filler, Type 6 poured joint material, shall be measured and paid for as Class S(AE) Concrete- Bridge. Neoprene material shall meet the requirements of Section 808.02 of the Standard Specifications and shall be in one piece for the full width and length of the bearing and may be 50, 60, or 70 durometer elastomer.

Specifications: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction, 1993 edition, with applicable Special Provisions and Supplemental Specifications.

Design Specifications: AASHTO Standard Specifications for Highway Bridges, 1992 edition, with current interim specifications.

Method of Design: Load Factor
Design Live Loading: HS20

	Interior Girder	Exterior Girder
Dead Load:	⚠ 1795 plf	⚠ 1595 plf
Live Load:	1.417 wheels + Impact	1.353 wheels + Impact

⚠ Includes future wearing surface: 213 PLF (Interior)
163 PLF (Exterior)

Materials and Strengths:
Class S(AE) Concrete: 28 day compressive strength, f'c = 4,000 psi.
Reinforcing Steel (Grade 60): fy = 60,000 psi.

STATE OF ARKANSAS
DALE P. LOE
REGISTERED PROFESSIONAL ENGINEER
No. 2168
12-20-93
BRIDGE ENGINEER

DETAILS OF STD. 30'-0" R.C.D.G. SPANS 30'-0" CLEAR ROADWAY BOIS D' ARC CREEK

ROUTE SEC.

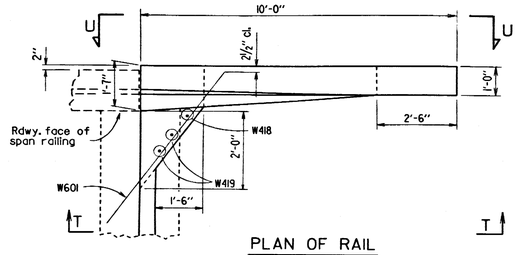
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

ALTERED BY: LM DATE: 10-25-93
CHECKED BY: DHP DATE: 12-20-93 SCALE: AS NOTED
DESIGNED BY: Std. DATE:
BRIDGE NO. 6580 DRAWING NO. 34892

LMME547 B30089.SI

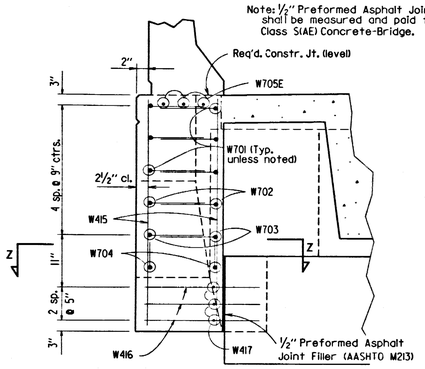
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TAMERAN

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				6	ARK.			
				JOB NO.		030089	31	1 of 3
				(1) 6580		STD. WING		34893



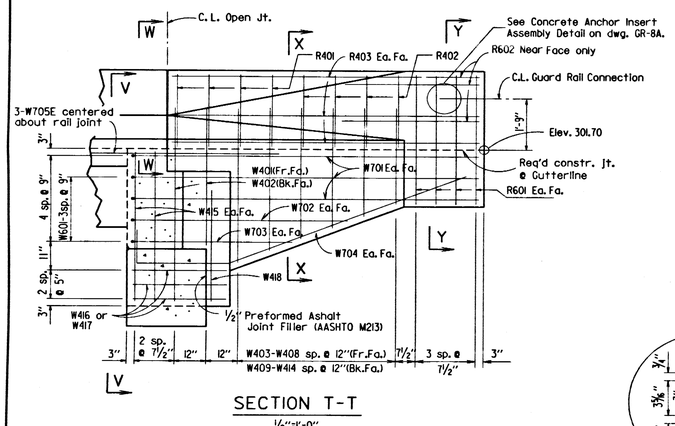
PLAN OF RAIL

½"=1'-0"



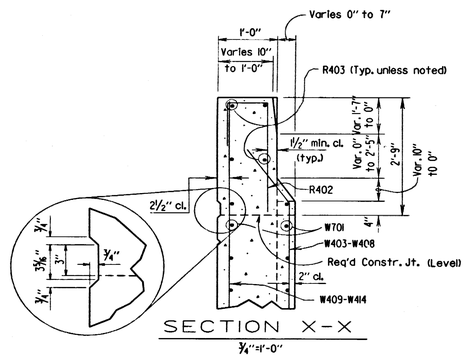
SECTION V-V

¾"=1'-0"



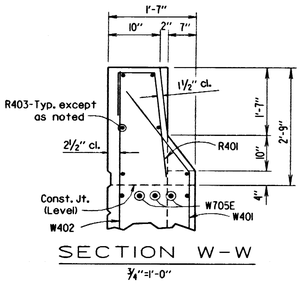
SECTION T-T

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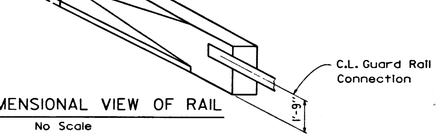
SECTION X-X

¾"=1'-0"



SECTION W-W

¾"=1'-0"



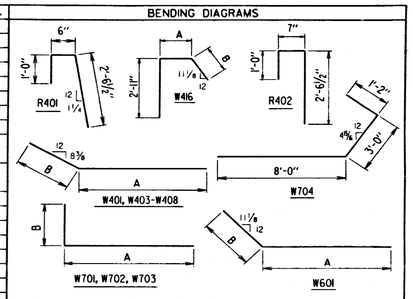
THREE DIMENSIONAL VIEW OF RAIL

No Scale

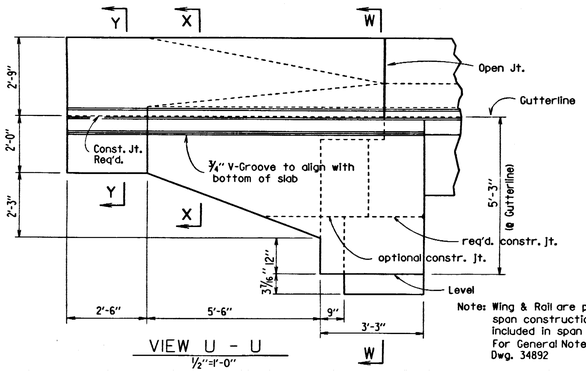
BAR LIST- BOTH WINGS & RAILS

MARK	NO. REQ'D.	LENGTH	A	B	PIN DIA.
R401	8	3'-11"			2"
R402	8	4'-0"			2"
R403	12	9'-8"			Str.
R601	16	4'-5"			Str.
R602	6	5'-0"			Str.
W401	4	H + 2'-1"	H + 1"	2'-0"	2"
W402	4	H + 2'-5"			Str.
W403-W408	2 of each	Var. 3'-4" to 5'-4"	Var. 2'-2" to 4'-2"	1'-2"	2"
W409-W414	2 of each	Var. 4'-5" to 6'-6"			Str.
W415	8	H - 4"			Str.
W416	6	4'-5"	1'-0½"	7"	2"
W417	6	2'-11"			Str.
W418	2	4'-4"			Str.
W419	4	2'-7"			
W601	8	7'-3"	6'-5"	1'-0"	4½"
W701	12	11'-10"	10'-10"	1'-2"	5/4"
W702	4	7'-10"	6'-10"	1'-2"	5/4"
W703	4	6'-0"	5'-0"	1'-2"	5/4"
W704	4	11'-10"			5/4"
W705	6	6'-0"			Str.

BENDING DIAGRAMS



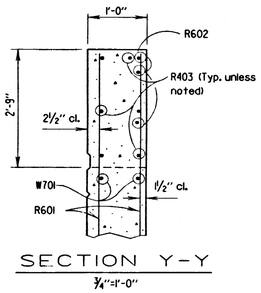
Dimensions are out to out of bars.



VIEW U - U

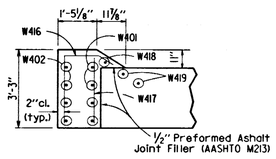
½"=1'-0"

Note: Wing & Rail are part of span construction and included in span quantities. For General Notes, See Dwg. 34892



SECTION Y-Y

¾"=1'-0"



SECTION Z-Z

½"=1'-0"

Note: For details of guard rail connections, see drwg. nos. GR-8 & GR-8A

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 2168
DALE F. LOE
BRIDGE ENGINEER

STANDARD DETAILS FOR WING AND RAIL SQUARE R.C.D.G. SPANS

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: W.M.A. DATE: 1-13-93
CHECKED BY: D.H.P DATE: 12-20-93 SCALE: As Shown
DESIGNED BY: Std. DATE:

BRIDGE NO. 6580 DRAWING NO. 34893

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