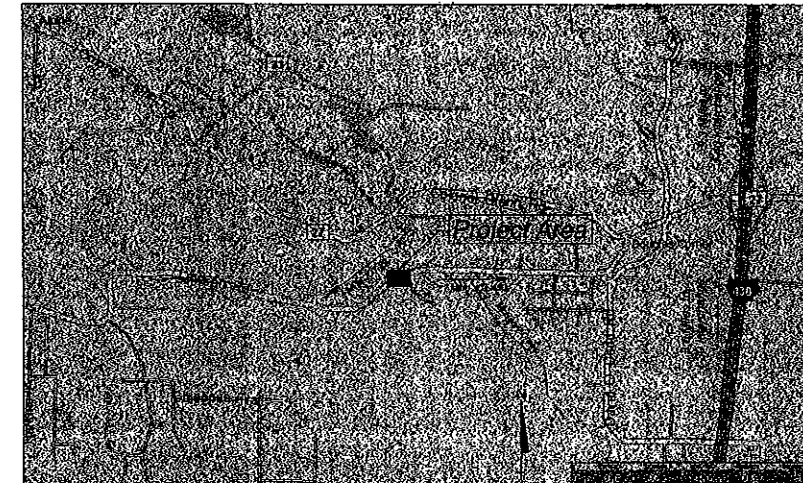
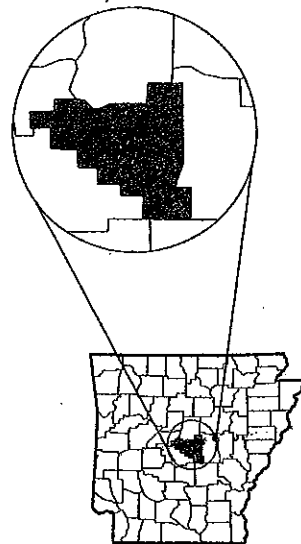


# PULASKI COUNTY, ARKANSAS

## ROAD & BRIDGE DEPARTMENT



## MCHENRY CREEK BRIDGE REPLACEMENT

USI Project No. 0401004  
MARCH 2006



USI - Arkansas, Inc.  
Consulting Engineers  
116 Ottenheimer Plaza, Suite 6  
Little Rock, Arkansas 72201  
Voice: 501.375.2231 Fax: 501.375.2232  
[www.usi-arkansas.com](http://www.usi-arkansas.com)

Vernon J. Williams *Vernon J. Williams* 3/23/2006  
Arkansas Registered Professional Engineer No. 9551



F.G. "BUDDY" VILLINES, III  
PULASKI COUNTY JUDGE  
CHIEF EXECUTIVE OFFICER

### PULASKI COUNTY QUORUM COURT

Dan Greenberg	Mary L. Williams
Jim Porter	Rev. Robert Green
Kathy Lewison	Bob Johnson
Jayne Cia	Jeff Rollins
Wilandra Dean	Phil Stowers
Donna Massey	Charles Roberson
Patricia Dicker	Steve Goss
Ann McCaleb	

APPROVAL  
Public Works Department  
APPROVED BY: *Shermen Smith*  
Shermen Smith, Public Works Director  
DATE: 3/23/2006  
BID NO.: 06-A-004

This is a partial set containing the drawings  
pertinent to the bridge.

Br #23023

UNCLASSIFIED EXCAVATION			
Station		Excavation	Embankment
From	To	(C.Y.)	(C.Y.)
Channel Improvements			
10+53.84	11+00	139	-
11+00	12+00	267	-
12+00	12+30	29	-
Sub Total		435	-
Lawson Road			
10+75	10+83.99	2.43	4
10+83.99	11+00	1.00	3
11+00	11+14.32	2.51	14
11+14.32	11+44.77	2.83	69
11+44.77	11+50	0.02	19
11+50	11+64.65	0.01	44
11+64.65	11+89.58	0.05	53
11+89.58	12+00	0.08	18
12+00	12+35.50	1.55	90
12+35.50	13+01.50	0	0
13+01.50	13+43.97	1.95	96
13+43.97	13+50	0.23	2
13+50	13+64.89	0.46	5
13+64.89	13+68.82	0.08	2
13+68.82	13+81.96	0.22	11
13+81.96	13+89.37	0.16	10
13+89.37	14+00	0.29	15
14+00	14+19.89	0.93	15
14+19.89	14+38.84	1.60	3
Sub Total		16.42	470
Grand Total		452	470

SUMMARY OF QUANTITIES (Prefabricated Steel Bridge Option)			
Section No	Section Title	Unit	Quantity
2	Site Preparation	(L.S.)	1
3	Unclassified Excavation	(C.Y.)	452
3	Compacted Embankment	(C.Y.)	470
4	Class 7 Aggregate Base Course	(TON)	498.5
5	Prime & Tack Coat	(Gal.)	66
6	ACHM Surface & Binder Course	(TON)	275
18	Replacement Of Fences	(L.F.)	300
18	Dumped Rip Rap	(C.Y.)	267
19	Cleanup	(L.S.)	1
22	Remove & Replace Mailbox	(Ea.)	1
24	Temporary Erosion Control	(L.S.)	1
24	Silt Fence	(L.F.)	830
26	Trench Or Excavation Safety Systems	(L.S.)	1
28	Type A Guard Rail	(L.F.)	300
28	Three Beam Guard Rail Terminal	(Ea.)	4
28	Type 1 Terminal Anchor Post	(Ea.)	4
34	Seeding & Fertilizer	(Ac.)	0.45
34	Top Soil	(C.Y.)	150
35	Mobilization (5 %)	(L.S.)	1
	Steel Truss Bridge	(L.S.)	1
	Piles (HP 12x63)	(L.F.)	192

Sheet Index

1. Legend, Summary, Schedule of Quantities & Sheet Index
2. Site Demolition Plan
3. Maintenance of Traffic
4. Maintenance of Traffic
5. McHenry Creek Improvements: Plan, Profile & Cross-sections  
STA. 10+53.84 to STA. 12+30
6. Lawson Road Improvements - Plan & Profile  
STA. 10+73.99 to STA. 14+59.02
7. Lawson Road Cross-sections: STA. 10+75 to STA. 11+50
8. Lawson Road Cross-sections: STA. 11+64.65 to STA. 13+50
9. Lawson Road Cross-sections: STA. 13+64.89 to STA. 14+38.84
10. Driveways: Plan & Profile
11. Field Ties
12. Steel Truss Bridge Typical Details
13. Wooden and Chainlink Fence Typical Details

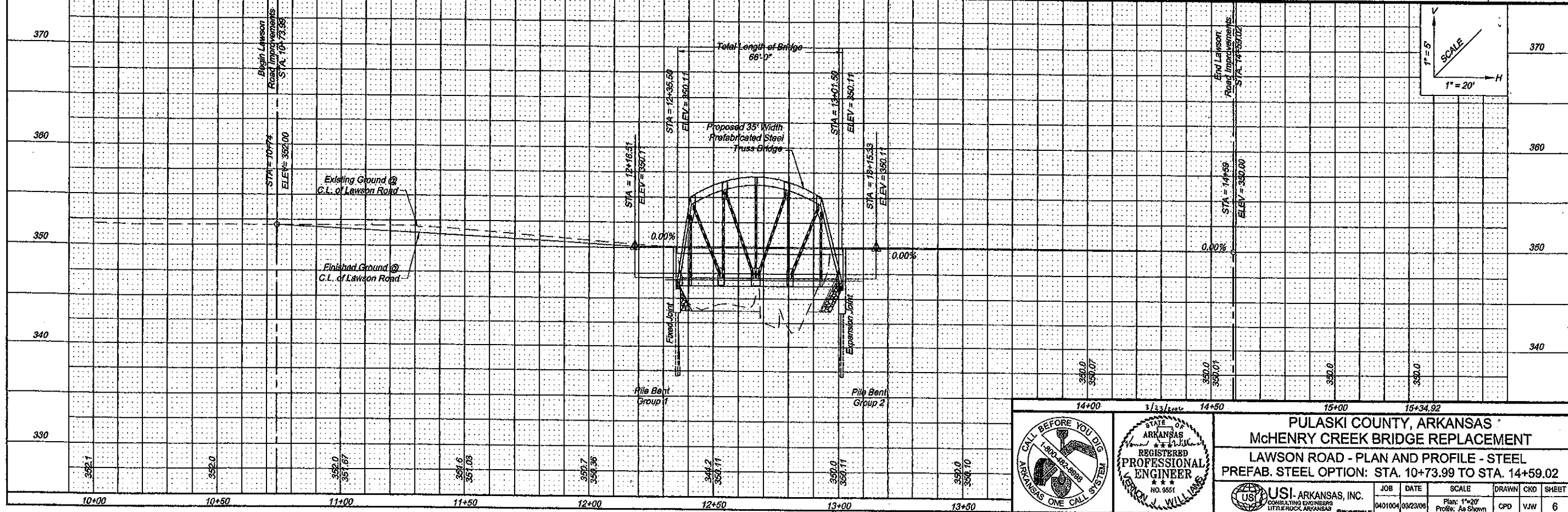
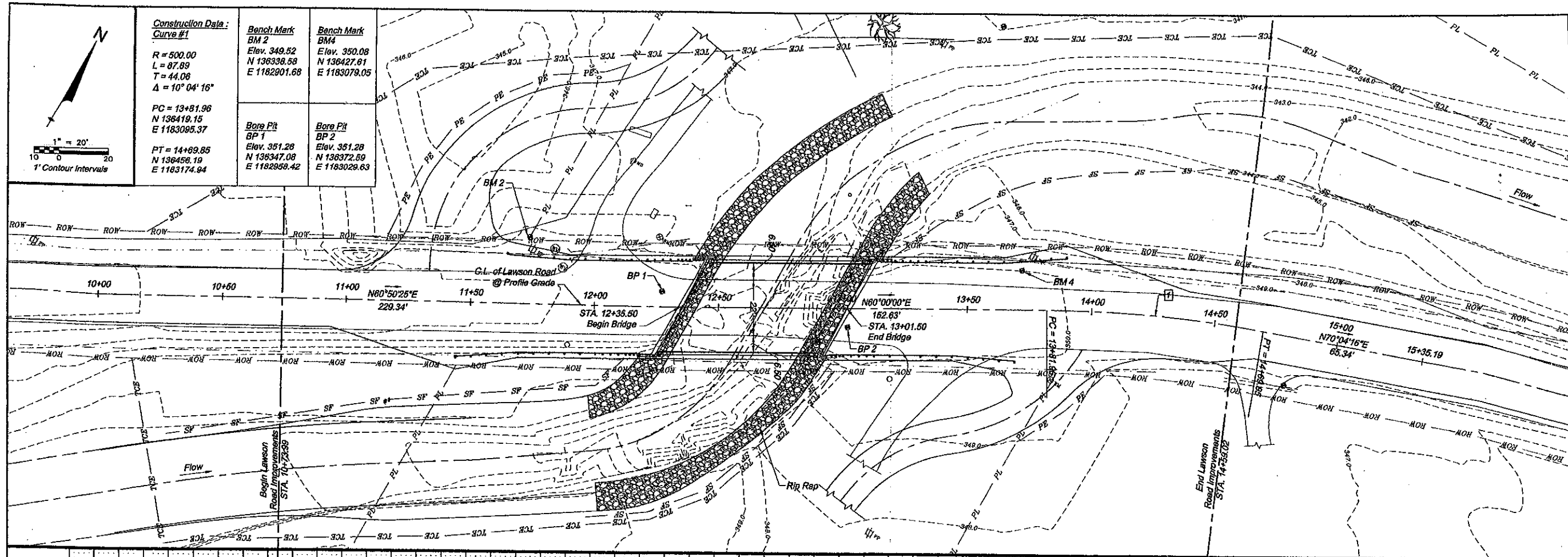
BASE AND SURFACING								
Station		Location	Width of Roadway	Asphalt Surface Course 2" U.T.	Asphalt Binder 3" U.T.	Aggregate Base Course 10" U.T.	Aggregate Base Course 6" U.T.	Tack Coat
From	To		(Ft.)	(TON)	(TON)	(TON)	(TON)	(Gal.)
10+73.99	12+35.50	Lawson Road	22	43.5	65	178	-	24
13+01.50	14+59.02	Lawson Road	22	42.5	64	173.5	-	23
10+00	11+60.85	Driveway Lt. of Lawson Rd.	20	38.5	-	-	97	-
10+00	11+18.21	Driveway Rt. of Lawson Rd.	14	20.5	-	-	50	-
Total			-	146	129	351.5	147	47

Tack Coat application calculated at 0.06 Gal./S.Y.; Aggregate Base Course Quantity based on a material density of 120 lb/cft

LEGEND			
— ROW —	Proposed Right-of-way	— Channel/Roadway Center Line —	⊗ Gas Valve
— ROW —	Existing Right-of-way	— Construction Limits —	⊗ Sanitary Sewer Manhole
— TCE —	Temporary Constr. Esmt.	— Edge of Channel Bed —	⊗ Gas Meter
— PE —	Permanent Easement	Aggregate Surface Course	⊗ Telephone Riser
— OHE —	Overhead Electricity Line	Grouted Rip-Rap or Aggregate Base Course	⊗ Sign
— SS —	Sanitary Sewer Line	Compacted Subgrade	⊗ Water Meter
— x —	Fence Line	Earth-Fill Section	⊗ Storm Inlet
— W —	Waterline	ACHM Surface Course	⊗ Power Pole
— T —	Telephone Line	ACHM Binder Course	⊗ Guy Wire Anchor
— SP —	Silt Fence	Concrete	⊗ Fire Hydrant
— 261 —	Minor Contour Line	BM #1	⊗ Pole
— 270 —	Major Contour Line	BP #1	⊗ Item to be Demolished
— — —	Property Line	Existing Pipe	⊗ Mail Box
			⊗ Tree



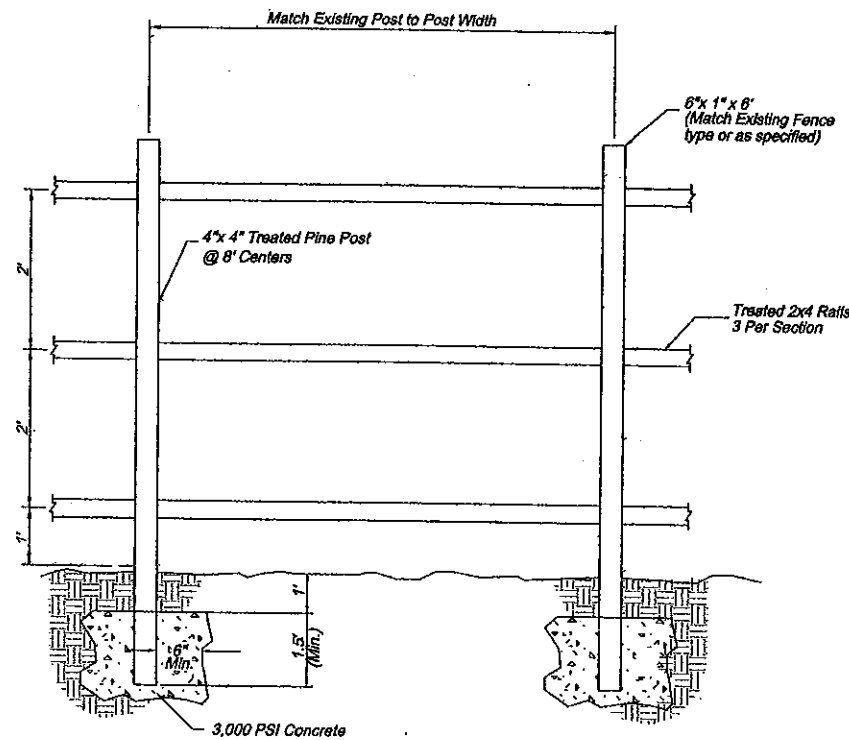
PULASKI COUNTY, ARKANSAS McHENRY CREEK BRIDGE REPLACEMENT			
LEGEND, SUMMARY, SCHEDULE OF QUANTITIES & SHEET INDEX			
USI-ARKANSAS, INC.	JOB DATE	SCALE	DRAWN CKD SHEET
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS	0401004 02/17/06	N.T.S.	CPD VWJ 1



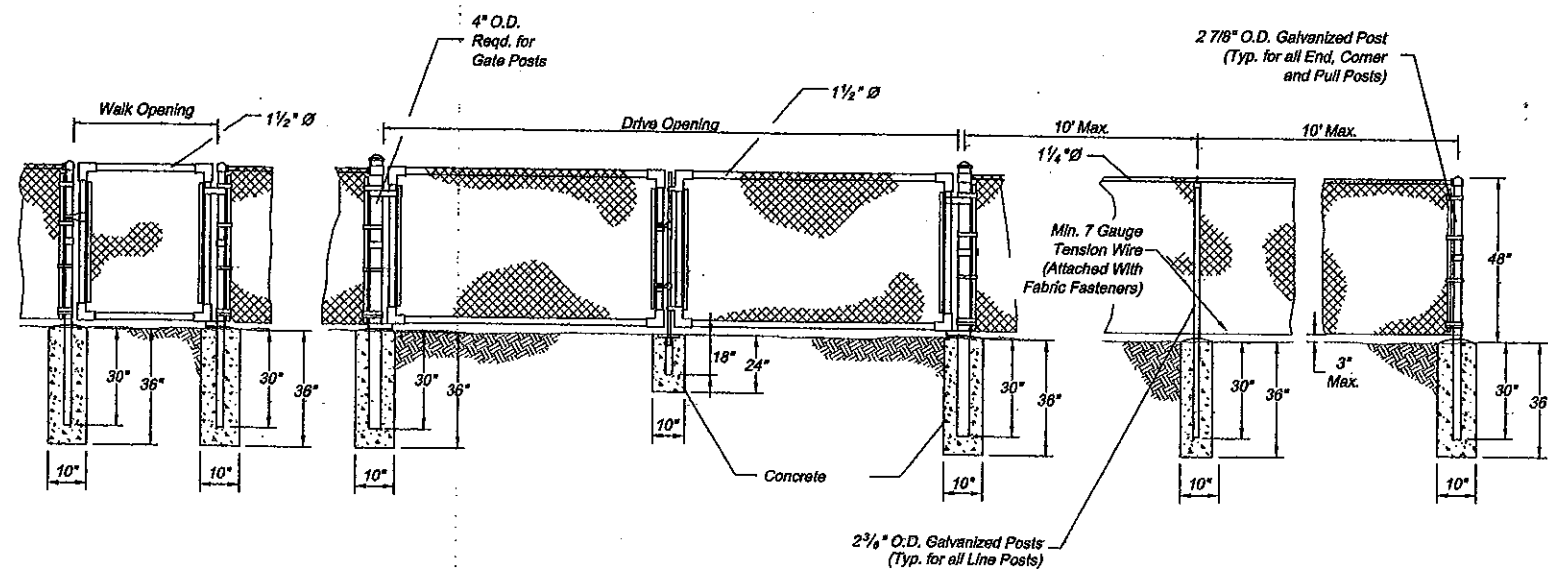
STATE OF ARKANSAS  
 REGISTERED PROFESSIONAL ENGINEER  
 NO. 9551  
 J. WILLIAMS

**PULASKI COUNTY, ARKANSAS**  
**McHENRY CREEK BRIDGE REPLACEMENT**  
**LAWSON ROAD - PLAN AND PROFILE - STEEL**  
**PREFAB. STEEL OPTION: STA. 10+73.99 TO STA. 14+59.02**

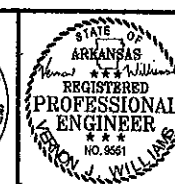
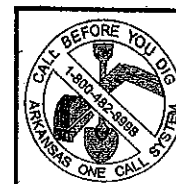
JOB	DATE	SCALE	DRAWN	CHK	SHEET
0401004	03/23/08	Plan: 1"=20' Profile: As Shown	CPD	VJW	6



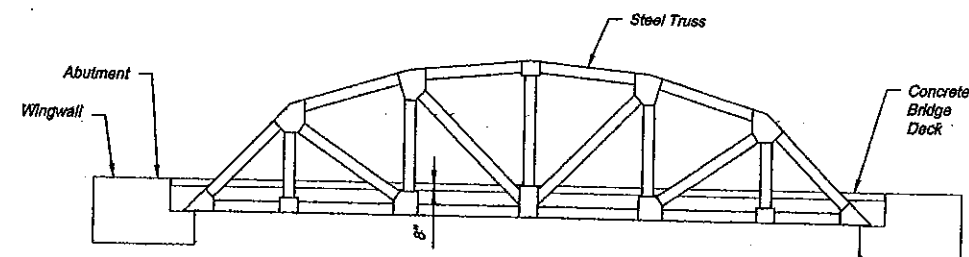
**WOODEN FENCE DETAIL (Typ.)**  
NOT TO SCALE



**RESIDENTIAL CHAIN LINK FENCE (Typ.)**  
NOT TO SCALE



PULASKI COUNTY, ARKANSAS McHENRY CREEK BRIDGE REPLACEMENT			
WOODEN AND CHAINLINK FENCE TYPICAL DETAILS			
USI-ARKANSAS, INC.	JOB	DATE	SCALE
CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS	0401004	03/17/06	CPD VJV
			SHEET
			13

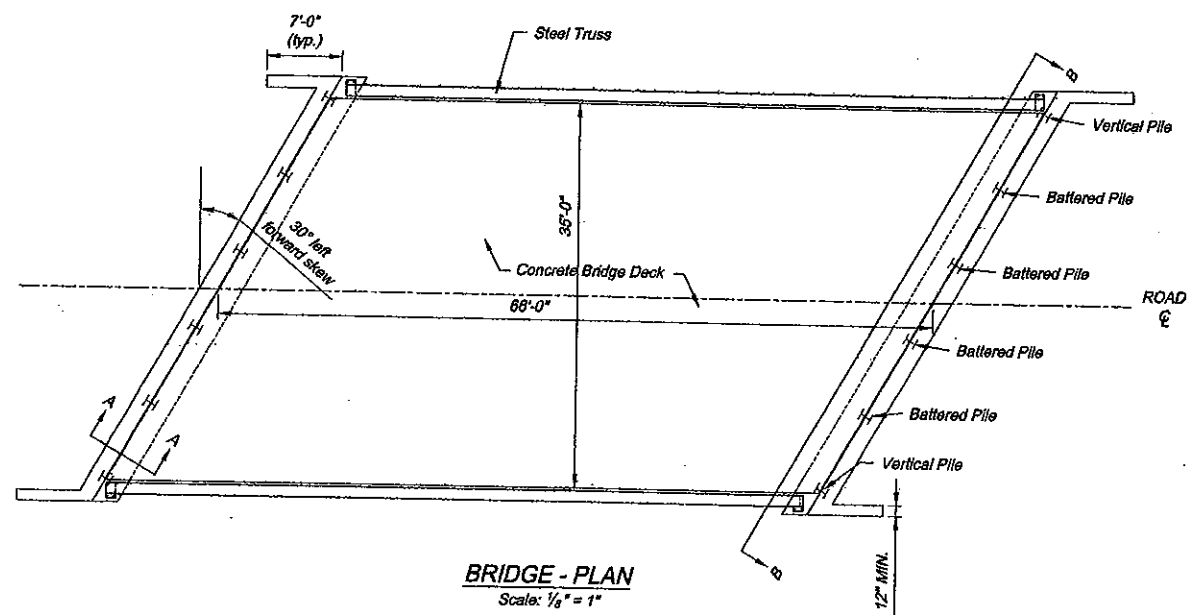


**BRIDGE - ELEVATION**

Scale:  $\frac{1}{8}" = 1'$

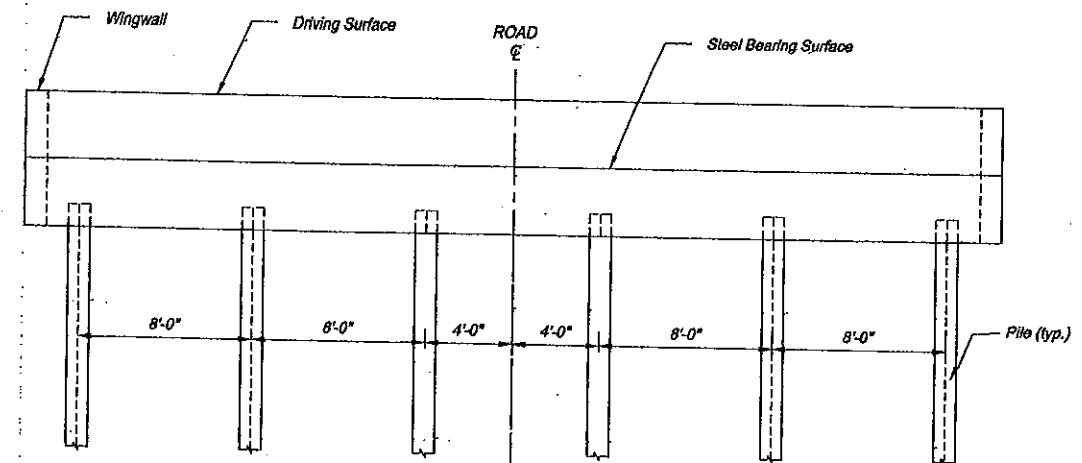
Notes:

1. Guard rail on bridge & bridge approach is not shown.



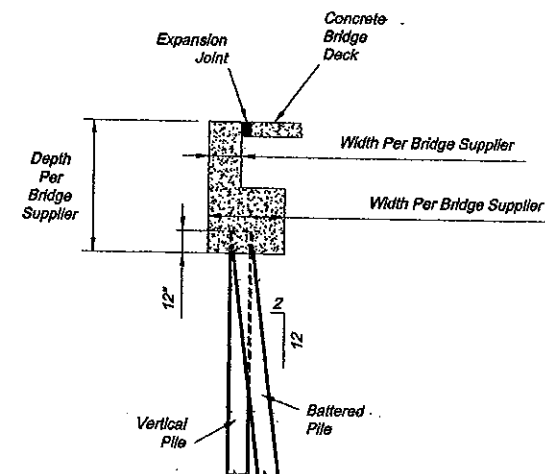
**BRIDGE - PLAN**

Scale:  $\frac{1}{8}" = 1'$



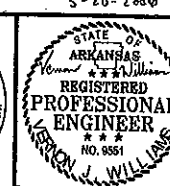
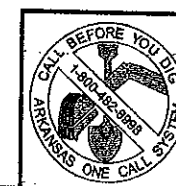
**SECTION B-B**

Scale:  $\frac{1}{4}" = 1'$



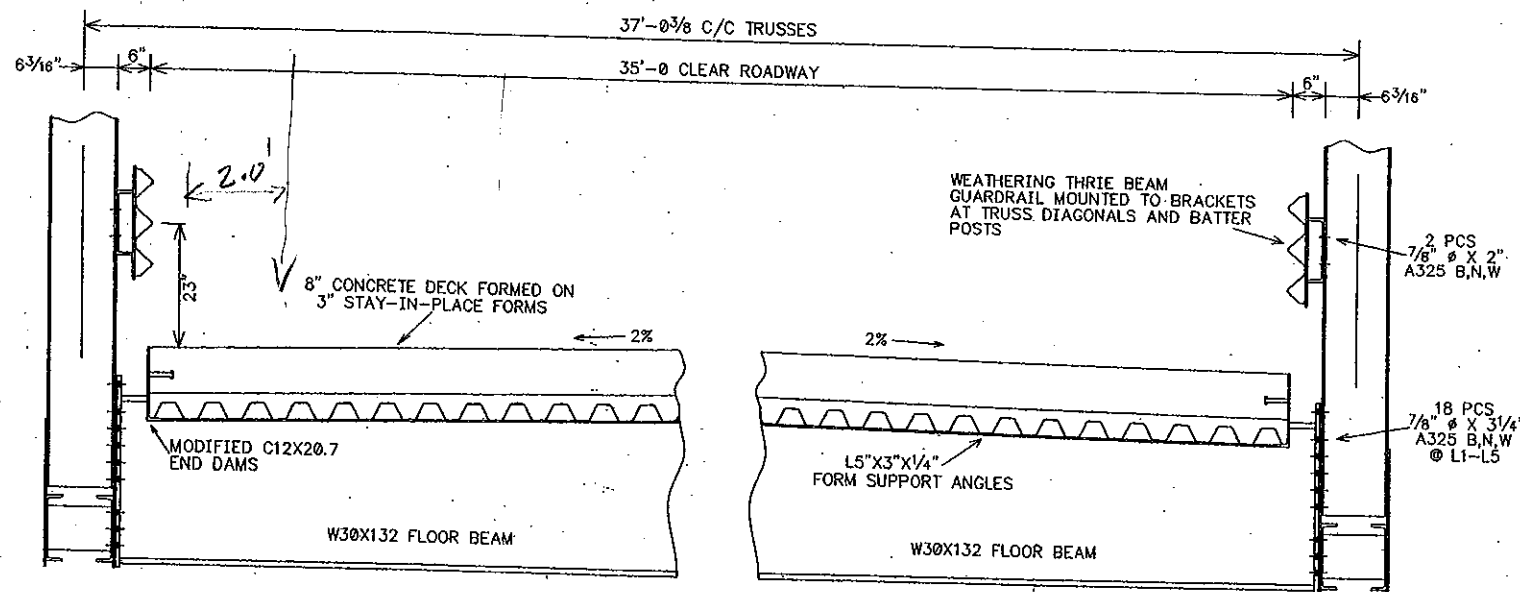
**SECTION A-A**

Scale:  $\frac{1}{4}" = 1'$



PULASKI COUNTY, ARKANSAS					
McHENRY CREEK BRIDGE REPLACEMENT					
STEEL TRUSS BRIDGE TYPICAL DETAILS					
<b>USI-AR</b> <small>CONSULTING ENGINEERS LITTLE ROCK, ARKANSAS</small>	JOB	DATE	SCALE	DRAWN	CKD
	0401004	03/17/06	AS SHOWN	CPD	VJW
					SHEET
					12





TYPICAL ROADWAY SECTION VIEW

TRUSS SHOE REACTION

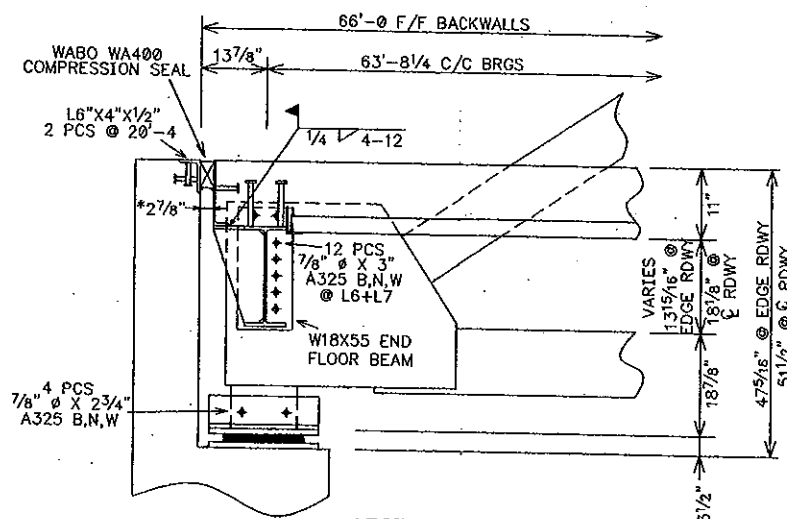
DEAD LOAD	96.2 K
LIVE LOAD (HS20)	84.2 K
IMPACT	22.4 K
TOTAL	202.8 K

MAX. CENTER BEARING REACTION

DEAD LOAD	33.0 K
LIVE LOAD (HS20)	46.3 K
IMPACT	13.9 K
TOTAL	93.2 K

DESIGN DEAD LOADS

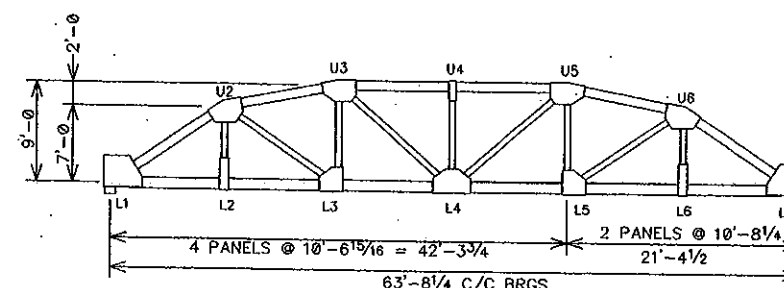
8\" CONCRETE DECK	100 PSF
SIP FORMS / CONCRETE FILL AND HAUNCHES	25 PSF
FUTURE WEARING SURFACE	20 PSF



ABUTMENT DETAIL

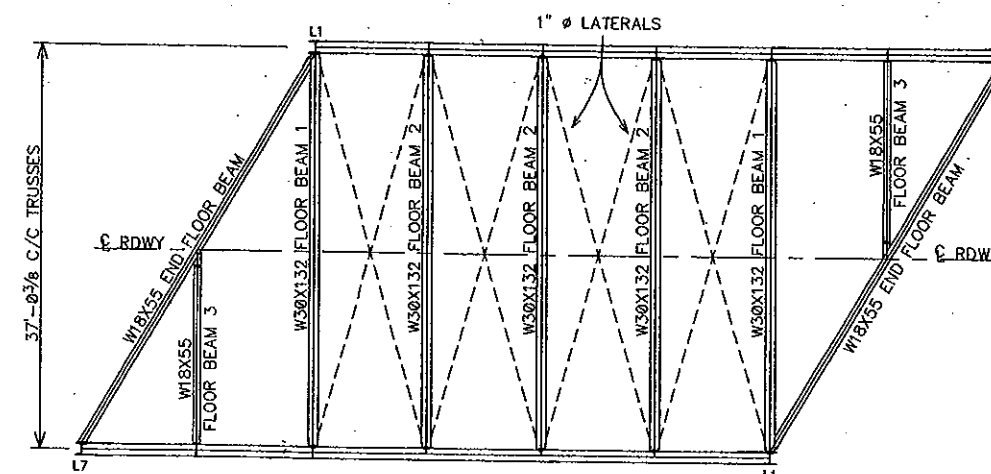
ALL MEASUREMENTS TAKEN PARALLEL TO E RDWY

\* 2 1/2\" GAP REQUIRED BETWEEN MEMBERS FOR COMPRESSION SEAL



TRUSS ELEVATION

TOTAL CAMBER = 1 1/8\"



FRAMING PLAN

ABUTMENT SKEW = 30° LF

END FLOOR BEAM SKEW = 30°-49'-21\" LF

DESIGN SPECIFICATIONS

AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 17th EDITION (2000), DIVISION I, WITH ALL INTERIM SPECIFICATIONS IN EFFECT.

LIVE LOAD

AASHTO HS20

MATERIAL

ALL SUPERSTRUCTURE STEEL SHALL BE ASTM A709, GRADE 50W (A588) WEATHERING TYPE STEEL.

ALL FASTENERS UNLESS NOTED OTHERWISE, SHALL BE 7/8\" HIGH STRENGTH BOLTS, ASTM A325 TYPE 3 (WEATHERING) WITH ASTM A563 GRADE C NUT AND ONE ASTM F436 WASHER PER BOLT. FASTENERS SHALL BE FURNISHED WITH ROTATIONAL CAPACITY TESTS.

CORRUGATED DECK TO BE WHEELING CORRUGATING COMPANY TYPE SUPER 8 3\" GAGE DECK. DECK MADE FROM ASTM A653 GALVANIZED SHEET STEEL WITH A MINIMUM G165 COATING.

CONSTRUCTION/FABRICATION

AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 17th EDITION (2000), DIVISION II, WITH ALL INTERIM SPECIFICATIONS IN EFFECT

CONCRETE 28 DAY F'c = 4000 PSI MIN.

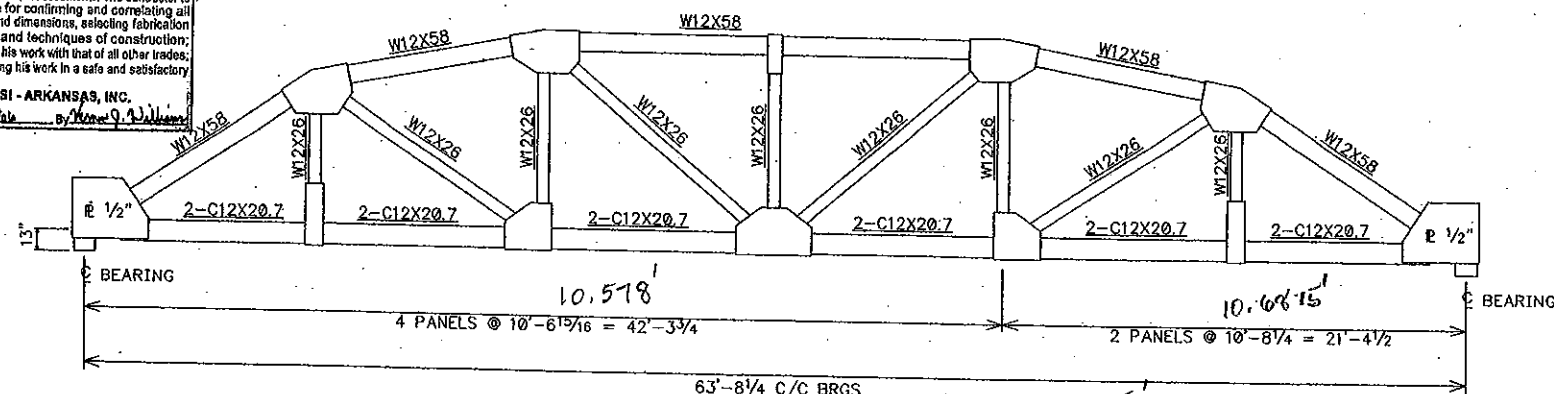
WELDING

ALL WELDING SHALL BE IN ACCORDANCE WITH AASHTO/AWS D1.5 BRIDGE WELDING CODE AND THE AASHTO FRACTURE CONTROL, WHERE APPLICABLE.

NON-DESTRUCTIVE TESTING OF WELDS SHALL BE PERFORMED AS FOLLOWS:

FILLET WELDS - VISUAL - 100%  
- MT. - 10% MIN

☒ Furnish As Submitted ☐ Revise and Resubmit  
☐ Furnish As Corrected ☐ Submit Specified Item  
Corrections or comments made on the shop drawings during this review do not relieve contractor from compliance with requirements of the drawings and specifications. This check is only for review of general conformance with the design concept of this project and general compliance with the information given in the contract documents. The contractor is responsible for confirming and correlating all quantities and dimensions, selecting fabrication processes and techniques of construction, coordinating his work with that of all other trades, and performing his work in a safe and satisfactory manner.  
USI - ARKANSAS, INC.  
Date 6/16/06 By: [Signature]



TRUSS BRIDGE DETAIL

TRUSS LIFTING WEIGHT - 10.8 K

WELD MEMBERS TO GUSSET PLATES WITH MINIMUM 5/16 INCH FILLET WELDS AT EACH END OF EACH MEMBER.

ALL GUSSET PLATES 3/8 INCHES THICK EXCEPT AS NOTED WITH SUFFICIENT FLAT AREAS TO RESIST STRESSES AND SO SHAPED TO PRODUCE AN AESTHETIC ARCHITECTURAL APPEARANCE.

NOTE: DRAWINGS RELATIVE (DO NOT SCALE)

David Morgan  
6-13-06  
[Stamp]

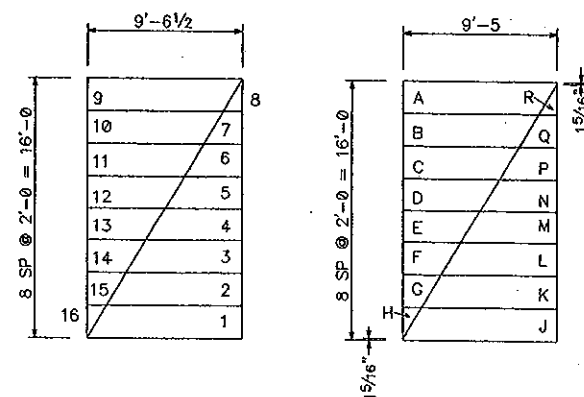
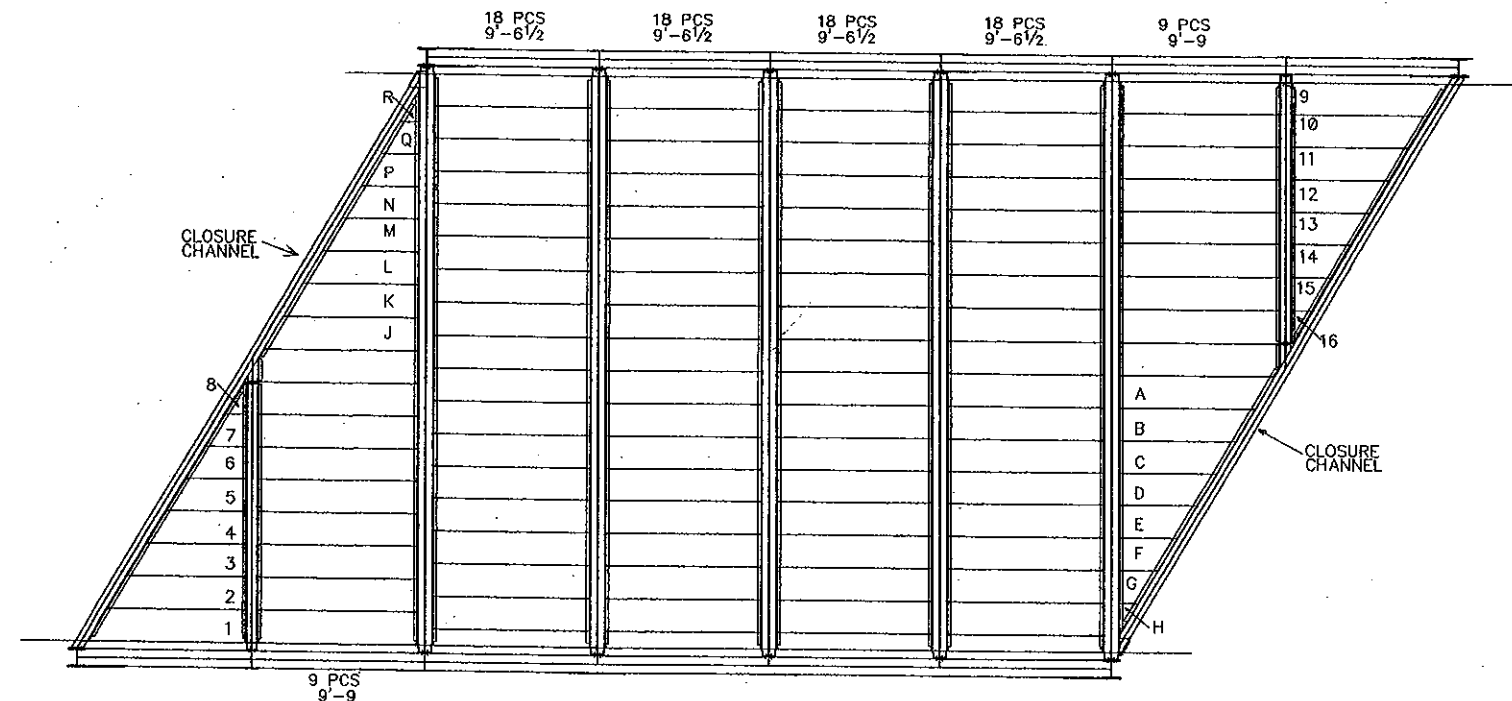
NO.	DATE	REVISIONS	BY	63'-8 TRUSS BRIDGE	35' ROADWAY WIDTH
				LAWSON ROAD	
				McHENRY CREEK BRIDGE	
				PULASKI COUNTY, ARKANSAS	
				DESIGN SAF	DRAWN SAF
				CHECK/DATE	FABRICATOR US BRIDGE
				DATE JUNE 8, 2006	DRAWING NO. McHENRY
					SHEET 1 OF 8

# MATERIAL SCHEDULE

QUANTITY	DESCRIPTION
1 ASSY	TRUSS A - 63'-8 1/4" C/C BEARINGS
1 ASSY	TRUSS B - 63'-8 1/4" C/C BEARINGS
2 PCS	END FLOOR BEAM - W18X55 @ 41'-7 1/2"
1 PC	STIFFENER PLATE A - 1/2" X 5 1/2" X 16 7/8"
1 PC	STIFFENER PLATE B - 1/2" X 6 1/2" X 16 7/8"
1 PC	STIFFENER PLATE C - 1/2" X 7 1/2" X 16 7/8"
1 PC	STIFFENER PLATE D - 1/2" X 8" X 16 7/8"
1 PC	STIFFENER PLATE E - 1/2" X 9" X 16 7/8"
1 PC	STIFFENER PLATE F - 1/2" X 10" X 16 7/8"
1 PC	STIFFENER PLATE G - 1/2" X 10 1/2" X 16 7/8"
1 PC	STIFFENER PLATE H - 1/2" X 11 1/2" X 16 7/8"
1 PC	STIFFENER PLATE J - 1/2" X 9 1/2" X 16 7/8"
1 PC	SHELF ANGLE - L5" X 3" X 1/4" @ 17'-6 1/8"
1 PC	SHELF ANGLE - L5" X 3" X 1/4" @ 18'-1"
1 PC	SHELF PLATE - 1/2" X 5 1/8" X 9 1/8" @ 10'-10 3/8"
1 PC	END PLATE - 1/2" X 10" X 22 1/4"
1 PC	END FLOOR BEAM STUB CONNECTION - W18X55 @ 1'-5 5/16"
1 PC	END FLOOR BEAM STUB CONNECTION END PLATE - 1/2" X 8" X 19 3/8"
1 PC	END FLOOR BEAM STUB SHELF ANGLE - L5" X 3" X 1/4" @ 1'-3 15/16"
40 PCS	7/8" Ø X 4" SHEAR STUDS
28 PCS	7/8" Ø X 6" SHEAR STUDS
2 PCS	FLOOR BEAM 1 - W30X132 @ 35'-9 3/4"
1 PC	END FLOOR BEAM MOUNTING BRACKET - W12X65 @ 13 1/8"
3 PCS	SHELF ANGLE - L5" X 3" X 1/4" @ 17'-2 7/8"
1 PC	SHELF ANGLE - L5" X 3" X 1/4" @ 16'-0 7/8"
2 PCS	END PLATE - 1/2" X 10" X 34 3/8"
2 PCS	LATERAL ROD ANCHOR - 3/4" X 6" X 8 1/4"
40 PCS	7/8" Ø X 4" SHEAR STUDS
28 PCS	7/8" Ø X 6" SHEAR STUDS
3 PCS	FLOOR BEAM 2 - W30X132 @ 35'-9 3/4"
4 PCS	SHELF ANGLE - L5" X 3" X 1/4" @ 17'-2 7/8"
2 PCS	END PLATE - 1/2" X 10" X 34 3/8"
4 PCS	LATERAL ROD ANCHOR - 3/4" X 6" X 8 1/4"
40 PCS	7/8" Ø X 4" SHEAR STUDS
28 PCS	7/8" Ø X 6" SHEAR STUDS
2 PCS	FLOOR BEAM 3 - W18X55 @ 16'-4 1/8"
2 PCS	SHELF ANGLE - L5" X 3" X 1/4" @ 15'-6 7/8"
1 PC	END PLATE A - 1/2" X 8" X 22 1/4"
1 PC	END PLATE B - 1/2" X 8" X 19 3/8"
20 PCS	7/8" Ø X 4" SHEAR STUDS
10 PCS	7/8" Ø X 6" SHEAR STUDS
8 PCS	LATERAL ROD - 1" Ø ROD X 35'-8 WITH 2 NUTS AND 2 WASHERS
2 ASSYS	TRUSS FIXED BEARINGS
1 PC	SOLE PLATE - 1" X 20" X 24"
1 PC	CON-SLIDE PAD - 1 1/2" X 14 1/2" X 15"
1 PC	MASONRY PLATE - 1" X 20" X 24"
1 PC	VERTICAL STAY PLATE - 3/4" X 5" X 18"
2 ASSYS	TRUSS EXPANSION BEARINGS
1 PC	SOLE PLATE - 1" X 20" X 24"
1 PC	SLIDER PLATE - 3/8" X 16" X 16 1/2" WITH 20 GA STAINLESS STEEL PLATE
1 PC	CON-SLIDE PAD - 1 1/2" X 14 1/2" X 15" WITH PTFE SURFACING
1 PC	MASONRY PLATE - 1" X 20" X 24"
1 PC	VERTICAL STAY PLATE - 3/4" X 5" X 18"
4 PCS	TRUSS BEARING ANGLE - L6" X 6" X 3/4" @ 18"
1 ASSY	END FLOOR BEAM FIXED BEARING
1 PC	CAP PLATE - 1/2" X 7 1/2" X 14"
1 PC	SPACER BEAM - W6X25 @ 18 3/8"
1 PC	SOLE PLATE - 1" X 18" X 20"
1 PC	CON-SLIDE PAD - 1 1/2" X 12" X 12"
1 PC	MASONRY PLATE - 1" X 18" X 20"
1 ASSY	END FLOOR BEAM EXPANSION BEARING
1 PC	CAP PLATE - 1/2" X 7 1/2" X 14"
1 PC	SPACER BEAM - W6X25 @ 18 3/8"
1 PC	SOLE PLATE - 1" X 18" X 20"
1 PC	SLIDER PLATE - 3/8" X 14" X 14" WITH 20 GA STAINLESS STEEL PLATE
1 PC	CON-SLIDE PAD - 1 1/2" X 12" X 12" WITH PTFE SURFACING
1 PC	MASONRY PLATE - 1" X 18" X 20"
4 PCS	ABUTMENT ANGLE - L6" X 4" X 1/2" @ 20'-4"
1 PC	RETAINER BAR - 3/8" X 3/8" BAR @ 20'-4"
16 PCS	1/2" Ø X 4" SHEAR STUDS
4 PCS	SHELF CHANNEL - C12X20.7 @ 40'-7"
1 PC	RETAINER BAR - 3/8" X 3/8" BAR @ 40'-7"
27 PCS	1/2" Ø X 4" SHEAR STUDS
2 PCS	L1L2 END DAM - C12X20.7 @ 12'-1"
1 PC	CLIP ANGLE - L3" X 3" X 5/16" @ 9 1/2"
1 PC	CLIP ANGLE - L3" X 3" X 5/16" @ 5"
8 PCS	1/2" Ø X 4" SHEAR STUDS
6 PCS	INSIDE PANEL END DAM - C12X20.7 @ 10'-8 11/16"
2 PCS	CLIP ANGLE - L3" X 3" X 5/16" @ 5"
7 PCS	1/2" Ø X 4" SHEAR STUDS
2 PCS	L5L6 END DAM - C12X20.7 @ 10'-8 1/16"
2 PCS	CLIP ANGLE - L3" X 3" X 5/16" @ 5"
7 PCS	1/2" Ø X 4" SHEAR STUDS
2 PCS	L6L7 END DAM - C12X20.7 @ 10'-8 1/2"
1 PC	CLIP ANGLE - L3" X 3" X 5/16" @ 5"
1 PC	CLIP ANGLE - L3" X 3" X 5/16" @ 8 1/2"
7 PCS	1/2" Ø X 4" SHEAR STUDS

QUANTITY	DESCRIPTION
12 PCS	GUARDRAIL BRACKET - C12X20.7 @ 4"
1 PC	MOUNTING PLATE - 1/2" X 4" X 21"
12 PCS	ANCHOR BOLTS - ASTM A449 - 1 1/2" Ø X 22" WITH 2 NUTS AND 1 WASHER
34 PCS	7/8" Ø X 2" ASTM A325 TYPE 3 WEATHERING B,N,W
46 PCS	7/8" Ø X 2 1/2" ASTM A325 TYPE 3 WEATHERING B,N,W
38 PCS	7/8" Ø X 2 3/4" ASTM A325 TYPE 3 WEATHERING B,N,W
78 PCS	7/8" Ø X 3" ASTM A325 TYPE 3 WEATHERING B,N,W
190 PCS	7/8" Ø X 3 1/4" ASTM A325 TYPE 3 WEATHERING B,N,W
2 PCS	WA400 WABO COMPRESSION SEAL @ 41'-0"
12 PCS	WEATHERING THRIE BEAM RAIL @ 12'-6"
24 PCS	5/8" Ø X 2" WEATHERING GUARDRAIL MOUNTING BOLT
168 PCS	5/8" Ø X 1 1/4" WEATHERING GUARDRAIL SPLICE BOLT
72 PCS	16 GA SUPER 8 - 3" STAY IN PLACE FORM (LAYS 24") @ 9'-6 1/2"
18 PCS	16 GA SUPER 8 - 3" STAY IN PLACE FORM (LAYS 24") @ 9'-9"
8 PCS	16 GA SUPER 8 - 3" STAY IN PLACE FORM (LAYS 24") @ 9'-5"
8 PCS	16 GA SUPER 8 - 3" STAY IN PLACE FORM (LAYS 24") @ 9'-6 1/2"
9 PCS	CLOSURE CHANNEL FOR 3" FORMS @ 10'-0"
1200 PCS	3/8" Ø X 1" HEX HEAD DECK ATTACHMENT SCREWS

BOLT CHART		BOLT TYPE - 7/8" Ø A325 TYPE 3 WEATHERING					
LOCATION		SIZE					
		2"	2 1/4"	2 1/2"	2 3/4"	3"	3 1/4"
FLOOR BEAMS 1 TO TRUSS							72
FLOOR BEAMS 2 TO TRUSS							108
FLOOR BEAMS 3 TO TRUSS						24	
FLOOR BEAMS 3 TO END FLOOR BEAM STUB				20			
END FLOOR BEAM TO TRUSS						24	
END FLOOR BEAM TO FLOOR BEAM 1 MOUNTING BRACKET					12		
END FLOOR BEAM TO MIDDLE BEARING				8			
TRUSS SHOE TO BEARINGS					16		
END DAM TO FBS 1 + 2						20	
END DAM TO END FB+END FB				8			
GUARDRAIL BRACKET TO TRUSS	24						
TOTAL REQ'D		24		36	28	68	180
TOTAL ORDERED		34		46	38	78	190



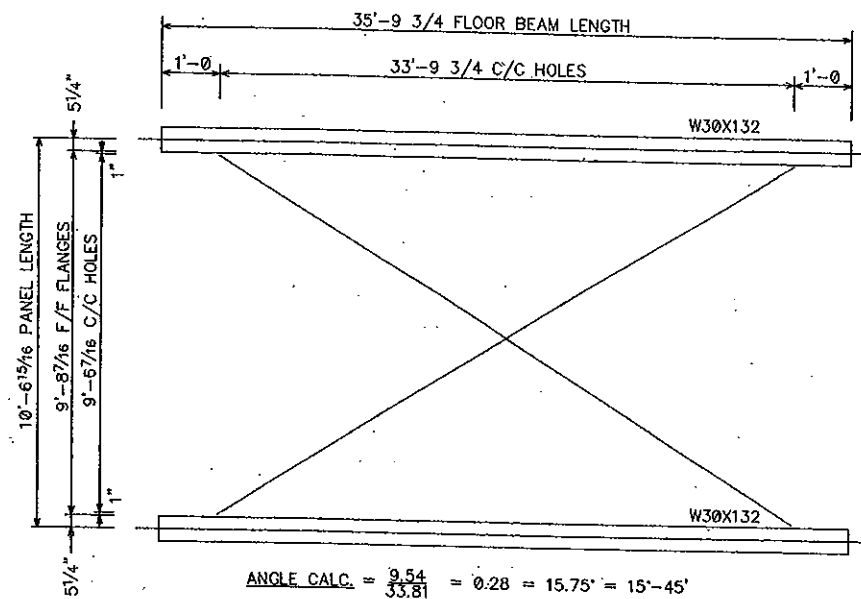
SKEW CUT FORM DETAILS

NOTE: DRAWINGS RELATIVE (DO NOT SCALE)

NO.	DATE	REVISIONS	BY	63'-8 TRUSS BRIDGE 35' ROADWAY WIDTH			
				LAWSON ROAD			
				McHENRY CREEK BRIDGE			
				PULASKI COUNTY, ARKANSAS			
				DESIGN	DRAWN	DATE	DRAWING NO.
				SAF	SAF	JUNE 8, 2006	McHENRY
				CHECK/DATE	FABRICATOR		
					US BRIDGE		
							SHEET
							2 OF 8





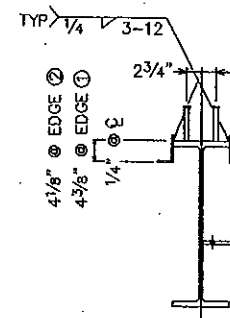
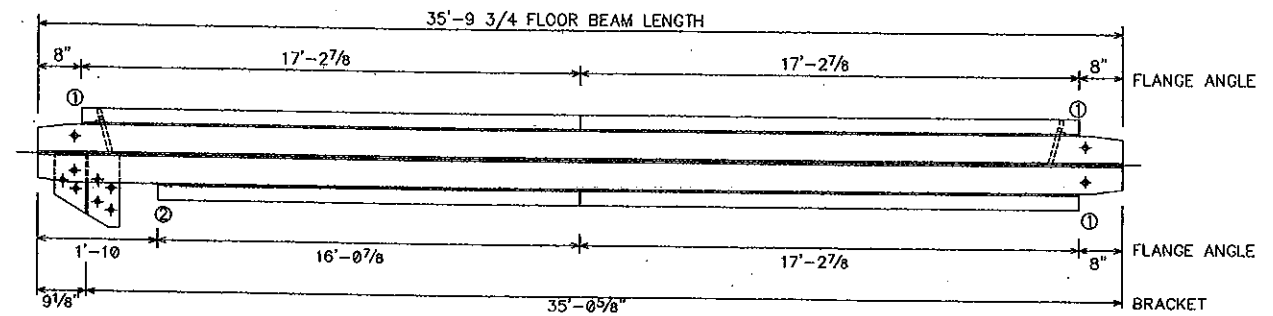


$$\text{ANGLE CALC.} = \frac{9.54}{33.81} = 0.28 = 15.75^\circ = 15^\circ-45'$$

$$\text{LENGTH CALC.} = \frac{33.81}{\cos 15.75^\circ} = 35.13'$$

#### LATERAL ROD LENGTHS

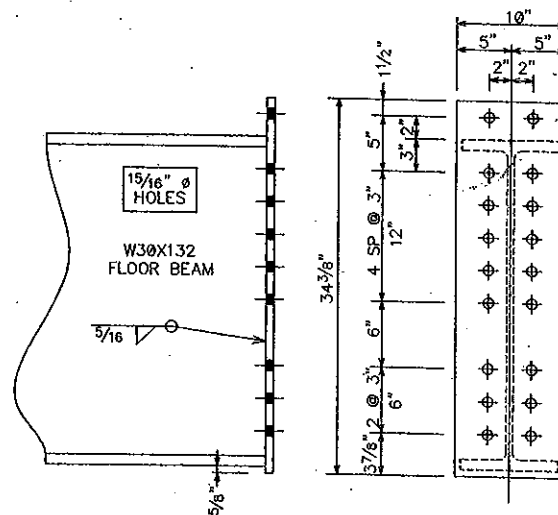
8 PCS - 1"  $\phi$  ROD - 35'-8" WITH 6" THREAD, NUT AND WASHER EACH END



END FLOOR BEAM  
MOUNTING BRACKET

#### FLOOR BEAM 1 DETAIL

W30X132  
2 REQ'D

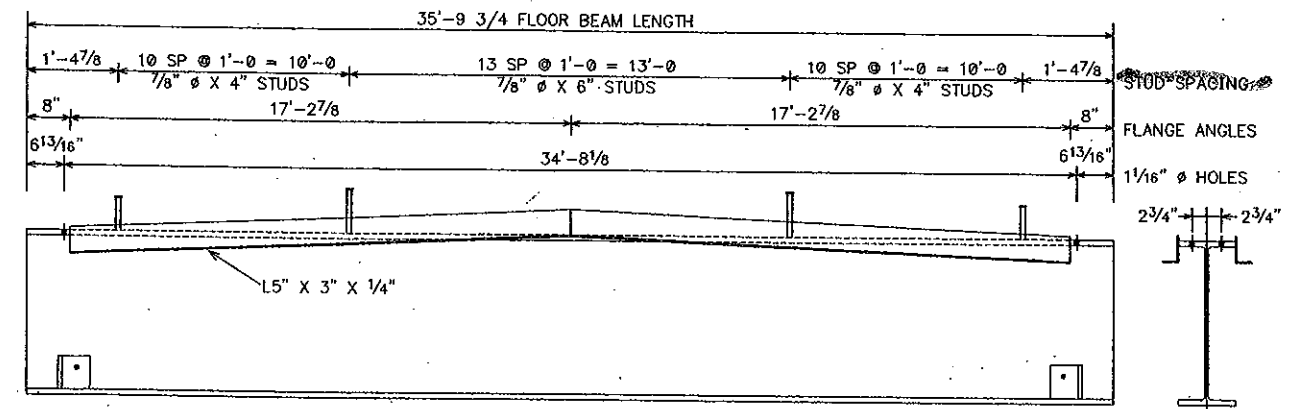


#### FLOOR BEAMS 1 AND 2 END PLATES

2 3/4" X 10" X 34 3/8"  
10 REQ'D

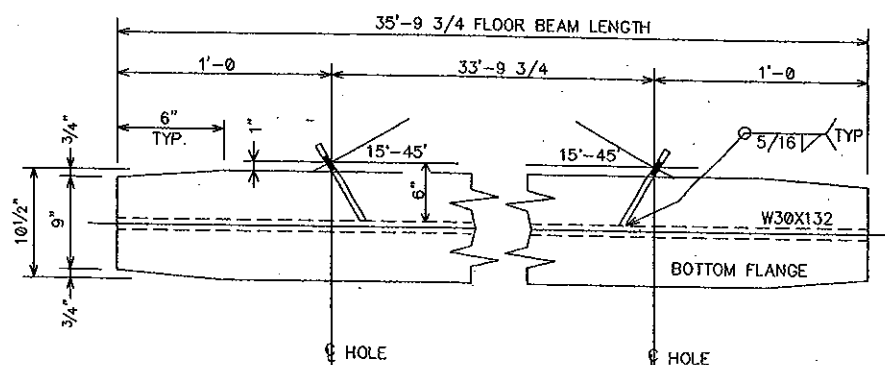
#### FLOOR BEAM 1 TO END FLOOR BEAM MOUNTING BRACKET

W12X65  
2 REQ'D



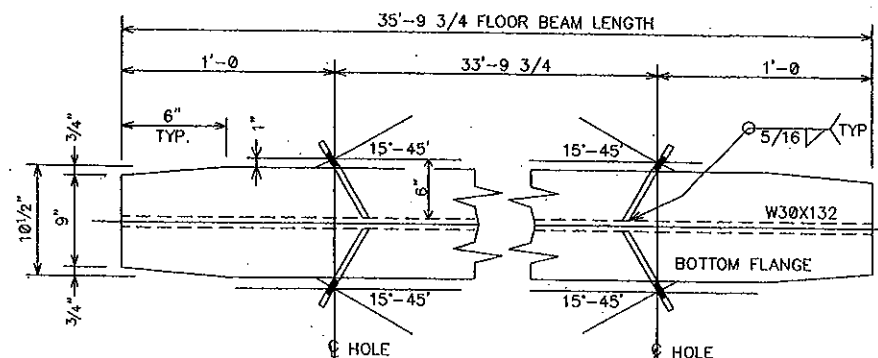
#### FLOOR BEAM 2 DETAIL

W30X132  
3 REQ'D



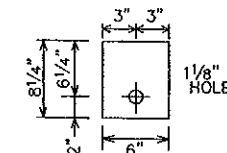
#### FLOOR BEAM 1 LATERAL ROD ANCHOR LAYOUT

2 REQ'D AS SHOWN



#### FLOOR BEAM 2 LATERAL ROD ANCHOR LAYOUT

3 REQ'D AS SHOWN



#### FLOOR BEAM LATERAL ROD ANCHOR

2 3/4" X 6" X 8 1/4"

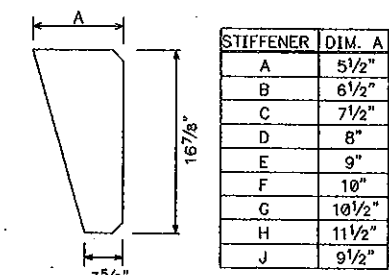
16 REQ'D

12 REQ'D FOR FLOOR BEAMS 2

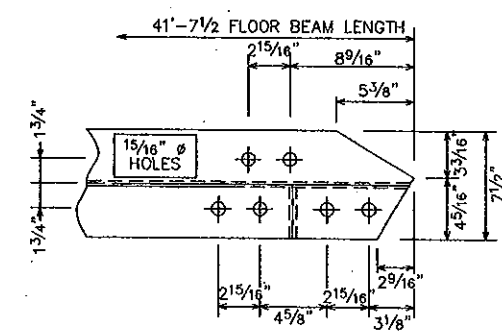
4 REQ'D FOR FLOOR BEAMS 1

NO.	DATE	REVISIONS	BY	63'-8 TRUSS BRIDGE	35' ROADWAY WIDTH
				LAWSON ROAD	
				McHENRY CREEK BRIDGE	
				PULASKI COUNTY, ARKANSAS	
				DESIGN	DRAWN
				SAF	SAF
				CHECK/DATE	DATE
					JUNE 8, 2006
				FABRICATOR	DRAWING NO.
				US BRIDGE	McHENRY
					SHEET
					4 OF 8

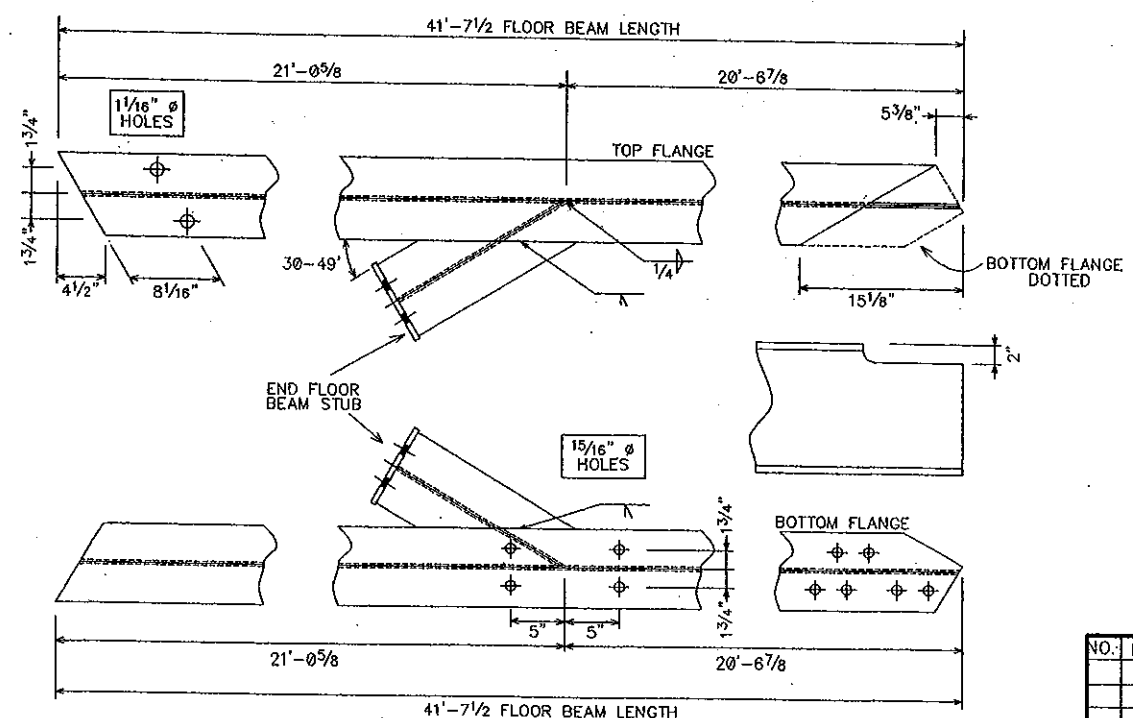
NOTE: DRAWINGS RELATIVE (DO NOT SCALE)



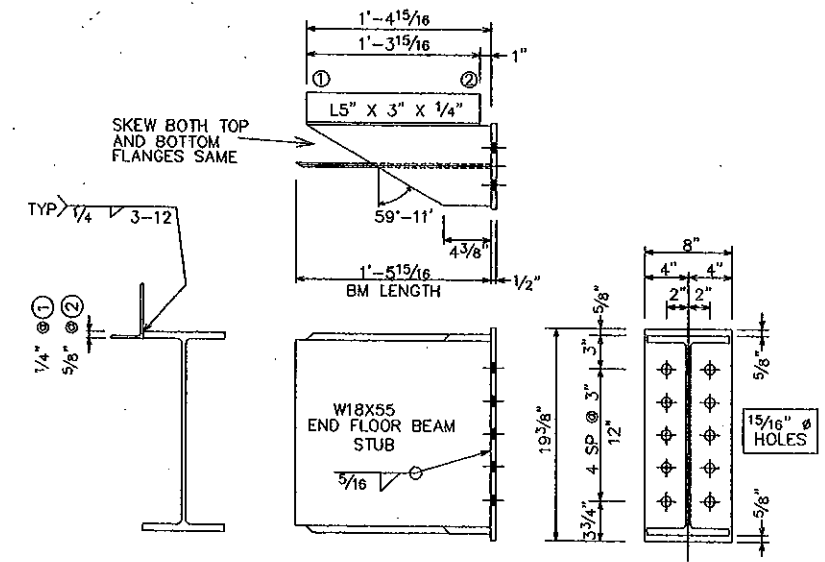
1/2" PLATE  
2 REQ'D EACH



DETAIL 2  
BOTTOM FLANGE SHOWN  
TOP FLANGE CUT SIMILAR



DETAIL 1

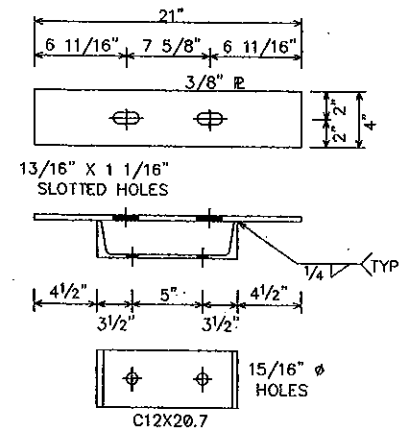
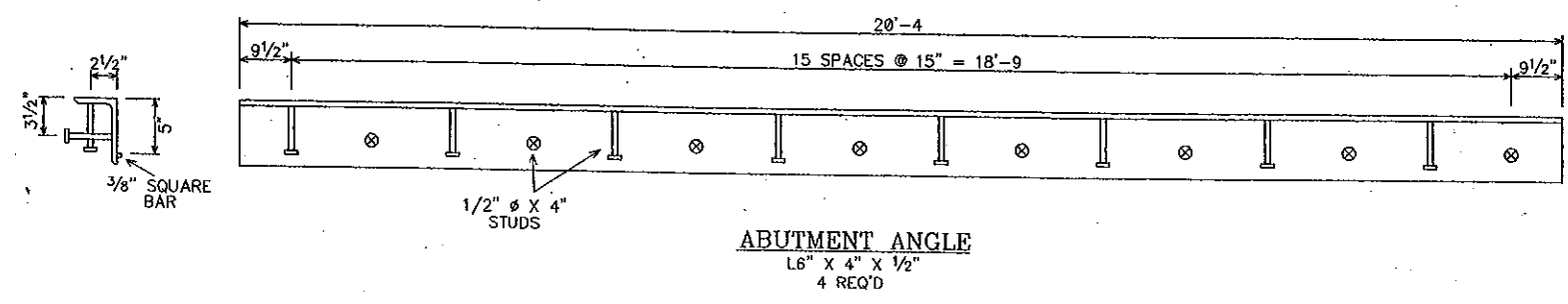
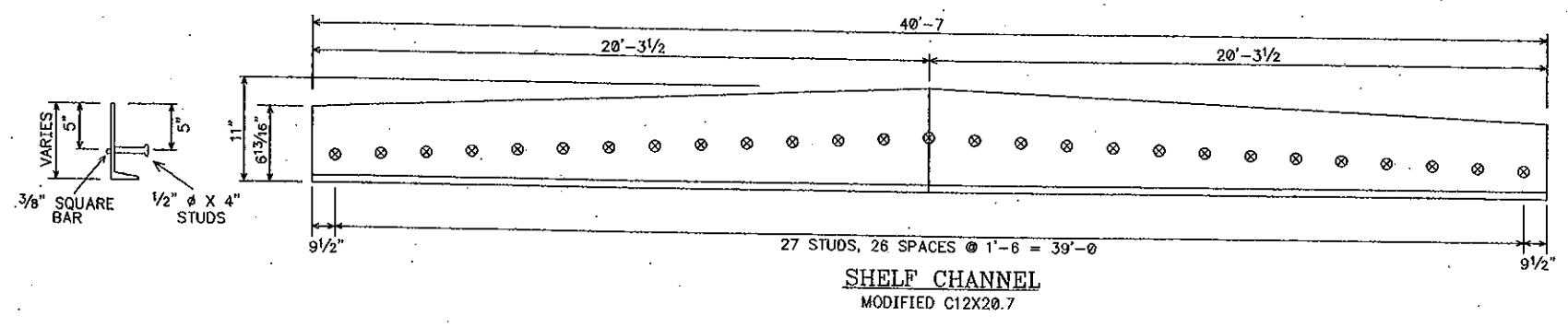
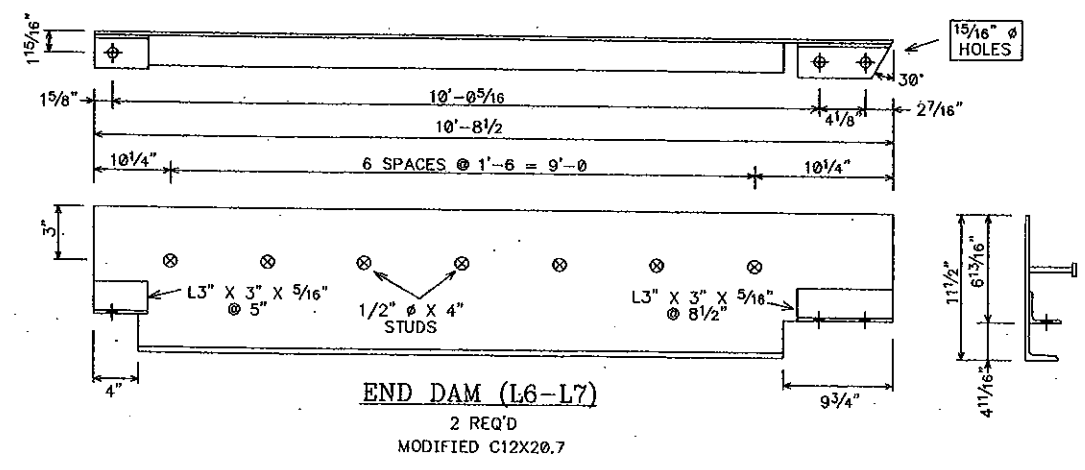
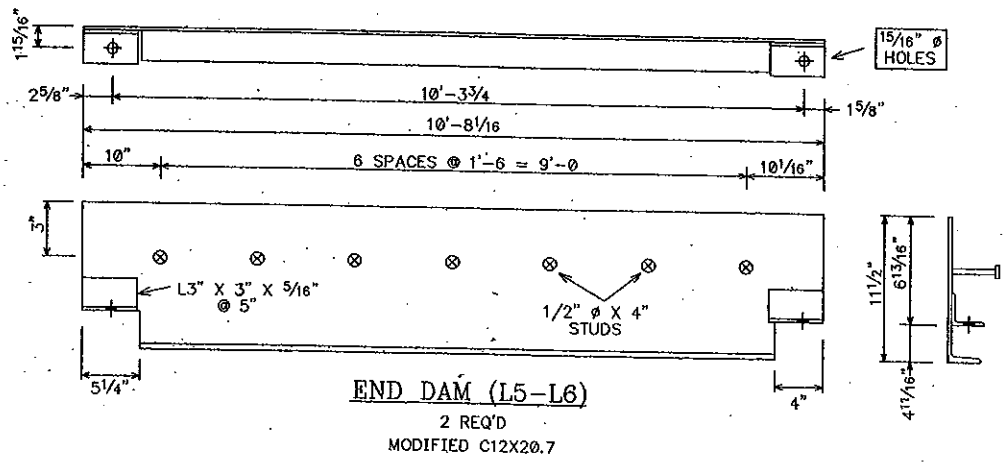
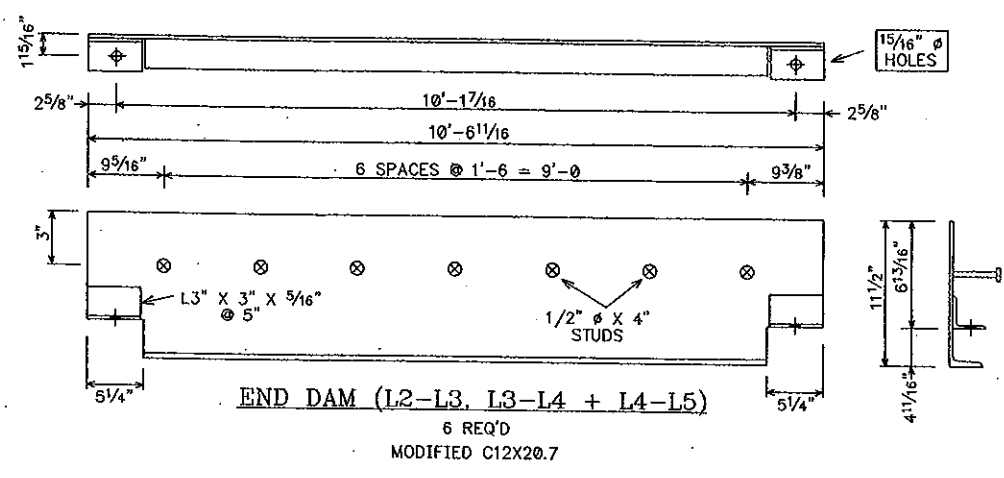
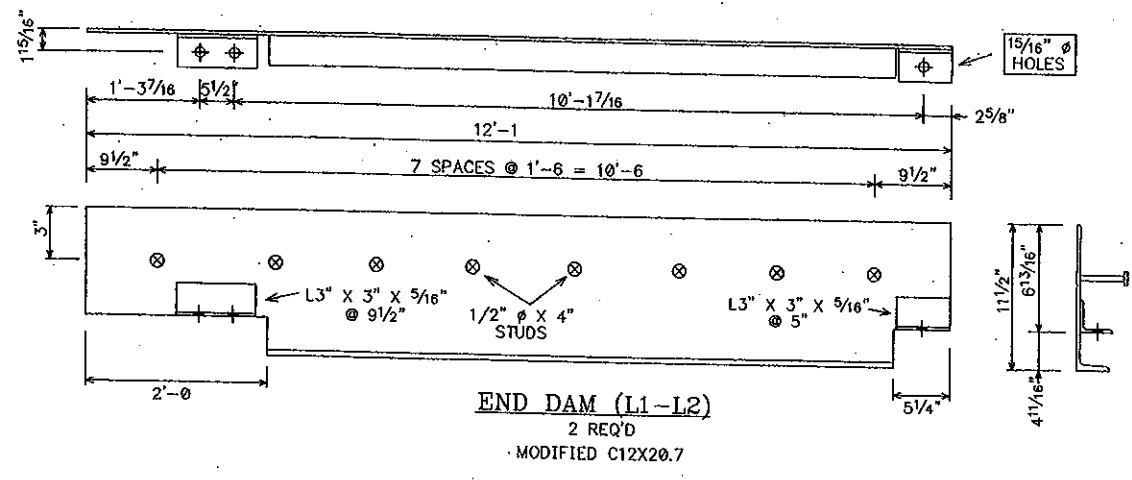


2 REQ'D

2 1/2" X 10" X 22 1/4"  
2 REQ'D

NOTE: DRAWINGS RELATIVE (DO NOT SCALE)

NO.	DATE	REVISIONS	BY	63'-8 TRUSS BRIDGE				35' ROADWAY WIDTH	
				LAWSON ROAD					
				McHENRY CREEK BRIDGE					
				PULASKI COUNTY, ARKANSAS					
				DESIGN SAF	DRAWN SAF	DATE JUNE 8, 2006	DRAWING NO. McHENRY		SHEET
				CHECK/DATE	FABRICATOR US BRIDGE				5 OF 8

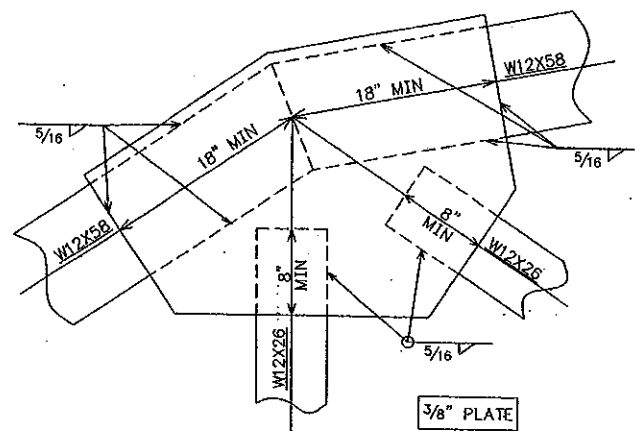


**GUARDRAIL BRACKET**

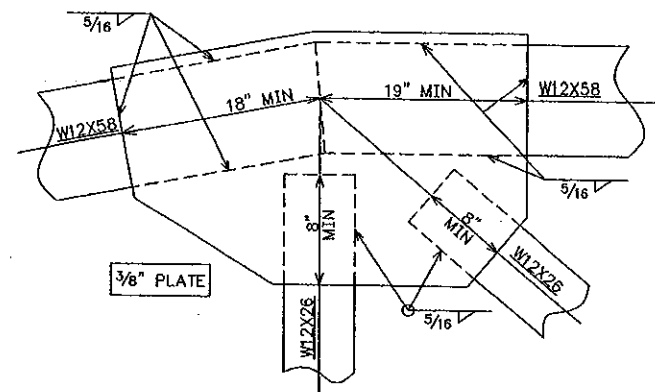
NOTE - BRACKET TO BE MADE OF WEATHERING STEEL  
12 REQ'D

NOTE: DRAWINGS RELATIVE (DO NOT SCALE)

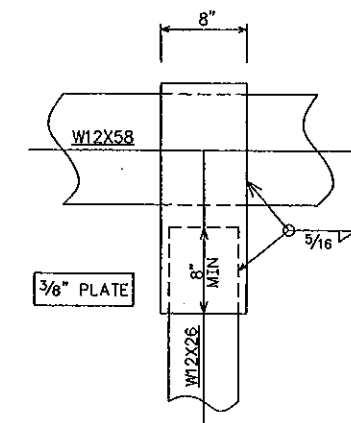
NO.		DATE	REVISIONS	BY	63'-8 TRUSS BRIDGE 35' ROADWAY WIDTH			
					LAWSON ROAD			
					McHENRY CREEK BRIDGE			
					PULASKI COUNTY, ARKANSAS			
					DESIGN	DRAWN	DATE	DRAWING NO.
					SAF	SAF	JUNE 8, 2006	McHENRY
					CHECK/DATE	FABRICATOR		
						US BRIDGE		
								SHEET
								6 OF 8



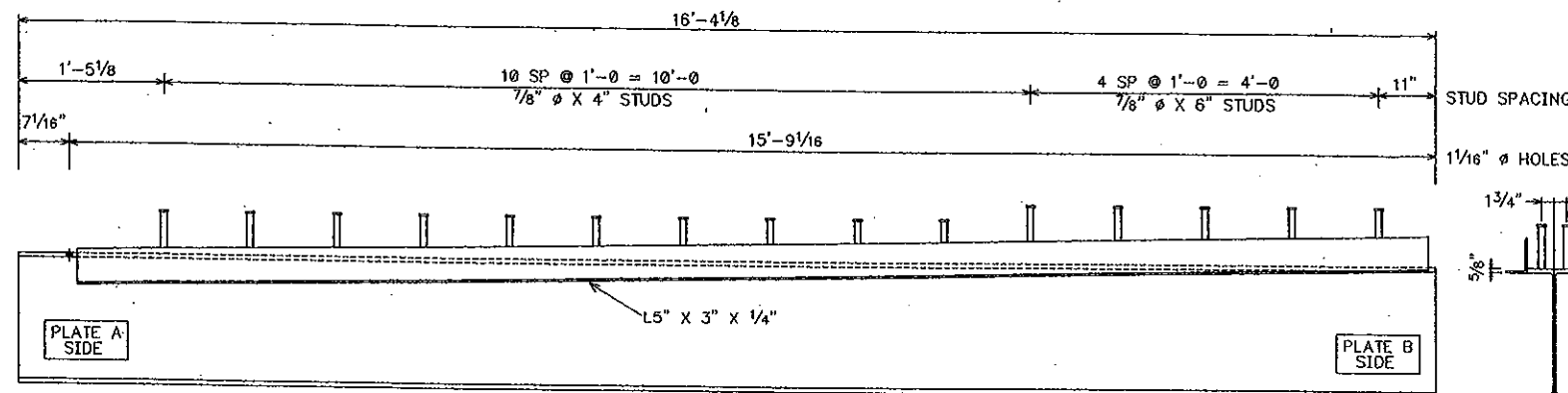
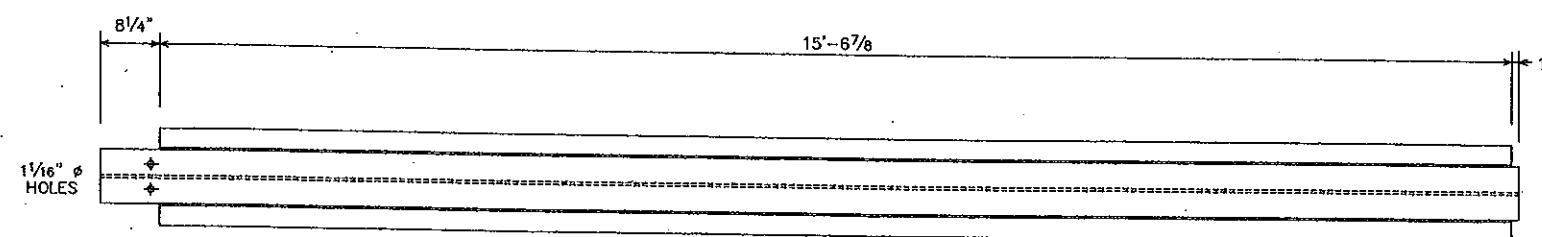
U2 + U6 GUSSET PLATES



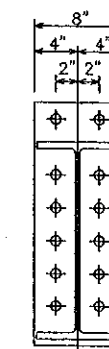
U3 + U5 GUSSET PLATES



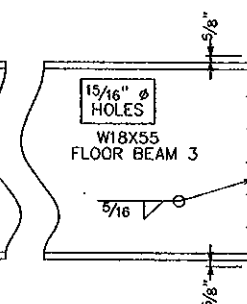
U4 GUSSET PLATES



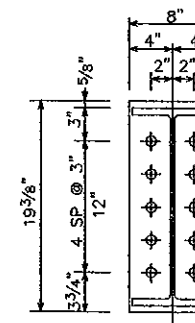
FLOOR BEAM 3  
W18X55  
2 REQ'D



FLOOR BEAM 3 END PLATE A  
P 1/2" X 8" X 22 1/4"  
2 REQ'D



FLOOR BEAM 3 END PLATE B  
P 1/2" X 8" X 19 3/8"  
2 REQ'D

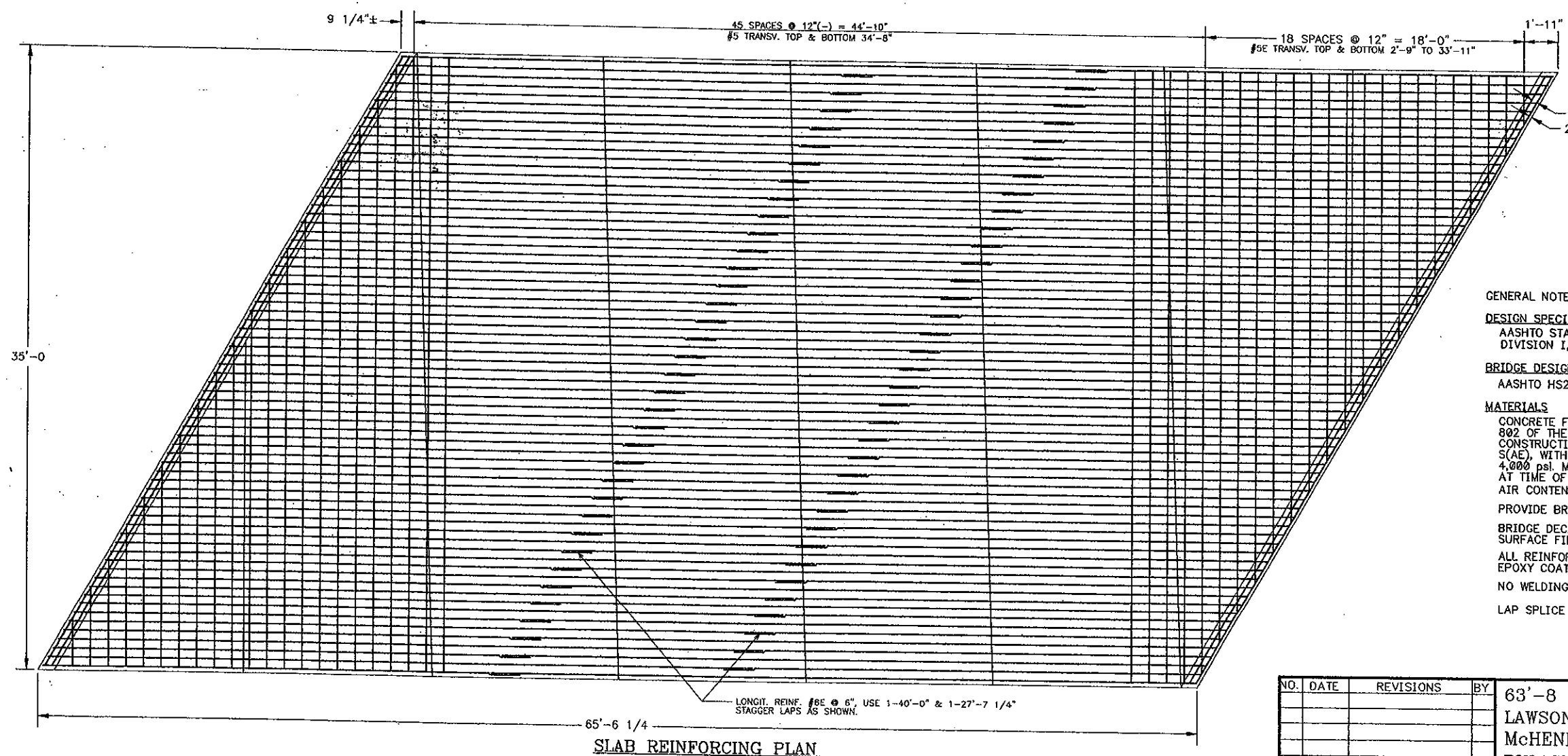
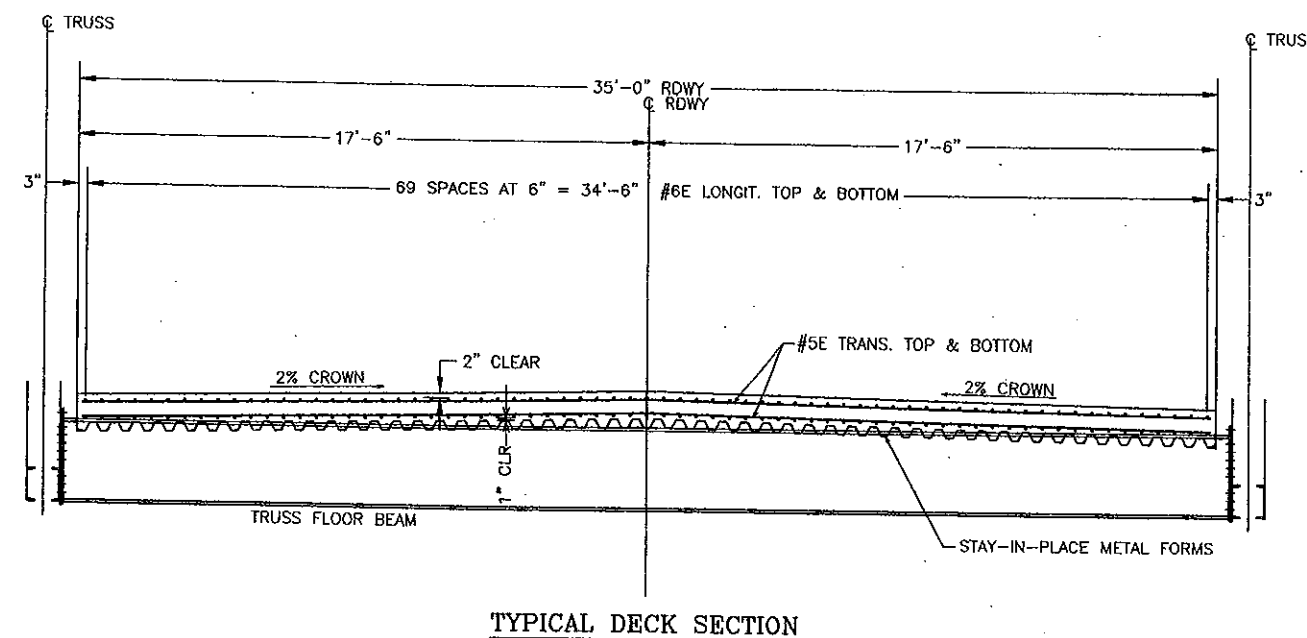
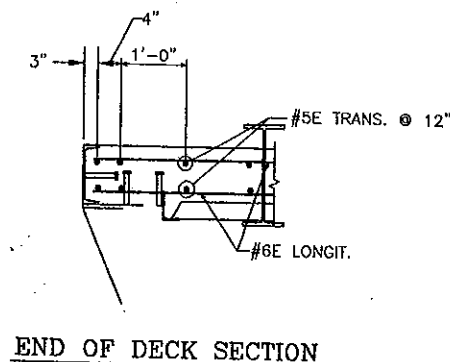


NOTE: DRAWINGS RELATIVE (DO NOT SCALE)

NO.	DATE	REVISIONS	BY	63'-8 TRUSS BRIDGE 35' ROADWAY WIDTH			
				LAWSON ROAD			
				McHENRY CREEK BRIDGE			
				PULASKI COUNTY, ARKANSAS			
				DESIGN	DRAWN	DATE	DRAWING NO.
				SAF	SAF	JUNE 8, 2006	McHENRY
				CHECK/DATE	FABRICATOR		
					US BRIDGE		
				SHEET		8	
				7		OF	



☒ Furnish As Submitted    ☐ Revise and Resubmit  
☐ Furnish As Corrected    ☐ Submit Specified Item  
 Corrections or comments made on the shop drawings during this review do not relieve contractor from compliance with requirements of the drawings and specifications. This check is only for review of general conformance with the design concept of the project and general compliance with the information given in the contract documents. The contractor is responsible for confirming and correlating all quantities and dimensions, selecting fabrication processes and techniques of construction, coordinating his work with that of all other trades, and performing his work in a safe and satisfactory manner.  
 USI - ARKANSAS, INC.  
 Date 6/20/06 By *John W. Styles*



#### GENERAL NOTES

#### DESIGN SPECIFICATIONS

AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, DIVISION I, WITH ALL INTERIM SPECIFICATIONS.

#### BRIDGE DESIGN LIVE LOADS

AASHTO HS20

#### MATERIALS

CONCRETE FOR BRIDGE DECK SHALL CONFORM TO SECTION 802 OF THE ARKANSAS HIGHWAY DEPARTMENT STANDARD CONSTRUCTION SPECIFICATIONS, 2003 EDITION. CONCRETE SHALL BE CLASS S(AE), WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4,000 psi. MAXIMUM WATER/CEMENT RATIO IS 0.44. SLUMP AT TIME OF PLACEMENT SHALL BE 1" TO 4". AIR CONTENT SHALL BE 6% ± 2%.

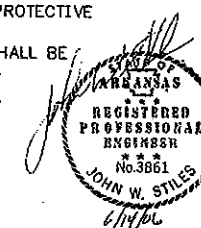
PROVIDE BRIDGE DECK WITH A CLASS 5 TINED FINISH.

BRIDGE DECK SHALL BE COATED WITH A CLASS 1 PROTECTIVE SURFACE FINISH.

ALL REINFORCEMENT SHALL BE AASHTO M31 AND SHALL BE EPOXY COATED IN ACCORDANCE WITH AASHTO M54.

NO WELDING OF REINFORCEMENT SHALL BE ALLOWED.

LAP SPLICE ALL BARS 32 BAR DIAMETERS.



NOTE: DRAWINGS RELATIVE (DO NOT SCALE)

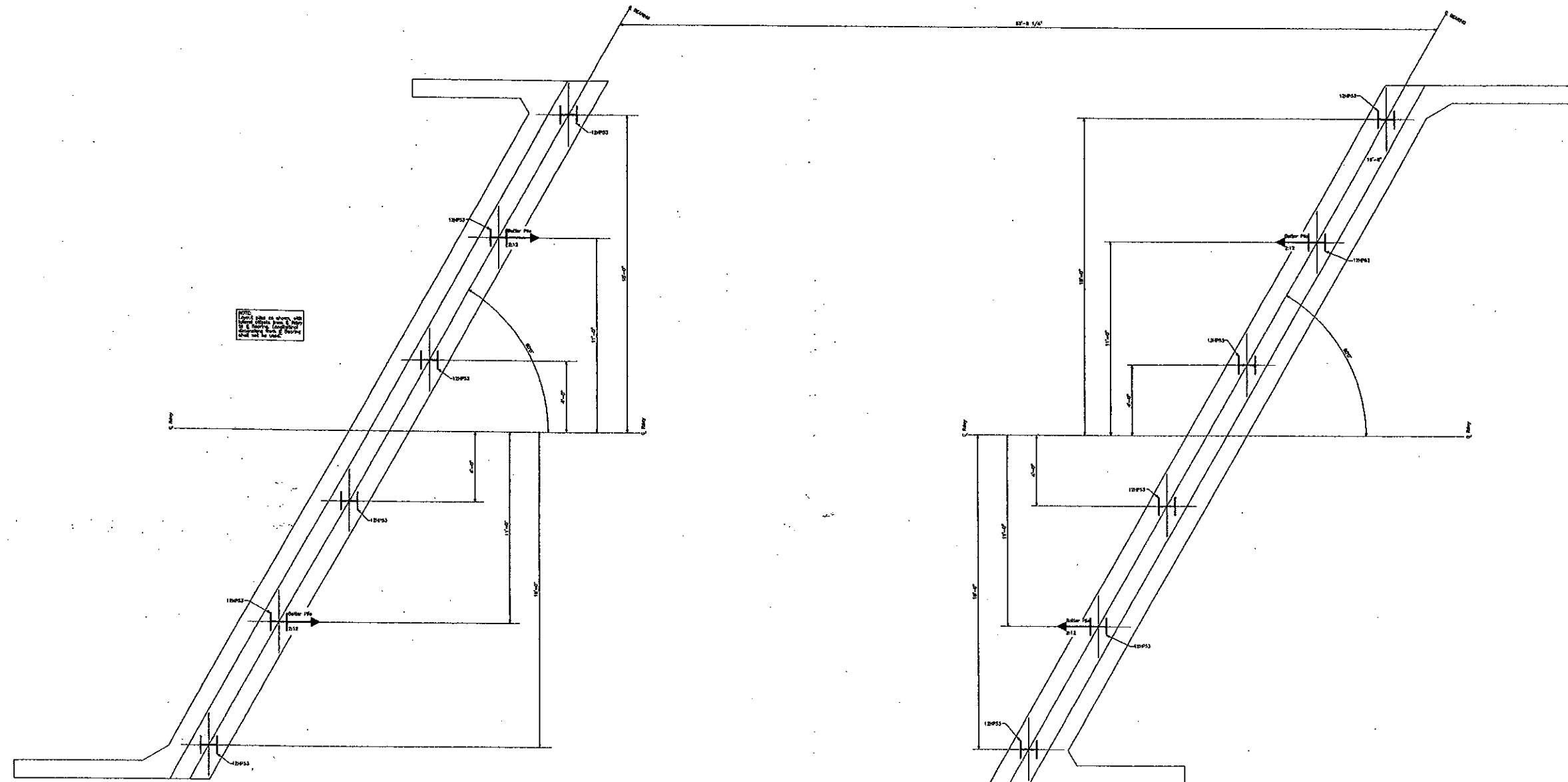
NO.	DATE	REVISIONS	BY	63'-8 TRUSS BRIDGE 35' ROADWAY WIDTH			
				LAWSON ROAD			
				McHENRY CREEK BRIDGE			
				PULASKI COUNTY, ARKANSAS			
				DESIGN	DRAWN	DATE	DRAWING NO.
				JWS	JWS	MAY 4, 2006	McHENRY
				CHECK/DATE	FABRICATOR		
							SHEET
							1 OF 4





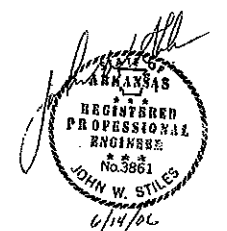
STATE OF ARKANSAS  
REGISTERED  
PROFESSIONAL  
ENGINEER  
No. 3861  
JOHN W. STILES  
6/14/06

NO.	DATE	REVISIONS	BY	63'-8 TRUSS BRIDGE				35' ROADWAY WIDTH	
				LAWSON ROAD					
				McHENRY CREEK BRIDGE					
				PULASKI COUNTY, ARKANSAS					
				DESIGN JWS	DRAWN JWS	DATE MAY 24, 2006	DRAWING NO. McHENRY		<u>SHEET</u> 2 OF 4
				CHECK/DATE	FABRICATOR US BRIDGE				

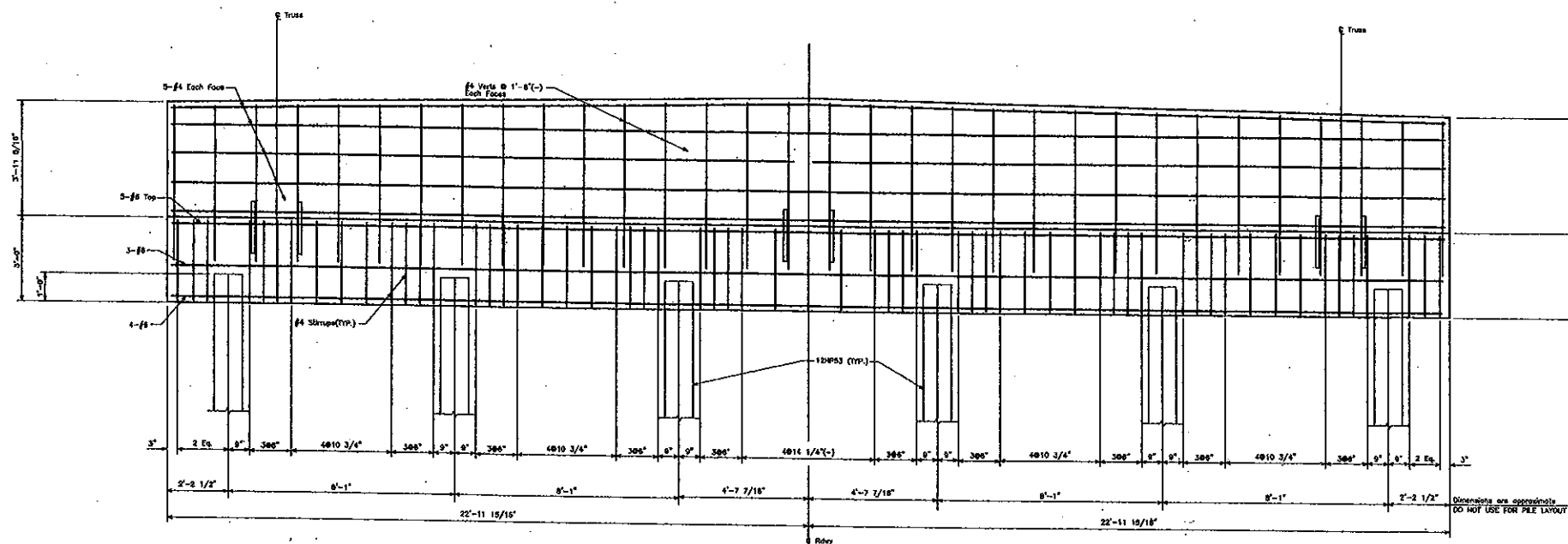


PILE LOCATION PLAN

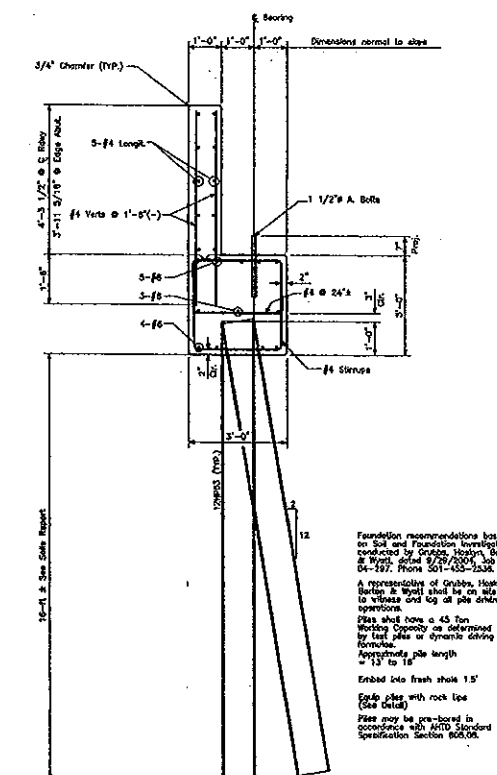
NOTE: DRAWINGS RELATIVE (DO NOT SCALE)



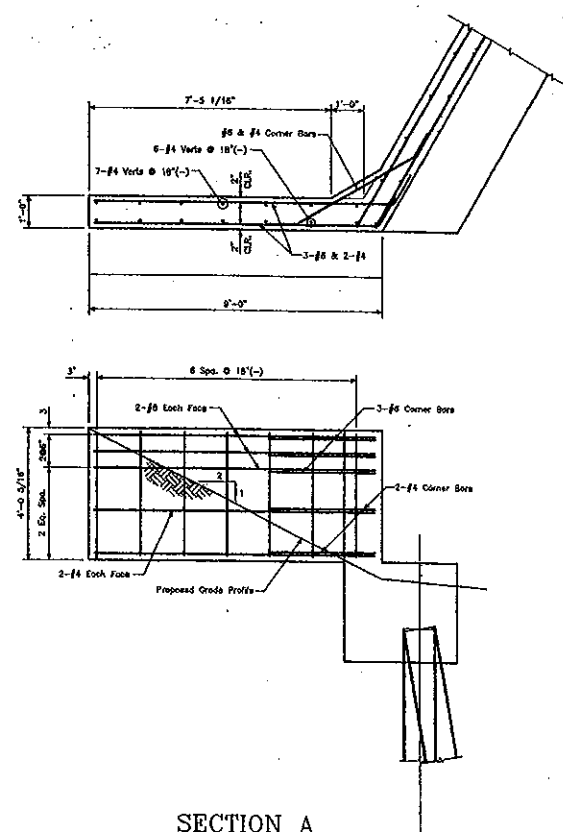
NO.	DATE	REVISIONS	BY	63'-8 TRUSS BRIDGE 35' ROADWAY WIDTH				
				LAWSON ROAD				
				McHENRY CREEK BRIDGE				
				PULASKI COUNTY, ARKANSAS				
				DESIGN JWS	DRAWN JWS	DATE MAY 24, 2006	DRAWING NO. McHENRY	SHEET
				CHECK/DATE	FABRICATOR US BRIDGE			3 OF 4



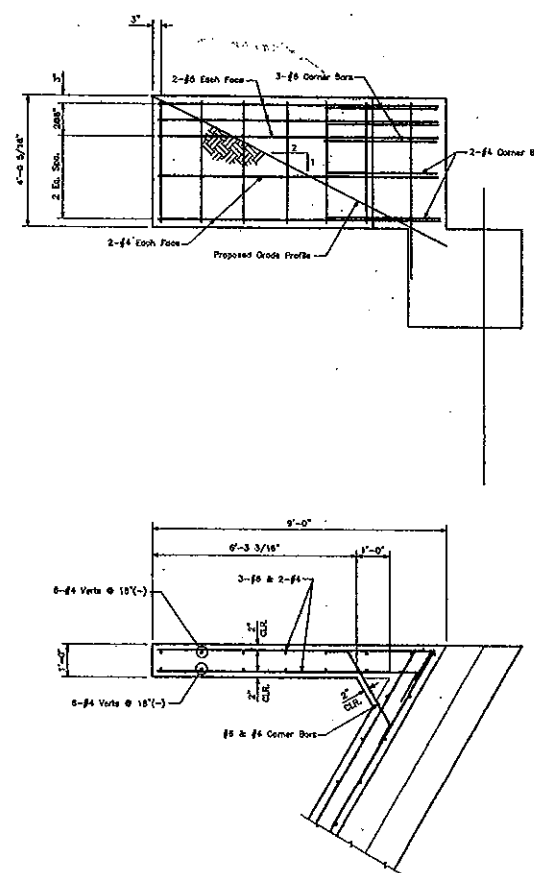
TYPICAL ABUTMENT ELEVATION



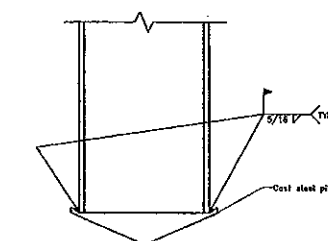
TYPICAL ABUTMENT SECTION



SECTION A



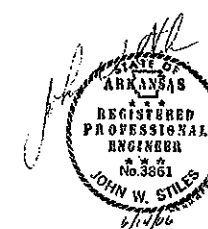
SECTION B



PILE TIP DETAIL

NOTE: DRAWINGS RELATIVE (DO NOT SCALE)

NO.	DATE	REVISIONS	BY	63'-8 TRUSS BRIDGE 35' ROADWAY WIDTH			
				LAWSON ROAD			
				McHENRY CREEK BRIDGE			
				PULASKI COUNTY, ARKANSAS			
				DESIGN	DRAWN	DATE	DRAWING NO.
				JWS	JWS	MAY 24, 2006	McHENRY
				CHECK/DATE	FABRICATOR		
					US BRIDGE		
				SHEET		4 OF 4	



# STEEL TRUSS BRIDGE TECHNICAL SPECIFICATIONS

Br. No. 23023

## 1.0 GENERAL

- 1.1 These specifications are for a fully engineered clear span bridge of welded steel construction and shall be regarded as minimum standards for design and fabrication.
- 1.2 Qualified Suppliers
  - (a) Each bidder is required to identify their intended bridge supplier as part of the bid submittal. Qualified suppliers must have at least 5 years experience fabricating these type structures.
  - (b) Pre-Approved Manufacturers:
    1. Steadfast Bridge Company.
    2. U.S. Bridge.
    3. Continental Bridge.

Suppliers other than those listed above may be used provided the Engineer evaluates the proposed supplier and approves the supplier prior to bid.

- (c) Proposed suppliers must have at least five (5) years experience designing and fabricating these type vehicular structures and a minimum of five (5) successful bridge projects, of similar construction, each of which has been in service at least three (3) years. List the location, bridge size, owner, and a contact for reference for each project.

## 2.0 DIMENSIONS

- 2.1 **Width:** Inside clear width of bridge shall be 35 feet 0 inches.
- 2.2 **Length:** 66 feet 0 inches from inside face of the abutment at driving surface level to same location on opposite abutment.
- 2.3 **Bridge Skew:** 30 degree left forward skew.

## 3.0 DESIGN

- 3.1 **Design Criteria:** The design of the bridge shall be in accordance with the American Association of State Highway Transportation Officials Standard Specification For Highway Bridges 17th Edition with interim revisions (herein referred to as "AASHTO") Load Factor Design. Tubular members and their connections shall be designed per the AISC "Hollow Structural Sections Connections Manual" latest edition.
- 3.2 **Uniform Live Load:** Portions of vehicular bridges (sidewalks) that carry pedestrian traffic shall be designed in accordance with AASHTO Section 3.14 criteria.
- 3.3 **Vehicle Loads:** The bridge shall be designed for HS-20-44 loading in accordance with AASHTO section 3.

- 3.4 **Wind Load:** The bridge structure shall be designed for wind loads in accordance with AASHTO section 3.
- 3.5 **Seismic:** All bridges shall be designed for seismic loads of the intensity required by AASHTO criteria unless specified otherwise.
- 3.6 **Contractor Design Responsibilities:** The bridge supplier shall be responsible for the complete structural design of the following bridge components.
  - (a) All structural steel members.
  - (b) Reinforced concrete bridge deck.
  - (c) Reinforced concrete bridge abutment.
  - (d) All other bridge components, excluding piles, not specifically mentioned.
- 3.6 **Shop Drawings:** Shop drawings and design calculations shall be prepared and sealed by a professional Engineer registered in Arkansas and submitted to the owner for approval. The contractor shall be responsible for verification of all field dimensions prior to bridge fabrication.

#### 4.0 STRUCTURAL STEEL

- 4.1 All structural members shall have a minimum thickness of material in accordance with AASHTO section 10.8.
- 4.2 Unpainted Weathering Steel bridges shall be fabricated from ASTM A242 or ASTM A588 steel for plates and structural shapes and ASTM A606 or ASTM A847 for tubular sections. Minimum yield ( $F_y$ ) shall be greater than 50,000 psi.
- 4.3 Field splices shall be bolted with High Strength ASTM A325 bolts; type 3 bolts are required for weathering steel bridges.
- 4.4 Welding materials shall be in strict accordance with the American Welding Society (AWS) Structural welding code, D1.1. for tubular members and ANSI/AASHTO/AWS D1.5 Bridge welding code for other structural steel members. Welders will be certified in accordance with the weld process to be used.

#### 5.0 STEEL FABRICATION AND QUALITY CONTROL

- 5.1 Bridge fabricator shall be certified by the American Institute of Steel Construction to have the personnel, organization, experience, capability, and commitment to produce fabricated structural steel for Conventional Steel Structures and Major Steel Bridges with Sophisticated Paint Endorsement and Fracture Critical Endorsement as set forth in the AISC Certification Program.
- 5.2 To ensure consistently high levels of quality fabrication, bridge fabricator shall be the designer and supplier of the bridge and shall not assign, sublet, or subcontract any part of bridge fabrication.

- 5.3 Bridge fabricator shall maintain a full-time Certified Welding Inspector (CWI) on staff for inspection of bridge fabrication, maintaining accurate records, and other necessary aspects of bridge fabrication to ensure consistently high levels of quality fabrication.
- 5.4 Workmanship, fabrication, and shop connections shall be in accordance with American Association of State Highway and Transportation Officials Specifications (AASHTO).
- 5.5 Welding operators shall be properly accredited experienced operators, each of whom shall submit satisfactory evidence of experience and skill in welding structural steel with the kind of welding to be used in the work, and who have demonstrated the ability to make uniform good welds meeting the size and type of weld required.
- 5.6 All welding shall utilize E70 or E80 series electrodes. The weld process used shall be Flux Core Arc Welding (FCAW) or Gas Metal Arc Welding (GMAW) or Shielded Manual Arc Welding (SMAW) or Submerged Arc Welding (SAW) per AWS D1.1 or ANSI/AASHTO/AWS D1.5 "Bridge Welding Code."
- 5.7 All welds shall be visually inspected by a Certified Welding Inspector. All testing requirements shall be in accordance with AWS D1.1 for tubular members and AWS D1.5 for all other structural steel.
- 5.8 The bottom cord of each truss shall be fabricated such that it will not catch trash or debris.

## **6.0 REINFORCED CONCRETE BRIDGE DECK**

- 6.1 **Thickness:** 8 inch (nominal).
- 6.2 **Cross slope:** Driving surface will be crowned at the bridge centerline with a 2% cross slope.
- 6.3 **Finish:** Class 5 finish per AHTD Standard Specification Section 802.19.

## **7.0 REINFORCED CONCRETE BRIDGE ABUTMENTS**

- 7.1 **Dimensions:**
  - (a) As required to comply with overall bridge dimensions in paragraph 2.0 of this section.
  - (b) As shown on the plans.
  - (c) As required to coordinate with the pile design provided by the Engineer.

## **8.0 PILES**

- 8.1 Type: Driven H-piles with rock points.
  - (a) Size: HP 12x53.



## 8.2 Installation:

- (a) In accordance with the recommendations outlined in the geotechnical investigation prepared by Grubbs, Hoskyn, Barton & Wyatt, Inc. dated September 29, 2004.
- (b) In accordance with AHTD Standard Specification Section 805.
- (c) Piles shall be driven to refusal in medium soft shale (geotech report Stratum IV) using a hammer capable of delivering at least 20,000 ft-lbs per blow.

## 9.0 GUARD RAIL & ACCESSORIES

### 9.1 Guard Rails:

- (a) Continuous guard rails shall be located on the exterior beams and be in accordance with AASHTO section 2.7.
- (b) Bridge supplier shall provide matching guard rail, shown on the plans, to be installed on both sides of the road at each bridge approach.
- (c) Guard rail finish shall be weather steel matching finish of the bridge steel.

## 10. FINISHES (BLAST CLEANING)

- 10.1 All Blast Cleaning shall be done in the fabricator's OSHA approved indoor facility.
- 10.2 To aid in providing a uniformly "weathered" appearance Weathering Steel bridges shall have all boldly exposed surfaces abrasive metal blasted in accordance with the Steel Structures Painting Council (SSPC) Surface Preparation Specification No. 7 "Brush-off Blast Cleaning". Exposed surfaces of steel shall be defined as those surfaces seen from the deck and from outside of the structure. Stringers, wide flange beams, and lower brace diagonals need not be blasted.

## 11.0 WARRANTY

- 11.1 The manufacturer shall provide a warranty against defects in material and workmanship for a period of ten years.

## 12.0 MEASUREMENT & PAYMENT

- 12.1 **Steel Truss Bridge:** The steel truss bridge will be paid for as a lump sum. The lump sum shall be full compensation for all portions of the bridge not paid for under a separate bid item, including design of certain bridge components, steel structure, reinforced concrete abutment, reinforced concrete bridge deck, and the guard rail attached to bridge.
- 12.2 **Piles:** The piles will be paid for using a linear foot unit price. The unit price will be full compensation for all work and materials associated with installing the piles.