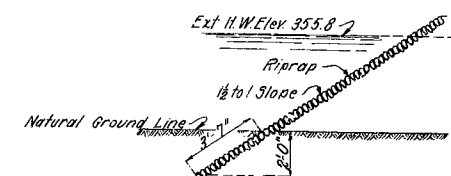


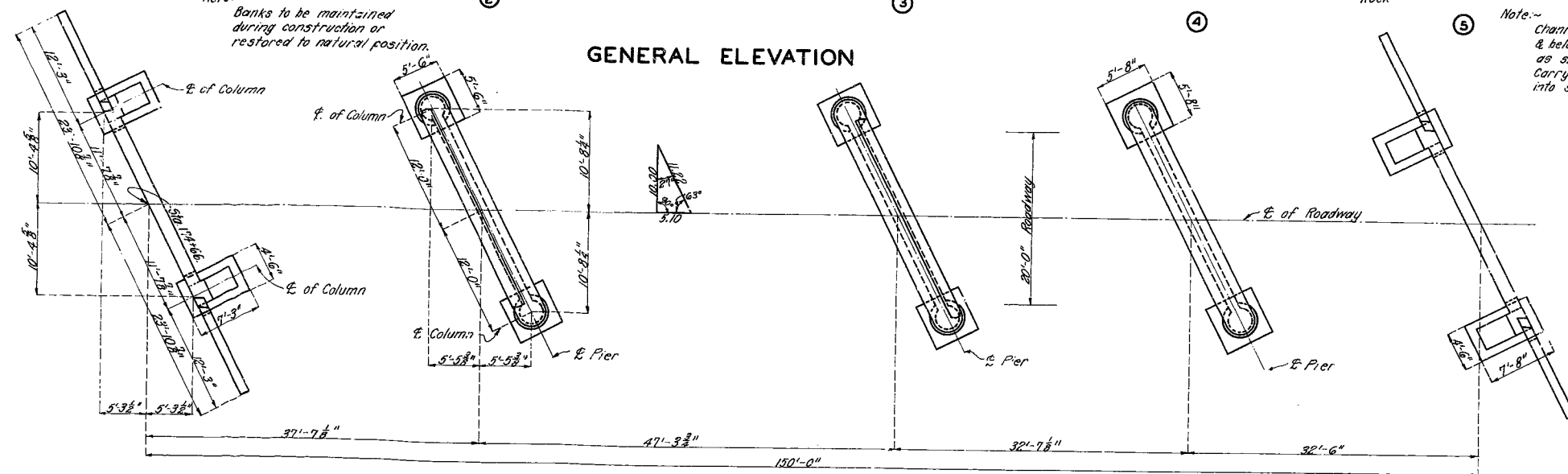
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	R 25-316	19		



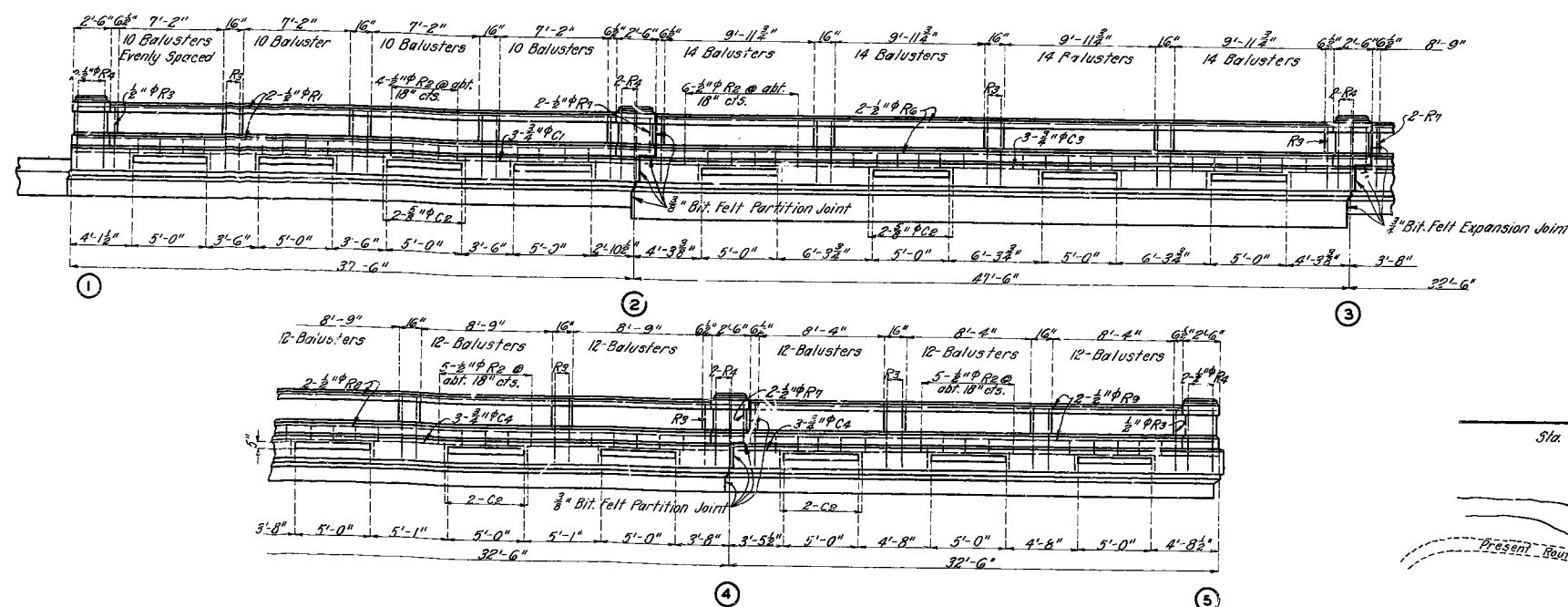
SIDE SLOPES OF FILL

Riprap fill at ends of bridge as shown in sketch.  
Approximately 80 square yards of riprap work  
included in road contract.

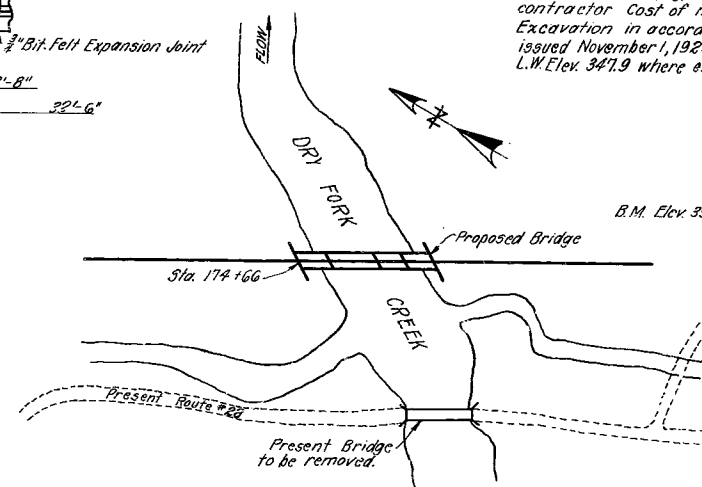
### RIPRAP SKETCH



## PLAN



### ELEVATION OF HANDRAIL AND CURB



LOCATION SKETCH

GENERAL NOTES:-

Concrete in handrail to be 1:2-3 mix. Concrete in slab, curbs and girders to be 1:2-3 $\frac{1}{2}$  mix. All other concrete to be 1:2-4 mix.  
Exposed edges to be bevel:  $\frac{3}{8}$ " where no other bevel is noted.  
Omit drains as shown on Standards C-6330, C-6335 & C-6345.  
Shop drawings for the fabricating of bearing plates and bolts will be furnished by the Missouri State Highway Department.  
No permanent camber desired in finished girders. Any construction camber remaining in girders to be taken out in floor slab by thickening floor over supports. Girders and slab shall not be less in depth than standard.  
Where bituminous felt is used in expansion or partition joints in concrete, stitch felt in vertical joint securely to one face of concrete with copper wire.  
Two name plates, type "A" as shown on Std. S-818 to be furnished and placed by contractor. Cost of name plates to be included in price bid for other items.  
Excavation in accordance with Specification XLIX of Standard Specifications issued November 1, 1926, except that quantities paid for will be computed from extreme L.W. Elev. 347.19 where existing ground line is below this elevation.

## BRIDGE OVER DRY FORK CREEK

STATE ROAD FROM BELLE TO VIENNA

ABOUT 3 MILES SOUTH OF BELLE

PROJECT NO. R28-S16      STA. 174 + 66.

MARIES COUNTY

SUBMITTED BY W. P. Saxe . . . . . DATE 8/7/29  
BRIDGE ENGINEER

APPROVED BY *1. H. Carter* . . . . . DATE *8/7/21*  
 BRIDGE ENGINEER  
 CHIEF ENGINEER

STD. C-6330

STD C-6335

STD. C-6345

STD. S-818

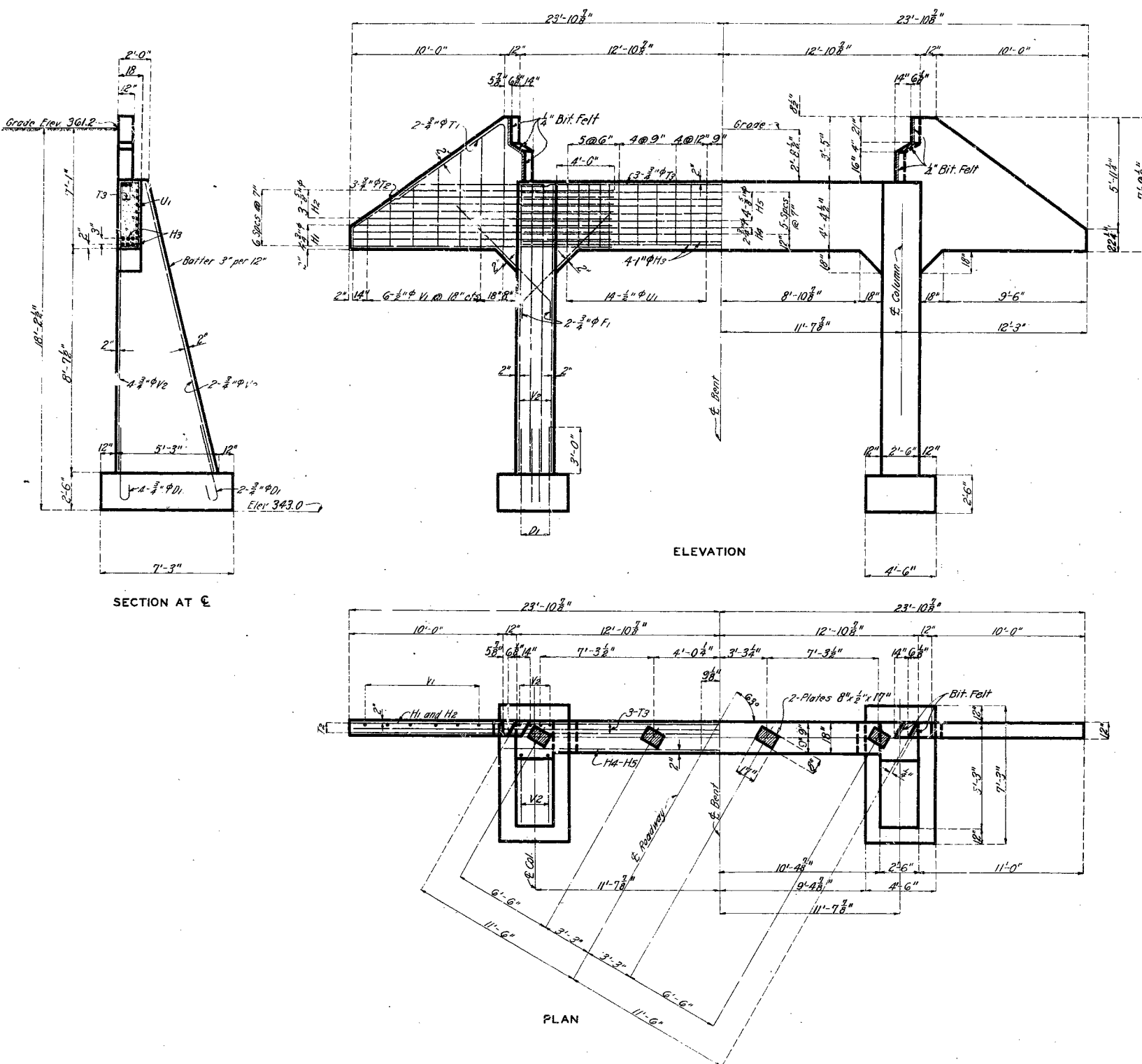
H-980

Drawn June 1929 By A.F.K.  
Traced June 1929 By H.E.C.  
Checked June 1929 By P.B.R.

Sheet No. 1 of 6

MISSOURI STATE HIGHWAY DEPARTMENT

FED. AID DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO	R28-516	1929		



DETAIL OF END BENT NO.1

COMPLETE BILL OF REINFORCING STEEL									
NO.	SIZE	LENGTH	MARK	LOCATION	BENDING SKETCHES & CUTTING DIAGRAMS				
End Bent No.1					2-3' Deck Girder Spans Continued				
12	3/4"	6'-3"	D1	Footings	26				
8	3/4"	9'-3"	F1	Haunch	312				
8	3/4"	17'-6"	H1	Wing Wall	16				
3	3/4"	30'-9"	H2	"	32				
8	1"	25'-6"	H3	Beam	16				
2	3/4"	25'-6"	H4	"	16				
4	3/4"	25'-6"	H5	"	16				
4	3/4"	17'-6"	T1	Wing Wall	16				
6	3/4"	16'-3"	T2	"	16				
3	3/4"	25'-6"	T3	Beam	16				
6	3/4"	9'-0"	V1	Wing Wall	16				
12	3/4"	12'-9"	V2	Column	16				
28	1/2"	11'-9"	V3	Beam	16				
Pier No.2 & 3					1-35' Deck Girder Span				
32	1"	8'-0"	D2	Footings	6				
6	1"	26'-0"	H2	Web Wall	32				
16	1/2"	26'-0"	H3	"	16				
1	1"	26'-0"	H4	Cap	32				
4	3/4"	22'-0"	H5	Haunch	16				
48	3/4"	7'-3"	P1	Cap	16				
48	1/2"	11'-6"	V2	Web Wall	16				
32	1"	11'-6"	V3	Column	16				
Pier No.4					1-35' Deck Girder Span				
16	1"	8'-0"	D2	Footings	16				
3	1"	26'-0"	H2	Web Wall	16				
10	1/2"	26'-0"	H3	"	16				
4	1"	24'-0"	H4	Cap	16				
44	3/4"	7'-3"	P1	Cap	16				
24	1/2"	13'-6"	V2	Web Wall	16				
16	1"	13'-6"	V3	Column	16				
End Bent No.5					1-45' Deck Girder Span				
12	3/4"	6'-3"	D1	Footings	12				
8	3/4"	9'-3"	F1	Haunch	16				
8	3/4"	17'-6"	H1	Wing Wall	16				
3	3/4"	30'-9"	H2	"	16				
2	3/4"	25'-6"	H3	Beam	16				
4	3/4"	25'-6"	H4	"	16				
9	3/4"	25'-6"	H5	"	16				
4	3/4"	17'-6"	T1	Wing Wall	16				
6	3/4"	16'-3"	T2	"	16				
3	3/4"	25'-6"	T3	Beam	16				
6	3/4"	9'-0"	V1	Wing Wall	16				
12	3/4"	12'-9"	V2	Column	16				
28	1/2"	11'-9"	V3	Beam	16				
2-30' Deck Girder Spans					13-S8 BARS CUT 52 & BEND AS SHOWN				
48	3/4"	15"	C2	Curb	13				
12	3/4"	32'-3"	C4	"	16				
60	1/2"	9"	R2	Rail	20				
24	1/2"	8'-3"	R3	Sub-Post	8				
16	1/2"	4'-0"	R4	Post	12				
576	3/4"	18"	R5	Baluster	2				
4	1/2"	2'-3"	R6	Post	4				
8	1/2"	32'-3"	R8	Rail					
8	1/2"	31'-0"	R9	"					
28	3/4"	22'-9"	S1	Slab					
28	3/4"	24'-3"	S2	"					
28	3/4"	25'-3"	S3	"					
12	1/2"	18'-0"	S4	"					
24	1/2"	5'-0"	S6	"					
12	1/2"	31'-3"	S7	"					
26	3/4"	29'-9"	S8	"					

BRIDGE OVER DRY FORK CREEK  
STATE ROAD FROM BELLE TO VIENNA  
ABOUT 3 MILES SOUTH OF BELLE  
PROJECT NO. R28-516 STA. 174 + 66.  
MARIES COUNTY  
SUBMITTED BY M.R. Lee DATE 8/1/29  
APPROVED BY T.H. Lee DATE 8/1/29  
BRIDGE ENGINEER  
CHIEF ENGINEER  
STDC-6330  
STDC-6335  
STD.C6345  
STD.S818  
H-980

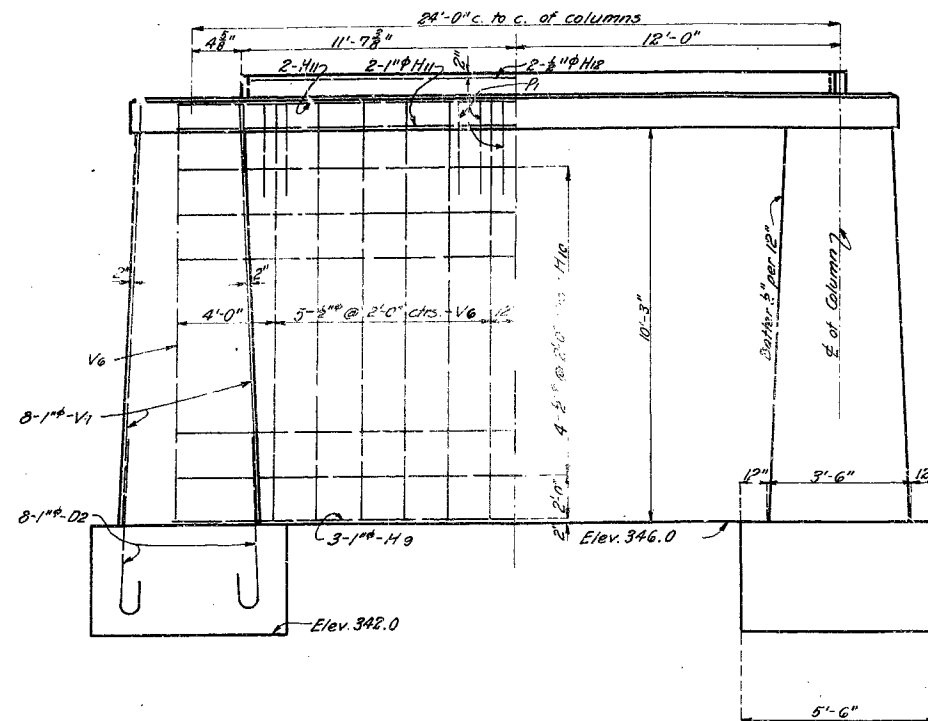
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Assembled June 1929 By H.E.C.  
Checked June 1929 By P.B.R.  
Drawn July 1928 By H.E.C.  
Checked Feb. 1929 By E.P.

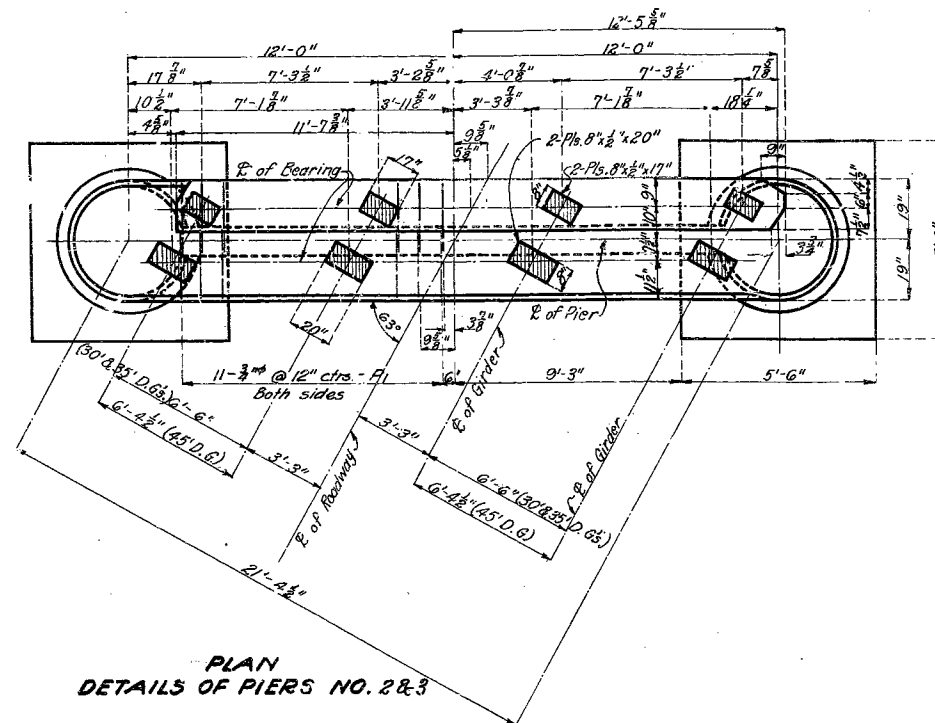
Note:-  
This drawing is not to scale.  
Follow dimensions.

# MISSOURI STATE HIGHWAY DEPARTMENT

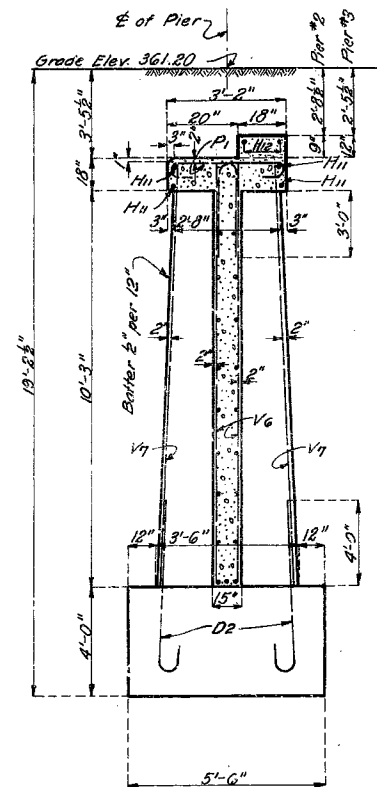
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5	MO.	R28-S16	19		



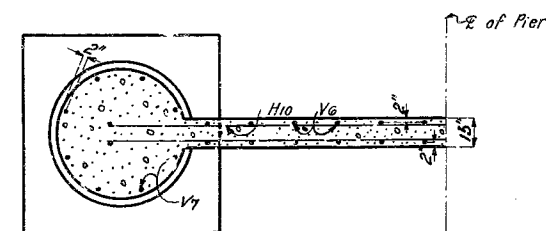
ELEVATION



PLAN  
DETAILS OF PIERS NO. 2 & 3



SECTION AT  $\perp$   
AT RIGHT ANGLES TO  $\perp$  OF PIER



HALF HORIZONTAL SECTION

## BRIDGE OVER DRY FORK CREEK

STATE ROAD FROM BELLE TO VIENNA  
ABOUT 3 MILES SOUTH OF BELLE  
PROJECT NO. R28-S16 STA. 174 + 66.

MARIES COUNTY

SUBMITTED BY *M.R. Long* DATE *8/1/29*  
APPROVED BY *T.H. Gault* DATE *7/1/29*  
BRIDGE ENGINEER  
CHIEF ENGINEER

STD. C-6330
STD. C-6335
STD. C-6345
STD. S-818
H-980

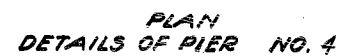
Sheet # 3 of 6

STEEL SPANS - PIERS - 5805

Assembled May 1929 by A.F.K. & H.E.C.  
Checked June 1929 by P.B.R.  
Drawn June 1925 by H.G.P.  
Checked June 1925 by J.I.

530

Assembled June 1929 By A.F.K. & H.E.C.  
Checked June 1929 By P.B.R.  
Drawn June 1925 by H.G.P.  
Checked June 1925 by J.I.



SUBMITTED BY *W.R. Lacy* DATE *8/7/29*  
 BRIDGE ENGINEER  
 APPROVED BY *Th. Cullen* DATE *8/7/29*  
 CHIEF ENGINEER

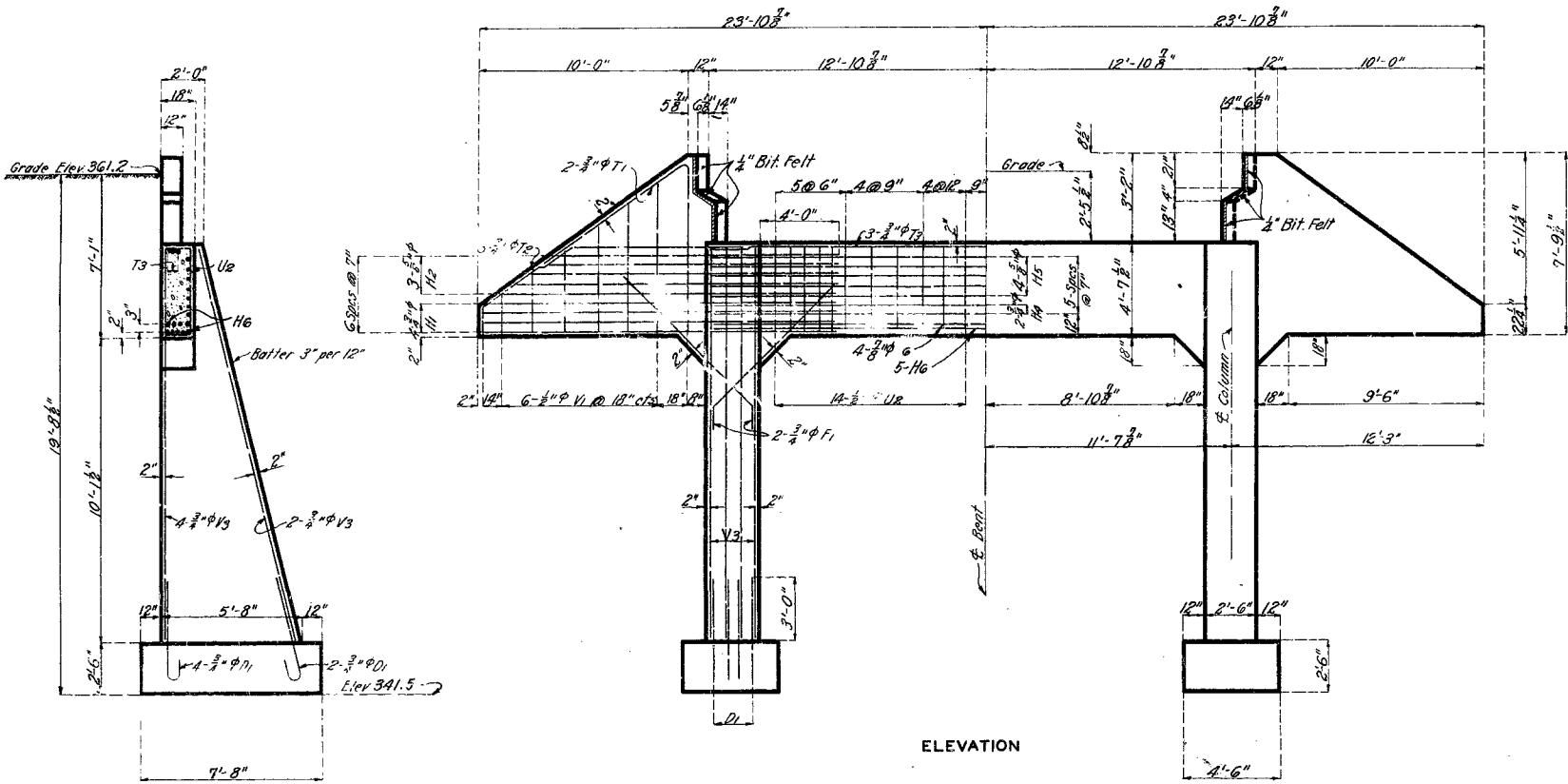
STD. C-6330
STD. C-6335
STD. C-6345
STD. S-818
H-980

Sheet # 4 of 6

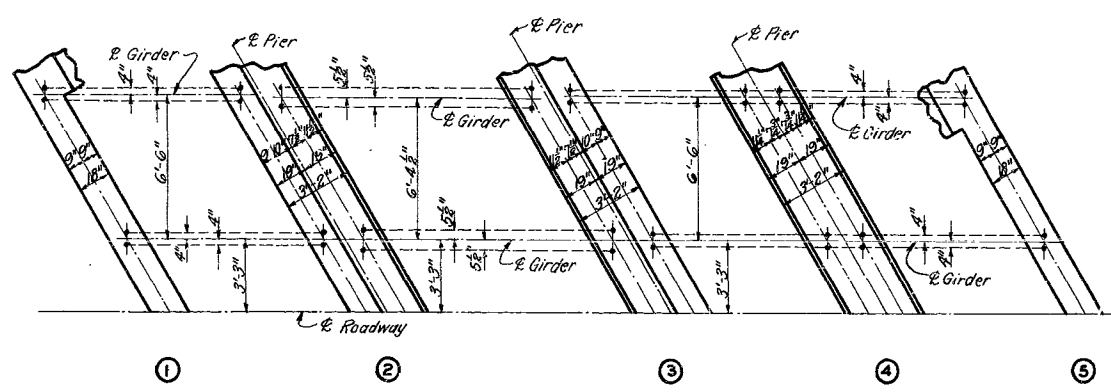
STEEL SPANS - PIERS - S805

MISSOURI STATE HIGHWAY DEPARTMENT

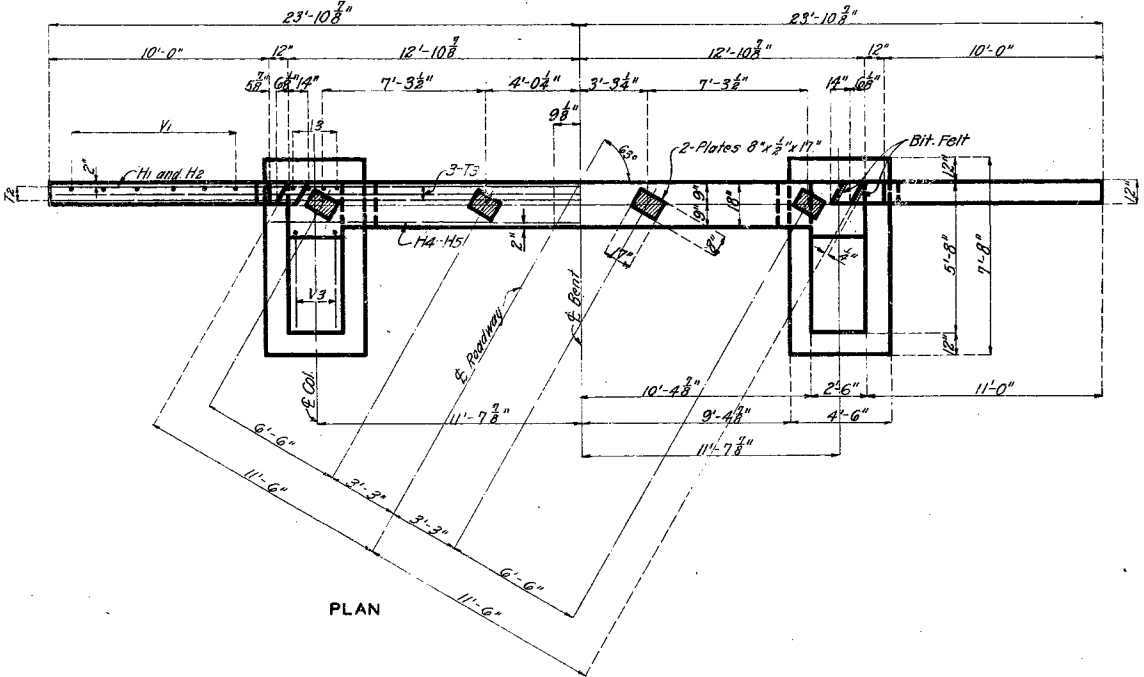
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	R28-516	192		



SECTION AT E



HALF ANCHOR BOLT PLAN



DETAIL OF END BENT NO.5

- LIST OF BEARING PLATES & BOLTS REQ'D.-
- 40 - Plates 8"x 8"x 17"
  - 16 - Plates 8"x 8"x 20"
  - 4 - Plates 17"x 8"x 2-1/2"
  - 12 - Copper Plates 8"x 17" - 16 Gauge
  - 4 - Copper Plates 8"x 20" - 16 Gauge
  - 64 - 3/8" Bolts 12" long - Sq. Nuts, Csk. Hds.
  - 64 - 3/8" Bolts 12" long - No Threads or Nuts.
  - 64 - 3/8" Bolts 1 1/2" long - Soft Iron.

Above list of bearing plates and bolts is complete.  
Plates & Bolts listed on Standards C-6330, C-6335 & C-6345  
not to be ordered.

BRIDGE OVER DRY FORK CREEK  
STATE ROAD FROM BELLE TO VIENNA  
ABOUT 3 MILES SOUTH OF BELLE  
PROJECT NO. R28-S16 STA. 174+66.

MARIES COUNTY

SUBMITTED BY *N.R. Lacy* DATE *8/29*  
APPROVED BY *W. H. Carter* DATE *8/29*  
BRIDGE ENGINEER  
CHIEF ENGINEER

STD.C-6330
STD.C-6335
STD.C-6345
STD.S818
H-980

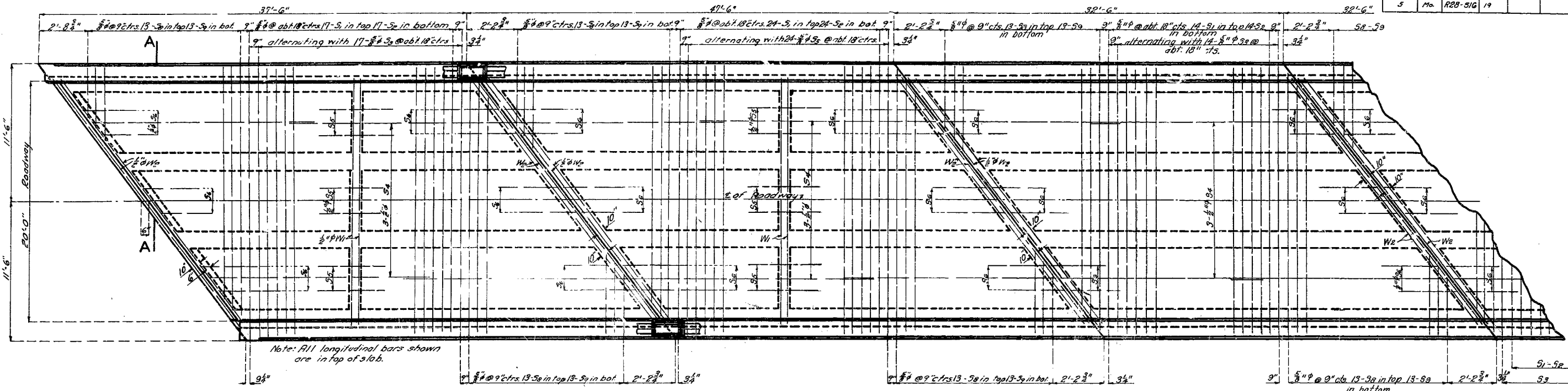
Note:-  
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Follow dimensions.

532

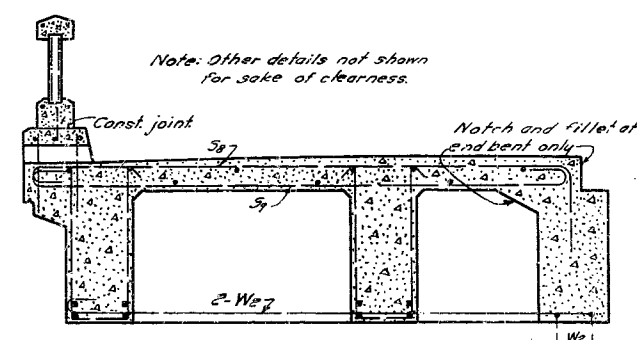
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Checked June 1929 By P.B.R.  
Drawn July 1928 By H.E.C.  
Checked Feb. 1929 By E.B.

# MISSOURI STATE HIGHWAY DEPARTMENT

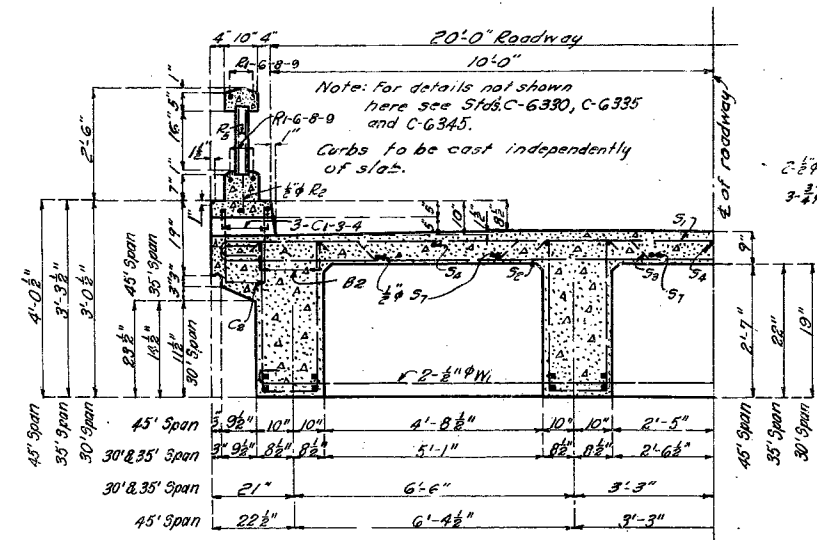
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5	Mo.	R28-S16	19		



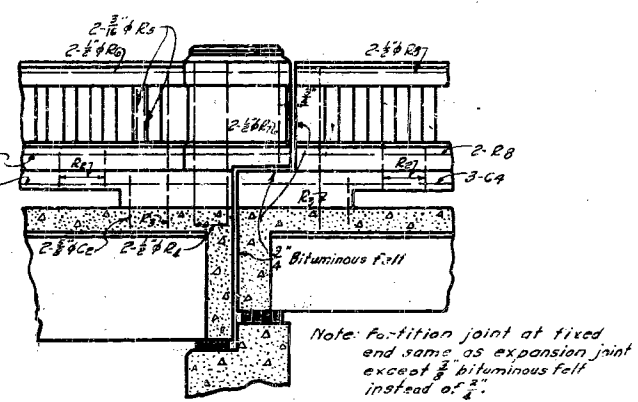
PLAN OF SLAB SHOWING REINFORCEMENT



SECTION A-A



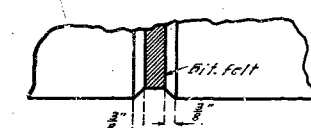
HALF CROSS SECTION



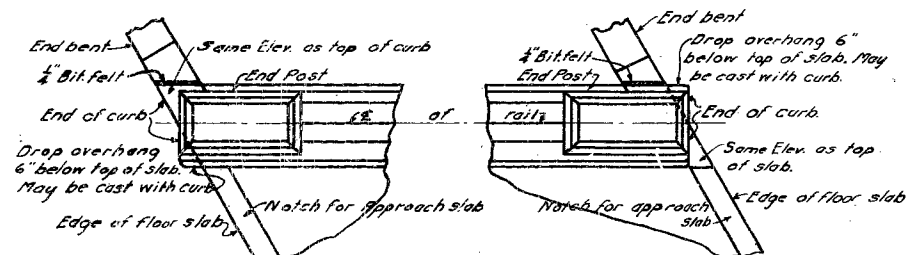
DETAIL OF HANDRAIL EXPANSION JOINTS



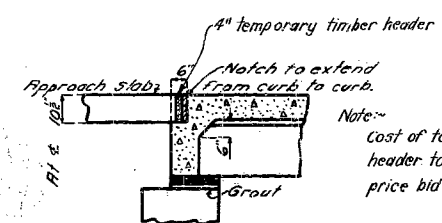
DETAIL OF BEVEL FOR CONST. JOINT AT CURB



DETAIL OF BEVEL FOR BIT. FELT JOINTS



SKETCHES SHOWING LOCATION OF END POSTS OF HANDRAIL



DETAIL OF NOTCH FOR APPROACH SLABS SECTION PARALLEL TO C ROADWAY

## BRIDGE OVER DRY FORK CREEK

STATE ROAD FROM BELLE TO VIENNA  
ABOUT 3 MILES SOUTH OF BELLE  
PROJECT NO. R28-S16 STA. 174+66

MARIES COUNTY

SUBMITTED BY: *M.R. Day* DATE: *4/12/29*  
APPROVED BY: *[Signature]* DATE: *4/12/29*  
CHIEF ENGINEER

STD. C-6330
STD. C-6335
STD. C-6345
STD. S-818
H-980

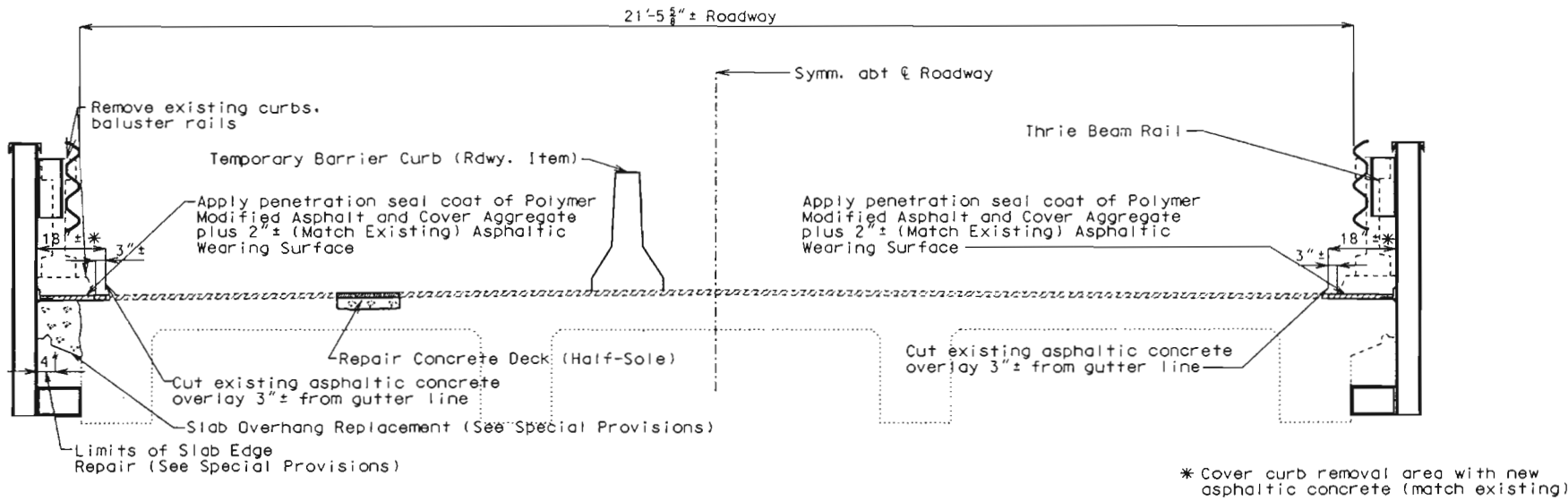
Assembled June 1929 by A.F.K. & H.E.C.  
Checked June 1929 by P.B.R.  
Drawn Jan. 1929 by H.S.J. & C.R.F.  
Checked Feb. 1929 by E.B.

Note: This drawing not to scale; follow dimensions.

533

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

State	Proj. No.	Sheet No.
MO		B1
Sec./Sur. 32 Twp. 41N Rge. 7W		



SECTION THRU SLAB

ESTIMATED QUANTITIES		
ITEM		TOTAL
Curb Removal for Thrie Beam Installation	Lin. Ft.	300
Substructure Repair (Unformed)	Sq. Ft.	33
Repairing Concrete Deck (Half-Soling)	Sq. Ft.	100
Slab Edge Repair(Bridges)	Lin. Ft.	140
Slab Overhang Replacement	Lin. Ft.	20
End Bent Wing Modification	Lump Sum	1
Deck Girder Repair	Lin. Ft.	30
Bridge Guard Rail (Thrie Beam)	Lin. Ft.	298

The polymer modified asphalt shall be applied at a rate of 0.35 gal. per square yard.  
The cover aggregate shall be applied at a rate of 0.0125 ton per square yard.

Type AC-20 Asphalt Cement is required in the Asphaltic Concrete mixes for bridge deck overlays when the adjacent roadways are not to be overlaid.

See Special Provisions for cost of seal coat, cover aggregate & asphaltic wearing surface.

See Special Provisions for cost of existing asphalt surface removal.

USE ONE OF THE FOLLOWING TYPE WEARING SURFACES:

Limestone Porphyry (LP) Asphaltic Concrete Mix  
Limestone Steel Slag (LS) Asphaltic Concrete Mix

The wearing surface chosen must be compatible with existing wearing surface.

GENERAL NOTES:

DESIGN SPECIFICATIONS:  
AASHTO 1996 and Interims thru 1999

DESIGN UNIT STRESSES:  
Class B1 Concrete f'c = 4,000 psi - End Bent Wing Modification  
Class B1 Concrete f'c = 4,000 psi - Deck Girder Repair  
Class B2 Concrete f'c = 4,000 psi - Repairing Concrete Deck  
Reinforcing Steel (Grade 60) fy = 60,000 psi  
Structural Carbon Steel (ASTM A709 Grade 36) fy = 36,000 psi

EXISTING WORK:  
Outline of old work is indicated by dashed lines. Heavy lines indicate new work.

REINFORCING STEEL:  
Minimum clearance to reinforcing steel shall be 1 1/2", unless otherwise shown.  
Contractor shall verify all dimensions in field before ordering new steel.

TRAFFIC MAINTAINED:  
Maintain traffic over structure during construction in accordance with the traffic control plan. (See Roadway Plans)

MAINTAIN GRADE:  
In order to maintain grade and a minimum thickness of overlay as shown on plans it may be necessary to use additional quantities of overlay at various locations throughout the structure. No payment will be allowed for additional labor, materials or equipment for variations in thickness of overlay.

DIMENSIONS:  
Drawings are not to scale. Follow dimensions.

EXISTING REINFORCING STEEL:  
Bars bonded in old concrete not removed shall be cleanly stripped and embedded into new concrete where possible. If length is available, old bars shall extend into new concrete at least 40 diameters for smooth bars and 30 diameters for deformed bars, unless otherwise noted.

RESIN ANCHORS:  
The contractor shall use one of the resin anchor systems listed in the job special provisions. These anchor systems shall be installed according to the manufacturer's specifications, except as modified by the job special provisions.

Cost of furnishing and installing the 3/8"Ø & 1/2"Ø resin anchor systems complete in place, shall be included in the price bid for Bridge Guard Rail (Thrie Beam).

Cost of furnishing and installing the 1"Ø resin anchor systems complete in place, shall be included in the price bid for "Deck Girder Repair".

The 3/8" diameter resin anchor systems shall have a minimum ultimate pullout strength of 41,100 lbs. in concrete with f'c= 3,000 psi (see special provisions.)

The 1/2" diameter resin anchor systems shall have a minimum ultimate pullout strength of 46,000 lbs. in concrete with f'c= 4,000 psi (see special provisions.)

The 1" diameter resin anchor systems shall have a minimum ultimate pullout strength of 27,200 lbs. in concrete with f'c= 4,000 psi (see special provisions.)

ROADWAY SURFACING:  
Roadway surfacing adjacent to bridge ends to match bridge overlay.

JOINT FILLER:  
All joint filler shall meet the requirements of sections 1057.2.4 of the Missouri Standard Specifications. Cost of furnishing and installing the joint filler, complete in place, shall be included in the price bids for Slab Overhang Replacement.

HIGH STRENGTH BOLTS:  
High strength bolts, nuts and washers will be sampled for quality assurance as specified in std. spec. 106 and field section (FS-712) from materials manual.



REPAIRS TO BRIDGE OVER DRY FORK CREEK

STATE ROAD FROM RTE. 89 TO RTE. 63

ABOUT 3 MILES SOUTH OF RTE. 89

PROJECT NO. STA 174+66± (MATCH EXIST.)

JOB. NO. J5M0019 RTE. 28

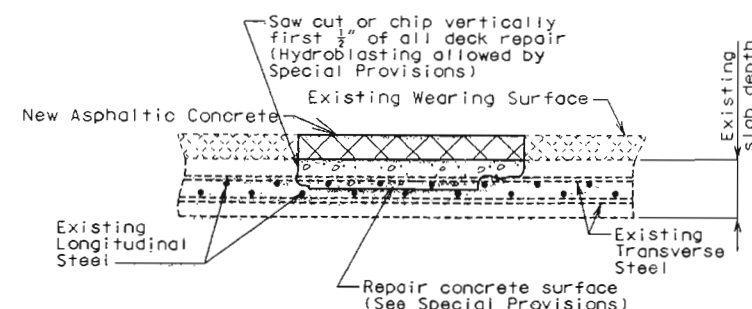
MARIES COUNTY

Date: 12/07/00

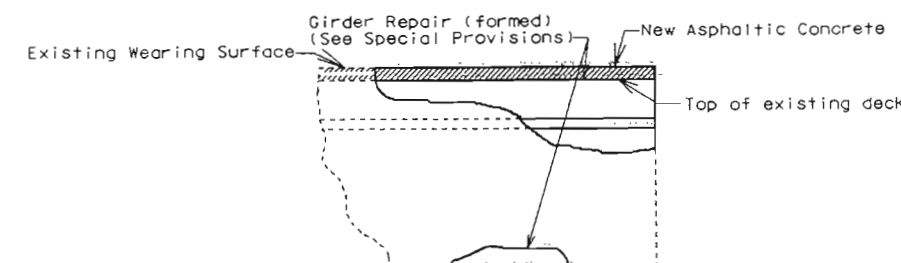
STD. 606.00
STD. 706.35
STD. 606.23
H09802

Designed Oct. 2000  
Detailed Oct. 2000  
Checked Oct. 2000



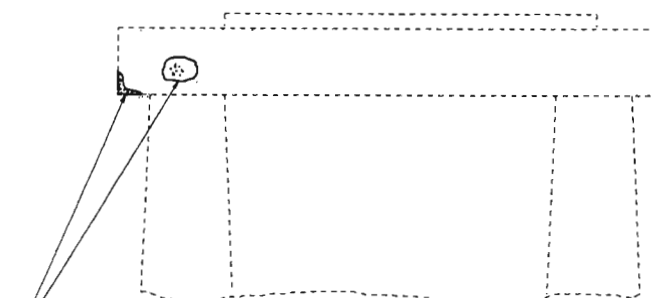


HALF-SOLED AREA



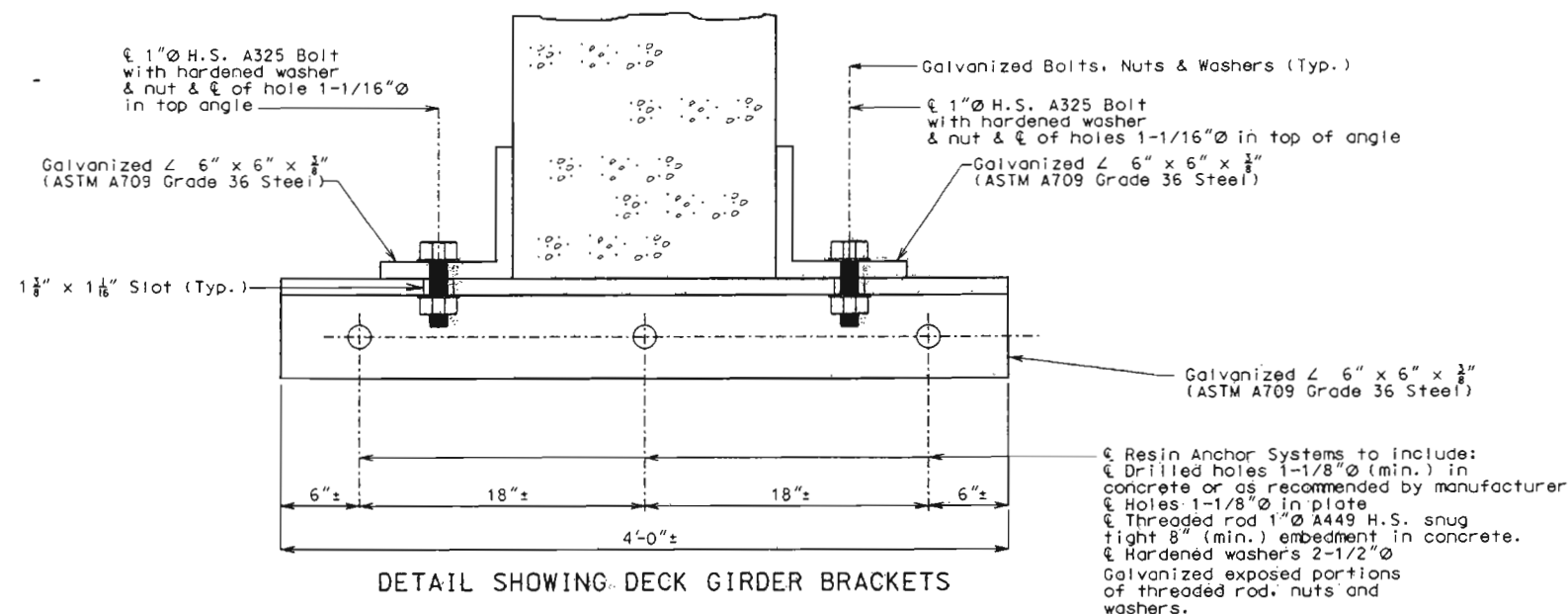
Note: Replace seal coat and asphaltic concrete as necessary to facilitate girder repairs

DECK GIRDER REPAIR



Substructure Repair (Unformed)  
(See Special Provisions)(Typ.)

SUBSTRUCTURE REPAIR



DETAIL SHOWING DECK GIRDER BRACKETS

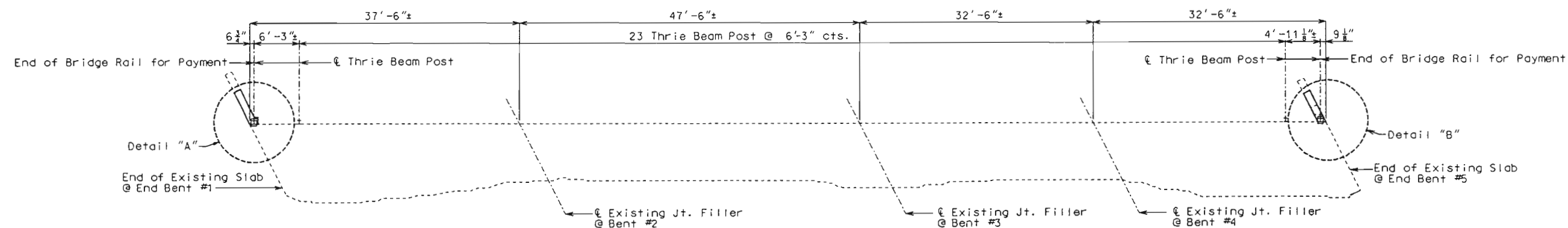
Note: Replace existing brackets with new brackets. Adjust anchors in field to miss existing anchors by 3". Field check resin anchor spacing before drilling holes in angles. Cut off existing bolts flush with vertical face of concrete.

Note: Payment for deck girder brackets complete in place shall be completely covered by the contract unit price for "Deck Girder Repair", per lin. ft.

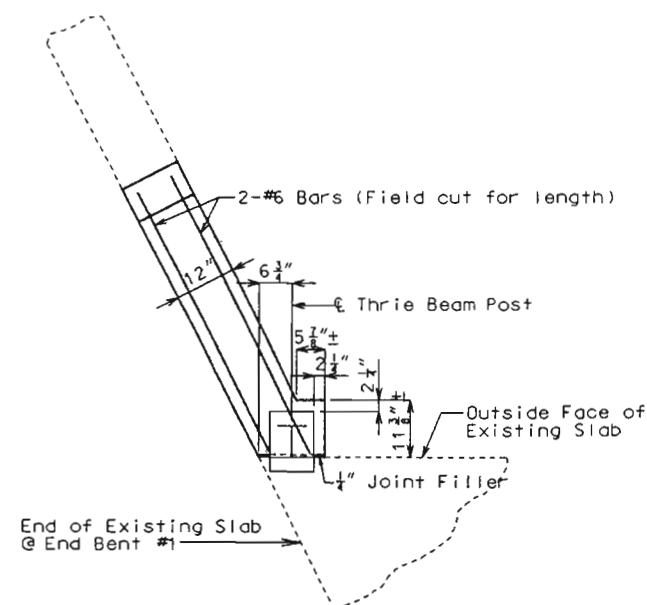




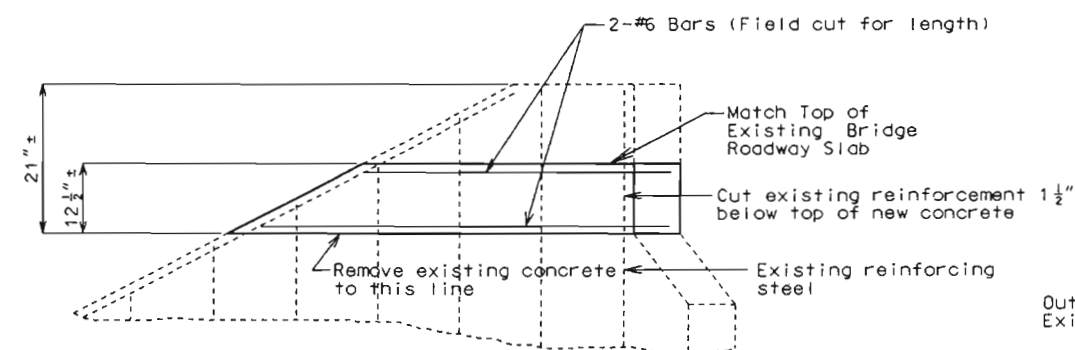
State	Proj. No.	Sheet No.
MO		83



HALF PLAN OF SLAB SHOWING RAIL POST SPACING ON LEFT SIDE  
(Right side similar about 180° rotation)

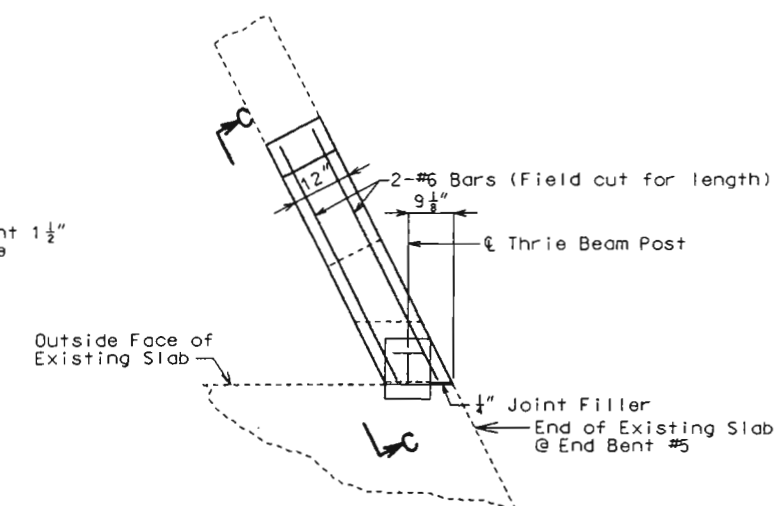


Detail "A"



Note: Use-In-Place existing steel as required.  
PART TYPICAL ELEVATION C-C  
(Typical detail for all wing modifications)

END BENT WING MODIFICATION

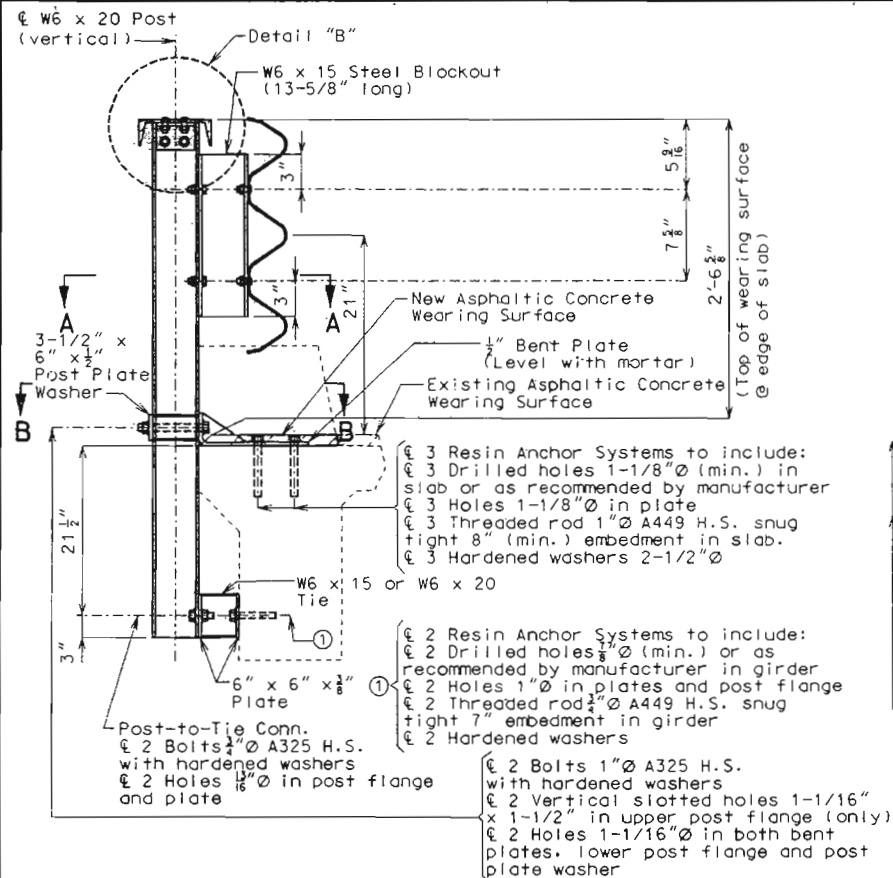


Detail "B"

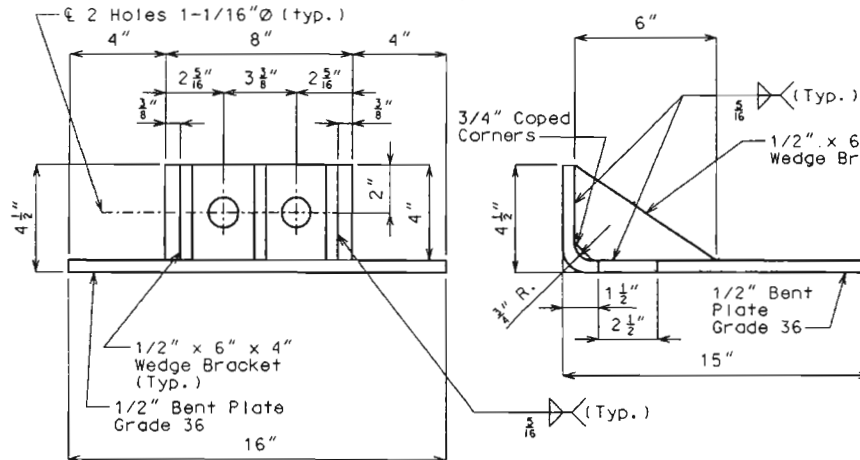


DATE 11/15/00

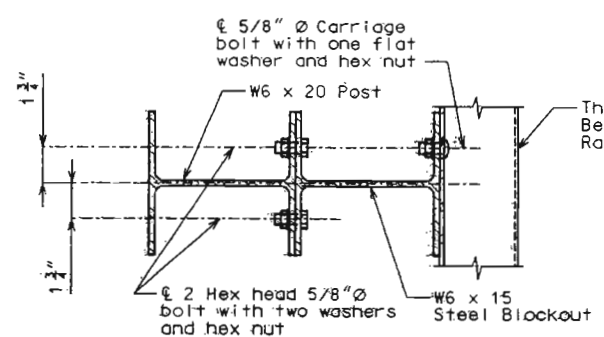
State	Proj. No.	Sheet No.
MO		B4



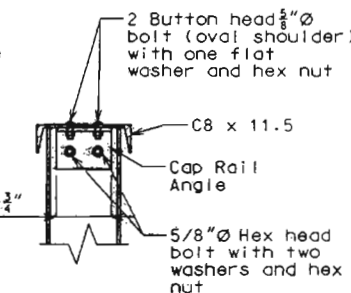
PART SECTION AT SLAB RAIL POST



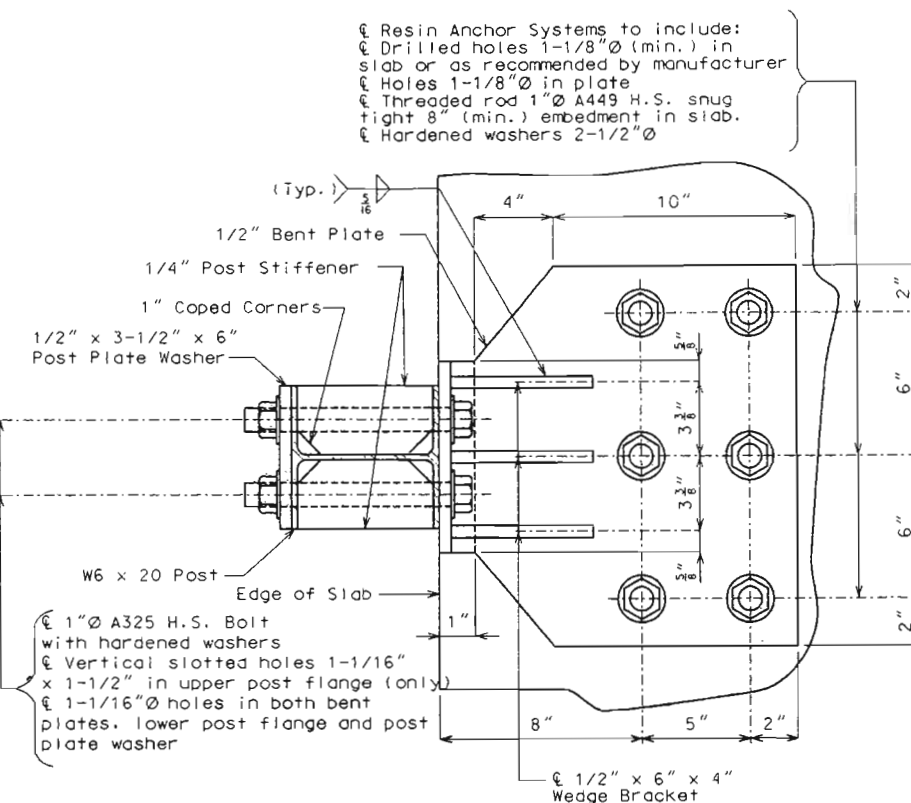
1/2" BENT PLATE (SLAB RAIL POST)



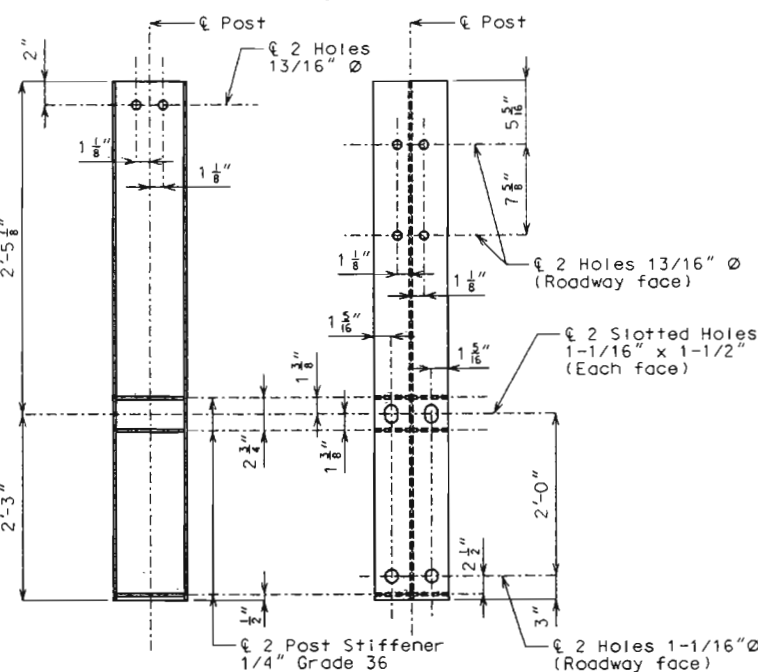
SECTION A-A



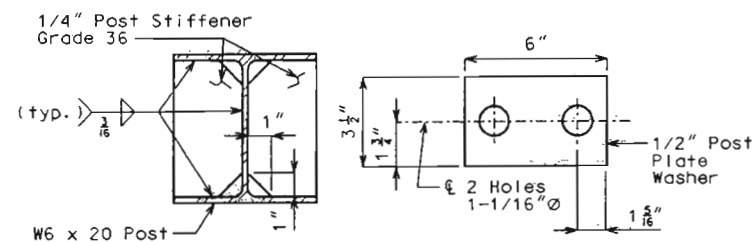
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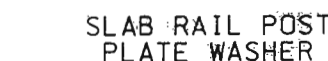
SECTION B-B



DETAILS OF SLAB RAIL POST

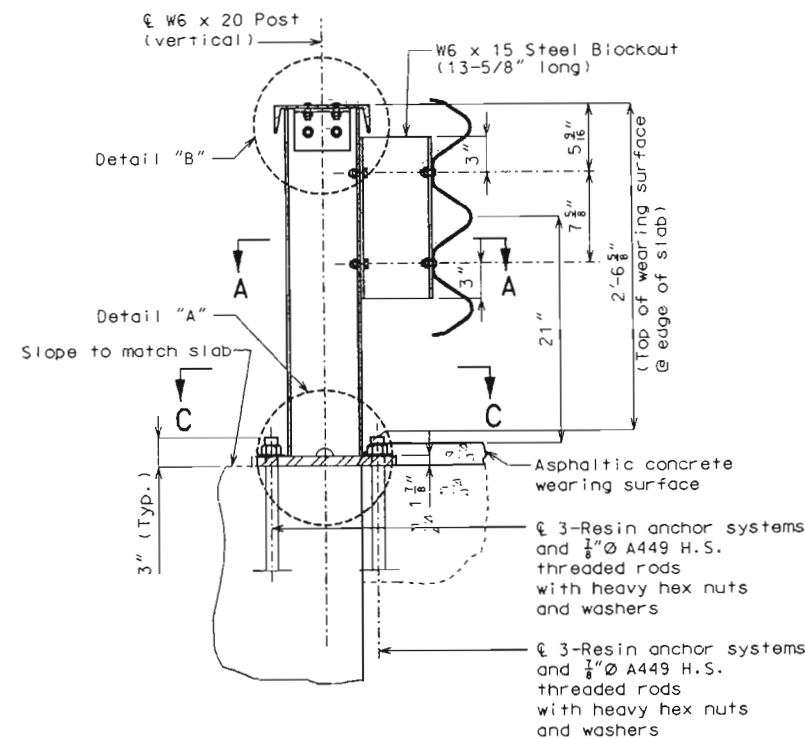


SLAB RAIL POST STIFFENER

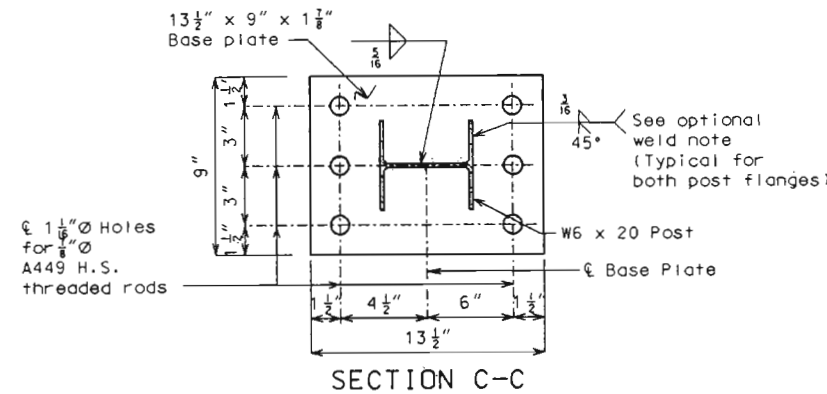


SLAB RAIL POST PLATE WASHER

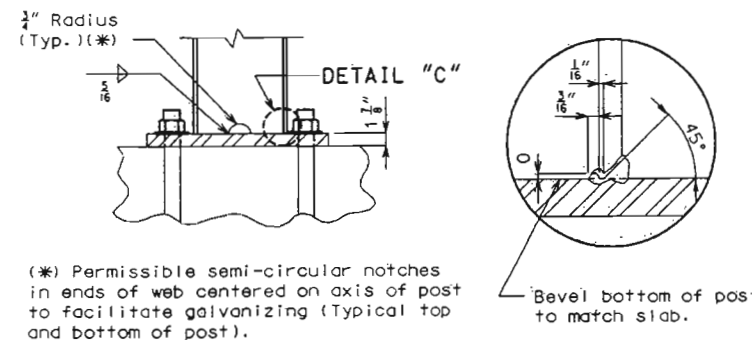
DETAILS OF THRIE BEAM RAIL



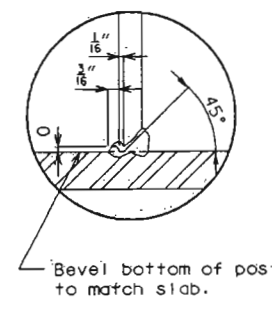
PART SECTION AT RAIL POST (AT END BENTS)



SECTION C-C



DETAIL "A"

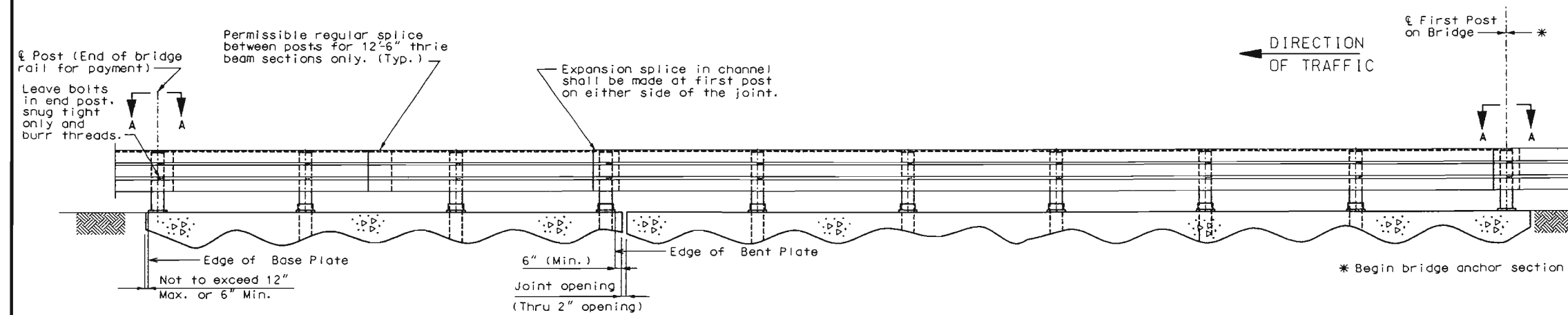


DETAIL "C"

Note: Optional welding of the post to the base plate is a 1/4\"/>

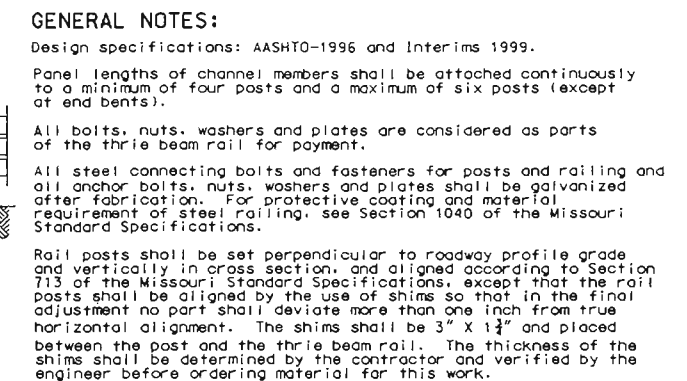
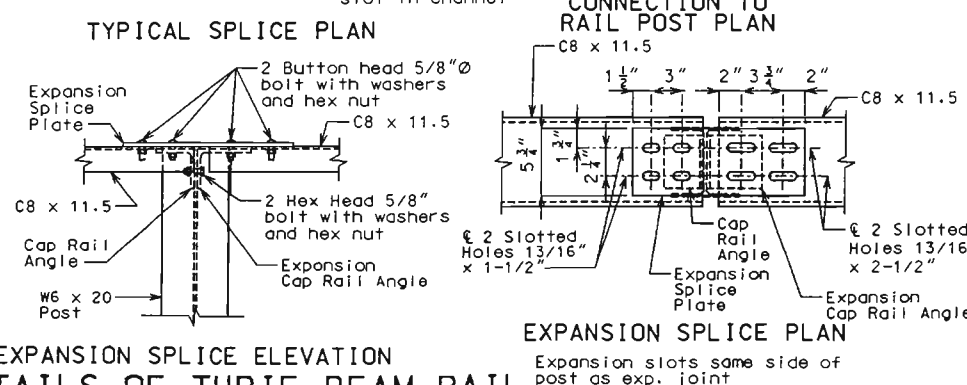
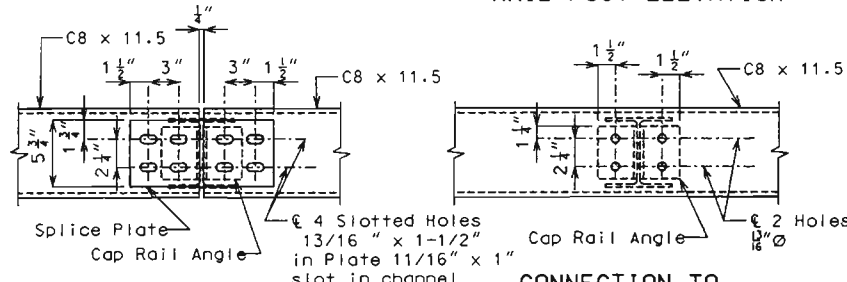
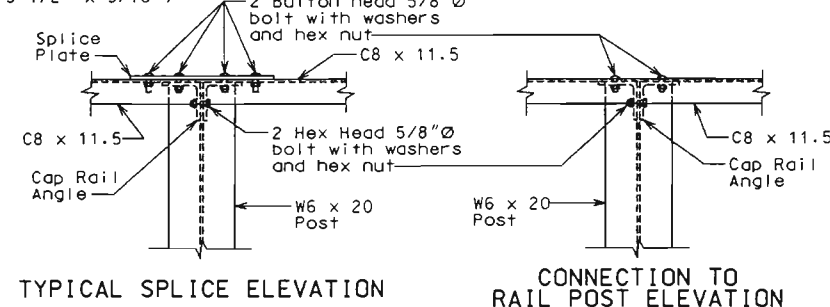
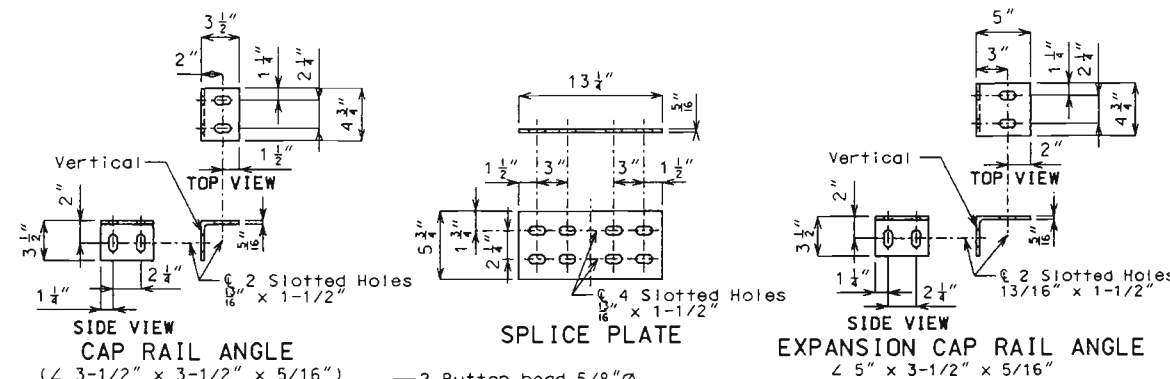
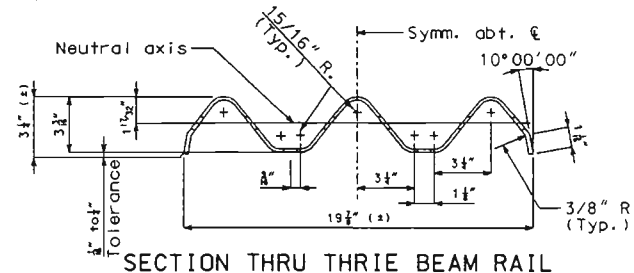
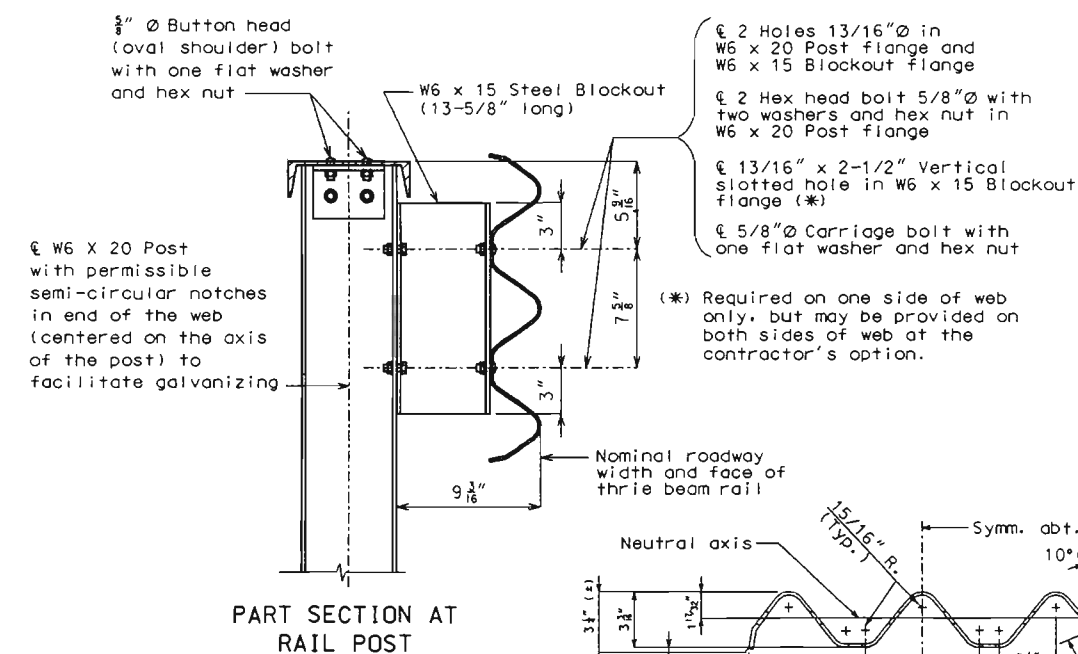


State	Proj. No.	Sheet No.
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Note: At the bridge ends for two-way pavement, use guard rail at all four corners and for divided pavement, use a guard rail at entrance ends only (unless required at exit end for high fill).

PART SECTION THRU SLAB SHOWING THRIE BEAM RAIL



At the expansion slots in the three beam rails and channels, tighten bolts. Back off one-half turn and burr threads.

At the three beam connection to posts on wings, tighten bolts, back off one-half turn and burr threads.

Minimum length of three beam sections is equal to one post space.

Use 5/8" Ø button-head, oval shoulder bolts with hex nuts at all slots (Thickness of hex nuts = 3/8" min.).

Three beam guard rail on the bridge shall be made of steel and shall be 12 Gage.

Posts, top plates, channels and channel splice plates shall be fabricated from ASTM A709 Grade 36 steel and galvanized.

Washers shall be used at all post bolts (between the bolt head and beam). They shall be rectangular in shape (3" X 1-3/4" X 3/16" min.) and flat with a 11/16" X 1" slot, or when necessary of such design as to fit the contour of the beam.

Special drilling of the three beam may be required at the splices. (All drilling details are to be shown on the shop drawings.)

Fabrication of structural steel shall be in accordance with Section 712 of the Missouri Standard Specifications.

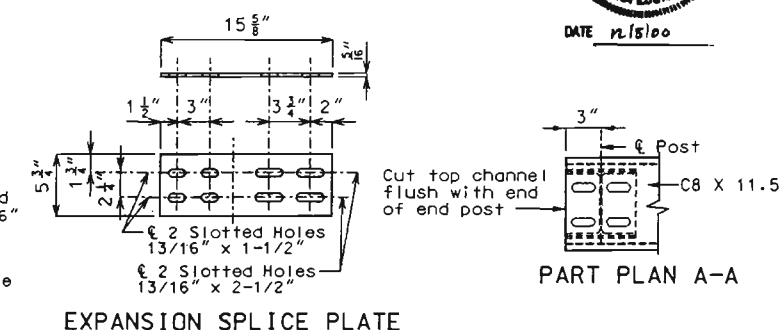
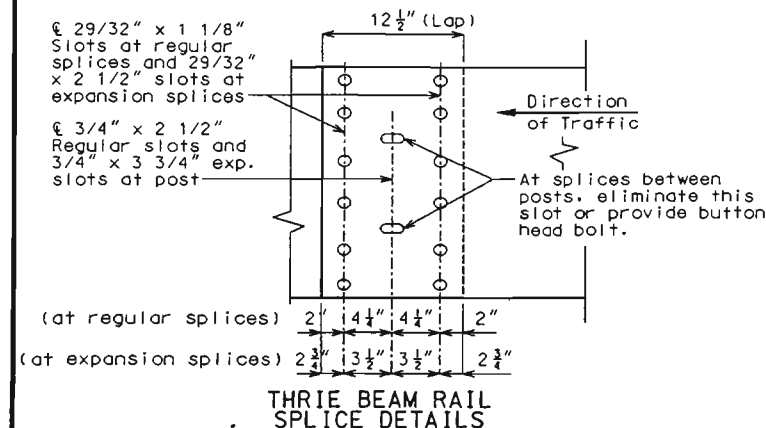
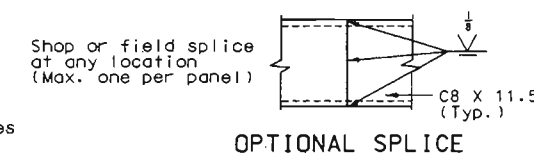
Expansion splices in the three beam rail shall be made at either the first or second post on either side of the joint and on structure at bridge ends. When the splice is made at the second post, an expansion slot shall be provided in the three beam rail for connection to the first post to allow for movement.

In addition to the expansion provisions at these expansion joints, expansion splices in the three beam rail and the channel shall be provided at other locations so that the maximum length without expansion provisions does not exceed 200 ft.

Contractor shall verify all dimensions in field before ordering materials.

Shim plates 6" X 6" X 1/16" may be used between the top of post and the channel member as required for vertical alignment.

See Missouri Standard Plans Drawing 606.00 for details not shown. See slab sheet for rail post spacing.



MARIES COUNTY H09802

Detailed Oct. 2000  
Checked Oct. 2000

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

State	Proj. No.	Sheet No.
MO		B1
Sec./Sur. 32	Twp. 41N	Rge. 7W

GENERAL NOTES:

DESIGN SPECIFICATIONS:  
AASHTO 1996 and Interims thru 1999

DESIGN UNIT STRESSES:  
Class B1 Concrete  $f'_c = 4,000$  psi - End Bent Wing Modification  
Class B2 Concrete  $f'_c = 4,000$  psi - Repairing Concrete Deck  
Reinforcing Steel (Grade 60)  $f_y = 60,000$  psi  
Structural Carbon Steel (ASTM A709 Grade 36)  $f_y = 36,000$  psi

EXISTING WORK:  
Outline of old work is indicated by dashed lines. Heavy lines indicate new work.

REINFORCING STEEL:  
Minimum clearance to reinforcing steel shall be  $1\frac{1}{2}"$ , unless otherwise shown.  
Contractor shall verify all dimensions in field before ordering new steel.

TRAFFIC MAINTAINED:  
Maintain traffic over structure during construction in accordance with the traffic control plan. (See Roadway Plans)

MAINTAIN GRADE:  
In order to maintain grade and a minimum thickness of overlay as shown on plans it may be necessary to use additional quantities of overlay at various locations throughout the structure. No payment will be allowed for additional labor, materials or equipment for variations in thickness of overlay.

DIMENSIONS:  
Drawings are not to scale. Follow dimensions.

EXISTING REINFORCING STEEL:  
Bars bonded in old concrete not removed shall be cleanly stripped and embedded into new concrete where possible. If length is available, old bars shall extend into new concrete at least 40 diameters for smooth bars and 30 diameters for deformed bars, unless otherwise noted.

RESIN ANCHORS:  
The contractor shall use one of the resin anchor systems listed in the job special provisions. These anchor systems shall be installed according to the manufacturer's specifications, except as modified by the job special provisions.

Cost of furnishing and installing the  $\frac{3}{8}" \times \frac{3}{8}" \times \frac{3}{8}"$  resin anchor systems complete in place, shall be included in the price bid for Bridge Guard Rail (Thrie Beam).

~~The  $\frac{3}{8}"$  diameter resin anchor systems shall have a minimum ultimate pullout strength of 41,100 lbs. in concrete with  $f'_c = 4,000$  psi (see special provisions.)~~

The  $\frac{3}{8}"$  diameter resin anchor systems shall have a minimum ultimate pullout strength of 27,200 lbs. in concrete with  $f'_c = 4,000$  psi (see special provisions.)

ROADWAY SURFACING:  
Roadway surfacing adjacent to bridge ends to match bridge overlay.

JOINT FILLER:  
All joint filler shall meet the requirements of sections 1057.2.4 of the Missouri Standard Specifications. Cost of furnishing and installing the joint filler, complete in place, shall be included in the price bids for Slab Overhang Replacement.

HIGH STRENGTH BOLTS:  
High strength bolts, nuts and washers will be sampled for quality assurance as specified in std. spec. 106 and field section (FS-712) from materials manual.

REPAIRS TO BRIDGE OVER DRY FORK CREEK

STATE ROAD FROM RTE. 89 TO RTE. 63

ABOUT 3 MILES SOUTH OF RTE. 89

PROJECT NO.

STA 174+66\* (MATCH EXIST.)

JOB. NO. J5M0019

RTE. 28

MARIES

COUNTY

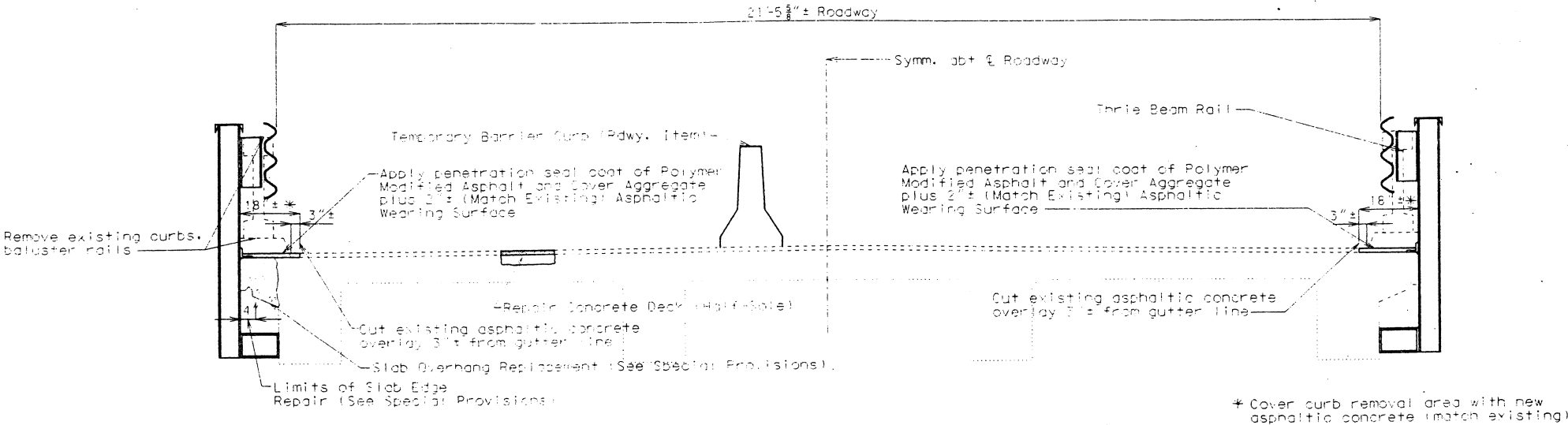
Date: 10/05/01

STD. 606.00

STD. 706.35

STD. 606.23

H09802



SECTION THRU SLAB

FINAL

ESTIMATED QUANTITIES

ITEM		TOTAL
Curb Removal for Thrie Beam Installation	Lin. Ft.	300 ✓
Repairing Concrete Deck (Half-Soling)	Sq. Ft.	100 ✓
Slab Edge Repair (Bridges)	Lin. Ft.	140 ✓
Slab Overhang Replacement	Lin. Ft.	72 ✓
End Bent Wing Modification	Lump Sum	1 ✓
Bridge Guard Rail (Thrie Beam)	Lin. Ft.	298 ✓

The polymer modified asphalt shall be applied at a rate of 0.35 gal. per square yard.  
The cover aggregate shall be applied at a rate of 0.0125 ton per square yard.

Type AC-20 Asphalt Cement is required in the Asphaltic Concrete mixes for bridge deck overlays when the adjacent roadways are not to be overlaid.

See Special Provisions for cost of seal coat, cover aggregate & asphaltic wearing surface.

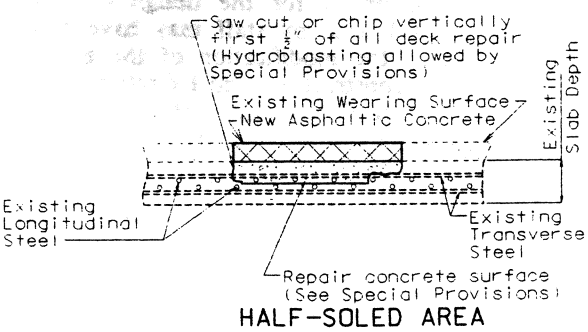
See Special Provisions for cost of existing asphalt wearing surface removal.

USE ONE OF THE FOLLOWING TYPE WEARING SURFACES:

Limestone Porphyry (LP) Asphaltic Concrete Mix

Limestone Steel Slag (LS) Asphaltic Concrete Mix

The wearing surface chosen must be compatible with existing wearing surface.

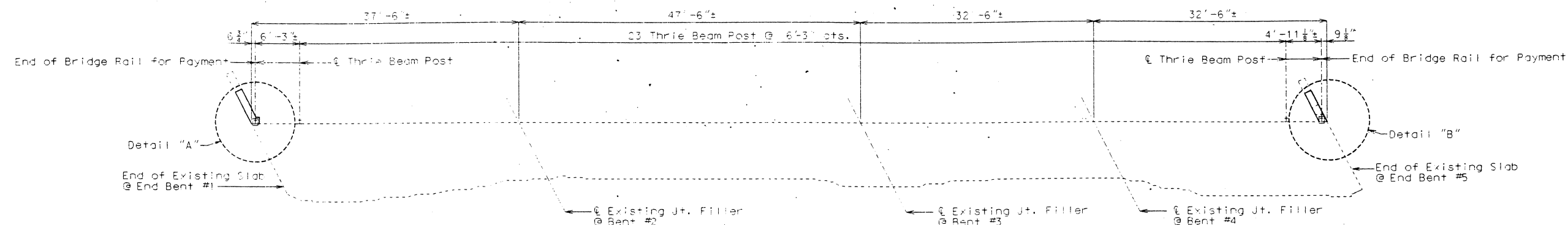


FINAL PLANS



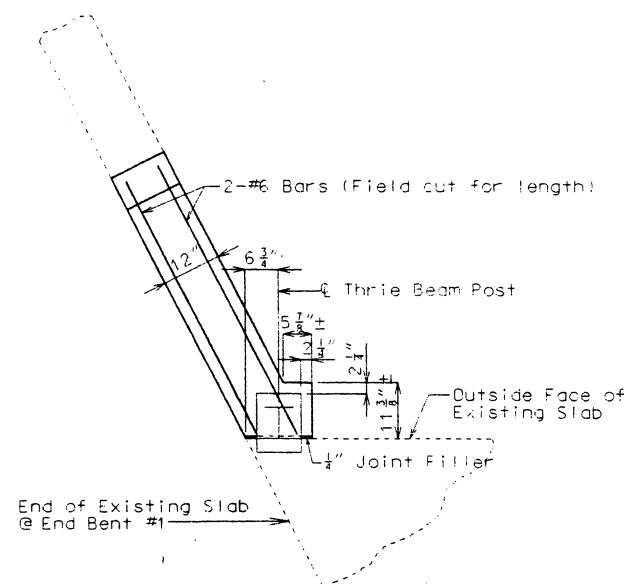
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State	Proj. No.	Sheet No.
MO		B2

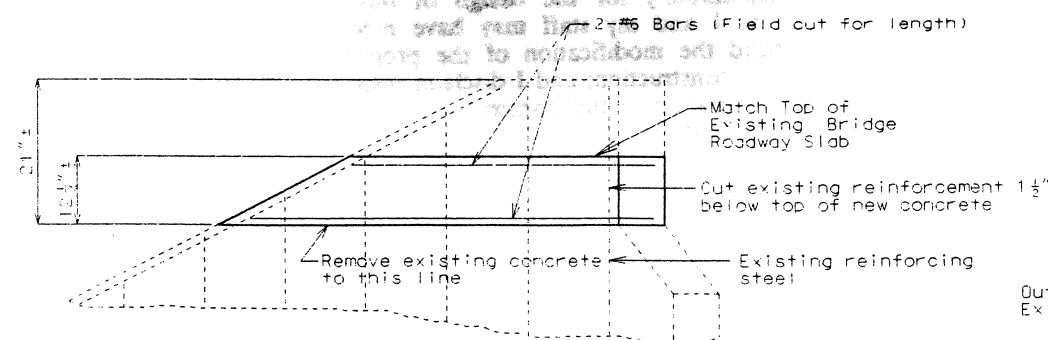


HALF PLAN OF SLAB SHOWING RAIL POST SPACING ON LEFT SIDE  
(Right side similar about 180° rotation)

FINAL PLANS

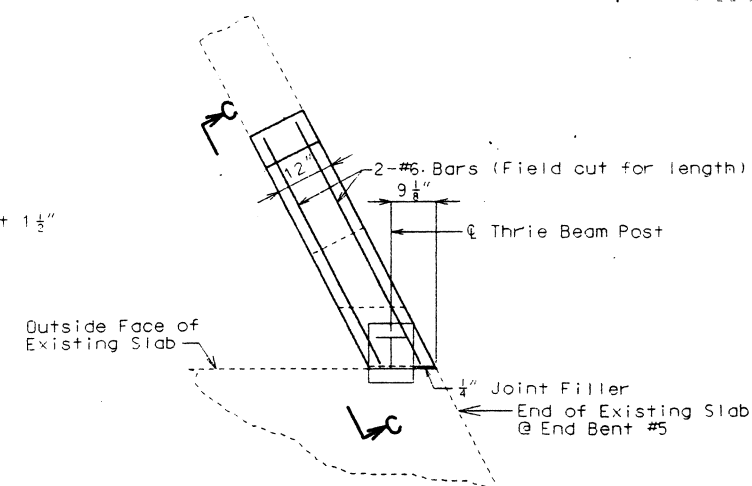


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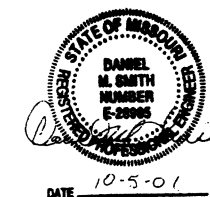


Note: Use-In-Place existing steel as required.  
PART TYPICAL ELEVATION C-C  
(Typical detail for all wing modifications)

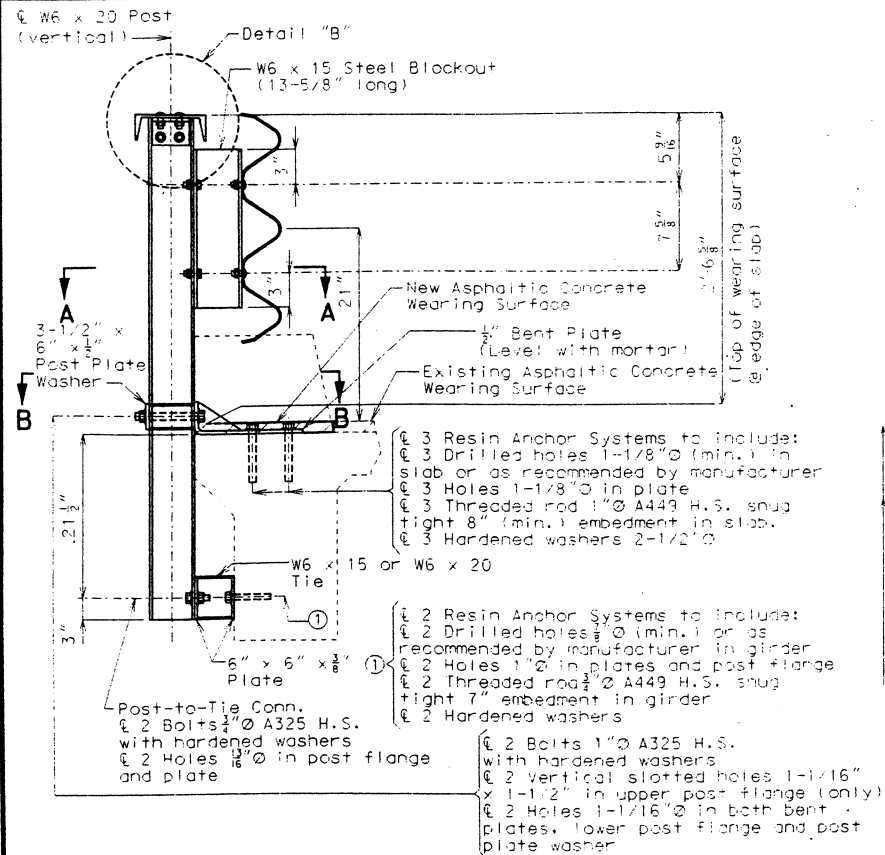
END BENT WING MODIFICATION



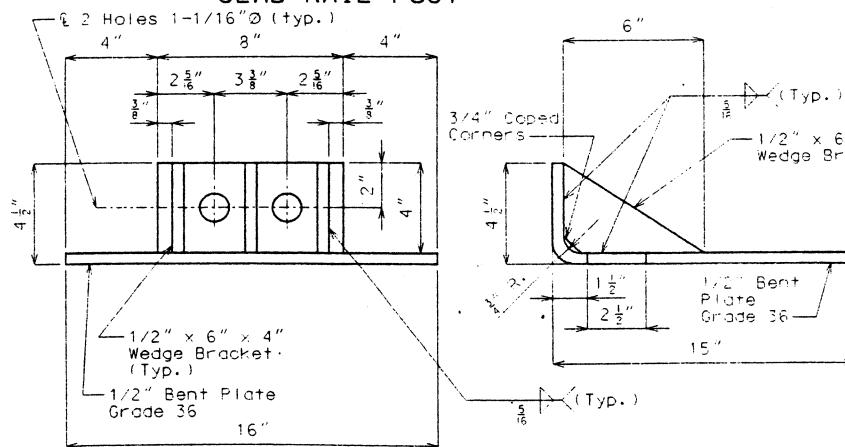
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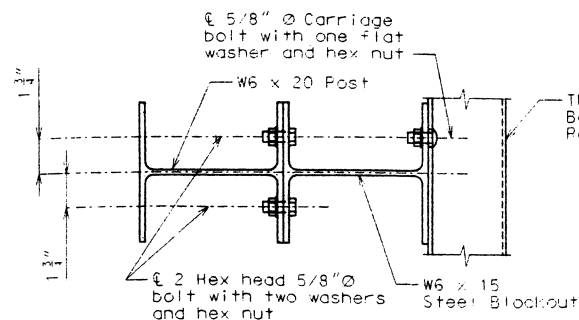
State	Proj. No.	Sheet No.
MO		83



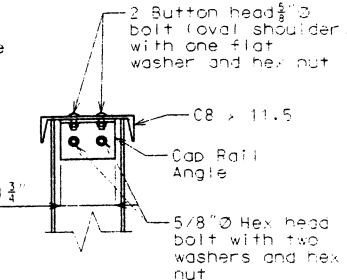
PART SECTION AT SLAB RAIL POST



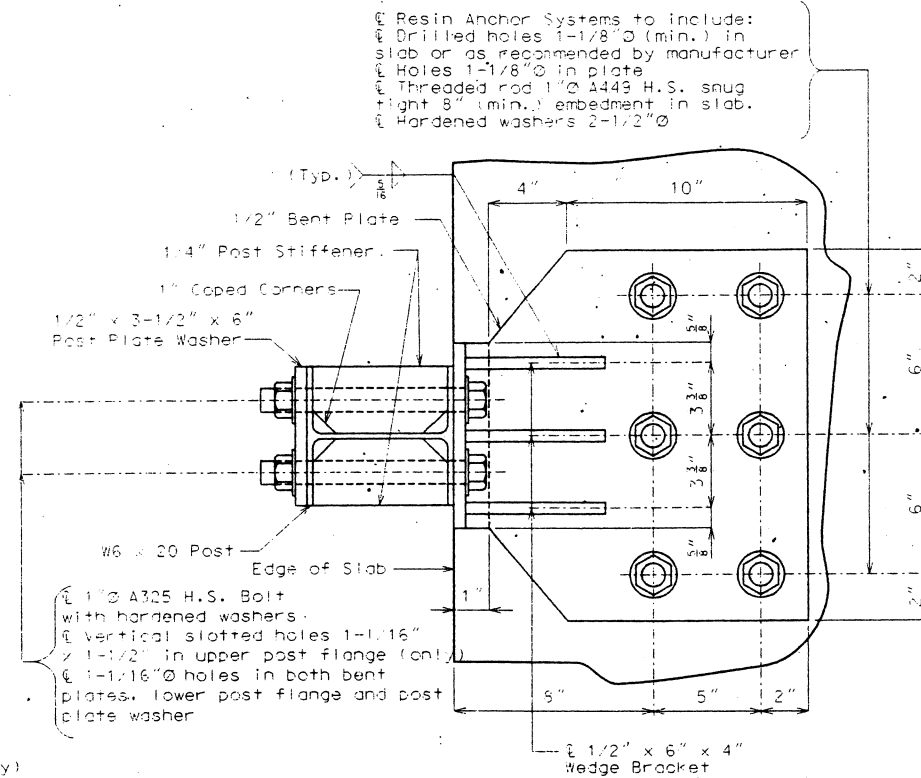
1/2" BENT PLATE (SLAB RAIL POST)



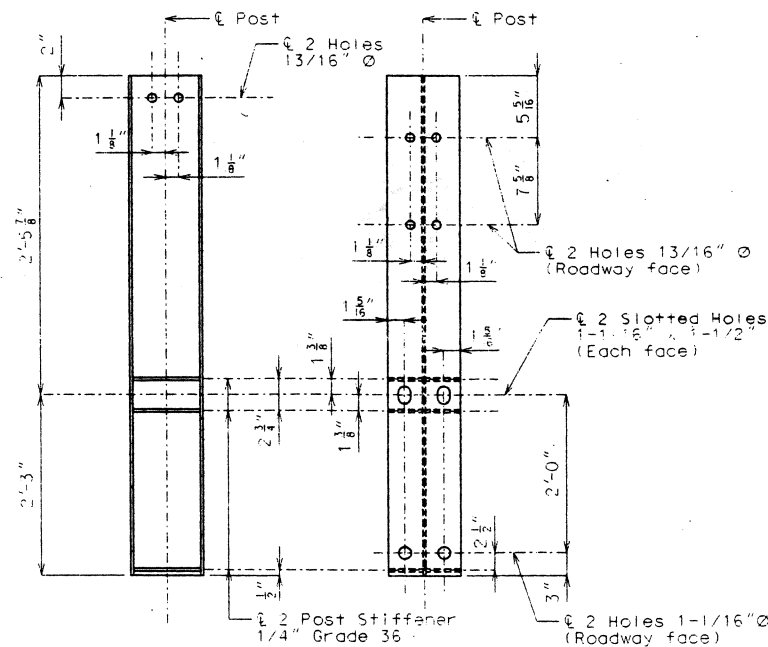
SECTION A-A



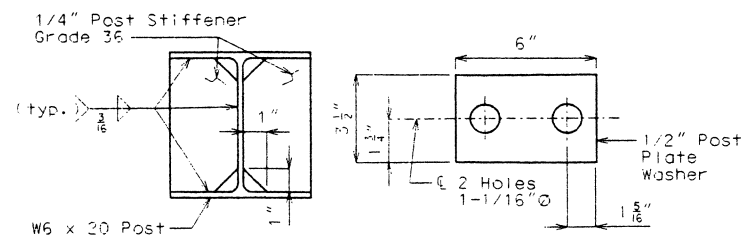
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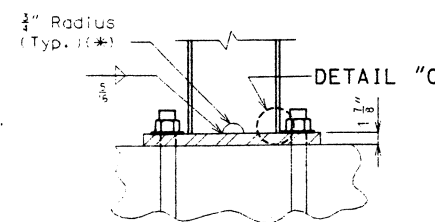
SECTION B-B



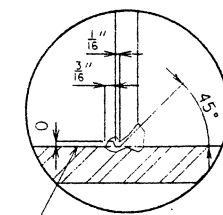
DETAILS OF SLAB RAIL POST



SLAB RAIL POST STIFFENER  
DETAILS OF THRIE BEAM RAIL



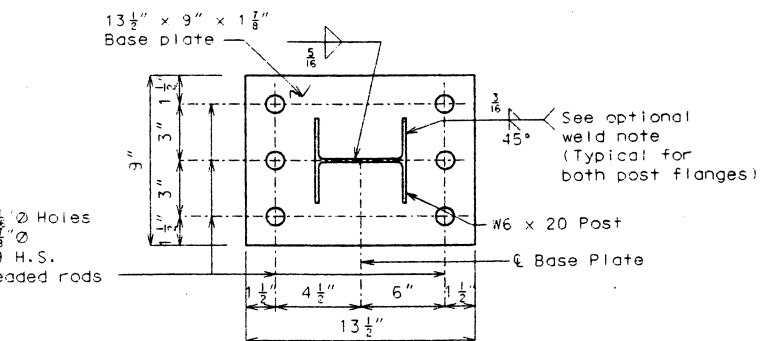
DETAIL "A"



DETAIL "C"

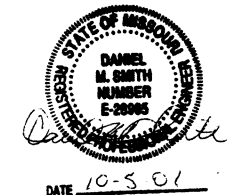
Note: Optional welding of the post to the base plate is a 1/8\"/>

PART SECTION AT RAIL POST (AT END BENTS)



SECTION C-C

FINAL PLANS

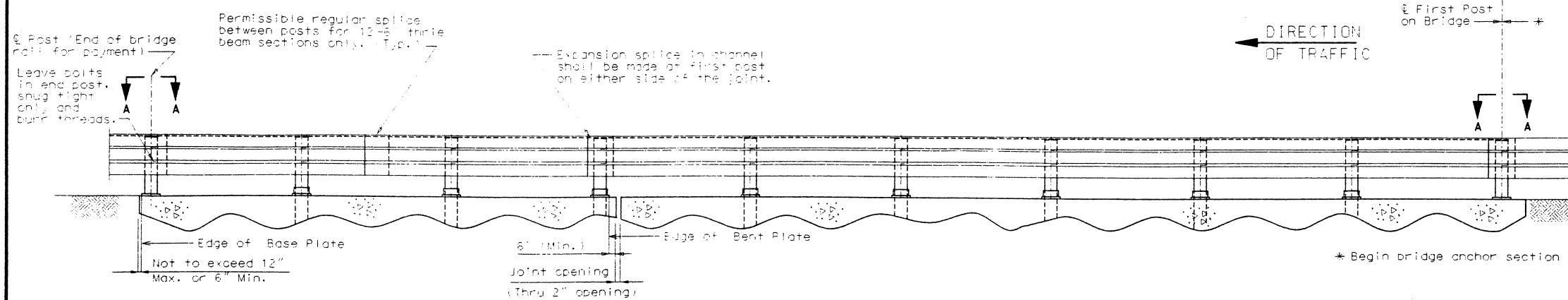


MARIES COUNTY

H09802

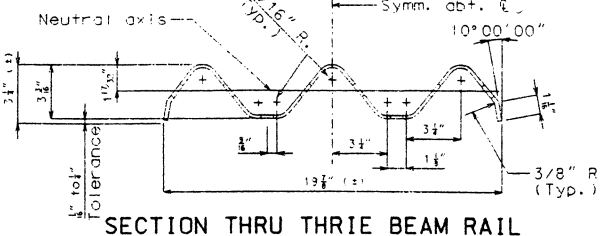
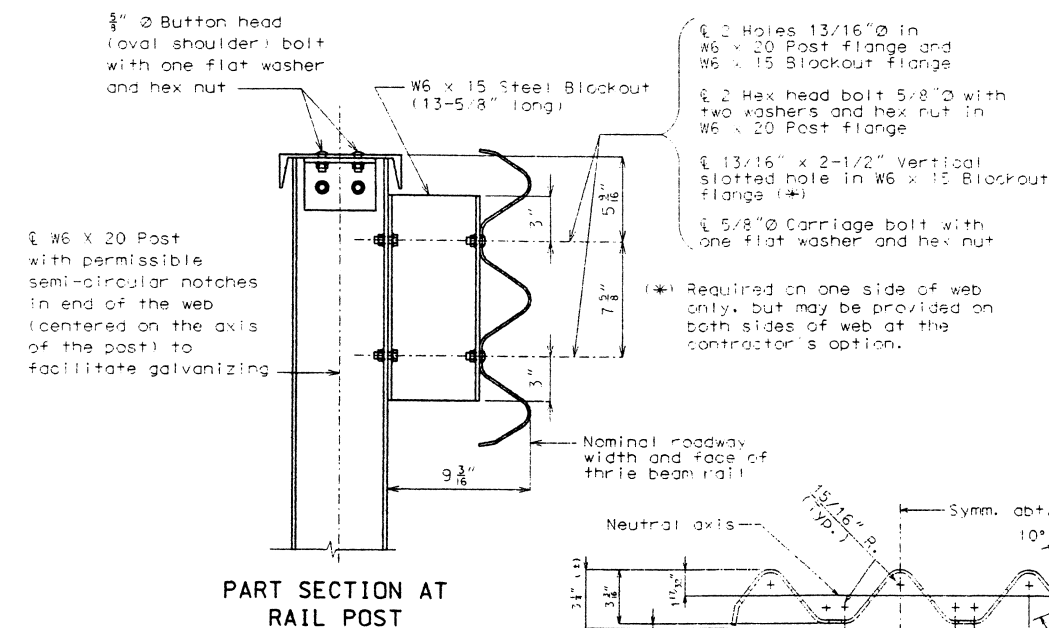


State	Proj. No.	Sheet No.
MO		84

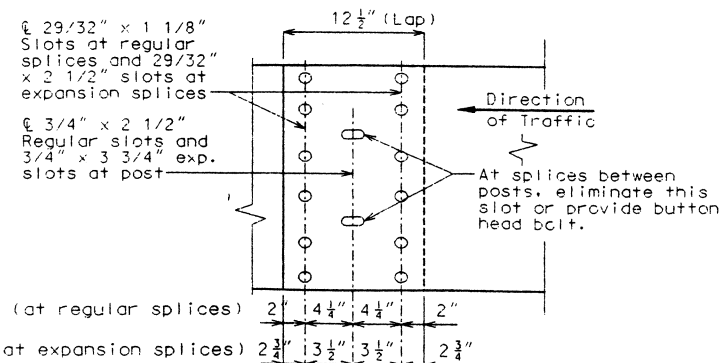


Note: At the bridge ends for two-way pavement, use guard rail at all four corners and for divided pavement, use a guard rail at entrance ends only (unless required at exit end for high fill).

PART SECTION THRU SLAB SHOWING THRIE BEAM RAIL

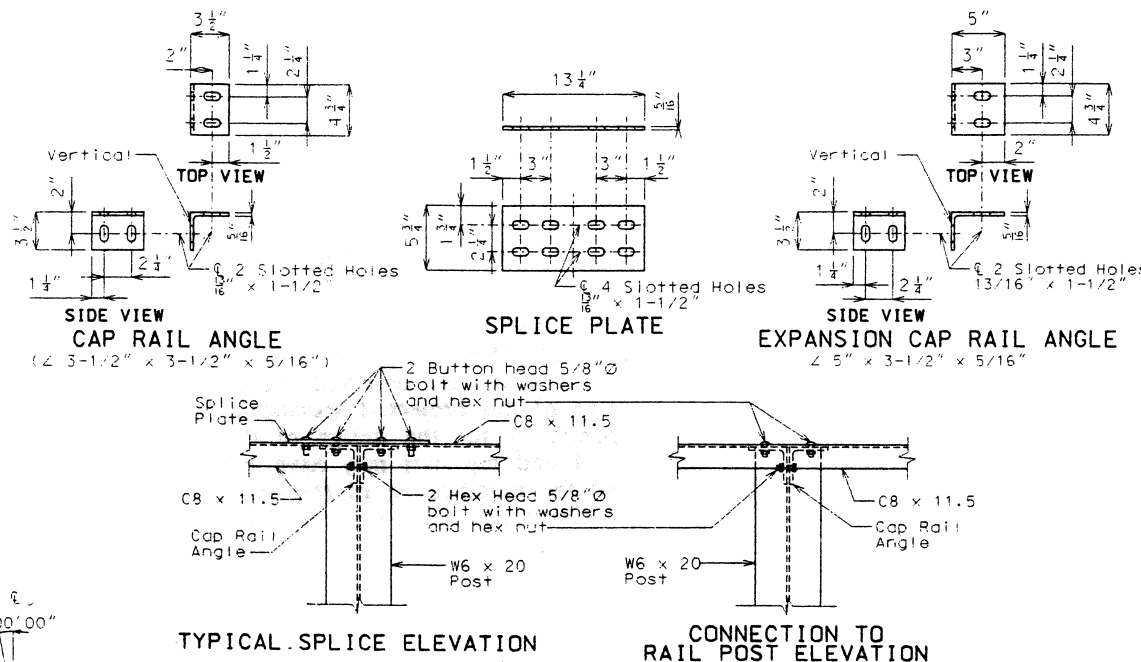


SECTION THRU THRIE BEAM RAIL



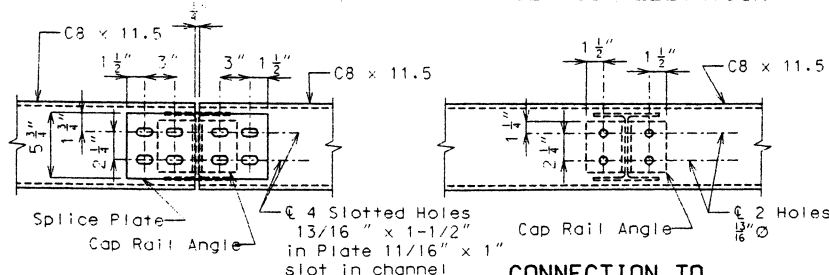
THRIE BEAM RAIL SPLICE DETAILS

Detailed Oct. 2000  
Checked Oct. 2000



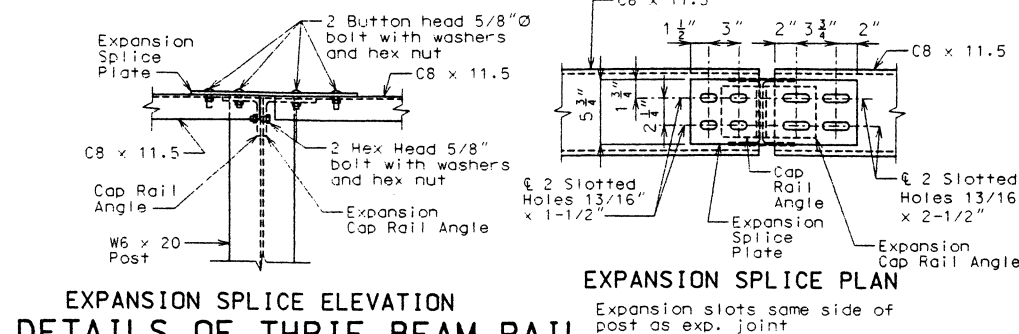
TYPICAL SPLICE ELEVATION

CONNECTION TO RAIL POST ELEVATION



TYPICAL SPLICE PLAN

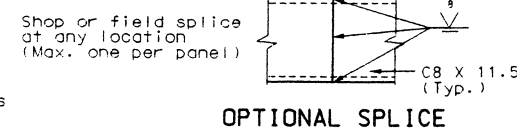
CONNECTION TO RAIL POST PLAN



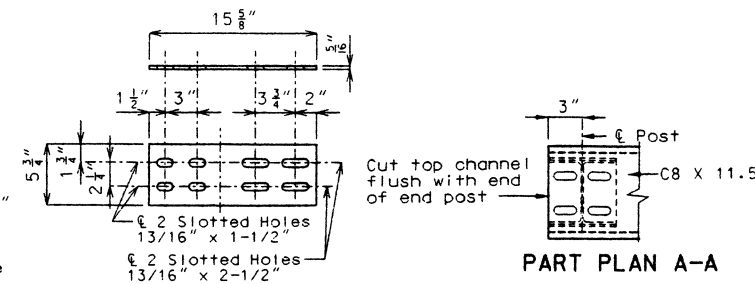
EXPANSION SPLICE ELEVATION  
DETAILS OF THRIE BEAM RAIL

EXPANSION SPLICE PLAN

EXPANSION SPLICE PLATE



OPTIONAL SPLICE



PART PLAN A-A

# GENERAL NOTES:

Design specifications: AASHTO-1996 and Interims 1999.

Panel lengths of channel members shall be attached continuously to a minimum of four posts and a maximum of six posts (except at end bents).

All bolts, nuts, washers and plates are considered as parts of the thrie beam rail for payment.

All steel connecting bolts and fasteners for posts and railing and all anchor bolts, nuts, washers and plates shall be galvanized after fabrication. For protective coating and material requirement of steel railing, see section 1040 of the Missouri Standard Specifications.

Rail posts shall be set perpendicular to roadway profile grade and vertically in cross section, and aligned according to Section 713 of the Missouri Standard Specifications, except that the rail posts shall be aligned by the use of shims so that in the final adjustment no part shall deviate more than one inch from true horizontal alignment. The shims shall be 3" x 1 1/4" and placed between the post and the thrie beam rail. The thickness of the shims shall be determined by the contractor and verified by the engineer before ordering material for this work.

At the expansion slots in the thrie beam rails and channels, tighten bolts, back off one-half turn and burr threads.

At the thrie beam connection to posts on wings, tighten bolts, back off one-half turn and burr threads.

Minimum length of thrie beam sections is equal to one post space.

Use 5/8" Ø button-head, oval shoulder bolts with hex nuts at all slots (Thickness of hex nuts = 3/8" min.).

Thrie beam guard rail on the bridge shall be made of steel and shall be 12 Gage.

Posts, top plates, channels and channel splice plates shall be fabricated from ASTM A709 Grade 36 steel and galvanized.

Washers shall be used at all post bolts (between the bolt head and beam). They shall be rectangular in shape (3" x 1-3/4" x 3/16" min.) and flat with a 11/16" x 1" slot, or when necessary of such design as to fit the contour of the beam.

Special drilling of the thrie beam may be required at the splices. (All drilling details are to be shown on the shop drawings.)

Fabrication of structural steel shall be in accordance with Section 712 of the Missouri Standard Specifications.

Expansion splices in the thrie beam rail shall be made at either the first or second post on either side of the joint and on structure at bridge ends. When the splice is made at the second post, an expansion slot shall be provided in the thrie beam rail for connection to the first post to allow for movement.

In addition to the expansion provisions at these expansion joints, expansion splices in the thrie beam rail and the channel shall be provided at other locations so that the maximum length without expansion provisions does not exceed 200 ft.

Contractor shall verify all dimensions in field before ordering materials.

Shim plates 6" x 6" x 1/16" may be used between the top of post and the channel member as required for vertical alignment.

See Missouri Standard Plans Drawing 606.00 for details not shown. See slab sheet for rail post spacing.

## FINAL PLANS



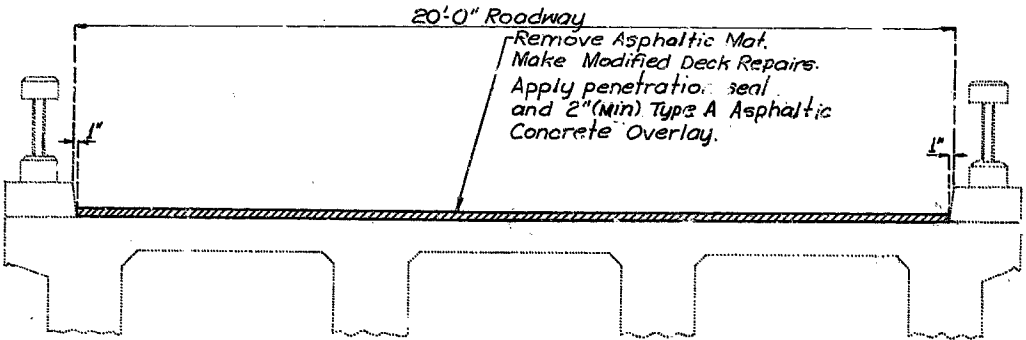
DATE 10-5-01

MARIES COUNTY H09802



MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

STATE	PROJ. NO.	SHEET NO.
MO.		4
SEC./SUR. 32	TWP. 41 N	RGE. 7 W



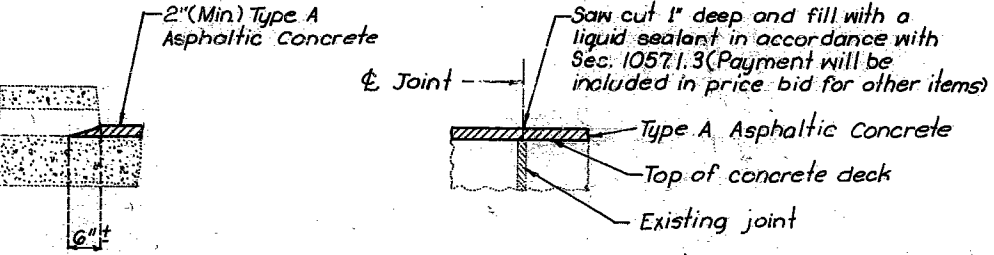
SECTION THRU SLAB

GENERAL NOTES:

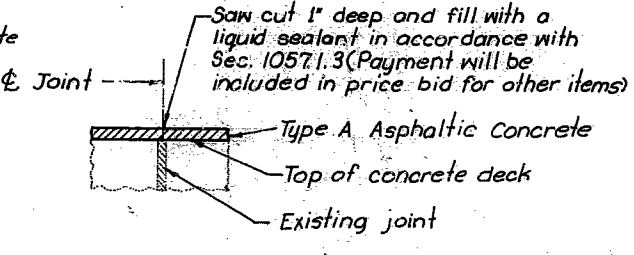
Traffic: One lane of traffic over structure to be maintained during construction.  
Outline of old work is indicated by light dashed lines. Heavy lines indicate new work.

ESTIMATED QUANTITIES		
ITEM		TOTAL
Asphalt Removal (Bridges)	Sq. Ft.	2975
Asphalt Cement (Asphaltic Conc) 60-70 or AC-20 (Type A mix)	Tons	1.8
Mineral Aggregate (Asphaltic Conc. Type A Mix)	Tons	35
Polymer Modified Asphalt (Seal Coat)	Gal.	120
Cover Aggregate (See Special Provisions)	Tons	5
Modified Deck Repair (See Special Provisions)	Sq. Ft.	30

Note: Polymer Modified Asphalt Emulsion Grade CRS 2 Modified shall be applied at a rate of .35 gallon per square yard. Cover Aggregate (See Special Provisions) shall be applied at a rate of .015 ton per square yard.



TYPICAL SECTION THRU CURB OUTLET



TYPICAL PART SECTION THRU SLAB AT TRANSVERSE JOINT

Note: See Special Provisions for Joint Repair.

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

REPAIRS TO  
BRIDGE OVER DRY FORK CREEK

STATE ROAD FROM BELLE TO VIENNA  
ABOUT 3.0 MILES SOUTH OF BELLE

PROJECT NO. 5-P-28-386 STA. 174+66

JOB NO. 5-PO28-396 RTE. 28

MARIES COUNTY

DATE 3/1/88

STD.
STD.
H-980R

DESIGNED FEB. 1988  
DETAILED FEB. 1988  
CHECKED FEB. 1988

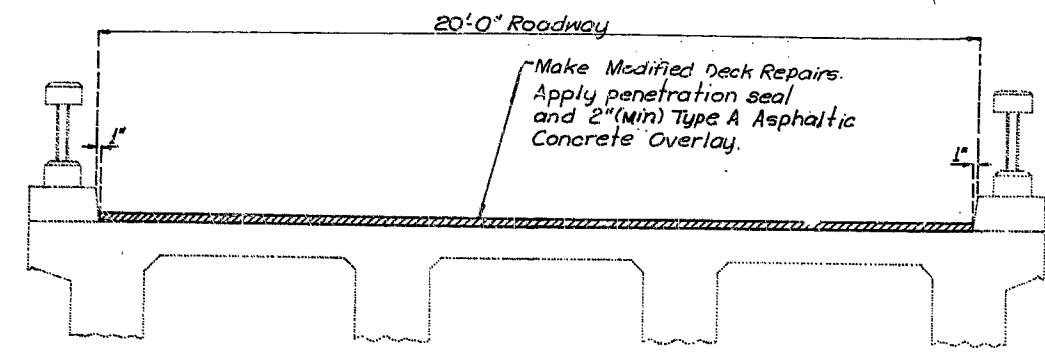
SEE FINAL PLANS

Sheet No. 1 of 1

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

FINAL PLANS

STATE	PROJ. NO.	SHEET NO.
MO.		4
SEC./SUR. 22	TWP. 41 N	RGE. 7 W



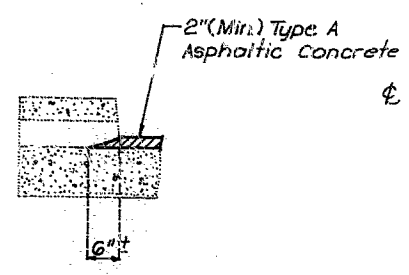
SECTION THRU SLAB

GENERAL NOTES:

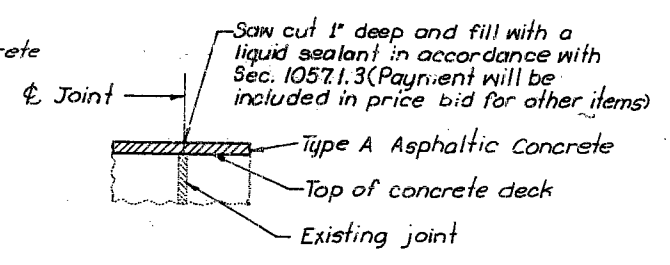
Traffic: One lane of traffic over structure to be maintained during construction.  
Outline of old work is indicated by light dashed lines. Heavy lines indicate new work.

ESTIMATED QUANTITIES		
ITEM		TOTAL
Asphalt Removal (Bridges)	Sq. Ft.	2975
Asphalt Cement (Asphaltic Conc) 60-70 or AC-20 (Type A mix)	Tons	1.7
Mineral Aggregate (Asphaltic Conc. Type A Mix)	Tons	4.1
Polymer Modified Asphalt (Seal Coat)	Gal.	120
Cover Aggregate (See Special Provisions)	Tons	5
Modified Deck Repair (See Special Provisions)	Sq. Ft.	0

Note: Polymer Modified Asphalt Emulsion Grade CRS-2 Modified shall be applied at a rate of .35 gallon per square yard.  
Cover Aggregate (See Special Provisions) shall be applied at a rate of .015 ton per square yard.



TYPICAL SECTION THRU CURB OUTLET



TYPICAL PART-SECTION THRU SLAB AT TRANSVERSE JOINT

Note: See Special Provisions for Joint Repair.

332 244

REPAIRS TO BRIDGE OVER DRY FORK CREEK

STATE ROAD FROM BELLE TO VIENNA  
ABOUT 3.0 MILES SOUTH OF BELLE  
PROJECT NO. 5-P-28-386 STA. 174+66

JOB NO. 5-PO28-386 RTE. 28  
MARIES COUNTY

DATE 3/1/88

DESIGNED FEB. 1988  
DETAILED FEB. 1988  
CHECKED FEB. 1988

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

Sheet No. 1A of 1

STD.
STD.
H-980R

# MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

State	Proj. No.	Sheet No.
MO		81
Sec./Sur. 32	Twp. 41N Rge. 7W	

## GENERAL NOTES:

DESIGN SPECIFICATIONS:  
AASHTO 1996 and Interims thru 1999

DESIGN UNIT STRESSES:  
Class B1 Concrete  $f'_c = 4,000$  psi - End Bent Wing Modification  
Class B2 Concrete  $f'_c = 4,000$  psi - Repairing Concrete Deck  
Reinforcing Steel (Grade 60)  $f_y = 60,000$  psi  
Structural Carbon Steel (ASTM A709 Grade 36)  $f_y = 36,000$  psi

EXISTING WORK:  
Outline of old work is indicated by dashed lines. Heavy lines indicate new work.

REINFORCING STEEL:  
Minimum clearance to reinforcing steel shall be  $1\frac{1}{2}"$ , unless otherwise shown.  
Contractor shall verify all dimensions in field before ordering new steel.

TRAFFIC MAINTAINED:  
Maintain traffic over structure during construction in accordance with the traffic control plan. (See Roadway Plans)

MAINTAIN GRADE:  
In order to maintain grade and a minimum thickness of overlay as shown on plans it may be necessary to use additional quantities of overlay at various locations throughout the structure.  
No payment will be allowed for additional labor, materials or equipment for variations in thickness of overlay.

DIMENSIONS:  
Drawings are not to scale. Follow dimensions.

EXISTING REINFORCING STEEL:  
Bars bonded in old concrete not removed shall be cleanly stripped and embedded into new concrete where possible.  
If length is available, old bars shall extend into new concrete at least 40 diameters for smooth bars and 30 diameters for deformed bars, unless otherwise noted.

RESIN ANCHORS:  
The contractor shall use one of the resin anchor systems listed in the job special provisions. These anchor systems shall be installed according to the manufacturer's specifications, except as modified by the job special provisions.  
Cost of furnishing and installing the  $\frac{1}{4}" \times \frac{1}{4}" \times 12"$  resin anchor systems complete in place, shall be included in the price bid for Bridge Guard Rail (Thrie Beam).  
The  $\frac{1}{4}"$  diameter resin anchor systems shall have a minimum ultimate pullout strength of 41,100 lbs. in concrete with  $f'_c = 3,000$  psi (see special provisions.)  
The  $\frac{1}{4}"$  diameter resin anchor systems shall have a minimum ultimate pullout strength of 27,200 lbs. in concrete with  $f'_c = 4,000$  psi (see special provisions.)

ROADWAY SURFACING:  
Roadway surfacing adjacent to bridge ends to match bridge overlay.

JOINT FILLER:  
All joint filler shall meet the requirements of sections 1057.2.4 of the Missouri Standard Specifications. Cost of furnishing and installing the joint filler, complete in place, shall be included in the price bids for Slab Overhang Replacement.

HIGH STRENGTH BOLTS:  
High strength bolts, nuts and washers will be sampled for quality assurance as specified in std. spec. 106 and field section (FS-712) from materials manual.

## REPAIRS TO BRIDGE OVER DRY FORK CREEK

STATE ROAD FROM RTE. 89 TO RTE. 63

ABOUT 3 MILES SOUTH OF RTE. 89

PROJECT NO. STA 174+66\* (MATCH EXIST.)

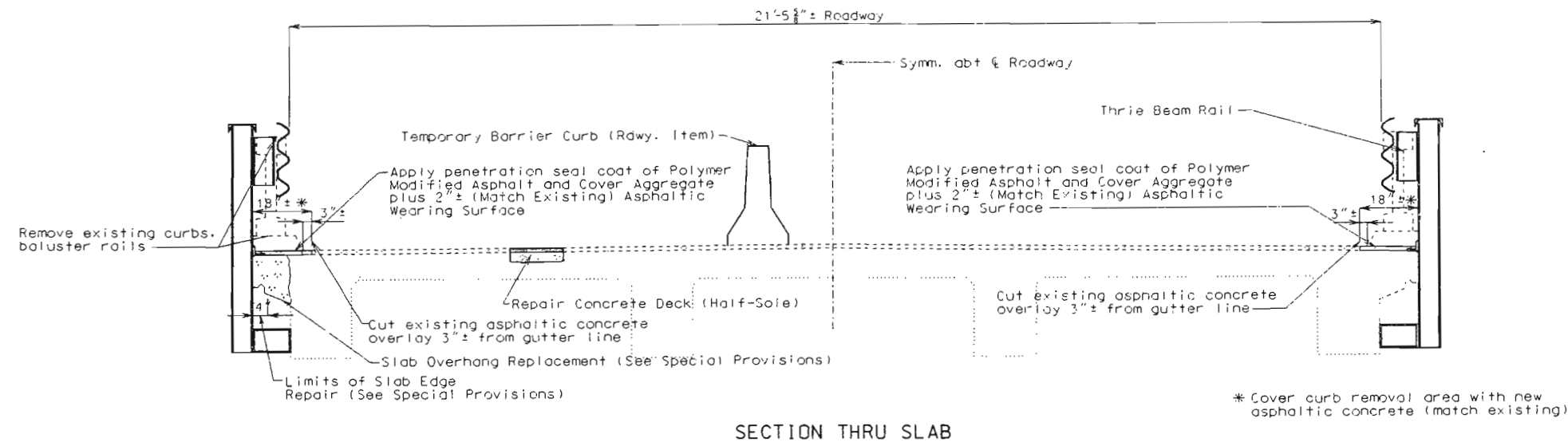
JOB. NO. J5M0019 RTE. 28

MARIES

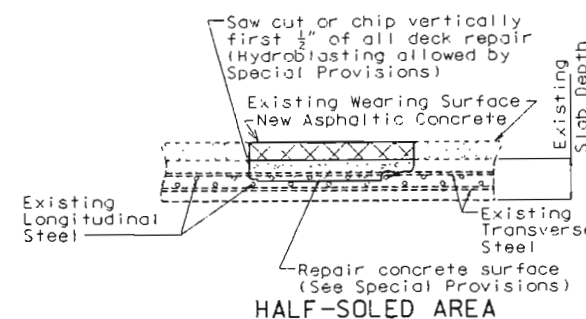
COUNTY

Date: 04/12/01

STD. 606.00
STD. 706.35
STD. 606.23
H09802



ESTIMATED QUANTITIES		
ITEM		TOTAL
Curb Removal for Thrie Beam Installation	Lin. Ft.	300
Repairing Concrete Deck (Half-Soling)	Sq. Ft.	100
Slab Edge Repair (Bridges)	Lin. Ft.	140
Slab Overhang Replacement	Lin. Ft.	20
End Bent Wing Modification	Lump Sum	1
Bridge Guard Rail (Thrie Beam)	Lin. Ft.	298



The polymer modified asphalt shall be applied at a rate of 0.35 gal. per square yard.  
The cover aggregate shall be applied at a rate of 0.0125 ton per square yard.

Type AC-20 Asphalt Cement is required in the Asphaltic Concrete mixes for bridge deck overlays when the adjacent roadways are not to be overlaid.

See Special Provisions for cost of seal coat, cover aggregate & asphaltic wearing surface.

See Special Provisions for cost of existing asphalt wearing surface removal.

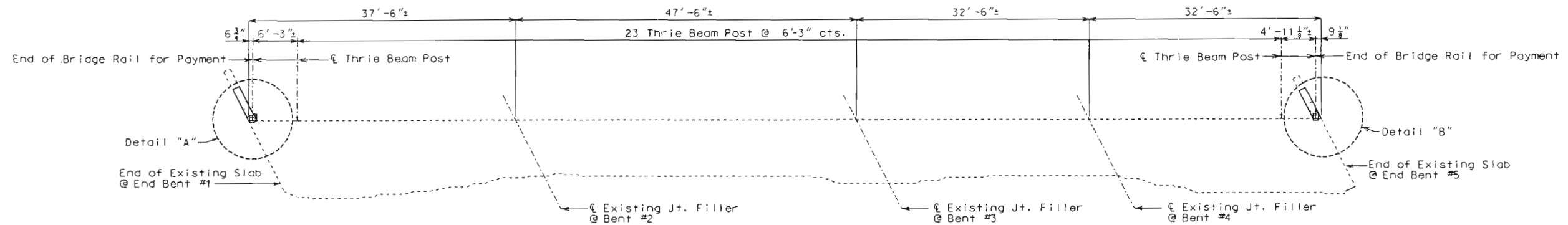
USE ONE OF THE FOLLOWING TYPE WEARING SURFACES:

Limestone Porphyry (LP) Asphaltic Concrete Mix  
Limestone Steel Slag (LS) Asphaltic Concrete Mix

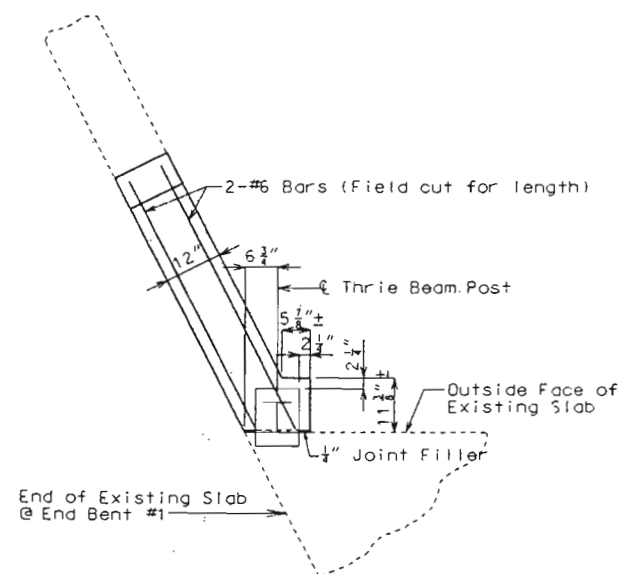
The wearing surface chosen must be compatible with existing wearing surface.

Designed Oct. 2000  
Detailed Apr. 2001  
Checked Apr. 2001

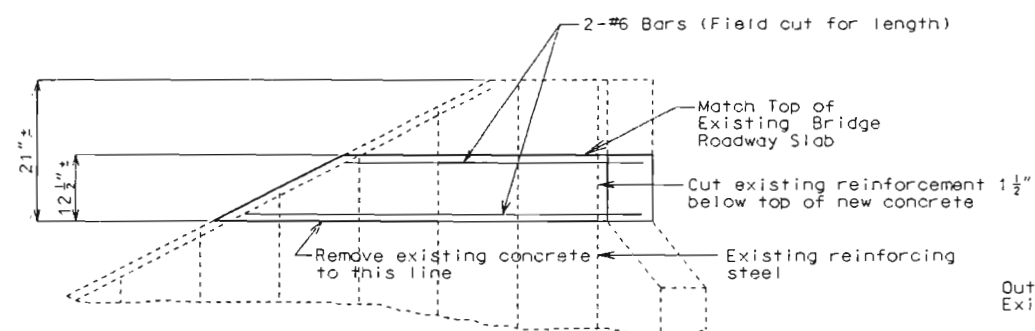
State	Proj. No.	Sheet No.
MO		82



HALF PLAN OF SLAB SHOWING RAIL POST SPACING ON LEFT SIDE  
(Right side similar about 180° rotation)

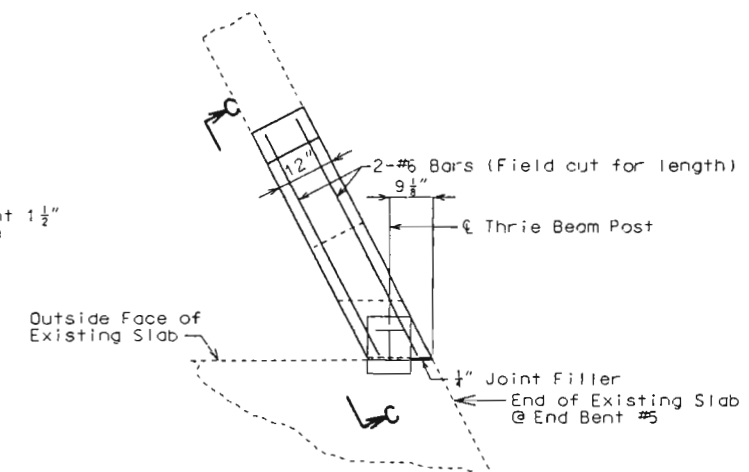


Detail "A"



Note: Use-In-Place existing steel as required.  
PART TYPICAL ELEVATION C-C  
(Typical detail for all wing modifications)

END BENT WING MODIFICATION



Detail "B"

Detailed Oct. 2000  
Checked, Oct. 2000

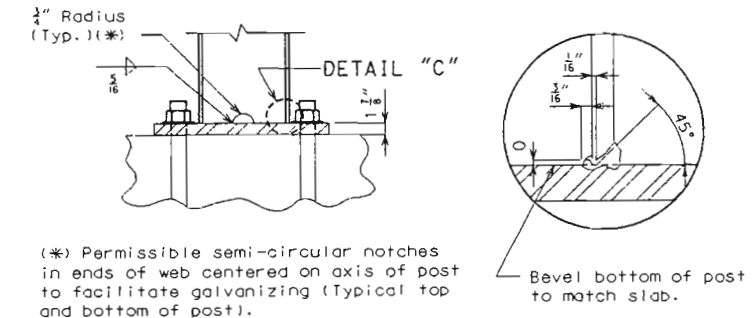
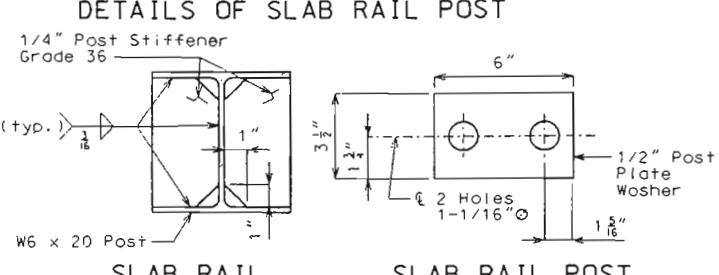
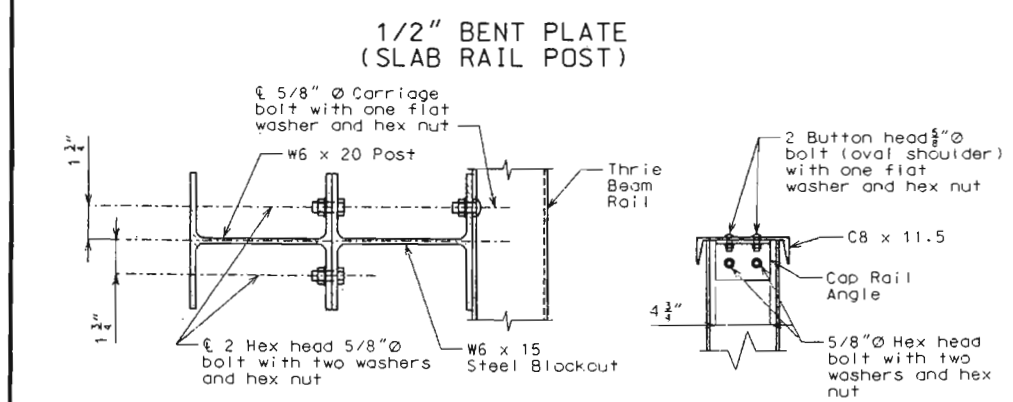
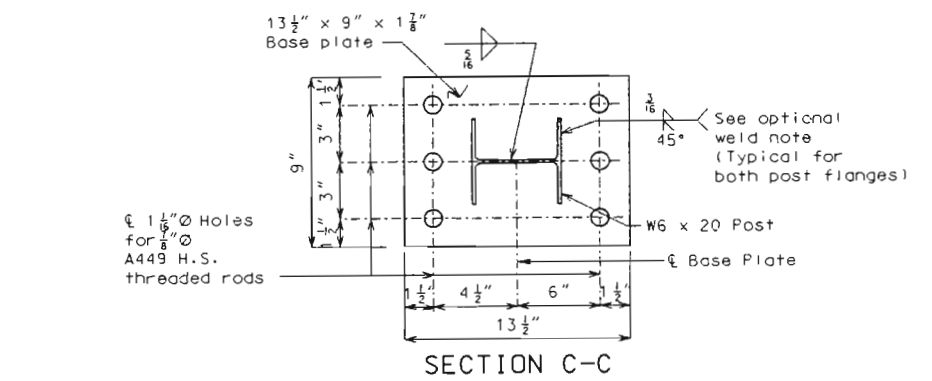
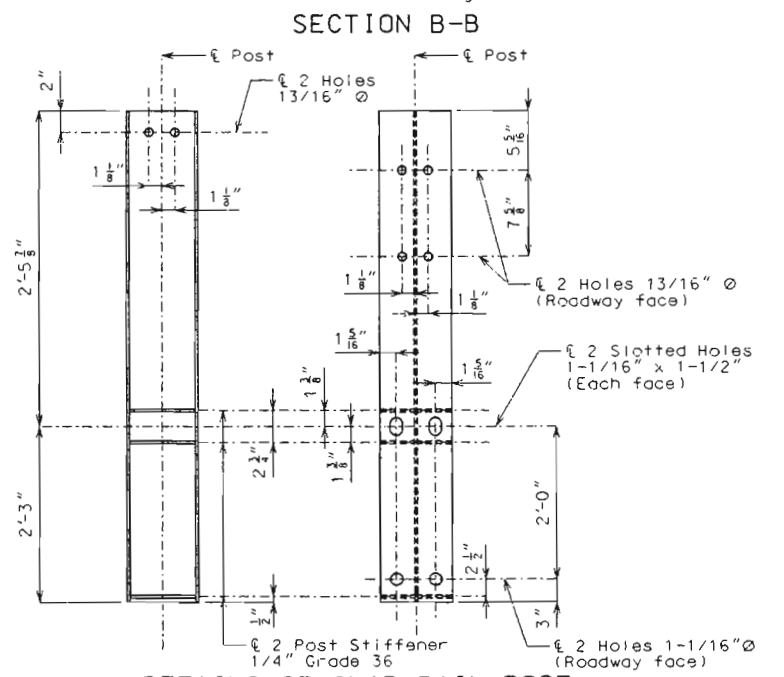
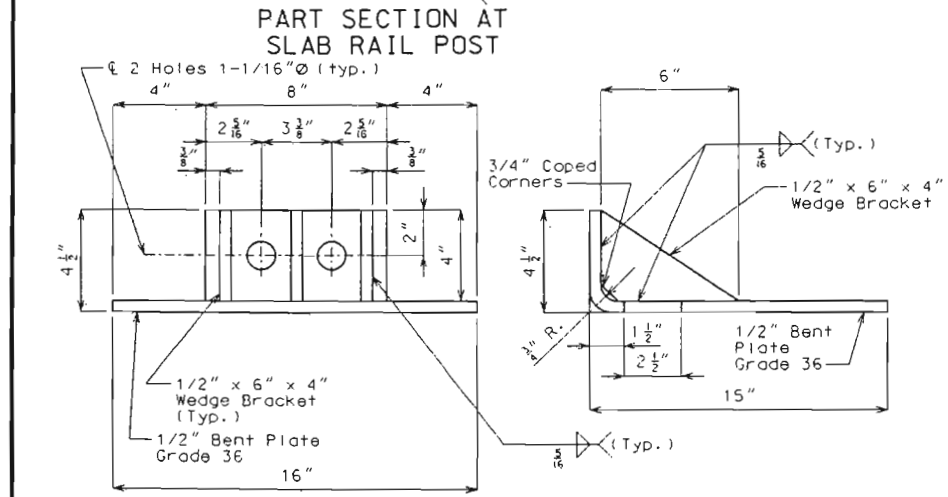
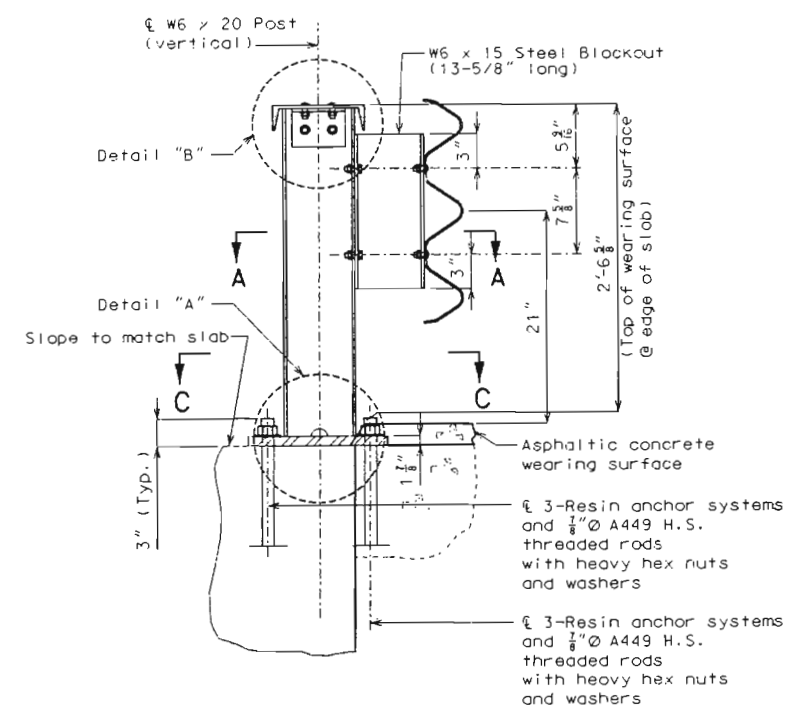
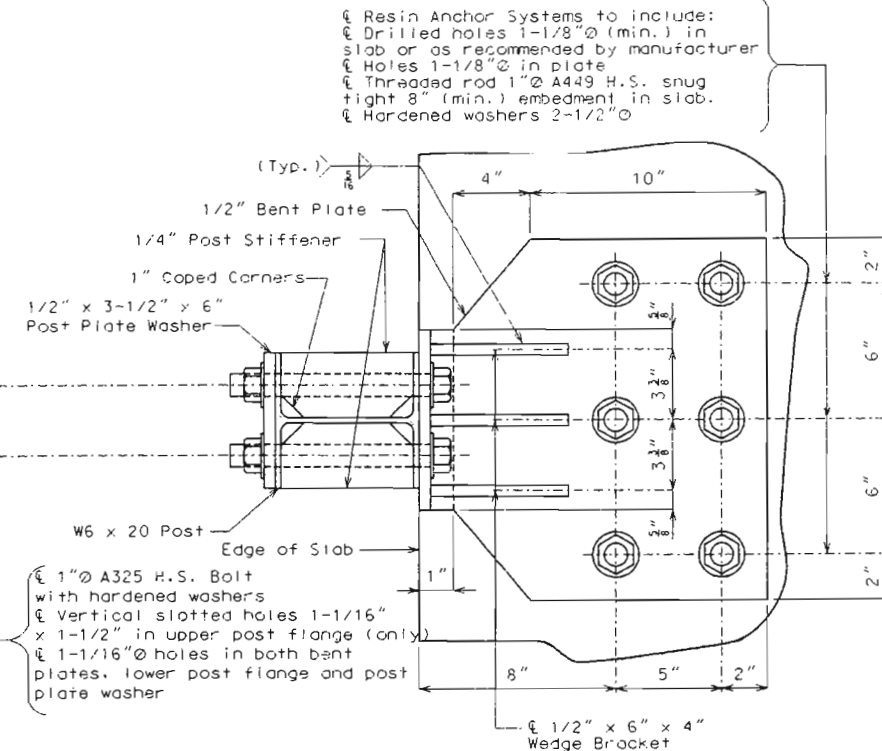
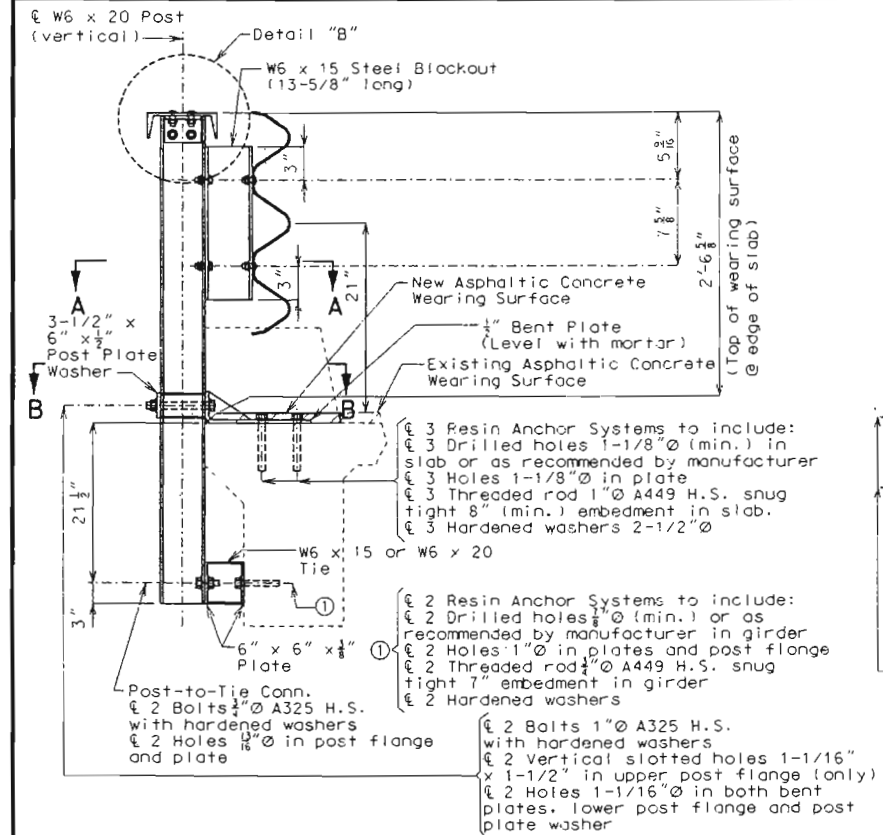
Sheet No. 2 of 4

MARIES COUNTY H09802

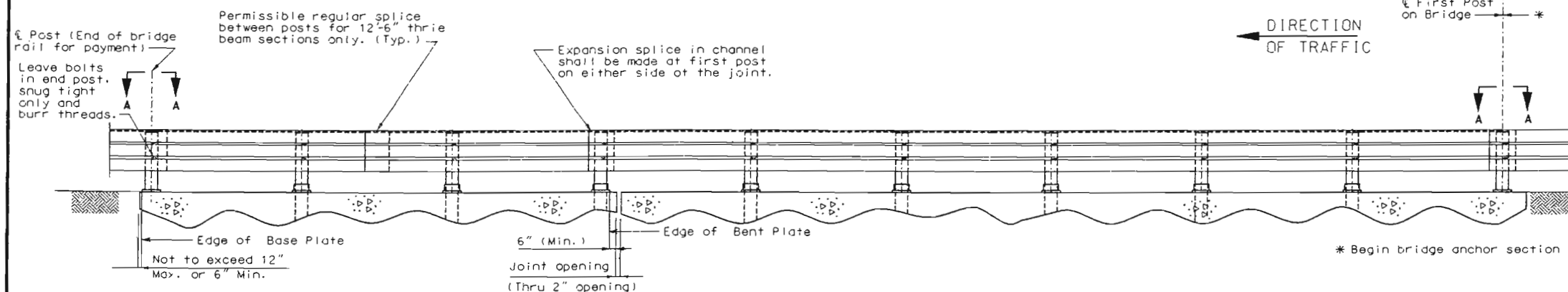


4-12-01

State	Proj. No.	Sheet No.
MO		83

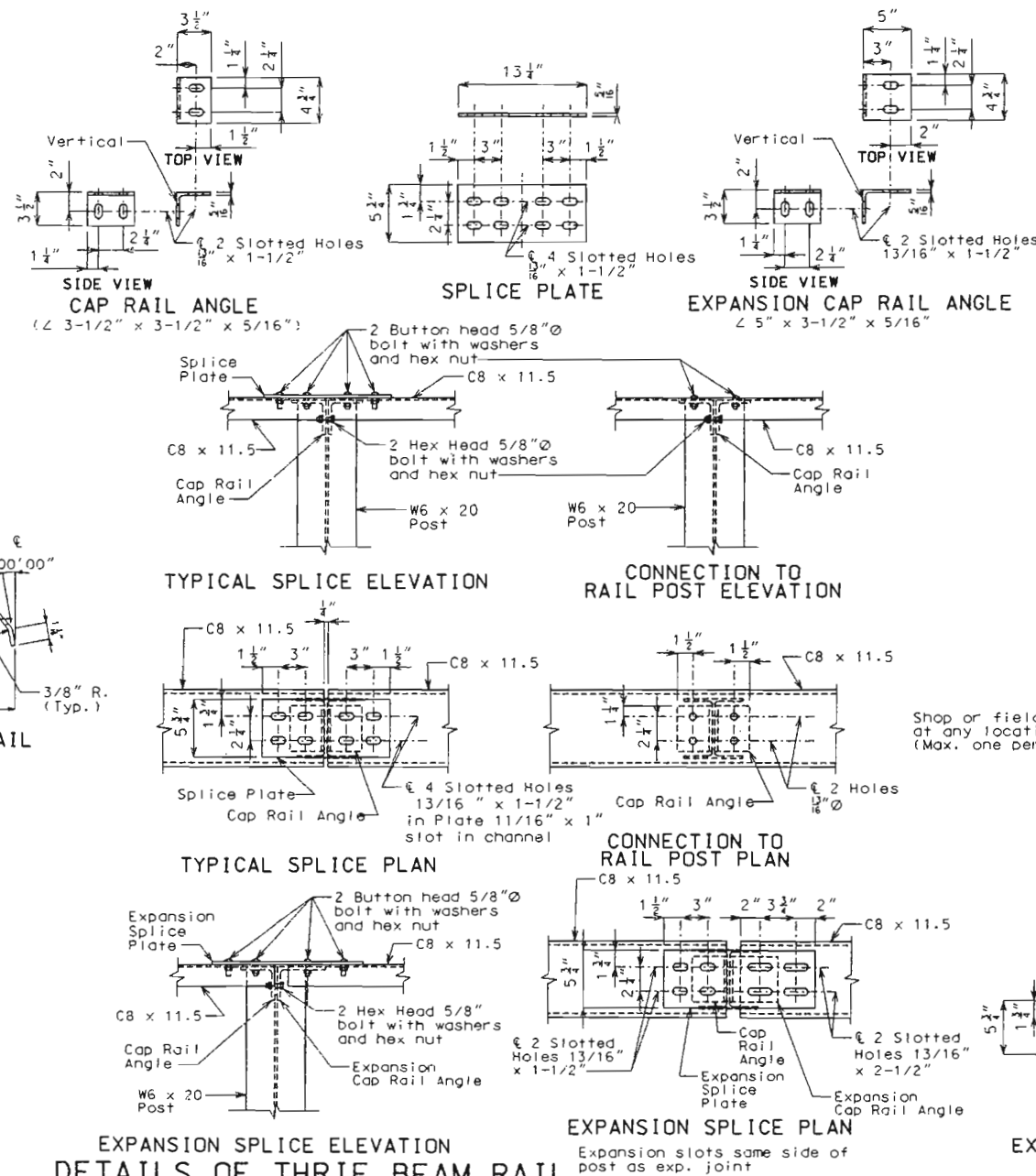
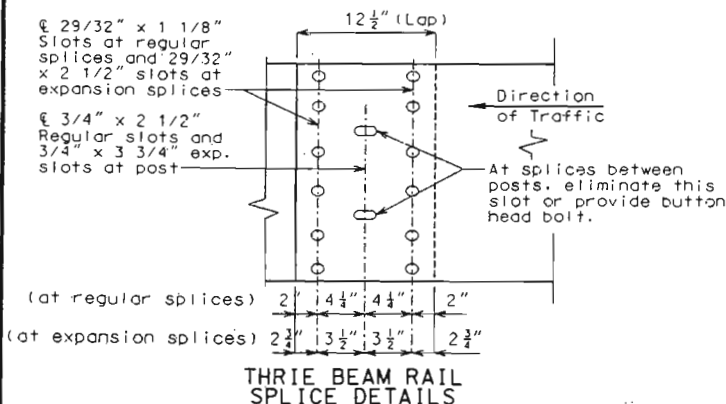
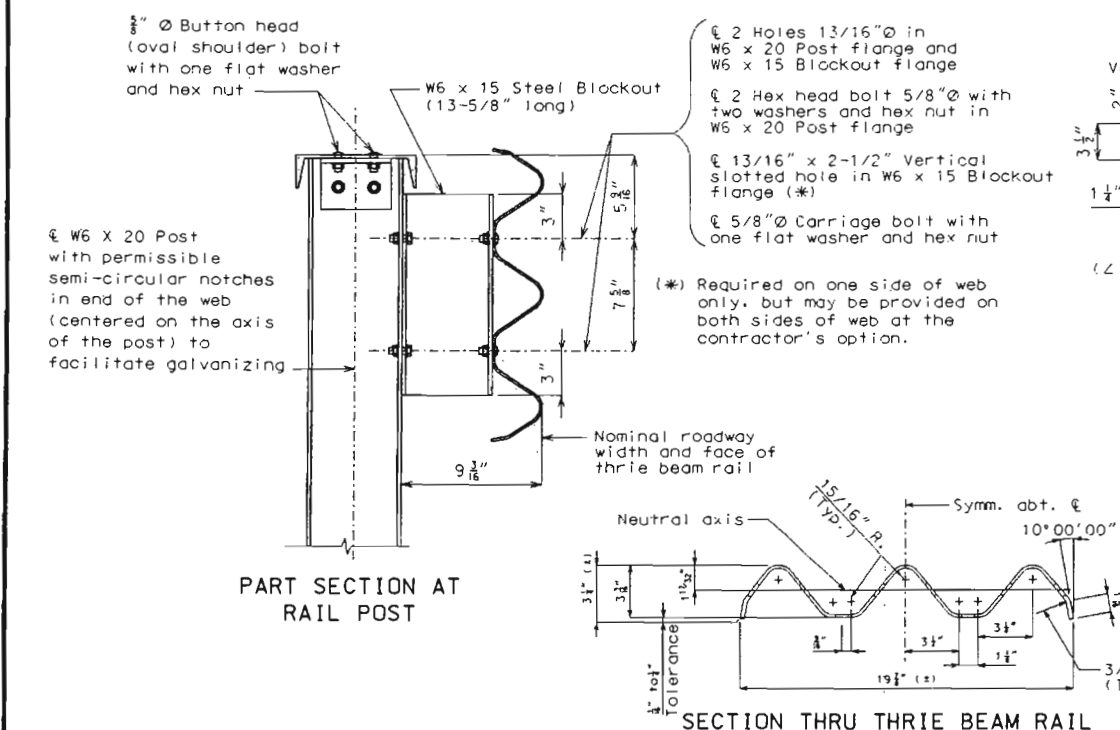


State	Proj. No.	Sheet No.
MO		84



Note: At the bridge ends for two-way pavement, use guard rail at all four corners and for divided pavement, use a guard rail at entrance ends only (unless required at exit end for high fill).

PART SECTION THRU SLAB SHOWING THRIE BEAM RAIL



# GENERAL NOTES:

Design specifications: AASHTO-1996 and Interims 1999.

Panel lengths of channel members shall be attached continuously to a minimum of four posts and a maximum of six posts (except at end bents).

All bolts, nuts, washers and plates are considered as parts of the thrie beam rail for payment.

All steel connecting bolts and fasteners for posts and railing and all anchor bolts, nuts, washers and plates shall be galvanized after fabrication. For protective coating and material requirement of steel railing, see Section 1040 of the Missouri Standard Specifications.

Rail posts shall be set perpendicular to roadway profile grade and vertically in cross section, and aligned according to Section 713 of the Missouri Standard Specifications, except that the rail posts shall be aligned by the use of shims so that in the final adjustment no part shall deviate more than one inch from true horizontal alignment. The shims shall be 3\"/>

At the expansion slots in the thrie beam rails and channels, tighten bolts, back off one-half turn and burr threads.

At the thrie beam connection to posts on wings, tighten bolts, back off one-half turn and burr threads.

Minimum length of thrie beam sections is equal to one post space.

Use 5/8\"/>

Thrie beam guard rail on the bridge shall be made of steel and shall be 12 Gage.

Posts, top plates, channels and channel splice plates shall be fabricated from ASTM A709 Grade 36 steel and galvanized.

Washers shall be used at all post bolts (between the bolt head and beam). They shall be rectangular in shape (3\"/>

Special drilling of the thrie beam may be required at the splices. (All drilling details are to be shown on the shop drawings.)

Fabrication of structural steel shall be in accordance with Section 712 of the Missouri Standard Specifications.

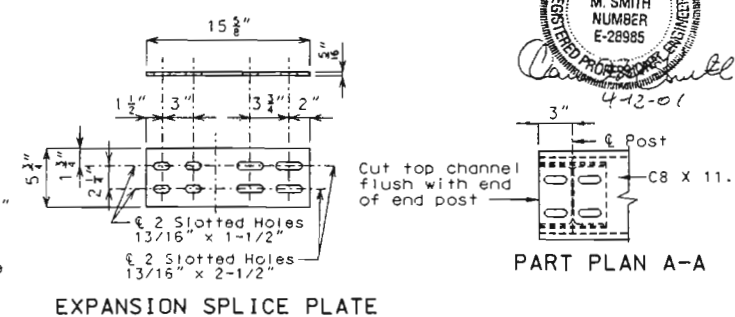
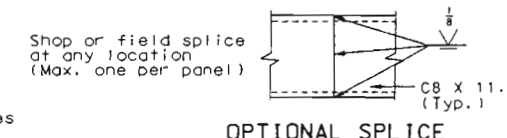
Expansion splices in the thrie beam rail shall be made at either the first or second post on either side of the joint and on structure or bridge ends. When the splice is made at the second post, an expansion slot shall be provided in the thrie beam rail for connection to the first post to allow for movement.

In addition to the expansion provisions at these expansion joints, expansion splices in the thrie beam rail and the channel shall be provided at other locations so that the maximum length without expansion provisions does not exceed 200 ft.

Contractor shall verify all dimensions in field before ordering materials.

Shim plates 6\"/>

See Missouri Standard Plans Drawing 606.00 for details not shown. See slab sheet for rail post spacing.



Detailed Oct. 2000  
Checked Oct. 2000

EXPANSION SPLICE ELEVATION  
DETAILS OF THRIE BEAM RAIL

Sheet No. 4 of 4

MARIES COUNTY H09802

Unapproved for use after 11/25/2014



Missouri Department of Transportation  
Bridge Inventory and Inspection System  
Structural Inventory & Appraisal Sheet

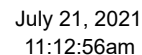
July 21, 2021  
11:12:56am

COUNTY : MARIES      BRIDGE : H0980 2      REVIEW STATUS : APPROVED      NBI STATUS : P  
RECORD TYPE : ROUTE CARRIED 'ON' STRUCT      RUN DATE : 2/8/2021      SUBMITTAL YEAR : 2020

GENERAL STRUCTURE INFORMATION			ROUTE DESIGNATION INFORMATION		
1	State	MISSOURI	5A	Record Type	ROUTE CARRIED 'ON' STRUCT
2	District	CD	5B	Route Signing Prefix	MO
3	County	MARIES	5C	Designated Level of Service	MAINLINE
8	Federal ID No.	5188	5D	Route Number	00028
27	Year Built	1929	5E	Directional Suffix	NOT APPLICABLE
106	Year Reconstructed	0	7	Facility Carried	MO 28 E
42A	Type of Service On	HIGHWAY	12	Base Hwy. Network	NO
21	Structure Maintenance	STATE HIGHWAY AGENCY	13A	LRS Inventory Route No.	
22	Structure Owner	STATE HIGHWAY AGENCY	13B	Subroute No.	
33	Br. Median Code	NO MEDIAN	20	Toll Status	ON FREE ROAD
37	Historical Significance	NOT ELIGIBLE FOR NR OF HP	26	Functional Classification	06-RURAL MINOR ARTERIAL
101	Parallel Struc Desg	NONE EXISTS	28A	Lanes on Structure	02
103	Temporary Structure	NOT TEMPORARY	100	STRAHNET Designation	RTE NOT A DEFENSE HWY
112	NBIS Bridge Length	YES	104	National Highway System	NOT ON NHS
			105	Federal Lands Highway	NOT APPLICABLE
			110	Designated Nat. Network	NO
STRUCTURE LOCATION INFORMATION			STRUCTURE TRAFFIC INFORMATION		
4	Place	JEFFERSON	29	AADT	1752
	Code	36872	30	AADT Year	2019
9	Location	S 32 T 41 N R 7 W	102	Direction of Traffic	2-WAY TRAFFIC
11	Milepoint	49.05 miles	109	AADT Truck Percent	16%
16	Latitude	38 D 15 M 1 S	114	Future AADT	2540
17	Longitude	91 D 43 M 15 S	115	Future AADT Year	2039
UNDERRECORD INFORMATION			STRUCTURE GEOMETRIC INFORMATION		
6	Features Intersected	DRY FK CR	10	Inventory Rte. Vert. Clear	99 Ft. 99 In.
42B	Type of Service Under	WATERWAY	19	By pass Detour Length	11.16 miles
28B	Lanes Under Structure	00	32	Approach Roadway Width	20 Ft. 0 In.
54A	Vert. Clearance Ref.	N/A	34	Skew	27.00 Degrees
54B	Vert. Clearance	0 Ft. 0 In.	35	Struct. Flared	NO
55A	Rt. Lat Clear Ref.	N/A	47	Total Horiz. Clear	21 Ft. 4 In.
55B	Rt. Lat Clearance	0 Ft. 0 In.	48	Maximum Span Length	47 Ft. 3 In.
56	Left Lat Clearance	0 Ft. 0 In.	49	Structure Length	149 Ft. 11 In.
38	Navigation Control	PERMIT NOT REQ	50A	Left Curb/Sidewalk Width	0 Ft. 0 In.
39	Nav Vertical Clear	0 Ft. 0 In.	50B	Right Curb/Sidewalk Width	0 Ft. 0 In.
40	Nav Horizontal Clear	0 Ft. 0 In.	51	Curb to Curb Br. Width	21 Ft. 4 In.
111	Nav. Pier Protection		52	Deck Width (Out-Out)	22 Ft. 12 In.
116	Nav. Cl. Vert. Clear		53	Vert. Clearance Over Deck	99 Ft. 99 In.

Design\_No = H0980





COUNTY :	MARIES	BRIDGE :	H0980 2	REVIEW STATUS :	APPROVED	NBI STATUS :	P
RECORD TYPE :	ROUTE CARRIED 'ON' STRUCT			RUN DATE :	2/8/2021	SUBMITTAL YEAR :	2020

LOAD RATING AND POSTING INFORMATION				MATERIAL/CONSTRUCTION INFORMATION			
31	Design Load	H 15		43A	Main Struc. Mat type	CONCRETE	
41	Structure Status	A - OPEN NO RESTRICTIONS		43B	Main struc Constr. Type	TEE BEAM	
63	Oper. Rating Meth.	LOAD FACTOR		45	# of Main Spans	4	
64	Operating Rating	49 Tons.		44A	Appr Struc. Mat type		
65	Inventory Rating Meth	LOAD FACTOR		44B	Appr Struc. Cnstr. type		
66	Inventory Rating	29 Tons.		46	# of Approach Span	0	
70	Bridge Posting Code	=>LEGAL LOADS		107	Deck Mat/Constr.	1 CONCRETE CIP	
PROPOSED IMPROVEMENT INFORMATION				108A	Wear Surf Mat/Constr.	6 BITUMINOUS	
	Sufficiency Rating	41.8 Percent		108B	Membrane Mat/Constr.	1 BUILT UP	
	Deficiency Rating	STRUCTURAL		108C	Deck Protect Mat/Constr.	0 NONE	
	Funding Eligibility	FULL		CONDITION RATING INFORMATION			
75A	Proposed Work	REPLACEMENT SUBSTND LOAD		58	Deck Cond. Rating	4	
75B	Work Done By	Contract		59	Superstructure Cond. Rating	4	
76	New Struc Length	0 Ft. 0 In.		60	Substructure Cond. Rating	6	
94	Struc Improve Cost	\$ 706,000		61	Channel /Channel Protection Cond. Rating	5	
95	Roadway Improve Cost	\$ 70,000		62	Culvert Cond. Rating	N	
96	Total Project Cost	\$ 1,059,000		INSPECTION INFORMATION			
97	Year of Cost Estimates	2021		90	Gen. Insp Date	8 / 20	
APPRAISAL RATING INFORMATION				91	Gen. Insp. Frequency	24 Months	
36A	Br. Rail App. Rating	MEETS ACCEPTBLE STND		92A	Frac. Critical Inspection	N Months	
36B	Transition Rail App. Rating	MEETS ACCEPTBLE STND		93A	Frac. Critical Insp. Date		
36C	Approach Rail App. Rating	MEETS ACCEPTBLE STND		92B	Underwater Inspection	N Months	
36D	Rail End Treat. App. Rating	MEETS ACCEPTBLE STND		93B	Underwater Insp. Date		
67	Struc Eval App. Rating	4		92C	Special Inspection	N Months	
68	Deck Geometry App. Rating	2		93C	Special Inspection Date		
69	Underclearance App. Rating	N		BORDER BRIDGE INFORMATION			
71	Waterway Adeq. App. Rating	8		98	Neighboring State Code		
72	Approach Road App. Rating	6		98B	Neighboring State % Respon		
113	Scour Assess App. Rating	8		99	Neighboring State Struc. No.		
APPROVED POSTING INFORMATION				FIELD POSTING INFORMATION			
Approved Posting Category		S-1		Field Posting Category		S-1	
		Ton1	Ton2			Ton1	Ton2
		Ton3				Ton3	
Tonnage Values for Posting Sign				Tonnage Values for Posting Sign			
General Text for Posting Sign				General Text for Posting Sign			
NO POSTING REQUIRED				NO POSTING REQUIRED			



Missouri Department of Transportation  
Bridge Inventory and Inspection System  
Structural Inventory & Appraisal Sheet

July 21, 2021  
11:12:56am

COUNTY : MARIES      BRIDGE : H0980 2      REVIEW STATUS : CONVERTED      NBI STATUS : T  
RECORD TYPE :      ROUTE CARRIED 'ON' STRUCT      RUN DATE : 3/9/2021      SUBMITTAL YEAR : 2021

GENERAL STRUCTURE INFORMATION			ROUTE DESIGNATION INFORMATION		
1	State	MISSOURI	5A	Record Type	ROUTE CARRIED 'ON' STRUCT
2	District	CD	5B	Route Signing Prefix	MO
3	County	MARIES	5C	Designated Level of Service	MAINLINE
8	Federal ID No.	5188	5D	Route Number	00028
27	Year Built	1929	5E	Directional Suffix	NOT APPLICABLE
106	Year Reconstructed	0	7	Facility Carried	MO 28 E
42A	Type of Service On	HIGHWAY	12	Base Hwy. Network	NO
21	Structure Maintenance	STATE HIGHWAY AGENCY	13A	LRS Inventory Route No.	
22	Structure Owner	STATE HIGHWAY AGENCY	13B	Subroute No.	
33	Br. Median Code	NO MEDIAN	20	Toll Status	ON FREE ROAD
37	Historical Significance	NOT ELIGIBLE FOR NR OF HP	26	Functional Classification	06-RURAL MINOR ARTERIAL
101	Parallel Struc Desg	NONE EXISTS	28A	Lanes on Structure	02
103	Temporary Structure	NOT TEMPORARY	100	STRAHNET Designation	RTE NOT A DEFENSE HWY
112	NBIS Bridge Length	YES	104	National Highway System	NOT ON NHS
			105	Federal Lands Highway	NOT APPLICABLE
			110	Designated Nat. Network	NO
STRUCTURE LOCATION INFORMATION			STRUCTURE TRAFFIC INFORMATION		
4	Place	JEFFERSON	29	AADT	1752
	Code	36872	30	AADT Year	2019
9	Location	S 32 T 41 N R 7 W	102	Direction of Traffic	2-WAY TRAFFIC
11	Milepoint	49.45 miles	109	AADT Truck Percent	16%
16	Latitude	38 D 15 M 1 S	114	Future AADT	2540
17	Longitude	91 D 43 M 15 S	115	Future AADT Year	2039
UNDERRECORD INFORMATION			STRUCTURE GEOMETRIC INFORMATION		
6	Features Intersected	DRY FK CR	10	Inventory Rte. Vert. Clear	99 Ft. 99 In.
42B	Type of Service Under	WATERWAY	19	By pass Detour Length	11.25 miles
28B	Lanes Under Structure	00	32	Approach Roadway Width	20 Ft. 0 In.
54A	Vert. Clearance Ref.	N/A	34	Skew	27.00 Degrees
54B	Vert. Clearance	0 Ft. 0 In.	35	Struct. Flared	NO
55A	Rt. Lat Clear Ref.	N/A	47	Total Horiz. Clear	21 Ft. 4 In.
55B	Rt. Lat Clearance	0 Ft. 0 In.	48	Maximum Span Length	47 Ft. 3 In.
56	Left Lat Clearance	0 Ft. 0 In.	49	Structure Length	149 Ft. 11 In.
38	Navigation Control	PERMIT NOT REQ	50A	Left Curb/Sidewalk Width	0 Ft. 0 In.
39	Nav Vertical Clear	0 Ft. 0 In.	50B	Right Curb/Sidewalk Width	0 Ft. 0 In.
40	Nav Horizontal Clear	0 Ft. 0 In.	51	Curb to Curb Br. Width	21 Ft. 4 In.
111	Nav. Pier Protection		52	Deck Width (Out-Out)	22 Ft. 12 In.
116	Nav. Cl. Vert. Clear		53	Vert. Clearance Over Deck	99 Ft. 99 In.

Design\_No = H0980



Missouri Department of Transportation  
Bridge Inventory and Inspection System  
Structural Inventory & Appraisal Sheet

July 21, 2021  
11:12:56am

COUNTY : MARIES BRIDGE : H0980 2 REVIEW STATUS : CONVERTED NBI STATUS : T  
RECORD TYPE : ROUTE CARRIED 'ON' STRUCT RUN DATE : 3/9/2021 SUBMITTAL YEAR : 2021

LOAD RATING AND POSTING INFORMATION			MATERIAL/CONSTRUCTION INFORMATION		
31	Design Load	H 15	43A	Main Struc. Mat type	CONCRETE
41	Structure Status	OPEN NO RESTRICTIONS	43B	Main struc Constr. Type	TEE BEAM
63	Oper. Rating Meth.	LOAD FACTOR	45	# of Main Spans	4
64	Operating Rating	49 Tons.	44A	Appr Struc. Mat type	000
65	Inventory Rating Meth	LOAD FACTOR	44B	Appr Struc. Cnstr. type	000
66	Inventory Rating	29 Tons.	46	# of Approach Span	0
70	Bridge Posting Code	=>LEGAL LOADS	107	Deck Mat/Constr.	1 CONCRETE CIP
PROPOSED IMPROVEMENT INFORMATION			108A	Wear Surf Mat/Constr.	6 BITUMINOUS
Sufficiency Rating 41.8 Percent			108B	Membrane Mat/Constr.	1 BUILT UP
Deficiency Rating STRUCTURAL			108C	Deck Protect Mat/Constr.	0 NONE
Funding Eligibility FULL			CONDITION RATING INFORMATION		
75A	Proposed Work	REPLACEMENT SUBSTND LOAD	58	Deck Cond. Rating	4
75B	Work Done By	Contract	59	Superstructure Cond. Rating	4
76	New Struc Length	183 Ft. 9 In.	60	Substructure Cond. Rating	6
94	Struc Improve Cost	\$ 706,000	61	Channel /Channel Protection Cond. Rating	5
95	Roadway Improve Cost	\$ 70,000	62	Culvert Cond. Rating	N
96	Total Project Cost	\$ 1,059,000	INSPECTION INFORMATION		
97	Year of Cost Estimates	2021	90	Gen. Insp Date	8 / 20
APPRAISAL RATING INFORMATION			91	Gen. Insp. Frequency	24 Months
36A	Br. Rail App. Rating	MEETS ACCEPTBLE STND	92A	Frac. Critical Inspection	N Months
36B	Transition Rail App. Rating	MEETS ACCEPTBLE STND	93A	Frac. Critical Insp. Date	
36C	Approach Rail App. Rating	MEETS ACCEPTBLE STND	92B	Underwater Inspection	N Months
36D	Rail End Treat. App. Rating	MEETS ACCEPTBLE STND	93B	Underwater Insp. Date	
67	Struc Eval App. Rating	4	92C	Special Inspection	N Months
68	Deck Geometry App. Rating	2	93C	Special Inspection Date	
69	Underclearance App. Rating	N	BORDER BRIDGE INFORMATION		
71	Waterway Adeq. App. Rating	8	98	Neighboring State Code	
72	Approach Road App. Rating	6	98B	Neighboring State % Respon	
113	Scour Assess App. Rating	8	99	Neighboring State Struc. No.	
APPROVED POSTING INFORMATION			FIELD POSTING INFORMATION		
Approved Posting Category S-1			Field Posting Category S-1		
Ton1 Ton2 Ton3			Ton1 Ton2 Ton3		
Tonnage Values for Posting Sign			Tonnage Values for Posting Sign		
General Text for Posting Sign			General Text for Posting Sign		
NO POSTING REQUIRED			NO POSTING REQUIRED		

Design\_No = H0980

Bridge Number:

H0980R2

Route/County:

28/Maries

Asbestos-Containing Material Present?

Yes: ☐

No: ☒

If yes, see report for location(s).

Structural Steel Present?

Yes: ☒

No: ☐

If No, then skip the following.

Lead-Based Paint (LBP) Present?

Yes: ☐

No: ☒

Trusses LBP?

Yes: ☐ No: ☐

Girder LBP?

Yes: ☐ No: ☐

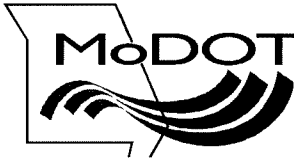
Railing LBP?

Yes: ☐ No: ☒

*galvanized*

Pile LBP?

Yes: ☐ No: ☐




## MEMORANDUM

Missouri Department of Transportation  
Construction and Materials  
Central Laboratory

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**TO:** TMS

**FROM:** Diane Roegge   
Environmental Chemist

**DATE:** October 29, 2015

**SUBJECT:** Materials  
Asbestos Inspection & Heavy Metal Paint Survey  
Route 28  
Bridge H-0980R2  
Maries County

We are providing you with the results of the inspection on the above referenced bridge. The inspection report contains an asbestos and a heavy metals survey. The asbestos inspection included identifying suspect asbestos-containing material and NVLAP accredited testing to confirm the presence of asbestos.

Form T746 – This will show if samples were taken, where from, and, if the sample was found to contain asbestos, our estimated quantity of material present. Under the column “Friability Category”, this is the meaning for the following:

N-ACM – No asbestos detected.

I NF – Asbestos is present. Material shall be handled carefully by a licensed abatement worker and kept wet if removing as part of a maintenance activity.

II NF – Asbestos is present. If removal is required for the maintenance activity, use an abatement contractor.

In accordance with Missouri Department of Natural Resources’ Technical Bulletin “Managing Construction and Demolition Waste” dated January 31, 2003, a heavy metal paint survey has been performed on the above referenced bridge. This survey includes locating concrete which has been painted with something other than traffic paint or graffiti, and testing the painted surface(s) to determine if hazardous heavy metals are present. If the bridge is being removed completely, or the maintenance repairs include removing the painted concrete, then, non-hazardous painted concrete may be used as clean fill materials, if properly handled. You must contact the Central Office Design Division for proper handling of the reported painted surfaces.

Although our survey included observing and sampling all accessible areas, it is possible that potentially hidden asbestos-containing materials may exist within the structure. Should you have any questions regarding these reports, please contact me at (573) 526-4359.

db/fr/dr

[http://sp/sites/cm/chemicallab/environmental/shared documents/asbestos/districts/central \(cd\)/mt/h0980r2/dr1510299.docx](http://sp/sites/cm/chemicallab/environmental/shared%20documents/asbestos/districts/central%20(cd)/mt/h0980r2/dr1510299.docx)

Attachments

MISSOURI DEPARTMENT OF TRANSPORTATION  
CONSTRUCTION AND MATERIALS  
Asbestos Survey Report  
All Suspect ACM

Page 1 of 1

ROUTE:	28
MODOT JOB NO.:	N/A
DISTRICT:	CD
COUNTY:	Maricopa
DATE OF SURVEY:	October 29, 2015
PARCEL NO.:	Bridge H-0980R2

SURVEYED BY:	Frank Reichart and Diane Roegge
CERTIFICATION #:	7118110514MOIR11239, F.R.
CERTIFICATION #:	7118110514MOIR7165, D.R.
SITE ADDRESS:	Over Dry Fork Creek
TYPE(S) OF STRUCTURE(S):	Bridge

[illegible]



MISSOURI DEPARTMENT OF TRANSPORTATION  
CONSTRUCTION AND MATERIALS

# Asbestos Survey Report

## Nonfriable Asbestos-Containing Materials

(Abatement not required if not made friable during demolition.)

**ROUTE:** 28

MODOT JOB NO.:

DISTRICT: CLCOUNTY: MaDATE OF TESTS: N/Br PARCEL NO.:

**TESTED BY:**

**CERTIFICATION #:**

**CERTIFICATION #:**

**SITE ADDRESS:**

**TYPE(S) OF STRUCTURE(S):**

Frank Reichart and Diane Roe  
7118110514MOIR1239, F.R.

7118110514MOIR7165, D.R.

## Over Dry Fork Creek

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Bridge

1141

[illegible]

**All necessary work to handle this material is the contractor's responsibility.**

IN F = Category I Nonfriable



MISSOURI DEPARTMENT OF TRANSPORTATION  
CONSTRUCTION AND MATERIALS

# Asbestos Survey Report

**All materials requiring removal or special handling.**

**ROUTE:**

28

**MODOT JOB NO.:**

N/A

**DISTRICT:**

CD

**COUNTY:**

Maries

DATE OF TESTS:

N/A

**PARCEL NO.:**

Bridge H-0980R2

**TESTED BY:**

**CERTIFICATION #:**

**CERTIFICATION #:**

**SITE ADDRESS:**

**TYPE(S) OF STRUCTURE(S):**

Frank Reichart and Diane Roegge

7118110514MOIR11239, F.R.

7118110514MOIR7165, D.R.

Over Dry Fork Creek

## Bridge

[illegible]

INF = Category I Nonfriable

II NF = Category II Nonfriable

F = Friable

\* = Tested By Point Count Procedure



Expiration Date

11/5/2015

Certificate Number: 7118110514MOIR11239

Training Date:

11/5/2014

**Missouri State Certificate for Asbestos Related Occupations**

issued by Department of Natural Resources  
P.O. Box 176

Jefferson City, MO 65102

Phone (573) 751-4817

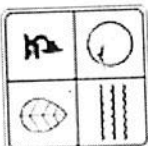
**Francis J. Reichart**

has successfully completed the requirements for certification as a INSPECTOR. This Missouri State Certification is subject to review and the director may deny, suspend or revoke the certification per RSMo chapter 643.230.

12/31/2014

Date

*tyra L Moore*  
Director of Air Pollution Control Program





Expiration Date

11/5/2015

Certificate Number: 7118110514MOIR7165

Training Date:

11/5/2014

**Missouri State Certificate for Asbestos Related Occupations**

issued by Department of Natural Resources

P.O. Box 176

Jefferson City, MO 65102

Phone (573) 751-4817

**Diane R. Roegge**

has successfully completed the requirements for certification as a INSPECTOR. This Missouri State Certification is subject to review and the director may deny, suspend or revoke the certification per RSMo chapter 643.230.

12/31/2014

Date

*Kyra Z Moore*  
Director of Air Pollution Control Program

