



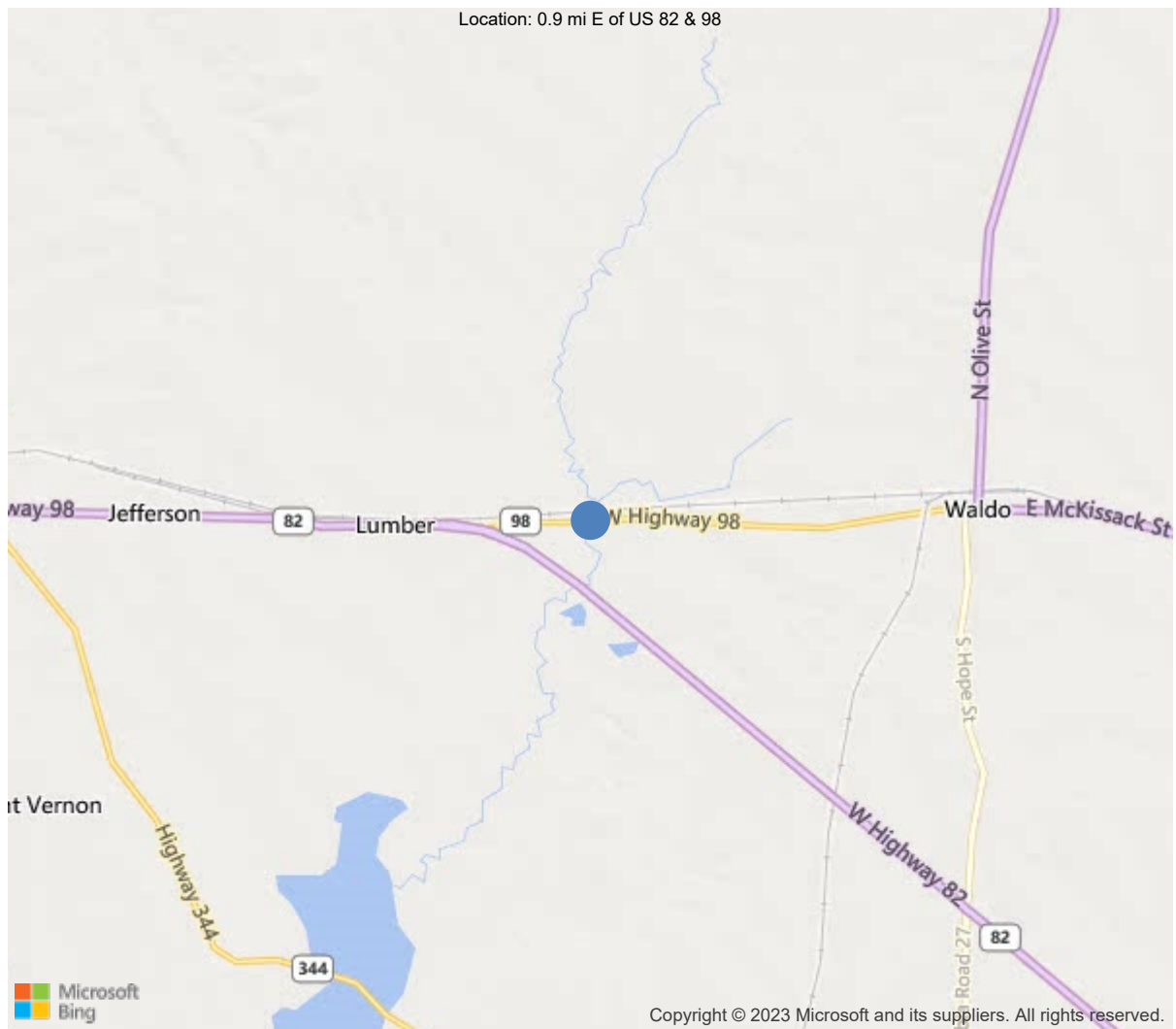
Latitude:33.35049, Longitude:-93.33013

Route:98 Section:01 Log:0.52

Arnold Road ID:14x98x1xA, Arnold Log mile:0.528

District 07, 27 - Columbia County

Owner: 1 - State Highway Agency



33.35049, -93.33013



Asset #06863(Routine, Underwater type 2)

SH 98 S:1 LM 0.52 over Beech Creek

Location: 0.9 mi E of US 82 & 98

Team Lead: Rickie Bratton, Inspection Date: 04/13/2021

IDENTIFICATION	
(1) State Names	5 - Arkansas
(8) Structure Number	06863
(5) Inventory Route	1
(2) Highway Agency District	07 - District 07
(3) County Code	27 - Columbia County
(4) Place Code	0
(6) Features Intersected	Beech Creek
(7) Facility Carried	SH 98 S:1 LM 0.52
(9) Location	0.9 mi E of US 82 & 98
(11) Mile Point	0.52 mi
(12) Base Highway Network	Yes
(13) LRS Inventory Rte & Subrte	0000098010
(16) Latitude	33.350494
(17) Longitude	-93.330132
(98) Border Bridge State Code	
(99) Border Bridge Structure No.	
STRUCTURE TYPE AND MATERIAL	
(43) Main Structure Type	42
Material	4 - Steel continuous
Type	2 - Stringer/Multi-beam or girder
(44) Approach Structure Type	00
Material	0 - Other
Type	0 - Other
(45) No. of Spans in Main Unit	4
(46) No. of Approach Spans	0
(107) Deck Structure Type	1 - Concrete Cast-in-Place
(108) Wearing Surface/Protective System	
Type of Wearing Surface	1 - Monolithic Concrete (concurrently pl
Type of Membrane	0 - None
Type of Deck Protection	0 - None
AGE AND SERVICE	
(27) Year Built	2003
(106) Year Reconstructed	0
(42) Type of Service	15
On	1 - Highway
Under	5 - Waterway
(28) Lane	
On	2
Under	0
(29) Average Daily Traffic	1200
(30) Year of ADT	2018
(109) Truck ADT	13 %
(19) Bypass, Detour Length	3 mi
GEOMETRIC DATA	
(48) Length of Maximum Span	38 ft
(49) Structure Length	142.2 ft
(50) Curb or Sidewalk Width	
Left	0 ft
Right	0 ft
(51) Bridge Roadway Width Curb to Curb	40 ft
(52) Deck Width Out to Out	43.5 ft
(32) Approach Roadway Width (W/Shoulders)	40 ft
(33) Bridge Median	0 - No median
(34) Skew	0 Deg
(35) Structure Flared	0 - No flare
(10) Inventory Route Min Vert Clear	99.99 ft
(47) Inventory Route Total Horiz Clear	40.7 ft
(53) Min Vert Clear Over Bridge Rdwy	99.9 ft
(54) Min Vert Underclear	0 ft
Ref:	
(55) Min Lat Underclear RT	99.9 ft
Ref:	
(56) Min Lat Underclear LT	0 ft
NAVIGATION DATA	
(38) Navigation Control	0 - No navigation control on w
(111) Pier Protection	1 - Navigation protection not
(39) Navigation Vertical Clearance	0 ft
(116) Vert-Lift Bridge Nav Min Vert Clear	0 ft
(40) Navigation Horizontal Clearance	0 ft

CLASSIFICATION	
(112) NBIS Bridge Length	Y
(104) Highway System	0
(26) Functional Class	6 - Rural Minor Arterial
(100) Defense Highway	0 - The inventory route is not
(101) Parallel Structure	N - No parallel structure exists
(102) Direction of Traffic	2 - way traffic
(103) Temporary Structure	
(105) Federal Lands Highways	0 - N/A
(110) Designated National Network	1 - The inventory route is par
(20) Toll	3 - On free road. The structu
(21) Maintain	1 - State Highway Agency
(22) Owner	1 - State Highway Agency
(37) Historical Significance	5 - Bridge is not eligible for
CONDITION	
(58) Deck	7
(59) Superstructure	8
(60) Substructure	8
(61) Channel & Channel Protection	7
(62) Culverts	N
LOAD RATING AND POSTING	
(31) Design Load	5 - MS 18 / HS 20
(63) Operating Rating Method	1
(64) Operating Rating	
Type	1 - Load Factor(LF)
Rating	60
(65) Inventory Rating Method	1 - Load Factor(LF)
(66) Inventory Rating	
Type	
Rating	36
(70) Bridge Posting	5 - Equal to or above legal loads
(41) Structure Open/Posted/Closed	A - Open, no restriction
APPRAISAL	
(67) Structural Evaluation	8
(68) Deck Geometry	7
(69) Clearances, Vertical/Horizontal	N
(71) Waterway Adequacy	8
(72) Approach Roadway Alignment	8
(36A) Bridge Railings	1 - Inspected feature meets current
(36B) Transitions	1 - Inspected feature meets current
(36C) Approach Guardrail	1 - Inspected feature meets current
(36D) Approach Guardrail Ends	1 - Inspected feature meets current
(113) Scour Critical Bridges	5 - Bridge foundations determined t
PROPOSED IMPROVEMENTS	
(75) Type of Work	
(76) Length of Structure Improvement	0 ft
(94) Bridge Improvement Cost	\$ 0
(95) Roadway Improvement Cost	\$ 0
(96) Total Project Cost	\$ 0
(97) Year of Improvement Cost Estimate	
(114) Future ADT	1321
(115) Year of Future ADT	2028

INSPECTIONS *			
(90) Inspection Date	04/13/2021		
(91) Frequency	24		
(92) Critical Feature Inspection	Done	Freq. (Mon)	Date
A: Fracture Critical Detail	No		
B: Underwater Inspection	No		
C: Other Special Inspection			
* The inspection date and frequency information in this box contains the current NBI date and frequency information. Please refer to the report header for the date this inspection was conducted.			



Asset #06863(Routine, Underwater type 2)

District: 07, County: 27 - Columbia County

Team Lead: Rickie Bratton, Inspection Date: 04/13/2021

General Observation (False)

04/29/2019 JPR -- This structure is logged from West to East.

58 - Deck (7)

Deck has numerous longitudinal and transverse cracks all spans. Some areas of the deck adjacent to the joints have cracking.

60 - Substructure (8)

4-24-2017 UW wade and probe, able to see bents 2-3 pile lines @ jct. with channel and there is a very shallow scoured area along bent 4.

A-46 - Asset Files

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Asset #06863(Routine, Underwater type 2)

SH 98 S:1 LM 0.52 over Beech Creek

Location: 0.9 mi E of US 82 & 98

Team Lead: Rickie Bratton, **Inspection Date:** 04/13/2021

ELEMENTS	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
12	Reinforced Concrete Deck	SF	6186	5167	1019	0	0
1120	Efflorescence/Rust Staining	SF	21	0	21	0	0
1130	Cracking (RC and Other)	SF	998	0	998	0	0
(12) (2015 notes) Minor longitudinal & transverse cracks all spans. The longitudinal cracks are about 2' inside the white lines of both lanes. (2017 notes) Deck has numerous longitudinal and transverse cracks all spans. Some areas of the deck adjacent to the joints have cracking.							
107	Steel Open Girder/Beam	LF	700	700	0	0	0
515	Steel Protective Coating	SF	33833	33833	0	0	0
227	Reinforced Concrete Pile	EA	15	15	0	0	0
234	Reinforced Concrete Pier Cap	LF	210	210	0	0	0
302	Compression Joint Seal	LF	84	74	10	0	0
2360	Adjacent Deck or Header	LF	10	0	10	0	0
(302) Some deck cracking along the joint @ bent 2.							
310	Elastomeric Bearing	EA	25	25	0	0	0
331	Reinforced Concrete Bridge Railing	LF	284	284	0	0	0



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Team Lead: Rickie Bratton, Inspection Date: 04/13/2021

Deck

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58 - Deck (7)

Comment: Deck has numerous longitudinal and transverse cracks all spans. Some areas of the deck adjacent to the joints have cracking.



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Location: 0.9 mi E of US 82 & 98

Team Lead: Rickie Bratton, Inspection Date: 04/13/2021

Superstructure

ELEMENTS	DESCRIPTION	UNITS	TOTAL				
				CS1	CS2	CS3	CS4
107	Steel Open Girder/Beam	LF	700	700	0	0	0
515	Steel Protective Coating	SF	33833	33833	0	0	0



Asset #06863(Routine, Underwater type 2)

SH 98 S:1 LM 0.52 over Beech Creek

Location: 0.9 mi E of US 82 & 98

Team Lead: Rickie Bratton, Inspection Date: 04/13/2021

Substructure

ELEMENTS	DESCRIPTION	UNITS	TOTAL				
				CS1	CS2	CS3	CS4
227	Reinforced Concrete Pile	EA	15	15	0	0	0
234	Reinforced Concrete Pier Cap	LF	210	210	0	0	0

60 - Substructure (8)

Comment: 4-24-2017 UW wade and probe, able to see bents 2-3 pile lines @ jct. with channel and there is a very shallow scoured area along bent 4.



Elevation



Soffit efflorescences



Soffit span 3



Deck overview



Transverse and longitudinal deck cracks 0.040 max



Approach roadway



Profile



Span 4, deck soffit looking back towards bent 4.



Roadway



Joint material abutment 1



Span 1 looking ahead @ vegetation growing up beside & back under the bridge, this is typical of both sides of the bridge.



Deck



Asset #06863(Routine, Underwater type 2)

SH 98 S:1 LM 0.52 over Beech Creek

Location: 0.9 mi E of US 82 & 98

Team Lead: Rickie Bratton, **Inspection Date:** 04/13/2021

Maintenance Needs

Date Reported: 04/07/2011

Priority: D- Routine

Type of Work: (Inactive) (Inactive) 9 - None

Status: Monitor

Component:

Deficiency Description

Deck all spans.

Numerous sealable longitudinal and transverse cracks.

Remarks

Date Reported: 04/29/2019
Priority: D- Routine
Type of Work: (Inactive) (Inactive) 9 - None
Status: Monitor
Component:

Deficiency Description

Span 1 looking ahead @ vegetation growing up beside & back under the bridge, this is typical of both sides of the bridge.

Remarks



Span 1 looking ahead @ vegetation growing up beside & back under the bridge, this is typical of both sides of the bridge.



Asset #06863(Routine, Underwater type 2)

SH 98 S:1 LM 0.52 over Beech Creek

Location: 0.9 mi E of US 82 & 98

Team Lead: Rickie Bratton, **Inspection Date:** 04/13/2021

Routine Maintenance

Check Box Maintenance Items

Type of Maintenance	Is recommended?
A-54 - Sealable Deck Cracks	
A-55 - Deck Washing Needed	
A-56 - Joint Cleaning/Flushing Needed	
A-57 - Beam End and Bearing Paint Needed	
A-58 - Cap Cleaning/Flushing Needed	
A-59 - Joint Repair Needed	
A-60 - Full Beam Painting Needed	
A-61 - Polymer Overlay Advised	
A-62 - Hydro and LMC Advised	



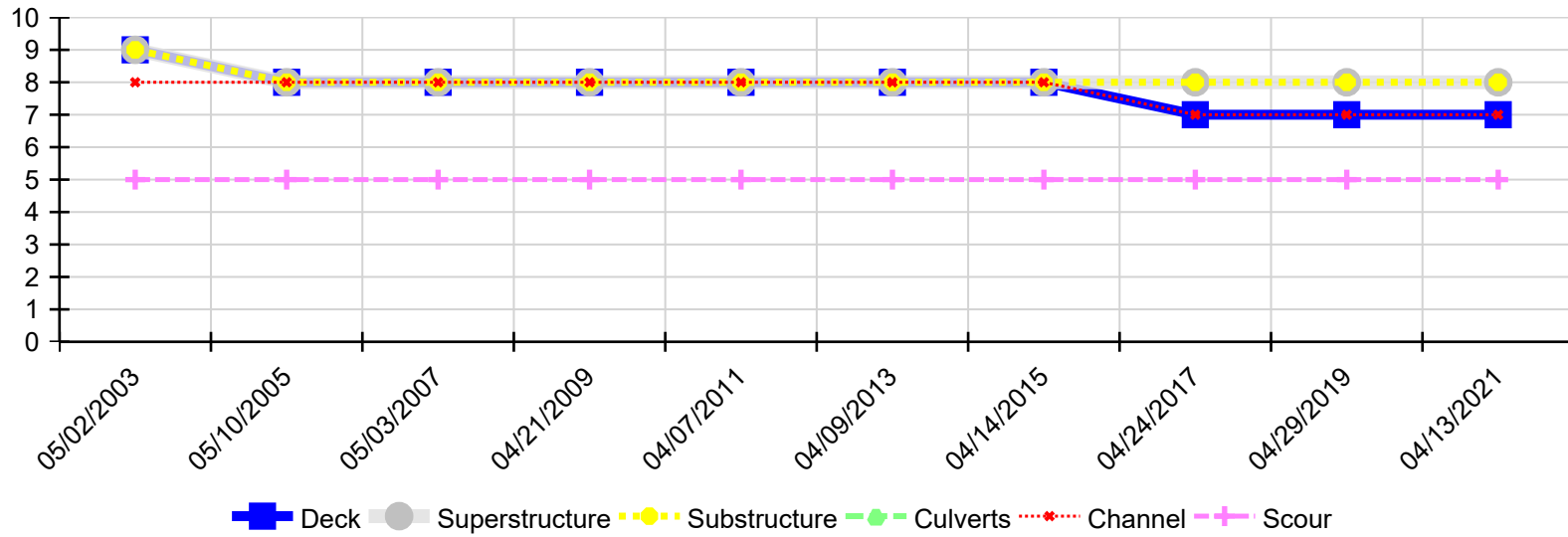
Asset #06863 (Routine, Underwater type 2)

SH 98 S:1 LM 0.52 over Beech Creek

Location: 0.9 mi E of US 82 & 98

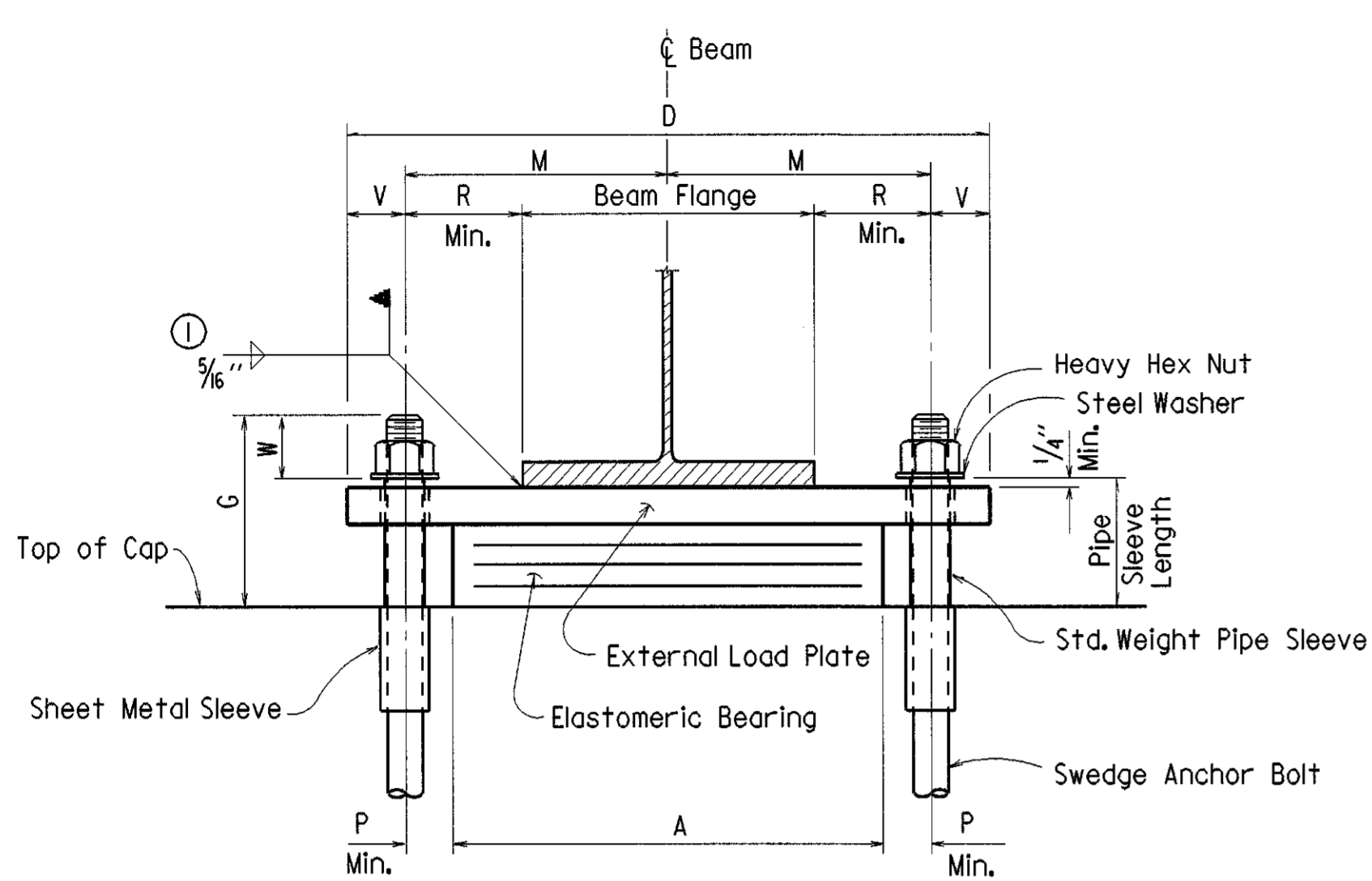
Team Lead: Rickie Bratton, Inspection Date: 04/13/2021

Condition History



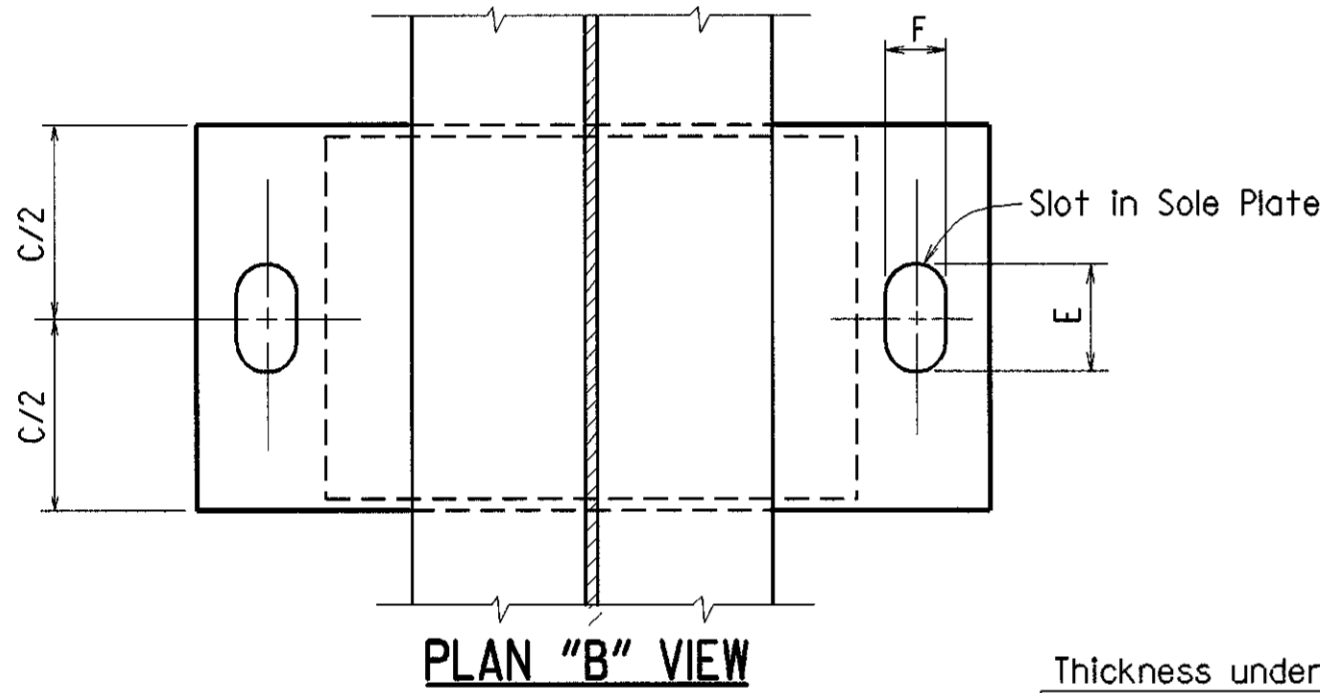
Inspection Date	Deck	Superstructure	Substructure	Culverts	Channel	Scour
04/13/2021	7	8	8	N	7	5
04/29/2019	7	8	8	N	7	5
04/24/2017	7	8	8	N	7	5
04/14/2015	8	8	8	N	8	5
04/09/2013	8	8	8	N	8	5
04/07/2011	8	8	8	N	8	5
04/21/2009	8	8	8	N	8	5
05/03/2007	8	8	8	N	8	5
05/10/2005	8	8	8	N	8	5
05/02/2003	9	9	9	N	8	5

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.		070114	31	82
						06862 & 06863 ELASTO. BRGS.		42701

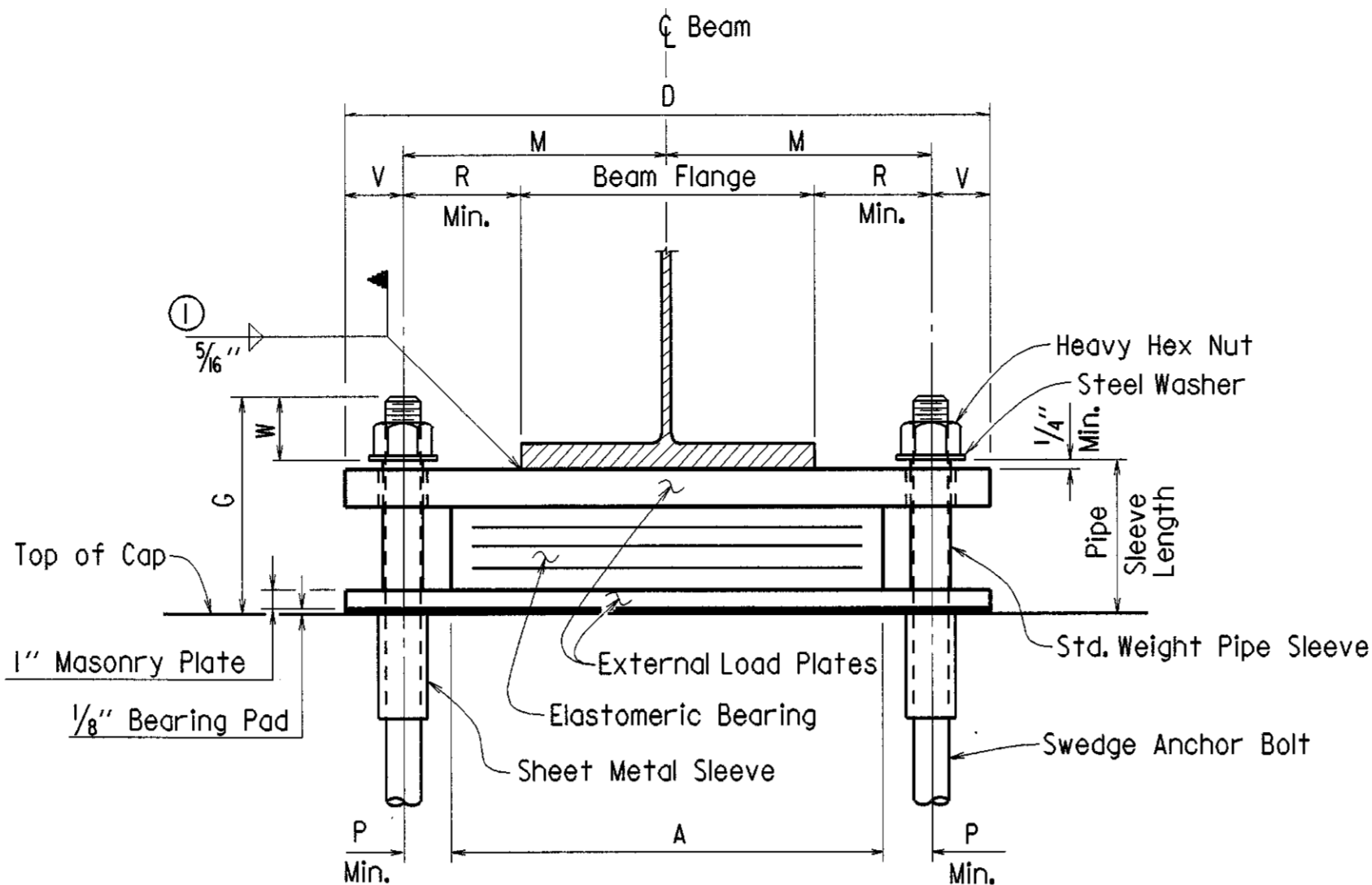


FRONT "B" VIEW

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

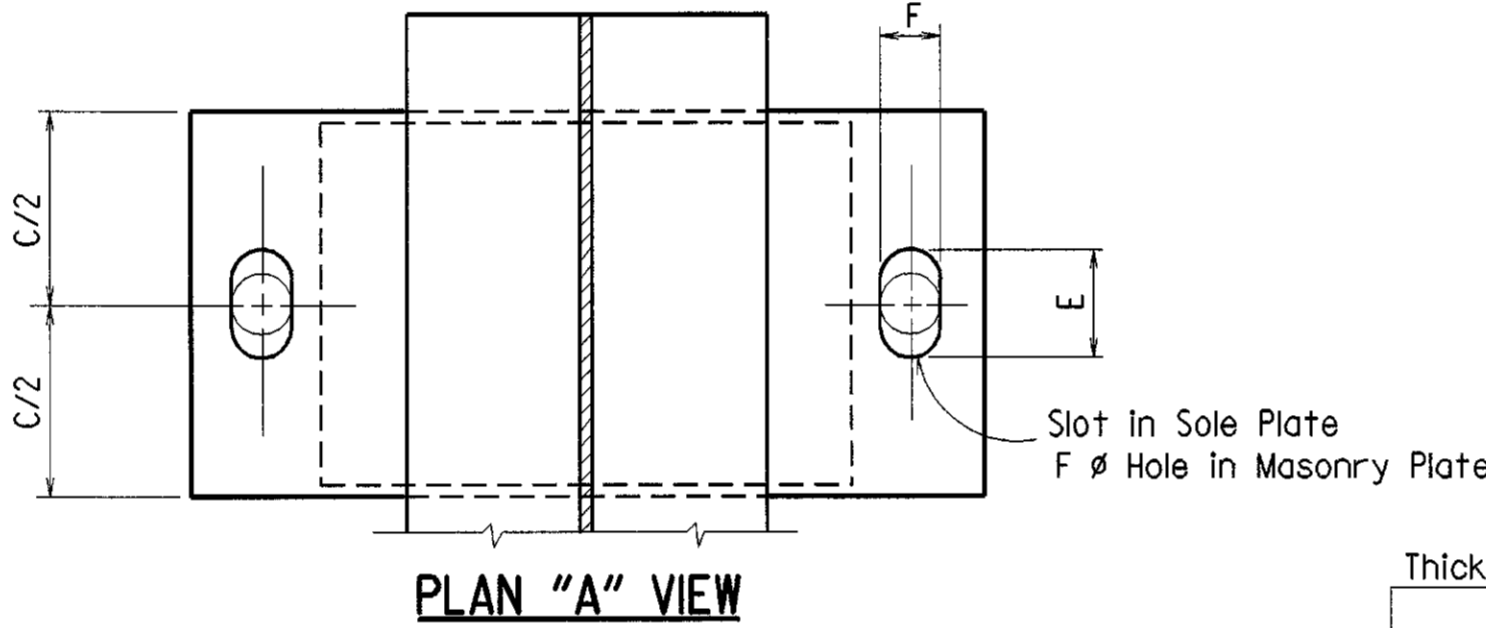


PLAN "B" VIEW

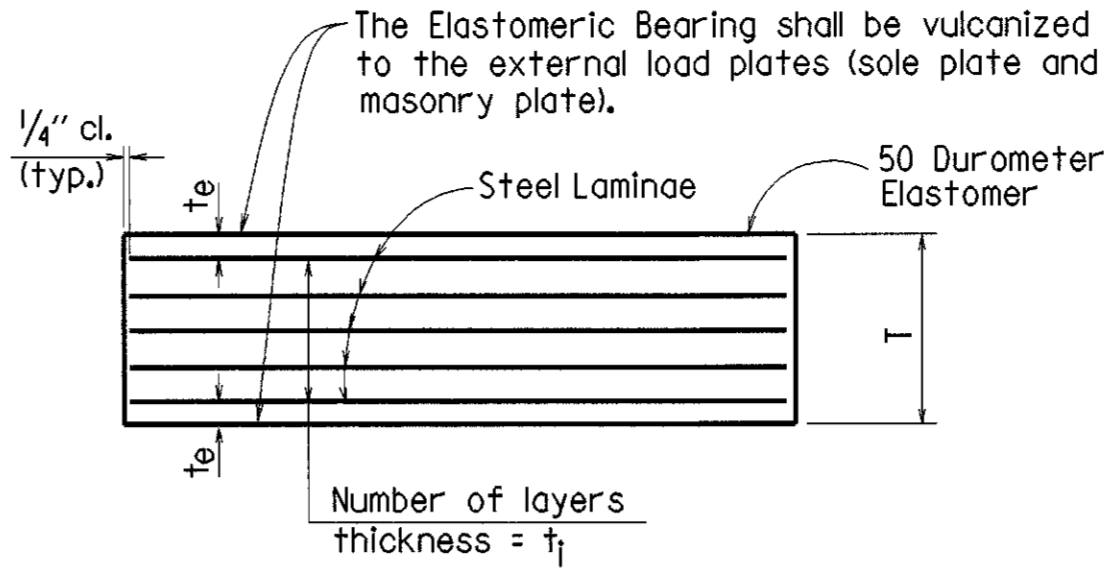


FRONT "A" VIEW

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

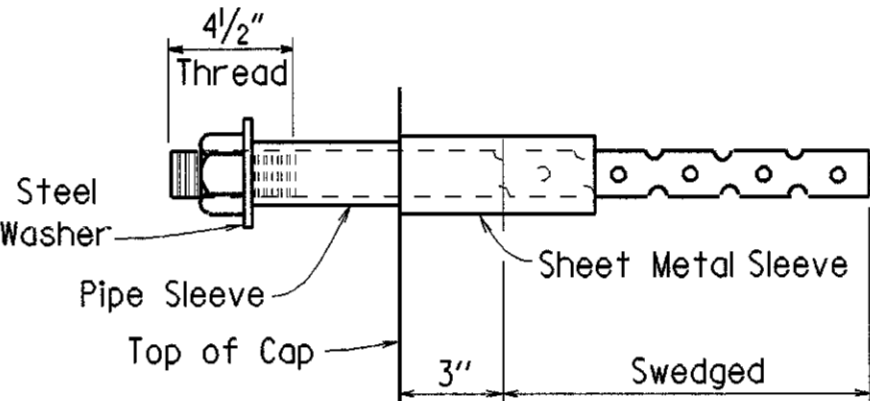


PLAN "A" VIEW



te = thickness of elastomer cover on top and bottom of pad
ti = thickness of elastomer between steel laminæ
N = number of elastomer layers of thickness ti

ELASTOMERIC BEARING



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

GENERAL NOTES

Elastomeric Bearings shall conform to Special Provision Job 070114 "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 50. 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 (sole plates and masonry 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 070114 "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)".

All external load plates (sole plates and masonry plates) will not be paid for separately but will be included in the unit price bid for "Elastomeric Bearings".

Bearings with masonry plates and 1/8" bearing pads shall be firmly seated in accordance with Subsection 807.66 of the Standard Specifications. This work and material shall be considered subsidiary to the item "Elastomeric Bearings" and shall not be paid for directly.



DETAILS OF ELASTOMERIC BEARINGS

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

DRAWN BY: B.E.F. DATE: 4-4-01 FILENAME: 070114XL.BRG
CHECKED BY: GYA DATE: 5-4-01 SCALE: NONE
DESIGNED BY: Std. DATE: 3-19-01
BRIDGE NO. 06862 & 06863 DRAWING NO. 42701

BRIDGE NO.	LOCATION		BEARING TYPE	BEARING	NO. of BEARINGS EACH BENT	MAXIMUM DESIGN LOADS*	G	H	ELASTOMERIC PAD						EXTERNAL LOAD PLATES								ANCHOR BOLT					
	BENT NO(S).	BEAM OR GIRDER NO.							A	B	N	t _i	t _e	NO. & THICKNESS OF STEEL LAMINAE	T	C	D	E	F	K	M	SOLE PLATE		ANCHOR BOLT		PIPE SLEEVE SIZE (ø x L)	SHEET METAL SLEEVE SIZE (ø x L)	STEEL WASHER SIZE (O.D.)
																						T _a	T _b	(ø x L)	GRADE			
06862	1 & 4	All	Exp.	B	4	60.0	8 1/8"	5 5/8"	12"	11"	5	1/2"	1/4"	6 @ 12 Ga.	3 5/8"	12"	21"	3"	2"	1/2"	8"	2"	2"	1 1/4" x 22"	55	1 1/4" x 5 7/8"	3" x 6"	2 1/2"
	2 & 3	All	Fix	B	4	111.6	8 5/8"	5 5/8"	14"	14"	5	1/2"	1/4"	6 @ 12 Ga.	3 5/8"	15"	25"	2 5/8"	2 5/8"	1/2"	9 1/2"	2"	2"	1 3/4" x 29"	55	2" x 5 3/8"	4" x 6"	3 3/8"
06863	1 & 5	All	Exp.	A	5	63.2	9 1/4"	6 3/4"	14"	11"	5	1/2"	1/4"	6 @ 12 Ga.	3 5/8"	12"	23"	3 1/4"	2"	1/2"	9"	2"	2"	1 1/4" x 23"	55	1 1/4" x 7"	3" x 6"	2 1/2"
	2 - 4	All	Fix	B	5	119.1	8 5/8"	5 5/8"	14"	14"	5	1/2"	1/4"	6 @ 12 Ga.	3 5/8"	15"	25"	2 5/8"	2 5/8"	1/2"	9 1/2"	2"	2"	1 3/4" x 29"	55	2" x 5 3/8"	4" x 6"	3 3/8"

* MAXIMUM DESIGN LOADS = SERVICE LOADS (kips)

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.		07014	32	82
				06863		LAYOUT		42702

GENERAL NOTES

BENCH MARK: *902 RR Spike S. Side 16" Elm 58.98' Lt. Sta. 203+76.32; Elev. 281.57.

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction, (1996 edition) with applicable supplemental specifications and special provisions. Section and Subsection refer to the Standard Construction Specification unless otherwise noted in the Plans.

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

LIVE LOADING: HS20 METHOD OF DESIGN: Load Factor

SEISMIC PERFORMANCE CATEGORY: A

MATERIALS AND STRENGTHS:

Class S(AE) Concrete (superstructure) $f'_c = 4,000$ psi
Class S Concrete (substructure) $f'_c = 3,500$ psi
Reinforcing Steel (AASHTO M31 or M53, Gr. 60) $f_y = 60,000$ psi
Structural Steel (AASHTO M270, Gr. 36) $f_y = 36,000$ psi
Structural Steel (AASHTO M270, Gr. 50W) $f_y = 50,000$ psi

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

PILING: Piling for Bents 1 and 5 shall be 16" oct. or 14" square precast concrete and shall be driven to a minimum safe bearing capacity of 44 tons per pile. Piles in end bents to be driven after embankment to bottom of cap is in place. Piles in bents 2, 3 & 4 shall be 18" square precast concrete and shall be driven to a minimum safe bearing capacity of 65 tons per pile. Piles in bents 2, 3 & 4 shall be driven to a minimum penetration of 20' below the channel bottom. All piling shall be driven with an approved air, steam or diesel hammer. Lengths of piling shown are for estimating quantities only. Actual lengths to be determined in the field. Drive one 50' test pile in Bent 2 and one 50' test pile in Bent 5.

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.

SURFACE TREATMENT: A 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:
140' Cont. Comp. W-Beam Unit
End Bents
Int. Bents

DRAWING NO.
42706 - 42710
42703 & 42704
42705

EXISTING BRIDGE: The existing bridge no. M511 (log mile 0.89) is 24' wide and 114' long and consists of precast concrete spans supported by timber pile bents with concrete caps.

REMOVAL AND SALVAGE: The existing bridge no. M511 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.

TEMPORARY BRIDGE: Construct a temporary bridge approximately 40' downstream from centerline construction with a minimum deck elevation of 285.00. See roadway plans for actual detour grade and alignment. The temporary bridge shall have a minimum length of 93', a minimum roadway width of 20' and a minimum live load capacity of H15. See Section 603 of the Standard Specifications and dwg. nos. 2461-2465 for standard temporary bridge details. The temporary bridge shall have a concrete deck. If timber piling and pine timber are used on this temporary bridge structure, the materials shall be treated with a preservative according to the Standard Specifications.

MAINTENANCE OF TRAFFIC: See Roadway Plans.

"N" VALUES

Sta. 204+46 - 33' Left of Center Line of Hwy. 98

4.3- 5.3, N=12
9.3- 10.3, N=21
15.5- 16.5, N=11
20.5- 21.5, N=9
25.5- 26.5, N=26
30.5- 31.5, N=31
35.5- 36.5, N=31
40.5- 41.5, N=32
45.5- 46.5, N=69
50.5- 51.5, N=87
55.5- 56.5, N=94
60.5- 61.5, N=75

Sta. 206+71 - 38' Right of Center Line of Hwy. 98

4.1- 5.1, N=0
9.1- 10.1, N=2
15.5- 16.5, N=14
20.5- 21.5, N=12
25.5- 26.5, N=19
30.5- 31.5, N=25
35.5- 36.5, N=24
40.5- 41.5, N=28
45.5- 46.5, N=65
50.5- 51.5, N=99
55.5- 56.3, N=104 (0.8')
60.5- 61.5, N=48
65.5- 66.5, N=43

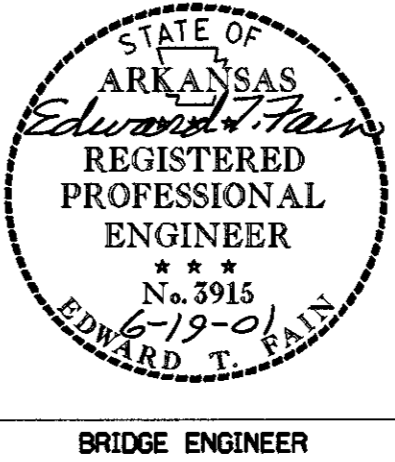
BORING LEGEND

AI-Moist, Medium Dense, Brown Silty Sand with some Organic Matter
BI-Wet, Medium Dense, Brown Sand
CI-Wet, Medium Dense, Brown Sand with Clay Seams
DI-Wet, Medium Dense, Gray Sand with some Organic Matter
EI-Wet, Loose, Gray Sand with some Clay Seams
FI-Moist, Very Stiff, Gray Clay with Sand Seams
GI-Moist, Hard, Gray Clay with Silt and Sand Lenses
HI-Moist, Hard, Gray Clay with Silt and Sand Lenses and Traces of Lignite
JI-Moist, Very Dense, Gray Sandy, Clayey Silt with Traces of Lignite
KI-Moist, Very Dense, Gray Sandy, Clayey Silt
LI-Moist, Very Hard, Gray Clay with Silt and Sand Lenses
MI-Moist to Wet, Very Loose, Brown and Gray Clayey Silt with some Organic Matter
NI-Wet, Very Loose, Brown and Gray Sand with Clay Seams and some Organic Matter
PI-Moist, Medium Dense, Gray Silty Sand with some Organic Matter
QI-Moist, Medium Dense, Gray Sand with Clay Seams and some Organic Matter
RI-Moist, Medium Dense, Gray Sandy, Clayey Silt
SI-Moist, Very Stiff, Gray and Brown Clay with Sand Seams and Traces of Lignite
TI-Moist, Very Stiff, Gray Clay with Silt and Sand Lenses and Traces of Lignite
UI-Moist, Very Stiff, Gray Clay with Silt and Sand Lenses
VI-Moist, Very Hard, Gray Clay with Sand Seams
WI-Moist, Very Dense, Gray Clayey Sand
XI-Moist, Very Dense, Gray Silty Sand with Clay Seams and Traces of Lignite

HYDRAULIC DATA

FLOOD DESCRIPTION	FREQUENCY	DISCHARGE	*NATURAL WATER SURFACE ELEVATION	WATER SURFACE ELEV. WITH BACKWATER
	YEARS	CFS	FEET	FEET
Design	50	5340	284.4	284.8
Base	100	6320	284.9	285.5
Extreme	500	8830	286.2	287.2
Overtopping	>500			

* Unconstricted water surface without structure or roadway approaches.
Drainage area = 21.0 sq. mi.
Historical H.W. Elev. 284.9



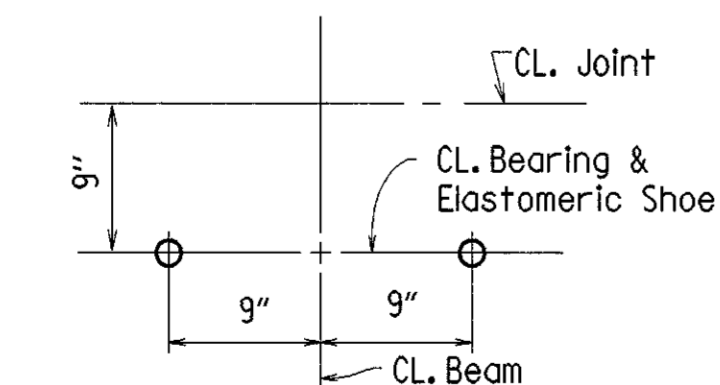
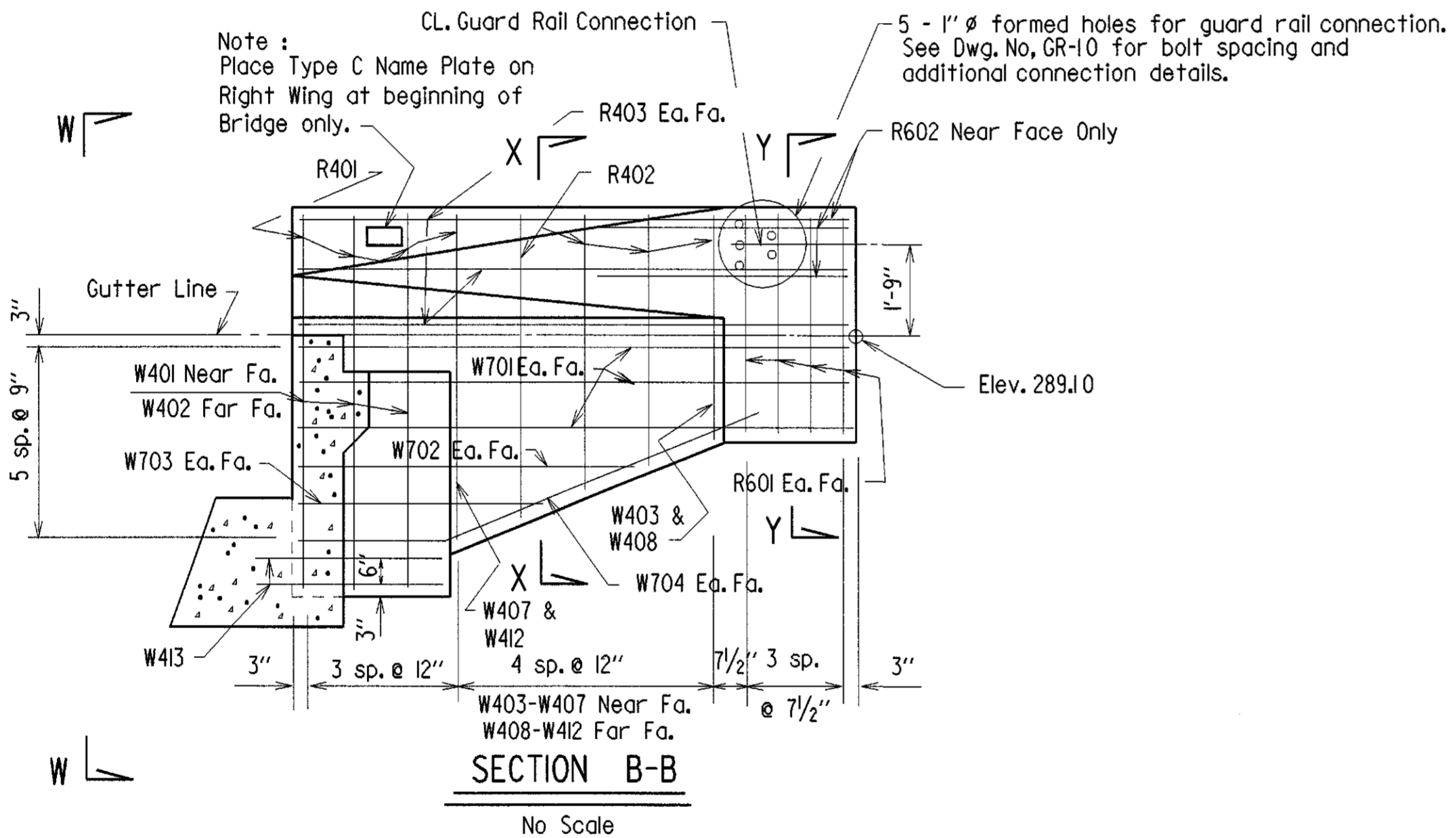
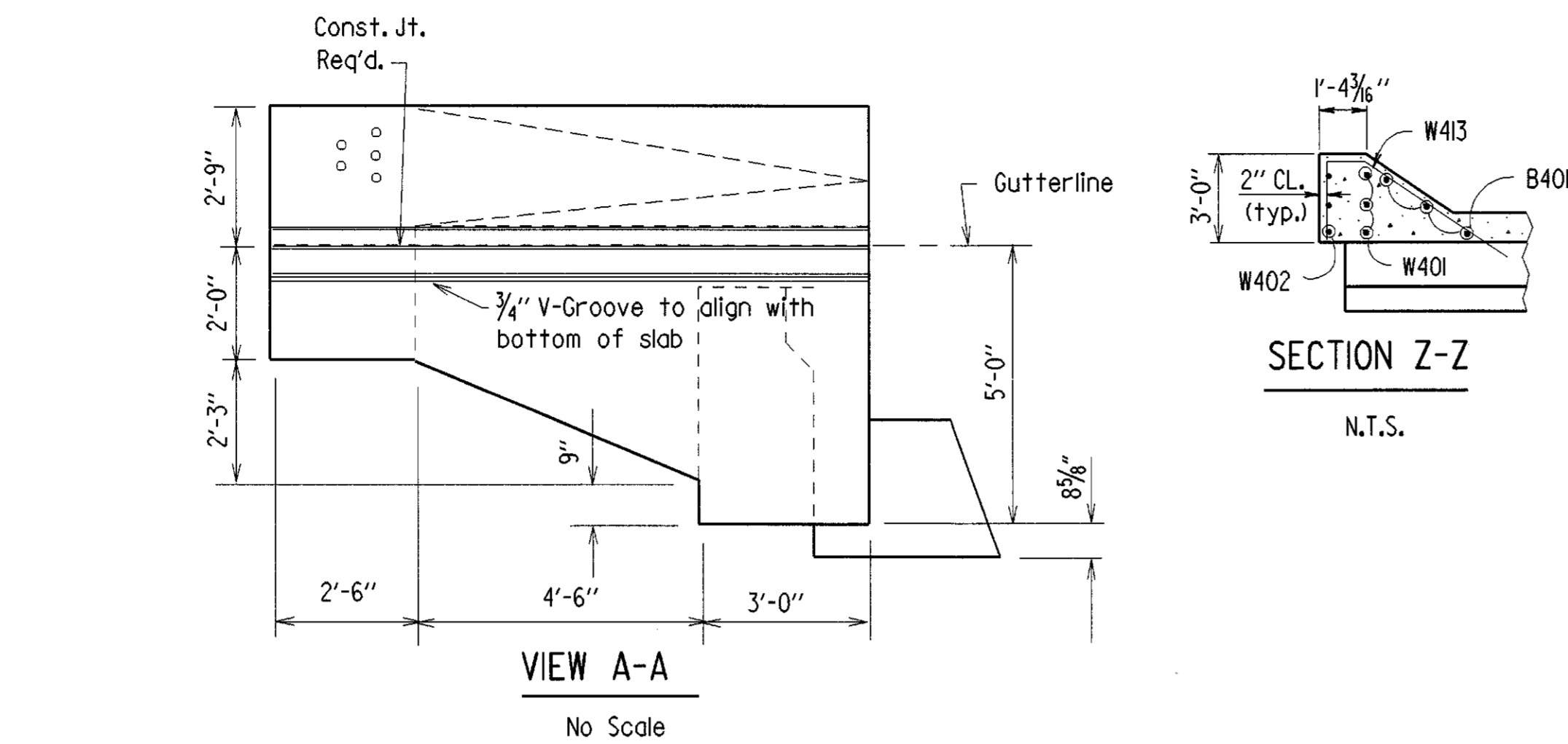
BRIDGE ENGINEER

SECTION B

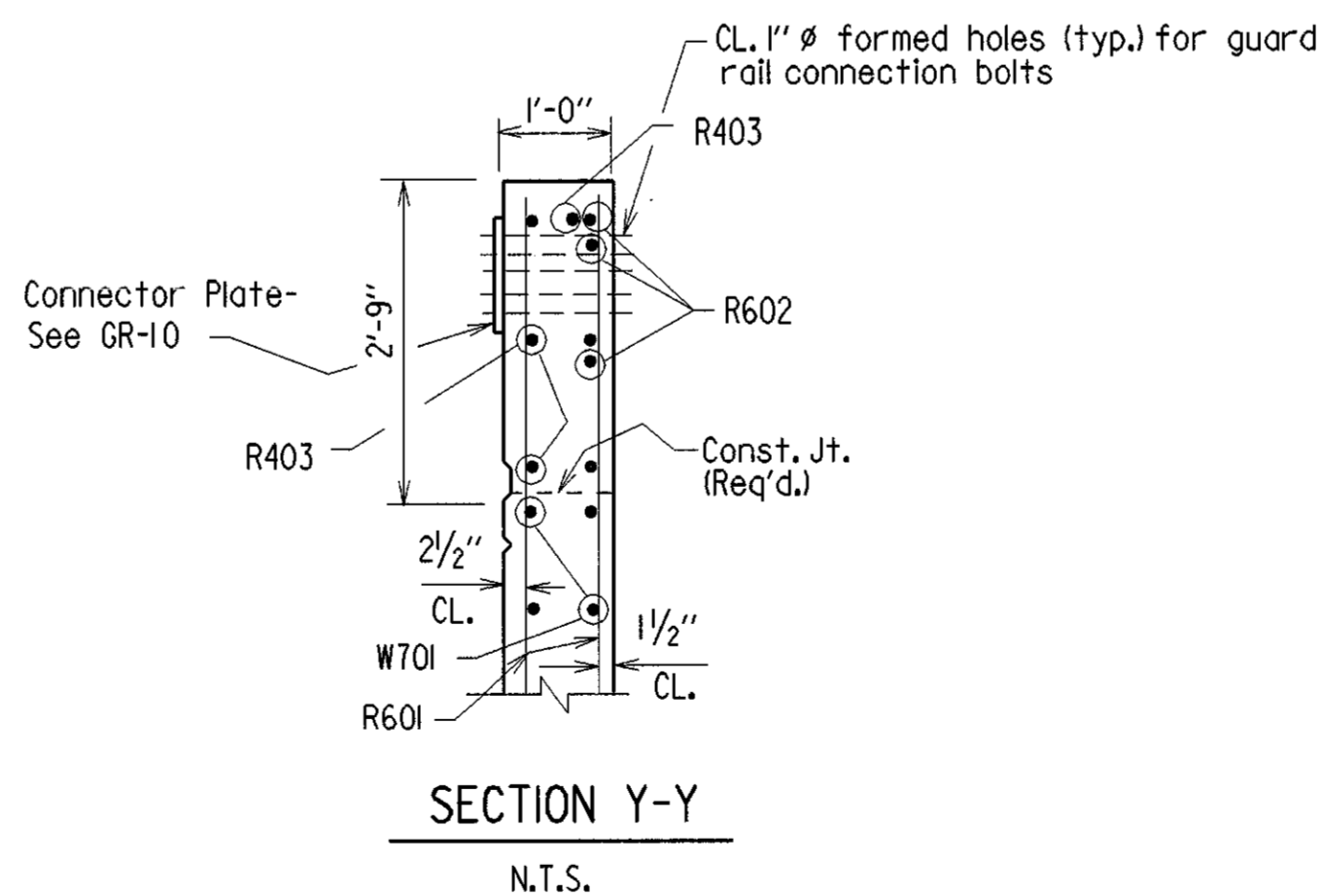
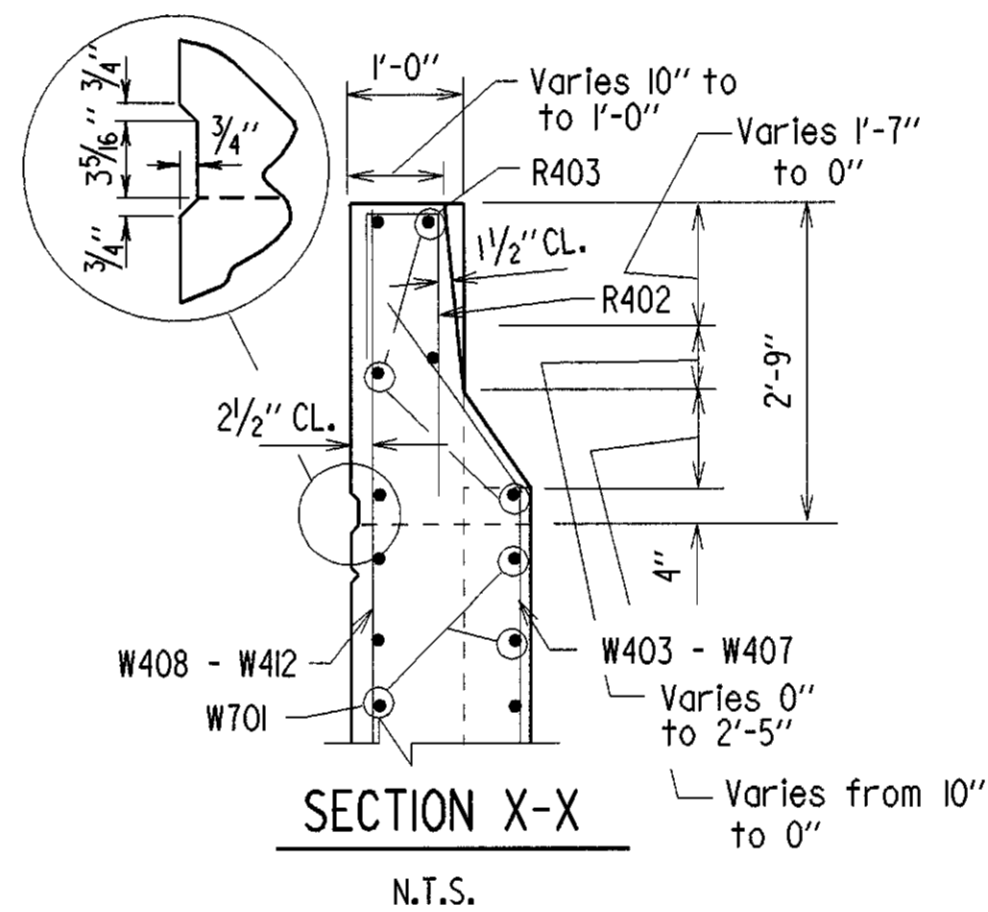
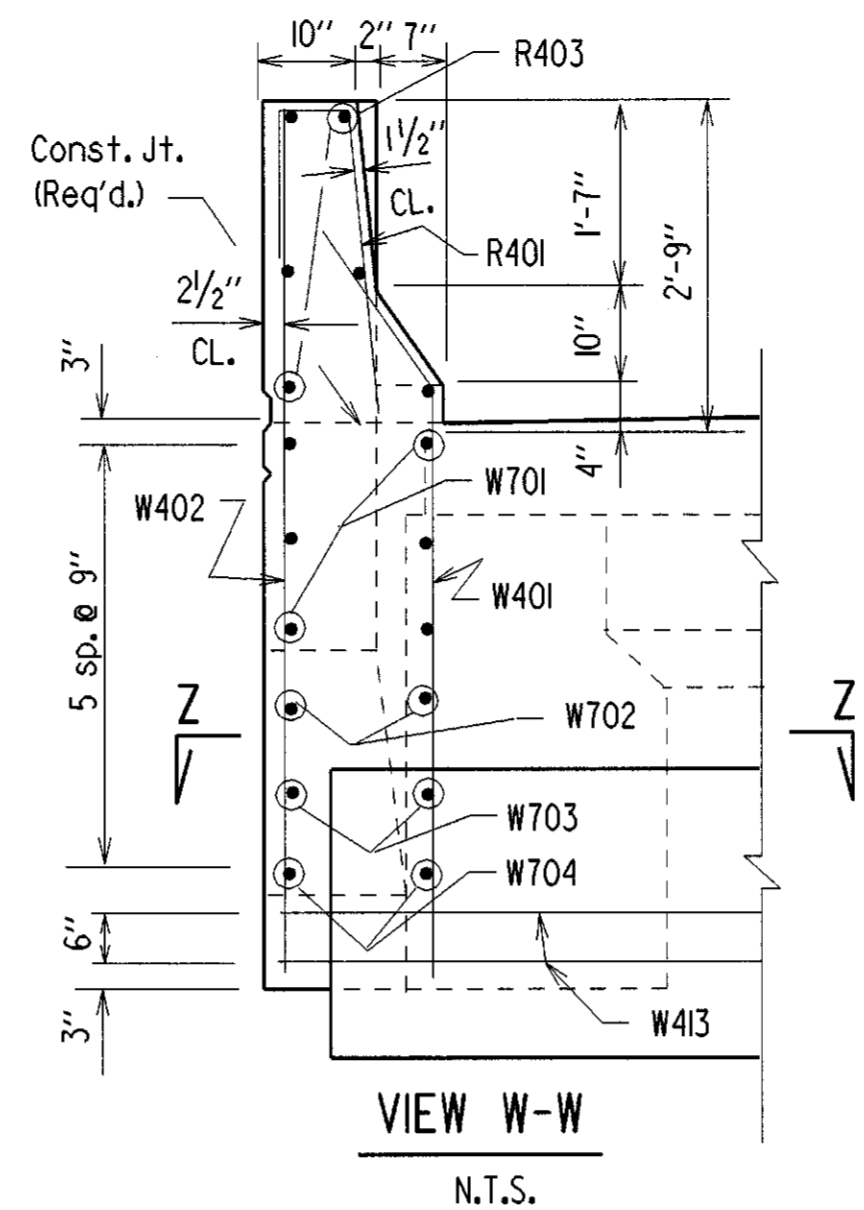
LAYOUT OF BRIDGE OVER
BEECH CREEK
BEECH CREEKS STRS. & APPRS. (S)
COLUMBIA COUNTY
ROUTE 98 SEC. 1
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: W.M.J. DATE: 3-9-01 FILENAME: B07014x.LLI
CHECKED BY: G.Y.A. DATE: 6-6-01 SCALE: 1" = 20'
DESIGNED BY: H.W. DATE: 11-10-01
BRIDGE NO. 06863 DRAWING NO. 42702

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.		070114	34	82
				06863		END BENT		42704



Note : For Details of Elastomeric Bearings, see Dwg. Nos. 42701.



BAR LIST PER END BENT

Mark	No. Req'd.	Length	Pin Dia.	Bending Diagrams (Dimensions are out to out of bars.)
B401	6	3'-10"	str.	
B402	74	4'-6"	str.	
B403	37	3'-11"	2"	
B404	16	22'-3"	str.	
B405	15	7'-0"	2"	
B406	4	2'-8"	str.	
B407	58	10'-11"	2"	
B601	8	7'-3"	4 1/2"	
B602	8	5'-0"	str.	
B603	6	43'-0"	4 1/2"	
B604	6	4'-8"	str.	
R401	8	3'-11"	2"	
R402	8	4'-0"	2"	
R403	12	9'-8"	str.	
R601	16	4'-5"	str.	
R602	6	5'-0"	str.	
W401	6	6'-3"	2"	
W402	6	7'-5"	str.	
W403 to W407	2 ea.	3'-5" to 5'-5"	2"	
W408 to W412	2 ea.	4'-6" to 6'-6"	str.	
W413	4	7'-11"	2"	
W701	12	9'-8"	str.	
W702	4	6'-0"	str.	
W703	4	4'-6"	str.	
W704	4	8'-4"	5 1/4"	

SHEET 2 OF 2

DETAILS OF

END BENT NOS.

1 & 5

BEECH CREEK

COLUMBIA COUNTY

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

STATE OF ARKANSAS

Edward T. Fain

REGISTERED

PROFESSIONAL

ENGINEER

No. 3915

6-19-01

EDWARD T. FAIR

BRIDGE ENGINEER

DRAWN BY: B.E.F.

CHECKED BY: GYA

DESIGNED BY: APW

DATE: 3-30-01

DATE: 5-4-01

DATE: 11-20-01

FILENAME: B070114X1.BII

SCALE: as noted

BRIDGE NO. 06863

DRAWING NO. 42704

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.		070114	36	82
				06863		CONT. W-BM UNIT	42706	

GENERAL NOTES

Governing specifications are the Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (1996 edition) with applicable supplemental specifications and special provisions.

All concrete shall be Class S(AE) and shall be poured in the dry. All exposed corners to be chamfered $\frac{3}{4}$ " unless otherwise noted.

All concrete shall be poured and screeded off prior to initial set. The concrete deck shall be finished in accordance with section 802.19, Class 5 of the Standard Specifications. Movement of the finishing machine across new concrete shall be on planks placed on the surface and shall be prohibited for 72 hours after finishing the pour. Sufficient concrete must be placed ahead of the strike-off to fully load the beam. 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.

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.

Reinforcing steel shall conform to AASHTO M31 or M53, Grade 60. The reinforcing is to be accurately located in the forms and firmly held in place by steel wire supports, sufficient in number and size to prevent displacement during the course of construction. The wire supports will not be paid for directly but will be considered subsidiary to the item "Reinforcing Steel-Bridge".

All stud shear connectors shall be granular flux filled, solid fluxed, or equal, and shall be automatically end welded in accordance with recommendations of the manufacturer.

Field connections shall be bolted with $\frac{3}{4}$ " high strength bolts unless otherwise noted. Bolt holes shall be $\frac{1}{16}$ " ϕ except that $\frac{1}{8}$ " ϕ holes may be used for connection of expansion devices, diaphragms and end struts if a washer is used under both the nut and head of the bolt.

Diaphragms shall be installed as beams are erected and shall be completely bolted prior to pouring of the concrete deck. All bolts in diaphragms shall be installed and tightened in accordance with subsection 807.71 prior to the pouring of the concrete deck.

Drawings show general features of design only. Shop drawings shall be made in accordance with the specifications, submitted and approved before any fabrication is begun. 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 Structural Steel shall be AASHTO M270, Gr. 50W unless otherwise noted and shall be paid for at the unit price per pound bid for "Structural Steel in Beam Spans (M270, Gr. 50W)". M270, Gr. 50W 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. 36.

All beams shall be blocked in their true position in the shop. The camber, length of sections, distance between bearings and openings of joints shall be measured with the beams in this position and this information shall become a part of the permanent record of the job. The component parts shall be match marked in this assembly and these marks shall be shown on the erection diagram. All beam dimensions are based on a temperature of 60°F. A tolerance of $\frac{1}{4}$ " is allowed for camber.

Beams are considered main load carrying members and shall meet the longitudinal Charpy V-Notch test specified in Section 807.05. All welding shall conform to Subsection 807.26. Welded connections shall be $\frac{3}{16}$ " fillet shop welds unless otherwise noted. 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 formal request to the Bridge Engineer for approval.

SLAB REINFORCING

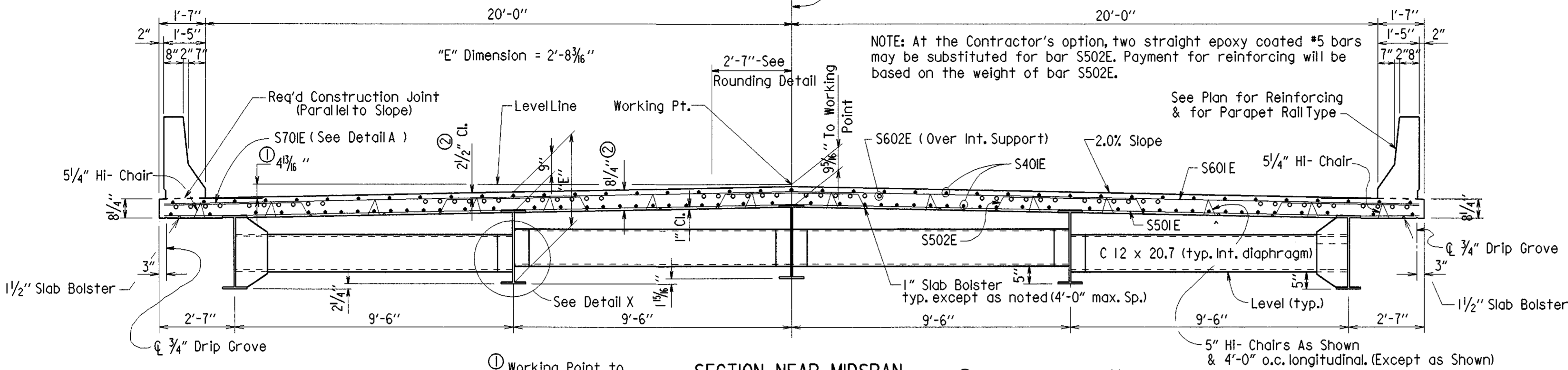
Transverse: S601E @ 14" o.c. in Top
S501E @ 14" o.c. in Bottom
S502E @ 14" o.c. Bent Up Over Beams
S701E @ 14" o.c. (Both Sides)

NOTE: Class I Protective Surface Treatment shall be applied to the Roadway Surface and to the Face & Top of the Concrete Parapet Rail.

Longitudinal: S401E in Top (Placed as Shown 18" max.)

S401E in Bottom Place as Shown

S602E place as shown centered over Int. Supports



① Working Point to Gutter Line

SECTION NEAR MIDSPAN

N.T.S.

② Tolerance Minus = $\frac{1}{4}$ "

Plus: Equal to amount of slab thickening used to meet slab thickness tolerance. See Adjustment For Slab Thickness Tolerance. Dwg. No. 42710.

Expansion Device:

Rdwy. Channel-MC 18 x 42.7

Conn. L's 8" x 4" x $\frac{1}{2}$ " x 8"

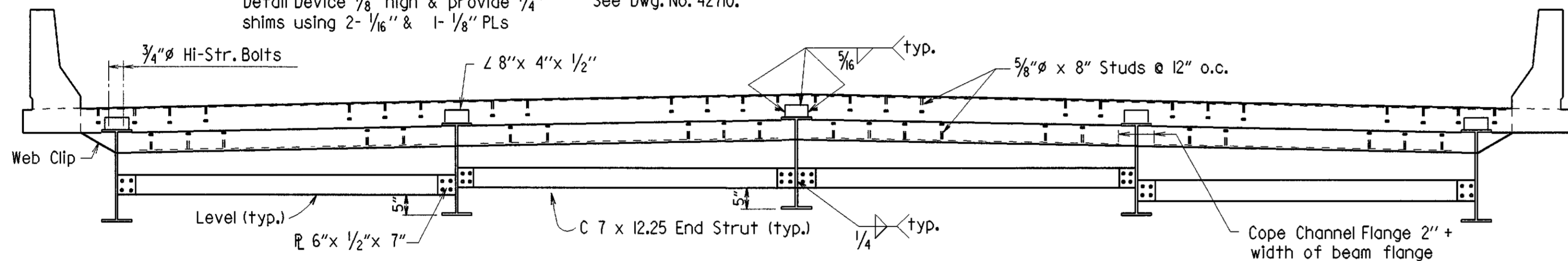
Detail Device $\frac{1}{8}$ " high & provide $\frac{1}{4}$ "

shims using 2- $\frac{1}{16}$ " & 1- $\frac{1}{8}$ " PLs

$\frac{5}{8}$ " ϕ x 8" Studs @ 12" o.c. (top and bottom)

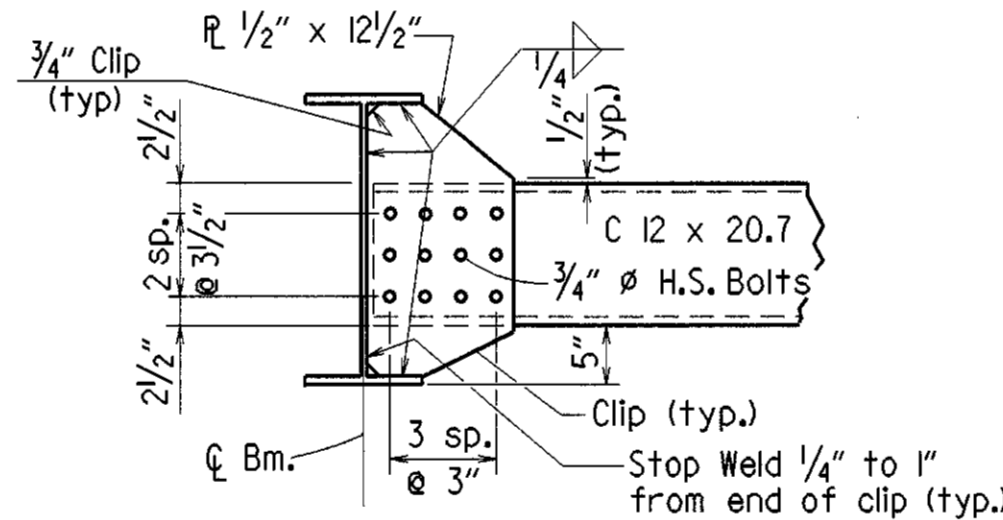
For Details of Bumper Plate and Seal Support

See Dwg. No. 42710.



VIEW AT Q JOINT

N.T.S.

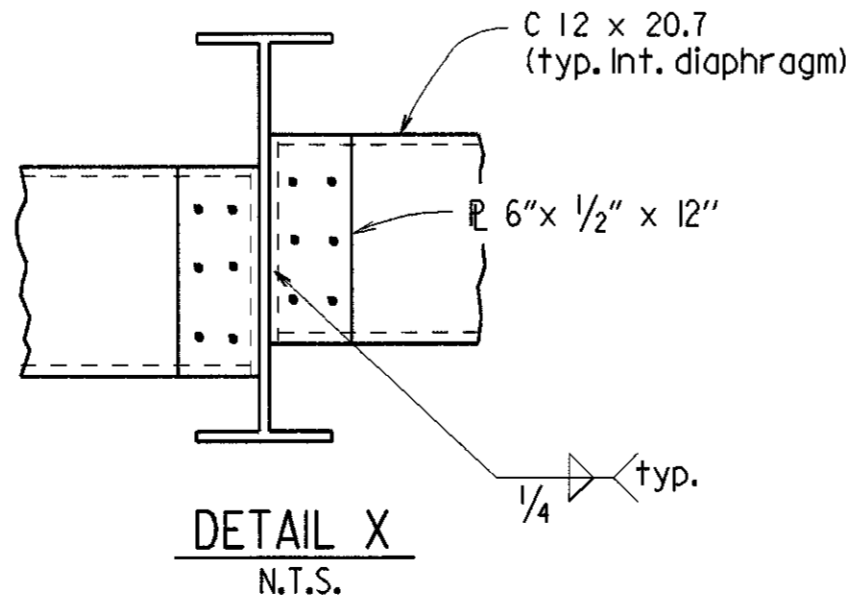


C 12 x 20.7 DIAPHRAGM CONNECTION AT EXTERIOR BEAMS

N.T.S.

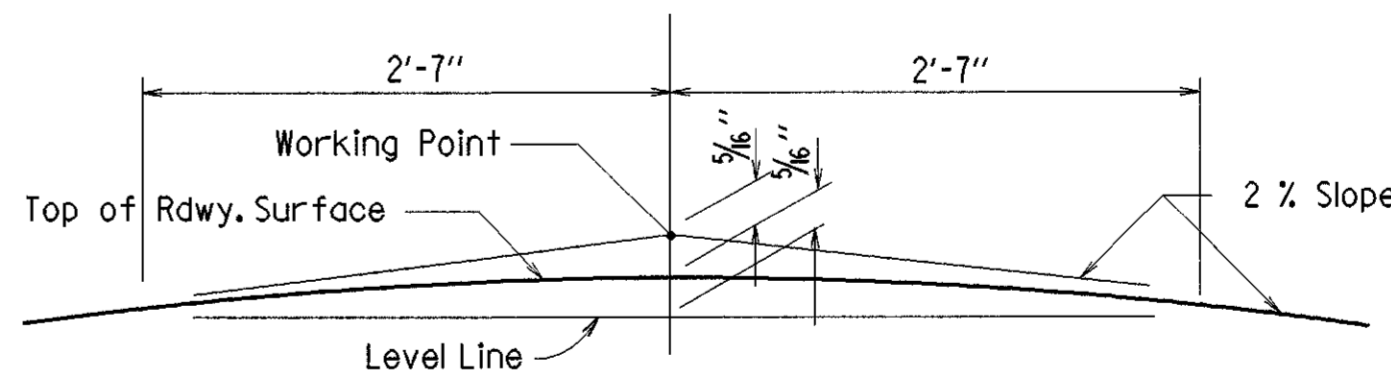
BAR LIST

MK	No. Required	Length	Pin Dia.	Bending Diagrams (Dimensions are out to out of bars.)
S401E	388	37'-0"	Str.	<p>**$\frac{1}{2}$" Over tolerance, No Undertolerance.</p>
S501E	120	42'-10"	Str.	
S502E	119	43'-8"	Str.	
S601E	120	42'-10"	Str.	
S602E	168	28'-0"	Str.	
S701E	238	10'-9"	6"	
P401E	296	6'-4"	2"	
P402E	296	5'-8"	2"	
P403E	40	6'-8"	Str.	
P404E	64	5'-10"	2"	
P405E	64	3'-2"	2"	
P406E	40	9'-8"	Str.	
P407E	64	8'-8"	Str.	
P601E	80	8'-8"	Str.	



DETAIL X

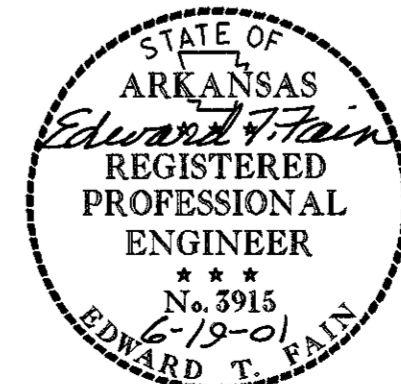
N.T.S.



NOTE: Working Point matches Theoretical Roadway Grade.

ROUNDING DETAIL

N.T.S.



BRIDGE ENGINEER

SHEET 1 OF 5

DETAILS OF 140' CONT. COMP. W-BEAM UNIT BEECH CREEK

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

DRAWN BY: B.E.F. DATE: 4-16-01 FILENAME: B070114X1.SI

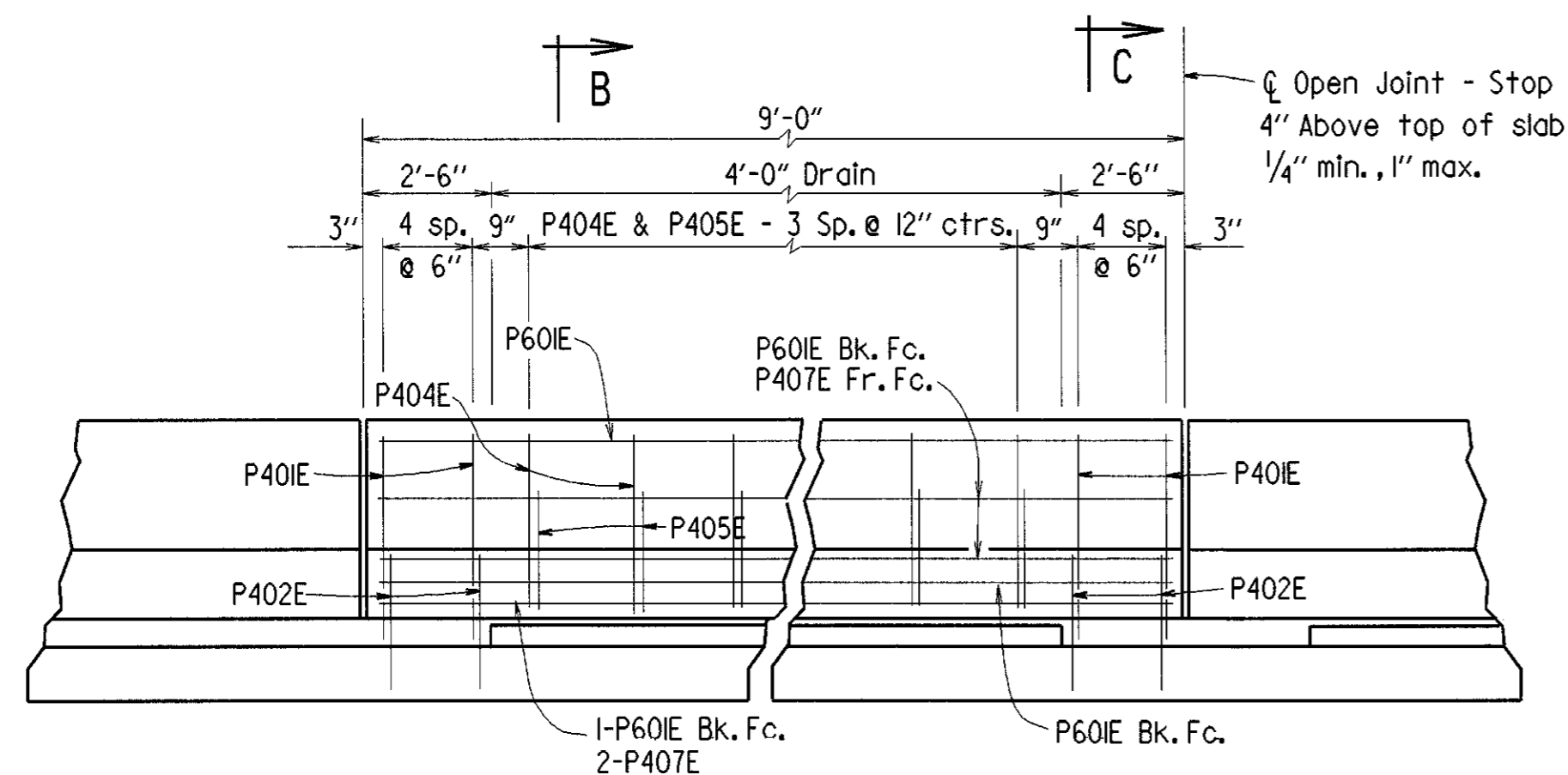
CHECKED BY: GYA DATE: 5-3-01 SCALE: N.T.S.

DESIGNED BY: B.E.F. DATE: 3-15-01

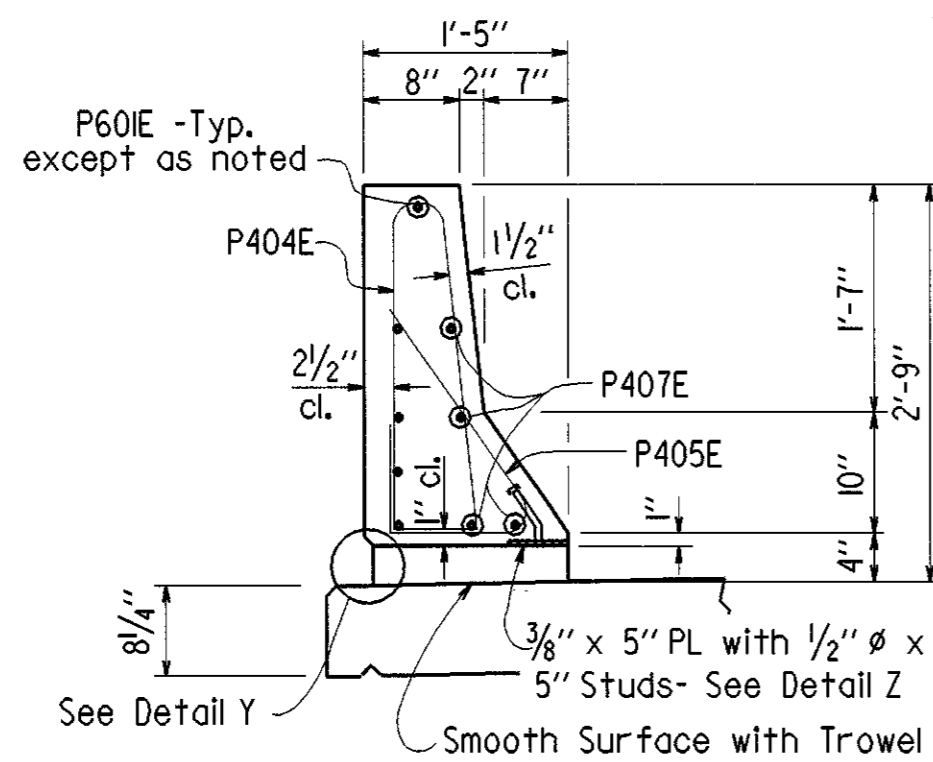
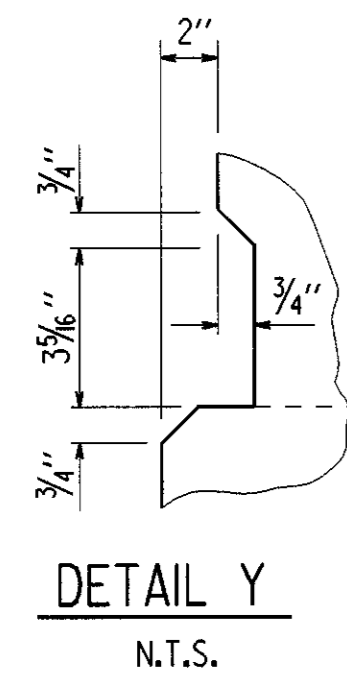
BRIDGE NO. 06863

DRAWING NO. 42706

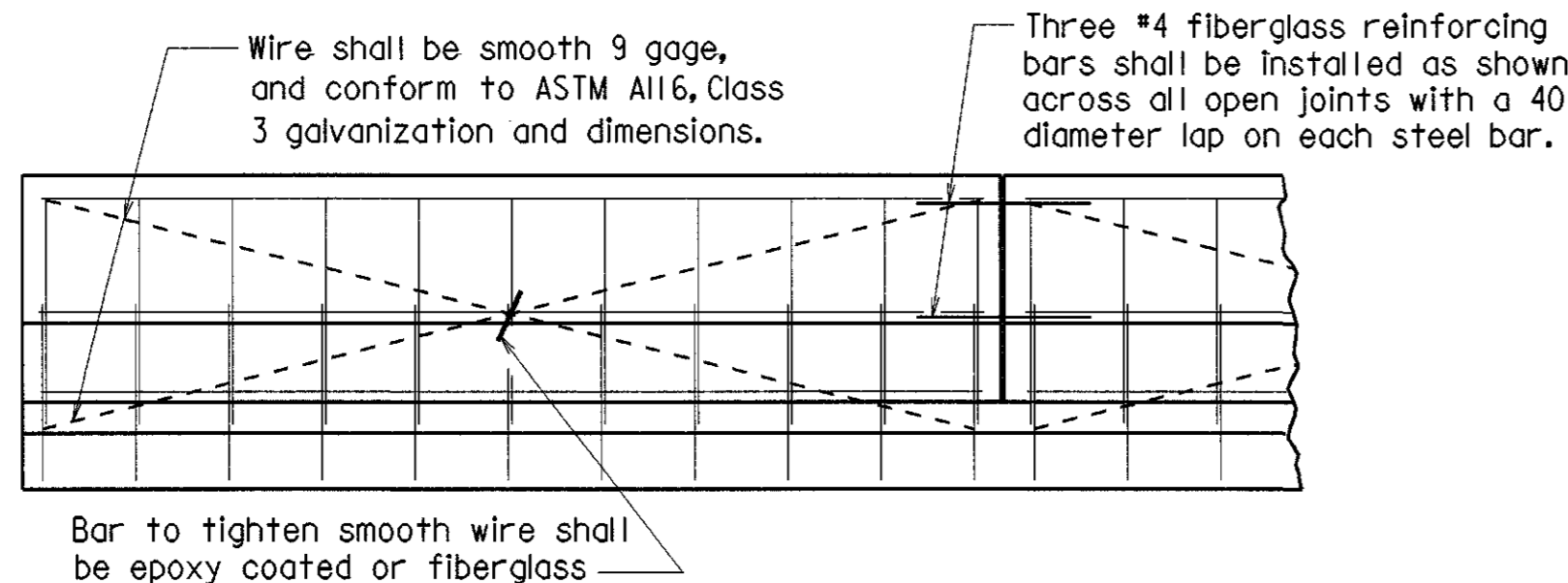
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070114	37	82
				06863		CONT. W-BM. UNIT		42707



SECTION A-A (FOR OPEN PARAPET RAIL)
N.T.S.

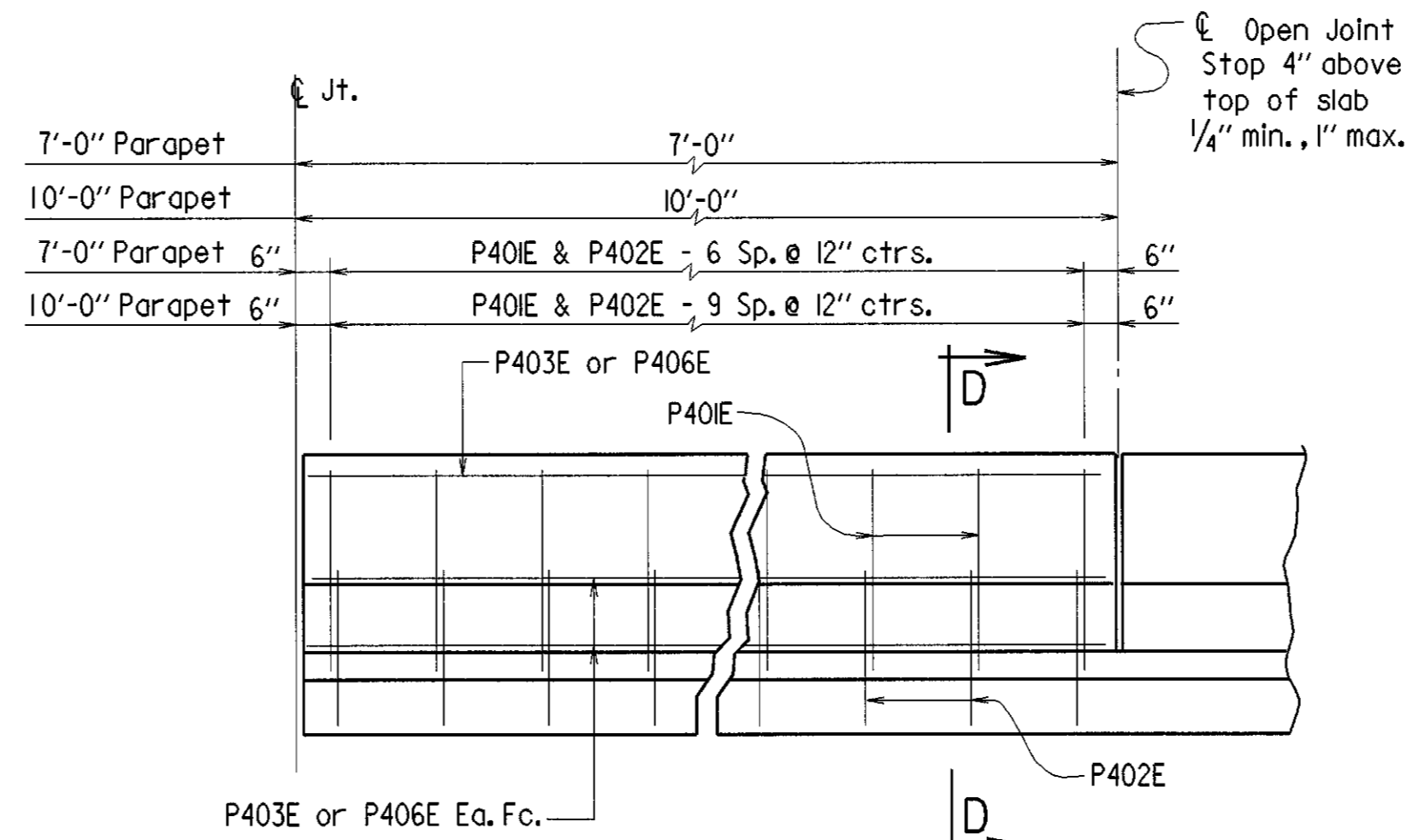


SECTION B-B
3/4" = 1'-0"

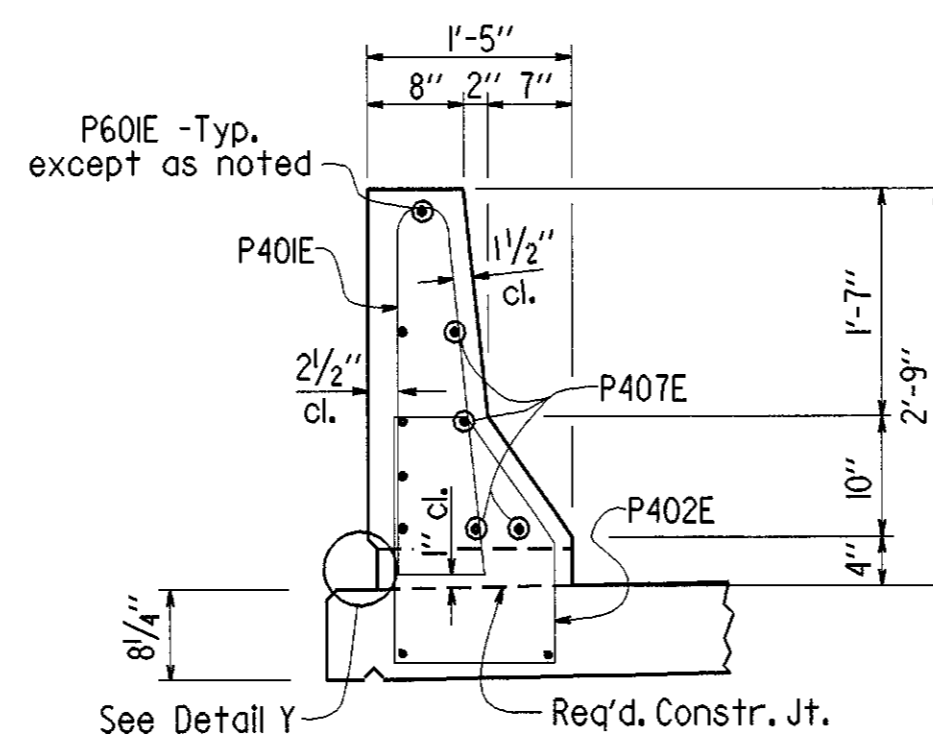


All panels shall be braced as shown to prevent racking. All open joints shall be sawed as soon as practical to a minimum width of 1/4". To control cracking before sawing, all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.

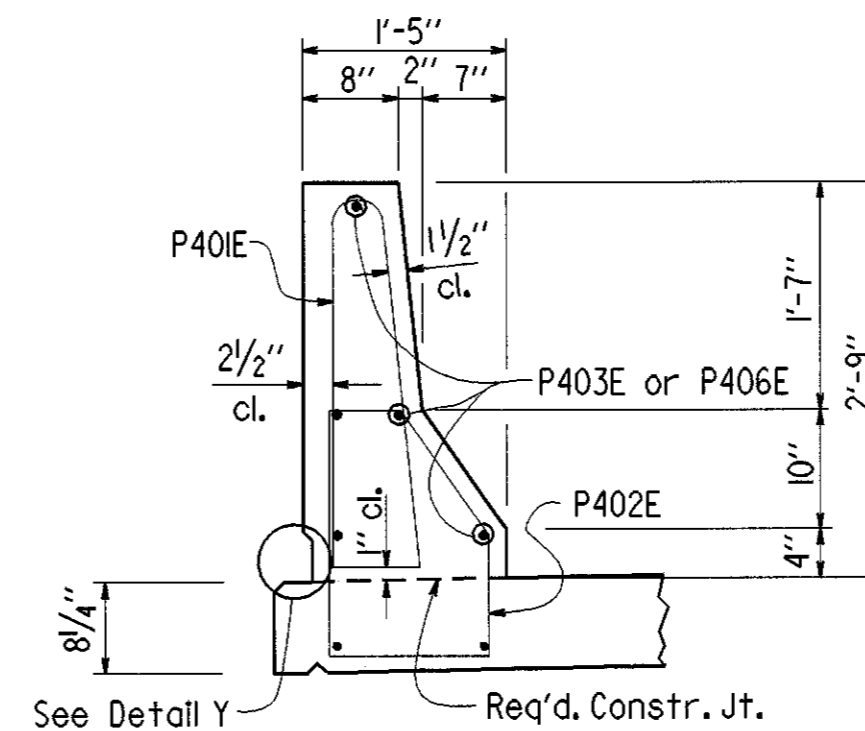
DETAILS OF OPTIONAL SLIPFORMING OF
CONCRETE PARAPET RAIL (OPEN OR CLOSED)
1/2" = 1'-0"



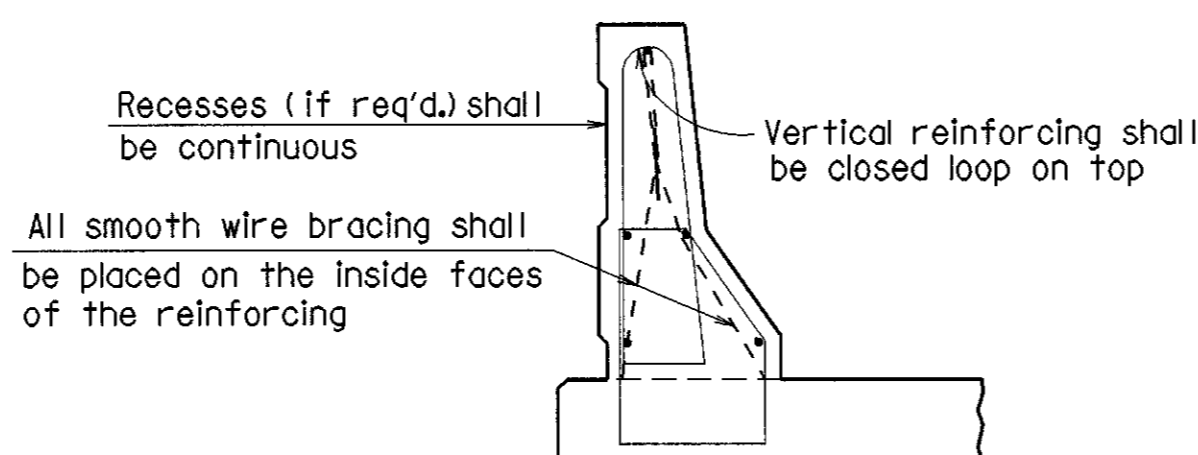
SECTION A-A (FOR CLOSED PARAPET RAIL)
N.T.S.



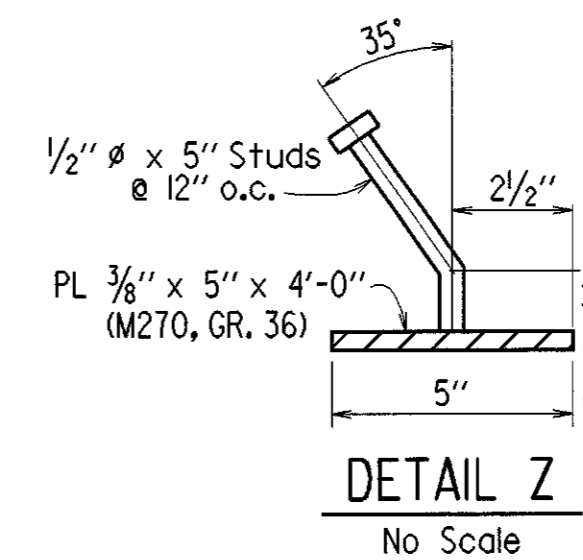
SECTION C-C
3/4" = 1'-0"



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



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.

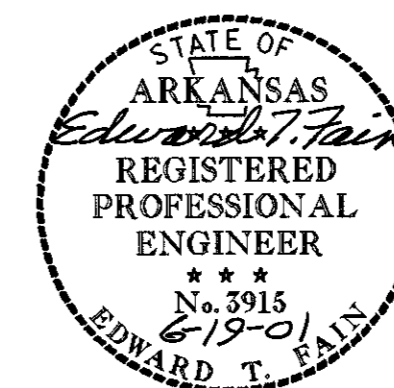


Note:
Parapet studs shall be 5" long, granular flux filled, solid fluxed, or equal and automatically end welded to the plate. Studs and plate shall meet the requirements of Section 807. Studs and plates shall be measured and paid for as Structural Steel in Beam Span (M270, GR 50W).
The surfaces of the 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 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 in Beam Span (M270, GR. 50W).

SHEET 2 OF 5

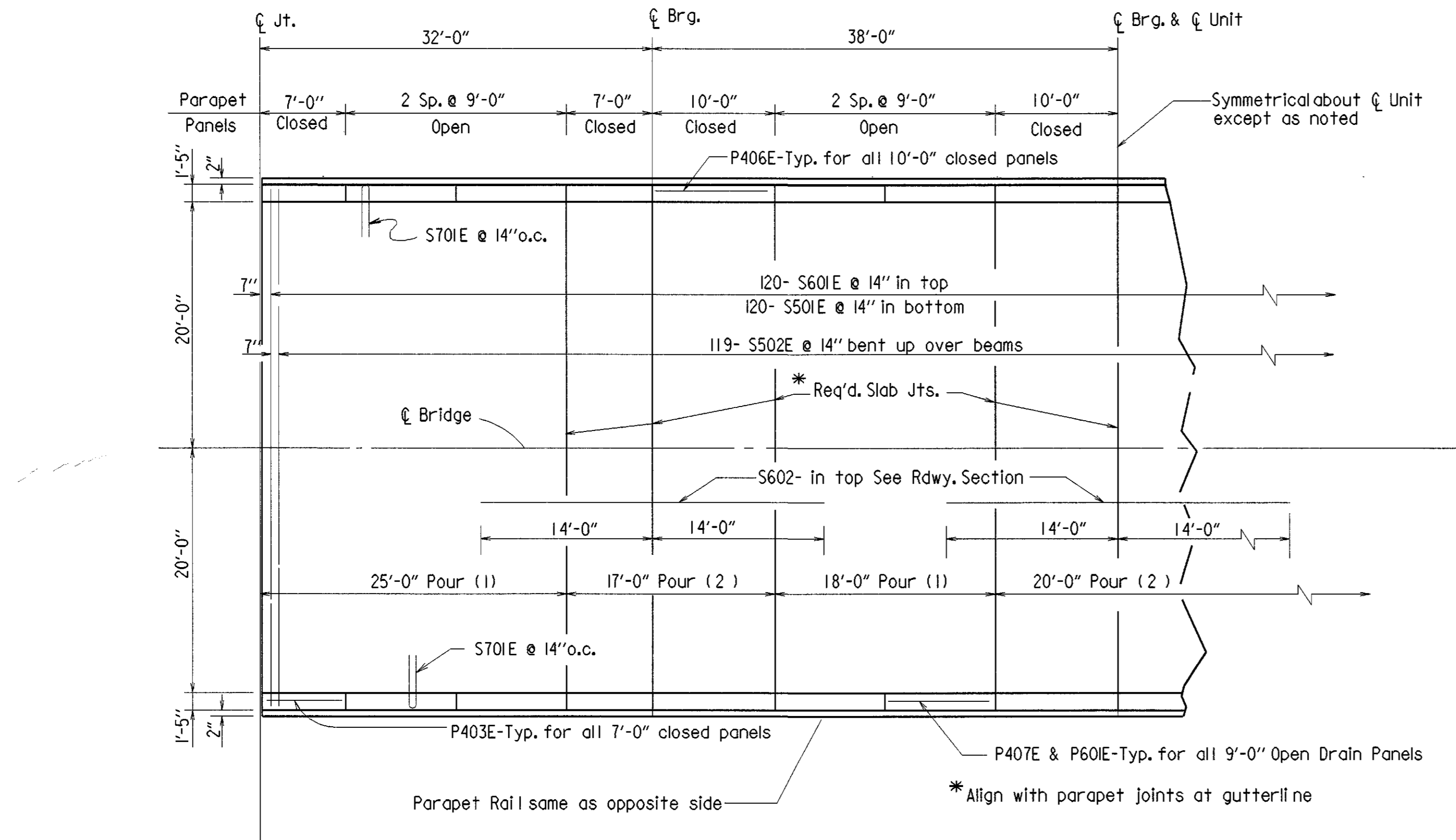
DETAILS OF
140'-0" CONT. COMP. W-BEAM UNIT
BEECH CREEK
ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.



BRIDGE ENGINEER

DRAWN BY: B.E.F. DATE: 4-17-01 FILENAME: B070114X1.S2
CHECKED BY: GYA DATE: 5-3-01 SCALE: As Shown
DESIGNED BY: B.E.F. DATE: 3-15-01
BRIDGE NO. 06863 DRAWING NO. 42707



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

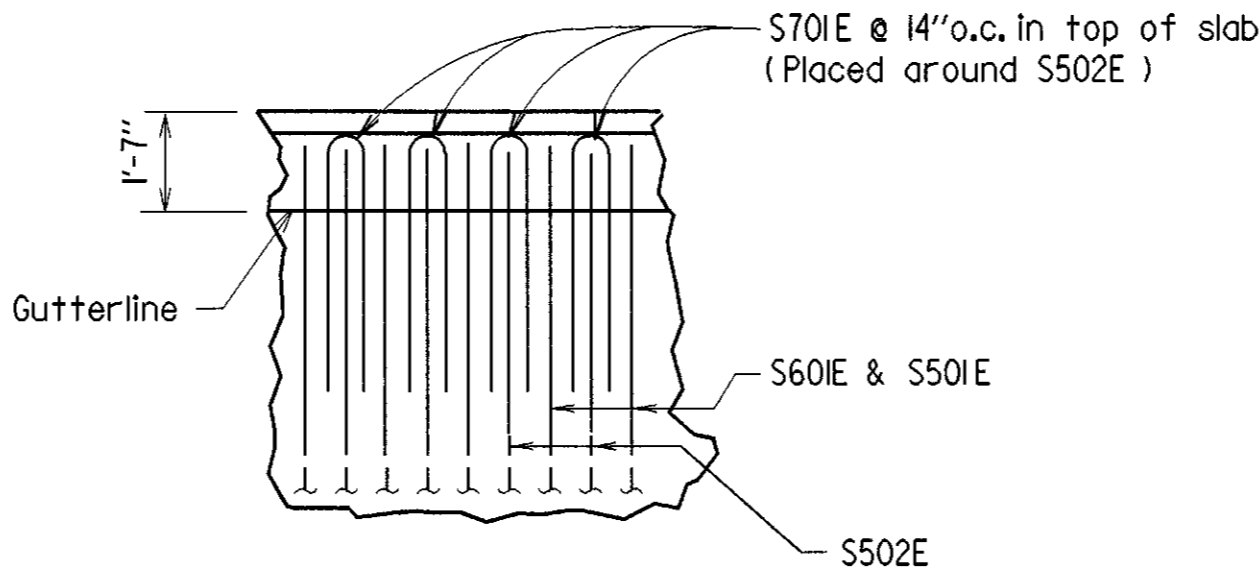
Note: Pours with the same number may be placed simultaneously or separately. All Pours (1) must be placed before Pours (2) can be placed. 48 hours shall elapse between the end of a pour and the start of the next pour. 72 hours shall elapse between the end of a pour and the start of an adjacent pour.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

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 vehi-
cular traffic is allowed on the Unit. See "Plan" for
location of joints.



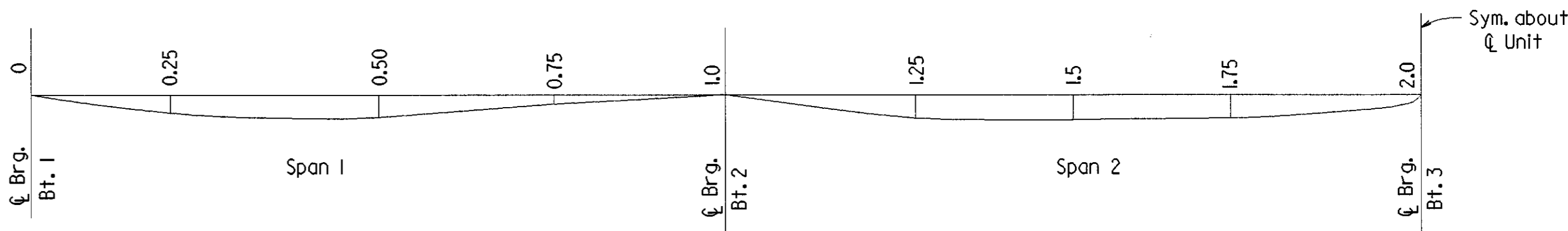
SLAB JOINT DETAIL
N.T.S.



DETAIL A
N.T.S.

TABLE OF DEFLECTIONS (INCHES)

Span	Point of Deflection	Int. Beam			Ext. Beam		
		Str. Steel	Str. Steel + Slab	Str. Steel + Slab + Parapet	Str. Steel	Str. Steel + Slab	Str. Steel + Slab + Parapet
1	0	0.000	0.000	0.000	0.000	0.000	0.000
	0.25	0.012	0.148	0.156	0.011	0.115	0.124
	0.50	0.015	0.175	0.186	0.013	0.137	0.148
	0.75	0.007	0.083	0.088	0.006	0.065	0.070
	1.00	0.000	0.000	0.000	0.000	0.000	0.000
2	1.25	0.010	0.106	0.113	0.008	0.082	0.090
	1.50	0.017	0.189	0.202	0.015	0.147	0.160
	1.75	0.010	0.107	0.114	0.008	0.083	0.091
	2.0	0.000	0.000	0.000	0.000	0.000	0.000



DEAD LOAD DEFLECTION DIAGRAM

Camber for Dead Load Deflection $\pm \frac{1}{4}$ " tolerance.

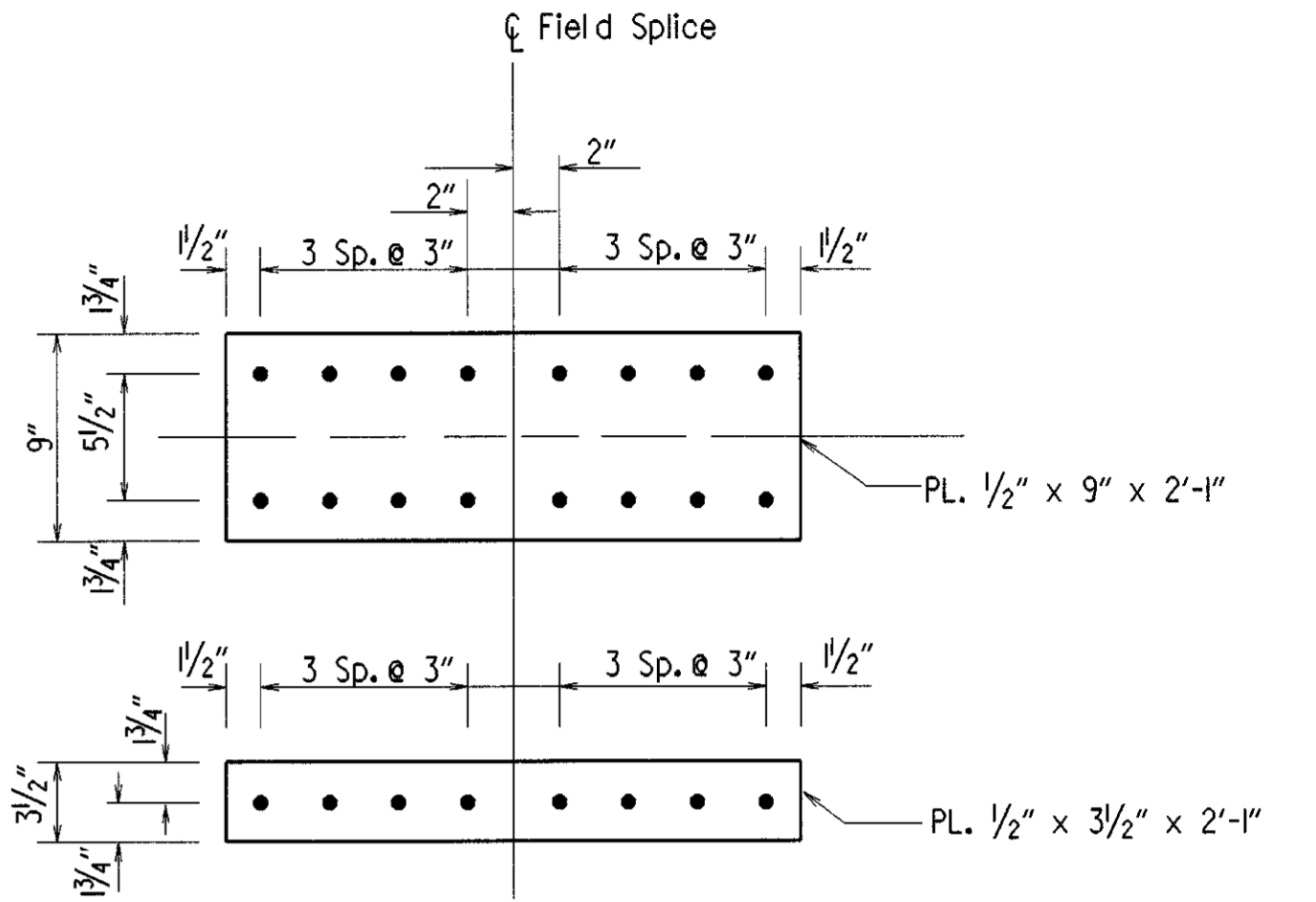


BRIDGE ENGINEER

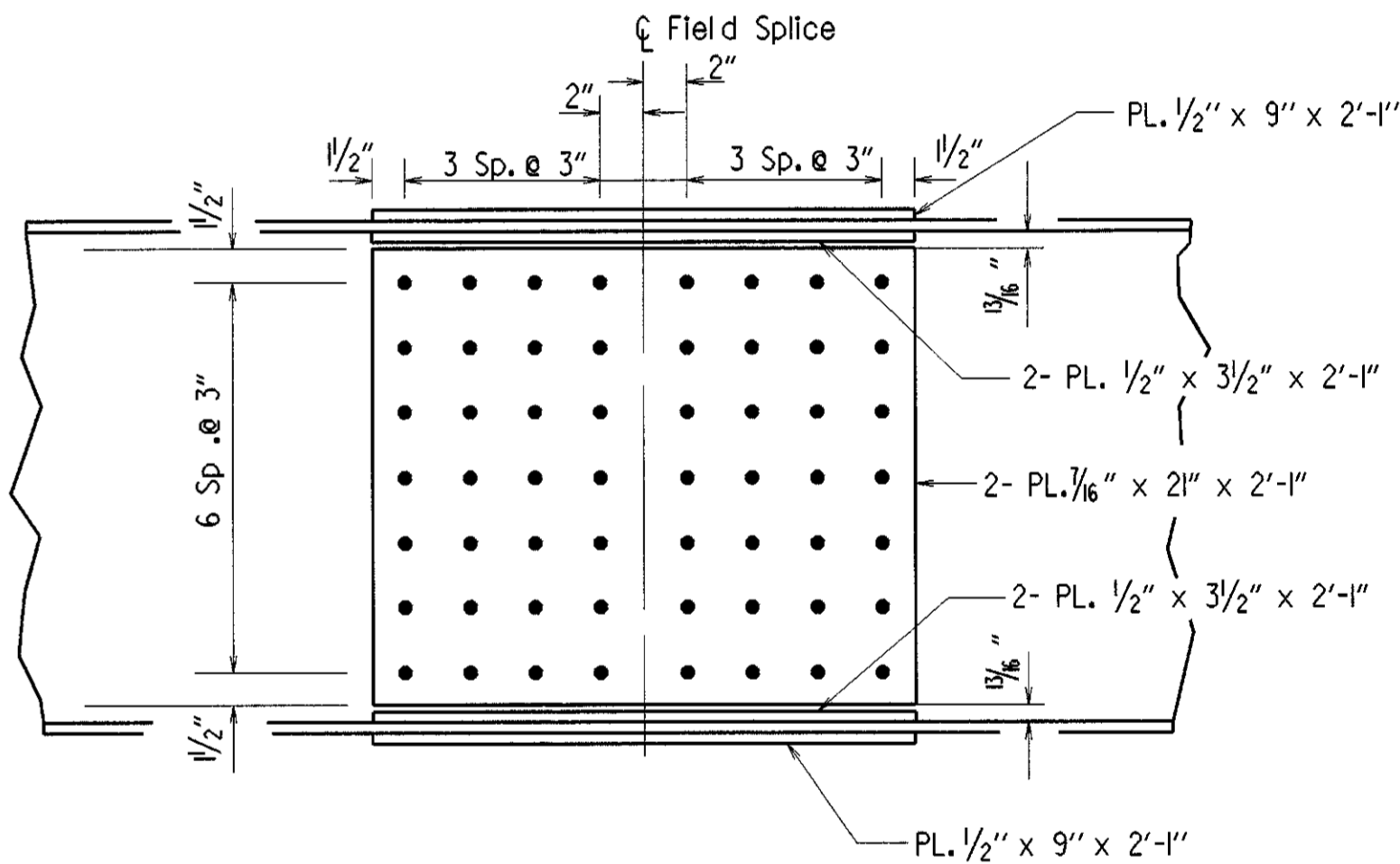
SHEET 3 OF 5
DETAILS OF
140'-0" CONT. COMP. W-BEAM UNIT
BEECH CREEK
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: B.E.F. DATE: 4-17-01 FILENAME: B070114XLS3
CHECKED BY: GYA DATE: 5-3-01 SCALE: N.T.S.
DESIGNED BY: B.E.F. DATE: 3-15-01
BRIDGE NO. 06863 DRAWING NO. 42708

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.		070114	39	82
				06863		CONT. W-BM. UNIT	42709	

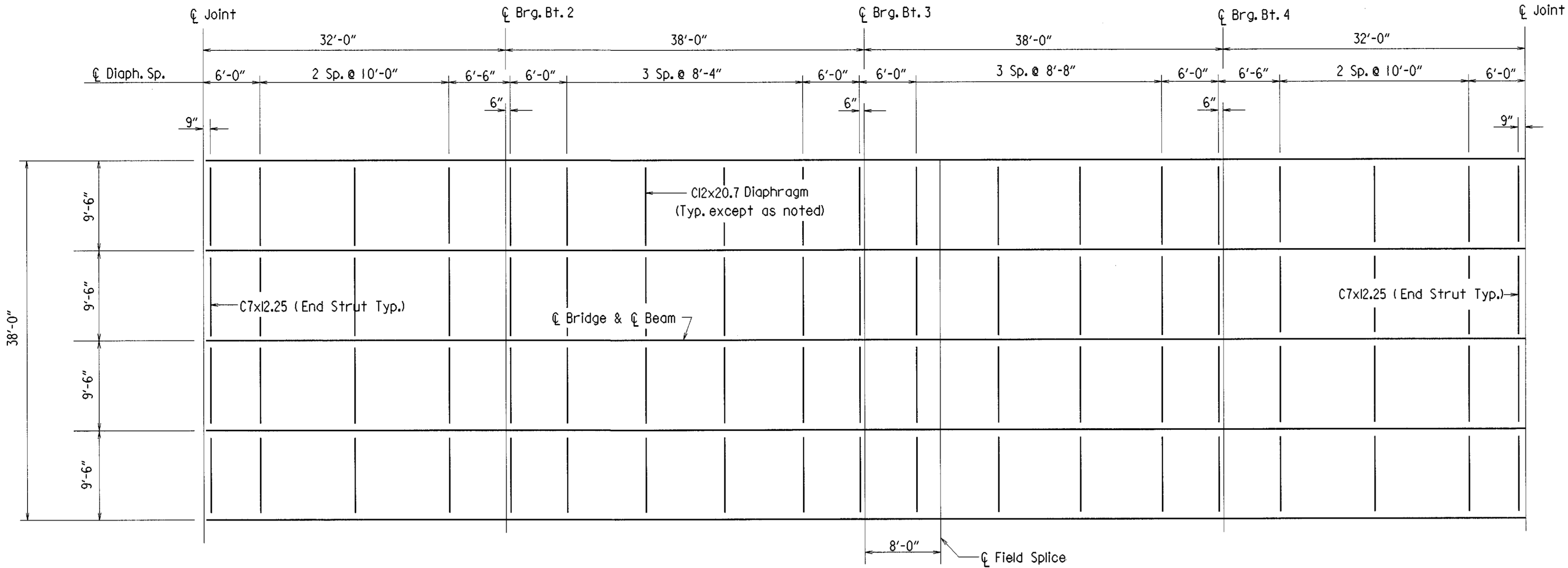


TOP & BOTTOM FLANGE SPLICE

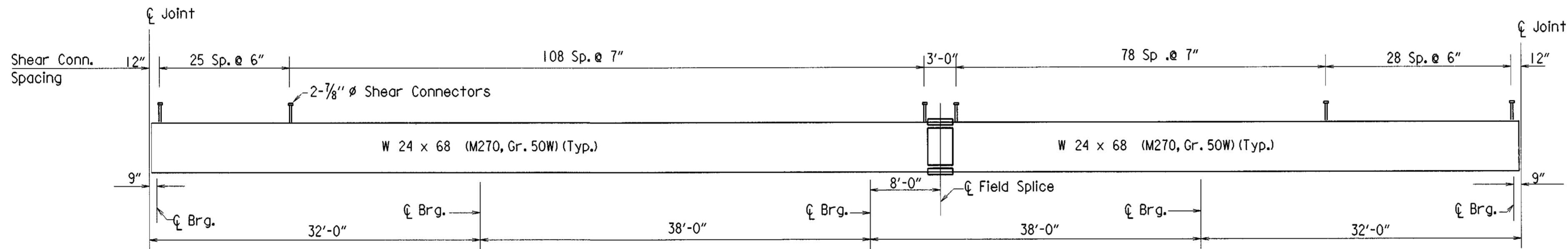


DETAILS FOR FIELD SPLICE

Note: All field splice plates shall be M270, Gr. 50W.
All field splice bolts shall be 3/8" H.S. bolts.



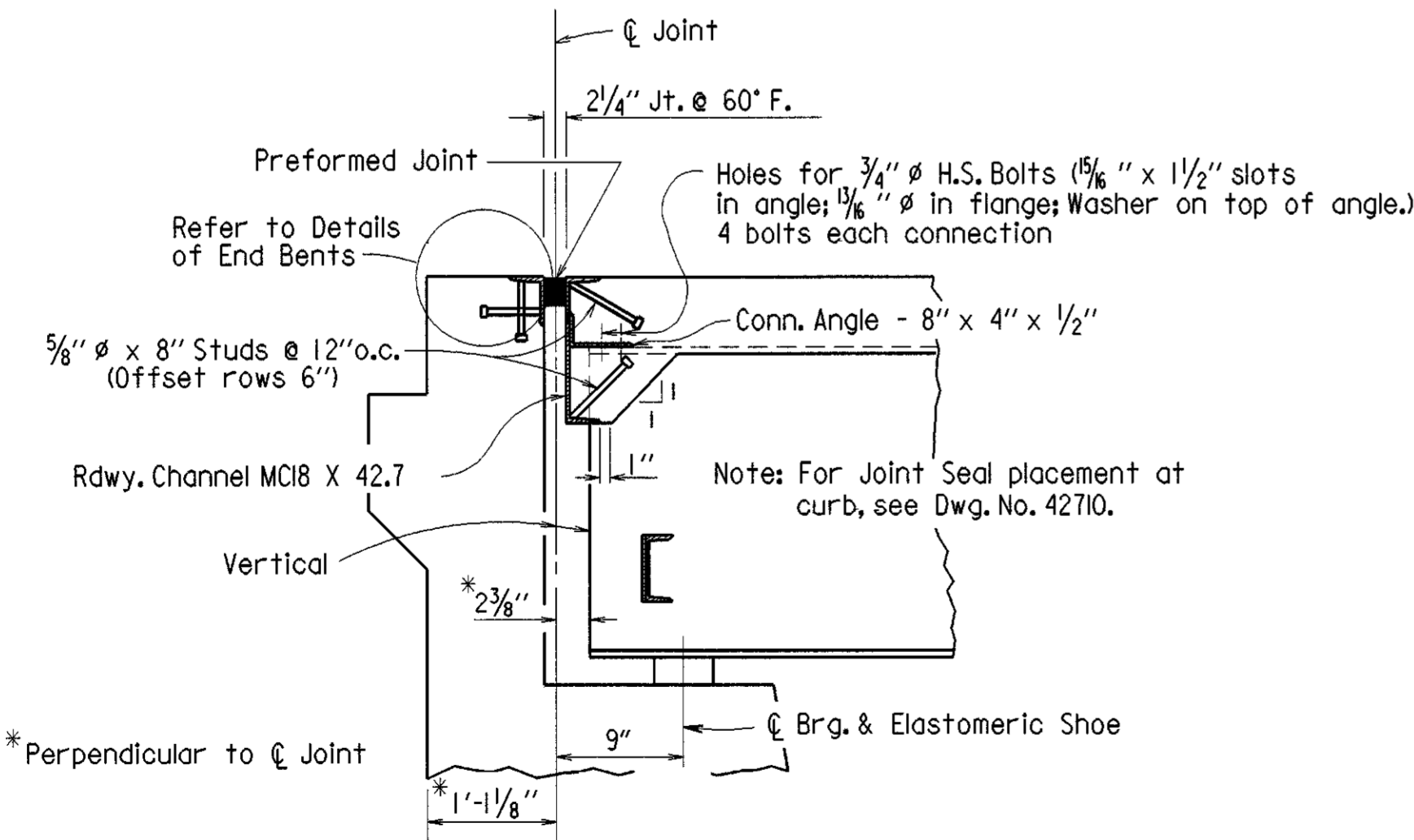
FRAMING PLAN



CONTINUOUS W-BEAM ELEVATION

N.T.S.

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



SECTION THRU JOINT AT END BENTS

N.T.S.

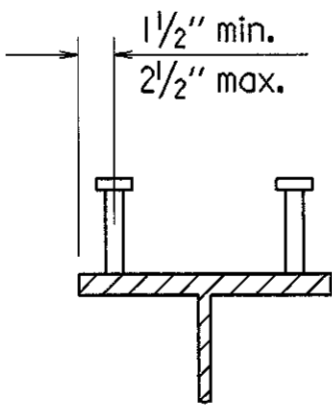
Note: For details of Joint Seal, see Dwg. No. 42710.

Note: Joint and End of Beam are vertical.

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.



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 3/8" studs shown, at the ratio of 1.361 - 3/4" studs in place of one 3/8" stud. 3/8" studs will be used as basis for measurement of structural steel in shear connectors. Maximum stud spacing = 24".

SHEAR CONNECTOR DETAIL

N.T.S.



BRIDGE ENGINEER

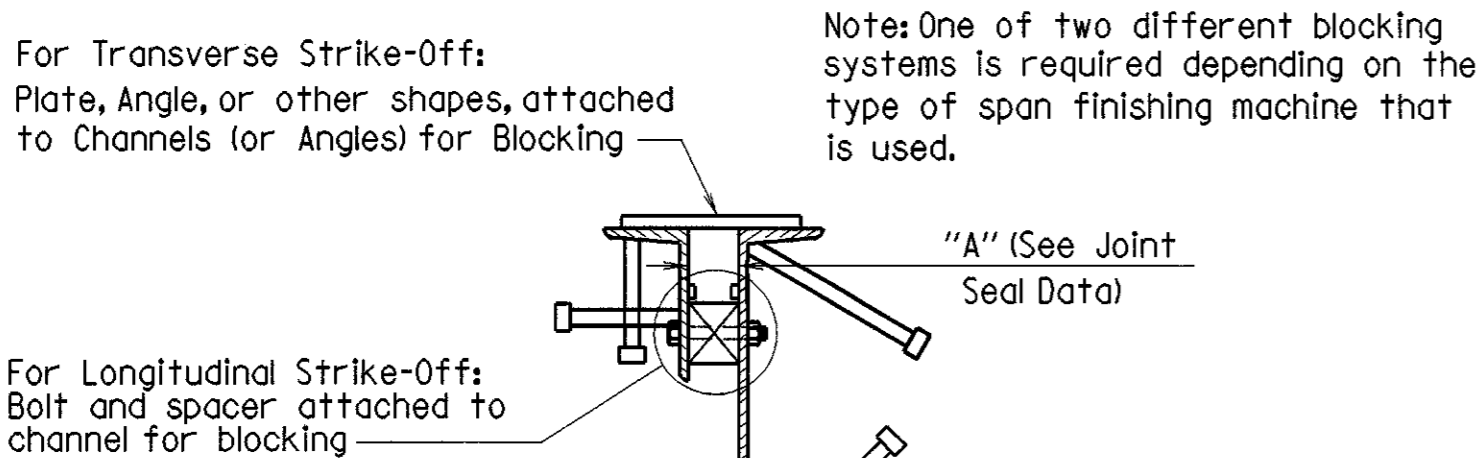
SHEET 4 OF 5

DETAILS OF
140'-0" CONT. COMP. W-BEAM UNIT
BEECH CREEK

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

DRAWN BY: B.E.F. DATE: 4-16-01 FILENAME: B070114XLS4
CHECKED BY: GYA DATE: 5-3-01 SCALE: 1/8" = 1'-0" or as noted
DESIGNED BY: B.E.F. DATE: 3-15-01
BRIDGE NO. 06863 DRAWING NO. 42709

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.		070114	40	82
				06863		CONT. W-BM. UNIT		42710



Note: Blocking Detail shown for joint at End Bents.

DETAILS FOR BLOCKING EXPANSION JOINT DEVICE

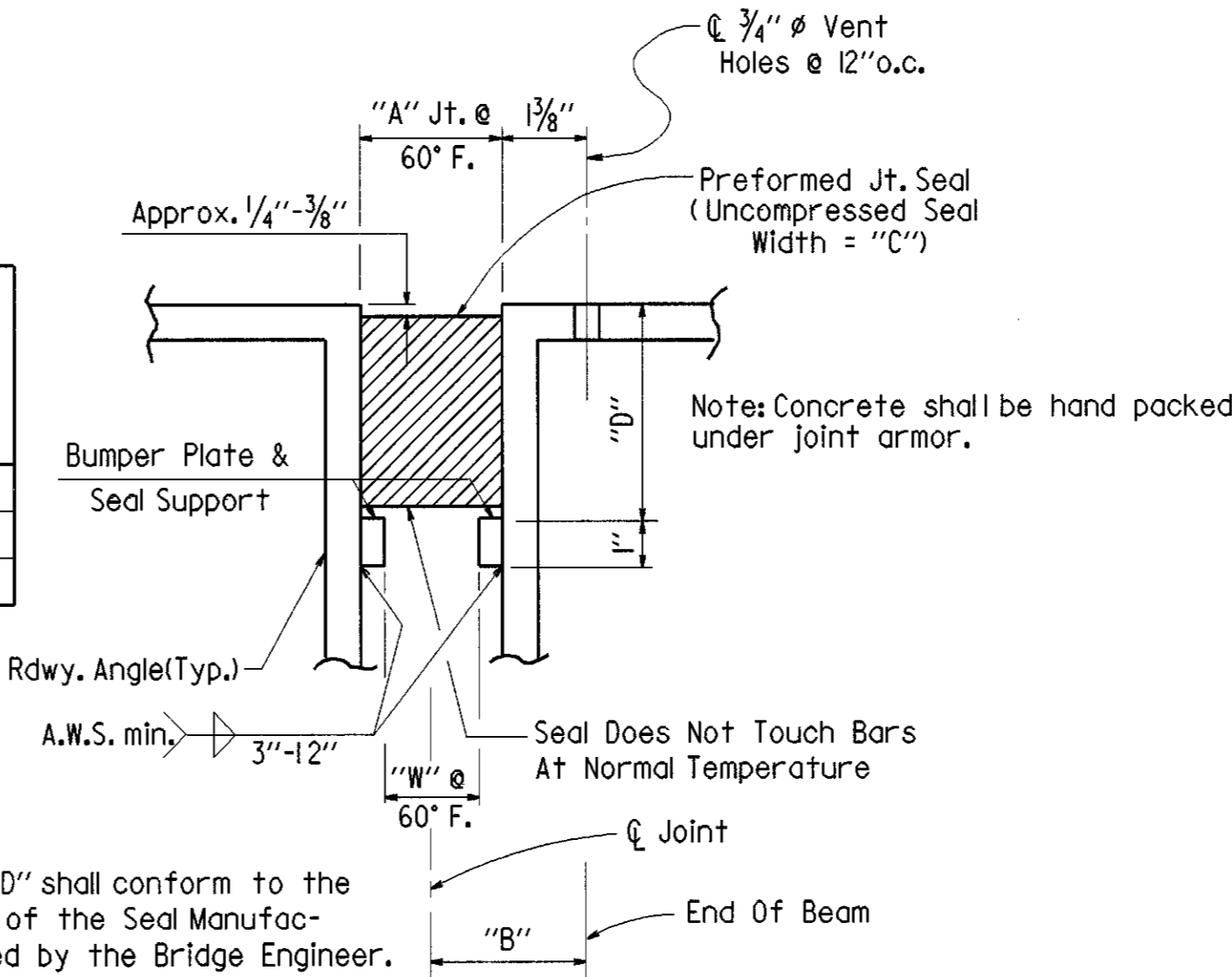
N.T.S.

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 DATA

"A" Joint Width Perpendicular To Joint @ 60°F	"B" Perpendicular To Joint	"C" Uncompressed Seal Width	"W" Width Between Plates	Bumper Plate Size
2 1/4"	2 3/8" ±	3 1/2"	3/4"	1" x 3/4"

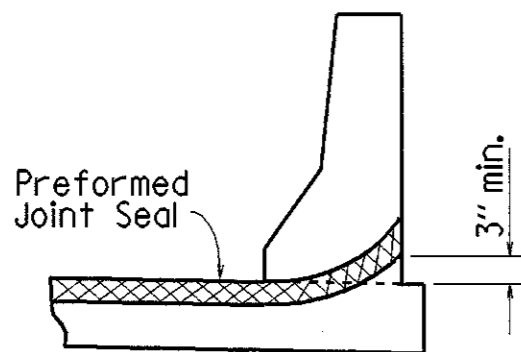
① Installation is limited to 40° F. min. and 80° F. max.



DETAIL OF JOINT SEAL & SUPPORT

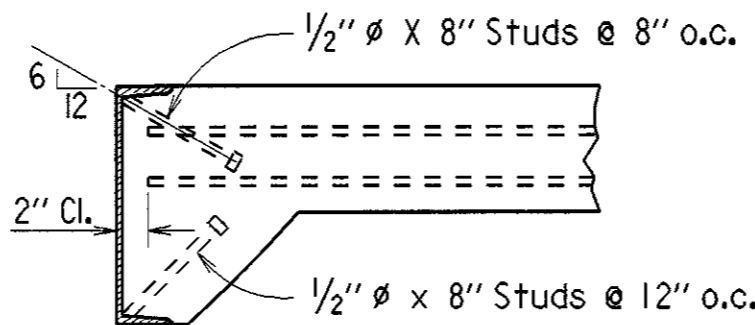
N.T.S.

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 because for rejection of the Seal.



JOINT SEAL
PLACEMENT AT CURB

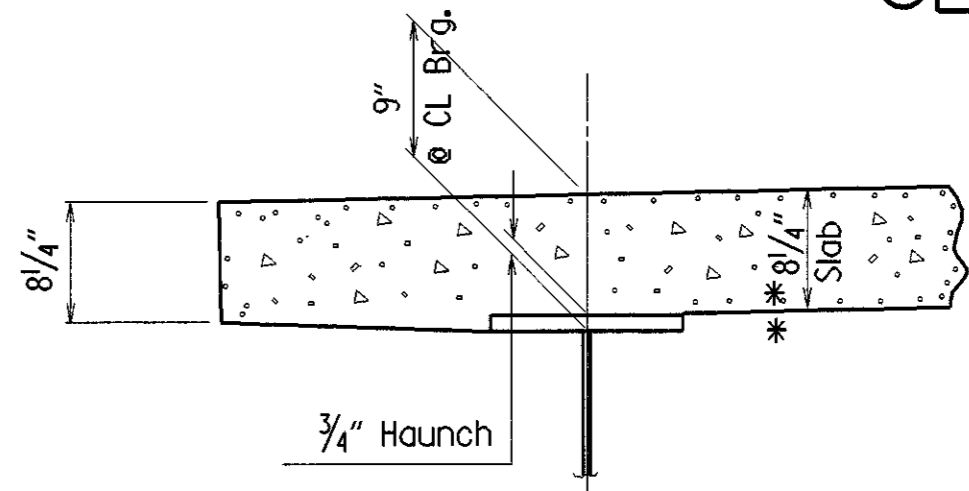
N.T.S.



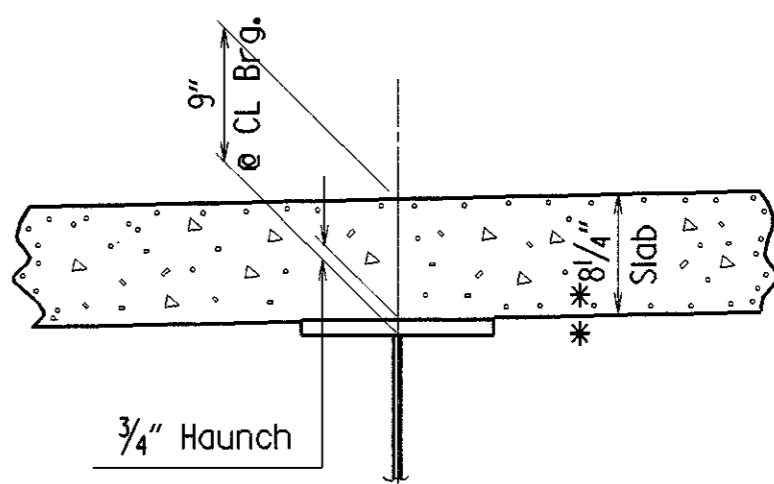
Note: As an alternate to 5/8" Ø studs, 1/2" Ø x 8" studs spaced as shown may be used. Use weight of 5/8" Ø stud as basis of measurement of structural steel in anchors.

DETAILS OF ALTERNATE ANCHORS

N.T.S.



EXTERIOR GIRDER



INTERIOR GIRDER

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

See Std. Dwg. No. I4991 for tolerances when permanent steel deck forms are used. Payment for concrete shall be based on removable deck forming. Tolerances shown are applicable only when removable deck forming is used.

HAUNCH DETAILS AND
ADJUSTMENT FOR SLAB THICKNESS TOLERANCE
WHEN REMOVABLE DECK FORMING IS USED

N.T.S.

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 + 1.3 (Wt./Ft. of W-Bm.)	756 plf + 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 Strength:
Class S(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. 50W) Fy = 50,000 p.s.i.

For additional details see dwg. no. 42709.



BRIDGE ENGINEER

SHEET 5 OF 5
DETAILS OF
140'-0" CONT. COMP. W-BEAM UNIT
BEECH CREEK

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

DRAWN BY: B.E.F. DATE: 4-17-01 FILENAME: B070114XLS5
CHECKED BY: GYA DATE: 5-3-01 SCALE: N.T.S.
DESIGNED BY: B.E.F. DATE: 3-15-01
BRIDGE NO. 06863 DRAWING NO. 42710