

**Pre-bid Meeting  
Phase 2 - Tails and Trails Bridge  
February 22, 2018**

**Grandview, Missouri  
Federal Project No. TAP-3322(413)**

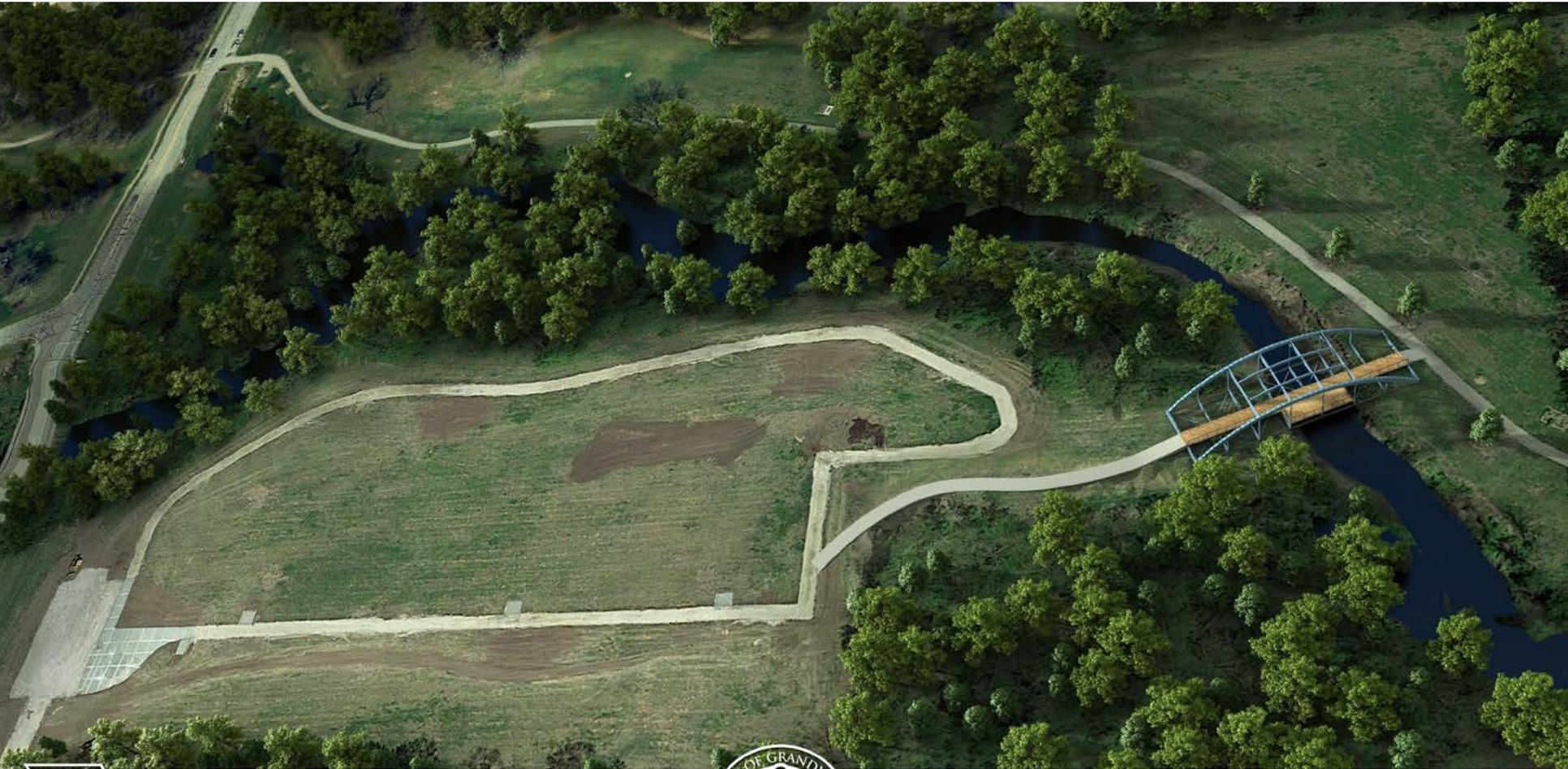


# Agenda

- Project Overview
- Phase I Construction
- Site Access
- Borrow Material
- Re-assembly of Bridge
  - a) Connections
  - b) Shop Drawings
  - c) Erection Scheme
  - d) Painting
- Addendum Items
- Questions



# Project Overview



CITY OF GRANDVIEW

BURNS  MCDONNELL

- Bids Due – 10:00 a.m. March 6, 2018
- Project Completion – December 15, 2018





CITY OF GRANDVIEW

BURNS  MCDONNELL



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CITY OF GRANDVIEW

BURNS  MCDONNELL



CITY OF GRANDVIEW

BURNS  MCDONNELL



CITY OF GRANDVIEW

BURNS  MCDONNELL



CITY OF GRANDVIEW

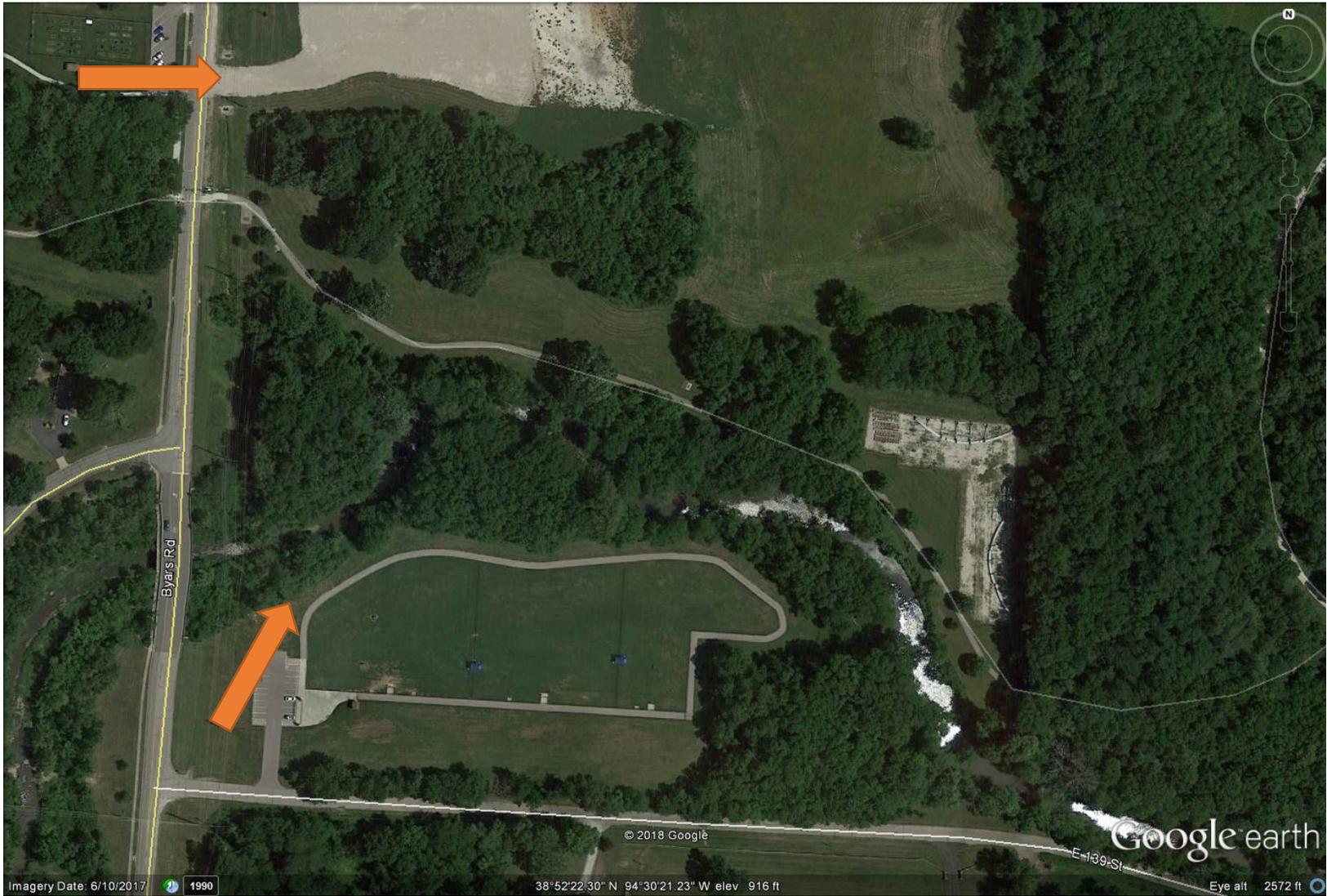
BURNS  MCDONNELL



CITY OF GRANDVIEW

BURNS  MCDONNELL

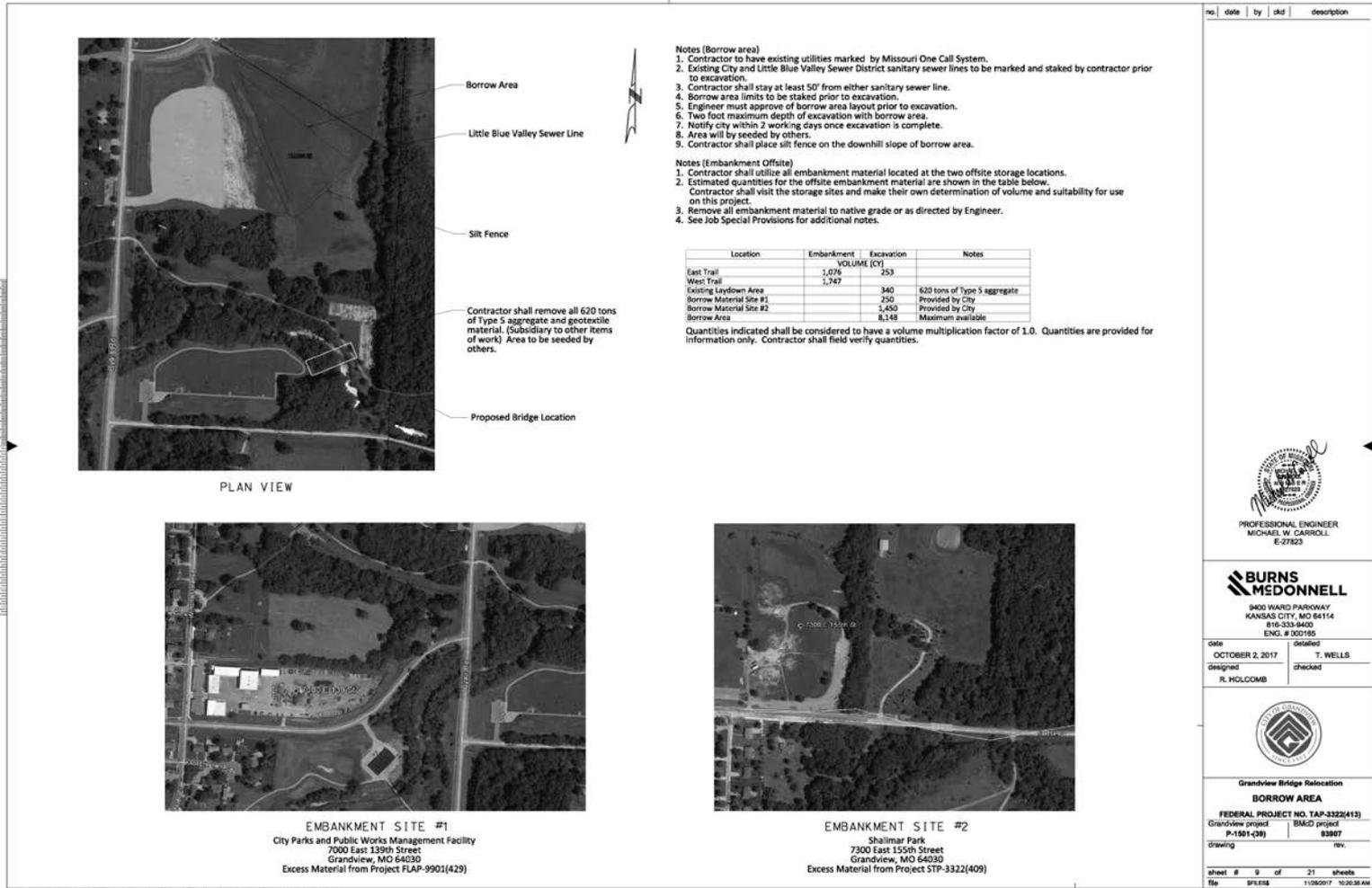
# Site Access



# Tree Clearing

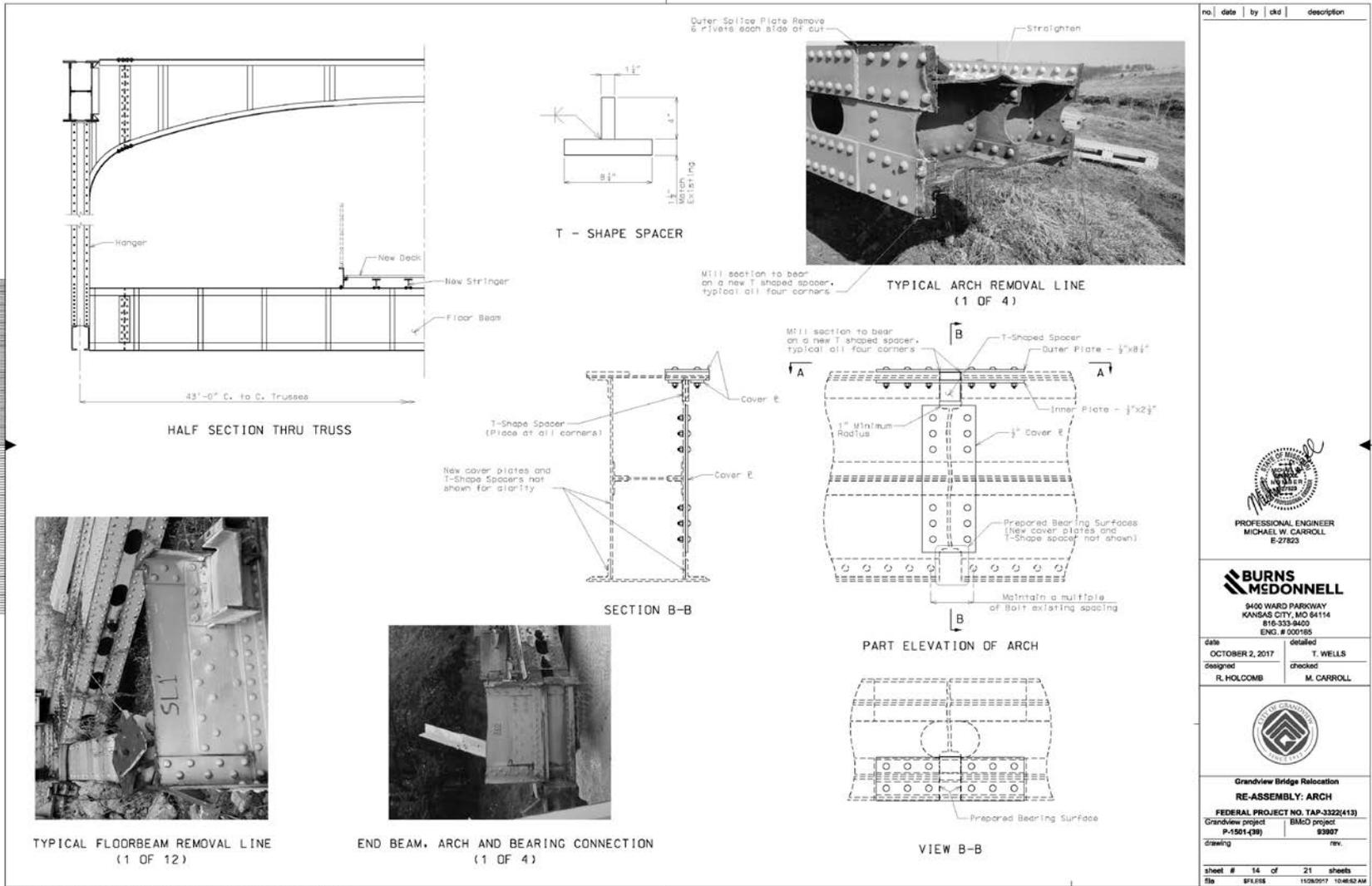


# Borrow



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# Arch Connection



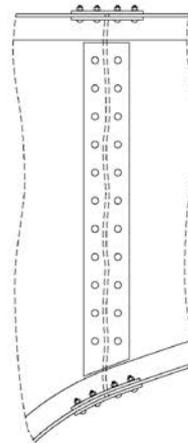
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# Upper Bracing



Repair with one outer and two inner plates for the outstanding angle legs. Typical both top and bottom. No rivet removal.

Repair web with cover plates and bolts at no more than 6 inch spacing. No rivet removal.



**Flange Plates:**

- 1 - 8 1/2" x 1/2" (outer)
- 2 - 3" x 1/2" (inner)
- 4 - bolts either side of cut. Bolt spacing to match existing.

**Web Plates:**

- 2 - 1/2" thick, trimmed to within 1/2" of flange angle. Connect one column of bolts each side of flange cut. Uniform bolt spacing at no more than 6" on center and maintain between 1 1/2" - 3" edge distance all around new plate. Minimum 1 1/2" edge distance to flange cut.

REPAIR OF UPPER LATERAL BRACING (SWAY) CONNECTION (TYPICAL 8 LOCATIONS)

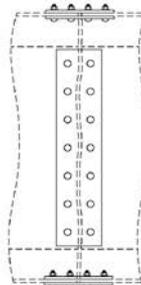


Slide flanges with inner and outer plates - 1/2" or greater. Minimum of 4 bolts per side of flange cut.

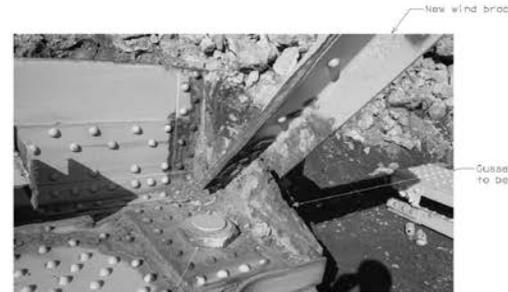
- Flange Plates:**
- 1 - 7 1/2" x 1/2" (outer)
  - 2 - 2 1/2" x 1/2" (inner)
  - 4 - bolts either side of cut

Repair web with cover plates and bolts at no more than 6 inch spacing.

Plates - 1/2" or greater  
See Lateral Bracing Web notes for edge and spacing requirements.



DETAIL OF UPPER LONGITUDINAL STRUT REPAIR (TYPICAL 12 LOCATIONS)



New wind brace

Gusset and angle to be replaced

Remove, clean, inspect and reinstall pending approval of Engineer

GUSSET CONFIGURATION AT BEARING AND END-BEAM (TYPICAL 4 LOCATIONS)

no.	date	by	chkd	description
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PROFESSIONAL ENGINEER  
MICHAEL W. CARROLL  
E-27823



9400 WARD PARKWAY  
KANSAS CITY, MO 64114  
816-333-0400  
ENG. # 000165

date	designed	checked
OCTOBER 2, 2017	T. WELLS	M. CARROLL
designed	checked	
R. HOLCOMB	M. CARROLL	



Grandview Bridge Relocation  
**RE-ASSEMBLY: UPPER BRACING**  
FEDERAL PROJECT NO. TAP-3322(413)  
Grandview project P-1501-038 | BMD project 93907  
drawing rev.

sheet #	15	of	21	sheets
file	SPL518 11/08/2017 10:48:06 AM			

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CITY OF GRANDVIEW



# Floor Beams / Hangers / Tension Tie

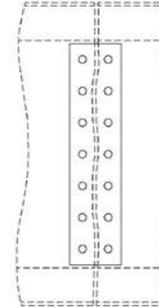


Reconnect interior beams. Only web will be reconnected.

Connect one column of bolts each side of flange cut. Uniform bolt spacing at no more than 6" on center and maintain between 3/4" - 3" edge distance all around new plate. Minimum 1 1/2" edge distance to flange cut.

Reconstruct Tension Tie to match existing, except as noted.

CONNECTION OF INTERIOR FLOOR BEAM  
(TYPICAL 12 LOCATIONS)



INTERIOR FLOOR BEAM CONNECTION



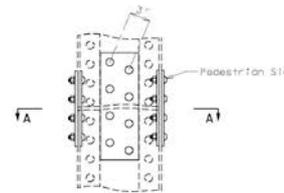
Example of Tension Tie to be replaced in kind.

Repair with:  
Plates:  
2 - 12 1/2" x 3/4"  
4 - 3 1/2" x 3/4" (inner)  
2 - 1/2" (web)

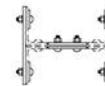
4 bolts per side of cut in flange  
4 bolts per side of cut in web  
3" longitudinal bolt spacing

Example of Tension Tie to be replaced in kind

RECONNECTION OF TENSION HANGER  
(TYPICAL 12 LOCATIONS)



HANGER ELEVATION



SECTION A-A

no.	date	by	chkd	description



PROFESSIONAL ENGINEER  
MICHAEL W. CARROLL  
E-27823

**BURNS  
MCDONNELL**

9400 WARD PARKWAY  
KANSAS CITY, MO 64114  
816-333-0400  
ENG. # 000165

date	detailed
OCTOBER 2, 2017	T. WELLS
designed	checked
R. HOLCOMB	M. CARROLL



Grandview Bridge Relocation  
**RE-ASSEMBLY:  
FLOOR BEAM AND HANGER**  
FEDERAL PROJECT NO. TAP-3322(413)

Grandview project	BMCJ project
P-1501-098	93907

drawing	rev.

sheet #	of	total sheets
16	21	21

file	DATE	TIME
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# Tension Tie – End Connection



LOOKING DOWN ON BEARING POST AT END OF ARCH



Inside of arch to be blast cleaned and inspected

TIE END CONNECTION FROM BELOW



GUSSET CONFIGURATION AT BEARING AND END-BEAM (TYPICAL 4 LOCATIONS)

no.	date	by	chkd	description
 PROFESSIONAL ENGINEER MICHAEL W. CARROLL E-27823				
 <b>BURNS &amp; McDONNELL</b> 9400 WARD PARKWAY KANSAS CITY, MO 64114 816-333-0400 ENG. # 000165				
date	OCTOBER 2, 2017	designed	R. HOLCOMB	checked
date		designed	T. WELLS	checked
date		designed	M. CARROLL	checked
 GRANDVIEW BRIDGE RELOCATION <b>ADDITIONAL PHOTOS</b> FEDERAL PROJECT NO. TAP-3322(413) Grandview project P-1501-038   BMO project 83907 drawing rev.				
sheet	18	of	21	sheets
file	SPL518		11/09/2017	10:51:38 AM

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# Tension Tie – End Connection



11.11.2016 13:25



# Tension Tie – End Connection



11.11.2016 13:31



- Shop Drawings
- Erection Scheme – Sealed by PE
- Painting



# Addendum Items:

1. Federal Project No. TAP-3322 (413):  
Request for Bid and Advertisement for Bid sheets have wrong number.
2. Advertisement for Bid – Section 102.20  
Prequalification will be required.
3. Federal Wage Rates will be updated.

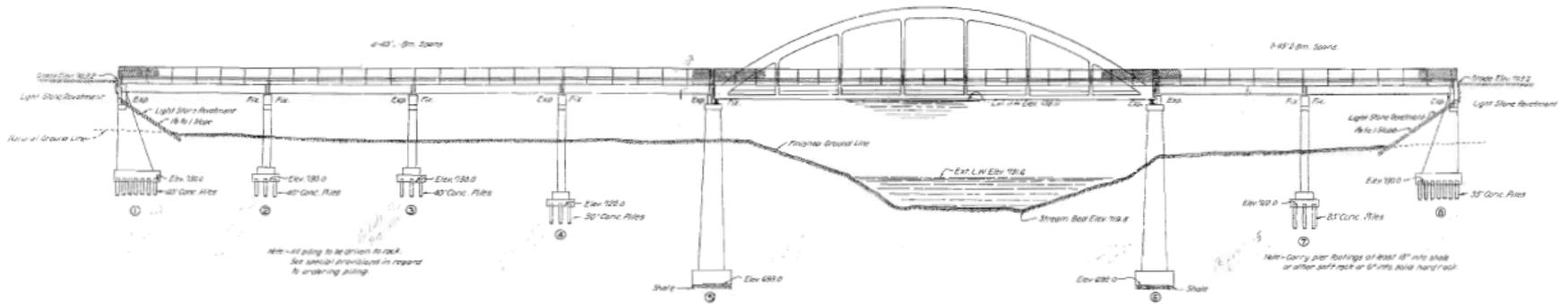


# Questions?

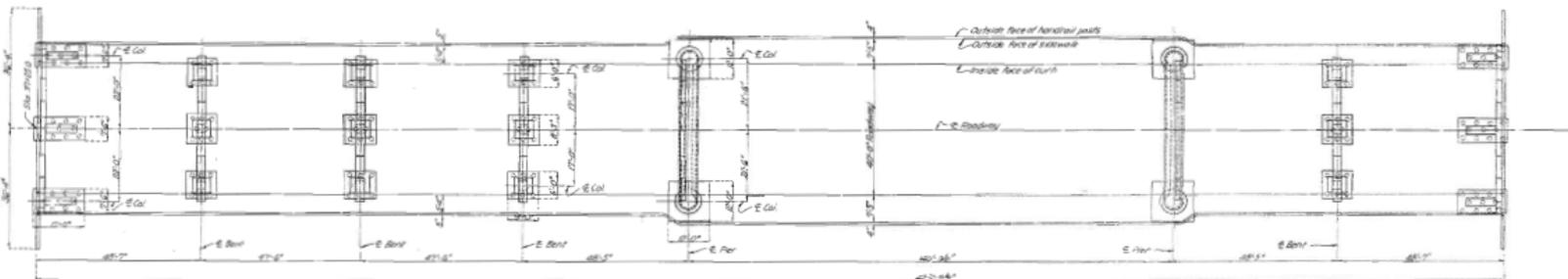


# MISSOURI STATE HIGHWAY DEPARTMENT

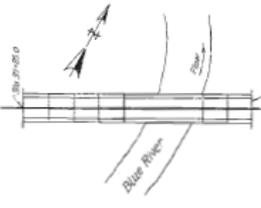
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	DIST. NO.	SHEET NO.
5	MO.	1027-2024	1954	10	5427/5



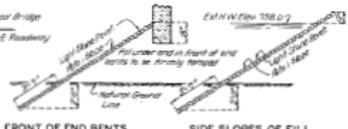
GENERAL ELEVATION



PLAN



LOCATION SKETCH



FRONT OF END BENTS  
SIDE SLOPES OF FILL  
LIGHT STONE REVETMENT SKETCHES

ESTIMATED QUANTITIES				
ITEM	QUANTITY	SUBTYPE	UNIT	TOTAL
Excavation Class I	1,250		CU YD	1,250
Excavation Class II	1,300		CU YD	1,300
Concrete Pile	4,927		LINEAL FEET	4,927
Concrete Pile Cap	430		CU YD	430
Concrete 12.0"x12.0" Class III	1,100		CU YD	1,100
Concrete 12.0"x12.0" Class III	1,100		CU YD	1,100
Reinforcing Steel	2,500		LINEAL FEET	2,500
Cast Steel Truss Spans	1		SPAN	1
Structural Steel ATC Span	300,000		LINEAL FEET	300,000
Structural Steel Approach Span	300,000		LINEAL FEET	300,000
Reinforced	1,000		CU YD	1,000
Reinforcing Castings 12.0"x12.0" Spans	1,000		CU YD	1,000

Bridge excavation above elevation 124.0 will be paid for as Class I Bridge Excavation.  
Bridge excavation below elevation 124.0 will be paid for as Class II Bridge Excavation.

**GENERAL NOTES-**  
 Designed under A.A.S.H.O. specifications with modifications.  
 Location: 1027.  
 Macadam-Concrete paving and curbs to be 12.0" thick Class III concrete in accordance to be 12.0" thick Class III.  
 Concrete Aggregate to be tested for where no other detail is noted.  
 Where bituminous felt is used in connection with joints in concrete, it shall be in vertical joints covered, its side faces of concrete work shall be dry.  
 Two center lines shall be shown on 100'-0" plan to be reproduced and placed by construction. One of them shall be included in plan and for other items.  
 Reinforcement: See Special Provisions.  
 Reinforcement: See Special Provisions.  
 Bridge excavation in accordance with Section I of Standard Specifications shall apply to all excavation work for which quantities shall be computed from maximum excavation 12.0" above existing ground line or below the existing ground line to be placed against top and end of spans No. 12.0" and other spans for use in the excavation.  
 Shop drawings shall be submitted for all structural steel work and shall be submitted to the Missouri State Highway Department in duplicate and shall be approved before steel is fabricated.

8x12 Elev 182.00 Bents in top of 47'-0" spans 40' 0" to 48' 0" RC

**BRIDGE OVER BLUE RIVER**  
 STATE ROAD FROM KANSAS CITY EAST  
 ABOUT 2.25 MILES S.W. OF CENTROPOLIS QUARRY  
 PROJ. NO. N.R.M. 352A (U.S. 40AP) STA. 374-25

**JACKSON COUNTY**  
 SUBMITTED BY: *[Signature]*  
 APPROVED BY: *[Signature]*  
 DATE: 3/15/32  
 ROAD DISTRICT: 10  
 DIST. ENGINEER

S-918R  
 J-526

F.A.

Designed by R.H. Smith  
 Prepared by R.H. Smith  
 Checked by R.H. Smith  
 Checked Dec. 20, 1931 by F.H.C.

Sheet No. 1074



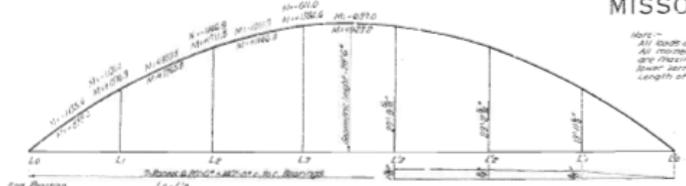
CITY OF GRANDVIEW



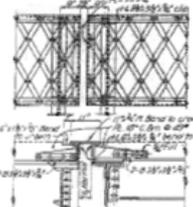
BURNS & McDONNELL

# MISSOURI STATE HIGHWAY DEPARTMENT

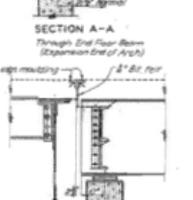
PROJ. NO.	STATE	FILE NO.	SCALE	SHEET NO.	TOTAL SHEETS
2	MO	177	1/4"	19	20



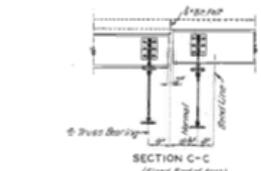
One Abutment  
24' x 29' 6"  
L.L. x 10' 6"  
7' 0"  
2' 0"



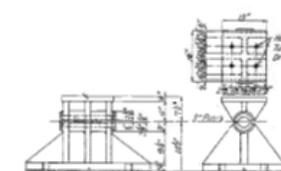
SECTION C-C  
Through End Bracker  
(Expansion End of Arch)



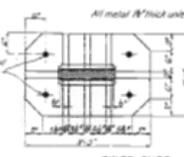
SECTION A-A  
Through End Floor-Beam  
(Expansion End of Arch)



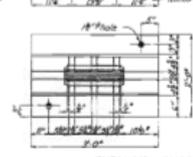
SECTION C-C  
(Fixed End of Arch)



SECTION A-A  
Through End Floor-Beam  
(Fixed End of Arch)



FIXED SHOE

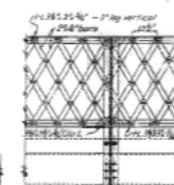


EXPANSION SHOE

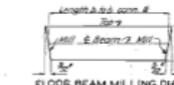
No casting on expansion shoe is same as for fixed shoe.  
All metal 1/2" thick unless otherwise noted.  
All anchor bolts to be 1/2" x 2'-0" swaggers, set 1/2" into masonry.  
All fittings practice.



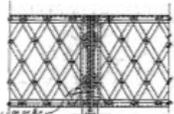
SECTION B-B



PART ELEVATION OF RAIL



FLOOR BEAM MILLING DIAGRAM

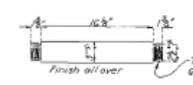


RAIL SPLICE

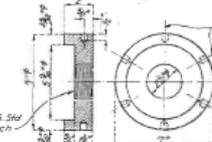
Splice rail as shown at 5th and 6th handrail posts from each end.



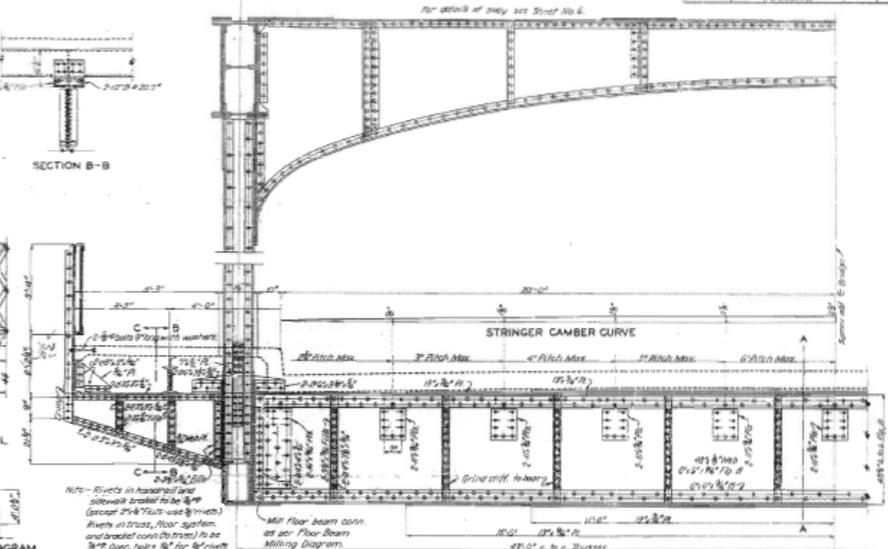
DETAIL OF HUB ENDS



COLD ROLLED STEEL PIN  
(4 Req'd.)

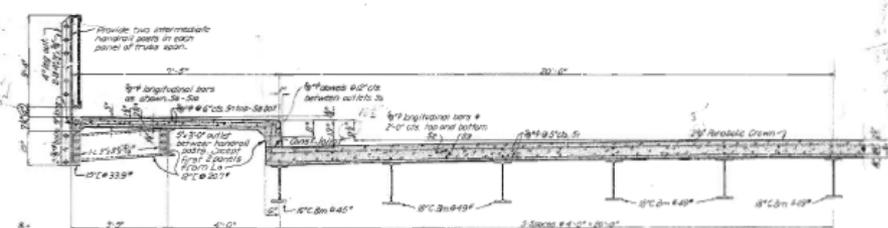


FORGED STEEL PIN NUT  
(6 Req'd.)



STRINGER CAMBER CURVE

HALF SECTION THRU TRUSS



HALF SECTION THRU FLOOR

**BRIDGE OVER BLUE RIVER**  
STATE ROAD FROM KANSAS CITY EAST  
ABOUT 2.25 MILES S.W. OF CENTROPOLIS QUARRY  
PROJ. NO. N.W. 3221 (U.S. 40A) STA. 37+25  
**JACKSON COUNTY**  
DESIGNED BY: *[Signature]* DATE: 3/18/02  
CHECKED BY: *[Signature]* DATE: 3/18/02

S-918 R  
J-526

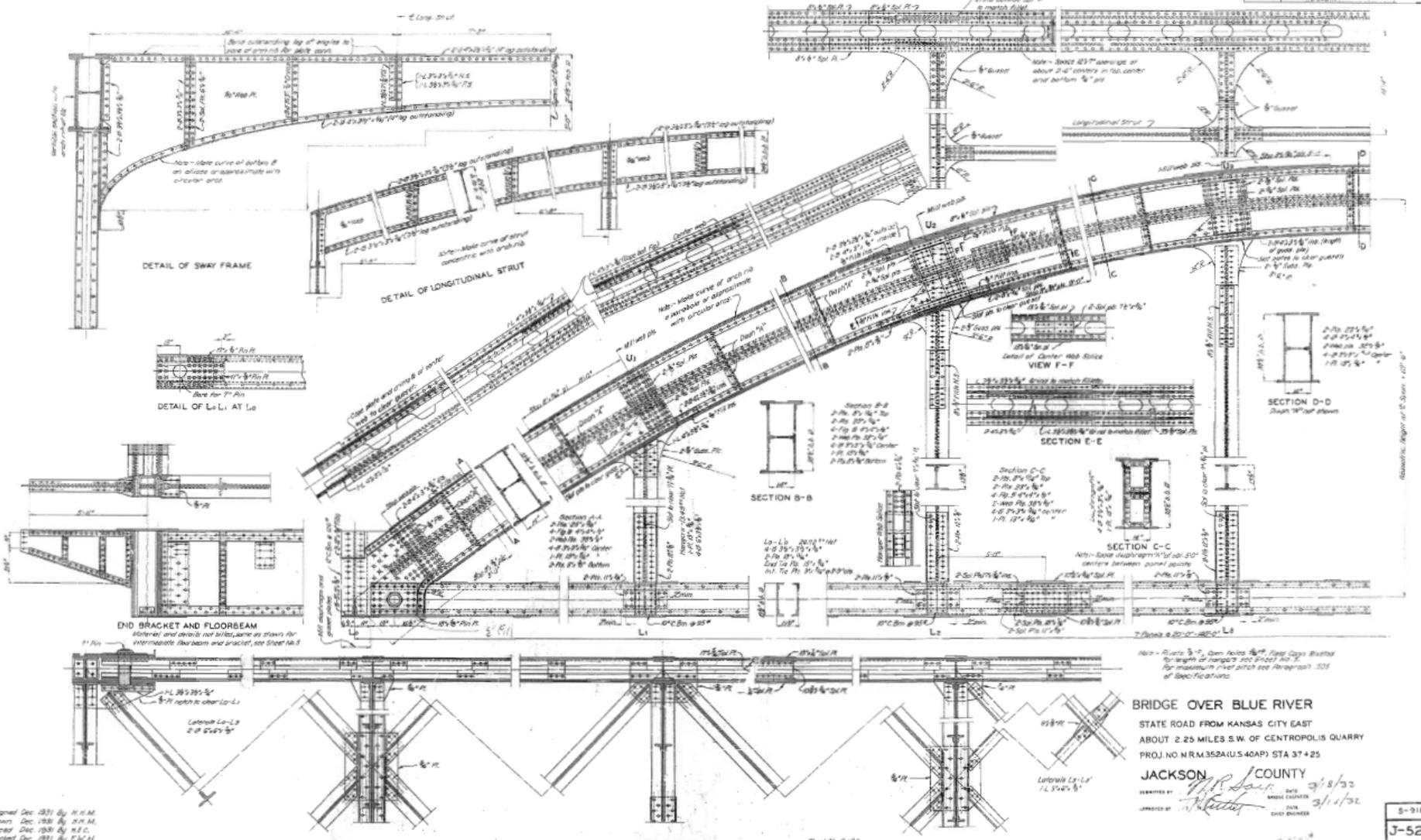
Designed Sept. 1931 by R.H.M.  
Checked Sept. 1931 by R.H.M.  
Revised Oct. 1931 by H.E.C.  
Checked Nov. 1931 by H.E.C.

Sheet No. 5 of 6



# MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	MO.	100-1-10	1932	14	14



Designed Dec. 1931 by H.M.M.  
 Drawn Dec. 1931 by H.M.M.  
 Transp. Dec. 1931 by H.M.C.  
 Checked Dec. 1931 by T.M.M.

Sheet No. 6 of 6

S-918 R  
 J-526



## ESTIMATED QUANTITIES

ITEM		SUBSTR.	SUPERSTR.	TOTAL
Excavation Class 1	Cu. Yds.	1230		1230
Excavation Class 2	Cu. Yds.	1950		1950
Concrete Piles	Lin. Ft.	4737		4737
Concrete Pile Cut-Offs	Lin. Ft.	438		438
Concrete 1-2-3 1/2 mix. Class "X"	Cu. Yds.		541.8	541.8
Concrete 1-2-4 mix. Class "B"	Cu. Yds.	934.4		934.4
Reinforcing Steel	Lbs.	61,500	137,270	198,770
Cast Steel - Truss Span	Lbs.		7,000	7,000
Structural Steel Arch Span	Lbs.		397,000	397,000
Structural Steel Approach Spans	Lbs.		388,500	388,500
Handrail	Lin. Ft.		860	860
Bearing Castings - I-Bm. Spans	Lbs.		7,850	7,850



## **Overview**

Steel through arch bridge over Blue River on US 40 in Kansas City

## **Location**

[Kansas City](#), [Jackson County](#), [Missouri](#)

## **Status**

Relocated to Grandview as Tails & Trails Bridge

## **Future prospects**

Relocated

## **History**

Built 1933; rehabilitated 1991, Closed to all traffic 2014, relocated 2015

## **Builders**

- [Davis Construction Co.](#) of Boonville, Missouri (Contractor)
- [Gerard Knutson Construction Co.](#) of Kansas City, Missouri (Contractor)
- [Kansas City Structural Steel Co.](#) of Kansas City, Missouri (Fabricator)
- [Lam Construction Co.](#) (Contractor)

