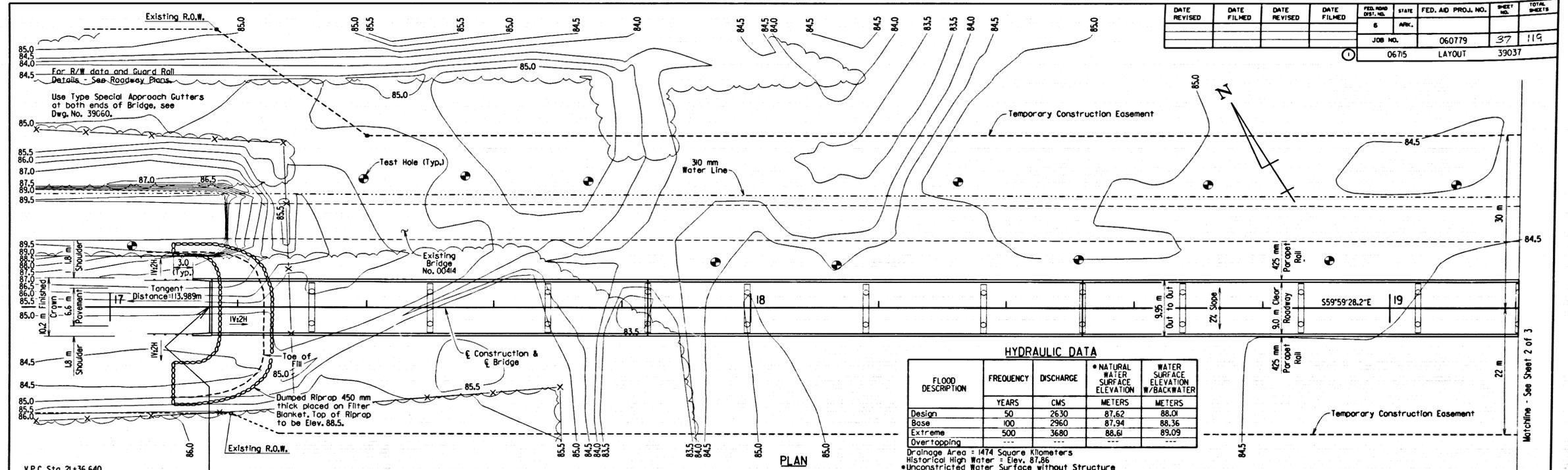


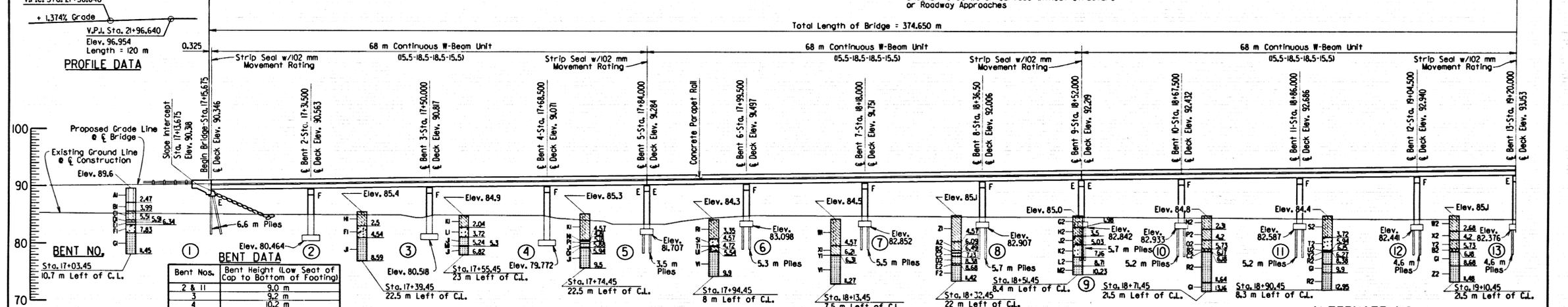
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				6	ARK.	060779	37	119
				JOB NO.	06715	LAYOUT	39037	



HYDRAULIC DATA

FLOOD DESCRIPTION	FREQUENCY	DISCHARGE	NATURAL WATER SURFACE ELEVATION	WATER SURFACE ELEVATION W/BACKWATER
	YEARS	CMS	METERS	METERS
Design	50	2630	87.62	88.0
Base	100	2960	87.94	88.36
Extreme	500	3680	88.61	89.09
Overtopping				

Drainage Area = 1474 Square Kilometers
 Historical High Water = Elev. 87.86
 *Unrestricted Water Surface without Structure or Roadway Approaches



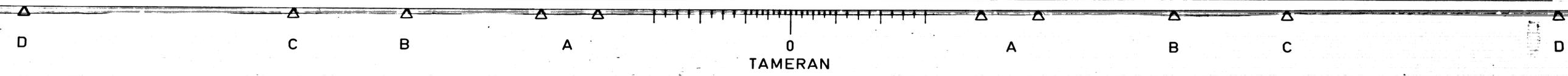
BENT DATA

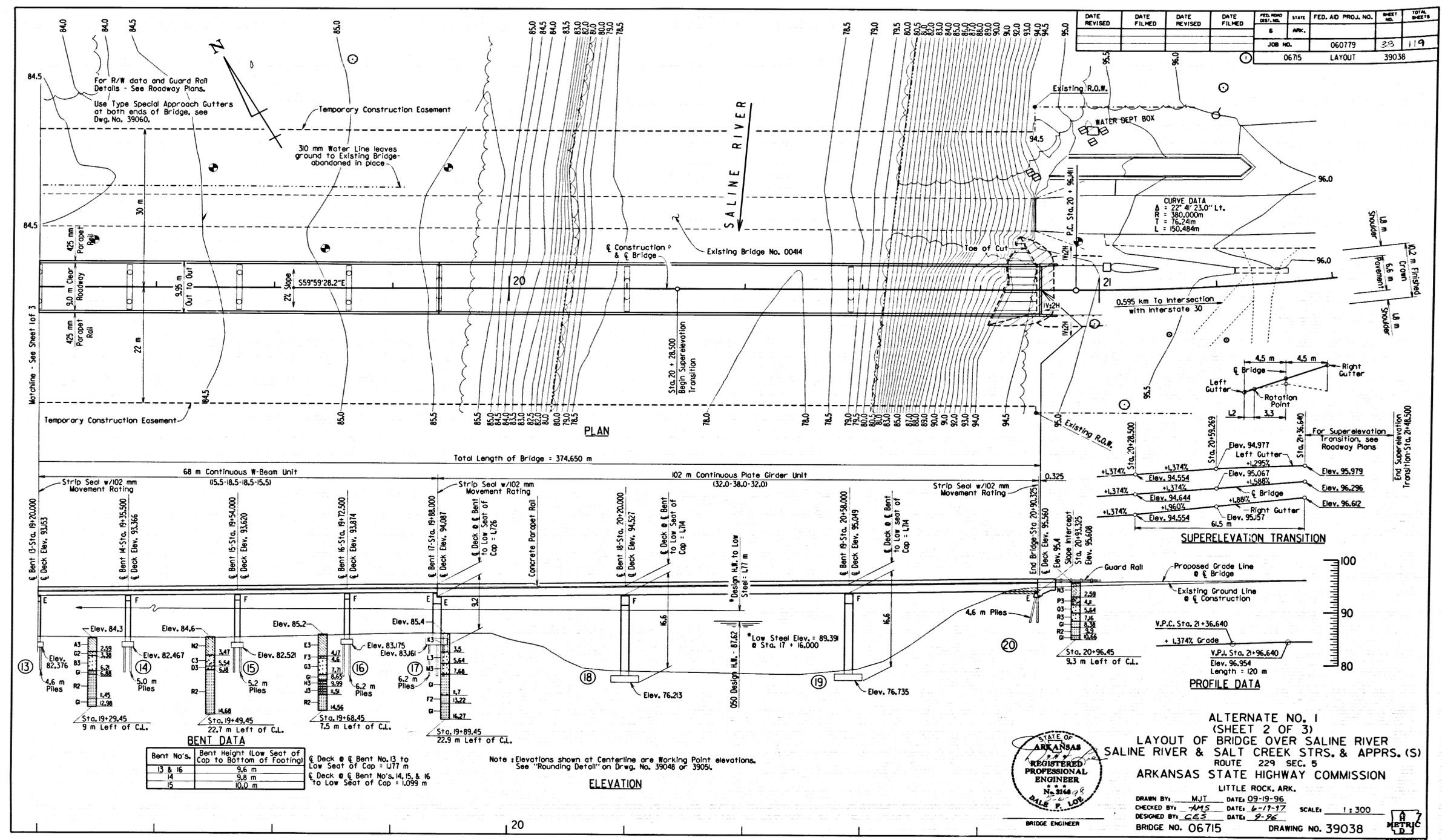
Bent Nos.	Bent Height (Low Seat of Cap to Bottom of Footing)
2 & 11	9.0 m
3	9.2 m
4	10.2 m
5 & 10	8.4 m
6	7.3 m
7	7.8 m
8	8.0 m
9	8.2 m
12	9.4 m
13	9.6 m



ALTERNATE NO. 1
 (SHEET 1 OF 3)
 LAYOUT OF BRIDGE OVER SALINE RIVER
 SALINE RIVER & SALT CREEK STRS. & APPRS. (S)
 ROUTE 229 SEC. 5
 ARKANSAS STATE HIGHWAY COMMISSION
 LITTLE ROCK, ARK.
 DRAWN BY: M.J.T. DATE: 09-19-96
 CHECKED BY: ANS DATE: 6-7-97 SCALE: 1:300
 DESIGNED BY: CES DATE: 9-96
 BRIDGE NO. 06715 DRAWING NO. 39037

MICROFILMED
 AUG 31 1998





DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				060779	33	119
				JOB NO. 06715	LAYOUT	39038

CURVE DATA
 A = 22° 4' 23.0" Lt.
 R = 380,000m
 T = 76,241m
 L = 150,484m

BENT DATA

Bent No's.	Bent Height (Low Seat of Cap to Bottom of Footing)
13 & 16	9.6 m
14	9.8 m
15	10.0 m

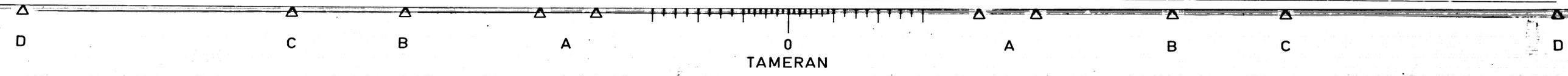
Deck @ Bent No. 13 to Low Seat of Cap = 1.77 m
 Deck @ Bent No's. 14, 15, & 16 to Low Seat of Cap = 1.099 m

Note: Elevations shown at Centerline are Working Point elevations. See "Rounding Detail" on Dwg. No. 39048 or 39051.

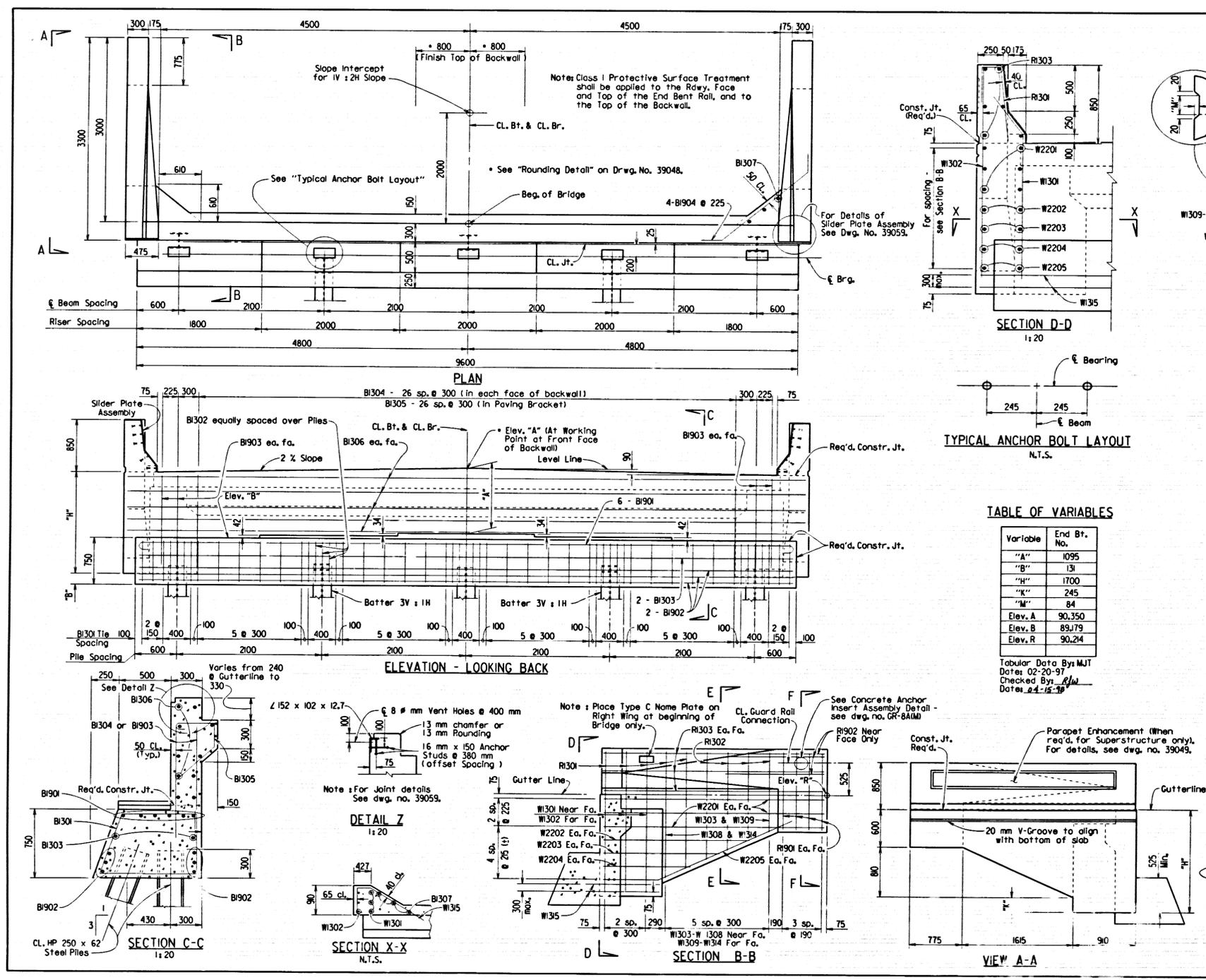


ALTERNATE NO. 1
 (SHEET 2 OF 3)
 LAYOUT OF BRIDGE OVER SALINE RIVER
 SALINE RIVER & SALT CREEK STRS. & APPRS. (S)
 ROUTE 229 SEC. 5
 ARKANSAS STATE HIGHWAY COMMISSION
 LITTLE ROCK, ARK.
 DRAWN BY: MJT DATE: 09-19-96
 CHECKED BY: AMS DATE: 6-17-97
 DESIGNED BY: CES DATE: 2-96
 BRIDGE NO. 06715 DRAWING NO. 39038

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AUG 31 1998



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FEEL. NO. DFL. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	060779	40	114
JOB NO. 06715 End Bent Details							39040	

BAR LIST

Mark	No. Req'd.	Length	Pin Dia.	Bending Diagrams (Dimensions are out to out of bars.)
B1301	38	3090	50	
B1302	15	1990	50	
B1303	2	9500	Str.	
B1304	54	1430	Str.	
B1305	27	120	50	
B1306	10	9850	Str.	
B1307	6	1360	Str.	
B1901	6	9930	114	
B1902	6	9500	Str.	
B1903	8	1430	Str.	
B1904	8	2250	114	
R1301	10	1170	50	
R1302	8	1190	50	
R1303	12	3200	Str.	
R1901	16	1350	Str.	
R1902	6	1410	Str.	
W1301	6	2100	76	
W1302	6	2460	Str.	
W1303 to W1308	2 Ea.	1020 to 1780	76	
W1309 to W1314	2 Ea.	1390 to 2180	Str.	
W135	4	2470	50	
W2201	12	3200	Str.	
W2202	4	2090	Str.	
W2203	4	1660	Str.	
W2204	4	1230	Str.	
W2205	4	2770	133	

TABLE OF VARIABLES

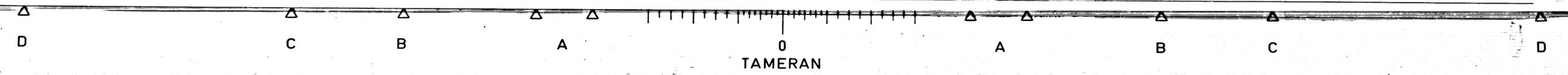
Variable	End Bt. No.
"A"	1095
"B"	131
"H"	1700
"K"	245
"M"	84
Elev. A	90.350
Elev. B	89.779
Elev. R	90.214

Tabular Data By: MJT
 Dates: 02-20-97
 Checked By: R/W
 Dates: 04-16-98

END BENT NOTES
 Stations and elevations are in meters. All other dimensions are in millimeters unless otherwise noted.
 All concrete shall be Class "S" with a minimum 28 day compressive strength $f'_c = 24.0$ MPa. Concrete shall be poured in the dry and all exposed corners to be chamfered 20 mm unless otherwise noted.
 All reinforcing steel shall conform to ASTM A 615/A 615M-96a, Grade 420 (yield strength = 420 MPa).
 Backwall shall not be poured before beams are in place and concrete span pours have been made.
 Structural steel in end bents shall be AASHTO M270, Gr. 345W and shall be paid for as "Structural Steel in Beam Spans (AASHTO M270, Gr. 345W)".
 If anchor bolts are drilled into cap, top reinforcing bars shall be properly placed to avoid damage.
 For additional information see layout.

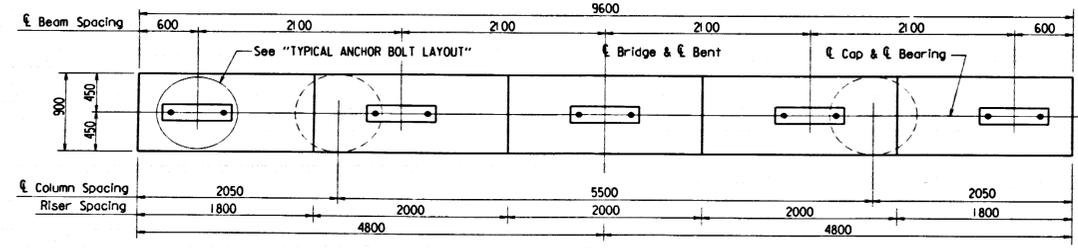
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 DETAILS OF END BENT NO. 1
 SALINE RIVER
 ROUTE 229 SEC. 5
 ARKANSAS STATE HIGHWAY COMMISSION
 LITTLE ROCK, ARK.**

BRIDGE ENGINEER: [Signature]
 DRAWN BY: MJT DATE: 02-19-97
 CHECKED BY: R/W DATE: 04-16-98
 DESIGNED BY: AMS DATE: 2-10-97
 BRIDGE NO. 06715 DRAWING NO. 39040

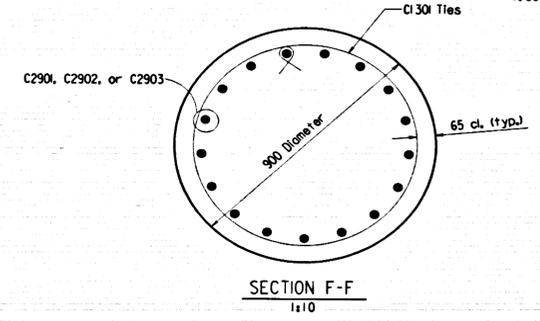
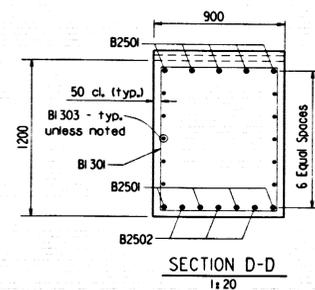
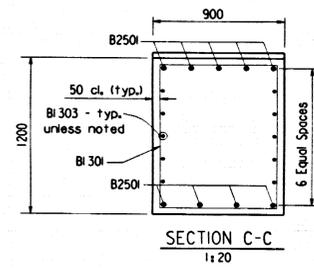
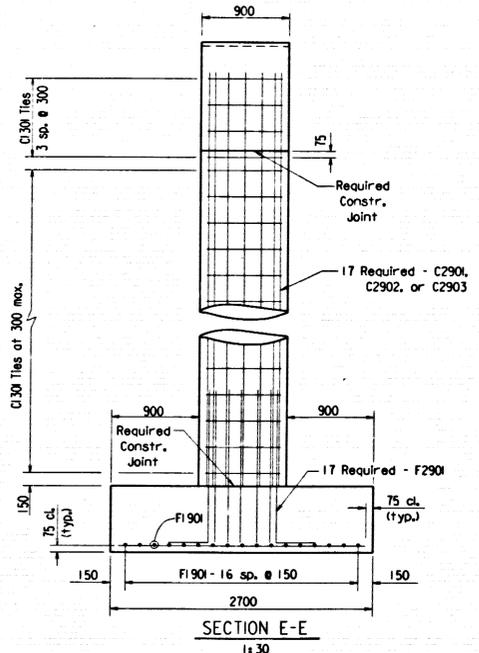
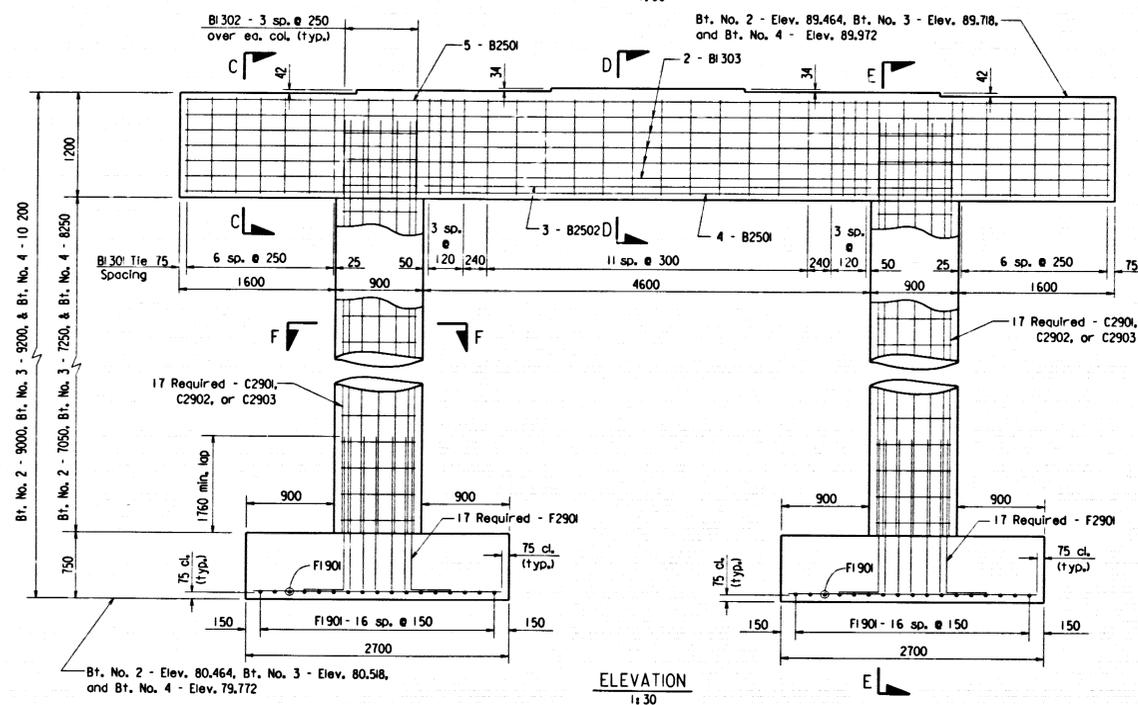
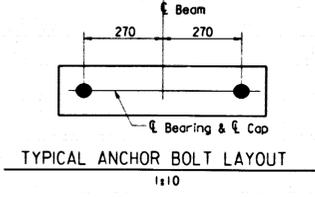


8060779x1.B1

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. 060779	11	119
						06715 BENT DETAILS	39041	

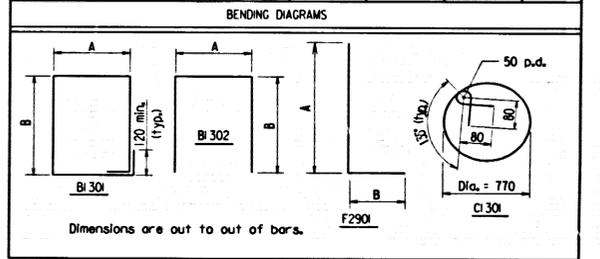


Notes for details of Elastomeric Bearings, see drwg. no. 39058.



BAR LIST

MARK	NUMBER REQUIRED			LENGTH	A	B	PIN. DIA.
	BT. NO. 2	BT. NO. 3	BT. NO. 4				
BI 301	34	34	34	3910	800	1100	50
BI 302	8	8	8	2950	800	1100	50
BI 303	10	10	10	9500	---	---	Str.
B2501	9	9	9	9500	---	---	Str.
B2502	3	3	3	4600	---	---	Str.
C1301	54	56	62	2690	---	---	50
C2901	34	---	---	8070	---	---	Str.
C2902	---	34	---	8270	---	---	Str.
C2903	---	---	34	9270	---	---	Str.
F1901	68	68	68	2550	---	---	Str.
F2901	34	34	34	310	2700	490	228



GENERAL NOTES

Stations and elevations are in meters. All other dimensions are in millimeters unless otherwise noted.

All Concrete shall be Class "S" and shall be poured in the dry. All exposed corners to be chamfered 20 mm unless otherwise noted.

All Reinforcing Steel shall conform to ASTM A615/A615M-96a, Grade 420 (fy = 420 MPa).

If Anchor Bolts are drilled into cap, top reinforcing bars shall be properly placed to avoid damage.

For additional information, see Layout.

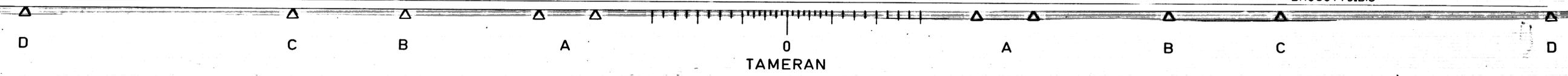


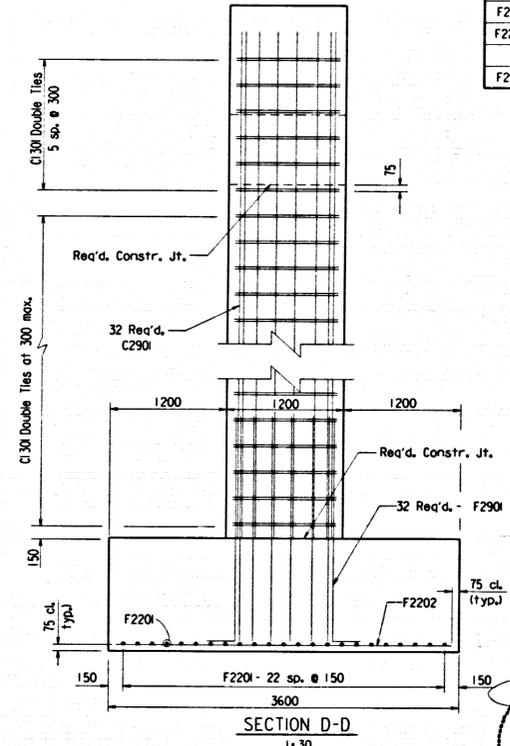
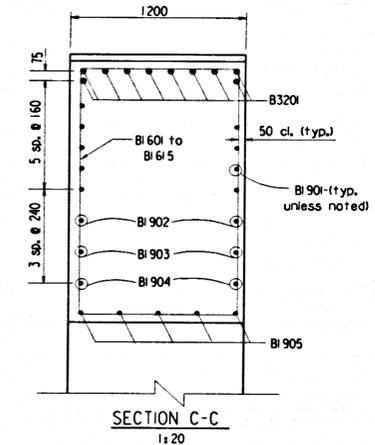
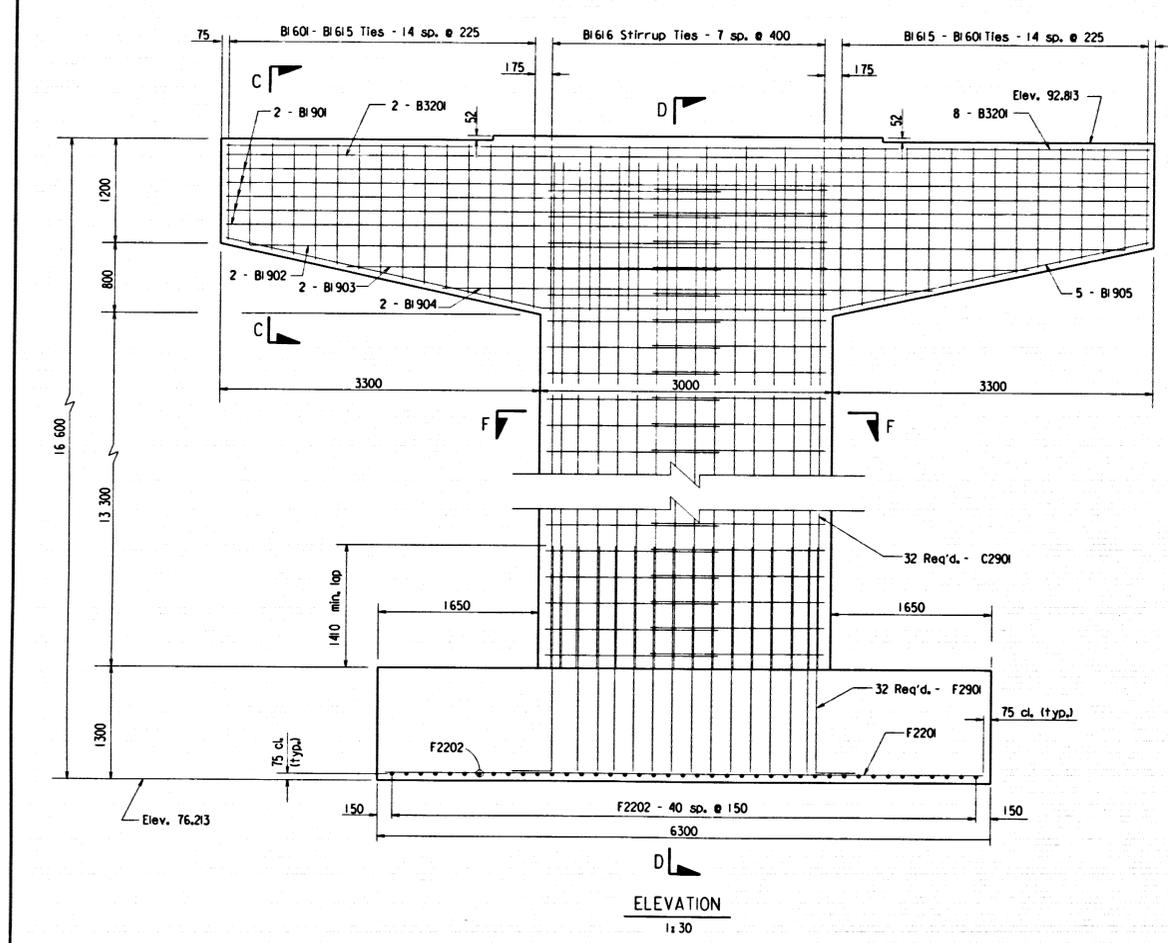
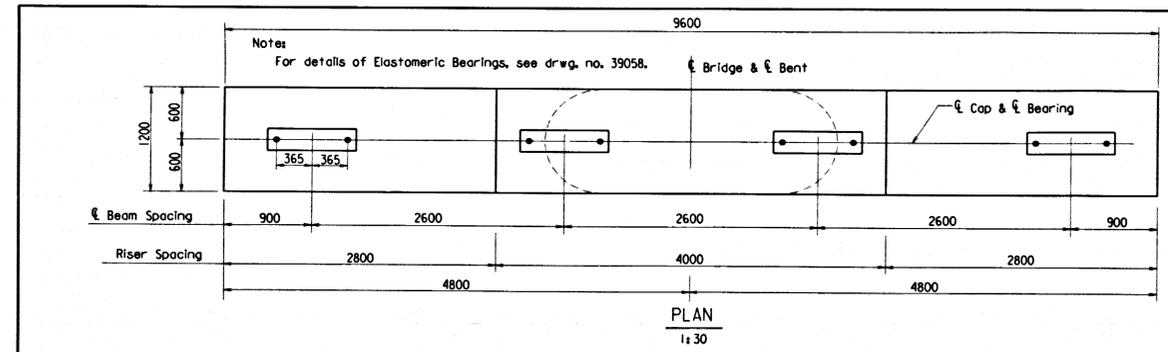
**ALTERNATE NO. 1
DETAILS OF INTERMEDIATE
BENT NOS. 2 THROUGH 4
SALINE RIVER**

ROUTE 229 SEC. 5
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: TEB DATE: 05/05/97
CHECKED BY: *rlw* DATE: 04/15/98 SCALE: As Noted
DESIGNED BY: *AMS* DATE: 2/4/97
BRIDGE NO. 06715 DRAWING NO. 39041

MICROFILMED
AUG 31 1998



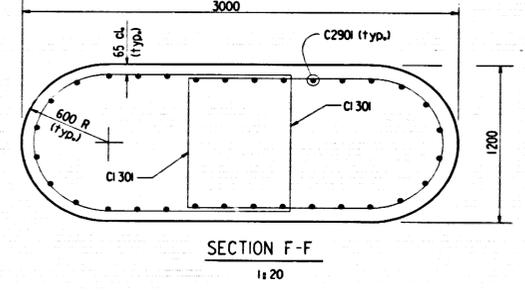


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				6	ARK.			
				JOB NO.	060779		45	119
				06715	BENT DETAILS			39045

BAR LIST

MARK	NO. REQ'D.	LENGTH	A	B	PIN. DIA.	BENDING DIAGRAMS
BI 601 to BI 615	2 of Each	4590 to 6110	1100	1120 to 1880	63	
BI 616	8	4830	1100	1900	63	
BI 901	10	9500			Str.	
BI 902	2	9170			Str.	
BI 903	2	7190			Str.	
BI 904	2	5210			Str.	
BI 905	5	9680	3220	3230	114	
B320I	10	9500			Str.	
C130I	100	5460	1250	1070	76	
C290I	32	15 050			Str.	
F220I	23	6150			Str.	
F2202	4	3450			Str.	
F290I	32	3300	2890	490	228	

Dimensions are out to out of bars.



GENERAL NOTES

Stations and elevations are in meters. All other dimensions are in millimeters unless otherwise noted.

All Concrete shall be Class "S" and shall be poured in the dry. All exposed corners to be chamfered 20 mm unless otherwise noted.

All Reinforcing Steel shall conform to ASTM A615/A615M-96a, Grade 420 (fy = 420 MPa).

If Anchor Bolts are drilled into cap, top reinforcing bars shall be properly placed to avoid damage.

For additional information, see Layout.

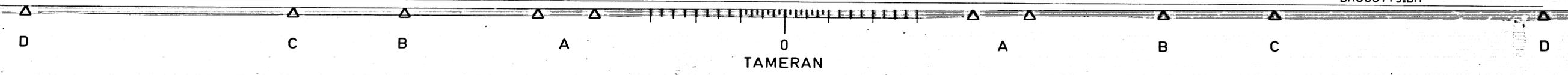


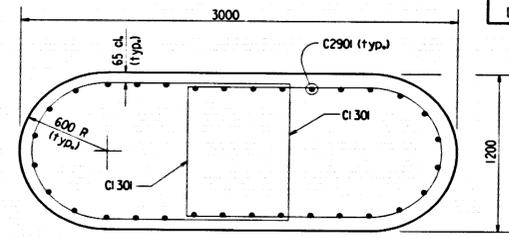
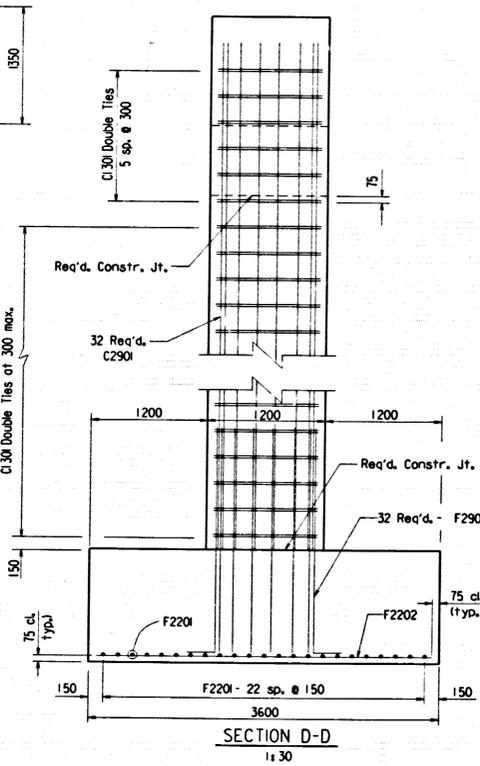
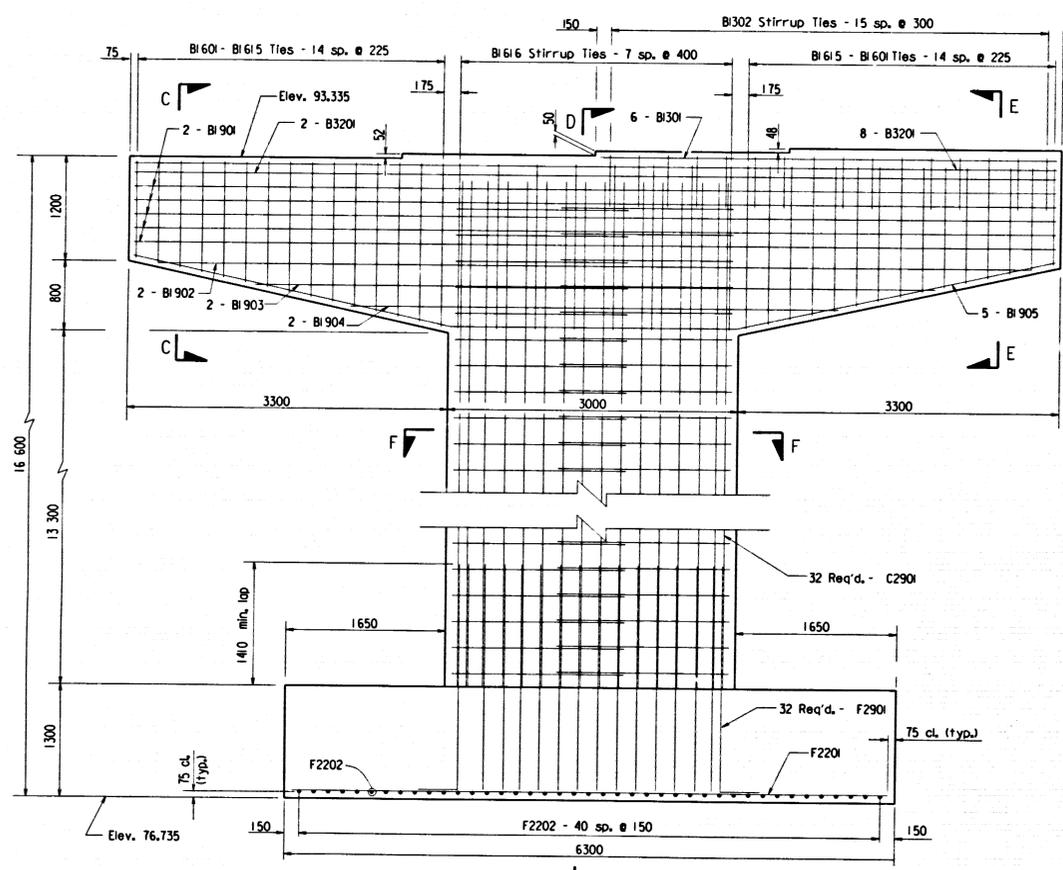
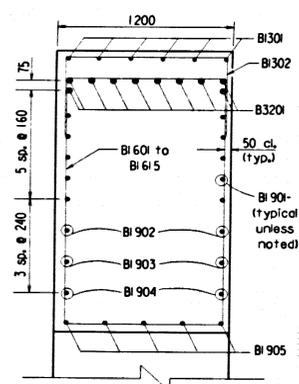
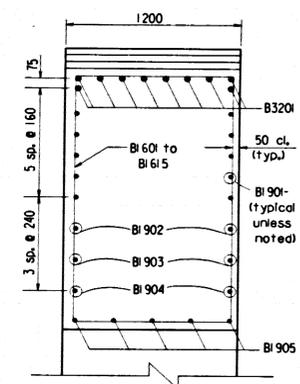
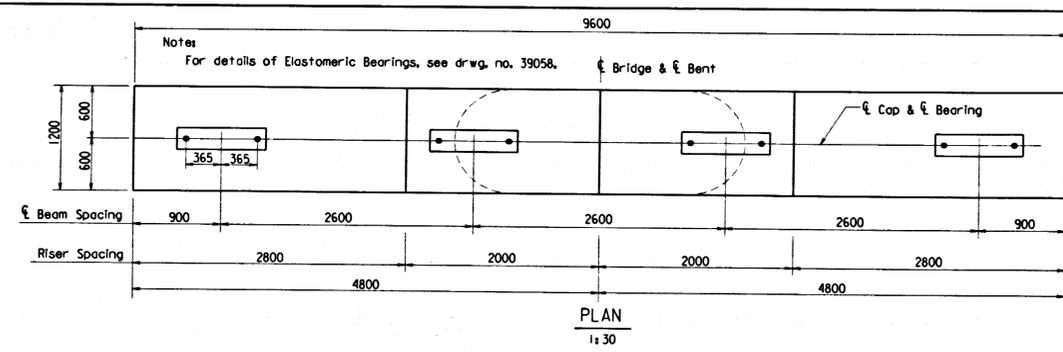
ALTERNATE NOS. 1 & 2
DETAILS OF INTERMEDIATE
BENT NO. 18
SALINE RIVER
ROUTE 229 SEC. 5
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: TEB DATE: 05/22/97
CHECKED BY: R/W DATE: 01/01/98 SCALE: As Noted
DESIGNED BY: AMS DATE: 2/28/97

BRIDGE NO. 06715 DRAWING NO. 39045

MICROFILMED
AUG 3 1 1998





DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	060779	46	119	
				06715 BENT DETAILS		39046		

BAR LIST

MARK	NO. REQ'D.	LENGTH	A	B	PIN. DIA.	BENDING DIAGRAMS
B1301	6	4700			Str.	
B1302	16	2250	1100	600	50	
B1601 to B1615	2	4590	1100	1120	63	
B1615 to B1616	8	610	1100	1880	63	
B1616	8	4830	1100	1900	63	
B1901	10	9500			Str.	
B1902	2	9170			Str.	
B1903	2	7190			Str.	
B1904	2	5210			Str.	
B1905	5	9680	3220	3230	114	
B3201	10	9500			Str.	
C1301	100	5460	1250	1070	76	
C2901	32	15 050			Str.	
F2201	23	6150			Str.	
F2202	41	3450			Str.	
F2901	32	3300	2890	490	228	

Dimensions are out to out of bars.

GENERAL NOTES

Stations and elevations are in meters. All other dimensions are in millimeters unless otherwise noted.

All Concrete shall be Class "S" and shall be poured in the dry. All exposed corners to be chamfered 20 mm unless otherwise noted.

All Reinforcing Steel shall conform to ASTM A615/A615M-96a, Grade 420 (fy = 420 MPa).

If Anchor Bolts are drilled into cap, top reinforcing bars shall be properly placed to avoid damage.

For additional information, see Layout.

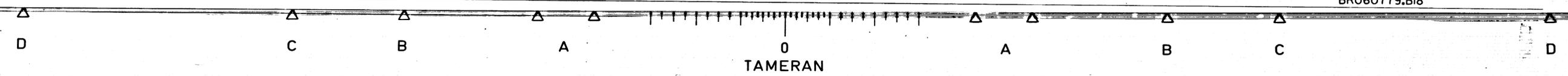
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DETAILS OF INTERMEDIATE
BENT NO. 19
SALINE RIVER
ROUTE 229 SEC. 5
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
DALE F. LOW
BRIDGE ENGINEER

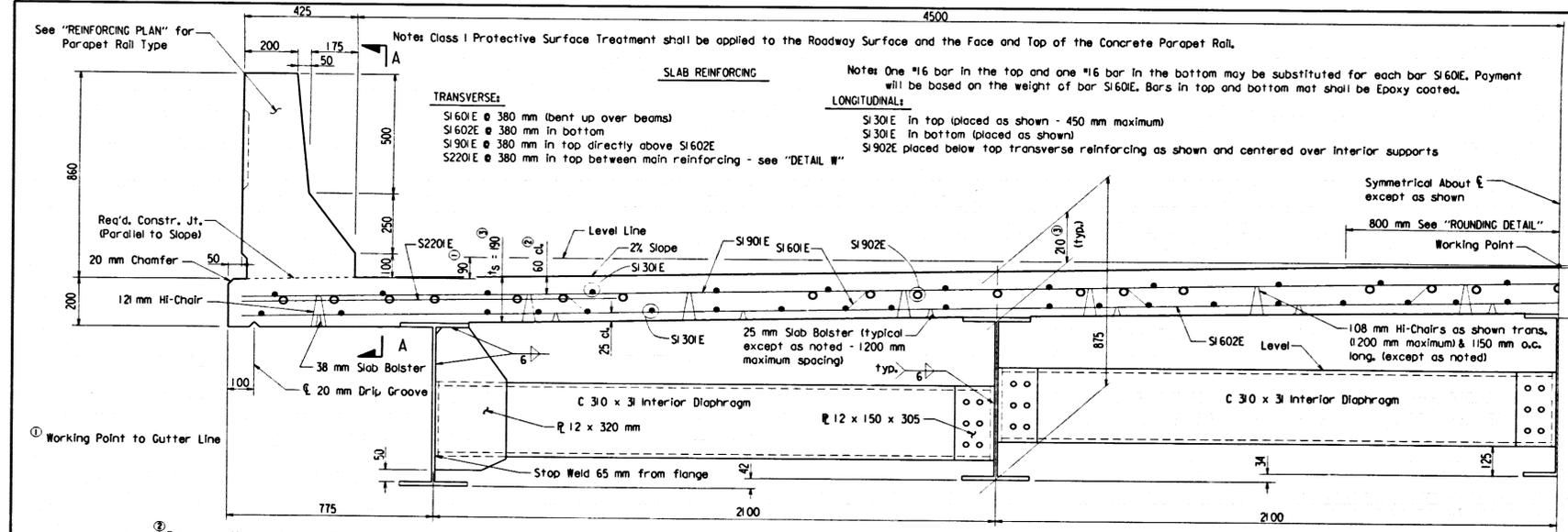
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CHECKED BY: R/ls DATE: 07/14/98 SCALE: As Noted
DESIGNED BY: A/S DATE: 2/28/97
BRIDGE NO. 06715 DRAWING NO. 39046

BR060779.B18

MICROFILMED
AUG 3 1 1998



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	060779		48	119
				06715 SPAN DETAILS		39048		



GENERAL NOTES

All dimensions are in millimeters (mm) unless otherwise noted.

The superstructure details shown are for when removable deck forming is used and are the basis for measurement of Class S(AE) Concrete. See Standard Drawing No. 36515 for allowable modifications and for tolerances when permanent steel bridge deck forms are used.

All Structural Steel shall be AASHTO M 270, Grade 345W unless otherwise noted and shall be paid for at the unit price per kilogram bid for "STRUCTURAL STEEL IN BEAM SPANS (M270, Gr. 345W)". Grade 345W steel shall not be painted. All exposed surfaces to be cleaned in accordance with subsection 807.84(e) of the Standard Specifications. Structural steel completely embedded in concrete may be AASHTO M 270, Gr. 250.

Beams are considered main load carrying members and shall meet the Longitudinal Charpy V-Notch Test specified in Section 807.05.

Construction Specifications: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (1996 Edition) with applicable supplemental specifications and special provisions.

Design Specifications: AASHTO 1996 with current Interim specifications.

Live loading: MS18 Method of Design: Load Factor

Dead Loads	Interior Beam	Exterior Beam
A. To W-Beam	9.40 kN/m + 8.44 kN/m + L3 (Wt./m of W-Bm)	8.44 kN/m + L3 (Wt./m of W-Bm)
B. To Composite Beam	4.33 kN/m +	4.33 kN/m +

Live Loads To Each composite beam: L253 wheels + impact; L204 wheels + impact

* Includes 2.07 kN/m future wearing surface

Material Strengths:
 Class S(AE) Concrete (N = 8) $f_c = 28.0$ MPa
 Reinforcing Steel (ASTM A615/A615M - 96a) $f_y = 420$ MPa
 Structural Steel AASHTO M 270 (Gr. 250) $f_y = 250$ MPa
 Structural Steel AASHTO M 270 (Gr. 345W) $f_y = 345$ MPa

For additional notes, see drwg. no. 39049.

Note: All Bars designated with an "E" suffix are to be Epoxy Coated.

① Working Point to Gutter Line

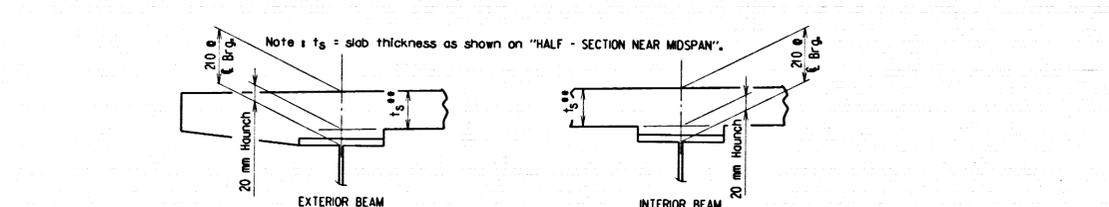
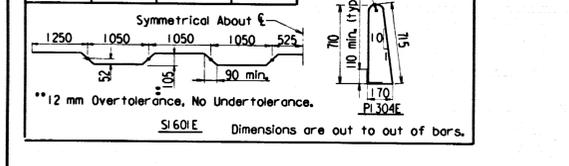
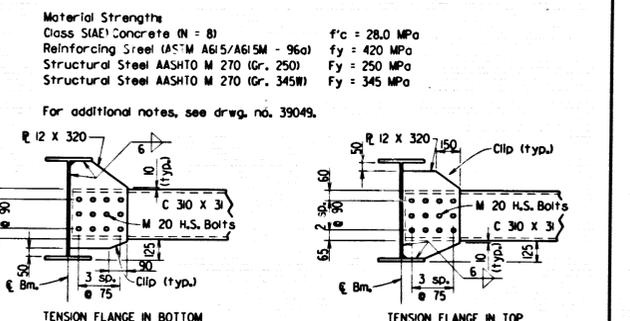
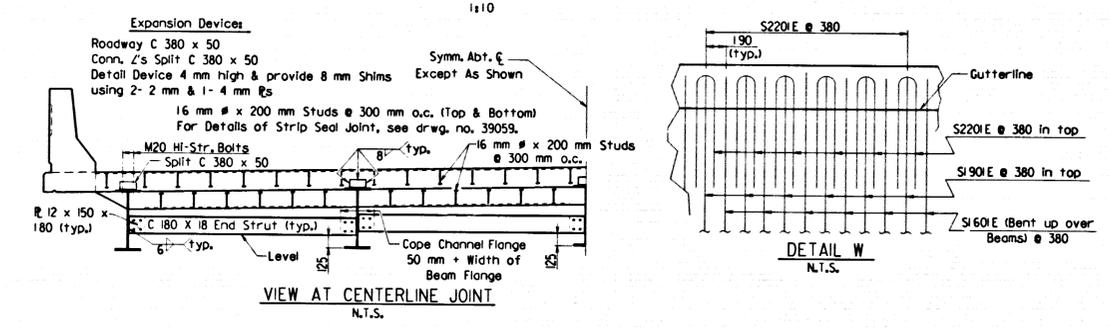
② Tolerances Minus = 6 mm
 Plus = The amount of slab thickening used to meet slab thickness tolerance, see "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED".

③ See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED".

Note: All Bars designated with an "E" suffix are to be Epoxy Coated.

BAR LIST - PER UNIT

MARK	NUMBER REQUIRED	LENGTH	PIN DIA.	BENDING DIAGRAMS
PI 301E	456	1930	50	
PI 302E	456	1680	50	
PI 303E	196	950	50	
PI 304E	196	1780	50	
PI 305E	112	3600	Str.	
PI 306E	48	2100	Str.	
PI 307E	48	1750	Str.	
PI 901E	140	3600	Str.	
SI 301E	384	11750	Str.	
SI 601E	178	10110	76	
SI 602E	179	9850	Str.	
SI 901E	179	9800	Str.	
SI 902E	105	8600	Str.	
S2201E	352	3490	168	



DIAPHRAGM CONNECTIONS AT EXTERIOR BEAMS

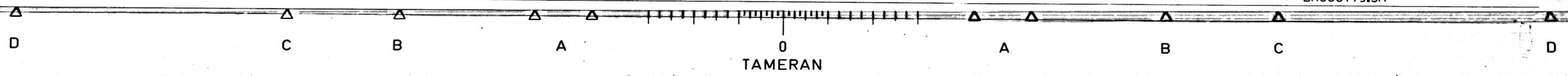
N.T.S.

ALTERNATE NO. 1
 (SHEET 1 OF 3)
 DETAILS OF
 68 METER CONTINUOUS
 W-BEAM UNIT
 SALINE RIVER
 ROUTE 229 SEC. 5
 ARKANSAS STATE HIGHWAY COMMISSION
 LITTLE ROCK, ARK.

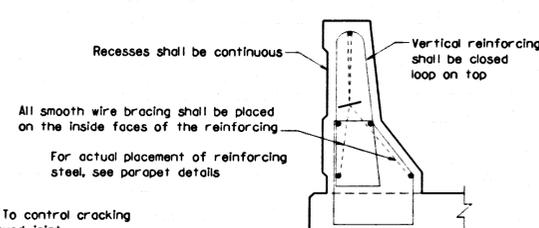
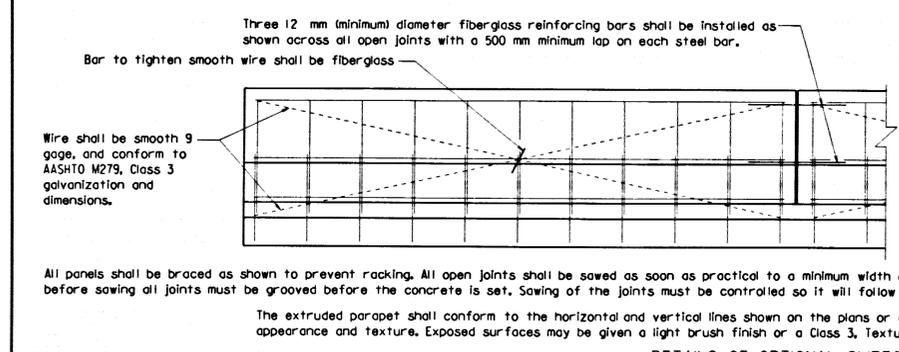
BRIDGE ENGINEER: [Signature]

DATE: 02/20/97
 CHECKED BY: AMS
 DESIGNED BY: AMS
 BRIDGE NO. 06715 DRAWING NO. 39048

MICROFILMED
 AUG 31 1998



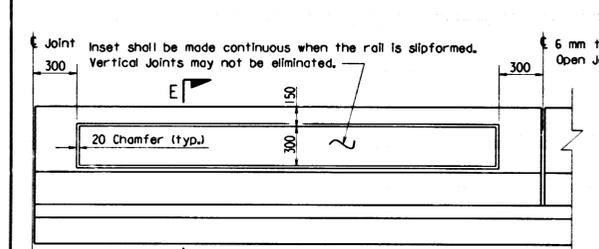
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						060779	42	119
						06715	SPAN DETAILS	39049



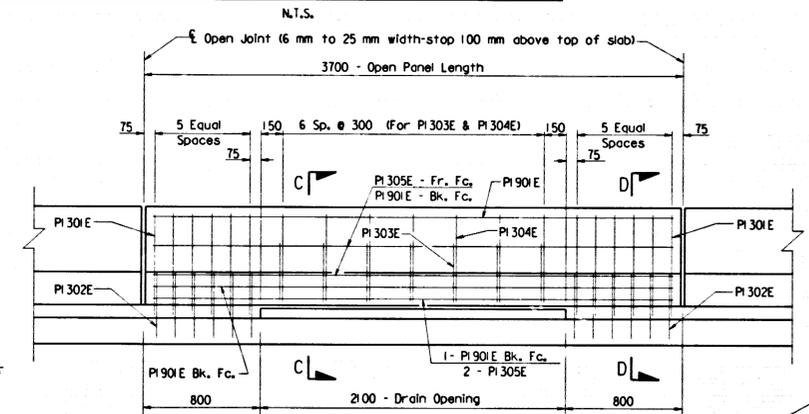
All panels shall be braced as shown to prevent racking. All open joints shall be sawed as soon as practical to a minimum width of 6 mm. To control cracking before sawing all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.

The extruded parapet shall conform to the horizontal and vertical lines shown on the plans or as directed by the Engineer and shall present a smooth, uniform appearance and texture. Exposed surfaces may be given a light brush finish or a Class 3, Textured Coating Finish, in place of Class 2, Rubbed Finish.

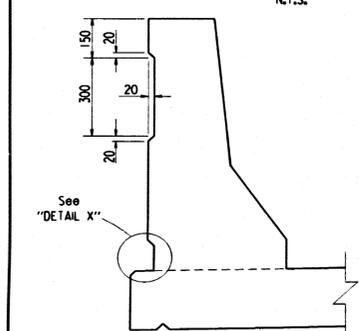
DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL



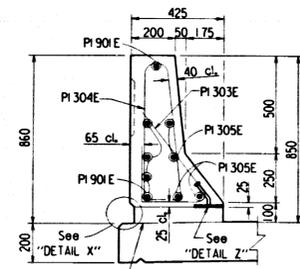
DETAILS OF PARAPET ENHANCEMENT
N.T.S.



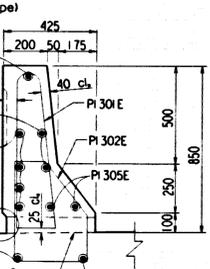
SECTION A-A (TYPICAL 3700 mm OPEN PANEL)



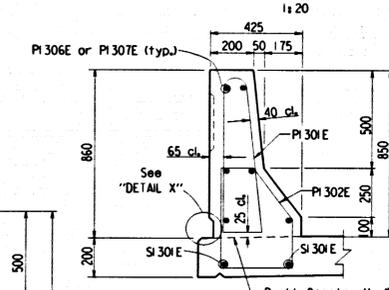
SECTION E-E
N.T.S.



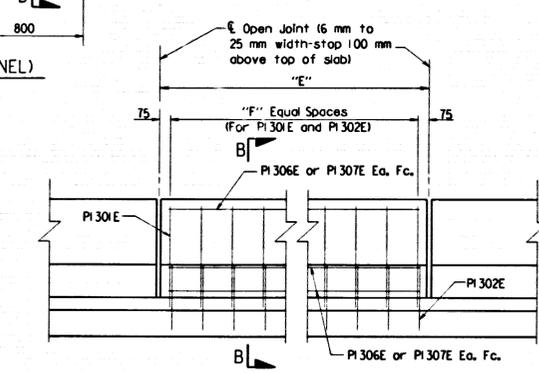
SECTION C-C
N.T.S.



SECTION D-D
N.T.S.



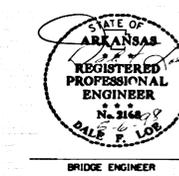
SECTION B-B
N.T.S.



SECTION A-A (TYPICAL CLOSED PANEL)

TABLE OF CLOSED PARAPET VARIABLES

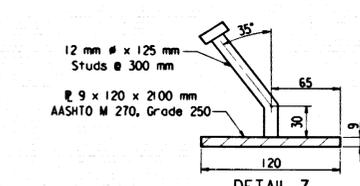
PANEL LENGTH "E"	"F"	LONGITUDINAL REINFORCING
2200	7	PI 306E
1850	6	PI 307E



STRUCTURAL STEEL:
All Beams shall be blocked in their true position in the shop and with the webs horizontal. See Section 807.54 (b)(1) of the Standard Specifications. The camber, length of sections, distance between bearings, and openings of joints shall be measured with the Beams in their true position and this information shall become a part of the permanent records of this job. The component parts shall be match marked in this assembly and these marks shall be shown on the erection diaphragm. All Beam dimensions are based on a temperature 16°C. A tolerance of ± 6 mm is allowed for camber. Flange field splice plates shall be cut and fabricated so that the primary direction of rolling is parallel to the main tensile and/or compressive stress. Structural shapes of equal or greater strength may be substituted for shapes shown if approval is obtained from the Bridge Engineer. Payment will be made on the basis of shapes shown. Field connections shall be bolted with high strength bolts and shall be M20 bolts unless otherwise noted. Bolts shall be placed with heads on the outside face of the exterior beam webs and on bottom of beam flanges. Holes for M20 high strength bolts in expansion device, diaphragms, and end struts may be 24 mm # if a washer is supplied for use under both the nut and the head of the bolt. Steel Diaphragms and End Struts shall be installed as beams are erected and shall be completely bolted prior to pouring of the concrete deck. All welding that is to be done during fabrication of structural steel, including temporary welds shall be detailed on the shop drawings and submitted for approval. If the contractor or erector should want to make additional welds, whether temporary or permanent, he shall submit detailed drawings with a formal request to the Bridge Engineer of the Arkansas State Highway and Transportation Department for approval. All welding shall conform to subsection 807.26 of the Standard Specifications. Bearings shall be seated in accordance with subsection 808.08 of the Standard Specifications. This work and material are to be considered as subsidiary to the item "ELASTOMERIC BEARINGS" and will not be paid for directly. 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.

CONCRETE:
All concrete shall be Class 5(AE) with a minimum 28 day compressive strength of 28.0 MPa and shall be poured in the dry. All exposed corners shall be chamfered 20 mm unless otherwise noted. Concrete shall be placed and consolidated for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent. Sufficient concrete must be placed ahead of the strike-off to fully load the beams. If a longitudinal strike-off is used, a vertical camber adjustment must be made in the strike-off to account for the future dead load deflection caused by the rolling. Movement of the finishing machine across the new concrete shall be on planks placed on the surface and is prohibited for 72 hours after finishing the pour. A minimum of 72 hours shall elapse between completion of the slab and the pouring of the parapet railing. The bridge deck shall be given a fine finish as specified for final finishing in subsection 802.19 for a Class 5 Tined Bridge Roadway Surface Finish.

REINFORCING STEEL:
The reinforcing steel shall be accurately located in the forms and firmly held in place by steel wire supports sufficient in size and number 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 "REINFORCING STEEL-BRIDGE".



DETAIL Z
N.T.S.

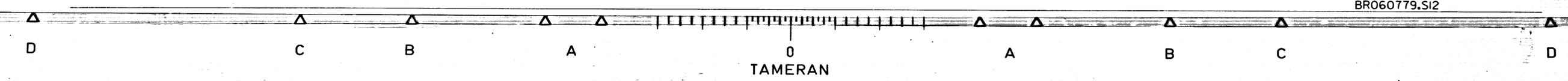
Notes:
The Surfaces of the 9 mm Plates which will not be in contact with concrete shall be painted in accordance with Section 638, or as approved by the Engineer. Only one coat is required and shall be applied in the fabricator's shop. Painting will not be paid for directly, but will be considered subsidiary to Structural Steel or Class 5 (AE) Concrete-Bridge.

**ALTERNATE NO. 1
(SHEET 2 OF 3)
DETAILS OF
68 METER CONTINUOUS
W-BEAM UNIT
SALINE RIVER**

ROUTE 229 SEC. 5
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
DRAWN BY: TEB DATE: 02/20/97
CHECKED BY: AHS DATE: 4/18/97
DESIGNED BY: AHS DATE: 4/17/96
BRIDGE NO. 06715 DRAWING NO. 39049

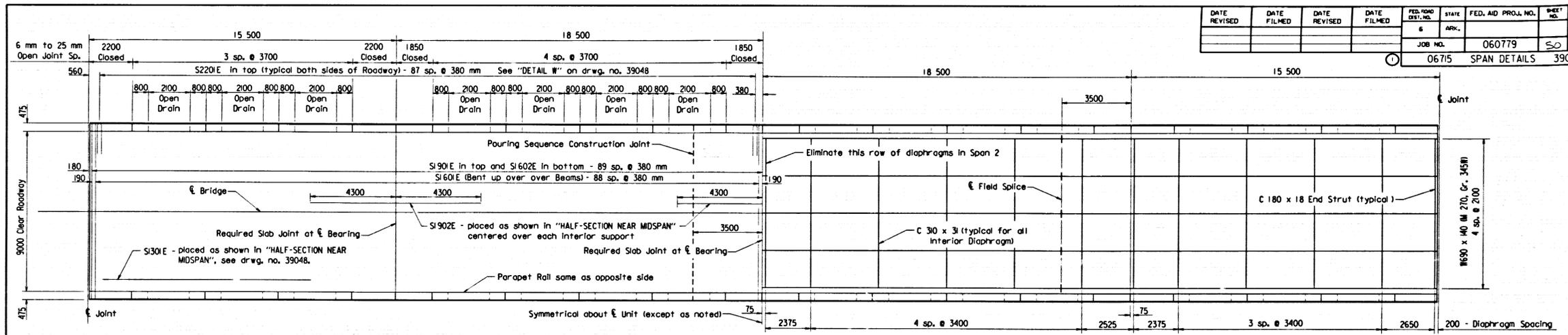
BRO60779.S12

MICROFILMED
AUG 3 1 1998



TAMERAN

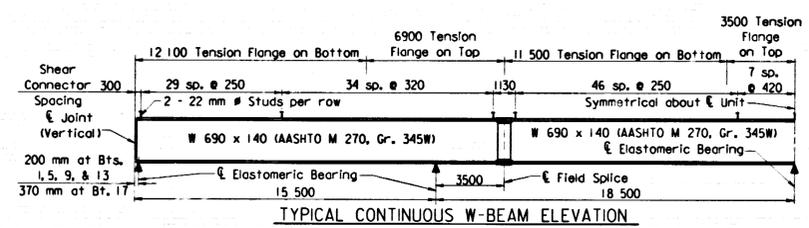
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				6	ARK.			
JOB NO. 060779							50	119
06715 SPAN DETAILS							39050	



REINFORCING AND FRAMING PLAN
1:100

DEAD LOAD DEFLECTIONS (mm)

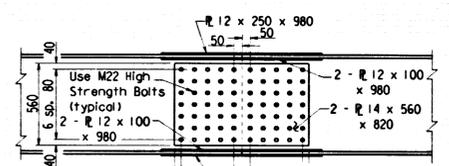
Span Point	L0	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11	L12	L13	L14	L15	L16	L17	L18	L19	L20	L21	L22	L23	L24	L25	L26	L27	L28	L29	L30
Interior Beam	0	1	1	2	2	2	1	1	1	0	0	0	1	1	2	2	2	1	1	0	0	0	1	1	2	2	2	1	1	0	0
Beam, Diaphragm, & Slab	0	5	8	11	12	12	10	7	4	1	0	2	5	8	11	12	11	9	5	2	0										
Beam, Diaphragm, Slab & Parapet	0	5	9	12	13	13	11	8	4	1	0	2	6	10	13	14	13	10	6	2	0										
Exterior Beam	0	1	1	1	2	2	1	1	1	0	0	0	1	1	2	2	2	1	1	0	0										
Beam, Diaphragm, & Slab	0	4	8	10	11	11	9	6	4	1	0	1	4	8	10	11	10	8	5	1	0										
Beam, Diaphragm, Slab & Parapet	0	5	8	11	12	12	10	7	4	1	0	2	5	9	11	12	12	9	5	2	0										



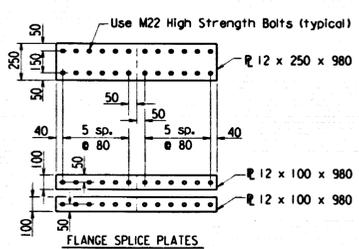
TYPICAL CONTINUOUS W-BEAM ELEVATION
N.T.S.

Stud Shear Connectors shown shall be 22 mm # x 100 mm long, granular flux filled, solid fluxed or equal, and automatically end welded to the beam flange in accordance with the recommendations of the Manufacturer. 20 mm # studs may be used in place of the 22 mm # studs shown, at the ratio of 1.361 - 20 mm # studs in place of one 22 mm # stud. 22 mm # studs will be used as basis for measurement of structural steel in shear connectors. Maximum stud spacing = 600 mm.

SHEAR CONNECTOR DETAIL
N.T.S.



Notes: All Splice Plates to be AASHTO M 270, Gr. 345W.



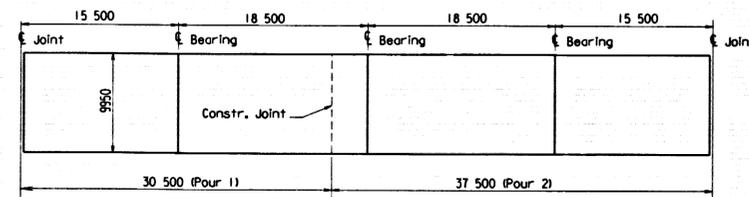
TYPICAL FIELD SPICE
N.T.S.

Notes: Bolted Field Splices shown may be eliminated or a shop welded splice may be substituted with approval of the Bridge Engineer. Payment will be made on the basis of the bolted splices shown.

Notes: Pour 1 must be placed before Pour 2 can be placed. A minimum of 72 hours shall elapse between pours. Any ralling pours made before the entire slab unit has been placed must be approved by the Bridge Engineer.

Concrete in bridge superstructure shall be consolidated for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

The contractor must obtain approval from the Bridge Engineer for any deviations from the pouring sequence shown.

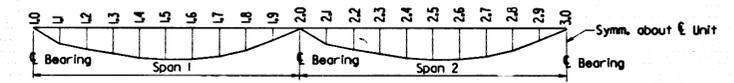


POURING SEQUENCE
N.T.S.

TABLE FOR WELD

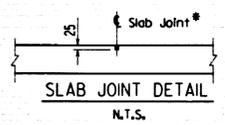
Material Thickness of Thicker Part Joined	Minimum Size of Fillet Weld	Single Pass Weld Must Be Used
To 20 mm inclusive	6 mm	
Over 20 mm	8 mm	

Notes: When a fillet weld size, as shown on the Plans, is larger than the minimum, the First Pass shall be that specified for minimum size of fillet weld.



DEAD LOAD DEFLECTION DIAGRAM
N.T.S.

Notes: Camber for Dead Load Deflection ± 6 mm tolerance. Deflections shown are from a chord from Centerline Bearing to Centerline Bearing.



SLAB JOINT DETAIL
N.T.S.

* 12 mm x 25 mm Type 6 Joint Sealer. See Sections 50L.02 (b) and 50L.05 (l) of the Standard Specifications. Joint Sealer shall be measured and paid for as Class S(AE) Concrete-Bridge. Slab joints shall extend to the outside edge of the deck slab. Slab joints shall be installed before the parapet railing is poured. If slab joints are to be sawed, they shall be sawed before any vehicular traffic is allowed on the unit. Slab joints shall be placed at all pouring sequence construction joints and required slab joint locations.

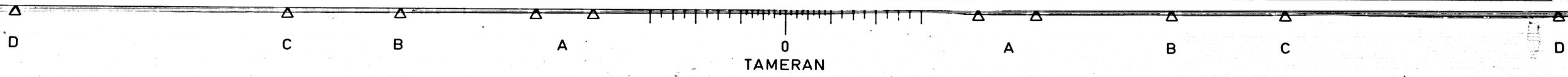


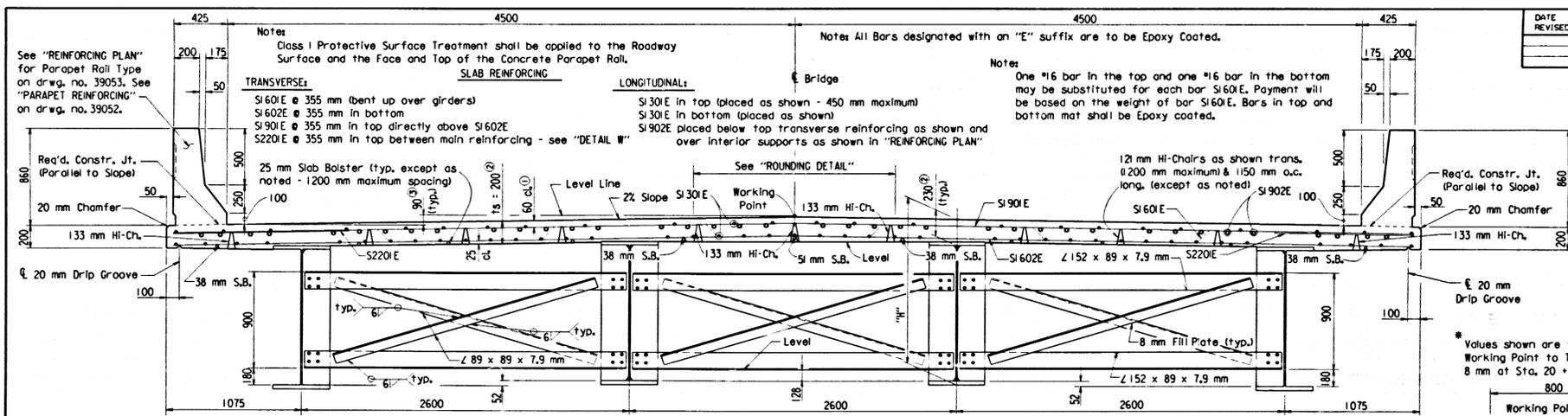
ALTERNATE NO. 1
(SHEET 3 OF 3)
DETAILS OF
68 METER CONTINUOUS
W-BEAM UNIT
SALINE RIVER
ROUTE 229 SEC. 5
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: TEB DATE: 02/20/97
CHECKED BY: AMS DATE: 6/19/97 SCALE: As Noted
DESIGNED BY: AMS DATE: 12/17/96
BRIDGE NO. 06715 DRAWING NO. 39050

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AUG 3 1 1998

BR060779.SI3





DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		51	114
				JOB NO.		060779		51
				06715		SPAN DETAILS		39051

Notes: All bars designated with an "E" suffix are to be Epoxy Coated.

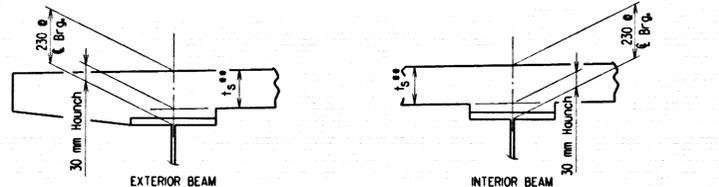
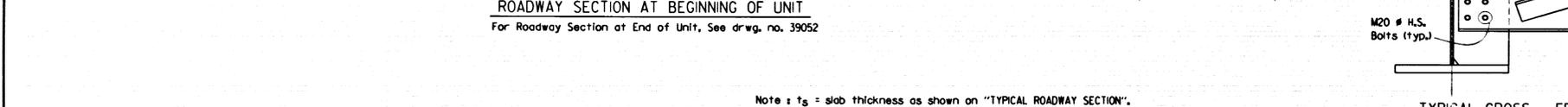
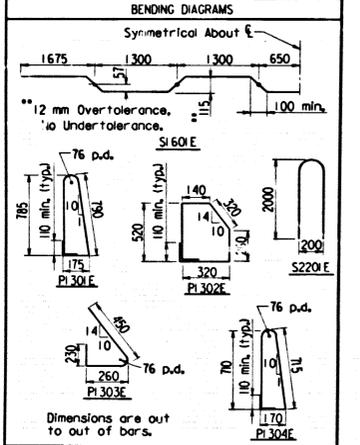
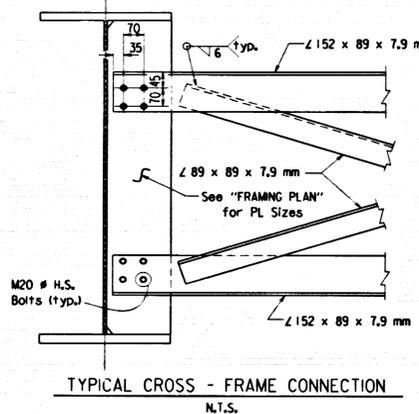
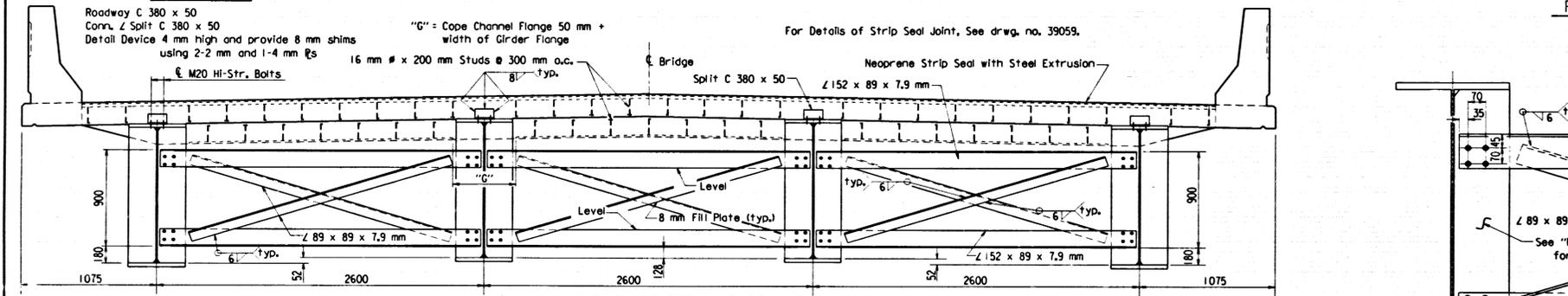
BAR LIST - PER UNIT

MARK	NUMBER REQUIRED	LENGTH	PIN. DIA.
Pl 301E	715	1930	50
Pl 302E	715	1680	50
Pl 303E	246	950	50
Pl 304E	246	1780	50
Pl 305E	164	3400	Str.
Pl 306E	36	1900	Str.
Pl 307E	24	1400	Str.
Pl 308E	18	3400	Str.
Pl 309E	48	3900	Str.
Pl 901E	205	3400	Str.
Pl 301E	585	11780	Str.
Sl 601E	287	10070	76
Sl 602E	288	9850	Str.
Sl 901E	288	9800	Str.
Sl 902E	76	18220	Str.
S220E	453	4100	156

① Tolerance: Minus = 6 mm
Plus = The amount of slab thickening used to meet slab thickness tolerance, see "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED".

② Refer to "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED"

③ Working Point to Gutterline
"H" = 1430 mm + Bottom Flange Thickness

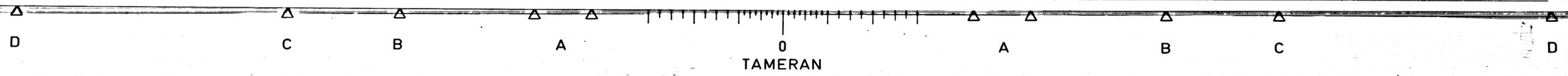


**Tolerance when removable deck forming is used is +12 mm, -6 mm, Haunch forming is required and shall be adjusted to maintain slab thickness tolerance. Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance: Minimum - occurs when top flange contacts bottom reinforcing steel; Maximum - top flange thickness plus 45 mm. No increase in concrete and structural steel quantities will be made to maintain tolerances. Tolerances shown are applicable only when removable deck forming is used. See Std. Draw. No. 36515 for tolerances when permanent steel deck forms are used. Payment for concrete shall be based on removable deck forming.



ALTERNATE NOS. 1 & 2
(SHEET 1 OF 6)
DETAILS OF
102 METER CONTINUOUS
PLATE GIRDER UNIT
SALINE RIVER
ROUTE 229 SEC. 5
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
DRAWN BY: TEB DATE: 02/20/91
CHECKED BY: AMS DATE: 6/6/97
DESIGNED BY: AMS DATE: 12/11/96
BRIDGE NO. 06715 DRAWING NO. 39051

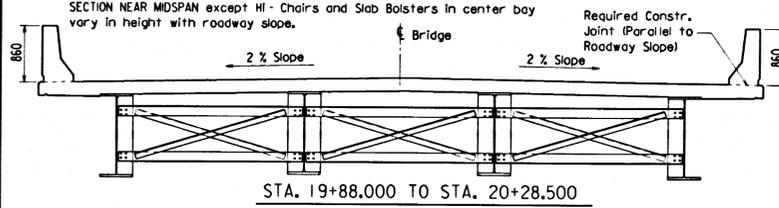
MICROFILMED
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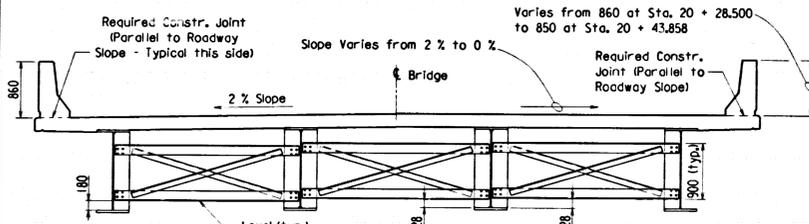
Notes

See Layout for Method of Superelevation Transition.

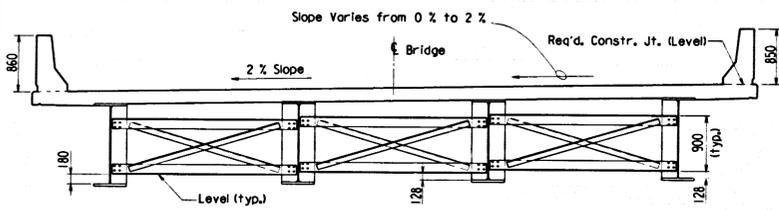
For Details not otherwise shown, see the applicable Roadway Sections on drwg. no. 39051. Slab Reinforcing is same as shown in TYPICAL ROADWAY SECTION NEAR MIDSPAN except HI-Chairs and Slab Bolsters in center bay vary in height with roadway slope.



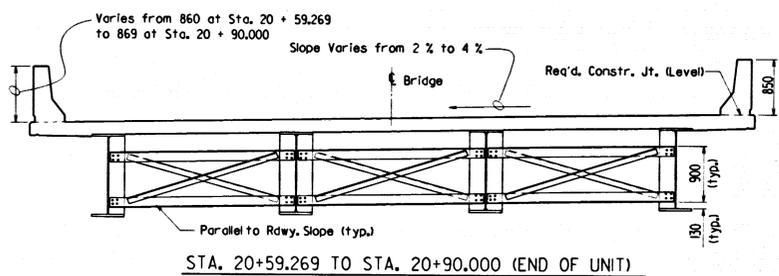
STA. 19+88.000 TO STA. 20+28.500



STA. 20+28.500 TO STA. 20+43.858

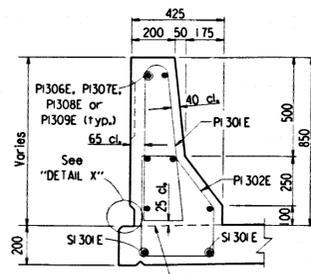


STA. 20+43.858 TO STA. 20+59.269

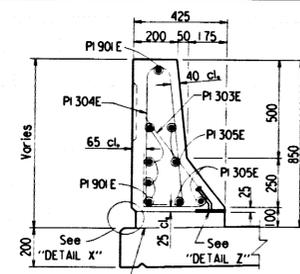


STA. 20+59.269 TO STA. 20+90.000 (END OF UNIT)

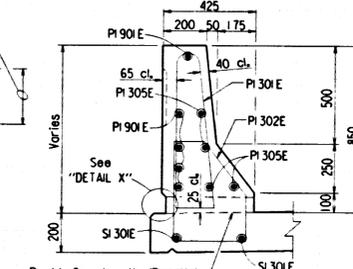
ROADWAY CROSS - SLOPE TRANSITION (LOOKING AHEAD)



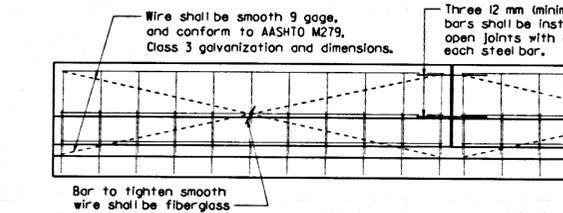
SECTION B-B



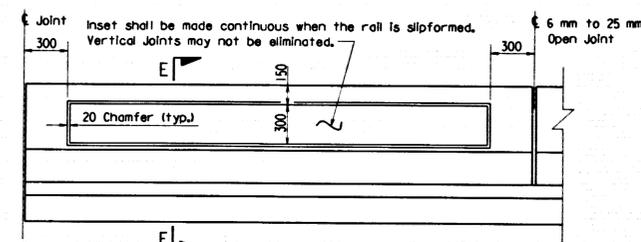
SECTION C-C



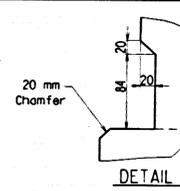
SECTION D-D



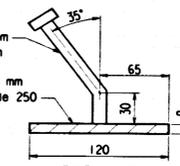
DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL



DETAILS OF PARAPET ENHANCEMENT



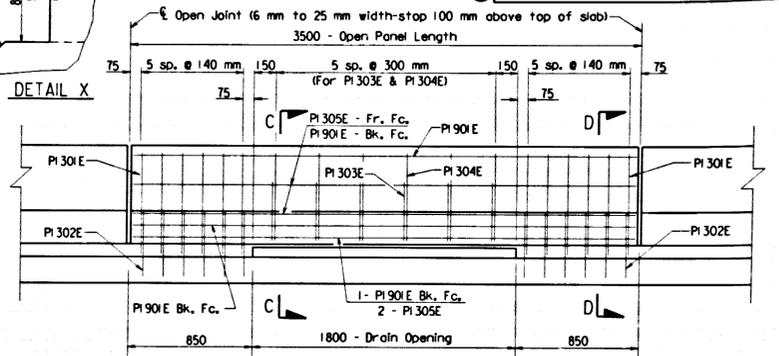
DETAIL X



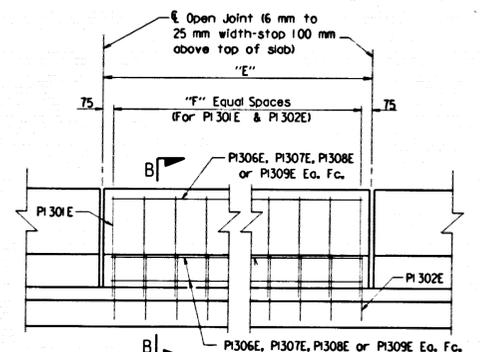
DETAIL Z

Notes
The Surfaces of the 9 mm 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 5 (AE) Concrete-Bridge.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO. 060779							52	119
06715 SPAN DETAILS							39052	



TYPICAL OPEN PANEL PARAPET RAIL



TYPICAL CLOSED PANEL PARAPET RAIL

TABLE OF CLOSED PARAPET VARIABLES

PANEL LENGTH "E"	"F"	LONGITUDINAL REINFORCING
2000	7	PI 306E
1500	5	PI 307E
3500	12	PI 308E
4000	13	PI 309E

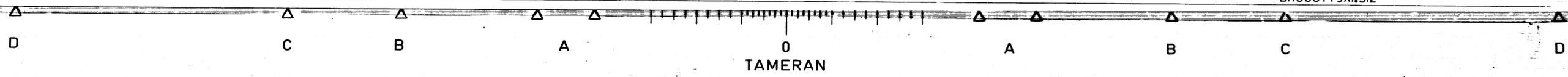
ALTERNATE NOS. 1 & 2
(SHEET 2 OF 6)
DETAILS OF
102 METER CONTINUOUS
PLATE GIRDER UNIT
SALINE RIVER

ROUTE 229 SEC. 5
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: TEB DATE: 02/20/97
CHECKED BY: AMS DATE: 6/16/97 SCALE: No Scale
DESIGNED BY: AMS DATE: 12/1/96
BRIDGE NO. 06715 DRAWING NO. 39052



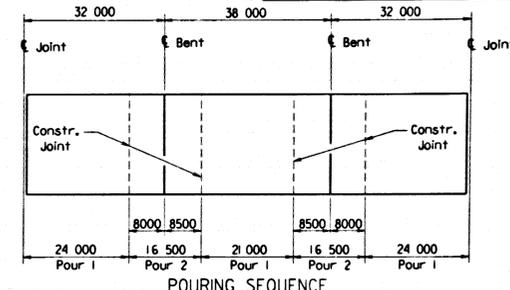
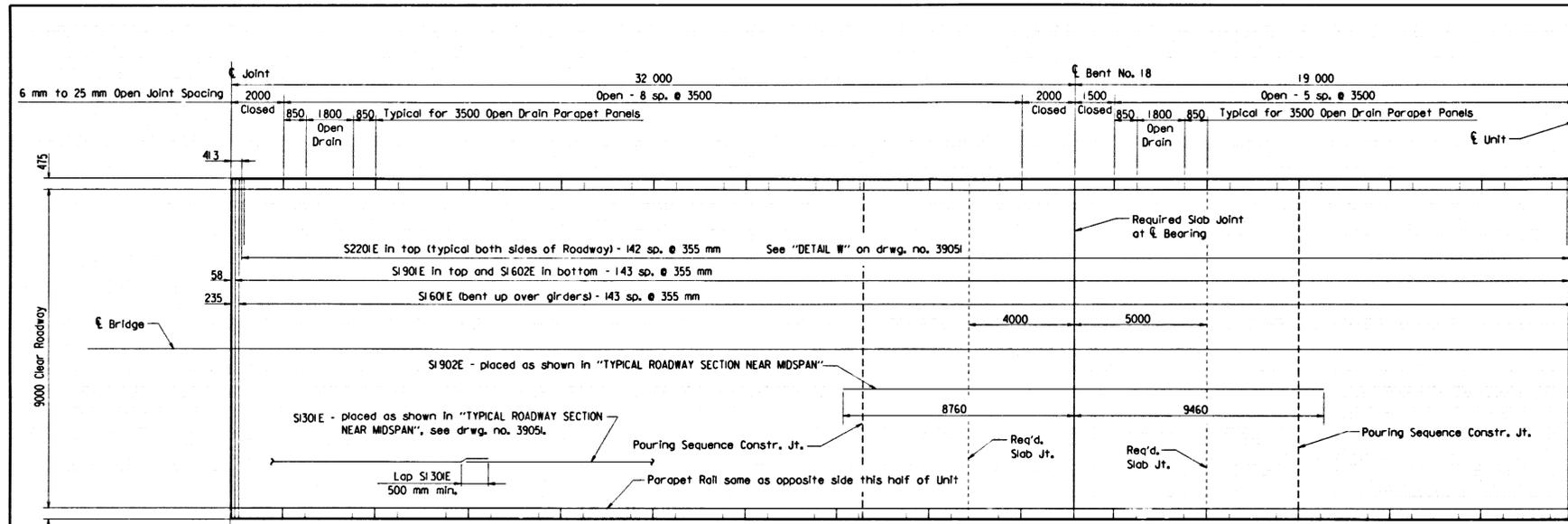
MICROFILMED
AUG 3 1 1998



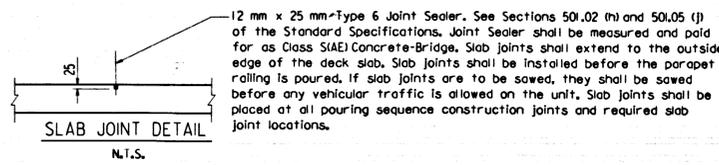
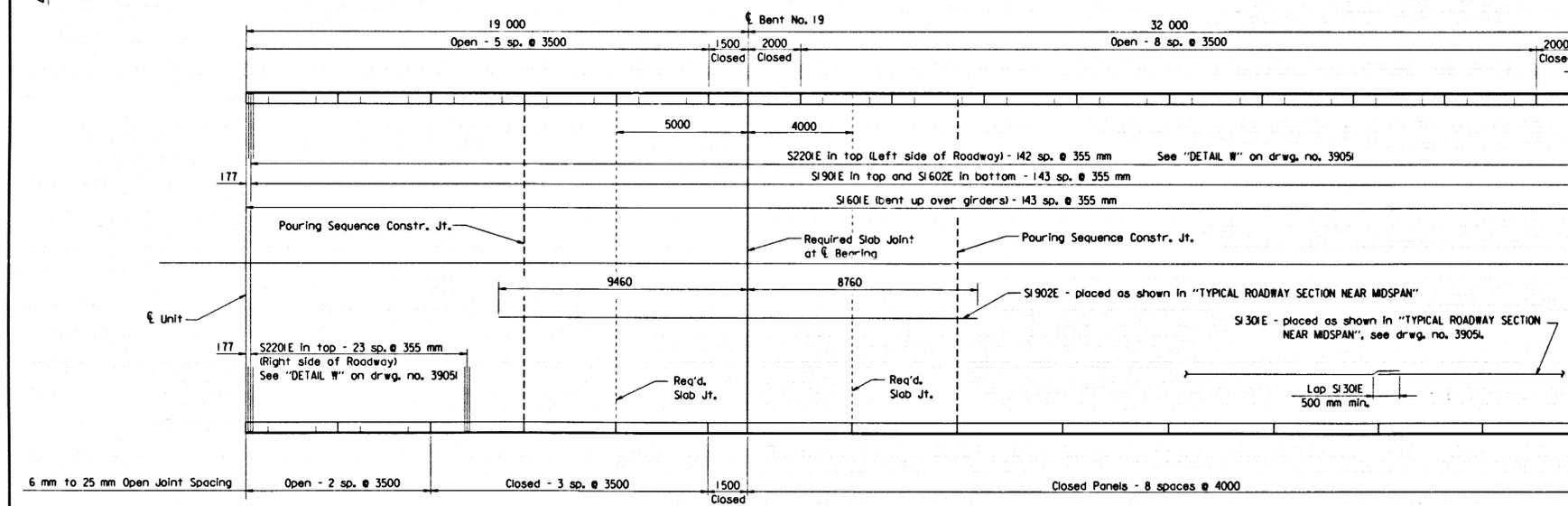
BR060779XLSI2

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						060779	53	119

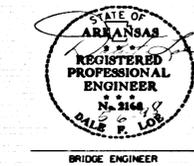
06715 SPAN DETAILS 39053



Notes
 Pours with the same number may be placed simultaneously or separately. All Pours (1) must be placed before Pours (2) can be placed, 48 hours shall elapse between the end of a pour and the start of the next pour, 72 hours shall elapse between the end of a pour and the start of an adjacent pour. Any ralling pours made before the entire slab unit has been placed must be approved by the Bridge Engineer.
 Concrete in bridge superstructure shall be consolidated for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.
 The Contractor must obtain approval from the Bridge Engineer for any deviations from the pouring sequence shown.

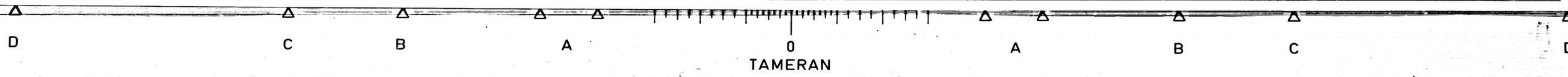


REINFORCING PLAN



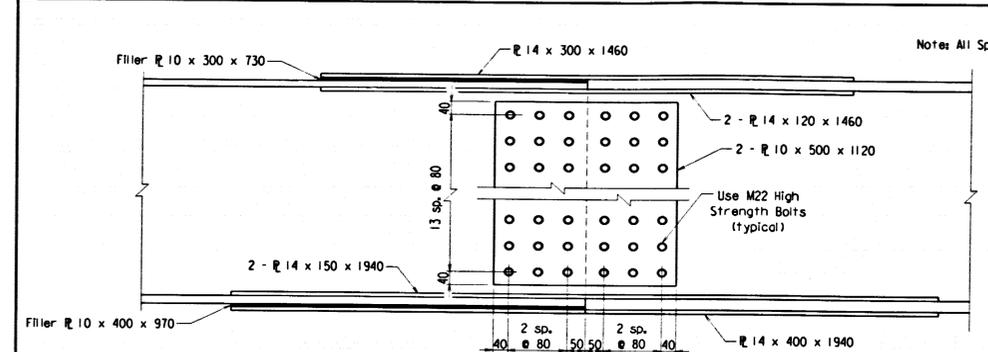
ALTERNATE NOS. 1 & 2
 (SHEET 3 OF 6)
 DETAILS OF
 102 METER CONTINUOUS
 PLATE GIRDER UNIT
 SALINE RIVER
 ROUTE 229 SEC. 5
 ARKANSAS STATE HIGHWAY COMMISSION
 LITTLE ROCK, ARK.
 DRAWN BY: TEB DATE: 02/20/97
 CHECKED BY: AMS DATE: 6/6/97
 DESIGNED BY: AMS DATE: 12/11/96
 BRIDGE NO. 06715 DRAWING NO. 39053

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 AUG 3 1 1998

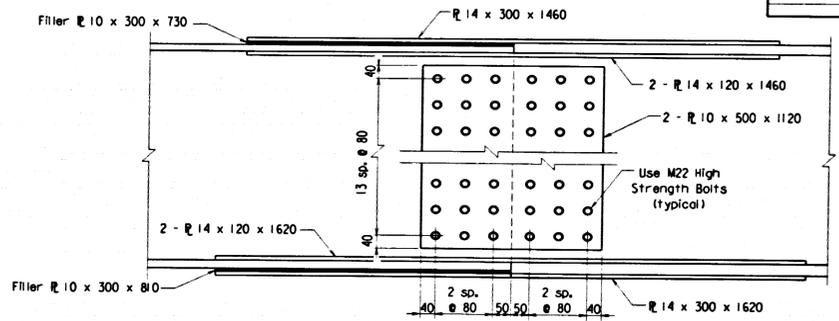


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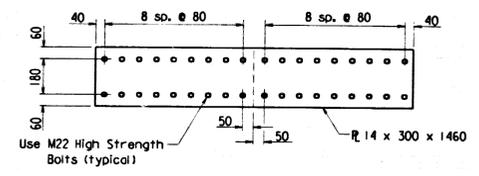
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				6	ARK.			
				JOB NO.	060779		SS	119
				06715	SPAN DETAILS		39055	



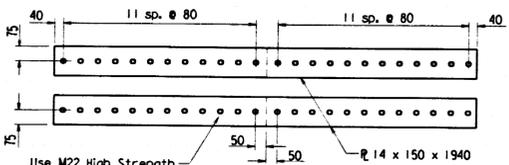
DETAILS OF FIELD SPLICE "A"



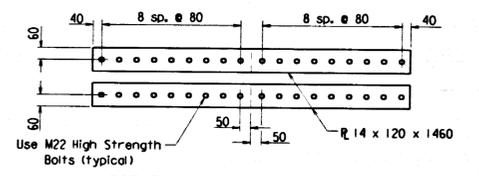
DETAILS OF FIELD SPLICE "B"



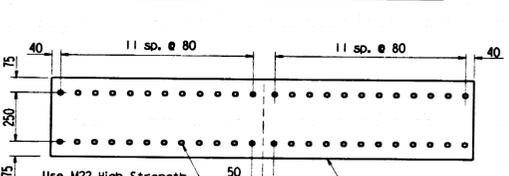
TOP FLANGE SPLICE PLATES ("A")



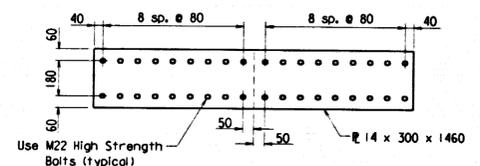
BOTTOM FLANGE SPLICE PLATES ("A")



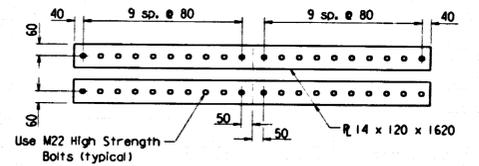
TOP FLANGE SPLICE PLATES ("A")



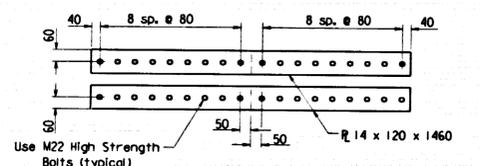
BOTTOM FLANGE SPLICE PLATES ("A")



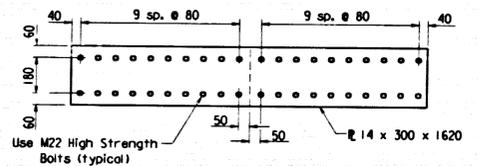
TOP FLANGE SPLICE PLATES ("B")



BOTTOM FLANGE SPLICE PLATES ("B")



TOP FLANGE SPLICE PLATES ("B")

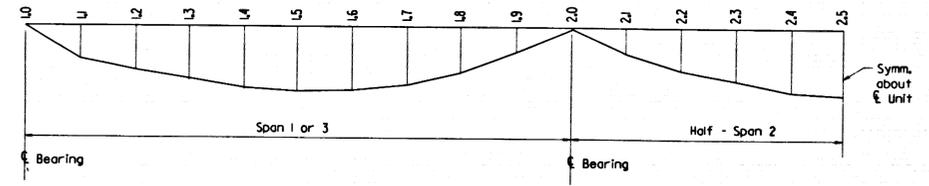


BOTTOM FLANGE SPLICE PLATES ("B")

DEAD LOAD DEFLECTIONS (mm)

		Span Point	1,0	1,1	1,2	1,3	1,4	1,5	1,6	1,7	1,8	1,9	2,0	2,1	2,2	2,3	2,4	2,5
Interior Girder	Structural Steel	0	3	6	8	9	9	7	5	3	1	0	0	2	3	5	5	
	Structural Steel, and Slab	0	20	36	48	52	50	42	30	17	6	0	2	10	21	30	33	
	Structural Steel, Slab and Parapet	0	22	40	53	58	55	47	33	19	7	0	3	12	25	34	38	
Exterior Girder	Structural Steel	0	3	6	8	9	8	7	5	3	1	0	0	1	3	4	5	
	Structural Steel, and Slab	0	18	33	44	48	46	38	28	16	6	0	2	10	19	27	30	
	Structural Steel, Slab and Parapet	0	20	37	49	53	51	43	31	18	6	0	2	12	23	32	35	

Notes:
 Camber for Dead Load Deflection ± 6 mm Tolerance. Deflections shown are from a chord from Centerline Bearing to Centerline Bearing.

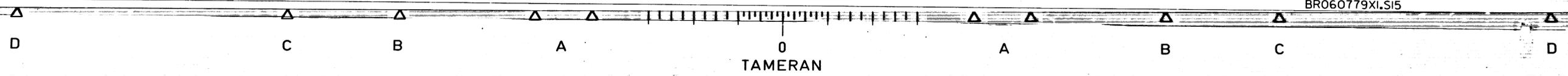


DEAD LOAD DEFLECTION DIAGRAM
 N.T.S.

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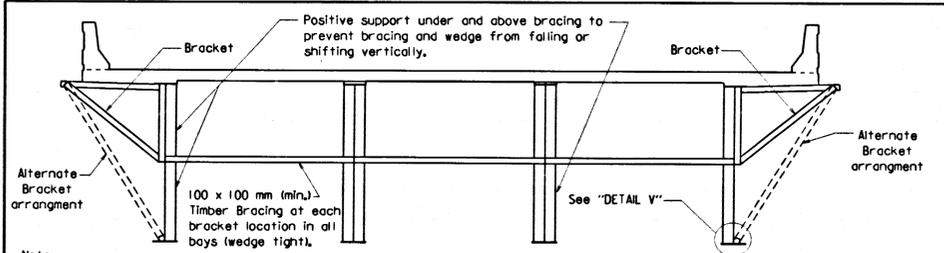


ALTERNATE NOS. 1 & 2
 (SHEET 5 OF 6)
 DETAILS OF
 102 METER CONTINUOUS
 PLATE GIRDER UNIT
 SALINE RIVER
 ROUTE 229 SEC. 5
 ARKANSAS STATE HIGHWAY COMMISSION
 LITTLE ROCK, ARK.
 DRAWN BY: TEB DATE: 02/20/97
 CHECKED BY: AMS DATE: 4/4/97 SCALE: N.T.S.
 DESIGNED BY: AMS DATE: 12/11/96
 BRIDGE NO. 06715 DRAWING NO. 39055



BR060779X1.S15

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	060779	56	119	
				06715	SPAN DETAILS	39056		



Notes:
 If a transverse finishing machine is used, the rail shall be supported directly over the exterior girders, or as an alternate, the rail may be supported by the overhanging brackets if the above strutting system is used. The strutting system may be omitted if 12 x 120 mm web stiffeners are welded to the insides of the exterior girders at the location of each bracket or if the alternate bracket arrangement shown above is used. The Alternate Bracket arrangement shall extend down to the junction of the web and bottom flange. The stiffener shall conform to the details for intermediate stiffener plates. No direct payment will be made for brackets, timber bracing, supports, or welded stiffeners. Payment shall be subsidiary to "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M 270, Gr. 345W)". This system shall be used on the 102 m Unit only.

SCREED RAIL SUPPORT

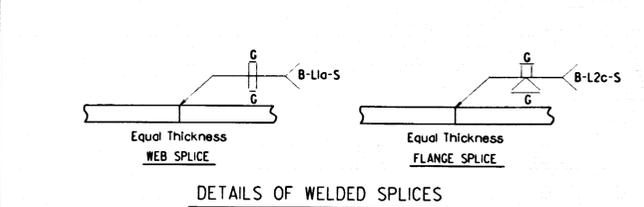
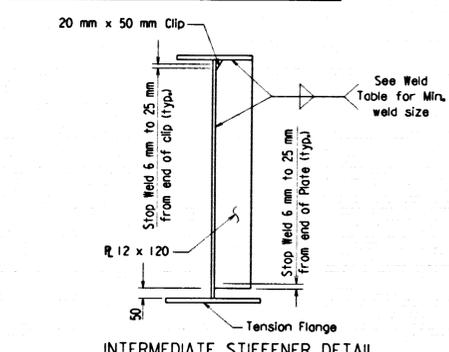
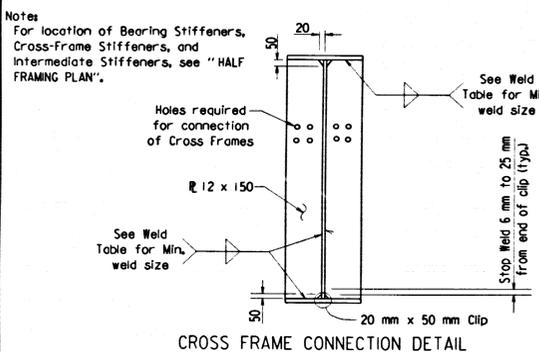
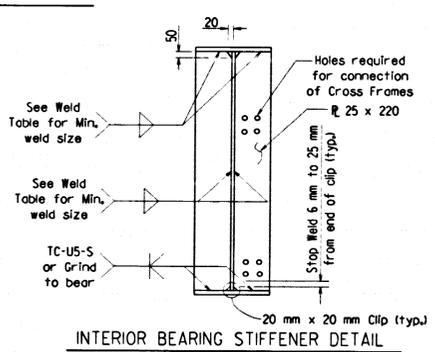
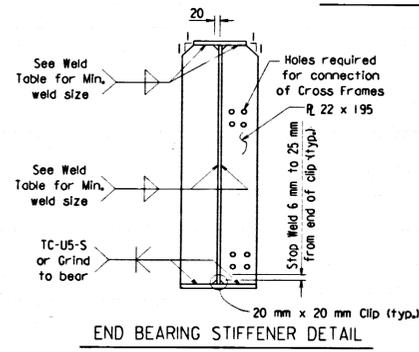
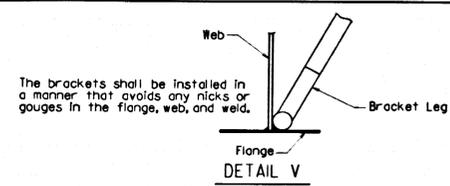


TABLE FOR WELD

Material Thickness of Thicker Part Joined (mm)	Minimum Size of Fillet Weld (mm)	Single Pass Weld Must Be Used
To 20 Inclusive	6	
Over 20	8	

Note:
 When a fillet weld size, as shown on the plans, is larger than the minimum, the first pass shall be that specified for minimum size of fillet weld.



The brackets shall be installed in a manner that avoids any nicks or gouges in the flange, web, and weld.

All dimensions are in millimeters (mm) unless otherwise noted.

CONCRETE:
 Concrete shall be poured in the dry and all exposed corners to be chamfered 20 mm unless otherwise noted.

Concrete in bridge superstructure shall be placed and consolidated for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

The Superstructure Details shown are for use when REMOVABLE DECK FORMING is used and are the basis for measurement of Class 5 (AE) Concrete. See Standard Drawing No. 36515 for allowable modifications and for tolerances when Permanent Steel Bridge Deck forms are used.

The concrete bridge deck shall be given a fine finish in accordance with Section 802J9 of the Standard Specifications for a Class 5, Tined Bridge Roadway Surface Finish. 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. A minimum of 72 hours shall elapse between completion of the slab and the pouring of the parapet railing. Sufficient concrete must be placed ahead of the strike-off to fully load the girder. If a longitudinal strike-off is used, a vertical camber adjustment must be made in the strike-off to account for the future dead-load deflection of the railing.

REINFORCING:
 The reinforcing steel shall 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-BRIDGE".

STRUCTURAL STEEL:

All structural steel shall be AASHTO designation M 270, Gr. 345W unless otherwise noted and shall be paid for at the unit price per kilogram bid for "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M 270, Gr. 345W)". M 270, Gr. 345W steel shall not be painted. All exposed surfaces to be cleaned in accordance with subsection 807.84 (a) of the Standard Specifications. Structural steel completely embedded in concrete may be AASHTO M 270, Gr. 250, unless otherwise noted.

Girder web and flange plates are considered main load carrying members and shall meet the Longitudinal Charpy V - Notch Test specified in section 807.05 of the Standard Specifications.

Girder webs may be made by shop splicing with a minimum length of 8000 mm for sections. Flange plates longer than 15 000 mm may be made by shop splicing with a minimum length of 8000 mm for sections. No additional payment for welds for these splices will be made.

Structural shapes of equal or greater strength may be substituted for shapes shown if prior approval is obtained from the Bridge Engineer. Payment will be made on the basis of shapes shown.

Cross - Frames shall be installed as girders are erected. Cross - Frames shall be installed and completely bolted prior to pouring of floor slabs.

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.

All girders shall be blocked in their true position in the shop, in groups of a minimum of 3 sections as specified in Section 807.54(b)(2). Girders shall be blocked with webs horizontal. The camber, length of sections, distance between bearings and opening of joints shall be measured with the girders in their true position and this information shall become part of the permanent record of this job. The component parts shall be match marked in this assembly and these marks shall be shown on the erection diagram. All girder dimensions are based on a temperature of 16 degrees C. A tolerance of 6 mm (plus or minus) is allowed for camber.

GENERAL NOTES

Bearings shall be seated in accordance with subsection 808.08 of the Standard Specifications. This work and material are to be considered as subsidiary to the item "ELASTOMERIC BEARINGS" and will not be paid for directly.

Steel plates for main members and flange field splice plates shall be cut and fabricated so that the primary direction of rolling is parallel to the direction of the main tensile and/or compressive stresses.

All welding that is to be done during fabrication of structural steel, including temporary welds, shall be detailed on the shop drawings and submitted for approval. If the contractor or erector should want to make additional welds, whether temporary or permanent, he shall submit detailed drawings with a formal request to the Bridge Engineer of the Arkansas State Highway and Transportation Department for approval. All welding shall conform to Subsection 807.26.

Groove welds in web and flange plates shall be Quality Control (Q.C.) tested by non-destructive testing, as required by the governing specifications in subsection 807.23(b). Fillet welds at flange to web plate connections shall be Q.C. tested by the magnetic particle method. All Quality Control (Q.C.) testing is at the contractor's expense.

Field Connections shall be bolted with High - Strength bolts and shall be M20 bolts unless otherwise noted. Bolts shall be placed with heads on the outside face of the exterior girder webs and on the bottom of the girder flanges. Holes for M20 High Strength bolts in expansion device and cross frame connections may be 24 mm # if a washer is supplied for use under both the nut and the head of the bolt.

CONSTRUCTION SPECIFICATIONS:
 Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction, 1996 edition, with applicable supplemental specifications and special provisions.

DESIGN SPECIFICATIONS:
 AASHTO Standard Specifications for Highway Bridges, 1996 edition, with current interim specifications.

Materials and Strengths:
 Class 5 (AE) Concrete
 Reinforcing Steel (ASTM A615/A615M-96a Gr. 420) $f_c = 28.0 \text{ MPa}$
 Structural Steel (M 270, Gr. 345W) $f_y = 420 \text{ MPa}$
 Structural Steel (M 270, Gr. 250) $f_y = 345 \text{ MPa}$
 Structural Steel (M 270, Gr. 250) $f_y = 250 \text{ MPa}$

Load Distributions:

Dead Load	Interior Girder	Exterior Girder
To Girders	12.58 kN/m + 1.3W _t (of Girder)	11.4 kN/m + 1.3W _t (of Girder)
To Composite Girders	5.41 kN/m*	5.41 kN/m*
Live Load to Composite Girders	L591 Wheels + Impact	L391 Wheels + Impact

* Includes 2.585 kN/m future wearing surface.

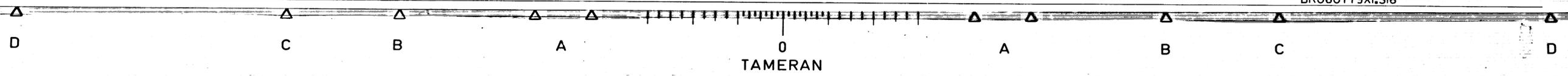
ALTERNATE NOS. 1 & 2
 (SHEET 6 OF 6)
 DETAILS OF
 102 METER CONTINUOUS
 PLATE GIRDER UNIT
 SALINE RIVER
 ROUTE 229 SEC. 5
 ARKANSAS STATE HIGHWAY COMMISSION
 LITTLE ROCK, ARK.



DRAWN BY: TEB DATE: 02/20/97
 CHECKED BY: AMS DATE: 06/07/97
 DESIGNED BY: AMS DATE: 12/11/96
 BRIDGE NO. 06715 DRAWING NO. 39056

BR060779X1.S16

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 AUG 31 1998



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
							JOB NO.	060779
								57 119
							06715	ELASTO. BRCS. 39057

TABLE OF DESIGN VARIABLES (mm)

ANCHOR BOLT DIAMETER	PIPE SLEEVE NOMINAL DIAMETER	SHEET METAL SLEEVE DIA.	STANDARD WASHER SIZE (O.D.)	MINIMUM EMBEDMENT LENGTH	SLOT WIDTH "F"	P Min.	R Min.	V	W
25.4	25.4	76	50.8	260	40 #	50	50	65	40
31.7	31.7	76	63.5	300	50 #	50	60	65	45
38.1	38.1	76	76.2	380	60 #	60	65	70	50
44.4	50.8	100	85.7	460	70 #	65	70	75	60
50.8	63.5	100	95.2	510	80 #	70	75	85	65
57.1	63.5	100	101.6	590	80 #	70	75	85	70
63.5	76.2	100	114.3	640	95 #	75	85	90	75

GENERAL NOTES

All dimensions are in millimeters (mm) unless otherwise noted.

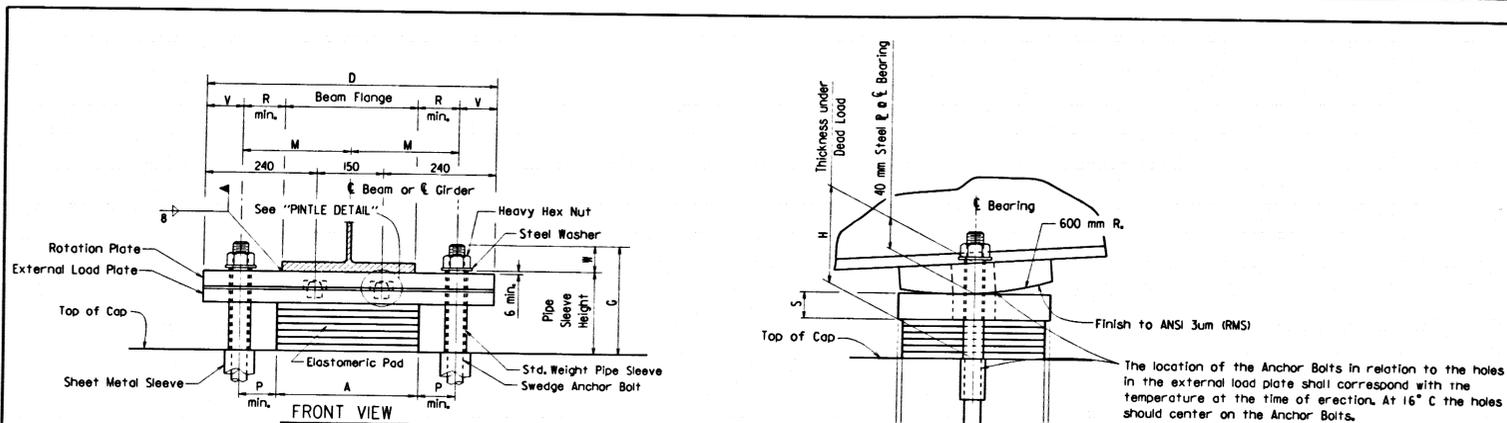
Elastomeric Bearings shall conform to Section 808 of the Standard Specifications and shall be paid for at the unit price bid for "ELASTOMERIC BEARINGS".

External load plates and Rotation plates shall conform to AASHTO M 270, Grade 345W. Rotation plates shall be cleaned in accordance with subsection 807.84(e) for unpainted Grade 345W steel. Pipe sleeves shall be ASTM A53, Grade B, and shall be galvanized to conform to AASHTO M 232, Class C or AASHTO M 298, Class 50.

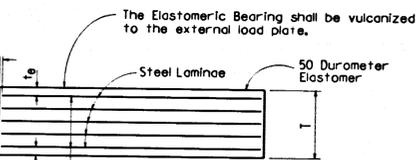
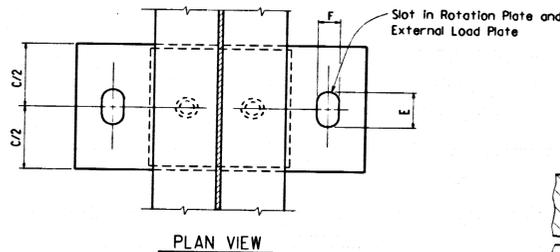
External load plates shall be completely fabricated (including bevel, bolt holes, pintle holes, and all shop welding) and shall be blast cleaned to remove rust, loose mill scale, dirt, oil, grease, and other foreign substances before vulcanizing to the elastomeric bearing. The surface finish specified in subsection 808.04(b). Other surfaces shall be blast cleaned in accordance with subsection 807.84(e) for unpainted Grade 345W steel.

Anchor Bolts, Washers and Nuts shall conform to subsection 807.07 of the Standard Specifications. The anchor bolt grade of steel shall be as specified in the "TABLE OF FABRICATOR VARIABLES". Indentations shall be circular with rounded bottoms and staggered as shown in the details.

Rotation Plates, Pipe sleeves, Anchor bolts, Washers and Nuts shall be paid for at the unit price bid for "STRUCTURAL STEEL IN BEAM SPANS (M270, Gr. 345W)". Pintles will not be paid for directly, but will be considered subsidiary to the item "ELASTOMERIC BEARINGS".

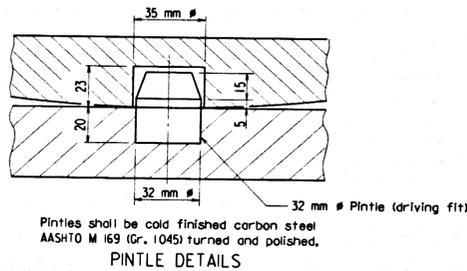


The location of the Anchor Bolts in relation to the holes in the external load plate shall correspond with the temperature at the time of erection. At 16°C the holes should center on the Anchor Bolts.



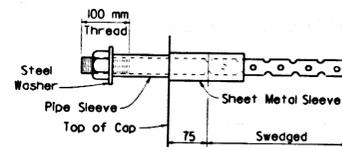
t_e = thickness of elastomer cover on top and bottom of pad
 t_l = thickness of elastomer between steel laminae
 N = number of elastomer layers of thickness t_l

ELASTOMERIC BEARING



Pintles shall be cold finished carbon steel AASHTO M 169 (Gr. 1045) turned and polished.

PINTLE DETAILS



ANCHOR BOLT DETAIL

NOTES: Anchor Bolts may be cast in place or drilled and grouted into place. If Anchor Bolts are to be cast in place, the Galvanized Sheet Metal Sleeves will not be required.

If Anchor Bolts are to be drilled and grouted in place, the Galvanized Sheet Metal Sleeves shall be cast in place as shown. Sleeves shall be dry packed with styrofoam, urethane foam or approved equal prior to pouring of concrete. After pouring of the cap and prior to erection of Structural Steel, the dry pack shall be removed and holes for the anchor bolts shall be accurately drilled into the masonry. Bolts placed in drilled holes shall be accurately set and fixed using a OPL approved epoxy or non-shrink grout that completely fills the holes. Galvanized Sheet Metal Sleeves will not be paid for directly, but will be considered subsidiary to the item "STRUCTURAL STEEL IN BEAM SPANS (M 270, Gr. 345W)".

TABLE OF FABRICATOR VARIABLES

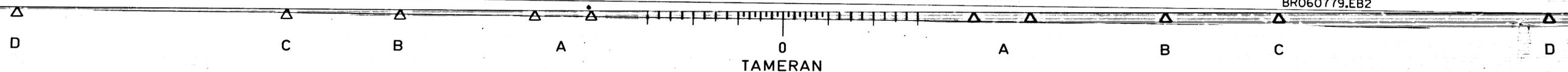
LOCATION	BEARING TYPE	NO. OF BEARINGS EACH BENT	* MAXIMUM DESIGN LOAD (kN)	G	H	ELASTOMERIC PAD							EXTERNAL LOAD PLATE							ANCHOR BOLT				
						A	B	N	t_l	t_e	NUMBER AND THICKNESS OF STEEL LAMINAE	T	C	D	E	F	K	M	S	ANCHOR BOLT (# x L) GRADE		PIPE SLEEVE SIZE (# x L)	SHEET METAL SLEEVE SIZE (# x L)	STEEL WASHER SIZE (O.D.)
Bent No. 1 - Span No. 1 Bent No. 5 - Span No. 4 Bent No. 9 - Span No. 8 Bent No. 13 - Span No. 12 Bent No. 17 - Span No. 16	Exp.	5	277	271	215	370	150	14	7	5	15 @ 14 ga.	136	190	630	100	60	20	245	40	38.1 # x 660	55	38.1 # x 221	76 # x 175	76.2
Bent No. 5 - Span No. 5 Bent No. 9 - Span No. 9 Bent No. 13 - Span No. 13	Exp.	5	277	276	220	370	150	14	7	5	15 @ 14 ga.	136	190	630	100	60	20	245	45	38.1 # x 660	55	38.1 # x 226	76 # x 175	76.2

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ALTERNATE NO. 1
 DETAILS OF ELASTOMERIC BEARINGS WITH PINTLES
 ROUTE 229 SEC. 5
 ARKANSAS STATE HIGHWAY COMMISSION
 LITTLE ROCK, ARK.

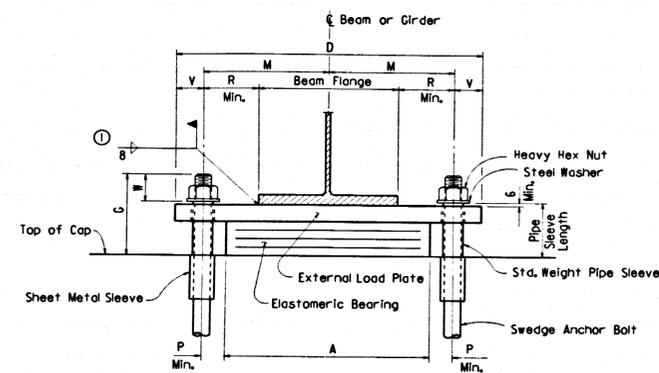
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 CHECKED BY: AMS DATE: 6/19/97 SCALE: None
 DESIGNED BY: AMS DATE: 12/15/96
 BRIDGE NO. 06715 DRAWING NO. 39057



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. AID PROJ. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						060779	58	119
						06715	ELASTO. BRGS.	39058

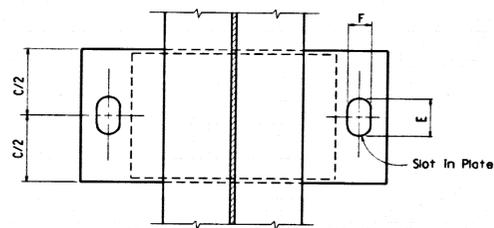
TABLE OF DESIGN VARIABLES (mm)

ANCHOR BOLT DIAMETER	PIPE SLEEVE NOMINAL DIAMETER	SHEET METAL SLEEVE DIA.	STANDARD WASHER SIZE (O.D.)	MINIMUM EMBEDMENT LENGTH	SLOT WIDTH "F"	P Min.	R Min.	V	W
25.4	25.4	76	50.8	260	40 #	50	50	65	40
31.7	31.7	76	63.5	30	50 #	50	60	65	45
38J	38J	76	76.2	380	60 #	60	65	70	50
44.4	50.8	100	85.7	460	70 #	65	70	75	60
50.8	63.5	100	95.2	510	80 #	70	75	85	65
57J	63.5	100	101.6	590	80 #	70	75	85	70
63.5	76.2	100	114.3	640	95 #	75	85	90	75
69.8	76.2	127	127.0	720	95 #	75	90	90	85
76.2	88.9	127	139.7	770	115 #	85	90	100	90

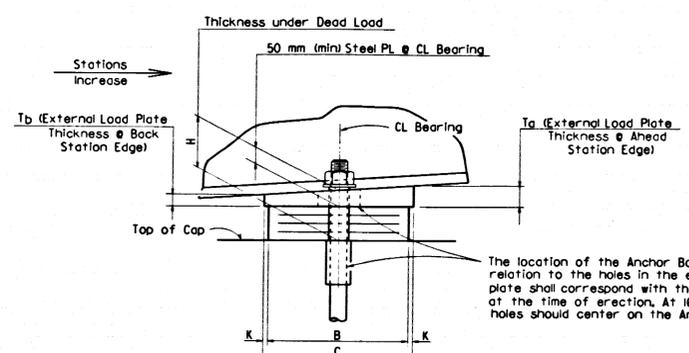


FRONT VIEW

① Care shall be taken to ensure that the external load plate is in full and complete contact with the beam or girder flange before welding begins.

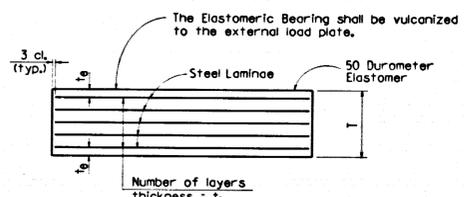


PLAN VIEW



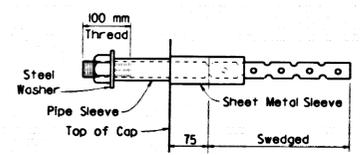
SIDE VIEW

The location of the Anchor Bolts in relation to the holes in the external load plate shall correspond with the temperature at the time of erection. At 16° C the holes should center on the Anchor Bolts.



ELASTOMERIC BEARING

t₀ = thickness of elastomer cover on top and bottom of pad
t₁ = thickness of elastomer between steel laminae
N = number of elastomer layers of thickness t₁



ANCHOR BOLT DETAIL

NOTE: Anchor Bolts may be cast in place or drilled and grouted into place. If Anchor Bolts are to be cast in place, the Galvanized Sheet Metal Sleeves will not be required.

If Anchor Bolts are to be drilled and grouted in place, the Galvanized Sheet Metal Sleeves shall be cast in place as shown. Sleeves shall be dry packed with styrofoam, urethane foam or approved equal prior to pouring of concrete. After pouring of the cap and prior to erection of Structural Steel, the dry pack shall be removed and holes for the anchor bolts shall be accurately drilled into the masonry. Bolts placed in drilled holes shall be accurately set and fixed using a OPL approved epoxy or non-shrink grout that completely fills the holes. Galvanized Sheet Metal Sleeves will not be paid for directly, but will be considered subsidiary to the items "STRUCTURAL STEEL IN BEAM SPANS (M 270, Gr. 345W)" and "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M 270, Gr. 345W)".

GENERAL NOTES

All dimensions are in millimeters (mm) unless otherwise noted.
Elastomeric Bearings shall conform to Section 808 of the Standard Specifications and shall be paid for at the unit price bid for "Elastomeric Bearings."
External load plates shall conform to AASHTO M 270, Grade 345W. Pipe sleeves shall be ASTM A53, Grade B, and shall be galvanized to conform to AASHTO M 232, Class C or AASHTO M 298, Class 50.
External load plates shall be completely fabricated (including bevel, bolt holes and all shop welding) and shall be blast cleaned to remove rust, loose mill scale, dirt, oil, grease and other foreign substances before vulcanizing to the elastomeric bearing. The surface in contact with the elastomeric bearing shall be blast cleaned to the surface finish specified in subsection 808.04(b). Other surfaces shall be blast cleaned in accordance with subsection 807.84(e) for unpainted Grade 345W steel.

Anchor Bolts, Washers and Nuts shall conform to subsection 807.07 of the Standard Specifications. The anchor bolt grade of steel shall be as specified in the "TABLE OF FABRICATOR VARIABLES". Indentations shall be circular with rounded bottoms and staggered as shown in the details.

Pipe Sleeves, Anchor Bolts, Washers and Nuts shall be paid for at the unit price bid for "STRUCTURAL STEEL IN BEAM SPANS (M 270, Gr. 345W)" and "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M 270, Gr. 345W)".

TABLE OF FABRICATOR VARIABLES

ALT. NO.	UNIT	LOCATION BENT NUMBERS	BEARING TYPE	NO. OF BEARINGS EACH BENT	* MAXIMUM DESIGN LOAD (KN)	ELASTOMERIC PAD		EXTERNAL LOAD PLATE										ANCHOR BOLT									
						G	H	A	B	N	t ₁	t ₀	NUMBER AND THICKNESS OF STEEL LAMINAE	T	C	D	E	F	K	M	T _a	T _b	ANCHOR BOLT (# x L)	GRADE	PIPE SLEEVE SIZE (# x L)	SHEET METAL SLEEVE SIZE (# x L)	STEEL WASHER SIZE (O.D.)
1	68 m	2, 3, 4, 6, 7, 8, 10, 11, 12, 14, 15, & 16	Fixed	5	526	211	140	400	160	7	9	7	10 @ 14 ga.	92	190	70	80	80	15	270	51.3	48.7	50.8 # x 760	55	63.5 # x 146	100 # x 175	95.2
1 AND 2	102 m	17	Exp.	4	502	262	196	480	190	10	11	9	11 @ 14 ga.	149	230	790	140	80	20	30	51.6	48.4	50.8 # x 830	55	63.5 # x 202	100 # x 175	95.2
	102 m	18	Fixed	4	1298	252	171	580	220	9	10	8	10 @ 14 ga.	125	250	90	95	95	15	365	51.7	48.3	69.8 # x 1050	55	76.2 # x 177	127 # x 250	127.0
	102 m	19	Fixed	4	1298	252	171	580	220	9	10	8	10 @ 14 ga.	125	250	90	95	95	15	365	52J	47.9	69.8 # x 1050	55	76.2 # x 177	127 # x 250	127.0
	102 m	20	Exp.	4	502	262	196	480	190	10	11	9	11 @ 14 ga.	149	230	790	140	80	20	30	51.8	48.2	50.8 # x 830	55	63.5 # x 202	100 # x 175	95.2

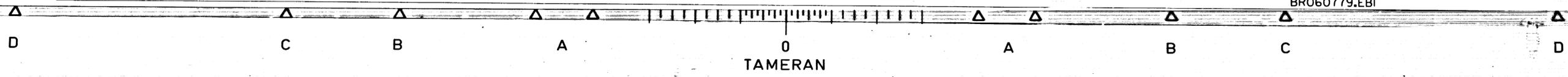
* Maximum Design Load = Service Load

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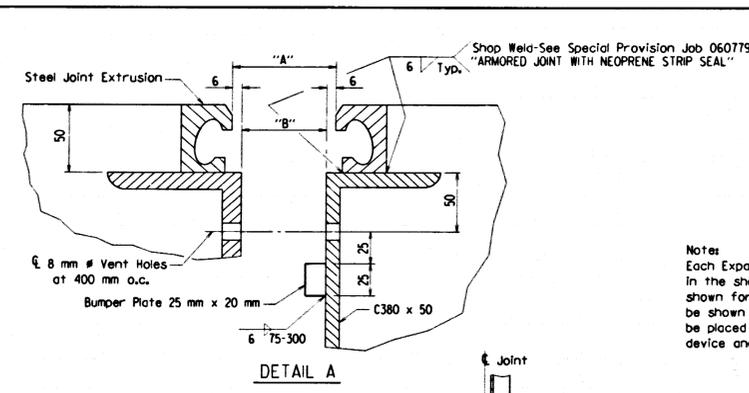
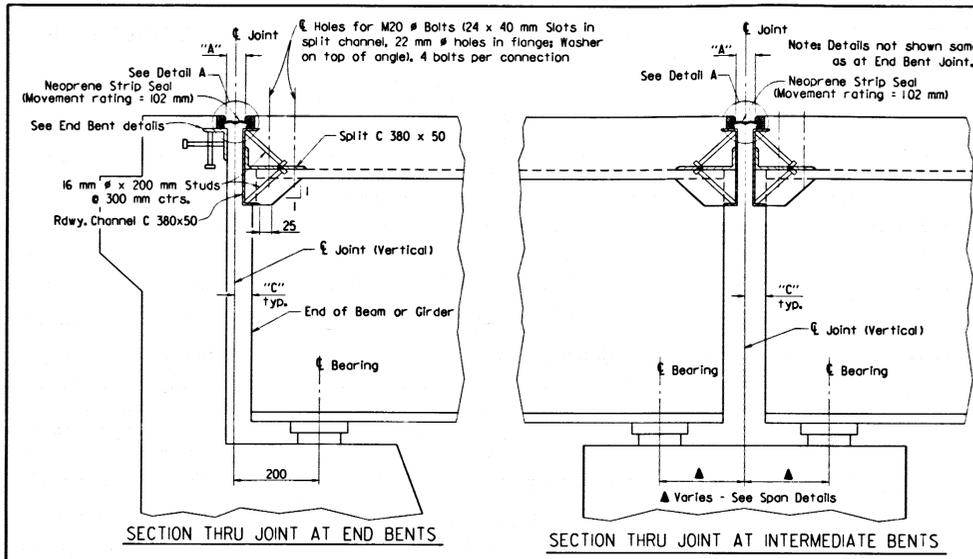


ALTERNATE NOS. 1 AND 2
DETAILS OF
ELASTOMERIC BEARINGS
ROUTE 229 SEC. 5
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

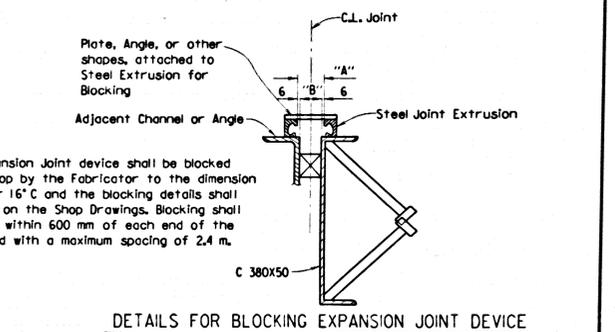
DRAWN BY: TEB DATE: 4/1/97
CHECKED BY: AMS DATE: 6/17/97 SCALE: None
DESIGNED BY: AMS DATE: 12/11/96
BRIDGE NO. 06715 DRAWING NO. 39058



BRO60779.EBI



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. PROJ. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				060779	ARK.		59	119
				JOB NO. 060779		JOB NO. 06715		JOINT DETAILS 39059

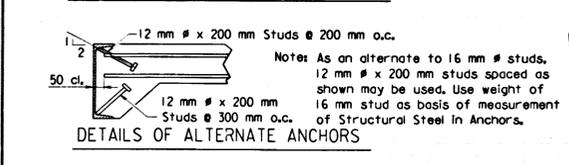
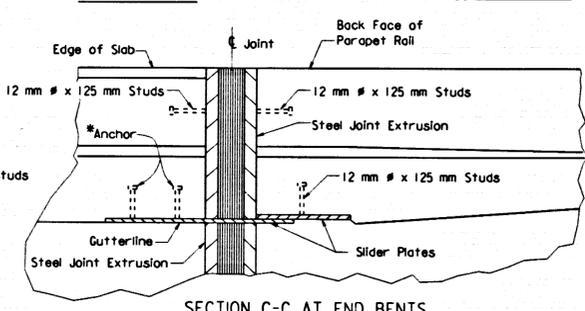
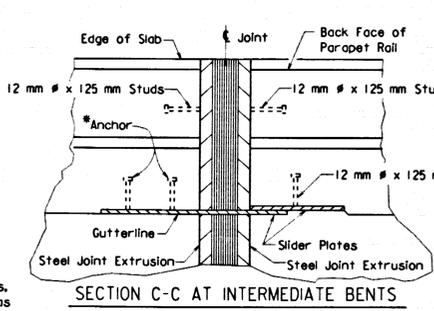
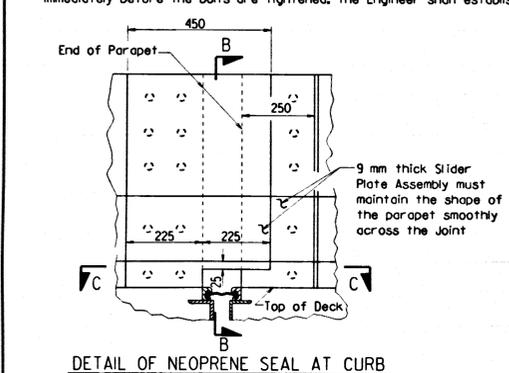
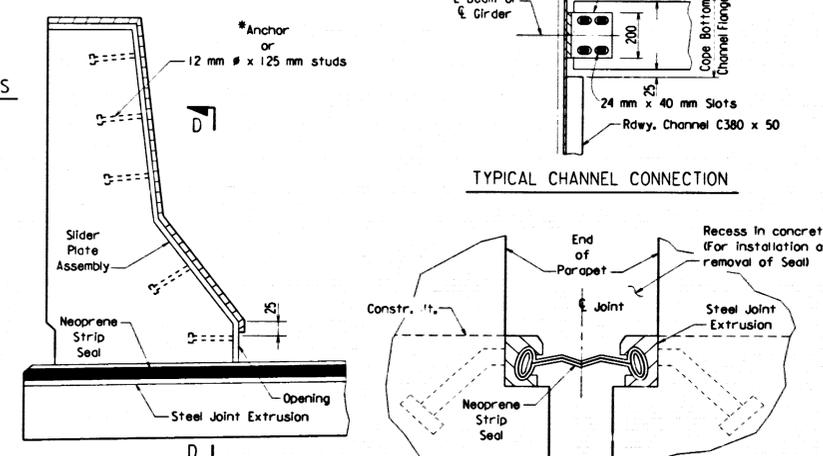


SECTION THRU JOINTS ARE TAKEN NORMAL TO C.L. JOINT.

STRIP SEAL JOINT DATA

Bent No./Sl.	Movement Rating (mm)	"A" Width Perpendicular to Joint at 24 Hour Average Temperature ** of :			"B" Width Perpendicular to Joint at 24 Hour Average Temperature ** of :			"C" Perpendicular to Joint at 24 Hour Average Temperature of 16° C
		28° C	16° C	4° C	28° C	16° C	4° C	
1	102	58	62	66	46	50	54	57
5, 9 & 13		57	66	75	45	54	63	59
17		53	64	75	41	52	63	58
20		55	62	69	43	50	57	57

** The temperature used to set the joint opening shall be the approximate average air temperature during the 24 hour period immediately before the bolts are tightened. The Engineer shall establish the temperature.



* The method of attachment of the cover slider plate assembly or similar device must be such that it may be removed in order to provide for future replacement of the neoprene seal.

Anchors will not be paid for directly but will be considered subsidiary to "STRUCTURAL STEEL IN BEAM SPANS (M270, Gr. 345W)" and "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, Gr. 345W)".

EXPANSION DEVICE INSTALLATION AT END BENTS:
The concrete span pour shall be placed before the end bent backwall concrete is placed. After beams or girders are erected the blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the backwall concrete, the blocking shall be removed, the opening adjusted for temperature and grade, and the backwall constructed.

EXPANSION DEVICE INSTALLATION AT INTERMEDIATE BENTS:
After all beams or girders on each side of the joint are erected the blocked expansion device shall be installed and adjusted for grade. Deck concrete shall be placed for the entire unit or span on one side of the joint before deck concrete on the other side is placed. Connection bolts for the first side to have deck concrete placed shall be completely bolted. Bolts on the other side shall be loosely installed so that thermal and rotational movements will not be restricted during concrete placement on the first side.

Connection bolts on the second side shall remain loose until the concrete pour adjacent to the joint is to be placed. Immediately prior to pouring the span concrete on the second side, the blocking shall be removed, the joint adjusted for temperature and grade, and the connection bolts tightened.

GENERAL NOTES
All dimensions are in millimeters (mm) unless otherwise noted.

EXPANSION NEOPRENE STRIP SEALS: The expansion device shall provide a movement of 102 mm as shown in the "STRIP SEAL JOINT DATA" table. The expansion joint shall be capable of sealing the deck surface and parapet area to prevent moisture and other contaminants from descending through the joint.

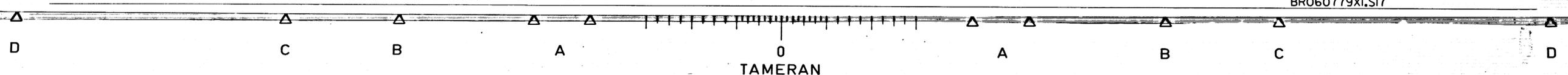
Details of proposed slider plate assembly shall be submitted to and approved by the Bridge Engineer prior to the fabrication of any structural steel at the expansion device.

All Structural Steel, except for the steel extrusion for the strip seal, shall be paid for as "STRUCTURAL STEEL IN BEAM SPANS (M 270, Grade 345W)" or "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, Grade 345W)". The steel extrusion and neoprene strip seal shall be paid for in accordance with Special Provision Job 060779 "ARMORED JOINT WITH NEOPRENE STRIP SEAL".



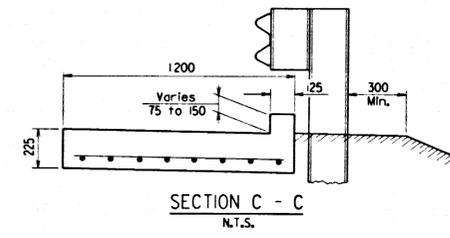
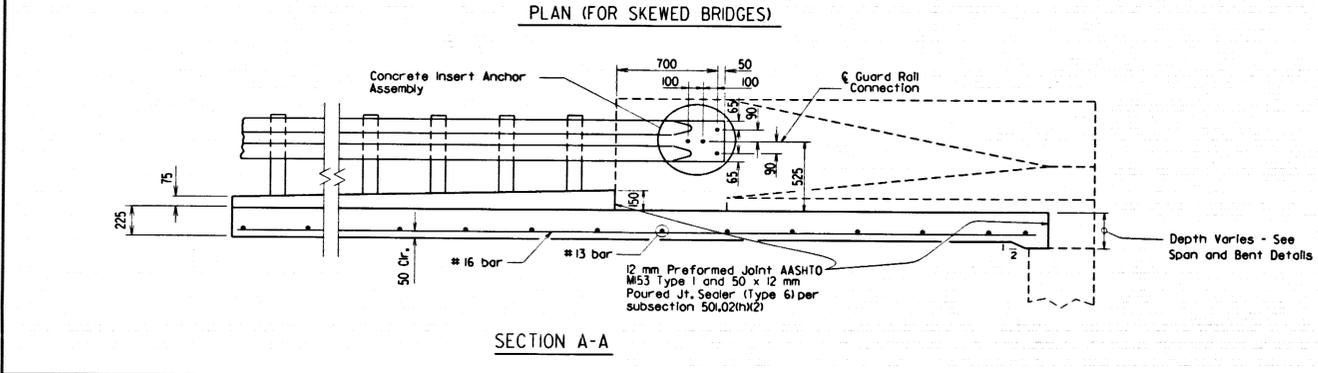
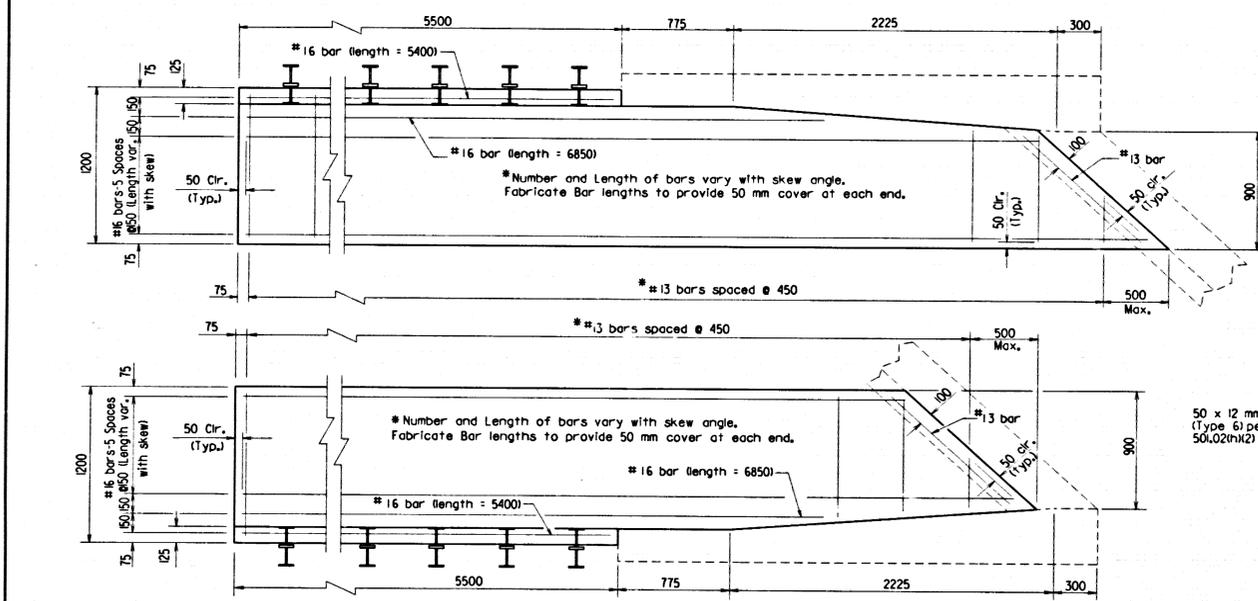
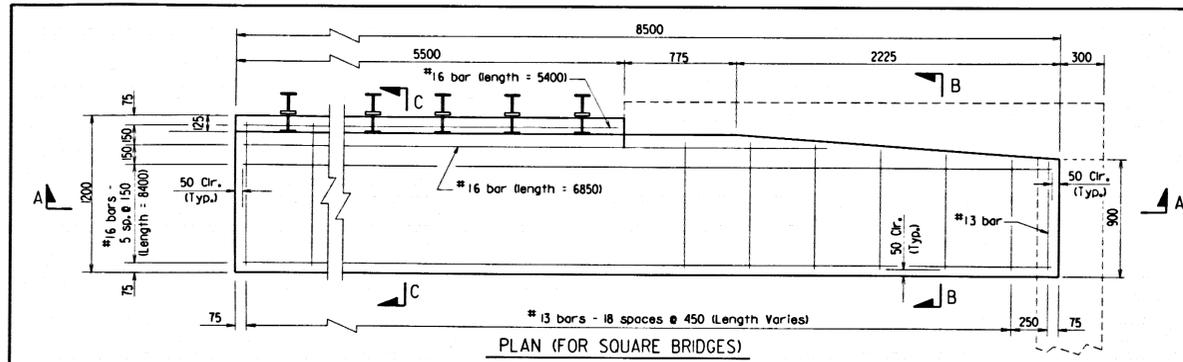
ALTERNATE NO. 1
DETAILS OF ARMORED JOINT WITH NEOPRENE STRIP SEAL
SALINE RIVER
ROUTE 229 SEC. 5
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

BRIDGE ENGINEER
DATE: 02/20/97
CHECKED BY: AMS DATE: 6/26/97
DESIGNED BY: AMS DATE: 2/14/97
SCALE: N.T.S.
BRIDGE NO. 06715 DRAWING NO. 39059



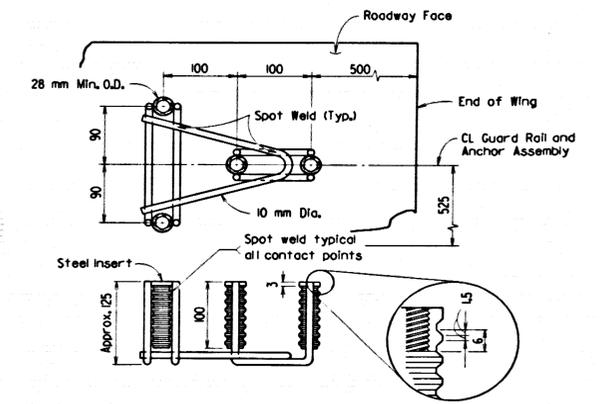
MICROFILMED
AUG 3 1 1998

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO. 060779							60	119
06715 SPEC. APPR. GUTRS. 39060								



QUANTITIES FOR ONE SQUARE APPROACH GUTTER

Concrete	Reinforcing Steel
2.24 m ³	117 kg



Minimum capacity of guard rail attachment by concrete insert anchor assembly or other means shall be 53 kN ultimate shear capacity per bolt and insert (12 kN per assembly). There shall be a minimum of four bolts per attachment located as shown. The contractor may use the insert anchor assembly shown, or one similar which provides the same ferrule depth and thread length. The capacity of the insert anchor assembly shall be certified to the Engineer.

Guard rail attachment using other types of concrete insert will be allowed, provided they meet the minimum capacity specified, the capacity is certified, and approval is obtained from the Engineer before use.

The threaded steel insert shall have a solid bottom, tapped to a minimum threaded depth of 60 mm. The guard rail shall be connected with M22 x 60 mm high strength hex bolts and one hardened steel washer. See Section 807 of the Standard Specifications.

Bolts shall conform to the requirements of AASHTO M 164 and shall be threaded full length. Bolts and washers shall be galvanized in accordance with AASHTO M 232.

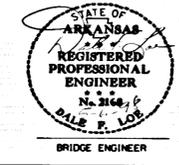
Bolts shall be installed in accordance with subsection 807.7 of the Standard Specifications.

Concrete Insert Anchor Assembly will not be paid for directly, but will be considered subsidiary to the item of Class S Concrete - Bridge or Class S (AE) Concrete - Bridge. For Details of Guard Rail, see detg. no. GR-88M.

GENERAL NOTES

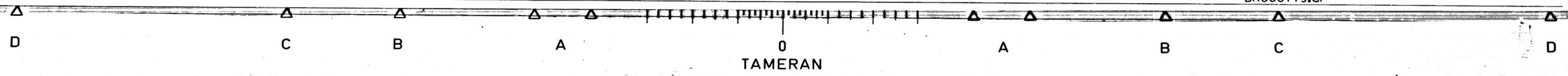
- All dimensions are in millimeters unless otherwise noted.
- Concrete shall be Class S or Class S (AE) or mixture used for Portland Cement Concrete Pavement.
- Reinforcement Steel shall conform to ASTM A 615/A615M-96a, Grade 420. Fabricate bar lengths to provide 50 mm cover of each end.
- Approach Gutters will be measured and paid for in accordance with Section 504 of the Standard Specifications.

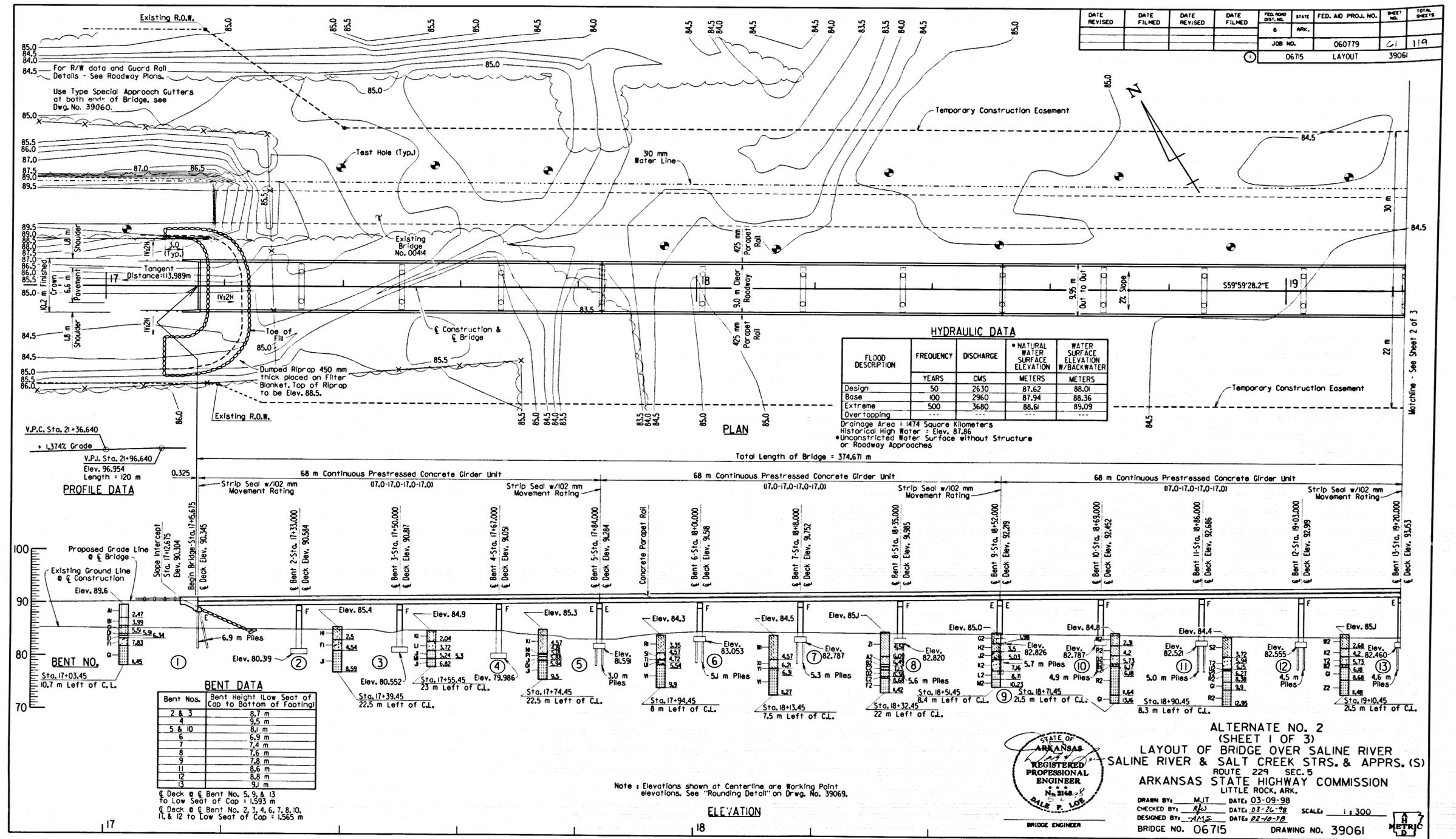
ALTERNATE NOS. 1 & 2
DETAILS OF
TYPE SPECIAL APPROACH GUTTERS
SALINE RIVER
ROUTE 229 SEC. 5
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.



BRIDGE ENGINEER
DRAWN BY: YEB DATE: 06/16/97
CHECKED BY: AMG DATE: 6/26/97
DESIGNED BY: DATE:
BRIDGE NO. 06715 DRAWING NO. 39060

MICROFILMED
AUG 3 1 1998





DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	060779	61	119
				JOB NO.	LAYOUT		39061	
				06715				

HYDRAULIC DATA

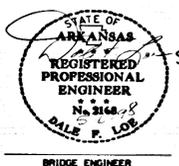
FLOOD DESCRIPTION	FREQUENCY	DISCHARGE	NATURAL WATER SURFACE ELEVATION	WATER SURFACE ELEVATION W/BACKWATER
	YEARS	CMS	METERS	METERS
Design	50	2630	87.62	88.01
Base	100	2960	87.94	88.36
Extreme	500	3680	88.61	89.09
Over topping	---	---	---	---

Drainage Area = 1474 Square Kilometers
 Historical High Water = Elev. 87.86
 *Unrestricted Water Surface without Structure or Roadway Approaches

BENT DATA

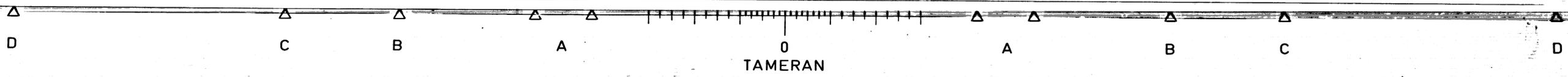
Bent Nos.	Bent Height (Low Seat of Cap to Bottom of Footing)
2 & 3	8.7 m
4	9.5 m
5 & 10	8.1 m
6	6.9 m
7	7.4 m
8	7.6 m
9	7.8 m
11	8.6 m
12	8.8 m
13	9.1 m

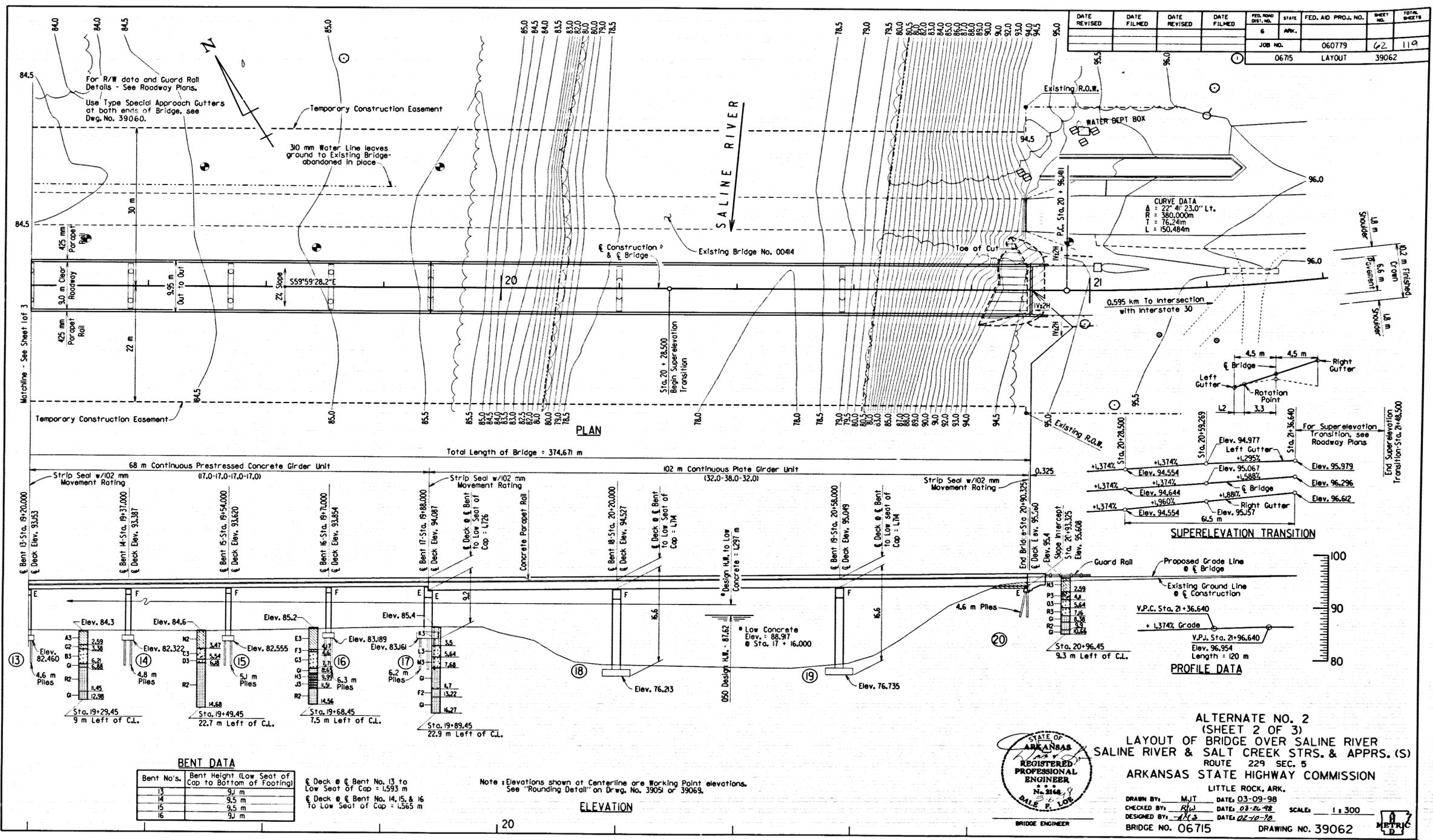
Deck 10 @ Bent No. 5, 9, & 13 to Low Seat of Cap = 1.593 m
 Deck 1 @ Bent No. 2, 3, 4, 6, 7, 8, 10, 11, & 12 to Low Seat of Cap = 1.565 m



ALTERNATE NO. 2
 (SHEET 1 OF 3)
 LAYOUT OF BRIDGE OVER SALINE RIVER
 SALINE RIVER & SALT CREEK STRS. & APPRS. (S)
 ROUTE 229 SEC. 5
 ARIZONA STATE HIGHWAY COMMISSION
 LITTLE ROCK, ARK.
 DRAWN BY: MJT DATE: 03-09-98
 CHECKED BY: RLS DATE: 03-26-98 SCALE: 1:300
 DESIGNED BY: AJS DATE: 02-10-78
 BRIDGE NO. 06715 DRAWING NO. 39061

MICROFILMED
 AUG 3 1 1998





DATE REVISION	DATE FILMED	DATE REVISION	DATE FILMED	FED. PROJ. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				06715	ARK.	060779	62	119
				JOB NO.		LAYOUT		39062

For R/W data and Guard Rail Details - See Roadway Plans.
Use Type Special Approach Gutters at both ends of Bridge, see Dwg. No. 39060.

30 mm Water Line leaves ground to Existing Bridge abandoned in place

SALINE RIVER

CURVE DATA
A = 22' 4" 23.0" Lt.
R = 380.000m
T = 76.24m
L = 150.484m

PLAN

Total Length of Bridge = 374.671 m

SUPERELEVATION TRANSITION

PROFILE DATA

BENT DATA

Bent No's.	Bent Height (Low Seat of Cap to Bottom of Footing)
13	9.1 m
14	9.5 m
15	9.5 m
16	9.1 m

Deck @ Bent No. 13 to Low Seat of Cap = 1.593 m
Deck @ Bent No. 14, 15, & 16 to Low Seat of Cap = 1.565 m

Note: Elevations shown at Centerline are Working Point elevations. See "Rounding Detail" on Dwg. No. 39051 or 39063.

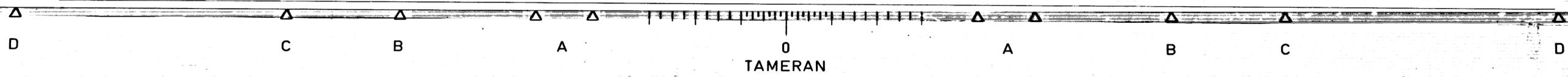
ELEVATION



ALTERNATE NO. 2
(SHEET 2 OF 3)
LAYOUT OF BRIDGE OVER SALINE RIVER
SALINE RIVER & SALT CREEK STRS. & APPRS. (S)
ROUTE 229 SEC. 5
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: MJT DATE: 03-09-98
CHECKED BY: RLW DATE: 03-26-98
DESIGNED BY: ALB DATE: 02-10-78
BRIDGE NO. 06715 DRAWING NO. 39062

MICROFILMED
AUG 3 1 1998



BORING LEGEND

- A1-Moist, Medium Dense, Brown Silt with Traces of Clay
- B1-Moist, Loose, Brown Silt with Traces of Clay
- C1-Moist, Medium Dense, Brown Clayey Silt
- D1-Moist, Stiff, Gray and Brown Sandy Clay
- E1-Wet, Medium Dense, Gray and Brown Sand with some Pea Gravel
- F1-Wet, Dense, Brown and Gray Sand with Clay Seams and Gravel
- G1-Hard, Dark Gray Calcareous, Fractured Shale with some Limestone Seams
- H1-Moist, Stiff, Brown and Gray Sandy, Silty Clay
- J1-Hard, Dark Gray Calcareous, Fractured Shale with some Gray Limestone Seams
- K1-Moist, Stiff, Gray and Brown Sandy, Silty Clay
- L1-Wet, Dense, Brown and Gray Sand and Gravel with some Clay Seams
- M1-Moist, Very Stiff, Gray Clay
- N1-Wet, Soft, Gray and Brown Sandy Clay
- P1-Soft to Medium Hard, Dark Gray Weathered Shale
- Q1-Medium Hard, Dark Gray Highly Weathered Shale
- R1-Wet, Soft to Medium Stiff, Gray and Brown Sandy, Silty Clay with some Gravel
- S1-Wet, Loose, Brown and Gray Sand with Clay Seams and Gravel
- T1-Wet, Very Loose, Gray and Brown Sand and Gravel
- U1-Wet, Soft, Gray Sandy Clay with Organic Matter
- V1-Hard, Dark Gray Calcareous, Fractured Shale with Quartz and some Gray Limestone Seams
- W1-Wet, Soft to Medium Stiff, Gray and Brown Sandy, Silty Clay
- X1-Wet, Soft, Gray Sandy Clay
- Y1-Wet, Dense, Gray and Brown Sand and Gravel
- Z1-Wet, Very Soft, Brown to Brown and Gray Sandy Clay
- A2-Wet, Very Soft, Gray Silty Clay
- B2-Wet, Medium Dense, Gray Sand and Gravel
- C2-Medium Hard, Dark Gray Weathered Shale
- D2-Hard, Dark Gray Calcareous, Fractured Shale with some Quartz Seams
- E2-Moist, Stiff, Gray Calcareous Clay
- F2-Hard, Dark Gray Calcareous, Fractured Shale with some Quartz and Limestone Seams
- G2-Moist, Stiff, Brown and Gray Silty Clay
- H2-Moist to Wet, Stiff, Brown Sandy, Silty Clay
- J2-Wet, Soft, Gray Sandy, Silty Clay with Organic Matter (Wood)
- K2-Wet, Medium Dense, Gray and Brown Sand and Gravel
- L2-Hard, Dark Gray Calcareous, Fractured Shale with some Gray Limestone and Weathered Shale Seams
- M2-Hard, Dark Gray Calcareous, Fractured Shale with some Gray Limestone and Quartz Seams
- N2-Moist, Medium Stiff, Brown Silty Clay
- P2-Wet, Soft, Brown and Gray Sandy Clay
- Q2-Wet, Soft, Gray Silty Clay
- R2-Hard, Dark Gray Calcareous, Fractured Shale with some Limestone and Quartz Seams
- S2-Moist, Medium Stiff, Brown to Brown and Gray Silty Clay
- T2-Wet, Loose, Brown Sand and Gravel
- U2-Wet, Dense, Brown Sand and Gravel
- V2-Hard, Dark Gray Weathered Shale
- W2-Moist, Medium Stiff, Brown Silty Clay with Traces of Pea Gravel
- X2-Wet, Soft, Brown Sandy Clay
- Y2-Wet, Soft, Gray Sandy, Silty Clay
- Z2-Hard, Dark Gray Calcareous, Fractured Shale with Quartz and some Limestone Seams
- A3-Moist, Medium Stiff, Brown Sandy Clay with some Organic Matter
- B3-Wet, Loose, Brown and Gray to Gray Sand and Gravel
- C3-Moist to Wet, Loose, Brown Sand with Clay Seams and Gravel
- D3-Wet, Medium Dense, Brown and Gray Sand and Gravel
- E3-Moist, Soft, Brown Sandy Clay
- F3-Wet, Medium Stiff, Gray and Brown Sandy, Silty Clay with some Organic Matter
- G3-Wet, Loose, Brown Sand and Gravel with some Clay Seams
- H3-Alternating Layers of Hard, Dark Gray Calcareous, Fractured Shale and Hard, Gray Limestone
- J3-Alternating Layers of Hard, Dark Gray Calcareous, Fractured Shale with Quartz Seams and Hard, Gray Limestone
- K3-Moist, Loose to Medium Dense, Brown Clayey Silt
- L3-Wet, Medium Dense, Brown Sand and Gravel with some Clay Seams
- M3-Wet, Loose, Brown Sand and Gravel with some Shale Fragments
- N3-Moist, Medium Stiff, Brown Sandy, Silty Clay with some Gravel
- P3-Moist, Medium Stiff, Brown and Gray Sandy, Silty Clay with Gravel
- Q3-Moist, Medium Dense, Brown Sand and Gravel
- R3-Moist, Dense, Brown Sand and Gravel

"N" VALUES

- Sta. 17+03.45 - 10.7 m Left of Center Line
 - 1.09- 1.39, N+11
 - 2.62- 2.92, N+9
 - 4.14- 4.44, N+27
 - 5.66- 5.96, N+14
 - 7.19- 7.49, N+34
- Sta. 17+39.5 - 22.5 m Left of Center Line
 - 1.67- 1.97, N+11
 - 3.20- 3.50, N+33
 - 6.40- 6.46, N+60(.06)
- Sta. 17+55.45 - 23 m Left of Center Line
 - 1.67- 1.97, N+13
 - 3.20- 3.50, N+32
- Sta. 17+74.45 - 22.5 m Left of Center Line
 - 1.67- 1.97, N+15
 - 3.20- 3.50, N+11
 - 4.72- 5.02, N+31
- Sta. 17+94.45 - 8 m Left of Center Line
 - 1.67- 1.97, N+3
 - 3.20- 3.50, N+8
 - 4.72- 5.02, N+2
- Sta. 18+13.45 - 7.5 m Left of Center Line
 - 1.67- 1.97, N+4
 - 3.20- 3.50, N+5
 - 4.72- 5.02, N+2
 - 6.24- 6.46, N+107(.21)
- Sta. 18+32.45 - 22 m Left of Center Line
 - 1.67- 1.97, N+0
 - 3.20- 3.50, N+1
 - 4.72- 5.02, N+0
 - 6.24- 6.54, N+33
- Sta. 18+51.45 - 8.4 m Left of Center Line
 - 1.67- 1.97, N+10
 - 3.20- 3.50, N+10
 - 4.72- 5.02, N+3
 - 6.24- 6.54, N+15
- Sta. 18+71.45 - 21.5 m Left of Center Line
 - 1.31- 1.61, N+7
 - 2.83- 3.13, N+3
 - 4.35- 4.65, N+2
 - 5.88- 6.18, N+24
- Sta. 18+90.45 - 8.3 m Left of Center Line
 - 1.67- 1.97, N+6
 - 3.20- 3.50, N+8
 - 4.72- 5.02, N+6
 - 6.09- 6.28, N+120(.18)
- Sta. 19+10.45 - 21.5 m Left of Center Line
 - 1.31- 1.61, N+8
 - 2.83- 3.13, N+4
 - 4.35- 4.65, N+3
 - 5.88- 6.18, N+16
- Sta. 19+29.45 - 9 m Left of Center Line
 - 1.22- 1.52, N+6
 - 2.74- 3.04, N+11
 - 4.26- 4.56, N+6
 - 5.79- 6.09, N+6
- Sta. 19+49.45 - 22.7 m Left of Center Line
 - 1.12- 1.42, N+6
 - 2.65- 2.95, N+8
 - 4.17- 4.47, N+6
 - 5.69- 5.99, N+14
- Sta. 19+68.45 - 7.5 m Left of Center Line
 - 1.28- 1.58, N+3
 - 2.80- 3.10, N+4
 - 4.32- 4.62, N+6
 - 5.85- 6.15, N+8
 - 7.37- 7.67, N+12
- Sta. 19+89.45 - 22.9 m Left of Center Line
 - 1.22- 1.52, N+9
 - 2.74- 3.04, N+14
 - 4.26- 4.56, N+12
 - 5.79- 6.09, N+9
 - 7.31- 7.61, N+7
- Sta. 20+96.45 - 9.3 m Left of Center Line
 - 1.22- 1.52, N+8
 - 2.74- 3.04, N+6
 - 4.26- 4.56, N+11
 - 5.79- 6.09, N+50
 - 7.31- 7.34, N+60(.03)

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	060779	63	119
						06715	LAYOUT	39063

GENERAL NOTES

All dimensions are in meters unless otherwise noted.

BENCH MARK: Cotton Picker Spike in Telephone Pole, 24.99 m Lt. of Sta. 19+95.09, Elev. 86.069

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction, 1996 edition, with applicable supplemental specifications and special provisions.

DESIGN SPECIFICATIONS: AASHTO Standard Specifications for Highway Bridges 1996 edition, with current Interim specifications.

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

MATERIALS AND STRENGTHS:

Class 5 Concrete (Prestressed Girder)	f'c = 35.0 MPa
Class 5(AE) Concrete (superstructure)	f'c = 28.0 MPa
Class 3 Concrete (substructure)	f'c = 24.0 MPa
Reinforcing Steel (ASTM A615/A615M-96a, Grade 420)	f _y = 420 MPa
Structural Steel (AASHTO M 270, Grade 345W)	F _y = 345 MPa
Structural Steel (AASHTO M 270, Grade 250)	F _y = 250 MPa

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

STEEL PILING: All piling shall be HP 250x62 and shall be driven with an approved air, steam, or diesel hammer to a minimum safe bearing capacity of 490 kN per pile and into the material designated as hard shale on the boring legend. Lengths shown are for estimating quantities and for use in determining payment for cut-off and build-up in accordance with the Standard Specifications. Piles in end bents to be driven after embankment to bottom of cap is in place. On all piles the contractor shall use approved steel H-Pile driving points. Minimum penetration for all piles shall be 3.0 m below bottom of cap or footing.

FOOTINGS: Footings in Bent Nos. 2, 3, 4, 18 and 19 shall be set a minimum of 0.5 m into material designated as hard, fractured shale on the boring legend. The top of the footings of Bent No's. 18 and 19 shall be set a minimum of 0.75 m below the channel bottom. Rock excavations shall be made to neat lines of the concrete footings. Care shall be exercised to avoid shattering of rock faces by excessive blasting. Concrete in the footings shall be poured directly against excavated surfaces of rock. The top of the footings for Bent No's. 5 through 17 shall be set a minimum of 0.8 m below Natural ground. Foundations for footings shall be prepared in accordance with Section 80.04 of the Standard Specifications.

BRIDGE DECK: The concrete bridge deck shall be given a fine finish as specified for final finishing in subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish.

PROTECTIVE SURFACE TREATMENT: Class I Protective Surface Treatment shall be applied to the roadway surface and to the face and top of the concrete parapet rail.

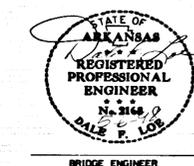
DETAIL DRAWINGS:

End Bents	39047 & 39064
Intermediate Bents	39065 - 39068 & 39045 & 39046
68 m Prestressed Concrete Girder Units	39069 - 39072
102 m Continuous Plate Girder Unit	39051 - 39056
Steel Piling	3650*
Type Special Approach Gutters	39060

EXISTING BRIDGE: Existing Bridge No. 00414 (log mile 0.37) is 7.0 m wide and 37.2 m long. It consists of 29 R.C. Deck Girder approach spans and two 32.5 m R.C. Deck Girder Arch spans over the main channel. Concrete pile bents and concrete piers support the superstructure. Plans of the existing bridge will be made available to the Contractor upon request. Original bridge plans are shown on drawing No's. 923-929, 100, and 103. Modifications have made to some of the original bridge substructure units. These modifications are not shown on the above original bridge drawings, but include the following: 1) four 40 mm X 40 mm concrete columns with a concrete cap are attached to Bent Nos. 10 & 22; 2) a 40 mm X 40 mm steel pile sitting on a 1 m X 1 m concrete slab are added to Bent No. 18; 3) three 30 mm steel piles, each sitting on a 5 m X 2 m concrete slab, and four 40 mm X 40 mm concrete columns with a concrete cap have been installed approximately 1 m ahead of Bent No. 24.

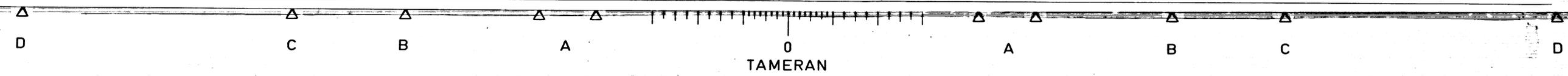
REMOVAL AND SALVAGE: After the new bridge is opened to traffic, existing Bridge No. 00414 shall be removed in accordance with Section 205 of the Standard Specifications. This includes any modifications added subsequent to original construction, and any original components which are in the floodplain but are no longer a functional part of the existing structure. All material from the existing bridge shall become the property of the Contractor.

**ALTERNATE NO. 2
(SHEET 3 OF 3)
LAYOUT OF BRIDGE OVER SALINE RIVER
SALINE RIVER & SALT CREEK STRS. & APPRS. (S)
ROUTE 229 SEC. 5
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.**



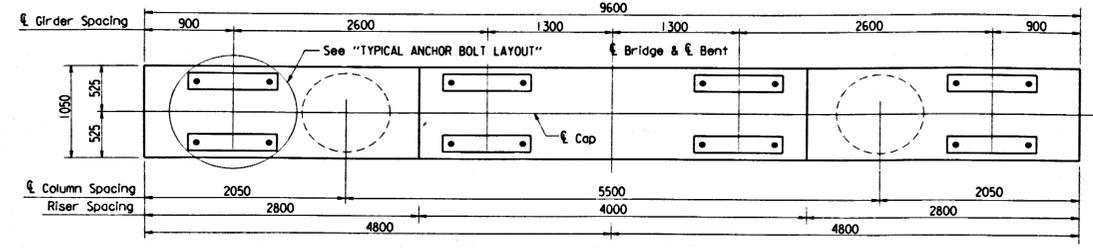
DRAWN BY: MJT DATE: 03-09-98
 CHECKED BY: RLU DATE: 03-20-98
 DESIGNED BY: AKS DATE: 02-10-98
 BRIDGE NO. 06715 DRAWING NO. 39063

MICROFILMED
AUG 3 1 1998

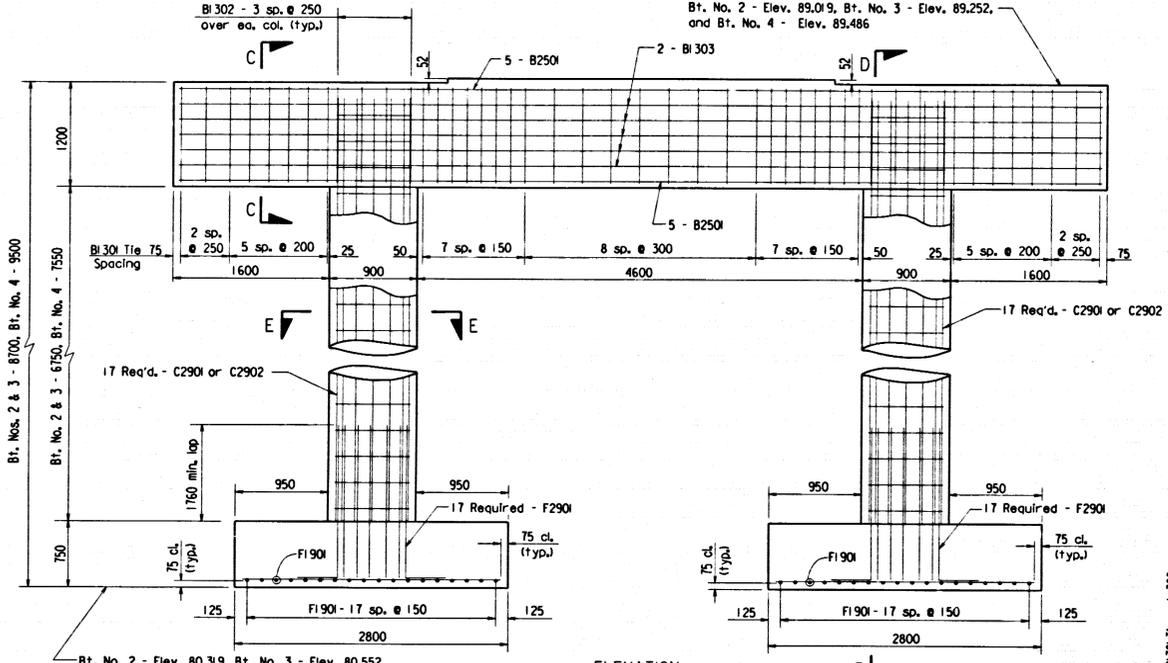


B06079X213

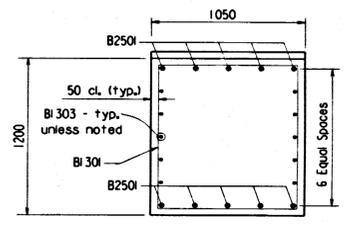
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	060779		25	119
				06715 BENT DETAILS		39065		



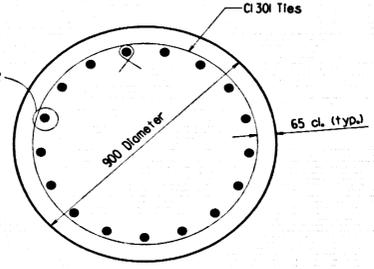
PLAN
1:30



ELEVATION
1:30

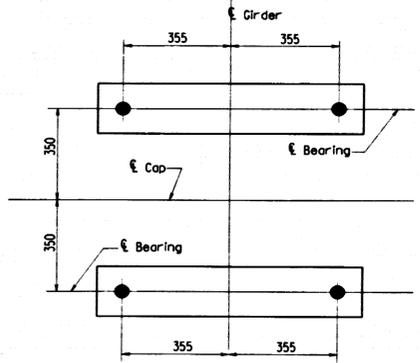


SECTION C-C
1:20



SECTION E-E
1:10

Notes:
For details of Elastomeric Bearings, see drwg. no. 39073.

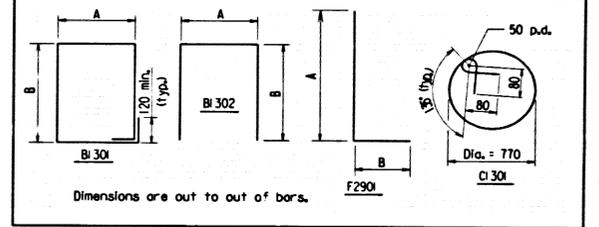


TYPICAL ANCHOR BOLT LAYOUT
1:10

BAR LIST - PER BENT

MARK	NUMBER REQUIRED		LENGTH	A	B	PIN DIA.
	BT. 2 or 3	BT. 4				
BI 30I	39	39	4210	950	1100	50
BI 302	8	8	3100	950	1100	50
BI 303	10	10	9500	---	---	Str.
B250I	10	10	9500	---	---	Str.
C130I	52	58	2690	---	---	50
C290I	34	---	7770	---	---	Str.
C2902	---	34	8570	---	---	Str.
F190I	72	72	2650	---	---	Str.
F290I	34	34	3110	2700	490	228

BENDING DIAGRAMS



GENERAL NOTES

Stations and elevations are in meters. All other dimensions are in millimeters unless otherwise noted.
 All Concrete shall be Class "S" and shall be poured in the dry. All exposed corners to be chamfered 20 mm unless otherwise noted.
 All Reinforcing Steel shall conform to ASTM A615/A615M-96a, Grade 420 (fy = 420 MPa).
 If Anchor Bolts are drilled into cap, top reinforcing bars shall be properly placed to avoid damage.
 For additional information, see Layout.

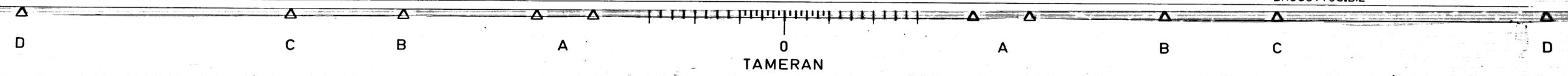
ALTERNATE NO. 2
 DETAILS OF INTERMEDIATE
 BENT NOS. 2 THROUGH 4
 SALINE RIVER

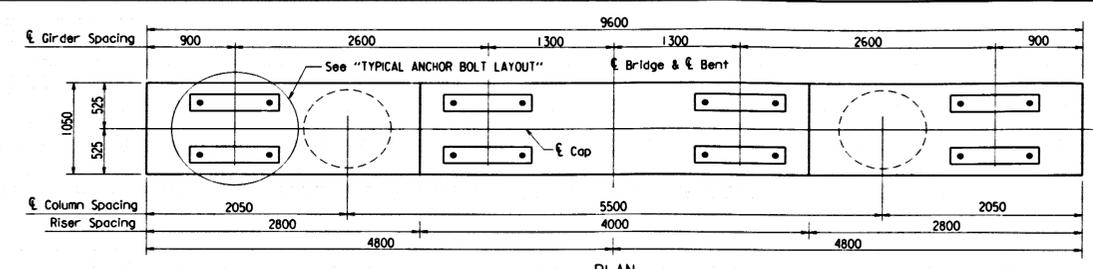
ROUTE 229 SEC. 5
 ARKANSAS STATE HIGHWAY COMMISSION
 LITTLE ROCK, ARK.

DRAWN BY: TEB DATE: 04/07/98
 CHECKED BY: AMS DATE: 4/22/98
 DESIGNED BY: AMS DATE: 3/26/98
 BRIDGE NO. 06715 DRAWING NO. 39065

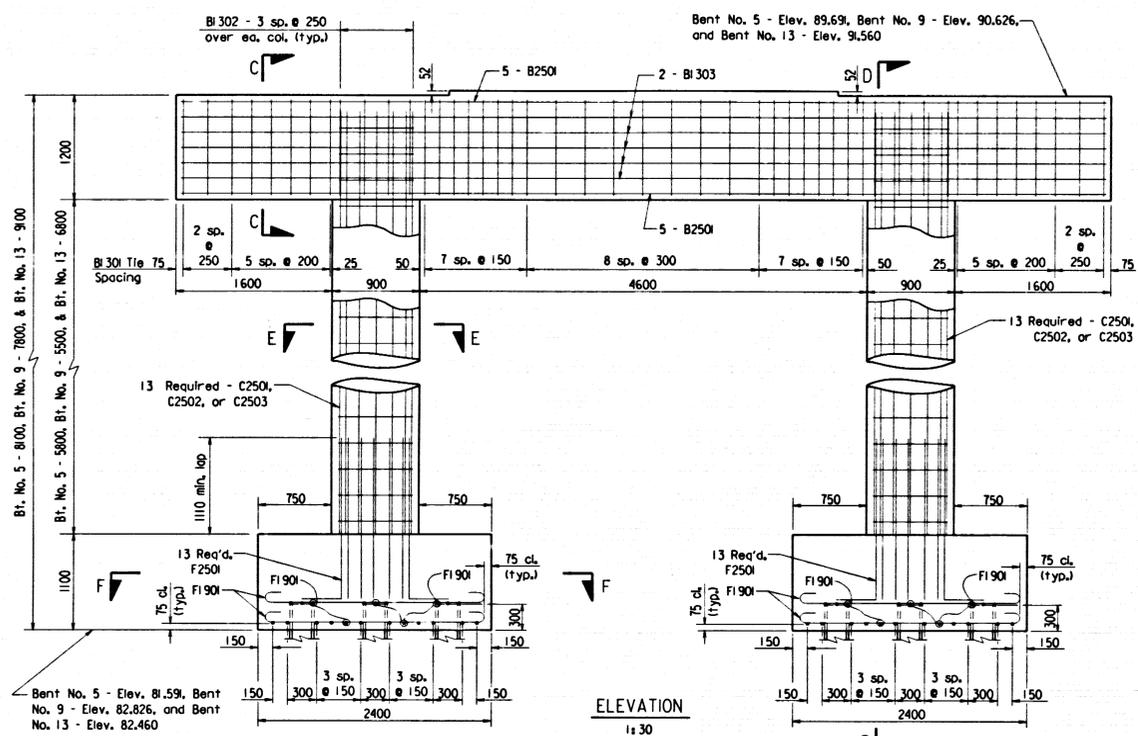


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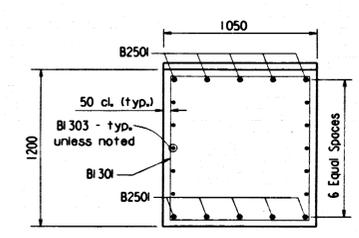




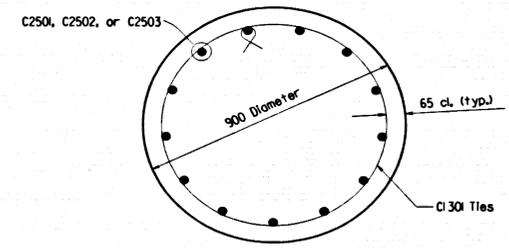
PLAN
1:30



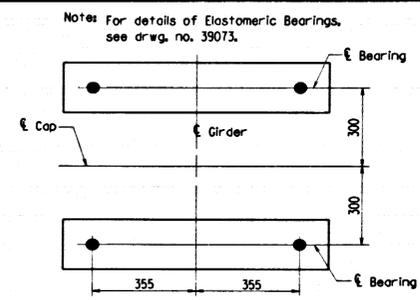
ELEVATION
1:30



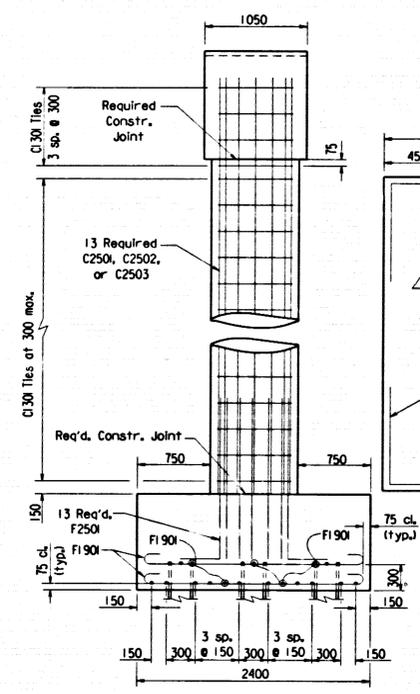
SECTION C-C
1:20



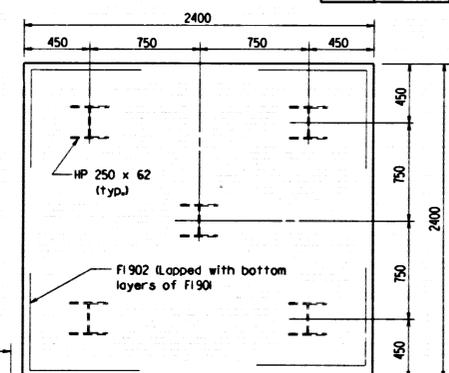
SECTION E-E
1:10



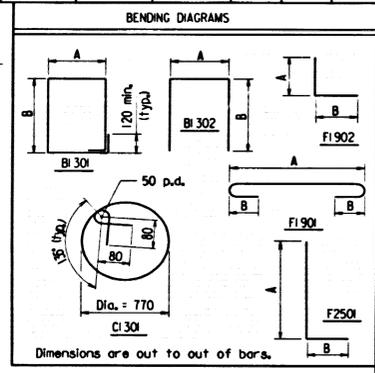
TYPICAL ANCHOR BOLT LAYOUT
1:10



SECTION D-D
1:30



SECTION F-F
1:20



BENDING DIAGRAMS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	060779	66	119
				JOB NO.		06715 BENT DETAILS		39066

BAR LIST

MARK	NUMBER REQUIRED			LENGTH	A	B	PIN DIA.
	BT. NO. 5	BT. NO. 9	BT. NO. 13				
BI 301	39	39	39	4210	950	1100	50
BI 302	8	8	8	3100	950	1100	50
BI 303	10	10	10	9500			Str.
B2501	10	10	10	9500			Str.
C1301	46	44	52	2690			50
C2501	26			6820			Str.
C2502		26		6520			Str.
C2503			26	7820			Str.
F1901	84	84	84	2570	2250	160	114
F1902	8	8	8	1830	940	940	114
F2501	26	26	26	2520	2170	40	152

GENERAL NOTES

Stations and elevations are in meters. All other dimensions are in millimeters unless otherwise noted.

All piling shall be HP 250 x 62 and shall be driven with an approved air, steam, or diesel hammer to a minimum safe bearing capacity of 490 kN per pile.

All concrete shall be Class "S" and shall be poured in the dry.

All exposed corners to be chamfered 20 mm unless otherwise noted.

All Reinforcing Steel shall conform to ASTM A615/A615M-96a Grade 420 ($f_y = 420$ MPa)

If Anchor Bolts are drilled into cap, top reinforcing bars shall be properly placed to avoid damage.

For additional information, see Layout.

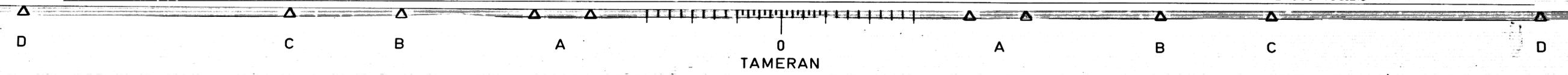
ALTERNATE NO. 2
DETAILS OF INTERMEDIATE
BENT NOS. 5, 9, AND 13
SALINE RIVER

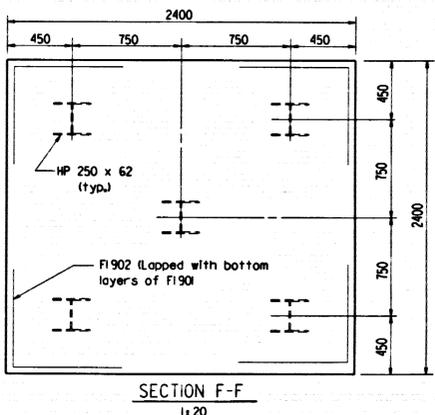
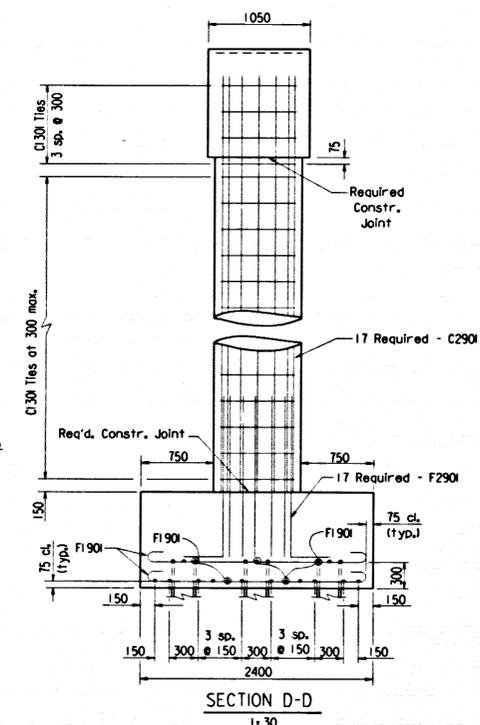
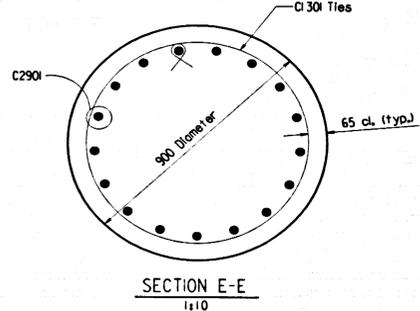
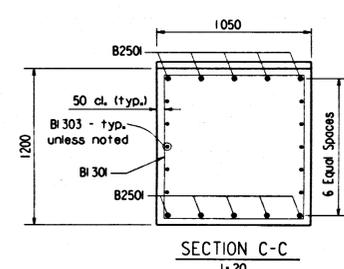
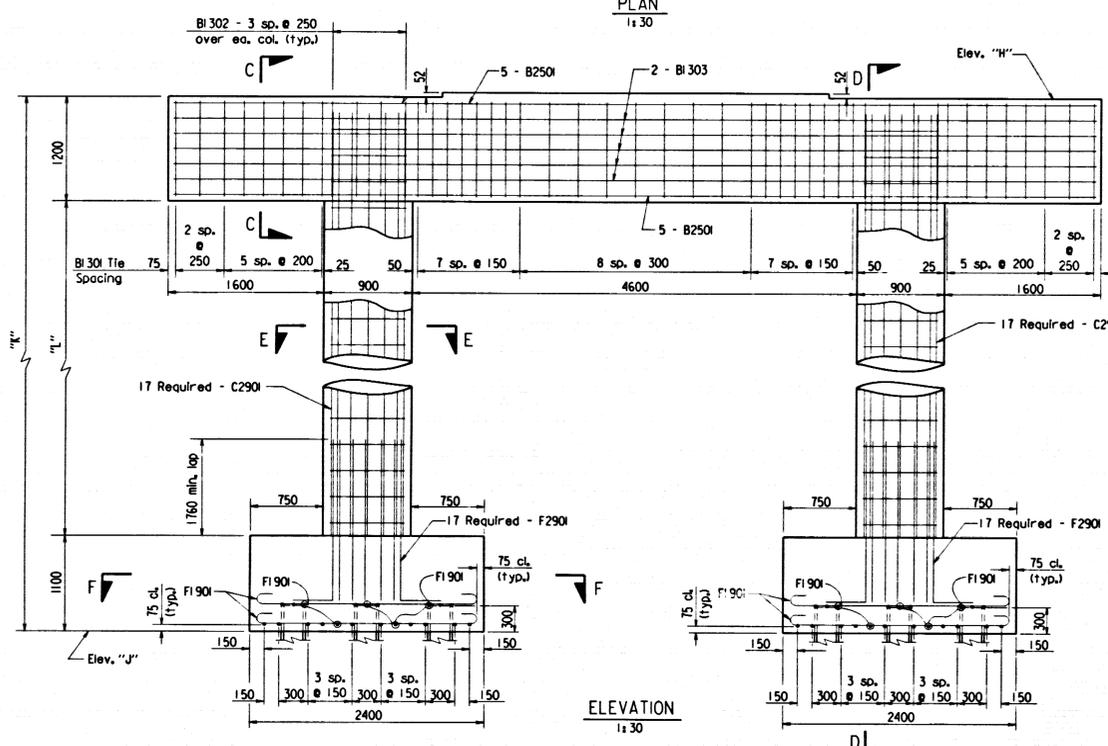
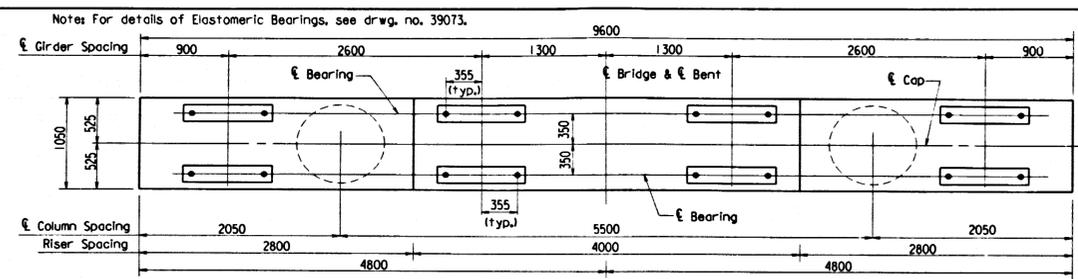
ROUTE 229 SEC. 5
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: TEB DATE: 04/07/98
CHECKED BY: AMS DATE: 4/22/98 SCALE: As Noted
DESIGNED BY: AMS DATE: 4/6/98
BRIDGE NO. 06715 DRAWING NO. 39066



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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	06715	BENT DETAILS	39067	

BAR LIST - PER BENT

MARK	NO. REQ'D.	LENGTH	A	B	PIN. DIA.
BI 301	39	4210	950	1100	50
BI 302	8	3100	950	1100	50
BI 303	10	9500			Str.
B250I	10	9500			Str.
C130I	"M"	2690			50
C290I	34	"N"			Str.
F190I	84	2570	2250	160	114
F1902	8	1830	940	940	114
F290I	34	3230	2820	490	228

BENDING DIAGRAMS

Dimensions are out to out of bars.

TABLE OF VARIABLES

BENT NO.	Elev. "H"	Elev. "J"	"K"	"L"	"M"	"N"
6	89.953	83.053	6900	4600	38	5620
7	90.187	82.787	7400	5100	42	6120
8	90.420	82.820	7600	5300	42	6320
10	90.887	82.787	8100	5800	46	6820
11	91.121	82.521	8600	6300	50	7320
12	91.355	82.555	8800	6500	50	7520
14	91.822	82.322	9500	7200	56	8220
15	92.055	82.555	9500	7200	56	8220
16	92.289	83.189	9100	6800	52	7820

GENERAL NOTES

Stations and elevations are in meters. All other dimensions are in millimeters unless otherwise noted.

All piling shall be HP 250 x 62 and shall be driven with an approved air, steam, or diesel hammer to a minimum safe bearing capacity of 490 kN per pile.

All Concrete shall be Class "S" and shall be poured in the dry.

All exposed corners to be chamfered 20 mm unless otherwise noted.

All Reinforcing Steel shall conform to ASTM A615/A615M-96a Grade 420 (fy = 420 MPa).

If Anchor Bolts are drilled into cap, top reinforcing bars shall be properly placed to avoid damage.

For additional information, see Layout.

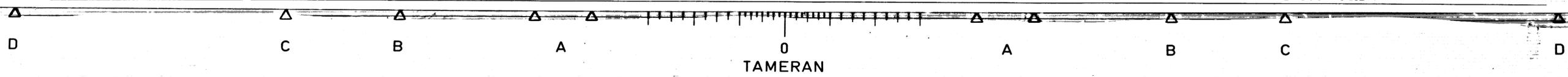


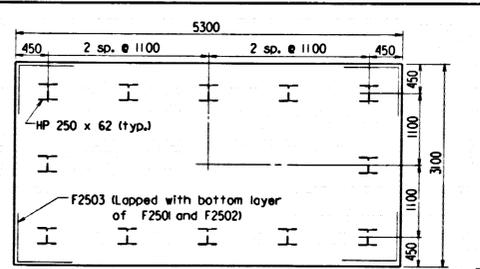
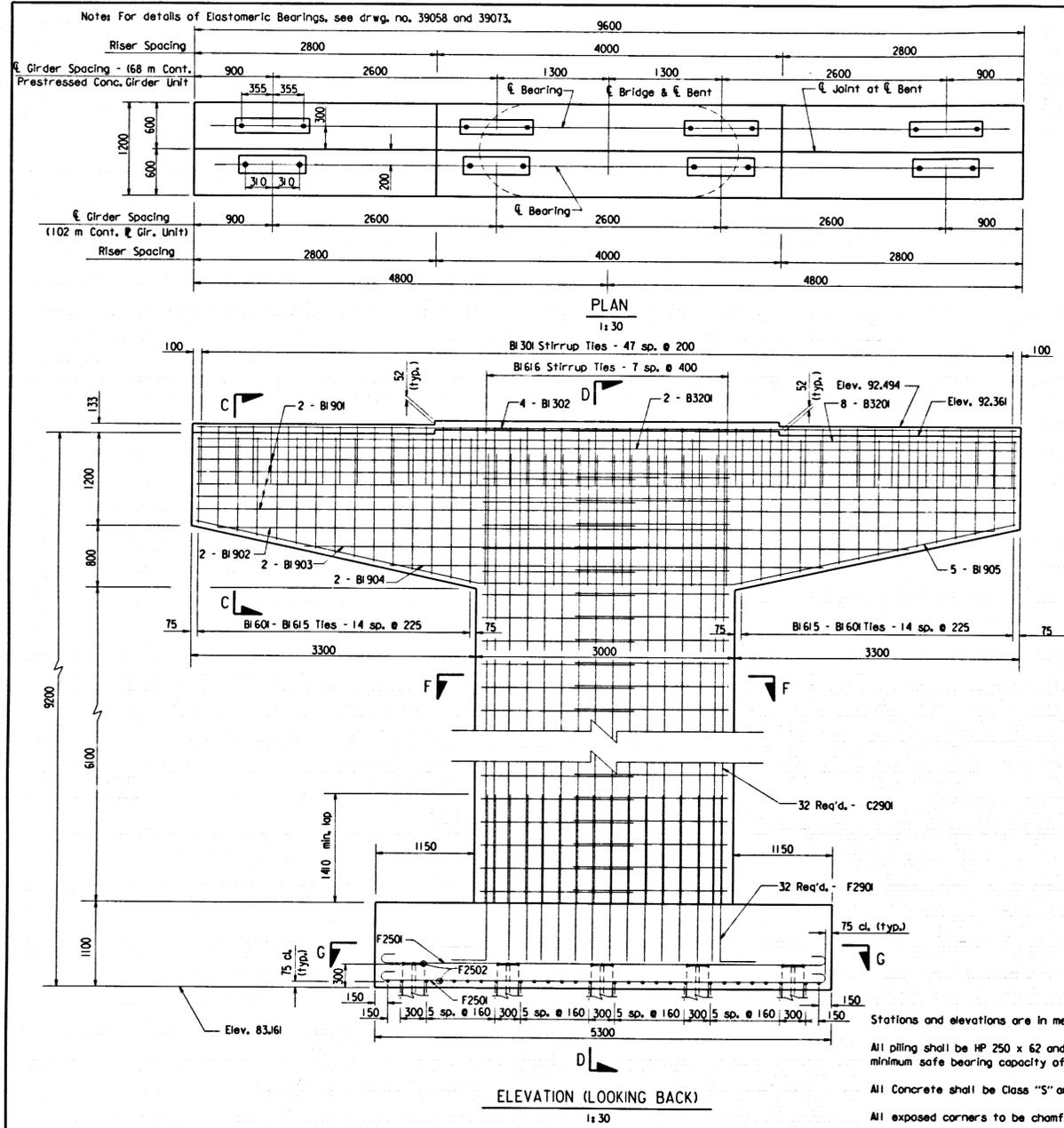
ALTERNATE NO. 2
 DETAILS OF INTERMEDIATE
 BENT NOS. 6, 7, 8, 10, 11,
 12, 14, 15, AND 16
 SALINE RIVER
 ROUTE 229 SEC. 5
 ARKANSAS STATE HIGHWAY COMMISSION
 LITTLE ROCK, ARK.

BRIDGE ENGINEER

DRAWN BY: TEB DATE: 04/07/98
 CHECKED BY: AMS DATE: 4/28/98
 DESIGNED BY: AMS DATE: 4/01/98
 BRIDGE NO. 06715 DRAWING NO. 39067

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 AUG 3 1 1998

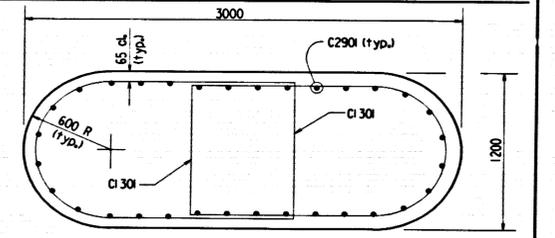
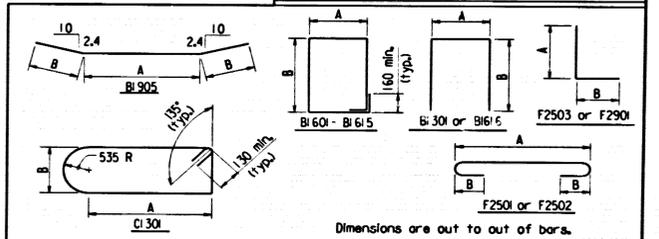
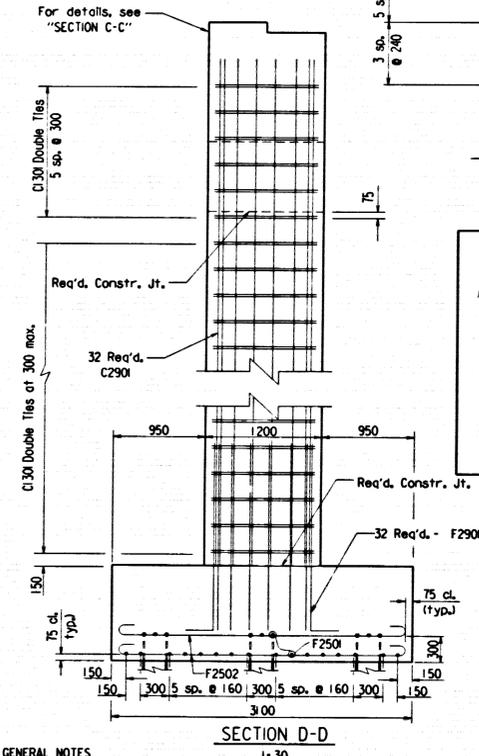
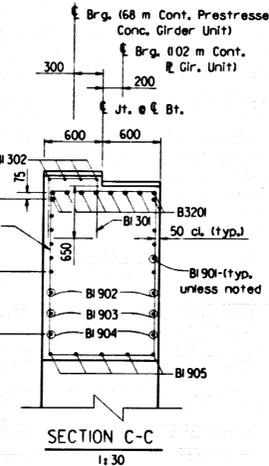




DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	060779	68	119	
				06715 BENT DETAILS		39068		

BAR LIST

MARK	NO. REQ'D.	LENGTH	A	B	PIN DIA.
BI 301	48	1870	500	710	50
BI 302	4	9500			Str.
BI 601 to BI 615	2 of Each	4590 to 6110	1100	1880	63
BI 616	8	4830	1100	1900	63
BI 901	10	9500			Str.
BI 902	2	9170			Str.
BI 903	2	7190			Str.
BI 904	2	5210			Str.
BI 905	5	9680	3220	3230	114
B3201	10	9500			Str.
CI 301	52	5460	1250	1070	76
C2901	32	7800			Str.
F2501	25	5720	5150	210	152
F2502	43	3520	2950	210	152
F2503	4	2600	1330	1330	152
F2901	32	2870	2460	490	228



GENERAL NOTES

Stations and elevations are in meters. All other dimensions are in millimeters unless otherwise noted.

All piling shall be HP 250 x 62 and shall be driven with an approved air, steam, or diesel hammer to a minimum safe bearing capacity of 490 kN per pile.

All Concrete shall be Class "S" and shall be poured in the dry.

All exposed corners to be chamfered 20 mm unless otherwise noted.

All Reinforcing Steel shall conform to ASTM A615/A615M-96a Grade 420 ($f_y = 420$ MPa).

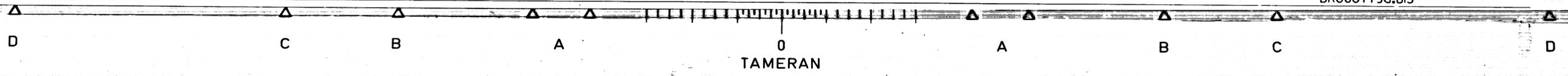
If Anchor Bolts are drilled into cap, top reinforcing bars shall be properly placed to avoid damage.

For additional information, see Layout.

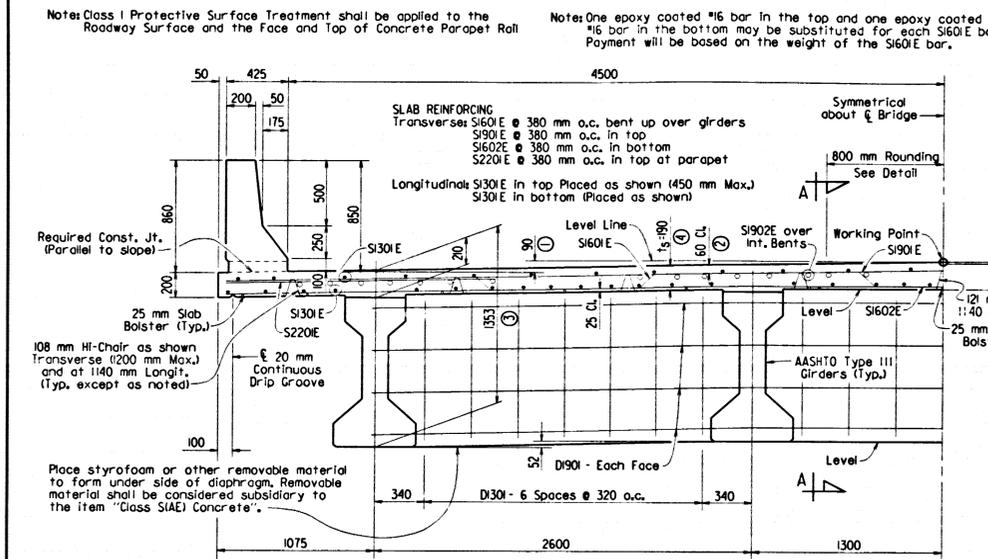


ALTERNATE NO. 2
DETAILS OF INTERMEDIATE
BENT NO. 17
SALINE RIVER
ROUTE 229 SEC. 5
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
DRAWN BY: TEB DATE: 04/08/98
CHECKED BY: AMS DATE: 4/24/98
DESIGNED BY: AMS DATE: 4/6/98
BRIDGE NO. 06715 DRAWING NO. 39068

MICROFILMED
AUG 3 1 1998

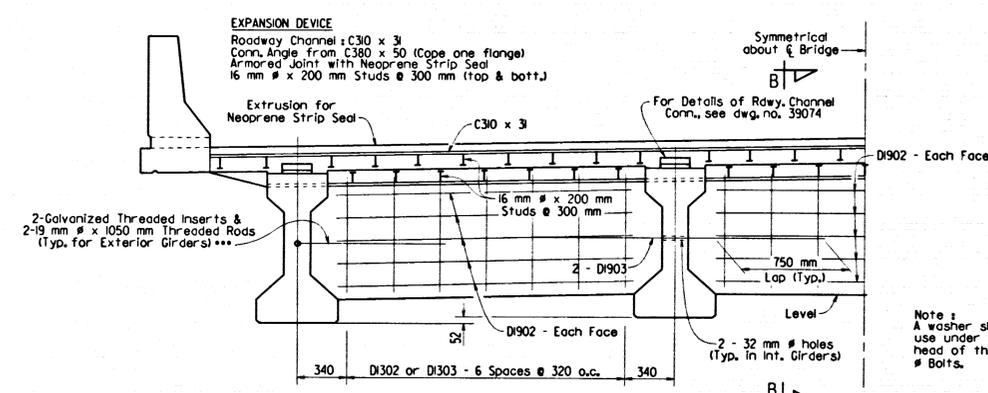


DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						060779	69	119
						06715	SPAN DETAILS	39069

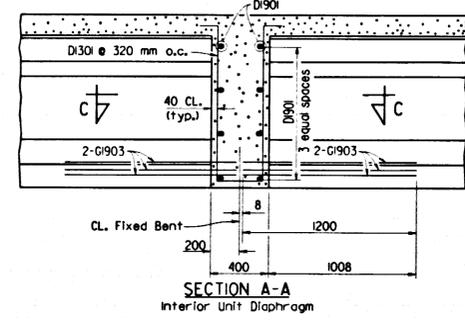


- ① Working Point to Gutter Line
- ② Tolerance: Minus 6 mm Plus Equal to amount of slab thickening used to meet slab thickness tolerance. See "Adjustment for Slab Thickness Tolerance when Removable Deck Forming is Used".
- ③ These dimensions are taken at Bearing & Girder
- ④ See "Adjustment for Slab Thickness Tolerance when Removable Deck Forming is Used".

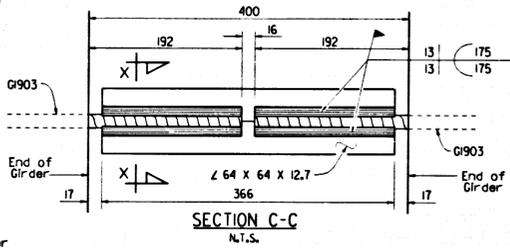
TYPICAL HALF-SECTION AT BENTS BETWEEN ENDS OF UNIT



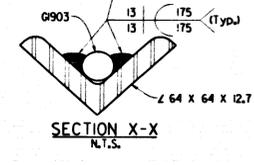
TYPICAL HALF-SECTION AT ENDS OF UNITS AND MIDSPAN DIAPHRAGMS



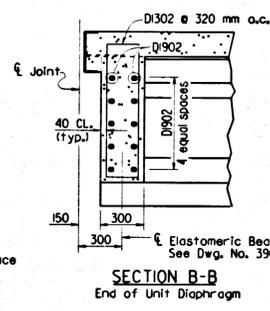
SECTION A-A Interior Unit Diaphragm



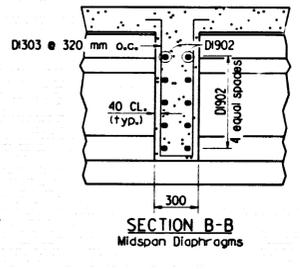
SECTION C-C N.T.S.



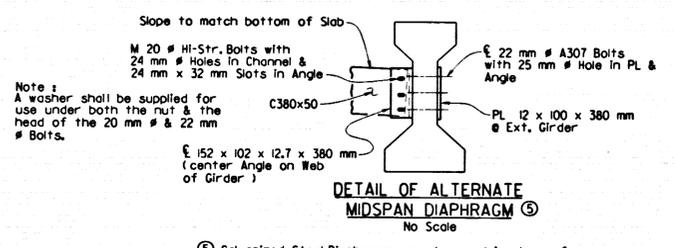
SECTION X-X N.T.S.



SECTION B-B End of Unit Diaphragm

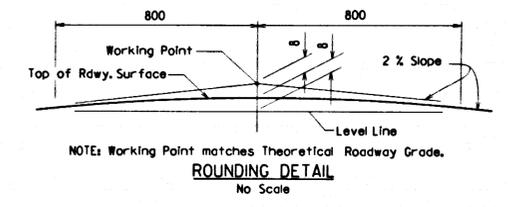


SECTION B-B Midspan Diaphragm

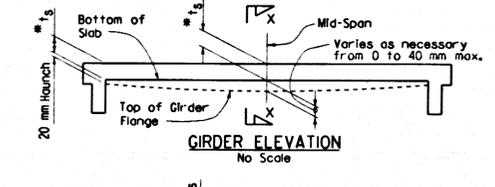


DETAIL OF ALTERNATE MIDSPAN DIAPHRAGM

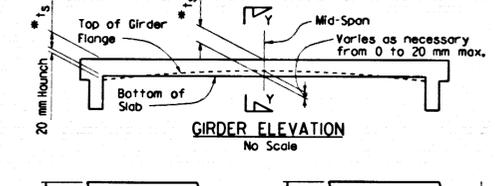
- ⑤ Galvanized Steel Diaphragms may be used in place of concrete at Midspan Diaphragms only. All components of the Alternate Steel Diaphragms shall be Galvanized. Payment will be based on concrete diaphragms.



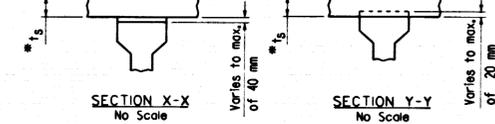
ROUNDING DETAIL



GIRDER ELEVATION



GIRDER ELEVATION



SECTION X-X

SECTION Y-Y

- Note: t_s = slab thickness as shown on superstructure details - See "Typical Half Section at Bents Between Ends of Unit".
- *Tolerance when removable deck forming is used is +12 mm - 6 mm. Haunch forming is required and shall be adjusted to maintain slab thickness tolerance. See Dwg. No. 3655 for tolerances when permanent steel deck forms are used.
- 'Girder Elevation' sketches show the range of acceptability of the top of the Girder relative to bottom of slab after the placement of the slab. When the top of the girder projects more than 20 mm into the slab, a raise in grade will be necessary. Girders shall be set in a sufficient number of spans so when adjustment is necessary the Profile Grade can be adjusted over suitable increments so the revised grade line will produce a smooth riding surface. Variation of haunch height will be at the Contractor's expense.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED

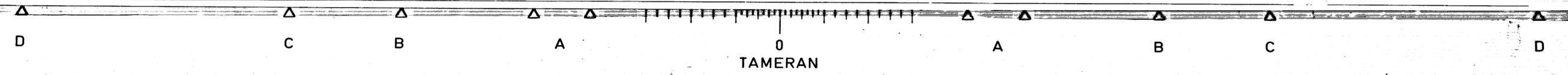
Note: All dimensions are in millimeters unless otherwise noted.

ALTERNATE NO. 2
(SHEET 1 OF 4)
DETAILS OF 68 METER
CONTINUOUS PRESTRESSED
CONCRETE GIRDER UNIT
SALINE RIVER
ROUTE 229 SEC. 5
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.



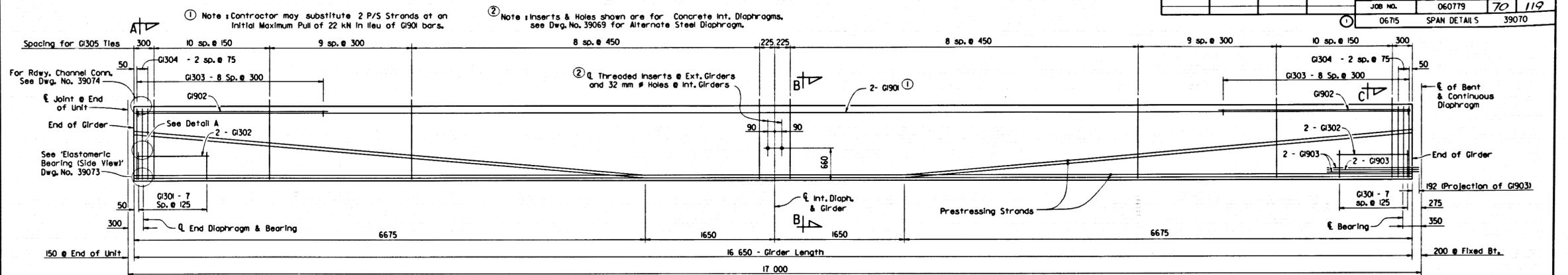
BRIDGE ENGINEER
DRAWN BY: MJT DATE: 03-17-98
CHECKED BY: CES DATE: 6-30-98 SCALE: AS NOTED
DESIGNED BY: AME DATE: 3-16-78
BRIDGE NO. 06715 DRAWING NO. 39069

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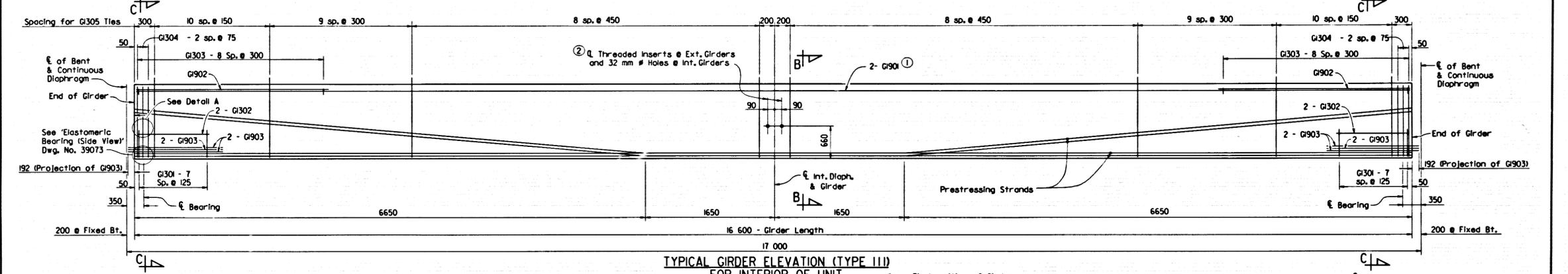


TAMERAN

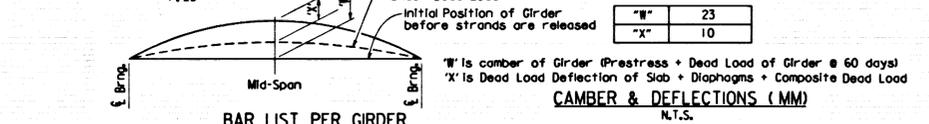
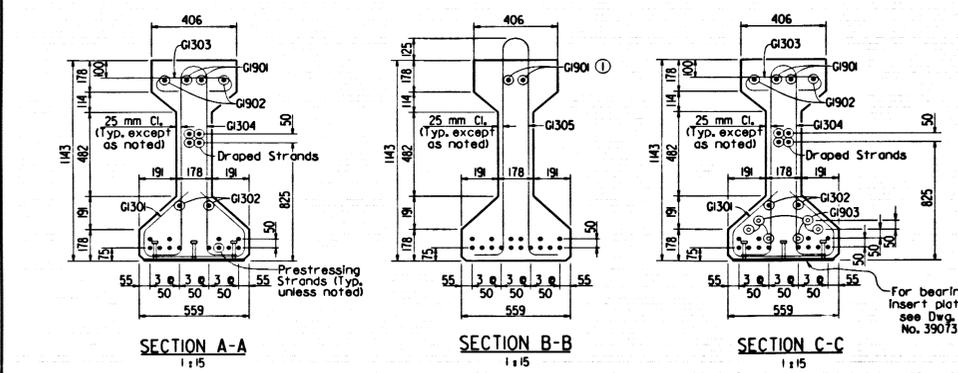
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		70	119
				JOB NO.	060779		39070	
				06715	SPAN DETAIL 5		39070	



TYPICAL GIRDER ELEVATION (TYPE III)
AT ENDS OF UNIT
1:25



TYPICAL GIRDER ELEVATION (TYPE III)
FOR INTERIOR OF UNIT
1:25



BAR LIST PER GIRDER

MARK	NO.	REQ'D.	LENGTH	P.D.
G301	16	1370	50	
G302	4	925	Str.	
G303	18	670	76	
G304	6	2430	76	
G305	56	2760	76	
G901	2	*	Str.	
G902	4	2500	Str.	
G903	**	1200	Str.	

BENDING DIAGRAMS

All bars in this list shall be subsidiary to the item "Prestressed Concrete Girders".
For Bar List of Span Reinforcing, See Dwg. No. 39071
* 16 550 for Girders at end of Unit, 16 500 for Girders in the Interior of Unit
** 6 for Girders at end of Unit, 12 for Girders in the Interior of Unit
③ G903 Bars shall be weldable steel conforming to ASTM A 706/A 706M-96b, Grade 420.

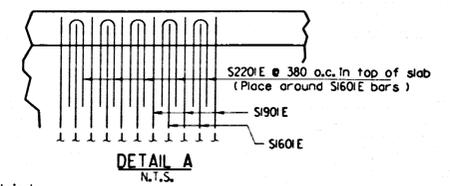
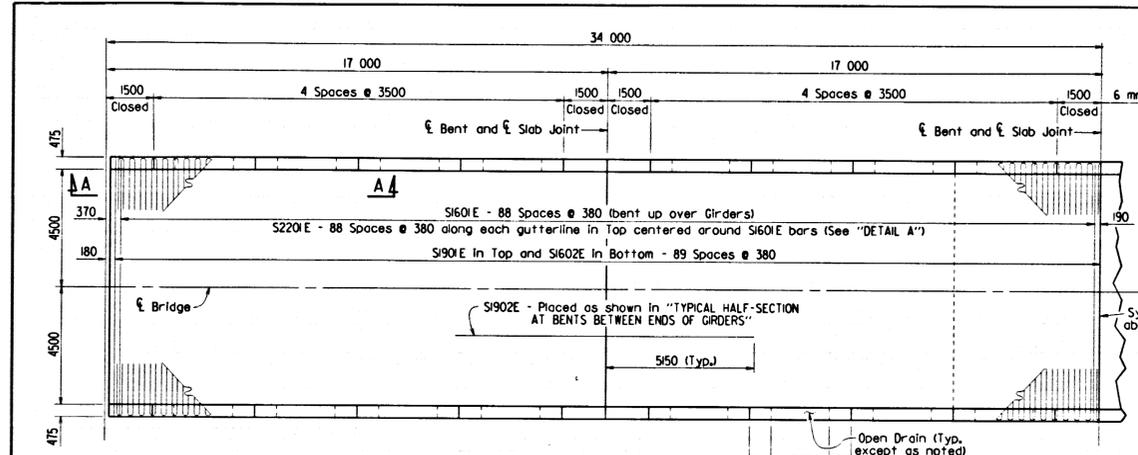


Notes: All dimensions are in millimeters unless otherwise noted.
ALTERNATE NO. 2
(SHEET 2 OF 4)
DETAILS OF 68 METER
CONTINUOUS PRESTRESSED
CONCRETE GIRDER UNIT
SALINE RIVER
ROUTE 229 SEC. 5
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
DRAWN BY: MJT DATE: 03-20-98
CHECKED BY: CES DATE: 7-17-98
DESIGNED BY: A/S DATE: 3-12-98
BRIDGE NO. 06715 DRAWING NO. 39070

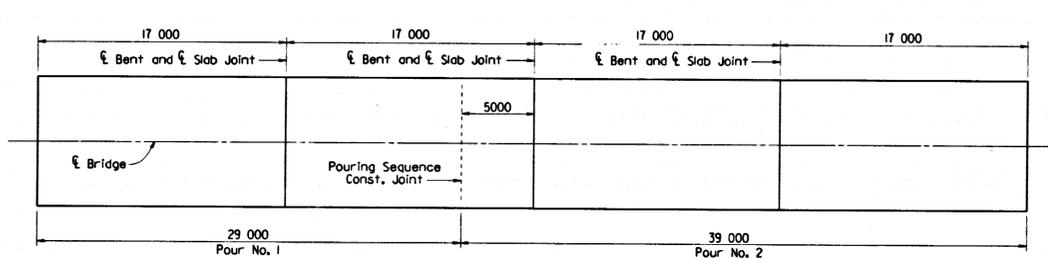
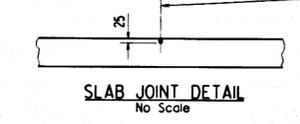
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AUG 31 1998



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	060779	71	119
JOB NO. 06715 SPAN DETAILS							39071	



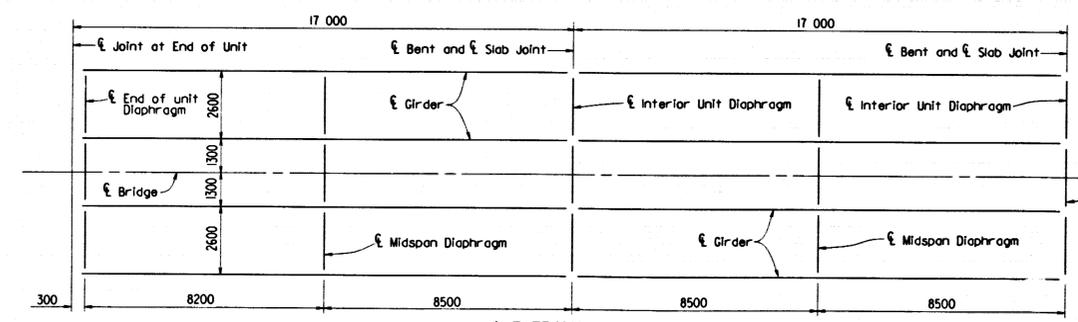
12 mm x 25 mm Type 6 Joint Sealer. See Sections 50L02 (h) and 50L05 (j) of the Standard Specifications. Joint Sealer shall be measured and paid for as Class S1AE Concrete. Bridge Slab joints shall be installed before the parapet railing is poured. If slab joints are to be sawed, they shall be sawed before any vehicular traffic is allowed on the unit. Slab joints shall be placed at all pouring sequence construction joints and required slab joint locations.



NOTES: Pour 1 must be placed before Pour 2 can be placed. A minimum of 72 hours shall elapse between pours. Any ralling pours made before the entire slab unit has been placed must be approved by the Bridge Engineer.

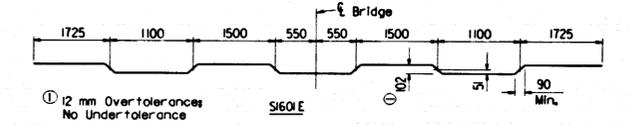
Concrete in diaphragms between girders over fixed bents shall be cast monolithically with the slab. All concrete in bridge superstructure shall be consolidated for the entire pour before any concrete has taken it's initial set.

The Contractor must obtain approval from the Bridge Engineer for any deviations from the pouring sequence shown.



BAR LIST-PER UNIT

MK	No. Req'd.	Length	Pin Dia.	Bending Diagrams (Dimensions are out to out of bars.)
D1301	63	2900	50	
D1302	42	2630	50	
D1303	84	2440	50	
D1901	24	7880	Str.	
D1902	180	2060	Str.	
S1301E	434	9300	Str.	
S1601E	178	9930	76	
S1602E	179	9850	Str.	
S1901E	179	9850	Str.	
S1902E	90	10 300	Str.	
S2201E	356	3810	168	
P1301E	464	1930	50	
P1302E	464	1660	50	
P1303E	192	1780	50	
P1304E	192	950	50	
P1305E	128	3380	Str.	
P1306E	96	1380	Str.	
P1901E	160	3380	Str.	



① 12 mm Overtolerances No Under tolerance

Notes Bar designations ending with "E" indicates Epoxy Coated bars.

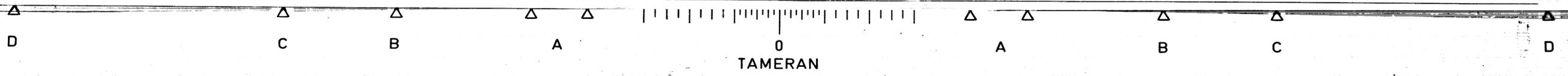
General Notes

All dimensions are in millimeters unless otherwise noted.
For Section A-A (showing parapet reinforcing), see Sheet 4 of 4.

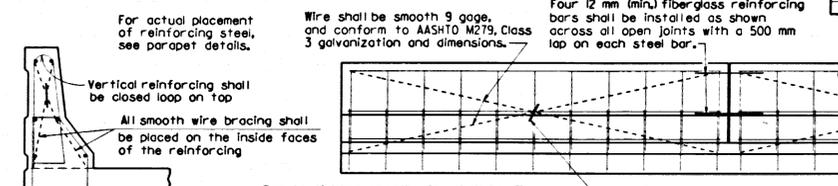
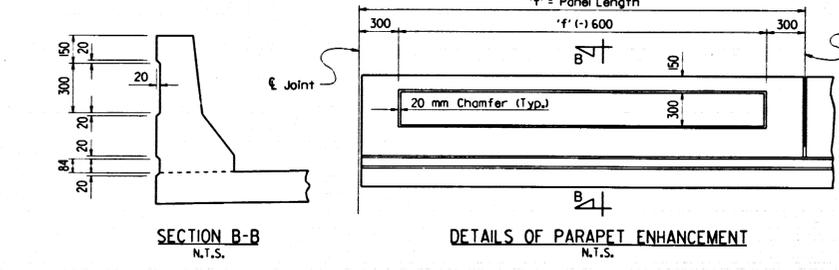
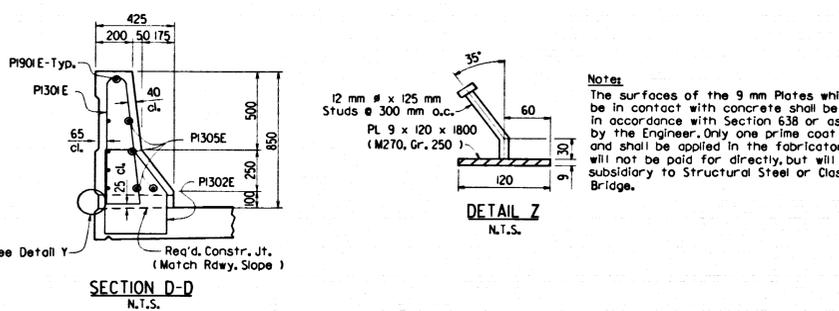
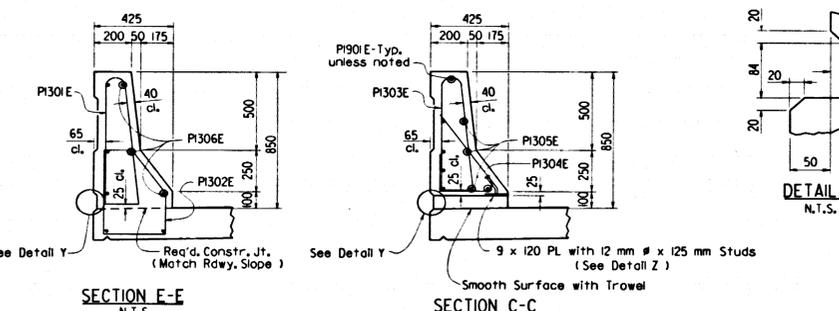
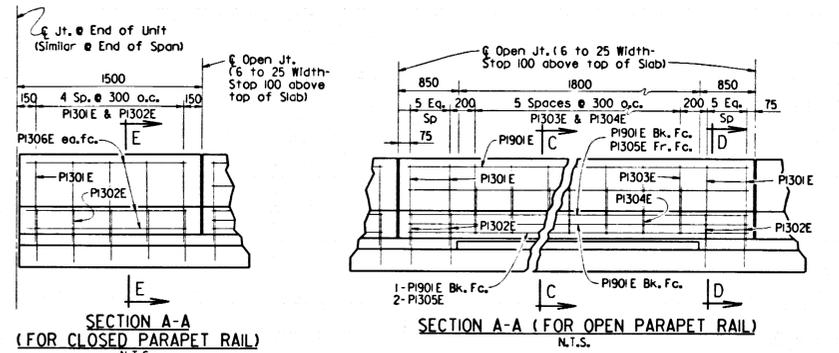


ALTERNATE NO. 2
(SHEET 3 OF 4)
DETAILS OF 68 METER
CONTINUOUS PRESTRESSED
CONCRETE GIRDER UNIT
SALINE RIVER
ROUTE 229 SEC. 5
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
DRAWN BY: MJT DATE: 03-18-98
CHECKED BY: CES DATE: 4-29-98
DESIGNED BY: AMS DATE: 3-18-98
BRIDGE NO. 06715 DRAWING NO. 39071

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		72	119
				JOB NO.	060779		06715 SPAN DETAILS 39072	



For actual placement of reinforcing steel, see parapet details.

Wire shall be smooth 9 gage, and conform to AASHTO M279, Class 3 galvanization and dimensions.

Four 12 mm (min) fiberglass reinforcing bars shall be installed as shown across all open joints with a 500 mm lap on each steel bar.

Vertical reinforcing shall be closed loop on top

All smooth wire bracing shall be placed on the inside faces of the reinforcing

Bar to tighten smooth wire shall be fiberglass

All panels shall be braced as shown to prevent racking. All open joints shall be sawed as soon as practical to a minimum width of 6 mm. To control cracking before sawing all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.

The extruded parapet shall conform to the horizontal and vertical lines shown on the plans or as directed by the Engineer and shall present a smooth, uniform appearance and texture. Exposed surfaces may be given a light brush finish or a Class 3, Textured Coating Finish, in place of Class 2, Rubbed Finish.

DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL (OPEN OR CLOSED)

PRESTRESSED GIRDERS GENERAL NOTES

Pretensioning steel shall be 13 mm dia. Low Relaxation strands with a minimum ultimate strength of 1860 MPa, and shall conform to AASHTO M 203.

Distances from the forms and spacing of the Prestressing Steel shall be maintained by stays, files, hangers, spacers, or other approved supports which shall be shown on the Shop Drawings.

All girders shall be Type III as noted on the details and shall be the standard prestressed sections adopted by the Joint Committee of AASHTO and the Prestressed Concrete Institute. All girders shall be cast in concrete floored pallets and in metal forms. All work and materials shall be as specified in section 802.22 of the Standard Specifications.

Concrete shall be Class 5 and shall have a minimum 28 day compressive strength, $f_c = 35.0$ MPa.

The initial tensile force applied to each 13 mm dia. strand shall be 138 kN. Transfer of this tensioning load to the girder shall not be done until the compressive strength of the concrete is 28.0 MPa.

Dimensions shown are to the center of the strands.

The contractor shall submit the method and sequence for release of strands to the Bridge Engineer for approval prior to casting of the girders.

The first 400 mm of the tops of the girders at beginning and end of bridge shall have a smooth surface, the rest of the tops of the girders shall be rough floated at approximately the time of set. This portion of the tops of girders shall be scrubbed transversely with a coarse wire brush to remove all laitance and to produce a roughened surface for bonding slabs.

All exposed steel at end of girders shall be protected against corrosion with a coating of tar or other waterproofing material.

Extreme care shall be exercised in handling and moving precast prestressed concrete girders. Girders must be maintained in an upright position at all times and must be picked up from points near the girder ends. Disregard of this requirement may lead to collapse of the girder. The contractor's proposed lifting details shall be submitted on shop drawings to the Bridge Engineer for approval. The use of holes for lifting purposes will not be permitted.

The points of support and directions of the reactions with respect to the member shall be approximately the same during transportation and storage as when the member is in its final position.

Reinforcing steel shall be ASTM A 615/A 615M-96a, Gr. 420 ($f_y = 420$ MPa).

The contractor may submit alternate strand patterns with design calculations for review and approval.

Load Distribution to Girders:

Dead Load (a) to girder only	To Interior Girder 2.12 kN/m + Girder + Diaph.	To Exterior Girder 10.83 kN/m + Girder + Diaph.
(b) To composite girder	5.25 kN/m	5.25 kN/m
Live Load to Comp. Girder	1.551 Wheels+Impact	1.289 Wheels+Impact

Includes 2.59 kN/m for future wearing surface

SUPERSTRUCTURE GENERAL NOTES

All dimensions are in millimeters (mm) unless otherwise noted.

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Dept. Standard Specifications for Highway Construction, 1996 edition, with applicable supplemental specifications and special provisions.

DESIGN SPECIFICATIONS: AASHTO Standard Specifications for Highway Bridges 1996 with current interim specifications.

LIVE LOADING: MS18 METHOD OF DESIGN: Load Factor

REINFORCING STEEL: Reinforcing Steel shall conform to ASTM A 615/A 615M-96a, Grade 420 ($f_y = 420$ MPa).

Reinforcing steel shall be accurately located in the forms and firmly held in place by steel wire supports sufficient in size and number 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 - Bridge".

CONCRETE: Concrete in Slab, Parapet, and Diaphragms shall be Class 5 (AE) with a minimum 28 day compressive strength $f_c = 28.0$ MPa and shall be poured in the dry. All end of unit and midspan diaphragms shall be cast in place and poured a minimum of 48 hours before the slab is poured. Interior bent diaphragms shall be cast monolithically with the slab.

All exposed corners to be chamfered 20 mm unless otherwise noted.

The superstructure details shown are for when removable deck forming is used and are the basis for measurement of Class 5 (AE) Concrete. See Standard Drawing No. 3655 for allowable modifications and for tolerances when permanent steel bridge deck forms are used.

Concrete in bridge superstructure shall be placed and consolidated for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent. The concrete bridge deck shall be given a fine finish as specified for final finishing in subsection 802.9 for a Class 5 finished roadway surface finish. Movement of the finishing machine across the new concrete shall be on planks placed on the surface and shall be prohibited for 72 hours after finishing the pour. Sufficient concrete must be placed ahead of the strike-off to fully load the girder. If a longitudinal strike-off is used, a vertical camber adjustment must be made in the strike-off to account for the future dead load deflection due to the railing.

STRUCTURAL STEEL: All Structural Steel shall be AASHTO M270, Gr. 345W unless otherwise noted and shall be paid for at the unit price bid for Structural Steel in Plate Girder Spans M270, Gr. 345W/AASHTO M270, Gr. 345W Steel shall not be painted. All exposed surfaces to be cleaned in accordance with Subsection 807.84(e) of the Standard Specifications. Structural Steel completely embedded in concrete may be AASHTO M270, Gr. 250.

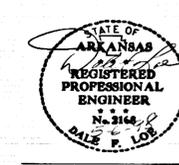
Structural shapes of equal or greater strength may be substituted for shapes shown if approval is obtained from the Bridge Engineer. Payment will be made on the basis of shapes shown.

All welding that is to be done during fabrication of structural steel, including temporary welds shall be detailed on the shop drawings and submitted for approval. If the contractor or erector should want to make additional welds, whether temporary or permanent, he shall submit detailed drawings with a formal request to the Bridge Design Engineer of the Arkansas State Highway and Transportation Department for approval. All welding shall conform to subsection 807.26 of the Standard Specifications.

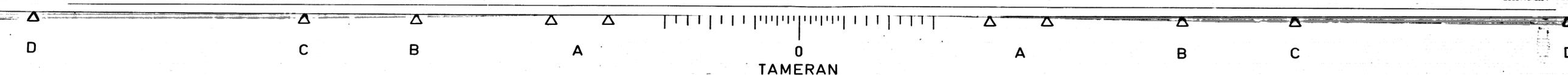
Drawings show general features of design only. Shop drawings shall be made in accordance with the specifications, submitted, and approval secured before fabrication is begun.

ALTERNATE NO. 2
(SHEET 4 OF 4)
DETAILS OF 68 METER
CONTINUOUS PRESTRESSED
CONCRETE GIRDER UNIT
SALINE RIVER
ROUTE 229 SEC. 5
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: MJT DATE: 03-18-98
CHECKED BY: DATE: SCALE: AS SHOWN
DESIGNED BY: AMS DATE: 3-18-98
BRIDGE NO. 06715 DRAWING NO. 39072

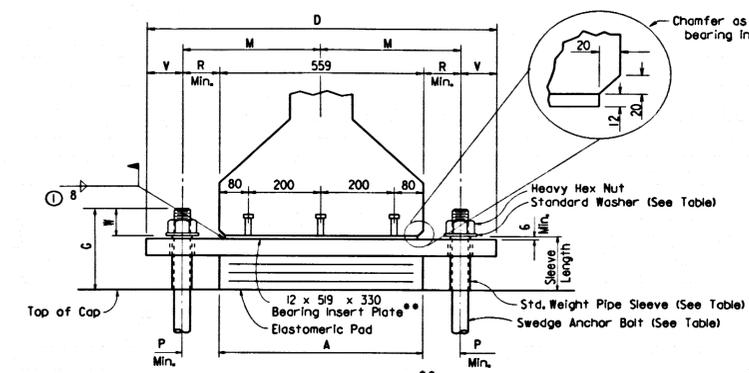


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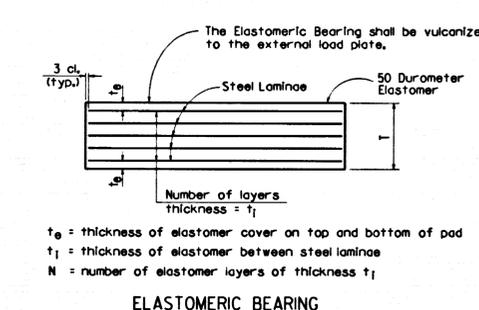
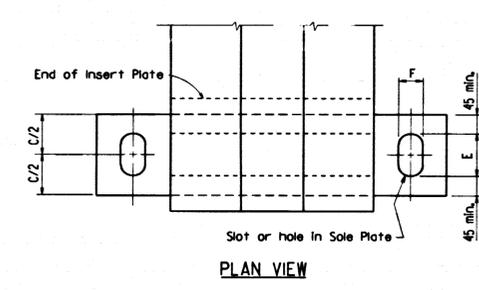
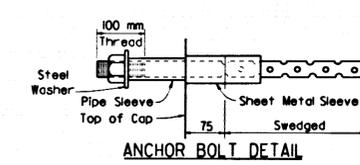
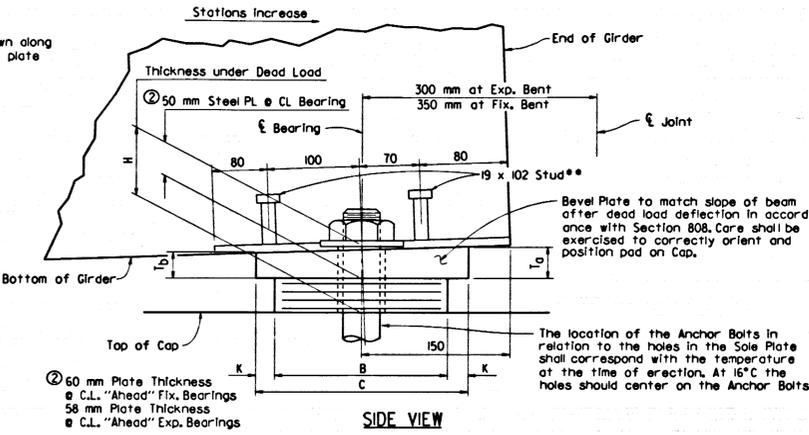


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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
							JOB NO.	060779
							06715	ELASTOMERIC BEARINGS 39073



① Care shall be taken to ensure that the sole plate is in full, complete contact with the Bearing Insert Plate before welding begins.



t_e = thickness of elastomer cover on top and bottom of pad
 t_l = thickness of elastomer between steel laminae
 N = number of elastomer layers of thickness t_l

TABLE OF DESIGN VARIABLES (mm)

ANCHOR BOLT DIAMETER	PIPE SLEEVE NOMINAL DIAMETER	SHEET METAL SLEEVE DIA.	STANDARD WASHER SIZE (O.D.)	MINIMUM EMBEDMENT LENGTH	SLOT WIDTH "P"	R	V	W
25.4	25.4	76	50.8	260	40 #	50	65	40
31.7	31.7	76	63.5	300	50 #	60	65	45
38.1	38.1	76	76.2	380	60 #	60	65	50
44.4	50.8	100	85.7	460	70 #	65	70	60
50.8	63.5	100	95.2	500	80 #	70	75	65
57.1	63.5	100	101.6	590	80 #	70	75	70
63.5	76.2	100	114.3	640	95 #	75	85	75
69.8	76.2	127	127.0	720	95 #	75	90	85
76.2	88.9	127	139.7	770	115 #	85	90	90

NOTE: Anchor Bolts may be cast in place or drilled and grouted into place. If Anchor Bolts are to be cast in place, the Galvanized Sheet Metal Sleeves will not be required.

If Anchor Bolts are to be drilled and grouted in place, the Galvanized Sheet Metal Sleeves shall be cast in place as shown. Sleeves shall be dry packed with styrofoam, urethane foam or approved equal prior to pouring of concrete. After pouring of the cap and prior to erection of prestressed girders, the dry pack shall be removed and holes for the anchor bolts shall be accurately drilled into the masonry. Bolts placed in drilled holes shall be accurately set and fixed using a OPL approved epoxy or non-shrink grout that completely fills the holes. Galvanized Sheet Metal Sleeves will not be paid for directly, but will be considered subsidiary to the item "STRUCTURAL STEEL IN PLATE GIRDER SPANS @ 270, Gr. 345W".

GENERAL NOTES

All dimensions are in millimeters (mm) unless otherwise noted.

Elastomeric Bearings shall conform to Section 808 of the Standard Specifications and shall be paid for at the unit price bid for "Elastomeric Bearings."

External load plates shall conform to AASHTO M 270, Grade 345W. Pipe sleeves shall be ASTM A53, Grade B, and shall be galvanized to conform to AASHTO M 232, Class C or AASHTO M 298, Class 50.

External load plates shall be completely fabricated (including bevel, bolt holes and all shop welding) and shall be blast cleaned to remove rust, loose mill scale, dirt, oil, grease and other foreign substances before vulcanizing to the elastomeric bearing. The surface in contact with the elastomeric bearing shall be blast cleaned to the surface finish specified in subsection 808.04(b). Other surfaces shall be blast cleaned in accordance with subsection 807.84(e) for unpainted Grade 345W steel.

Anchor Bolts, Washers and Nuts shall conform to subsection 807.07 of the Standard Specifications. The anchor bolt grade of steel shall be as specified in the "TABLE OF FABRICATOR VARIABLES". Indentations shall be circular with rounded bottoms and staggered as shown in the details.

Pipe Sleeves, Anchor Bolts, Washers and Nuts shall be paid for at the unit price bid for "STRUCTURAL STEEL IN PLATE GIRDER SPANS @ 270, Gr. 345W".

TABLE OF FABRICATOR VARIABLES

UNIT	LOCATION BENT NUMBERS	BEARING TYPE	NO. OF BEARINGS EACH BENT	MAXIMUM DESIGN LOAD (kN)	G	H	ELASTOMERIC PAD						EXTERNAL LOAD PLATE						ANCHOR BOLT							
							A	B	N	t_l	t_e	NUMBER AND THICKNESS OF STEEL LAMINAE	T	C	D	E	F	K	M	T_a	T_b	ANCHOR BOLT (# x L)	GRADE	PIPE SLEEVE SIZE (# x L)	SHEET METAL SLEEVE SIZE (# x L)	STEEL WASHER SIZE (O.D.)
68 m	1 & 17	Exp.	4	474	240	158	460	150	10	8	5	11 @ 14 ga.	111	200	880	110	80	25	355	51.7	48.3	50.8 # x 750	55	63.5 # x 175	100 # x 150	95.2
68 m	5, 9 & 13	Exp.	8	474	240	158/166	460	150	10	8	5	11 @ 14 ga.	111	200	880	110	80	25	355	51.0/59.7	49.0/56.3	50.8 # x 750	55	63.5 # x 175	100 # x 150	95.2
68 m	2, 3, 4, 6, 7, 8, 10, 11, 12, 14, 15 & 16	Fix.	8	394	215	129/139	320	150	7	8	5	8 @ 14 ga.	81	190	880	80	80	20	355	51.0/61.6	49.0/58.4	57.1 # x 80	55	63.5 # x 145	100 # x 150	101.6

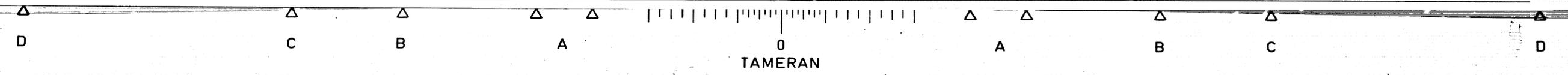
Tabular Data bys: MJT Date: 4/8/98
 Checked bys: CES Date: 7-17-98



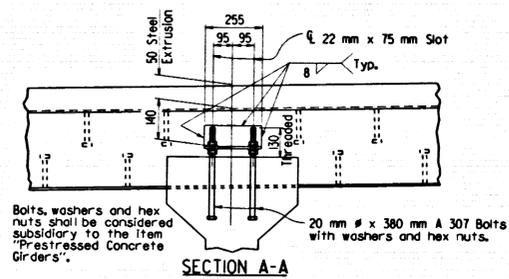
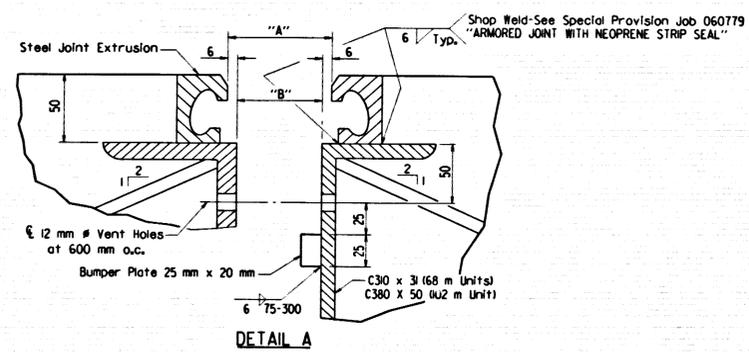
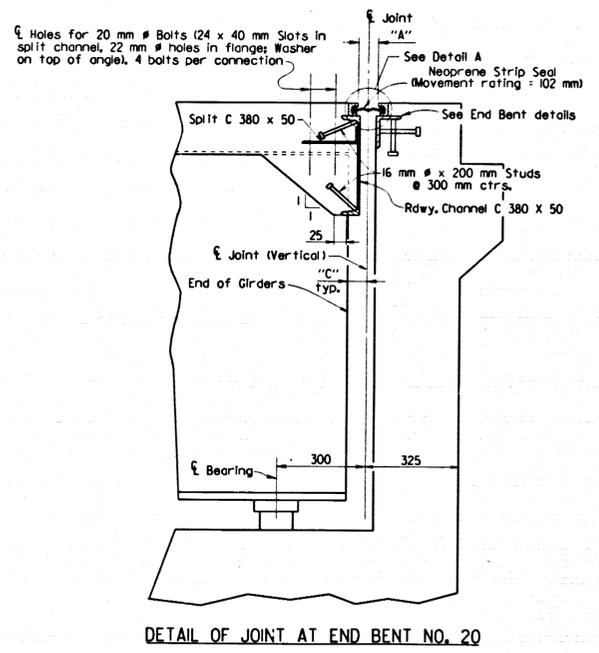
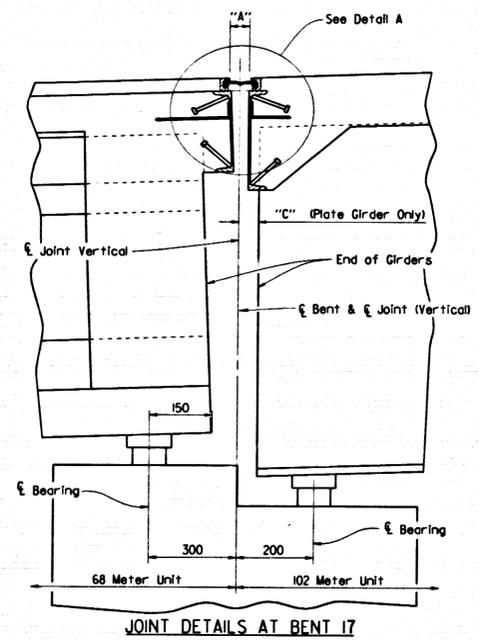
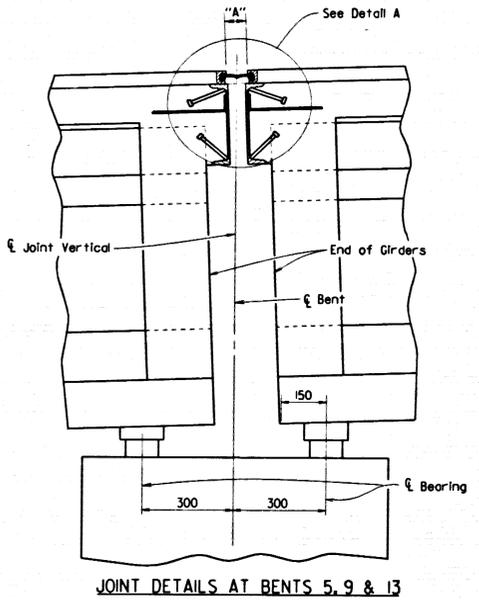
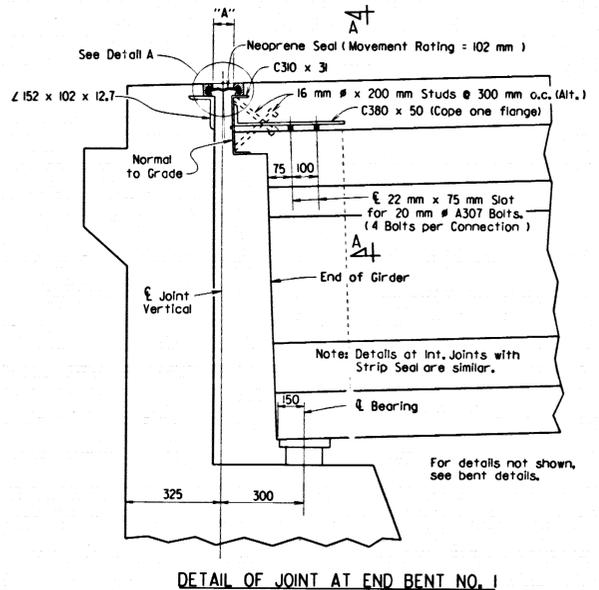
ALTERNATE NO. 2
 DETAILS OF ELASTOMERIC FIXED AND EXPANSION BEARINGS FOR PRESTRESSED CONCRETE GIRDERS
 ROUTE 229 SEC. 5
 ARKANSAS STATE HIGHWAY COMMISSION
 LITTLE ROCK, ARK.

DRAWN BY: MJT DATE: 03-25-98
 CHECKED BY: CES DATE: 7-17-98 SCALE: NO SCALE
 DESIGNED BY: AMS DATE: 3-12-98
 BRIDGE NO. 06715 DRAWING NO. 39073

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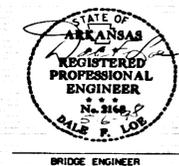


DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	060779	74	119
				JOB NO.		06715	JOINT DETAILS 39074	



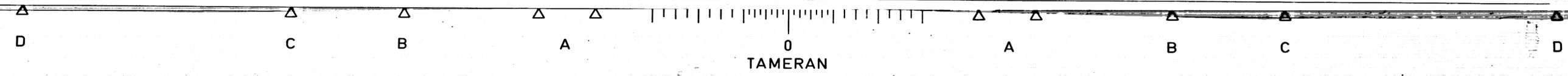
Notes: Details of Joint in curb and parapet are general and show basic design controls only. See SP Job 060779, 'Armored Joint with Neoprene Strip Seal'.

ALTERNATE NO. 2
(SHEET 1 OF 2)
DETAILS OF ARMORED JOINT
WITH NEOPRENE STRIP SEAL
SALINE RIVER
ROUTE 229 SEC. 5
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

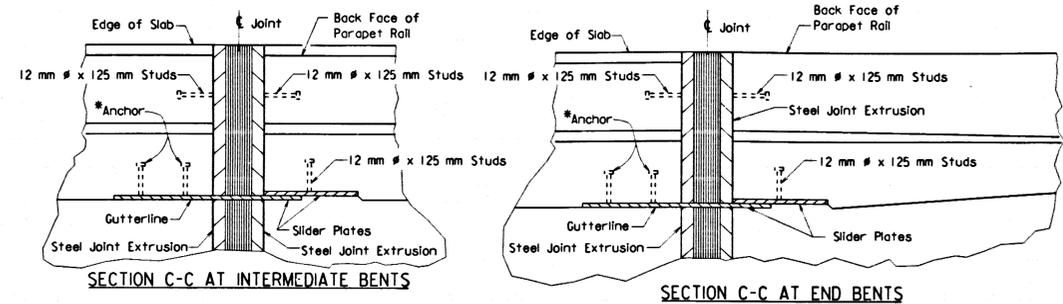


DRAWN BY: MJT DATE: 03-23-98
CHECKED BY: CES DATE: 5-6-98 SCALE: NONE
DESIGNED BY: AMS DATE: 3-12-98
BRIDGE NO. 06715 DRAWING NO. 39074

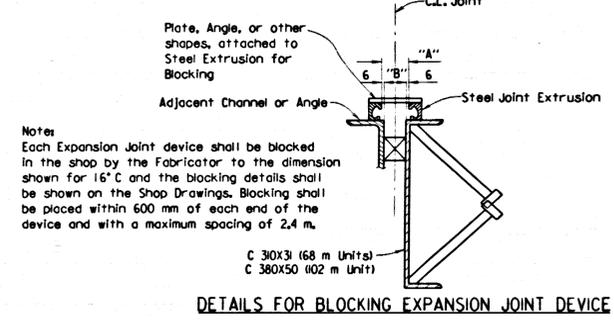
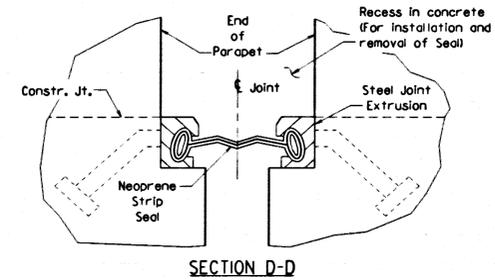
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						060779	75	119
				JOB NO.		06715		JOINT DETAILS 39075



* The method of attachment of the cover slider plate assembly or similar device must be such that it may be removed in order to provide for future replacement of the neoprene seal.
 Anchors will not be paid for directly but will be considered subsidiary to "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, Gr. 345#)".

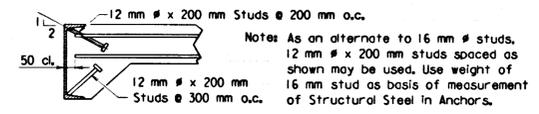


Notes:
 Each Expansion Joint device shall be blocked in the shop by the fabricator to the dimension shown for 16° C and the blocking details shall be shown on the Shop Drawings. Blocking shall be placed within 600 mm of each end of the device and with a maximum spacing of 2.4 m.

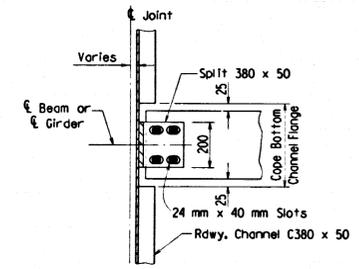
STRIP SEAL JOINT DATA

Bent No(s)	Movement Rating (mm)	"A" Width Perpendicular to Joint at 24 Hour Average Temperature ** of :			"B" Width Perpendicular to Joint at 24 Hour Average Temperature ** of :			"C" Perpendicular to Joint at 24 Hour Average Temperature of 16° C
		28° C	16° C	4° C	28° C	16° C	4° C	
1	102	58	62	66	46	50	54	57
5, 9 & 13		57	66	75	45	54	63	59
17		53	64	75	41	52	63	58
20		55	62	69	43	50	57	57

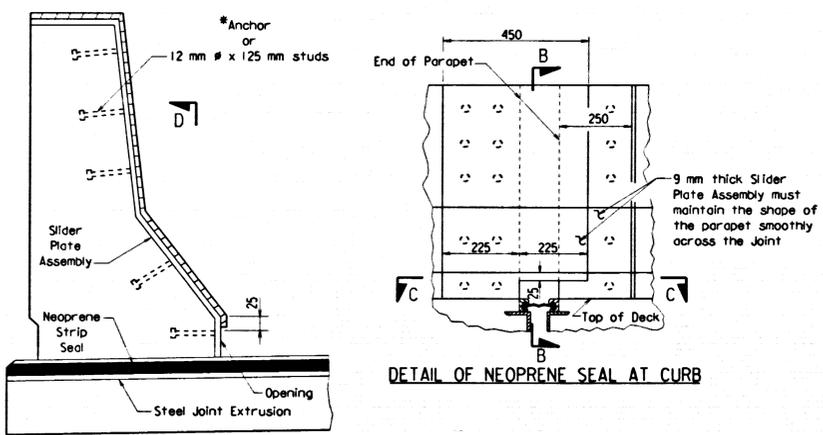
** The temperature used to set the joint opening shall be the approximate average air temperature during the 24 hour period immediately before the bolts are tightened. The Engineer shall establish the temperature.



DETAILS OF ALTERNATE ANCHORS
 Steel Units shown Prestressed Units are similar.



TYPICAL CHANNEL CONNECTION
 For steel units only; for Prestressed Unit details, See Dwg. No. 39074



EXPANSION DEVICE INSTALLATION AT END BENTS:
 The concrete span pour shall be placed before the end bent backwall concrete is placed. After beams or girders are erected the blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent, immediately prior to pouring the backwall concrete, the blocking shall be removed, the opening adjusted for temperature and grade, and the backwall constructed.

EXPANSION DEVICE INSTALLATION AT INTERMEDIATE BENTS:
 After all beams or girders on each side of the joint are erected the blocked expansion device shall be installed and adjusted for grade. Deck concrete shall be placed for the entire unit or span on one side of the joint before deck concrete on the other side is placed. Connection bolts for the first side to have deck concrete placed shall be completely bolted. Bolts on the other side shall be loosely installed so that thermal and rotational movements will not be restricted during concrete placement on the first side.

Connection bolts on the second side shall remain loose until the concrete pour adjacent to the joint is to be placed, immediately prior to pouring the span concrete on the second side, the blocking shall be removed, the joint adjusted for temperature and grade, and the connection bolts tightened.

GENERAL NOTES

All dimensions are in millimeters (mm) unless otherwise noted.
 EXPANSION NEOPRENE STRIP SEAL: The expansion device shall provide a movement of 102 mm as shown in the "STRIP SEAL JOINT DATA" table. The expansion joint shall be capable of sealing the deck surface and parapet area to prevent moisture and other contaminants from descending through the joint.
 Details of proposed slider plate assembly shall be submitted to and approved by the Bridge Engineer prior to the fabrication of any structural steel at the expansion device.
 All Structural Steel, except for the steel extrusion for the strip seal, shall be paid for as "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M 270, Grade 345#)". The steel extrusion and neoprene strip seal shall be paid for in accordance with Special Provision Job 060779 "ARMORED JOINT WITH NEOPRENE STRIP SEAL".



ALTERNATE NO. 2
 (SHEET 2 OF 2)
 DETAILS OF ARMORED JOINT
 WITH NEOPRENE STRIP SEAL
 SALINE RIVER
 ROUTE 229 SEC. 5
 ARKANSAS STATE HIGHWAY COMMISSION
 LITTLE ROCK, ARK.

DRAWN BY: MJT DATE: 04-07-98
 CHECKED BY: CES DATE: 4-29-98
 DESIGNED BY: AMS DATE: 3-18-98
 BRIDGE NO. 06715 DRAWING NO. 39075

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