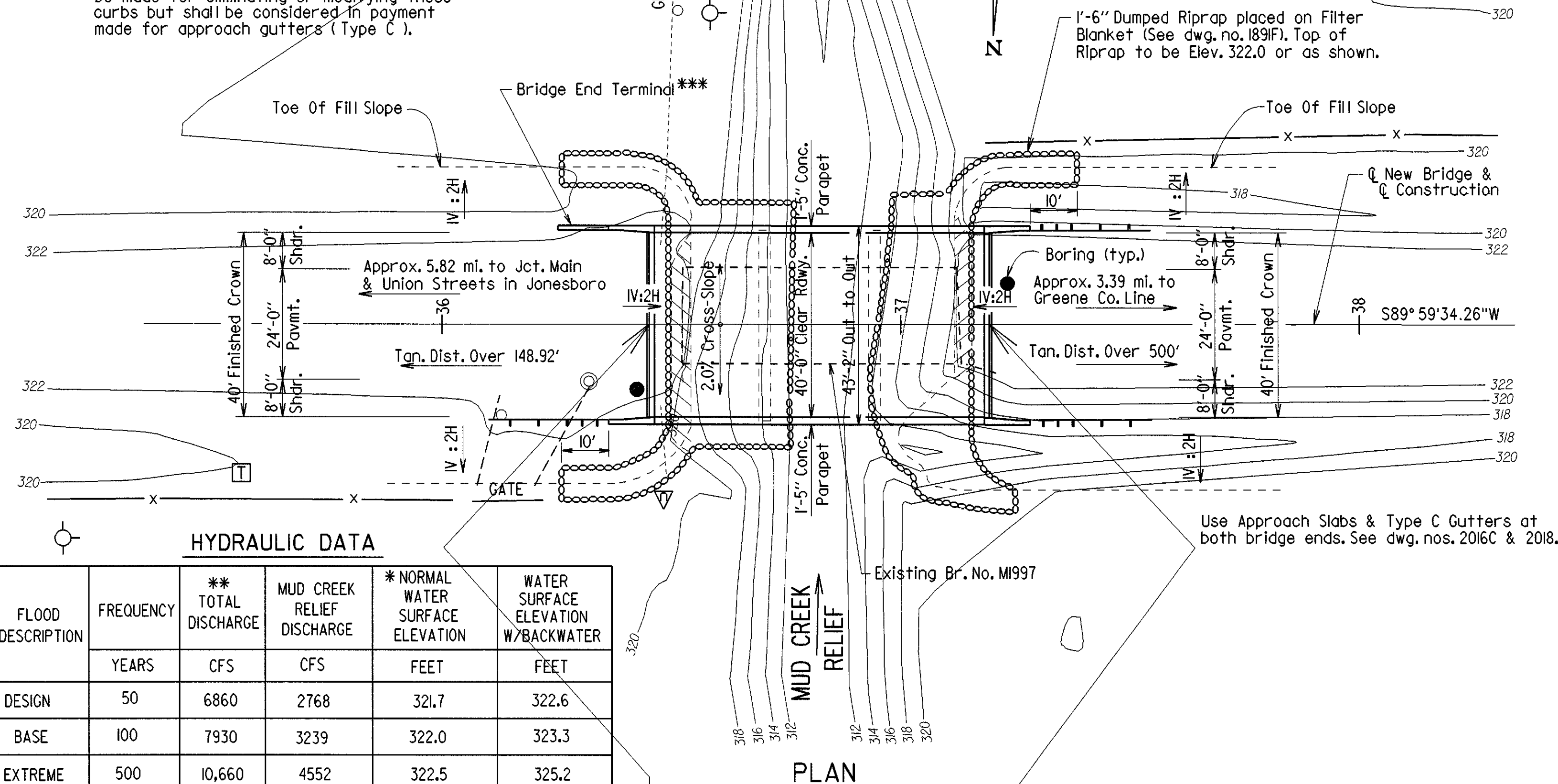


DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100126	47	132
				06891	LAYOUT			43054

\*\*\*Install Bridge End Terminal as shown. Eliminate or modify approach curb sections to fit bridge end terminal. No payment shall be made for eliminating or modifying these curbs but shall be considered in payment made for approach gutters (Type C).



#### HYDRAULIC DATA

FLOOD DESCRIPTION	FREQUENCY YEARS	** TOTAL DISCHARGE CFS	MUD CREEK RELIEF DISCHARGE CFS	* NORMAL WATER SURFACE ELEVATION FEET	WATER SURFACE ELEVATION W/BACKWATER FEET
DESIGN	50	6860	2768	321.7	322.6
BASE	100	7930	3239	322.0	323.3
EXTREME	500	10,660	4552	322.5	325.2
OVERTOPPING	> 500	NA	NA	NA	NA

\* Unconstricted water surface without structure or roadway approaches.  
 \*\* Combined Drainage Area = 16.7 sq. mi. for Mud Creek & Relief  
 Historical H.W. Elev. = 324.3

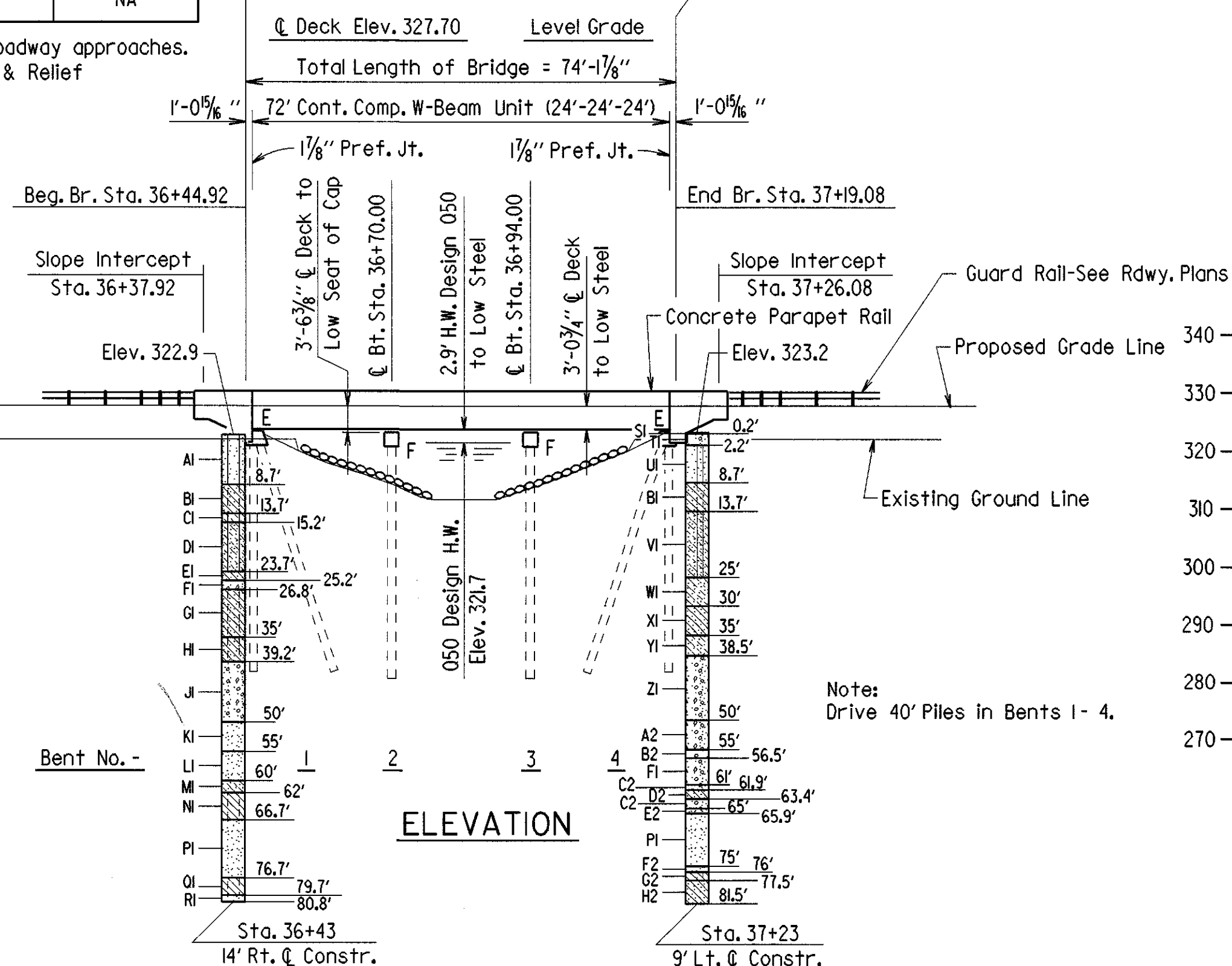
#### "N" VALUES

Sta. 36+43 - 14' Rt. @ Constr.

4. 2- 5. 2, N=9  
 9. 2- 10. 2, N=11  
 14. 2- 15. 2, N=20  
 19. 2- 20. 2, N=8  
 24. 2- 25. 2, N=8  
 30. 5- 31. 5, N=6  
 35. 5- 36. 5, N=2  
 40. 5- 41. 5, N=46  
 45. 5- 46. 5, N=53  
 50. 5- 51. 5, N=32  
 55. 5- 56. 5, N=4  
 60. 5- 61. 5, N=32  
 65. 5- 66. 5, N=31  
 70. 5- 71. 5, N=67  
 75. 5- 76. 5, N=57  
 80. 5- 80. 8, N=601 (0. 3')

Sta. 37+23 - 9' Lt. @ Constr.

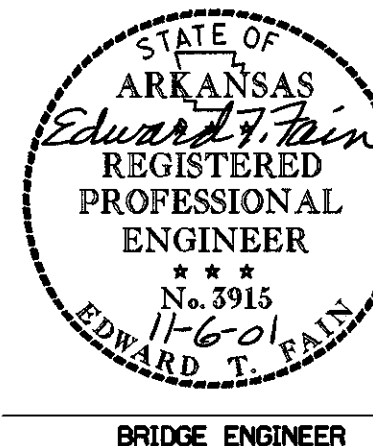
4. 2- 5. 2, N=4  
 9. 2- 10. 2, N=9  
 14. 2- 15. 2, N=3  
 19. 2- 20. 2, N=4  
 25. 5- 26. 5, N=7  
 30. 5- 31. 5, N=8  
 35. 5- 36. 5, N=18  
 40. 5- 41. 5, N=40  
 45. 5- 46. 5, N=33  
 50. 5- 51. 5, N=27  
 55. 5- 56. 5, N=9  
 60. 5- 61. 5, N=33  
 65. 5- 65. 9, N=601 (0. 4')  
 70. 5- 70. 9, N=601 (0. 4')  
 75. 5- 76. 5, N=60  
 80. 5- 81. 5, N=66  
 80. 5- 81. 5, N=66



Note: Drive 40' Piles in Bents 1 - 4.

#### BORING LEGEND

AI-Moist, Loose, Brown and Gray Sandy Silt with some Organic Matter  
 BI-Moist, Stiff, Brown Sandy, Silty Clay with some Organic Matter  
 CI-Moist, Medium Dense, Brown Clayey Silt  
 DI-Wet, Medium Dense to Loose, Gray Sandy Silt with Clay Seams  
 EI-Wet, Medium Stiff, Gray Clay with Sand Seams and Traces of Gravel  
 FI-Wet, Loose, Gray Sand and Gravel  
 GI-Wet, Medium Stiff, Gray Sandy, Silty Clay  
 HI-Wet, Soft, Brown Sandy, Silty Clay  
 JI-Wet, Dense to Very Dense, Brown Sand and Gravel  
 KI-Wet, Dense, Brown Sand  
 LI-Wet, Very Loose, Reddish Brown Sand  
 MI-Wet, Dense, Gray Sand with Clay Seams  
 NI-Wet, Hard, Gray Silty Clay with some Sand  
 PI-Wet, Very Dense, Reddish Brown Sand  
 QI-Wet, Hard, Gray Silty Clay  
 RI-Wet, Very Dense, Brown Sand  
 SI-Asphalt Pavement  
 TI-Moist, Very Loose, Brown Sand and Gravel  
 UI-Moist, Very Loose, Brown Sandy Silt with some Organic Matter  
 VI-Wet, Very Loose, Gray Sandy Silt with Clay Seams  
 WI-Wet, Loose, Gray Sand with Clay Seams and Traces of Gravel  
 XI-Wet, Medium Stiff, Gray Sandy Clay  
 YI-Wet, Medium Dense, Gray Clayey Sand with Traces of Gravel  
 ZI-Wet, Dense, Brown Sand and Gravel  
 A2-Wet, Medium Dense, Gray Sand and Gravel  
 B2-Wet, Loose, Gray Gravel  
 C2-Wet, Dense, Gray Sand and Gravel  
 D2-Wet, Hard, Gray Sandy Clay  
 E2-Wet, Very Dense, Reddish Brown Sand with Traces of Gravel  
 F2-Wet, Very Dense, Brown Sand and Gravel  
 G2-Wet, Hard, Gray and Brown Silty Clay  
 H2-Wet, Very Hard, Gray and Brown Sandy Clay with Traces of Lignite



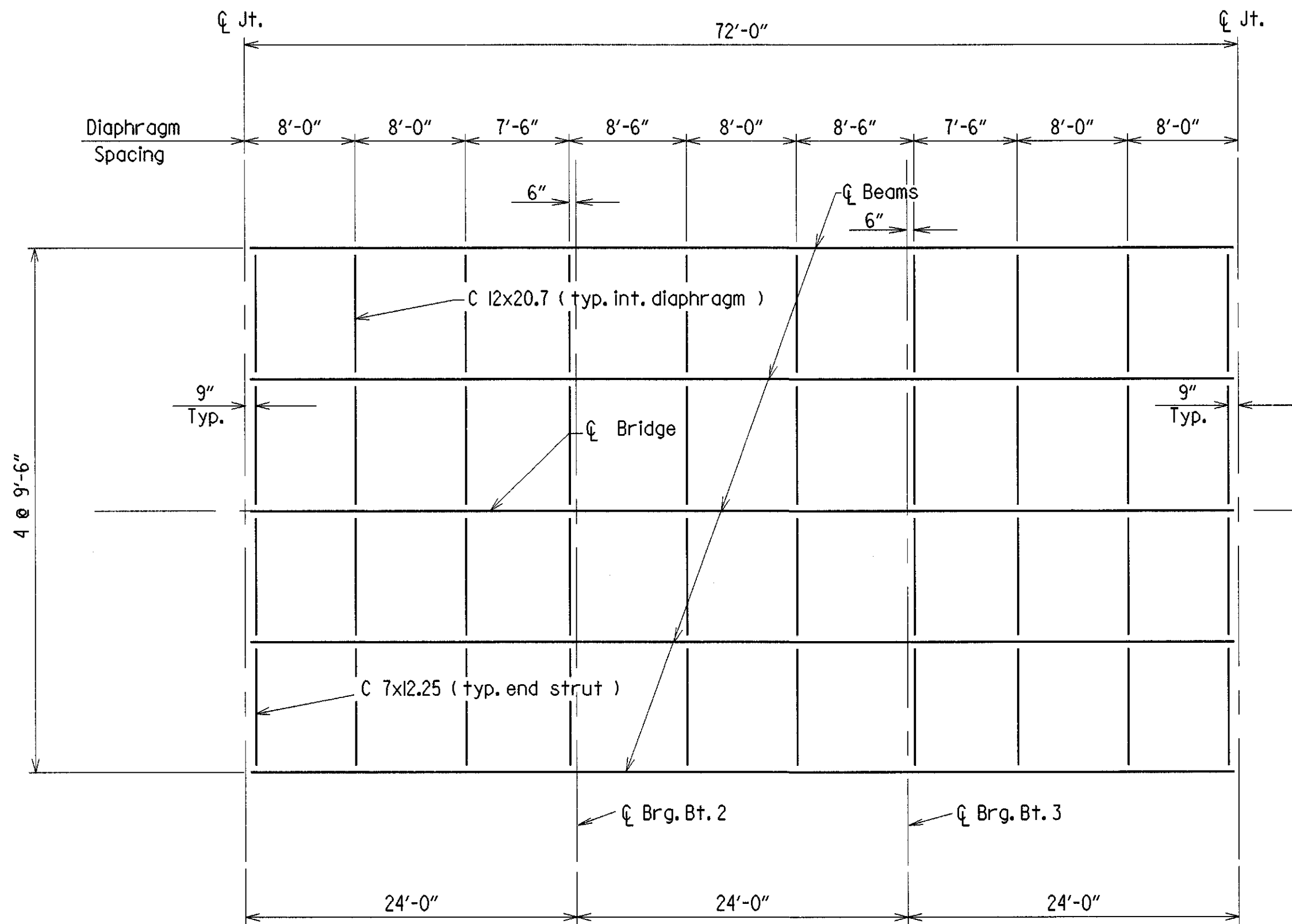
LAYOUT OF BRIDGE OVER  
 MUD CREEK RELIEF  
 & RELIEF STRS. & APPRS. (S)  
 CRAIGHEAD COUNTY  
 ROUTE 141 SEC. 1  
 ARKANSAS STATE HIGHWAY COMMISSION  
 LITTLE ROCK, ARK.

DRAWN BY: W.M.J. DATE: 6-7-01 FILENAME: B100126X2.LI  
 CHECKED BY: J.P.W. DATE: 11-6-01 SCALE: 1" = 20'  
 DESIGNED BY: B.E.F. DATE: 5-3-01  
 BRIDGE NO. 06891 DRAWING NO. 43054

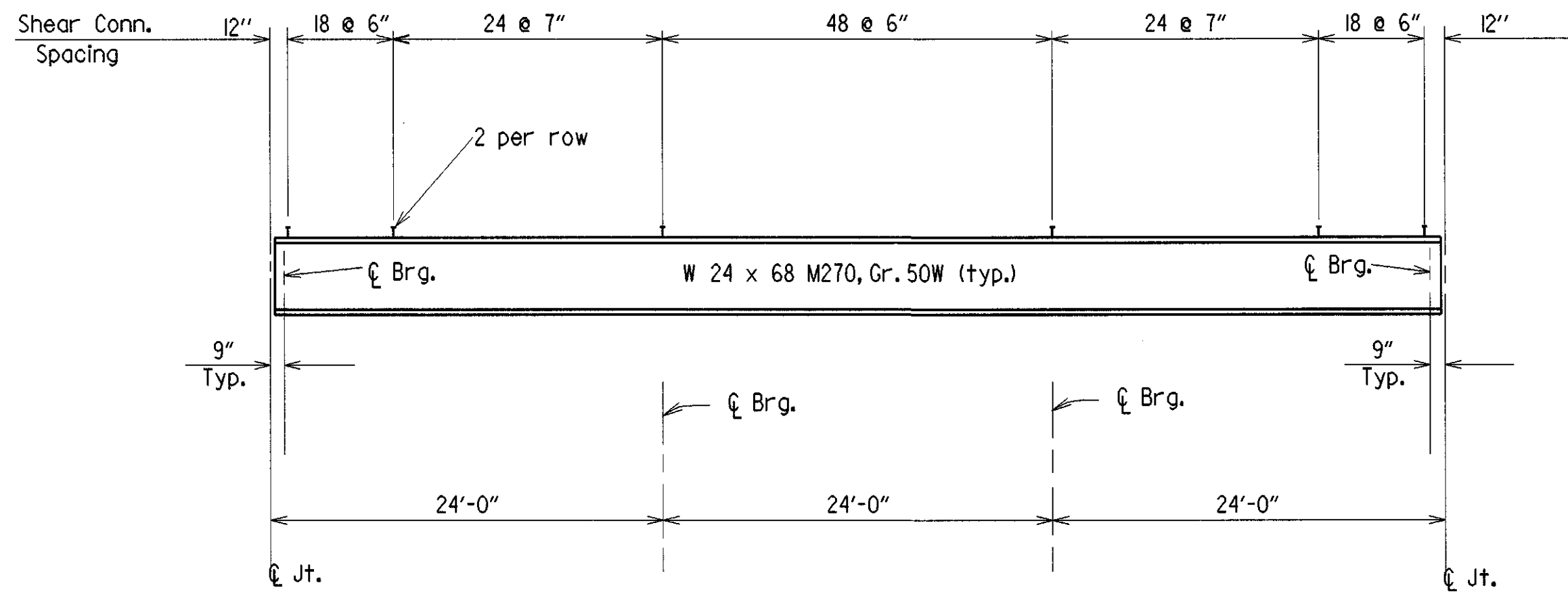




DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100126	52	132
				06891	CONT. W-BM. UNIT		43059	



FRAMING PLAN  
N.T.S.



TYP. BEAM ELEVATION  
N.T.S.

TABLE FOR WELD		
Material Thickness of Thicker Part Joined (Inches)	Minimum Size of Fillet Weld (Inches)	Single Pass Weld Must Be Used
To 3/4" Inclusive	1/4"	
Over 3/4"	5/16"	

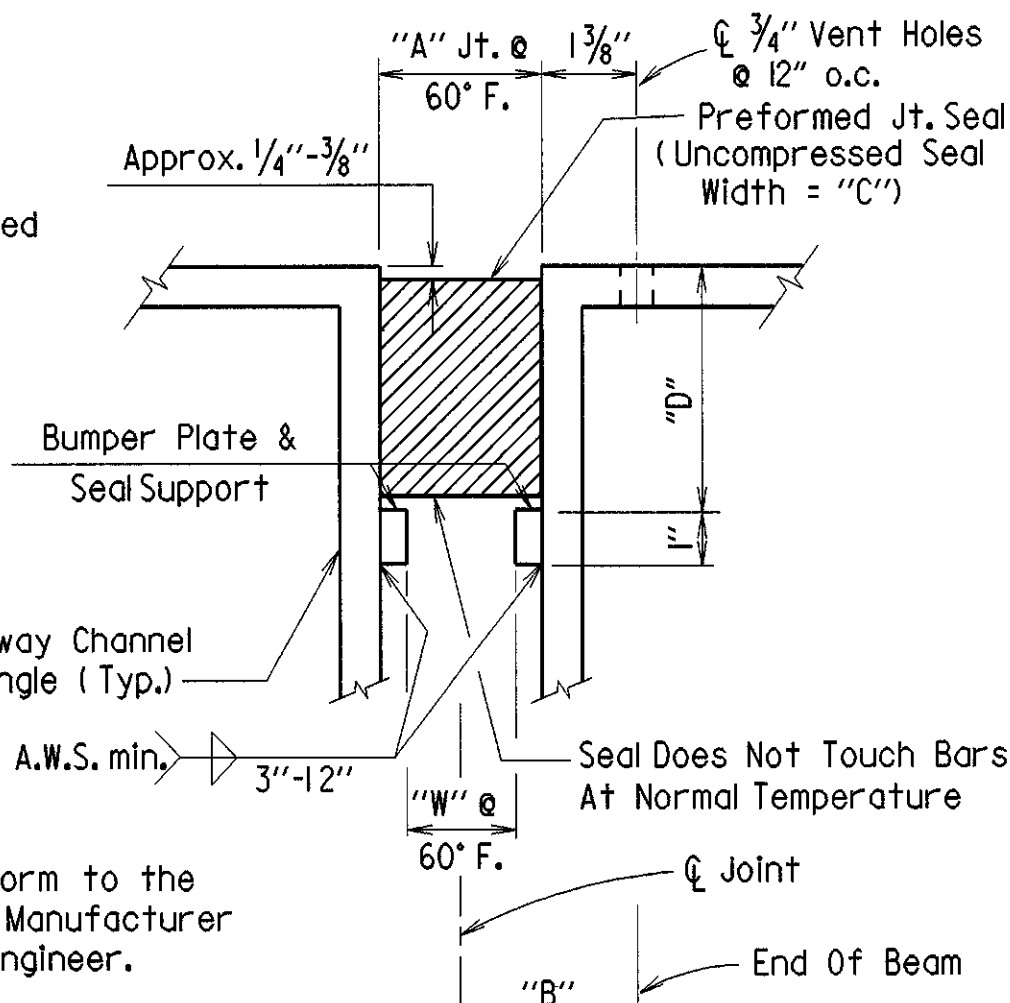
NOTE: When a fillet weld size, as shown on the plans, is larger than the minimum, the first pass shall be that specified for minimum size of fillet weld.

JOINT SEAL DATA				
"A" Joint Width Perpendicular To Joint @ 60°F*	"B" Perpendicular To Joint	"C" Uncompressed Seal Width	"W" Width Between Plates	Bumper Plate Size
1 1/8"	2 1/4" +	3"	5/8"	1" x 5/8"

\* Installation is limited to 40° F. min. and 80° F. max.

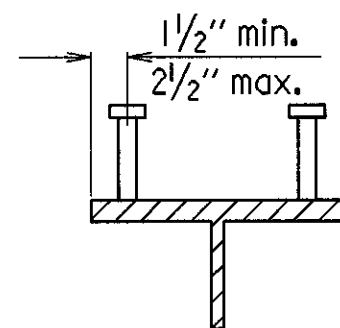
Note: Concrete shall be hand packed under joint armor.

Note: Dimension "D" shall conform to the recommendations of the Seal Manufacturer as approved by the Bridge Engineer.



DETAIL OF JOINT SEAL & SUPPORT

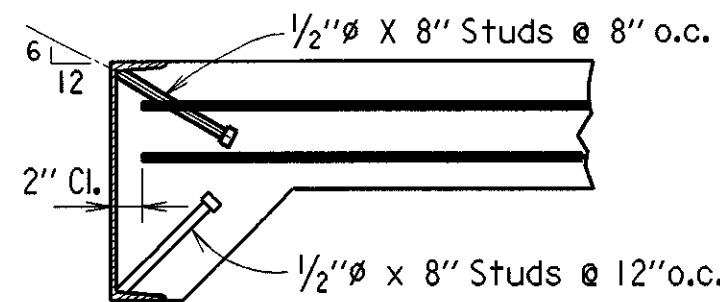
N.T.S.  
Note: The Seal shall be in one piece (without splices) for the full length of the Joint, except that lengths 55 feet and longer may have a factory made splice. Splices, when required, shall be shown on the Shop Drawings and shall be placed near the high ends of the Roadway. Separation of the Splice during installation shall be cause for rejection of the Seal.



Stud Shear Connectors shown shall be 3/8" x 4" long, granular flux filled, solid fluxed or equal, and automatically end welded to the beam flange in accordance with the recommendations of the Manufacturer. 3/4" studs may be used in place of the 1/2" studs shown, at the ratio of 1.361 - 3/4" studs in place of one 1/2" stud. 1/8" studs will be used as basis for measurement of structural steel in shear connectors. Maximum stud spacing = 24".

SHEAR CONNECTOR DETAIL

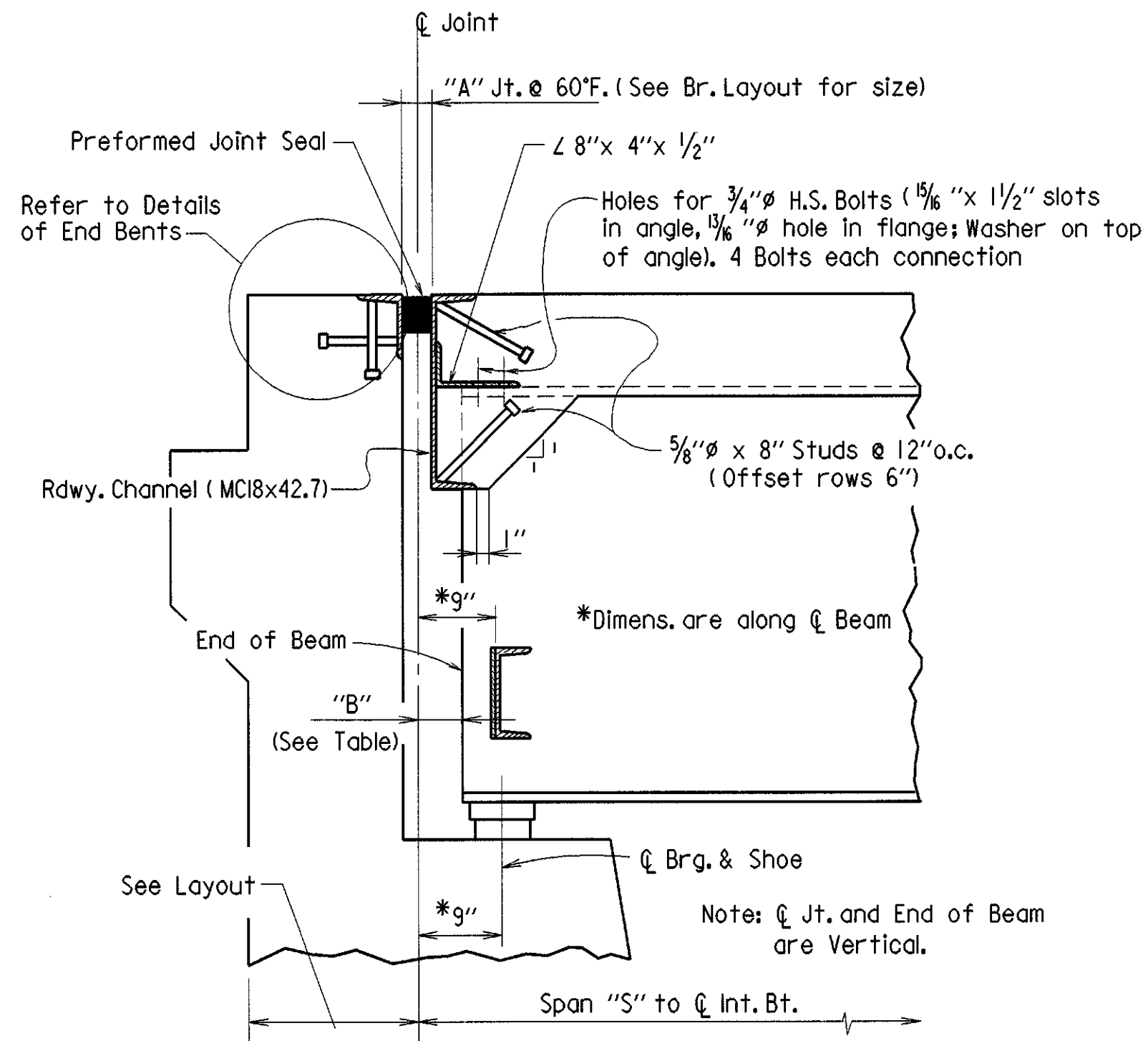
No Scale



Note: As an alternate to 3/8" studs, 1/2" x 8" studs spaced as shown may be used. Use weight of 5/8" stud as basis of measurement of structural steel in anchors.

DETAILS OF ALTERNATE ANCHORS

N.T.S.



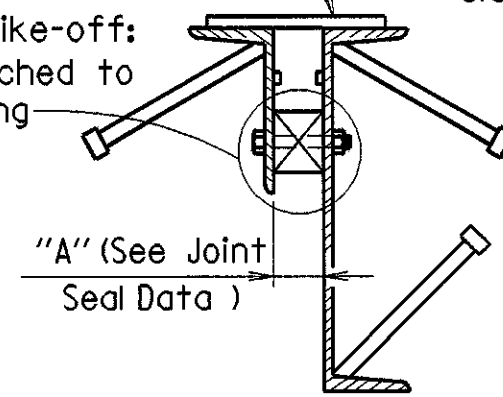
JOINT AT END BENTS

N.T.S.

One of two different blocking systems is required depending on the type of span finishing machine that is used.

For Transverse Strike-off: Plate, Angle, or other shapes, attached to Channels (or Angles) for Blocking

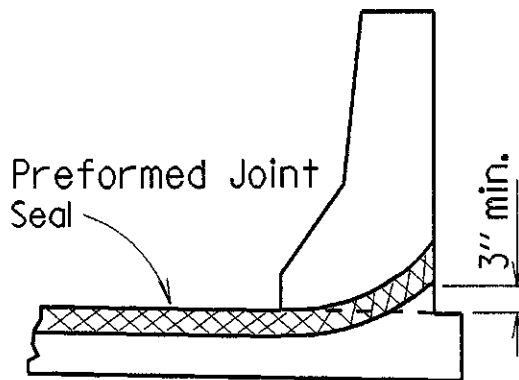
For Longitudinal Strike-off: Bolt & spacer attached to channels for blocking



DETAILS FOR BLOCKING EXPANSION JOINT DEVICE

N.T.S.

Note: Each expansion joint device shall be blocked in the Shop by the Fabricator to the dimension "A", and the blocking details shall be shown on the Shop Drawings. The blocking shall not be removed until the Slab on one side is complete. Blocking shall be placed within 2 feet of each end of the device and with a maximum spacing of 8 feet. Removal shall be just before or after pouring the second side of the joint, as directed by the Engineer.



JOINT SEAL  
PLACEMENT AT CURB  
N.T.S.



BRIDGE ENGINEER

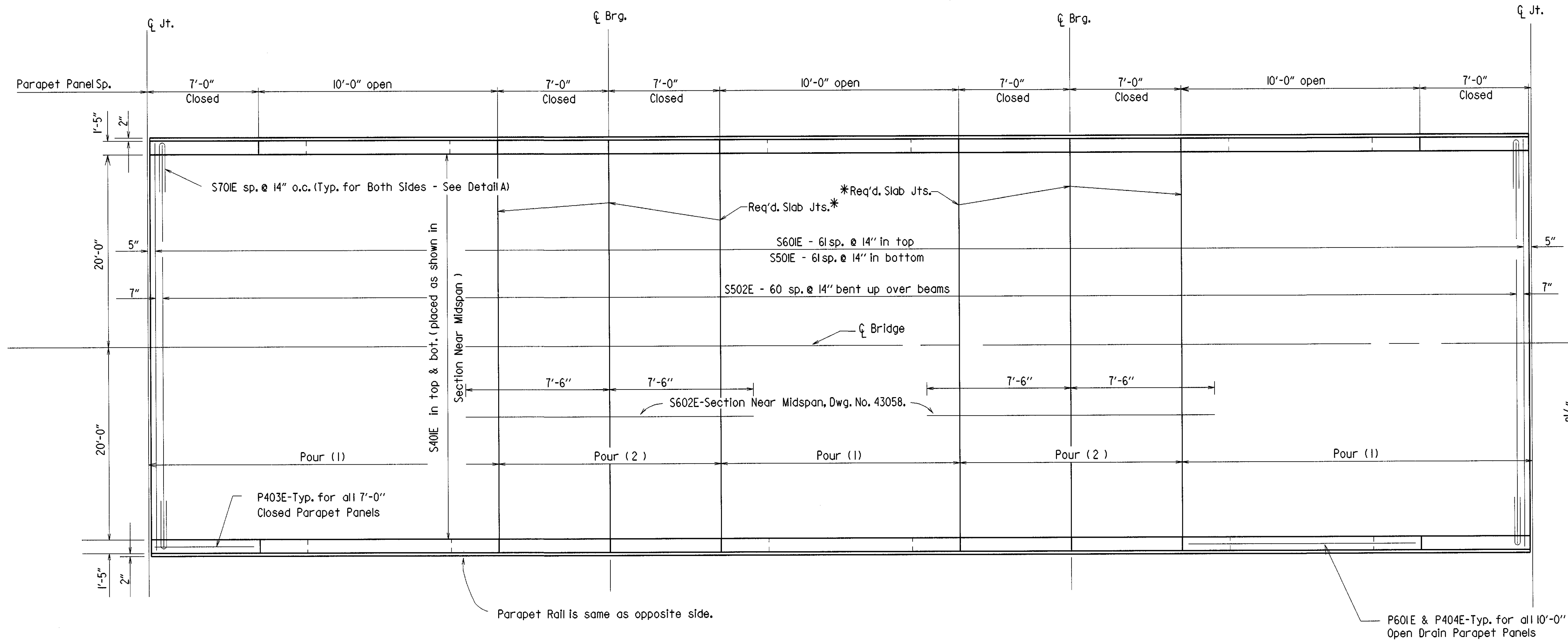
SHEET 2 OF 4  
DETAILS OF  
72' CONT. COMP. W-BEAM UNIT  
MUD CREEK RELIEF  
CRAIGHEAD COUNTY

ROUTE 141 SEC. 1

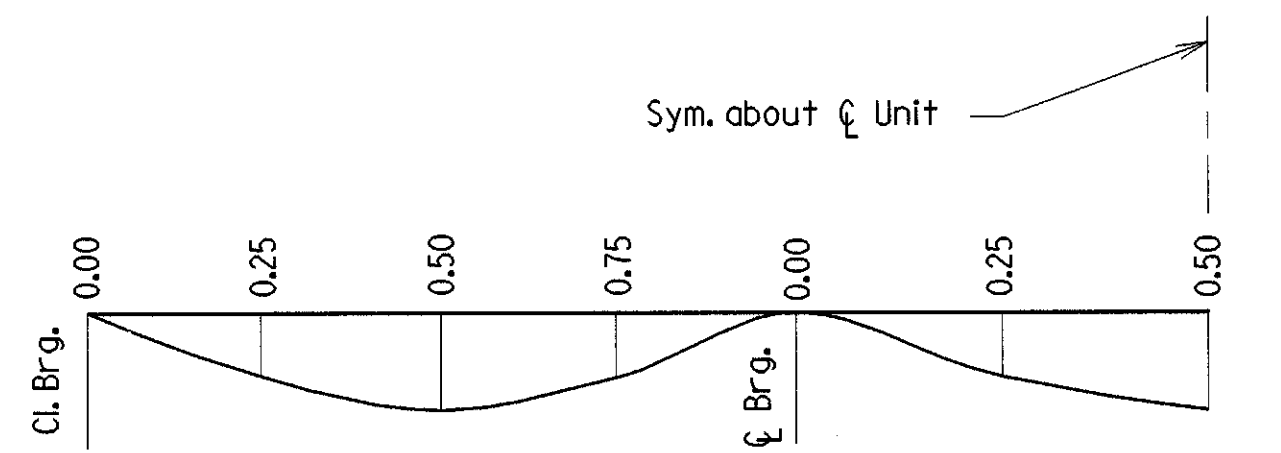
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: K. W. Y. DATE: 7-20-01 FILENAME: b100126.x1.s12  
CHECKED BY: GYA DATE: 10-25-01 SCALE: AS SHOWN  
DESIGNED BY: KWT DATE: 8-30-01  
BRIDGE NO. 06891 DRAWING NO. 43059



REINFORCING PLAN &  
DIAGRAM OF POURING SEQUENCE  
N.T.S.

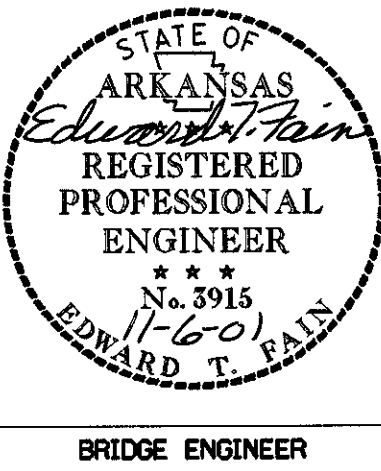
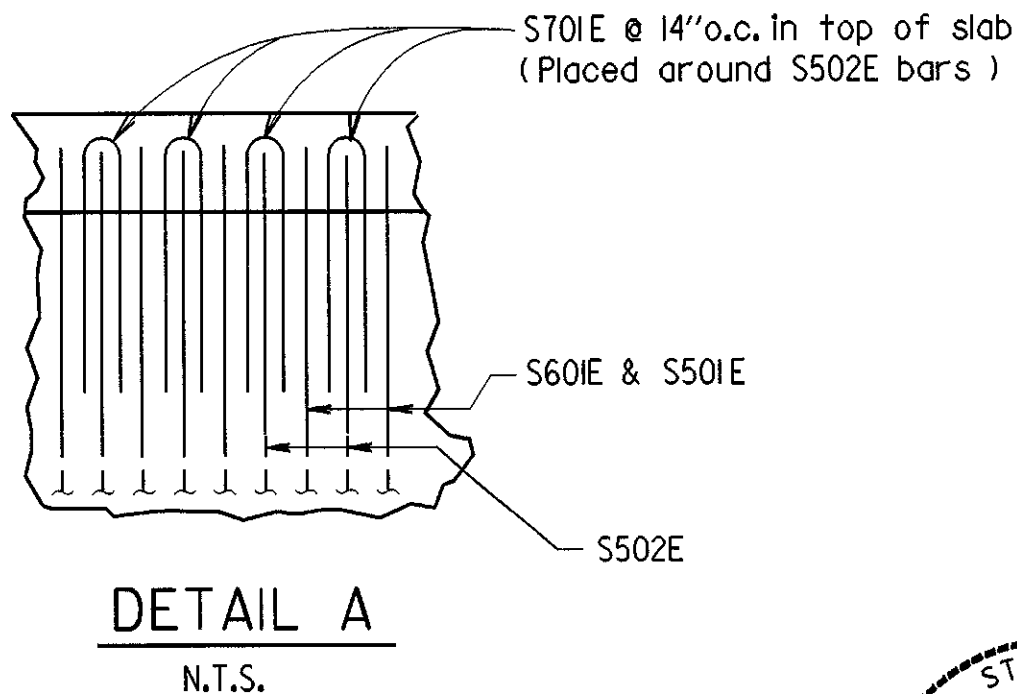


DEAD LOAD DEFLECTIONS DIAGRAM (TYP.)  
Camber for Dead Load Deflection  $\pm 1/4$ " tolerance.

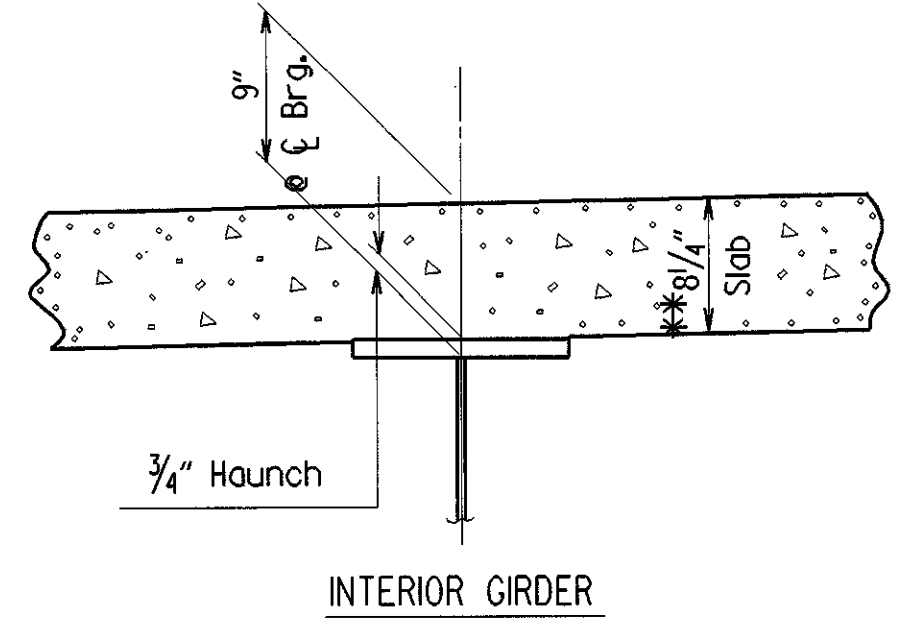
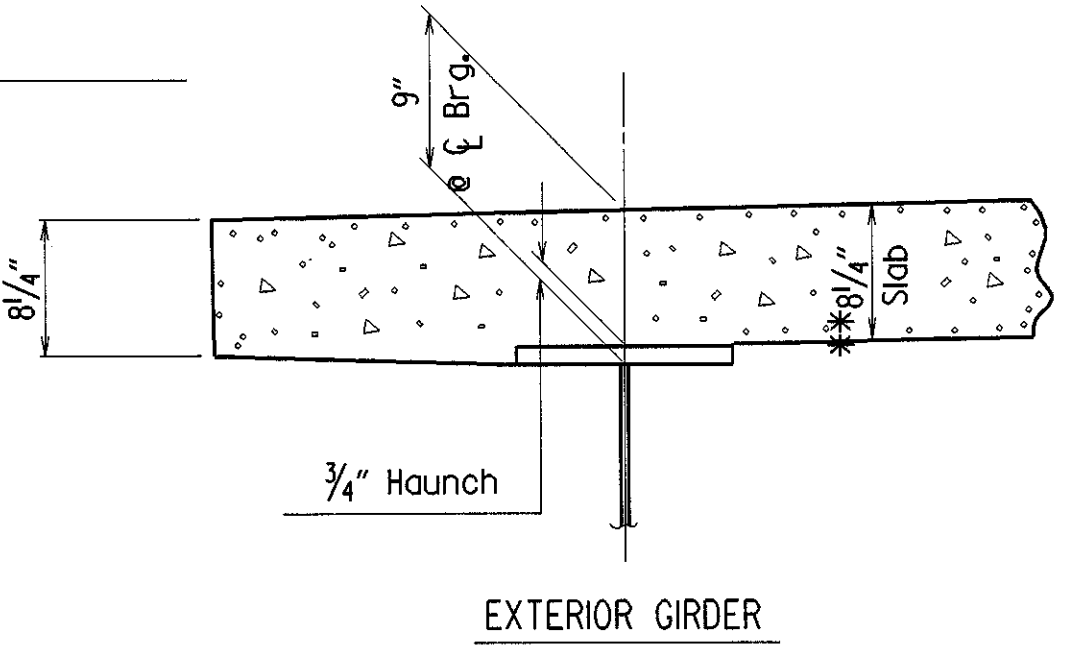
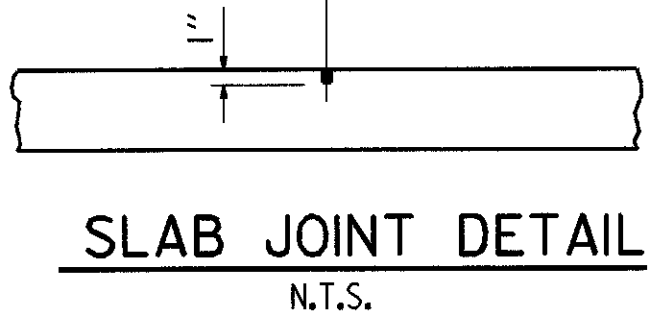
Note: Pours with the same number may be placed simultaneously or separately. All Pours (1) must be placed before Pours (2) can be placed. 48 hours shall elapse between the end of a pour and the start of the next pour. 72 hours shall elapse between the end of a pour and the start of an adjacent pour. Any railing 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.

TABLE OF DEAD LOAD DEFLECTIONS-INCHES							
Span	Point of Deflection	Structural Steel		Structural Steel + Slab		Structural Steel + Slab + Rail	
		Interior	Exterior	Interior	Exterior	Interior	Exterior
1	0.00	0	0	0	0	0	0
	0.25	0.004	0.004	0.054	0.042	0.057	0.045
	0.50	0.006	0.005	0.067	0.053	0.071	0.057
2	0.75	0.003	0.003	0.037	0.029	0.039	0.031
	0.00	0	0	0	0	0	0
	0.25	0	0	0.003	0.002	0.003	0.003
	0.50	0.001	0.001	0.011	0.009	0.012	0.010



1/2" x 1" Type 6 Poured Synthetic Polymer Jt. in slab (to be paid for as 'Class S(AE) Concrete.') If slab joints are to be sawed, they shall be sawed before any vehicular traffic is allowed on the unit. See "Plan" for location of joints.



\*\*Tolerance when removable deck forming is used is  $\pm 1/2$ ",  $-1/4$ ".  
Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

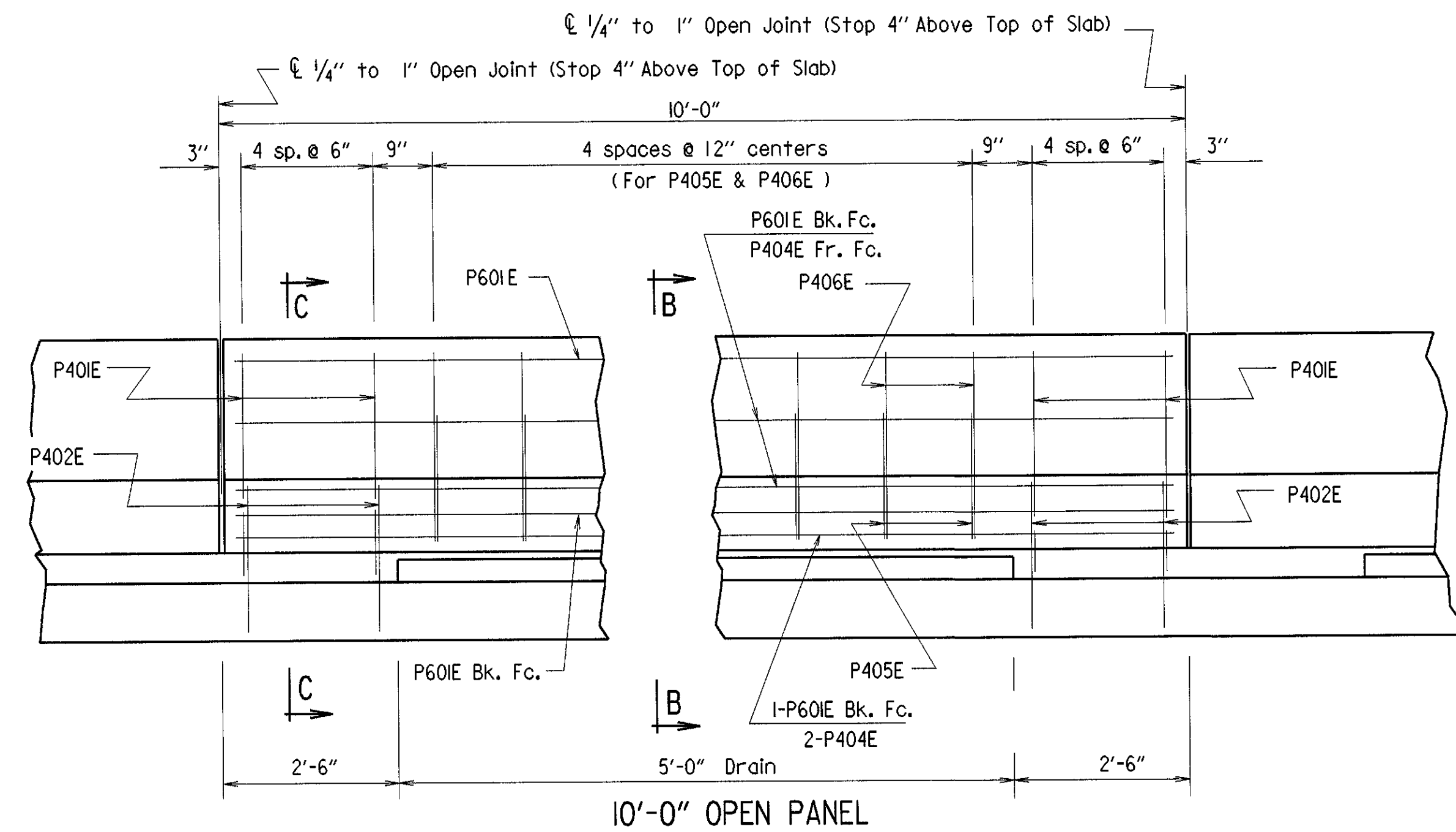
Tolerances shown are applicable only when removable deck forming is used. See Std. Dwg. No. 14991 for tolerances when permanent steel deck forms are used. Payment for concrete shall be based on removable deck forming.

HAUNCH DETAILS AND  
ADJUSTMENT FOR SLAB THICKNESS TOLERANCE  
WHEN REMOVABLE DECK FORMING IS USED  
N.T.S.

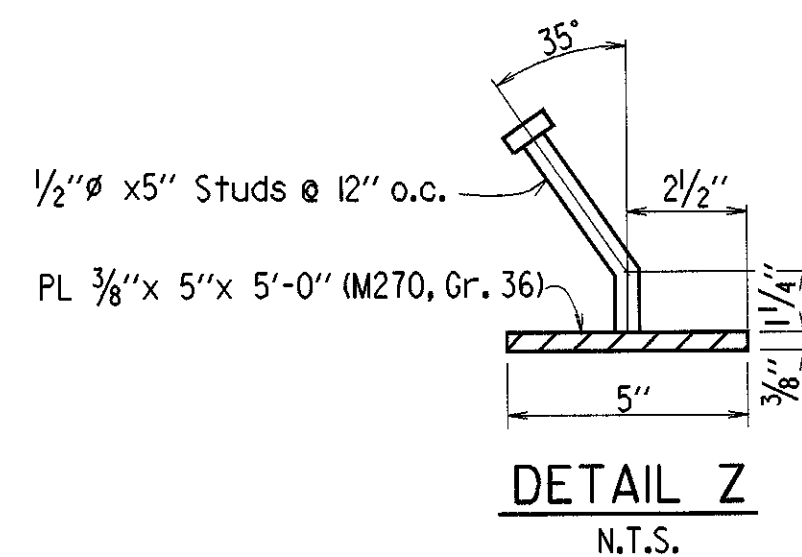
SHEET 3 OF 4  
DETAILS OF  
72' CONT. COMP. W-BEAM UNIT  
MUD CREEK RELIEF  
CRAIGHEAD COUNTY  
ROUTE 141 SEC. 1  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: K. W. Y. DATE: 8-31-01 FILENAME: b100126x2.s13  
CHECKED BY: GVA DATE: 10-25-01 SCALE: AS SHOWN  
DESIGNED BY: K.W.Y. DATE: 8-30-01  
BRIDGE NO. 06891 DRAWING NO. 43060

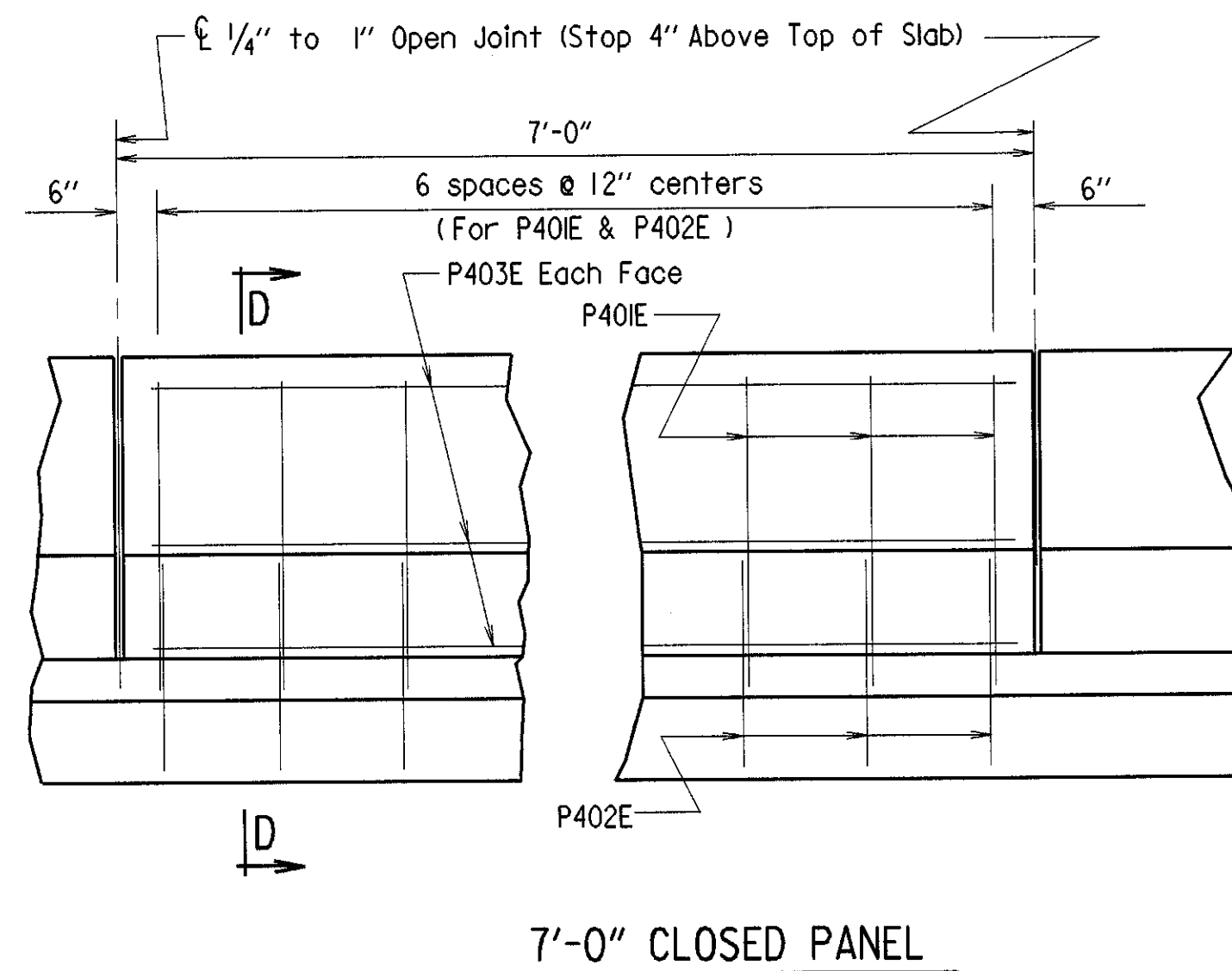
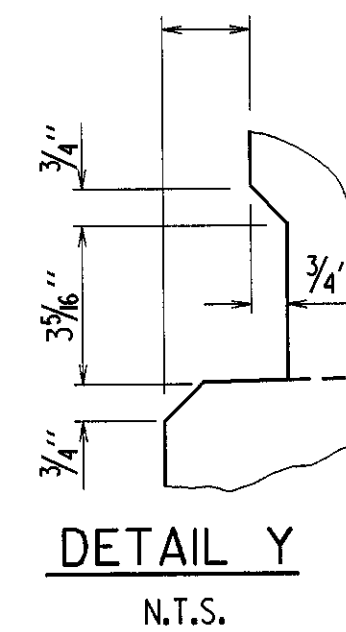
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100126	51	132
				06891		CONT. W-BM. UNIT	43061	



ELEVATION OF TYPICAL PARAPET RAIL  
(As viewed from roadway side of parapet)  
N.T.S.



Note:  
The surfaces of the 3/8" 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 prime coat is required where multiple coats are specified. All coats 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 (AE) Concrete.



Design Specifications: AASHTO 1996 with Interim Specifications

Live loading: HS20 Method of Design: Load Factor

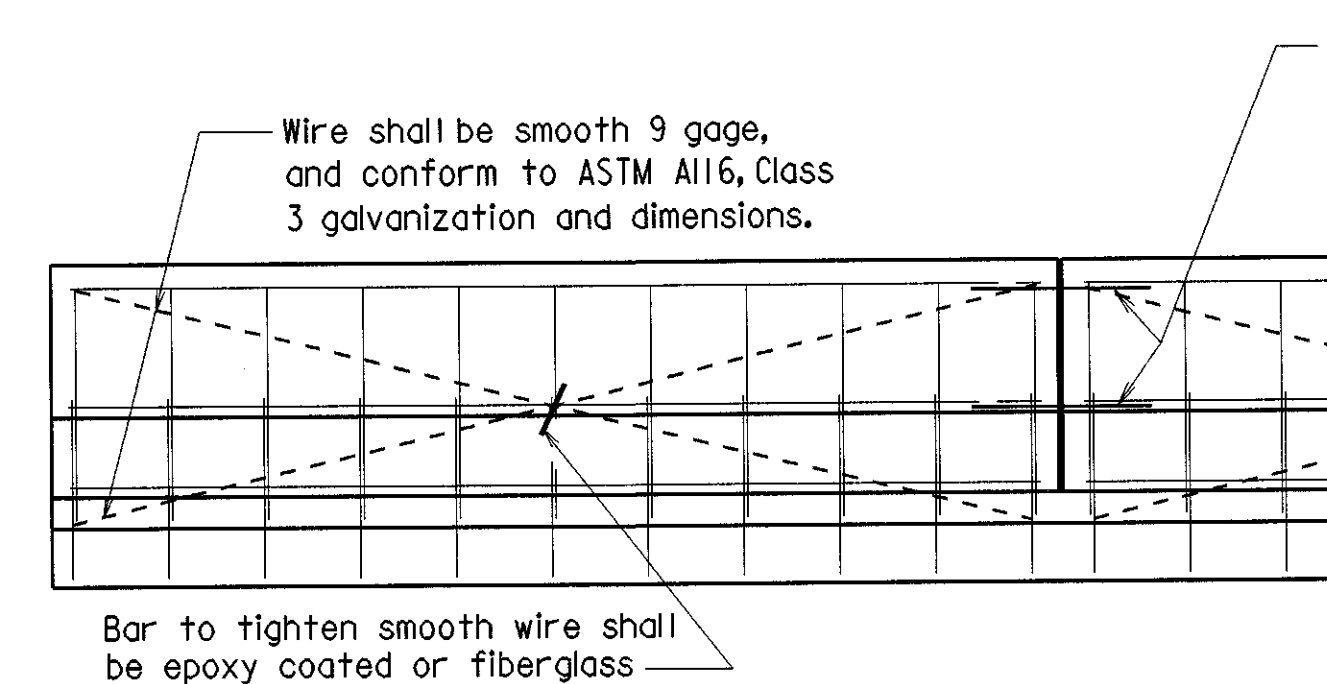
Dead Load: Interior Beam Exterior Beam  
A. To W-Beam 980 plf + 756 plf +  
1.3 (Wt./Ft. of W-Bm.) 1.3 (Wt./Ft. of W-Bm.)

B. To Composite Beam Closed Parapets 348 plf \* 348 plf \*  
Open Parapets 336 plf \* 336 plf \*

Live Load: To each composite beam 1,727 wheels + impact 1,490 wheels + impact

\* Includes 192 plf future wearing surface

Material Strengths:  
Class (AE) Concrete (N=8) f'c = 4,000 p.s.i.  
Reinforcing Steel (AASHTO M31 or M53, Gr. 60) fy = 60,000 p.s.i.  
Structural Steel (AASHTO M270, Gr. 36) fy = 36,000 p.s.i.  
Structural Steel (AASHTO M270, Gr. 50) fy = 50,000 p.s.i.

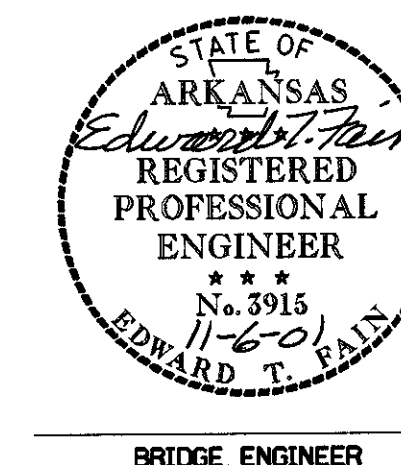
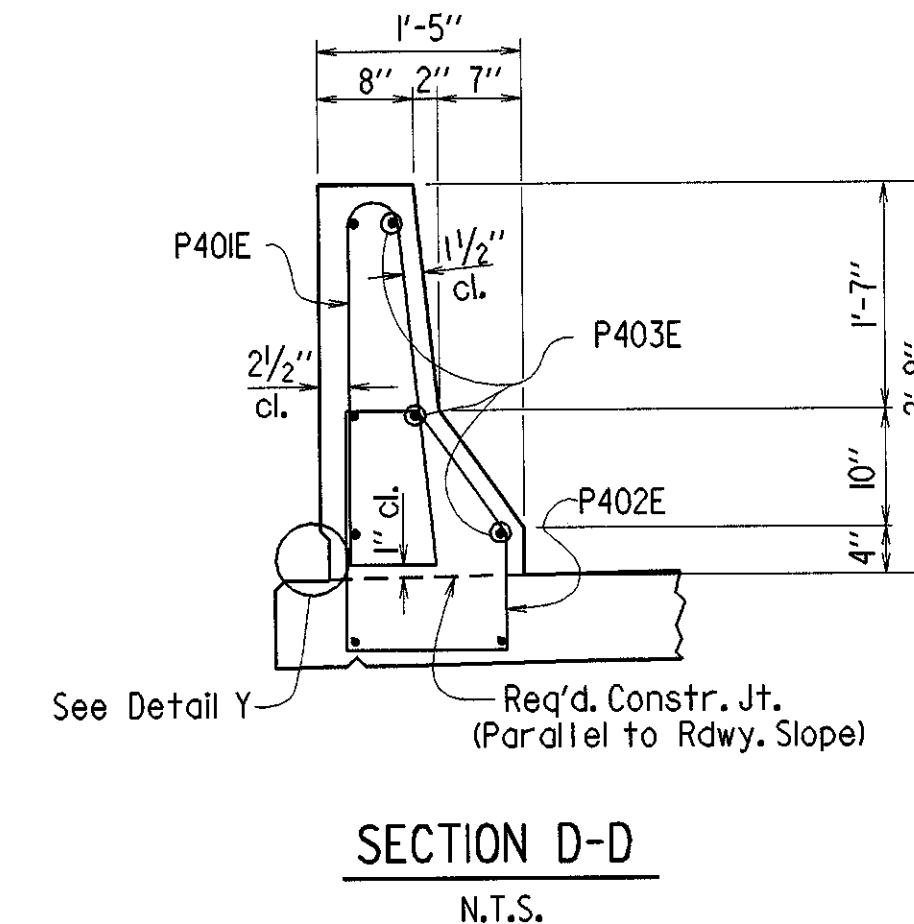
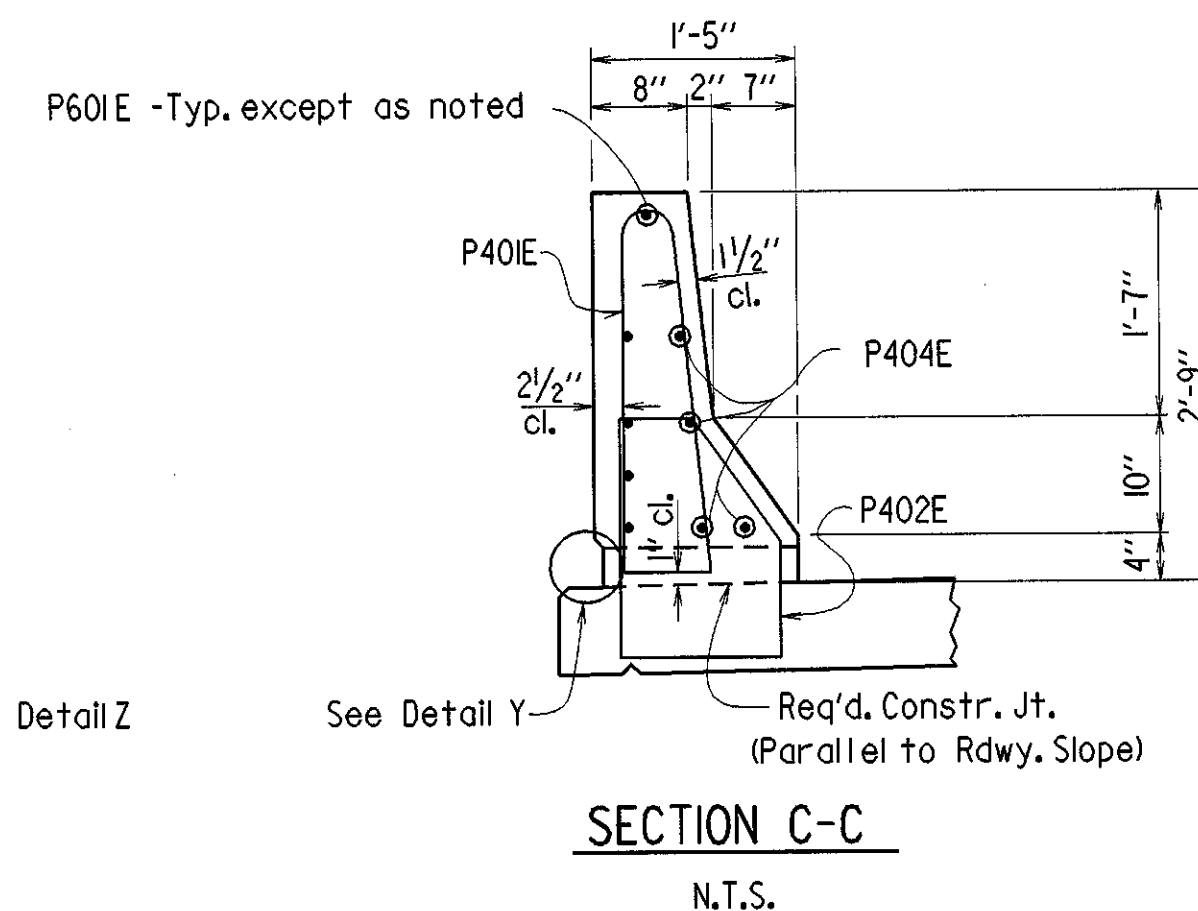
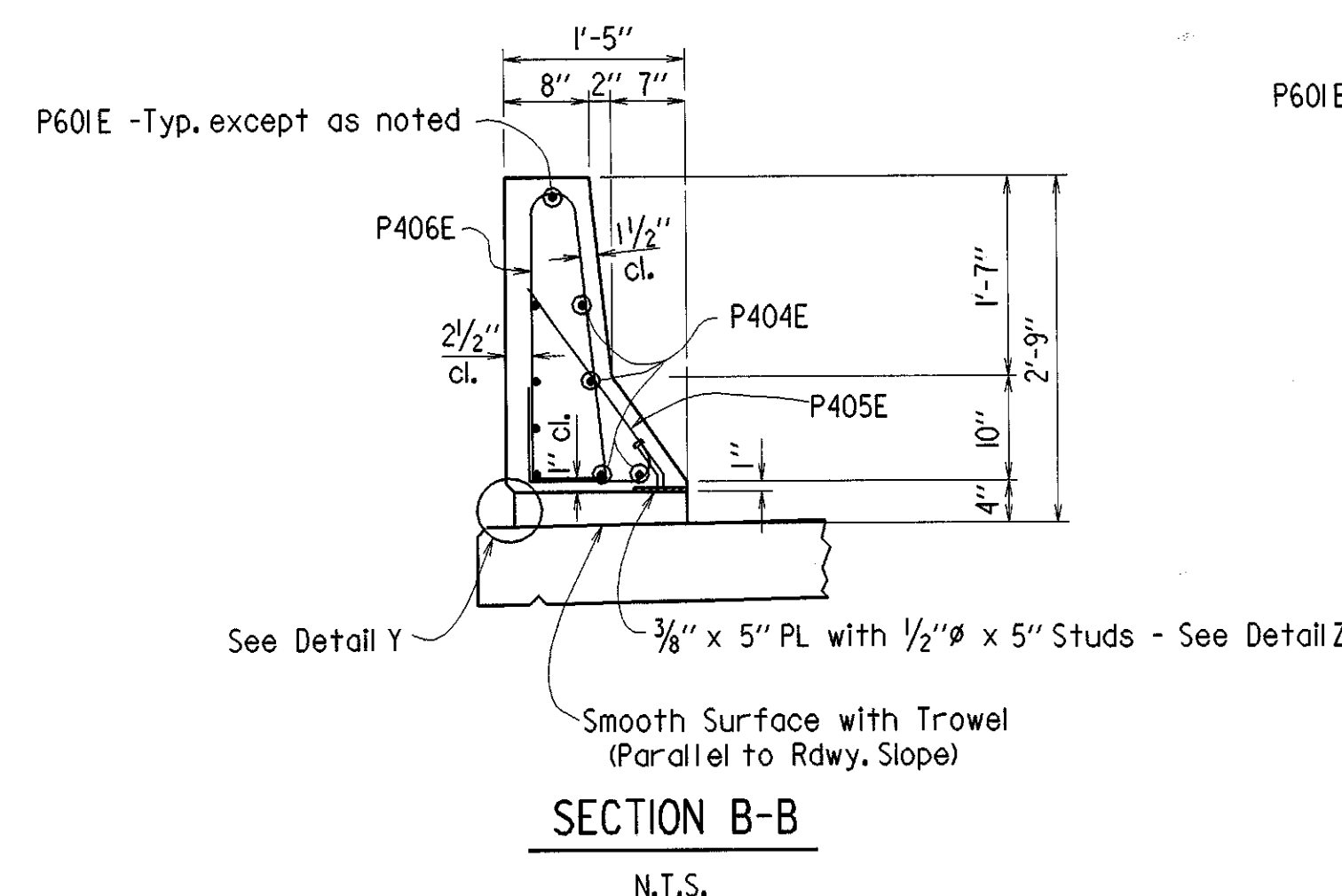


Vertical reinforcing shall be closed loop on top

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

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 1/4". 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.

DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL (OPEN OR CLOSED)  
N.T.S.



SHEET 4 OF 4  
DETAILS OF  
72' CONT. COMP. W-BEAM UNIT  
MUD CREEK RELIEF  
CRAIGHEAD COUNTY  
ROUTE 141 SEC. 1  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: K. W. Y. DATE: 9-4-01 FILENAME: bl00126x2.s14  
CHECKED BY: GVA DATE: 10-25-01 SCALE: no scale  
DESIGNED BY: L.W.Y. DATE: 8-30-01  
BRIDGE NO. 06891 DRAWING NO. 43061



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.		100126	55	132
				06891		ELASTO. BRGS.		43062

TABLE OF DESIGN VARIABLES

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
1 1/4"	1 1/4"	3"	2 1/2"	12"	2" ø	2"	2 1/4"	2 1/2"	2 1/4"
1 1/2"	1 1/2"	3"	3"	15"	2 1/4" ø	2 1/4"	2 1/2"	2 3/4"	2 1/2"
3/4"	2"	4"	3 3/8"	18"	2 5/8" ø	2 1/2"	2 3/4"	3"	2 3/4"
2"	2 1/2"	4"	3 3/4"	20"	3 1/8" ø	2 3/4"	3"	3 1/4"	3"
2 1/4"	2 1/2"	4"	4"	23"	3 1/8" ø	2 3/4"	3"	3 1/4"	3 1/4"
2 1/2"	3"	4"	4 1/2"	25"	3 3/4" ø	3"	3 1/4"	3 1/2"	3 1/2"
2 3/4"	3"	5"	5"	28"	3 3/4" ø	3"	3 1/2"	3 1/2"	4"

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 item "Structural Steel in Beam Spans, (M 270, Gr. 50W)"

GENERAL NOTES

Elastomeric Bearings shall conform to Special Provision Job 100126 "Elastomeric Bearings" and Section 808 of the Standard Specifications and shall be paid for at the unit price bid for "Elastomeric Bearings." Long-duration testing of random lot samples specified in subsection 808.05 is not required.

External load plates shall conform to AASHTO M 270, Grade 50W. 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 and bolt holes) and shall be cleaned before vulcanizing to the elastomeric bearing. The surface in contact with the elastomeric bearing shall be cleaned in accordance with Special Provision Job 100126 "Elastomeric Bearings". Other surfaces shall be blast cleaned in accordance with subsection 807.84(b) for painted steel and 807.84(e) for unpainted Grade 50W 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 (M270, Gr. 50W)".

Tabular Data by : K.W.Y. Date: 9-20-01  
Checked by : GYA Date: 10-25-01  
Designed by : K.W.Y. Date: 8-30-01



BRIDGE ENGINEER

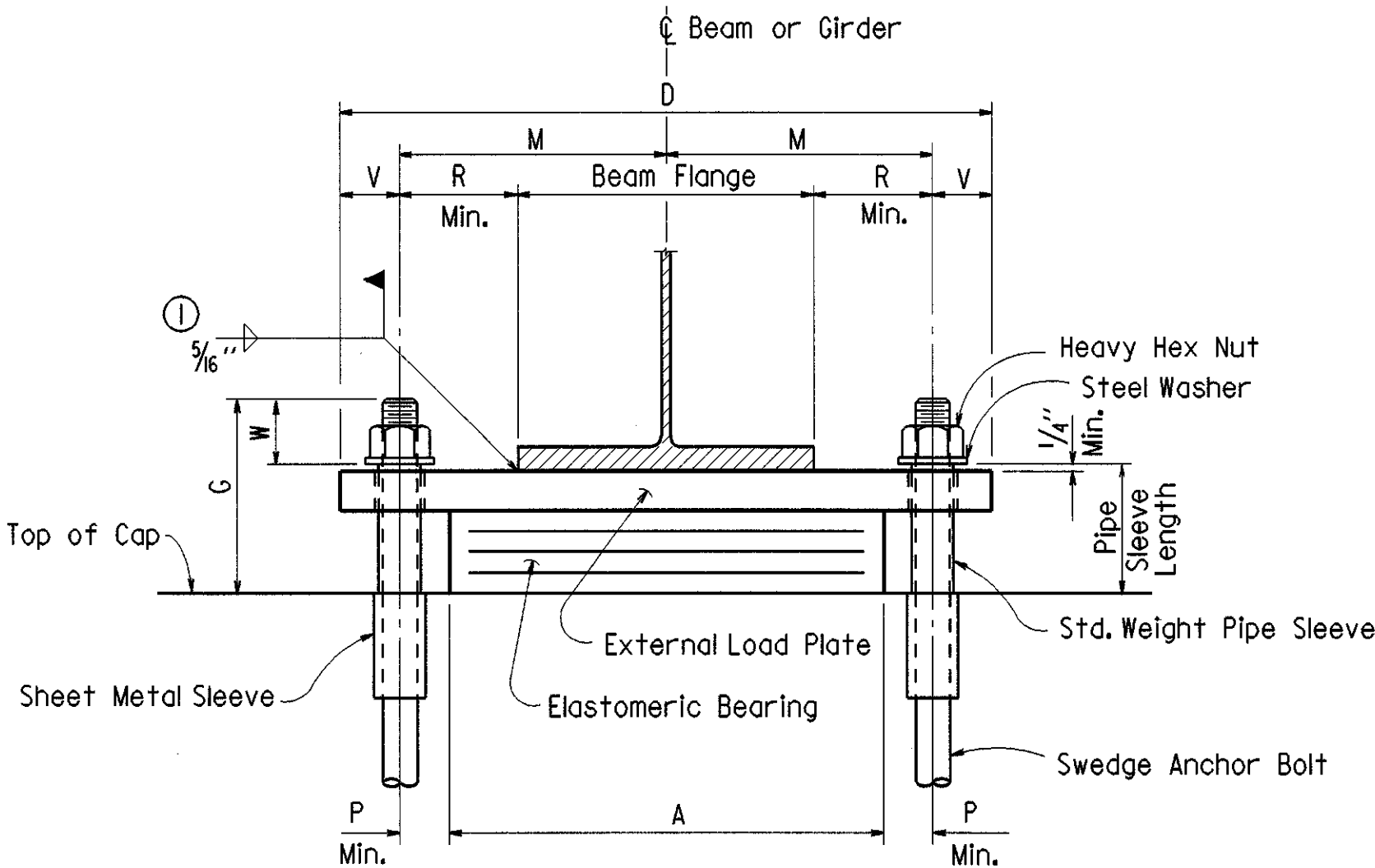
DETAILS OF ELASTOMERIC BEARINGS  
72' CONT. COMP. W-BEAM UNIT

ROUTE 141 SEC. 1  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: MJT DATE: Nov. 12, 96 FILENAME: b100126x2.brq  
CHECKED BY: AMS DATE: Nov. 15, 96 SCALE: NONE  
DESIGNED BY: Std. DATE:

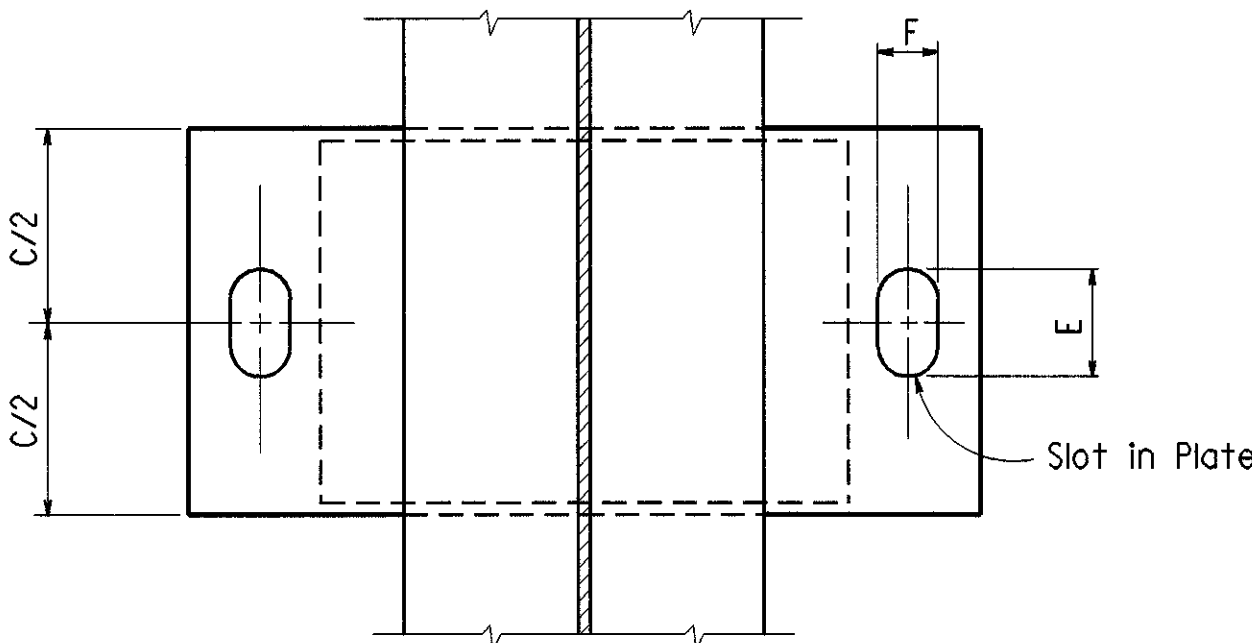
BRIDGE NO. 06891

DRAWING NO. 43062

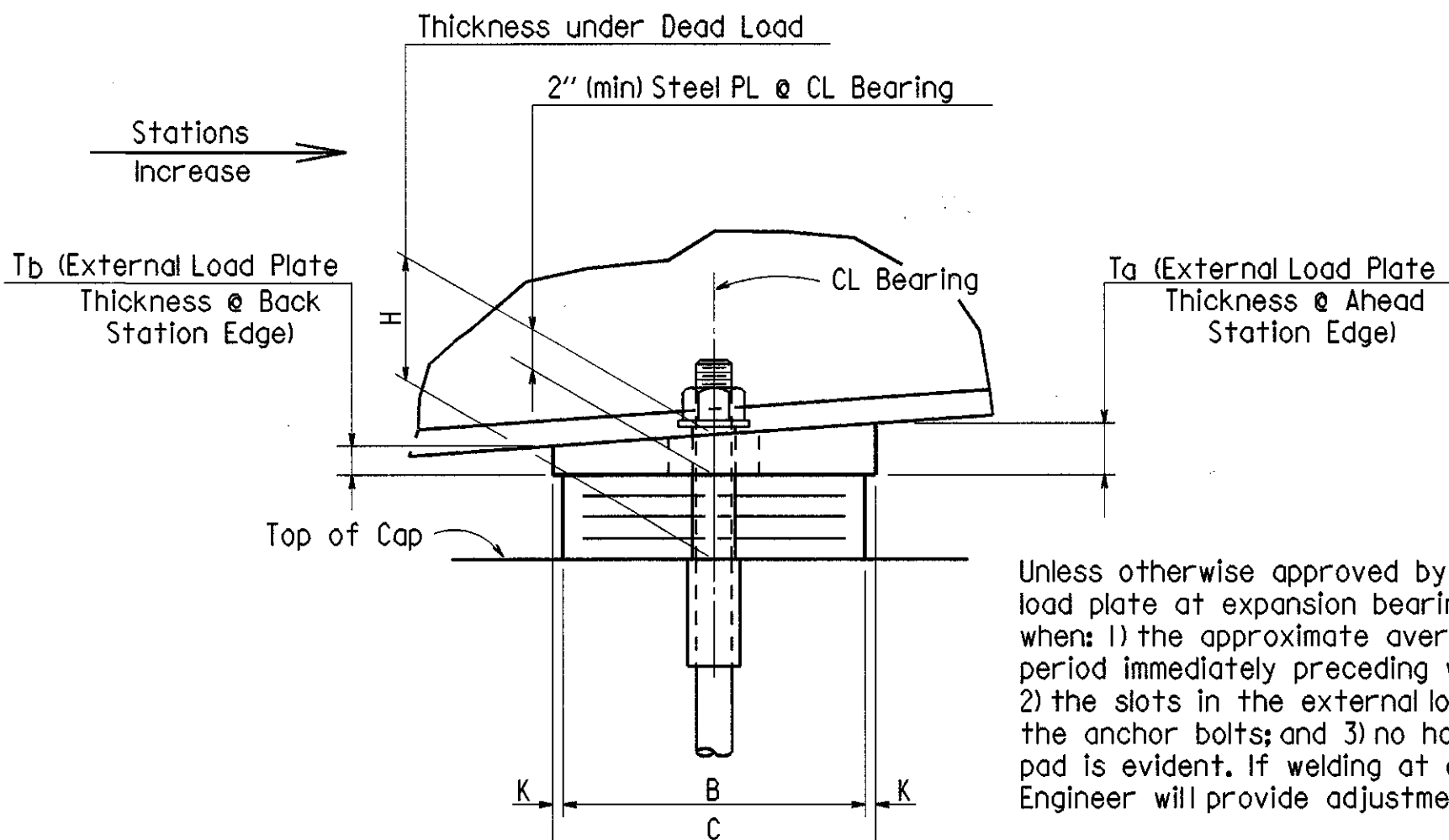


FRONT VIEW

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.

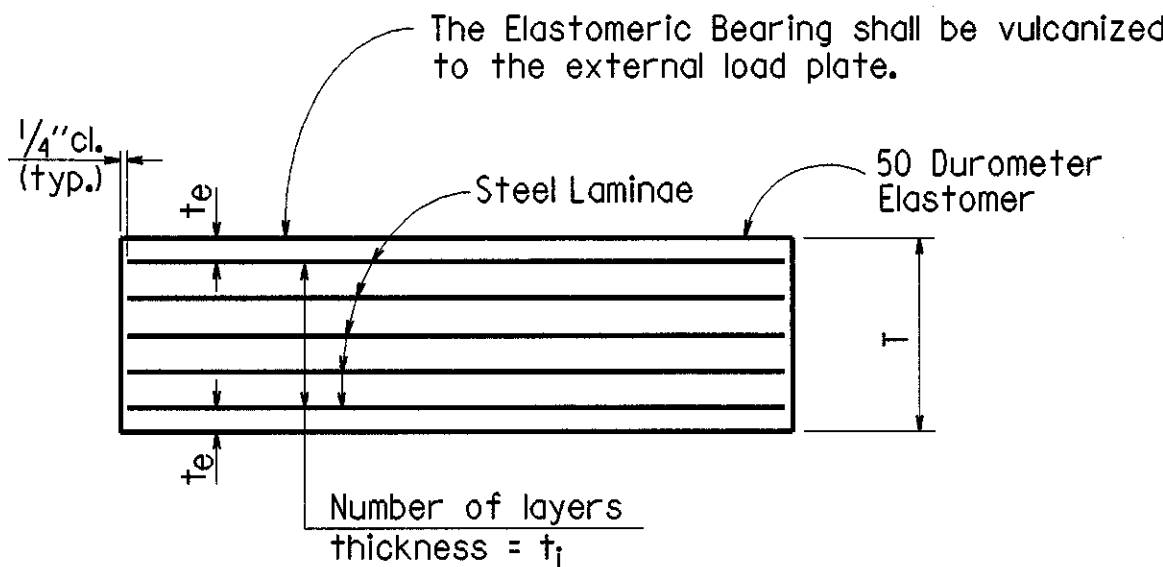


PLAN VIEW



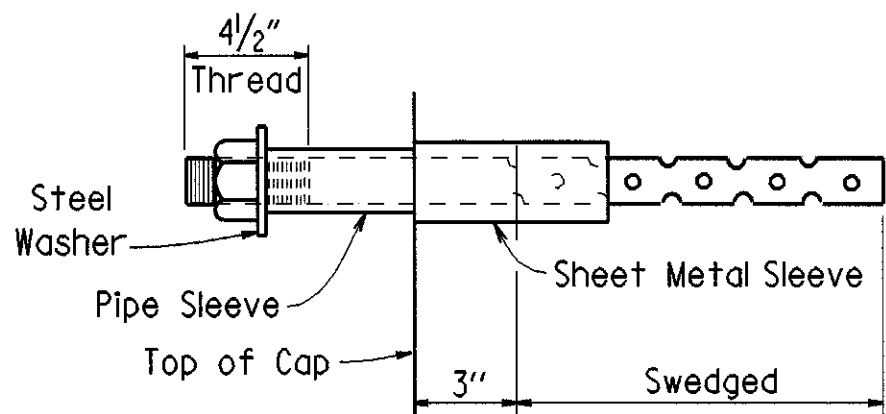
SIDE VIEW

Unless otherwise approved by the Engineer, welding of the external load plate at expansion bearings to the girder will be allowed only when: 1) the approximate average air temperature during the 24 hour period immediately preceding welding is between 40° F and 80° F; and 2) the slots in the external load plate are positioned to center on the anchor bolts; and 3) no horizontal deformation of the elastomeric pad is evident. If welding at other temperatures is required, the Engineer will provide adjustment data.



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

ELASTOMERIC BEARING



ANCHOR BOLT DETAIL

TABLE OF FABRICATOR VARIABLES

BRIDGE NO.	LOCATION			BEARING TYPE	NO. of BEARINGS EACH BENT	*MAXIMUM DESIGN LOAD (KIPS)	G	H	ELASTOMERIC PAD						EXTERNAL LOAD PLATE								ANCHOR BOLT					
	BENT NO(S).	SPAN NO.	BEAM OR GIRDER NO.						A	B	N	t <sub>i</sub>	t <sub>e</sub>	NO. & THICKNESS OF STEEL LAMINAE	T	C	D	E	F	K	M	T <sub>a</sub>	T <sub>b</sub>	ANCHOR BOLT		PIPE SLEEVE SIZE (ø x L)	SHEET METAL SLEEVE SIZE (ø x L)	STEEL WASHER SIZE (O.D.)
																								(ø x L)	GRADE			
16891	1 & 4		All	Exp	5	54J	8 5/8"	5 5/8"	11	11	5	1/2"	1/4"	6 @ 12 Ga.	3 5/8"	12"	22"	3 1/2"	2 5/8"	1/2"	8"	2"	2"	1 3/4" X 27"	55	2" X 5 1/8"	4" X 6"	3 3/8"
	2 & 3		All	Fix	5	92.5	9 1/8"	5 5/8"	13	13	5	1/2"	1/4"	6 @ 12 Ga.	3 5/8"	14"	25"	3 1/8"	3 1/8"	1/2"	9 1/4"	2"	2"	2 1/4" X 33"	55	2 1/2" X 5 1/8"	4" X 6"	4"

\* Maximum Design Load = Service Load