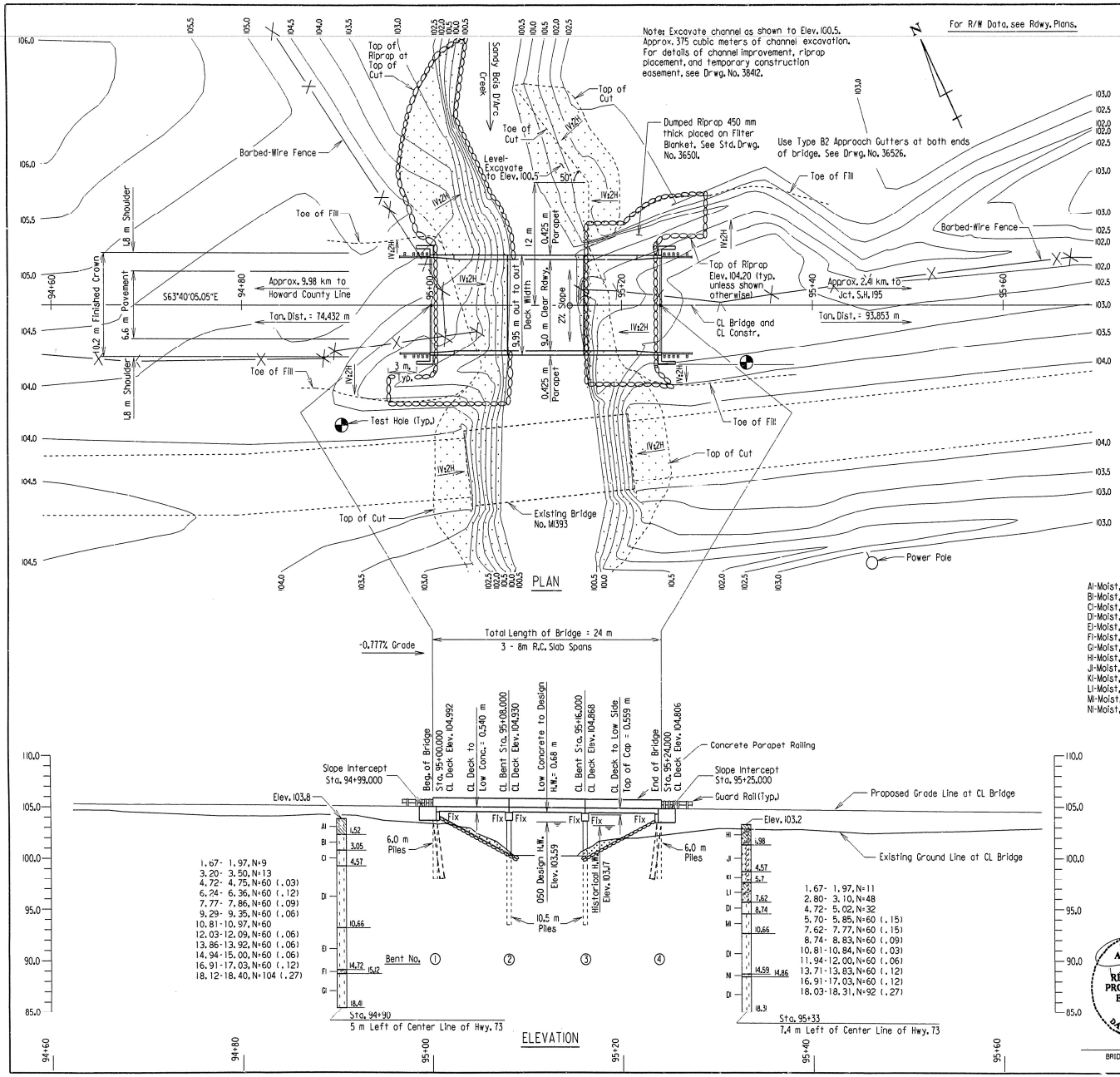
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				6	ARK.			
				JOB NO.		030088	59	253
				① 06705 - LAYOUT - 38411				



For General Notes, see Drwg. No. 38412.

HYDRAULIC DATA

Flood Description	Frequency	Discharge	* Natural Water Surface Elevation	Water Surface Elev. With Backwater
	Years	CMS	Meters	Meters
Design	50	90.1	103.59	103.85
Base	100	106.7	103.70	104.08
Extreme	500	149.8	103.91	104.40
Overtopping	125	113.0	103.73	104.14

* Unconstricted water surface without structure or roadway approaches.
Drainage area = 22.5 square kilometers.
Historical H.W. Elev. = 103.17 meters

BORING LEGEND

AI-Moist, Soft, Brown Sandy, Silty Clay
BI-Moist, Loose, Brown and Gray Silty Sand with Traces of Gravel
CI-Moist, Medium Dense, Brown and Gray Calcareous Silty Sand with some Gravel and Clay Seams
DI-Moist, Very Dense, Gray Calcareous Silty Sand
EI-Moist, Very Dense, Gray Silty Sand
FI-Moist, Very Dense, Gray Silty Sand with Clay Seams, Gravel and Thin Gray Cemented Sand Seams
GI-Moist, Very Dense, Calcareous Silty Sand
HI-Moist, Stiff, Brown Sandy, Silty Clay with Gravel
JI-Moist, Dense, Brown and Gray Calcareous Silty Sand and Gravel
KI-Moist, Dense, Brown Silty Sand and Gravel
LI-Moist, Very Dense, Gray Silty Sand with Clay Seams and Gravel
MI-Moist, Very Dense, Gray Calcareous Silty Sand with some Thin Cemented Sand Seams
NI-Moist, Very Dense, Gray Calcareous Silty Sand with some Thin Gray Cemented Sand Seams

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 2168
DATE 6-16-97
BRIDGE ENGINEER

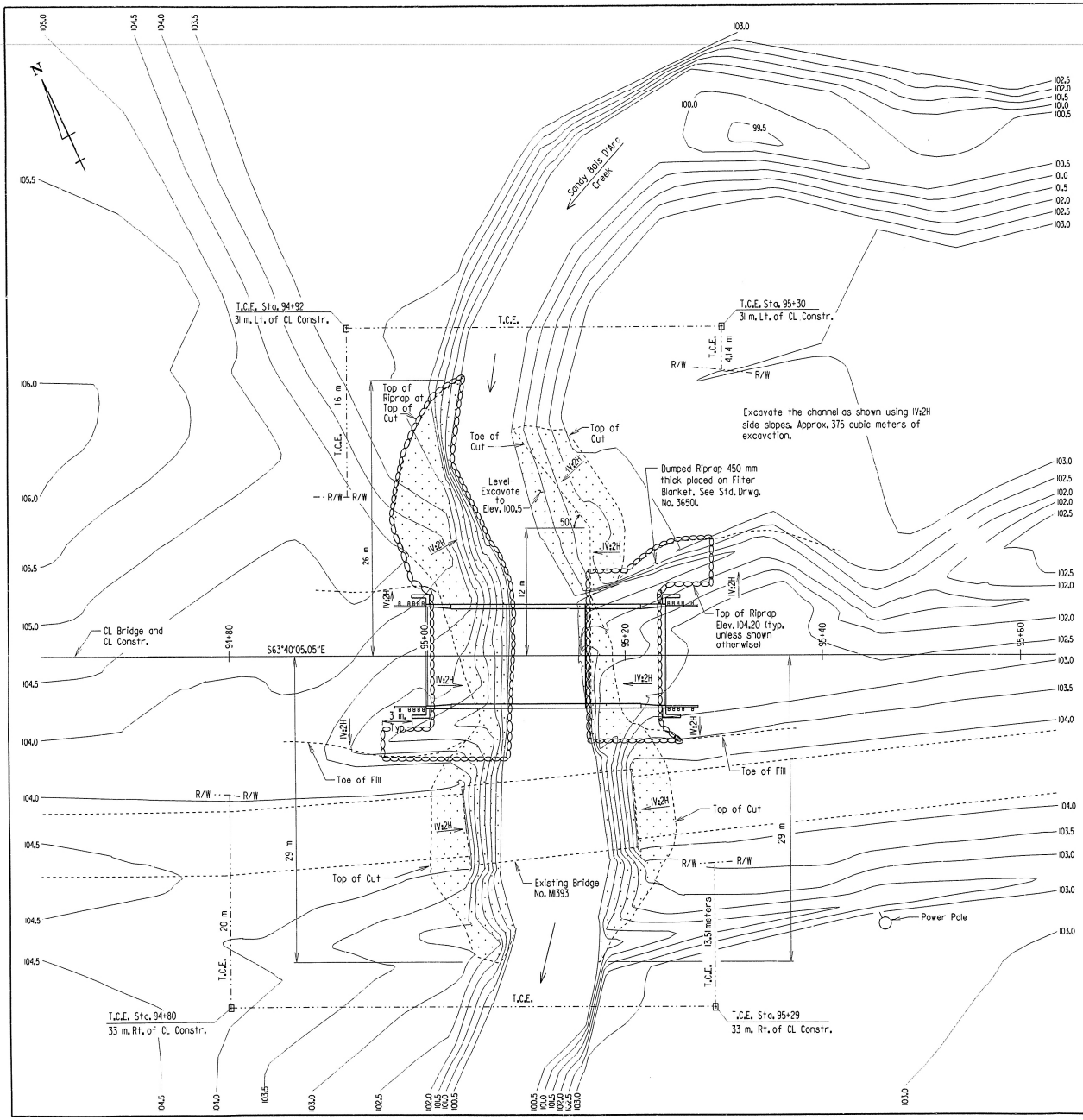
LAYOUT OF BRIDGE OVER SANDY BOIS D'ARC CREEK
COLUMBUS - CROSS ROADS (S)
HEMPSTEAD COUNTY
ROUTE 73 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JAC DATE: 4-10-97
CHECKED BY: CJF DATE: 6-9-97 SCALE: 1:200
DESIGNED BY: CJF DATE: 4-9-97
BRIDGE NO. 06705 DRAWING NO. 38411

METRIC D

BRIDGE ENGINEER
OCT 20 1997

b30088J1



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.		030088	60	253

① 06705 - CHNL. IMPRVMT. - 38412

GENERAL NOTES

All dimensions are in meters unless otherwise noted.

BENCH MARK: Nail in Power Pole, 37.19 m Right of Station 94+44, Elev. 105.596 m.

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 LRFD Bridge Design Specifications (1994 edition) with current interim specifications.

LIVE LOADING: HL93

SEISMIC ZONE: 1

MATERIALS AND STRENGTHS:
Class S(AE) Concrete (superstructure) f'c = 28.0 MPa
Class S Concrete (substructure) f'c = 24.0 MPa
Reinforcing Steel (AASHTO M31 or M53, Gr. 420) fy = 420 MPa

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

CONCRETE PILING: Piling for Bents 1 and 4 shall be 405 mm octagonal or 355 mm square precast concrete. Piling shapes shall not be mixed. Piling in Bents 2 and 3 shall be 455 mm square precast concrete. All piling shall be driven with an approved air, steam, or diesel hammer to a minimum safe bearing capacity of 390 KN per pile. Piling in Bents 1 and 4 shall be driven after embankment to bottom of cap is in place and shall have a minimum penetration of 3 meters below natural ground. Piling in Bents 2 and 3 shall be driven to a tip elevation of 93.5 or lower. Jetting will be required to obtain minimum tip elevation at Bents 2 and 3 and any cost for jetting shall be included in the item "Concrete Piling (455 mm sq.)". Lengths of piling shown are assumed for estimating quantities only. Actual lengths shall be determined in the field. Drive one 7.5 meter test pile in Bent 1 and one 12.0 meter test pile in Bent 3.

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

CLASS I 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:	DRAWING NO.
End Bents	38413
Intermediate Bents	38413
8 m R.C. Slab Spans	38414-38415
Concrete Piling	36506
Type C Bridge Name Plate	36502
Embankment Construction	36500
Dumped Riprap and Filter Blanket	36501
Type B2 Approach Gutters	36526

EXISTING BRIDGE: The existing bridge No. MI393 (log 6.20) is 7.7 m wide and 17.4 m long and consists of precast concrete channel beam spans supported by concrete piers. The existing bridge is located approximately 15.5 meters downstream from the proposed new bridge.

REMOVAL AND SALVAGE: After the new bridge is open to traffic, the existing bridge (MI393) shall be removed in accordance with section 205 of the Standard Specifications. All material from the existing bridge shall become the property of the contractor.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9168
DALE P. LOE
9-4-97
BRIDGE ENGINEER

DETAILS OF CHANNEL IMPROVEMENTS FOR SANDY BOIS D'ARC CREEK

COLUMBUS - CROSS ROADS (S)

HEMPSTEAD COUNTY

ROUTE 73 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JAC DATE: 4-10-97
CHECKED BY: CJF DATE: 6-9-97 SCALE: 1:200
DESIGNED BY: CJF DATE: 4-9-97

BRIDGE NO. 06705 DRAWING NO. 38412

METRIC LD

RECEIVED
OCT 20 1997

b30088J1

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.		030088	15	253
				(1)		06705 - QUANTITIES - 38410		

SCHEDULE OF BRIDGE QUANTITIES - JOB NO. 030088

BRIDGE NO. / CODE NO. / NAME PLATE TITLE	UNIT OF STRUCTURE	ITEM NO. / ITEM / UNIT	205 REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO.)	801 UNCLASSIFIED EXCAVATION FOR STRUCTURES-BRIDGE	802 CLASS S CONCRETE-BRIDGE	802 CLASS S(AE) CONCRETE-BRIDGE	803 CLASS 1 PROTECTIVE SURFACE TREATMENT	SP & 804 REINFORCING STEEL-BRIDGE (GRADE 420)	805 CONCRETE PILING (405 mm OCT. OR 355 mm SQ)	805 TEST PILE (405 mm OCT. OR 355 mm SQ)	805 CONCRETE PILING (455 mm SQ)	805 TEST PILE (455 mm SQ)	812 BRIDGE NAME PLATE (TYPE C)	816 FILTER BLANKET	816 DUMPED RIPRAP
			LUMP SUM	CU. METER	CU. METER	CU. METER	LITER	KILOGRAM	METER	METER	METER	METER	EACH	SQ. METER	CU. METER
06705 / X020 / SANDY BOIS D' ARC CREEK	BENT NO. 1			3	7.40			620	18.0	7.5				305	146
	BENT NO. 2				6.00			555			52.5				
	BENT NO. 3				6.00			555			42.0				
	BENT NO. 4				7.40			620	24.0			12.0		165	78
	THREE 8.0 M R.C. SLAB SPANS					118.10	24	9530					1		
	SITE NO. 1 - BRIDGE NO. M1393		1.0												
TOTALS FOR JOB NO. 030088			1.0	3	26.80	118.10	24	11880	42.0	7.5	94.5	12.0	1	470	224

ED FAIN
DESIGN SECTION SUPERVISOR

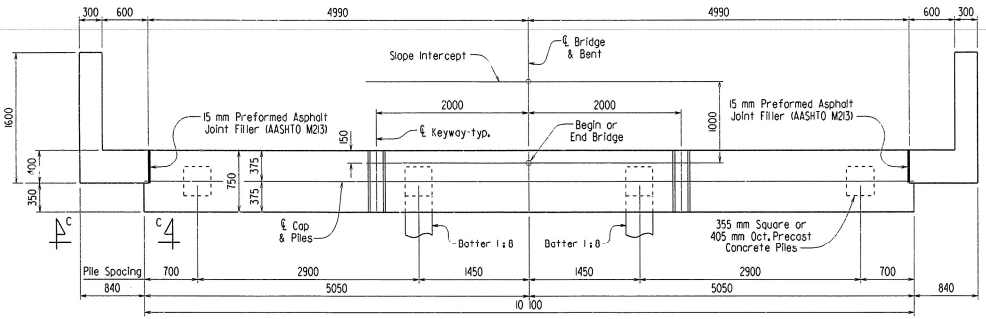
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 2168
DALE P. LOE
BRIDGE ENGINEER

SCHEDULE OF BRIDGE QUANTITIES
COLUMBUS-CROSS ROADS (S)
HEMPSTEAD COUNTY
ROUTE 73 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 14 MAY 97
CHECKED BY: JAC DATE: 29 MAY 97 SCALE:
DESIGNED BY: DATE:
BRIDGE NO. 06705 DRAWING NO. 38410

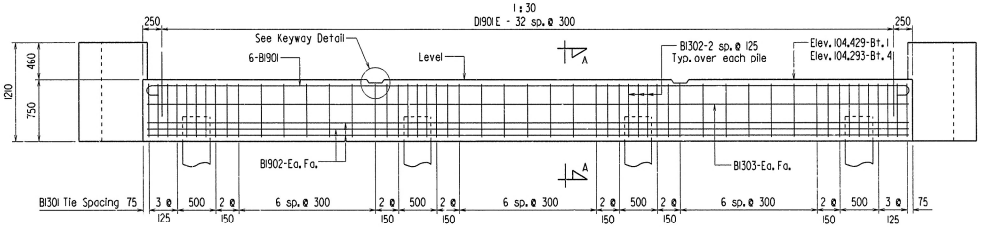
AHD METRIC

B030088.01



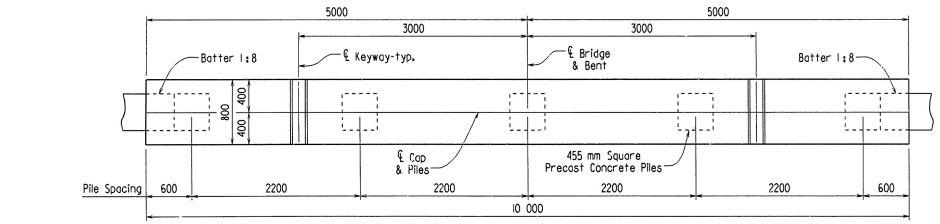
PLAN - END BENT

1 : 30



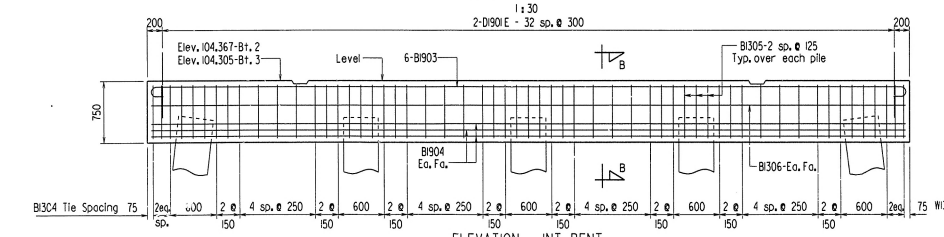
ELEVATION - END BENT

1 : 30



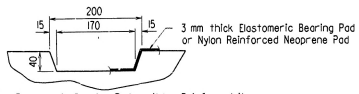
PLAN - INT. BENT

1 : 30



ELEVATION - INT. BENT

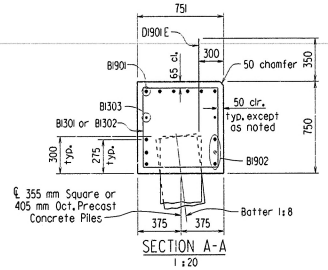
1 : 30



Note: 3 mm thick Elastomeric Bearing Pad or Nylon Reinforced Neoprene Pad to be in full contact with bent cap surfaces when placing superstructure concrete. See span details for material specifications and payment.

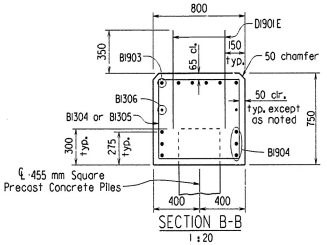
KEYWAY DETAIL

N.T.S.



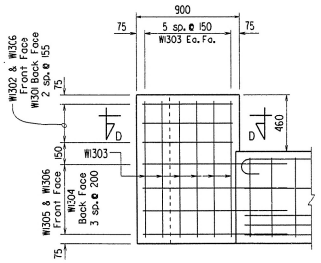
SECTION A-A

1 : 20



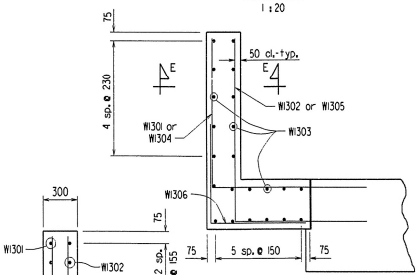
SECTION B-B

1 : 20



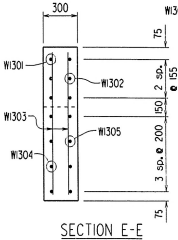
VIEW C-C

1 : 20



SECTION D-D

1 : 20



SECTION E-E

1 : 20

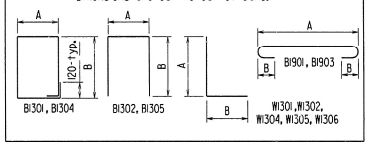
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				6	ARK.			
				JOB NO.		030088	61	253
				06705 - BENTS - 38413				

BAR LIST-PER BENT

MARK	NO. REQ'D. END	NO. REQ'D. INT.	LENGTH	'A'	'B'	P.D.
BI301	41	-	2680	650	635	50
BI302	12	-	1870	650	635	50
BI303	2	-	10 000	-	-	Str.
BI304	-	42	2780	700	635	50
BI305	-	15	1970	700	635	50
BI306	-	2	9900	-	-	Str.
WI301	6	-	1970	1200	800	76
WI302	6	-	2070	1500	600	76
WI303	44	-	1110	-	-	Str.
WI304	8	-	2470	1200	1300	76
WI305	8	-	2570	1500	1100	76
WI306	14	-	1570	800	800	76
BI901	6	-	10 440	10 000	160	114
BI902	6	-	10 000	-	-	Str.
BI903	-	6	10 340	9900	160	114
BI904	-	6	9900	-	-	Str.
D1901E	33	66	800	-	-	Str.

BENDING DIAGRAMS

Dimensions are out to out of bars.



Note: Bars with "E" suffix are to be epoxy-coated, and shall be measured and paid for as 'Reinforcing Steel-Bridge (Grade 420)'.

GENERAL NOTES

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

All concrete shall be Class "S" with a minimum 28 day compressive strength f'c = 24.0 MPa and shall be poured in the dry. All exposed corners shall be chamfered 20 mm unless otherwise noted.

All reinforcing steel shall conform to AASHTO M31 or M53, Grade 420 (yield strength = 420 MPa).

Preformed Asphalt Joint Filler shall be measured and paid for as Class S Concrete-Bridge.

For additional information, see Layout.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 2168 DALE P. LOE

BRIDGE ENGINEER

DETAILS OF PILE BENTS
8.0 METER R. C. SLAB SPANS
9.0 METER CLEAR ROADWAY - 0° SKEW

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 6 MAY 97

CHECKED BY: JAC DATE: 9MAY97 SCALE: AS NOTED

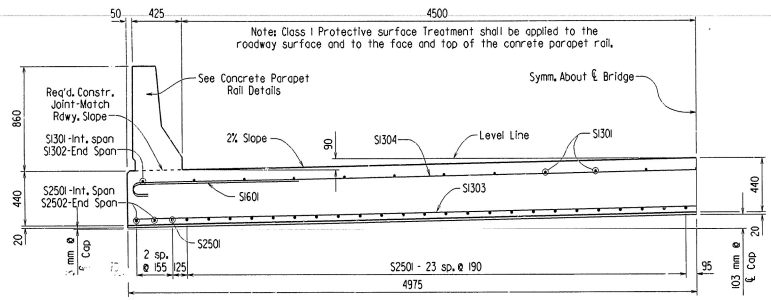
DESIGNED BY: JAC DATE: 22 APR97

BRIDGE NO. 06705 DRAWING NO. 38413

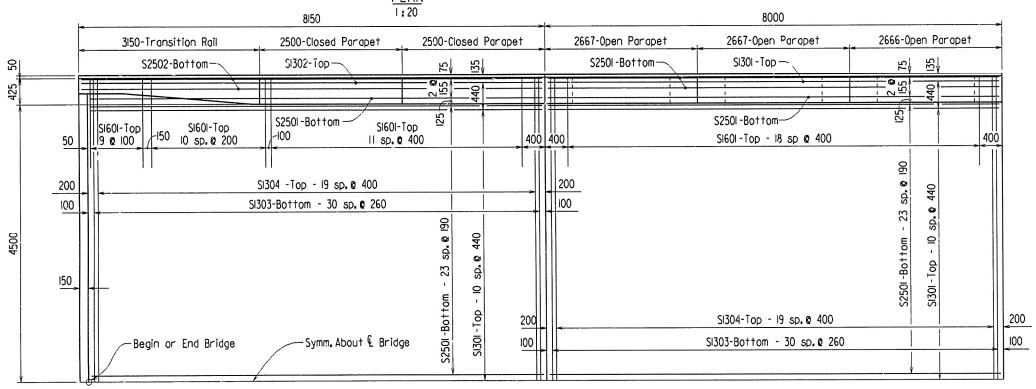
METRIC D

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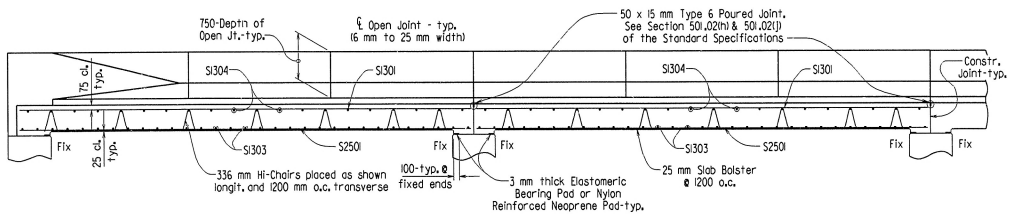
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				6	ARK.			
				JOB NO.		030088	62	253
				①		06705 - R.C. SLAB SPAN - 38414		



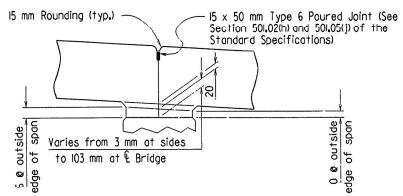
PLAN
1 : 20



HALF-REINFORCING PLAN
1 : 40

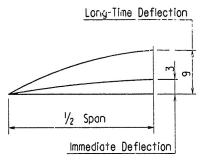


LONGITUDINAL SECTION ALONG ℄ BRIDGE
1 : 40



Note: All joints to be cleaned by sandblasting or other approved methods before pouring joint.

TYPICAL SECTION THRU JOINT
No Scale



DEAD LOAD CAMBER DIAGRAM
No Scale

QUANTITIES-PER SPAN

Span	Class S(AE) Concrete	Reinforcing Steel	Structural Steel For Information Only
End	39.45 cu. meters	3220 kg	0 kg
Interior	39.20 cu. meters	3090 kg	63 kg

GENERAL NOTES

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

All concrete shall be Class S(AE) with a minimum 28 day compressive strength of f'c = 28.0 MPa. All exposed corners to be chamfered 20 mm unless otherwise noted.

All reinforcing steel shall conform to AASHTO M 31 or M 53, Gr. 420 (yield strength = 420 MPa).

Elastomeric or Nylon reinforced Neoprene Bearing Pad, Preformed joint Filler, Structural Steel and Type 6 Poured Synthetic Polymer Joints shall be measured and paid for as "Class S(AE) Concrete-Bridge". Elastomeric bearing pad shall meet the requirements of Section 808 of the Standard Specifications for unreinforced pads. Nylon reinforced neoprene pad material shall meet the requirements of subsection 807.20 of the Standard Specifications. The pad shall be in one piece for the full length of the bearing.

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 LRFD Bridge Design Specifications, 1996 edition, with current interim specifications.

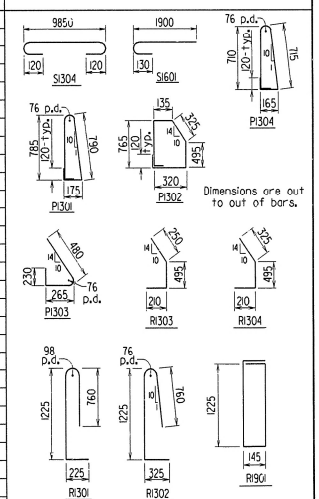
DESIGN LIVE LOADING: HL93

LOAD DISTRIBUTION TO SLAB:
Dead Load: 12.9 kN/m² (Includes 1.1 kN/m² future wearing surface)
Live Load: 0.329 Wheels/meter of width plus 30% Impact

For additional information, see Layout.

BAR LIST-PER SPAN

MARK	NUMBER REQUIRED END SPAN	NUMBER REQUIRED INT SPAN	LENGTH	P.D.	BENDING DIAGRAMS
S1301	21	23	7900	Str.	
S1302	2	-	8050	Str.	
S1303	31	31	9850	Str.	
S1304	20	20	10 170	76	
P1301	48	60	1950	50	
P1302	48	60	2150	50	
P1303	-	24	960	50	
P1304	-	24	1800	50	
R1301	12	-	2230	50	
R1302	12	-	2350	50	
R1303	12	-	930	50	
R1304	12	-	1010	50	
S1601	66	38	2080	95	
P1901	-	48	2560	Str.	
P1902	32	-	2400	Str.	
R1901	8	-	2700	114	
R1902	10	-	1600	Str.	
R1903	10		2300	Str.	
R1904	6		3050	Str.	
S2501	50	54	7900	Str.	
S2502	4	-	8050	Str.	



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

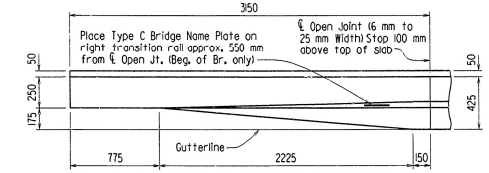
SHEET 1 OF 2
DETAILS OF 8.0 METER R.C. SLAB SPANS
9.0 METER ROADWAY
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 15 APR 97
CHECKED BY: DHP DATE: 5-7-97 SCALE: AS NOTED
DESIGNED BY: JAC DATE: 22 APR 97
BRIDGE NO. 06705 DRAWING NO. 38414

METRIC D

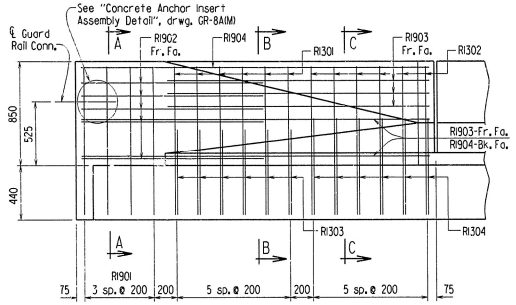
B030088.S!

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030088	63	253
				1	06705 - R.C. SLAB SPAN - 38415			



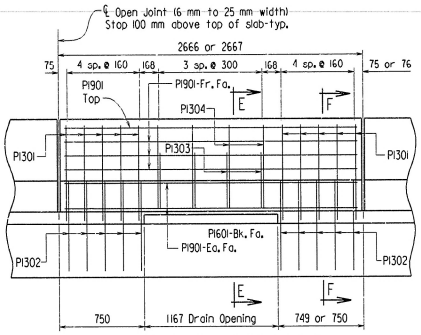
PLAN OF TRANSITION END PANEL

1 : 20



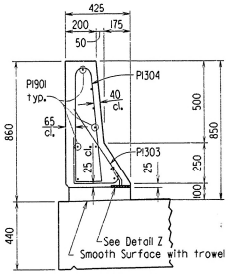
FRONT ELEVATION OF TRANSITION END PANEL

1 : 20



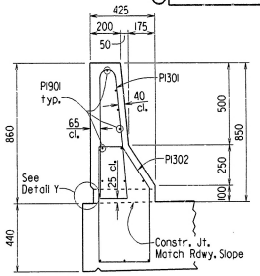
DETAILS OF OPEN PARAPET RAIL

1 : 20



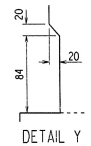
SECTION E-E

1 : 25



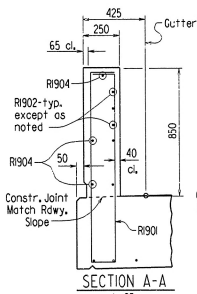
SECTION F-F

1 : 25



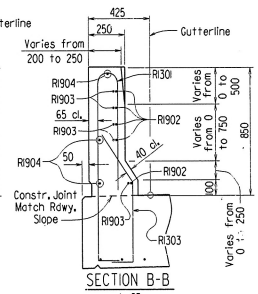
DETAIL Y

No Scale



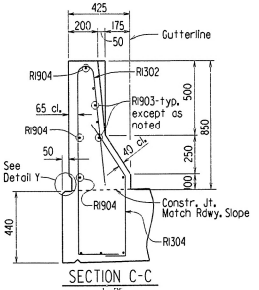
SECTION A-A

1 : 25



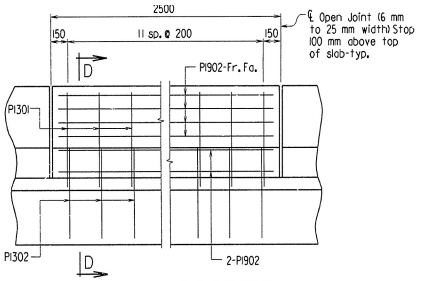
SECTION B-B

1 : 25



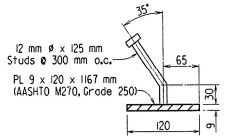
SECTION C-C

1 : 25



DETAILS OF CLOSED PARAPET RAIL

1 : 20



DETAIL Z

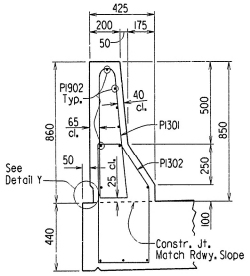
No Scale

Note:

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 Class S(AE) Concrete-Bridge.

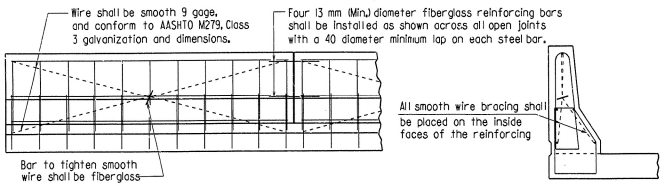
Studs shall be granular flux filled, solid fluxed, or equal, and shall be automatically end welded to the plate in accordance with the recommendations of the manufacturer.

Studs and plates shall be measured and paid for as Class S(AE) Concrete-Bridge.



SECTION D-D

1 : 25



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

No Scale

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 3168
6-2-97
DALE F. LOY

BRIDGE ENGINEER

SHEET 2 OF 2
DETAILS OF 8.0 METER R.C. SLAB SPANS
9.0 METER CL. RDWY.
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 17 APR 97
CHECKED BY: DHP DATE: 5-7-97 SCALE: AS NOTED
DESIGNED BY: JAC DATE: 22 APR 97

BRIDGE NO. 06705 DRAWING NO. 38415

METRIC D

B030088.S2