Dawn
Ludlow
Catawba
L0548
Avalon
Sumner
Rothville
Wien
Westville
Blue Mound
Bynumville
Swan Lake National Wildlife Refuge
Asper
Hale
Plymouth
Mendon
Braymer
Whitham
Musselfork
Coloma
Tina
Snyder
Tinney Grove
Indian Grove
Triplett
Mandeville
Bosworth
Bogard
Keytesville
Salisbury
Stet
Brunswick
Grand Port
Dalton
De Witt
Leta
Carrollton
Miami Station
N0826
Lakeview
Miami
Forest Green
Sharon
Norborne
N0727
Cambridge
A1889
Hardin
Gilliam
Glasgow
Miles Point
Hodge
Slater
Missouri River
Waverly
Malta Bend
Orearville
Image © 2024 Airbus

BRIDGE MEMORANDUM

Job No.: **JNW0010** **Bridge No.:** **A18892**
County: Chariton **Route:** KK (Low Volume) over Little Chariton River

Final Layout:	U.I.P., Redeck Existing (51')(76'-100'-76')(51') Composite Wide Flange Beam Spans
Roadway Width:	26'-0" plus 16" Type D Barriers each side
Alignment:	Tangent
Skew:	14° R.A.
Profile Grade:	Match existing ±
Loading:	H15-44 (1966), HS20-44 (New construction)
Begin Station:	646+59.08± (match existing)
Traffic Handling:	Structure to be closed during construction. Traffic to be maintained on other routes during construction. See roadway plans for traffic control.
Traffic Information:	AADT = 140 (2023), Truck = 8.6% = 12 AADT = 175 (2043), Truck = 8.6% = 15
Existing Bridge:	Redeck A18891 and use in place.
Condition Ratings:	Deck = 4, Superstructure = 6, Substructure = 6
Load Posting:	No posting required (to be maintained)

General Notes:

- Remove existing bridge deck including curbs, rails and top of wings.
- Install 6½" CIP sliding slab with 3/16" cross slope (without precast panels), stay-in-place forms permitted.
- Increase existing haunch 1" to match existing profile grade.
- Install 16" wide, Type D Barriers.
- Install Slab Drains as required.
- Clean & Recoat existing bearings at Int. Bents No. 2, 3, 4 & 5.
- Apply Protective Coating - Concrete Bents and Piers (Epoxy) to Intermediate Bents No. 2 & 5.
- Install Strip Seal Expansion Joints at Intermediate Bents No. 2 & 5.
- Perform 20 sq. ft. of Substructure Repair (Formed) at Intermediate Bent No. 5.
- Clean & Recoat existing piles at Intermediate Bents No. 2 & 3 with Aluminum Epoxy-Mastic Primer.
- Install 20' Bridge Approach Slab (Minor) at End Bents No. 1 & 6
- No conduit, lighting, utility supports, or sidewalks are to be included in the final plans.
- Existing paint system is System B (lead based).
- Bridge deck may be finished with a vibratory screed. Include note B3.25 on plans.

Special Notes:

- Provide object markers at each corner of bridge (Roadway Item).
- Remove existing Bridge Approach Pavement (Roadway Item).
- Roadway surfacing adjacent to bridge ends to match top of bridge deck (Roadway Item).
- Rubblized existing bridge deck may be used on spill slopes (Roadway Item).
- An asbestos and lead inspection has been performed on this structure (A18891). Results indicate that asbestos is not present and lead is present. The Bridge Division will include this report in the electronic deliverables folder when submitting contract documents to the Design Division for the letting (Bridge Item).
- Girders to be recoated in a future, paint-only contract (Estimated cost of $217,000).

Estimated Working / Calendar Days = **40** / **60**
FY26 Estimated Construction Cost[1] = $949,000

[1]Does not include STIP inflation from Planning

Bridge contact is Ted Koester, SPM 573-751-4229

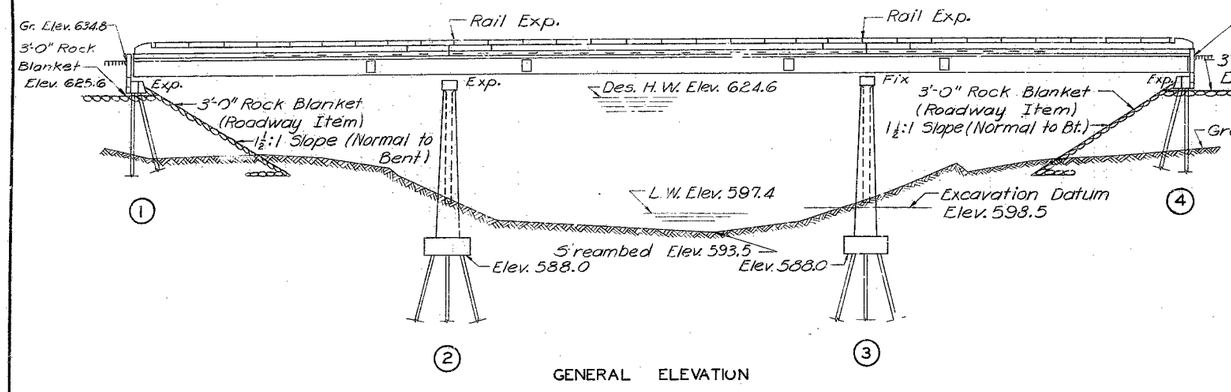
District contact is Joyce Reynolds, TPM 816-387-2411

Ted Koester	6/18/24		
Prepared by: Structural Project Manager	*Date*	*District: Transportation Project Manager*	*Date*
		District: District Bridge Engineer	*Date*

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	8	

(76'-100'-76') Cont. Composite Welded I Girder Spans

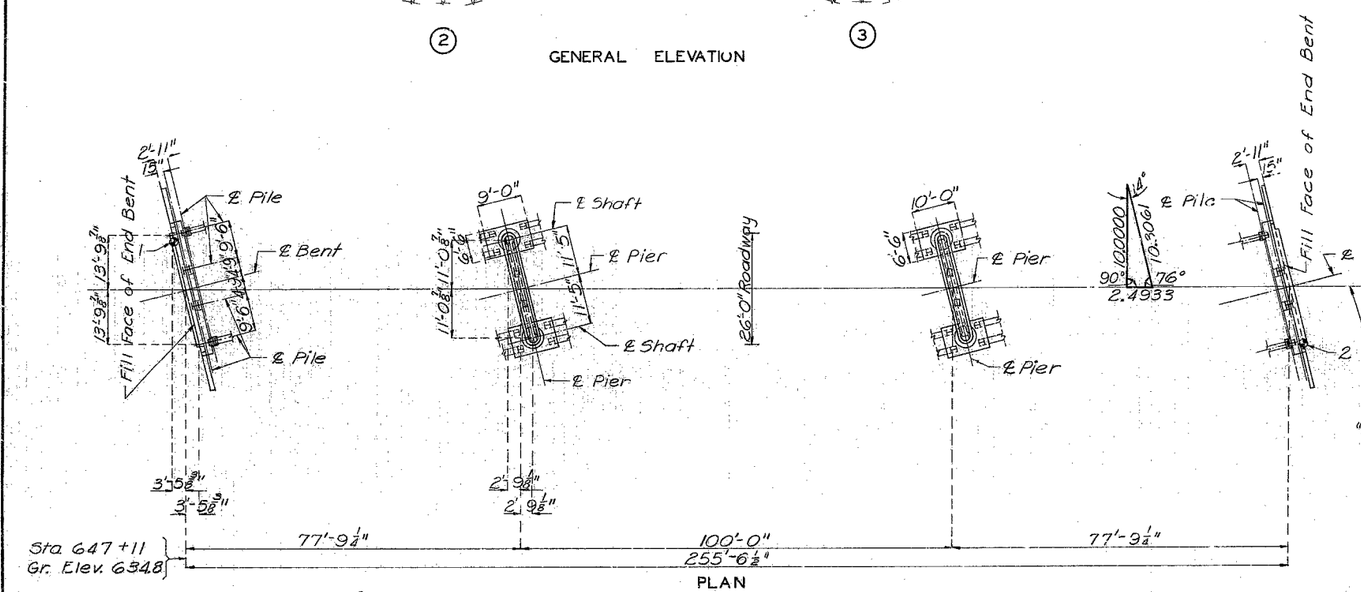


GENERAL ELEVATION

Note: Compacted roadway fill (full roadway width) shall be placed up to elevation of bottom of concrete beam in front of and not less than 25'-0" in back of End Bents before steel piles are driven for End Bents No. 1 & 4.

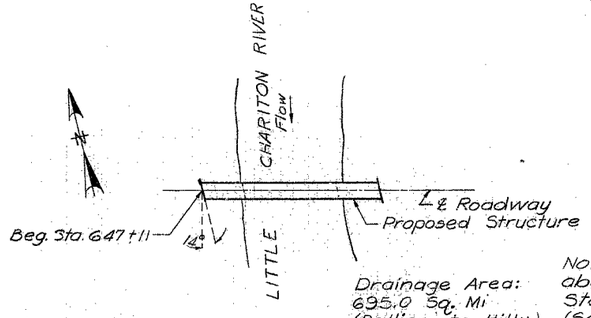
PILE DATA				
Bent or Pier No.	1	2	3	4
Pile Type and Size	10BP42	10BP42	10BP42	10BP42
Number each Bent or Pier	4	10	10	4
Approximate Length Ft.	100	60	60	100
Design Bearing Tons	49	56	56	49
* Hammer Energy required Ft Lbs.	12,600	13,200	13,200	12,600

* Minimum energy requirement of hammer based on plan length and design bearing value of piles. Increase by the factor (W+w)/2W when the weight of the ram (W) is less than the weight of the pile (w).
All pile shall be driven to practical refusal.



PLAN

Note: For Boring Data see sheet No. 4 of 9.
"⊕" Indicates location of boring.



LOCATION SKETCH

Drainage Area: 695.0 Sq. Mi (Rolling to Hilly)

Note: Existing structure about 600'± Rt. of Sta. 652+ (To be removed) (See Special Provisions)

ESTIMATED QUANTITIES				
ITEM		SUBSTR.	SUPERSTR.	TOTAL
Class 1 Excavation for Structures	Cuyd.	30		30
Class 2 Excavation for Structures	Cuyd.	185		185
Steel Piles in Place (10")	Lin.Ft.	1916		1916
Steel Pile Cut-offs (10")	Lin.Ft.	84		84
Class B Concrete	Cuyd.	195.3		195.3
Class B1 Concrete	Cuyd.		199.6	199.6
Reinforcing Steel	Lbs.	16230	52580	68810
Fabricated Structural Carbon Steel	Lbs.		142,790	142,790
Bridge Rail (Single tube type)	Lin.Ft.		487	487

Note: No payment for excavation will be allowed at End Bents No. 1 & 4.

GENERAL NOTES:

Design Specifications: A.A.S.H.O. - 1961

Design Loading:
H15 - 44 15#/sq. ft. Future Wearing Surface
Earth 120# Equivalent Fluid Pressure 30#

Design Unit Stresses:
Class B Concrete (substructure) f_c = 1,200 psi
Class B1 Concrete (superstructure) f_c = 1,600 psi
Reinforcing Steel f_s = 20,000 psi
Structural Steel (A.S.T.M. A36-62T) f_s = 20,000 psi
Steel Pile (ASTM A36-62T) f_b = 9000 psi

Surface Seal:
Superstructure deck to be surface sealed.

Fabricated Steel:
Field connections, High Strength Bolts ¾"ϕ, holes 13/16"ϕ except as noted.
Details of welded joints shown are for manual arc welding except as noted.

B.M. Elev. 611.18 x Nails in N. side 15" Maple 105' Rt. Sta. 647+70

BRIDGE OVER LITTLE CHARITON RIVER

STATE ROAD FROM ROUTE 5 WESTERLY
ABOUT 3.5 MILES N.W. OF GLASGOW
PROJECT NO.S-1014(4) SKK STA. 647 + 11

CHARITON COUNTY

SUBMITTED BY D.B. Jordan BRIDGE ENGINEER DATE 5/25/66
APPROVED BY M.J. Snider CHIEF ENGINEER DATE 5/25/66

STD. 54.00
A-1889

DESIGNED MARCH 1966 BY GIRIYAPPA
DETAILED MARCH 1966 BY BRANSTETTER
CHECKED April 1966 BY Rhodes

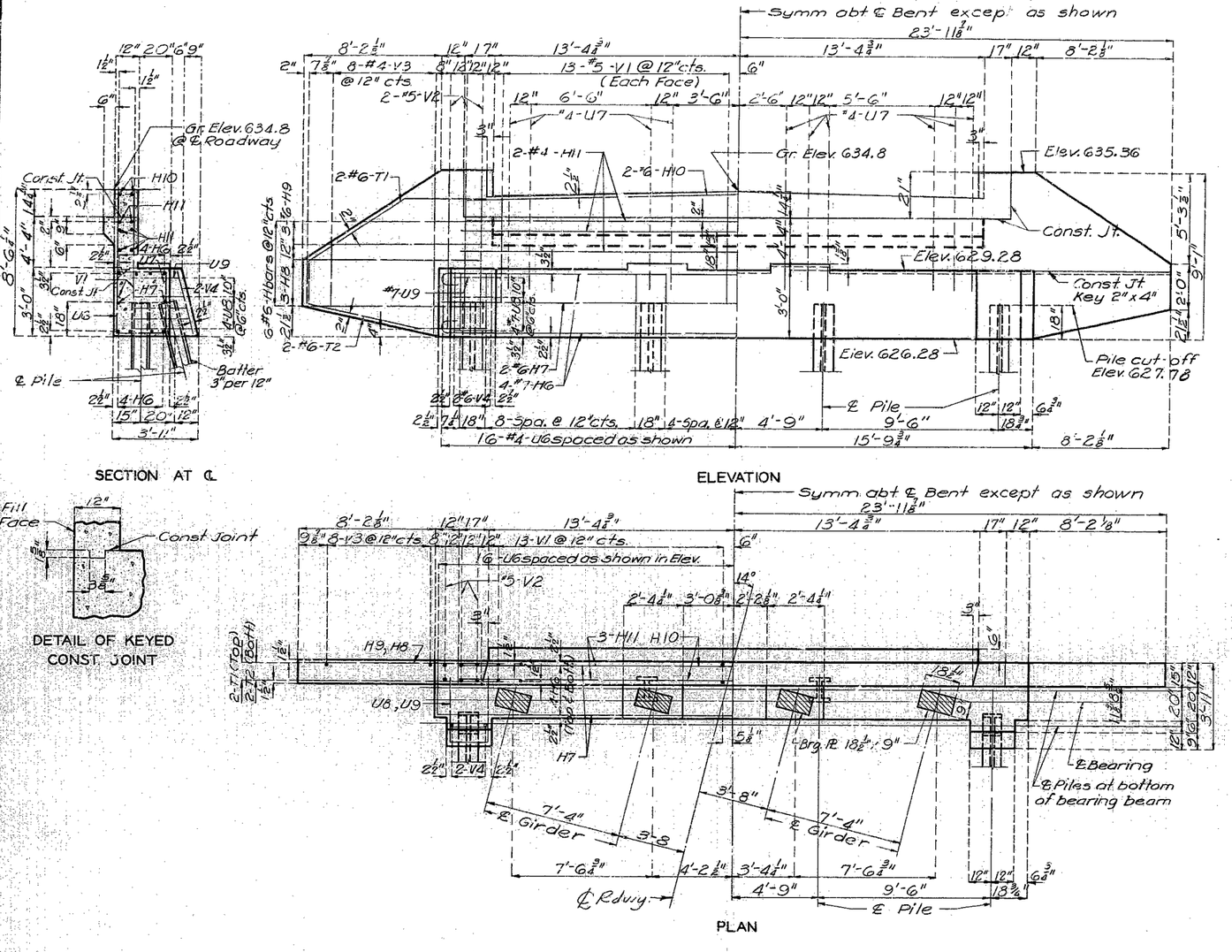
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 1 of 9.

5216

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	9	



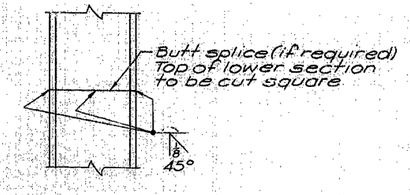
SECTION AT ℄

DETAIL OF KEYED CONST. JOINT

ELEVATION

PLAN

DETAILS OF END BENT NO. 1



DETAIL OF STEEL PILE SPLICE

Note: Fill at end bent No. 1 shall not be carried above bottom of beam and wings until adjacent superstructure span is in place.

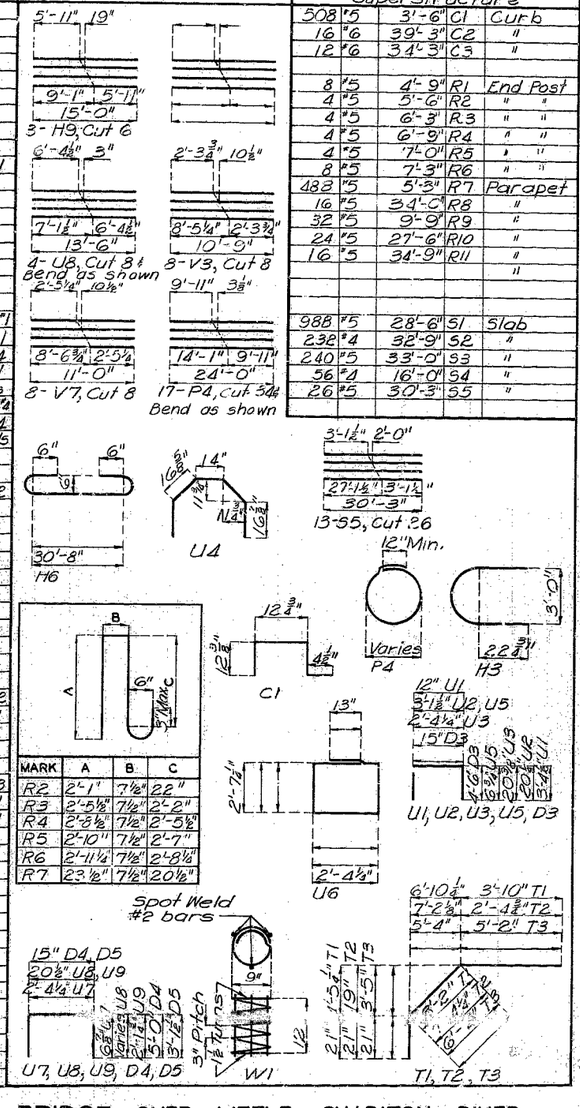
Top of backwall and expansion device for End Bent No. 1 to conform to crown of roadway slab.

Backwall above upper construction joint shall not be poured until the structural steel of the expansion device has been installed and slab has been poured in adjacent span.

COMPLETE BILL OF REINFORCING STEEL

NO.	SIZE	LENGTH	MARK	LOCATION
		End Bents No. 1 & 4		
16	#7	33'-3"	H6	Beam
4	#6	31'-3"	H7	"
12	#6	10'-0"	H8	Wing
6	#6	15'-0"	H9	"
4	#6	29'-6"	H10	Backwall
6	#4	29'-9"	H11	" Bt.#1
4	#4	29'-9"	H11	" Bt.#4
4	#6	13'-9"	T1	Wing Bt.#1
8	#6	11'-6"	T2	Wing
4	#6	13'-3"	T3	" Bt. #4
62	#4	11'-0"	U6	Beam
20	#4	3'-6"	U7	"
8	#7	13'-6"	U8	Buttress
4	#7	6'-0"	U9	"
52	#5	6'-9"	V1	Backwall Bt.#1
12	#5	8'-9"	V2	Wing Bt.#1
2	#5	8'-9"	V2	" " #4
8	#4	10'-9"	V3	" " #1
8	#6	2'-9"	V4	Buttress
58	#5	5'-9"	V5	Backwall Bt.#4
8	#4	11'-0"	V7	Wing Bt.#4
16	#2	19'-3"	W1	A.B. Wells
		Int. Piers No. 2 & 3		
32	#9	4'-6"	D1	Ftg. Pier #2
24	#11	6'-6"	D2	" " #3
8	#6	10'-3"	D3	" " #2
8	#6	11'-3"	D4	" " #3
16	#6	7'-6"	D5	Footing
4	#6	25'-9"	H1	Cap
8	#7	22'-9"	H2	"
8	#7	8'-6"	H3	"
56	#4	22'-6"	H4	"
6	#8	24'-0"	H5	Web
32	#9	10'-0"	P1	Shaft Pier #2
16	#8	3'-0"	P2	" " "
16	#8	28'-9"	P3	" " "
4	#4	24'-0"	P4	Shaft
40	#4	27'-3"	P5	Web
24	#11	10'-6"	P6	Shaft Pier #3
12	#10	10'-0"	P7	" " "
12	#10	29'-3"	P8	" " "
44	#5	7'-9"	U1	Web
46	#6	6'-6"	U2	Cap
4	#6	5'-9"	U3	"
42	#5	6'-9"	U4	"
16	#4	4'-3"	U5	"
16	#2	19'-9"	W1	A.B. Wells

BENDING SKETCHES & CUTTING DIAGRAMS



NO.	SIZE	LENGTH	MARK	LOCATION
		Superstructure		
508	#5	3'-6"	C1	Curb
16	#6	39'-3"	C2	"
12	#6	34'-3"	C3	"
8	#5	4'-9"	R1	End Post
4	#5	5'-6"	R2	" "
4	#5	6'-3"	R3	" "
4	#5	6'-9"	R4	" "
4	#5	7'-0"	R5	" "
8	#5	7'-3"	R6	" "
488	#5	5'-3"	R7	Parapet
16	#5	34'-6"	R8	"
32	#5	9'-9"	R9	"
24	#5	27'-6"	R10	"
16	#5	34'-9"	R11	"
				"
988	#5	28'-6"	S1	Slab
232	#4	32'-9"	S2	"
240	#5	33'-0"	S3	"
56	#4	16'-0"	S4	"
26	#5	30'-3"	S5	"

BRIDGE OVER LITTLE CHARITON RIVER

STATE ROAD FROM ROUTE 5 WESTERLY

ABOUT 3.5 MILES N. W. OF GLASGOW

PROJECT NO. S-1014 (4) SKK **STA.** 647 + 11

CHARITON **COUNTY**

A-1889

527

No.	Revised	July 1965
8.12		

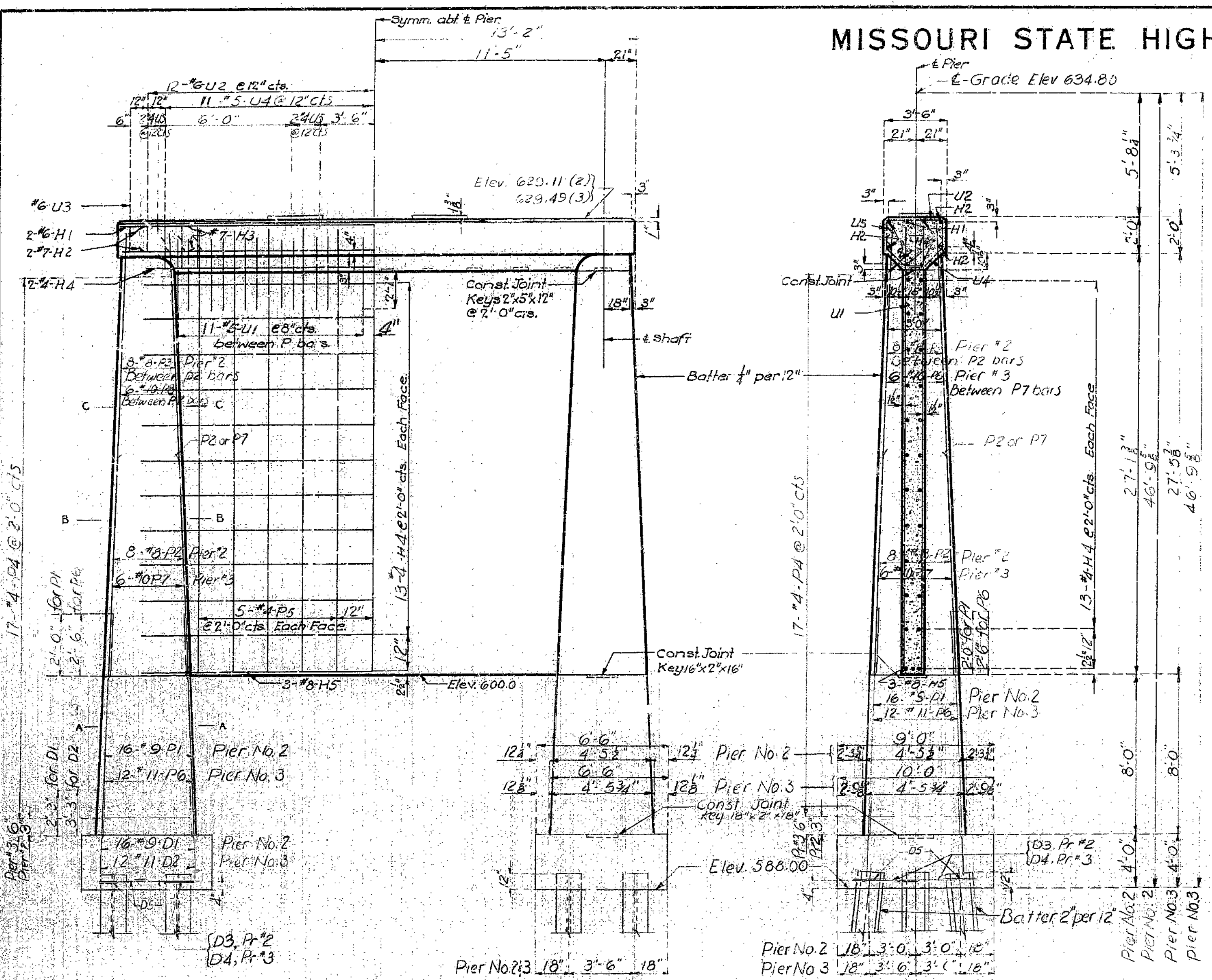
DETAILED MARCH 1966 BY BRANSTETTER

CHECKED Apr. 1966 BY Rhodes

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

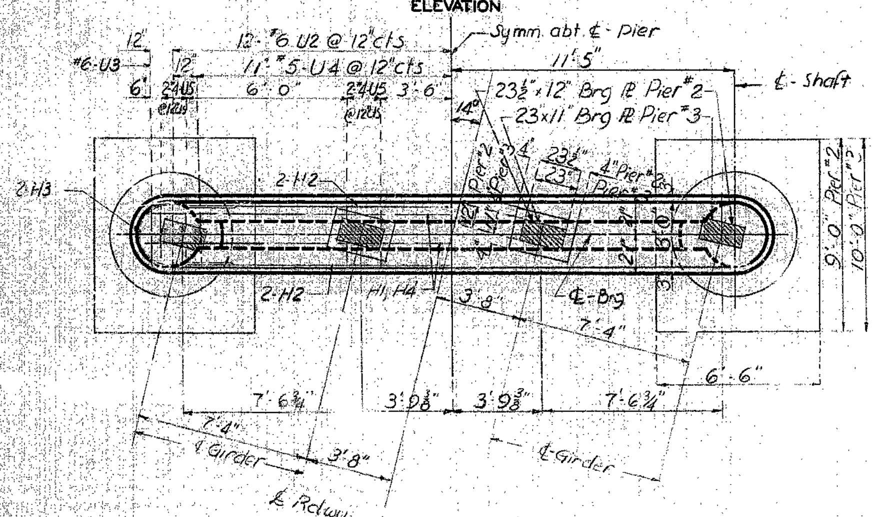
MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	10	

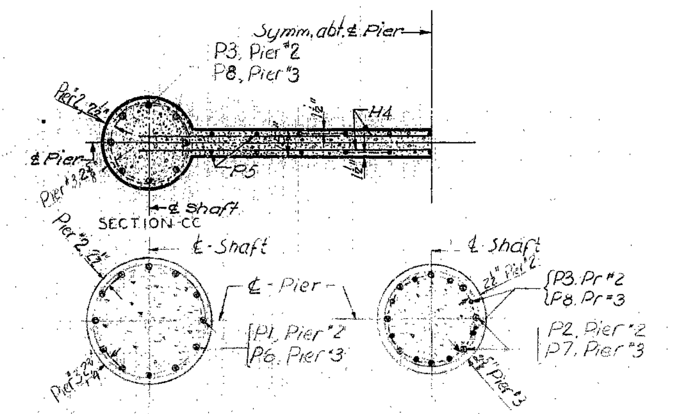


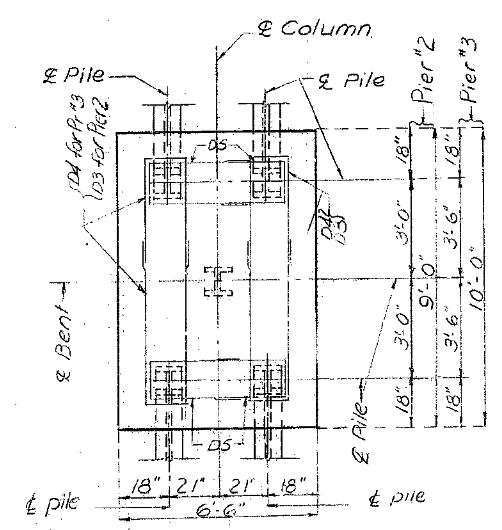
ELEVATION

SECTION AT ℄



PLAN





PLAN OF FOOTING
SHOWING REINFORCEMENT AND PILES

BRIDGE OVER LITTLE CHARITON RIVER

STATE ROAD FROM ROUTE 5 WESTERLY

ABOUT 3.5 MILES N. W. OF GLASGOW

PROJECT NO. S-1014(4) SKK **STA.** 647 + 11

CHARITON COUNTY

DETAILS OF PIER NO. 2 & 3

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

DETAILED March 1966 BY Giriyappa

CHECKED Apr. 1966 BY Rhodes

Sheet No. 3 of 9.

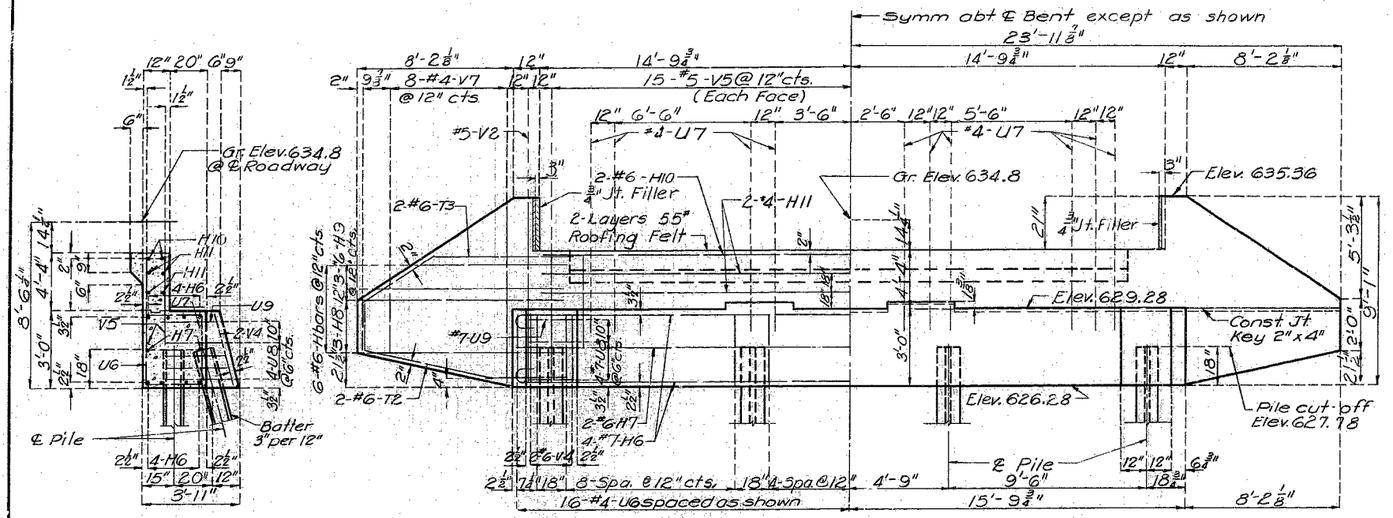
A-1889

528

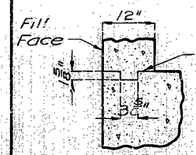
No. 201 Mar. 1964 Revised

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	11	

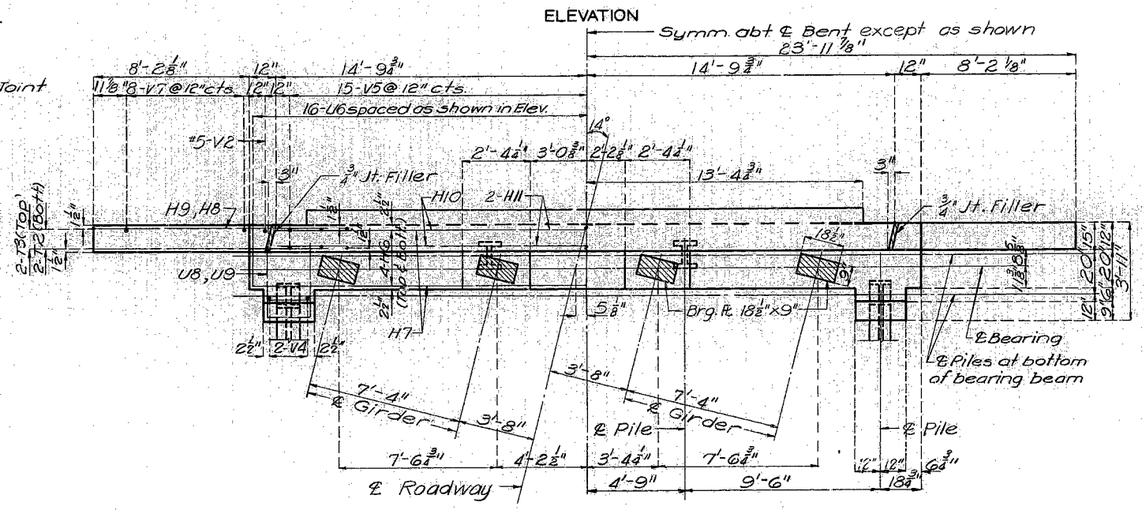


SECTION AT ℄



DETAIL OF KEYED CONST. JOINT

ELEVATION

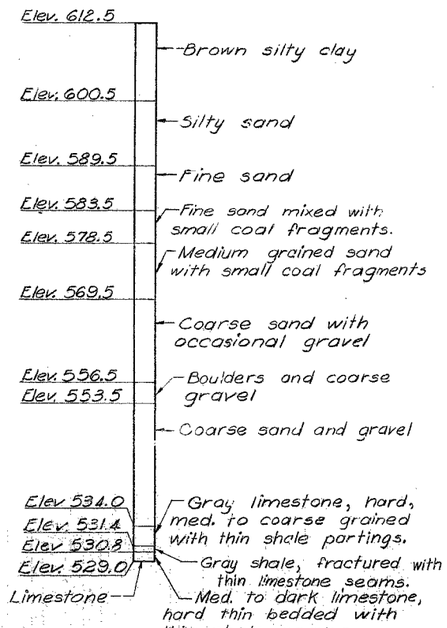


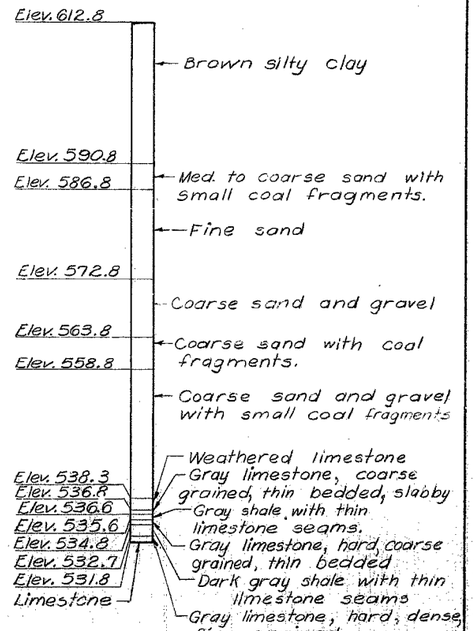
PLAN

DETAILS OF END BENT NO. 4

DETAIL OF STEEL PILE SPLICE

Note: Fill at end bent No. 4 shall not be carried above bottom of beam and wings until adjacent superstructure span is in place.





BORING DATA

Note: For location of borings see Sheet No. 1 of 9.

5229

No. 8	Revised	July 1965

DETAILED MARCH 1966 BY BRANSTETTER
CHECKED Apr. 1966 BY Rhodes

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

Sheet No. 4 of 9.

BRIDGE OVER LITTLE CHARITON RIVER

STATE ROAD FROM ROUTE 5 WESTERLY

ABOUT 3.5 MILES N.W. OF GLASGOW

PROJECT NO. S-1014(4) SKK **STA.** 647 + 11

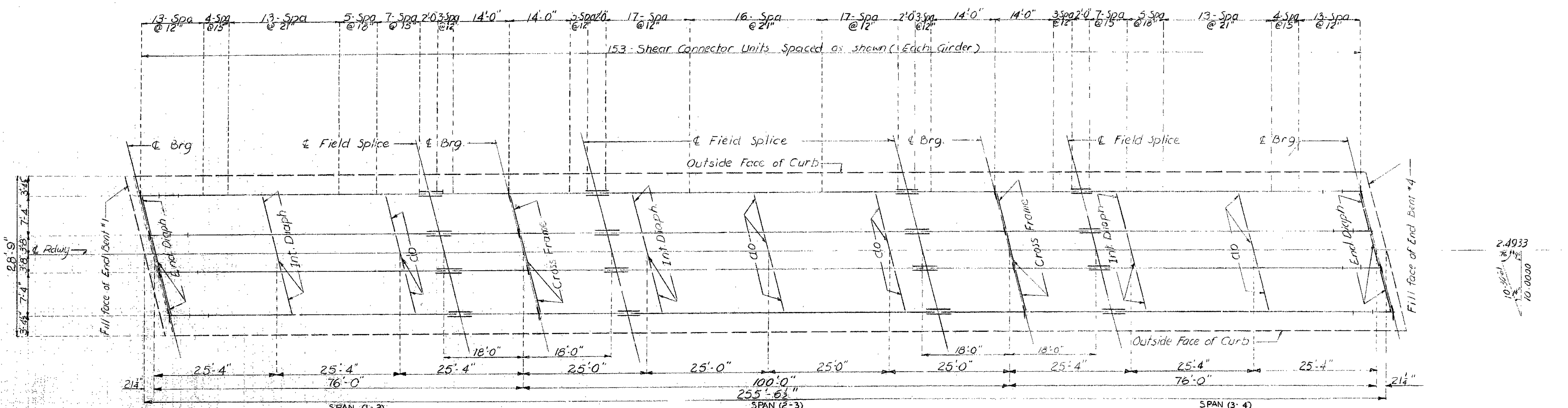
CHARITON COUNTY

A-1889

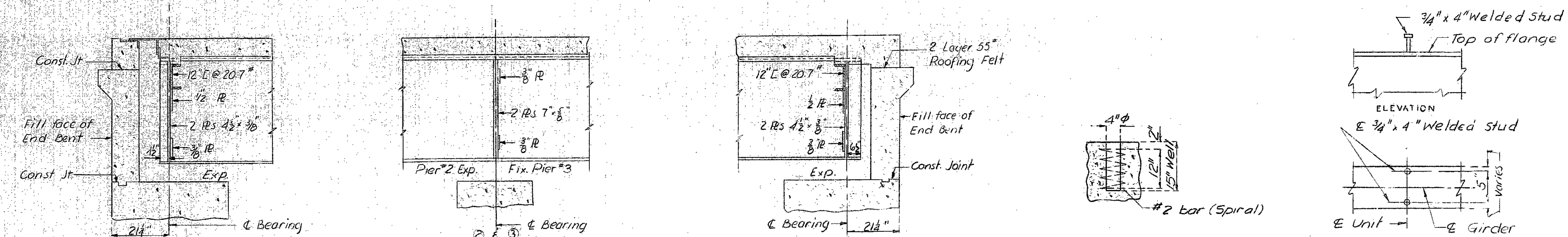
MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	12	

530



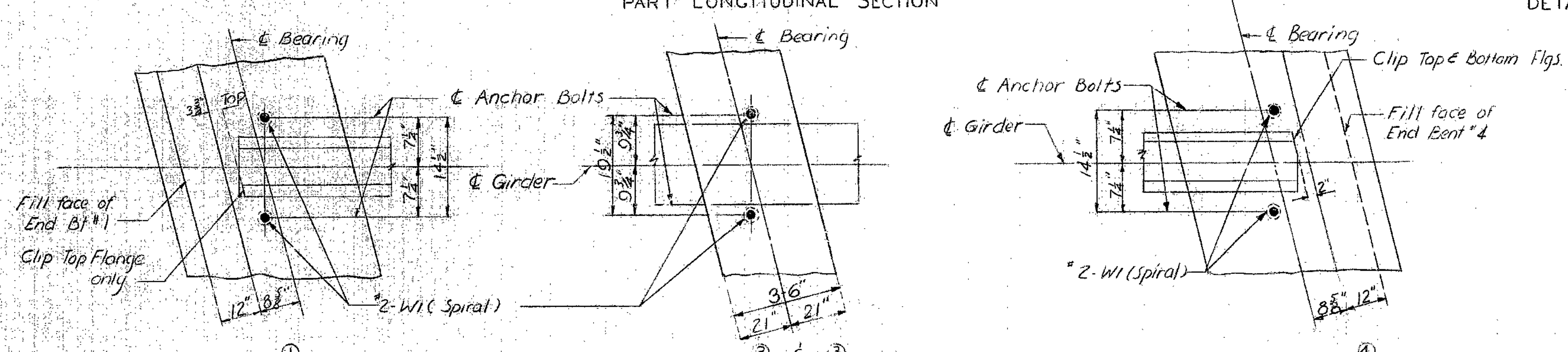
PLAN OF STRUCTURAL STEEL



PART LONGITUDINAL SECTION

DETAIL OF ANCHOR BOLT WELLS

DETAILS OF SHEAR CONNECTOR



PART ANCHOR BOLT PLAN

BRIDGE OVER LITTLE CHARITON RIVER

STATE ROAD FROM ROUTE 5 WESTERLY

ABOUT 3.5 MILES N.W. OF GLASGOW

PROJECT NO. S-1014 (4) SKK STA. 647 +11

CHARITON COUNTY

DETAILED MARCH 1966 BY GIRIYAPPA

CHECKED Apr. 1966 BY Rhodes

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

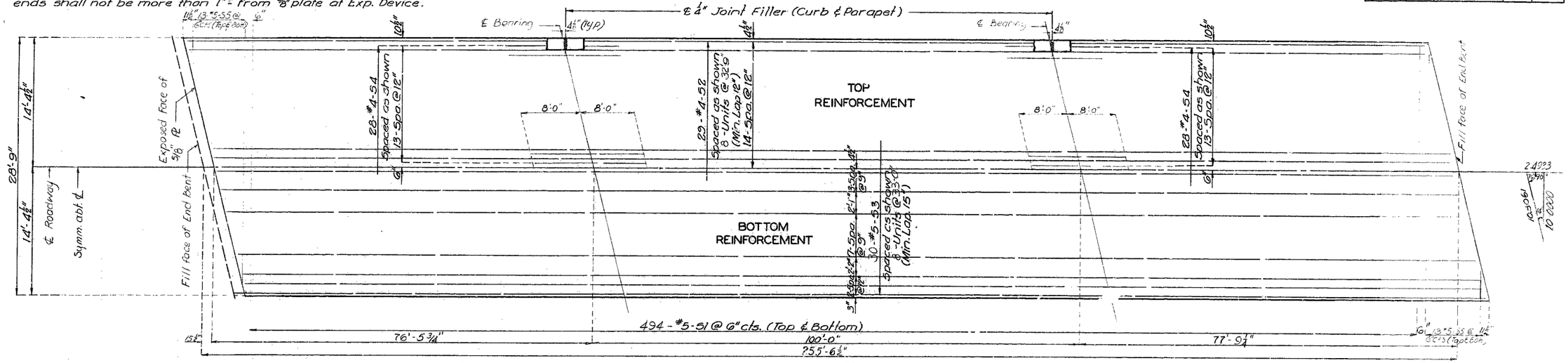
Sheet No. 5 of 9.

A-1889

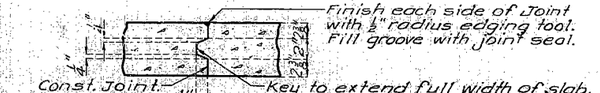
MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	13	

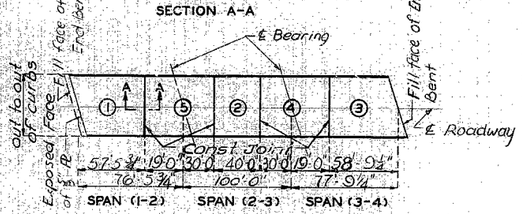
Note: Longitudinal Reinforcing steel shall be placed so that ends shall not be more than 1" ± from ⅜" plate at Exp. Device.



PLAN OF SLAB SHOWING REINFORCEMENT



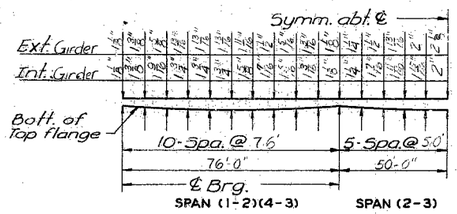
SECTION A-A



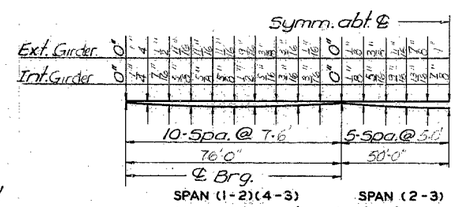
	Sequence of Pours				
	Direction				
Basic Sequence	1	2	3	4	5
	Either Direction				
Alternate "A" Pours	1		5+2		4+3
	End to 5		1 to 4		2 to End
Alternate "B" Pours	1+5+2			4+3	
	End to 4			2 to End	
Alternate "C" Pours	1+5+2+4+3				
	End to End				

Note: The contractor shall observe the basic pouring sequence and shall pour and satisfactorily finish the slab pours at a rate of not less than 15 cubic yards per hour. ~~However he may use one of the longer alternate pours if he elects to use an approved oscillating screed type, self propelled mechanical finishing machine and can demonstrate to the engineer that he can pour and satisfactorily finish the slab pours at a rate of not less than 30 cubic yards per hour.~~ Finishing machine loads will not be permitted on concrete less than 48 hours old.

SLAB POURING SEQUENCE

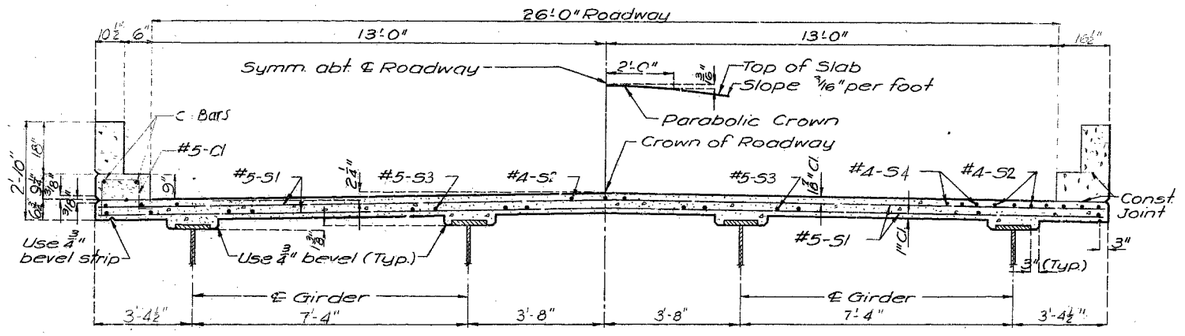


THEORETICAL SLAB HAUNCHING DIAGRAM



11% Structural Steel

DEAD LOAD DEFLECTION



HALF SECTION NEAR ℄ SPAN

HALF SECTION NEAR INT. PIERS 2&3

Note: For details of curb and handrail not shown see sheet No. 9 of 9.

BRIDGE OVER LITTLE CHARITON RIVER

STATE ROAD FROM ROUTE 5 WESTERLY

ABOUT 3.5 MILES N. W. OF GLASCOW

PROJECT NO. S-1014(4) SKK **STA.** 647 + 11

CHARITON COUNTY

531

DETAILED MARCH 1966 BY GIRIYAPPA

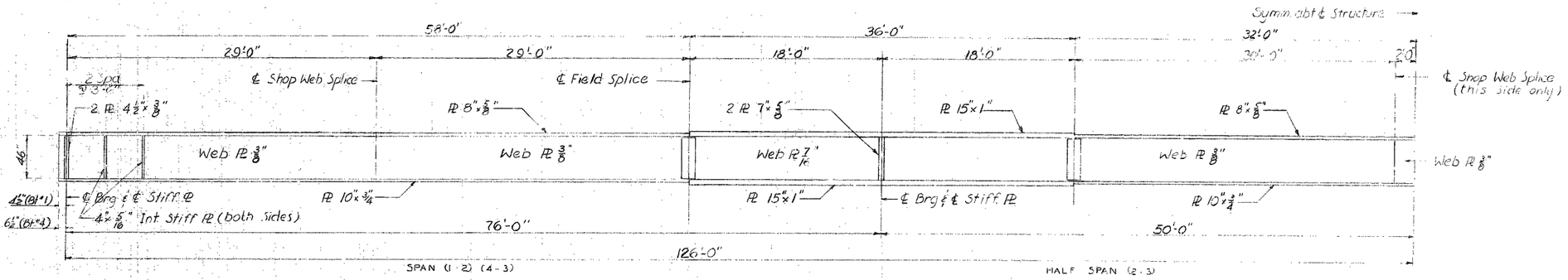
CHECKED Apr. 1966 BY Rhodes

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

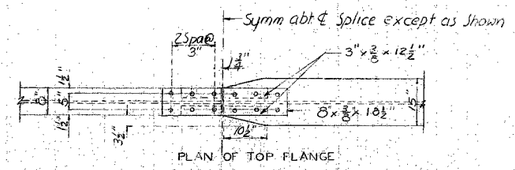
A-1889

MISSOURI STATE HIGHWAY DEPARTMENT

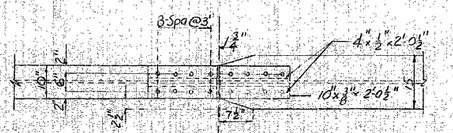
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	14	



HALF ELEVATION OF GIRDERS

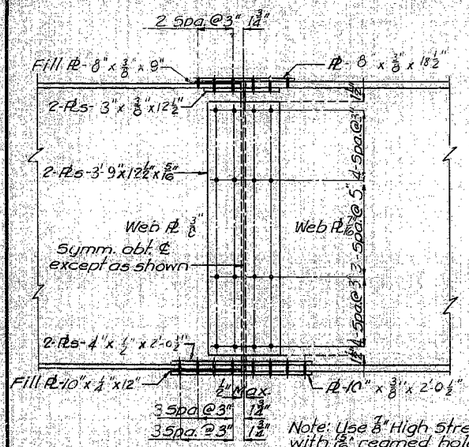


PLAN OF TOP FLANGE

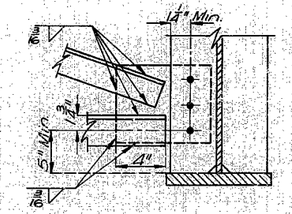


PLAN OF BOTT. FLANGE

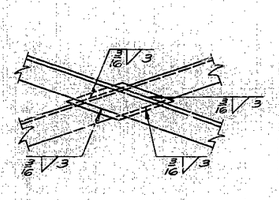
PLAN OF FLANGE



DETAILS OF FIELD SPLICE



DETAIL "A"



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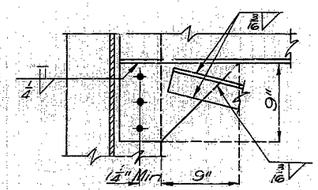
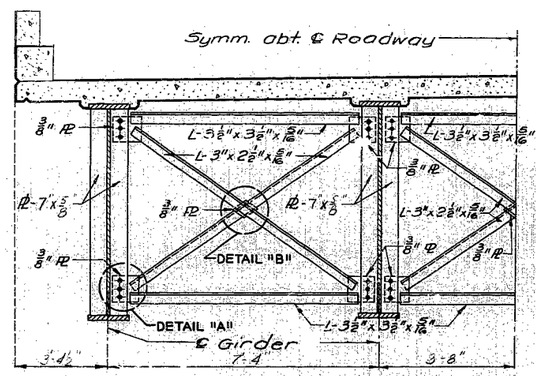
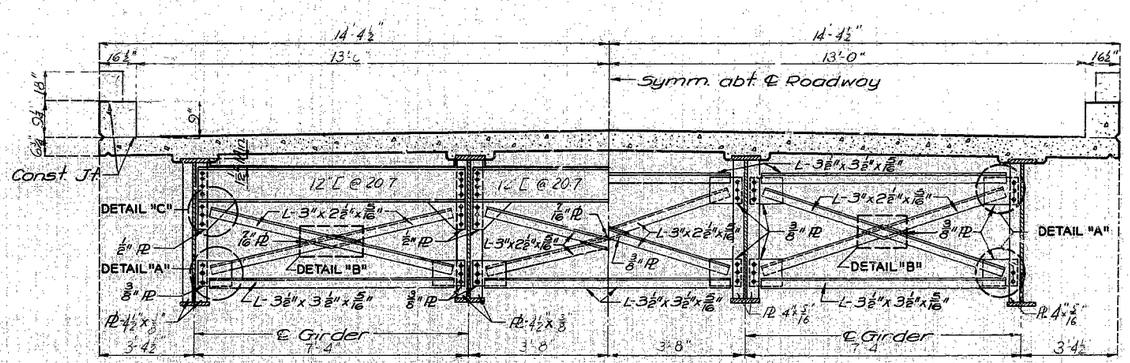


DETAIL "C"



HALF SECTION NEAR CROSS FRAMES



HALF SECTION SHOWING END DIAPHRAGMS

HALF SECTION SHOWING INT. DIAPHRAGMS

532

DETAILED MARCH 1966 BY G.R.H.
CHECKED Apr. 1966 BY Rhodes

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

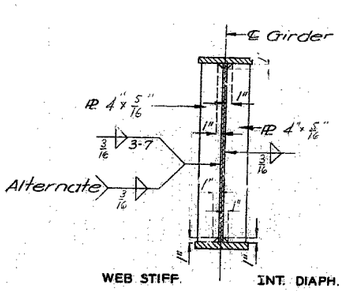
Sheet No. 7 of 9.

BRIDGE OVER LITTLE CHARITON RIVER
STATE ROAD FROM ROUTE 5 WESTERLY
ABOUT 3.5 MILES N.W. OF GLASGOW
PROJECT NO. S-1014(4) SKK **STA.** 647+11
CHARITON **COUNTY**

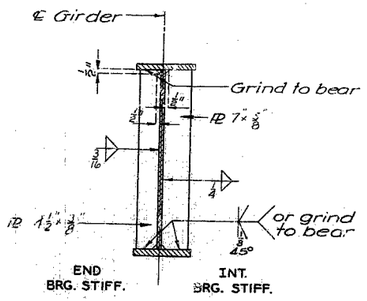
A-1889

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	15	

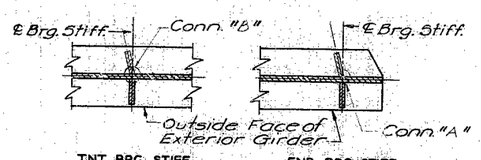


WEB STIFF. INT. DIAPH.

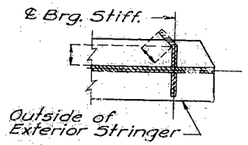


END BRG. STIFF. INT. BRG. STIFF.

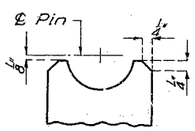
Note: Intermediate web stiffener plates shall be fitted to form a close joint (tight) top and bottom.



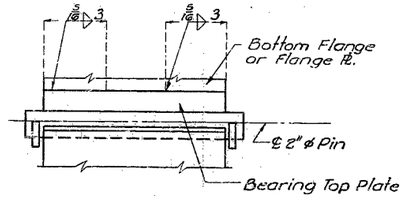
INT. BRG. STIFF. END BRG. STIFF.



TYPICAL LOCATION DETAILS



END VIEW OF WEB EXPANSION BEARING



NOTES: TYPE "D" BEARINGS

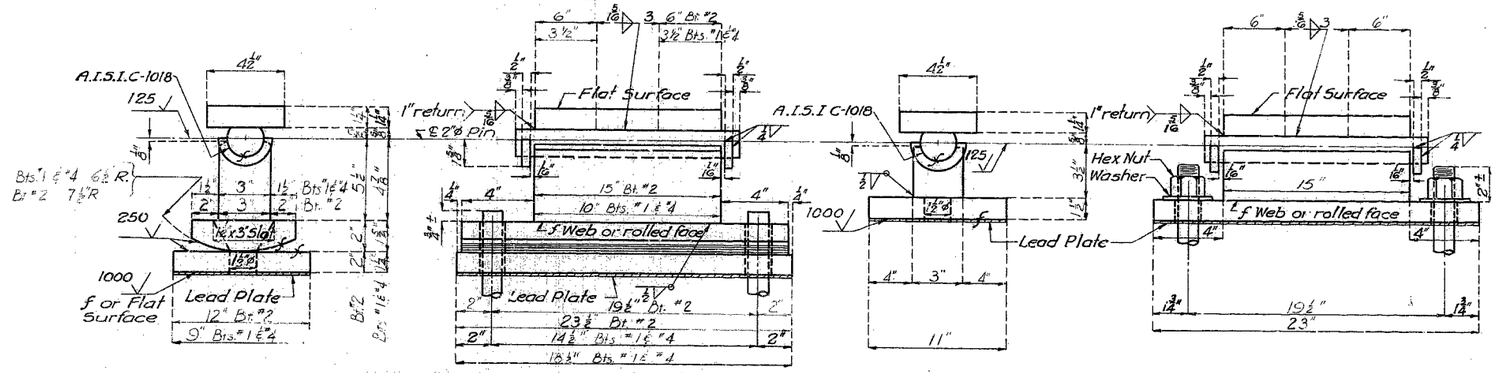
Lead plates under bearings shall be approximately ¼" thickness and weigh 8#/sq. ft. Cost of lead plates shall be included in price bid for other items. "Estimated weight" does not include weight of anchor bolts.

Rockers and pedestals shall be machined after welding.

Where flat surface is indicated, tolerance shall be .003 in/in in any direction.

Anchor Bolts for Type "D" Bearings shall be 1¼" ø swedged bolts and shall extend 12" into concrete, with hexagon nuts and plain washers for Fixed Bearings, no nuts for Expansion Bearings.

WELDING DETAILS

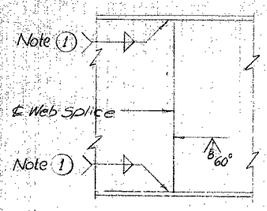


EXPANSION FIXED

Required: 8 @ Bts 1℄4, 4 @ Bt 2

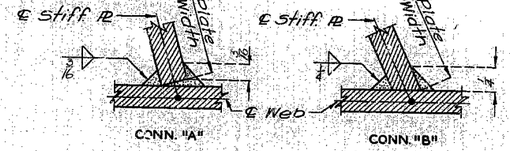
Required: 4 @ Bt 3

TYPE "D" BEARINGS
(Estimated Weight 3352 #)



SHOP WEB SPLICE

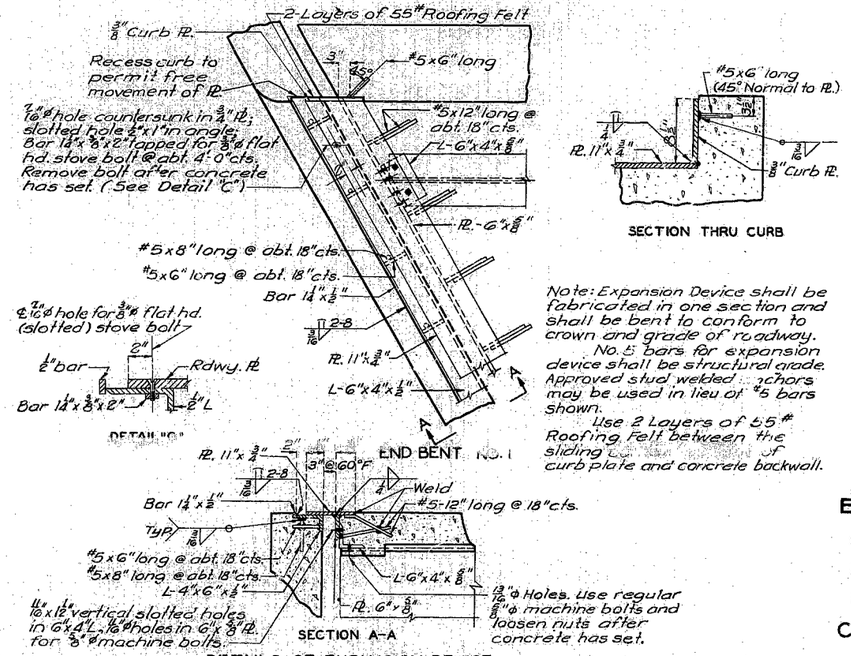
Note (1) Fillet weld size for flange to web welds when tandem fully automatic submerged arc process is used shall be 5/16" for material to ⅝" thick, ¼" for material over ⅝" to ⅞" thick, and in accordance with AWS recommended weld sizes for material over ⅞" thick.



CONN. "A" CONN. "B"

FLANGE TO WEB	
Flange Thickness	Min. Size Fillet Weld
Over ¼" to ¾"	¼
Over ¾ to 1½"	5/16

WELDING DETAILS



SECTION THRU CURB

Note: Expansion Device shall be fabricated in one section and shall be bent to conform to crown and grade of roadway.

No. 5 bars for expansion device shall be structural grade. Approved stud welded anchors may be used in lieu of #5 bars shown.

Use 2 Layers of 55# Roofing Felt between the sliding surface of curb plate and concrete backwall.

DETAILS OF EXPANSION DEVICE

BRIDGE OVER LITTLE CHARITON RIVER

STATE ROAD FROM ROUTE 5 WESTERLY

ABOUT 3.5 MILES N. W. OF GLASGOW

PROJECT NO. S-1014(4) SKK **STA.** 647 + 11

CHARITON COUNTY

A-1889

533

DETAILED MARCH 1966 BY GIRIYAPPA

CHECKED Apr. 1966 BY Rhodes

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

Sheet No. 8 of 9.

GENERAL NOTES:

All handrail posts shall be set normal to grade.

Aluminum tube handrail shall be bent to conform to vertical and horizontal alignment of parapet.

Aluminum washer shims between top of parapet and post base may be used for adjusting handrail alignment. Maximum thickness of shims to be ⅛". Where more tilting of post is required for proper alignment, concrete bearing areas shall be ground down.

All parts of handrail, except anchor bolts, nuts, washers, and set screws are to be of aluminum material.

The contract unit price per linear foot of "Bridge Rail" shall include furnishing and erecting the handrail complete with anchor bolts, shims and Insulating compound.

All fillets ¼" except as noted.

All drafts 3° except as noted.

Pipe rail ~~to be~~ fabricated in two or three panel lengths ~~unless otherwise approved~~.

Omit set screw on side near filled joint in parapet at all expansion posts.

Top of curbs and parapets to be built parallel to grade with curb and parapet joints (except at end posts) normal to grade.

All exposed edges of end posts shall have ½" bevel. All exposed edges of curbs and parapets shall have ½" radius or ⅜" bevel.

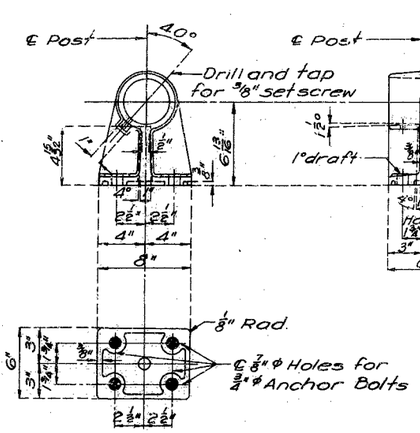
If the contractor desires, he ~~may~~ use drive fit cast aluminum end caps in lieu of welded aluminum closure plates.

Integrally cast test coupons and a coat of clear lacquer specified in Std. Spec. 56.2.4 and 56.3.5 respectively will not be required for these rail posts.

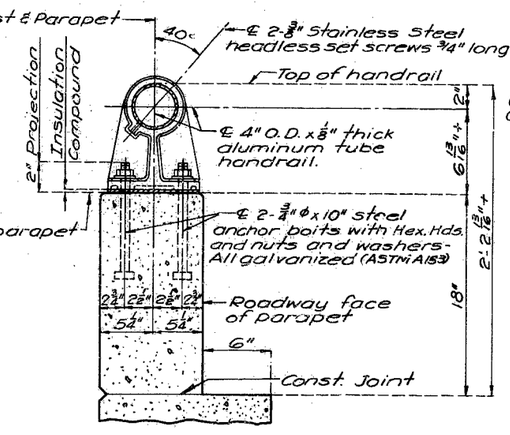
Concrete end posts to be vertical.

MISSOURI STATE HIGHWAY DEPARTMENT

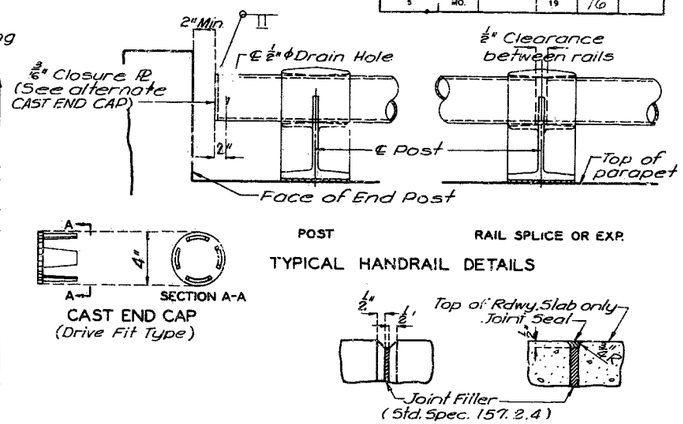
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	16	



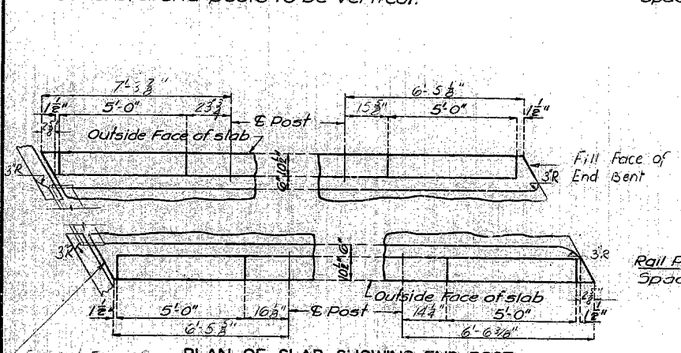
POST DETAILS



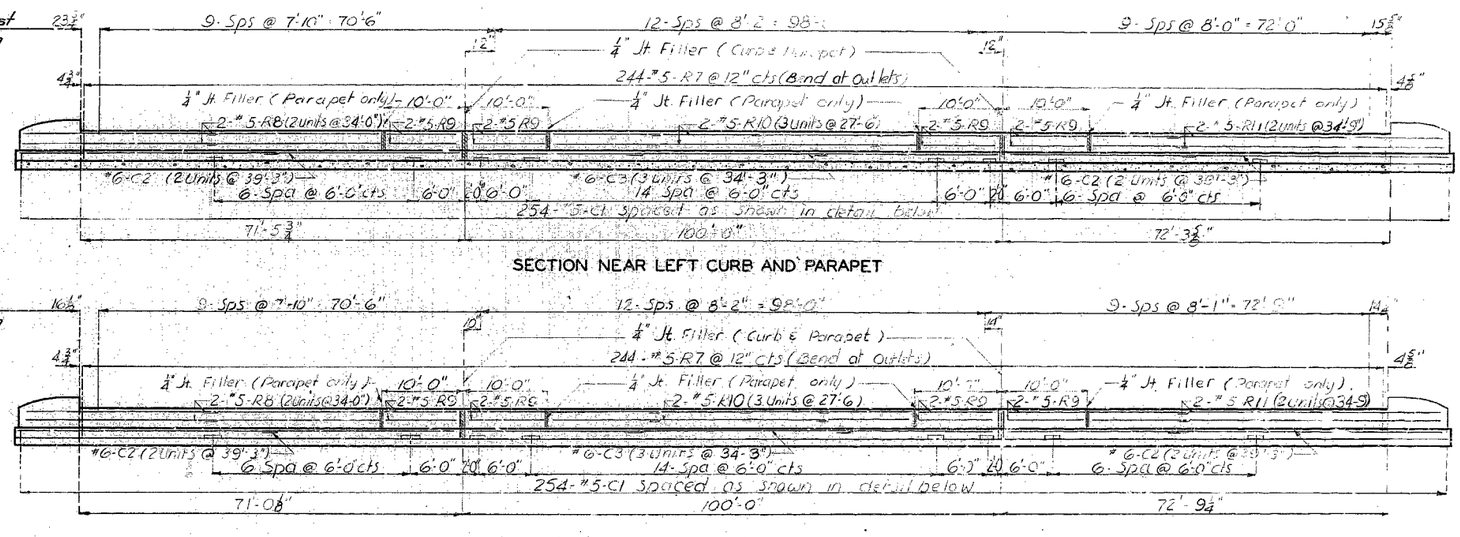
SECTION THRU HANDRAIL



SINGLE TUBE ALUMINUM RAILING

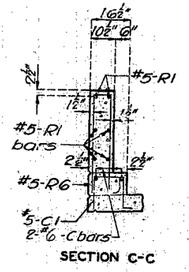


PLAN OF SLAB SHOWING END POST

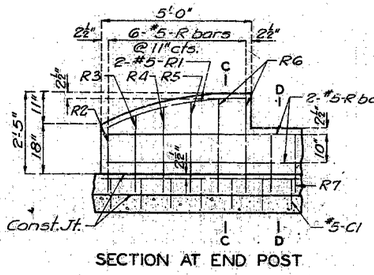


SECTION NEAR LEFT CURB AND PARAPET

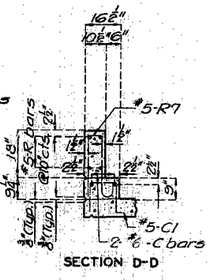
ELEVATION OF RIGHT CURB AND PARAPET



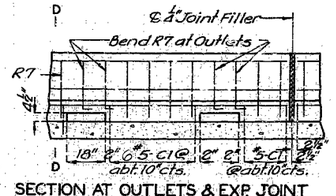
SECTION C-C



SECTION AT END POST



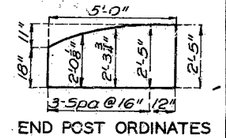
SECTION D-D



SECTION AT OUTLETS & EXP. JOINT

Note: Where there are no outlets use #5-C1 @ abt. 12" cts.

Note: For horizontal curb and parapet bars use minimum lap of 19" for #5 and 18" for #6.



END POST ORDINATES

BRIDGE OVER LITTLE CHARITON RIVER

STATE ROAD FROM ROUTE 5 WESTERLY

ABOUT 3.5 MILES N. W. OF GLASGOW

PROJECT NO. S-1014(4) SKK STA. 647 + 11

CHARITON COUNTY

A-1889

534

No.	Date	Revised
1.5.2	Nov. 1965	Oct. 1969

DETAILED March 1966 BY Giriyappa

CHECKED Apr. 1966 BY Rhodes

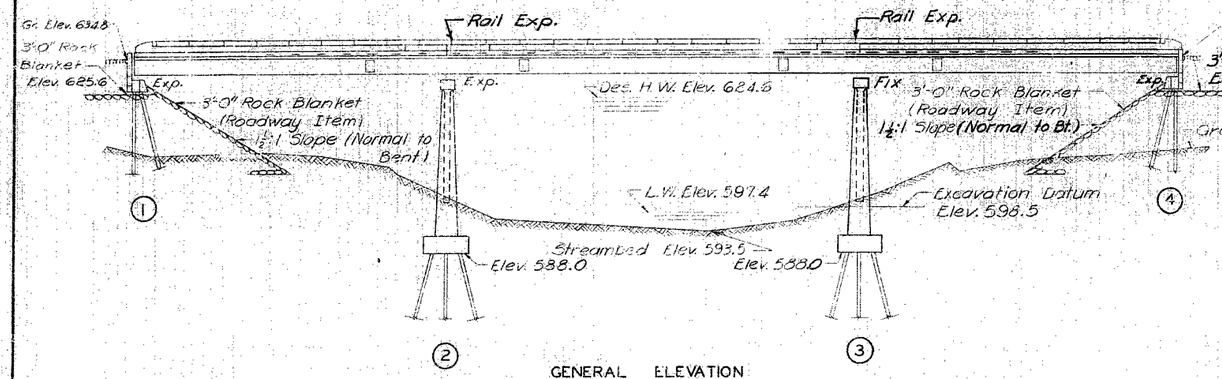
Note: This drawing is not to scale. Follow dimensions.

MISSOURI STATE HIGHWAY DEPARTMENT

DIST.	ROAD SYSTEM	STATE JOB NO.	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.			19	8	

FINAL PLANS

(76'-100'-76') Cont. Composite Welded I Girder Spans

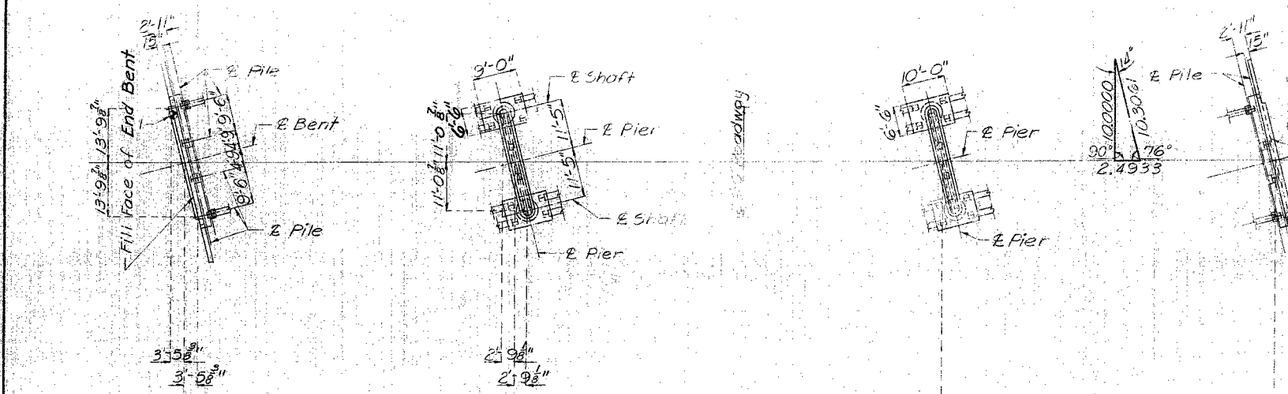


GENERAL ELEVATION

Note: Compacted roadway fill (full roadway width) was ± up to elevation of bottom of concrete beam in front of and not less than 25"-0" in back of End Bents before steel piles were driven for End Bents No. 1 & 4.

PILE DATA				
Bent or Pier No.	1	2	3	4
Pile Type and Size	10BP42	10BP42	10BP42	10BP42
Number each Bent of Pier	4	10	10	4
Length Ft.	100	60	60	100
Design Bearing Tons	49	56	56	49
* Hammer Energy required Ft. Lbs.	12,600	13,200	13,200	12,600

* Minimum energy requirement of hammer based on plan length and design bearing value of piles. Increase by the factor (W+w)/2W when the weight of the ram (W) is less than the weight of the pile (w).
All pile were driven to practical refusal.



Note: for Boring Data see sheet No 4 of 9.
"⊕" Indicates location of boring.

GENERAL NOTES:

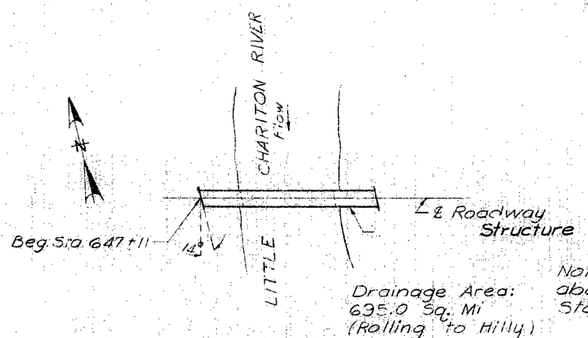
Design Specifications: A.A.S.H.O - 1961

Design Loading:
H15-44 15#/sq. ft. Future Wearing Surface
Earth 120# Equivalent Fluid Pressure 30#

Design Unit Stresses:
Class B Concrete (substructure) f_c = 1,200 psi
Class B1 Concrete (superstructure) f_c = 1,600 psi
Reinforcing Steel: f_s = 20,000 psi
Structural Steel (A.S.T.M. A36-62T) f_s = 20,000 psi
Steel Pile (ASTM A36-62T) f_b = 9000 psi

Surface Seal:
Superstructure deck was surface sealed.

Fabricated Steel:
Field connections, High Strength Bolts ¾"ϕ, holes 13/16"ϕ except as noted.
Details of welded joints shown are for manual arc welding except as noted.



Drainage Area: 635.0 Sq. Mi (Rolling to Hilly)

Note: Existing structure about 600'± Rt. of Sta. 652± was removed)

LOCATION SKETCH

FINAL QUANTITIES

ITEM		SUBSTR.	SUPERSTR.	TOTAL
Class A Excavation for Structures	Cu.yd.	400		400
Class C Excavation for Structures	Cu.yd.	1845		1845
Steel Piles in Place (10")	Lin.ft.	1943		1943
Steel Pile Cut-offs (10")	Lin.ft.	121		121
Class B Concrete	Cu.yd.	1953		1953
Class B1 Concrete	Cu.yd.		1998	1998
Reinforcing Steel	Lbs.	16230	52580	68810
Fabricated Structural Carbon Steel	Lbs.		142320	142320
Bridge Rail (Single tube type)	Lin.Ft.		487	487

Note: No payment for excavation was allowed at End Bents No. 1 & 4.

FINISHED

B.M. Elev. 635.34 ⊠ on top Wing Wall 15' Lt. Sta. 647+11

BRIDGE OVER LITTLE CHARITON RIVER

STATE ROAD FROM ROUTE 5 WESTERLY
ABOUT 3.5 MILES N.W. OF GLASGOW
PROJECT NO. S-1014(4) SKK STA. 647 + 11

CHARITON COUNTY

FINISHED

SUBMITTED BY L. E. Jenkins BRIDGE ENGINEER DATE 5/25/66

APPROVED BY [illegible] CHIEF ENGINEER DATE 5/25/66

FINISHED

STD. 54.00
A-1889

DESIGNED MARCH 1966 BY GIRIYAPPA
DETAILED MARCH 1966 BY BRAINSTETTER
CHECKED April 1966 BY Rhodes

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

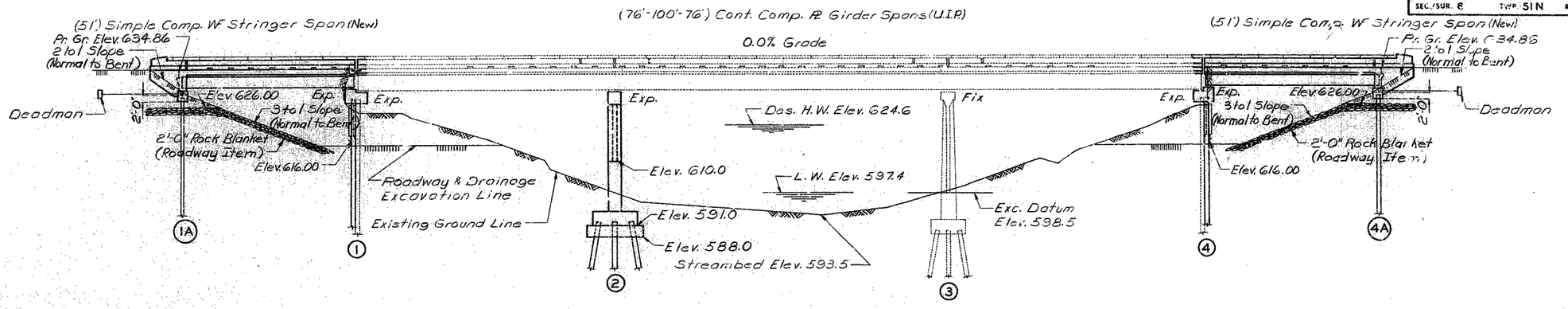
Sheet No. 1A of 1

FINAL PLANS

535

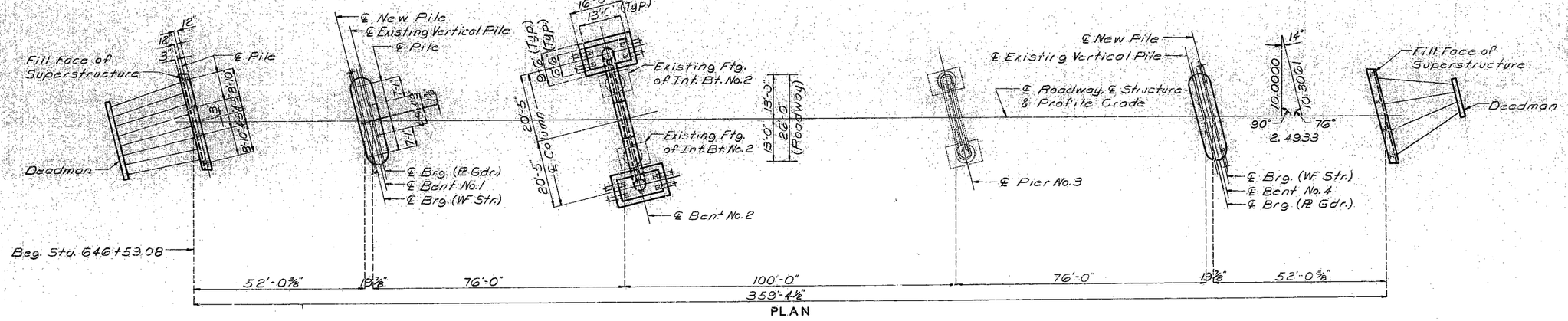
MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

STATE	PROJ. NO.	SHEET NO
MO		7
SEC./SUR. 6	TWP. 51N	RGE. 17W



GENERAL ELEVATION

Note: Remove existing concrete beam cap, backwall, wings and battered piles at bents No. 1 and 4 (See Special Provisions).
Existing intermediate bent No. 2 to be removed (See Special Provisions).
Seal course is designed for a water elevation of 607.0.



PLAN

Note: For General Notes, Estimated Quantities, Estimated Quantities For Alternate Slabs and Pile Data, see sheet No. 2.

B.M. Elev. 635.34 "D" on Top Wing Wall 15' Lt. Sta. 647+11

BRIDGE OVER LITTLE CHARITON RIVER

STATE ROAD FROM ROUTE 5 WESTERLY
ABOUT 3.5 MILES N.W. OF GLASCOW
PROJECT NO. BHO-021(11) STA. 646+59.08
JOB NO. 2-S-KK-315 RTE. KK
CHARITON COUNTY
DATE 6/18/86

STD.
STD. 706.35
A-1889R

DESIGNED May 1986
DETAILED May 1986
CHECKED May 1986

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

SEE FINAL PLANS

Sheet No. 1 of 15

STATE	PROJ. NO.	SHEET NO.
MO.		8

ESTIMATED QUANTITIES FOR ALTERNATE SLABS

TYPE OF SLAB	REINF. (LBS) EPOXY	REINF. (LBS) PLAIN	CONC. (CU. YD.)
Cast In Place Conventional Forms	9450	8520	102.3
Precast Panel Forms	9450	3720	82.1
Stay In Place Forms **	9450	8520	97.8 *

Note: The table of Estimated Quantities for Alternate Slabs represents the quantities used by the state in preparing the cost estimate for concrete slabs. Variations may be encountered in these estimated quantities but these variations cannot be used for an adjustment in the Contract Unit Price per square yard of Alternate Slab used.

See Special Provisions for alternate methods of forming slabs.

* Does not include concrete required to fill corrugation of S.I.P. forms.

** Does not include reinforcing bars used as bar supports.

Precast panel quantities based on skewed end panels.

ESTIMATED QUANTITIES

ITEM		SUBSTR.	SUPERSTR	TOTAL
Special Work	Lump Sum			1
Replacement of Exp. Device and Adj. Conc.	Lin. Ft.		54	54
Removal of Bents #1 & #4 (See Special Prov.)	Lump Sum			1
Removal of Bent #2 (See Special Prov.)	Lump Sum			1
Class 1 Excavation	Cu. Yd.	105		105
Class 2 Excavation	Cu. Yd.	118		118
Structural Steel Piles (10")	Lin. Ft.	2072		2072
Class B Concrete	Cu. Yd.	135.2		135.2
Seal Concrete	Cu. Yd.	33.8		33.8
Class B1 Concrete	Cu. Yd.		22.2	22.2
( ) Slab on Steel (See Special Provisions)	Sq. Yd.		337	337
Lam. Neop. Brg. Pads (Steel Structure)	Each		20	20
Preformed Compression Exp. Joint Seal (4")	Lin. Ft.		27	27
Elastomeric Expansion Joint Seal (3")	Lin. Ft.		27	27
Reinforcing Steel	Lb.	14,930		14,930
Reinforcing Steel (Epoxy Coated)	Lb.		4600	4600
Fabricated Structural Carbon Steel (Misc.)	Lb.		8120	8120
Deadman Anchorage Assembly	Each			2
Painting (Existing & New Steel)	Lump Sum			1

Note: All reinforcement in End Bents No.1A and No.4A (except pile cap beam) is included with Superstructure quantities.

All concrete between the upper and lower construction joints in End Bents No.1A and No.4A is included in the superstructure quantities for Slab on Steel, see Special Provisions.

GENERAL NOTES:

Design Specifications: A.A.S.H.T.O. -1983 and Interims 1984 and 1985 Load Factor Design.

Design Loading:
H15-44, 15#/sq. ft. Future Wearing Surface.
Earth 120#/cu. ft., Equivalent Fluid Pressure Bent No.1A 63#/cu. ft. and Bent No.4A 40#/cu ft.
Fatigue Stress - Case II

Design Unit Stresses:
Class B Concrete (Substructure) f'c = 3,000 psi.
Class B1 Concrete (Curb and Parapet) f'c = 4,000 psi.
Class B2 Concrete (Superstr. except Curb and Parapet) f'c = 4,000 psi.
Reinforcing Steel (Grade 60) fy = 60,000 psi.
New Structural Carbon Steel (A.S.T.M. A36) fy = 36,000 psi.
Structural Steel Pile fb = 9,000 psi.

Fabricated Steel:
Field connections, High Strength Bolts 3/4" ϕ, holes 13/16" ϕ except as noted.
Turn of Nut Method of tensioning high strength bolts will be permitted.

Reinforcing Steel:
Minimum clearance to reinforcing steel shall be 1½" unless otherwise shown.
All reinforcing bars in top of substructure beam or caps shall be spaced to clear anchor bolts for bearings by at least ½".
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.

Joint Filler:
All joint filler shall meet the requirement of Std Spec. 1057.2.4, except as noted.

Painting:
System B by contractor in accordance with Std. Spec. 712.12 and 712.13. Color of the final field coat for System B shall be aluminum. (See Special Provisions)
Areas to be encased in end bent concrete shall be painted one coat of System C primer and scratched or damaged surfaces are to be touched up in field before concrete is poured.

The prime coat of paint on bracing for intermediate bents may be applied in the shop or field. The weight of sway bracing is included in the Fabricated Structural Carbon Steel quantities.

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

Contractor shall verify all dimensions in field before ordering new material.

PILE DATA

BENT NO.			1A	1	2	4	4A
BEARING PILE	Pile Type and Size		HP10X42				
	Number		4	3	12	3	4
	Approximate Length	Ft.	100	100	56	100	100
	Design Bearing	Tons	36	51	53	51	36
	Hammer Energy Req'd	Ft. Lbs.	12,600	12,600	12,600	12,600	12,600

Note: Minimum energy requirement of hammer based on pile length and design bearing value of piles.

All pile shall be driven to practical refusal.

SEE FINAL PLANS

DETAILED May 1986
CHECKED May 1986

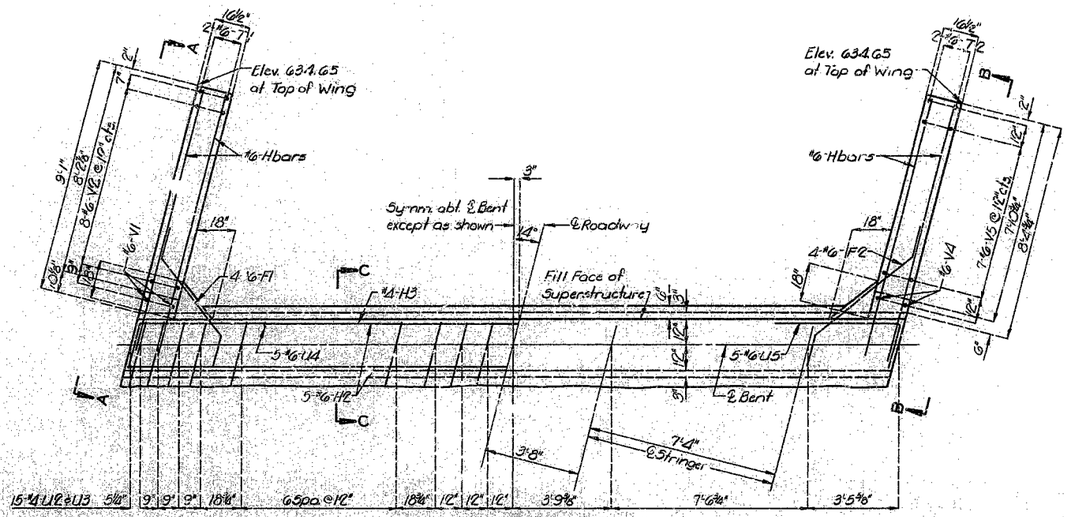
Note: This drawing is not to scale. Follow dimensions.

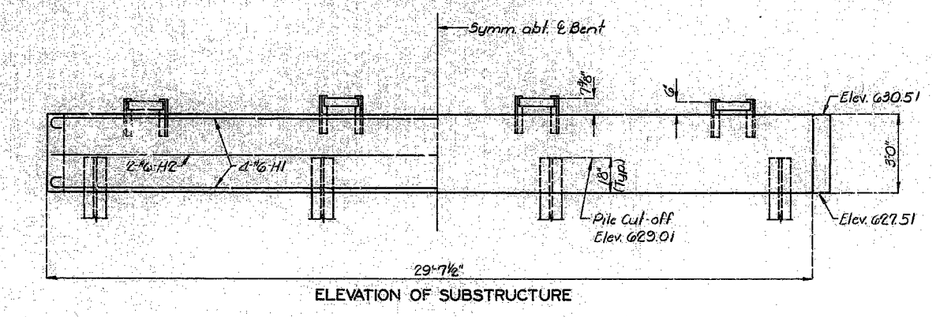
Sheet No. 2 of 15 .

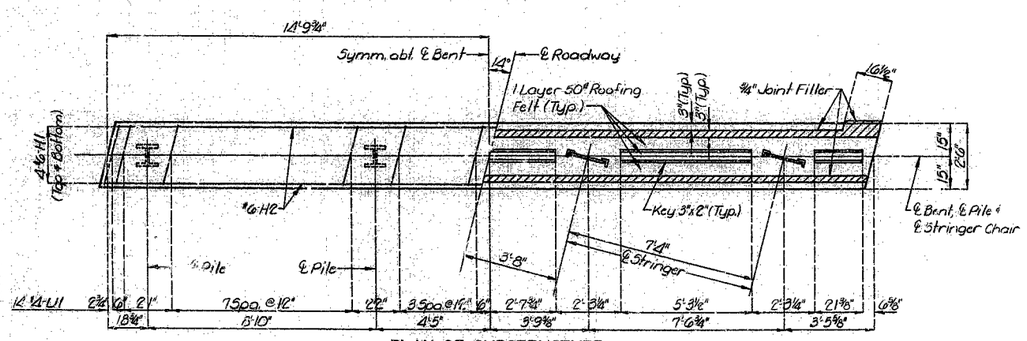
CHARITON COUNTY

A-1889R

STATE	PROJ. NO.	SHEET NO.
MO.		9

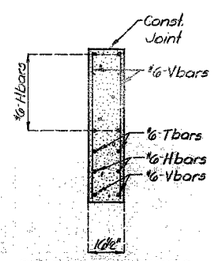


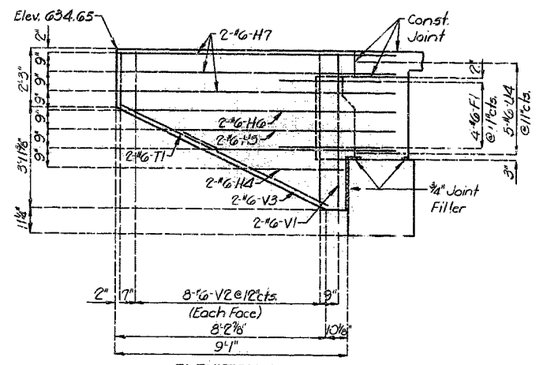


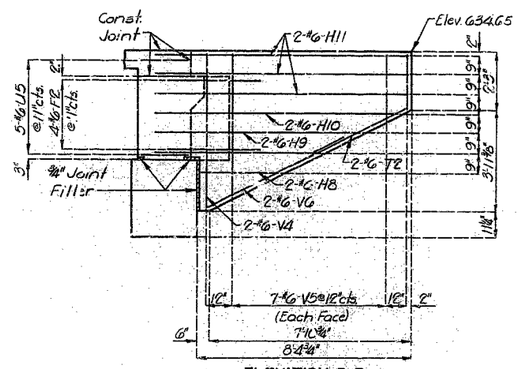


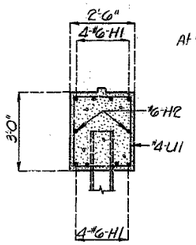
DETAILS OF END BENTS NO. 1A & 4A

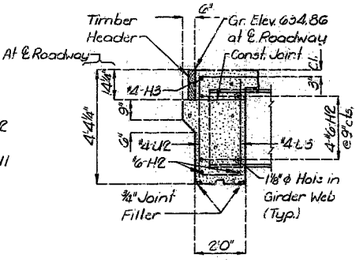
DETAILED May 1986
CHECKED May 1986

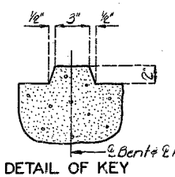


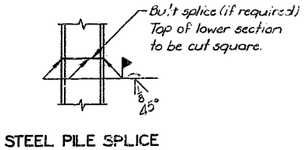












Note: For Details of Deadman Anchorage System, see Sheet No. 4.
For details of curb and parapet, see Sheet No. 13.
For details of support chairs, see Sheet No. 7.
All Ubars in end bents, except U4 & U5, are to be placed parallel to ℄ Roadway.

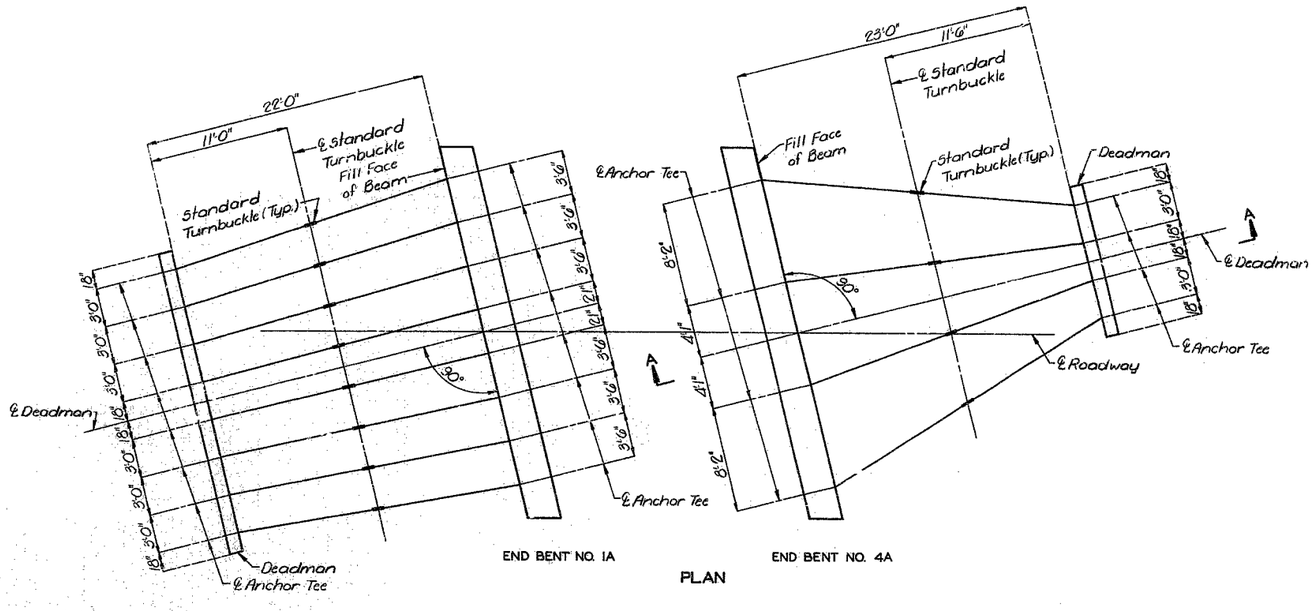
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 3 of 15

CHARITON COUNTY

A-1889R

STATE	PROJ. NO.	SHEET NO.
MO.		10



END BENT NO. 1A — END BENT NO. 4A

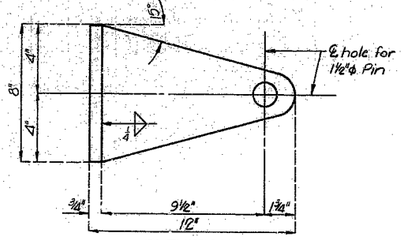
PLAN

CONSTRUCTION SEQUENCE:

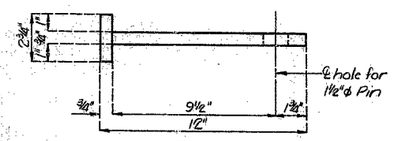
Construct End Bent beam with Anchor Tees in place.
Machine compact fill up to elevation of ⅞"ϕ Rod and Turnbuckle.
Construct Deadman with Anchor Tees in place.
Install ⅞"ϕ Rod, Clevis and Turnbuckle assembly.
Tighten Turnbuckle until snug.
Hand compact fill for 6" ± over ⅞"ϕ Rod and Turnbuckle.
Machine compact remaining fill.
See Special Provisions.

BILL OF REINFORCING STEEL

NUMBER	SIZE & MARK	LENGTH
8	#4-H101	23'-9"
8	#4-H102	11'-9"
144	#4-V101	21"

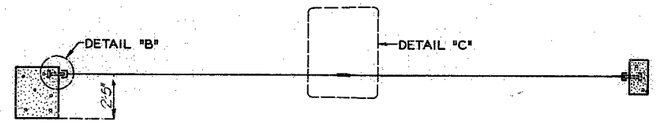


ELEVATION

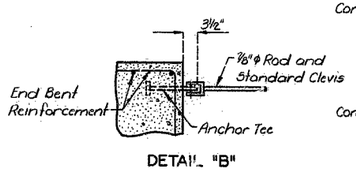


PLAN

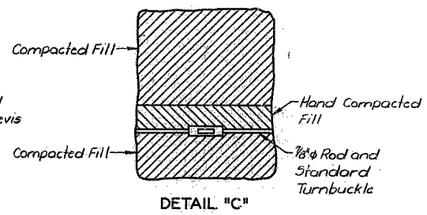
DETAILS OF ANCHOR TEE



SECTION A-A



DETAIL "B"



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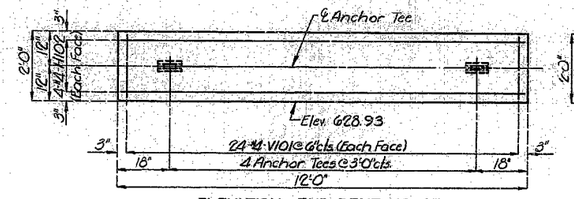
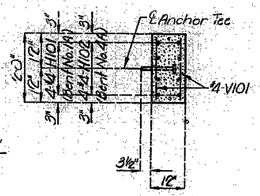
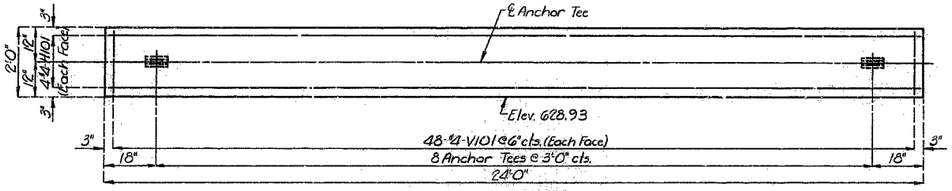


ELEVATION — END BENT NO. 4A



SECTION
END BENTS NO. 1A & 4A



ELEVATION — END BENT NO. 1A

DETAILS OF DEADMAN

DETAILED May 1986
CHECKED May 1986

DETAILS OF DEADMAN ANCHORAGE SYSTEM

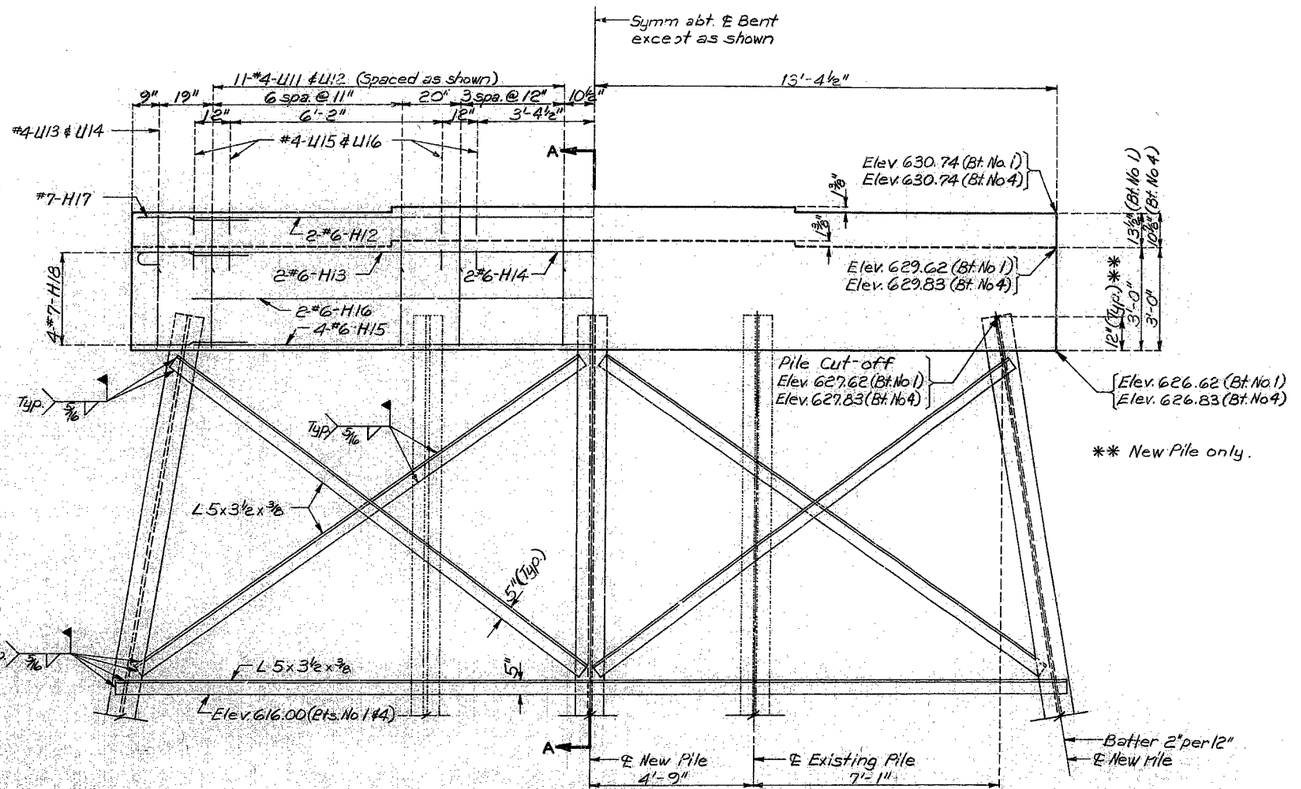
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 4 of 15

CHARITON COUNTY

A-1889R

STATE	PROJ. NO.	SHEET NO.
MO.		11



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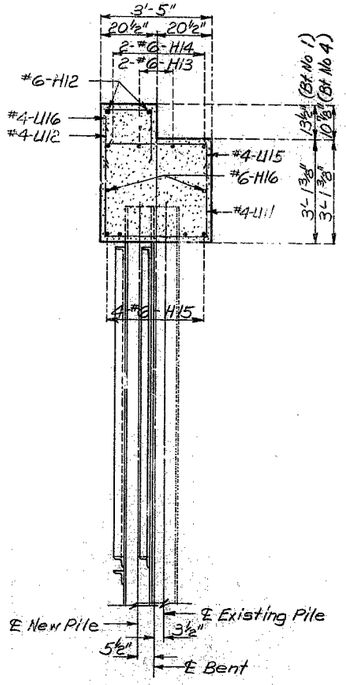
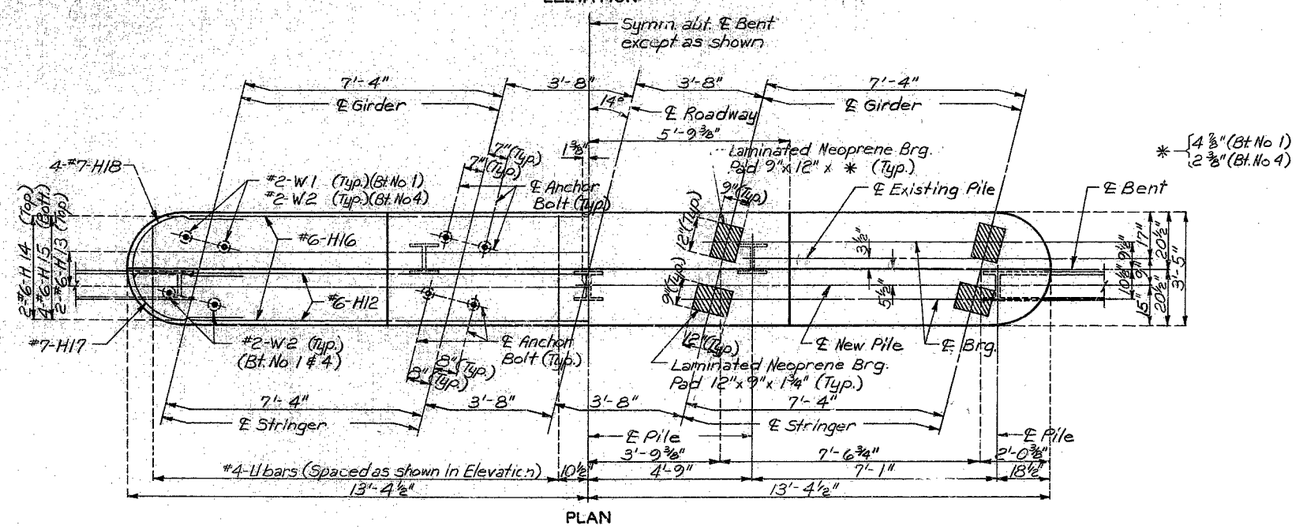


SECTION A-A



PLAN

DETAILS OF INTERMEDIATE BENTS NO. 1 & 4

Note: All piles shall be HP10x42
For detail of steel pile splice, see Sheet No. 3.

Note: Bent No. 1 shown. Bent No 4 opposite hand.
For details of Anchor Bolt Wells see Sheet No. 7.
Remove existing concrete beam cap, wings, and battered piles (see Special Provisions).

478

DETAILED MAY 1986
CHECKED May 1986

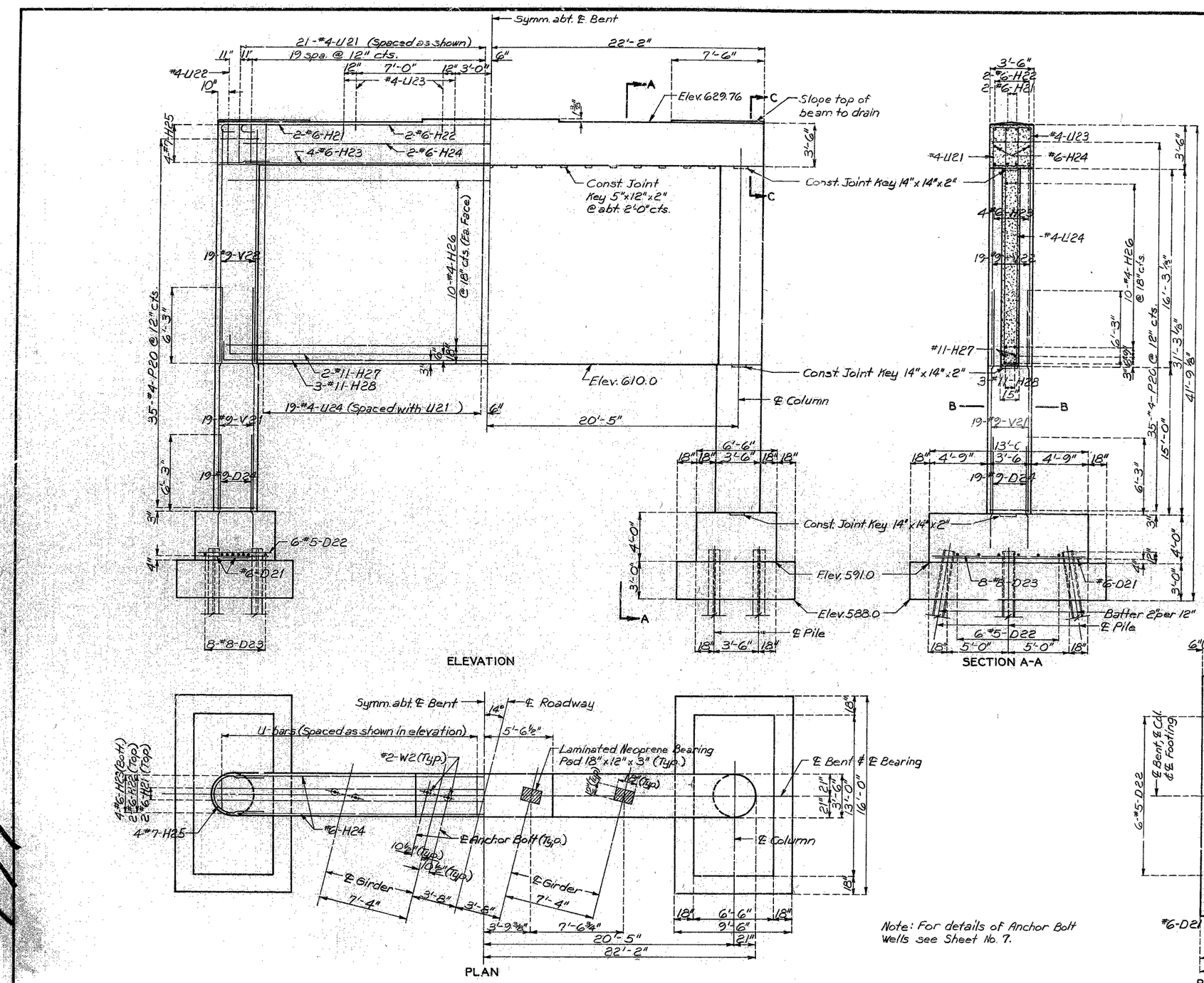
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 5 of 15.

CHARITON COUNTY

A-1889R

STATE	PROJ. NO.	SHEET NO.
MO.		12



DETAILS OF INTERMEDIATE BENT NO. 2

DETAILED MAY 1986
CHECKED May 1986

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

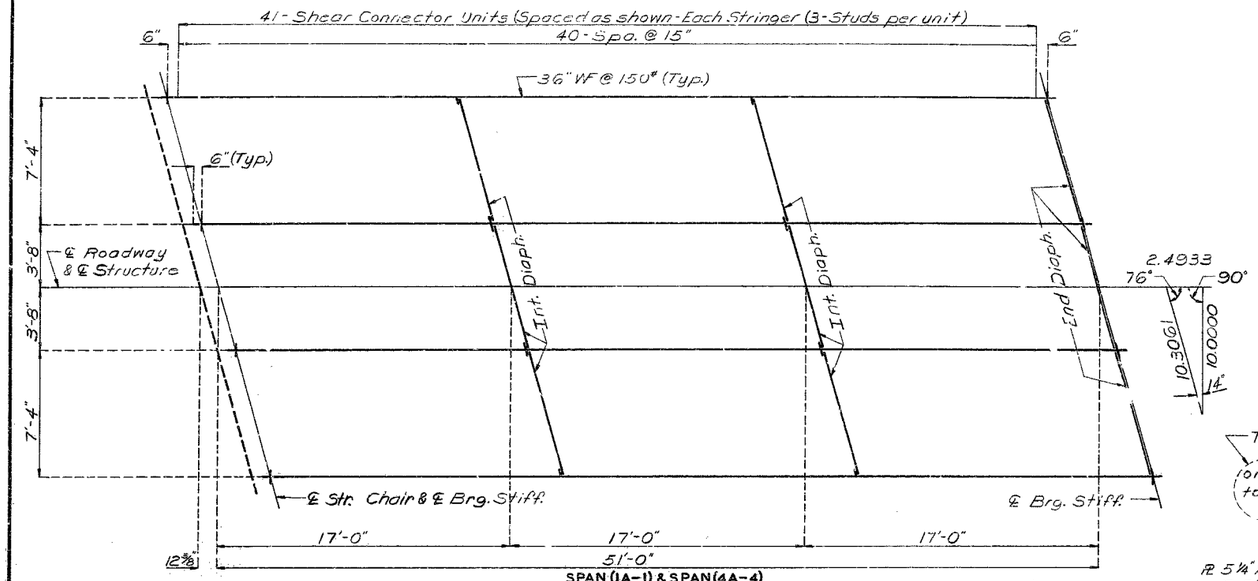
Sheet No. 6 of 15.

CHARITON COUNTY

A-1889R

419

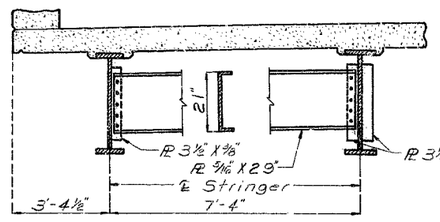
STATE	PROJ. NO.	SHEET NO.
MO.		13



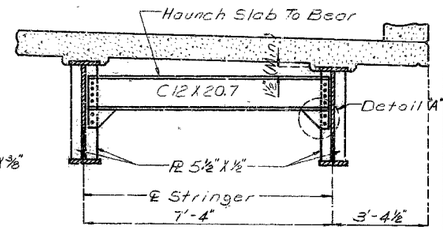
SPAN (1A-1) & SPAN (4A-4)

PLAN OF STRUCTURAL STEEL.

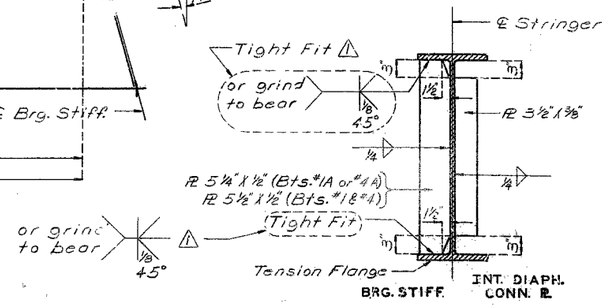
Note: All eight 36" WF @ 150# shall be furnished by the state. Four of the eight 36" WF @ 150# have existing end bearing stiffeners which shall be left in place on one end of the stringer. The stringers shall be placed so the existing end bearing stiffeners are at bents No. 1A or 4A. The end bearing stiffeners on opposite ends of the four stringers shall be removed and replaced with PL's 5½"x½". All bearing stiffeners and intermediate diaphragm connection plates shall be oriented as shown on Plan of Structural Steel. The 36" WF @ 150# shall be painted by the contractor. (See Special Provisions) All new fabricated structural steel shall be A36.

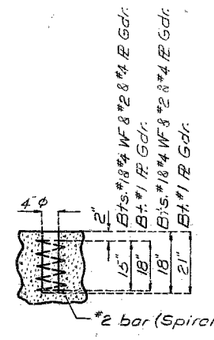


TYP. PART SECTION SHOWING INT. DIAPHRAGMS

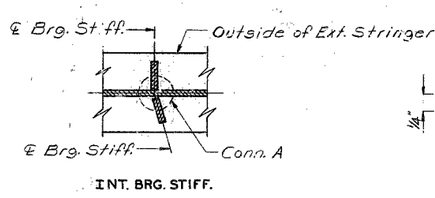


TYP. PART SECTION SHOWING END DIAPHRAGMS

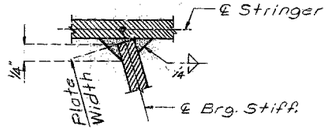




DETAIL OF ANCHOR BOLT WELLS

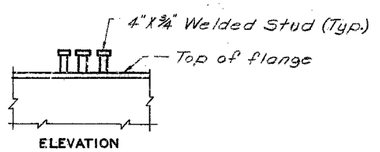


INT. BRG. STIFF.



CONN. A

WELDING DETAILS



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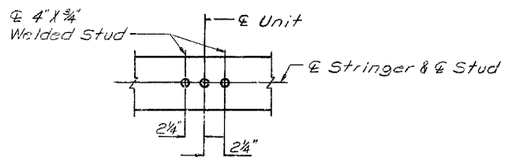
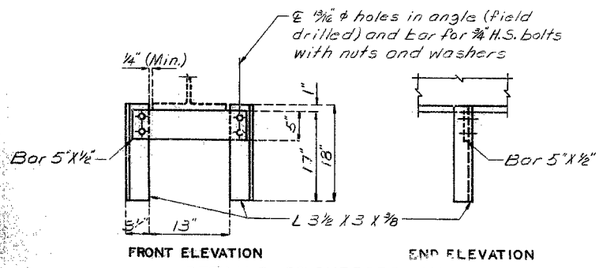


PLAN OF STUD CONN.
(3 studs per unit)

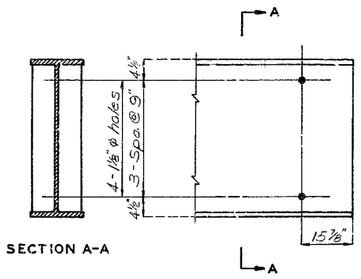
DETAILS OF SHEAR CONNECTORS

Note: Weight of 620 Lbs. of shear connectors is included in weight of Fabricated Structural Carbon Steel. (See Special Provisions)



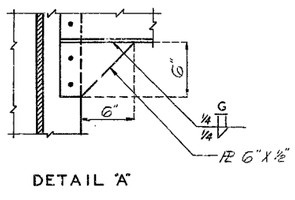
FRONT ELEVATION END ELEVATION

DETAILS OF SUPPORT CHAIR



SECTION A-A

WEB HOLE DETAILS AT END BENTS



DETAIL "A"

490

DETAILED May 1986
CHECKED May 1986

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

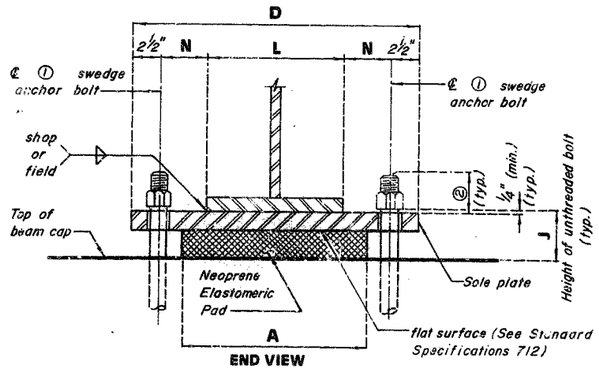
⚠ Revised 8/12/86

Sheet No. 7 of 15.

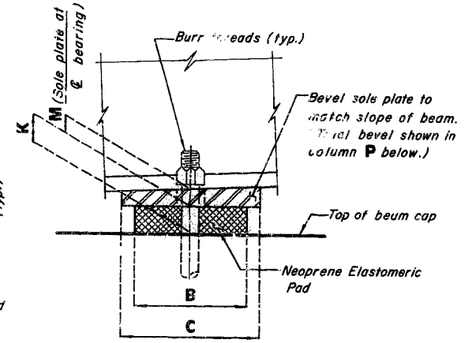
CHARITON COUNTY

A-1889R

STATE	PROJ NO	SHEET NO.
MO.		14

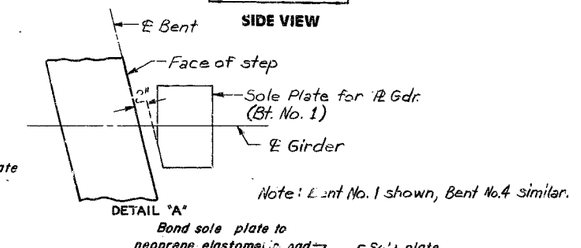


END VIEW



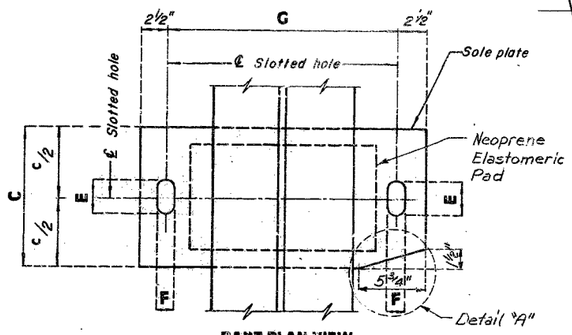
SIDE VIEW

Note: The location of anchor bolts in relation to the slotted holes in the sole plate shall correspond with the temperature at the time of erection. At 60° F. the slotted holes should center on the anchor bolts.

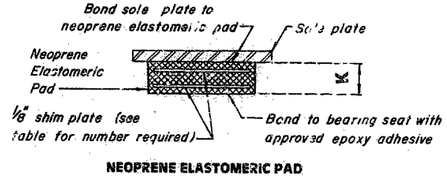


DETAIL "A"

Note: Bent No. 1 shown, Bent No. 4 similar.



PART PLAN VIEW



NEOPRENE ELASTOMERIC PAD

① 1½"℄ for WF Str. (Bts.#1 & 4) & Pt Gdr. (Bts.#2 & 4.)
② 2" ℄ for Pt Gdr. (Bt.#1)
② 2¼" for 1½" ℄ Anchor Bolt
② 2½" for 2" ℄ Anchor Bolt
③ 15" for 1½" ℄ Anchor Bolt
③ 18" for 2" ℄ Anchor Bolt

EXPANSION BEARINGS

NUMBER REQUIRED = (8 for WF Str.) (Bts.#1 & 4)
(4 for Pt Gdr.) (Bts.#1)
(4 for Pt Gdr.) (Bt.#2)
(4 for Pt Gdr.) (Bt.#4)

EXPANSION BEARINGS

	BENT NO.	A	B	C	D	E	F	G	J	K	L	M	N	P	NUMBER OF SHIM PLATES (*)
(WF Str.)	1 & 4	12"	9"	10"	21"	4½"	1⅝"	16"	3½"	1¾"	12"	1½"	2"	-	2
(Pt Gdr.)	1	9"	12"	13"	19"	5½"	2⅛"	14"	6⅝"	4⅞"	10"	1½"	2"	-	7
(Pt Gdr.)	4	9"	12"	13"	19"	4½"	1⅝"	14"	4⅛"	2⅜"	10"	1½"	2"	-	3
(Pt Gdr.)	2	18"	12"	13"	26"	4¾"	1⅝"	21"	4¾"	3"	15"	1½"	3"	-	4

(*) THE REQUIRED SHIM PLATE SHALL BE PLACED BETWEEN EQUAL LAYERS OF ELASTOMER AND MOLDED TOGETHER TO FORM AN INTEGRAL UNIT.

GENERAL NOTES:

ANCHOR BOLTS SHALL BE ① SWEDGED BOLTS AND SHALL EXTEND ③ INTO CONCRETE WITH HEXAGON NUTS. (SWEDGING SHALL BE 1" LESS THAN EXTENSION INTO CONCRETE.)

WEIGHT OF ANCHOR BOLTS AND HEXAGON NUTS FOR BEARINGS SHALL BE INCLUDED IN WEIGHT OF FABRICATED STRUCTURAL STEEL.

NEOPRENE ELASTOMERIC PADS SHALL BE 60 DUROMETER.

THE SOLE PLATE SHALL BE FURNISHED WITH THE BEARING AND FIELD OR SHOP [illegible] STRINGERS OR GIRDERS.

STRUCTURAL STEEL FOR SOLE PLATE SHALL BE A-36.

PAYMENT FOR THE SOLE PLATE WILL BE INCLUDED IN THE COST OF THE BEARING ASSEMBLY. SEE SPECIAL PROVISIONS.

ALL ANCHOR BOLTS SHALL BE A-588 STEEL WITH A-563 DH3 OR A-563 C3 (HEAT TREATED) HEXAGON NUTS.

THE ACCEPTED QUANTITY OF ELASTOMERIC BEARING ASSEMBLIES, COMPLETE IN PLACE, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR LAMINATED NEOPRENE BEARING PADS (STEEL STRUCTURES), EACH.

ALL STRUCTURAL STEEL FOR SOLE PLATES, ANCHOR BOLTS AND HEXAGON NUTS SHALL BE PAINTED WITH 2 COATS (5 MILS MINIMUM) OF INORGANIC ZINC. WELD AREAS TO BE TOUCHED UP AFTER ASSEMBLY.

DETAILS OF LAMINATED NEOPRENE BEARINGS (STEEL STRUCTURES)

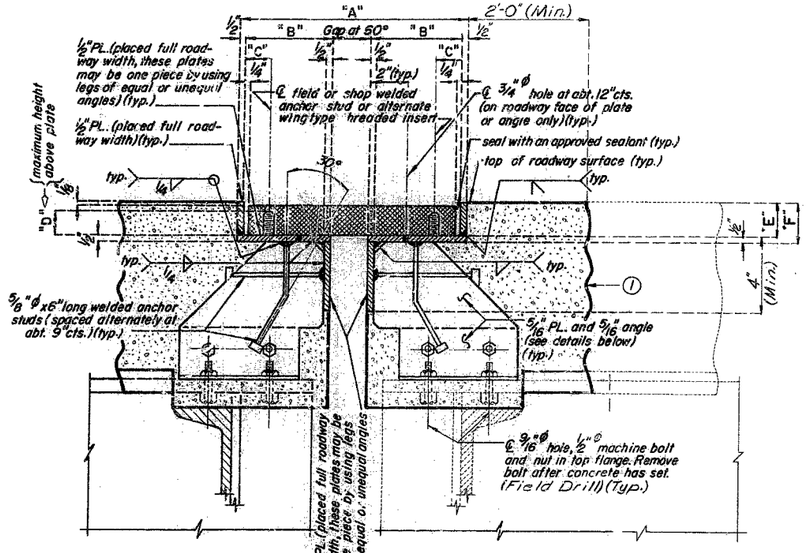
LAM. NEOP. BRGS. REVISED APRIL 1986
MARCH 197[illegible]

DETAILED MAY, 1986
CHECKED May 1986

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

CHARITON COUNTY

A-1889R

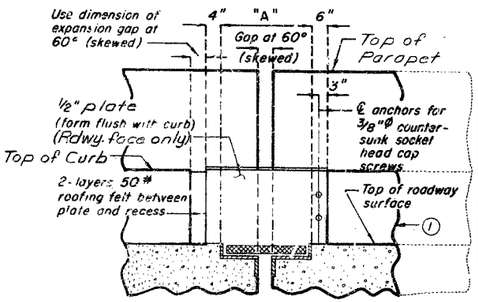


PART SECTION THRU ARMORED JOINT

TABLE OF DIMENSIONS											
LOCATION	ACCEPTABLE ALTERNATE TYPES	EXP. GAP AT 60°	"A" AT 60°	"B"	"C"	"D"	"E"	"F"	ANCHOR STUDS SIZE	ANCHOR STUDS SPA.	ANCHOR STUDS "G"
Int. Bent No. 1	Delastiflex LM300	2"	12 3/8"	4 1/16"	2 9/16"	7/8"	2 1/8"	2 5/8"	½	9"	45
	Gen-Strip CCL 3"	2 1/8"	11 3/4"	4 1/4"	1 3/4"	1 1/8"	1 3/4"	2 1/4"	5/8"	12"	65
	On-Flex 35	2"	11½"	4 1/4"	1 5/8"	1¼"	2 3/8"	2 1/8"	5/8"	12"	65
	Wabo BendoFlex 450	2"	11½"	4 1/4"	1 5/8"	1¼"	2 3/4"	3 1/8"	½"	12"	50
	Fel-Span T40A CS	2"	12"	4 1/2"	1 5/8"	1½"	2 1/4"	2 3/8"	½"	12"	50
	Acme Trojan TR400	2½"	12"	4 1/4"	1 3/4"	1½"	1 3/4"	2"	½"	12"	40

NOTE: ALL DIMENSIONS ARE AT RIGHT ANGLES. EXPANSION GAP AND DIMENSION "A" SHALL BE INCREASED 3/16" FOR EACH 10° FALL IN TEMPERATURE AND DECREASED 3/16" FOR EACH 10° RISE IN TEMPERATURE

STATE	PROJ NO	SHEET NO
MO		15



PART ELEVATION OF CURB & PARAPET

GENERAL NOTES:

THE CERTIFIED NUTS AND BOLTS FOR THE ANCHOR STUDS OR WING TYPE THREADED INSERTS SHALL BE TIGHTENED TO THE FOOT POUNDS "G" SPECIFIED IN THE TABLE OF DIMENSIONS. RETIGHTEN TO "G" FOOT POUNDS A MINIMUM OF 30 MINUTES AFTER INITIAL TIGHTENING. THE WELDED ANCHOR STUDS SHALL BE THE REDUCED BASE TYPE.

MATERIAL FOR THE ARMORED JOINT SHALL BE A36 STRUCTURAL GRADE STEEL. ANCHORS FOR THE ARMORED JOINT SHALL BE APPROVED STUD WELDED ANCHORS (C1010 T. 4RU C1020).

SEE SPECIAL PROVISIONS FOR PAINTING.

ANCHOR BOLTS IN THE CURB SHALL BE CAST-IN-PLACE, GROUTED OR CONE- EXPANSION TYPE. HOLES IN THE CURB FOR ANCHORS SHALL NOT BE DRILLED UNTIL THE CONCRETE IS AT LEAST 7 DAYS OLD.

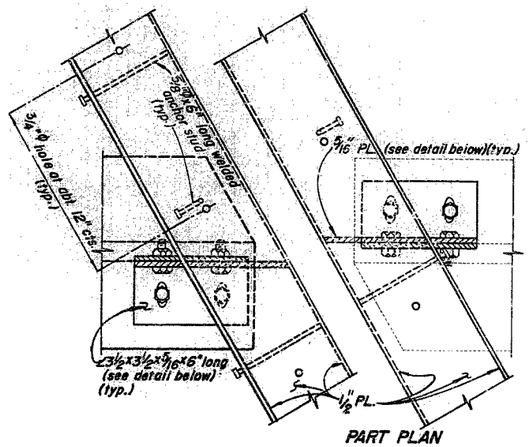
PLAN DIMENSIONS ARE BASED ON INSTALLATION AT 60°F. THE EXPANSION GAP AND OTHER DIMENSIONS SHALL BE ADJUSTED DURING INSTALLATION FOR COMPLIANCE WITH ANY TEMPERATURE CHANGE.

CONTACT SURFACE OF STEEL TO ALUMINUM SHALL BE INSULATED WITH THE MATERIAL SPECIFIED ON THE SHOP DRAWINGS.

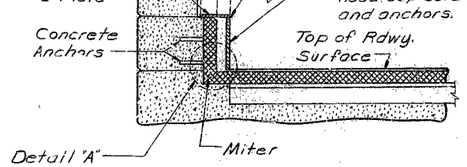
FURNISHING, PAINTING AND INSTALLING THE STRUCTURAL STEEL ARMORED JOINT AND CURB PLATES SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR EXPANSION JOINT SEAL.

BOLT CAVITIES TO BE FILLED WITH APPROVED SEALANT IN COMPLIANCE WITH MANUFACTURER'S CERTIFICATION.

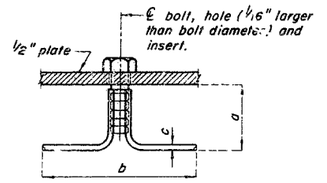
① Remove existing concrete to this line.



PART PLAN



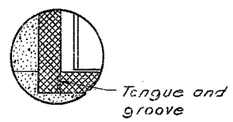
CURB TREATMENT



BOLT DIAMETER	SAFE LOAD TENSION (LBS.) (MIN.)	APPROX. ULT. CAP. TENSION (LBS.) (MIN.)	DIMENSIONS a (MIN.)	b	c
1/2"	800	8,000	1-5/8"	5"	.218"
5/8"	1,300	9,200	1-5/8"	5"	.218"
3/4"	1,800	13,200	2-1/4"	6"	.262"
7/8"	2,000	16,200	2-1/2"	6-1/2"	.306"
1"	2,000	16,200	2-1/2"	6-1/2"	.306"

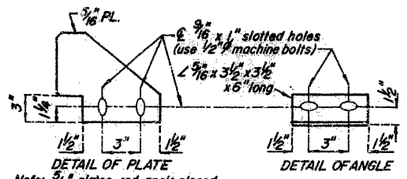
DETAILS OF ALTERNATE WING TYPE THREADED INSERT

(MACHINE BOLTS NEED ONLY BE USED TO SECURE THE WING TYPE THREADED INSERTS TO THE STEEL PLATE UNTIL THE CONCRETE HAS ATTAINED 3,000 p.s.i.)



DETAIL "A" (Alternate)

PART PLAN



DETAIL OF PLATE

DETAIL OF ANGLE

Note: 5/16" plates and angle placed at each girder or stringer.

Elastomeric Expansion Jt. Seal
SPS-INT. BT.
FEB. 1976
REVISED
APRIL 1985

DETAILED May 1986
CHECKED May 1986

DETAILS OF ELASTOMERIC EXPANSION JOINT SEAL AT BENT NO. 1

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

CHARITON COUNTY

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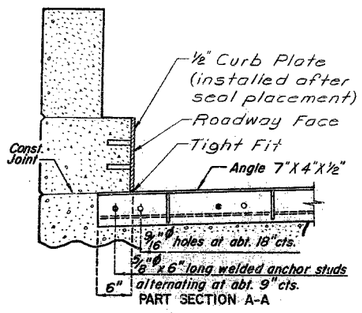
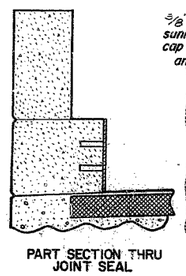
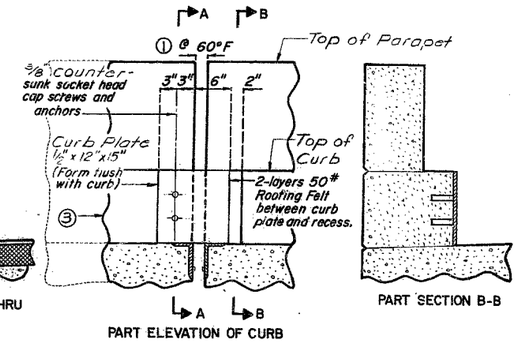
STATE	PROJ NO	SHEET NO
MO		16



PART SECTION A-A


PART SECTION THRU JOINT SEAL



PART ELEVATION OF CURB

PART SECTION B-B

③ Remove existing concrete to this line.

GENERAL NOTES:

STRUCTURAL STEEL FOR EXPANSION DEVICE SHALL BE FABRICATED IN ONE SECTION, EXCEPT THAT WHEN THE LENGTH IS OVER 50', SPLICING IS PERMISSIBLE.

THE EXPANSION DEVICE SHALL BE BENT TO CONFORM TO CROWN AND GRADE OF ROADWAY.

ANCHORS FOR COMPRESSION SEAL ARMOR SHALL BE APPROVED STUD WELDED ANCHORS (C1010 THRU C1020).

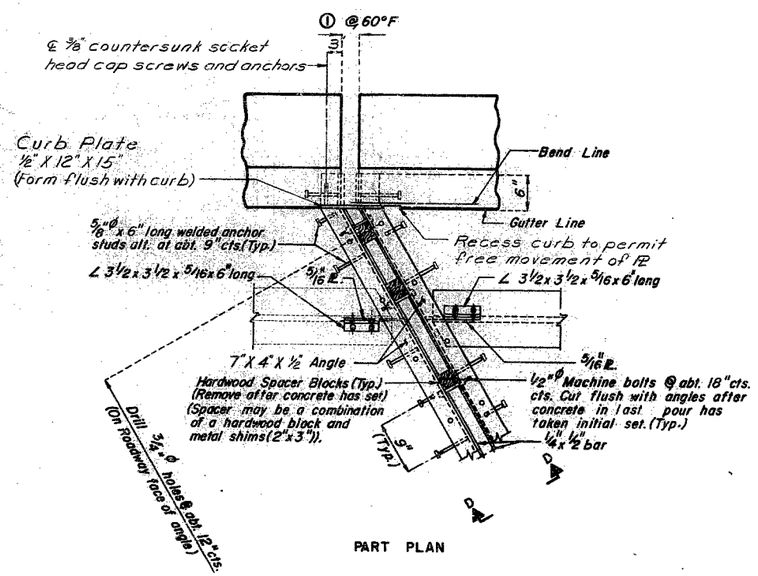
PLAN DIMENSIONS ARE BASED ON INSTALLATION AT 60° F.

DIMENSIONS ① SHALL BE INCREASED ⅛" FOR EACH 10°FALL IN TEMPERATURE AND DECREASED ⅛" FOR EACH 10° RISE IN TEMPERATURE AT INSTALLATION.

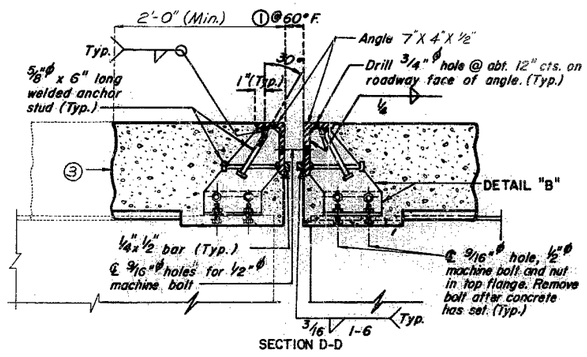
SEE SPECIAL PROVISIONS FOR THE REQUIREMENTS OF COMPRESSION JOINT SEAL.

FURNISHING, PAINTING AND INSTALLING THE STRUCTURAL STEEL ARMORED JOINT AND CURB PLATES SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR EXPANSION JOINT SEAL.

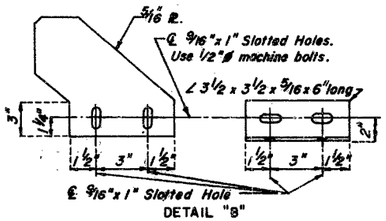
NEOPRENE EXTRUSIONS SHALL MEET A.S.T.M. D3542-83.



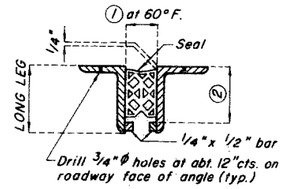
PART PLAN



SECTION D-D



DETAIL "B"



PART CROSS SECTION THRU EXPANSION JOINT

TABLE OF TRANSVERSE BRIDGE SEAL DIMENSIONS

SEAL (WIDTH)	①	②	REQUIRED MOVEMENT RANGE
2.5"	1-5/8"	SEAL DEPTH + 3/4"	.9"
3.0"	1-7/8"	SEAL DEPTH + 3/4"	1.0"
3.5"	2-1/4"	SEAL DEPTH + 3/4"	1.3"
4.0"	2-5/8"	SEAL DEPTH + 3/4"	1.6"
4.5"	2-3/4"	SEAL DEPTH + 3/4"	1.9"
5.0"	2-7/8"	SEAL DEPTH + 3/4"	2.0"

Bent No. 4

NOTE: DEPTH OF SEAL SHALL NOT BE LESS THAN WIDTH OF SEAL.

SIZE OF ARMOR ANGLE:

VERTICAL LEG OF ANGLE SHALL BE A MINIMUM OF DEPTH OF SEAL + 1-1/2". HORIZONTAL LEG OF ANGLE SHALL BE A MINIMUM OF 3". MINIMUM THICKNESS OF ANGLE SHALL BE 1/2".

IF A SEAL SIZE LARGER THAN THAT INDICATED ON THE PLANS IS USED, THE MOVEMENT RANGE, THE OPENING AT 60° AND ALL DIMENSIONS FOR THE ARMOR ANGLES SHALL BE SHOWN ON THE SHOP DRAWINGS.

4983

STD. PCJS(SK)	REVISED
OCT. 1973	SEPT. 1986

DETAILED May 1986
CHECKED May 1986

DETAILS OF PREFORMED COMPRESSION JOINT SEAL AT BENT NO. 4

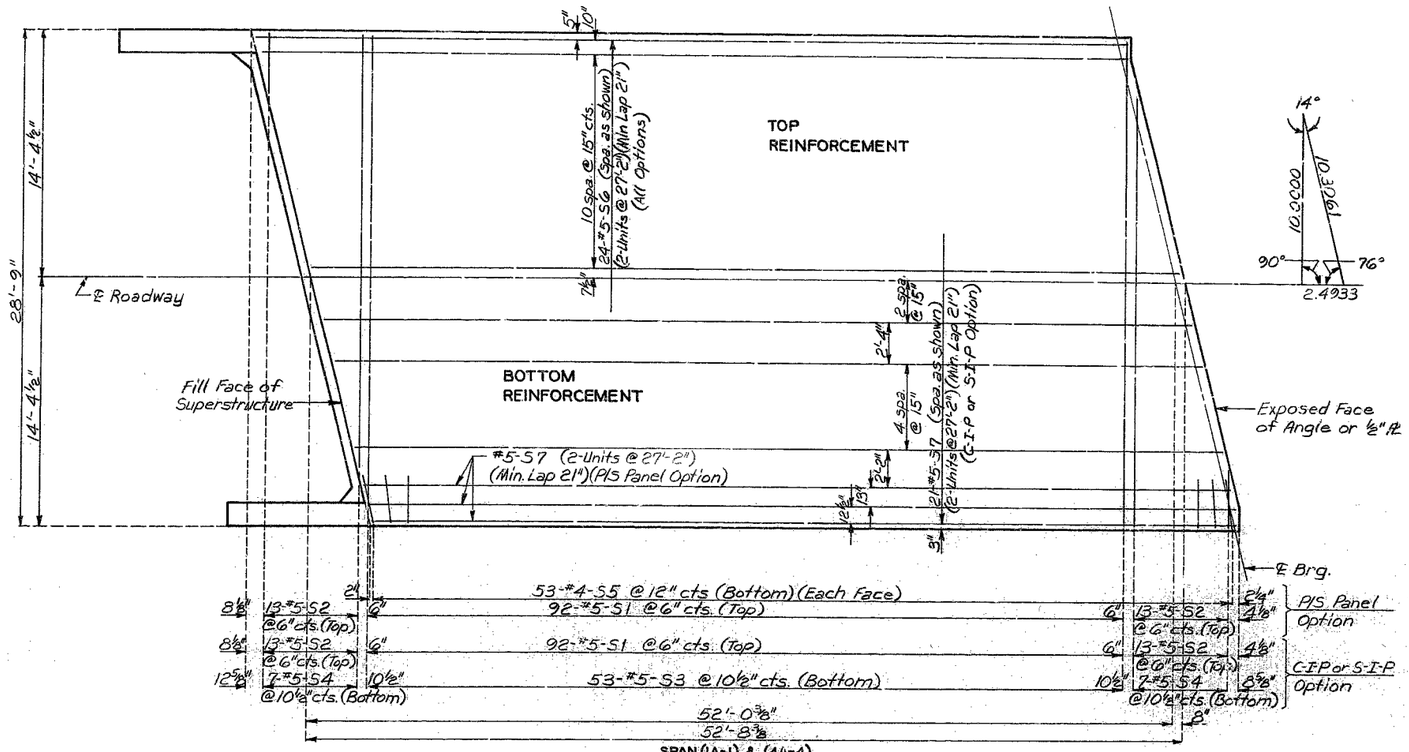
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 10 of 15

CHARITON COUNTY

A-1889R

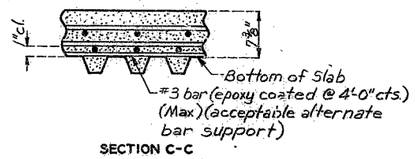
STATE	PROJ. NO.	SHEET NO.
MO.		17



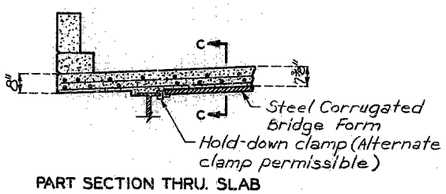
Note: The contractor shall pour and satisfactorily finish the roadway slab at a rate of not less than 25 cubic yards per hour.

Note: Bottom transverse reinforcing steel shall be placed to match the corrugation valleys of forms.

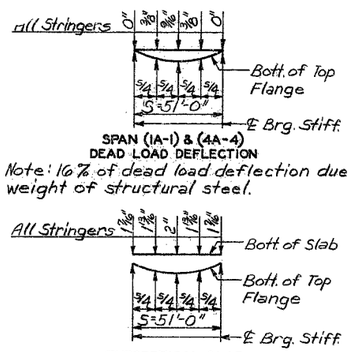
To determine haunch for the stay-in-place alternate add ⅜" to the haunch for the cast-in-place alternate.



SECTION C-C



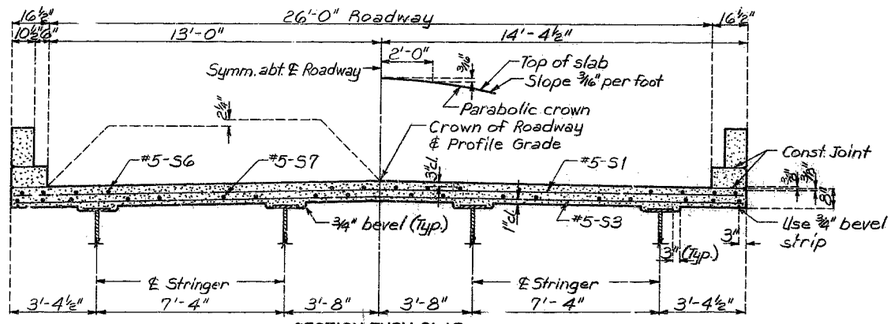
PART SECTION THRU. SLAB



SPAN (1A-1) & (4A-4)
DEAD LOAD DEFLECTION

Note: 16% of dead load deflection due to weight of structural steel.

THEORETICAL SLAB HAUNCHING DIAGRAM
(C-I-P Option)



SECTION THRU. SLAB
(C-I-P Option)

Note: For details and reinforcement of curb and parapet not shown see Sheet No. 13.

DETAILED MAY. 1986
CHECKED May 1986

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

Sheet No. 11 of 15 .

CHARITON COUNTY

A-1889R

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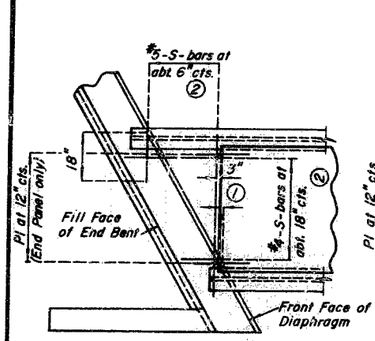
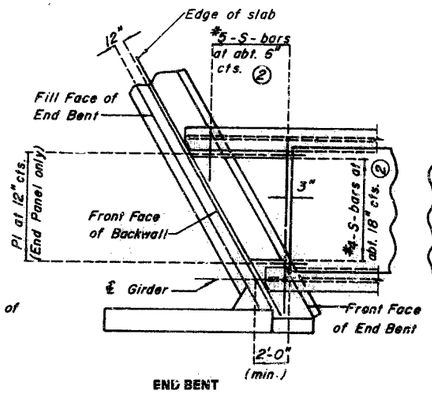
STATE	PROJ NO	SHEET NO
MO		13



END BENT
(SEMI-INTEGRAL)



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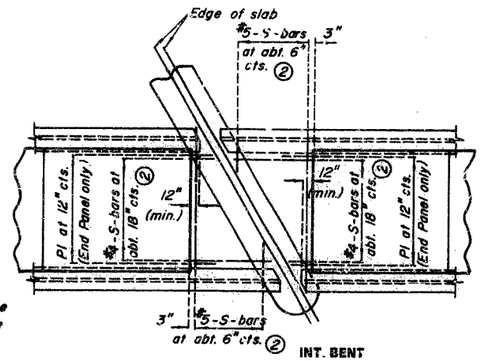
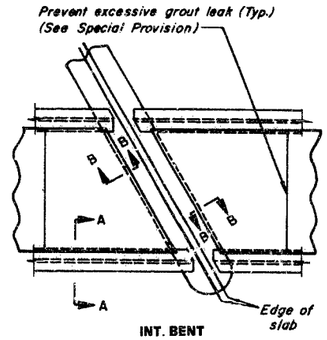
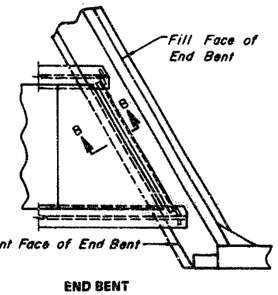


INT. BENT
(EXP. GAP)

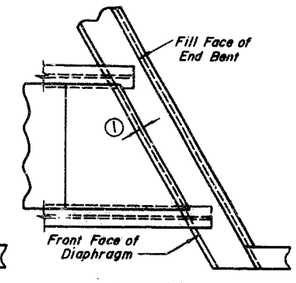
PANELS - SQUARED ENDS



INT. BENT
(EXP. GAP)



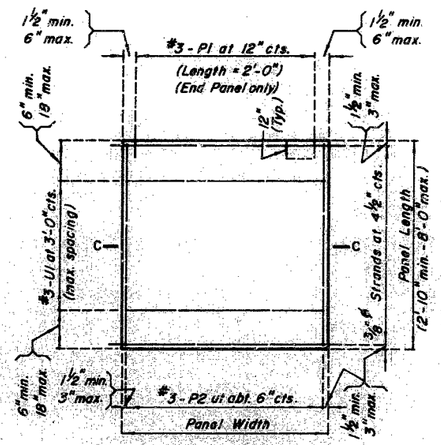
END BENT



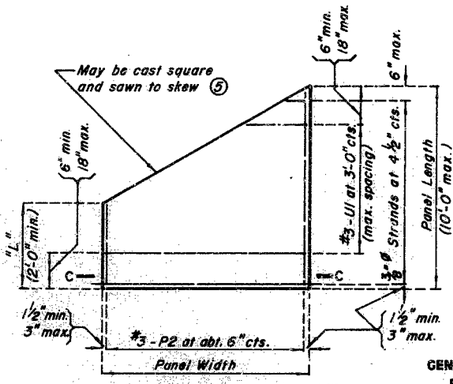
END BENT
(SEMI-INTEGRAL)

PANELS - SKEWED ENDS

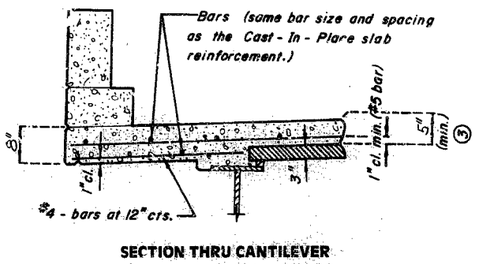
PLAN OF PRECAST PRESTRESSED PANELS PLACEMENT



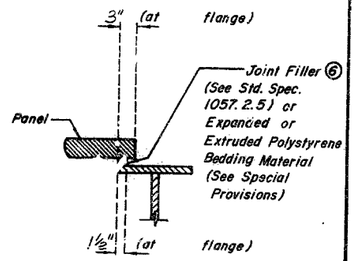
PLAN OF PRECAST PRESTRESSED PANEL



PLAN OF PRECAST PRESTRESSED PANEL
(SKEWED END-OPTIONAL)



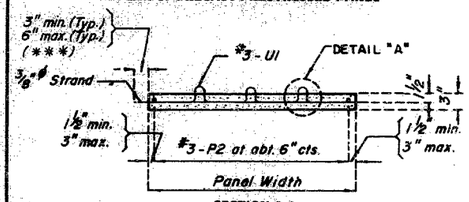
SECTION THRU CANTILEVER



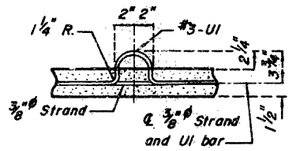
SECTION A-A

NOTE:

USE SLAB HAUNCHING DIAGRAM ON SHEET NO. 11 FOR DETERMINING THICKNESS OF JOINT FILLER OR POLYSTYRENE BEDDING MATERIAL WITHIN THE LIMITS NOTED BELOW.

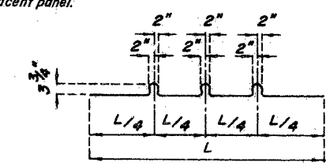


SECTION C-C



DETAIL "A"

(***) Prestressing strands to extend 6" or to within 1" of adjacent panel.



BENDING DIAGRAM FOR U1 BAR

REINFORCING STEEL:

ALL DIMENSIONS ARE OUT TO OUT.

MINIMUM CLEARANCE TO REINFORCING STEEL SHALL BE 1½ INCH UNLESS OTHERWISE SHOWN.

HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE C.R.S.I. MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES, STIRRUP AND TIE DIMENSIONS.

ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.

THE PRESTRESSED PANEL QUANTITIES ARE NOT INCLUDED IN THE TABLE OF ESTIMATED QUANTITIES FOR ALTERNATE SLABS.

IF U1 BARS INTERFERE WITH PLACEMENT OF SLAB STEEL, U1 LOOPS MAY BE BENT OVER AS NECESSARY TO CLEAR SLAB STEEL.

WELDED WIRE FABRIC OR WELDED DEFORMED BAR MATS PROVIDING A MINIMUM AREA OF REINFORCING PERPENDICULAR TO STRANDS OF 0.22 SQ. IN./FT. WITH SPACING PARALLEL TO STRANDS SUFFICIENT TO INSURE PROPER HANDLING MAY BE USED IN LIEU OF THE #3-P2 BARS SHOWN. WIRE OR BAR DIAMETER SHALL NOT BE LARGER THAN 0.375 INCHES. #3-U1 BARS MAY BE ORIENTED AT RIGHT ANGLES TO LOCATION AND SPACING SHOWN. U1 BARS SHALL BE PLACED BETWEEN PI BARS.

GENERAL NOTES:

PRESTRESSED PANEL:

CONCRETE FOR PRESTRESSED PANELS SHALL BE CLASS A1 WITH $F'c$ = 5,000 PSI, $F'ci$ = 3,500 PSI.

THE TOP SURFACE OF ALL PANELS SHALL RECEIVE A SCORED FINISH WITH A DEPTH OF SCORING OF ⅛ INCH PERPENDICULAR TO THE PRESTRESSING STRANDS IN THE PANEL (SEE SPECIAL PROVISIONS).

PRESTRESSING TENDON SHALL BE HIGH-TENSILE STRENGTH UNCOATED SEVEN-WIRE (7) LOW RELAXATION STRANDS FOR PRESTRESSED CONCRETE CONFORMING TO AASHTO M203 EXCEPT THAT NOMINAL DIAMETER OF STRAND = ⅜ INCH AND NOMINAL AREA = 0.085 SQ. IN. AND MIMIMUM ULTIMATE STRENGTH = 23,000 LBS. (270 KSI). LARGER STRANDS MAY BE USED WITH THE SAME SPACING AND INITIAL TENSION.

INITIAL PRESTRESSING FORCE = 17.2 KIPS/STRAND.

THE METHOD AND SEQUENCE OF RELEASING THE STRANDS SHALL BE SHOWN ON THE SHOP DRAWINGS.

SUITABLE ANCHORAGE DEVICES FOR LIFTING PANELS MAY BE CAST IN PANELS PROVIDED THEY ARE SHOWN ON THE SHOP DRAWINGS AND APPROVED BY THE ENGINEER. PANEL LENGTHS SHALL BE DETERMINED BY THE CONTRACTOR AND SHOWN ON THE SHOP DRAWINGS.

WHEN SQUARE END PANELS ARE USED AT SKEWED BENTS IT IS REQUIRED THAT THE SKEWED PORTION BE CAST FULL DEPTH. NO SEPARATE PAYMENT WILL BE MADE FOR THE ADDITIONAL CONCRETE AND REINFORCING REQUIRED.

MINIMUM JOINT FILLER OR POLYSTYRENE BEDDING MATERIAL THICKNESS SHALL BE ⅜ INCH EXCEPT OVER SPLICE PLATES WHERE MINIMUM THICKNESS SHALL BE ¼ INCH; WHEN JOINT FILLER IS LESS THAN ½" THICK OVER SPLICE PLATE, MAKE THE WIDTH OF JOINT FILLER AT SPLICE THE SAME WIDTH AS PANEL ON SPLICE. THICKER JOINT FILLER OR POLYSTYRENE BEDDING MATERIAL MAY BE USED ON ONE OR BOTH SIDES OF THE GIRDER TO REDUCE CAST-IN-PLACE CONCRETE THICKNESS, WITHIN TOLERANCES. NO MORE THAN 2 INCHES TOTAL THICKNESS OF JOINT FILLER OR POLYSTYRENE BEDDING MATERIAL SHALL BE USED.

THE SAME THICKNESS OF JOINT FILLER MATERIAL SHALL BE USED UNDER ANY ONE EDGE OF ANY PANEL EXCEPT AT SPLICES, AND THE MAXIMUM CHANGE IN THICKNESS BETWEEN ADJACENT PANELS SHALL BE ¼ INCH TO CORRECT FOR VARIATIONS FROM GIRDER *DEFLECTION DIAGRAM*. THE POLYSTYRENE BEDDING MATERIAL MAY BE CUT TO MATCH HAUNCH HEIGHT ABOVE TOP OF FLANGE.

SUPPORT FROM DIAPHRAGM FORMS REQUIRED UNDER OPTIONAL SKEWED END UNTIL CAST-IN-PLACE CONCRETE HAS REACHED 3,000 PSI COMPRESSIVE STRENGTH.

NOTES:

① END PANEL TO BE DIMENSIONED 1½ INCH INSIDE FACE OF DIAPHRAGM.

② S-BARS SHOWN ARE BOTTOM STEEL IN SLAB BETWEEN PANELS AND USED WITH SQUARED END PANELS ONLY.

③ ADJUSTMENT IN THE SLAB THICKNESS, JOINT FILLER OR EXPANDED POLYSTYRENE BEDDING MATERIAL THICKNESS OR GRADE WILL BE NECESSARY IF THE GIRDER *DEFLECTION AFTER* ERECTION DIFFERS FROM PLAN *DEFLECTION* BY MORE THAN THE ¾ OF DEAD LOAD DEFLECTION DUE TO THE WEIGHT OF STRUCTURAL STEEL. NO PAYMENT WILL BE MADE FOR ADDITIONAL LABOR OR MATERIALS FOR THE ADJUSTMENT.

④ S-BARS SHOWN ARE USED WITH SKEWED END PANELS OR SQUARE END PANELS OF SQUARE STRUCTURES ONLY. #5 S-BARS SHALL EXTEND THE WIDTH OF SLAB (21 INCHES LAP IF NECESSARY) OR TO WITHIN 3 INCHES OF EXPANSION DEVICE ASSEMBLIES.

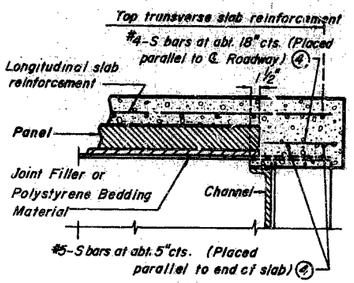
COST OF S-BARS SHALL BE INCLUDED IN PRICE BID FOR SLAB PER SQUARE YARD.

S-BARS ARE NOT LISTED IN BILL OF REINFORCING.

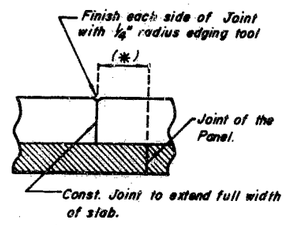
SLAB EXTERIOR GIRDER HAUNCH TO BE THE SAME AS CAST-IN-PLACE.

⑤ ANY STRAND 2'-0" OR SHORTER SHALL HAVE A #4 REINFORCING BAR ON EACH SIDE OF IT CENTERED BETWEEN STRANDS. STRANDS 2'-0" OR SHORTER MAY THEN BE DEBONDED AT FABRICATORS OPTION.

⑥ ALL PANEL SUPPORT PADS SHALL BE GLUED TO THE GIRDER. WHEN SUPPORT THICKNESS EXCEEDS 1½ INCH THE PADS SHALL BE GLUED TOP AND BOTTOM. THE GLUE USED SHALL BE THE TYPE RECOMMENDED BY THE PANEL SUPPORT PADS MANUFACTURER.



PART SECTION B-B



PERMISSIBLE CONST. JOINT

(*) ADJUST THE PERMISSIBLE CONST. JOINT TO A CLEARANCE OF 6 INCHES MIN. FROM THE JOINTS OF THE PRESTRESSED PANELS.

485

STEEL P/C-P/S PANEL (3") MAY 1986 REVISED JULY 1985

DETAILED MAY 1986
CHECKED May 1986

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

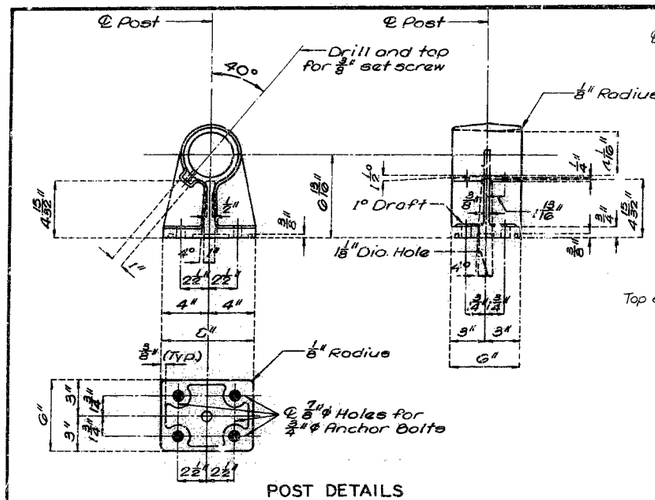
DETAILS OF PRECAST PRESTRESSED PANELS

Sheet No. 12 of 15

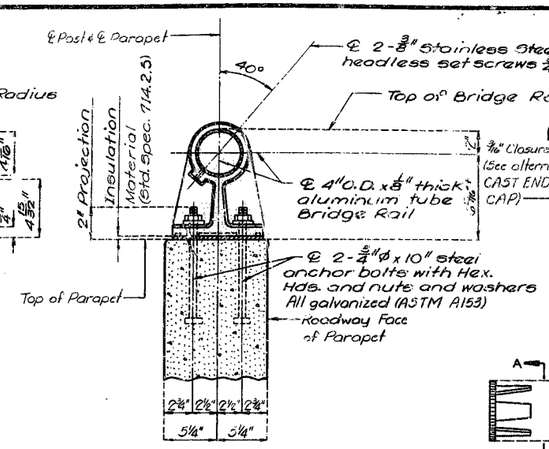
CHARITON COUNTY

A-1889R

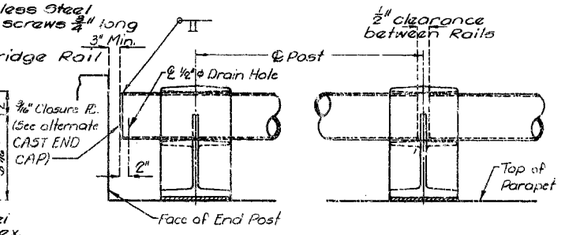
STATE	PROJ. NO.	SHEET NO.
MO		19



POST DETAILS

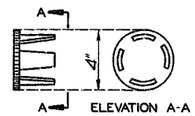


SECTION THRU BRIDGE RAIL

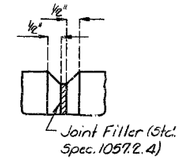


POST RAIL SPLICE OR EXPANSION

TYPICAL BRIDGE RAIL DETAILS



CAST END CAP
(Drive Fit Type)



FILLED JOINT DETAIL

GENERAL BRIDGE RAIL NOTES:

All bridge rail posts shall be set normal to grade.

Aluminum tube bridge rail shall be bent to conform to vertical and horizontal alignment of curb and parapet.

Aluminum washer shims between top of parapet and post base may be used for adjusting bridge rail alignment. Maximum thickness of shims to be ⅛". Where more tilting of post is required for proper alignment, concrete bearing areas shall be ground down.

All parts of bridge rail, except anchor bolts, nuts, washers and set screws are to be of aluminum material.

All fillets ⅛" except as noted.

All drills ⅜" except as noted.

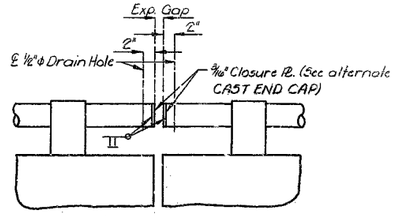
Omit set screw in side of rail post adjacent to filled joints in parapet at rail expansion points.

Top of curbs and parapets to be built parallel to grade with curb and parapet joints (except at end bents) normal to grade.

All exposed edges of curbs and parapets shall have ½" radius or ⅜" bevel unless otherwise noted.

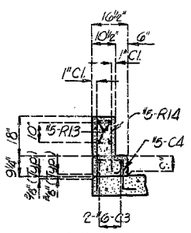
A thin coating of material shall be applied to the stainless steel headless set screws to prevent locking to aluminum posts. The coating material shall be equal to Wynn Oil Company's "Viscotene", Stahl Specialty Company's "PBC 516" or National Chemsearch Corporation's "Thread Eze."

Bridge rail and posts to be state furnished. (See Special Provisions)



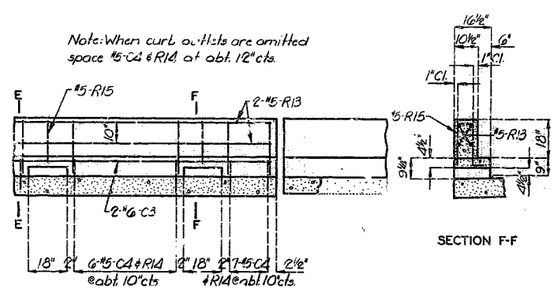
PART RAIL ELEVATION AT EXPANSION GAP

ONE TUBE ALUMINUM RAILING



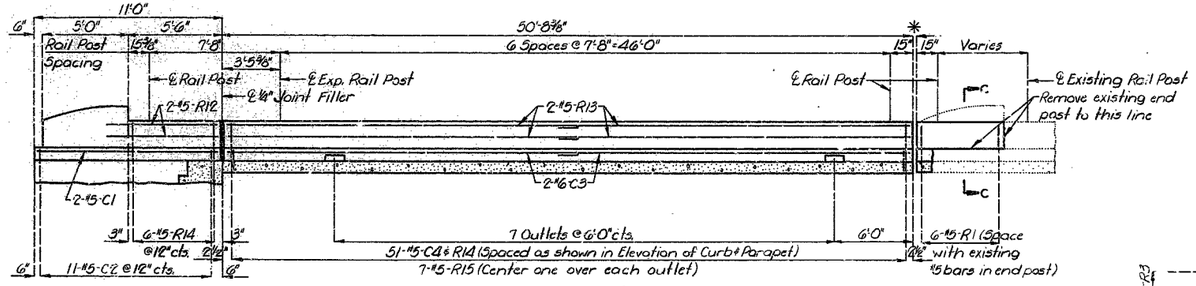
SECTION E-E

Note: When curb outlets are omitted space #5-C4 & R14 at abt. 12" cts.



ELEVATION OF CURB & PARAPET

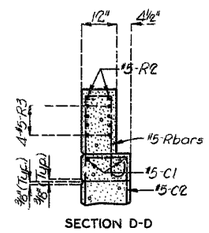
SECTION F-F



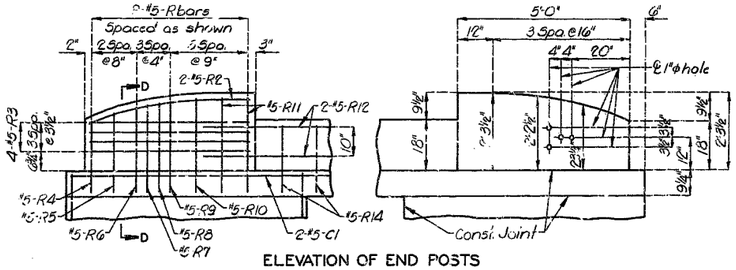
SPANS (1A-1) & (4A-4)

PART SECTION NEAR LEFT CURB AND PARAPET

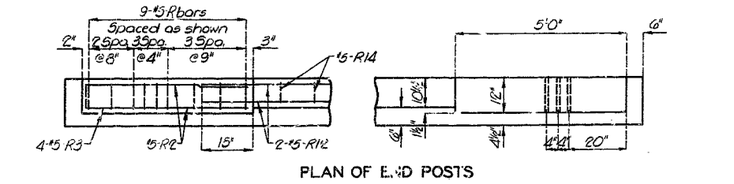
* { 2⅜" Gap @ 60°F (Bf. #1) / 2⅝" Gap @ 60°F (Bf. #4) }



SECTION D-D

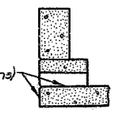


ELEVATION OF END POSTS

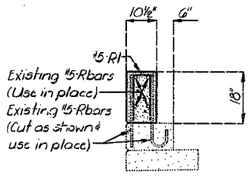


PLAN OF END POSTS

Note: Epoxy seal to be applied to new and existing outlets.



SECTION AT OUTLET



SECTION C-C

STD. 1.7.1 NOV. 1974 | REVISED JUNE 1984

486

DETAILED May 1986
CHECKED May 1986

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

Sheet No. 13 of 15

CHARITON COUNTY

A-1889R

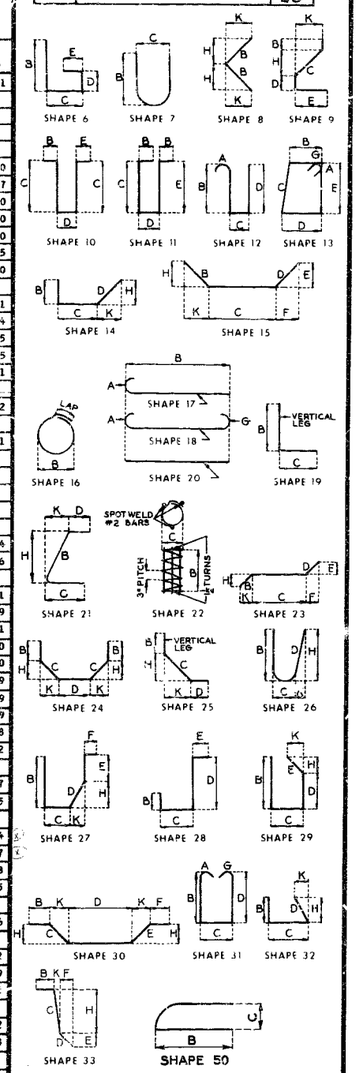
COMPLETE BILL OF REINFORCING STEEL

NO. REQD.	MARK NO. SIZE	MARK NO. MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	H FT.	H IN.	K FT.	K IN.	NOMINAL LENGTH FT.IN.	ACTUAL LENGTH FT.IN.	WEIGHT LBS.
			SUBSTRUCTURE																							
			END BTS NO 1A64A																							
16	6H1	BEAM		18		X			29	4.000														30 8	30 8	737
4	6H2	BEAM		20		X			29	4.000														29 4	29 4	176
56	4U1	BEAM		13	S	X			2	3.875	2	9.000	2	3.875	2	9.000								10 11	10 8	399
			INT.BT.NO 1																							
2	6H12	BEAM		20		X			23	4.000														23 4	23 4	70
2	6H13	BEAM		20		X			25	9.000														25 9	25 9	77
2	6H14	BEAM		20		X			23	4.000														23 4	23 4	70
4	6H15	BEAM		20		X			23	4.000														23 4	23 4	140
2	6H16	BEAM		20		X			23	4.000														23 4	23 4	70
2	7H17	BEAM		50		X			4	1.000		17.500												8 10	8 7	35
4	7H18	BEAM		7		X			4	1.000	3	0.500												9 9	9 9	80
22	4U11	BEAM		13	S	X			3	2.000	2	9.000	3	2.000	2	9.000								12 7	12 4	181
22	4U12	BEAM		10	S	X					18.000		17.500											4 6	4 4	64
2	4U13	BEAM		13	S	X			2	6.000	2	9.000	2	6.000	2	9.000								11 3	11 0	15
2	4U14	BEAM		10	S	X					18.000		13.500											4 2	4 0	5
8	4U15	BEAM		10	S	X					6	0	3	2.000										4 2	4 0	21
8	4U16	BEAM		10	S	X					6.000		17.500											2 6	2 4	12
8	2W1	BEAM		22		X				18.000		9.125												26 1	26 1	35
8	2W2	BEAM		22		X				15.000		9.125												23 0	23 0	31
			INT BT NO 2																							
4	6D21	FOOTING		10		X					9	9.000	12	0.000										19 6	19 2	115
12	5D22	FOOTING		20		X			6	3.000														6 3	6 3	78
16	8D23	FOOTING		20		X			12	9.000														12 9	12 9	545
38	9D24	FOOTING & COLUMN		20		X			9	2.000														9 2	9 2	1184
2	6H21	BEAM		18		X			43	10.000														45 2	45 2	136
2	6H22	BEAM		18		X			41	0.000														42 4	42 4	127
4	6H23	BEAM		20		X			41	0.000														41 0	41 0	246
2	6H24	BEAM		20		X			41	0.000														41 0	41 0	123
8	7H25	BEAM		7		X			4	2.000	3	2.000												10 0	10 0	164
20	4H26	WEB		20		X			39	10.000														39 10	39 10	532
2	11H27	WEB		10		X					5	2.000	46	10.000										51 2	50 6	537
3	11H28	WEB		10		X					4	8.000	41	10.000										51 2	50 6	805
70	4P29	COLUMN		16		X			3	3.000														11 1	11 1	518
42	4U21	BEAM		13	S	X			3	3.000	3	3.000	3	3.000	3	3.000								13 9	13 6	379
2	4U22	BEAM		13	S	X			2	8.000	3	3.000	2	8.000	3	3.000								12 7	12 4	16
8	4U23	BEAM		10	S	X					6.000		3	3.000										4 3	4 1	22
38	4U24	WEB		13	S	X				12.000	19	5.000		12.000	19	5.000								41 7	41 4	1049
38	9V21	COLUMN		20		X			21	2.000														21 2	21 2	2132
38	9V22	COLUMN		20		X			19	0.000														19 0	19 0	2455

COMPLETE BILL OF REINFORCING STEEL

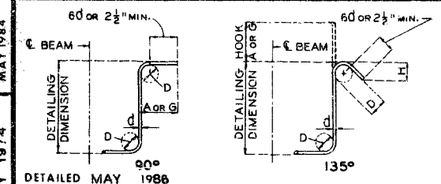
NO. REQD.	MARK NO. SIZE	MARK NO. MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	H FT.	H IN.	K FT.	K IN.	NOMINAL LENGTH FT.IN.	ACTUAL LENGTH FT.IN.	WEIGHT LBS.
8	2W2	BEAM			22		X			15.000		9.125												23 0	23 0	31
			INT.BT.NO 4																							
2	6H12	BEAM			20		X			23	4.000													23 4	23 4	70
2	6H13	BEAM			20		X			25	9.000													25 9	25 9	77
2	6H14	BEAM			20		X			23	4.000													23 4	23 4	70
4	6H15	BEAM			20		X			23	4.000													23 4	23 4	140
2	6H16	BEAM			20		X			23	4.000													23 4	23 4	70
2	7H17	BEAM			50		X																	8 10	6 7	35
4	7H18	BEAM			7		X			4	1.000	3	0.500											9 9	9 9	80
22	4U11	BEAM			13	S	X			3	2.000	2	9.000	3	2.000	2	9.000							12 7	12 4	181
22	4U12	BEAM			10	S	X					18.000		17.500										4 6	4 4	64
2	4U13	BEAM			13	S	X			2	6.000	2	9.000	2	6.000	2	9.000							11 3	11 0	15
2	4U14	BEAM			10	S	X					18.000		13.500										4 2	4 0	5
8	4U15	BEAM			10	S	X					6.000		3 2.000										4 2	4 0	21
8	4U16	BEAM			10	S	X					6.000		17.500										2 6	2 4	12
16	2W2	BEAM			22		X			15.000		9.125												23 0	23 0	61
			SUPERSTRUCTURE																							
			END BTS NO 1A64A																							
8	6F1	WING BRACE			23					14.000		3 10.875		14.000		11.000		8.625		11.000		8.625		6 3	6 2	74
8	6F2	WING BRACE			23					14.000		4 10.750		14.000		8.625		11.000		8.625		11.000		7 5	7 2	86
20	6H2	DIAPH			20					29	4.000													29 4	29 4	881
2	4H3	DIAPH			20					29	4.000													29 4	29 4	39
4	6H4	WING			20					3	5.000													3 5	3 5	21
4	6H5	WING			20					8	4.000													8 4	6 4	50
4	6H6	WING			20					9	11.000													9 11	9 11	60
12	6H7	WING			20					10	6.000													10 6	10 6	189
4	6H8	WING			20					3	1.000													3 1	3 1	19
4	6H9	WING			20					8	1.000													8 1	8 1	49
4	6H10	WING			20					9	7.000													9 7	9 7	58
12	6H11	WING			20					10	1.000													10 1	10 1	182
4	6T1	WING			25					2	1.000	4	0.750	6	9.000					21.000	3	8.000	12 11	12 10	77
4	6T2	WING			25					2	1.000	3	10.500	6	7.000					21.000	3	5.500	12 7	12 6	75
60	4U2	DIAPH	E	19	S					3	7.500	3	0.000											6 8	6 7	264
58	4U3	DIAPH	E	19	S					3	7.500		21.625											5 5	5 4	207
10	6U4	DIAPH		15							21.125	4	10.000							20.500		5.125		6 7	6 6	98
10	6U5	DIAPH		21							21.125	4	10.000							20.500		5.125		6 7	6 4	95
4	6V1	WING			20					5	11.000													5 11	5 11	36
32	6V2	WING			20			V	4	2	4.000													2 4	2 4	
		INCR = 5.750 IN								5	8.000													5 8	5 8	192
4	6V3	WING			20					6	5.000													6 5	6 5	39
4	6V4	WING			20					5	11.000													5 11	5 11	36
28	6V5	WING			20			V	4	2	7.000													2 7	2 7	
		INCR = 6.000 IN								5	7.000													5 7	5 7	172
4	6V6	WING			20					6	4.000													6 4	6 4	38
6	5C1	CURB	E	20						10	0.000													10 9	10 9	90
44	5C2	CURB	E	10	S							20.000		14.000										4 6	4 4	199

STATE	PROJ NO	SHEET NO
MO		20



BENDING DIAGRAMS

NOTE: Two (2) additional #4-U2 are included in bar bill for testing.

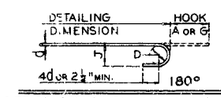


DETAILED MAY 1986
CHECKED May 1986

STIRRUP HOOK DIMENSIONS				
GRADES 40-50-60 KSI				
BAR SIZE	D (IN.)	90° HOOK A OR G	135° HOOK A OR G	135° HOOK APPROX. H
#3	1-1/2"	4"	4"	2-1/2"
#4	2"	4-1/2"	4-1/2"	3"
#5	2-1/2"	6"	5-1/2"	3-3/4"
#6	4-1/2"	6"	7"	4-1/2"

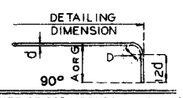
NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.

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



SIZE OF 180° HOOKS (GRADE 40 KSI)

D = 5d FOR #3 THRU #11
D = 10d FOR #14 AND #18



SIZE OF 90° HOOKS (ALL GRADES) AND 180° HOOKS (GRADE 60 KSI)

D = 6d FOR #3 THRU #8
D = 8d FOR #9, #10 AND #11
D = 10d FOR #14 AND #18

END HOOK DIMENSIONS						
	180° HOOKS				90° HOOKS	
BAR SIZE	GRADE 40		GRADE 60		ALL GRADES	
	A OR G	J	A OR G	J	A OR G	
#3	5"	2-3/4"	5"	3"	6"	
#4	6"	3-1/2"	6"	4"	8"	
#5	7"	4-1/2"	7"	5"	10"	
#6	8"	5-1/4"	8"	6"	12"	
#7	9"	6-1/4"	10"	7"	14"	
#8	10"	7"	11"	9"	16"	
#9	12"	8"	15"	11-1/4"	19"	
#10	13"	9"	17"	12-3/4"	22"	
#11	14"	10"	19"	14-1/4"	2'-0"	
#14	2'-2"	20-1/2"	2'-2"	20-1/2"	2'-7"	

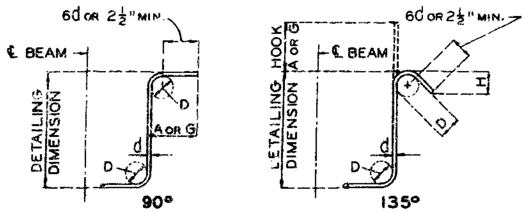
NOTES:

ALL [illegible] WITH SAME PROCEDURE AS FOR ABOVE STD. HOOKS.
HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.
E - EPOXY COATED REINFORCEMENT.
S - STIRRUP.
X - BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES.
V - BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. - NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS - ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)
ACTUAL LENGTHS - ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.

STD. 90.8 REVISED MAY 1984
MAY 1974

Sheet No. 14 of 15

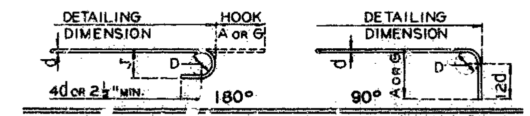
CHARITON COUNTY A-1889R



STIRRUP HOOK DIMENSIONS				
GRADES 40-50-60 KSI				
BAR SIZE	D (IN.)	90° HOOK	135° HOOK	
		HOOK A OR G	HOOK A OR G	APPROX. H
#3	1-1/2"	4"	4"	2-1/2"
#4	2"	4-1/2"	4-1/2"	3"
#5	2-1/2"	6"	5-1/2"	3-3/4"
#6	4-1/2"	8"	7"	4-1/2"

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.

END HOOK DIMENSIONS					
BAR SIZE	180° HOOKS				90° HOOKS
	GRADE 40		GRADE 60		ALLGRADES
	A OR G	J	A OR G	J	A OR G
#3	5"	2-3/4"	5"	3"	6"
#4	6"	3-1/2"	6"	4"	8"
#5	7"	4-1/2"	7"	5"	10"
#6	8"	5-1/4"	8"	6"	12"
#7	9"	6-1/4"	10"	7"	14"
#8	10"	7"	11"	8"	16"
#9	12"	8"	15"	11-1/4"	19"
#10	13"	9"	17"	12-3/4"	22"
#11	14"	10"	19"	14-1/4"	2'-0"
#14	2'-2"	20-1/2"	2'-2"	20-1/2"	2'-7"



SIZE OF 180° HOOKS (GRADE 40 KSI)

D = 5d FOR #3 THRU #11
D = 10d FOR #14 AND #18

SIZE OF 90° HOOKS (ALL GRADES) AND 180° HOOKS (GRADE 60 KSI)

D = 6d FOR #3 THRU #8
D = 8d FOR #9, #10 AND #11
D = 10d FOR #14 AND #18

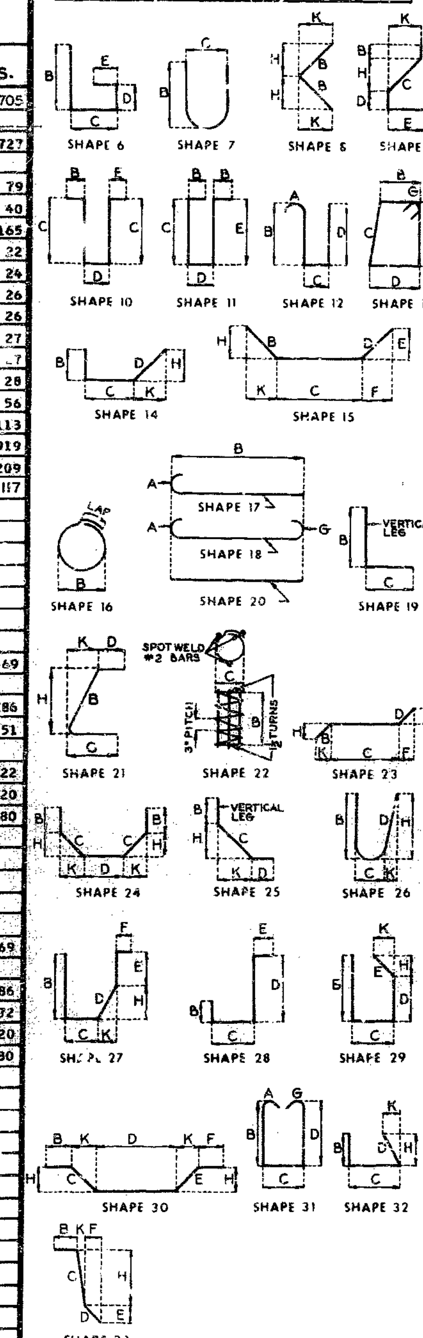
NOTES:

ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS.
HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.
E - EPOXY COATED REINFORCEMENT.
S - STIRRUP.
X - BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES.
V - BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. - NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS - ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN PENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)
ACTUAL LENGTHS - ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.

COMPLETE BILL OF REINFORCING STEEL

NO. REQD.	MARK NO. SIZE MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	B FT. IN.	C FT. IN.	D FT. IN.	E FT. IN.	F FT. IN.	H FT. IN.	K FT. IN.	NOMINAL LENGTH FT. IN.	ACTUAL LENGTH FT. IN.	WEIGHT LBS.
18	6C3	CURB	E	20					26 1.000							26 1	26 1	705
204	5C4	CURB	E	10	S				6.000	12.750	13.500					3 9	3 5	727
24	5R1	PARAPET	E	10	S					16.000	8.500					3 5	3 2	79
8	5R2	END POST	E	20					4 9.000							4 9	4 9	40
16	5R3	END POST	E	10	S					4 9.000	7.750					10 2	9 11	165
4	5R4	END POST	E	12					2 1.375	9.000	2 1.375					5 7	5 4	22
4	5R5	END POST	E	12					2 4.125	9.000	2 4.125					6 0	5 9	24
4	5R6	END POST	E	12					2 6.250	9.000	2 6.250					6 5	6 2	26
4	5R7	END POST	E	12					2 7.250	9.000	2 7.250					6 7	6 4	26
4	5R8	END POST	E	12					2 8.000	9.000	2 8.000					6 8	6 5	27
4	5R9	END POST	E	12					2 8.625	9.000	2 8.625					6 9	6 6	27
4	5R10	END POST	E	12					2 9.500	9.000	2 9.500					6 11	6 8	28
8	5R11	END POST	E	12					2 9.750	9.000	2 9.750					7 0	6 9	56
16	5R12	PARAPET	E	20					6 9.000							6 9	6 9	113
34	5R13	PARAPET	E	20					25 11.000							25 11	25 11	919
228	5R14	PARAPET	E	12					2 0.375	8.500	2 0.375					5 6	5 1	1209
28	5R15	PARAPET	E	10	S				5.500	19.000	8.500					4 5	4 0	117
		CAST-IN-PLACE																
		CONVENTIONAL																
		FORMS OR																
		STAY-IN-PLACE																
		FORMS																
184	5S1	SLAB	E	20					28 6.000							28 6	28 6	5469
52	5S2	SLAB	E	20			V	4	26 6.000							26 6	26 6	
		INCR = 24.000 IN							2 6.000							2 6	2 6	786
106	5S3	SLAB		20					28 6.000							28 6	28 6	3151
28	5S4	SLAB		20			V	4	25 0.000							25 0	25 0	
		INCR = 42.125 IN							3 11.000							3 11	3 11	422
96	5S6	SLAB	E	20					27 2.000							27 2	27 2	2720
84	5S7	SLAB		20					27 2.000							27 2	27 2	2380
		PRECAST PANEL																
		FORMS																
184	5S1	SLAB	E	20					28 6.000							28 6	28 6	5469
52	5S2	SLAB	E	20			V	4	26 6.000							26 6	26 6	
		INCR = 24.000 IN							2 6.000							2 6	2 6	786
212	4S5	SLAB		20					3 4.000							3 4	3 4	472
96	5S6	SLAB	E	20					27 2.000							27 2	27 2	2720
24	5S7	SLAB		20					27 2.000							27 2	27 2	680

STATE	PROJ NO	SHEET NO
MO		21



BENDING DIAGRAMS

Note: Two (2) additional 5R13 & 6C3 are included in bar bill for testing.

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STD. 90.8.5 MAY 1974 REVISED MAY 1984

DETAILED MAY 1986
CHECKED May 1986

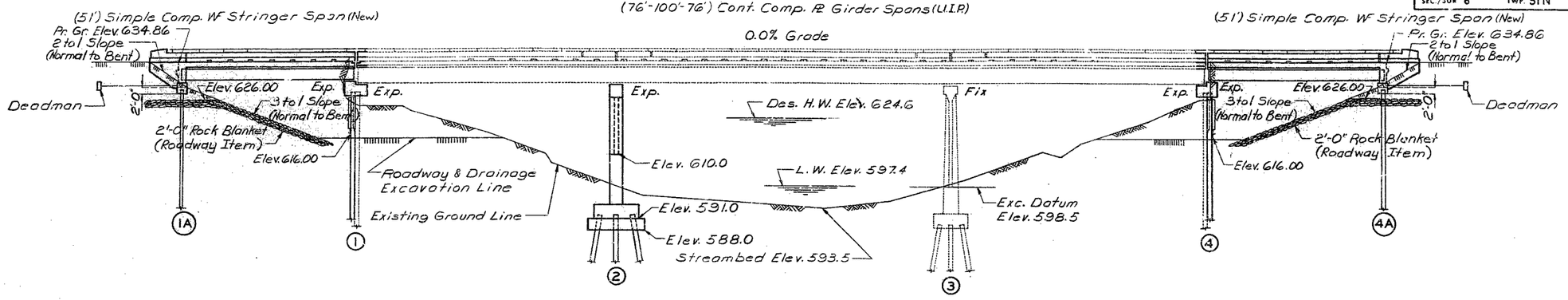
Note: This drawing is not to scale. Follow dimensions.

CHARITON COUNTY A-1889R

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

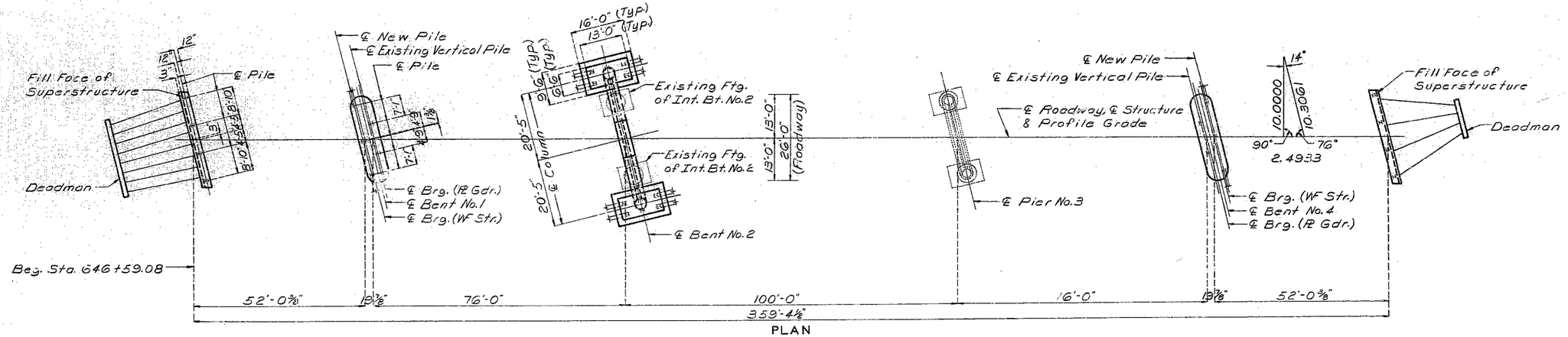
FINAL PLANS

STATE	PROJ NO	SHEET NO
MO	PROJ BHO-021(11)	7
SEC./SUR 6	TWP. 51N	RGE 17W



GENERAL ELEVATION

Note: Remove existing concrete beam cap, backwall, wings and battered piles at bents No. 1 and 4 (See Special Provisions).
Existing intermediate bent No. 2 to be removed (See Special Provisions).
Seal course is designed for a water elevation of 607.0.



PLAN

Note: For General Notes, Estimated Quantities, Estimated Quantities For Alternate Slabs and Pile Data, see sheet No. 2.

B.M. Elevation 635.49 N.E. Corner 9" Curb 13' Rt. Sta. 646+59

BRIDGE OVER LITTLE CHARITON RIVER

STATE ROAD FROM ROUTE 5 WESTERLY
ABOUT 3.5 MILES N.W. OF GLASCOW
PROJECT NO. BHO-021(11) STA. 646+59.08
JOB NO. 2-S-KK-315 RTE. KK
CHARITON COUNTY
DATE 6/18/86

STD.
STD. 706.35
A-1889R

DESIGNED May 1986
DETAILED May 1986
CHECKED May 1986

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

Sheet No. 1A of 15

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FINAL PLANS

STATE	PROJ. NO	SHEET NO.
MO.	PROJ. BHO-021(11)	8

FINAL QUANTITIES FOR ALTERNATE SLABS			
TYPE OF SLAB	REINF. (LBS.) EPOXY	REINF. (LBS.) PLAIN	CONC. (CU. YD.)
~~Cast-In-Place Superstructure Forms~~	~~9450~~	~~3720~~	~~82.1~~
Precast Panel Forms	9450	3720	82.1
~~Stay-In-Place Forms~~ **	~~9450~~	~~3720~~	~~82.1~~ *

Note: The table of Estimated Quantities for Alternate Slabs represents the quantities used by the state in preparing the cost estimate for concrete slabs. Variations may be encountered in these estimated quantities but these variations cannot be used for an adjustment in the Contract Unit Price per square yard of Alternate Slab used.

See Special Provisions for alternate methods of forming slabs.

* Does not include concrete required to fill corrugation of S.I.P. forms.

** Does not include reinforcing bars used as bar supports.

Precast panel quantities based on skewed end panels.

FINAL QUANTITIES					
ITEM		SUBSTR.	SUPERSTR	TOTAL	
Special Work	Lump Sum			1	
Replacement of Exp. Device and Adj. Conc.	Lin. Ft.		54	54	
Removal of Bents #1 & #4 (See Special Prov.)	Lump Sum			1	
Removal of Bent #2 (See Special Prov.)	Lump Sum			1	
Class 1 Excavation	Cu. Yd.	125		125	
Class 2 Excavation	Cu. Yd.	118		118	
Structural Steel Piles (10")	Lin. Ft.	2060		2060	
Class 3 Concrete	Cu. Yd.	135.2		135.2	
Seal Concrete	Cu. Yd.	33.8		33.8	
Class B1 Concrete	Cu. Yd.		22.2	22.2	
( ) Slab on Steel (See Special Provisions)	Sq. Yd.		337	337	
Lam. Neop. Brg. Pads (Steel Structure)	Each		20	20	
Preformed Compression Exp. Joint Seal (4")	Lin. Ft.		27	27	
Elastomeric Expansion Joint Seal (3")	Lin. Ft.		27	27	
Reinforcing Steel	Lb.	14,930		14,930	
Reinforcing Steel (Epoxy Coated)	Lb.		4600	4600	
Fabricated Structural Carbon Steel (Misc.)	Lb.		8240	8240	Weller Marker
Deadman Anchorage Assembly	Each			2	
Painting (Existing & New Steel)	Lump Sum			1	

Note: All reinforcement in End Bents No.1A and No.4A (except pile cap beam) is included with Superstructure quantities.

All concrete between the upper and lower construction joints in End Bents No.1A and No.4A is included in the superstructure quantities for Slab on Steel, see Special Provisions.

GENERAL NOTES:

Design Specifications: A.A.S.H.T.O. - 1983 and Interims 1984 and 1985 Load Factor Design.

Design Loading:
H15-44, 15#/sq.ft. Future Wearing Surface.
Earth 120#/cu.ft., Equivalent Fluid Pressure Bent No.1A 63#/cu.ft. and Bent No.4A 40#/cu.ft.
Fatigue Stress - Case II

Design Unit Stresses:
Class B Concrete (Substructure) f'c = 3,000 psi.
Class B1 Concrete (Curb and Parapet) f'c = 4,000 psi.
Class B2 Concrete (Superstr. except Curb and Parapet) f'c = 4,000 psi.
Reinforcing Steel (Grade 60) fy = 60,000 psi.
New Structural Carbon Steel (A.S.T.M. A36) fy = 36,000 psi.
Structural Steel Pile fb = 9,000 psi.

Fabricated Steel:
Field connections, High Strength Bolts 3/4" ϕ, holes 13/16" ϕ except as noted.
Turn of Nut Method of tensioning high strength bolts will be permitted.

Reinforcing Steel:
Minimum clearance to reinforcing steel shall be 1½" unless otherwise shown.
All reinforcing bars in top of substructure beam or caps shall be spaced to clear anchor bolts for bearings by at least ½".
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.

Joint Filler:
All joint filler shall meet the requirement of Std Spec. 1057.2.4, except as noted.

Painting:
System B by contractor in accordance with Std. Spec. 712.12 and 712.13. Color of the final field coat for System B shall be aluminum. (See Special Provisions)
Areas to be encased in end bent concrete shall be painted one coat of System C primer and scratched or damaged surfaces are to be touched up in field before concrete is poured.

The prime coat of paint on bracing for intermediate bents may be applied in the shop or field. The weight of sway bracing is included in the Fabricated Structural Carbon Steel quantities.

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

Contractor shall verify all dimensions in field before ordering new material.

PILE DATA						
BENT NO.		1A	1	2	4	4A
BEARING PILE	Pile Type and Size	HP10X42				
	Number	4	3	12	3	4
	Approximate Length Ft.	96'-9"	96'	59'-6"	95'-9"	96'-9"
	Design Bearing Tons	36	51	53	51	36
	Hammer Energy Req'd Ft. Lbs.	12,600	12,600	12,600	12,600	12,600

Note: Minimum energy requirement of hammer based on plan length and design bearing value of piles.

All pile shall be driven to practical refusal.

420

DETAILED May 1986
CHECKED May 1986

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

CHARITON COUNTY

A-1889R

Missouri Department of Transportation
State Bridge Inspection Report

June 25, 2024
10:10:24AM

COUNTY: CHARITON **DISTRICT: NW** **CLASS: STATBR** **FED-ID: 1580** **BRIDGE: A1889**

GENERAL STRUCTURE INFORMATION

ROUTE: RTKKS	**# SPANS:** 5	**PLACE CODE:** 13204 CHARITON	
FEATURE: LIT CHARITON RVR	**LANES ON:** 2	**LENGTH:** 359 FT 0 IN	
STATUS: A-OPEN	**LANES UNDER:** 0	**MAXIMUM SPAN:** 100 FT 0 IN	
LOG MILE: 12.239	**COMPASS DIRECTION:** WEST to EAST	**APPROACH ROADWAY:** 21 FT 0 IN	
DETOUR: 20.00 MILES	**DIRECTION OF TRAFFIC:** 2-WAY TRAF	**CURB TO CURB:** 26 FT 0 IN	
NHS: NO	**FUNCTIONAL CLASS:** RL-MINOR COLLECTOR	**OUT TO OUT:** 28 FT 8 IN	
BUILT: 1966	**NBI OWNER:** MODOT	**AADT:** 140	
REHAB: 1986	**NBI MAINTAINED:** MODOT	**AADT YEAR:** 2023	
LOCATION: S 6 T 51 R 17 W	**MAINTENANCE DISTRICT:** NW	**AADT TRUCK:** 8.6%	
LATITUDE: 39 15 29.69 (DMS)	**MAINTENANCE COUNTY:** CHARITON	**FUTURE AADT:** 175	
LONGITUDE: 92 51 50.51 (DMS)	**SUB AREA:** 7A37	**FUTURE AADT YEAR:** 2043	

BRIDGE INSPECTION INFORMATION

DATE: 04/29/2024 **RESPONSIBILITY:** BRIDGEDIV
FREQUENCY: 24 **CALCULATED INTERVAL**:** 23
TEAM LEADER: RANDY WEAVER **ELEMENT:** NO
INSPECTOR 2: TOM SHRIVER (NTLQ) **INSPECTOR 4:**
INSPECTOR 3:

** When calculated interval exceeds the frequency, a justification comment per BIRM is required.

GENERAL INSPECTION COMMENTS

FRACTURE CRITICAL INSPECTION INFORMATION

DATE: **RESPONSIBILITY:** **CATEGORY:**
FREQUENCY: **CALCULATED INTERVAL**:** **NBI:**
TEAM LEADER: **INSPECTOR 3:** **METHOD:**
INSPECTOR 2: **INSPECTOR 4:**

** When calculated interval exceeds the frequency, a justification comment per BIRM is required.

FRACTURE CRITICAL INSPECTION COMMENTS

INDEPTH INSPECTION INFORMATION

DATE: **RESPONSIBILITY:** **CATEGORY:**
FREQUENCY: **CALCULATED INTERVAL**:** **NBI:**
TEAM LEADER: **INSPECTOR 3:** **METHOD:**
INSPECTOR 2: **INSPECTOR 4:**

** When calculated interval exceeds the frequency, a justification comment per BIRM is required.

INDEPTH INSPECTION COMMENTS

SPECIAL INSPECTION INFORMATION

DATE: 12/22/2014 **RESPONSIBILITY:** BRIDGEDIV **CATEGORY:** CHANNEL CROSS SEC
FREQUENCY: 120 **CALCULATED INTERVAL**:** **NBI:** NO
TEAM LEADER: SCOTT STEPHENS **INSPECTOR 3:** **METHOD:** WT TAPE
INSPECTOR 2: **INSPECTOR 4:**

** When calculated interval exceeds the frequency, a justification comment per BIRM is required.

SPECIAL INSPECTION COMMENTS

(WEAVER1, 04/29/2024)--4-29-24 UNABLE TO COMPLETE CROSS SECTION DUE TO FLOODING OF THE RIVER DUE TO RECENT HEAVY RAINS

UNDERWATER INSPECTION INFORMATION

DATE: 05/15/2018 **RESPONSIBILITY:** BRIDGEDIV **CATEGORY:** DRY
FREQUENCY: 60 **CALCULATED INTERVAL**:** 41 **NBI:** NO
TEAM LEADER: CURT RICKERSON **INSPECTOR 3:** **METHOD:** VISUAL
INSPECTOR 2: **INSPECTOR 4:**

** When calculated interval exceeds the frequency, a justification comment per BIRM is required.

UNDERWATER INSPECTION COMMENTS

OTHER SPECIAL INSPECTIONS

DATE	FREQUENCY	CATEGORY	NBI	CALCULATED INTERVAL	RESPONSIBILITY	METHOD

OTHER UNDERWATER INSPECTIONS

DATE	FREQUENCY	CATEGORY	NBI	CALCULATED INTERVAL	RESPONSIBILITY	METHOD

COUNTY: CHARITON **DISTRICT: NW** **CLASS: STATBR** **FED-ID: 1580** **BRIDGE: A1889**

STRUCTURE POSTING

APPROVED CATEGORY: S-1 NO POSTING REQUIRED
Ton 1: **Ton 2:** **Ton 3:**
COMMENTS:

FIELD CATEGORY: S-1 NO POSTING REQUIRED
Ton 1: **Ton 2:** **Ton 3:** **PROBLEM:** **PROBLEM DIRECTION:**
COMMENTS:

GENERAL COMMENTS/MAJOR RATED ITEMS

GENERAL COMMENTS: (BOWDEJ1, 04/02/2008)--(52') SMP WF - (76'-100'-76') CONT COMP WLD PL GDR - (52') SMP WF - (END SPANS ADDED IN 1996)
(ACTONB1, 04/15/2024)--STIP REDECK - 2026

[ITEM 58] DECK: 3-SERIOUS CONDITION
RATING : 05/15/2018
COMMENTS: (WEAVER1, 04/29/2024)--APPROXIMATELY 70% SATURATION, PATCHES, AND DELAMINATIONS THROUGHOUT THE SPANS 2,3 & 4 DECK

[ITEM 59] SUPER: 6-SATISFACTORY CONDITION
RATING : 05/15/2018
COMMENTS: (MADSEJ, 05/11/2020)--MEDIUM TO HEAVY PACKRUST ON THE GIRDER ENDS IN THE EXPANSION JOINT AREAS.
(SHELTJ2, 05/25/2022)--GRDR ENDS W/ INITL 10% SL IN WEB & BTM FLGS AT JOINT AREA

[ITEM 60] SUB: 5-FAIR CONDITION
RATING : 05/15/2018
COMMENTS: (MADSEJ, 05/11/2020)--DELAMINATIONS AND SPALLS THROUGHOUT THE BENT 5 BEAMCAP WITH A MINOR AFFECT ON THE GIRDER BEARINGS.
(SHELTJ2, 05/25/2022)--BNT 5 GRDR 1, 2 & 4 BEARINGS W/ 10% UNDERMINING DUE TO SPALLS

[ITEM 61] BANK/CHANNEL: 6-WIDESPREAD MINOR DAMAGE
RATING : 05/18/2001
COMMENTS: (MADSEJ, 05/11/2020)--STEEP ERODING AND SLOUGHING BANKS THROUGHOUT THE CHANNEL.

[ITEM 113] SCOUR: 8-STABLE FOR CALCULATED
RATING : 05/18/2001
EVALUATION TYPE :
COMMENTS:

[ITEM 71] WATERWAY ADEQUACY: MINOR DELAYS APPRCH
RATING : 05/18/2001
COMMENTS:

[ITEM 72] APPRRDWY ALIGNMENT: 6-SATISFACTORY
RATING : 05/18/2001
COMMENTS:

RAILING AND APPROACH PAVEMENT COMPONENTS AND RATINGS

[ITEM 36A] BRIDGE RAILING RATING: *DOESNT MEET CURRNT STND-0* ***RATING :*** *02/12/2003* ***COMMENTS:***

MATERIAL	CONSTRUCTION	DIRECTION	COMMENTS
REINFORCED CONCRETE	PARAPET	BOTH	
ALUMINUM	CIRCULAR TUBE	BOTH	
REINFORCED CONCRETE	CURB	BOTH	

[ITEM 36B] TRANSITION RAILING RATING: *DOESNT MEET CURRNT STND-0* ***RATING :*** *02/12/2003* ***COMMENTS:***

MATERIAL	CONSTRUCTION	DIRECTION	COMMENTS
GALVANIZED STEEL	W-BEAM	ALL	

[ITEM 36C] APPROACH RAILING RATING: *MEETS CURRENT STANDARDS-1* ***RATING :*** *05/18/2001* ***COMMENTS:***

COUNTY: CHARITON **DISTRICT: NW** **CLASS: STATBR** **FED-ID: 1580** **BRIDGE: A1889**

MATERIAL	CONSTRUCTION	DIRECTION	COMMENTS
GALVANIZED STEEL	W-BEAM	ALL	

[ITEM 36D] RAIL END TREATMENT RATING: *DOESNT MEET CURRNT STND-0* ***RATING :*** *02/12/2003* ***COMMENTS:***

MATERIAL	CONSTRUCTION	DIRECTION	COMMENTS
GALVANIZED STEEL	TURN DOWN SECTION > 45	BOTH-EAST	

APPROACH PAVEMENT: *Overall condition assigned for each approach pavemenet component is shown below.

MATERIAL	CONSTRUCTION	DIRECTION	CONDITION*	COMMENTS
ASPHALT	BITUMINOUS MAT	BOTH	GOOD	(MENEET, 09/03/2019)--BREAKING UP ON WEST APPROACH AND SETTLING

DRAINAGE, EXPANSION DEVICES, BANK/SLOPE, AND DECK PROTECTIVE COMPONENTS

DECK PROTECTIVE COMPONENTS:

SERIES TYPE-#	COMPONENT	MATERIAL	CONSTRUCTION	THICKNESS	YEAR APPLIED	MANUFACTURE	OVERALL CONDITION
APPROACH SERIES-1	*WEARING SURFACE*	*ASPHALT*	*BITUMINOUS MAT*				*FAIR*
COMMENT:							
	DECK PROTECTION	*NOTAPPLICABLE*	*NONE*				
COMMENT:							
	MEMBRANE	*NOTAPPLICABLE*	*NONE*				
COMMENT:							
MAIN SERIES-2	*WEARING SURFACE*	*ASPHALT*	*BITUMINOUS MAT*				*POOR*
COMMENT:							
	DECK PROTECTION	*NOTAPPLICABLE*	*NONE*				
COMMENT:							
	MEMBRANE	*NOTAPPLICABLE*	*NONE*				
COMMENT:							
APPROACH SERIES-3	*WEARING SURFACE*	*ASPHALT*	*BITUMINOUS MAT*				*POOR*
COMMENT:							
	DECK PROTECTION	*NOTAPPLICABLE*	*NONE*				
COMMENT:							
	MEMBRANE	*NOTAPPLICABLE*	*NONE*				
COMMENT:							

DRAINAGE COMPONENTS:

COMPONENT	MATERIAL	CONSTRUCTION	DIRECTION	COMMENTS
DRAINAGE	*REINFORCED CONCRETE*	*CURB OUTLET*		

EXPANSION DEVICE COMPONENTS:

SUB UNIT-#	SUB LABEL	COMPONENT	MATERIAL	CONSTRUCTION	GAP	YEAR APPLIED	MANUFACTURE	OVERALL CONDITION
BENT-2		CLOSED EXPANSION JOINT	ELASTOMERIC	COMPRESSION SEAL			ON-FLEX	POOR
COMMENT:								
BENT-5		CLOSED EXPANSION JOINT	ELASTOMERIC	COMPRESSION SEAL			ON-FLEX	POOR
COMMENT:								

BANK/SLOPE PROTECTION COMPONENTS:

COMPONENT	MATERIAL	CONSTRUCTION	DIRECTION	COMMENTS
SLOPE PROTECTION	ROCK	RIP RAP	BOTH	

DECK COMPONENTS

SPAN TYPE-#	COMPONENT	MATERIAL	CONSTRUCTION	COMMENTS
APPROACH SPANS-1	DECK	REINFORCED CONCRETE	CAST-IN-PLACE-P/C FORMS	
MAIN SPANS-2	DECK	REINFORCED CONCRETE	CAST-IN-PLACE	

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
DELAMINATION	THROUGHOUT		LARGE		
DETERIORATION	AT OUTLETS		MINOR		
EFFLORESCENCE	THROUGHOUT		LIGHT		
PATCHES	THROUGHOUT		LARGE	50 %	
SATURATION	THROUGHOUT		SEVERE	70 %	

MAIN SPANS-3	DECK	REINFORCED CONCRETE	CAST-IN-PLACE

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
DELAMINATION	THROUGHOUT		LARGE		
DETERIORATION	AT OUTLETS		MINOR		
EFFLORESCENCE	THROUGHOUT		LIGHT		
PATCHES	THROUGHOUT		LARGE	50 %	
REBAR EXPOSED	THROUGHOUT		MINOR		
SATURATION	THROUGHOUT		MODERATE	50 %	
SPALLS	THROUGHOUT		SMALL		

MAIN SPANS-4	DECK	REINFORCED CONCRETE	CAST-IN-PLACE

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
DELAMINATION	THROUGHOUT		LARGE		
DETERIORATION	AT OUTLETS		MINOR		
EFFLORESCENCE	THROUGHOUT		LIGHT		
PATCHES	THROUGHOUT		LARGE	40 %	
SATURATION	THROUGHOUT		HEAVY	40 %	

APPROACH SPANS-5	DECK	REINFORCED CONCRETE	CAST-IN-PLACE-P/C FORMS

SUPERSTRUCTURE COMPONENTS

SERIES TYPE-#	SPAN TYPE	MATERIAL	CONSTRUCTION	LABEL	COMMENTS
APPROACH SERIES-1	SIMPLE SPAN	STEEL	WIDE FLANGE GIRDERS		

SPAN	COMPOSITE INDICATOR	LENGTH	WEATHERING STEEL	COMMENTS
APPROACH SPANS-1	COMPOSITE	52 FT 0 IN	NO	

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
RUST	GIRDER ENDS		HEAVY		

MAIN SERIES-2 CONTINUOUS SPAN STEEL PLATE GIRDERS

SPAN	COMPOSITE INDICATOR	LENGTH	WEATHERING STEEL	COMMENTS
MAIN SPANS-2	COMPOSITE	76 FT 0 IN	NO	

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
OTHER	DIAPHRAGMS		NOT APPLICABLE		(REHAGM, 08/06/2004)--1ST DIAPHRAGM EAST, BETWEEN GIRDERS 1 & 2 IS BENT SLIGHT FROM DRIFT
RUST	GIRDER ENDS		HEAVY		
RUSTING	BOTTOM FLANGE		LIGHT		
RUSTING	TOP FLANGE		LIGHT		

SPAN	COMPOSITE INDICATOR	LENGTH	WEATHERING STEEL	COMMENTS
MAIN SPANS-3	COMPOSITE	100 FT 0 IN	NO	

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
RUSTING	BOTTOM FLANGE		LIGHT		
RUSTING	TOP FLANGE		LIGHT		

SPAN	COMPOSITE INDICATOR	LENGTH	WEATHERING STEEL	COMMENTS
MAIN SPANS-4	COMPOSITE	76 FT 0 IN	NO	

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
RUST	GIRDER ENDS		HEAVY		
RUSTING	BOTTOM FLANGE		LIGHT		
RUSTING	DIAPHRAGMS		MEDIUM		

APPROACH SERIES-3 SIMPLE SPAN STEEL WIDE FLANGE GIRDERS

SPAN	COMPOSITE INDICATOR	LENGTH	WEATHERING STEEL	COMMENTS
APPROACH SPANS-5	COMPOSITE	52 FT 0 IN	NO	

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
RUST	GIRDER ENDS		HEAVY		

SUBSTRUCTURE COMPONENTS

SUBSTRUCTURE	SKEW	LENGTH	MATERIAL	CONSTRUCTION	LABEL	COMMENTS
ABUTMENT-1	*RA-14 DEGREES*	*29 FT 8 IN*	*REINFORCED CONCRETE*	*INTEGRAL*		

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT

ASSOCIATED COMPONENT	MATERIAL	CONSTRUCTION
BEAM CAP	REINFORCED CONCRETE	CAST-IN-PLACE

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
LEACHING	TOP	THROUGHOUT	HEAVY		

DEADMAN ANCHORS	STEEL	ROD

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT

PILING	STEEL	H-SHAPE

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
TURNED BACK WINGS	REINFORCED CONCRETE	CAST-IN-PLACE			

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
FIXED BEARING	ELASTOMERIC	PLAIN NEOPRENE			

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT

BENT-2	*RA-14 DEGREES*	*26 FT 9 IN*	*REINFORCED CONCRETE*	*PILE CAP*		

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
ASSOCIATED COMPONENT	**MATERIAL**	**CONSTRUCTION**			
BEAM CAP	REINFORCED CONCRETE	CAST-IN-PLACE			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**
HORIZONTAL CRACKS	THROUGHOUT		FEW		
PILING	STEEL	H-SHAPE			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**
RUSTING	AT BEAM CAP		LIGHT		
RUSTING	GROUND LINE		LIGHT		
CROSS BRACING	STEEL	ANGLE			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**
FIXED BEARING	ELASTOMERIC	PLAIN NEOPRENE			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**

BENT-3 RA-14 DEGREES 44 FT 4 IN REINFORCED CONCRETE MULTIPLE COLUMN

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
ASSOCIATED COMPONENT	**MATERIAL**	**CONSTRUCTION**			
BEAM CAP	REINFORCED CONCRETE	CAST-IN-PLACE			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**
MAP CRACKS	CAP FACE		MINOR		
COLUMN	REINFORCED CONCRETE	CAST-IN-PLACE			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**
SCALING	BOTTOM		MEDIUM		
FOOTING	REINFORCED CONCRETE	H-PILE			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**
WEB BEAM	REINFORCED CONCRETE	CAST-IN-PLACE			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**
VERTICAL CRACKS	RANDOM		MEDIUM		(MENEET, 09/03/2019)--OPEN
FIXED BEARING	STEEL	PEDESTAL(ROTATING)			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**

BENT-4 RA-14 DEGREES 26 FT 4 IN REINFORCED CONCRETE MULTIPLE COLUMN

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
ASSOCIATED COMPONENT	**MATERIAL**	**CONSTRUCTION**			
BEAM CAP	REINFORCED CONCRETE	CAST-IN-PLACE			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**
SATURATION	BEAM CAP		MINOR	20 %	
COLUMN	REINFORCED CONCRETE	CAST-IN-PLACE			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**
SCALING	BOTTOM		MEDIUM		
FOOTING	REINFORCED CONCRETE	H-PILE			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**
WEB BEAM	REINFORCED CONCRETE	CAST-IN-PLACE			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**
SCALING	BOTTOM		MEDIUM		
VERTICAL CRACKS	RANDOM		MEDIUM		(MENEET, 09/03/2019)--OPEN
FIXED BEARING	ELASTOMERIC	PLAIN NEOPRENE			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**

BENT-5 RA-14 DEGREES 26 FT 9 IN REINFORCED CONCRETE PILE CAP

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT

COUNTY: CHARITON **DISTRICT: NW** **CLASS: STATBR** **FED-ID: 1580** **BRIDGE: A1889**

ASSOCIATED COMPONENT	MATERIAL	CONSTRUCTION			
BEAM CAP	REINFORCED CONCRETE	CAST-IN-PLACE			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**
DELAMINATION	THROUGHOUT		LARGE		
HORIZONTAL CRACKS	CAP FACE		OPEN		
SPALLS	AT BEARING		MINOR AFFECT	5 %	(MADSEJ, 05/11/2020)--SPAN 4 GIRDER 4
SPALLS	THROUGHOUT		LARGE		
VERTICAL CRACKS	THROUGHOUT		FEW		
PILING	STEEL	H-SHAPE			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**
RUSTING	GROUND LINE		LIGHT		
CROSS BRACING	STEEL	ANGLE			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**
FIXED BEARING	ELASTOMERIC	PLAIN NEOPRENE			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**

ABUTMENT-6 *RA-14 DEGREES* *29 FT 8 IN* *REINFORCED CONCRETE* *INTEGRAL*

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
ASSOCIATED COMPONENT	**MATERIAL**	**CONSTRUCTION**			
BEAM CAP	REINFORCED CONCRETE	CAST-IN-PLACE			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**
DEADMAN ANCHORS	STEEL	ROD			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**
PILING	STEEL	H-SHAPE			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**
TURNED BACK WINGS	REINFORCED CONCRETE	CAST-IN-PLACE			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**
FIXED BEARING	ELASTOMERIC	PLAIN NEOPRENE			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**

OVER/UNDER ROUTES CLEARANCE INFORMATION

CLEARANCES OVER DECK

**NOTE: Vertical clearances for permitting purposes are taken as 2 inches less than the actual field measured clearance.

VERTICAL CLEARANCE TYPE**	VALUE	DIRECTION	DATE	COMMENT

COUNTY: CHARITON **DISTRICT: NW** **CLASS: STATBR** **FED-ID: 1580** **BRIDGE: A1889**

CLEARANCES UNDER BRIDGE

**NOTE: Vertical clearances for permitting purposes are taken as 2 inches less than the actual field measured clearance.

RECORD #	ROUTE	# LANES	DIRECTION OF TRAFFIC	RIGHT LATERAL CLEARANCE	LEFT LATERAL CLEARANCE	UR-ID

VERTICAL CLEARANCE TYPE**	VALUE	DIRECTION	DATE	COMMENT

STRUCTURE PAINT INFORMATION

CONDITION: GOOD **RUST AMOUNT :** 7 = .2% OF SURFACE RUSTED **STEEL TONS :** 71

ORIGINAL PAINT

PAINT TYPE : B SYSTEM
NAME : BASIC LEAD CHROMIUM
PAINT COLOR : ALUMINUM
PAINT YEAR : 1968
MILS :

CONTRACT REPAINT

PAINT TYPE :
NAME :
PAINT COLOR :
PAINT YEAR :
MILS :

DEPARTMENT REPAINT

PAINT TYPE : B SYSTEM
NAME : BASIC LEAD CHROMIUM
PAINT COLOR : ALUMINUM
PAINT YEAR : 1986
MILS : 7

MANUFACTURE :
SURFACE PREP :

REQUESTED WORK ITEMS

GENERAL WORK COMMENTS:

RESPONSIBILITY	*LOCATION*	*ITEM*	*CATEGORY*	*PRIORITY*	*DATE*	*WORK ITEM COMMENT*
REGIONAL	BENT-CAPS	REPAIR BEAM CAP	SUBSTRUCTURE	2	05/15/2018	(SHELTJ2, 05/25/2022)--REPAIR SPALL UNDER BEARING SEATS UNDER GRDRS 1, 4 & 5 AT BENT
DISTRICT SPECIAL	BENT	PAINT H-PILE	PAINT	2	05/15/2018	(RICKEC, 05/15/2018)--GIRDERS AND DIAPHRAMS NEED CLEANED AND PAINTED
DISTRICT ROUTINE	BENT	PAINT BRGS AND BEAMS ENDS	PAINT	2	05/15/2018	
DISTRICT SPECIAL	WEST	REPAIR APPROACH ROADWAY	APPROACH	2	05/15/2018	(RICKEC, 05/15/2018)--WEST APPROACH SLAB SETTLING AND BREAKING UP
DISTRICT SPECIAL			REDECK	2	05/15/2018	(RICKEC, 05/15/2018)--HEAVY SATURATION AND LARGE AREAS OF MAP CRACKING IN SPANS 2,3 & 4

UTILITY ATTACHMENTS

UTILITY	*OWNER*	*METHOD*	*MEASUREMENT TYPE*	*VALUE*	*NUMBER*	*UTILITY ATTACHMENT COMMENT*

PROGRAM NOTES INFORMATION

YEAR	PROJECT #	MONTH LET	YEAR LET	ITEMS	COMMENT

COMPUTER GENERATED RATINGS AND DEFICIENCY ITEMS

NOTE: The items listed in this section are updated whenever computer edits are ran on a structure after the inspection updates have been entered in to TMS.

Rated Item	Rating	Rating Date
[Item 67] Structure Evaluation Rating:	5-BETTER THAN MINIMUM	7/12/2018
[Item 68] Deck Geometry Rating:	5-BETTER THAN MINIMUM	1/19/2017
[Item 69] Underclearance:	N-NOT APPLICABLE	5/18/2001
Sufficiency Rating:	71.9%	3/8/2022
Deficiency:	STRUCTURAL	7/12/2018
Funding Eligibility:	PARTIAL	----
Estimated New Structure Length:	387 FT.	----
Estimated Structure Cost:	$1,368,169	----
Estimated Total Project Cost:	$2,052,253	----
Year of Cost Estimate:	2024	----

NOTE: The above structure length and cost estimates are computer generated using algorithims in the TMS system. These algorthims are generalized to use NBI items to come up with a new structure length and width to calculate a new area which is taken times a representative cost per square foot. The actual structure size and cost may vary significantly from these numbers once site specific engineering is done.

ADVANCED SIGN INFORMATION

SIGN #	SIGN TYPE	PROBLEM	PROBLEM DIRECTION
1			

OUTFALL INSPECTION INFORMATION

 # OUTFALLS: **INSPECTOR:**

STATUS: **DATE:**

NOTES:

BRIDGE MEMORANDUM

Job No.: **JNW0010** **Bridge No.:** **L05481**
County: Livingston **Route:** D (Minor) over Shoal Creek Drainage Ditch

Final Layout: U.I.P., Redeck & Make Composite Existing (70'-90'-70') Continuous Wide Flange Beam Spans
Roadway Width: 24'-0" plus 16" Type D Barriers each side
Alignment: Tangent
Skew: Square
Profile Grade: Match existing ±
Loading: H15-44 (1953), HS20-44 (New construction)
Begin Station: 394+80.0± (match existing)
Traffic Handling: Structure to be closed during construction. Traffic to be maintained on other routes during construction. See roadway plans for traffic control.
Traffic Information: AADT = 614 (2023), Truck = 10.8% = 66
AADT = 768 (2043), Truck = 10.8% = 83
Existing Bridge: Redeck L0548 and use in place.
Condition Ratings: Deck = 4, Superstructure = 6, Substructure = 6
Load Posting: No posting required (to be maintained)

General Notes:

- Remove existing bridge deck including curbs, rails and top of wings.
- Install 6½" CIP sliding slab with 3/16" cross slope (without precast panels), stay-in-place forms permitted.
- Increase existing haunch 1" to match existing profile grade.
- Make End Bents No. 1 & 4 semi-integral.
- Install 16" wide, Type D Barriers.
- Install Slab Drains as required.
- Install Shear Connectors to make composite.
- Clean & Recoat existing bearings at Int. Bents No. 2 & 3.
- Apply Protective Coating - Concrete Bents and Piers (Epoxy) to End Bents No. 1 & 4 and Intermediate Bents No. 2 & 3.
- Install 20' Bridge Approach Slab (Minor) at End Bents No. 1 & 4
- No conduit, lighting, utility supports, or sidewalks are to be included in the final plans.
- Existing paint system is System S (lead based).

Special Notes:

- Provide object markers at each corner of bridge (Roadway Item).
- Remove existing Bridge Approach Pavement (Roadway Item).
- Roadway surfacing adjacent to bridge ends to match top of bridge deck (Roadway Item).
- Rubblized existing bridge deck may be used on spill slopes (Roadway Item).
- An asbestos and lead inspection has been performed on this structure (L0548). Results indicate that asbestos is not present and lead is present. The Bridge Division will include this report in the electronic deliverables folder when submitting contract documents to the Design Division for the letting (Bridge Item).
- Girders to be recoated in a future, paint-only contract (Estimated cost of $115,000).

Estimated Working / Calendar Days = **30** / **45**
FY26 Estimated Construction Cost[1] = $352,000

[1]Does not include STIP inflation from Planning

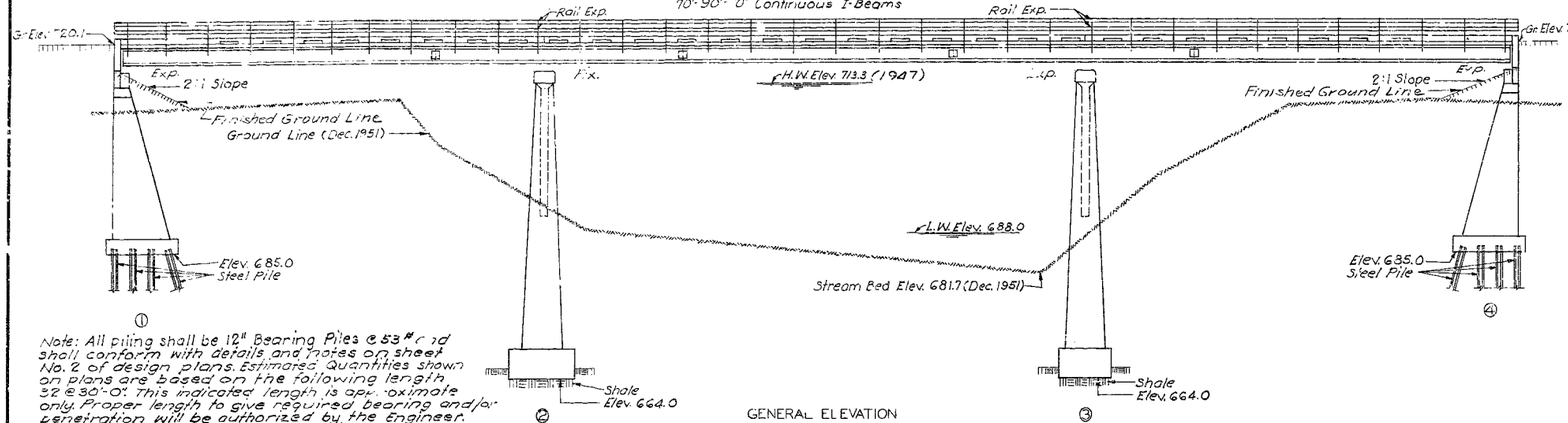
Bridge contact is Ted Koester, SPM 573-751-4229

District contact is Joyce Reynolds, TPM 816-387-2411

Ted Koester	6/12/24		
Prepared by: Structural Project Manager	*Date*	*District: Transportation Project Manager*	*Date*
		District: District Bridge Engineer	*Date*

MISSOURI STATE HIGHWAY DEPARTMENT

U. S. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	S-625(6) Sec 3 (SD)	19		



GENERAL ELEVATION

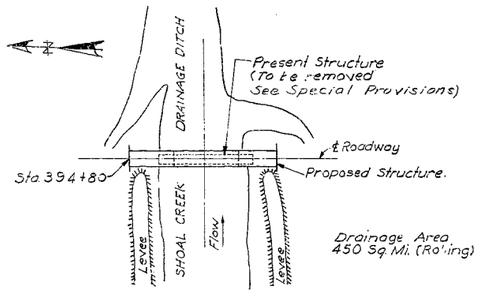
Note: All piling shall be 12" Bearing Piles @ 53 #/ft and shall conform with details and notes on sheet No. 2 of design plans. Estimated Quantities shown on plans are based on the following length 32 @ 30'-0". This indicated length is approximate only. Proper length to give required bearing and/or penetration will be authorized by the Engineer.

All piles shall be driven to or into solid rock, boulders, shale, or cemented gravel; or to not less than full length authorized and to sustain a load of at least 40 ton per pile.

All piles shall be driven with a steam hammer.

Note: Footings for piers No. 2 and 3 shall be carried at least 18" into and cast against vertical faces of firm undisturbed shale or other soft rock. If hard solid rock is encountered, all loose, shelly, or disintegrated material shall be removed and the footings placed on hard, solid undisturbed rock.

PLAN



LOCATION SKETCH

GENERAL NOTES:

Design Specifications A.A.S.H.O.-1953
Loading H15-44.
Structural Steel Stress 18,000 #/□"
Reinforcing Steel Stress 18,000 #/□"
Concrete Class "B" Stress 1,000 #/□"
All concrete shall be Class "B".
For requirements on welding electrodes See Special Provisions. Qualification of welding operators will be required.

Paint: Shop, none; Field, contact surfaces of bolted rail connections one coat of red lead and surfaces inaccessible after erection three coats of red lead. No other paint to be applied by Contractor. Red lead required shall be furnished by Contractor. Payment for cleaning and painting such surfaces will be included in unit price bid for Fabricated Structural Steel.

Where joint filler is specified on plans it shall conform with the requirements for Premoulded Material for Fillers as given in Section 38-19 A (1) h of the Standard Specifications.

Rivets $\frac{7}{8}$" ϕ holes $1\frac{3}{16}$" ϕ except as noted.

Field connections shall be riveted or if the Contractor desires he may use high tensile steel bolts with carburized washers in place of rivets except for connections noted in handrail details. See Special Provisions.

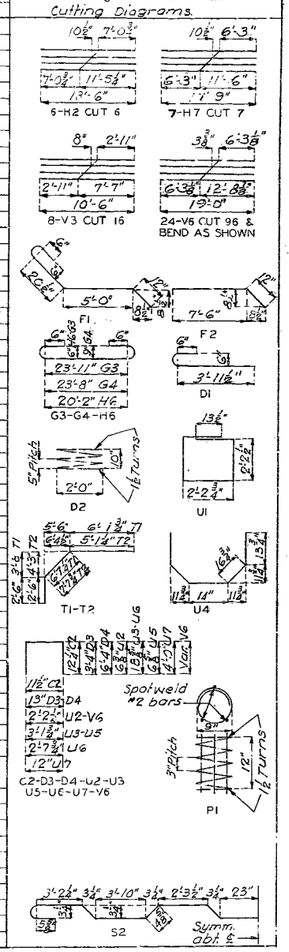
ESTIMATED QUANTITIES				
Item		Substr.	Superstr.	Total
Class 1 Excavation for Structures.	Cu. Yds.	190		190
Class 2 Excavation for Structures.	Cu. Yds.	915		915
Class "B" Concrete.	Cu. Yds.	343.6	129.8	473.4
Fabricated Structural Steel.	Lbs.		190,300	190,300
Steel Castings.	Lbs.		5220	5220
Reinforcing Steel.	Lbs.	18,400	32,820	51,220
Steel Piles in place.	Lin. Ft.	864		864
Steel pile Cut-offs.	Lin. Ft.	96		96

Note: Excavation for bridge made above Elev. 700.0 will be paid for as Class 1 Excavation for Structures.
Excavation for bridge made below Elev. 700.0 will be paid for as Class 2 Excavation for Structures.

COMPLETE BILL OF REINFORCING STEEL

No.	Size	Length	Mark	Location
		End Bents	No. 1 and 4	
40	#7	5'-3"	D1	Footing
32	#5	31'-6"	D2	"
32	#6	7'-9"	D3	"
16	#6	13'-9"	D4	"
16	#6	9'-0"	F1	Haunch
16	#6	8'-6"	F2	"
8	#6	24'-6"	G1	Backwall
8	#4	24'-6"	G2	"
10	#6	26'-6"	G3	Beam
12	#10	27'-0"	G4	"
20	#6	11'-6"	H1	Wing
6	#6	18'-6"	H12	" Bt. #1
7	#6	17'-9"	H7	" Bt. #4
16	#2	19'-9"	P1	A.B. Wells
4	#6	15'-3"	T1	Wing St. #1
4	#6	15'-3"	T2	" Bt. #4
50	#4	10'-0"	U1	Beam
20	#4	3'-3"	U2	"
24	#5	6'-3"	V1	Backwall Bt. #1
4	#4	7'-9"	V2	Wing
16	#4	10'-6"	V3	"
24	#7	27'-3"	V4	Column
16	#7	28'-0"	V5	"
96	#3	19'-0"	V6	"
24	#4	27'-3"	V7	"
24	#5	6'-9"	V8	Backwall St. #4
		Piers No. 2 and 3		
40	#5	6'-9"	D5	Footing
4	#6	23'-0"	H3	Cap
8	#7	20'-0"	H4	"
40	#4	20'-0"	H5	Web
6	#8	22'-9"	H6	"
16	#2	19'-9"	P1	A.B. Well
32	#4	21'-9"	P2	Web
32	#8	21'-9"	P3	Column
40	#8	27'-3"	P4	"
42	#6	6'-3"	U3	Cap
38	#5	6'-3"	U4	"
20	#4	4'-3"	U5	"
4	#6	5'-9"	U6	"
36	#5	9'-0"	U7	Web
		Superstructure		
36	#6	25'-6"	C1	Curb
292	#5	3'-0"	C2	"
18	#6	31'-9"	C3	"
466	#5	24'-3"	S1	Slab
232	#5	26'-6"	S2	"
378	#5	27'-9"	S3	"
32	#5	16'-0"	S4	"

Bending Sketches and Cutting Diagrams.



B.M. Elev. 710.59 X-Nails in North Side of 12" Locust 35' Rt. Sta. 397+02 (U.S.G.S. Datum)

BRIDGE OVER SHOAL CREEK DRAINAGE DITCH

STATE ROAD FROM LUDLOW S. JTH TO CARROLL CO. LINE

ABOUT 1.1 MILES SOUTH OF LUDLOW

PROJECT NO S-625(6)SEC.A (SD) STA. 394 + 30

FINISHED

LIVINGSTON COUNTY

SUBMITTED BY J.A. Williams. BRIDGE ENGINE DATE 6/4/1953.

APPROVED BY Geo. M. Whitton. CHIEF ENGINEER DATE 6/15/1953

STD. G-110 RS

L-548

FINISHED

FINISHED

Drawn MAY 1953 by K.P.W.
Checked May 1953 by G.H.

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

Sheet No. 1 of 5

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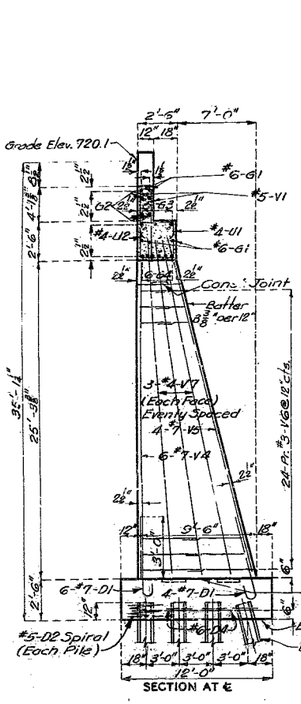
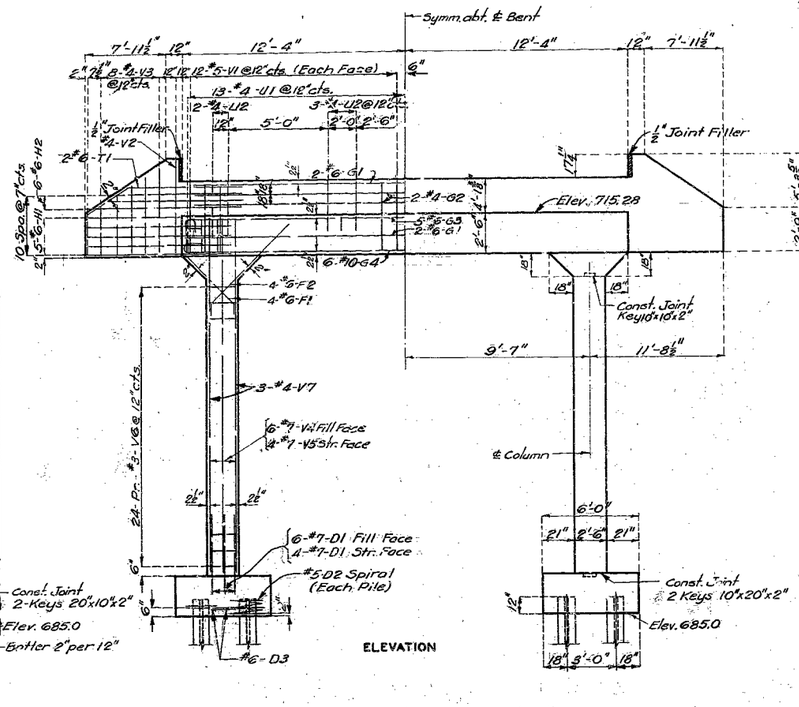
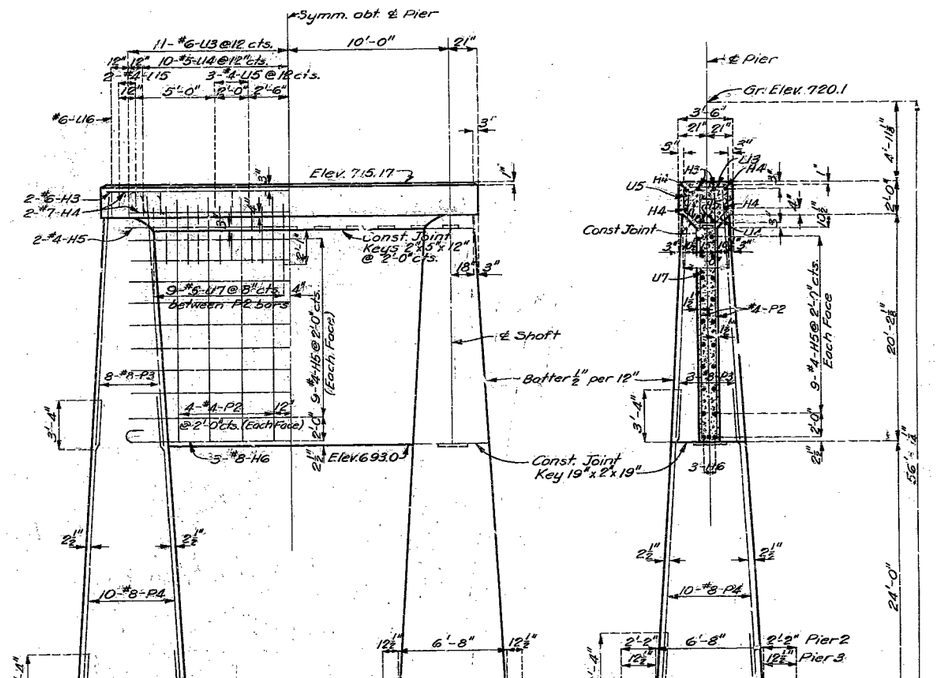
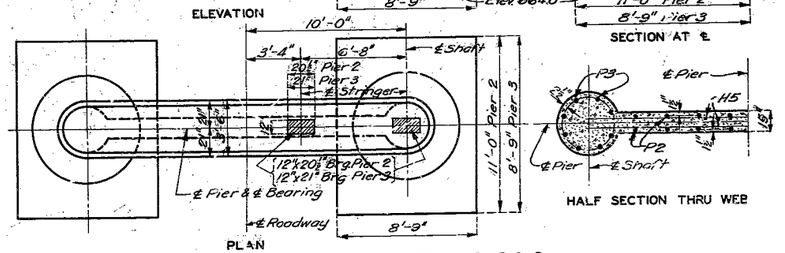
MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	S-625(6) Sec.A(SD)	19		









DETAILS OF STEEL PILE

PLAN

DETAILS OF END BENT NO. 1

DETAILS OF PIERS NO. 2 & 3

FINISHED

BRIDGE OVER SHOAL CREEK DR. DITCH

STATE ROAD FROM LUDLOW SOUTH TO CARROLL CO. LINE

ABOUT 1.1 MILES S. OF LUDLOW

PROJECT NO. S-625(6)SEC.A (SD) STA. 394+80

FINISHED

LIVINGSTON COUNTY

FINISHED

L-548

246

Assembled May 1953 by H.J.K. & J.C.G.
Checked May 1953 by A.J.K.

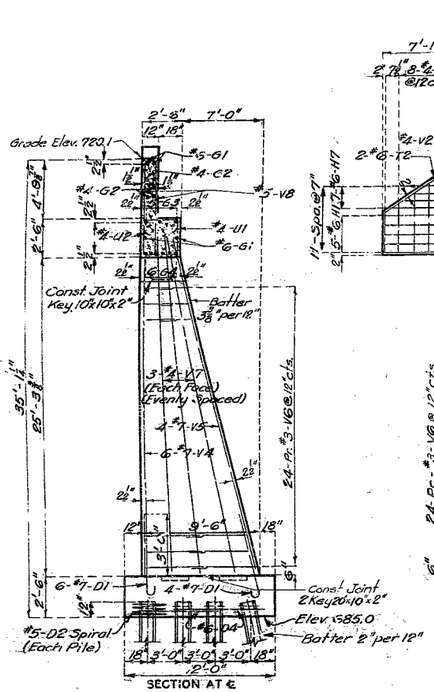
Note: This drawing is not to scale. Follow dimensions.

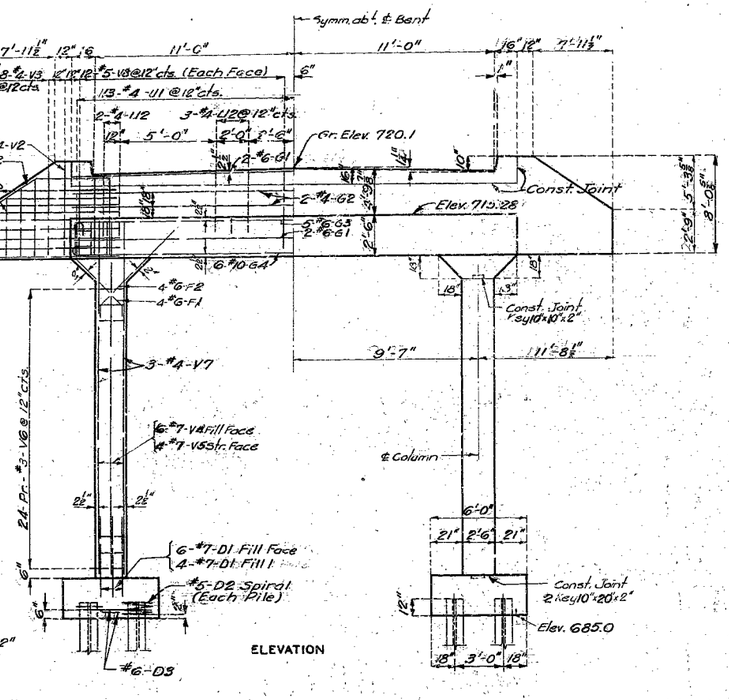
Sheet No. 20 of 25.

2 Col. End Square & Skewed } H15-H20

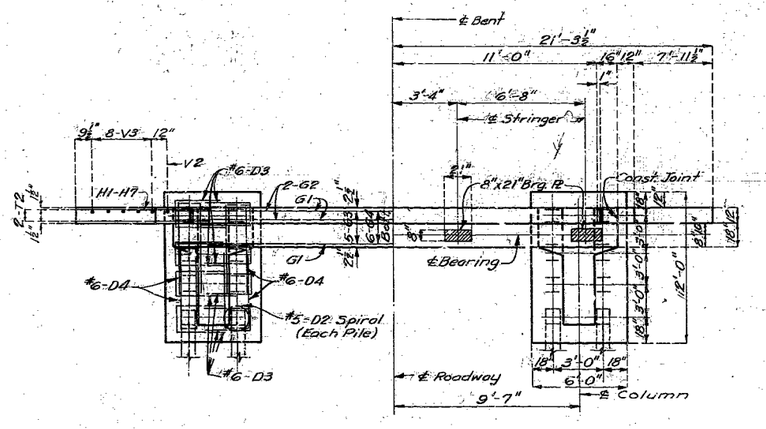
MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
5	MO.	S-625(6) Sec A (SD)	19		





Note: Top of backwall and expansion device for end bent No. 4 to conform to crown of roadway slab. Backwall above construction joint shall not be poured until the structural steel of the expansion device has been installed and slab has been poured in adjacent span.



PLAN

DETAILS OF END BENT NO. 4.

247

FINISHED

BRIDGE OVER SHOAL CREEK DR. DITCH

STATE ROAD FROM LUDLOW SOUTH TO CARROLL CO. LINE

ABOUT 1.1 MILES S. OF LUDLOW

PROJECT NO. S-625(6) SEC. A (SD) STA. 394+80

FINISHED

LIVINGSTON COUNTY

FINISHED

L-548

Assembled May 1953 by H.J.K. & J.C.G.
Checked May 1953 by Q.J.K.

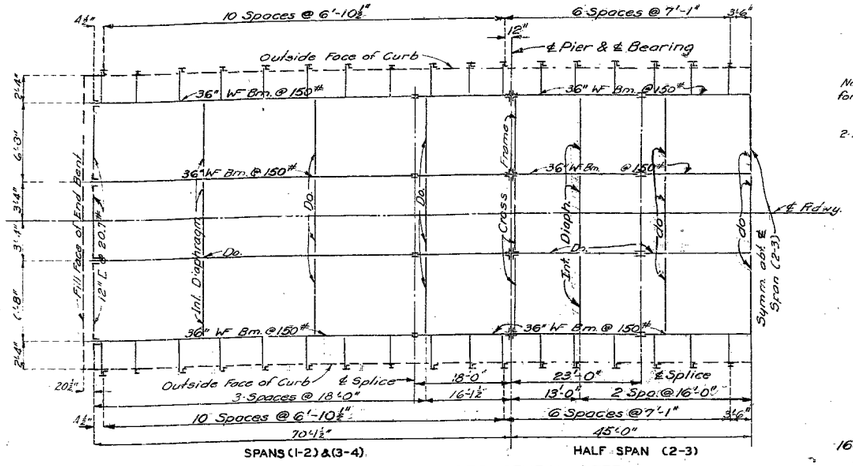
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 3 of 5.

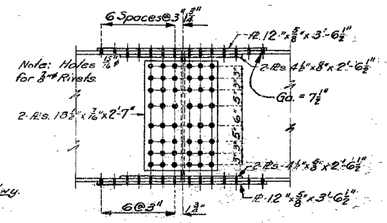
2 Col. End Square & Skewed } H 15-1120

MISSOURI STATE HIGHWAY DEPARTMENT

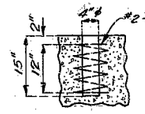
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	S-625(6) Sec A (SD)	19		



HALF PLAN OF STRUCTURAL STEEL



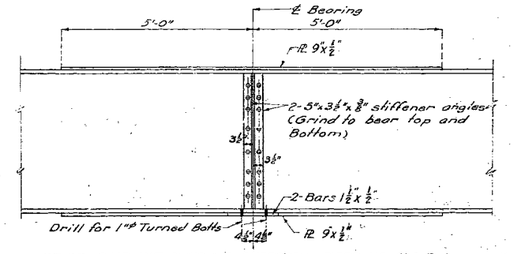
DETAILS OF FIELD SPLICE



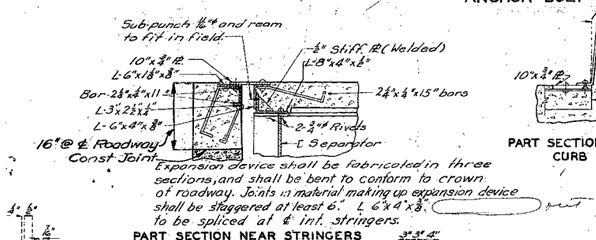
Note: Holes for all anchor bolts shall be formed in substructure by placing and setting with template 4" ø wells of depth shown.

Grout for anchor bolt wells shall contain Iron Oxide. (Embeco or an approved equivalent.)

PART SECTION SHOWING ANCHOR BOLT WELL

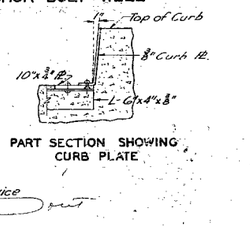


DETAIL OVER INTERMEDIATE SUPPORTS PIERS NO. 2 & 3



Expansion device shall be fabricated in three sections, and shall be bent to conform to crown of roadway. Joints in material making up expansion device shall be staggered at least 6". L 6"x4"x⅜" to be spliced at ℄ Int. Stringers.

PART SECTION NEAR STRINGERS



PART SECTION SHOWING CURB PLATE

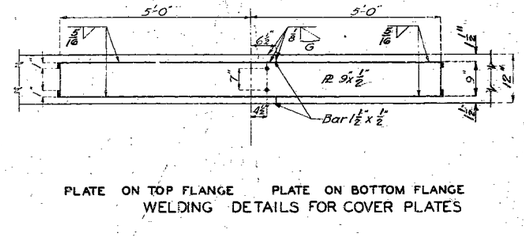
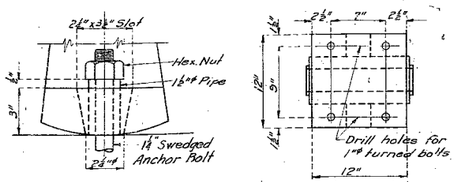
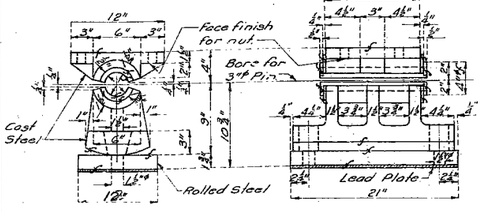


PLATE ON TOP FLANGE PLATE ON BOTTOM FLANGE

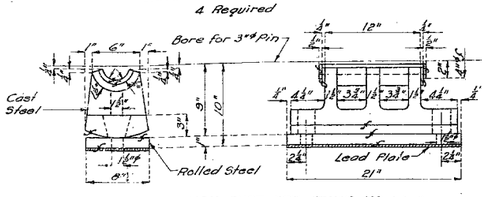
WELDING DETAILS FOR COVER PLATES





EXPANSION SHOE FOR PIER NO. 3

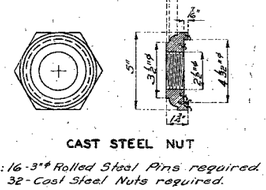
4 Required



EXPANSION SHOE FOR BENTS NO. 1 & 4.

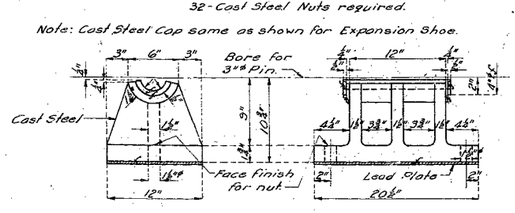
8 Required

DETAILS OF SHOES



Note: 16-3"ø Rolled Steel Pins required. 32-Cast Steel Nuts required.

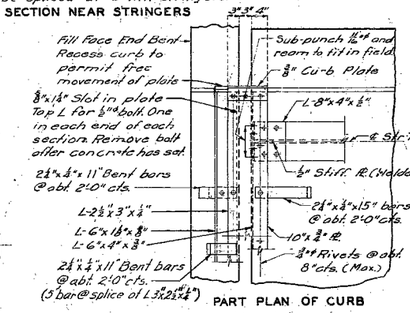
Note: Cast Steel Cap same as shown for Expansion Shoe.



FIXED SHOE FOR PIER NO. 2.

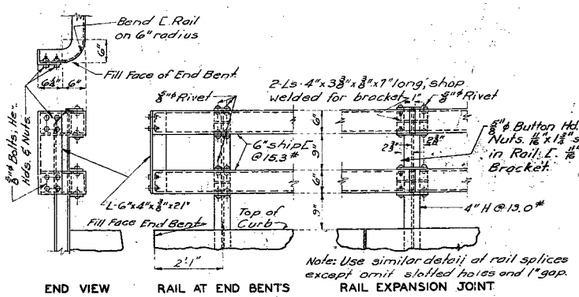
4 Required

Note: All fillets shall have ⅜" radius. Finish all surfaces marked S. All pins, bolts, nuts, rolled plates, & pipe sleeves will be paid for as structural steel. Anchor bolts shall be 1¼"ø swedged bolts with Hex. Nuts and shall extend 12" into concrete. All finished surfaces shall be painted with one coat of white lead and tallow. Lead plates under bearings shall be approximately ⅜" thickness and weigh 8#/sq. Ft.



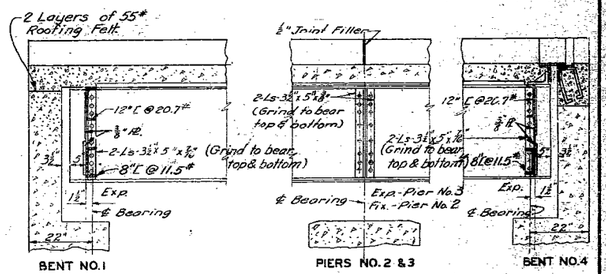
PART PLAN OF CURB

DETAILS OF EXPANSION DEVICE AT BENT NO. 4



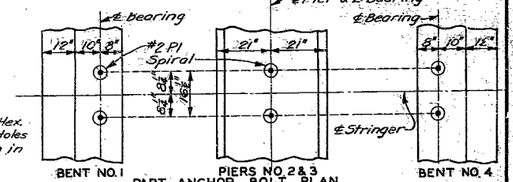
END VIEW RAIL AT END BENTS RAIL EXPANSION JOINT

DETAILS OF RAIL



BENT NO. 1 PIERS NO. 2 & 3 BENT NO. 4

PART LONGITUDINAL SECTION



BENT NO. 1 PIERS NO. 2 & 3 BENT NO. 4

PART ANCHOR BOLT PLAN

BRIDGE OVER SHOAL CREEK DR. DITCH

STATE ROAD FROM LUDLOW SOUTH TO CARROLL CO. LINE

ABOUT 1.1 MILES S. OF LUDLOW

PROJECT NO. S-625 (6) SEC. A (SD) STA. 394+80 FINISHED

LIVINGSTON COUNTY FINISHED

L-548 FINISHED

Assembled May 1953 by H.T.K. & J.C.G.
Checked May 1953 by A.F.K.

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

Sheet No. 4 of 5.

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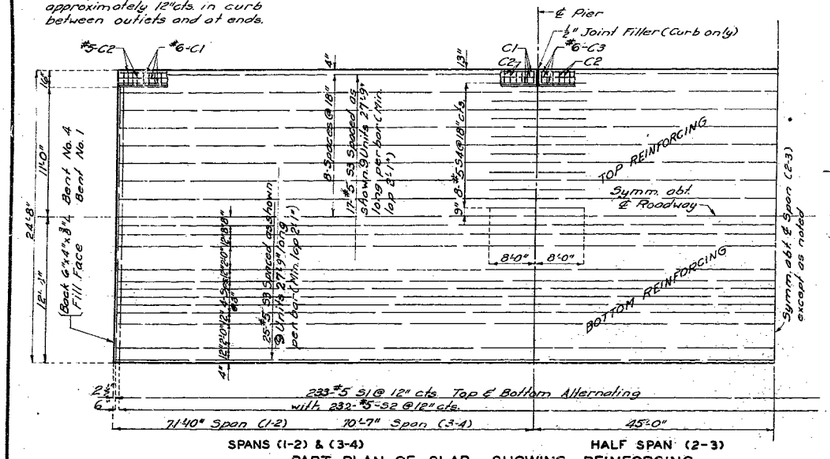
MISSOURI STATE HIGHWAY DEPARTMENT

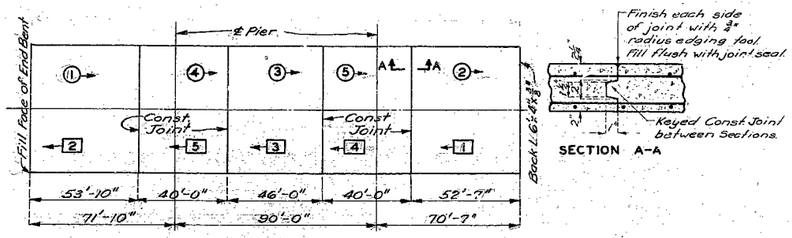
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	S-625(6) Sec A (SD)	19		

Note: Space dowel bars C2 at approximately 12"cts. in curb between outlets and at ends.



SPANS (1-2) & (3-4) HALF SPAN (2-3)

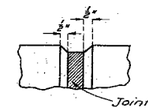
PART PLAN OF SLAB SHOWING REINFORCING



Note: The slab shall be poured in sections of the lengths shown above and in the sequence indicated by the numbers ①②③④ and ⑤ or as an alternate, by the numbers 1, 2, 3, 4, and 5. The separate pours shall progress in the direction indicated by the arrows. Longitudinal construction joints will not be permitted.

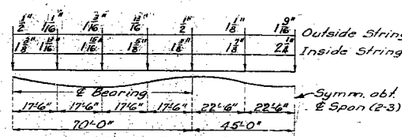
SLAB POURING SEQUENCE

SECTION A-A



Note: Use bevel as shown for exposed faces of all joints consisting of joint filler.

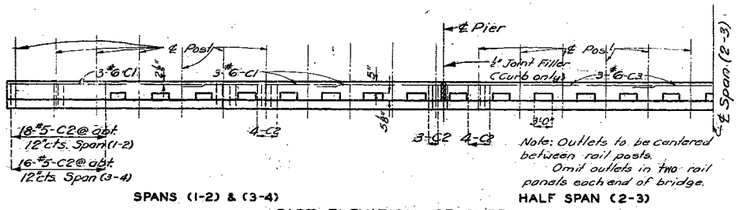
DETAILS OF BEVEL FOR FILLED JOINTS



SPANS (1-2) & (3-4) HALF SPAN (2-3)

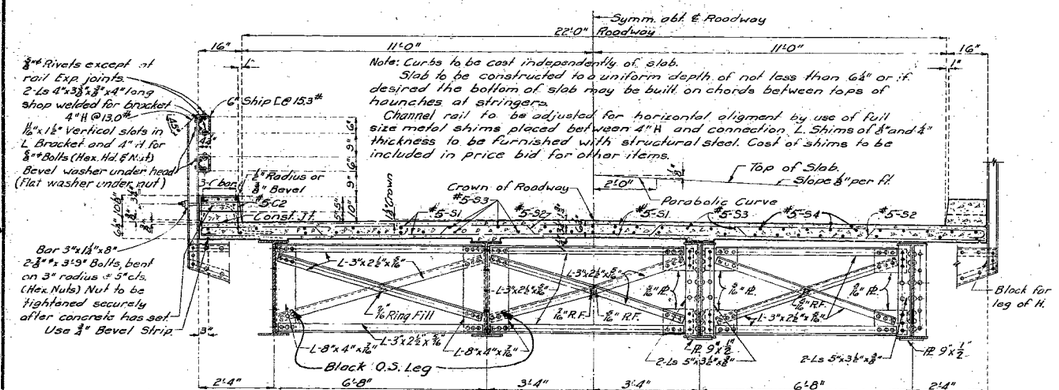
Note: Slab shall be built parallel to grade and to a uniform thickness of 64". Dead load deflection, crown and difference between depth of stringers shall be taken care of by haunching to stringers by the amounts shown above. This additional concrete is included in "Estimated Quantities".

SLAB HAUNCHING DIAGRAM

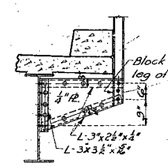


SPANS (1-2) & (3-4) HALF SPAN (2-3)

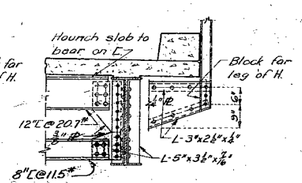
PART ELEVATION OF CURB



HALF SECTION NEAR INTERMEDIATE DIAPHRAGMS HALF SECTION NEAR CROSS FRAMES PIERS NO. 2 & 3



DETAIL OF BRACKET FOR INT. POSTS



DETAIL OF CHANNEL SEPARATORS

FINISHED

FINISHED

FINISHED

BRIDGE OVER SHOAL CREEK DR. DITCH

STATE ROAD FROM LUDLOW SOUTH TO CARROLL CO. LINE
ABOUT 1.1 MILES S. OF LUDLOW
PROJECT NO. S-625 (6) SEC. A (SD) STA. 394+80

LIVINGSTON COUNTY

L-548

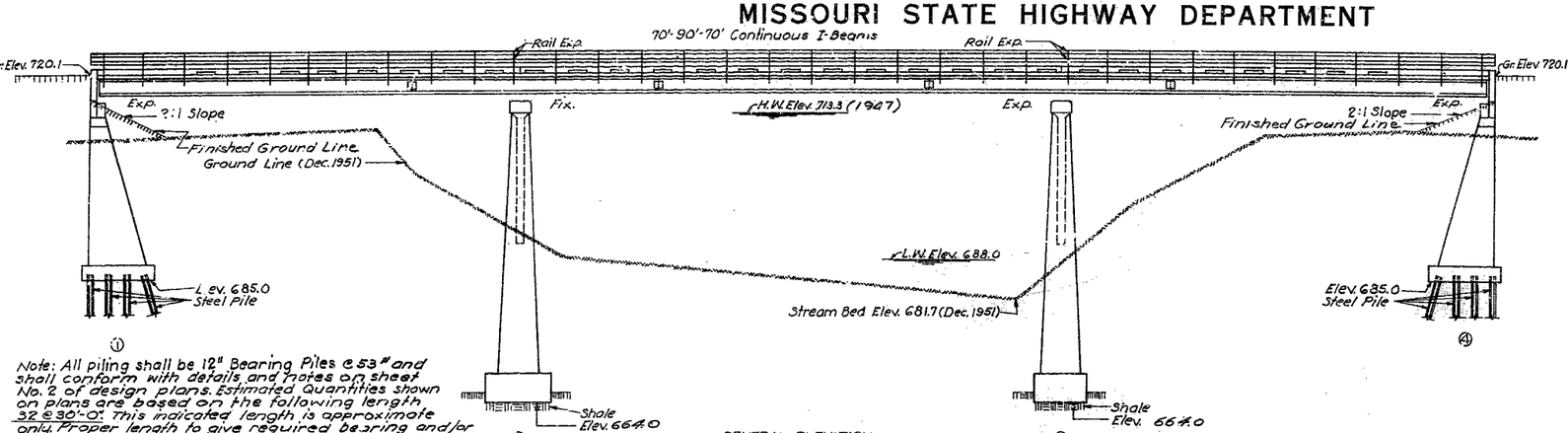
249

Assembled May 1953 by H.J.K. & J.C.G.
checked May 1953 A.F.K.

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

MISSOURI STATE HIGHWAY DEPARTMENT

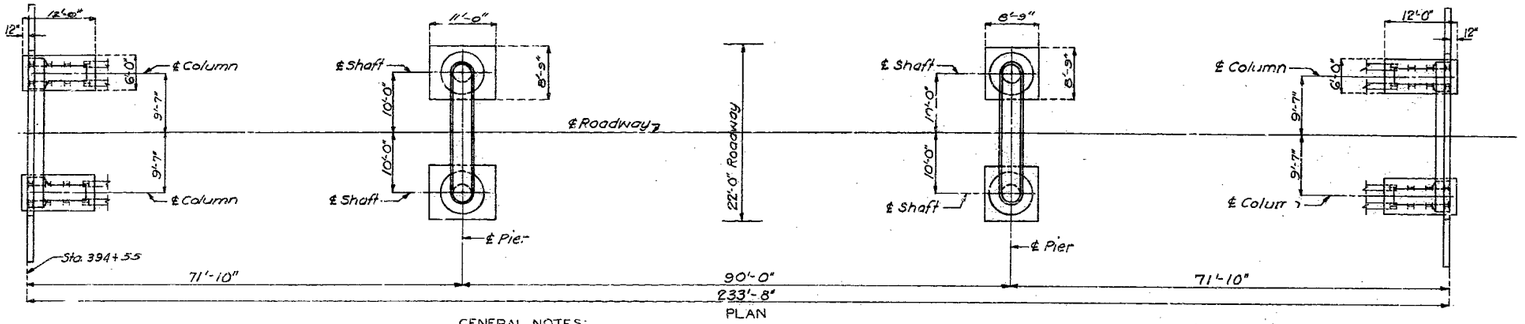
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO	S-625(6) SEC.A (SD)	1955	9	11

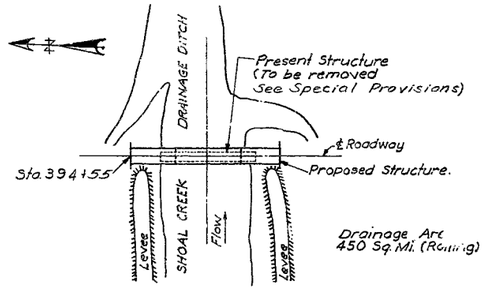


GENERAL ELEVATION

Note: All piling shall be 12" Bearing Piles @ 53# and shall conform with details and notes on sheet No. 2 of design plans. Estimated Quantities shown on plans are based on the following length 32 @ 30'-0". This indicated length is approximate only. Proper length to give required bearing and/or penetration will be authorized by the engineer.
All piles shall be driven to or into solid rock, boulders, shale, or cemented gravel; or to not less than full length authorized and to sustain a load of at least 40 ton per pile.
All piles shall be driven with a steam hammer.

Note: Footings for piers No. 2 and 3 shall be carried at least 18" into and cast against vertical faces of firm undisturbed shale or other soft rock. If hard solid rock is encountered, all loose, shelly, or disintegrated material shall be removed and the footings placed on hard, solid undisturbed rock.





LOCATION SKETCH

GENERAL NOTES:

Design Specifications A.A.S.H.O.-1953
Loading H15-44.
Structural Steel Stress 18,000 #/□"
Reinforcing Steel stress 18,000 #/□"
Concrete Class "B" Stress 1,000 #/□"
All concrete shall be Class "B".
For requirements on welding electrodes See Special Provisions. Qualification of welding operators will be required.
Paint: Shop, none; Field, contact surfaces of bolted rail connections one coat of red lead and surfaces inaccessible after erection three coats of red lead. No other paint to be applied by Contractor. Red lead required shall be furnished by Contractor. Payment for cleaning and painting such surfaces will be included in unit price bid for Fabricated Structural Steel.
Where joint filler is specified on plans it shall conform with the requirements for Premoulded Material for Filler as given in Section 38-19 A (1) h of the Standard Specifications.
Rivets ⅞" @ holes 1⅛" ø except as noted.
Field connections shall be riveted or if the Contractor desires he may use high tensile steel bolts with carburized washers in place of rivets except for connections noted in handrail details. See Special Provisions.

FINAL QUANTITIES

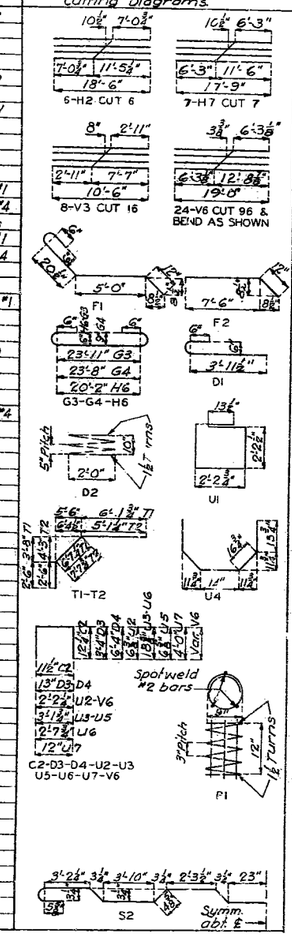
Item		Substr.	Superstr.	Total
Class 1 Excavation for Structures.	Cu. Yds.	175		175
Class 2 Excavation for Structures.	Cu. Yds.	915		915
Class "B" Concrete.	Cu. Yds.	342.6	1238	1734
Fabricated Structural Steel.	Lbs.		132,000	132,000
Steel Castings.	Lbs.		5,210	5,210
Reinforcing Steel.	Lbs.	18,750	32,800	51,550
Steel Piles in place.	Lin. Ft.	731		731
Steel Pile Cut-offs.	Lin. Ft.	229		229

Note: Excavation for bridge made above Elev. 700.0 will be paid for as Class 1 Excavation for Structures.
Excavation for bridge made below Elev. 700.0 will be paid for as Class 2 Excavation for Structures.

FINAL PLANS

COMPLETE BILL OF REINFORCING STEEL

No.	Size	Length	Mark	Location	Bending Sketches and Cutting Diagrams.
		End Bents No. 1 and 4			
40	#7	5'-3"	D1	Footing	
32	#5	31'-6"	D2	"	
32	#6	7'-9"	D3	"	
16	#6	13'-9"	D4	"	
16	#6	9'-0"	F1	Haunch	
16	#6	8'-6"	F2	"	
8	#6	24'-6"	G1	Backwall	
8	#4	24'-6"	G2	"	
10	#6	26'-6"	G3	Beam	
12	#10	27'-0"	G4	"	
20	#6	11'-6"	H1	Wing	
6	#6	18'-6"	H2	" Bk.#1	
7	#6	17'-9"	H7	" Bk.#4	
16	#7	19'-0"	P1	A.B. Wells	
4	#6	15'-3"	T1	Wing Bk.#1	
4	#6	15'-3"	T2	" Bk.#4	
50	#4	10'-0"	U1	Beam	
20	#4	3'-3"	U2	"	
1024	#5	6'-3"	V1	Backwall Bk.#1	
4	#8	7'-9"	V2	Wing	
16	#4	10'-6"	V3	"	
24	#7	27'-3"	V4	Column	
16	#7	28'-0"	V5	"	
96	#3	19'-0"	V6	"	
24	#4	27'-3"	V7	"	
1048	#5	6'-9"	V8	Backwall Bk.#4	
		Piers No. 2 and 3			
40	#8	6'-9"	D5	Footing	
4	#6	23'-0"	H3	Cap	
8	#7	20'-0"	H4	"	
40	#4	20'-0"	H5	Web	
6	#8	22'-9"	H6	"	
16	#7	19'-5"	P1	A.B. Well	
32	#4	21'-9"	P2	Web	
32	#8	21'-9"	P3	Column	
40	#8	27'-3"	P4	"	
42	#6	6'-3"	U3	Cap	
33	#5	6'-3"	U4	"	
20	#4	4'-3"	U5	"	
4	#6	5'-9"	U6	"	
36	#5	9'-0"	U7	Web	
		Superstructure			
36	#6	25'-6"	C1	Curb	
292	#5	3'-0"	C2	"	
18	#6	31'-9"	C3	"	
466	#5	24'-3"	S1	Slab	
232	#5	26'-6"	S2	"	
378	#5	27'-9"	S3	"	
32	#5	16'-0"	S4	"	



B.M. Elev. 710.59 X-Nails in North Side of 12" Locust 35' Rt. Sta. 397+02 (U.S.G.S. Datum)

FINISHED

BRIDGE OVER SHOAL CREEK DRAINAGE DITCH
STATE ROAD FROM LUDLOW SOUTH TO CARROLL CO. LINE
ABOUT 1.1 MILES SOUTH OF LUDLOW
PROJECT NO. S-625(6) SEC.A (SD) **STA.** 394 + 55
LIVINGSTON **COUNTY**

SUBMITTED BY J.A. Williams BRIDGE ENGINEER DATE 6/15/1953
APPROVED BY Roy M. Whitten CHIEF ENGINEER DATE 6/15/1953

FINISHED

STD. C-110 R3
L-548

Drawn MAY 1953 by K.R.W.
Checked May 1953 by [illegible]

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

Sheet No. 1A of 2.

250

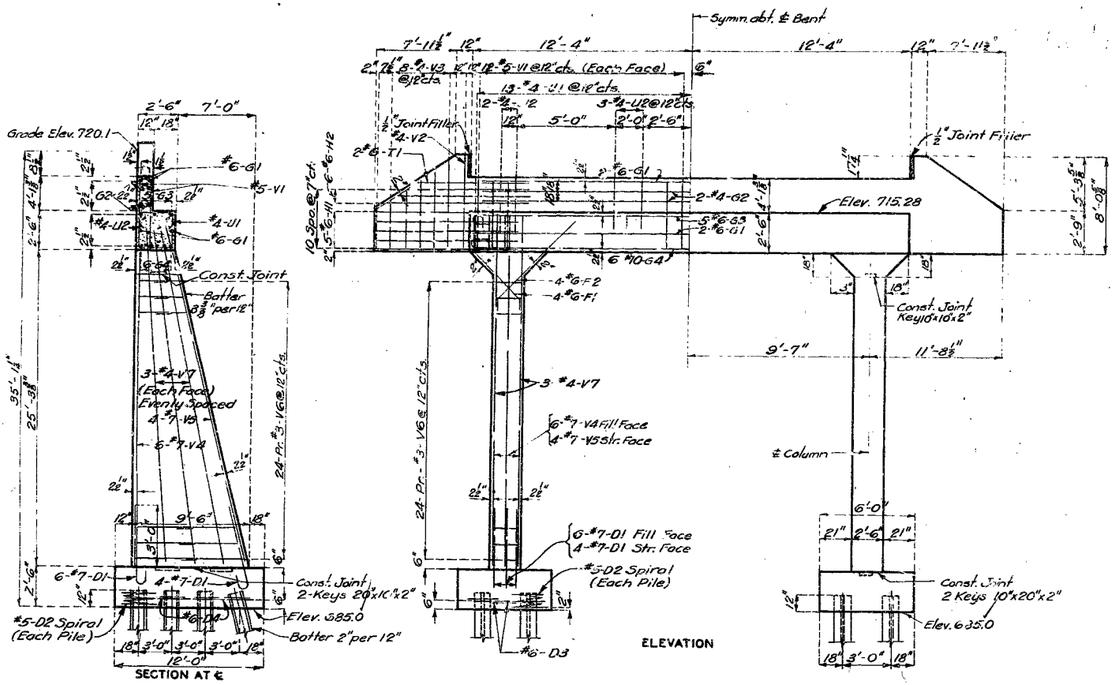
FINAL PLANS

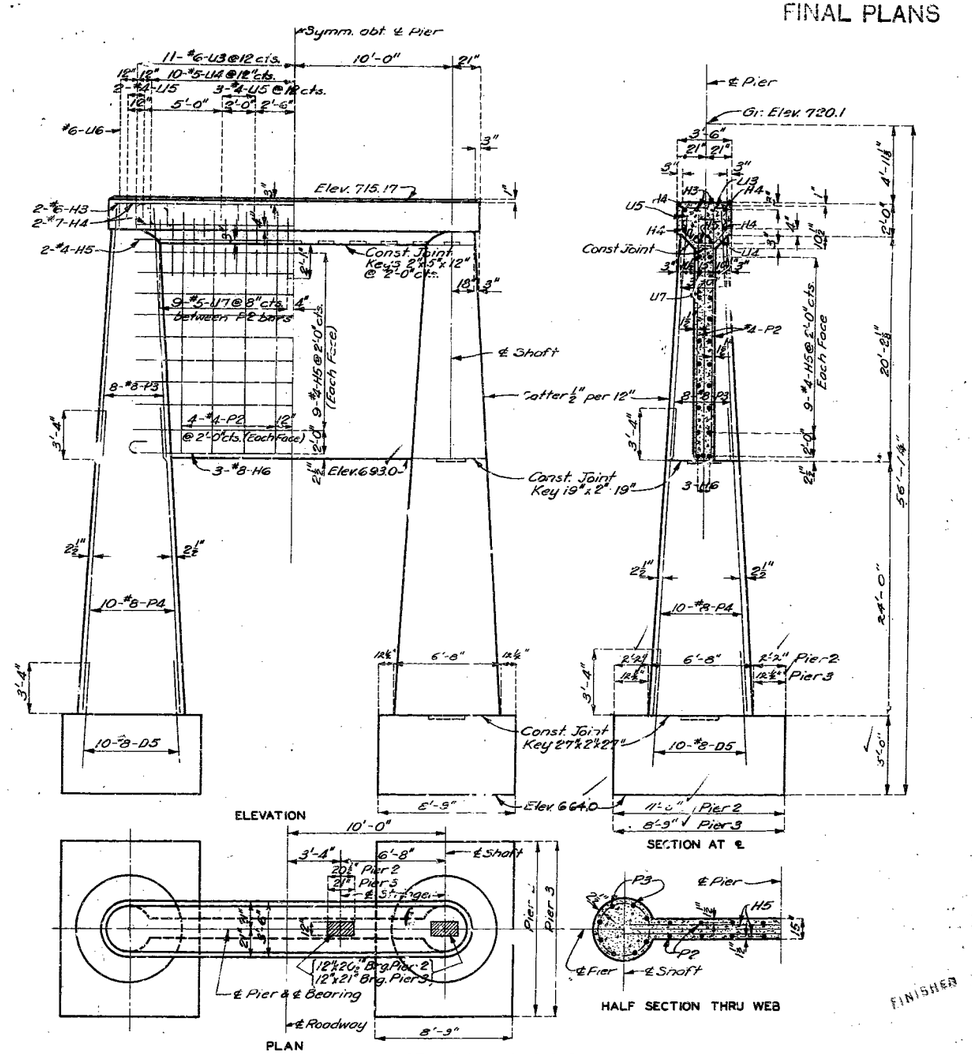
MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOT. SHEETS
5	MO.	S-625(6) Sec. A(SD)	1955	10	11

FINAL PLANS

251





DETAILS OF PIERS NO. 2 & 3

BRIDGE OVER SHOAL CREEK DR. DITCH

STATE ROAD FROM LUDLOW SOUTH TO CARROLL CO. LINE
ABOUT 1.1 MILES S. OF LUDLOW
PROJECT NO. S-625(6)SEC.A (SD) STA. 394+55
LIVINGSTON COUNTY

FINISHED

Assembled May 1953 by H.J.K. & J.C.G.
Checked May 1953 by A.J.K.

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

Sheet No. 2A of 2 Sheets

L-548

FINAL PLANS

2 Col. End Square & Skewed — H15-1420

Missouri Department of Transportation
State Bridge Inspection Report

June 25, 2024
10:11:20AM

COUNTY: LIVINGSTON **DISTRICT: NW** **CLASS: STATBR** **FED-ID: 6343** **BRIDGE: L0548**

GENERAL STRUCTURE INFORMATION

ROUTE: RTDS	**# SPANS:** 3	**PLACE CODE:** 49340 MONROE	
FEATURE: SHOAL CR DRAIN DTC	**LANES ON:** 2	**LENGTH:** 234 FT 0 IN	
STATUS: A-OPEN	**LANES UNDER:** 0	**MAXIMUM SPAN:** 90 FT 0 IN	
LOG MILE: 7.913	**COMPASS DIRECTION:** NORTH to SOUTH	**APPROACH ROADWAY:** 20 FT 0 IN	
DETOUR: 26.00 MILES	**DIRECTION OF TRAFFIC:** 2-WAY TRAF	**CURB TO CURB:** 22 FT 0 IN	
NHS: NO	**FUNCTIONAL CLASS:** RL-MAJOR COLLECTOR	**OUT TO OUT:** 24 FT 6 IN	
BUILT: 1954	**NBI OWNER:** MODOT	**AADT:** 614	
REHAB:	**NBI MAINTAINED:** MODOT	**AADT YEAR:** 2023	
LOCATION: S 27 T 56 R 25 W	**MAINTENANCE DISTRICT:** NW	**AADT TRUCK:** 10.8%	
LATITUDE: 39 38 12.84 (DMS)	**MAINTENANCE COUNTY:** LIVINGSTON	**FUTURE AADT:** 768	
LONGITUDE: 93 42 8.39 (DMS)	**SUB AREA:** 7A36	**FUTURE AADT YEAR:** 2043	

BRIDGE INSPECTION INFORMATION

DATE: 10/13/2022 **RESPONSIBILITY:** DISTRICT
FREQUENCY: 24 **CALCULATED INTERVAL**:** 24
TEAM LEADER: BRYCE ACTON **ELEMENT:** NO
INSPECTOR 2: **INSPECTOR 4:**
INSPECTOR 3:

** When calculated interval exceeds the frequency, a justification comment per BIRM is required.

GENERAL INSPECTION COMMENTS

FRACTURE CRITICAL INSPECTION INFORMATION

DATE: **RESPONSIBILITY:** **CATEGORY:**
FREQUENCY: **CALCULATED INTERVAL**:** **NBI:**
TEAM LEADER: **INSPECTOR 3:** **METHOD:**
INSPECTOR 2: **INSPECTOR 4:**

** When calculated interval exceeds the frequency, a justification comment per BIRM is required.

FRACTURE CRITICAL INSPECTION COMMENTS

INDEPTH INSPECTION INFORMATION

DATE: **RESPONSIBILITY:** **CATEGORY:**
FREQUENCY: **CALCULATED INTERVAL**:** **NBI:**
TEAM LEADER: **INSPECTOR 3:** **METHOD:**
INSPECTOR 2: **INSPECTOR 4:**

** When calculated interval exceeds the frequency, a justification comment per BIRM is required.

INDEPTH INSPECTION COMMENTS

SPECIAL INSPECTION INFORMATION

DATE: 06/04/2021 **RESPONSIBILITY:** DISTRICT **CATEGORY:** CHANNEL CROSS SEC
FREQUENCY: 72 **CALCULATED INTERVAL**:** 72 **NBI:** NO
TEAM LEADER: SCOTT STEPHENS **INSPECTOR 3:** **METHOD:** WT TAPE
INSPECTOR 2: **INSPECTOR 4:**

** When calculated interval exceeds the frequency, a justification comment per BIRM is required.

SPECIAL INSPECTION COMMENTS

UNDERWATER INSPECTION INFORMATION

DATE: 10/13/2022 **RESPONSIBILITY:** DISTRICT **CATEGORY:** DRY
FREQUENCY: 60 **CALCULATED INTERVAL**:** 24 **NBI:** NO
TEAM LEADER: BRYCE ACTON **INSPECTOR 3:** **METHOD:** VISUAL
INSPECTOR 2: **INSPECTOR 4:**

** When calculated interval exceeds the frequency, a justification comment per BIRM is required.

UNDERWATER INSPECTION COMMENTS

(STEPHS2, 10/30/2014)--WET IN 2014

OTHER SPECIAL INSPECTIONS

DATE	FREQUENCY	CATEGORY	NBI	CALCULATED INTERVAL	RESPONSIBILITY	METHOD

OTHER UNDERWATER INSPECTIONS

DATE	FREQUENCY	CATEGORY	NBI	CALCULATED INTERVAL	RESPONSIBILITY	METHOD

COUNTY: LIVINGSTON **DISTRICT: NW** **CLASS: STATBR** **FED-ID: 6343** **BRIDGE: L0548**

STRUCTURE POSTING

APPROVED CATEGORY: S-1 NO POSTING REQUIRED
Ton 1: **Ton 2:** **Ton 3:**
COMMENTS:

FIELD CATEGORY: S-1 NO POSTING REQUIRED
Ton 1: **Ton 2:** **Ton 3:** **PROBLEM:** **PROBLEM DIRECTION:**
COMMENTS:

GENERAL COMMENTS/MAJOR RATED ITEMS

GENERAL COMMENTS: (BOWDEJ1, 10/23/2009)--(72'-90'-72') CONT WF GDR SPANS

[ITEM 58] DECK: 4-POOR CONDITION
RATING : 10/25/2016
COMMENTS: (STEPHS2, 10/25/2016)--SATURATION SPAN 3
(ACTONB1, 10/31/2022)--DETERIORATION @ EDGE & FULL DEPTH PATCHES

[ITEM 59] SUPER: 6-SATISFACTORY CONDITION
RATING : 10/25/2016
COMMENTS: (STEPHS2, 10/25/2016)--RUST TOP FLANGE
(ACTONB1, 10/31/2022)--INITIAL SECTION LOSS @ TOP FLANGE

[ITEM 60] SUB: 6-SATISFACTORY CONDITION
RATING : 11/24/2020
COMMENTS: (STEPHS2, 11/24/2020)--CONDITION ABUTMENT 1 AND 4
(ACTONB1, 10/31/2022)--MINOR DELAMS & SPALLS @ ABUTS

[ITEM 61] BANK/CHANNEL: 5-MAJOR DAMAGE
RATING : 10/25/2016
COMMENTS: (BOWDEJ1, 11/04/2004)--BANKS SLOUGHING
(STEPHS2, 10/25/2016)--CHANNEL PLUGGED WITH DRIFT
(ACTONB1, 10/31/2022)--CONSIDERABLE BANK EROSION

[ITEM 113] SCOUR: 8-STABLE FOR CALCULATED
RATING : 05/18/2001
EVALUATION TYPE :
COMMENTS: (ACTONB1, 10/31/2022)--NO SCOUR OBSERVED

[ITEM 71] WATERWAY ADEQUACY: DECK ABOVE FLOOD ELEV
RATING : 05/18/2001
COMMENTS:

[ITEM 72] APPRRDWY ALIGNMENT: 6-SATISFACTORY
RATING : 05/18/2001
COMMENTS:

RAILING AND APPROACH PAVEMENT COMPONENTS AND RATINGS

[ITEM 36A] BRIDGE RAILING RATING: *DOESNT MEET CURRNT STND-0* ***RATING :*** *02/16/2004* ***COMMENTS:***

MATERIAL	CONSTRUCTION	DIRECTION	COMMENTS
REINFORCED CONCRETE	CURB	BOTH	

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	COMMENT
LONGITUDINAL CRACKS	THROUGHOUT		MINOR	
STEEL	CHANNEL-DOUBLE	BOTH		
RUSTING	THROUGHOUT		LIGHT	

[ITEM 36B] TRANSITION RAILING RATING: *NOT PROVIDED-0* ***RATING :*** *05/18/2001* ***COMMENTS:***

[ITEM 36C] APPROACH RAILING RATING: *NOT PROVIDED-0* ***RATING :*** *05/18/2001* ***COMMENTS:***

COUNTY: LIVINGSTON **DISTRICT: NW** **CLASS: STATBR** **FED-ID: 6343** **BRIDGE: L0548**

[ITEM 36D] RAIL END TREATMENT RATING: *NOT PROVIDED-0* ***RATING :*** *05/18/2001* ***COMMENTS:***

APPROACH PAVEMENT: *Overall condition assigned for each approach pavemenet component is shown below.

MATERIAL	CONSTRUCTION	DIRECTION	CONDITION*	COMMENTS
ASPHALT	BITUMINOUS MAT	BOTH	GOOD	

DRAINAGE, EXPANSION DEVICES, BANK/SLOPE, AND DECK PROTECTIVE COMPONENTS

DECK PROTECTIVE COMPONENTS:

SERIES TYPE-#	COMPONENT	MATERIAL	CONSTRUCTION	THICKNESS	YEAR APPLIED	MANUFACTURE	OVERALL CONDITION
MAIN SERIES-1	*WEARING SURFACE*	*ASPHALT*	*CINDER SEAL*	*.4 IN*	*2012*		*GOOD*

COMMENT:

DECK PROTECTION	*NOTAPPLICABLE*	*NONE*

COMMENT:

MEMBRANE	*NOTAPPLICABLE*	*NONE*

COMMENT:

DRAINAGE COMPONENTS:

COMPONENT	MATERIAL	CONSTRUCTION	DIRECTION	COMMENTS
DRAINAGE	*REINFORCED CONCRETE*	*CURB OUTLET*		

EXPANSION DEVICE COMPONENTS:

SUB UNIT-#	SUB LABEL	COMPONENT	MATERIAL	CONSTRUCTION	GAP	YEAR APPLIED	MANUFACTURE	OVERALL CONDITION
ABUTMENT-4		*CLOSED EXPANSION JOINT*	*STEEL*	*FLAT PLATE*				

COMMENT:

BANK/SLOPE PROTECTION COMPONENTS:

COMPONENT	MATERIAL	CONSTRUCTION	DIRECTION	COMMENTS
BANK PROTECTION	*ROCK*	*RIP RAP*	*SOUTH*	

DECK COMPONENTS

SPAN TYPE-#	COMPONENT	MATERIAL	CONSTRUCTION	COMMENTS
MAIN SPANS-1	*DECK*	*REINFORCED CONCRETE*	*CAST-IN-PLACE*	

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
DETERIORATION	EDGE		MODERATE		
PATCHES	THROUGHOUT		MANY		
SATURATION	THROUGHOUT		MODERATE	30 %	
SCALING	THROUGHOUT		HEAVY		

SPAN TYPE-#	COMPONENT	MATERIAL	CONSTRUCTION	COMMENTS
MAIN SPANS-2	*DECK*	*REINFORCED CONCRETE*	*CAST-IN-PLACE*	

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
DETERIORATION	EDGE		MODERATE		
PATCHES	THROUGHOUT		MANY		
SATURATION	THROUGHOUT		MODERATE	30 %	
SCALING	THROUGHOUT		HEAVY		

MAIN SPANS-3 *DECK* *REINFORCED CONCRETE* *CAST-IN-PLACE*

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
DETERIORATION	EDGE		MODERATE		
FULL DEPTH PATCHES	THROUGHOUT		LARGE		
PATCHES	THROUGHOUT		MANY		
SATURATION	THROUGHOUT		MODERATE	40 %	
SCALING	THROUGHOUT		HEAVY		

SUPERSTRUCTURE COMPONENTS

SERIES TYPE-#	SPAN TYPE	MATERIAL	CONSTRUCTION	LABEL	COMMENTS
MAIN SERIES-1	*CONTINUOUS SPAN*	*STEEL*	*WIDE FLANGE GIRDERS*		

SPAN	COMPOSITE INDICATOR	LENGTH	WEATHERING STEEL	COMMENTS
MAIN SPANS-1	NON-COMPOSITE	71 FT 10 IN	NO	

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
RUSTING	TOP FLANGE		MEDIUM		(MENEET, 11/23/2011)--EXT GIRDERS ONLY.
SECTION LOSS	TOP FLANGE		INITIAL		

SPAN	COMPOSITE INDICATOR	LENGTH	WEATHERING STEEL	COMMENTS
MAIN SPANS-2	NON-COMPOSITE	90 FT 0 IN	NO	

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
RUSTING	BOTTOM FLANGE WELD		LIGHT		
RUSTING	TOP FLANGE		LIGHT		(MENEET, 11/23/2011)--EXT GIRDERS ONLY.

SPAN	COMPOSITE INDICATOR	LENGTH	WEATHERING STEEL	COMMENTS
MAIN SPANS-3	NON-COMPOSITE	71 FT 10 IN	NO	

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
RUSTING	BOTTOM FLANGE		LIGHT		
RUSTING	TOP FLANGE		MEDIUM		(MENEET, 11/23/2011)--EXT GIRDERS ONLY.
SECTION LOSS	TOP FLANGE		INITIAL		

SUBSTRUCTURE COMPONENTS

SUBSTRUCTURE	SKEW	LENGTH	MATERIAL	CONSTRUCTION	LABEL	COMMENTS
ABUTMENT-1		*24 FT 8 IN*	*REINFORCED CONCRETE*	*OPEN CONCRETE*		

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT

ASSOCIATED COMPONENT	MATERIAL	CONSTRUCTION
BACKWALL	REINFORCED CONCRETE	CAST-IN-PLACE

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
EFFLORESCENCE	RANDOM		MINOR		
HAIR LINE CRACKING	RANDOM		FEW		

BEAM CAP	REINFORCED CONCRETE	CAST-IN-PLACE

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
HORIZONTAL CRACKS	TOP		FINE		
SEALED	TOP		ASPHALTICBASE		

COLUMN	REINFORCED CONCRETE	CAST-IN-PLACE

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT

FOOTING	REINFORCED CONCRETE	H-PILE

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT

STRAIGHT WINGS	REINFORCED CONCRETE	CAST-IN-PLACE

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT

EXPANSION BEARING	STEEL	ROCKER

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
RUSTING	THROUGHOUT		LIGHT		

PIER-2 *23 FT 6 IN* *REINFORCED CONCRETE* *MULTIPLE COLUMN*

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
ASSOCIATED COMPONENT	**MATERIAL**	**CONSTRUCTION**			
BEAM CAP	REINFORCED CONCRETE	CAST-IN-PLACE			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**
COLUMN	REINFORCED CONCRETE	CAST-IN-PLACE			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**
FOOTING	REINFORCED CONCRETE	SPREAD			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**
WEB BEAM	REINFORCED CONCRETE	CAST-IN-PLACE			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**
EXPANSION BEARING	STEEL	ROCKER			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**

PIER-3 *23 FT 6 IN* *REINFORCED CONCRETE* *MULTIPLE COLUMN*

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
ASSOCIATED COMPONENT	**MATERIAL**	**CONSTRUCTION**			
BEAM CAP	REINFORCED CONCRETE	CAST-IN-PLACE			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**
COLUMN	REINFORCED CONCRETE	CAST-IN-PLACE			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**
FOOTING	REINFORCED CONCRETE	SPREAD			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**
WEB BEAM	REINFORCED CONCRETE	CAST-IN-PLACE			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**
EXPANSION BEARING	STEEL	ROCKER			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**

ABUTMENT-4 *24 FT 8 IN* *REINFORCED CONCRETE* *OPEN CONCRETE*

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
ASSOCIATED COMPONENT	**MATERIAL**	**CONSTRUCTION**			
BACKWALL	REINFORCED CONCRETE	CAST-IN-PLACE			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**
DETERIORATION	TOP		MINOR		
EFFLORESCENCE	THROUGHOUT		MODERATE		
HORIZONTAL CRACKS	THROUGHOUT		MINOR		
BEAM CAP	REINFORCED CONCRETE	CAST-IN-PLACE			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**
DELAMINATION	THROUGHOUT		MINOR		
HIGH STEEL SPALLS	THROUGHOUT		FEW		
HORIZONTAL CRACKS	RANDOM		FEW		
SEALED	TOP		ASPHALTICBASE		
COLUMN	REINFORCED CONCRETE	CAST-IN-PLACE			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**
FOOTING	REINFORCED CONCRETE	H-PILE			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**
STRAIGHT WINGS	REINFORCED CONCRETE	CAST-IN-PLACE			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**

COUNTY: LIVINGSTON **DISTRICT: NW** **CLASS: STATBR** **FED-ID: 6343** **BRIDGE: L0548**

EXPANSION BEARING	STEEL	ROCKER			
CONDITION	***LOCATION 1***	***LOCATION 2***	***SEVERITY***	***MEASUREMENT***	***COMMENT***
RUSTING	THROUGHOUT		MODERATE		

OVER/UNDER ROUTES CLEARANCE INFORMATION

CLEARANCES OVER DECK

**NOTE: Vertical clearances for permitting purposes are taken as 2 inches less than the actual field measured clearance.

VERTICAL CLEARANCE TYPE**	VALUE	DIRECTION	DATE	COMMENT

CLEARANCES UNDER BRIDGE

**NOTE: Vertical clearances for permitting purposes are taken as 2 inches less than the actual field measured clearance.

RECORD #	ROUTE	# LANES	DIRECTION OF TRAFFIC	RIGHT LATERAL CLEARANCE	LEFT LATERAL CLEARANCE	UR-ID

VERTICAL CLEARANCE TYPE**	VALUE	DIRECTION	DATE	COMMENT

STRUCTURE PAINT INFORMATION

CONDITION: FAIR **RUST AMOUNT :** 6=1.0% OF SURFACE RUSTED **STEEL TONS :** 99

ORIGINAL PAINT		CONTRACT REPAINT		DEPARTMENT REPAINT	
PAINT TYPE :		**PAINT TYPE :**		**PAINT TYPE :**	S SYSTEM
NAME :		**NAME :**		**NAME :**	CAL SULPH/LEAD PAINT
PAINT COLOR :		**PAINT COLOR :**		**PAINT COLOR :**	GRAY
PAINT YEAR :		**PAINT YEAR :**		**PAINT YEAR :**	2008
MILS :		**MILS :**		**MILS :**	12
				MANUFACTURE :	
				SURFACE PREP :	HAND CLEANED

REQUESTED WORK ITEMS

GENERAL WORK COMMENTS:

RESPONSIBILITY	*LOCATION*	*ITEM*	*CATEGORY*	*PRIORITY*	*DATE*	*WORK ITEM COMMENT*

UTILITY ATTACHMENTS

Missouri Department of Transportation
State Bridge Inspection Report

COUNTY: LIVINGSTON **DISTRICT: NW** **CLASS: STATBR** **FED-ID: 6343** **BRIDGE: L0548**

UTILITY	*OWNER*	*METHOD*	*MEASUREMENT TYPE*	*VALUE*	*NUMBER*	*UTILITY ATTACHMENT COMMENT*

PROGRAM NOTES INFORMATION

YEAR	PROJECT #	MONTH LET	YEAR LET	ITEMS	COMMENT

COMPUTER GENERATED RATINGS AND DEFICIENCY ITEMS

NOTE: The items listed in this section are updated whenever computer edits are ran on a structure after the inspection updates have been entered in to TMS.

Rated Item	Rating	Rating Date
[Item 67] Structure Evaluation Rating:	4-MEETS MINIMUM TOLERABLE	5/18/2001
[Item 68] Deck Geometry Rating:	4-MEETS MINIMUM TOLERABLE	3/19/2002
[Item 69] Underclearance:	N-NOT APPLICABLE	5/18/2001
Sufficiency Rating:	49.0%	3/7/2024
Deficiency:	STRUCTURAL	1/3/2017
Funding Eligibility:	FULL	----
Estimated New Structure Length:	269 FT.	----
Estimated Structure Cost:	$1,559,931	----
Estimated Total Project Cost:	$2,339,897	----
Year of Cost Estimate:	2024	----

NOTE: The above structure length and cost estimates are computer generated using algorithims in the TMS system. These algorthims are generalized to use NBI items to come up with a new structure length and width to calculate a new area which is taken times a representative cost per square foot. The actual structure size and cost may vary significantly from these numbers once site specific engineering is done.

ADVANCED SIGN INFORMATION

SIGN #	SIGN TYPE	PROBLEM	PROBLEM DIRECTION
1			

OUTFALL INSPECTION INFORMATION

 # OUTFALLS: **INSPECTOR:**
STATUS: **DATE:**
NOTES:

BRIDGE MEMORANDUM

Job No.: JNW0010 **Bridge No.:** N07272
County: Carroll **Route:** B (Low Volume) over Sambo Creek

Final Layout: U.I.P., Redeck & Make Composite Existing (37'-47'-37') Simple Wide Flange Beam Spans
Roadway Width: 22'-0" plus 16" Type D Barriers each side
Alignment: Tangent
Skew: Square
Profile Grade: Match existing ±
Loading: H10-44 (1958), HS20-44 (New construction)
Begin Station: 423+13.5± (match existing)
Traffic Handling: Structure to be closed during construction. Traffic to be maintained on other routes during construction. See roadway plans for traffic control.
Traffic Information: AADT = 85 (2023), Truck = 10.0% = 9
AADT = 106 (2043), Truck = 10.0% = 11
Existing Bridge: Redeck N07271 and use in place.
Condition Ratings: Deck = 3, Superstructure = 6, Substructure = 6
Load Posting: Posted for 14 tons (to be removed)

General Notes:

- Remove existing bridge deck including curbs, rails and top of wings.
- Install 6½" CIP sliding slab with 3/16" cross slope (without precast panels), stay-in-place forms permitted.
- Increase existing haunch 1/2" to match existing profile grade. (1" wearing surface assumed on the existing bridge)
- Install concrete diaphragms at Int. Bents No. 2 & 3 to make continuous.
- Make End Bents No. 1 & 4 semi-integral.
- Install 16" wide, Type D Barriers.
- Install Slab Drains as required.
- Install Shear Connectors to make composite.
- Install cover plates to strengthen existing beams to remove load posting.
- Estimated size of cover plates for Spans No. 1 & 3 = 10' x 9.25" x 0.375" (Exterior Girders)
- Estimated size of cover plates for Span No. 2 = 18' x 10" x 0.5" (Exterior Girders)
- Perform 15 sq. ft. of Substructure Repair (Formed) at Intermediate Bent No. 2.
- Perform 25 sq. ft. of Substructure Repair (Formed) at Intermediate Bent No. 3.
- Perform 50 sq. ft. of Substructure Repair (Formed) at End Bent No. 4.
- Apply Protective Coating - Concrete Bents and Piers (Epoxy) to Intermediate Bents No. 2 & 3.
- Install 20' Bridge Approach Slab (Minor) at End Bents No. 1 & 4
- No conduit, lighting, utility supports, or sidewalks are to be included in the final plans.
- Existing paint system is System A (lead based).
- Bridge deck may be finished with a vibratory screed. Include note B3.25 on plans.

Special Notes:

- Provide object markers at each corner of bridge (Roadway Item).
- Remove existing Bridge Approach Pavement (Roadway Item).
- Roadway surfacing adjacent to bridge ends to match top of bridge deck (Roadway Item).
- Rubblized existing bridge deck may be used on spill slopes (Roadway Item).
- An asbestos and lead inspection has been performed on this structure (N07271). Results indicate that asbestos is not present and lead is present. The Bridge Division will include this report in the electronic deliverables folder when submitting contract documents to the Design Division for the letting (Bridge Item).
- Girders to be recoated in a future, paint-only contract (Estimated cost of $39,000).

Estimated Working / Calendar Days = **30** / **45**
FY26 Estimated Construction Cost[1] = $308,000

[1]Does not include STIP inflation from Planning

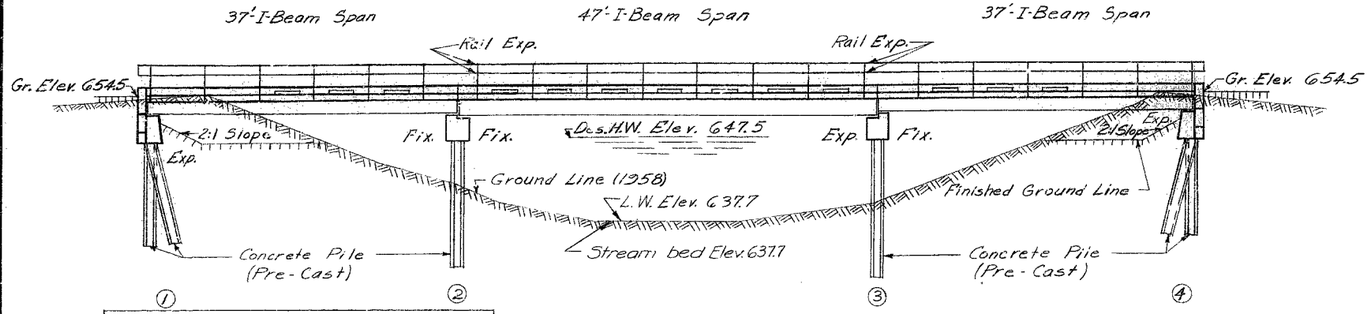
Bridge contact is Ted Koester, SPM 573-751-4229

District contact is Joyce Reynolds, TPM 816-387-2411

Ted Koester	6/12/24		
Prepared by: Structural Project Manager	*Date*	*District: Transportation Project Manager*	*Date*
		District: District Bridge Engineer	*Date*

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	26	

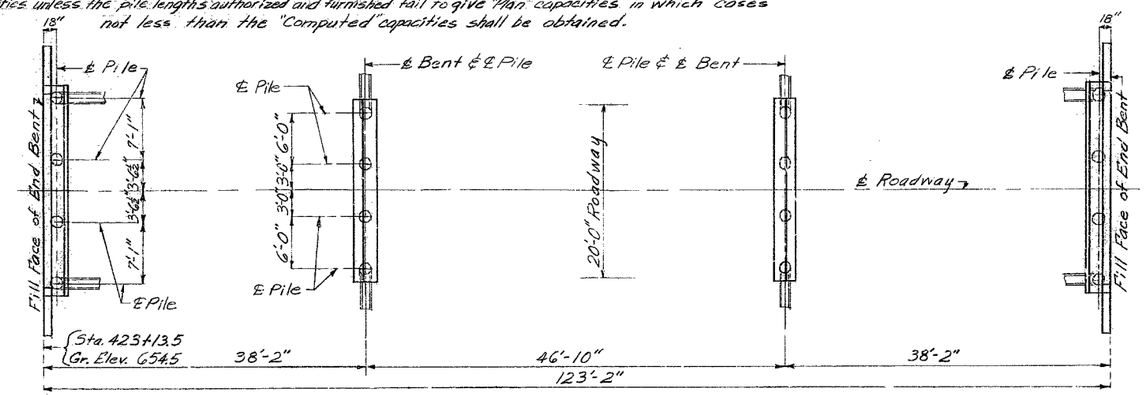


GENERAL ELEVATION

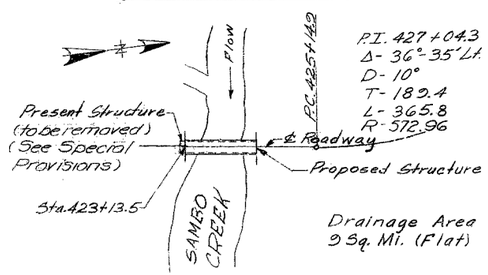
DATA FOR PILE DRIVING		
Bent No.	1 & 4	2 & 3
"Plan" Capacity Per Pile	23.5T	26.0T
"Computed" Capacity Req'd Per Pile	15.5T	21.5T
Min. Penetration (Pile Tip Elev.)	620.0	615.0

All piling shall be of reinforced concrete and shall conform with details and notes on Standard P-3R1 except as otherwise specified. Estimated quantities shown on plans are based on the following lengths: 8 @ 45'-0" and 8 @ 50'-0". These indicated lengths are approximate only. Proper lengths to give required bearing and/or penetration will be authorized by the Engineer. All piles shall be driven to the minimum penetrations noted and to not less than the specified "Plan" capacities unless the pile lengths authorized and furnished fail to give "Plan" capacities in which cases not less than the "Computed" capacities shall be obtained.

Note: Excavation of all existing material under bridge shall be made to not less than 3'-0" below bottom of steel and not less than 4'-0" outside of curb lines. Payment for this excavation outside the limit of excavation for substructure will be made at unit contract price for Roadway Excavation.



PLAN



LOCATION SKETCH

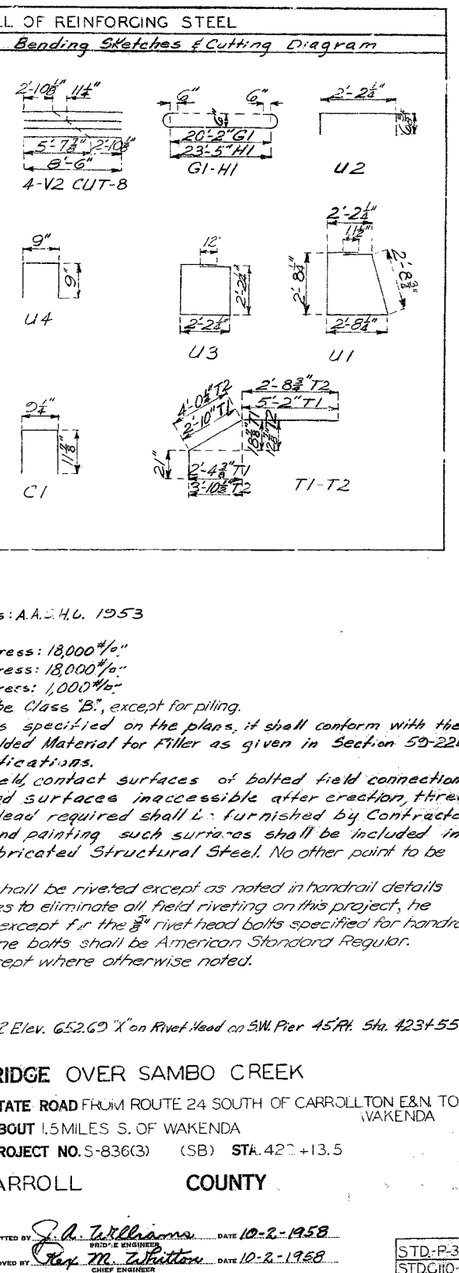
409

ESTIMATED QUANTITIES				
Item		Substr.	Superstr.	Total
Class I Excavation for Structures	Cu. Yds.	90		90
Class "B" Concrete	Cu. Yds.	31.6	59.4	91.0
* Fabricated Structural Steel	Lbs.		43,800	43,800
Reinforcing Steel	Lbs.	3030	11,660	14690
Gray Iron Alloy Castings	Lbs.		1280	1280
Precast Concrete Pile In Place	Lin. Ft.	712		712
Precast Concrete Pile Cut-Offs	Lin. Ft.	48		48

Note: All excavation for bridge will be paid for as Class I Excavation for Structures.

* Final pay weight for Fabricated Structural Steel will be based on using field rivets except for bolted connections specified for handrail.

COMPLETE BILL OF REINFORCING STEEL					
No.	Size	Length	Mark	Location	Bending Sketches & Cutting Diagram
Superstructure					
402	#4	22'-0"	S1	Slab	
128	#4	19'-9"	S2	"	
64	#4	24'-3"	S3	"	
18	#5	2'-0"	C1	Curb	
24	#6	20'-0"	C2	"	
12	#6	2'-6"	C3	"	
End Bents No. 1 & 4					
16	#6	26'-0"	H1	Beam	
4	#6	24'-0"	H2	"	
4	#6	22'-3"	H3	Btwl.	
12	#6	6'-9"	W4	Wing	
8	#6	9'-9"	T1	"	
8	#6	8'-6"	T2	"	
42	#4	11'-3"	U1	Beam	
12	#4	3'-3"	U2	"	
88	#5	3'-6"	V1	Btwl.	
8	#4	8'-6"	V2	Wing	
4	#4	6'-0"	V3	"	
Int. Bents No. 2 & 3					
16	#6	22'-9"	G1	Beam	
4	#6	20'-9"	G2	"	
4	#4	20'-9"	G3	"	
16	#4	3'-3"	U2	"	
34	#4	9'-9"	U3	"	
52	#4	2'-3"	U4	"	



GENERAL NOTES:

Design Specifications: A.A.S.H.O. 1953
Loading: H10-44
Structural Steel Stress: 18,000 #/□"
Reinforcing Steel Stress: 18,000 #/□"
Concrete, Class "B" Stress: 1,000 #/□"
All concrete shall be Class "B", except for piling.

Where joint filler is specified on the plans, it shall conform with the requirements for Premoulded Material for Filler as given in Section 59-22D of the Standard Specifications.

Paint: Shop, none; Field, contact surfaces of bolted field connections, one coat of red lead, and surfaces inaccessible after erection, three coats of red lead. Red lead required shall be furnished by Contractor. Payment for cleaning and painting such surfaces shall be included in unit price bid for "Fabricated Structural Steel. No other paint to be applied by Contractor.

Field connections shall be riveted except as noted in handrail details or, if the Contractor desires to eliminate all field riveting on this project, he may use machine bolts except for the ⅞" rivet head bolts specified for handrail. Heads and nuts on machine bolts shall be American Standard Regular.

Rivets ¾", holes ⅞", except where otherwise noted.

B.M. #32 Elev. 652.69 "X" on Rivet Head on S.W. Pier 45' Rt. Sta. 423+55

BRIDGE OVER SAMBO CREEK

STATE ROAD FROM ROUTE 24 SOUTH OF CARROLLTON E&N TO WAKENDA
ABOUT 1.5 MILES S. OF WAKENDA
PROJECT NO. S-836(3) (SB) **STA.** 423+13.5

CARROLL **COUNTY**

SUBMITTED BY J. A. Williams, BRIDGE ENGINEER DATE 10-2-1958
APPROVED BY Chas. M. Patton, CHIEF ENGINEER DATE 10-2-1958

STD-P-3R1
STD-110-R7
N-727

Drawn JULY 1958 by EHR
Checked Sept. 1958 by LEG

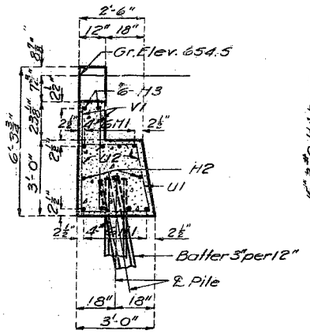
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 1 of 4

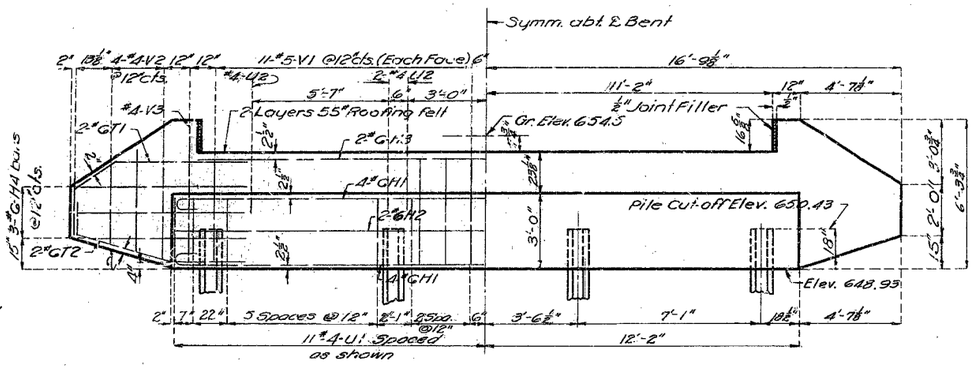
SEE FINAL PLANS BROWN-LINES

MISSOURI STATE HIGHWAY DEPARTMENT

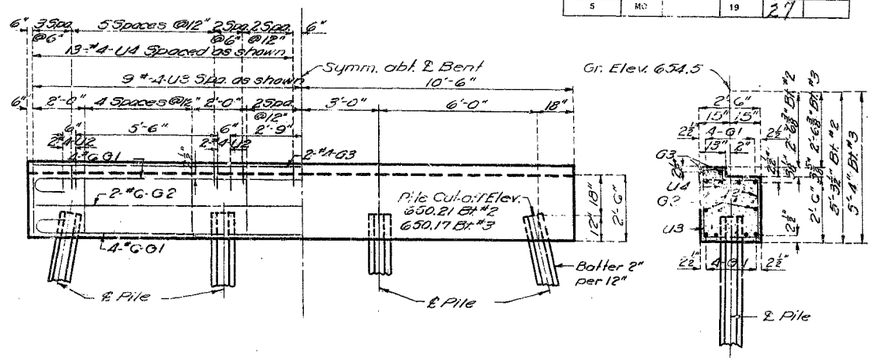
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO		19	27	



SECTION AT ℄

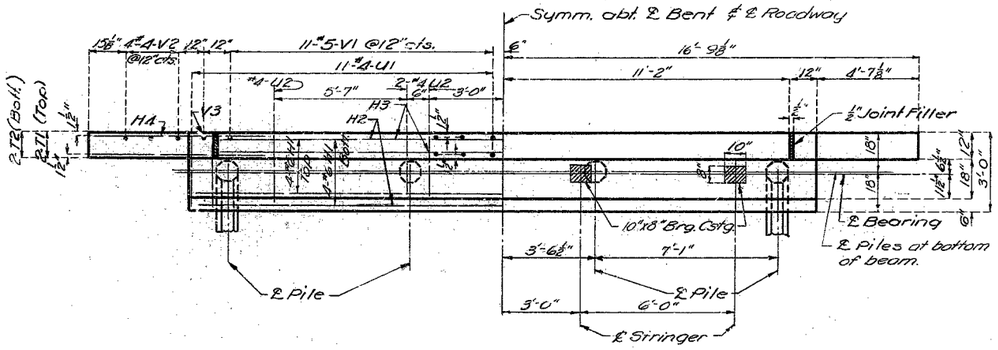


ELEVATION



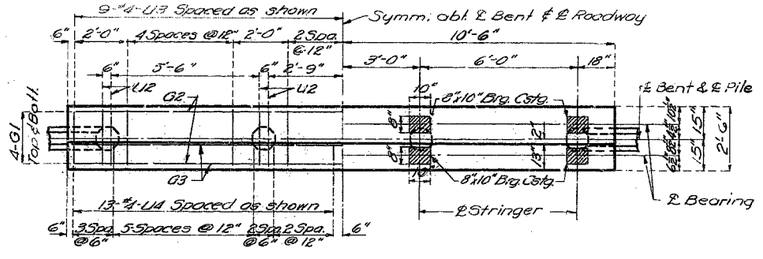
ELEVATION

SECTION AT ℄



PLAN

DETAILS OF END BENTS NO. 1&4



PLAN

DETAILS OF INTERMEDIATE BENTS NO. 2&3

BRIDGE OVER SAMBO CREEK

STATE ROAD FROM ROUTE 24 SOUTH OF CARROLLTON E.&N TO WAKENDA

ABOUT 1.5 MILES S. OF WAKENDA

PROJECT NO. S-836(3) (SB) STA. 423+13.5

CARROLL COUNTY

N-727

Assembled July 1958 by EHR & JRS
Checked Sept. 1958 by LEG

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

Sheet No. 2 of 4.

NO CONSTRUCTION CHANGES

Sq. I-Bm. Conc. Cap Type End & Int. Bts. on Piles
No conc. Appr. slab at End Bt.

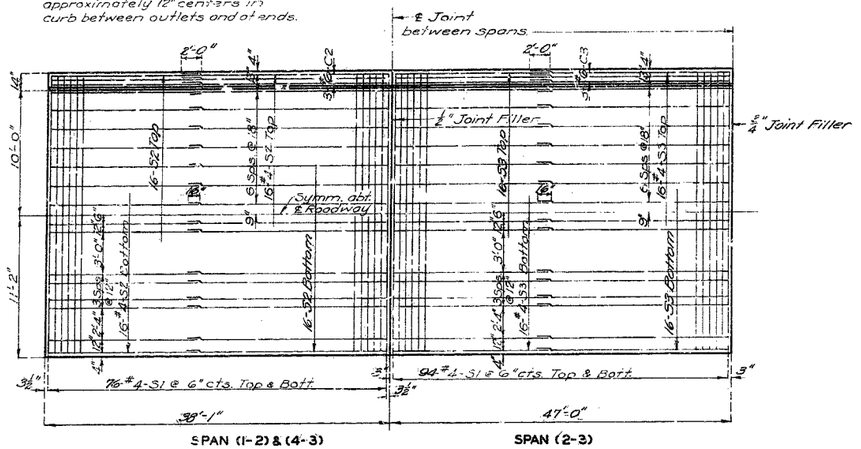
MAY 1958

410

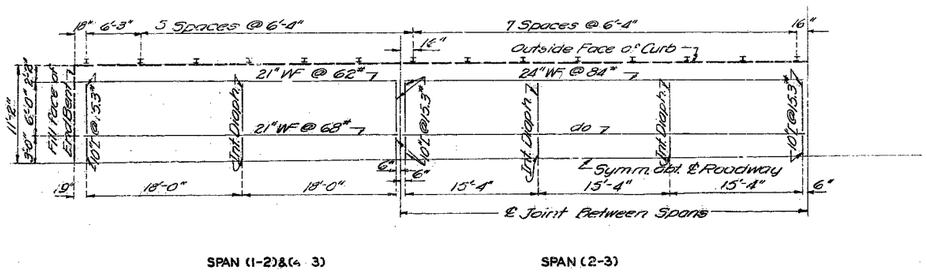
MISSOURI STATE HIGHWAY DEPARTMENT

FED ROAD STATE	FED AID PROJ NO	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
MO		19	28	

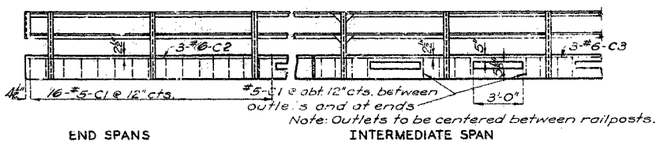
Note: Space dowel bars C1 at approximately 12" centers in curb between outlets and at ends.



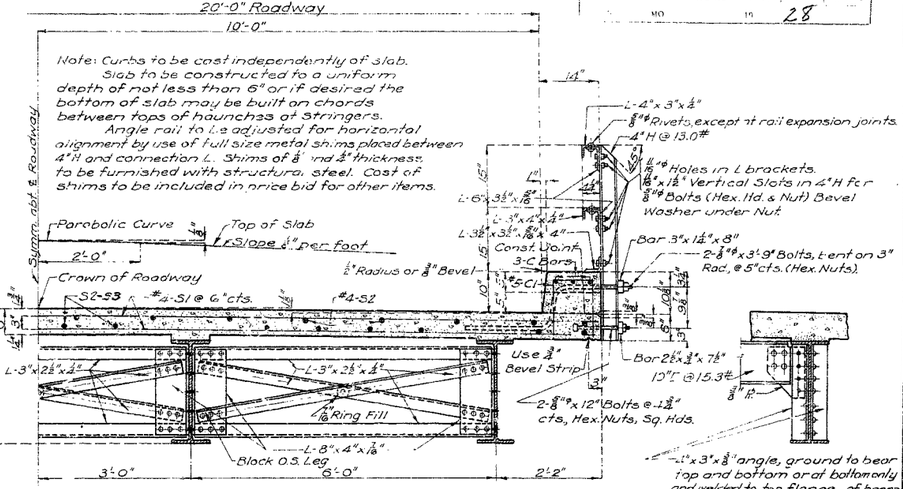
PLAN OF SLAB SHOWING REINFORCEMENT



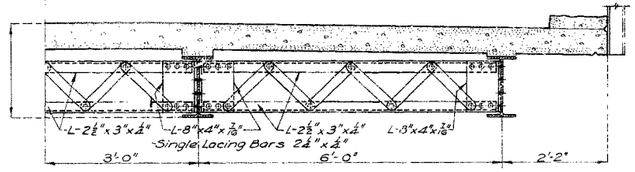
PART PLAN OF STRUCTURAL STEEL



TYPICAL CURB DETAILS



HALF SECTION THROUGH SPANS REQUIRING 21", 24" & 27" STRINGERS

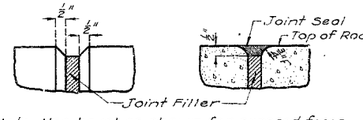


Note: Slab, curb, rail and post details same as shown in section for 24" stringers.

HALF SECTION THROUGH SPANS REQUIRING 14", 16" & 18" STRINGERS

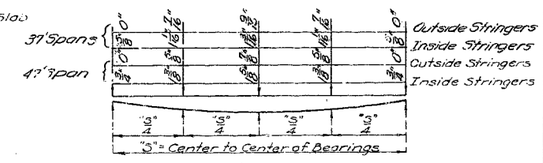
SECTIONS AT ENDS OF SPANS

Note: Haunch slab to bear on ℄ separators.



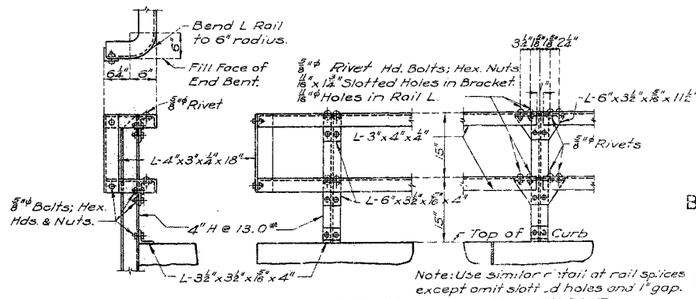
Note: Use bevel as shown for exposed faces of all filled joints except at top surface of roadway slab. Use edging tool with ½" radius at top surface of roadway slab each side of joint and fill flush with joint seal as shown.

DETAILS OF BEVEL FOR FILLED JOINTS



Note: Slab shall be built parallel to grade and to a minimum thickness of 6". Dead load deflection, vertical curve (if any), crown and any difference in depth of stringers shall be taken care of by haunching to stringers by the amounts shown above. This additional concrete is included in "Estimated Quantities."

SLAB HAUNCHING DIAGRAM



Note: Use similar rail at rail splices except omit slotted holes and 1" gap.

DETAILS OF RAIL

BRIDGE OVER SAMBO CREEK

STATE ROAD FROM ROUTE 24 SOUTH OF CARROLLTON E. & N. TO WAKENDA

ABOUT 1.5 MILES S. OF WAKENDA

PROJECT NO S-836(3) (SB) STA 423+13.5

CARROLL COUNTY

N-727

Assembled July 1958 by EHR & JRS
Checked Sept 1958 by LEG

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

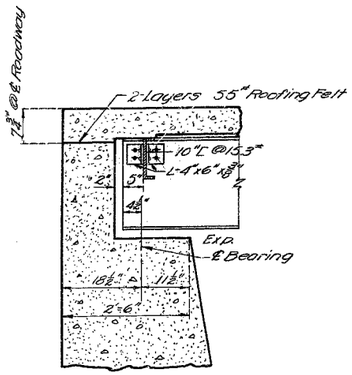
Sheet No. 3 of 4 Sheets

NO CONSTRUCTION CHANGES

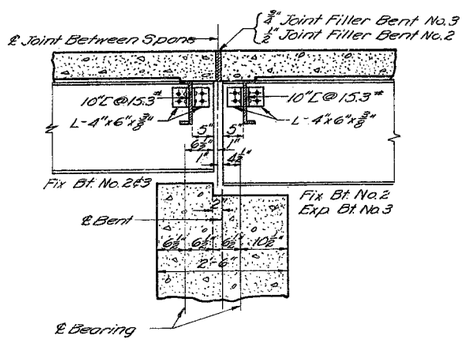
Sq. 20-H10
Rev. Feb. 1955

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISC. YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	2.9	

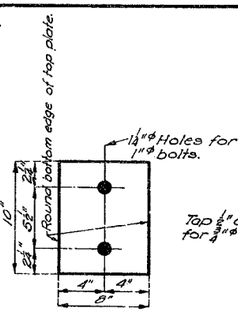


END BENTS NO. 1 & 4

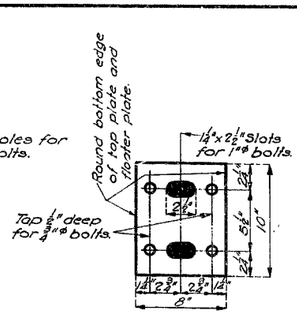


INTERMEDIATE BENTS NO.2&3

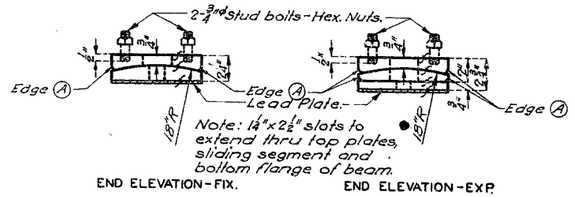
PART LONGITUDINAL SECTION



BOTTOM PLATES

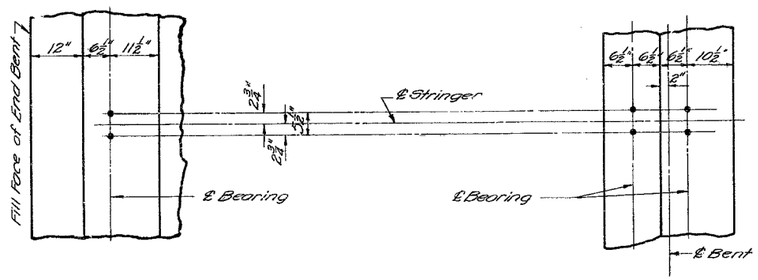


TOP PLATES



END ELEVATION-FIX. END ELEVATION-EXP.

Required: 12 Sets 8"x10" Each set consists of 5 plates each.



END BENTS NO. 1 & 4 INTERMEDIATE BENTS NO. 2 & 3

PART ANCHOR BOLT PLAN

GENERAL NOTES:

Finish all surfaces marked ƒ.

Bearing castings shall be either Gray Iron Alloy or cast steel, but payment will be made as Gray Iron Alloy.

All bolts and nuts will be paid for as Structural Steel.

Anchor bolts shall be 1"ϕ swedged bolts, no heads or nuts and to extend 10" into concrete. Top ends of anchor bolts shall be above top of casting, but not higher than ¼" below top surface of the bottom flange of beam.

All lead plates shall be approximately ¾" thick and weigh 8# /sq. ft. Cost of lead plates shall be included in unit price bid for other items.

Edge Ⓐ to be rounded (⅛" to ⅜" radius).

BRIDGE OVER SAMBO CREEK

STATE ROAD FROM ROUTE 24 SOUTH OF CARROLLTON E.&N. TO WAKENDA

ABOUT 1.5 MILES S. OF WAKENDA

PROJECT NO. S-836(3) (SB) STA. 423+13.5

CARROLL COUNTY

N-727

212

Assembled July 1958 by EHR & JRS
Checked Sept 1958 by LEG

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

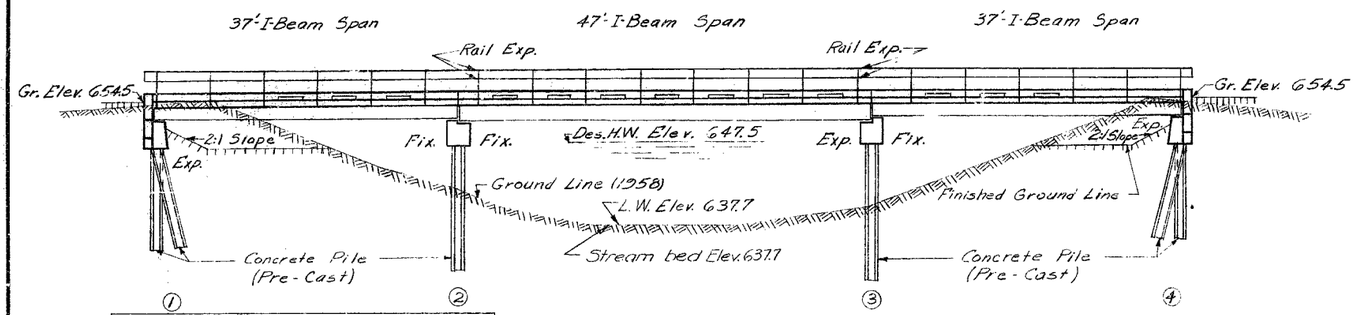
Sheet No. 4 of 4

NO CONSTRUCTION CHANGES

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	26	

FINAL PLANS

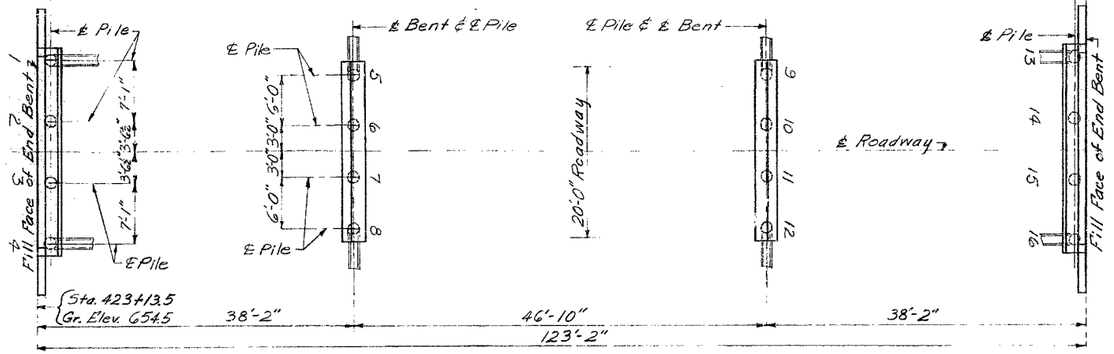


GENERAL ELEVATION

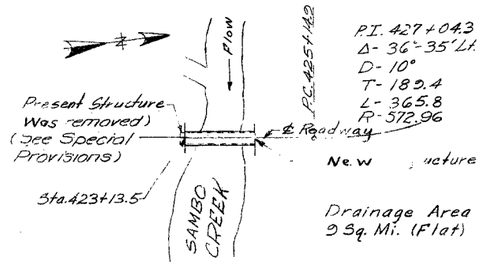
DATA FOR PILE DRIVING		
Bent No.	1&4	2&3
"Plan" Capacity Per Pile	23.5T	26.0T
Computed Capacity Req'd Per Pile	15.5T	21.5T
Min. Penetration (Pile Tip Elev)	620.0	615.0

All piling was of reinforced concrete and conform with details and notes on Standard P.3R1 except as otherwise specified. Estimated quantities shown on plans are based on the following lengths: 8@45'0" and 8@ 50'0". These indicated lengths are approximate only. Proper lengths to give required bearing and/or penetration was authorized by the Engineer. All piles were driven to the minimum penetrations noted and to not less than the specified "Plan" capacities unless the pile lengths authorized and furnished fail to give "Plan" capacities in which cases not less than the "Computed" capacities were obtained.

Note: Excavation of all existing material under bridge was made to not less than 3'-0" below bottom of steel and not less than 4'-0" outside of curb lines. Payment for this excavation outside the limit of excavation for substructure was made at unit contract price for Roadway Excavation.



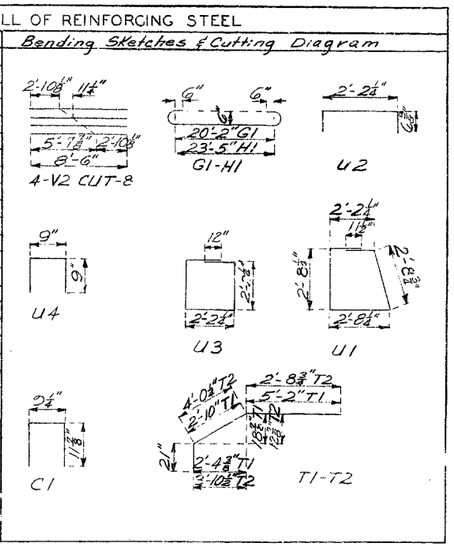
PLAN



LOCATION SKETCH

Pile Tip Elev.			
Bent No.	Pile No.	Elev.	Remarks
1	1	612.6	Battered
1	2	614.4	
1	3	608.4	
1	4	611.6	Battered
2	5	613.7	Battered
2	6	604.2	
2	7	604.2	
2	8	612.7	Battered
3	9	602.9	Battered
3	10	602.2	
3	11	601.2	
3	12	601.9	Battered
4	13	608.7	Battered
4	14	619.4	
4	15	609.4	
4	16	607.7	Battered

COMPLETE BILL OF REINFORCING STEEL					
No.	Size	Length	Mark	Location	Bending Sketches & Cutting Diagram
Superstructure					
492	#4	22'-0"	G1	Slab	
128	#4	19'-9"	G2	"	
64	#4	24'-3"	G3	"	
188	#5	2'-9"	C1	Curb	
24	#6	20'-0"	C2	"	
12	#6	24'-6"	C3	"	
End Bents No. 1&4					
16	#6	26'-0"	H1	Beam	
4	#6	24'-0"	H2	"	
4	#6	22'-3"	H3	(3 Kwl.	
12	#6	6'-7"	H4	Wing	
8	#6	5'-7"	T1	"	
8	#6	8'-6"	T2	"	
12	#4	11'-3"	U1	Beam	
12	#4	3'-3"	U2	"	
88	#5	3'-6"	V1	8 Kwl.	
8	#4	8'-6"	V2	Wing	
4	#4	6'-0"	V3	"	
Int. Bents No. 2&3					
16	#6	22'-2"	G1	Beam	
4	#6	20'-9"	G2	"	
4	#4	20'-9"	G3	"	
16	#4	3'-3"	U2	"	
34	#4	5'-9"	U3	"	
52	#4	2'-3"	U4	"	



GENERAL NOTES:

Design Specifications: A.A.S.H.O.-1953
Loading: H10-44
Structural Steel Stress: 18,000#/□"
Reinforcing Steel Stress: 18,000#/□"
Concrete, Class "B" Stress: 1,000#/□"
All concrete was Class "B", except for piling.
Where joint filler is specified on the plans, it conforms with the requirements for Premoulded Material for Filler as given in Section 59-22D of the Standard Specifications.
Paint: Shop, none; Field, contact surfaces of bolted field connections, one coat of red lead; and surfaces inaccessible after erection, three coats of red lead. Red lead required was furnished by Contractor. Payment for cleaning and painting such surfaces was included in unit price bid for Fabricated Structural Steel. No other paint was applied by Contractor.
Field connections was bolted except as noted in handrail details. If Contractor desired to eliminate all field riveting on this project, he used machine bolts except for the ⅞" rivet head bolts specified for handrail. Heads and nuts of machine bolts were American Standard Regular. Rivets ⅞", holes 15/16", except where otherwise noted.

QUANTITIES				
Item		Substr.	Superstr.	Total
Class 1 Excavation for Structures	Cu Yds.	82.5		82.5
Class "B" Concrete	Cu Yds.	31.6	59.4	91.0
* Fabricated Structural Steel	Lbs.		45910	45910
Reinforcing Steel	Lbs.	3030	11660	14690
Gray Iron Alloy Castings	Lbs.		1280	1280
Precast Concrete Pile in Place	Lin. Ft.	677		677
Precast Concrete Pile Cut-Offs	Lin. Ft.	83		83

Note: All excavation for bridge was paid for as Class 1 Excavation for Structures.
* Final pay weight for Fabricated Structural Steel was based on using field rivets except for bolted connections specified for handrail.

BM "D" ON N.E. Cor. Elephant Ear Lt. N. End of Br.

BRIDGE OVER SAMBO CREEK

STATE ROAD FROM ROUTE 24 SOUTH OF CARROLLTON E&N TO WAKENDA
ABOUT 1.5 MILES S. OF WAKENDA
PROJECT NO. S-836(3) (SB) **STA.** 423+13.5

CARROLL **COUNTY**

SUBMITTED BY J. A. Williams BRIDGE ENGINEER DATE 10-2-1958
APPROVED BY Roy M. Whitton CHIEF ENGINEER DATE 10-3-1958

STD-P-3R1
STDC110-57

N-727

413

Drawn JULY 1958 by EHR
Checked Sept. 1958 by LEC

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

Sheet No. 1A of 1

Missouri Department of Transportation
State Bridge Inspection Report

June 25, 2024
10:12:21AM

COUNTY: CARROLL **DISTRICT: NW** **CLASS: STATBR** **FED-ID: 7205** **BRIDGE: N0727**

GENERAL STRUCTURE INFORMATION

ROUTE: RTBE	**# SPANS:** 3	**PLACE CODE:** 22780 EUGENE	
FEATURE: SAMBO CR	**LANES ON:** 1	**LENGTH:** 123 FT 0 IN	
STATUS: P-POSTLOAD	**LANES UNDER:** 0	**MAXIMUM SPAN:** 46 FT 10 IN	
LOG MILE: 7.925	**COMPASS DIRECTION:** NORTH to SOUTH	**APPROACH ROADWAY:** 22 FT 0 IN	
DETOUR: 24.00 MILES	**DIRECTION OF TRAFFIC:** 1-LN/2-WAY	**CURB TO CURB:** 20 FT 0 IN	
NHS: NO	**FUNCTIONAL CLASS:** RL-MAJOR COLLECTOR	**OUT TO OUT:** 22 FT 4 IN	
BUILT: 1959	**NBI OWNER:** MODOT	**AADT:** 85	
REHAB:	**NBI MAINTAINED:** MODOT	**AADT YEAR:** 2023	
LOCATION: S 28 T 52 R 22 W	**MAINTENANCE DISTRICT:** NW	**AADT TRUCK:** 10.0%	
LATITUDE: 39 17 40.19 (DMS)	**MAINTENANCE COUNTY:** CARROLL	**FUTURE AADT:** 106	
LONGITUDE: 93 22 38.78 (DMS)	**SUB AREA:** 7A35	**FUTURE AADT YEAR:** 2043	

BRIDGE INSPECTION INFORMATION

DATE: 10/26/2022 **RESPONSIBILITY:** DISTRICT
FREQUENCY: 24 **CALCULATED INTERVAL**:** 24
TEAM LEADER: BRYCE ACTON **ELEMENT:** NO
INSPECTOR 2: **INSPECTOR 4:**
INSPECTOR 3:

** When calculated interval exceeds the frequency, a justification comment per BIRM is required.

GENERAL INSPECTION COMMENTS

FRACTURE CRITICAL INSPECTION INFORMATION

DATE: **RESPONSIBILITY:** **CATEGORY:**
FREQUENCY: **CALCULATED INTERVAL**:** **NBI:**
TEAM LEADER: **INSPECTOR 3:** **METHOD:**
INSPECTOR 2: **INSPECTOR 4:**

** When calculated interval exceeds the frequency, a justification comment per BIRM is required.

FRACTURE CRITICAL INSPECTION COMMENTS

INDEPTH INSPECTION INFORMATION

DATE: **RESPONSIBILITY:** **CATEGORY:**
FREQUENCY: **CALCULATED INTERVAL**:** **NBI:**
TEAM LEADER: **INSPECTOR 3:** **METHOD:**
INSPECTOR 2: **INSPECTOR 4:**

** When calculated interval exceeds the frequency, a justification comment per BIRM is required.

INDEPTH INSPECTION COMMENTS

SPECIAL INSPECTION INFORMATION

DATE: 03/14/2023 **RESPONSIBILITY:** BRIDGEDIV **CATEGORY:** QUALITY ASSURANCE
FREQUENCY: 999 **CALCULATED INTERVAL**:** **NBI:** NO
TEAM LEADER: JESSE ELSEMAN **INSPECTOR 3:** **METHOD:** VISUAL
INSPECTOR 2: TERRY L SHUNAMON **INSPECTOR 4:**

** When calculated interval exceeds the frequency, a justification comment per BIRM is required.

SPECIAL INSPECTION COMMENTS

(ELSEMJ, 03/15/2023)--USING THE FIELD VERIFICATION MODEL (FVM) - AS A THIRD PARTY INSPECTOR, I TOOK THE PREVIOUS INSP REPORT INTO THE FIELD AND VERIFIED THOROUGHNESS OF REPORT WITH ASSIGNED CONDITION AND APPRAISAL RATINGS

UNDERWATER INSPECTION INFORMATION

DATE: 10/26/2022 **RESPONSIBILITY:** DISTRICT **CATEGORY:** DRY
FREQUENCY: 60 **CALCULATED INTERVAL**:** 24 **NBI:** NO
TEAM LEADER: BRYCE ACTON **INSPECTOR 3:** **METHOD:** VISUAL
INSPECTOR 2: **INSPECTOR 4:**

** When calculated interval exceeds the frequency, a justification comment per BIRM is required.

UNDERWATER INSPECTION COMMENTS

OTHER SPECIAL INSPECTIONS

DATE	FREQUENCY	CATEGORY	NBI	CALCULATED INTERVAL	RESPONSIBILITY	METHOD
06/09/2021	72	CHANNEL CROSS SECTIONS	NO	72	DISTRICT	MEAS ROD

OTHER UNDERWATER INSPECTIONS

DATE	FREQUENCY	CATEGORY	NBI	CALCULATED INTERVAL	RESPONSIBILITY	METHOD

COUNTY: CARROLL **DISTRICT: NW** **CLASS: STATBR** **FED-ID: 7205** **BRIDGE: N0727**

STRUCTURE POSTING

APPROVED CATEGORY: S-5 CENTERLINE OF BRIDGE AND TRUCKS OVER 14 TONS 15 MPH ON BRIDGE.
Ton 1: 14 **Ton 2:** **Ton 3:**
COMMENTS:

FIELD CATEGORY: S-5 CENTERLINE OF BRIDGE AND TRUCKS OVER 14 TONS 15 MPH ON BRIDGE.
Ton 1: 14 **Ton 2:** **Ton 3:** **PROBLEM:** **PROBLEM DIRECTION:**
COMMENTS: (ELSEMJ, 03/15/2023)--NORTH SIGN MISSING

GENERAL COMMENTS/MAJOR RATED ITEMS

GENERAL COMMENTS: (BOWDEJ1, 03/06/2008)--(37'-47'-37') I-BM SPANS

[ITEM 58] DECK: 3-SERIOUS CONDITION
RATING : 10/25/2016
COMMENTS: (STEPHS2, 10/30/2014)--SATURATION SPAN 3
(ACTONB1, 11/08/2022)--HEAVY SATURATION THROUGHOUT

[ITEM 59] SUPER: 6-SATISFACTORY CONDITION
RATING : 05/18/2001
COMMENTS: (STEPHS2, 10/30/2014)--RUSTING AT FLANGES

[ITEM 60] SUB: 6-SATISFACTORY CONDITION
RATING : 05/18/2001
COMMENTS: (STEPHS2, 10/30/2014)--H CRACKS/SPALLS AT BENTS

[ITEM 61] BANK/CHANNEL: 5-MAJOR DAMAGE
RATING : 10/25/2016
COMMENTS: (BOWDEJ1, 12/16/2004)--BANK SLOUGHING
(ACTONB1, 11/08/2022)--MODERATE BANK EROSION

[ITEM 113] SCOUR: 8-STABLE FOR CALCULATED
RATING : 05/18/2001
EVALUATION TYPE :
COMMENTS: (ACTONB1, 11/08/2022)--NO SCOUR OBSERVED

[ITEM 71] WATERWAY ADEQUACY: MINOR DELAYS APPRCH
RATING : 05/18/2001
COMMENTS:

[ITEM 72] APPRRDWY ALIGNMENT: 6-SATISFACTORY
RATING : 05/18/2001
COMMENTS:

RAILING AND APPROACH PAVEMENT COMPONENTS AND RATINGS

[ITEM 36A] BRIDGE RAILING RATING: *DOESNT MEET CURRNT STND-0* ***RATING :*** *06/29/2004* ***COMMENTS:***

MATERIAL	CONSTRUCTION	DIRECTION	COMMENTS
REINFORCED CONCRETE	CURB	BOTH	

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	COMMENT
SPALLS	THROUGHOUT		MINOR	
VERTICAL CRACKS	THROUGHOUT		MINOR	

MATERIAL	CONSTRUCTION	DIRECTION
STEEL	ANGLE-DOUBLE	BOTH

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	COMMENT
RUSTING	THROUGHOUT		LIGHT	

[ITEM 36B] TRANSITION RAILING RATING: *NOT PROVIDED-0* ***RATING :*** *05/18/2001* ***COMMENTS:***

[ITEM 36C] APPROACH RAILING RATING: *NOT PROVIDED-0* ***RATING :*** *05/18/2001* ***COMMENTS:***

COUNTY: CARROLL **DISTRICT: NW** **CLASS: STATBR** **FED-ID: 7205** **BRIDGE: N0727**

[ITEM 36D] RAIL END TREATMENT RATING: *NOT PROVIDED-0* ***RATING :*** *05/18/2001* ***COMMENTS:***

APPROACH PAVEMENT: *Overall condition assigned for each approach pavemenet component is shown below.

MATERIAL	CONSTRUCTION	DIRECTION	CONDITION*	COMMENTS
ASPHALT	BITUMINOUS MAT	BOTH	POOR	

DRAINAGE, EXPANSION DEVICES, BANK/SLOPE, AND DECK PROTECTIVE COMPONENTS

DECK PROTECTIVE COMPONENTS:

SERIES TYPE-#	COMPONENT	MATERIAL	CONSTRUCTION	THICKNESS	YEAR APPLIED	MANUFACTURE	OVERALL CONDITION
MAIN SERIES-1	*WEARING SURFACE*	*ASPHALT*	*BITUMINOUS SEAL COAT*	*.4 IN*			*FAIR*

COMMENT: (BOWDEJ1, 12/16/2004)--SEALED IRON MTN CHIPS 1995

DECK PROTECTION	*NOTAPPLICABLE*	*NONE*

COMMENT:

MEMBRANE	*NOTAPPLICABLE*	*NONE*

COMMENT:

DRAINAGE COMPONENTS:

COMPONENT	MATERIAL	CONSTRUCTION	DIRECTION	COMMENTS
DRAINAGE	*REINFORCED CONCRETE*	*CURB OUTLET*		

EXPANSION DEVICE COMPONENTS:

SUB UNIT-#	SUB LABEL	COMPONENT	MATERIAL	CONSTRUCTION	GAP	YEAR APPLIED	MANUFACTURE	OVERALL CONDITION

COMMENT:

BANK/SLOPE PROTECTION COMPONENTS:

COMPONENT	MATERIAL	CONSTRUCTION	DIRECTION	COMMENTS

DECK COMPONENTS

SPAN TYPE-#	COMPONENT	MATERIAL	CONSTRUCTION	COMMENTS
MAIN SPANS-1	*DECK*	*REINFORCED CONCRETE*	*CAST-IN-PLACE*	

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
DETERIORATION	EDGE		MODERATE		
FULL DEPTH PATCHES	RANDOM		FEW		
PATCHES	RANDOM		MANY		
REBAR EXPOSED	EDGE		MODERATE		
SATURATION	THROUGHOUT		HEAVY	60 %	
TRANSVERSE CRACKS	THROUGHOUT		MANY		

SPAN TYPE-#	COMPONENT	MATERIAL	CONSTRUCTION	COMMENTS
MAIN SPANS-2	*DECK*	*REINFORCED CONCRETE*	*CAST-IN-PLACE*	

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT

DETERIORATION	EDGE	MODERATE		
FULL DEPTH PATCHES	RANDOM	FEW		(BOWDEJ1, 01/04/2007)--LARGE PATCHES @ JOINT, BENT #2 AND #3
PATCHES	RANDOM	MANY		
REBAR EXPOSED	EDGE	MODERATE		
SATURATION	THROUGHOUT	HEAVY	60 %	
TRANSVERSE CRACKS	THROUGHOUT	MANY		

MAIN SPANS-3 *DECK* *REINFORCED CONCRETE* *CAST-IN-PLACE*

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
DETERIORATION	EDGE		MODERATE		
FULL DEPTH PATCHES	RANDOM		FEW		(BOWDEJ1, 01/04/2007)--LARGE PATCHES @ JTS
PATCHES	RANDOM		MANY		
REBAR EXPOSED	EDGE		MODERATE		
SATURATION	THROUGHOUT		HEAVY	70 %	
TRANSVERSE CRACKS	THROUGHOUT		MANY		

SUPERSTRUCTURE COMPONENTS

SERIES TYPE-#	SPAN TYPE	MATERIAL	CONSTRUCTION	LABEL	COMMENTS
MAIN SERIES-1	*SIMPLE SPAN*	*STEEL*	*WIDE FLANGE GIRDERS*		

SPAN	COMPOSITE INDICATOR	LENGTH	WEATHERING STEEL	COMMENTS
MAIN SPANS-1	NON-COMPOSITE	38 FT 2 IN	NO	

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
DECK LIFTING	THROUGHOUT		MINOR		
RUSTING	TOP FLANGE		MINOR		(SIMPSB, 06/28/2004)--@ JOINTS

MAIN SPANS-2	NON-COMPOSITE	46 FT 10 IN	NO	

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
DECK LIFTING	THROUGHOUT		MINOR		
OTHER	THROUGHOUT		NOT APPLICABLE		(REHAGM, 01/17/2005)--CENTER SPAN ROTATING SLIGHTLY
RUSTING	TOP FLANGE		MINOR		(SIMPSB, 06/28/2004)--@ JOINTS

MAIN SPANS-3	NON-COMPOSITE	38 FT 2 IN	NO	

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
DECK LIFTING	THROUGHOUT		MINOR		
RUSTING	TOP FLANGE		MINOR		(SIMPSB, 06/28/2004)--@ JOINTS

SUBSTRUCTURE COMPONENTS

SUBSTRUCTURE	SKEW	LENGTH	MATERIAL	CONSTRUCTION	LABEL	COMMENTS
ABUTMENT-1		*24 FT 4 IN*	*REINFORCED CONCRETE*	*NON-INTEGRAL*		

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
ASSOCIATED COMPONENT	**MATERIAL**	**CONSTRUCTION**			
BACKWALL	REINFORCED CONCRETE	CAST-IN-PLACE			
SHOVING	TOP		MINOR		
BEAM CAP	REINFORCED CONCRETE	CAST-IN-PLACE			
SEALED	BEAM CAP		ASPHALTICBASE		
PILING	REINFORCED CONCRETE	PRE-CAST			
STRAIGHT WINGS	REINFORCED CONCRETE	CAST-IN-PLACE			

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
FIXED BEARING	STEEL	CURVED PLATE(ROTATING			

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT

BENT-2 *21 FT 0 IN* *REINFORCED CONCRETE* *PILE CAP*

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
ASSOCIATED COMPONENT	**MATERIAL**	**CONSTRUCTION**			
BEAM CAP	REINFORCED CONCRETE	CAST-IN-PLACE			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**
DELAMINATION	THROUGHOUT		MINOR		
HIGH STEEL SPALLS	THROUGHOUT		FEW		
SEALED	BEAM CAP		ASPHALTICBASE		
PILING	REINFORCED CONCRETE	PRE-CAST			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**
FIXED BEARING	STEEL	CURVED PLATE(ROTATING			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**

BENT-3 *21 FT 0 IN* *REINFORCED CONCRETE* *PILE CAP*

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
ASSOCIATED COMPONENT	**MATERIAL**	**CONSTRUCTION**			
BEAM CAP	REINFORCED CONCRETE	CAST-IN-PLACE			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**
DELAMINATION	THROUGHOUT		MINOR		
HIGH STEEL SPALLS	THROUGHOUT		FEW		
SCALING	VERTICAL FACE		MODERATE		
SEALED	BEAM CAP		ASPHALTICBASE		
PILING	REINFORCED CONCRETE	PRE-CAST			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**
SCALING	THROUGHOUT		LIGHT		
FIXED BEARING	STEEL	CURVED PLATE(ROTATING			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**

ABUTMENT-4 *24 FT 4 IN* *REINFORCED CONCRETE* *NON-INTEGRAL*

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
ASSOCIATED COMPONENT	**MATERIAL**	**CONSTRUCTION**			
BACKWALL	REINFORCED CONCRETE	CAST-IN-PLACE			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**
HORIZONTAL CRACKS	TOP		FEW		
SHOVING	TOP		MINOR		
BEAM CAP	REINFORCED CONCRETE	CAST-IN-PLACE			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**
HORIZONTAL CRACKS	TOP		OPEN		
SEALED	BEAM CAP		ASPHALTICBASE		
PILING	REINFORCED CONCRETE	PRE-CAST			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**
STRAIGHT WINGS	REINFORCED CONCRETE	CAST-IN-PLACE			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**
FIXED BEARING	STEEL	CURVED PLATE(ROTATING			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**

OVER/UNDER ROUTES CLEARANCE INFORMATION

CLEARANCES OVER DECK

**NOTE: Vertical clearances for permitting purposes are taken as 2 inches less than the actual field measured clearance.

VERTICAL CLEARANCE TYPE**	VALUE	DIRECTION	DATE	COMMENT

CLEARANCES UNDER BRIDGE

**NOTE: Vertical clearances for permitting purposes are taken as 2 inches less than the actual field measured clearance.

RECORD #	ROUTE	# LANES	DIRECTION OF TRAFFIC	RIGHT LATERAL CLEARANCE	LEFT LATERAL CLEARANCE	UR-ID

VERTICAL CLEARANCE TYPE**	VALUE	DIRECTION	DATE	COMMENT

STRUCTURE PAINT INFORMATION

CONDITION: FAIR **RUST AMOUNT :** 5=3.0% OF SURFACE RUSTED **STEEL TONS :** 23

ORIGINAL PAINT		CONTRACT REPAINT		DEPARTMENT REPAINT	
PAINT TYPE :		PAINT TYPE :		PAINT TYPE :	A SYSTEM
NAME :		NAME :		NAME :	RED LEAD
PAINT COLOR :		PAINT COLOR :		PAINT COLOR :	ALUMINUM
PAINT YEAR :		PAINT YEAR :		PAINT YEAR :	1988
MILS :		MILS :		MILS :	6
				MANUFACTURE :	
				SURFACE PREP :	

REQUESTED WORK ITEMS

GENERAL WORK COMMENTS:

RESPONSIBILITY	LOCATION	ITEM	CATEGORY	PRIORITY	DATE	WORK ITEM COMMENT
DISTRICT ROUTINE	NORTH	REPLACE POSTING SIGN	POSTING	2	03/15/2023	

UTILITY ATTACHMENTS

UTILITY	OWNER	METHOD	MEASUREMENT TYPE	VALUE	NUMBER	UTILITY ATTACHMENT COMMENT

PROGRAM NOTES INFORMATION

Design_No = N0727

COUNTY: CARROLL **DISTRICT: NW** **CLASS: STATBR** **FED-ID: 7205** **BRIDGE: N0727**

YEAR	PROJECT #	MONTH LET	YEAR LET	ITEMS	COMMENT

COMPUTER GENERATED RATINGS AND DEFICIENCY ITEMS

NOTE: The items listed in this section are updated whenever computer edits are ran on a structure after the inspection updates have been entered in to TMS.

Rated Item	Rating	Rating Date
[Item 67] Structure Evaluation Rating:	4-MEETS MINIMUM TOLERABLE	3/19/2002
[Item 68] Deck Geometry Rating:	5-BETTER THAN MINIMUM	3/7/2024
[Item 69] Underclearance:	N-NOT APPLICABLE	5/18/2001
Sufficiency Rating:	59.0%	3/7/2024
Deficiency:	STRUCTURAL	1/31/2013
Funding Eligibility:	PARTIAL	----
Estimated New Structure Length:	154 FT.	----
Estimated Structure Cost:	$544,439	----
Estimated Total Project Cost:	$816,659	----
Year of Cost Estimate:	2024	----

NOTE: The above structure length and cost estimates are computer generated using algorithims in the TMS system. These algorthims are generalized to use NBI items to come up with a new structure length and width to calculate a new area which is taken times a representative cost per square foot. The actual structure size and cost may vary significantly from these numbers once site specific engineering is done.

ADVANCED SIGN INFORMATION

SIGN #	SIGN TYPE	PROBLEM	PROBLEM DIRECTION
1	YIELD TO ONCOMING TRAFFIC		
2	B - ONE LANE BRIDGE		

OUTFALL INSPECTION INFORMATION

 # OUTFALLS: **INSPECTOR:**
STATUS: **DATE:**
NOTES:

BRIDGE MEMORANDUM

Job No.: JNW0010 **Bridge No.:** N08262
County: Carroll **Route:** JJ (Low Volume) over West Fork Wakenda Creek

Final Layout:	U.I.P., Redeck & Make Composite Existing (39'-51'-39') Simple Wide Flange Beam Spans
Roadway Width:	22'-0" plus 16" Type D Barriers each side
Alignment:	Tangent
Skew:	Square
Profile Grade:	Match existing ±
Loading:	H15-44(1-Lane)(1958), HS20-44 (New construction)
Begin Station:	124+42.0± (match existing)
Traffic Handling:	Structure to be closed during construction. Traffic to be maintained on other routes during construction. See roadway plans for traffic control.
Traffic Information:	AADT = 186 (2023), Truck = 11.8% = 22 AADT = 232 (2043), Truck = 11.8% = 27
Existing Bridge:	Redeck N08261 and use in place.
Condition Ratings:	Deck = 4, Superstructure = 5, Substructure = 5
Load Posting:	Posted S-4, Centerline of Bridge, (to be removed)

General Notes:

- Remove existing bridge deck including curbs, rails and top of wings.
- Install 6½" CIP sliding slab with 3/16" cross slope (without precast panels), stay-in-place forms permitted.
- Match existing haunch to match existing profile grade. (1/2" wearing surface assumed on the existing bridge)
- Install concrete diaphragms at Int. Bents No. 2 & 3 to make continuous.
- Make End Bents No. 1 & 4 semi-integral.
- Install 16" wide, Type D Barriers.
- Install Slab Drains as required.
- Install Shear Connectors to make composite.
- Install cover plates to top flange to repair existing beams.
- Estimated size of bottom cover plates for Span No. 2 = 10' x 11" x 0.375" (Exterior Girders)
- Replace channel diaphragm between beams 9 & 10.
- Perform 50 sq. ft. of Substructure Repair (Formed) at Intermediate Bent No. 2.
- Perform 25 sq. ft. of Substructure Repair (Formed) at Intermediate Bent No. 3.
- Install 20' Bridge Approach Slab (Minor) at End Bents No. 1 & 4
- No conduit, lighting, utility supports, or sidewalks are to be included in the final plans.
- Existing paint system is System A (lead based).
- Bridge deck may be finished with a vibratory screed. Include note B3.25 on plans.

Special Notes:

- Provide object markers at each corner of bridge (Roadway Item).
- Remove existing Bridge Approach Pavement (Roadway Item).
- Roadway surfacing adjacent to bridge ends to match top of bridge deck (Roadway Item).
- Rubblized existing bridge deck may be used on spill slopes (Roadway Item).
- An asbestos and lead inspection has been performed on this structure (N08261). Results indicate that asbestos is not present and lead is present. The Bridge Division will include this report in the electronic deliverables folder when submitting contract documents to the Design Division for the letting (Bridge Item).
- Girders to be recoated in a future, paint-only contract (Estimated cost of $47,300).

Estimated Working / Calendar Days = **30** / **45**
FY26 Estimated Construction Cost[1] = $323,000

[1]Does not include STIP inflation from Planning

Bridge contact is Ted Koester, SPM 573-751-4229

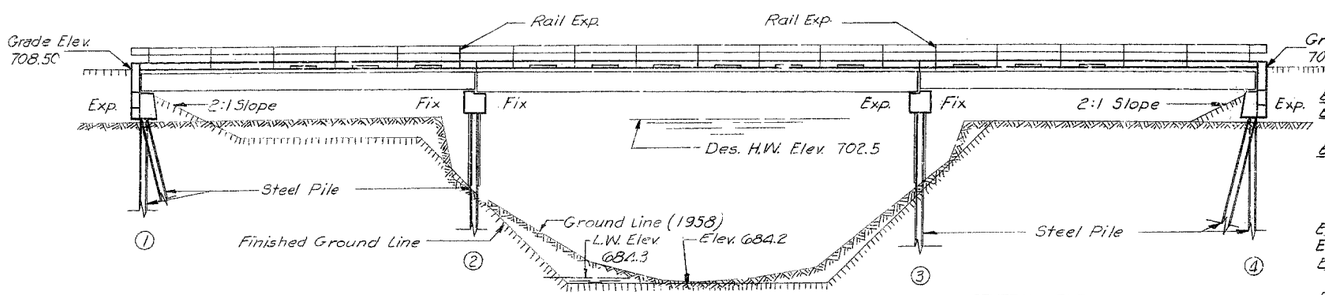
District contact is Joyce Reynolds, TPM 816-387-2411

Ted Koester	6/12/24		
Prepared by: Structural Project Manager	*Date*	*District: Transportation Project Manager*	*Date*
		District: District Bridge Engineer	*Date*

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	16	

39'-51'-39' I-Beam Spans

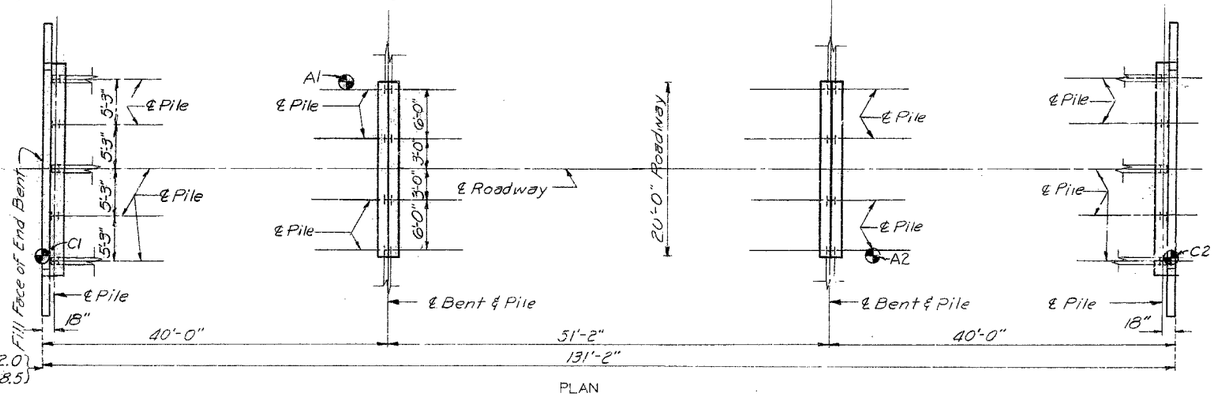


GENERAL ELEVATION

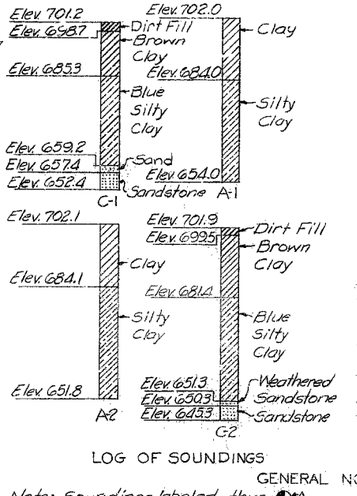
Note: All piling shall be 10" bearing piles at 42# and shall conform with details and notes on sheet No.2 of design plans. Estimated quantities shown on plans are based on the following length: 18@ 55'-0". This length is approximate only. Proper length to give required bearing and/or penetration will be authorized by the Engineer.

All piles shall be driven to or into solid rock, boulders, shale or cemented gravel; or to not less than full length authorized and to sustain a load of at least 37 ton per pile.

A gravity hammer may be used for driving piles if desired.



PLAN



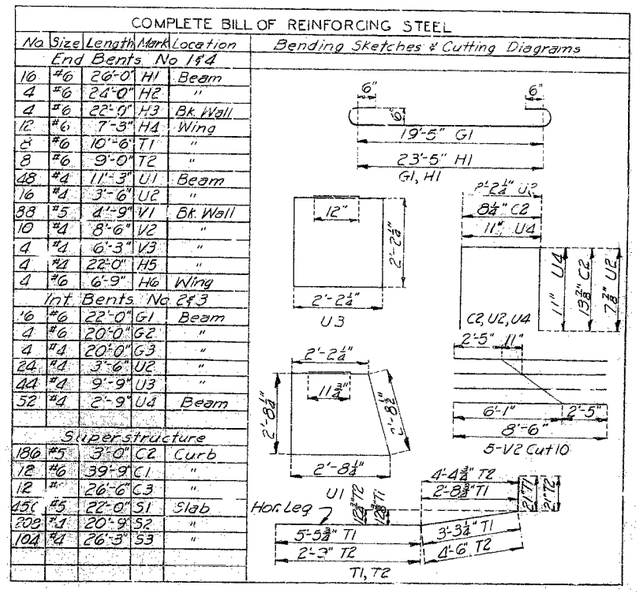
LOG OF SOUNDINGS

Note: Soundings labeled thus: ⊕A were taken by Auger. Soundings labeled thus: ⊕C were taken by Core Drill.

COMPLETE BILL OF REINFORCING STEEL

No	Size	Length	Mark	Location
		End Bents No 1&4		
16	#6	26'-0"	H1	Beam
4	#6	24'-0"	H2	"
4	#6	22'-0"	H3	Bk. Wall
12	#6	7'-3"	H4	Wing
8	#6	10'-6"	T1	"
8	#6	9'-0"	T2	"
68	#4	11'-3"	U1	Beam
16	#4	3'-6"	U2	"
38	#5	4'-9"	V1	Bk. Wall
10	#4	8'-6"	V2	"
4	#4	6'-3"	V3	"
4	#4	22'-0"	H5	"
4	#6	6'-9"	H6	Wing
		Int. Bents No 2&3		
16	#6	22'-0"	G1	Beam
4	#6	20'-0"	G2	"
4	#4	20'-0"	G3	"
24	#4	3'-6"	U2	"
44	#4	9'-9"	U3	"
52	#4	2'-9"	U4	Beam
		Superstructure		
180	#5	3'-0"	C2	Curb
12	#6	39'-9"	C1	"
12	"	26'-6"	C3	"
450	#5	22'-0"	S1	Slab
208	#7	20'-9"	S2	"
104	#4	26'-3"	S3	"

Bending Sketches & Cutting Diagrams



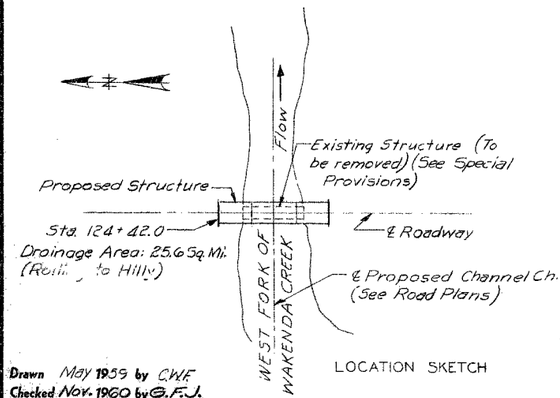
GENERAL NOTES:

Design Specifications: A.A.S.H.O. (1957)
Loading: H15-44 (1-Lane)
Structural Carbon Steel Stress: 18,000 #/□"
Reinforcing Steel Stress: 20,000 #/□"
Class B-1 Concrete Stress: 1600 #/□"
Class B Concrete Stress: 1200 #/□"
Concrete for substructure shall be Class B (Air-entrained)
Concrete for superstructure shall be Class B-1 (Air-entrained)
Rivets ⅞"ϕ; holes ⅞"ϕ except as noted.
Field connections shall be riveted except as noted in handrail details or, if the Contractor desires to eliminate all field riveting on this project, he may use machine bolts. Heads and nuts of machine bolts shall be American Standard Regular.

Paint: Shop, none; Field, contact surfaces of bolted field connections, one coat of red lead and surfaces inaccessible after erection three coats of red lead. No other paint to be applied by Contractor except as noted for steel piles. Red lead required shall be furnished by Contractor. Payment for cleaning and painting such surfaces will be included in unit price bid for Fabricated Structural Carbon Steel.

Where joint filler is specified on the plans, it shall conform with the requirements of Section 1572.5 of the Standard Specifications.

B.M. #38 Elev. 702.10 Spike in 14" Walnut 40' Lt. Sta. 123+95 FINISHED



LOCATION SKETCH

ESTIMATED QUANTITIES

	Item		Substr.	Superstr.	Total
	Class 1 Excavation for Structures	Cu.Yds.	10		10
	Class B Concrete	Cu.Yds.	27.5		27.5
*	Fabricated Structural Carbon Steel	Lbs.		57,750	59,520
	Reinforcing Steel	Lbs.	3400	16,810	20,210
	Steel Piles in Place	Lin.Ft.	936		936
	Steel Pile Cut-Offs	Lin.Ft.	54		54
	Class B-1 Concrete	Cu.Yds.		64.9	64.9

* Note: Final pay weight for Fabricated Structural Carbon Steel will be based on using field rivets except for bolted connections specified for handrail. Total estimated weight of fabricated structural carbon steel includes weight of angles required for steel pile Bents No. 2 & 3.

See Section 52.4.7 of Standard Specifications for required painting of steel piles.

Qualification of welding operators will be required.

Drawn May 1959 by C.W.F.
Checked Nov. 1960 by G.F.J.

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

FINISHED

BRIDGE OVER WEST FORK OF WAKENDA CREEK

STATE ROAD FROM RAY COUNTY LINE EAST & SOUTH TO RTE. SDD

ABOUT 6.0 MILES N.W. OF NORBORNE

PROJECT NO. S-1646 (2)(SJJ) **STA.** 124+42.0

CARROLL **COUNTY**

SUBMITTED BY D.B. Jensen BRIDGE ENGINEER DATE 6/8/61

APPROVED BY J.J. Corbett CHIEF ENGINEER DATE 6/8/61

FINISH

STD. 54.00

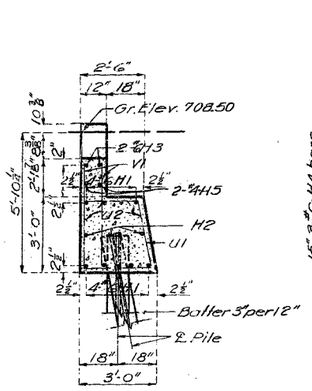
N-826

Sheet No. 1 of 5.

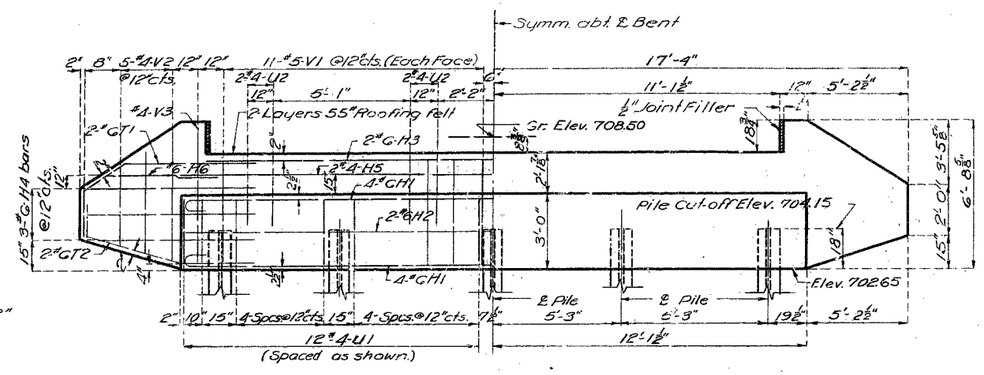
SEE FINAL PLANS BROWN-LINES

MISSOURI STATE HIGHWAY DEPARTMENT

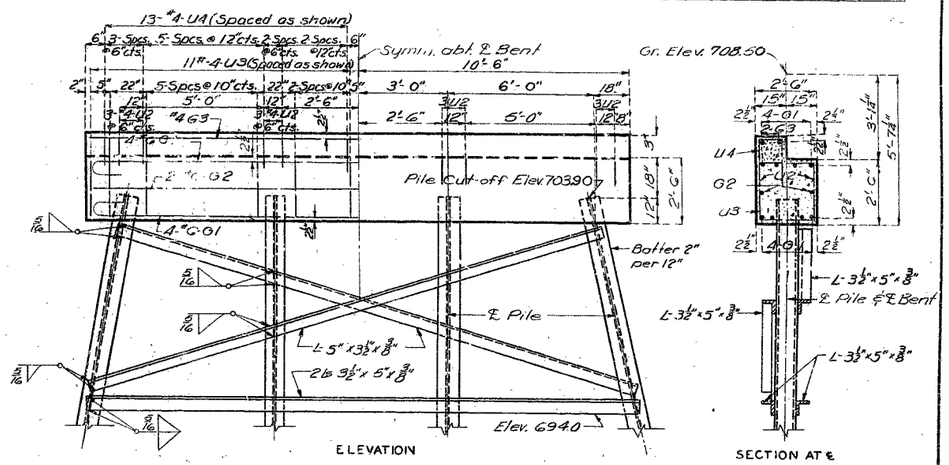
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO		19	17	



SECTION AT ℄

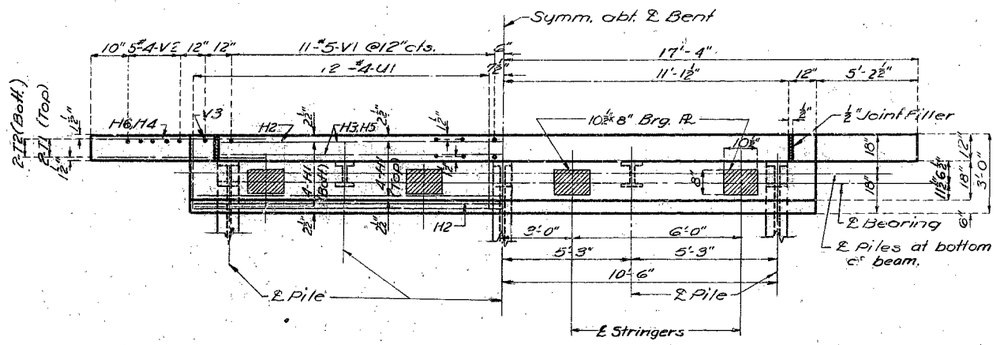


ELEVATION



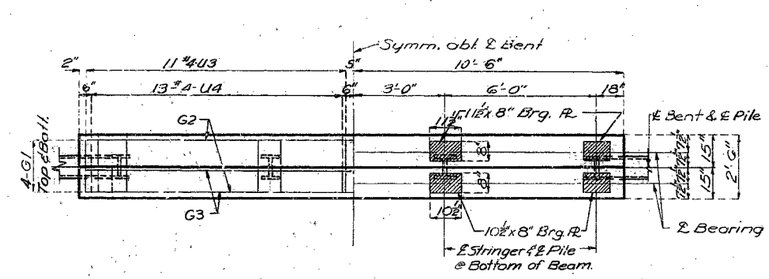
ELEVATION

SECTION AT ℄



PLAN

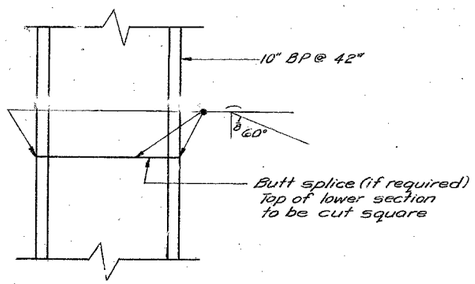
DETAILS OF END BENT NO. 1 & 4



PLAN

DETAILS OF INTERMEDIATE BENT NO. 2 & 3

Note: Fill at End Bents No. 1 and No. 4 shall not be carried above bottom of beam and wings until superstructure spans (1-2) and (4-3) are in place.



DETAILS OF STEEL PILE SPLICE

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

FINISHED

FINISHED

FINISHED

BRIDGE OVER WEST FORK OF WAKENDA CREEK

STATE ROAD FROM RAY COUNTY LINE EAST & SOUTH TO RTE. 33D

ABOUT 6.0 MILES N.W. OF NORBORNE

PROJECT NO. S-1646(2) (SJJ) STA. 124+42.0 FINISHED

CARROLL COUNTY

N-826

Assembled May 1959 by C.W.F. & J.C.F. & B.W.D. & E.J.W.
Checked Nov. 1960 by G.F.J.

Sheet No. 2 of 5.

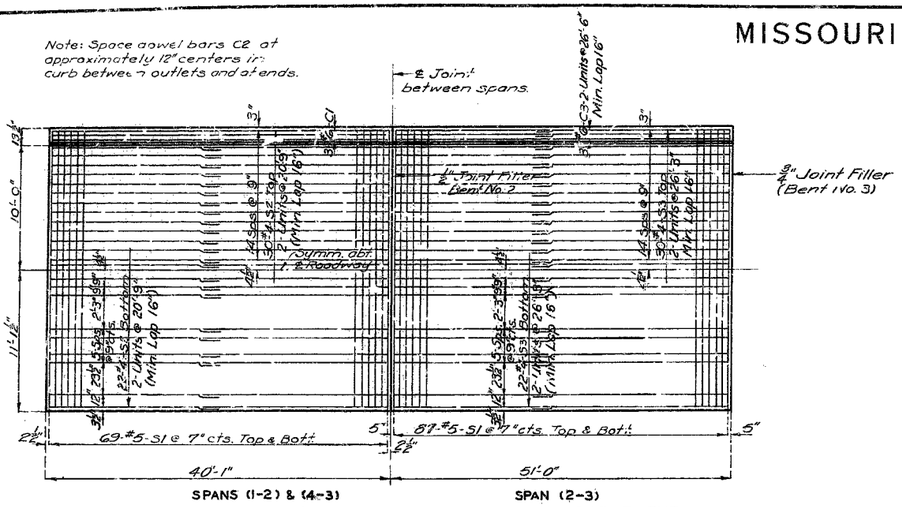
NO CONSTRUCTION CHANGES

Sq. 1-BM Conc. Cap Type End & Int. Bts. on Piles MAY 1958
No conc. Appr. slab at End Bt.

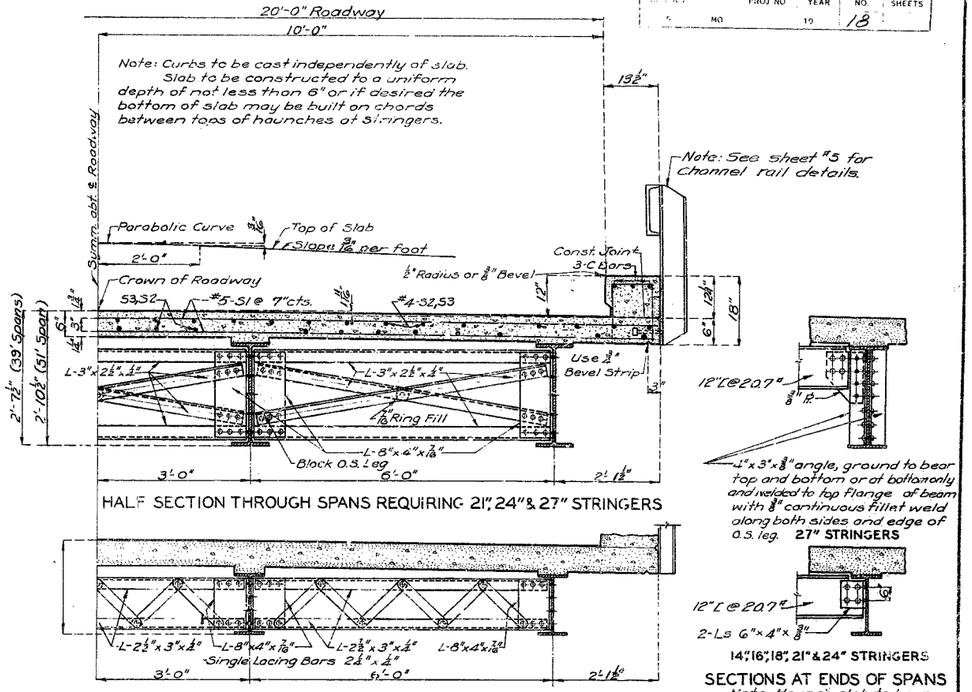
415

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	MO		19	18	



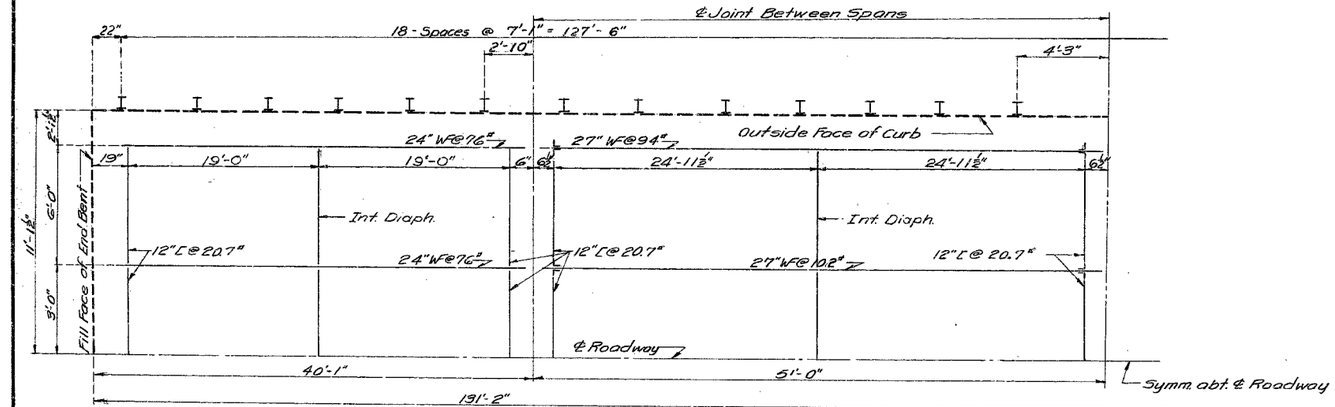
PLAN OF SLAB SHOWING REINFORCEMENT



HALF SECTION THROUGH SPANS REQUIRING 21", 24" & 27" STRINGERS

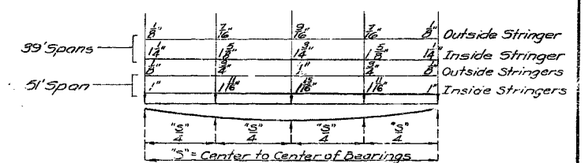
Note: Slab, curb, rail and post details same as shown in section for 24" stringers.

HALF SECTION THROUGH SPANS REQUIRING 14", 16" & 18" STRINGERS



PART PLAN OF STRUCTURAL STEEL

Note: See sheet No. 5 of 5 for Part Longitudinal Section Near ℄ and Part Anchor Bolt Plan.



Note: Slab shall be built parallel to grade and to a minimum thickness of 6". Dead load deflection, vertical curve (if any), crown and any difference in depth of stringers shall be taken care of by haunching to stringers by the amounts shown above. This additional concrete is included in "Estimated Quantities."

SLAB HAUNCHING DIAGRAM

FINISHED

BRIDGE OVER WEST FORK OF WAKENDA CREEK

STATE ROAD FROM RAY COUNTY LINE EAST & SOUTH TO RTE. SDD

ABOUT 6.0 MILES N.W. OF NORBORNE

PROJECT NO. S-1646(2) (SJJ) STA. 124+42.0

FINISHED

CARROLL COUNTY

FINISHED

N-826

Sheet No. 3 of 5.

Assembled May 1959 by C.W.F. & J.C.F. & B.W.D. & E.J.W.
Checked Nov. 1960 by G.F.J.

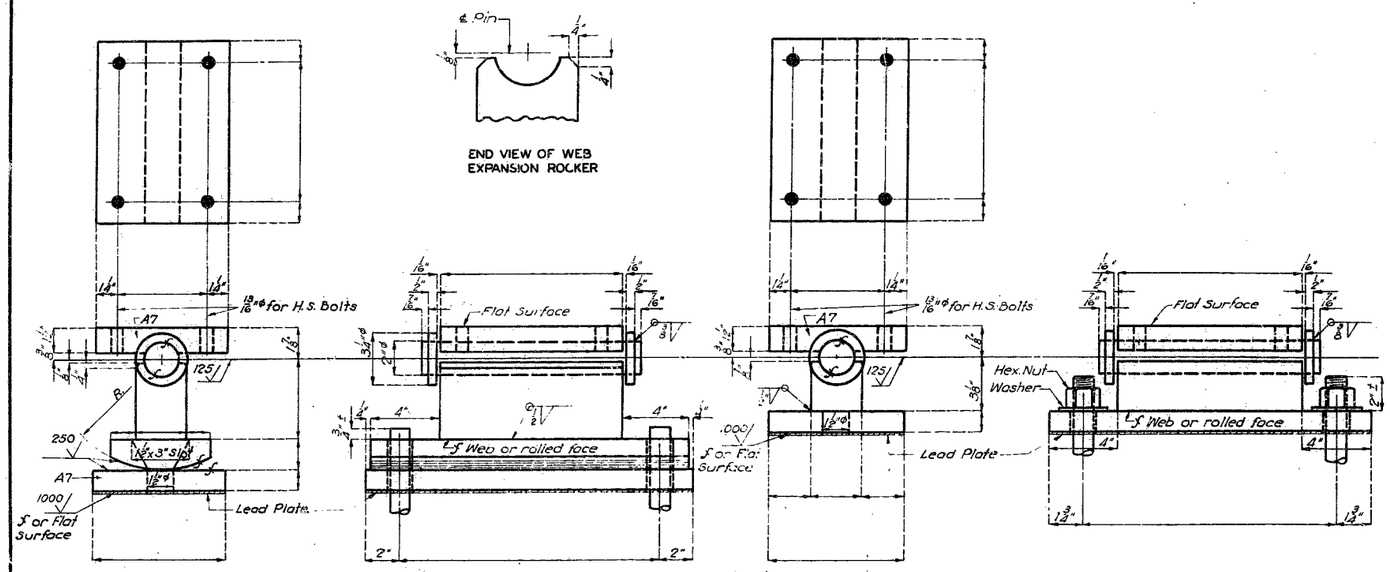
Note: This drawing is not to scale. Follow dimensions.

NO CONSTRUCTION CHANGES

Sq.-20-
Rev. Feb. 1955

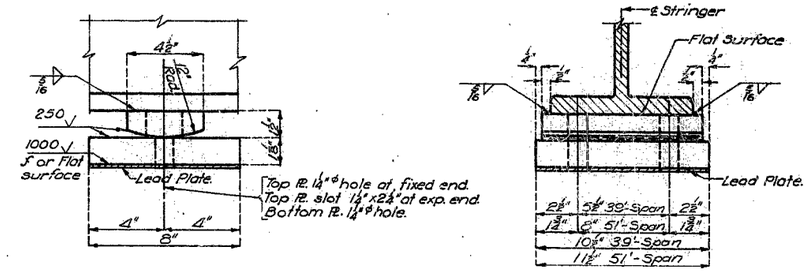
MISSOURI STATE HIGHWAY DEPARTMENT

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

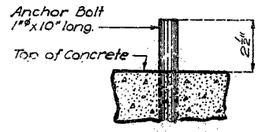


EXPANSION FIXED

TYPE "D" BEARINGS



END ELEVATION



ANCHOR BOLT PROJECTION

Required: 16 Sets 10½"x8"x18"
8 Sets 11½"x8"x18"

Note: Each set consists of one masonry plate & one rocker plate.

TYPE "C" BEARINGS

(Estimated Weight 1170#)

GENERAL NOTES:

Material for Type "D" Bearings shall be except as noted A.S.T.M. A-373 steel or A7 meeting the carbon and manganese requirements of A-373.

Material for Type "C" Bearings shall be A.S.T.M. A-36 Steel.

Material for Pins shall be A.I.S.I. C-1018.

Anchor Bolts for Type "D" Bearings shall be 1¼"ϕ swedged Bolts and shall extend 12" into concrete, with hexagon nuts and plain washers for Fixed Bearings, no nuts for Exp. Bearings.

Anchor Bolts for Type "C" Bearings shall be 1"ϕ swedged Bolts, 10" long with no heads or nuts. Top of Anchor Bolts shall be set approximately ½" below top of bearing.

Lead Plates under bearings shall be approximately ⅜" thickness and weigh 15#/sq. Foot. Cost of lead plates shall be included in price bid for other items.

Material for Bearings will be paid for as Fabricated Carbon Steel.

FINISHED

BRIDGE OVER WEST FORK OF WAKENDA CREEK

STATE ROAD FROM RAY COUNTY LINE EAST & SOUTH TO RTE. SDD

ABOUT 6.0 MILES N.W. OF NORBORNE

PROJECT NO. S-1646(2) (SJJ) STA. 124+42.0

CARROLL COUNTY

FINISHED

417

Assembled: Mar. 1961 by C.W.F. & E.J.W.
Checked: Mar. 1961 by G.F.J.

Note: This drawing is not to scale. Follow dimensions

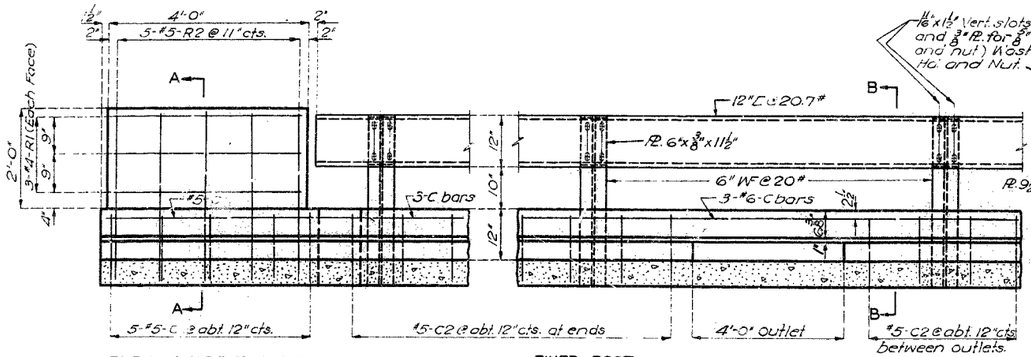
Sheet No. 4 of 5

N-826

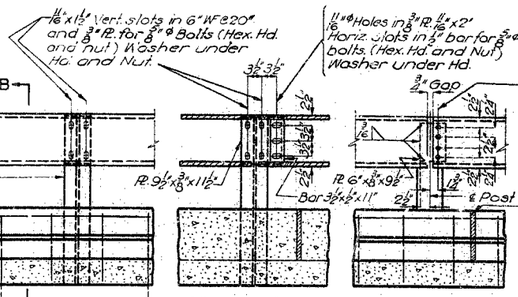
NO CONSTRUCTION CHANGES

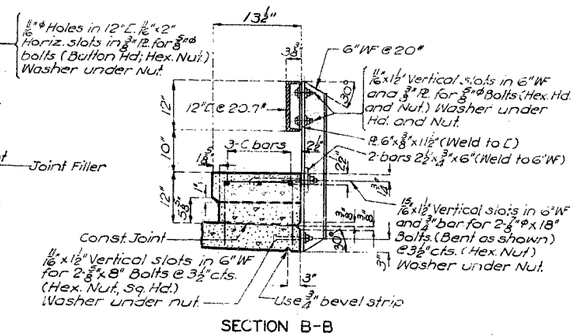
MISSOURI STATE HIGHWAY DEPARTMENT

FED ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	20	

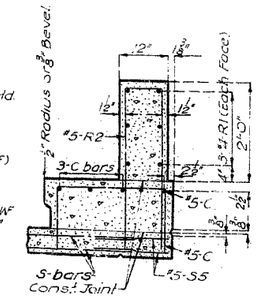


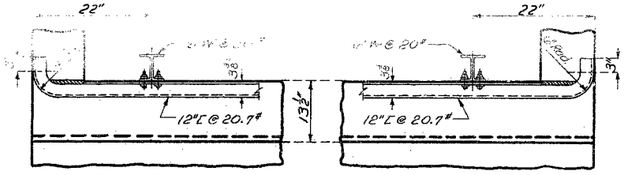
Note: Outlets to be centered between rail posts. For location of outlets if any, see Sheet No. 1 of design plans.
C2 bars in curb to be spaced at abt. 12" cts. from end post to end post on bridges having no outlets.

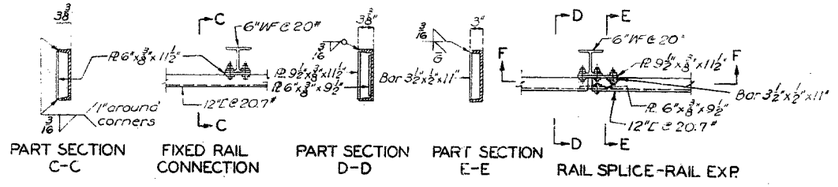


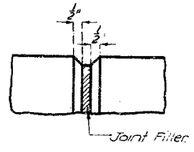


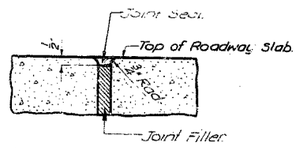
Note: Channel rail to be adjusted for horizontal alignment by use of full size metal shims placed between 6"WF and connection PL. shims of ⅛" and ¼" thickness to be furnished with structural steel. Cost of shims to be included in price bid for other items.





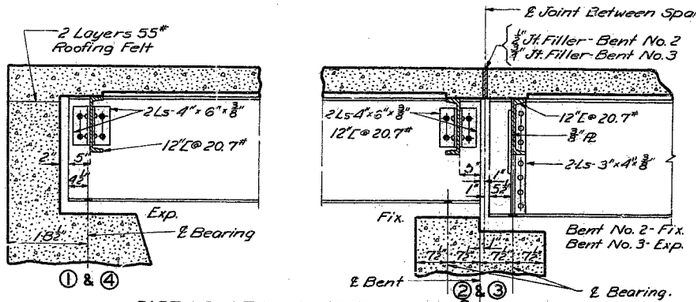


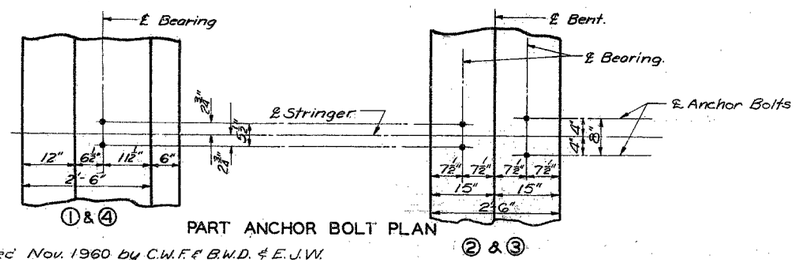




Note: Use bevel as shown for exposed faces of all filled joints except at top surface of roadway slab. Use edging tool with ¾" radius at top surface of roadway slab each side of joint and fill flush with joint seal as shown.

DETAILS OF BEVEL FOR FILLED JOINTS





GENERAL NOTES

Expansion end posts to be set parallel to grade, vertical faces of end posts to be vertical. All exposed edges of end posts to be beveled ½". 6"WF posts to be set normal to grade. 12"C rails shall be fabricated to conform to horizontal and vertical alignment of curb.

FINISHED

BRIDGE OVER WEST FORK OF WAKENDA CREEK
STATE ROAD FROM RAY COUNTY LINE EAST & SOUTH TO RTE. SDD
ABOUT 6.0 MILES N.W. OF NORBORNE
PROJECT NO. S-1642(2) (SJJ) STA. 124+42.0

CARROLL COUNTY

FINISHED

Assembled Nov. 1960 by C.W.F. & B.W.D. & E.J.W.
Checked Nov. 1960 by G.F.J.

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

Sheet No. 5 of 5.

N-826

NO CONSTRUCTION CHANGES

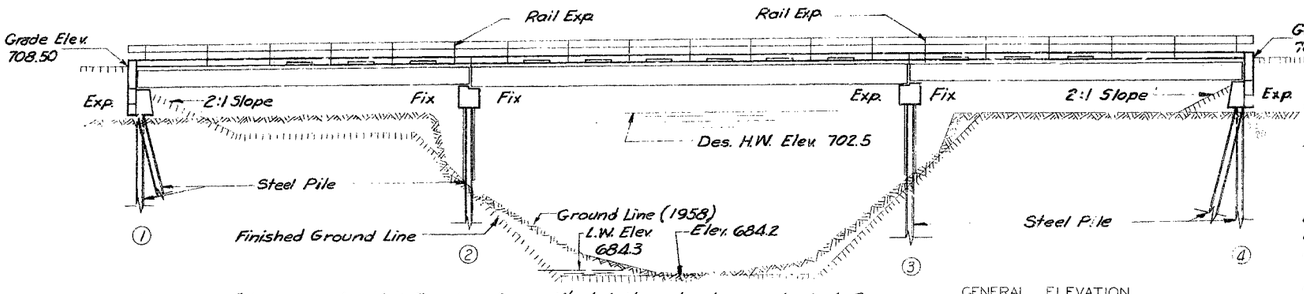
418

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	16	

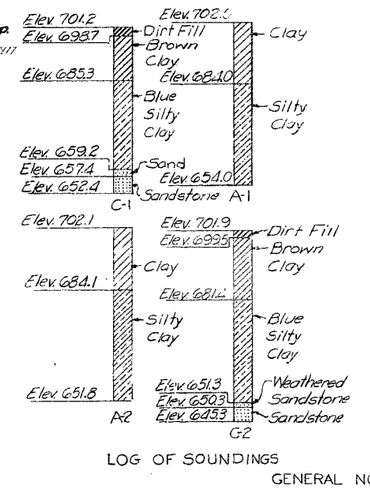
FINAL PLANS

39'-51'-39' I-Beam Spans



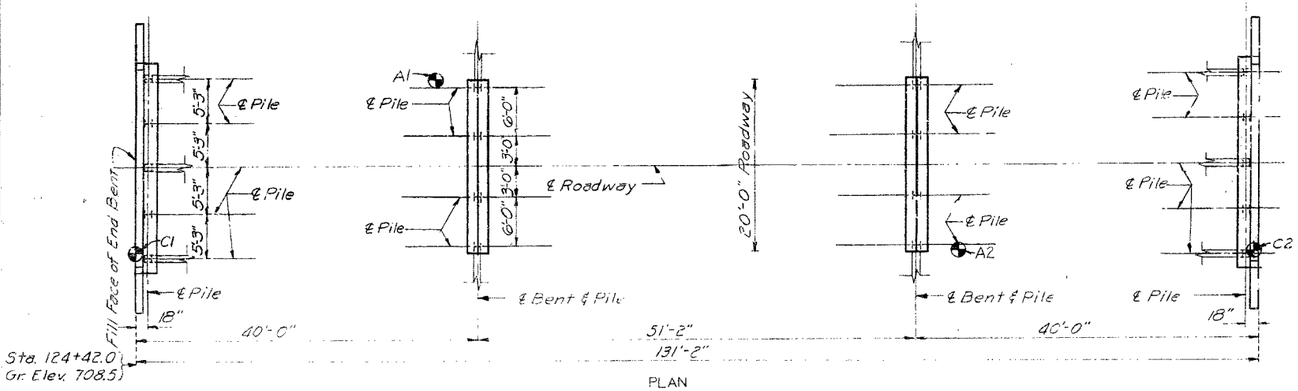
GENERAL ELEVATION

Note: All piling are 10" bearing piles at 42# and conform with details and notes on sheet No. 2 of design plans. Proper length to give required bearing and/or penetration was authorized by the Engineer.
All piles were driven to or into solid rock, boulders, shale or cemented gravel or to not less than full length authorized and to sustain a load of at least 37 ton per pile.
All piles were driven with a steam hammer.

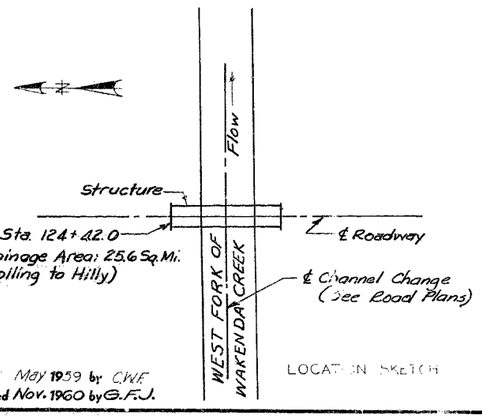


LOG OF SOUNDINGS

Note: Soundings labeled thus: ⊕A were taken by Auger. Soundings labeled thus: ⊕C were taken by Core Drill.



PLAN



LOCATION SKETCH

Drawn May 1959 by C.W.F.
Checked Nov. 1960 by G.F.J.

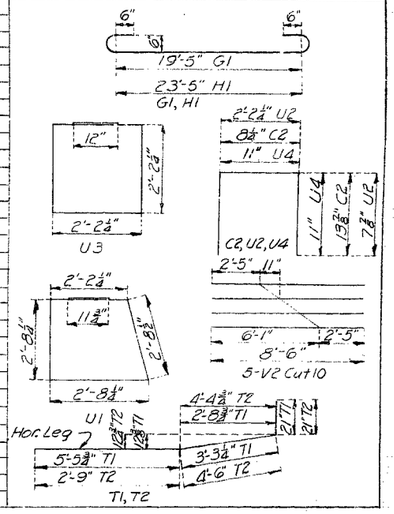
QUANTITIES				
Item		Substr.	Superstr.	Total
Class I Excavation for Structures	Cu.Yds.	0		0
Class B Concrete	Cu.Yds.	32.6		32.6
* Fabricated Structural Carbon Steel	Lbs.	1770	58190	59960
Reinforcing Steel	Lbs.	3400	16810	20210
Steel Piles in Place	Lin.Ft.	942		942
Steel Pile Cut-Offs	Lin.Ft.	48		48
Class B-1 Concrete	Cu.Yds.		64.9	64.9

* Note: Final pay weight for Fabricated Structural Carbon Steel is based on using field rivets except for bolted connections specified for handrail. Total weight of fabricated structural carbon steel includes weight of angles required for steel pile Bents No. 2 & 3.
See Section 52.4.7 of Standard Specifications for required painting of steel piles.
Qualification of welding operators was required

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

COMPLETE BILL OF REINFORCING STEEL

No.	Size	Length	Mark	Location	Bending Sketches & Cutting Diagrams
End Bents No. 1 & 4					
16	#6	20'-0"	H1	Beam	
4	#6	24'-0"	H2	"	
4	#6	22'-0"	H3	Bk. Wall	
12	#6	7'-3"	H4	Wing	
3	#6	10'-6"	T1	"	
8	#6	9'-0"	T2	"	
48	#4	11'-3"	U1	Beam	
16	#4	3'-6"	U2	"	
88	#5	4'-9"	V1	Bk. Wall	
10	#4	8'-6"	V2	"	
4	#4	6'-3"	V3	"	
4	#4	22'-0"	H5	"	
4	#6	6'-9"	W6	Wing	
Int. Bents No. 2 & 3					
16	#6	22'-0"	G1	Beam	
4	#6	20'-0"	G2	"	
4	#4	20'-0"	G3	"	
24	#4	3'-6"	U2	"	
44	#4	9'-9"	U3	"	
52	#4	2'-9"	U4	Beam	
Superstructure					
186	#5	3'-0"	C2	Curb	
12	#6	39'-9"	C1	"	
12	#6	26'-6"	C3	"	
450	#5	22'-0"	S1	Slab	
208	#4	20'-9"	S2	"	
104	#4	26'-3"	S3	"	



GENERAL NOTES:
Design Specifications: A.A.S.H.O. (1957)
Loading: H15-44 (1 Lane)
Structural Carbon Steel Stress: 18,000 #/□"
Reinforcing Steel Stress: 20,000 #/□"
Class B-1 Concrete Stress: 1600 #/□"
Class B Concrete Stress: 1200 #/□"
Concrete for substructure is Class B (Air-entrained)
Concrete for superstructure is Class B-1 (Air-entrained)
Rivets 7/8": holes 15/16" except as noted.
Field connections made by use of machine bolts. Heads and nuts of Machine Bolts are American standard Regular.

FINISHED

Paint: Shop paint, ... intact surfaces of bolted field connections, one coat of red lead and surfaces inaccessible after erection three coats of red lead. No other paint was applied by Contractor except as noted for steel piles. Red lead required was furnished by Contractor. Payment for cleaning and painting such surfaces is included in unit price bid for Fabricated Structural Carbon Steel.
Where joint filler is specified on the plans, it conforms with the requirements of Section 157.2.5 of the Standard Specifications.

B.M.* - Elev. 709.38, "a" on S.E. Wingwall, 13' Lt. Sta. 125+73.

BRIDGE OVER WEST FORK OF WAKENDA CREEK
STATE ROAD FROM RAY COUNTY LINE EAST & SOUTH TO RTE. SDD
ABOUT 6.0 MILES N.W. OF NORBORNE
PROJECT NO. S-1646 (2)(SJJ) **STA.** 124+42.0
CARROLL **COUNTY**

FINISHED

SUBMITTED BY D.B. Jansen BRIDGE ENGINEER DATE 6/18/61
APPROVED BY J.J. Corbett CHIEF ENGINEER DATE 6/18/61

STD. 54.00
N-826

Sheet No. 1A of 1

FINISHED

FINAL PLANS

619

Missouri Department of Transportation
State Bridge Inspection Report

June 25, 2024
10:13:07AM

COUNTY: CARROLL **DISTRICT: NW** **CLASS: STATBR** **FED-ID: 7282** **BRIDGE: N0826**

GENERAL STRUCTURE INFORMATION

ROUTE: RTJJS	**# SPANS:** 3	**PLACE CODE:** 21412 EGYPT	
FEATURE: WAKENDA CR	**LANES ON:** 1	**LENGTH:** 131 FT 0 IN	
STATUS: P-POSTLOAD	**LANES UNDER:** 0	**MAXIMUM SPAN:** 51 FT 2 IN	
LOG MILE: 10.233	**COMPASS DIRECTION:** NORTH to SOUTH	**APPROACH ROADWAY:** 18 FT 0 IN	
DETOUR: 25.00 MILES	**DIRECTION OF TRAFFIC:** 1-LN/2-WAY	**CURB TO CURB:** 20 FT 0 IN	
NHS: NO	**FUNCTIONAL CLASS:** RL-MAJOR COLLECTOR	**OUT TO OUT:** 22 FT 4 IN	
BUILT: 1961	**NBI OWNER:** MODOT	**AADT:** 186	
REHAB:	**NBI MAINTAINED:** MODOT	**AADT YEAR:** 2023	
LOCATION: S 4 T 52 R 25 W	**MAINTENANCE DISTRICT:** NW	**AADT TRUCK:** 11.8%	
LATITUDE: 39 20 49.45 (DMS)	**MAINTENANCE COUNTY:** CARROLL	**FUTURE AADT:** 233	
LONGITUDE: 93 43 11.70 (DMS)	**SUB AREA:** 7A35	**FUTURE AADT YEAR:** 2043	

BRIDGE INSPECTION INFORMATION

DATE: 10/25/2022 **RESPONSIBILITY:** DISTRICT
FREQUENCY: 24 **CALCULATED INTERVAL**:** 24
TEAM LEADER: BRYCE ACTON **ELEMENT:** NO
INSPECTOR 2: **INSPECTOR 4:**
INSPECTOR 3:

** When calculated interval exceeds the frequency, a justification comment per BIRM is required.

GENERAL INSPECTION COMMENTS

FRACTURE CRITICAL INSPECTION INFORMATION

DATE: **RESPONSIBILITY:** **CATEGORY:**
FREQUENCY: **CALCULATED INTERVAL**:** **NBI:**
TEAM LEADER: **INSPECTOR 3:** **METHOD:**
INSPECTOR 2: **INSPECTOR 4:**

** When calculated interval exceeds the frequency, a justification comment per BIRM is required.

INDEPTH INSPECTION INFORMATION

DATE: **RESPONSIBILITY:** **CATEGORY:**
FREQUENCY: **CALCULATED INTERVAL**:** **NBI:**
TEAM LEADER: **INSPECTOR 3:** **METHOD:**
INSPECTOR 2: **INSPECTOR 4:**

** When calculated interval exceeds the frequency, a justification comment per BIRM is required.

FRACTURE CRITICAL INSPECTION COMMENTS

SPECIAL INSPECTION INFORMATION

DATE: 06/17/2015 **RESPONSIBILITY:** DISTRICT **CATEGORY:** CHANNEL CROSS SEC
FREQUENCY: 120 **CALCULATED INTERVAL**:** **NBI:** NO
TEAM LEADER: **INSPECTOR 3:** **METHOD:** WT TAPE
INSPECTOR 2: WESLEY CARMACK **INSPECTOR 4:**

** When calculated interval exceeds the frequency, a justification comment per BIRM is required.

UNDERWATER INSPECTION INFORMATION

DATE: 10/25/2022 **RESPONSIBILITY:** DISTRICT **CATEGORY:** DRY
FREQUENCY: 60 **CALCULATED INTERVAL**:** 24 **NBI:** NO
TEAM LEADER: BRYCE ACTON **INSPECTOR 3:** **METHOD:** VISUAL
INSPECTOR 2: **INSPECTOR 4:**

** When calculated interval exceeds the frequency, a justification comment per BIRM is required.

SPECIAL INSPECTION COMMENTS

UNDERWATER INSPECTION COMMENTS

OTHER SPECIAL INSPECTIONS

DATE	FREQUENCY	CATEGORY	NBI	CALCULATED INTERVAL	RESPONSIBILITY	METHOD

OTHER UNDERWATER INSPECTIONS

DATE	FREQUENCY	CATEGORY	NBI	CALCULATED INTERVAL	RESPONSIBILITY	METHOD

COUNTY: CARROLL **DISTRICT: NW** **CLASS: STATBR** **FED-ID: 7282** **BRIDGE: N0826**

STRUCTURE POSTING

APPROVED CATEGORY: S-4 CENTERLINE OF BRIDGE.
Ton 1: **Ton 2:** **Ton 3:**
COMMENTS:

FIELD CATEGORY: S-4 CENTERLINE OF BRIDGE.
Ton 1: **Ton 2:** **Ton 3:** **PROBLEM:** **PROBLEM DIRECTION:**
COMMENTS:

GENERAL COMMENTS/MAJOR RATED ITEMS

GENERAL COMMENTS: (BOWDEJ1, 01/04/2010)--(40'-51'-40') SMP WF GDR SPANS

[ITEM 58] DECK: 4-POOR CONDITION
RATING : 10/12/2018
COMMENTS: (STEPHS2, 10/30/2014)--DECK SATURATION
(ACTONB1, 11/08/2022)--MODERATE EDGE DETERIORATION

[ITEM 59] SUPER: 5-FAIR CONDITION
RATING : 10/12/2018
COMMENTS: (STEPHS2, 10/12/2018)--SL GIRDER ENDS

[ITEM 60] SUB: 5-FAIR CONDITION
RATING : 11/25/2020
COMMENTS: (STEPHS2, 10/12/2018)--RUSTING PILE
(STEPHS2, 11/25/2020)--CONDITION CAP 2

[ITEM 61] BANK/CHANNEL: 6-WIDESPREAD MINOR DAMAGE
RATING : 05/18/2001
COMMENTS: (BOWDEJ1, 12/20/2004)--MINOR EROSION & CHANNEL DEEPENING
(ACTONB1, 11/08/2022)--MODERATE BANK EROSION

[ITEM 113] SCOUR: 8-STABLE FOR CALCULATED
RATING : 05/18/2001
EVALUATION TYPE :
COMMENTS: (ACTONB1, 11/08/2022)--NO SCOUR OBSERVED

[ITEM 71] WATERWAY ADEQUACY: DECK ABOVE FLOOD ELEV
RATING : 05/18/2001
COMMENTS:

[ITEM 72] APPRRDWY ALIGNMENT: 8-VERYGOOD
RATING : 05/18/2001
COMMENTS:

RAILING AND APPROACH PAVEMENT COMPONENTS AND RATINGS

[ITEM 36A] BRIDGE RAILING RATING: *DOESNT MEET CURRNT STND-0* ***RATING :*** *06/29/2004* ***COMMENTS:***

MATERIAL	***CONSTRUCTION***	***DIRECTION***	***COMMENTS***
REINFORCED CONCRETE	CURB	BOTH	
STEEL	CHANNEL-12"	BOTH	

[ITEM 36B] TRANSITION RAILING RATING: *NOT PROVIDED-0* ***RATING :*** *05/18/2001* ***COMMENTS:***

[ITEM 36C] APPROACH RAILING RATING: *NOT PROVIDED-0* ***RATING :*** *05/18/2001* ***COMMENTS:***

[ITEM 36D] RAIL END TREATMENT RATING: *NOT PROVIDED-0* ***RATING :*** *05/18/2001* ***COMMENTS:***

COUNTY: CARROLL **DISTRICT: NW** **CLASS: STATBR** **FED-ID: 7282** **BRIDGE: N0826**

APPROACH PAVEMENT: *Overall condition assigned for each approach pavemenet component is shown below.

MATERIAL	CONSTRUCTION	DIRECTION	CONDITION*	COMMENTS
ASPHALT	BITUMINOUS MAT		GOOD	

DRAINAGE, EXPANSION DEVICES, BANK/SLOPE, AND DECK PROTECTIVE COMPONENTS

DECK PROTECTIVE COMPONENTS:

SERIES TYPE-#	COMPONENT	MATERIAL	CONSTRUCTION	THICKNESS	YEAR APPLIED	MANUFACTURE	OVERALL CONDITION
MAIN SERIES-1	WEARING SURFACE	ASPHALT	BITUMINOUS SEAL COAT	.3 IN			FAIR
COMMENT:							
	DECK PROTECTION	LIQUID SEALANT	INTERNALLY SEALED			PAVON INDECK	
COMMENT:							
	MEMBRANE	NOTAPPLICABLE	NONE				
COMMENT:							

DRAINAGE COMPONENTS:

COMPONENT	MATERIAL	CONSTRUCTION	DIRECTION	COMMENTS
DRAINAGE	REINFORCED CONCRETE	CURB OUTLET		

EXPANSION DEVICE COMPONENTS:

SUB UNIT-#	SUB LABEL	COMPONENT	MATERIAL	CONSTRUCTION	GAP	YEAR APPLIED	MANUFACTURE	OVERALL CONDITION

COMMENT:

BANK/SLOPE PROTECTION COMPONENTS:

COMPONENT	MATERIAL	CONSTRUCTION	DIRECTION	COMMENTS
BANK PROTECTION	ROCK	RIP RAP	BOTH	(BOWDEJ1, 12/20/2004)--PLACED ROCK 1999

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	COMMENT
OTHER	THROUGHOUT		NOT APPLICABLE	(REHAGM, 01/17/2005)--RIPRAP AGAINST PILINGS

DECK COMPONENTS

SPAN TYPE-#	COMPONENT	MATERIAL	CONSTRUCTION	COMMENTS
MAIN SPANS-1	DECK	REINFORCED CONCRETE	CAST-IN-PLACE	

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
BOLTED	TOP FLANGE		ALL GIRDERS		
DETERIORATION	EDGE		MINOR		
EFFLORESCENCE	RANDOM		MINOR		
SATURATION	THROUGHOUT		MINOR		
TRANSVERSE CRACKS	RANDOM		FEW		

SPAN TYPE-#	COMPONENT	MATERIAL	CONSTRUCTION	COMMENTS
MAIN SPANS-2	DECK	REINFORCED CONCRETE	CAST-IN-PLACE	

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
SATURATION	THROUGHOUT		MINOR		

MAIN SPANS-3 *DECK* *REINFORCED CONCRETE* *CAST-IN-PLACE*

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
DETERIORATION	EDGE		MEDIUM		
SATURATION	THROUGHOUT		MINOR	30 %	
TRANSVERSE CRACKS	THROUGHOUT		MINOR		

SUPERSTRUCTURE COMPONENTS

SERIES TYPE-#	SPAN TYPE	MATERIAL	CONSTRUCTION	LABEL	COMMENTS
MAIN SERIES-1	*SIMPLE SPAN*	*STEEL*	*WIDE FLANGE GIRDERS*		

SPAN	COMPOSITE INDICATOR	LENGTH	WEATHERING STEEL	COMMENTS
MAIN SPANS-1	NON-COMPOSITE	40 FT 0 IN	NO	

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
DECK LIFTING	TOP FLANGE		MINOR		
PACK RUST	TOP FLANGE		MINOR		
SECTION LOSS	ENDS		MEDIUM		
SECTION LOSS	TOP FLANGE		MEDIUM		

SPAN	COMPOSITE INDICATOR	LENGTH	WEATHERING STEEL	COMMENTS
MAIN SPANS-2	NON-COMPOSITE	51 FT 2 IN	NO	

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
DECK LIFTING	TOP FLANGE		MINOR		
PACK RUST	TOP FLANGE		MINOR		
SECTION LOSS	ENDS		MINOR		
SECTION LOSS	TOP FLANGE		INITIAL		

SPAN	COMPOSITE INDICATOR	LENGTH	WEATHERING STEEL	COMMENTS
MAIN SPANS-3	NON-COMPOSITE	40 FT 0 IN	NO	

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
DECK LIFTING	TOP FLANGE		MINOR		
PACK RUST	TOP FLANGE		MINOR		
SECTION LOSS	ENDS		MINOR		
SECTION LOSS	TOP FLANGE		INITIAL		

SUBSTRUCTURE COMPONENTS

SUBSTRUCTURE	SKEW	LENGTH	MATERIAL	CONSTRUCTION	LABEL	COMMENTS
ABUTMENT-1		*24 FT 3 IN*	*REINFORCED CONCRETE*	*NON-INTEGRAL*		

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
ASSOCIATED COMPONENT	**MATERIAL**	**CONSTRUCTION**			
BACKWALL	REINFORCED CONCRETE	CAST-IN-PLACE			
SHOVING	TOP		MINOR		
BEAM CAP	REINFORCED CONCRETE	CAST-IN-PLACE			
EFFLORESCENCE	THROUGHOUT		MINOR		
VERTICAL CRACKS	THROUGHOUT		MINOR		
PILING	STEEL	H-SHAPE			
OTHER	GROUND LINE		NOT APPLICABLE		(REHAGM, 01/17/2005)--RIPRAP AGAINTS PILINGS
STRAIGHT WINGS	REINFORCED CONCRETE	CAST-IN-PLACE			
EXPANSION BEARING	STEEL	SLIDING CURVED/FLAT PL/			

RUSTING	THROUGHOUT		ADVANCED		

BENT-2 *21 FT 0 IN* *REINFORCED CONCRETE* *PILE CAP*

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
ASSOCIATED COMPONENT	**MATERIAL**	**CONSTRUCTION**			
BEAM CAP	REINFORCED CONCRETE	CAST-IN-PLACE			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**
DELAMINATION	VERTICAL FACE		MEDIUM		
REBAR EXPOSED	VERTICAL FACE		MODERATE		
SPALLS	VERTICAL FACE		MEDIUM		
PILING	STEEL	H-SHAPE			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**
CROSS BRACING	STEEL	ANGLE			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**
FIXED BEARING	STEEL	CURVED PLATE(ROTATING			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**

BENT-3 *21 FT 0 IN* *REINFORCED CONCRETE* *PILE CAP*

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
ASSOCIATED COMPONENT	**MATERIAL**	**CONSTRUCTION**			
BEAM CAP	REINFORCED CONCRETE	CAST-IN-PLACE			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**
DELAMINATION	THROUGHOUT		MODERATE		
REBAR EXPOSED	VERTICAL FACE		FEW		
SPALLS	TOP		SMALL		
SPALLS	VERTICAL FACE		MEDIUM		
PILING	STEEL	H-SHAPE			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**
CROSS BRACING	STEEL	ANGLE			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**
EXPANSION BEARING	STEEL	SLIDING CURVED/FLAT PL/			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**
RUSTING	THROUGHOUT		ADVANCED		

ABUTMENT-4 *24 FT 3 IN* *REINFORCED CONCRETE* *NON-INTEGRAL*

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
ASSOCIATED COMPONENT	**MATERIAL**	**CONSTRUCTION**			
BACKWALL	REINFORCED CONCRETE	CAST-IN-PLACE			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**
SHOVING	TOP		MINOR		
BEAM CAP	REINFORCED CONCRETE	CAST-IN-PLACE			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**
EFFLORESCENCE	THROUGHOUT		MINOR		
HORIZONTAL CRACKS	THROUGHOUT		MINOR		
PILING	STEEL	H-SHAPE			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**
STRAIGHT WINGS	REINFORCED CONCRETE	CAST-IN-PLACE			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**
EXPANSION BEARING	STEEL	SLIDING CURVED/FLAT PL/			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**
RUSTING	THROUGHOUT		ADVANCED		

COUNTY: CARROLL DISTRICT: NW CLASS: STATBR FED-ID: 7282 BRIDGE: N0826

OVER/UNDER ROUTES CLEARANCE INFORMATION

CLEARANCES OVER DECK

**NOTE: Vertical clearances for permitting purposes are taken as 2 inches less than the actual field measured clearance.

VERTICAL CLEARANCE TYPE**	VALUE	DIRECTION	DATE	COMMENT

CLEARANCES UNDER BRIDGE

**NOTE: Vertical clearances for permitting purposes are taken as 2 inches less than the actual field measured clearance.

RECORD #	ROUTE	# LANES	DIRECTION OF TRAFFIC	RIGHT LATERAL CLEARANCE	LEFT LATERAL CLEARANCE	UR-ID

VERTICAL CLEARANCE TYPE**	VALUE	DIRECTION	DATE	COMMENT

STRUCTURE PAINT INFORMATION

CONDITION: FAIR **RUST AMOUNT :** 6=1.0% OF SURFACE RUSTED **STEEL TONS :** 30

ORIGINAL PAINT		CONTRACT REPAINT		DEPARTMENT REPAINT	
PAINT TYPE :	A SYSTEM	PAINT TYPE :		PAINT TYPE :	MANUFACTURE :
NAME :	RED LEAD	NAME :		NAME :	SURFACE PREP :
PAINT COLOR :	ALUMINUM	PAINT COLOR :		PAINT COLOR :	
PAINT YEAR :	1962	PAINT YEAR :		PAINT YEAR :	
MILS :	3	MILS :		MILS :	

REQUESTED WORK ITEMS

GENERAL WORK COMMENTS:

RESPONSIBILITY	LOCATION	ITEM	CATEGORY	PRIORITY	DATE	WORK ITEM COMMENT

UTILITY ATTACHMENTS

UTILITY	OWNER	METHOD	MEASUREMENT TYPE	VALUE	NUMBER	UTILITY ATTACHMENT COMMENT

COUNTY: CARROLL DISTRICT: NW CLASS: STATBR FED-ID: 7282 BRIDGE: N0826

PROGRAM NOTES INFORMATION

YEAR	PROJECT #	MONTH LET	YEAR LET	ITEMS	COMMENT

COMPUTER GENERATED RATINGS AND DEFICIENCY ITEMS

NOTE: The items listed in this section are updated whenever computer edits are ran on a structure after the inspection updates have been entered in to TMS.

Rated Item	Rating	Rating Date
[Item 67] Structure Evaluation Rating:	4-MEETS MINIMUM TOLERABLE	5/18/2001
[Item 68] Deck Geometry Rating:	4-MEETS MINIMUM TOLERABLE	5/18/2001
[Item 69] Underclearance:	N-NOT APPLICABLE	5/18/2001
Sufficiency Rating:	52.5%	3/7/2024
Deficiency:	STRUCTURAL	1/28/2019
Funding Eligibility:		----
Estimated New Structure Length:		----
Estimated Structure Cost:		----
Estimated Total Project Cost:		----
Year of Cost Estimate:		----

NOTE: The above structure length and cost estimates are computer generated using algorithims in the TMS system. These algorthims are generalized to use NBI items to come up with a new structure length and width to calculate a new area which is taken times a representative cost per square foot. The actual structure size and cost may vary significantly from these numbers once site specific engineering is done.

ADVANCED SIGN INFORMATION

SIGN #	SIGN TYPE	PROBLEM	PROBLEM DIRECTION
1	B - ONE LANE BRIDGE		
2	YIELD TO ONCOMING TRAFFIC		

OUTFALL INSPECTION INFORMATION

 # OUTFALLS: **INSPECTOR:**
STATUS: **DATE:**
NOTES: