

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT

CONSTRUCTION PLANS FOR STATE HIGHWAY

McHENRY CREEK & RELIEF
STRS. & APPRS. (S)

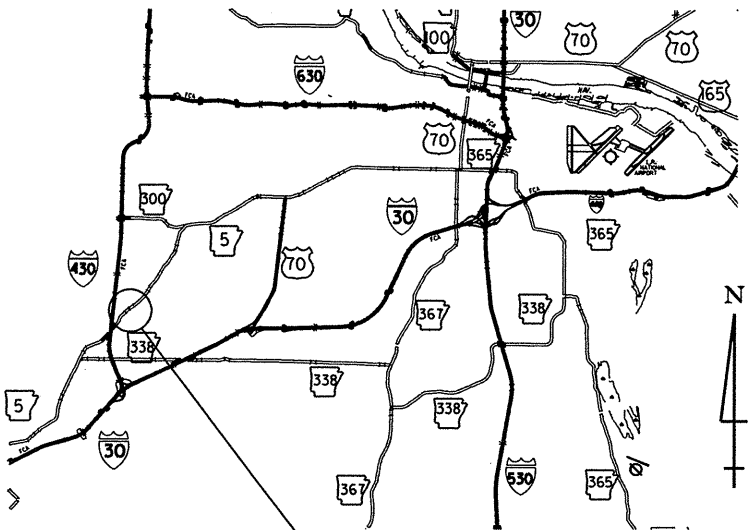
PULASKI COUNTY

ROUTE 5 SECTION 9

F.A.P. BRN-9253(60)

JOB 060352

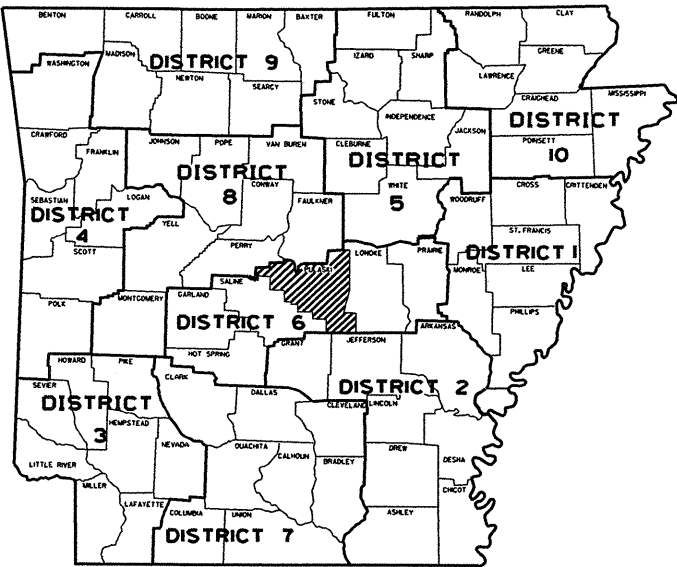
NOT TO SCALE



PROJECT
LOCATION

VICINITY MAP

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. 060352	1	83
						McHENRY CREEK & RELIEF STRS. & APPRS. (S)		



ARKANSAS HIGHWAY DISTRICT 6

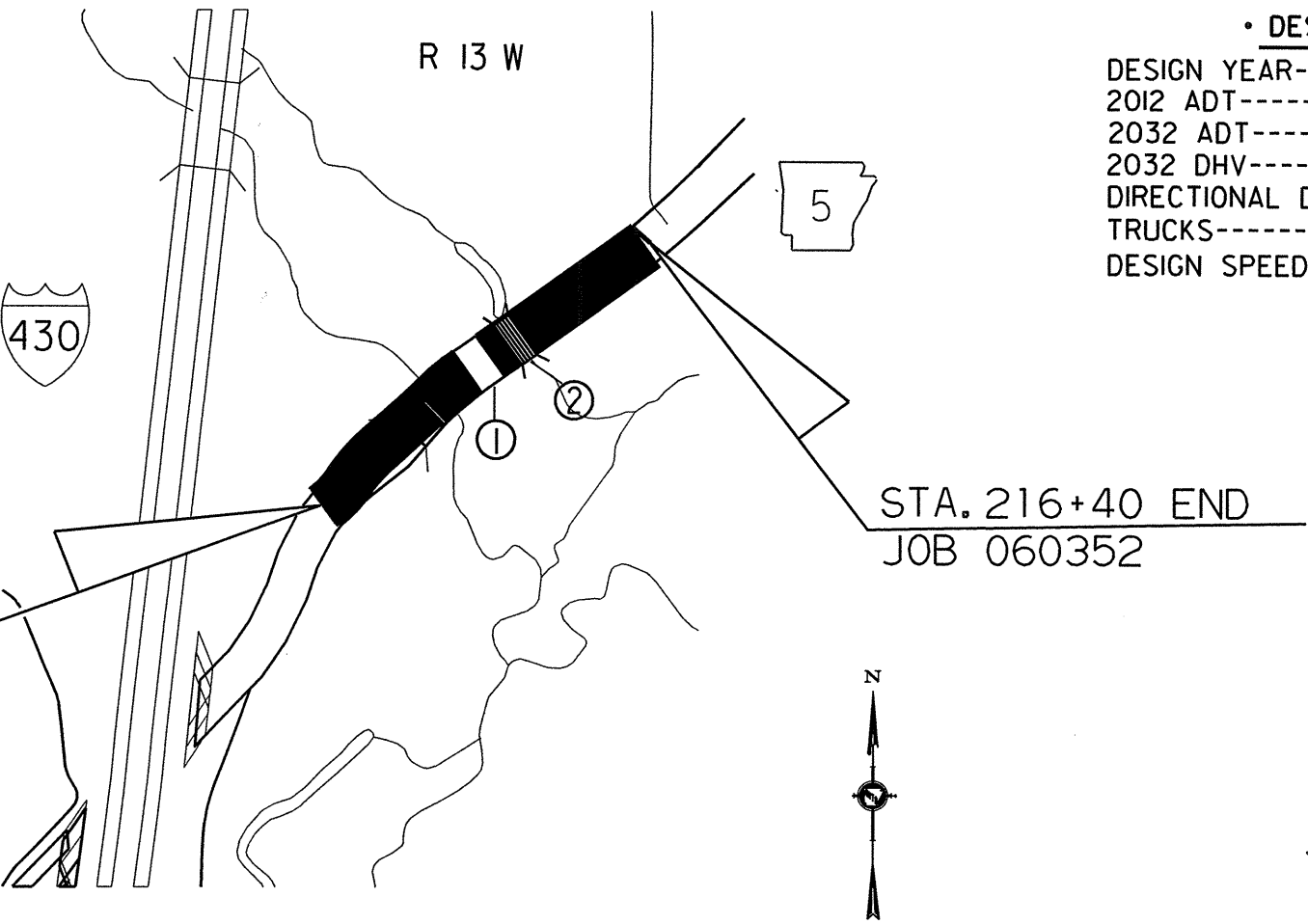
• DESIGN TRAFFIC DATA •

DESIGN YEAR-----2032
2012 ADT-----9000
2032 ADT-----11500
2032 DHV-----1265
DIRECTIONAL DISTRIBUTION-----60%
TRUCKS-----3%
DESIGN SPEED-----40 MPH

STRUCTURES OVER 20' -0" SPAN

- ① STA. 205+89.00 BRIDGE END
BRIDGE NO. 07210
150' -0" CONT. COMP. INTEGRAL W-BEAM UNITS
151' -0" BRIDGE LENGTH
STA. 207+40.00 BRIDGE END
- ② STA. 210+81 CONSTRUCT
QUINT. 12' x 10' x 116' R.C. BOX CULVERT
WITH 3:1 WINGS LT. & RT.
SPAN LENGTH = 64' -0"

STA. 200+00 BEGIN
JOB 060352
LOG MILE 3.72



PROJECT COORDINATES:

	BEGIN	MID-POINT	END
LAT.	N34°41'3.4"	N34° 41' 07.0"	N34°41'12.8"
LON.	W92°24'8.4"	W92° 24' 02.0"	W92°23'52.5"

GROSS LENGTH OF PROJECT	1640.00	FEET OR 0.311	MILE
NET LENGTH OF ROADWAY	1425.00	FEET OR 0.270	MILE
NET LENGTH OF BRIDGES	215.00	FEET OR 0.041	MILE
NET LENGTH OF PROJECT	1640.00	FEET OR 0.311	MILE

P.E. JOB 060352
NON-PART.

APPROVED



DEPUTY DIRECTOR
AND CHIEF ENGINEER

SCHEDULE OF BRIDGE QUANTITIES - JOB NO. 060352

BRIDGE NO.	CODE NO.	NAME PLATE TITLE	UNIT OF STRUCTURE	ITEM NO.	205	801	802	802	803	SS# 804	SS# 804	805	805	807	812	816	816	SP JOB 060352
				ITEM	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO.)	UNCLASSIFIED EXCAVATION FOR STRUCTURES-BRIDGE	CLASS S CONCRETE-BRIDGE	CLASS S (AE) CONCRETE-BRIDGE	CLASS 1 PROTECTIVE SURFACE TREATMENT	REINFORCING STEEL-BRIDGE (GRADE 60)	EPOXY COATED REINFORCING STEEL (GRADE 60)	STEEL PILING (HP12X53)	PREBORING	STRUCTURAL STEEL IN BEAM SPANS (M 270, GRADE 50W)	BRIDGE NAME PLATE (TYPE D)	DUMPED RIPRAP	FILTER BLANKET	SHORING
				UNIT	LUMP SUM	CU. YD.	CU. YD.	CU. YD.	GAL.	LB.	LB.	LIN. FT.	LIN. FT.	LB.	EACH	CU. YD.	SQ. YD.	LUMP SUM
07210	X071	McHENRY CREEK	BENT NO. 1				10.83			1,221	534	105	95			203	375	
			BENT NO. 2			185	47.92			7,125								
			BENT NO. 3			208	47.92			7,125								
			BENT NO. 4				10.83			1,221	534	165	155			186	340	
			150'-0" CONT. INTEGRAL W-BEAM UNIT					239.10	16.6	2,348	54,062			102,720	1			
			SITE NO. 1 (BRIDGE NO. M0127)		1													
			TOTALS FOR BRIDGE NO. 07210			② 393	117.50	239.10	16.6	19,040	55,130	① 270	250	102,720	1	389	715	1

- ① All steel piling are required to have approved driving points which will not be paid for directly, but shall be considered subsidiary to the item "Steel Piling (HP12x53)".
- ② Includes 79 cu. yds. of rock excavation.

STEWART LINZ
DESIGN SECTION SUPERVISOR



BRIDGE ENGINEER

SCHEDULE OF BRIDGE QUANTITIES
BRIDGE OVER McHENRY CREEK
McHENRY CREEK & RELIEF STRS. & APPRS. (S)
PULASKI COUNTY
ROUTE 5 SEC. 9
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
DRAWN BY: HHO DATE: 03/11/11 FILENAME: b060352.qldgn
CHECKED BY: RBR DATE: 5/6/11 SCALE: NO SCALE
DESIGNED BY: DATE:
BRIDGE NO. 07210 DRAWING NO. 51915

For R/W Data and Guard Rail
Details see Roadway Plans.

Excavate existing roadway
embankment as shown. Approx.
300 Cubic Yards of excavation.

Place 1'-6" Dumped Riprap on top
of filter blanket. See Std. Dwg.
No. 1891F. Top of Riprap Elev. 282.0

Use Type B Approach Gutters (w=8'-0") and
Approach Slabs (Type Sp.1) at both ends of
Bridge. For details, see Std. Dwg. 2016B and
Dwg. No. 51925.

GENERAL NOTES:

BENCH MARK: TBM 903 Ch. Sq. on Parapet Rail, 26.50' Lt. of C.L. Construction, Sta. 206+55.14, Elev. 281.39

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard
Specifications for Highway Construction (2003 edition) with applicable supplemental specifications
and special provisions. Unless otherwise noted, section and subsection refer to Standard Specifications
for Highway Construction.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications 5th Edition (2010), with 2010 Interims.

LIVE LOADING: HL-93

SEISMIC ZONE: 1

$S_D = 0.087$

SITE CLASS = B

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.

STEEL PILING: Piling in Bents 1 and 4 shall be HP12X53 and shall be driven with an approved air, steam or
diesel hammer to a minimum safe bearing capacity of 70 tons and into material designated as Hard Shale
on the boring legend. Lengths shown are for estimating quantities and for use in determining payment
for cut-off and build-up in accordance with the standard specifications. On all piles the Contractor shall
use approved steel H-Pile driving points. Piles in end bents to be driven after embankment to bottom
of cap is in place.

PREBORING: Preboring is required for all piling at Bents 1 and 4. Prebored holes shall have a diameter 6"
greater than the greatest cross-sectional dimension of the pile for a depth of 3' into material designated
as medium hard or hard shale in the boring legend. After completion of driving, the void space around the
pile shall be backfilled with Class (S) concrete from the bottom of the prebored hole to 10' below the
bottom of the cap. The remaining 10' shall be backfilled with sand or pea gravel. The Contractor shall be
responsible for keeping prebored holes free of debris prior to backfilling, which may require the use of
temporary casing or other approved methods. Any related cost for backfilling and temporary casing will
not be paid for separately but shall be considered subsidiary to the item "Preboring". Preboring will
be paid for in accordance with section 805.

FOOTINGS: Footings in intermediate bents shall be set a minimum of 2'-6" into material designated
as Shale on the boring legend. The top of the footings shall be set at or below the existing
channel bottom. Foundations for footings shall be prepared in accordance with subsection 804.04.
Rock excavations shall be made to neat lines of the concrete footings. Blasting will not be allowed.
Concrete in footings shall be poured directly against excavated surfaces of rock.

SHORING: Temporary Shoring will be required to construct embankment while maintaining traffic on
existing roadway. See Special Provision Job No. 060352 "Shoring".

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.

PIPE UNDER DRAIN: One Pipe Under drain with outlet protectors shall be installed behind each bridge
end in accordance with Section 611. Pipe Under drains will not be paid for directly but shall be
considered subsidiary to "Unclassified Excavation".

DETAIL DRAWINGS:

	DRAWING NO.
Stage Construction	51917
End Bents	51918
Intermediate Bents	51919
150' Integral W-Beam Unit	51920-51924
Type "B" Special Shoes	51923
Steel Piles	14995A
Type B Approach Gutters	2016B
Type Special I Approach Slabs	51925

EXISTING BRIDGE: Bridge No. M0127 (Log Mile 3.84) is 33' wide and 80' long and consists of 4 concrete
slab spans supported by concrete walls on spread footings. The existing bridge is approximately
35' downstream of centerline construction.

REMOVAL AND SALVAGE: After the Stage I Construction is complete and opened to traffic, existing
Bridge No. M0127 shall be removed in accordance with Section 205. All material from the existing
bridge shall become the property of the Contractor.

MAINTENANCE OF TRAFFIC: See Roadway Plans.

HYDRAULIC DATA

FLOOD DESCRIPTION	FREQUENCY	DISCHARGE THRU BRIDGE OPENING	EXISTING WATER SURFACE ELEVATION	WATER SURFACE ELEVATION W/ BACKWATER
	YEARS	CFS	FEET	FEET
Design	50	6,180	4,087	281.4
Base	100	7,361	5,094	281.9
Extreme	500	9,819	7,427	283.3
Overtopping	>500	—	—	—

① Water surface at proposed bridge location with existing
structures and roadway approaches.

② Drainage area = 9.1 sq. miles (Includes McHenry Creek, Relief
Structure, Quintuplet 12' x 10' R.C. Box Culvert - Sta. 210+80)
Proposed Low Bridge Member Elevation = 282.84

Historical H.W. Elev. = N/A

Estimated 100-Year backwater elevation with
existing structures in place = 281.9 feet

LAYOUT OF BRIDGE OVER
McHENRY CREEK
McHENRY CREEK & RELIEF STRS. & APPRS. (S)
PULASKI COUNTY
ROUTE 5 SEC. 9
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: MRE DATE: 11/04/10 FILENAME: b060352.dgn
CHECKED BY: RBR DATE: 5/6/11 SCALE: 1"= 20'-0"
DESIGNED BY: CBL DATE: Dec 2010
BRIDGE NO. 07210 DRAWING NO. 51916



BRIDGE ENGINEER

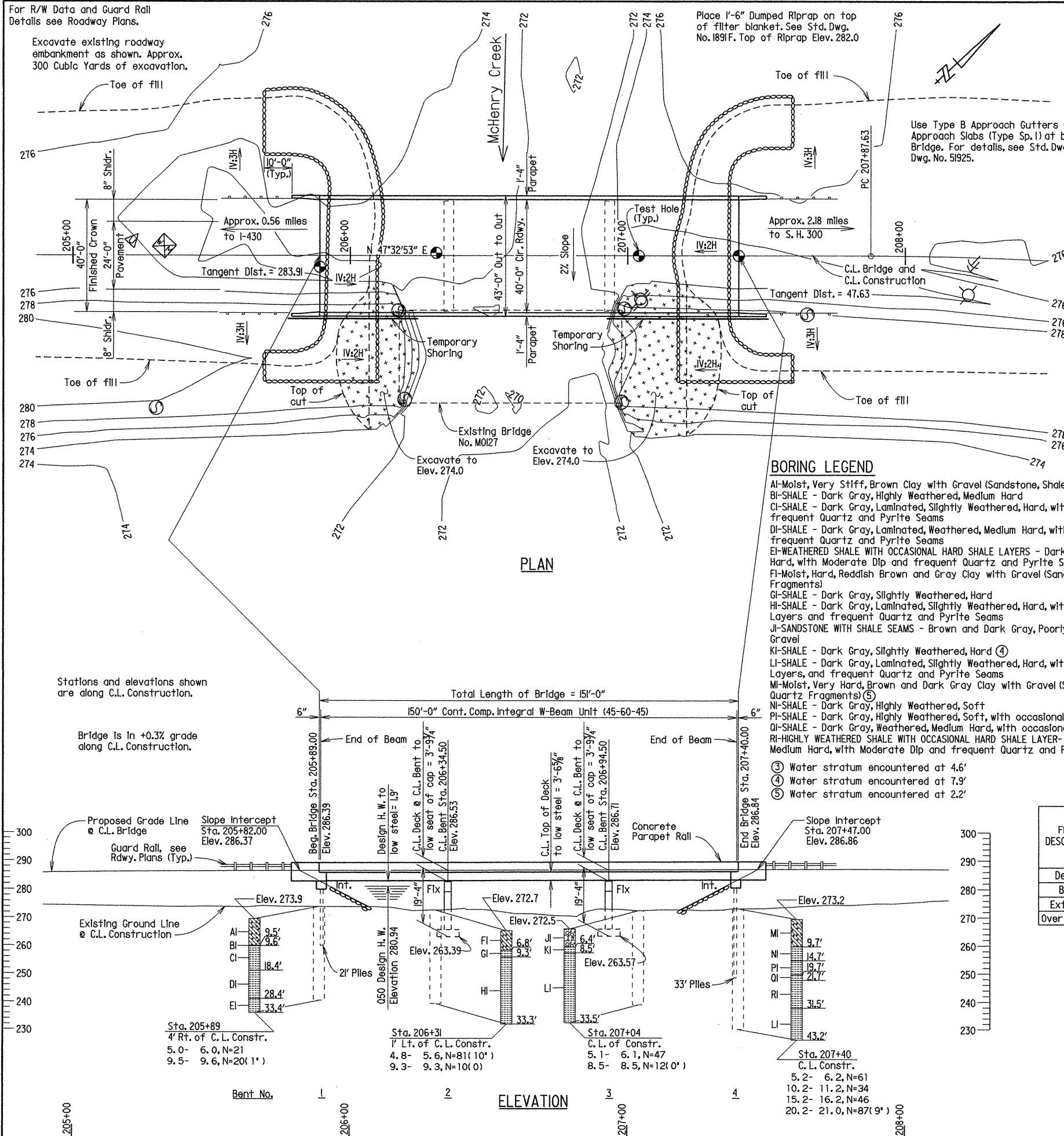
PLAN

BORING LEGEND

- AI-Moist, Very Stiff, Brown Clay with Gravel (Sandstone, Shale and Quartz Fragments) ③
BI-SHALE - Dark Gray, Highly Weathered, Medium Hard
CI-SHALE - Dark Gray, Laminated, Slightly Weathered, Hard, with Moderate Dip and
frequent Quartz and Pyrite Seams
DI-SHALE - Dark Gray, Laminated, Weathered, Medium Hard, with Moderate Dip and
frequent Quartz and Pyrite Seams
EI-WEATHERED SHALE WITH OCCASIONAL HARD SHALE LAYERS - Dark Gray, Laminated, Medium
Hard, with Moderate Dip and frequent Quartz and Pyrite Seams
FI-Moist, Hard, Reddish Brown and Gray Clay with Gravel (Sandstone, Shale and Quartz
Fragments)
GI-SHALE - Dark Gray, Slightly Weathered, Hard
HI-SHALE - Dark Gray, Laminated, Slightly Weathered, Hard, with Moderate Dip, Fractured
Layers and frequent Quartz and Pyrite Seams
JI-SANDSTONE WITH SHALE SEAMS - Brown and Dark Gray, Poorly-Cemented, with Quartz
Gravel
KI-SHALE - Dark Gray, Slightly Weathered, Hard ④
LI-SHALE - Dark Gray, Laminated, Slightly Weathered, Hard, with Moderate Dip, Fractured
Layers, and frequent Quartz and Pyrite Seams
MI-Moist, Very Hard, Brown and Dark Gray Clay with Gravel (Sandstone, Shale and
Quartz Fragments) ⑤
NI-SHALE - Dark Gray, Highly Weathered, Soft
PI-SHALE - Dark Gray, Highly Weathered, Soft, with occasional Quartz Seams
QI-SHALE - Dark Gray, Weathered, Medium Hard, with occasional Quartz Seams
RI-HIGHLY WEATHERED SHALE WITH OCCASIONAL HARD SHALE LAYER- Dark Gray, Laminated,
Medium Hard, with Moderate Dip and frequent Quartz and Pyrite Seams

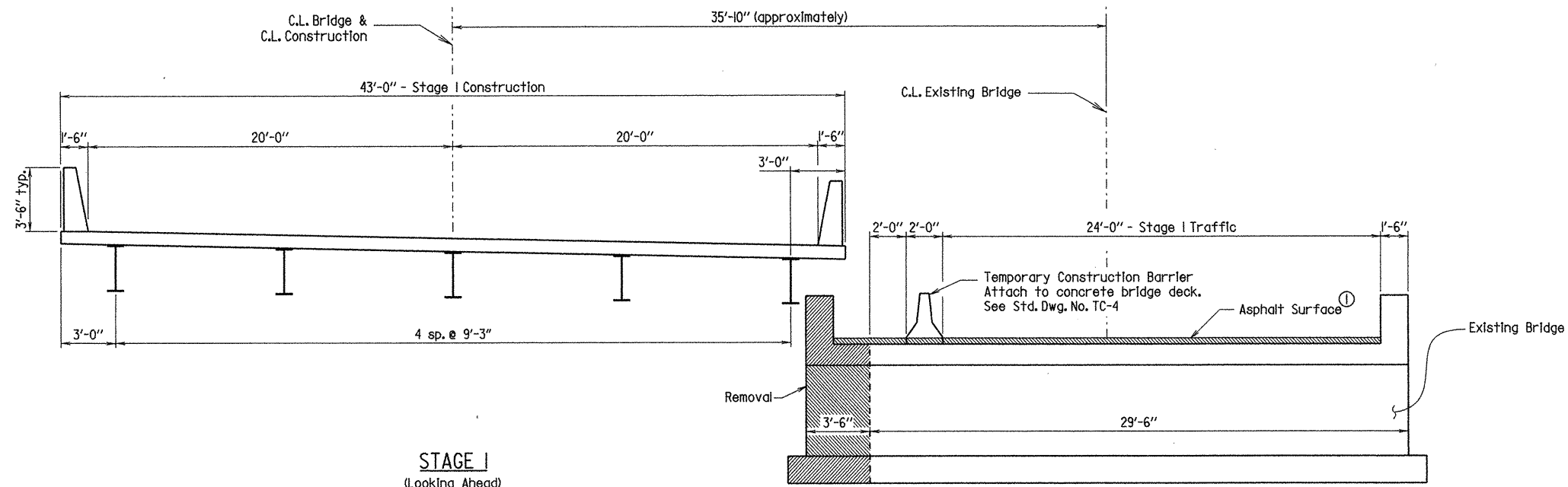
- ③ Water stratum encountered at 4.6'
④ Water stratum encountered at 7.9'
⑤ Water stratum encountered at 2.2'

ELEVATION



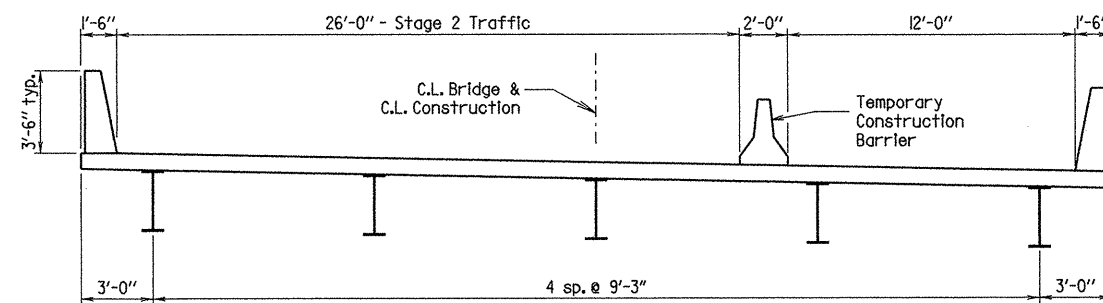
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				6	ARK.			
				JOB NO.		060352	31	83
				07210		STAGE CONSTRUCTION		51917

① 07210 STAGE CONSTRUCTION 51917

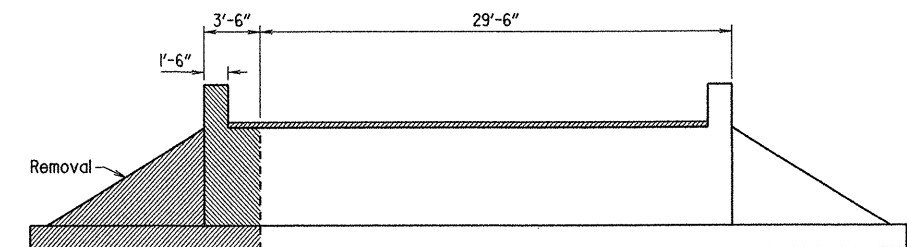


STAGE 1
(Looking Ahead)

① See Roadway Plans for asphalt removal.

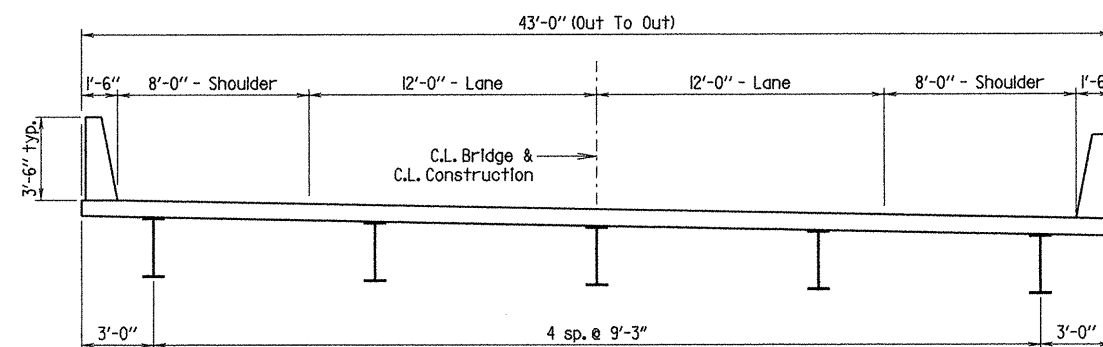


STAGE 2
(Looking Ahead)



DETAILS OF END BENT AND WING WALL REMOVAL - STAGE 1

(Looking Ahead)
3/8" = 1'-0"



FINAL
(Looking Ahead)

NOTES:
Details that pertain to Maintenance of Traffic shown on bridge plans are for information only. See Roadway plans for Maintenance of Traffic.
For details of temporary barrier, see Dwg. Nos. TC-4 and TC-5



BRIDGE ENGINEER

DETAILS OF STAGE CONSTRUCTION
McHENRY CREEK
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: RBR DATE: 12/10/2010 FILENAME: b060352.sc.dgn
CHECKED BY: CHW DATE: 3/31/11 SCALE: 1/4" = 1'-0" or as noted
DESIGNED BY: CSL DATE: 06/20/11
BRIDGE NO. 07210 DRAWING NO. 51917

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.		060352	33	83

07210 DETAILS OF INT. BENTS 51919

BAR LIST-PER BENT

MARK	NO. REQ'D.	LENGTH	'A'	'B'	P.D.	BENDING DIAGRAMS
B401	8	40'-8"	-	-	Str.	
B402	80	8'-8"	1'-6"	2'-8"	2"	
B403	18	10'-0"	2'-2"	2'-8"	2"	
B404	9	7'-4"	2'-2"	2'-8"	2"	
B801	6	42'-6"	40'-8"	8"	6"	
B802	8	40'-8"	-	-	Str.	
C401	54	7'-8"	2'-1"	-	3"	
C701	11	17'-0"	-	-	Str.	
C702	11	16'-10"	-	-	Str.	
C703	11	16'-6"	-	-	Str.	
F601	81	9'-10"	8'-6"	6"	4 1/2"	
F701	51	15'-2"	13'-6"	7"	5 1/4"	
F702	33	8'-1"	7'-1"	1'-2"	5 1/4"	

Dimensions are out to out of bars.

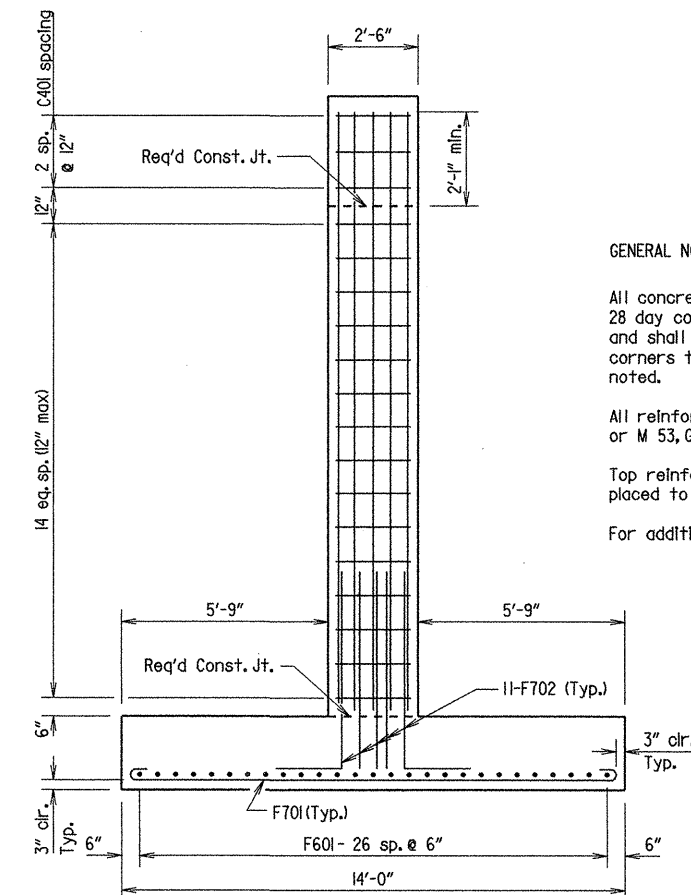
GENERAL NOTES:

All concrete shall be Class "S" with a minimum 28 day compressive strength of $f'_c = 3500$ psi and shall be poured in the dry. All exposed corners to be chamfered $\frac{3}{4}$ " unless otherwise noted.

All reinforcing steel shall conform to AASHTO M 31 or M 53, Gr. 60. (Yield strength= 60,000 psi.)

Top reinforcing bars in cap shall be properly placed to avoid interference with anchor bolts.

For additional information, see Layout, Dwg. No. 51916.

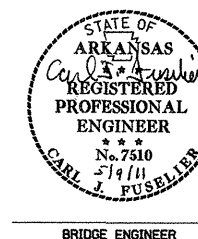


SECTION A-A

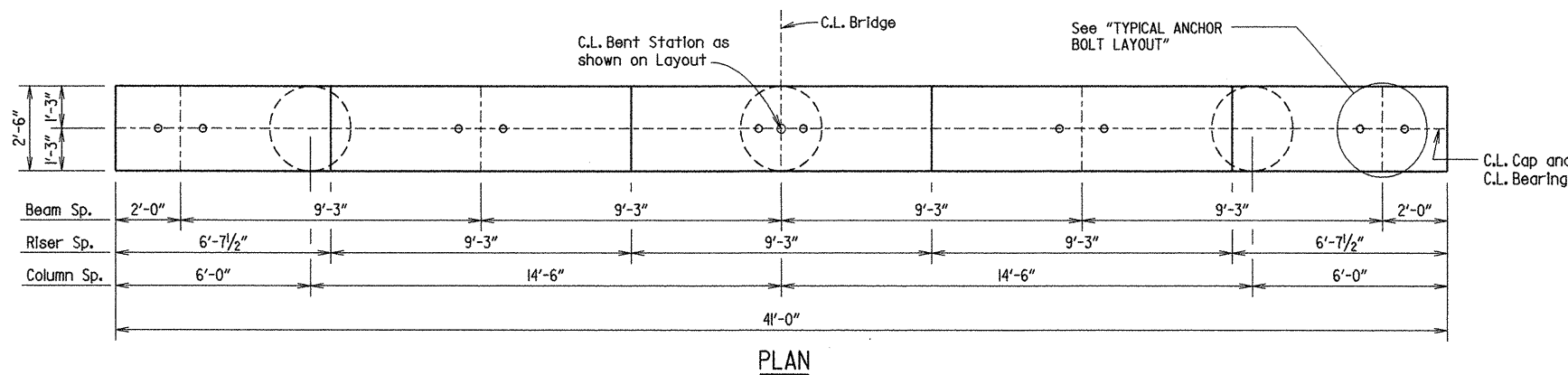
DETAILS OF INTERMEDIATE BENTS McHENRY CREEK

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

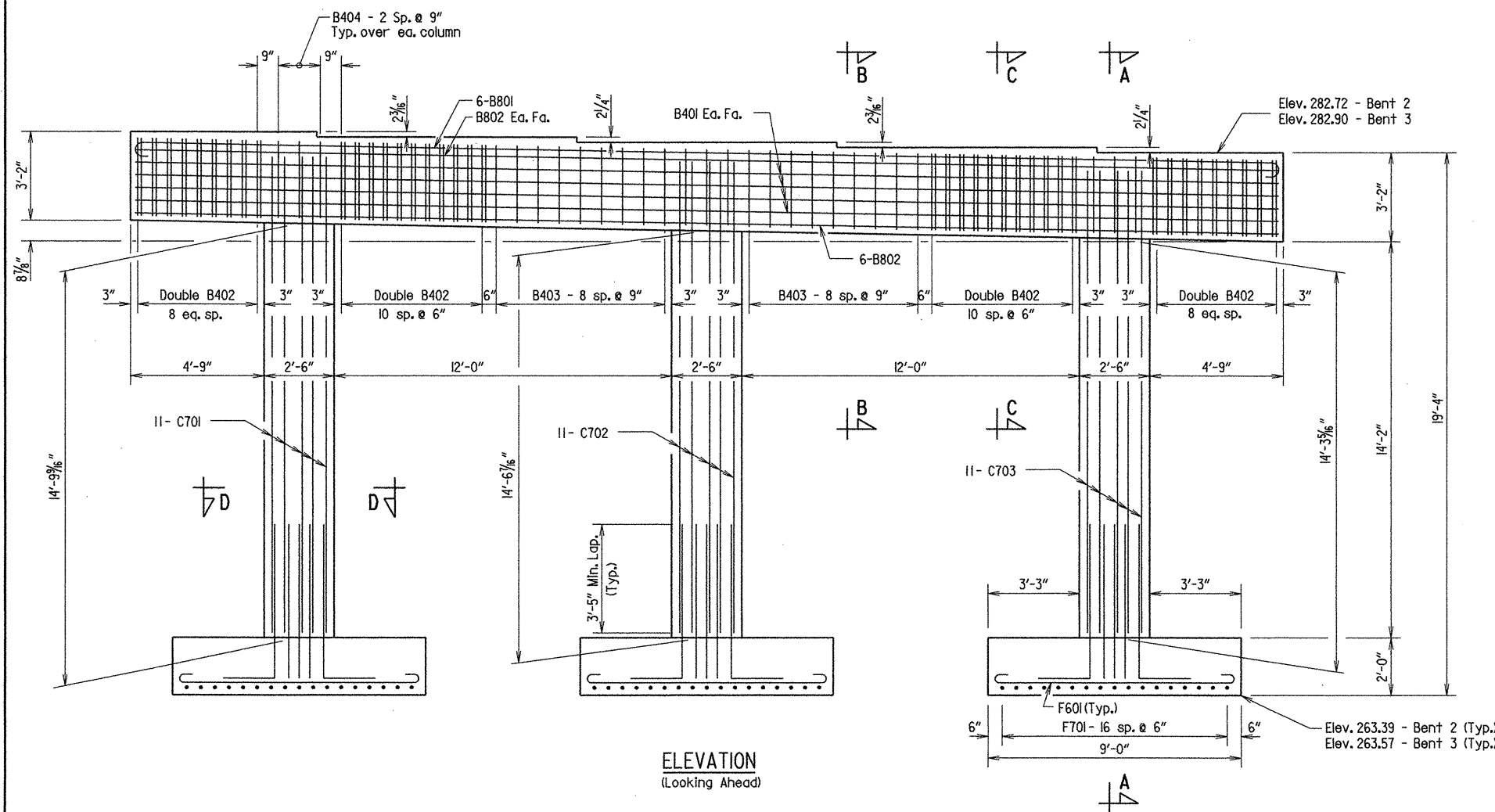
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CHECKED BY: DHP DATE: 3-31-11 SCALE: $\frac{3}{8}$ " = 1'-0" or as shown
DESIGNED BY: RBR DATE: 2/11
BRIDGE NO. 07210 DRAWING NO. 51919



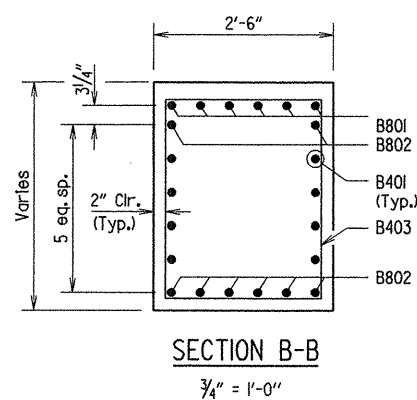
BRIDGE ENGINEER



PLAN

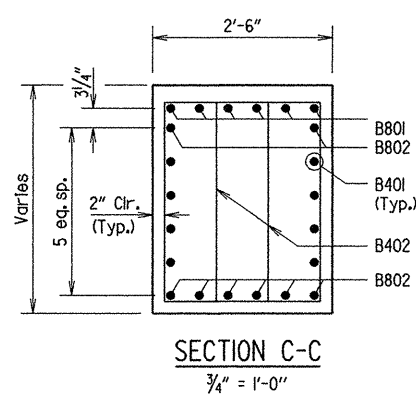


ELEVATION (Looking Ahead)



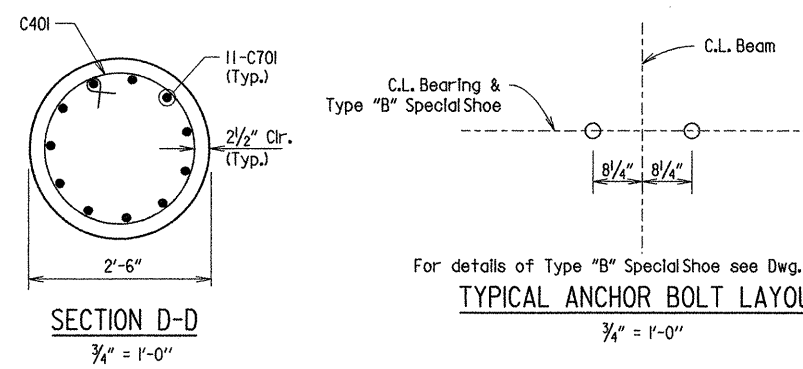
SECTION B-B

$\frac{3}{4}$ " = 1'-0"



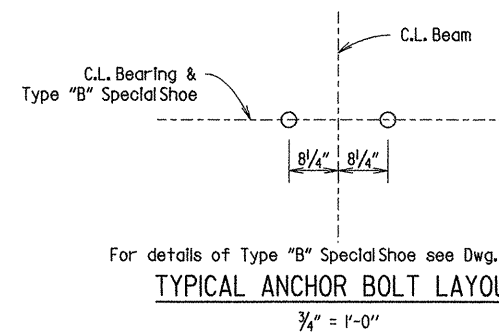
SECTION C-C

$\frac{3}{4}$ " = 1'-0"



SECTION D-D

$\frac{3}{4}$ " = 1'-0"

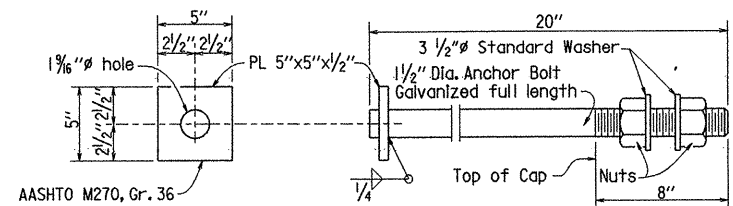


For details of Type "B" Special Shoe see Dwg. No. 51923

TYPICAL ANCHOR BOLT LAYOUT

$\frac{3}{4}$ " = 1'-0"

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.		060352	34	83
				① 07210	SPAN DETAILS			51920



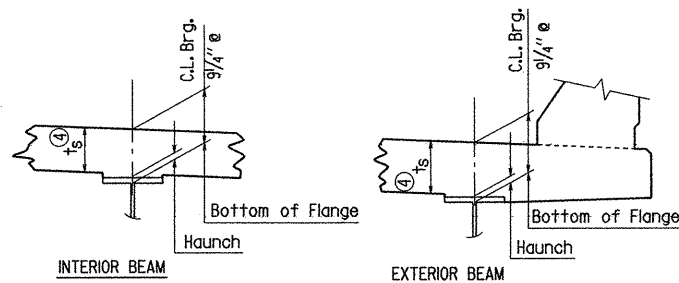
Anchor Bolts, Nuts and Washers will not be measured and paid for separately, but will be considered subsidiary to the unit price bid for "Structural Steel in Beam Spans (M270 Gr.50W)".

No Scale

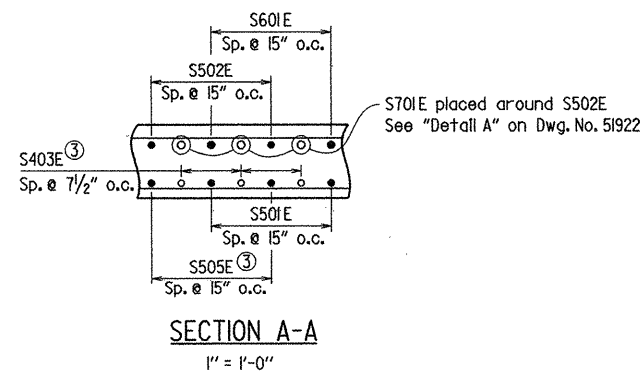
Longitudinal: S401E Top & Bottom
S503E placed as shown at ends of unit (See Reinf. Plan)
S602E placed as shown over interior supports (See Reinf. Plan)
Transverse: S502E @ 15" o.c. bent up over beams
S601E @ 15" o.c. in top, S501E @ 15" o.c. in bottom — Alternate
Overhang: S701E @ 15" o.c. in top (See "Detail A" on Dwg. No. S1922)
S505E @ 15" o.c. in bottom ③
S403E @ 7½" o.c. in bottom ③

NOTE: Bars with an "E" suffix are epoxy coated.

- ① Tolerance: Minus = $\frac{1}{4}$ "
Plus = Equal to amount of slab thickening used to meet slab thickness tolerance-
See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE"
- ② See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE"
- ③ S403E and S505E placed in overhang on low side only to accommodate future expansion of roadway.

$$\frac{1}{2}'' = 1'-0''$$


⑤ If permanent steel bridge deck forms are used, the fabricator shall clip the plate as necessary to accommodate the deck form support.


$$1'' = 1'-0''$$

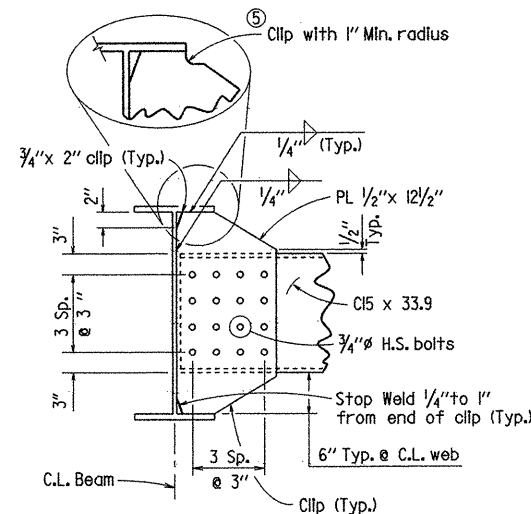
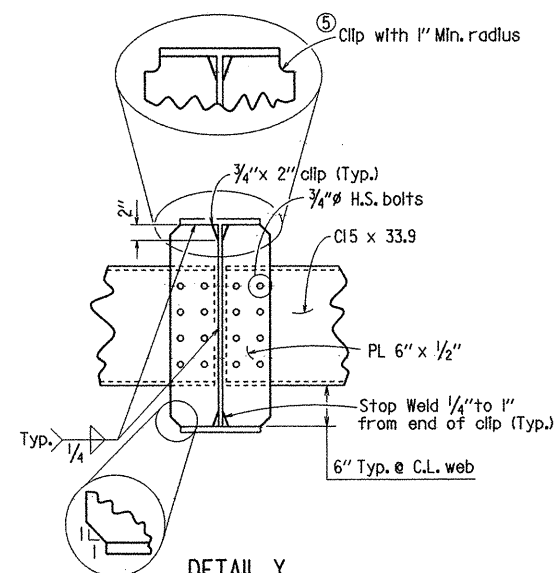
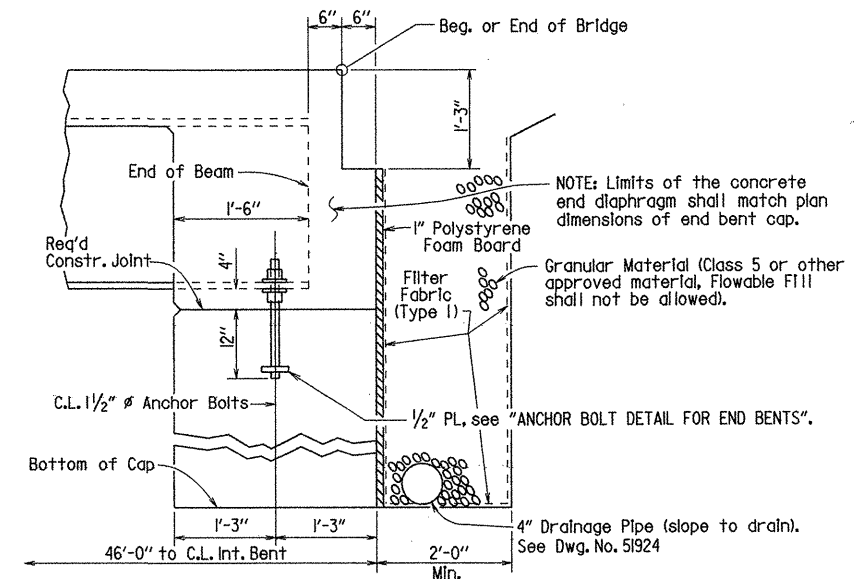
④ Tolerance when removable deck forming is used is $+1/2"$, $-1/4"$. Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

t_s = Slab thickness as shown on Typical Roadway Section.

Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance : Minimum - occurs when top flange contacts bottom reinforcing steel; Maximum - top flange thickness plus $1\frac{3}{4}$ ". No increase in concrete and structural steel quantities will be made to maintain tolerances.

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

No Scale


$$I'' = I' - 0'$$

$$I'' = I - O''$$


No Scale

NOTE: For additional details of pipe under drain see Std. Dwg. PU-land Section 611 of the Standard Specifications. Pipe under drains, outlet protectors, granular materials, drain pipe, filter fabric and polystyrene foam board will not be measured or paid for separately, but will be considered subsidiary to the unit price bid for "Unclassified Excavation".

ARKANSAS STATE HIGHWAY COMMISSION

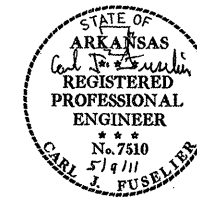
LITTLE ROCK, ARK.

DRAWN BY: RBR DATE: 2-3-11 FILENAME: b060352_sl.dgn

CHECKED BY: CMW DATE: 3/31/11 SCALE: As shown

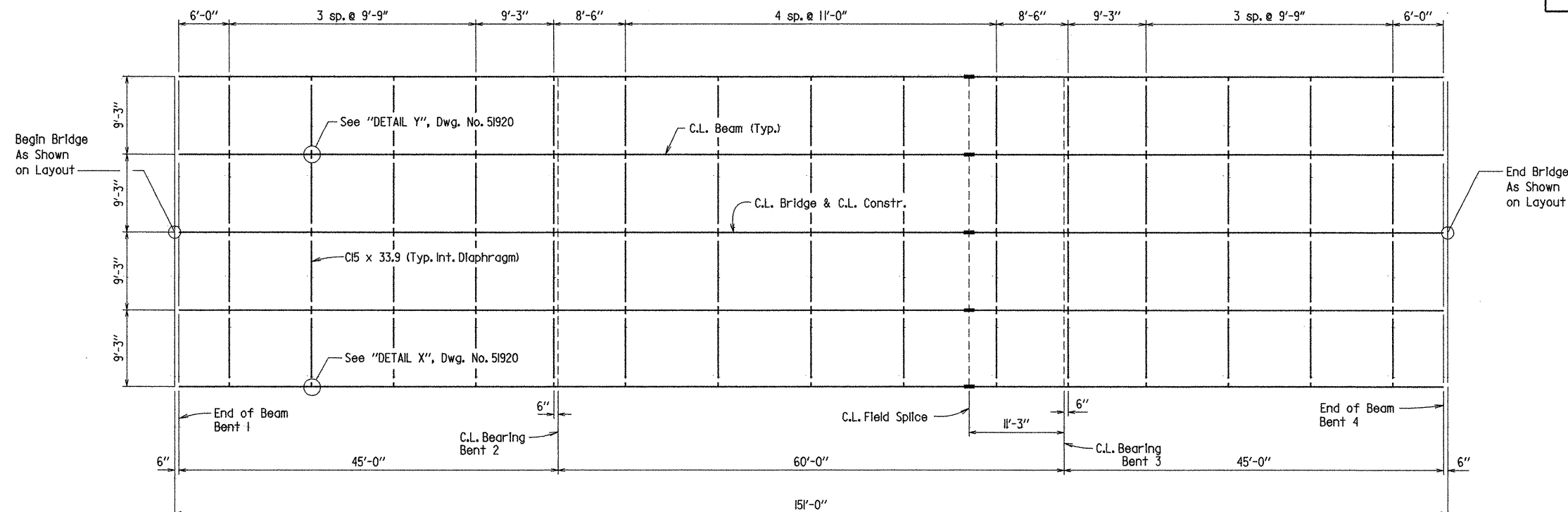
DESIGNED BY: RBC DATE: 2/11
BRIDGE NO. 07210 DRAWING NO. 51920

DRAWING NO. 51920

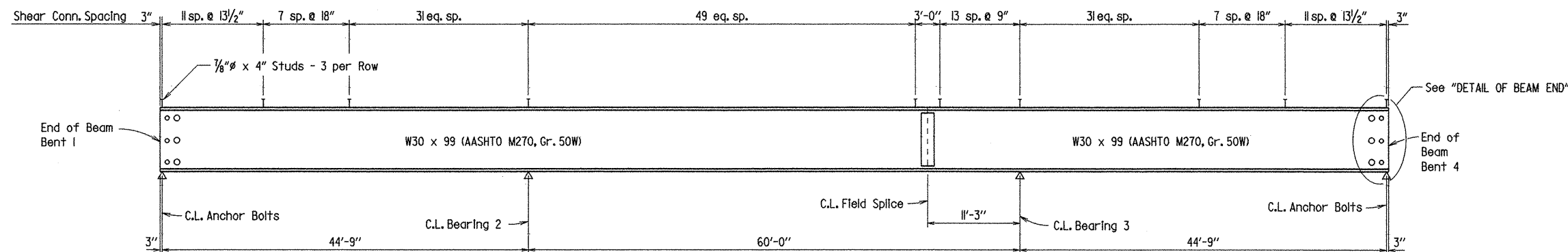


BRIDGE ENGINEER

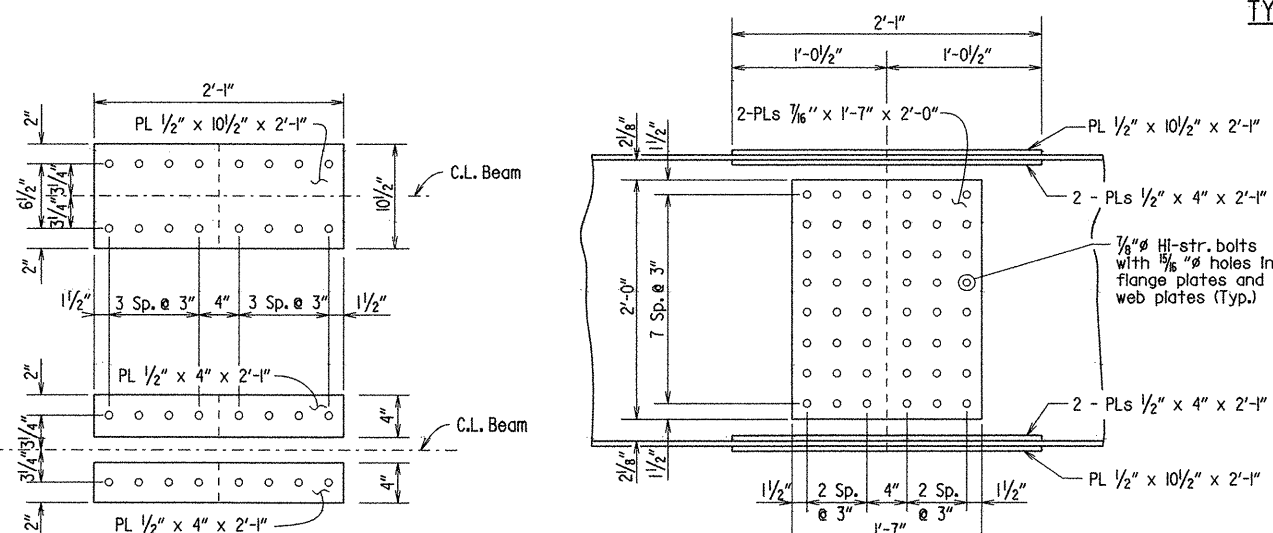
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				6	ARK.			
				JOB NO.		060352	35	83
				07210		SPAN DETAILS		51921



FRAMING PLAN



TYPICAL BEAM ELEVATION

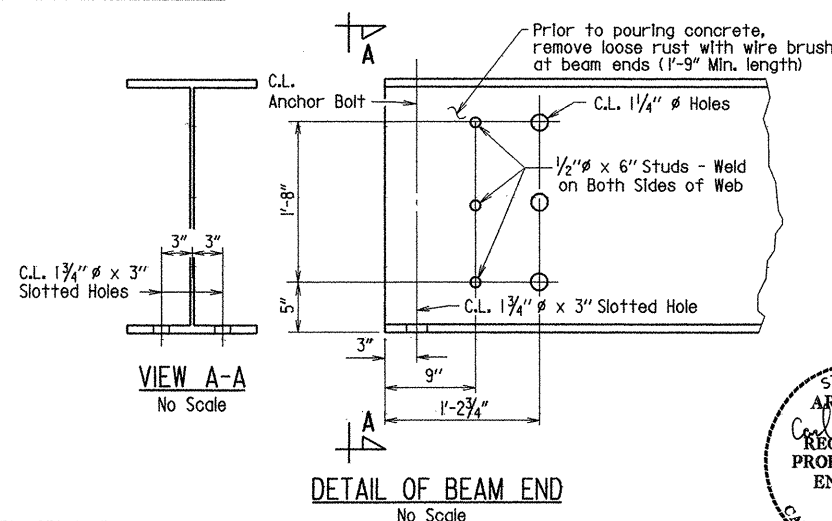


FLANGE SPICE
TOP AND BOTTOM
No Scale

DETAILS OF FIELD SPICE

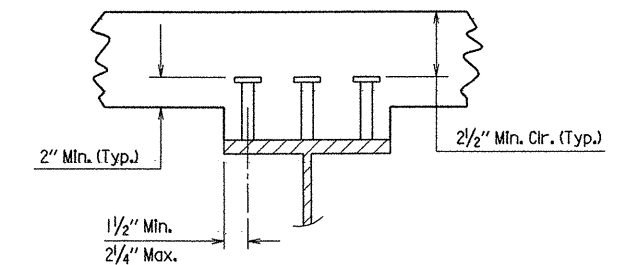
WEB SPICE
No Scale

All Field Splice Plates shall be AASHTO M270, Gr. 50W
All Field Splice Bolts shall be 7/8" H.S. Bolts
All Field Splice Bolt Holes shall be 15/16" ϕ



VIEW A-A
No Scale

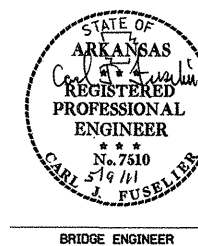
DETAIL OF BEAM END
No Scale



Stud Shear Connectors shown shall be 7/8" ϕ 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" ϕ studs may be used in place of the 7/8" ϕ studs shown, at the ratio of 1.361 - 3/4" ϕ studs in place of one 7/8" ϕ stud. 7/8" ϕ studs will be used as basis for measurement of structural steel in shear connectors. Maximum stud spacing = 24"

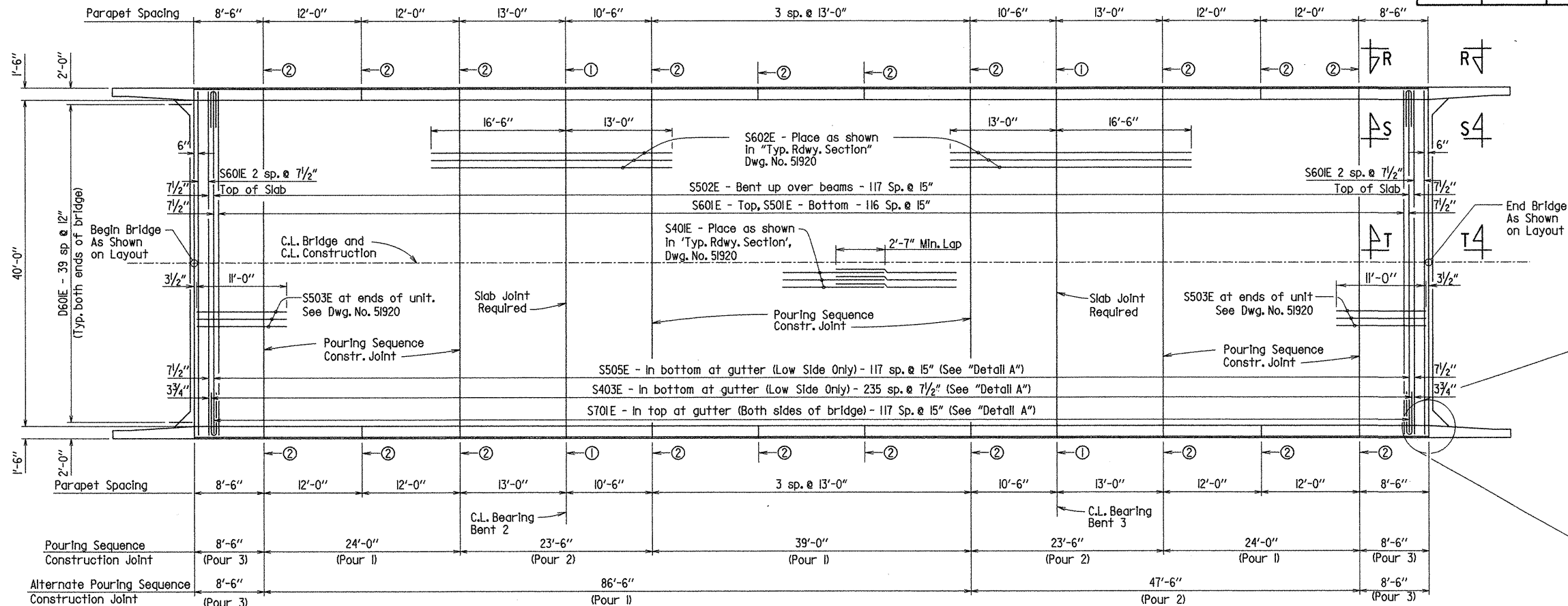
SHEAR CONNECTOR DETAIL
No Scale

NOTE:
Bolted Field Splices may be eliminated or Shop Welded Splices substituted with the approval of the Engineer. Payment will be made on the basis of plan quantities.

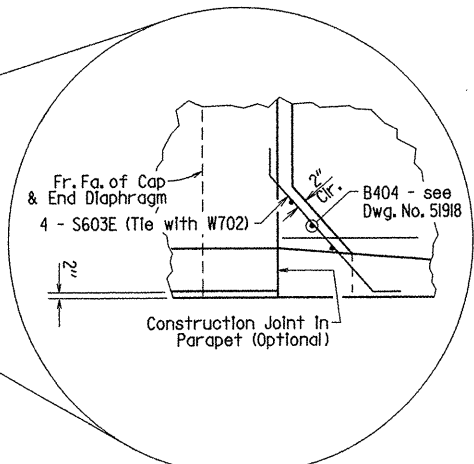


SHEET 2 OF 5
DETAILS OF 150'-0"
INTEGRAL W-BEAM UNIT
McHENRY CREEK
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
DRAWN BY: RBR DATE: 2-25-11 FILENAME: b060352_sl.dgn
CHECKED BY: CMW DATE: 3/31/11 SCALE: 1/8" = 1'-0" or as shown
DESIGNED BY: RBR DATE: 2/11
BRIDGE NO. 07210 DRAWING NO. 51921

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.		060352	36	83
				07210		SPAN DETAILS		51922



- ① C.L. Full Depth Parapet Joint (1/4\"/>

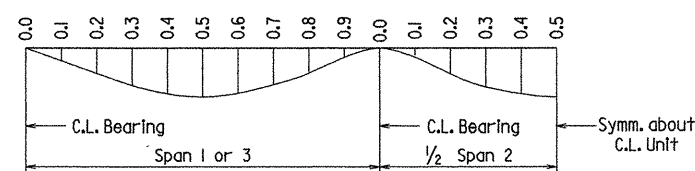


NOTE:
For "VIEW R-R", "VIEW S-S" and "SECTION T-T" see Dwg. No. 51924

TABLE OF DEAD LOAD DEFLECTIONS (INCHES)

Span	Point of Deflection	Structural Steel		Structural Steel + Slab		Structural Steel + Slab + Parapet	
		Interior	Exterior	Interior	Exterior	Interior	Exterior
1 or 3	0.0	0.000	0.000	0.000	0.000	0.000	0.000
	0.1	0.014	0.013	0.115	0.097	0.116	0.099
	0.2	0.026	0.023	0.210	0.117	0.213	0.182
	0.3	0.034	0.030	0.272	0.229	0.277	0.237
	0.4	0.036	0.032	0.293	0.247	0.299	0.257
	0.5	0.034	0.030	0.274	0.230	0.280	0.239
	0.6	0.027	0.024	0.219	0.184	0.223	0.190
	0.7	0.018	0.016	0.142	0.120	0.143	0.121
	0.8	0.008	0.007	0.062	0.052	0.060	0.049
	0.9	0.000	0.000	0.004	0.003	0.001	-0.002
1/2 Span 2	0.0	0.000	0.000	0.000	0.000	0.000	0.000
	0.1	0.014	0.013	0.115	0.097	0.129	0.199
	0.2	0.038	0.033	0.303	0.255	0.335	0.306
	0.3	0.061	0.054	0.490	0.413	0.538	0.490
	0.4	0.077	0.069	0.624	0.525	0.683	0.620
	0.5	0.083	0.074	0.672	0.565	0.735	0.666

Table is symmetrical about C.L. Unit

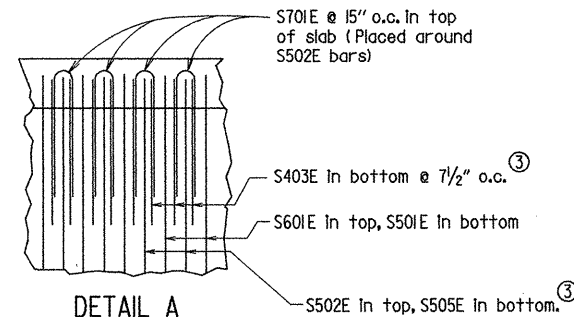


DEAD LOAD DEFLECTIONS DIAGRAM (TYP.)

NOTE:
Camber for Dead Load Deflection plus Vertical curve $\pm 1/4$ \"/>

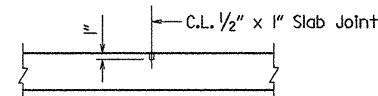
REINFORCING PLAN & DECK POURING SEQUENCE

Note: Required slab joints and pouring sequence joints shall align with parapet open joints at the gutter line.



DETAIL A
No Scale

③ S403E and S505E placed in overhang on low side only to accommodate future expansion of roadway. For additional details see "Section A-A" (Dwg. No. 51920)



SLAB JOINT DETAIL
No Scale

Use 1/2\"/>

Note: Pours with the same number may be placed simultaneously or separately. All Pours (1) must be placed before Pours (2) can be placed. All Pours (2) must be placed before Pours (3). 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 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 Engineer for any deviations from the pouring sequence shown.

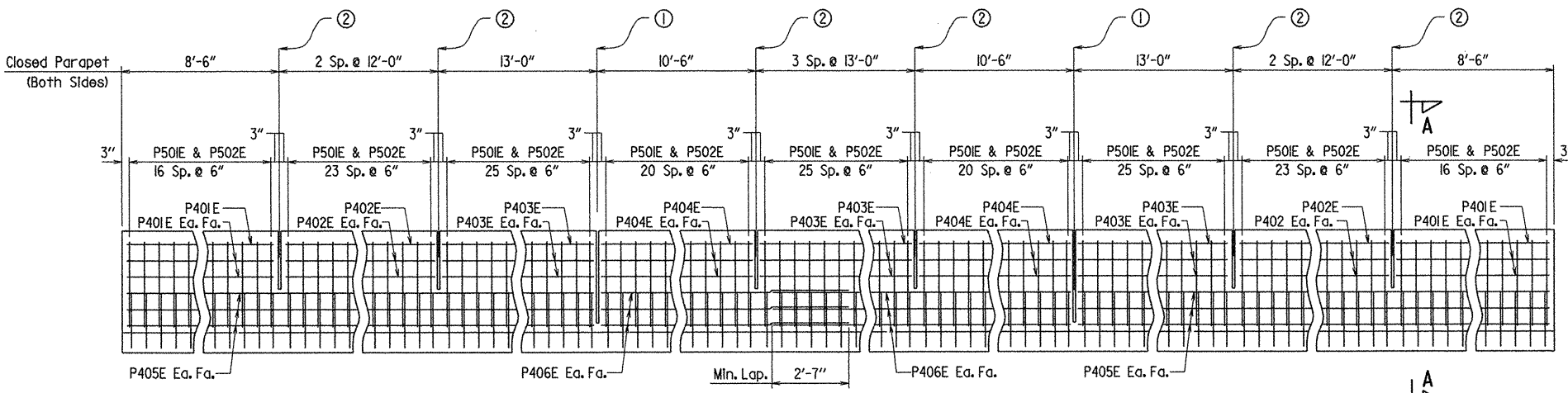


BRIDGE ENGINEER

SHEET 3 OF 5
DETAILS OF 150'-0\"/>

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

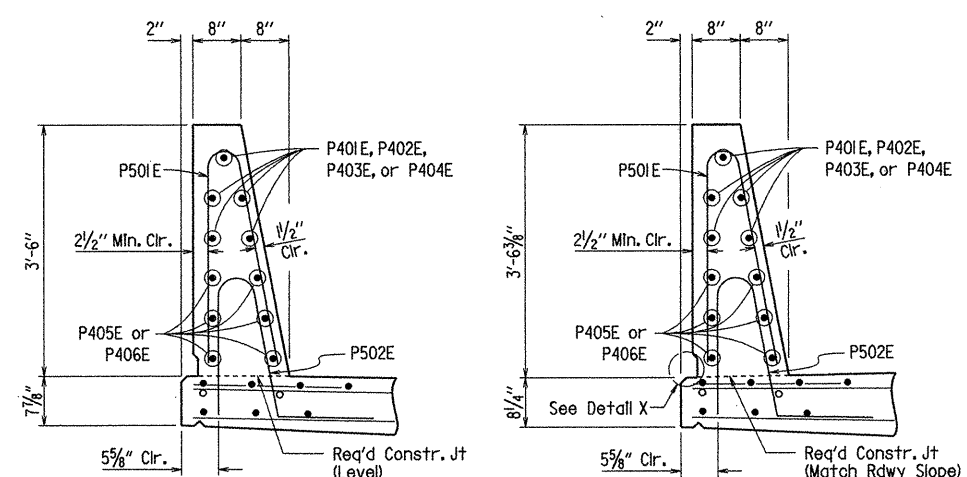
DRAWN BY: RBR DATE: 2-28-11 FILENAME: b060352.sldgn
CHECKED BY: CAL DATE: 3/31/11 SCALE: 1/8\"/>



① C.L. Full-Depth Parapet Joint (1/4" to 1" Max.) as shown in "Reinforcing Plan & Deck Pouring Sequence" Dwg. No. 51762. Stop 4" from top of slab.

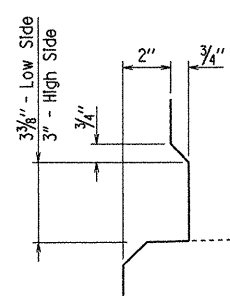
② C.L. Partial-Depth Parapet Joint (1/4" to 1" Max.) as shown in "Reinforcing Plan & Deck Pouring Sequence" Dwg. No. 51762. Stop 1'-6" from top of slab.

DETAILS OF PARAPET RAIL
Scale: 3/8" = 1'-0"

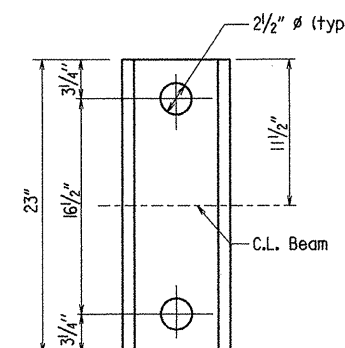


SECTION A-A
High Side
Scale: 3/4" = 1'-0"

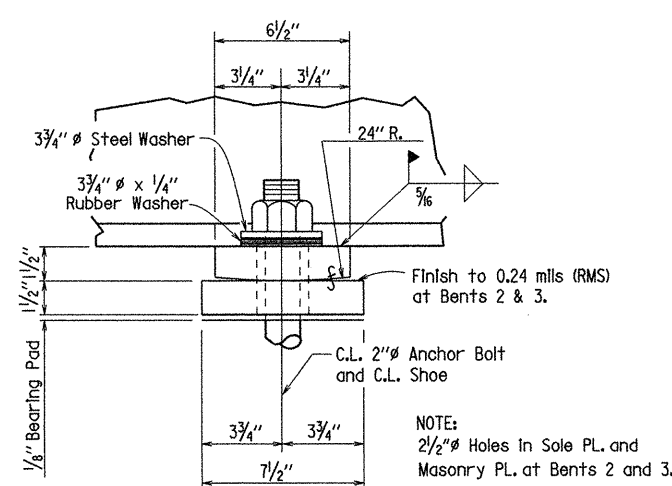
SECTION A-A
Low Side
Scale: 3/4" = 1'-0"



DETAIL X
Scale: 1 1/2" = 1'-0"



PLAN TYPE "B" SPECIAL SHOE
BENTS: 2 and 3
NO SCALE

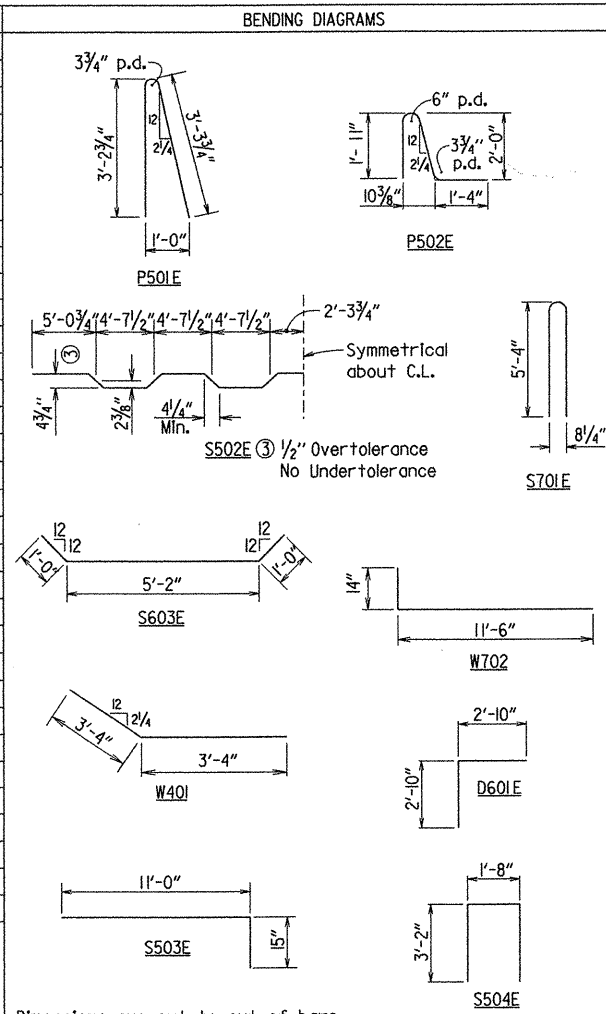


ELEVATION TYPE "B" SPECIAL SHOE
BENTS: 2 and 3
NO SCALE

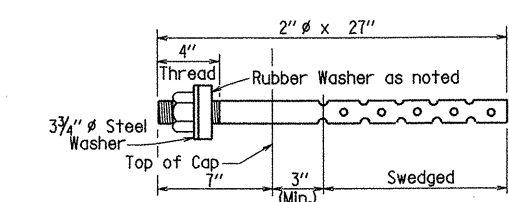
NOTE: Plates for Type "B" Special Shoes shall be M270, GR. 50W.

MARK	NO. REQ'D	LENGTH	P.D.
P401E	20	8'-2"	Str.
P402E	40	11'-8"	Str.
P403E	50	12'-8"	Str.
P404E	20	10'-2"	Str.
P405E	24	45'-2"	Str.
P406E	24	31'-2"	Str.
P501E	604	6'-8"	3 3/4"
P502E	604	5'-4"	3 3/4"
S401E	452	39'-8"	Str.
S402E	18	42'-8"	Str.
S403E	236	4'-6"	Str.
S501E	117	42'-8"	Str.
S502E	118	43'-6"	3"
S503E	92	12'-2"	2 1/2"
S504E	88	7'-10"	2 1/2"
S505E	118	4'-6"	Str.
S601E	123	42'-8"	Str.
S602E	92	29'-6"	Str.
S603E	16	7'-2"	4 1/2"
S701E	236	11'-0"	6 1/2"
R401	32	9'-8"	Str.
R402	32	2'-0"	Str.
R601	32	6'-8"	Str.
R602	12	5'-0"	Str.
W401	20	6'-8"	2"
W402	20	6'-8"	Str.
W701	12	11'-6"	Str.
W702	48	12'-6"	5 1/4"
D601E	80	5'-6"	4 1/2"

NOTE: Bars designated with an "E" suffix shall be epoxy coated.



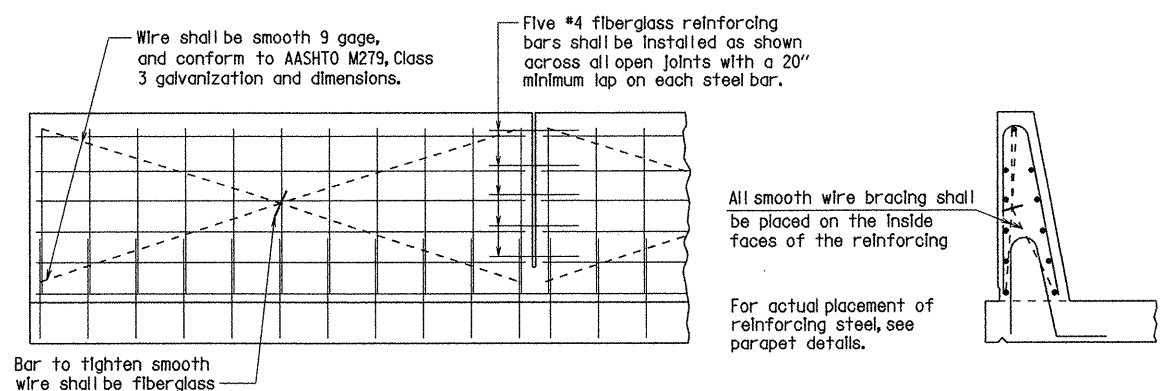
Dimensions are out to out of bars.



ANCHOR BOLT DETAIL FOR INTERMEDIATE BENTS

BENTS: 2 and 3
NO SCALE

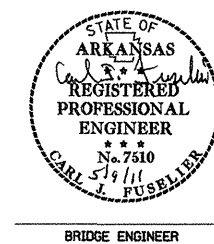
NOTES: Anchor Bolts, Nuts and Washers to be according to subsection 807.07. Indentations shall be circular with rounded bottoms and staggered as shown above. Rubber washer shall be closed cell expanded rubber, meeting the requirements of ASTM D1056 - 85 2B2 E2, and shall be considered subsidiary to the item of "Structural Steel in Beam Spans (M270, Gr. 50W)". Anchor bolts shall be Grade 55.



DETAILS OF OPTIONAL SLIP FORMING OF CONCRETE PARAPET RAIL
No Scale

All panels shall be braced as required 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.

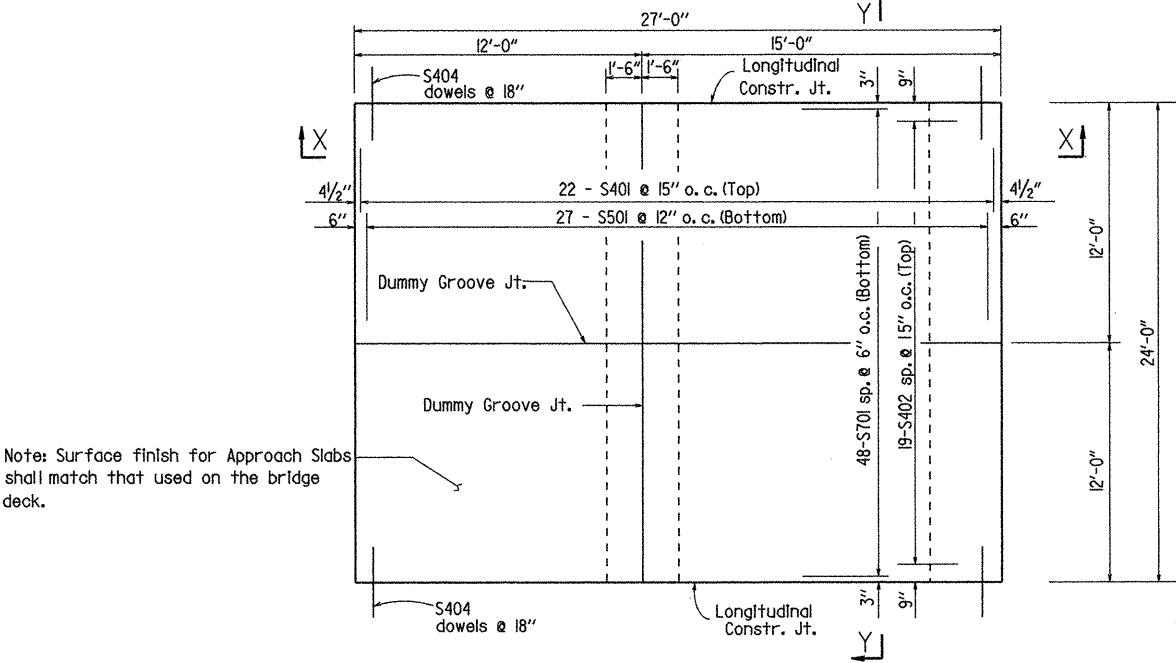
The extruded parapet shall conform to the horizontal and vertical lines shown on the plans or as directed by the Engineer and shall present a smooth, uniform appearance and texture.



BRIDGE ENGINEER

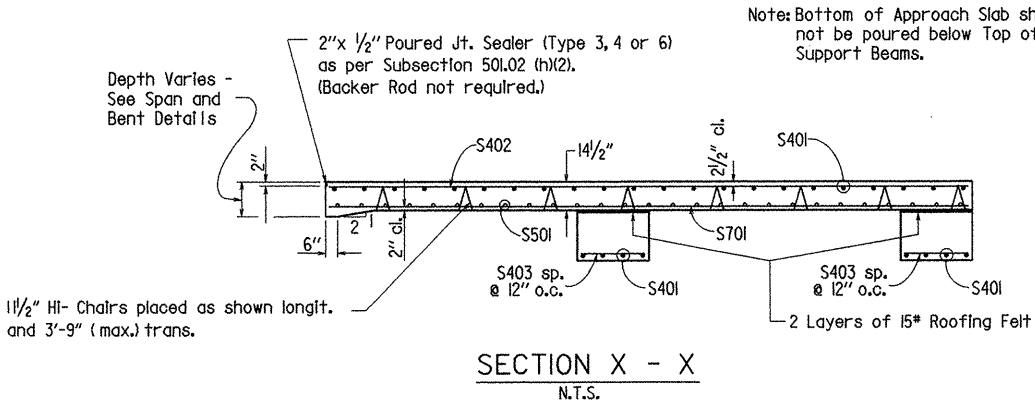
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DESIGNED BY: <u>RBR</u>	DATE: <u>2-11</u>	
BRIDGE NO. 07210	DRAWING NO. 51924	

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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				JOB NO.		060352	37	83
				07210	APPROACH SLAB		51925	

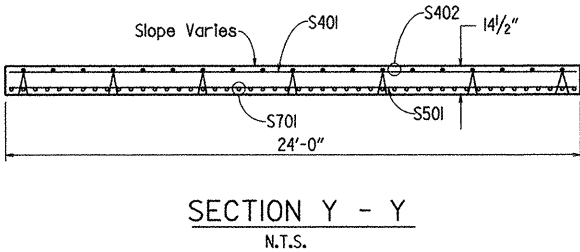


Note: Surface finish for Approach Slabs shall match that used on the bridge deck.

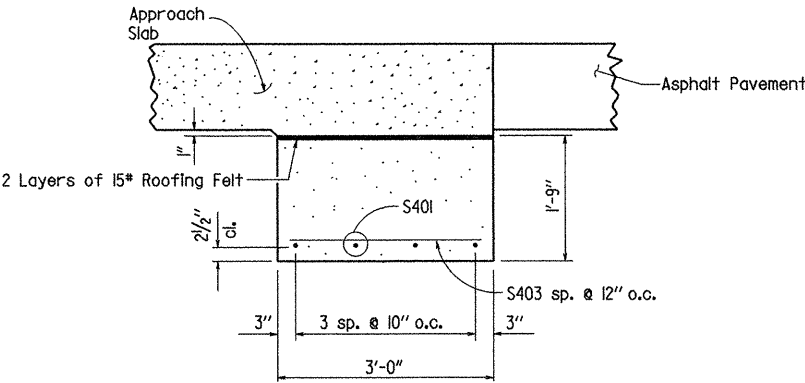
PLAN - APPROACH SLAB
N.T.S.



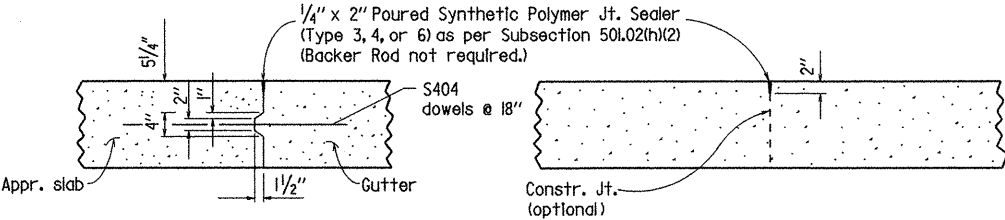
SECTION X - X
N.T.S.



SECTION Y - Y
N.T.S.



DETAILS OF SUPPORT
AT EXPANSION JOINT
3/4" = 1'-0"



DETAILS OF LONGITUDINAL
CONSTRUCTION JOINT
3/4" = 1'-0"

DETAILS OF DUMMY
GROOVED JOINT
3/4" = 1'-0"

BAR LIST

Mark	No. Req'd.	Length
S401	30	23'-8"
S402	19	26'-8"
S403	48	2'-8"
S404	36	3'-0"
S501	27	23'-8"
S701	48	26'-8"

TABLE OF QUANTITIES FOR ONE TYPE SPECIAL APPROACH SLAB

Slab Width	Reinforcing Steel (lbs.)	Concrete (Cu. Yds.)
24'-0"	4,260	38.80

GENERAL NOTES

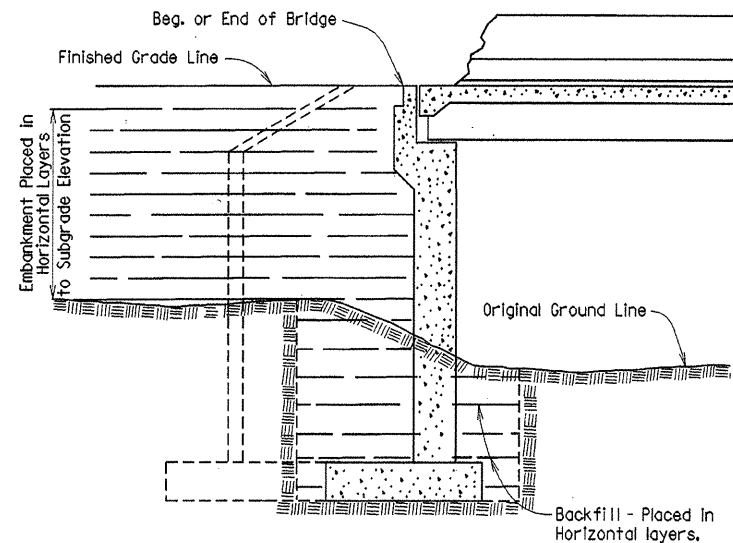
Concrete shall be Class S (AE) (f'c = 4,000 psi).
Reinforcement Steel shall conform to AASHTO M31 or M53, Grade 60 (fy = 60,000 psi).
Approach Slabs will be measured and paid for in accordance with Section 504 of the Standard Specifications.

DETAILS OF APPROACH SLAB (TYPE SPECIAL I)

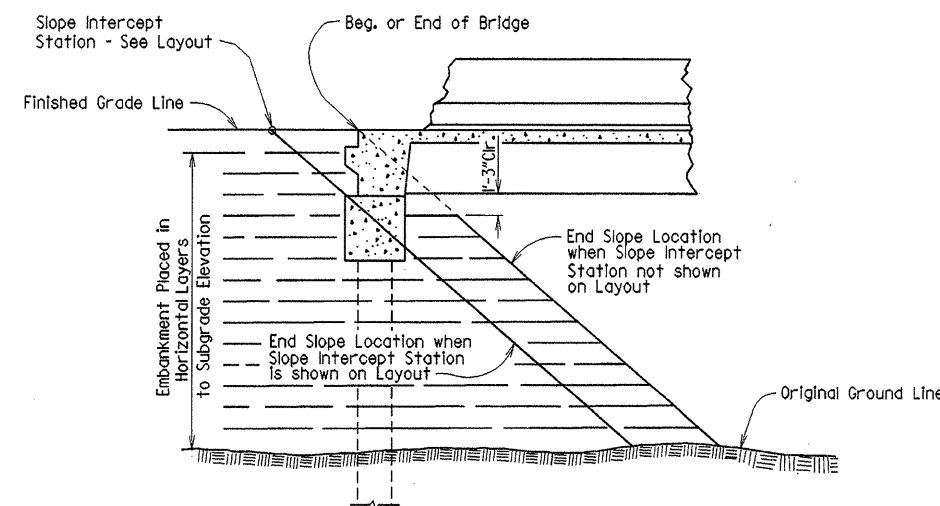
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
DRAWN BY: RBR DATE: 3-8-11 FILENAME: b060352.as.dgn
CHECKED BY: CSJ DATE: 4/24/11 SCALE: As Shown
DESIGNED BY: Std. DATE: BRIDGE NO. 07210 DRAWING NO. 51925



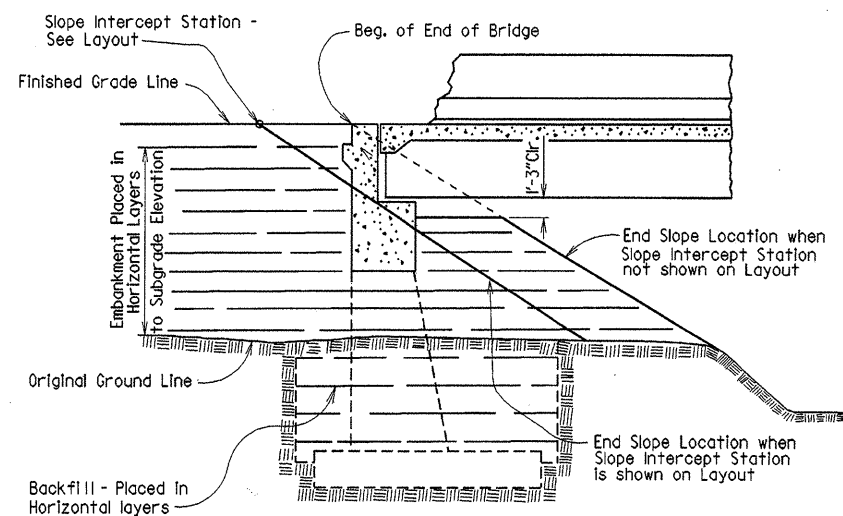
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04-10-2003				6	ARK.		40	
				JOB NO.				
				①		EMBANKMENT & BACKFILL 1888A		



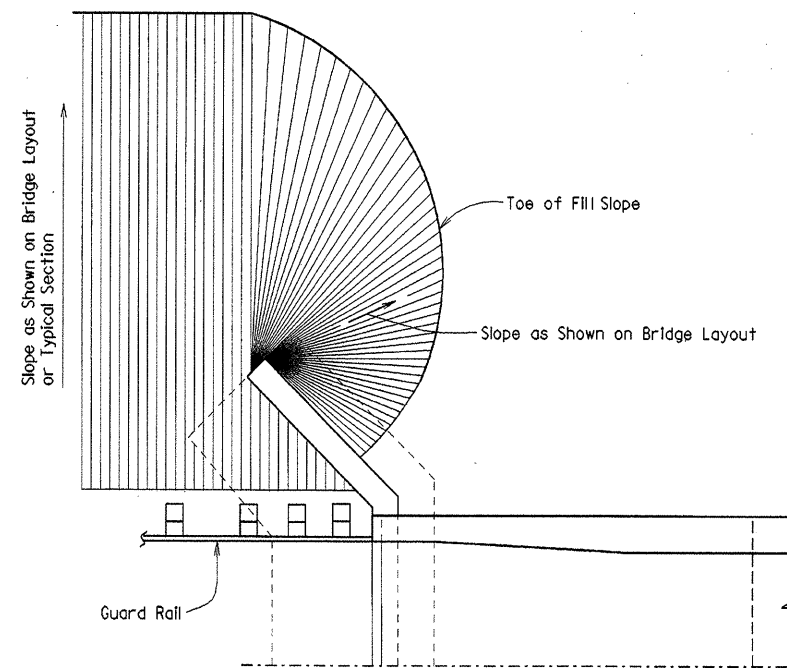
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL
AT VERTICAL WALL ABUTMENTS



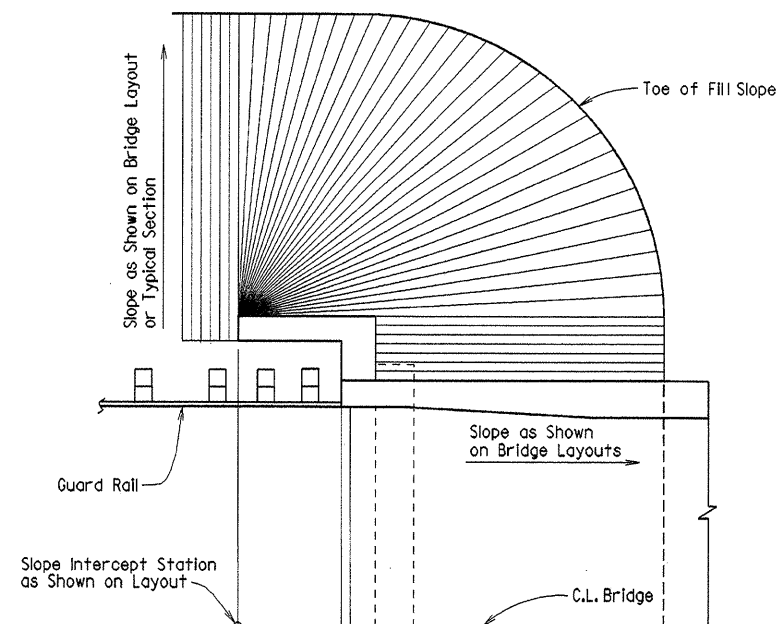
EMBANKMENT CONSTRUCTION AT SPILL-THROUGH
PILE END BENTS



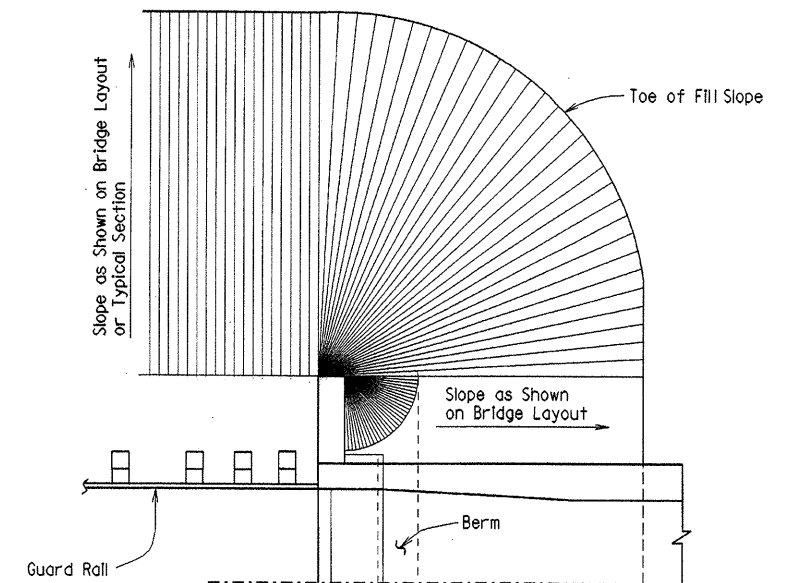
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL
AT SPILL-THROUGH END BENTS



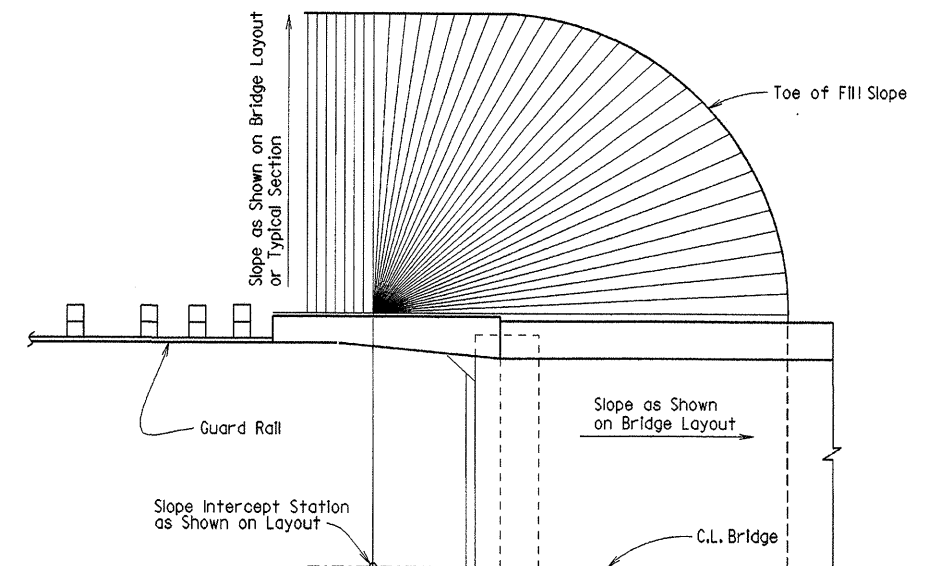
VERTICAL WALL ABUTMENTS



SPILL-THROUGH END BENTS WITH TURNBACK WING



SPILL-THROUGH END BENTS WITH STUB WING



SPILL-THROUGH END BENTS WITH TRANSITION WING

GENERAL NOTES

The Bridge End Embankment shall be defined as a section of embankment, not less than 20 feet long adjacent to the bridge end, together with the side slopes and slopes under the bridge end including around the end of wingwalls. Embankment adjacent to structures shall be constructed in 4 inch horizontal layers (loose measure) and compacted by the use of mechanical equipment to the satisfaction of the Engineer. Refer to subsections 210.09, 210.10 and 801.08 of the Specifications for construction requirements.

Revised and redrawn MJT 04-10-2003
Chk'd. By: CJF 04-10-2003

METHOD OF DETERMINING FILL SLOPE LOCATION AT BRIDGE ENDS

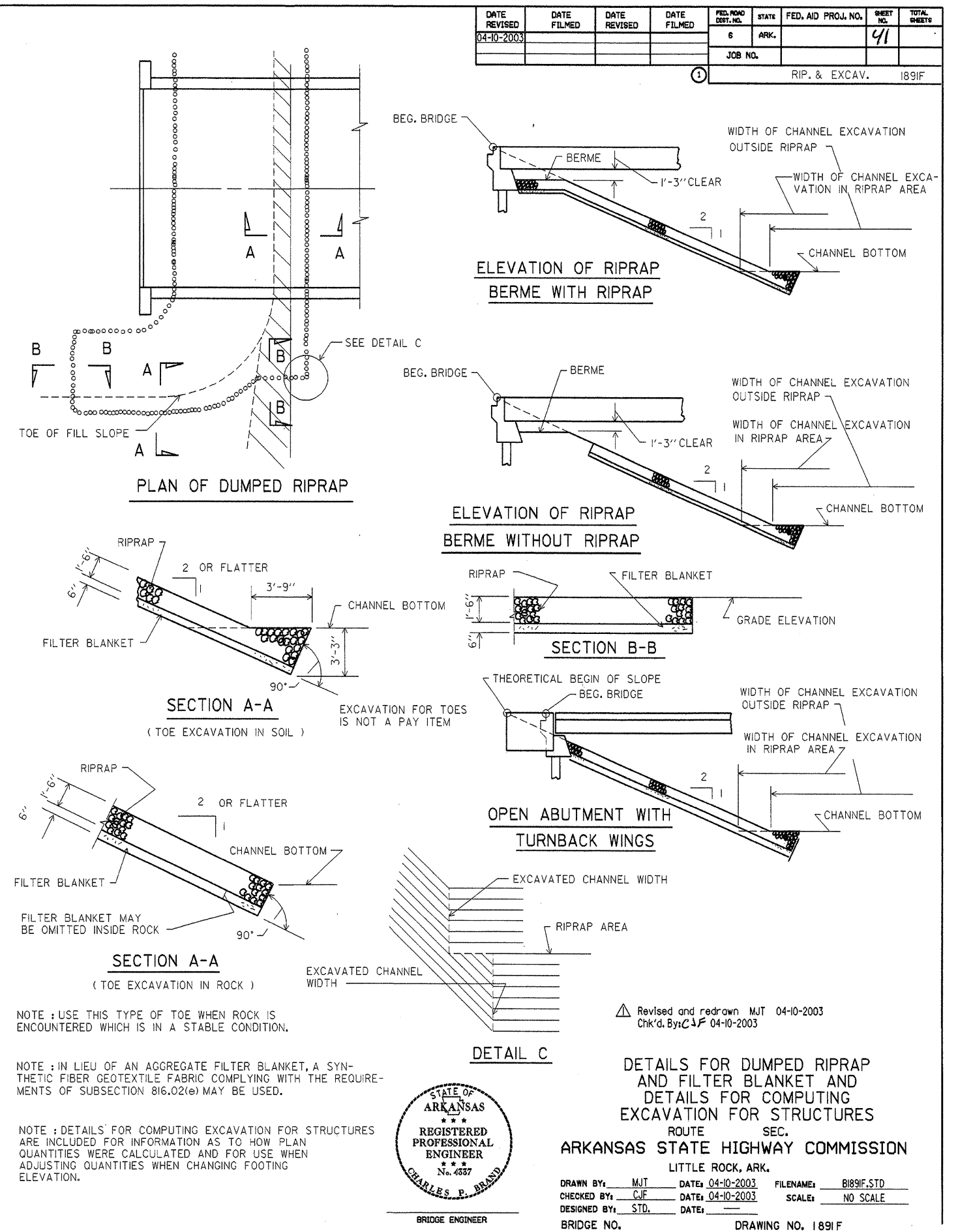
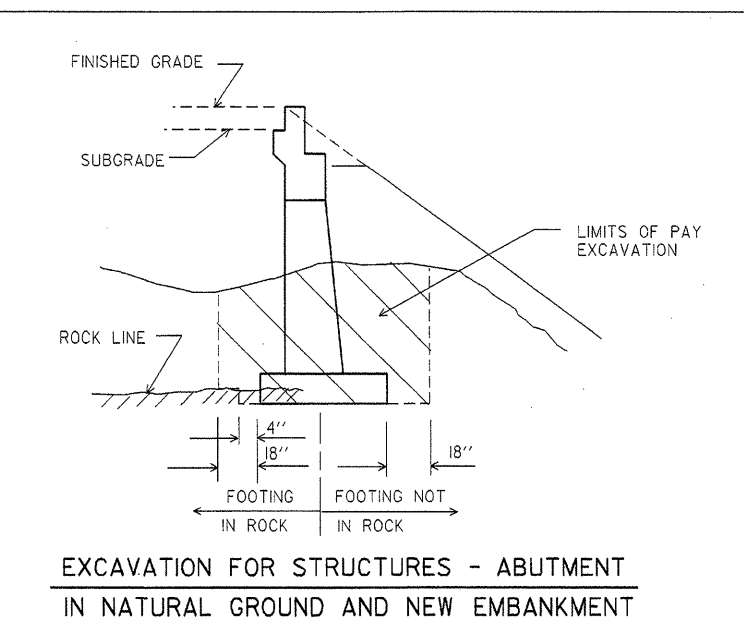
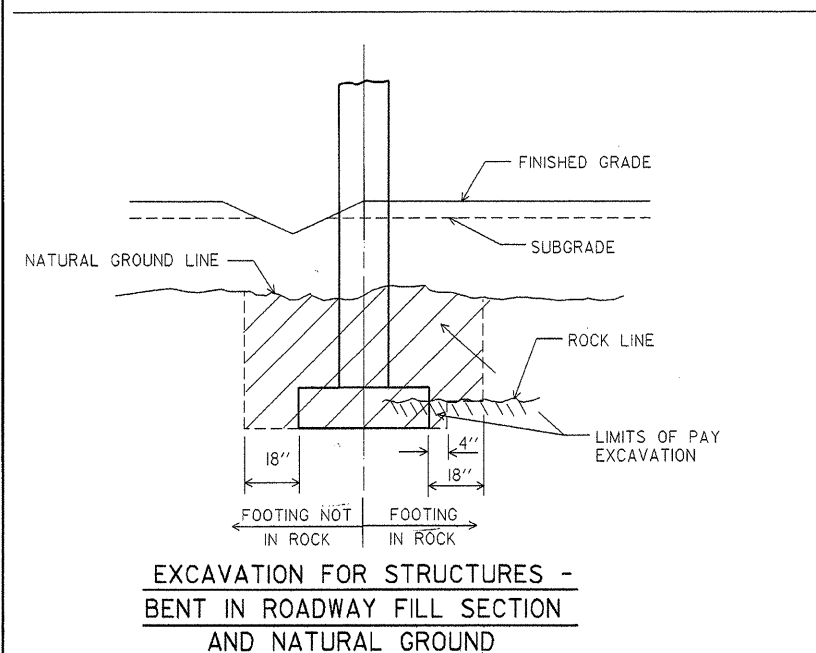
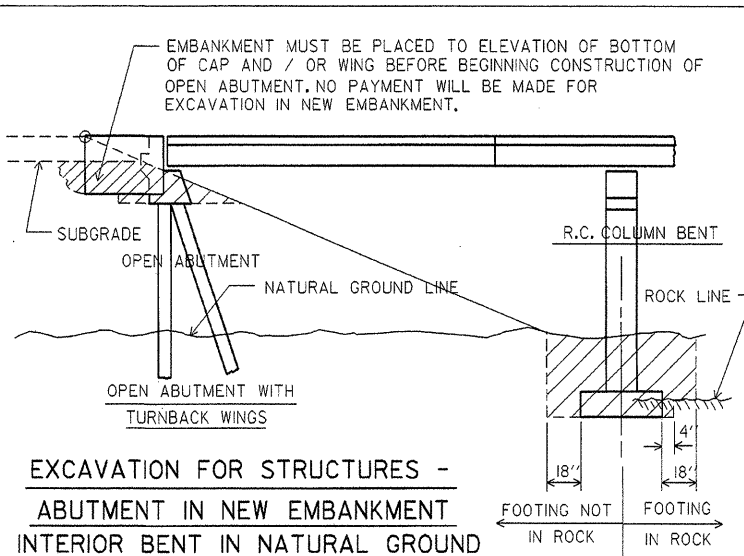
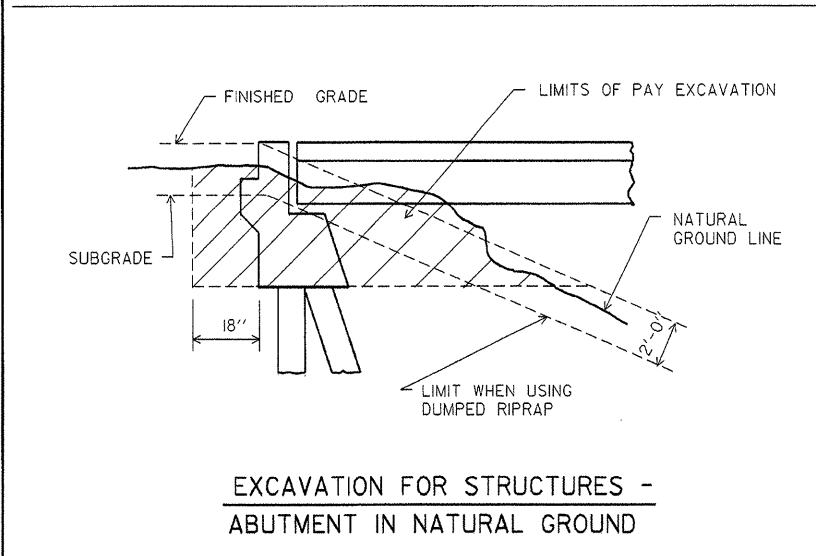
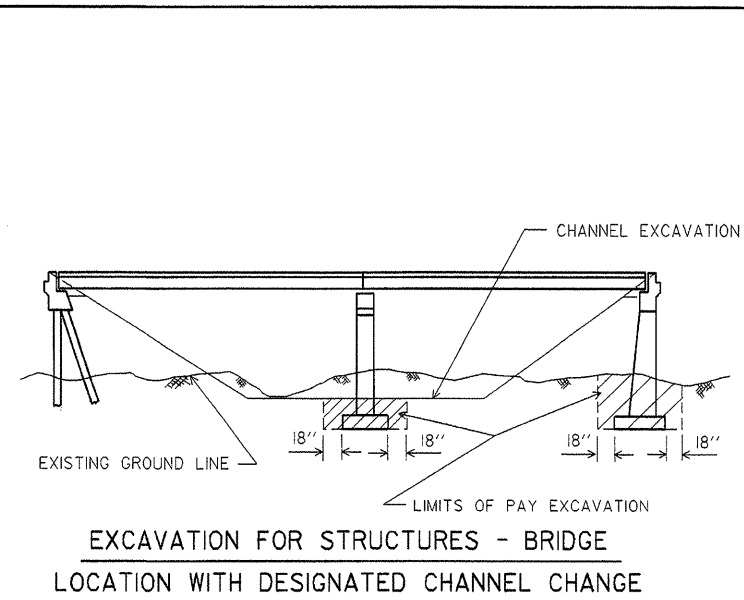
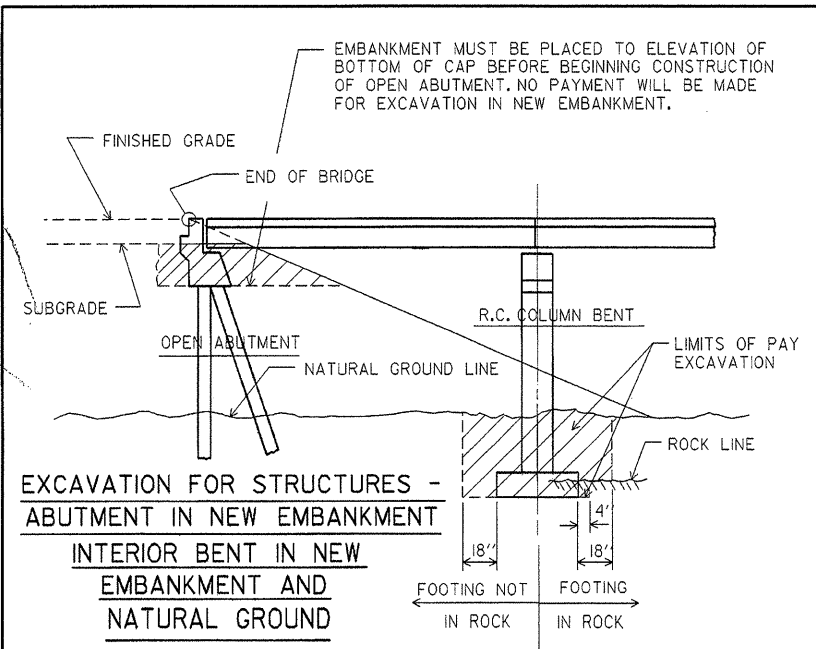


BRIDGE ENGINEER

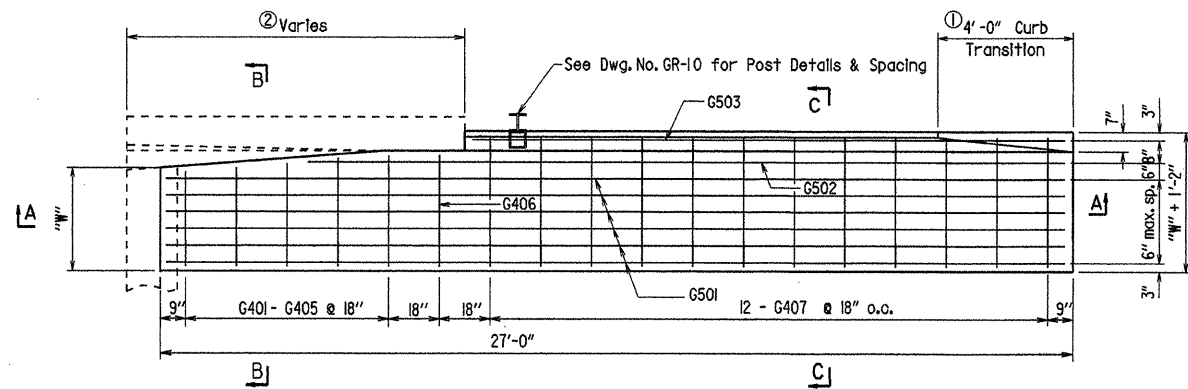
EMBANKMENT CONSTRUCTION AND BACKFILL AT BRIDGE ENDS

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

DRAWN BY: MJT DATE: 04-10-2003 FILENAME: B1888A.STD
CHECKED BY: CJF DATE: 04-10-2003 SCALE: NO SCALE
DESIGNED BY: STD DATE: BRIDGE NO. DRAWING NO. 1888A

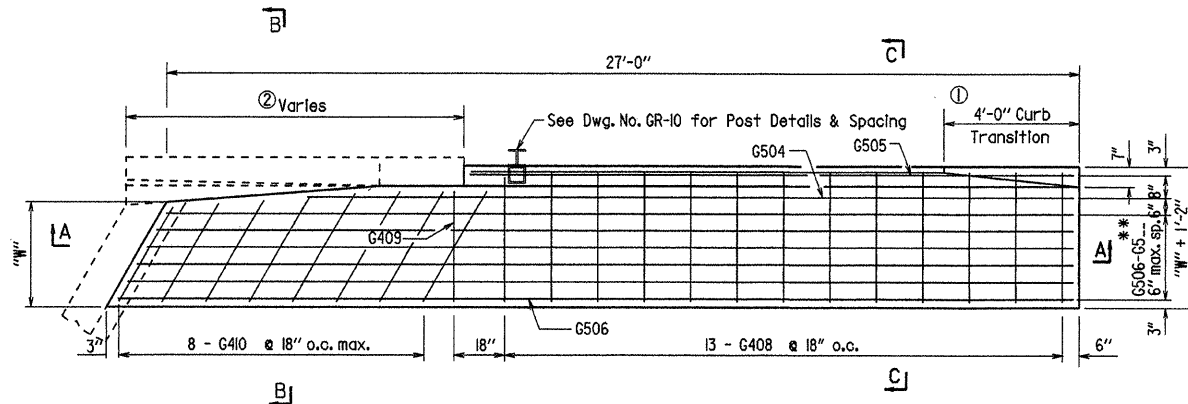


DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
4-10-2003				6	ARK.		42	
07-14-2010								
				JOB NO.				
				1	TYPE B GUTTERS			2016B

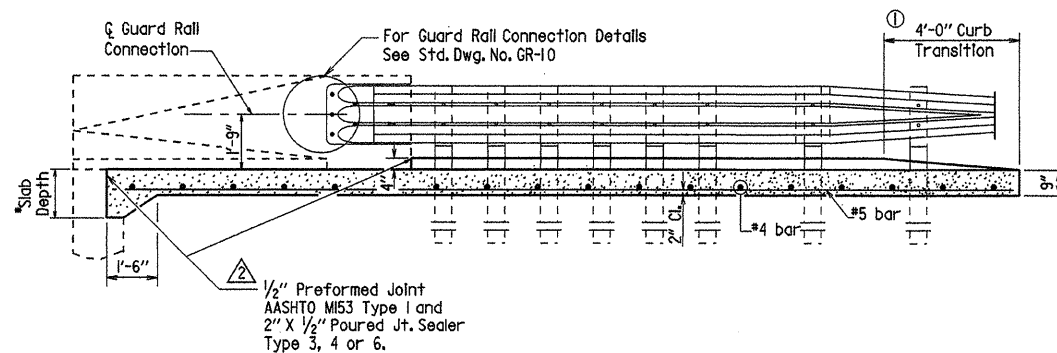


HALF PLAN OF APPROACH GUTTERS FOR SQUARE BRIDGE

② Length varies. See End Bent details for actual length. Quantities shown are for 10'-0" Transition Rail.



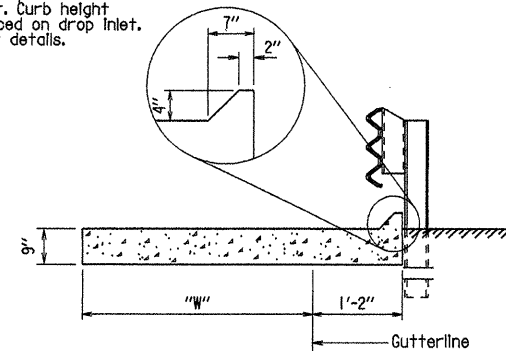
PLAN OF APPROACH GUTTERS FOR SKEWED BRIDGE



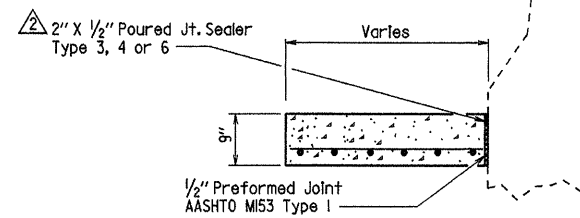
SECTION A - A

* Slab Depth Varies - See Span and Bent Details

① Construct gutter curb with height-transition as shown. If drop inlet is not placed at end of gutter.
Construct gutter curb full height (no height-transition) if drop inlet is placed at end of gutter. Curb height transition placed on drop inlet. See drop inlet details.



SECTION C - C
N.T.S.



SECTION B - B
N.T.S.

*** BAR LIST ②
TYPE B GUTTER

Mark	No. Required for Width "W"				Length	Square or Skewed
	3'-0"	4'-0"	6'-0"	8'-0"		
G401 - G405	1 each	1 each	1 each	1 each	"W" - 3" to "W" + 3"	Square
G406	1	1	1	1	"W" + 3"	Square
G407	12	12	12	12	"W" + 10"	Square
G408	13	13	13	13	"W" + 10"	Skewed
G409	1	1	1	1	"W" + 3"	Skewed
G410	8	8	8	8	*	Skewed
G501	6	8	12	16	26'-8"	Square
G502	1	1	1	1	22'-2"	Square
G503	1	1	1	1	17'-8"	Square
G504	1	1	1	1	*	Skewed
G505	1	1	1	1	*	Skewed
G506 - G5...	1 each	1 each	1 each	1 each	*	Skewed

* Bar Lengths vary with Skew.

** G512 for "W" = 3'
G514 for "W" = 4'
G518 for "W" = 6'
G522 for "W" = 8'

*** Special bar list required when skew angle exceeds 40° for W = 8'; 50° for W = 6'; or 60° for W = 4'.

QUANTITIES FOR ONE SQUARE APPROACH GUTTER

"W" Width (ft.)	Reinforcing Steel (lbs.)	Concrete (cubic yards)
3	252	3.00
4	319	3.75
6	459	5.25
8	590	6.75

GENERAL NOTES

Concrete shall be Class S or Class S(AE) or mixture used for Portland Cement Concrete Pavement.

Reinforcement Steel shall conform to AASHTO M31 or M53, Grade 60 (fy = 60,000 psi).

Approach Gutters will be measured and paid for in accordance with Section 504 of the Standard Specifications.

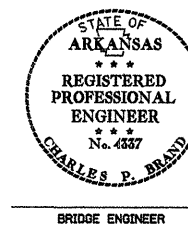
△ Revised and redrawn 4-10-2003. By KDH CK, B: CUF 4-10-2003

△ Added joint sealer type & revised transition rail length 07-14-2010 by MJT Checked by: CUF 07-14-2010

DETAILS OF STANDARD TYPE B APPROACH GUTTERS

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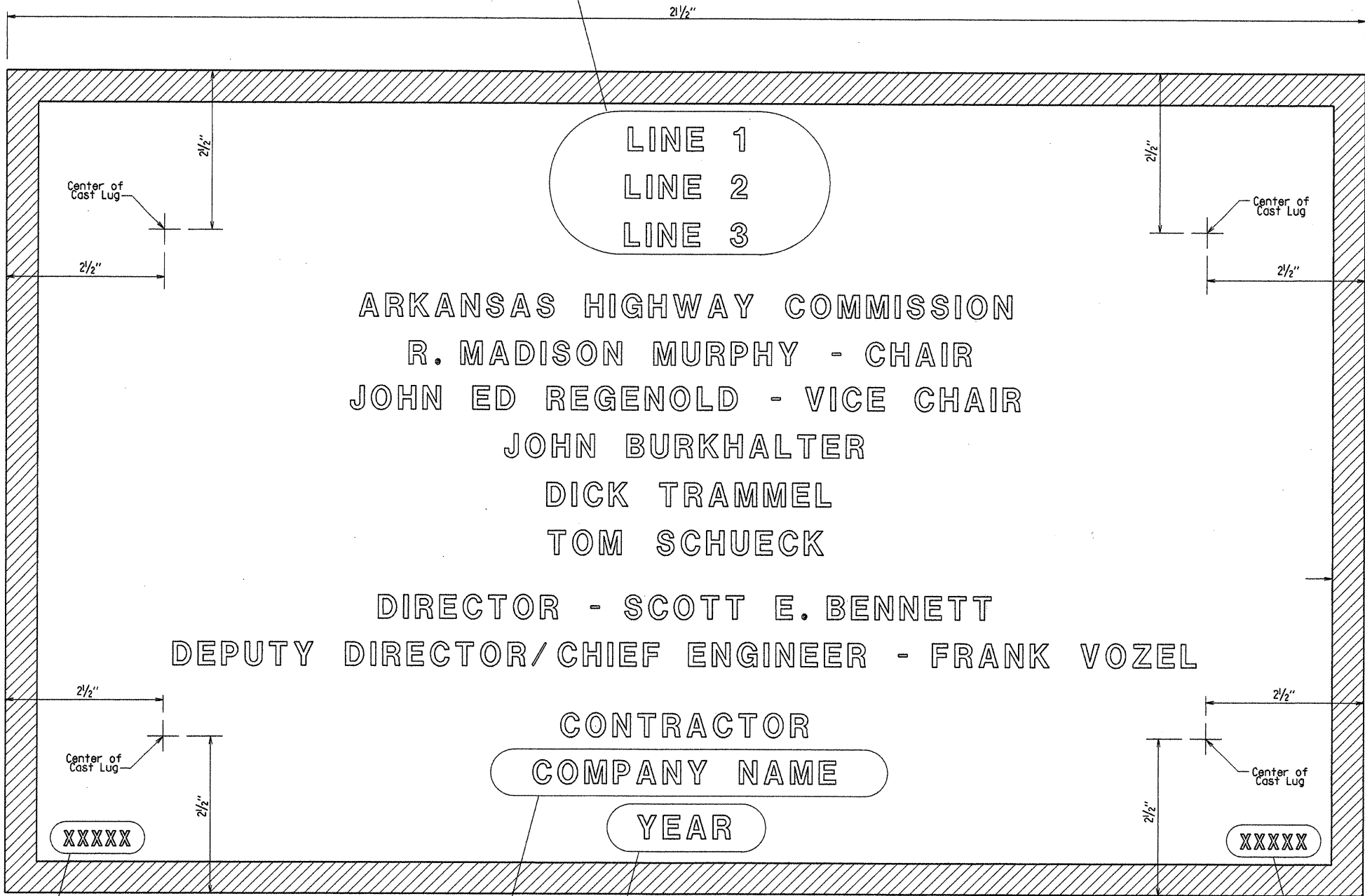
DRAWN BY: KDH DATE: 4-10-2003 FILENAME: B2016B.STD
CHECKED BY: CUF DATE: 4-10-2003 SCALE: 3/8" = 1'-0"
DESIGNED BY: STD DATE: BRIDGE NO. DRAWING NO. 2016B



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
9-8-11				6	ARK.		43	
				JOB NO.				
				NAME PLATE	2387			

The name of the bridge as shown on the plans shall be placed on Lines 1 - 3 using 1/8" raised letters and numerals 3/8" high.

Line 1	Example 1 Red River	Example 2 Southern Railroad	Example 3 Saline River	Example 4 Highway 5
Line 2	Relief			
Line 3		Overpass	Relief	



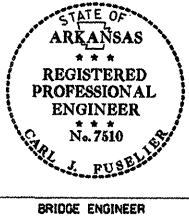
Place the design live loading here using 1/8" raised letters and numerals 1/4" high. Examples: HS 20 HL-93

Place the Year in which Contract was awarded here using 1/8" raised numerals 3/8" high. Example: 2001

Place the name of the company awarded the construction contract here using 1/8" raised letters and numerals 3/8" high. Example: ABCD CONSTRUCTION, INC.

Place the Bridge number here using 1/8" raised letters and numerals 1/4" high. Examples: A1234 05432

TYPICAL BRIDGE NAME PLATE

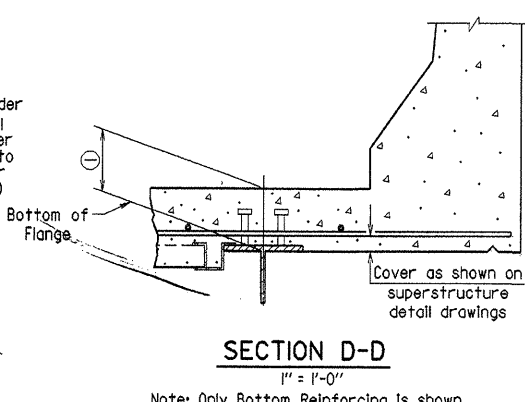
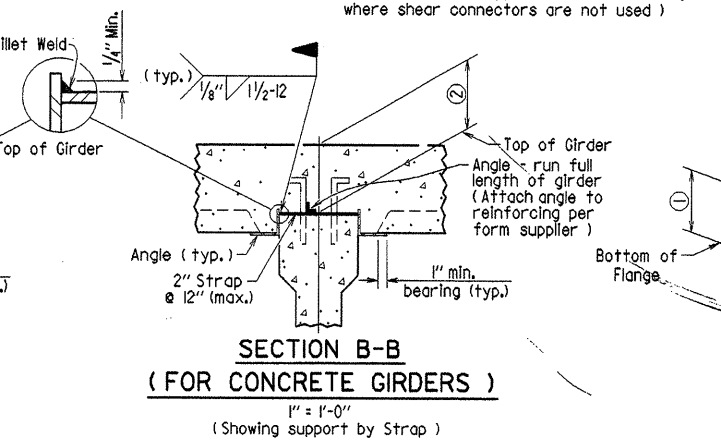
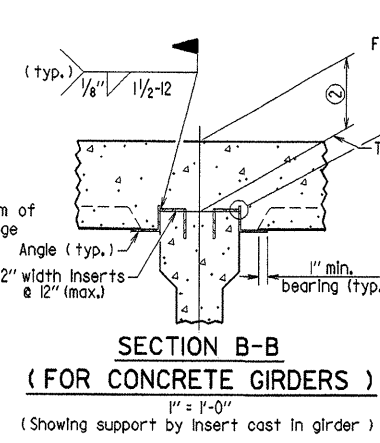
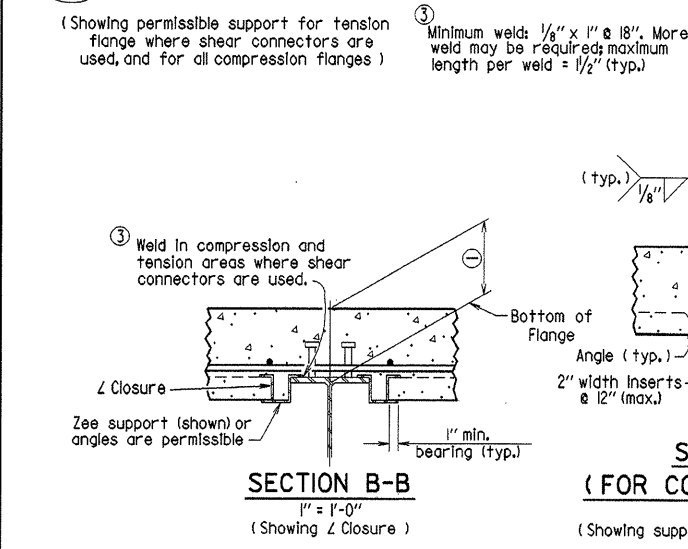
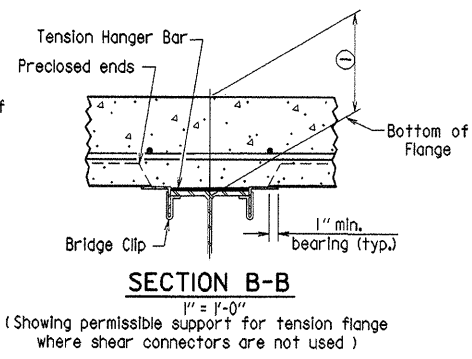
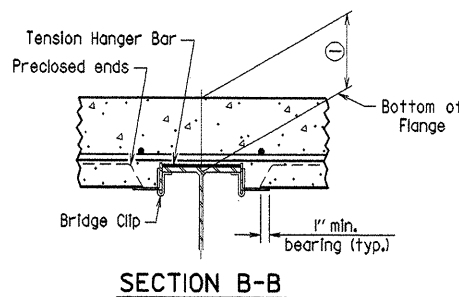
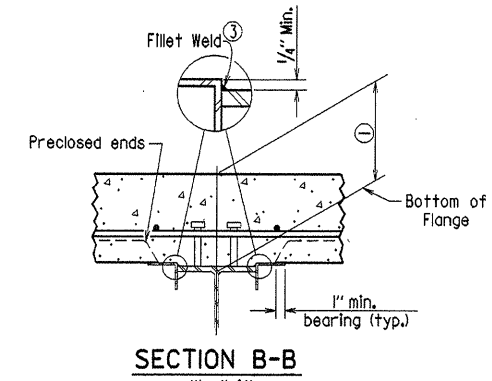
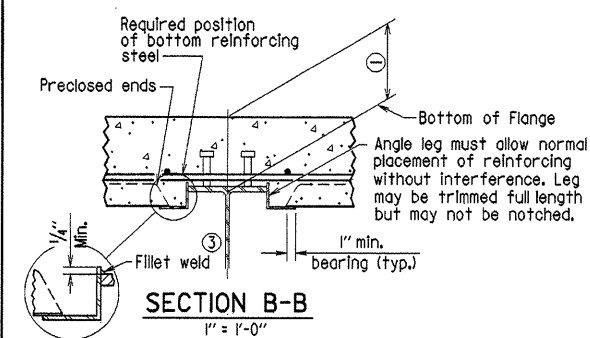
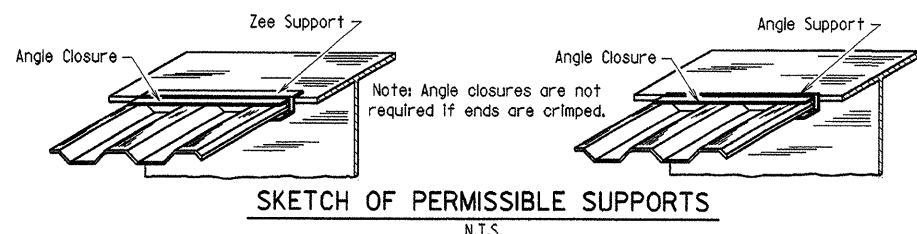
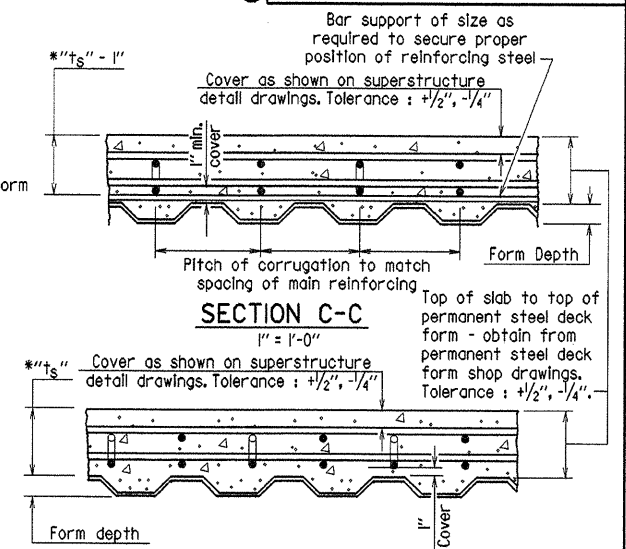
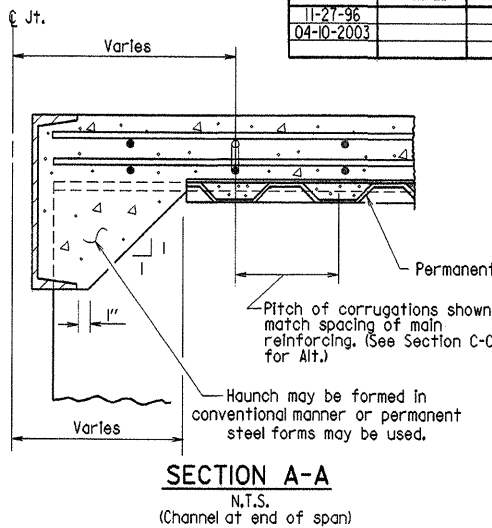
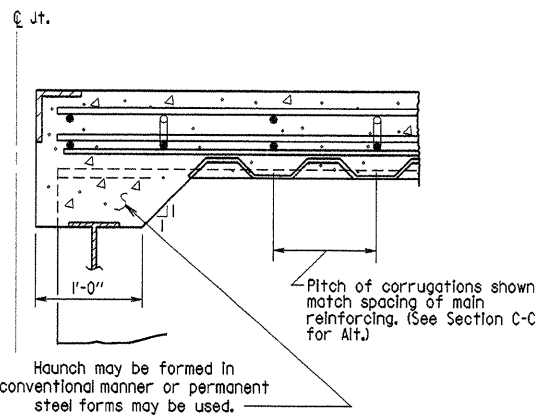
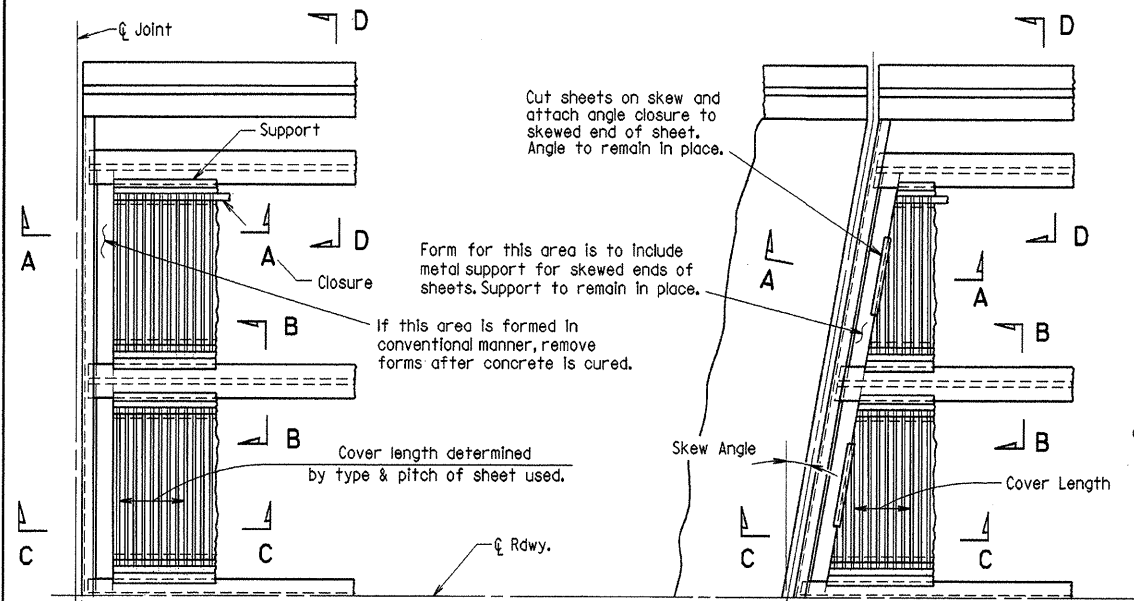


DETAILS OF STANDARD TYPE D
BRIDGE NAME PLATE
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

Revised and Redrawn
9-8-11 KDH Checked By: CRE

DRAWN BY: KDH DATE: 9-8-11 FILENAME: B2387.STD
CHECKED BY: CRE DATE: 9-8-11 SCALE: 1"=0" = 1'-0" OR AS NOTED
DESIGNED BY: STD. DATE:
BRIDGE NO. DRAWING NO. 2387

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
11-27-96						6	ARK.		44	
04-10-2003										
JOB NO.										
BR. DECK FORMS 14991										



GENERAL NOTES

Permanent steel deck forms may be used at the Contractor's option and shall be at no additional cost to the Department. Such use may result in changes to the dead load deflection of the girder. Any cost for adjustments due to a change in the dead load deflection will be borne by the Contractor. Payment for deck concrete and structural steel will not be increased due to use of permanent steel deck forms.

Permanent steel deck forms shall conform to subsection 802.14(b) of the Standard Specifications. Detailed plans, including detailed calculations and manufacturer's technical brochure, shall be submitted to and approved by the Bridge Engineer before work of forming the bridge deck is started.

Welding of form supports to the tension flange of steel girders will be permitted only in areas where shear connectors are used. When welding is not allowed, the method of fastening Z or L supports to the flange must be approved by the Bridge Engineer.

Form sheets shall be fastened to supporting members and to each other with galvanized metal screws sufficient in size and number to provide a secure attachment. Alternate methods of attachment must be approved by the Bridge Engineer.

When the pitch of form corrugations match the reinforcing spacing, transversely align form sheets across the bridge to maintain the correct orientation of continuous reinforcing bars in the corrugations.

Bar support rods, when used, shall be sized and spaced to adequately support the bottom reinforcing mat at the required position.

High chairs shall be sized to support the top mat of reinforcing at the proper position. High chairs shall be placed at locations shown on the detail drawings.

Specifications: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2003 Edition), with applicable supplemental specifications and special provisions.



DETAILS OF PERMISSIBLE TYPE PERMANENT STEEL BRIDGE DECK FORMS FOR STEEL & CONCRETE GIRDER SPANS

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: MJT DATE: 10-17-96
 CHECKED BY: CPB DATE: 10-17-96
 DESIGNED BY: STD. DATE: —

BRIDGE NO. DRAWING NO. 14991

Revised for 2003 AHTD Construction Specifications and CPB Seal, MJT 04-10-2003
 Chk'd. By: c2f 04-10-2003

