Photographic & Historic Documentation of the Historic Patton Bridge

Bridge No. G0688
Bollinger County, Route 51

June 2014

Missouri Department of Transportation

MISSOURI STATE HISTORIC PRESERVATION OFFICE
BRIDGE INVENTORY SURVEY FORM

1 No. G0688

2 County Bollinger

3 Location of Negatives/CDs MoDOT

4 Type of Bridge: Metal Truss X; Covered Wooden Truss; Stone; Concrete; Other

5 Present Name(s) Little Whitewater Creek Bridge

6 Other Name(s) Patton Bridge

7 Specific Legal Location
- Township 33 N
- Range 9 E
- Section 35
- Route Mo 51

If City or Town, Street Address

8 City or Town. If Rural, Vicinity: Patton

9 Description of Location: Over Little Whitewater Creek

10 Coordinates: UTM zone; Lat; N; Long; E

11 On National Register?

12 Is It Eligible

13 Part of Estab. Hist. Dist.?

14 District Potential?

15 Name of Established Dist.

16 Date(s): 1922

17 Builder: C. P. O'Reilly & Co., St. Louis, MO

18 Truss Design and/or Structural Design: 2 Warren pony truss spans; configuration: (80'-60') pony truss

Skew: 24

19 No. of Spans: 2

20 No. of Roadways: two-lane

21 No. of Walkways: N/A

22 Length
- Overall: 145'
- Clear Span: 80'

Width
- Overall: 20' 11"
- Roadway: 20'

Height: N/A

23 Abutment and Pier Material: concrete abutment, wingwalls & pier

Deck Material: concrete with bituminous surface

24 Owner's Name and Address: Missouri Highway & Transportation Commission, P. O. Box 270, Jefferson City, MO 65102

25 Original Site? Yes

Moved? No

When Moved?

26 Legal Load Condition: No Restrictions

27 Preservation Underway? No

28 Endangered? Yes

By What: Replacement

29 Other Surveys in which included: Fraser--possibly eligible--early MSHD truss design

30 History and Significance: The contract for project 202A, which included bridge G0688, was awarded on December 30, 1922 to C. P. O'Reilly of St. Louis, Missouri. Funding for the project came from a combination of Federal Aid ($97,998.59), the $1200 road fund ($13,800.00), the State Road Fund ($13,800.00), and the local community ($27,600.00). The project agreement was executed on April 27, 1923. The Illinois Steel Bridge Company fabricated the bridge.

31 Description of Environment: Bridge G0688 is located immediately south of the community of Patton on the Little Whitewater River, there is a major curve on Highway 51 just north of the bridge.

32 Sources of Information: Structural Inventory & Appraisal Sheet; Fraser; Commission Minutes 12/30/1922, 4/27/1923; Correspondence & Construction files, Bridge Division, MoDOT;

33 Prepared By: Karen L. Daniels

34 Organization: MoDOT

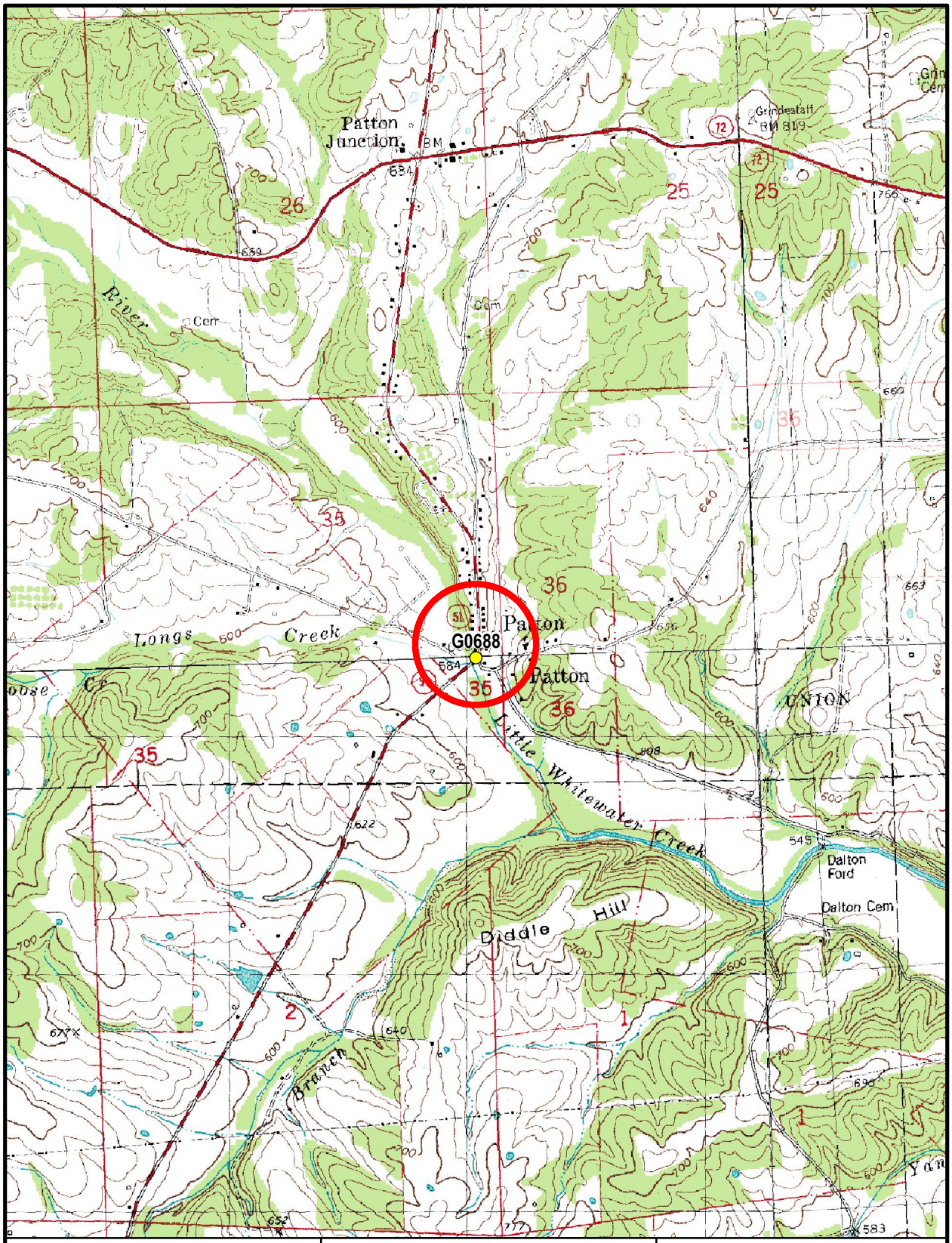
Note: A copy of a topo map of the bridge vicinity and photos of the bridge and surroundings should be included.

RETURN THIS FORM WHEN COMPLETED TO:

STATE HISTORIC PRESERVATION OFFICE
P.O. Box 176
Jefferson City, MO 65102
Phone (573) 751-7860

35 Date: Feb-14

Revision Date(s)



Adapted from U.S.G.S. Patton 1959, Sedgewickville 1980, Hurricane 1980, & Scopus 1980 Missouri 7.5' Quadrangles

Bollinger County
Route 51
Bridge No. G0688

Photo Index
Bridge G0688, Patton Bridge
Bollinger County, Missouri
Photographs taken: January 14, 2014
Photographer: Karen L. Daniels
Location of original files: Missouri Department of Transportation, Jefferson City, Missouri

#1 of 20
Bridge G0688, Deck overview, facing north

#2 of 20
Bridge G0688, Deck, facing north

#3 of 20
Bridge G0688, pony trusses, facing north

#4 of 20
Bridge G0688, Deck overview, facing south

#5 of 20
Bridge G0688, far truss (east truss), facing southwest

#6 of 20
Bridge G0688, 80 foot span, far truss (east truss), facing west

#7 of 20
Bridge G0688, 60 foot span, far truss (east truss), facing southwest

#8 of 20
Bridge G0688, 80 foot span, bottom chord, facing south

#9 of 20
Bridge G0688, 60 foot span, bottom chord, facing south

#10 of 20
Bridge G0688, near truss (west truss), facing southeast

#11 of 20
Bridge G0688, near truss (west truss), facing northeast

#12 of 20
Bridge G0688, 60 foot span, near truss, facing east

#13 of 20
Bridge G0688, near truss, facing northwest

#14 of 20
Bridge G0688, far truss (east truss), facing northeast

#15 of 20
Bridge G0688, detail of far truss (east truss), mismatched panel, facing east

#16 of 20
Bridge G0688, detail of top chord connection, facing west

#17 of 20
Bridge G0688, detail of bottom chord connection, facing west

#18 of 20
Bridge G0688, “U” abutment, south end of bridge, facing southeast

#19 of 20
Bridge G0688, detail of gas pipe railing, facing north

#20 of 20
Bridge G0688, bridge plaque, facing south

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Bridge G0688, Deck overview, facing north

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Bridge G0688, Deck, facing north

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Bridge G0688, Deck overview, facing south

#5 of 20
Bridge G0688, far truss (east truss), facing southwest

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Bridge G0688, 80 foot span, far truss (east truss), facing west

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Bridge G0688, 60 foot span, far truss (east truss), facing southwest

#8 of 20
Bridge G0688, 80 foot span, bottom chord, facing south

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Bridge G0688, 60 foot span, bottom chord, facing south

#10 of 20
Bridge G0688, near truss (west truss), facing southeast

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Bridge G0688, 60 foot span, near truss, facing east

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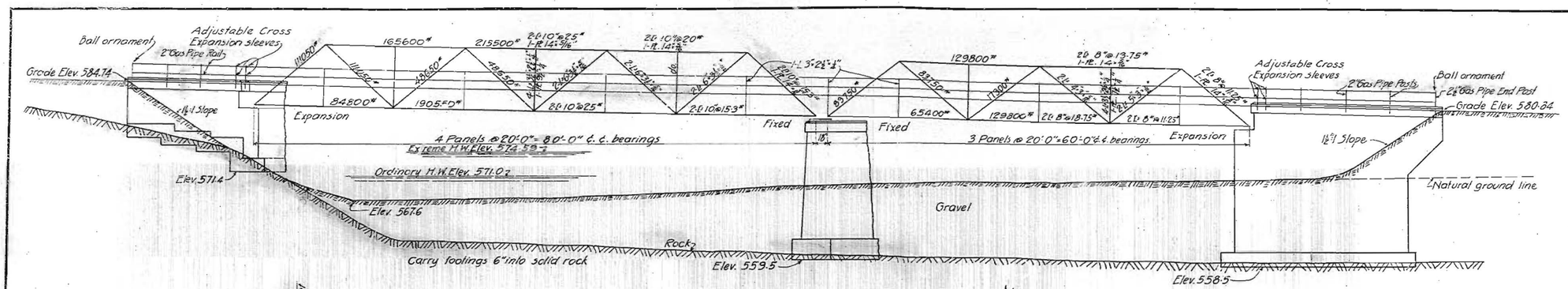
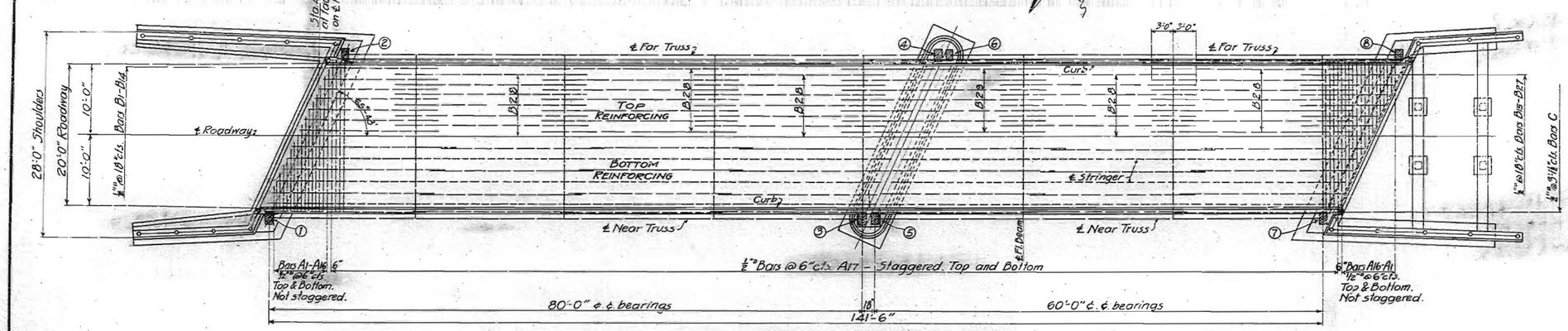
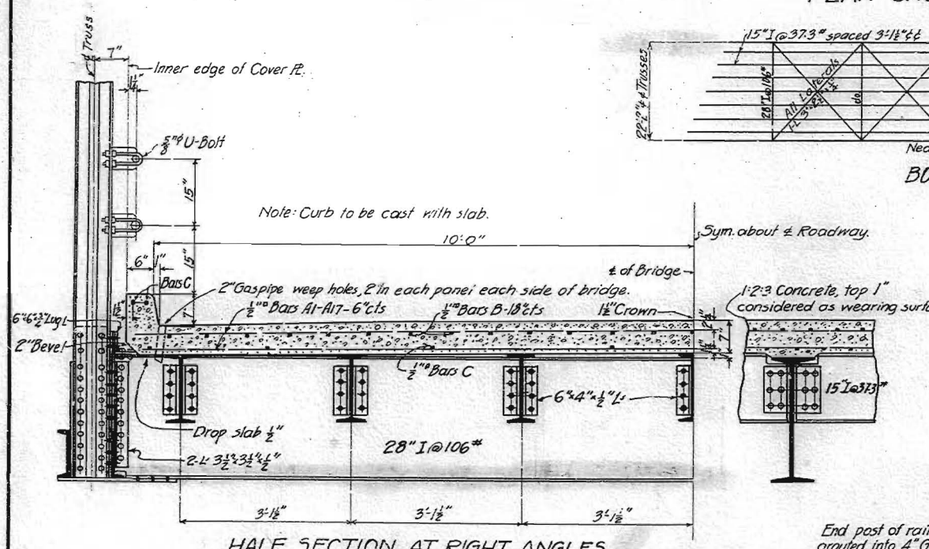
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	202A	1923		



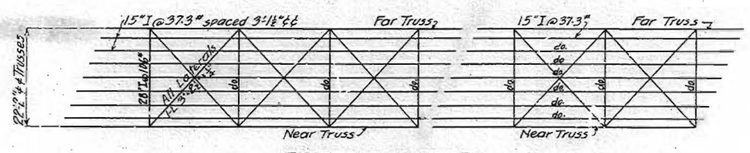
GENERAL ELEVATION.



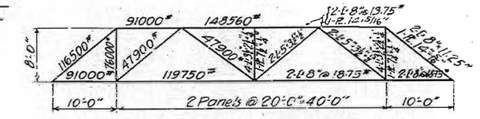
PLAN SHOWING FLOOR REINFORCING.



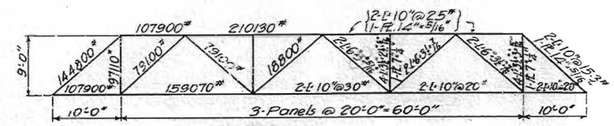
HALF SECTION AT RIGHT ANGLES TO ℄ ROADWAY.



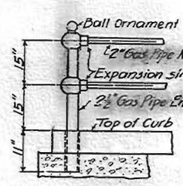
BOTTOM LATERAL SYSTEM.

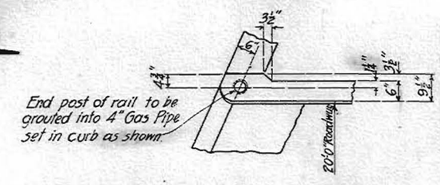


FAR TRUSS - 60'-0" SPAN.



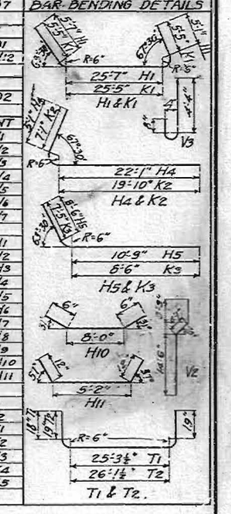
FAR TRUSS - 80'-0" SPAN.





PLAN & ELEVATION OF RAIL AT END.

BILL OF REINFORCING BARS							
No.	SIZE	LENGTH	MARK	No.	SIZE	LENGTH	MARK
SUPERSTRUCTURE							
4	½" ⊡	3'-6"	A1	1	½" ⊡	19'-6"	B8
4	½" ⊡	4'-6"	A2	1	½" ⊡	18'-9"	B9
4	½" ⊡	5'-9"	A3	1	½" ⊡	18'-3"	B10
4	½" ⊡	6'-9"	A4	1	½" ⊡	17'-6"	B11
4	½" ⊡	7'-9"	A5	1	½" ⊡	16'-9"	B12
4	½" ⊡	9'-0"	A6	1	½" ⊡	16'-0"	B13
4	½" ⊡	10'-0"	A7	1	½" ⊡	15'-6"	B14
4	½" ⊡	11'-0"	A8	1	½" ⊡	5'-9"	B15
4	½" ⊡	12'-3"	A9	1	½" ⊡	6'-6"	B16
4	½" ⊡	13'-3"	A10	1	½" ⊡	7'-3"	B17
4	½" ⊡	14'-6"	A11	1	½" ⊡	7'-9"	B18
4	½" ⊡	15'-6"	A12	1	½" ⊡	8'-6"	B19
4	½" ⊡	16'-6"	A13	1	½" ⊡	9'-3"	B20
4	½" ⊡	17'-6"	A14	1	½" ⊡	10'-0"	B21
4	½" ⊡	18'-9"	A15	1	½" ⊡	10'-6"	B22
4	½" ⊡	20'-0"	A16	1	½" ⊡	11'-3"	B23
546	½" ⊡	20'-9"	A17	1	½" ⊡	12'-0"	B24
1	½" ⊡	24'-3"	B1	1	½" ⊡	12'-6"	B25
1	½" ⊡	23'-6"	B2	1	½" ⊡	13'-3"	B26
1	½" ⊡	23'-0"	B3	1	½" ⊡	14'-0"	B27
1	½" ⊡	22'-3"	B4	67	½" ⊡	26'-0"	B28
1	½" ⊡	21'-6"	B5	14	½" ⊡	27'-6"	B29
1	½" ⊡	20'-9"	B6	84	½" ⊡	22'-0"	C
1	½" ⊡	20'-3"	B7	BAR BENDING DETAILS			
EAST ABUTMENT							
66	½" ⊡	2'-0"	D1				
14	½" ⊡	12'-0"	H12				
PIER							
32	½" ⊡	4'-0"	D2				
WEST ABUTMENT							
89	¾" ⊡	17'-3"	V1				
20	¾" ⊡	22'-4"	V2				
109	¾" ⊡	5'-6"	V3				
34	½" ⊡	8'-0"	V4				
4	½" ⊡	6'-9"	V5				
4	½" ⊡	5'-0"	V6				
16	¾" ⊡	9'-0"	V7				
14	½" ⊡	37'-10"	H1				
4	½" ⊡	5'-6"	H2				
7	½" ⊡	8'-3"	H3				
14	½" ⊡	25'-0"	H4				
14	½" ⊡	17'-0"	H5				
4	½" ⊡	7'-0"	H6				
3	½" ⊡	19'-0"	H7				
3	½" ⊡	26'-3"	H8				
2	⅞" ⊡	28'-3"	H9				
14	½" ⊡	9'-0"	H10				
14	½" ⊡	7'-2"	H11				
8	¾" ⊡	30'-8"	T1				
8	¾" ⊡	30'-10"	T2				
6	1" ⊡	35'-0"	K1				
6	¾" ⊡	27'-9"	K2				
6	¾" ⊡	16'-8"	K3				
12	¾" ⊡	8'-3"	K4				
6	¾" ⊡	5'-10"	K5				



GENERAL NOTES.

Detail shop drawings shall be submitted to the State Highway Department in quadruplicate and shall be approved before steel is fabricated.
Loading: Live load as per specifications of Missouri State Highway Department 1922.
Rivets ¾" Holes 13/16" ⌀. Field connections riveted.
Paint: Shop: One coat of red lead.
Field: First coat of sublimed blue lead.
Second coat of sublimed blue lead tinted.
Concrete in floor to be class A-1:2:3 mix.
Concrete in West Abutment above footings to be class B-1:2:4 mix.
Concrete in East Abutment and Pier to be class C-1:3:5 mix.
Concrete in all footings to be class C-1:3:5 mix.
Bevel exposed edges of concrete ¾" where no other bevel is shown.
Expansion joint to consist of three layers of tar paper applied on smoothly finished surfaces.

TOTAL ESTIMATED QUANTITIES					
	SUPERSTRUCTURE	EAST ABUTMENT	WEST ABUTMENT	PIER	TOTAL
Cu. Yds. Excavation		31.0	163.0	110.0	304.0
Cu. Yds. class A-1:2:3 Concrete	69.4				69.4
Cu. Yds. class B-1:2:4 Concrete			75.8		75.8
Cu. Yds. class C-1:3:5 Concrete		76.3	17.8	109.8	203.9
Lbs. Structural Steel	100250				100250
Lbs. Reinforcing Steel	13990	250	7990	110	22340
Lin. ft. Gas Pipe Rail	595'-0"	126'-0"	117'-0"		838'-0"

MISSOURI STATE HIGHWAY DEPARTMENT

BRIDGE OVER LITTLE WHITEWATER CREEK

STATE ROAD FROM MARBLE HILL TO PERRYVILLE

ABOUT 12 MILES FROM MARQUAND

PROJECT No. 202A STA. 423+26

BOLLINGER COUNTY

SUBMITTED BY [signature] BRIDGE ENGINEER

APPROVED BY [signature] CHIEF ENGINEER

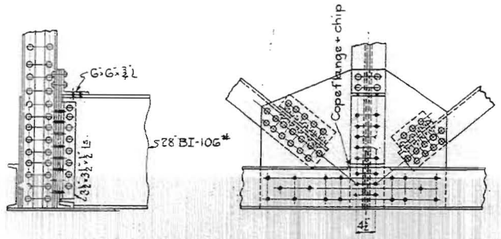
G688R

DRAWN NOV. 1923 BY C.B.V.

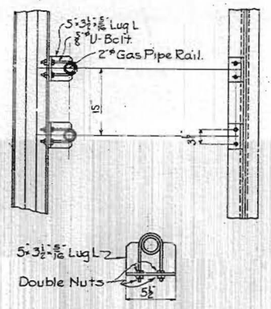
CH'K'D Dec. 1923 BY F.J.K.

Sheet 1 of 4.

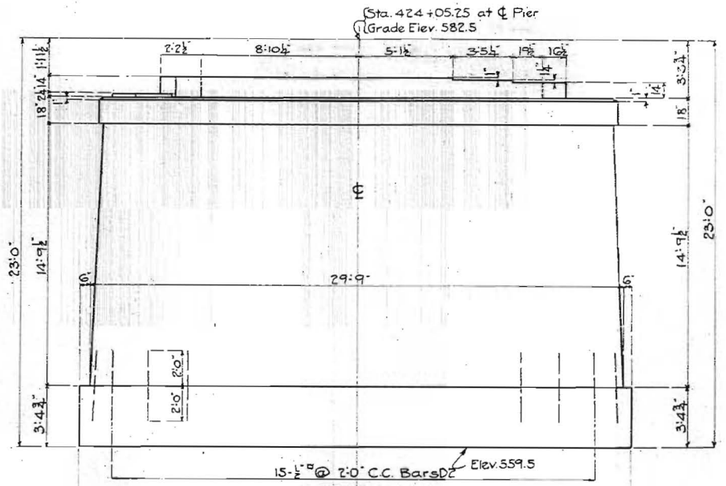
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	202 A	1923		



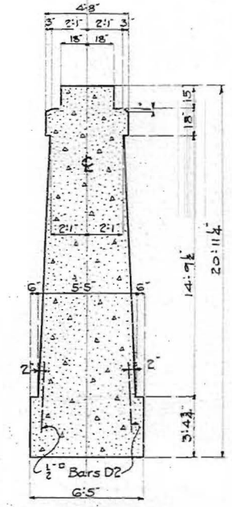
TYPICAL FLOOR BEAM CONNECTION
(This connection to be used unless otherwise noted)



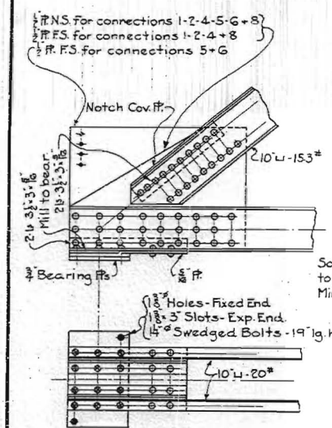
SKETCH SHOWING HANDRAIL CONNECTION
(On all posts and hangers)



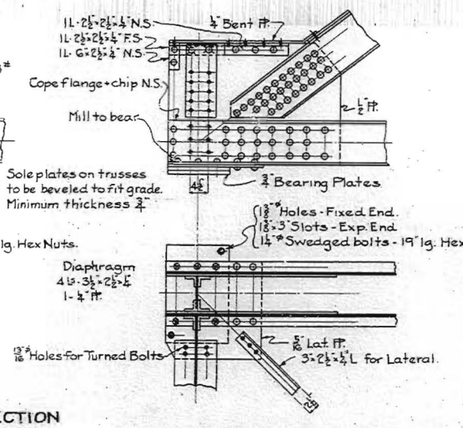
ELEVATION OF PIER



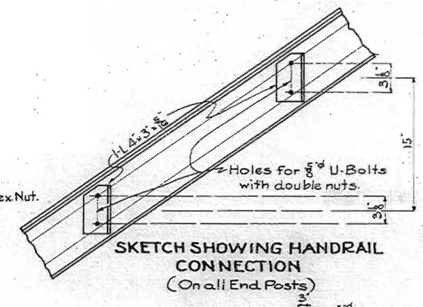
SECTION THRU ℄



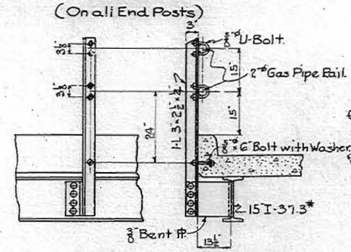
TYPICAL DETAIL OF END CONNECTION WITHOUT FLOOR BEAM
(Use at connections 1-2-4-5-6+8)



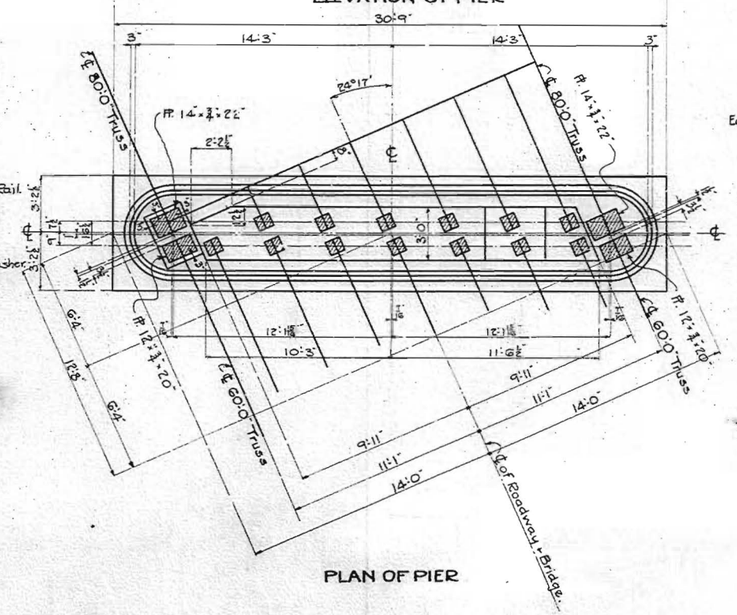
TYPICAL DETAIL OF END CONNECTION WITH FLOOR BEAM
(Use at connections 3+7)



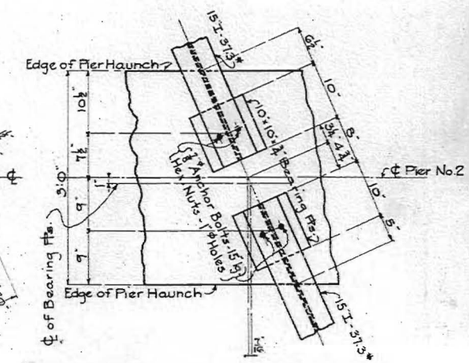
SKETCH SHOWING HANDRAIL CONNECTION
(On all End Posts)



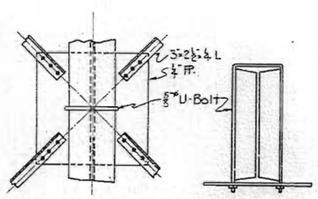
RAIL POST AT CENTER OF EACH 20'-0" PANEL



PLAN OF PIER



DETAIL OF STRINGER BEARING AT PIER



METHOD OF SUPPORTING LATERALS

MISSOURI STATE HIGHWAY DEPARTMENT

BRIDGE OVER LITTLE WHITEWATER CREEK

STATE ROAD FROM MARBLE HILL TO PERRYVILLE

ABOUT 12 MILES FROM MARQUAND

PROJECT NO. 202 A STA. 423+26

BOLLINGER COUNTY

SUBMITTED BY Charles D. Mann BRIDGE ENGINEER

APPROVED BY B. H. Piepmeier CHIEF ENGINEER

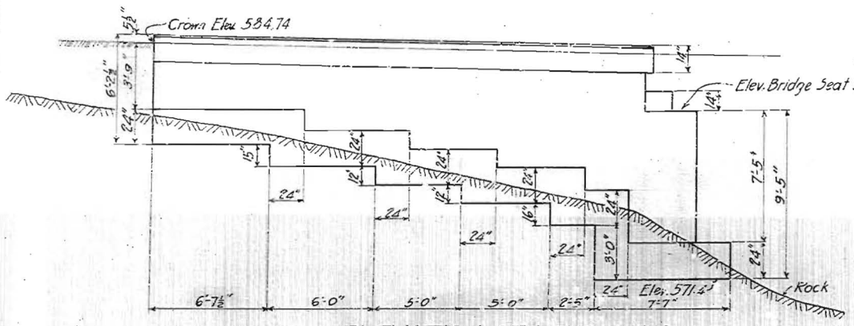
G688R

DRAWN Nov. 1923 BY T.H.R.

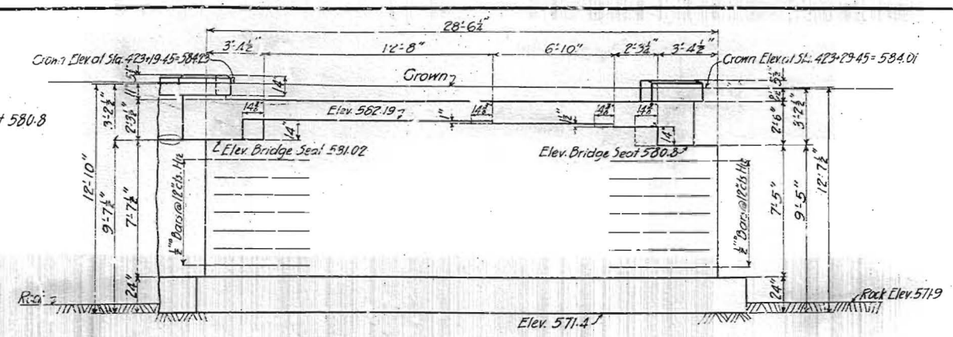
CH'K'D Nov 1923 BY H.H.G.

Sheet 2 of 4

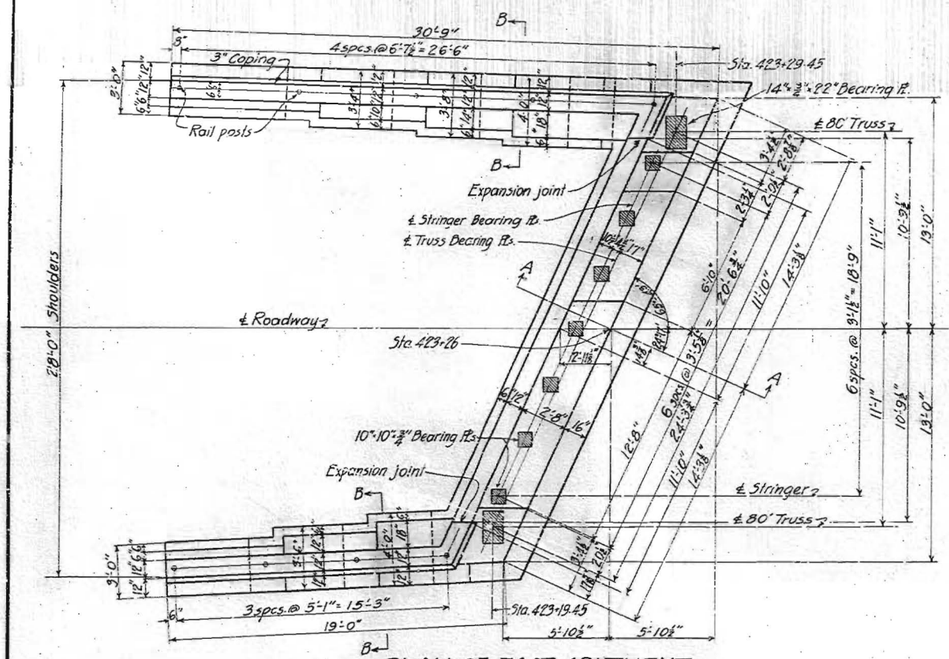
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	202 A	1923		



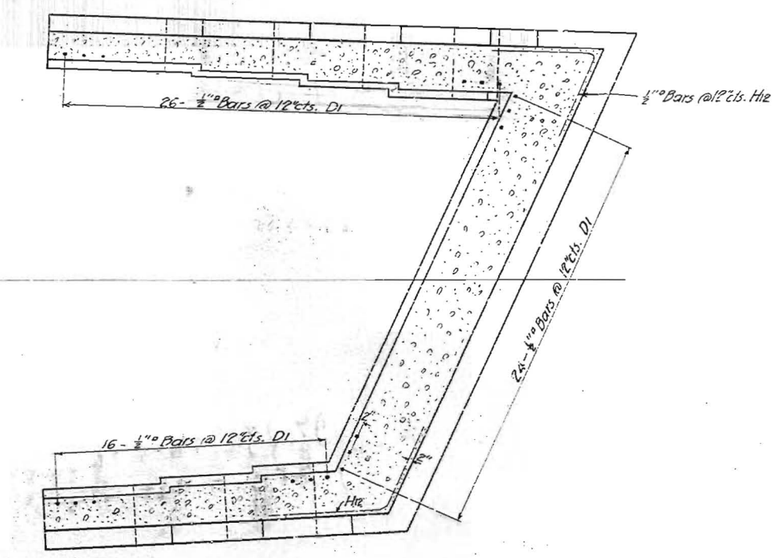
ELEVATION OF LONG WING.



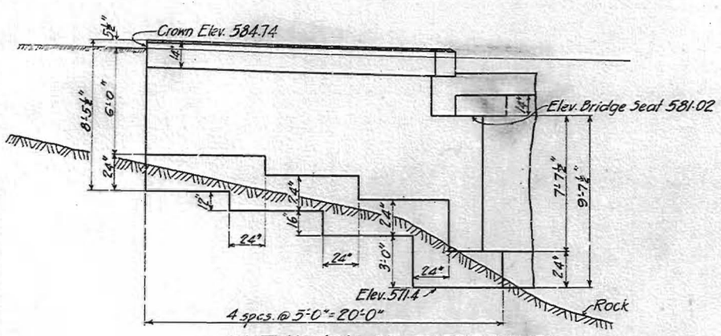
FRONT ELEVATION OF EAST ABUTMENT.



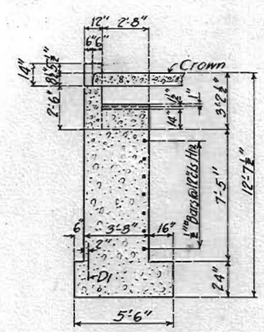
PLAN OF EAST ABUTMENT.



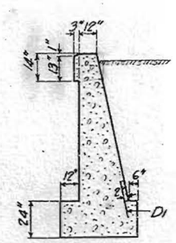
HORIZONTAL SECTION THRU EAST ABUTMENT.



ELEVATION OF SHORT WING.



SECTION A-A.



SECTION B-B.

DRAWN DEC. 1923 BY C.B.V.

CH'K'D. Dec. 1923 BY [illegible]

Sheet 3 of 4.

MISSOURI STATE HIGHWAY DEPARTMENT

BRIDGE OVER LITTLE WHITEWATER CREEK

STATE ROAD FROM MARBLE HILL TO PERRYVILLE

ABOUT 12 MILES FROM MARQUAND

PROJECT NO. 202. STA. 423+26

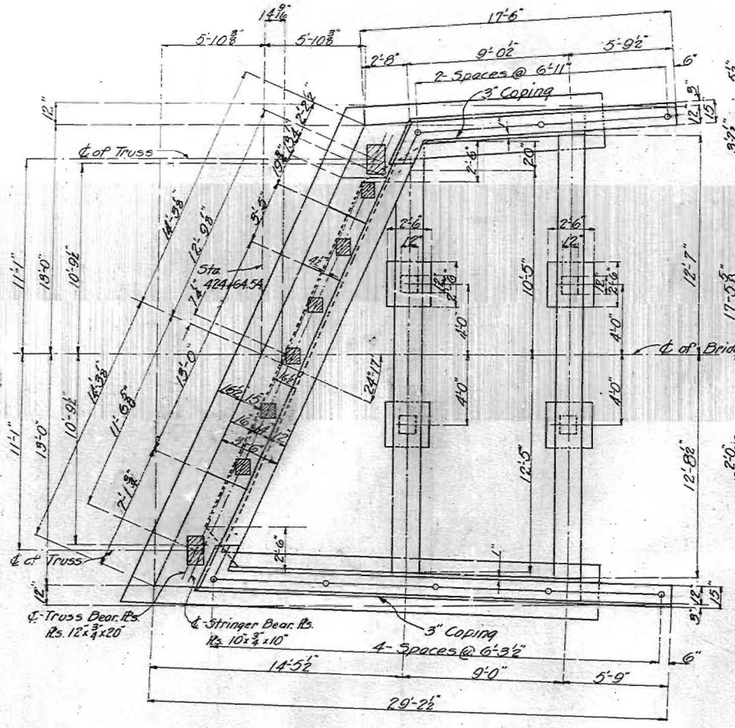
BOLLINGER COUNTY

SUBMITTED BY [illegible] BRIDGE ENGINEER

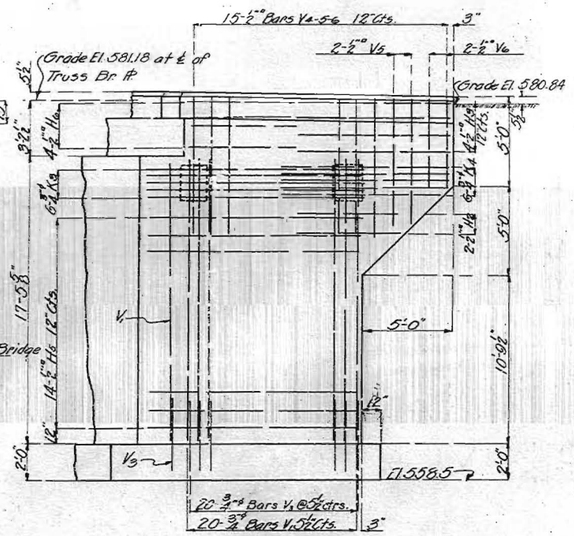
APPROVED BY [illegible] CHIEF ENGINEER

688 R

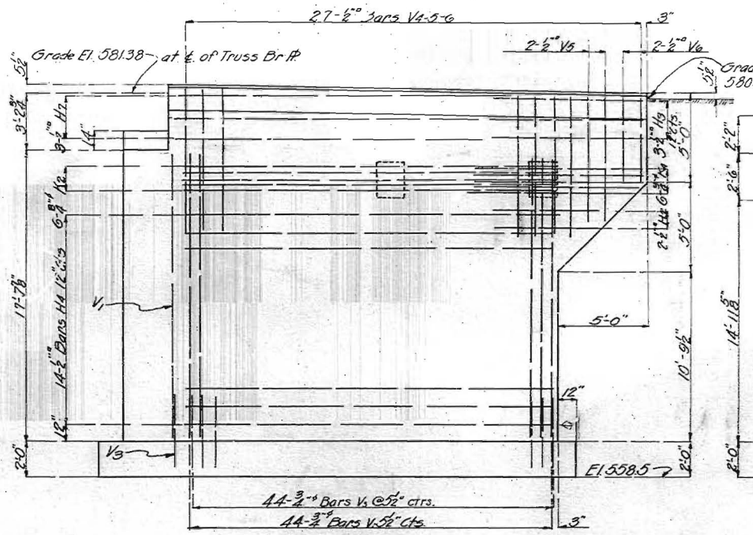
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	202 A	1923		



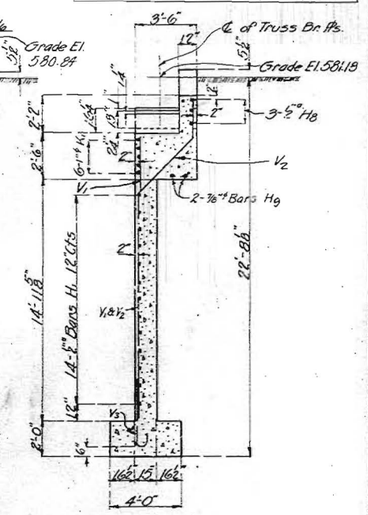
PLAN



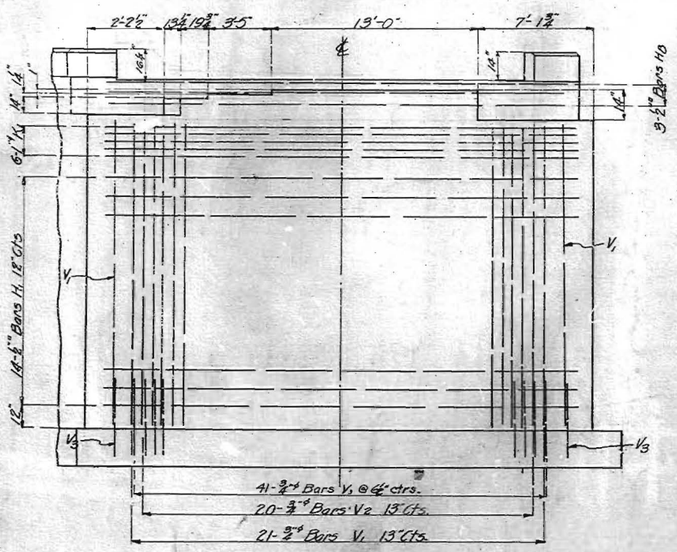
ELEVATION OF SHORT WING



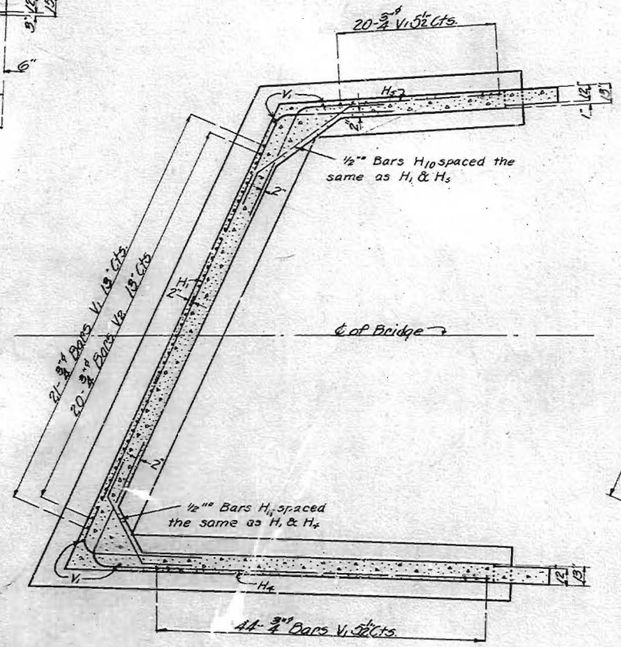
ELEVATION OF LONG WING



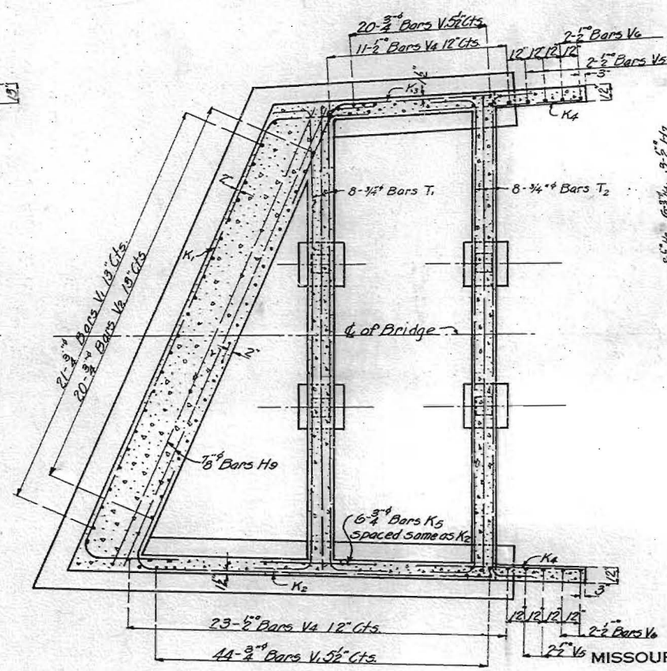
SECTION THRU FRONT WALL



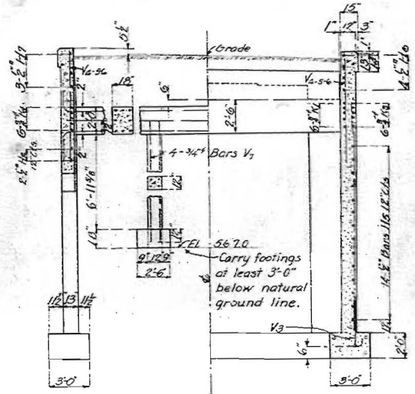
ELEVATION OF FRONT WALL



SECTION BELOW BEAMS



SECTION THRU BEAMS



BACK OF TIE BEAMS BACK OF FRONT WALL

SECTIONS THRU WING WALLS

MISSOURI STATE HIGHWAY DEPARTMENT

BRIDGE OVER LITTLE WHITEWATER CREEK

STATE ROAD FROM MARBLE HILL TO PERRYVILLE

ABOUT 12 MILES FROM MARQUAND

PROJECT No. 202 A STA. 423+26

BOLLINGER COUNTY

SUBMITTED BY [signature] BRIDGE ENGINEER

APPROVED BY [signature] CHIEF ENGINEER

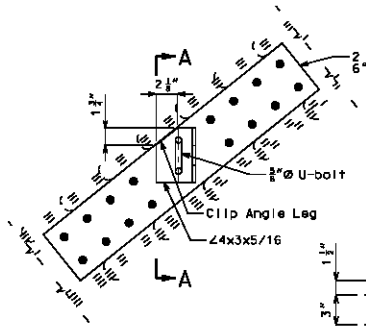
DRAWN Nov. 1923 BY H.L.P.

CH'K'D Dec. 1923 BY [illegible]

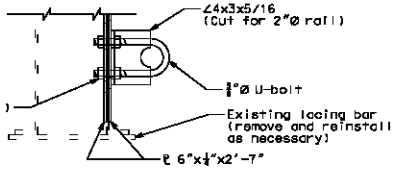
DETAILS OF WEST ABUTMENT

SHEET 4 of 4

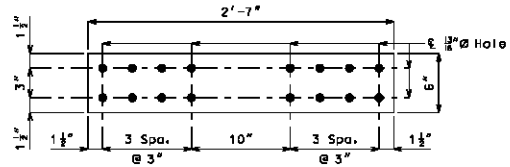
5688R



PART ELEVATION AT RAIL CONNECTION
(Rail not shown for clarity)



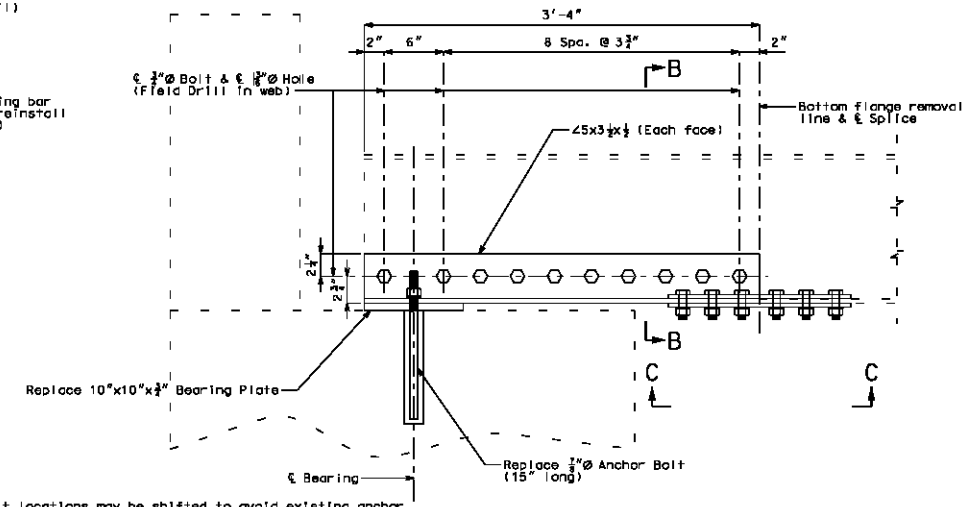
SECTION A-A
(Rail not shown for clarity)



DETAILS OF SPLICE PLATE

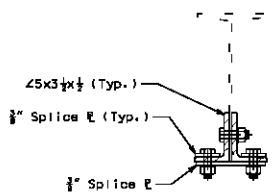
Note:
Remove existing lacing bars as necessary to install plate on interior face of channel. Reinstall existing lacing bars with new 3/4"Ø high strength bolts.

DETAILS OF REPAIR OF CHANNEL WEB AT BRIDGE RAIL CONNECTION AT SE CORNER END POST

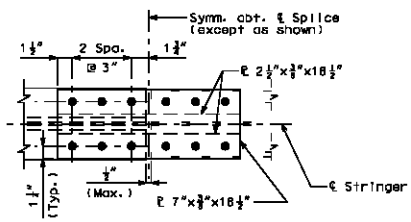


PART ELEVATION

Note:
Anchor bolt locations may be shifted to avoid existing anchor bolts. Adjust bearing plate size accordingly.

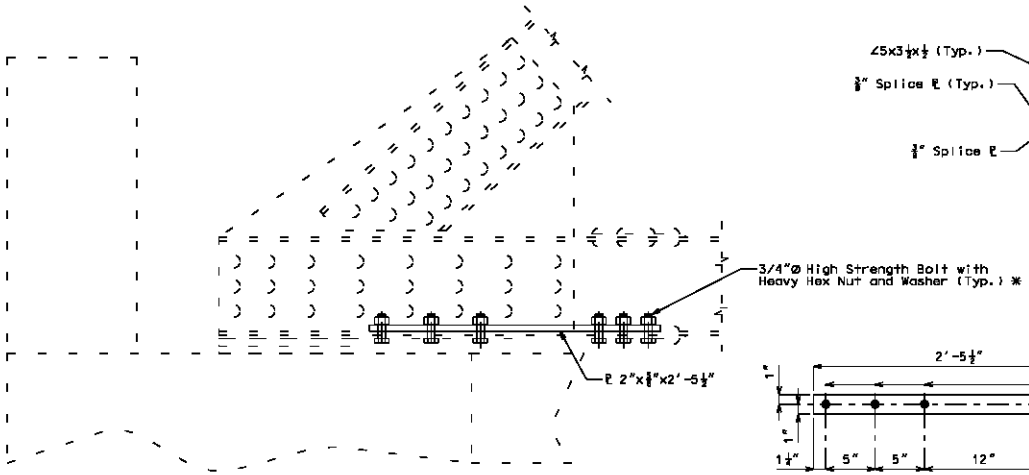


SECTION B-B

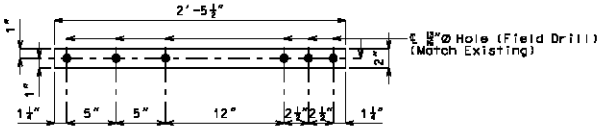


PLAN C-C

DETAILS OF REPAIR OF BOTTOM FLANGE OF STRINGERS AT ABUTMENTS NO. 1 & 3



PART ELEVATION



DETAILS OF SPLICE PLATE

Note:
* Bolts may be installed with hex head up or down. If hex head is down, remove concrete from beam to allow installation. If hex head is up, bolts may be installed snug-tight without use of impact wrench.

DETAILS OF REPAIR OF CHANNEL FLANGE OF BOTTOM CHORD AT NE CORNER NEAR ABUTMENT NO. 1

General Notes:

Outline of old work is indicated by light dashed lines. Heavy lines indicate new work.

Verify all dimensions in field before ordering new material.

Fabricated structural steel shall be ASTM A709 Grade 36.

Use 3/4"Ø high strength bolts for 13/16"Ø holes.

Contact surfaces shall be in accordance with Sec 1081 for surface preparation.

All exposed surfaces at repair areas shall be coated with an epoxy mastic primer.

DETAILS OF PROPOSED TRUSS REPAIRS

Detailed Mar. 2012
Checked Mar. 2012

Note: This drawing is not to scale. Follow dimensions.

Sheet No. of

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED	
3/9/2012	
ROUTE 51	STATE MO
DISTRICT BR	SHEET NO. 1
COUNTY BOLLINGER	
JOB NO. –	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO. G0688	

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

Details_G0688.dgn 1:29:59 PM 3/9/2012