

STATE OF ARKANSAS
STATE HIGHWAY COMMISSION

FISCAL YEAR	Job No.	SHEET NO.	TOTAL SHEETS
1929	1097	1	9
Project: ST. FRANCIS RIVER BRIDGE, CLAY COUNTY, ARKANSAS			

INDEX OF SHEETS

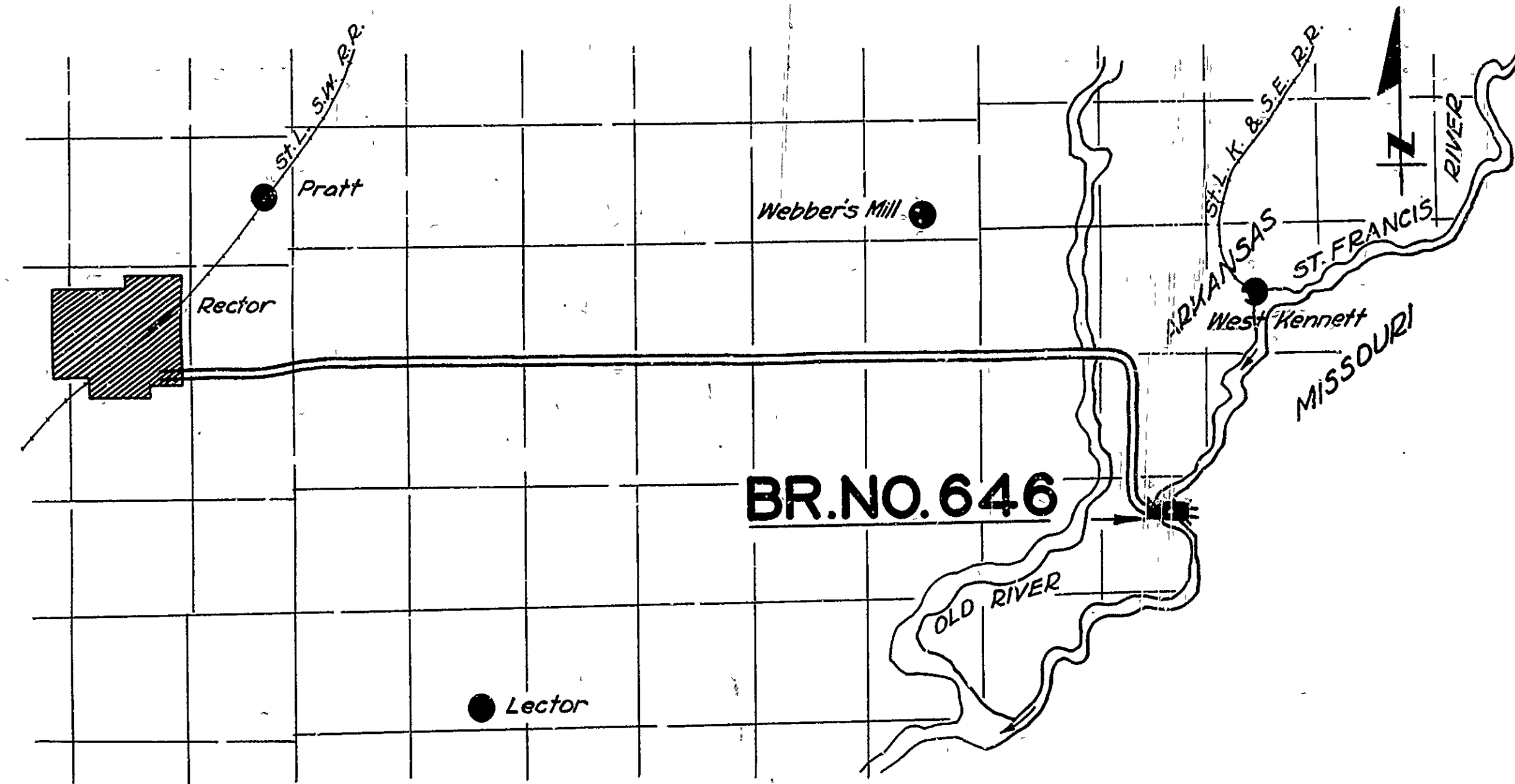
Sheet No.	Drawg No.	Title Sheet
1	1799	Layout Part No. 1 Br. No. 246
2	1800	" " " " " "
3	1801	" " " " " "
4	1802	Details 19' T.T. Span, Skewed, & 12'-9 1/4" Change-over.
5	1803	Details of Piers No. 4 & No. 5, & Changes on 80' Low Truss.
6	1804	Standard 80' Low Truss.
7	1804	Details 15' T.T. Span & I-Beam.
8	13	Standard 19' Span, 20' Roadway.
9	7	Standard Water Barrel.

PLAN OF PROPOSED BRIDGE
OVER
ST. FRANCIS RIVER
CLAY COUNTY

QUANTITIES

Item No.	Description	Quantity	Unit
52	Untreated Timber	6,839	M.F.B.M.
52	Treated Timber	213,121	" "
56	Structural Steel (Beams)	21,290	Lbs.
56	Structural Steel (Trusses)	59,300	" "
67	Treated Timber Piling	9,910	Lin. Ft.
	S.P. Treated Timber Pile Cut-Off	492	" "

ROUTE 90 SEC. 1
JOB NO 1097



The Specifications adopted by the State Highway Commission, May 30th, 1925 apply with subsequent revisions and Special Provisions noted apply to this Project

Pamphlet	Revised	Date
A	Revised	Sept. 1st, 1928
B		
C		
D	Revised	July 1st, 1928
E		
F		
G		
H	Revised	Oct. 1st, 1928
I		
J	Revised	Jan. 1st, 1929
K		
L	Revised	Jan. 1st, 1929

SPECIAL PROVISIONS

Item	No. of Sheets
Treated Bridge Timber	1
Treated Timber Pile Cut-off	1

LAYOUT
Scale: 1" = 1 Mile

LENGTH OF PROJECT = 1057'-0"
LENGTH OF BRIDGES = 1057'-0"
LENGTH OF EMBANKMENT =

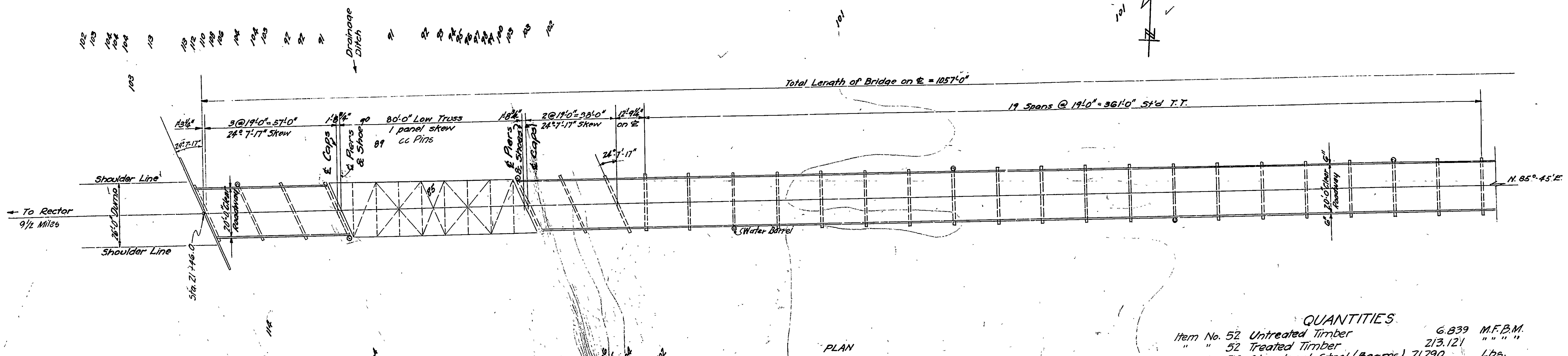
APPROVED
CHAIRMAN - STATE HIGHWAY COMMISSION

APPROVED
STATE HIGHWAY ENGINEER

M.B. Lewis
BRIDGE ENGINEER

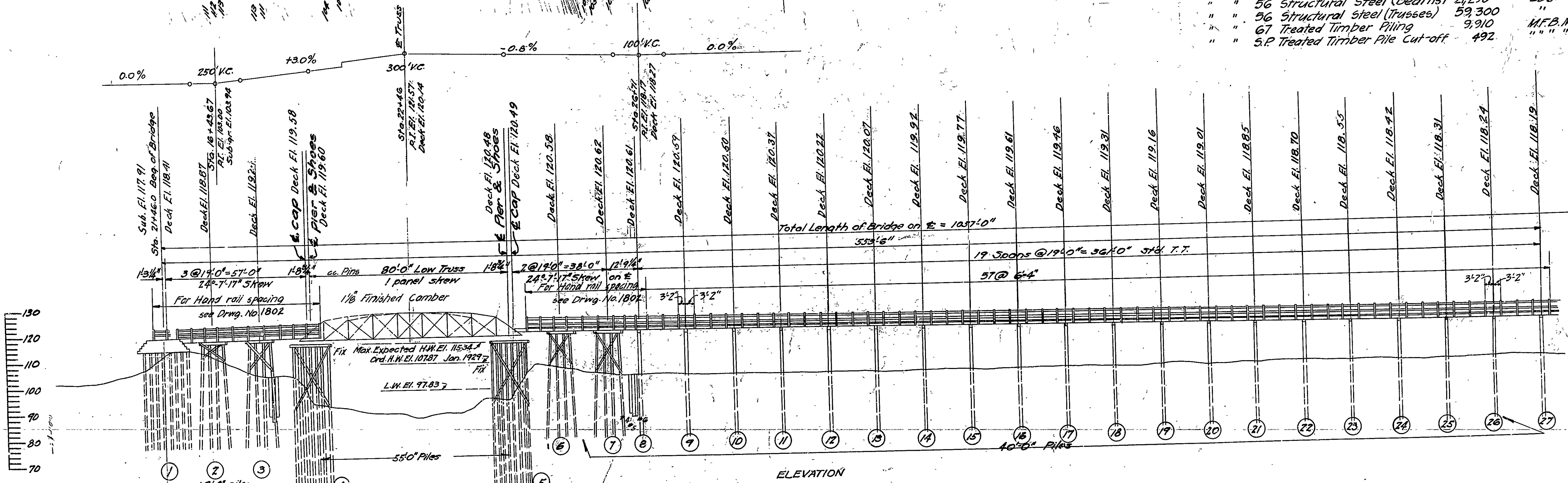
BRIDGES NO. 646

DRAWING NO. 1799



QUANTITIES

Item No. 52	Untreated Timber	6,839	M.F.B.M.
" "	52 Treated Timber	2,131.21	" " "
" "	56 Structural Steel (Beams)	2,290	Lbs.
" "	56 Structural Steel (Trusses)	59,300	" "
" "	67 Treated Timber Piling	9,910	M.F.B.M.
" "	5.P Treated Timber Pile Cut-off	492	" " "



B.M. #1 Elev. 104.18
Nail in 20" Ash, 300' Lt. of Sta. 18+80

B.M. #3 Elev. 104.27
Nail in 24" Cypress, 60' Lt. of Sta. 23+65

- Test Hole #1
15' Lt. of Sta. 21+90
Gr. El. 103.00
3.0 Coarse Sand
4.0 Sand & Clay
1.0 Blue Sand
7.0 Quick Sand
- Test Hole #2
2' at Sta. 21+90
Gr. Elev. 103.20
3.0 Coarse Sand
4.0 Sand & Clay
1.0 Blue Sand & Clay
9.0 Quick Sand
- Test Hole #3
15' Lt. Sta. 21+90
Gr. Elev. 103.30
3.0 Coarse Sand
4.5 Sand & Clay
1.0 Blue Sand & Clay
6.5 Quick Sand
- Test Hole #4
15' Lt. of Sta. 23+35
Gr. Elev. 100.90
1.0 Top Soil
3.0 Yellow Clay
2.0 Blue Sand & Clay
2.0 Blue Sand
6.0 Quick Sand
- Test Hole #5
2' at Sta. 23+35
Gr. Elev. 101.00
1.0 Top Soil
3.0 Yellow Clay
2.0 Blue Clay & Sand
2.0 Blue Sand
7.0 Quick Sand
- Test Hole #6
15' Lt. of Sta. 23+35
Gr. Elev. 101.10
1.0 Top Soil
3.0 Yellow Clay
2.0 Blue Clay & Sand
2.0 Blue Sand
7.0 Quick Sand

See Drwgs. No. 1096 & 1803 for Details of Steel Truss
" " No. 13 for Details of 19-0 span
" " No. 1802 for Details 19-0 skewed span and
" " 12'-9 1/4" change-over span.

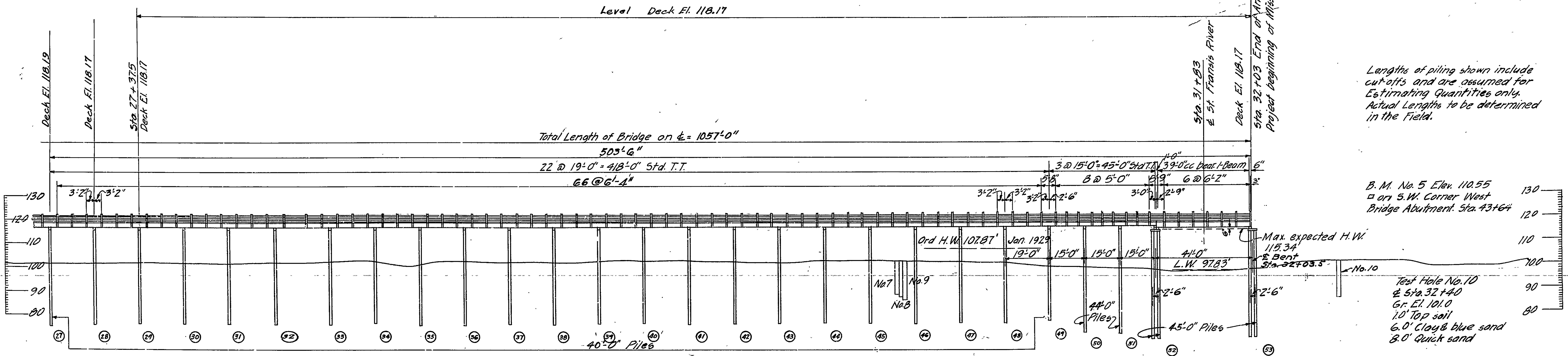
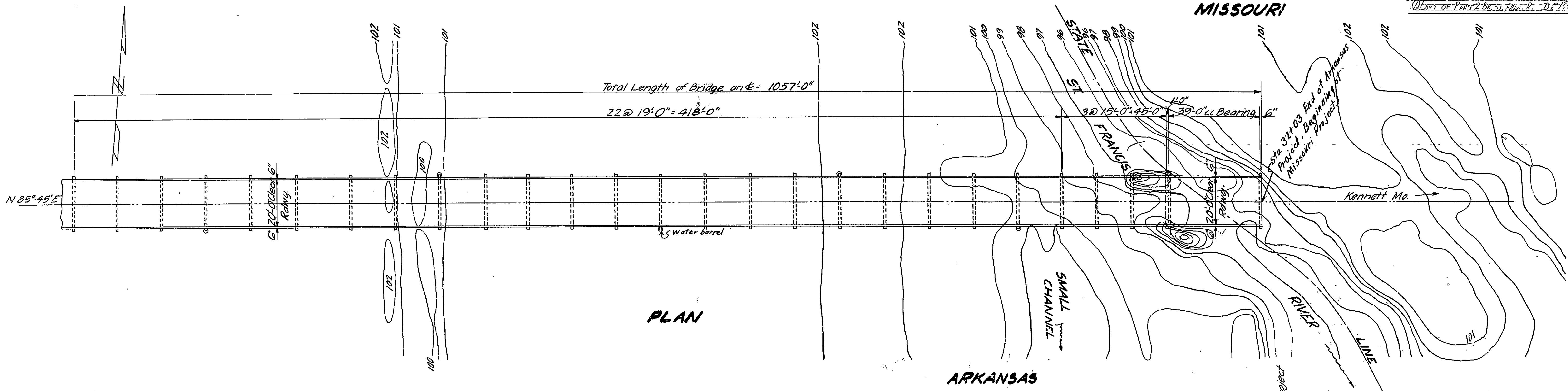
LAYOUT OF PART NO. 1 OF
BRIDGE OVER ST. FRANCIS RIVER
RECTOR-KENNETT ROAD, CLAY COUNTY

ROUTE 90 SEC. 1
ARKANSAS STATE HIGHWAY DEPARTMENT
LITTLE ROCK, ARK.

Drawn By: F.P.R. Date: 7-10-29
Traced By: J.D. Date: 7-12-29
Checked By: H.O.D. Date:
BRIDGE NO. 646
Scale: 1 in. = 22 ft.
DRAWING NO. 1800

F.P.R.
BRIDGE ENGINEER

FISCAL YEAR	Job No.	SHEET No.	TOTAL SHEETS
1929	1097	3	89



B.M. No. 4 El. 104.06
 Nail in 18" Cypress
 100' Lt. Sta. 29+80

See Drwg. No. 13 for Details of 19'-0" Span
 " " " 18'-0" " " 15'-0" "
 " " " 18'-0" " " 39'-0" "
 " " " 7 " " " Water Barrel

Test Hole No. 7
 15' Lt. Sta. 30+54
 Gr. El. 102.20
 1.0' Top soil
 2.0' Clay mixture
 5.5' Blue clay & sand
 5.5' Quick sand

Test Hole No. 8
 @ Sta. 30+54
 Gr. El. 102.0
 1.0' Top soil
 2.0' Yellow clay
 5.0' Blue clay
 10' Blue sand
 6.0' Quick sand

Test Hole No. 9
 15' Rt. Sta. 30+54
 Gr. El. 101.9
 1.0' Top soil
 2.0' Clay mixture
 6.0' Blue clay & sand
 7.0' Quick sand

LAYOUT OF
 PART 2 BRIDGE OVER ST. FRANCIS R.
 RECTOR-KENNETT ROAD
 CLAY COUNTY
 ROUTE 90 SEC. 1

ARKANSAS STATE HIGHWAY DEPARTMENT
 LITTLE ROCK, ARK.

Drawn By: *FRB* Date: 2-22
 Traced By: *GMA* Date: 2-22
 Checked By: *W.A.D.* Date: _____

Scale: 1/4" = 20ft.

BRIDGE NO. 646

DRAWING NO. 1801

N.B. Garner
 BRIDGE ENGINEER

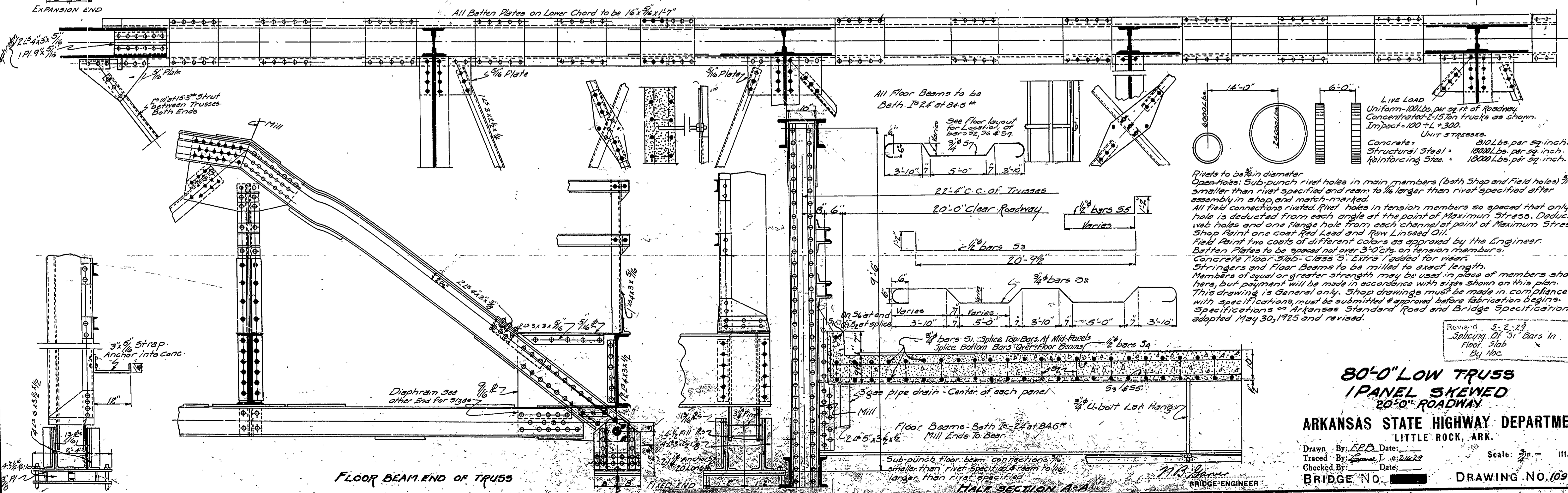
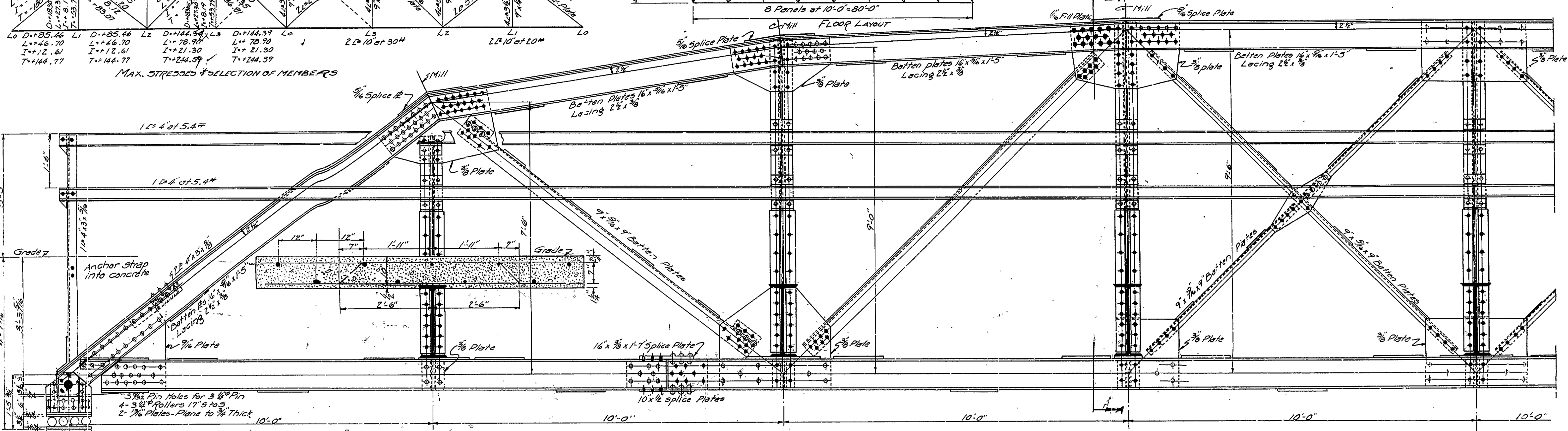
FISCAL YEAR	Job No.	SHEET NO.	TOTAL SHEETS

ESTIMATED QUANTITIES
 Structural Steel without Expansion Devices 59300 Lbs.
 Reinforcing Steel (0.60 of End Floor Beams) 10472 Lbs.
 Class 3 Conc. (1.10 of End Floor Beams) 5490 Cu. Yds.

FLOOR BEAM DATA
 D.L.M. = 31512 x 22.93 x 15. 1055000 #
 L.L.M. = 1734972 #
 Imp. Mom. at 30% = 380,350 #
 Total Mom. = 3,369,972 #
 Required Sec. Mod. = 3,569,972 ÷ 18000 = 198.3
 Section Mod. of 24" B.I. at 84.5" = 200.5

MAX. STRESSES & SELECTION OF MEMBERS

D ₁ = 123.53 L ₁ = 67.50 T ₁ = 18.25 T ₁ = 207.26	D ₂ = 122.24 L ₂ = 66.30 T ₂ = 18.04 T ₂ = 207.08	D ₃ = 154.27 L ₃ = 84.30 T ₃ = 22.76 T ₃ = 261.33	2L 9 x 15 # 16 x 3/8 Cor. Pl.	2L 9 x 15 # 16 x 3/8 Cor. Pl.	2L 9 x 15 # 16 x 3/8 Cor. Pl.	2L 9 x 15 # 16 x 3/8 Cor. Pl.	2L 9 x 15 # 16 x 3/8 Cor. Pl.	2L 9 x 15 # 16 x 3/8 Cor. Pl.	2L 9 x 15 # 16 x 3/8 Cor. Pl.
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LIVE LOAD
 Uniform - 100 lbs. per sq. ft. of roadway.
 Concentrated - 15 ton trucks as shown.
 Impact = 100 - L + 300.
 Unit stresses:
 Concrete = 300 Lbs. per sq. inch.
 Structural Steel = 18000 Lbs. per sq. inch.
 Reinforcing Steel = 18000 Lbs. per sq. inch.

Rivets to be 3/4" in diameter.
 Open holes: Sub-punch rivet holes in main members (both Shop and Field holes) 1/8" smaller than rivet specified and ream to 1/8" larger than rivet specified after assembly in shop and match-marked.
 All field connections riveted. Rivet holes in tension members so spaced that only one hole is deducted from each angle at the point of Maximum Stress. Deduct two web holes and one flange hole from each channel at point of Maximum Stress.
 Shop Paint one coat Red Lead and Raw Linseed Oil.
 Field Paint two coats of different colors as approved by the Engineer.
 Batten plates to be spaced not over 3'-0" on tension members.
 Concrete Floor Slab - Class 3 Concrete, 4" depth for wear.
 Stringers and Floor Beams to be milled to exact length.
 Members of equal or greater strength may be used in place of members shown here, but payment will be made in accordance with sizes shown on this plan.
 This drawing is General only. Shop drawings must be made in compliance with specifications, must be submitted & approved before fabrication begins.
 Specifications of Arkansas Standard Road and Bridge Specifications adopted May 30, 1925 and revised.

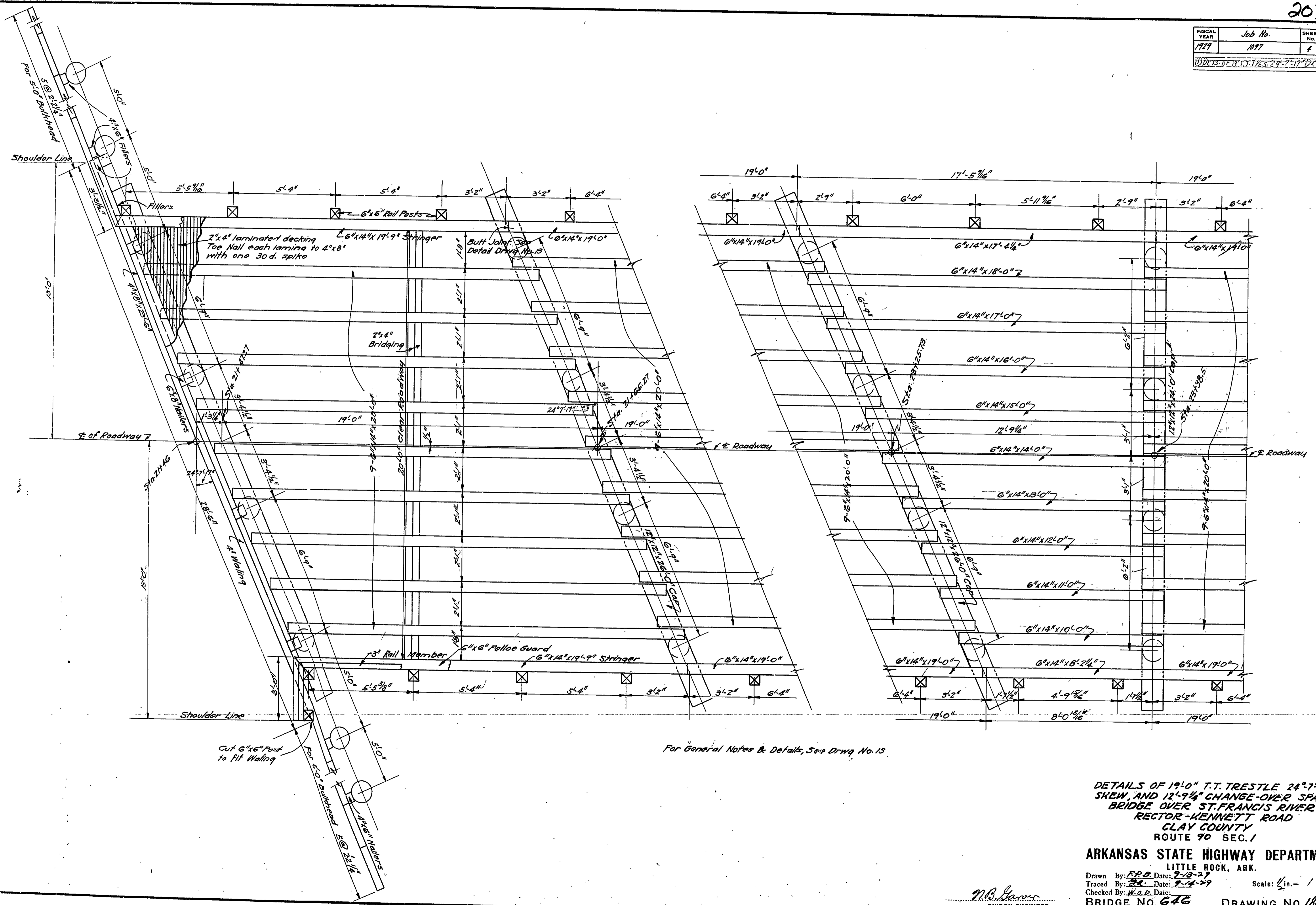
**80'-0" LOW TRUSS
 1 PANEL SKEWED
 20'-0" ROADWAY**

ARKANSAS STATE HIGHWAY DEPARTMENT
 LITTLE ROCK, ARK.

Drawn By: EPB Date: _____ Scale: 1/4" = 1 ft.
 Traced By: L. E. 2/22/27 Date: _____
 Checked By: _____ Date: _____
 BRIDGE NO. _____ DRAWING NO. 1096

FISCAL YEAR	Job No.	SHEET NO.	TOTAL SHEETS
1929	1077	1	9

DETAILS OF T.T. TRETTLE 24°-7'-17" SKW. AND 12'-9 1/4" CHANGE-OVER SPAN BRIDGE OVER ST. FRANCIS RIVER RECTOR-KENNETT ROAD CLAY COUNTY



For General Notes & Details, See Drwg No. 13

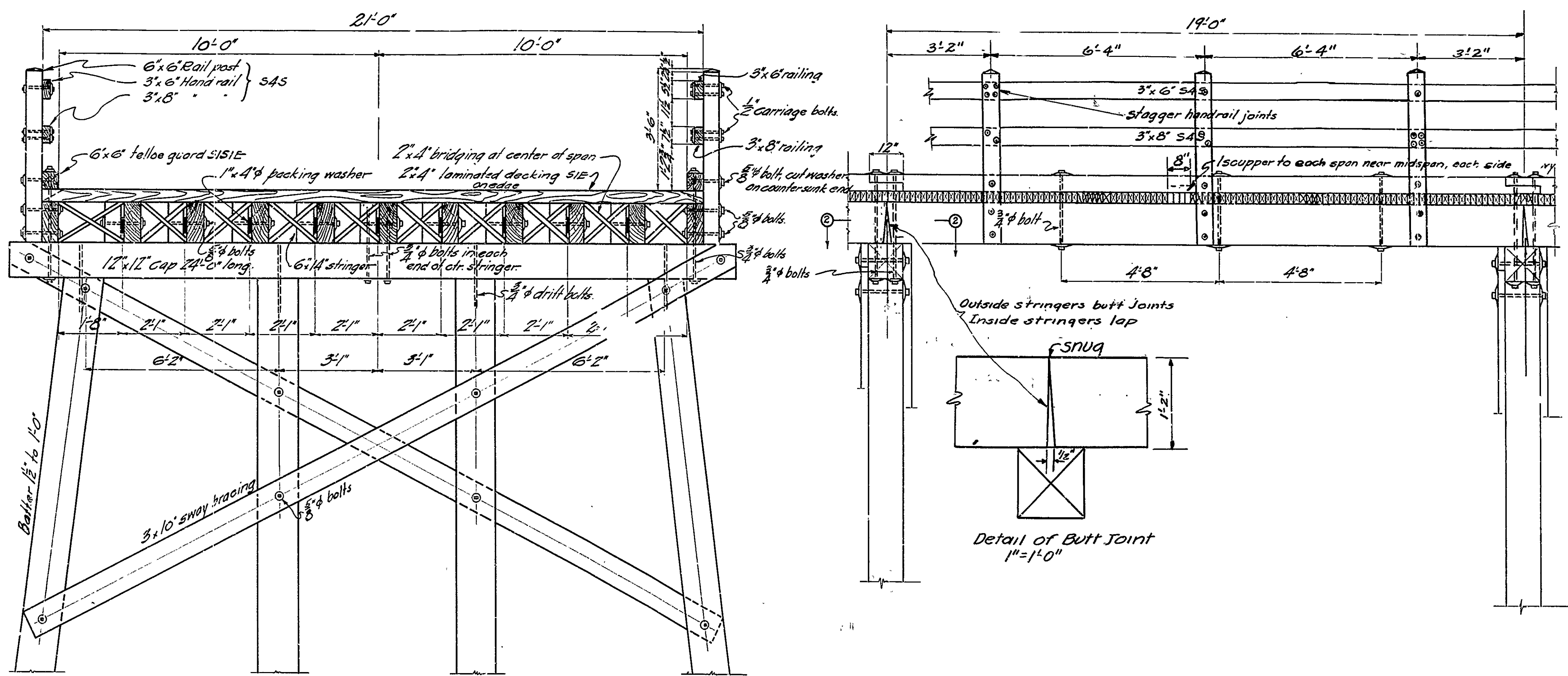
DETAILS OF 19'-0" T.T. TRETTLE 24°-7'-17" SKW. AND 12'-9 1/4" CHANGE-OVER SPAN BRIDGE OVER ST. FRANCIS RIVER RECTOR-KENNETT ROAD CLAY COUNTY ROUTE 90 SEC. 1

ARKANSAS STATE HIGHWAY DEPARTMENT
LITTLE ROCK, ARK.

Drawn By: *FRB* Date: 7-13-29
Traced By: *EL* Date: 7-14-29
Checked By: *W.O.D.* Date: _____
Scale: 1/4" = 1 ft.
BRIDGE NO. 646 DRAWING NO. 1802

M.B. Garrow
BRIDGE ENGINEER

FISCAL YEAR	JOB NUMBER	SHEET NO.	TOTAL SHEETS



Each stringer to be spiked to caps with 4-40d spikes and to be sized at bearing points in field. 2x4 laminated decking S1E. Each piece to be nailed to each adjacent piece, once between each stringer with 30d spikes. Each piece to be nailed to alternate stringers with 30d spikes. Alternate pieces to be nailed to alternate stringers.

Random length pieces of 2x4 decking may be used under the following conditions:-

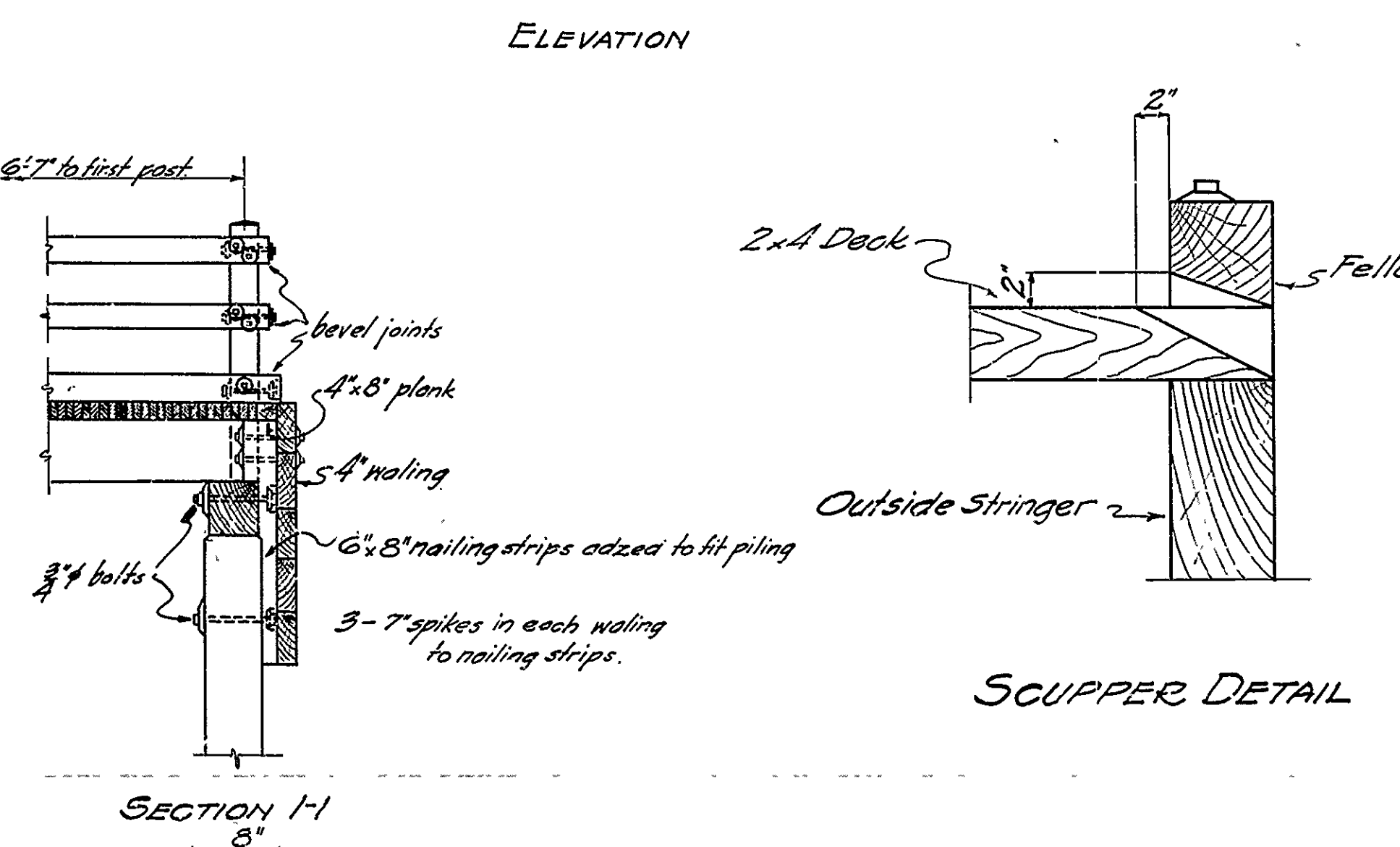
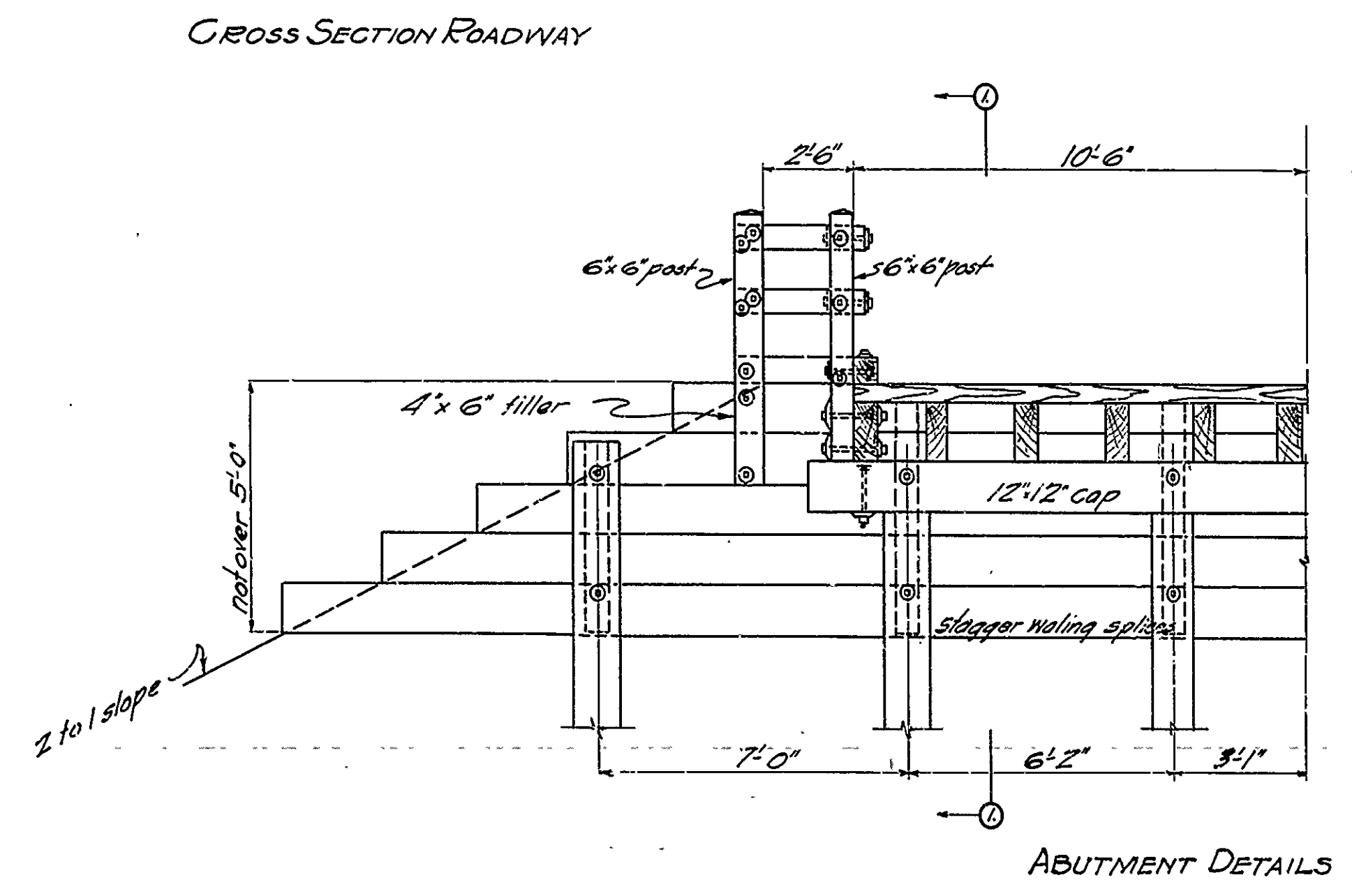
1. Each joint to be made on stringers.
2. Each piece shall cover at least 3 stringers.
3. No more than one joint in any length (lamina)
4. Each joint to be followed by at least 3 full length pieces.

Use sway bracing on all bents 5'0" or over in height. Use malleable or cast iron washers on both ends of machine bolts unless noted otherwise.

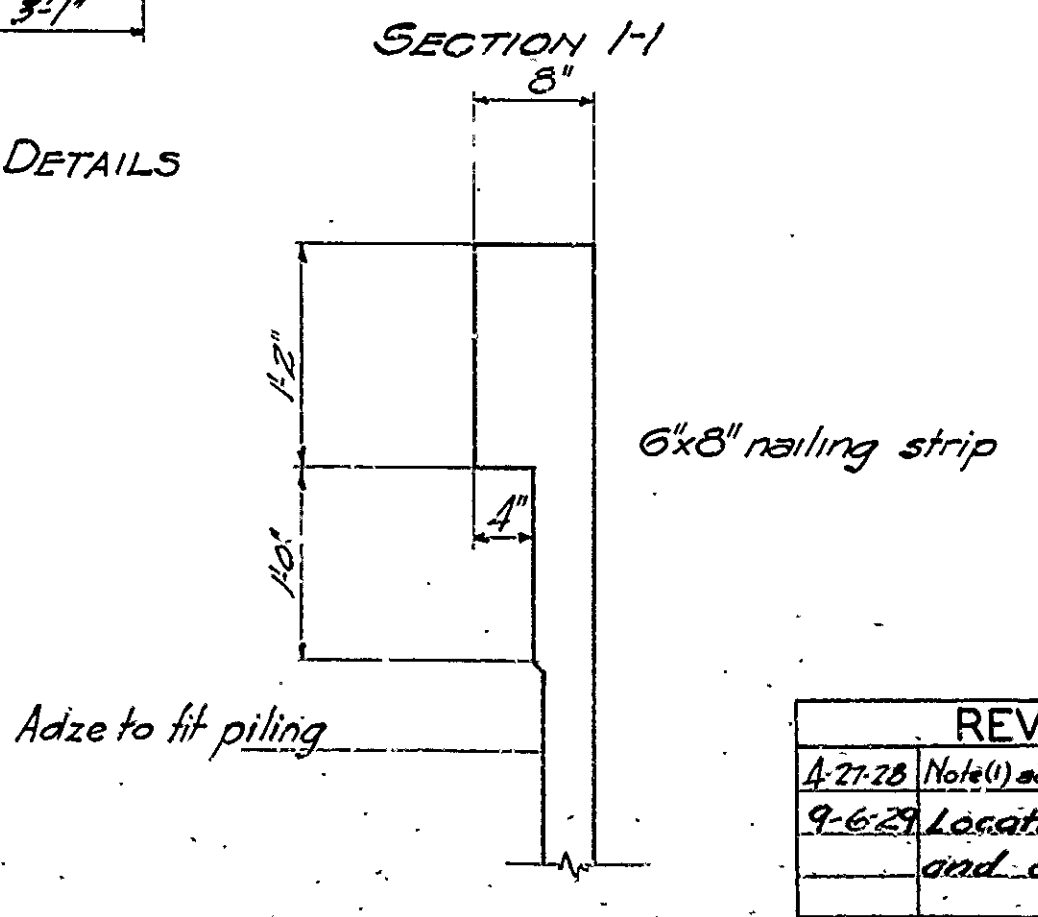
Handrail shall be made of untreated, seasoned, dressed lumber and shall be painted with 3 coats of paint in accordance with paragraph 52.2(a) of Arkansas State Standard Specifications.

All treated timber and piling to be treated by empty cell process in accordance with paragraph 52.2(d) of Arkansas State Standard Specifications.

Specifications: Arkansas State Road and Bridge Specifications adopted May 30, 1925.



NOTE (1) - MEASUREMENT FOR PAYMENT OF THE 2"X4" LAMINATED DECKING SHALL BE COMPUTED AT 84 (EIGHTY-FOUR) FT. B.M. PER LINEAL FOOT OF BRIDGE. ENDS OF DECKING TO BE FLUSH.

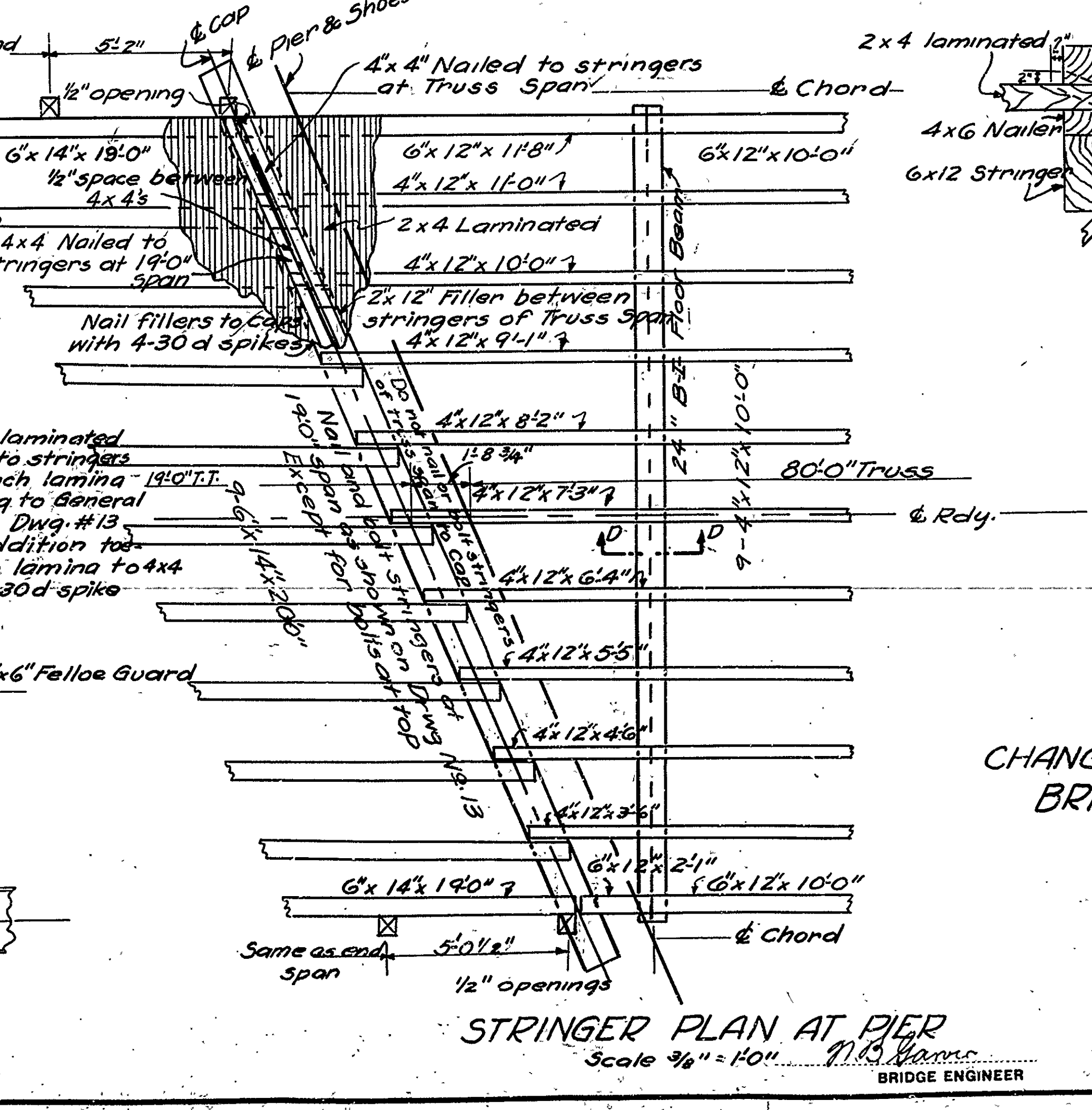
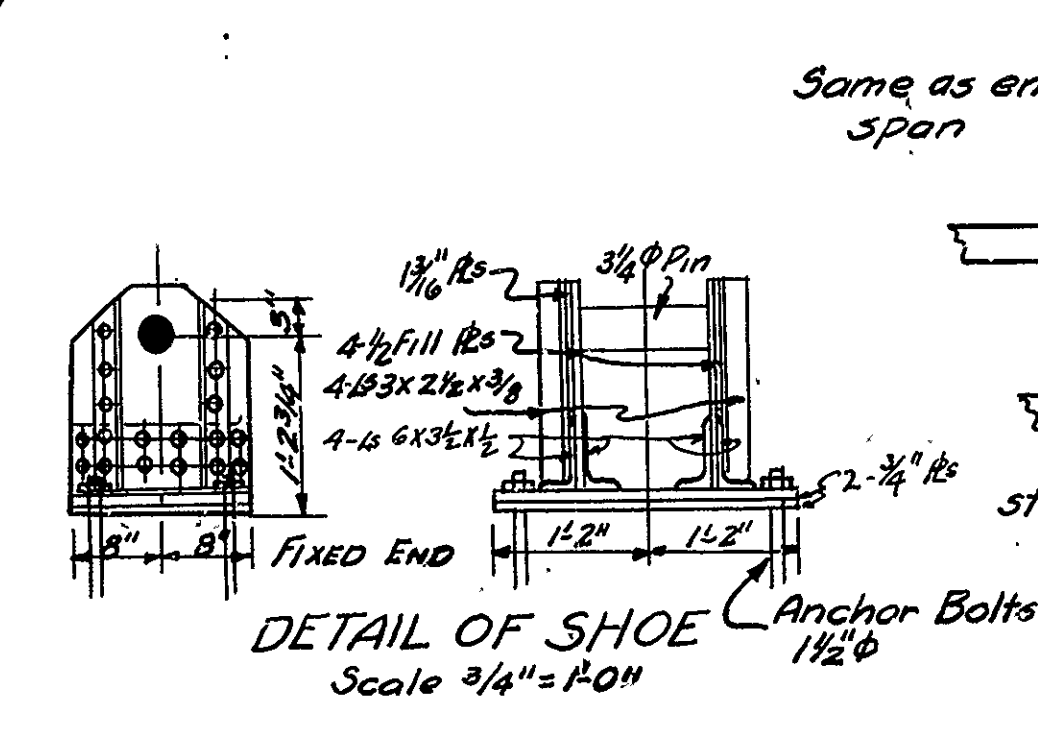
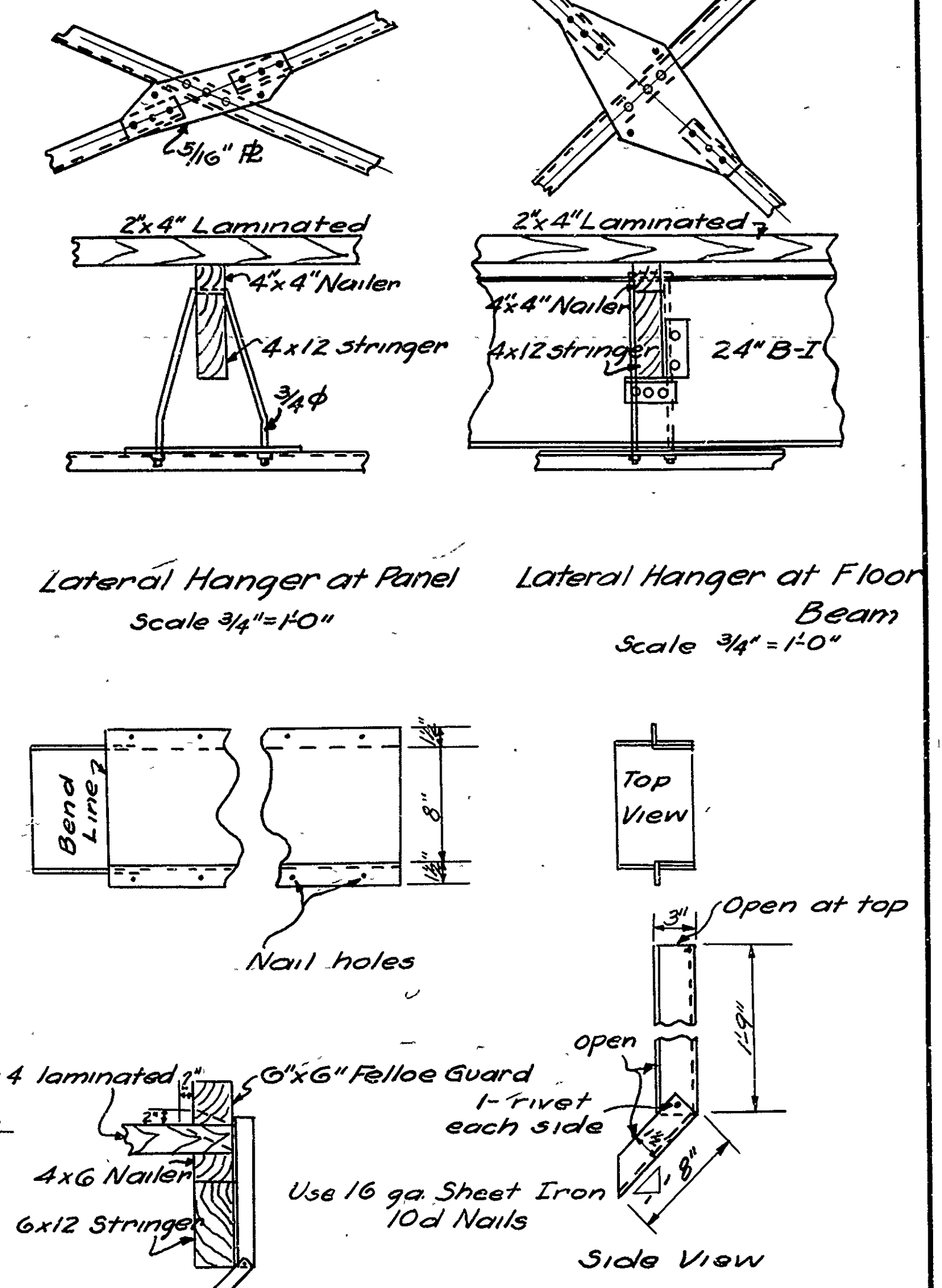
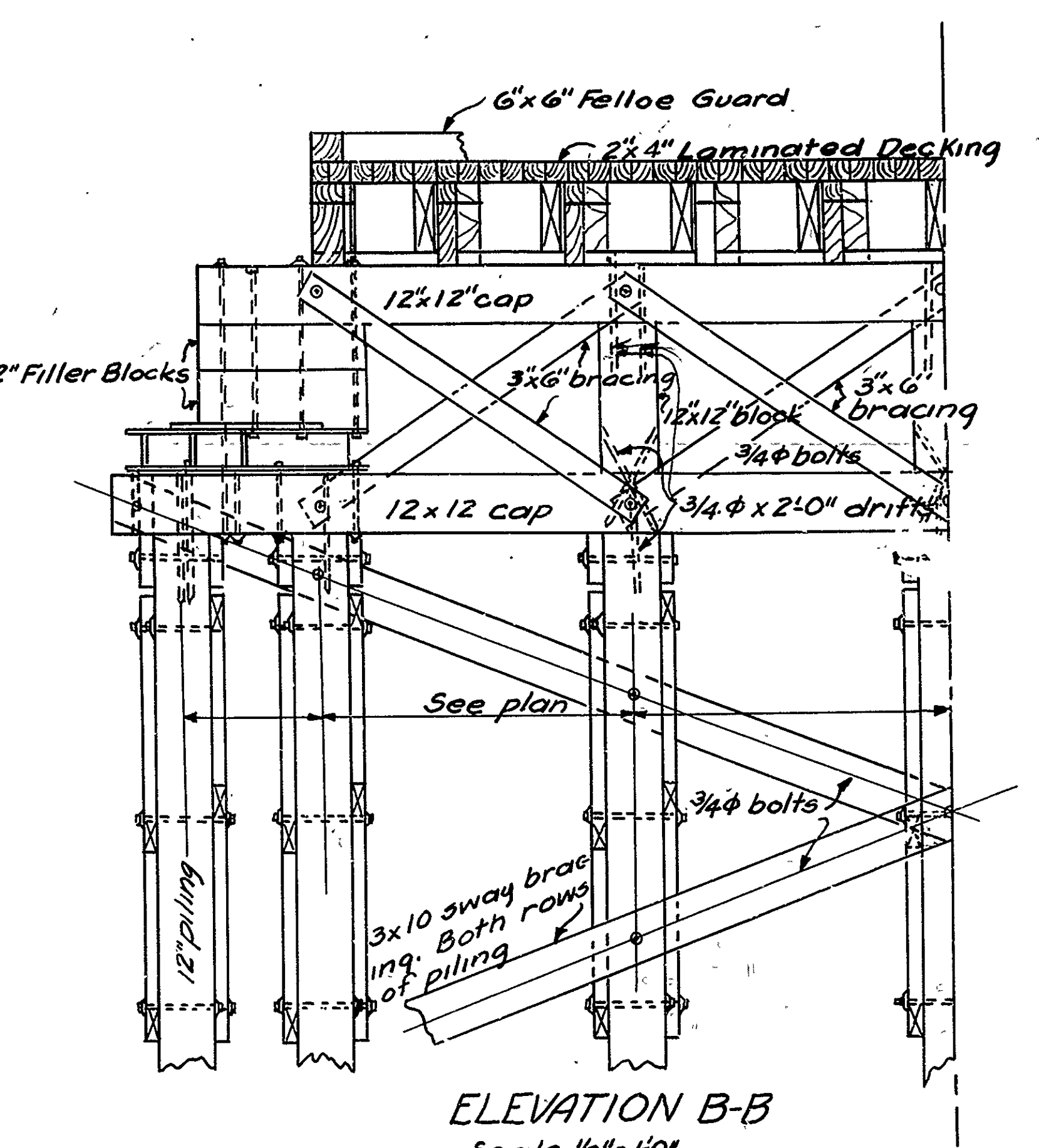
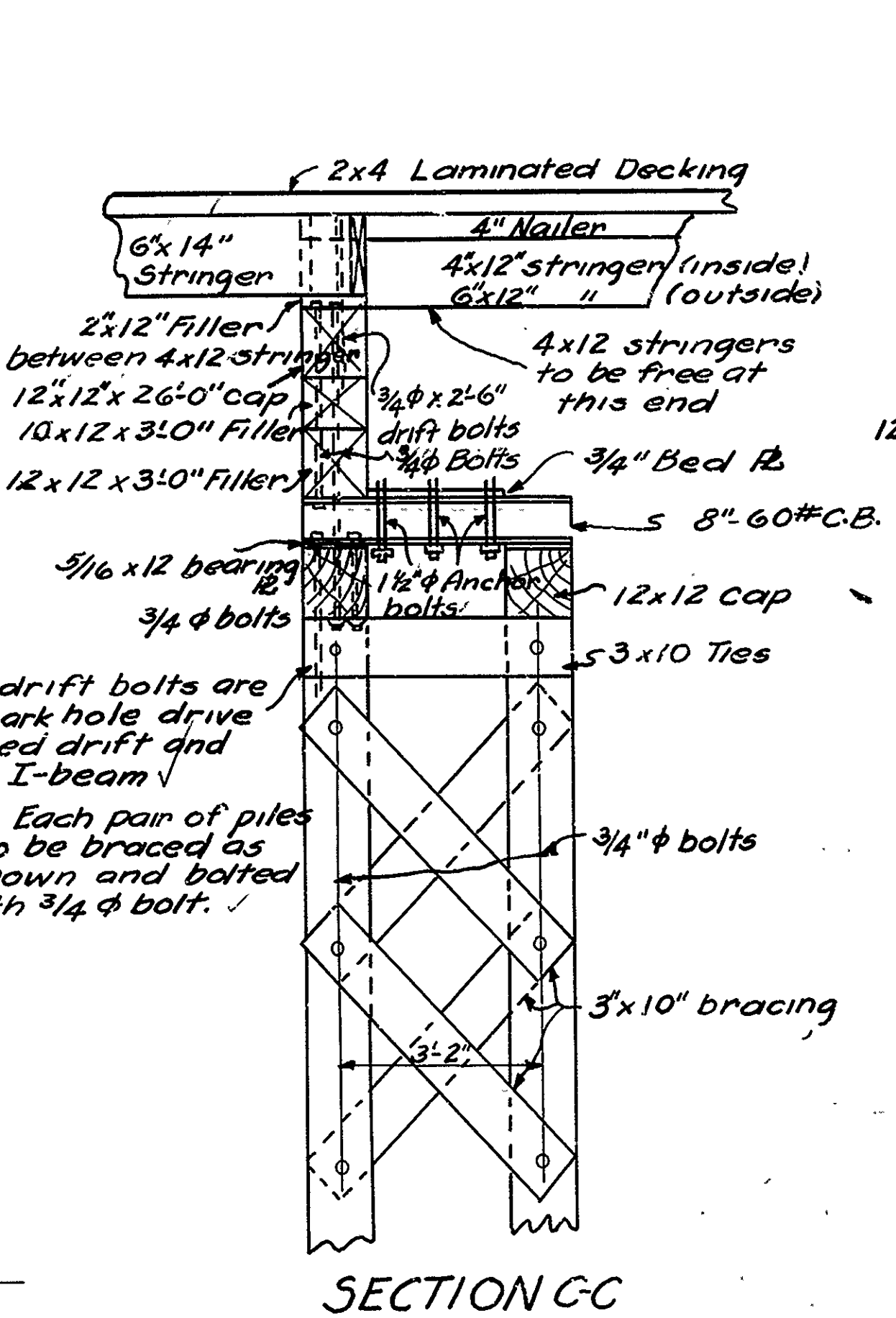
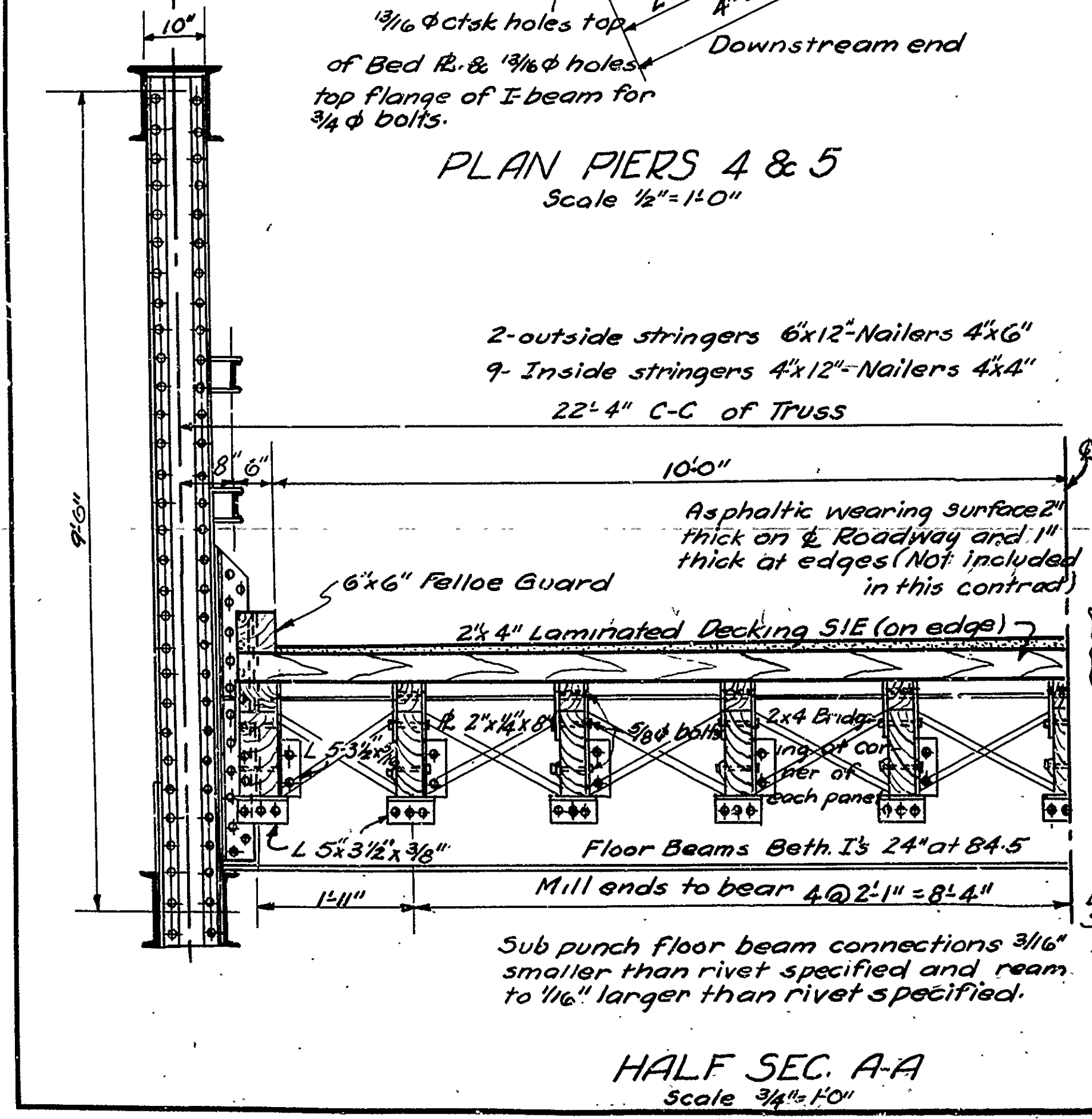
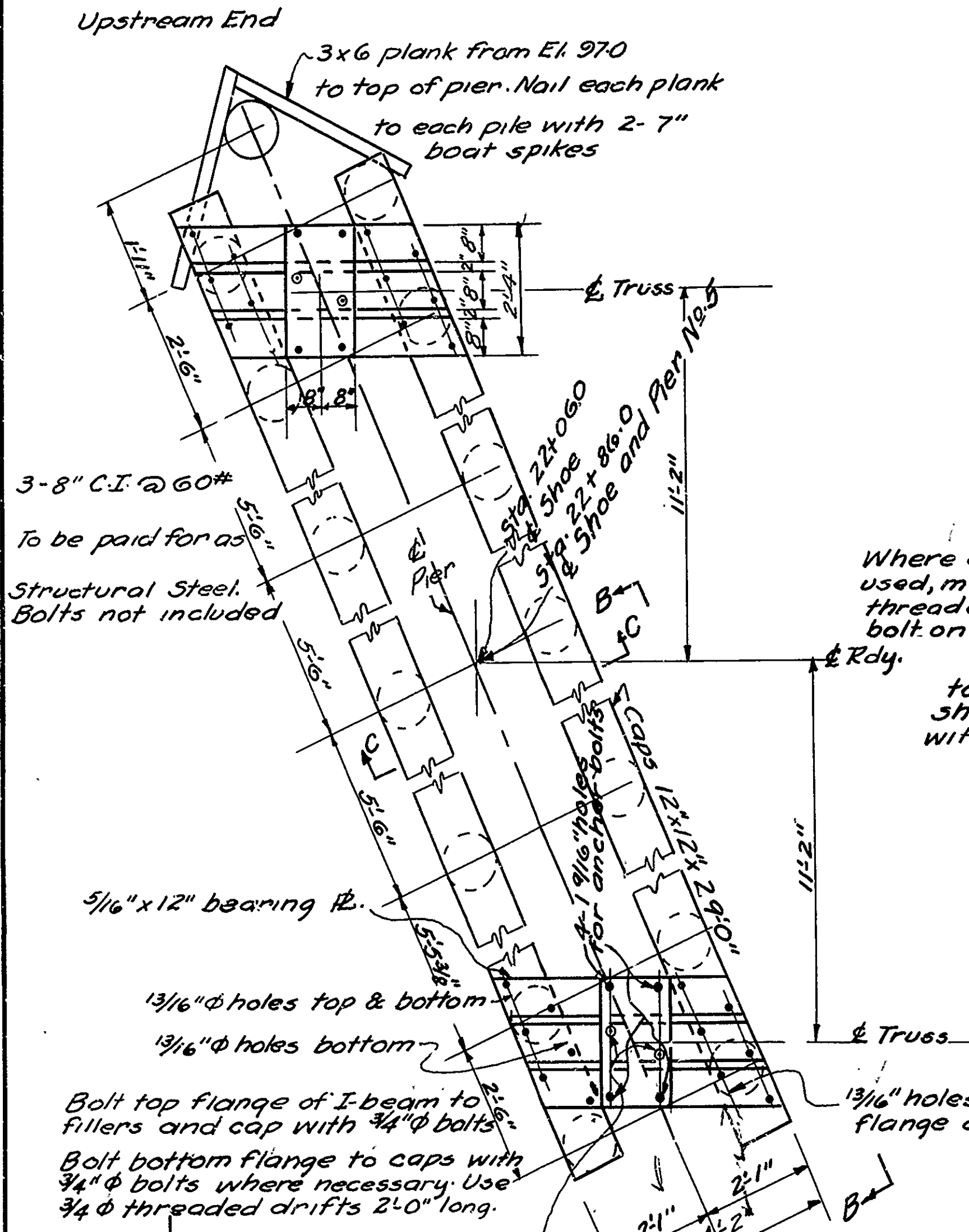


REVISED
 4-27-28 Note(1) added - 4'x8" nailing strip to 6'x8" nailing strip
 9-6-28 Location Hand Rail Posts and outside stringer 5'0" 6'0"

M.B. Lerner
 BRIDGE ENGINEER

DETAILS OF
 19'-0" STD. TIMBER TRESTLE
 20'-0" ROADWAY
 ARKANSAS STATE HIGHWAY DEPARTMENT
 LITTLE ROCK, ARK.
 Drawn By: _____ Date: _____
 Traced By: M.H. _____ Date: 2-22-28
 Checked By: _____ Date: _____
 BRIDGE No. _____ DRAWING No. 13

FISCAL YEAR	JOB NO.	SHEET NO.	TOTAL SHEETS
1929	1097	5	89



DETAILS

PIERS No. 4 & 5 AND CHANGES ON 80'-0" LOW TRUSS SPAN BRIDGE OVER ST. FRANCIS RIVER RECTOR-KENNET ROAD CLAY CO. ROUTE 90 SEC. 1

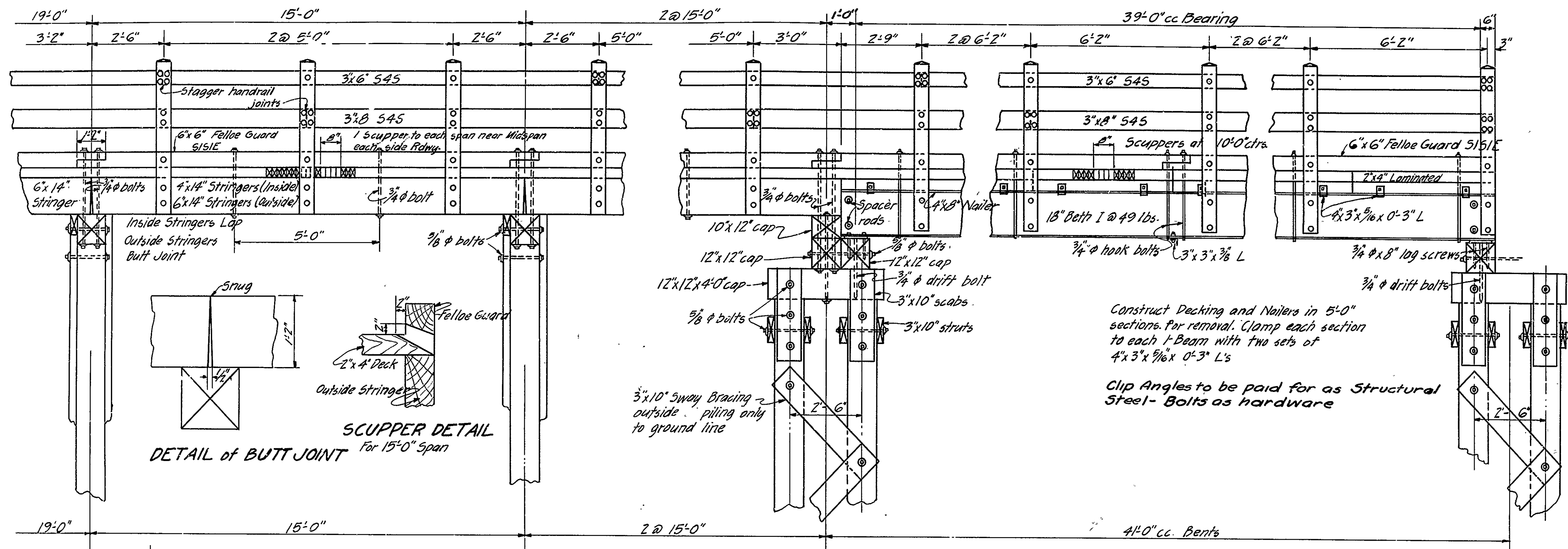
ARKANSAS STATE HIGHWAY DEPARTMENT
LITTLE ROCK, ARK.

Drawn By: E.B.B. Date: 4-22-29
Traced By: C.H.G. Date: 7-13-29
Checked By: M.O.Z. Date: _____

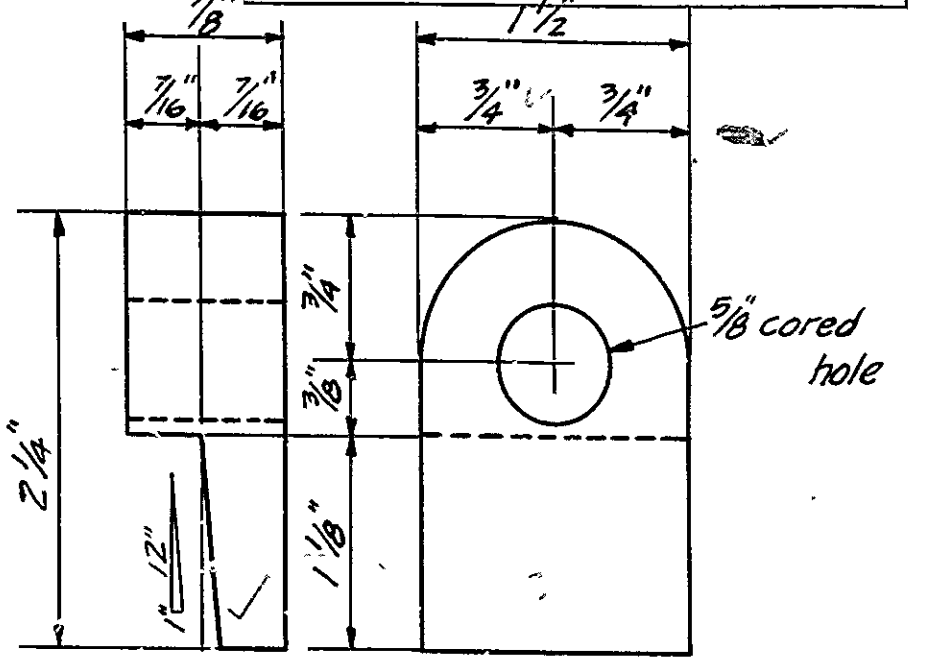
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As NOTED

BRIDGE No. 646 DRAWING No. 1803

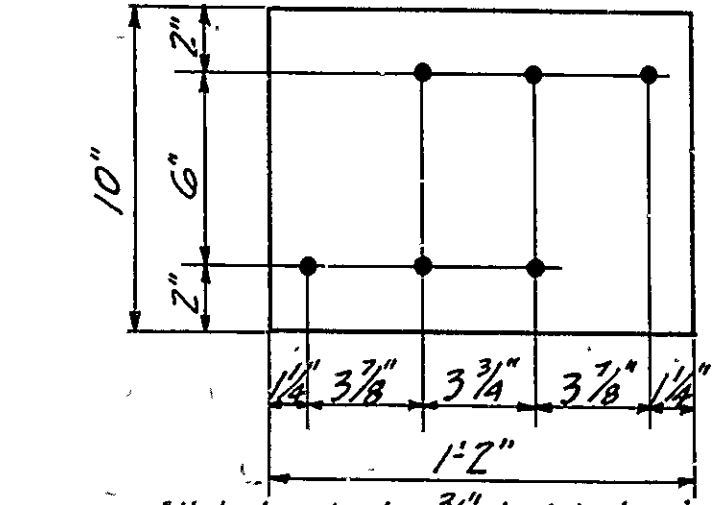
FISCAL YEAR	Job	SHEET	TOTAL SHEETS
1929	1097	7	89



SCUPPER DETAIL
DETAIL of BUTT JOINT
For 15'-0" span



DETAIL of C.I. CLAMP

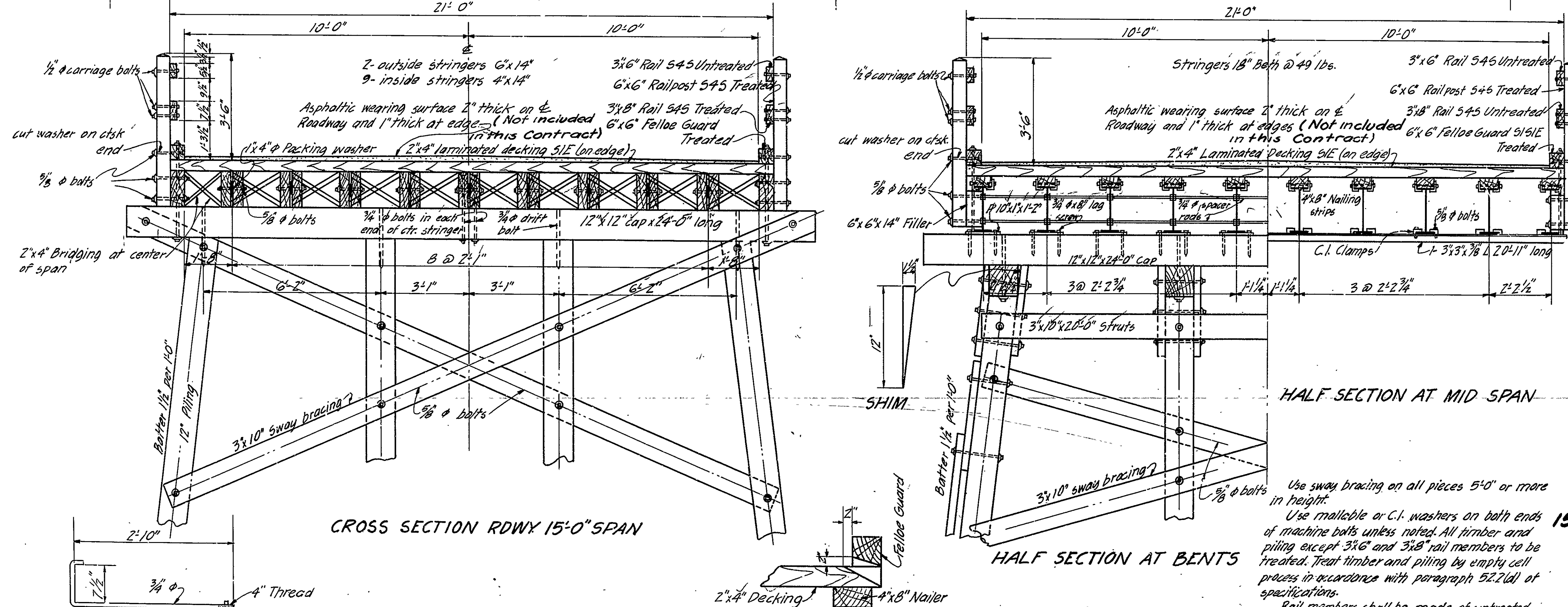


DETAIL of BEARING PLATE

Construct Decking and Nailers in 5'-0" sections. Per removal. Clamp each section to each I-Beam with two sets of 4x3x3/8 0-3 L's

Clip Angles to be paid for as Structural Steel- Bolts as hardware

All holes to be 3/4" phi. 4 holes in ctr. to be checked.



CROSS SECTION RDWY 15'-0" SPAN

HALF SECTION AT MID SPAN

HALF SECTION AT BENTS

DETAIL of BOLT HOOK

SCUPPER DETAIL
For I-Beam Span

NOTES

Measurement for payment of the 2x4 laminated decking shall be computed at 84 (eighty-four) Ft. B.M. per lineal foot of bridge. Ends of decking to be flush.

Either Carnegie or Bethlehem sections of equal or greater strength than shown, may be used, but payment will be made on basis of section shown.

2x4 laminated decking 51E. Each piece to be nailed to each adjacent piece, once between each stringer with 30d nails. Each piece to be nailed to alternate stringers with 30d nails. Alternate pieces to be nailed to alternate stringers. Each timber stringer to be nailed to caps with 4-40 d nails and to be sized at bearing points in field.

Random length pieces of 2x4 decking may be used under the following conditions:

1. Each joint to be made on stringers.
2. Each piece to cover at least three stringers.
3. Not more than one joint in any length of laminated.
4. Each joint to be followed by at least three full length pieces.

Specifications: Arkansas State Road and Bridge Specifications adopted May 30, 1925

DETAILS
15'-0" T. T. SPAN & 39'-0" I-BEAM SPAN
BRIDGE OVER ST. FRANCIS R.
RECTOR-KENNETT RD.
CLAY CO.
ROUTE 90 SEC. 1

ARKANSAS STATE HIGHWAY DEPARTMENT
LITTLE ROCK, ARK.

Drawn By: *KRB* Date: 2-2-29
Traced By: *gmg* Date: 2-10-29
Checked By: *W.C.D.* Date: _____

Scale: 1/2" = 1 ft.
BRIDGE NO. 646 DRAWING NO. 1804

N.B. James
BRIDGE ENGINEER