

For R/W & T.C.E. Data, see Rdwy. plans.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	
				6	ARK.		
				JOB NO.		030323	2
				07172		LAYOUT	

GENERAL NOTES

BENCH MARK: Square cut in corner of exist. bridge, 141.3' left of Sta. 110+06.3, ELEV. 192.1.

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 the Construction Specifications.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications (Fourth Edition, Interim Revisions)

LIVE LOADING: HL93 SEISMIC PERFORMANCE ZONE: I

MATERIALS AND STRENGTHS:

Class 5 Concrete (superstructure) $f'_c = 4,000$ psi
 Class 5 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

② CONCRETE PILING: Piling in Bent Nos. 1 and 8 shall be 20" square precast concrete piles driven to a minimum ultimate bearing capacity of 207 tons per pile. Bent Nos. 2 thru 7 shall be 24" square precast concrete and shall be driven to a minimum ultimate bearing capacity of 248 tons per pile and to a tip elevation of 155.0 or lower. All piling shall be driven with an approved air, steam, or diesel pile driver. Piling in end bents shall be driven after embankment to bottom of cap is in place. Lengths of piling shown are assumed for estimating quantities only. Actual lengths shall be determined in the field. Drive one 45' test pile in Bent Nos. 1 and 8, and one test pile in Bent Nos. 3 and 6.

PREBORING: All piling in Bent Nos. 2 thru 7 shall be prebored to achieve minimum penetration. After the piles have been driven, the holes shall be backfilled in accordance with subsection 805.08a. Quantities of preboring shown are for purposes only. Actual size and length to be determined in the field by the Engineer. Backfill shall not be paid for directly, but shall be considered subsidiary to "Preboring". The Contractor shall be responsible for keeping prebored holes clear of debris prior to driving of piles and backfilling, which may require the use of casings or other methods. Temporary casings, if required, shall not be paid for but shall be considered subsidiary to the item "Preboring".

DRIVING SYSTEM: The driving system approval and ultimate bearing capacity determination for piling shall be based on the requirements of subsection 805.09b) "Method of Driving" (WEAP). It is estimated that a minimum rated hammer energy of 40,000 ft.-lbs. per blow will be required to obtain the ultimate bearing capacity of all bents.

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

DETAIL DRAWINGS:

End Bents 50864 & 50865
 Intermediate Bents 50866
 Elasticity Bearings 50867 & 50869
 474'-0" Continuous W-Beam Unit 50870 & 50875
 Concrete Piling 50876
 Type Special Approach Gutters 50875A

EXISTING BRIDGE: Existing Bridge No. A0470 (L.M. 8.60) is 478' long (14 spans) and 21' wide and consists of a concrete deck on steel beams supported by concrete piling.

REMOVAL AND SALVAGE: Existing bridge No. A0470 shall be removed in accordance with Section 205. Exposed timber piling from the previous structure shall also be removed to a minimum depth of 2' below natural ground. All material from the existing bridge shall become the property of the Contractor except the following which shall remain the property of the State:

Guardrail Beams from Bridge Approaches
 Existing Riprap at Bent No. 8
 Two Steel Beam Spans including Diaphragms

The Contractor shall notify the Department prior to removal to determine the location of guardrail pieces and spans deemed salvageable. The Contractor shall provide storage and on site loading onto AHTD equipment for removal of the guardrail pieces and spans. Salvaged riprap shall be delivered by the Contractor to a stockpile location determined by the Department. Payment for this work shall be considered incidental to "Removal of Existing Bridge Structure (Site No. 1)".

TEMPORARY BRIDGE: Construct a minimum 30' long temporary bridge approximate downstream with a minimum deck elev. of 191.6. See Roadway Plans for actual grade and alignment. The temporary bridge shall have a minimum roadway width of 30' and a minimum live load capacity of 105. A minimum span length of 30' shall be the main channel. See Section 603 and drawing nos. 2463-2465 for standard bridge details. If timber piling and pile timber are used on this temporary bridge structure, the materials shall be treated with a preservative according to Standard Specifications. A timber deck is not allowed.

MAINTENANCE OF TRAFFIC: For maintenance of traffic, see Roadway Plans.

SHEET 1 OF 2

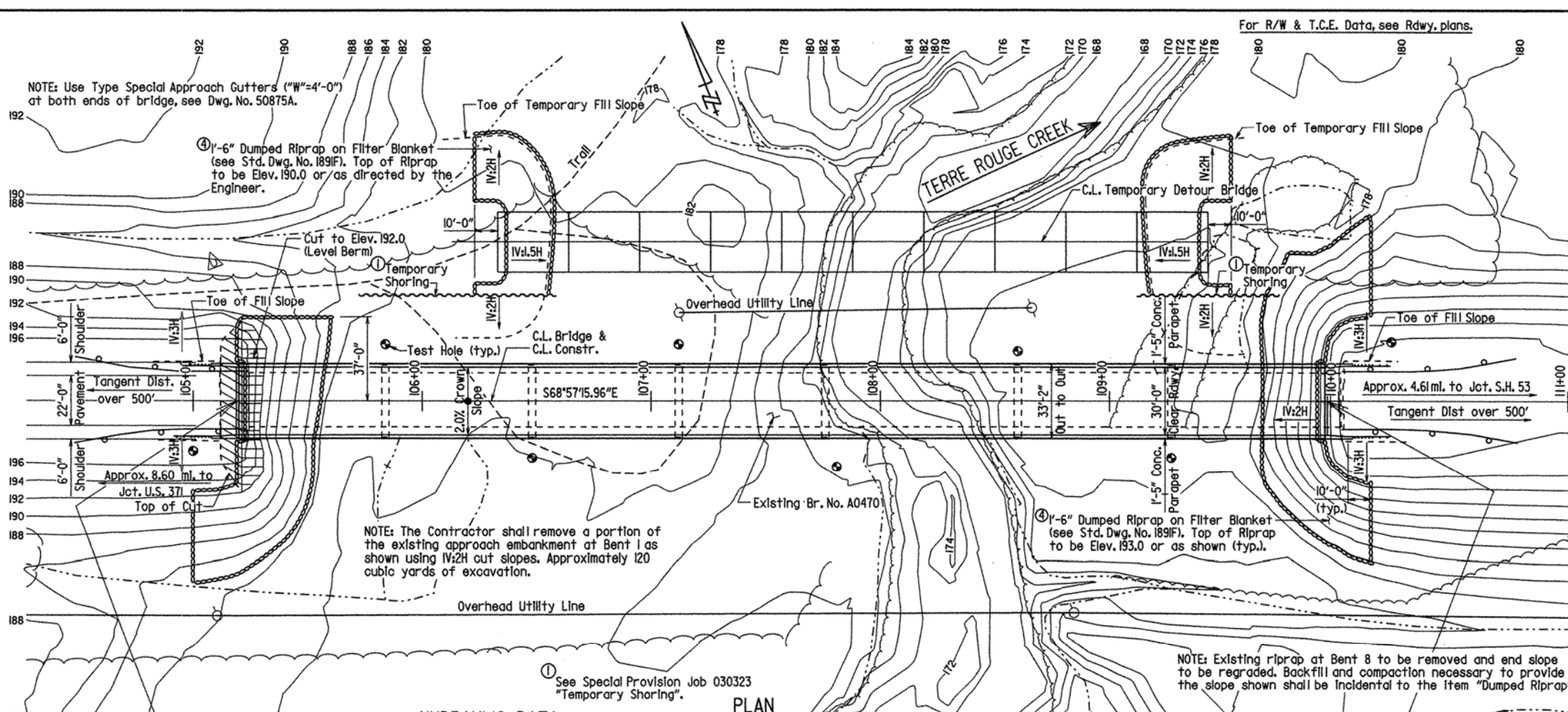
LAYOUT OF BRIDGE OVER
 TERRE ROUGE CREEK
 TERRE ROUGE CREEK STR. & APPRS.
 NEVADA COUNTY
 ROUTE 24 SEC. 5

ARKANSAS STATE HIGHWAY COMMISSION
 LITTLE ROCK, ARK.

DRAWN BY: KMY DATE: 1-30-09 FILENAME: b030323/L
 CHECKED BY: TEH DATE: 9-28-09 SCALE: 1" = 30'-0"
 DESIGNED BY: KMY DATE: 1-09
 BRIDGE NO. 07172 DRAWING NO. 50862



BRIDGE ENGINEER



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.		030323	24	69
				07172		LAYOUT		50862

GENERAL NOTES

BENCH MARK: Square cut in corner of exist. bridge, 14.13' left of Sta. 110+01.63, Elev. 200.28.

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 the Construction Specifications.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications (Fourth Edition with 2008 Interim Revisions)

LIVE LOADING: HL93

SEISMIC PERFORMANCE ZONE: I

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) fy = 60,000 psi

Structural Steel (AASHTO M270, Gr. 36) Fy = 36,000 psi

Structural Steel (AASHTO M270, Gr. 50W) Fy = 50,000 psi

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

CONCRETE PILING: Piling in Bent Nos. 1 and 8 shall be 20" square precast concrete and shall be driven to a minimum ultimate bearing capacity of 207 tons per pile. Piling in Bent Nos. 2 thru 7 shall be 24" square precast concrete and shall be driven to a minimum ultimate bearing capacity of 248 tons per pile and to a tip elevation of 155.0 or lower. All piling shall be driven with an approved air, steam, or diesel hammer. Piling in end bents shall be driven after embankment to bottom of cap is in place. Lengths of piling shown are assumed for estimating quantities only. Actual lengths to be determined in the field. Drive one 45' test pile in Bent Nos. 1 and 8, and one 60' test pile in Bent Nos. 3 and 6.

PREBORING: All piling in Bent Nos. 2 thru 7 shall be prebored to achieve minimum penetration. After the piles have been driven, the holes shall be backfilled in accordance with subsection 805.08(a). Quantities of preboring shown are for bidding purposes only. Actual size and length to be determined in the field by the Engineer. Backfill shall not be paid for directly, but shall be considered subsidiary to the item "Preboring". The Contractor shall be responsible for keeping prebored holes free of debris prior to driving of piles and backfilling, which may require the use of temporary casings or other methods. Temporary casings, if required, shall not be paid for directly, but shall be considered subsidiary to the item "Preboring".

DRIVING SYSTEM: The driving system approval and ultimate bearing capacity determination for piling shall be based on the requirements of subsection 805.09(b) "Method B - Wave Equation Analysis (WEAP)". It is estimated that a minimum rated hammer energy of 40,000 ft. lbs. per blow will be required to obtain the ultimate bearing capacity at all bents.

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.

DETAIL DRAWINGS:

End Bents 50864 & 50865

Intermediate Bents 50866

Elastomeric Bearings 50868 & 50869

474'-0" Continuous W-Beam Unit 50870 - 50875

Concrete Piling 50867

Type Special Approach Gutters 50875A

EXISTING BRIDGE: Existing Bridge No. A0470 (L.M. 8.60) is 478' long (14 spans) and 28' wide and consists of a concrete deck on steel beams supported by concrete piling.

REMOVAL AND SALVAGE: Existing bridge No. A0470 shall be removed in accordance with Section 205. Exposed timber piling from a previous structure shall also be removed to a minimum depth of 2' below natural ground. All material from the existing bridge shall become the property of the Contractor except the following which shall remain the property of the State:

Guardrail Beams from Bridge Approaches

Existing Riprap at Bent No. 8

Two Steel Beam Spans including Diaphragms

The Contractor shall notify the Department prior to removal to determine the specific guardrail pieces and spans deemed salvageable. The Contractor shall provide temporary storage and on site loading onto AHTD equipment for removal of the guardrail and structural steel from the site. Salvaged riprap shall be delivered by the Contractor to a stockpile location determined by the Department. Payment for this work shall be considered incidental to "Removal of Existing Bridge Structure (Site No. 1)".

TEMPORARY BRIDGE: Construct a minimum 310' long temporary bridge approximately 70' downstream with a minimum deck elev. of 191.6. See Roadway Plans for actual detour grade and alignment. The temporary bridge shall have a minimum roadway width of 20' and a minimum live load capacity of H15. A minimum span length of 31' shall be used over the main channel. See Section 603 and drawing nos. 2463-2465 for standard temporary bridge details. 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. A timber deck is not allowed.

MAINTENANCE OF TRAFFIC: For maintenance of traffic, see Roadway Plans.

FLOOD DESCRIPTION	FREQUENCY	DISCHARGE	*NATURAL WATER SURFACE ELEVATION	WATER SURFACE ELEV. WITH BACKWATER
	YEARS	CFS	FEET	FEET
Design	050	21,700	191.6	191.7
Base	0100	25,900	193.3	193.3
Extreme	0500	30,600	194.5	194.5
Overtopping	>0500	-	-	-

*Unconstricted water surface without structure or roadway approaches.
Drainage area = 232 square miles.
Historical H.W. = 192.1 ft.

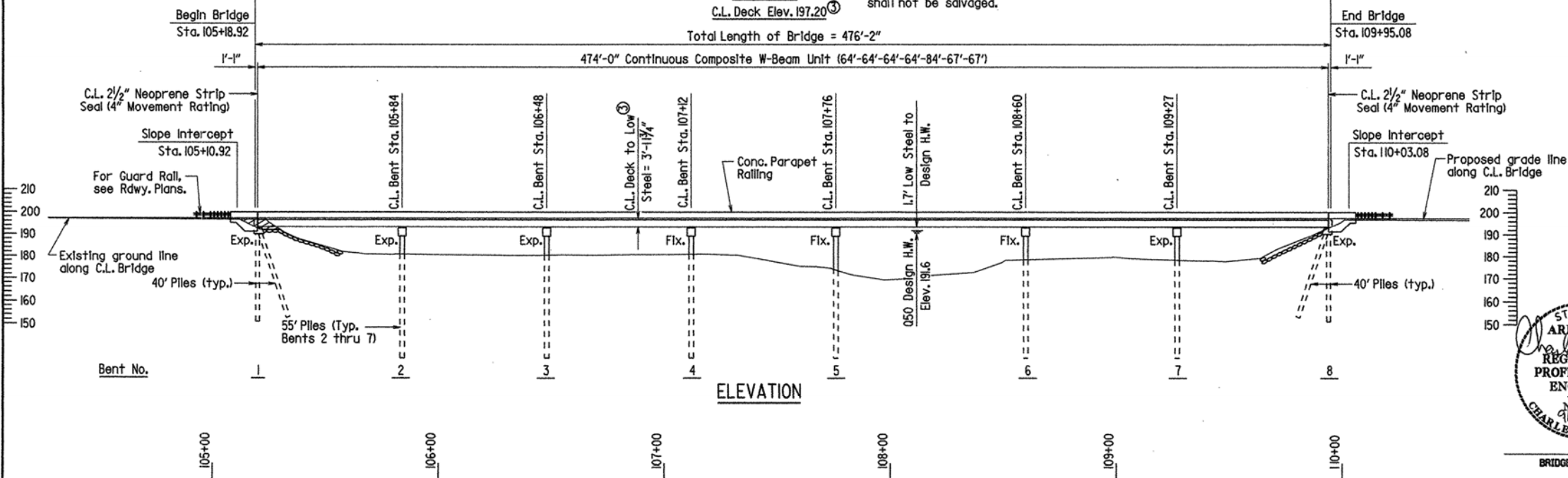
Level Grade
C.L. Deck Elev. 197.20

Total Length of Bridge = 476'-2"

474'-0" Continuous Composite W-Beam Unit (64'-64'-64'-64'-64'-67'-67')

- The proposed bridge shall be constructed to avoid interference with the existing piling. The Contractor shall verify measurements before driving any piling. Any adjustments necessary to fit the proposed bridge to the existing bridge location shall be submitted for the Engineer's approval.
- Measured at Working Point, see Dwg. No. 50870.
- Dumped riprap placed at the detour bridge shall be salvaged for use on the new bridge. This work shall not be paid for directly, but shall be considered incidental to the item "Dumped Riprap". Filter blanket shall not be salvaged.

Bent No(s)	C.L. Deck to Low Seat of Cap
2, 3 & 7	4'-6 3/4"
4	4'-3 1/2"
5 & 6	4'-4 1/2"



SHEET 1 OF 2

LAYOUT OF BRIDGE OVER

TERRE ROUGE CREEK

TERRE ROUGE CREEK STR. & APPRS. (S)

NEVADA COUNTY

ROUTE 24 SEC. 5

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KMY DATE: 1-30-09 FILENAME: b030323x1.LI.dgn

CHECKED BY: TEH DATE: 9-28-09 SCALE: 1" = 30'-0"

DESIGNED BY: KMY DATE: 1-09

BRIDGE NO. 07172 DRAWING NO. 50862

"N" VALUES

Sta. 105+00 - 22' Right of Center Line of Construction

4.8- 5.8, N=7
9.8- 10.8, N=6
15.5- 16.5, N=8
20.5- 21.5, N=22
25.5- 26.5, N=32
30.5- 31.5, N=32
35.5- 36.5, N=39
40.5- 41.5, N=42
45.5- 46.5, N=42
50.5- 51.5, N=40
55.5- 56.5, N=43
60.5- 61.5, N=43

Sta. 106+48 - 25' Right of Center Line of Construction

5.0- 6.0, N=6
10.0- 11.0, N=29
15.5- 16.5, N=26
20.5- 21.5, N=33
25.5- 26.5, N=37
30.5- 31.5, N=42
35.5- 36.5, N=43
40.5- 41.5, N=44
45.5- 46.5, N=38
50.5- 51.5, N=45
55.5- 56.5, N=48
60.5- 61.5, N=44

Sta. 107+69 - 29' Right of Center Line of Construction

4.9- 5.9, N=6
9.9- 10.9, N=6
15.5- 16.5, N=25
20.5- 21.5, N=37
25.5- 26.5, N=38
30.5- 31.5, N=42
35.5- 36.5, N=43
40.5- 41.5, N=45
45.5- 46.5, N=43
50.5- 51.5, N=42
55.5- 56.5, N=48
60.5- 61.5, N=46

Sta. 109+27 - 25' Right of Center Line of Construction

5.0- 6.0, N=12
10.0- 11.0, N=12
15.5- 16.5, N=4
20.5- 21.5, N=34
25.5- 26.5, N=40
30.5- 31.5, N=44
35.5- 36.5, N=46
40.5- 41.5, N=47
45.5- 46.5, N=50
50.5- 51.5, N=46
55.5- 56.5, N=48
60.5- 61.5, N=46

Sta. 105+84 - 25' Left of Center Line of Construction

5.0- 6.0, N=3
10.0- 11.0, N=10
15.5- 16.5, N=26
20.5- 21.5, N=36
25.5- 26.5, N=37
30.5- 31.5, N=46
35.5- 36.5, N=39
40.5- 41.5, N=61
45.5- 46.5, N=43
50.5- 51.5, N=44
55.5- 56.5, N=43
60.5- 61.5, N=47

Sta. 107+42 - 25' Left of Center Line of Construction

4.7- 5.7, N=9
9.7- 10.7, N=7
15.5- 16.5, N=24
20.5- 21.5, N=31
25.5- 26.5, N=40
30.5- 31.5, N=42
35.5- 36.5, N=45
40.5- 41.5, N=44
45.5- 46.5, N=50
50.5- 51.5, N=50
55.5- 56.5, N=46
60.5- 61.5, N=45

Sta. 108+60 - 22' Left of Center Line of Construction

5.1- 6.1, N=1
10.1- 11.1, N=5
15.5- 16.5, N=32
20.5- 21.5, N=34
25.5- 26.5, N=32
30.5- 31.5, N=37
35.5- 36.5, N=36
40.5- 41.5, N=36
45.5- 46.5, N=39
50.5- 51.5, N=33
55.5- 56.5, N=36
60.5- 61.5, N=37

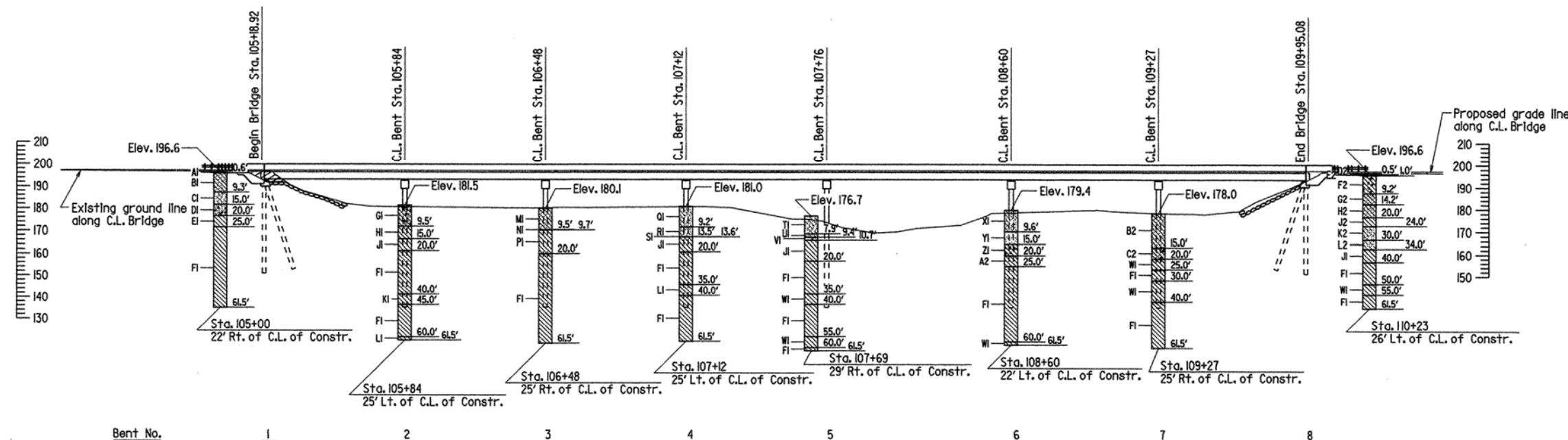
Sta. 110+23 - 26' Left of Center Line of Construction

4.7- 5.7, N=8
9.7- 10.7, N=11
14.7- 15.7, N=4
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25.5- 26.5, N=4
30.5- 31.5, N=10
35.5- 36.5, N=29
40.5- 41.5, N=39
45.5- 46.5, N=39
50.5- 51.5, N=41
55.5- 56.5, N=42
60.5- 61.5, N=43

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.		030323	25	69
				07172	LAYOUT			50863

BORING LEGEND

AI-Asphalt Pavement (7")
BI-Moist, Medium Stiff, Brown Clay with Sand
CI-Moist, Loose, Brown and Gray Clayey Sand
DI-Wet, Loose, Brown and Gray Clayey Sand with Gravel
EI-Moist, Very Stiff, Dark Gray Clay with some Gravel
FI-Moist, Hard, Dark Gray Clay
GI-Wet, Soft, Gray Sandy Clay with Organic Matter
HI-Moist, Stiff, Gray and Brown Clay
JI-Moist, Very Stiff, Dark Gray Clay
KI-Moist, Very Hard, Dark Gray Clay with occasional Sand Seams
LI-Moist, Hard, Dark Gray Clay with some Sand Partings
MI-Moist, Medium Stiff, Brown and Gray Sandy Clay
NI-Moist, Loose, Brown Sand with Gravel
PI-Moist, Very Stiff, Dark Gray Clay with some Sand Partings
OI-Moist, Loose, Brown Clayey Sand
RI-Wet, Loose, Brown and Gray Clayey Sand
SI-Gravel
TI-Moist, Loose, Brown Sand with Clay
UI-Wet, Loose, Brown Sand with Clay
VI-Wet, Loose, Gray Sand with Clay, Organic Matter and some Gravel
WI-Moist, Hard, Dark Gray Clay with some Concretions
XI-Moist to Wet, Very Loose, Brown Clayey Sand
YI-Wet, Loose, Gray Sand
ZI-Moist, Hard, Dark Gray Clay with Gravel
A2-Moist, Hard, Dark Gray Clay with Trace of Concretions
B2-Moist, Stiff, Brown and Gray Sandy Clay
C2-Wet, Soft, Gray Sandy Clay with Organic Matter (Wood)
D2-Asphalt Pavement (6")
E2-Aggregate Base Course (6")
F2-Moist, Medium Stiff, Brown and Gray Clay with Gravel
G2-Moist, Stiff, Brown and Gray Clay with Sand and some Gravel
H2-Moist, Soft, Brown Clay with Sand
J2-Moist, Medium Stiff, Brown Clay
K2-Wet, Very Loose, Brown and Gray Sand with Clay
L2-Wet, Loose, Brown and Gray Sand with Clay



ELEVATION OF SOIL BORINGS



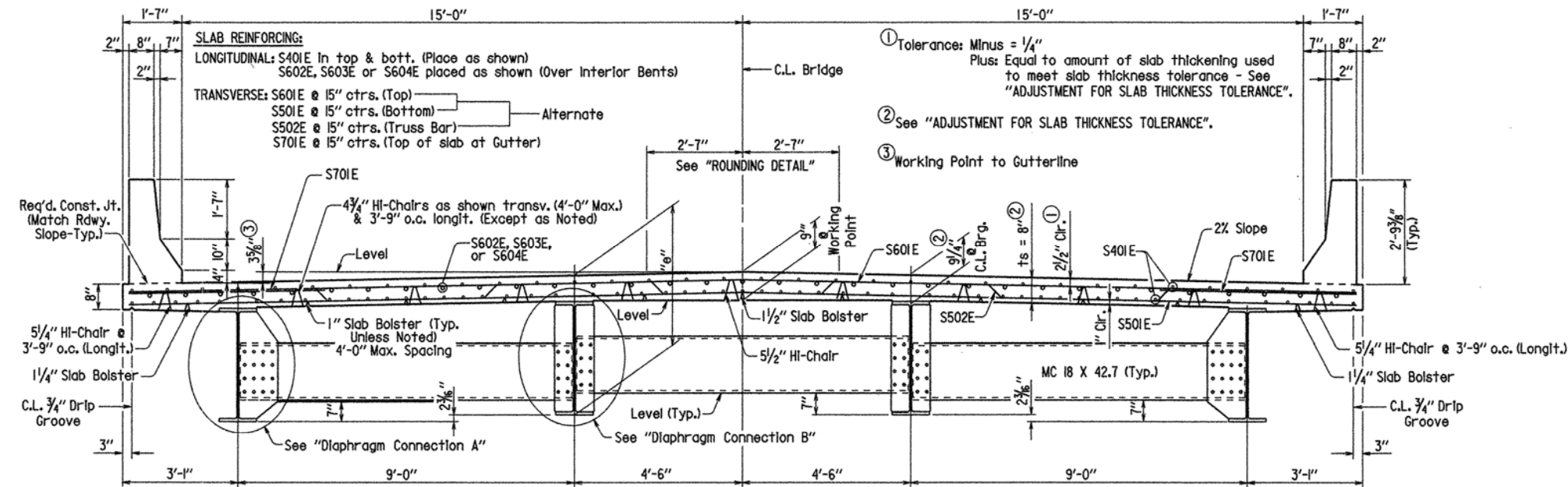
SHEET 2 OF 2
LAYOUT OF BRIDGE OVER
TERRE ROUGE CREEK
TERRE ROUGE CREEK STR. & APPRS. (S)
NEVADA COUNTY
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KMY DATE: 5-13-09 FILENAME: b030323x1.LL.dgn
CHECKED BY: TEH DATE: 9-28-09 SCALE: 1" = 30'-0"
DESIGNED BY: KMY DATE: 1-09
BRIDGE NO. 07172 DRAWING NO. 50863

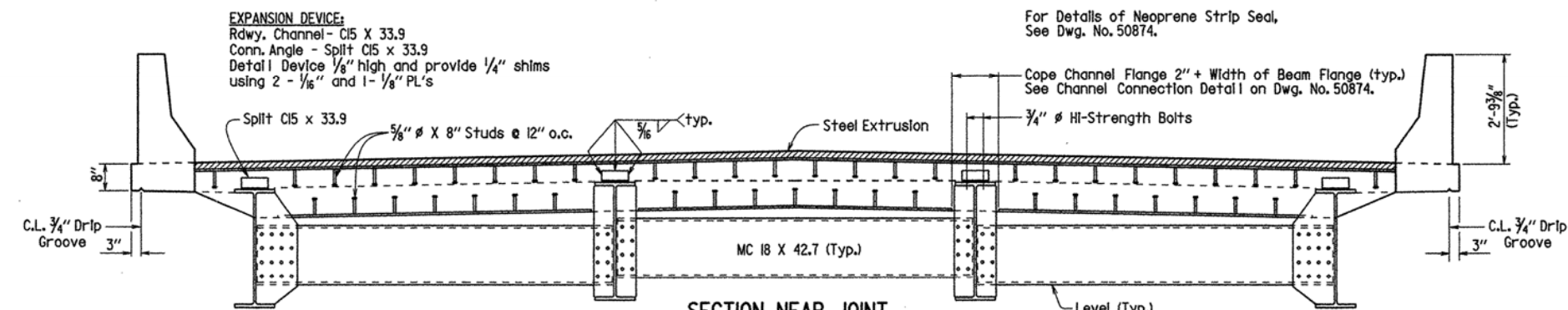
NOTE: At the Contractor's option, two straight epoxy coated #5 bars may be substituted for bar S502E. Payment for reinforcing will be based on the weight of bar S502E.

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

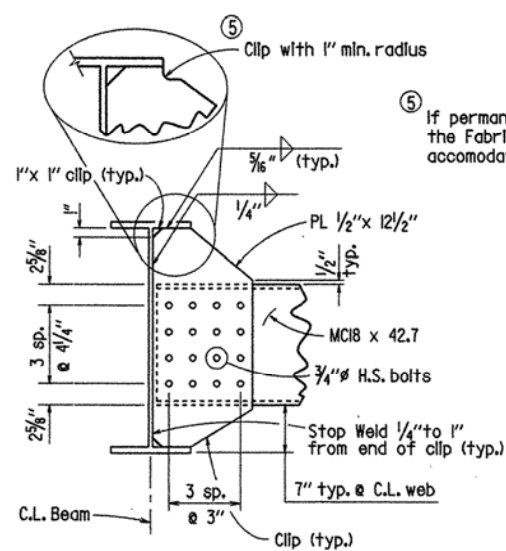
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				6	ARK.			
				JOB NO.		030323	32	109
				07172	CONT. UNIT		50870	



TYPICAL ROADWAY SECTION

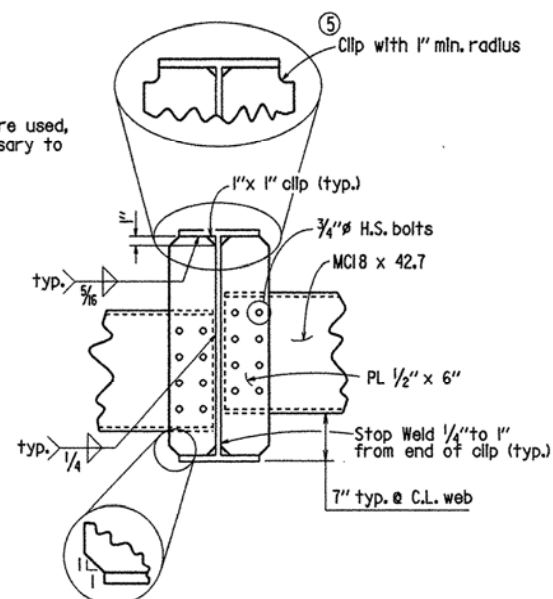


SECTION NEAR JOINT



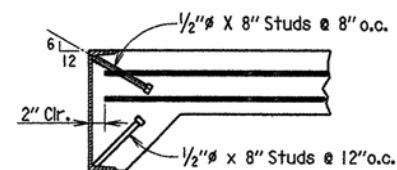
DIAPHRAGM CONNECTION A

No Scale



DIAPHRAGM CONNECTION B

No Scale



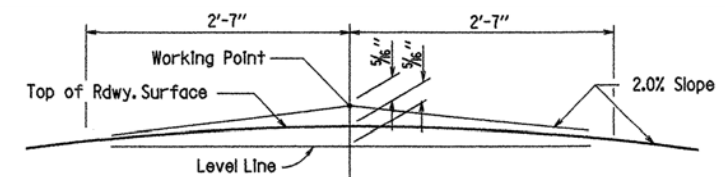
Note:
 As an alternate to $\frac{5}{8}$ " studs, $\frac{1}{2}$ " ϕ X 8" studs spaced as shown may be used. Use weight of $\frac{5}{8}$ " ϕ stud as basis of measurement of structural steel in anchors.

DETAILS OF ALTERNATE ANCHORS AND PLACEMENT OF LONGITUDINAL REINFORCEMENT

No Scale



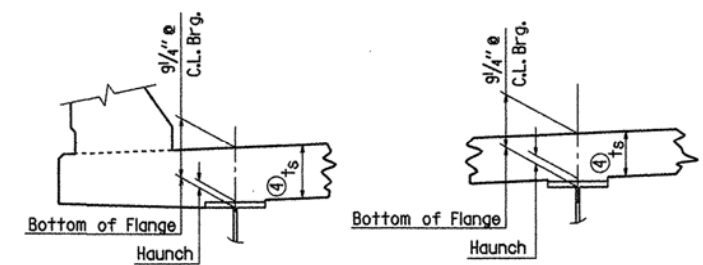
BRIDGE ENGINEER



NOTE: Working Point matches Theoretical Roadway Grade.

ROUNDING DETAIL

No Scale



t_s = slab thickness as shown in "Typical Roadway Section"

EXTERIOR BEAM

INTERIOR BEAM

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

Notes:
 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 $\frac{3}{4}$ ". No increase in concrete and structural steel quantities will be made to maintain tolerances.

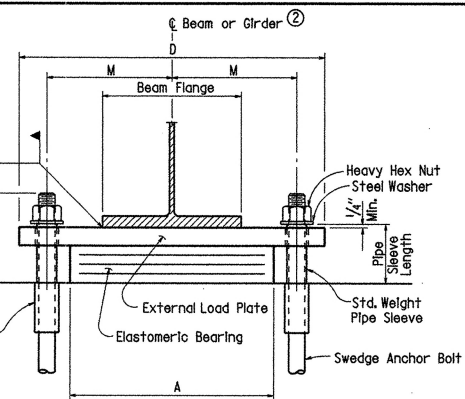
Tolerances shown are applicable only when removable deck forming is used. See Std. Dwg. No. 14991 for tolerances when permanent steel deck forms are used. Payment for concrete shall be based on removable deck forming.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE

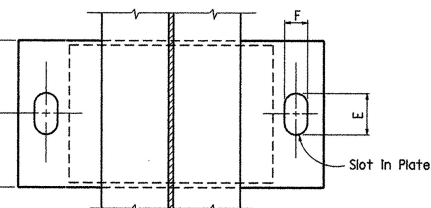
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SHEET 1 OF 6
 DETAILS OF
 474'-0" CONTINUOUS W-BEAM UNIT
 TERRE ROUGE CREEK
 ROUTE 24 SEC. 5
 ARKANSAS STATE HIGHWAY COMMISSION
 LITTLE ROCK, ARK.

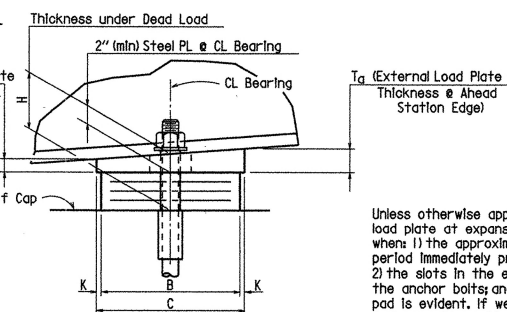
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 CHECKED BY: TEH DATE: 8-17-09 SCALE: AS SHOWN
 DESIGNED BY: Lwy DATE: 4-09
 BRIDGE NO. 07172 DRAWING NO. 50870



FRONT VIEW - AT BENT NOS. 2, 3, 4 & 7



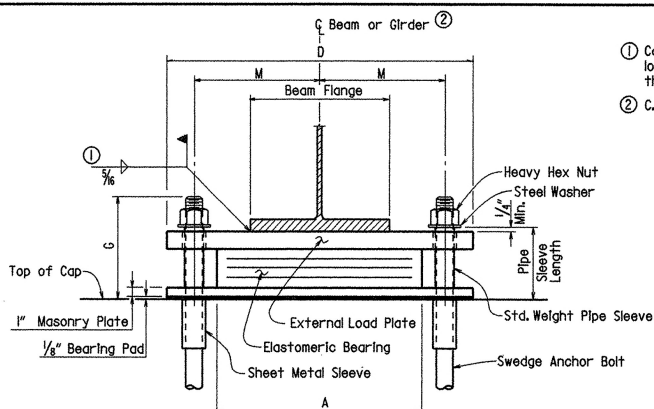
PLAN VIEW - AT BENT NOS. 2, 3, 4 & 7



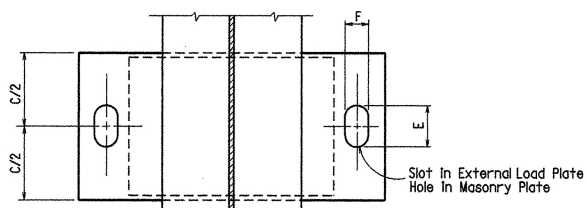
SIDE VIEW - AT BENT NOS. 2, 3, 4 & 7

m Design Load = Service I Limit State

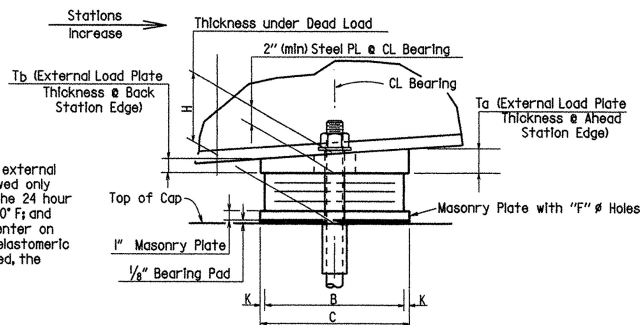
Dimension "E" does not apply to masonry
- See "SIDE VIEW - AT BENT NOS. 1 & 8"



FRONT VIEW - AT BENT NOS. 1 & 8

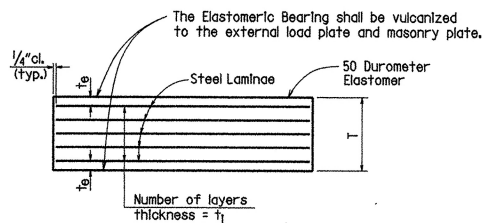


PLAN VIEW - AT BENT NOS. 1 & 8



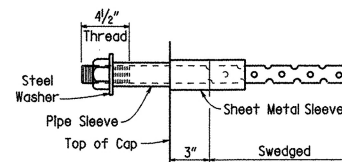
SIDE VIEW - AT BENT NOS. 1 & 8

- ① Care shall be taken to ensure that the external load plate is in full and complete contact with the beam or girder flange before welding begins.
- ② C.L. Elastomeric pad shall be aligned with C.L. Beam.



t_e = thickness of elastomer cover on top and bottom of pad
 t_1 = thickness of elastomer between steel laminæ
 N = number of elastomer layers of thickness t_1

ELASTOMERIC BEARING



ANCHOR BOLT DETAIL

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

If Anchor Bolts are to be drilled and grouted in place, the Galvanized Steel Sleeves shall be cast in place as shown. Sleeves shall be dry packed with styrofoam, urethane foam or approved equivalent material. After pouring of the cap and prior to the pouring of Structural Steel, the dry pack shall be removed and holes in the masonry shall be accurately drilled into the masonry. In drilled holes shall be accurately set and fixed using a non-shrink epoxy or non-shrink grout that completely fills the holes. Galvanized Steel Metal Sleeves will not be paid for directly, but will be considered subsidiary to the item "Structural Steel in Beam Spans, M 27".

GENERAL NOTES

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

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

External load plates and masonry plates shall be completely fabricated (including bevelling and bolt holes) and shall be cleaned before vulcanizing the elastomeric bearing. Surfaces in contact with the elastomeric bearing shall be cleaned in accordance with subsection 808.03. 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)". External load plates, masonry plates and 1/8" bearing pads will not be measured or paid for separately but will be considered included in the unit bid price for "Elastomeric Bearings".

Bearings with masonry plates shall be seated in accordance with subsection 807.66. Bearings without masonry plates shall be seated in accordance with subsection 808. This work and materials are considered as subsidiary to the item "Elastomeric Bearings" and will not be paid for directly.

TABLE OF FABRICATOR VARIABLES

ANCHOR BOLT																								
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Tabular Data by: AMS Date: 7-27-09
 Checked by: TEH Date: 8-17-09
 Designed by: KWY Date: 4-09



SHEET 1 OF 2
 DETAILS OF ELASTOMERIC BEARINGS
 ROUTE SEC.
 ARKANSAS STATE HIGHWAY COMMISSION
 LITTLE ROCK, ARK.

DRAWN BY: SAT DATE: 19 Apr 11 01 FILENAME: b030323.eb
 CHECKED BY: AMS DATE: JUL 1-05 SCALE: NONE
 DESIGNED BY: Std. DATE: ---
 BRIDGE NO. 07172 DRAWING NO. 50868

NOTE: Spirals terminate with $1\frac{1}{2}$ turns.

$L = \text{Length of Pile}$

② Omit this section and use 3" pitch throughout for pile lengths of 20'-0" or less.

5 Additional Turns @ 1" Pitch

Single $\frac{3}{8}" \phi$ Spiral (typ.)

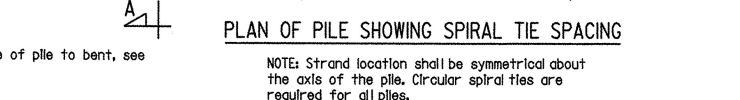
Prestressing Strands or Reinforcing Bars

3" Pitch as Req'd.

② 12 Turns @ 6" Pitch = 6'-0"

16 Turns @ 3" Pitch = 4'-0"

1"



PRESTRESSED CONCRETE PILE PROPERTIES

	Grade	Strand Diameter	① No. of Strands per Size "D"		Minimum Ultimate Tensile Strength Per Strand (Lbs.)	Initial Prestressing Force Per Strand (Lbs.)
			20" Sq.	24" Sq.		
Low Relaxation	250	1/16"	17	24	27,000	20,300
		1/8"	13	18	36,000	27,000
		3/16"	14	21	31,000	23,300
		1/2"	11	16	41,300	31,000

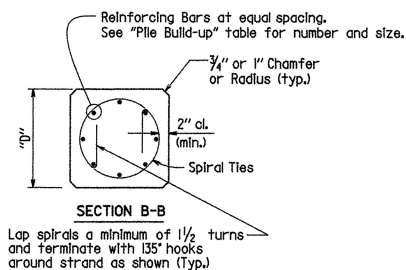
ONE POINT PICK-UP

50" Max. with Pile in Horizontal Position

Sheave

	Grade	Strand Diameter	① No. of Strands per Size "d"		Minimum Ultimate Tensile Strength Per Strand (Lbs.)	Initial Prestressing Force Per Strand (Lbs.)
			20" Sq.	24" Sq.		
Low Relaxation	250	7/16"	17	24	27,000	20,300
		1/2"	13	18	36,000	27,000
	270	7/16"	14	21	31,000	23,300
		1/2"	11	16	41,300	31,000

"B" — 0.75 Low Relaxation



BUILD-UP PILE REINFORCING		
Pile Size	No. Req'd.	Bar Size
20" Sq.	8	# 9
24" Sq.	12	# 9

Diagram illustrating a pile with a build-up section. The pile is shown with a central section labeled "BUILD-UP". The build-up section is reinforced with "Prestressing Strands or Reinforcing Bars". The pile is labeled "Pile" on the left and "Prestressing Strands or Reinforcing Bars" on the right.

50° Max. with Pile In Horizontal Position

Shave

Mark plainly with removable band of Paint

0.21 L 0.58 L 0.21 L

L

TWO POINT PICK-UP

40° Max. with Pile In Horizontal Position

Single Shave

Mark plainly with removable band of Paint

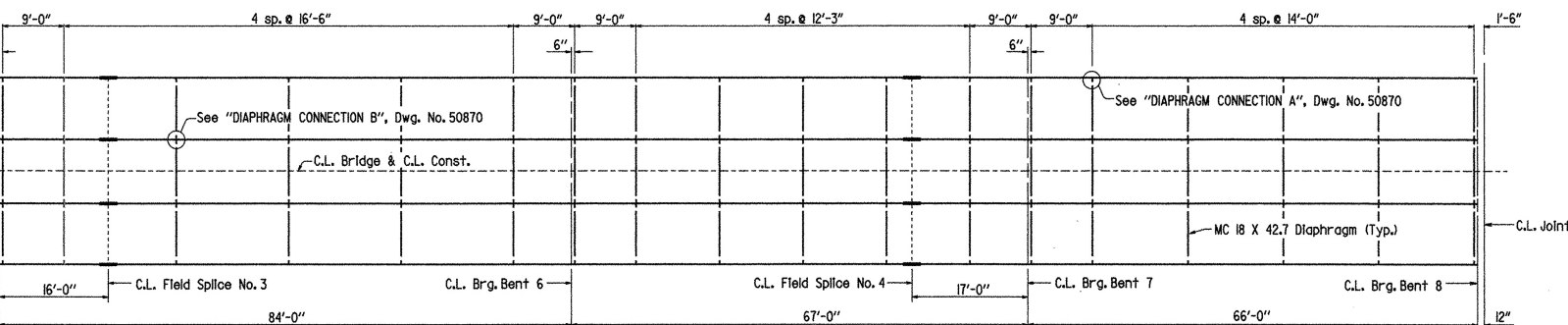
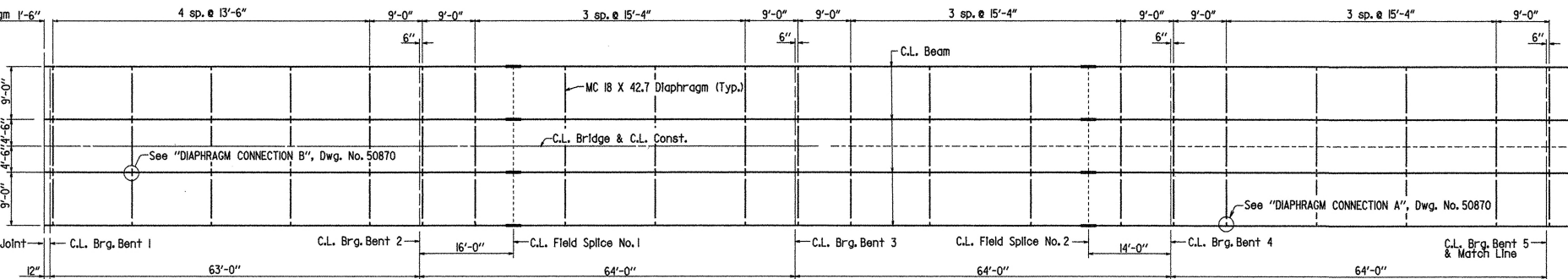
Single Shave

0.14 L 0.36 L 0.36 L 0.14 L

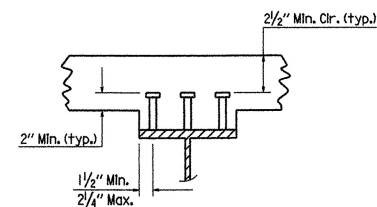
L

MAXIMUM PICKUP LENGTHS "L"

DRAWN BY: A.M.S. DATE: 8/24/09 FILENAME: b030323_piling
 CHECKED BY: kwv DATE: 9-24-09 SCALE: No Scale
 DESIGNED BY: Std. DATE: _____
 BRIDGE NO. 07172 DRAWING NO. 50867



FRAMING PLAN



Stud Shear Connectors shown shall be 3/8" x 4" 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 on one 3/8" stud. 3/8" studs will be used as the basis for measurement of structural steel in shear connectors.

SHEAR CONNECTOR DETAIL

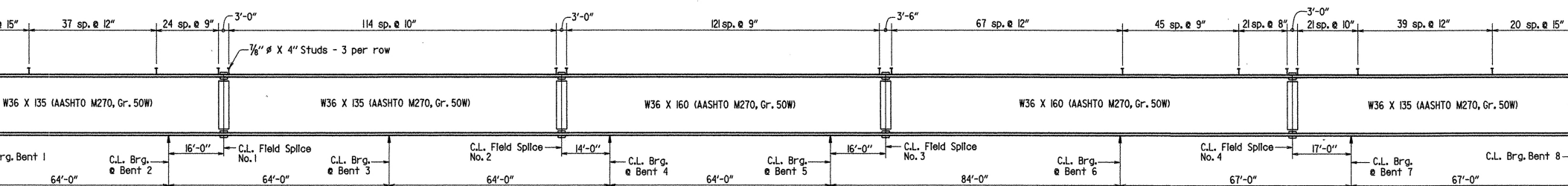


TABLE FOR WELD

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.

TYPICAL BEAM ELEVATION

Note: Bolted field splices may be eliminated or shop welds substituted with the approval of the Engineer. Payment will be made on the basis of the plan quantities.



BRIDGE ENGINEER

SHEET 2 OF 6

DETAILS OF
474'-0" CONTINUOUS W-BEAM UNIT
TERRE ROUGE CREEK

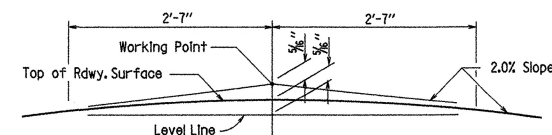
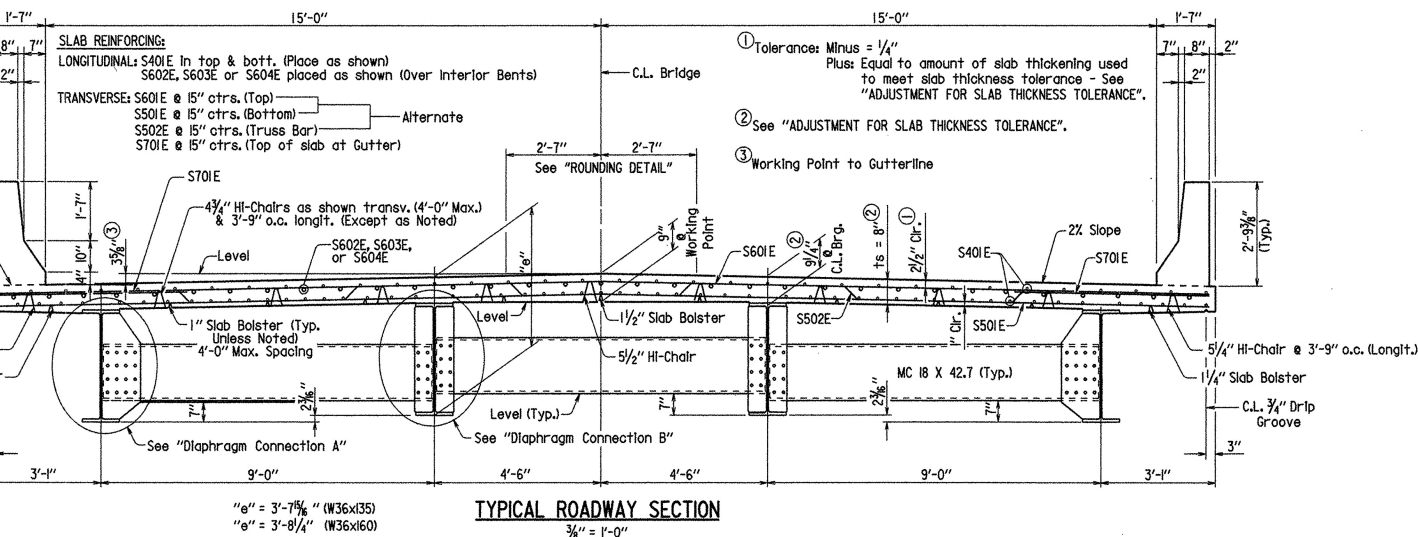
ROUTE 24 SEC. 5
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: AMS. DATE: 7/15/09. FILENAME: b030323.sld
CHECKED BY: TEH. DATE: 8-17-09. SCALE: No Scale
DESIGNED BY: KMY. DATE: 4-09.
BRIDGE NO. 07172 DRAWING NO. 50871

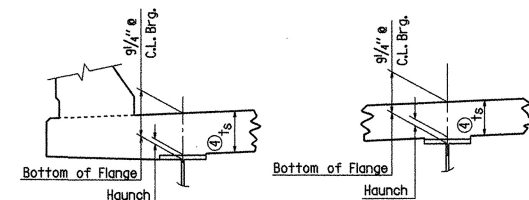
Factor's option, two straight epoxy coated #5 bars
 substituted for bar S502E. Payment for reinforcing will
 be the weight of bar S502E.

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

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	NO.
				6	ARK.		
				JOB NO.		030323	3
				07172		CONT. UNIT	



NOTE: Working Point matches Theoretical Roadway Grade.



t_s = slab thickness as shown in "Typical Roadway Section"

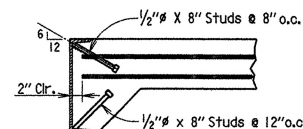
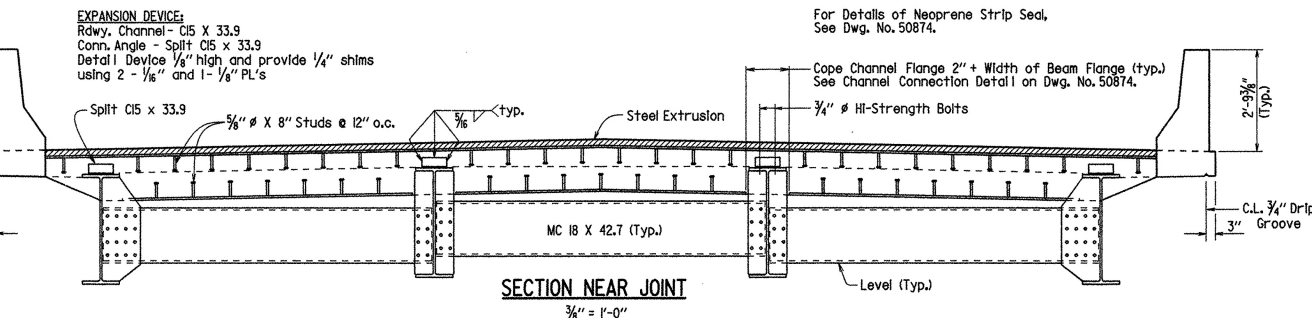
- ④ Tolerance when removable deck forming is used is + 1/2", - 1/4".
 Haunch forming is required and shall be adjusted to maintain slab
 thickness tolerance.

Notes:
 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 1/4". 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. 14991 for tolerances when permanent steel
 deck forms are used. Payment for concrete shall be based on
 removable deck forming.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE

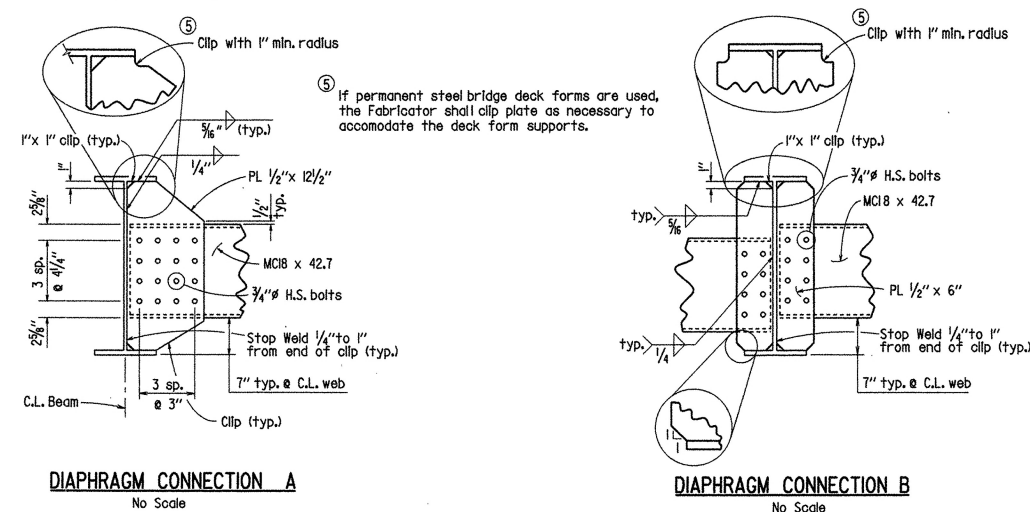
No Scale



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

DETAILS OF ALTERNATE ANCHORS AND PLACEMENT OF LONGITUDINAL REINFORCEMENT

No Scale



SHEET 1 OF 6

DETAILS OF

474'-0" CONTINUOUS W-BEAM UNIT
 TERRE ROUGE CREEK

ROUTE 24 SEC. 5

ARKANSAS STATE HIGHWAY COMMISSION

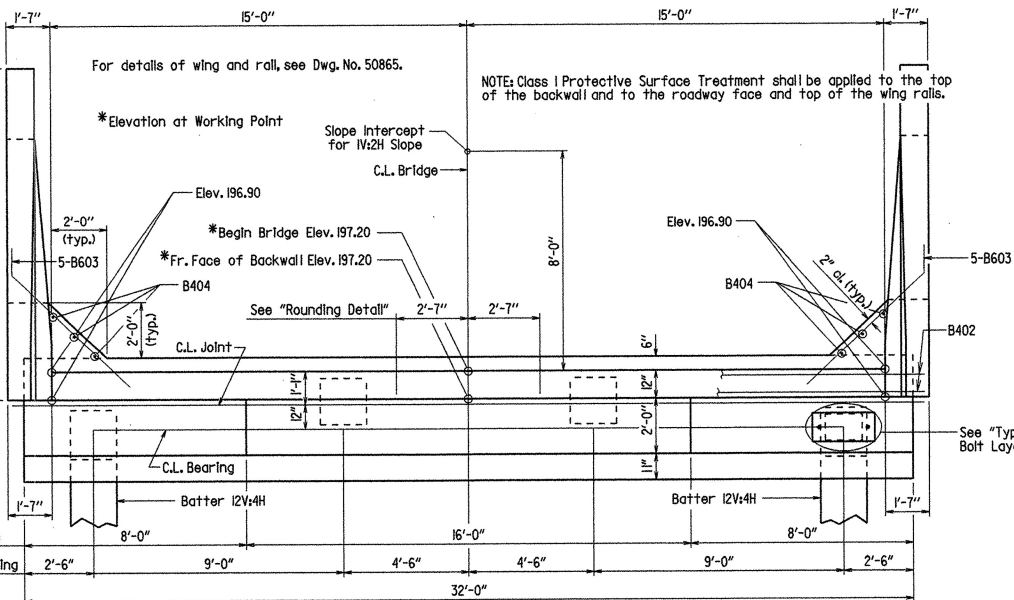
LITTLE ROCK, ARK.



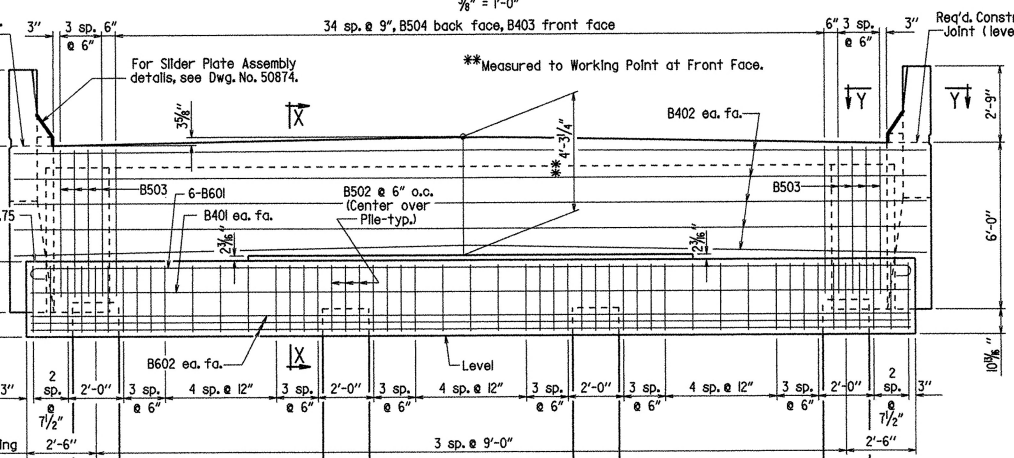
BRIDGE ENGINEER

DRAWN BY: AWS DATE: 7/15/09 FILENAME: b030323.sld
 CHECKED BY: TEH DATE: 8-17-09
 DESIGNED BY: kwy DATE: 4-04
 BRIDGE NO. 07172 DRAWING NO. 50870

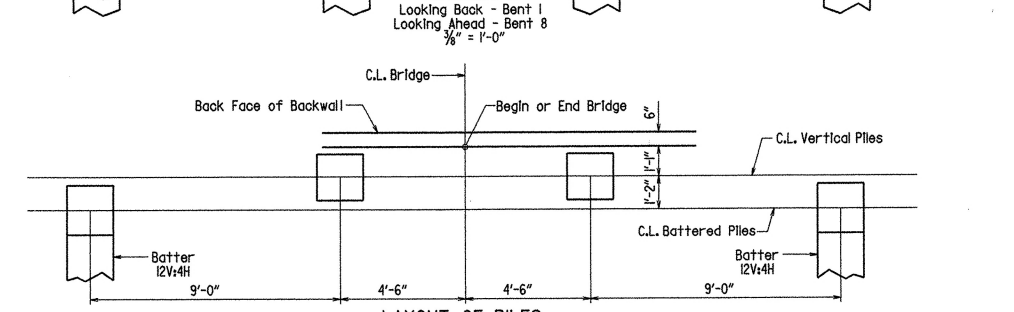
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				6	ARK.		
						JOB NO.	030323
							07172
							END BENTS



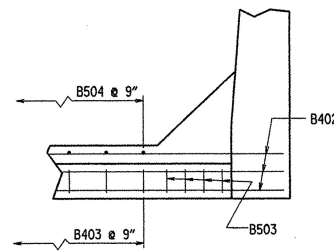
PLAN OF BENTS 1 & 8



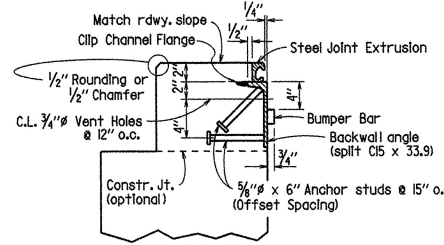
ELEVATION



LAYOUT OF PILES

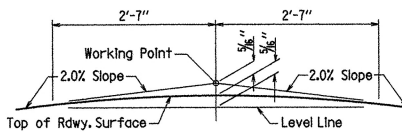


SECTION Y-Y

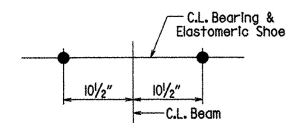


DETAIL Z

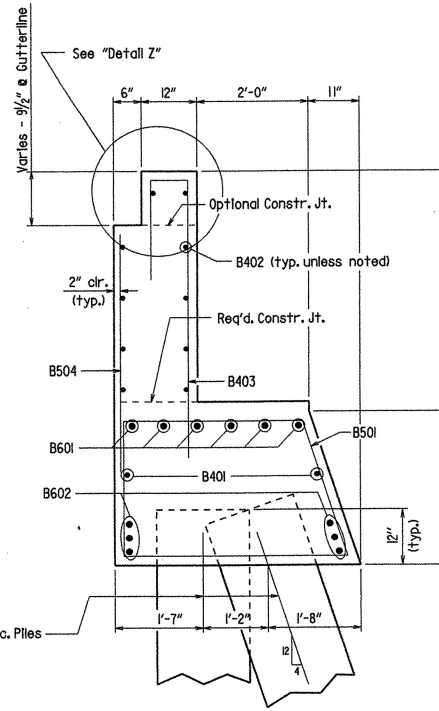
NOTES: For additional joint details, see Dwg. No. 50874.
Concrete shall be hand packed under the joint armor in the backwall.



ROUNDING DETAIL



TYP. ANCHOR BOLT LAYOUT



SECTION X-X

NOTE: The Backwall above the required construction joint shall be poured until the beams are in place. Backwall may be placed to placing the adjacent concrete deck only if the optional construction joint is used. See Dwg. No. 50874, "Expansion Device Installation at End Bents", for additional information.

GENERAL NOTES

All concrete shall be Class "S" with a minimum 28 day compressive strength $f'_c = 3,500$ psi. Concrete shall be poured in the dry and all exposed to be chamfered $3/4$ " unless otherwise noted.

All reinforcing steel shall conform to AASHTO M31 or M53, Grade 60 (yield strength = 60,000 psi).

Structural steel in end bents shall be M270, Gr. 50W and shall be placed to placing the adjacent concrete deck only if the optional construction joint is used. See Dwg. No. 50874, "Expansion Device Installation at End Bents", for additional information.

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

For additional information, see Layout.



SHEET 1 OF 2
DETAILS OF END BENTS 1 & 8
TERRE ROUGE CREEK
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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BRIDGE NO. 07172 DRAWING NO. 50864

BRIDGE ENGINEER