Missouri Department of Transportation
State Bridge Inspection Report

May 02, 2024
4:09:18PM

COUNTY: CLAY **DISTRICT: KC** **CLASS: STATBR** **FED-ID: 6412** **BRIDGE: L0659**

GENERAL STRUCTURE INFORMATION

ROUTE: IS29S
FEATURE: CST NE PARVIN RD
STATUS: A-OPEN
LOG MILE: 124.169
DETOUR: 1.00 MILES
NHS: YES
BUILT: 1954
REHAB:
LOCATION: S 1 T 50 R 33 W
LATITUDE: 39 9 59.75 (DMS)
LONGITUDE: 94 33 32.69 (DMS)

 # SPANS: 3
LANES ON: 3
LANES UNDER: 2
COMPASS DIRECTION: SOUTH to NORTH
DIRECTION OF TRAFFIC: 1-WAY TRAF
FUNCTIONAL CLASS: UR-INTERSTATE
NBI OWNER: MODOT
NBI MAINTAINED: MODOT
MAINTENANCE DISTRICT: KC
MAINTENANCE COUNTY: CLAY
SUB AREA: 7C25

PLACE CODE: 02800 AVONDALE CITY
LENGTH: 123 FT 0 IN
MAXIMUM SPAN: 62 FT 1 IN
APPROACH ROADWAY: 52 FT 0 IN
CURB TO CURB: 50 FT 10 IN
OUT TO OUT: 53 FT 6 IN
AADT: 43245
AADT YEAR: 2023
AADT TRUCK: 11.7%
FUTURE AADT: 77841
FUTURE AADT YEAR: 2043

BRIDGE INSPECTION INFORMATION

DATE: 09/26/2022 **RESPONSIBILITY:** DISTRICT
FREQUENCY: 24 **CALCULATED INTERVAL**:** 24
TEAM LEADER: TIMOTHY HAZLETT **ELEMENT:** YES
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: **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.

SPECIAL INSPECTION COMMENTS

UNDERWATER 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.

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: CLAY **DISTRICT: KC** **CLASS: STATBR** **FED-ID: 6412** **BRIDGE: L0659**

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, 09/30/2008)--(32'-62'-27') CONT P/S CONC I-GDR SPANS (WIDENED)

[ITEM 58] DECK: 7-GOOD CONDITION
RATING : 02/02/2007
COMMENTS: (BATUSJ1, 09/19/2012)--T-CRACKS
(KIMM1, 10/02/2018)--WEAR

[ITEM 59] SUPER: 6-SATISFACTORY CONDITION
RATING : 08/23/2023
COMMENTS: (OTISL1, 10/05/2020)--LEACHING @ GIDER ENDS/ENCASEMENTS
(RAITHK, 08/23/2023)--MOD COLLISION DAMAGE MIDSPAN

[ITEM 60] SUB: 6-SATISFACTORY CONDITION
RATING : 02/02/2007
COMMENTS: (OTISL1, 10/05/2020)--SPALLS BENT 2 COLUMNS & BOTH ABUTMENTS

[ITEM 61] BANK/CHANNEL: N-NOT APPLIC NO WATRWAY
RATING : 05/18/2001
COMMENTS:

[ITEM 113] SCOUR: N-NOT APPLIC NOT WATERW
RATING : 05/18/2001
EVALUATION TYPE :
COMMENTS:

[ITEM 71] WATERWAY ADEQUACY: NOT APPLICABLE
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: *MEETS CURRENT STANDARDS-1* ***RATING :*** *05/18/2001* ***COMMENTS:***

MATERIAL	CONSTRUCTION	DIRECTION	COMMENTS
REINFORCED CONCRETE	SAFETY BARRIER CURB	BOTH	(OTISL1, 10/03/2016)--FEW SCRAPES THROUGHOUT

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	COMMENT
PATCHES	RANDOM		MODERATE	
VERTICAL CRACKS	THROUGHOUT		FEW	

[ITEM 36B] TRANSITION RAILING RATING: *MEETS CURRENT STANDARDS-1* ***RATING :*** *11/13/2008* ***COMMENTS:***

MATERIAL	CONSTRUCTION	DIRECTION	COMMENTS
GALVANIZED STEEL	THRIE BEAM TO W-BEAM	BOTH-NORTH	
GALVANIZED STEEL	THRIE BEAM TO W-BEAM	SOUTHWEST	

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

MATERIAL	CONSTRUCTION	DIRECTION	COMMENTS
GALVANIZED STEEL	W-BEAM	BOTH-NORTH	
GALVANIZED STEEL	W-BEAM	SOUTHWEST	

[ITEM 36D] RAIL END TREATMENT RATING: MEETS CURRENT STANDARDS-1 *RATING :* 03/05/2002 *COMMENTS:*

MATERIAL	CONSTRUCTION	DIRECTION	COMMENTS
GALVANIZED STEEL	BREKAWAY SYSTEM	BOTH-NORTH	

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

MATERIAL	CONSTRUCTION	DIRECTION	CONDITION*	COMMENTS
ASPHALT/CONCRETE	BITUMINOUS MAT/SLAB	NORTH	FAIR	
ASPHALT/CONCRETE	BITUMINOUS MAT/SLAB	SOUTH	FAIR	

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	PLAIN CONCRETE	MONOLITHIC				
COMMENT:							
	DECK PROTECTION	EPOXY POLYMER	COATED REBAR				
COMMENT:							
	MEMBRANE	NOTAPPLICABLE	NONE				
COMMENT:							

DRAINAGE COMPONENTS:

COMPONENT	MATERIAL	CONSTRUCTION	DIRECTION	COMMENTS
DRAINAGE	REINFORCED CONCRETE	DRAIN BASIN-END BENT		

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
SLOPE PROTECTION	PLAIN CONCRETE	PAVEDSLOPE		

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
EFFLORESCENCE	EDGE		FEW		
LONGITUDINAL CRACKS	RANDOM		FEW		
REFLECTIVE CRACKS	THROUGHOUT		FEW		
SCALING	DRIVING SURFACE		LIGHT		

TRANSVERSE CRACKS	EDGE		FEW	

MAIN SPANS-2 *DECK* *REINFORCED CONCRETE* *CAST-IN-PLACE*

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
EFFLORESCENCE	EDGE		FEW		
LONGITUDINAL CRACKS	RANDOM		FEW		
REFLECTIVE CRACKS	THROUGHOUT		FEW		
SCALING	DRIVING SURFACE		LIGHT		
TRANSVERSE CRACKS	EDGE		FEW		

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

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
EFFLORESCENCE	EDGE		FEW		
LONGITUDINAL CRACKS	RANDOM		FEW		
REFLECTIVE CRACKS	THROUGHOUT		FEW		
SCALING	DRIVING SURFACE		LIGHT		
TRANSVERSE CRACKS	EDGE		FEW		

SUPERSTRUCTURE COMPONENTS

SERIES TYPE-#	SPAN TYPE	MATERIAL	CONSTRUCTION	LABEL	COMMENTS
MAIN SERIES-1	*CONTINUOUS SPAN*	*PRESTRESSED CONCRETE*	*I-GIRDERS*		

SPAN	COMPOSITE INDICATOR	LENGTH	WEATHERING STEEL	COMMENTS
MAIN SPANS-1	COMPOSITE	32 FT 8 IN	NO	

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
LEACHING	GIRDER ENCASEMENT		MINOR		

MAIN SPANS-2	COMPOSITE	62 FT 1 IN	NO	

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
COLLISION DAMAGE	EXTERIOR GIRDERS		MODERATE		
LEACHING	GIRDER ENCASEMENT		MINOR		

MAIN SPANS-3	COMPOSITE	27 FT 8 IN	NO	

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
LEACHING	GIRDER ENCASEMENT		MINOR		

SUBSTRUCTURE COMPONENTS

SUBSTRUCTURE	SKEW	LENGTH	MATERIAL	CONSTRUCTION	LABEL	COMMENTS
ABUTMENT-1	*RA-7 DEGREES*	*53 FT 11 IN*	*REINFORCED CONCRETE*	*INTEGRAL*		

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
ASSOCIATED COMPONENT	**MATERIAL**	**CONSTRUCTION**			
BEAM CAP	REINFORCED CONCRETE	CAST-IN-PLACE			
LEACHING	GIRDERS		MINOR		
REBAR EXPOSED	THROUGHOUT		MINOR		
SPALLS	THROUGHOUT		MINOR		
VERTICAL CRACKS	THROUGHOUT		FEW		(OTISL1, 10/03/2016)--@ GIRDERS
PILING	STEEL	H-SHAPE			
TURNED BACK WINGS	REINFORCED CONCRETE	CAST-IN-PLACE			

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
FIXED BEARING	ELASTOMERIC	LAMIN NEOP/PTFE(ROTATI			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**
DIAPHRAGM	REINFORCED CONCRETE	CAST-IN-PLACE			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**
LEACHING	AT GIRDERS		MINOR		
VERTICAL CRACKS	AT GIRDERS		FEW		

BENT-2 RA-7 DEGREES 50 FT 3 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**
DELAMINATION	THROUGHOUT		MINOR		
REBAR EXPOSED	THROUGHOUT		MODERATE		
SPALLS	THROUGHOUT		MODERATE		
VERTICAL CRACKS	THROUGHOUT		FEW		
FOOTING	REINFORCED CONCRETE	H-PILE			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**
FIXED BEARING	ELASTOMERIC	LAMIN NEOP/PTFE(ROTATI			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**

BENT-3 RA-7 DEGREES 50 FT 3 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**
VERTICAL CRACKS	THROUGHOUT		FEW		
COLUMN	REINFORCED CONCRETE	CAST-IN-PLACE			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**
DELAMINATION	THROUGHOUT		MINOR		
VERTICAL CRACKS	THROUGHOUT		FEW		
FOOTING	REINFORCED CONCRETE	H-PILE			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**
FIXED BEARING	ELASTOMERIC	LAMIN NEOP/PTFE(ROTATI			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**

ABUTMENT-4 RA-7 DEGREES 53 FT 11 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**
REBAR EXPOSED	THROUGHOUT		FEW		
RUST STAINS	THROUGHOUT		FEW		
SPALLS	THROUGHOUT		MINOR		
VERTICAL CRACKS	THROUGHOUT		FEW		
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	LAMIN NEOP/PTFE(ROTATI			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**
DIAPHRAGM	REINFORCED CONCRETE	CAST-IN-PLACE			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**
LEACHING	AT GIRDERS		MINOR		
VERTICAL CRACKS	AT GIRDERS		FEW		

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
1	CST NE PARVIN RD E	2	2-WAY TRAF	7 FT 0 IN		14191

VERTICAL CLEARANCE TYPE**	VALUE	DIRECTION	DATE	COMMENT
ACTUAL	15 FT 6 IN			

STRUCTURE PAINT INFORMATION

CONDITION: **RUST AMOUNT :** **STEEL TONS :**

ORIGINAL PAINT	CONTRACT REPAINT	DEPARTMENT REPAINT	
PAINT TYPE :	**PAINT TYPE :**	**PAINT TYPE :**	**MANUFACTURE :**
NAME :	**NAME :**	**NAME :**	**SURFACE PREP :**
PAINT COLOR :	**PAINT COLOR :**	**PAINT COLOR :**	
PAINT YEAR :	**PAINT YEAR :**	**PAINT YEAR :**	
MILS :	**MILS :**	**MILS :**	

REQUESTED WORK ITEMS

GENERAL WORK COMMENTS:

Missouri Department of Transportation
State Bridge Inspection Report

COUNTY: CLAY **DISTRICT: KC** **CLASS: STATBR** **FED-ID: 6412** **BRIDGE: L0659**

RESPONSIBILITY	*LOCATION*	*ITEM*	*CATEGORY*	*PRIORITY*	*DATE*	*WORK ITEM COMMENT*
DISTRICT SPECIAL	ROADWAY SURFACE	SEAL WITH SILANE	DECK	3	04/22/2024	

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:	6-EQ TO PRESENT MIN CRITR	10/6/2020
[Item 68] Deck Geometry Rating:	5-BETTER THAN MINIMUM	4/17/2002
[Item 69] Underclearance:	4-MEETS MINIMUM TOLERABLE	3/25/2003
Sufficiency Rating:	92.9%	3/7/2024
Deficiency:	NOT DEFICIENT	4/17/2002
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

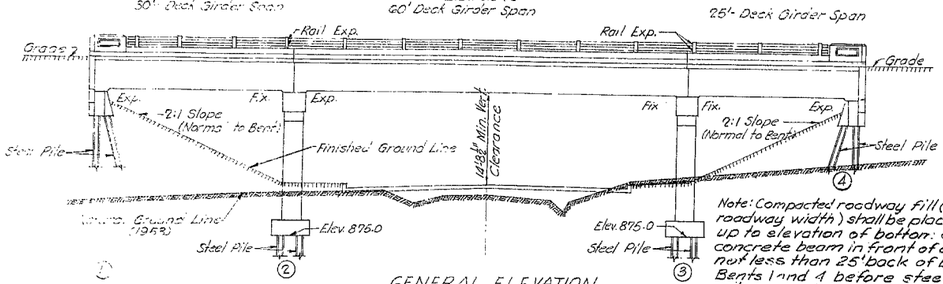
SIGN #	SIGN TYPE	PROBLEM	PROBLEM DIRECTION
1			

OUTFALL INSPECTION INFORMATION

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

MISSOURI STATE HIGHWAY DEPARTMENT

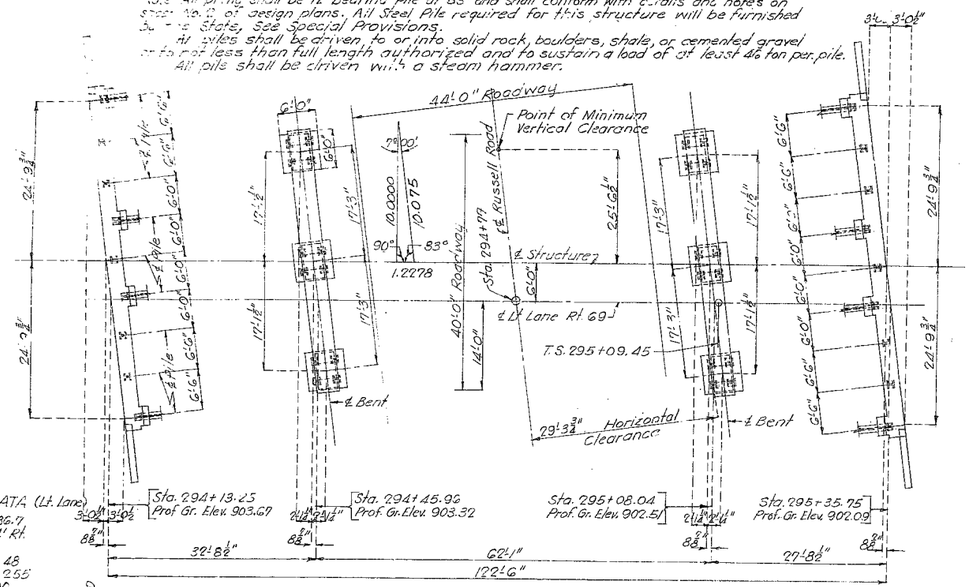
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	UI-99(6) (RT. 69)	19		



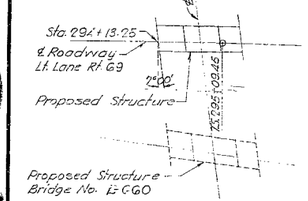
GENERAL ELEVATION

Note: All piling shall be 12" Bearing Pile at 53# and shall conform with details and notes on Sheet No. 2 of design plans. All Steel Pile required for this structure will be furnished by the State, See Special Provisions.
All piles shall be driven to or into solid rock, boulders, shale, or cemented gravel to refusal of not less than full length authorized and to sustain a load of at least 46 ton per pile.
All pile shall be driven with a steam hammer.

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' back of End Bents 1 and 4 before steel piles are driven.



PLAN



LOCATION SKETCH

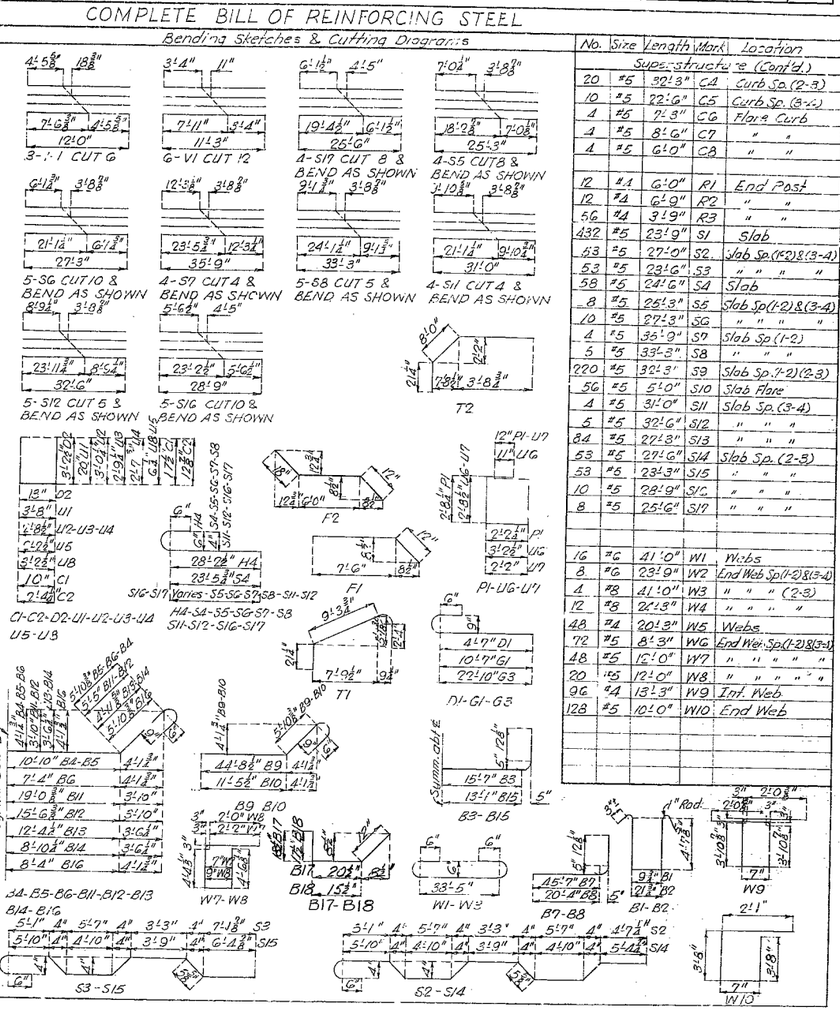
GENERAL NOTES:

Design Specifications A.A.S.H.O. 1953
Loading H20-S16-44
Reinforcing Steel Stress 18,000#/a"
Class "B" Concrete Stress 1,000#/a"
All concrete shall be Class "B" (Air Entrained)
Where joint filler is specified on plans it shall conform with the requirements for Gray Rubber Compound Joints as given in section 38-19.8(2) of the Standard Specifications.
For requirements on welding electrodes see Special Provisions. Qualification of Welding operators will be required.
Surfaces of piles at Bents No. 1 & 4 from bottom of concrete cap to 3'0 below bottom of concrete cap shall be painted with one coat of an approved brand of emulsified asphalt paint. Payment for excavating around piles to 3'0" below bottom of cap and backfilling; some, furnishing emulsified asphalt paint and cleaning and painting steel surfaces specified will be included in the unit price bid for other items.
A rubbed surface finish will be required on all exposed surfaces of concrete end posts above top of curbs.

No.	Size	Length	Mark	Location
		END BENTS NO. 1 & 4		
6	#4	12'-0"	H1	Wing
20	#6	10'-6"	H2	"
4	#6	7'-0"	H3	"
32	#7	29'-6"	H4	Beam
16	#6	28'-0"	H5	"
8	#6	14'-6"	T1	Wing
8	#6	12'-6"	T2	"
184	#5	7'-0"	U1	Beam
64	#7	8'-9"	U2	"
16	#7	8'-3"	U3	"
16	#7	8'-0"	U4	"
28	#4	3'-3"	U5	"
12	½"	11'-3"	V1	Wing
20	#6	9'-0"	V2	"
32	#4	8'-9"	V3	Beam
		INT. BENTS NO. 2 & 3		
48	#8	6'-3"	D1	Footing
48	#6	7'-6"	D2	"
32	#6	8'-6"	F1	Col. Haunch
16	#6	8'-6"	F2	" "
28	#9	12'-3"	G1	Beam
8	#6	21'-9"	G2	"
24	#11	24'-6"	G3	"
16	#10	27'-3"	G4	"
93	#3	10'-9"	P1	Col. 48 @ 2 45 @ 3
72	#5	12'-9"	U6	Beam
40	#5	10'-9"	U7	"
24	#4	4'-3"	U8	"
48	#8	19'-3"	V4	Column
		SUPERSTRUCTURE		
240	#4	10'-9"	B1	Gir. Sp. (1-2) & (3-4)
735	#4	11'-9"	B2	" " (2-3)
15	#11	34'-6"	B3	" " (1-2)
4	#9	36'-9"	B4	" " "
6	#10	36'-9"	B5	" " "
3	#10	29'-9"	B6	" " "
30	#11	47'-3"	B7	Gir. Sp. (2-3)
30	#11	22'-0"	B8	" "
30	#11	52'-3"	B9	" "
30	#11	19'-0"	B10	" "
15	#11	52'-3"	B11	" "
15	#11	45'-3"	B12	" "
10	#11	38'-10"	B13	" "
10	#11	31'-0"	B14	" "
15	#11	29'-6"	B15	Gir. Sp. (3-4)
6	#8	31'-9"	B16	" "
50	#6	4'-3"	B17	" (2-3)
40	#6	3'-9"	B13	" (1-2) & (3-4)
216	#4	3'-9"	C1	Curb
244	#5	4'-6"	C2	"
10	#5	27'-6"	C3	Curb Sp. (1-2)

COMPLETE BILL OF REINFORCING STEEL

Bending Sketches & Cutting Diagrams



No.	Size	Length	Mark	Location
		Superstructure (Cont'd.)		
20	#5	32'-3"	C4	Curb Sp. (2-3)
10	#5	22'-6"	C5	Curb Sp. (3-4)
4	#5	2'-3"	C6	Flare Curb
4	#5	8'-6"	C7	" "
4	#5	6'-0"	C8	" "
12	#4	6'-0"	R1	End Post
12	#4	6'-0"	R2	" "
56	#4	3'-9"	R3	" "
432	#5	23'-9"	S1	Slab
13	#5	27'-0"	S2	Slab Sp. (1-2) & (3-4)
53	#5	23'-6"	S3	" " " "
58	#5	24'-6"	S4	Slab
8	#5	26'-3"	S5	Slab Sp. (1-2) & (3-4)
10	#5	27'-3"	S6	" " " "
4	#5	36'-9"	S7	Slab Sp. (1-2)
5	#5	33'-3"	S8	" "
220	#5	32'-3"	S9	Slab Sp. (1-2) (2-3)
56	#5	5'-0"	S10	Slab Flare
4	#5	31'-0"	S11	Slab Sp. (3-4)
5	#5	32'-6"	S12	" " "
84	#5	27'-3"	S13	" " "
58	#5	27'-6"	S14	Slab Sp. (2-3)
53	#5	23'-3"	S15	" " "
10	#5	28'-9"	S16	" " "
8	#5	25'-6"	S17	" " "
16	#6	41'-0"	W1	Webs
8	#6	23'-9"	W2	End Web Sp. (1-2) & (3-4)
4	#8	41'-0"	W3	" " " (2-3)
12	#8	24'-3"	W4	" " " "
48	#4	20'-3"	W5	Webs
72	#5	8'-3"	W6	End Web Sp. (1-2) & (3-4)
48	#5	16'-0"	W7	" " " "
20	#5	12'-0"	W8	" " " "
96	#4	13'-3"	W9	Int. Web
128	#5	10'-0"	W10	End Web

ESTIMATED QUANTITIES

Item		Substr.	Super str.	Total
Class I Excavation for Structures	Cu. Yds.	150		150
Class "B" Concrete	Cu. Yds.	132.9	365.4	498.3
Reinforcing Steel	Lbs.	20,120	84,870	104,990
Grey Iron Alloy Castings	Lbs.		3610	3610
Aluminum Alloy Handrail	Lin. Ft.		215	215
Steel Piling in Place (State furnished)	Lin. Ft.	1232		1232

B.M. #11 Elev. 878.52 R.R. Spike in W. side T.P. 10' Lt. Sta. 281+96 Rt. Lane.

BRIDGE OVER RUSSELL ROAD

STATE ROAD FROM ARMOUR ROAD IN NORTH KANSAS CITY N.E.

ABOUT 2 MILES NORTH OF NORTH KANSAS CITY

PROJECT NO. UI-99(6) (RT. 69) **STA.** 294+13.25 (LEFT LANE)

CLAY **COUNTY**

FINISHED

SUBMITTED BY J. A. Williams BRIDGE ENGINEER DATE 6/10/1954

APPROVED BY Rex McWaitter CHIEF ENGINEER DATE 6/10/1954

FINISHED

FINISHED

STD C-110 RS

L-659

Drawn April 1954 by M.E.L.
Checked May 1954 by J.E.L.

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

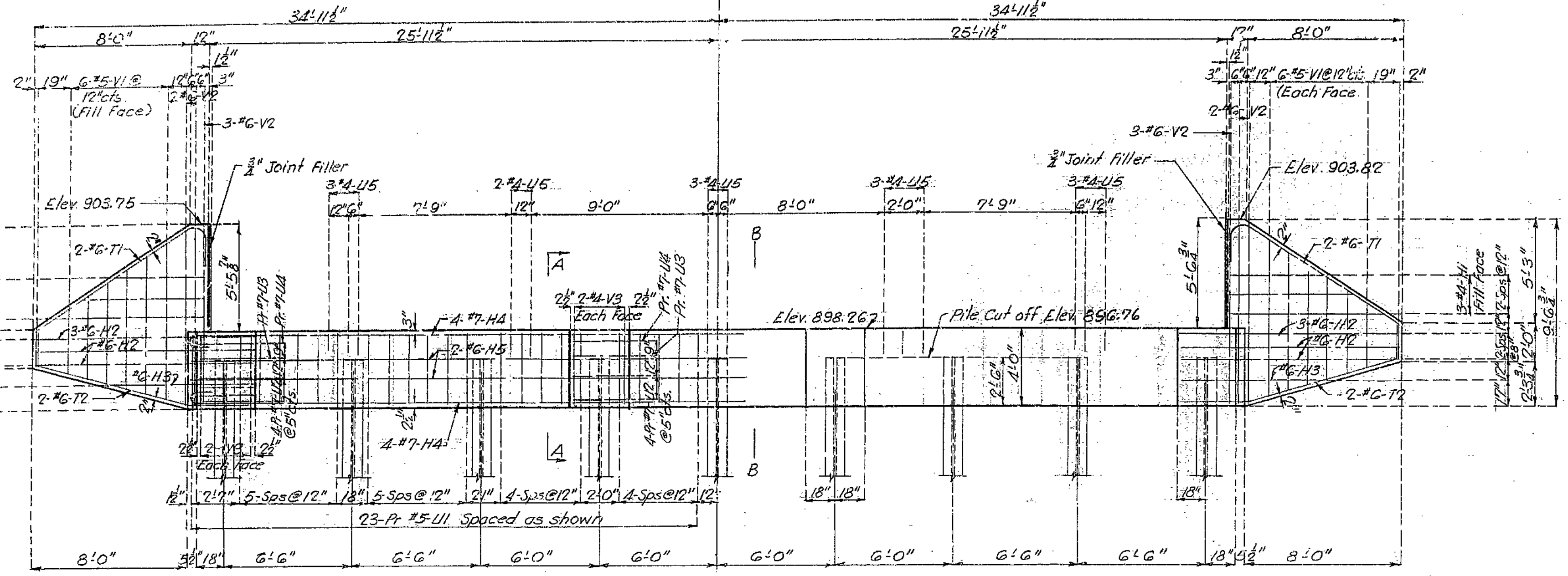
Sheet No. 1 of 7

SEE FINAL PLANS BROWN-LINES

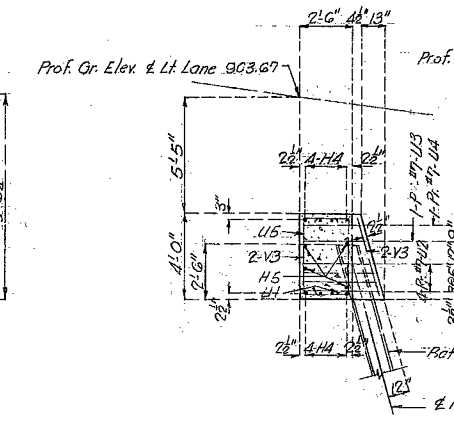
12

MISSOURI STATE HIGHWAY DEPARTMENT

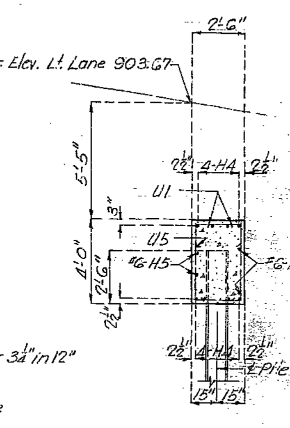
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	UI-99(6) (RT.69)	19		



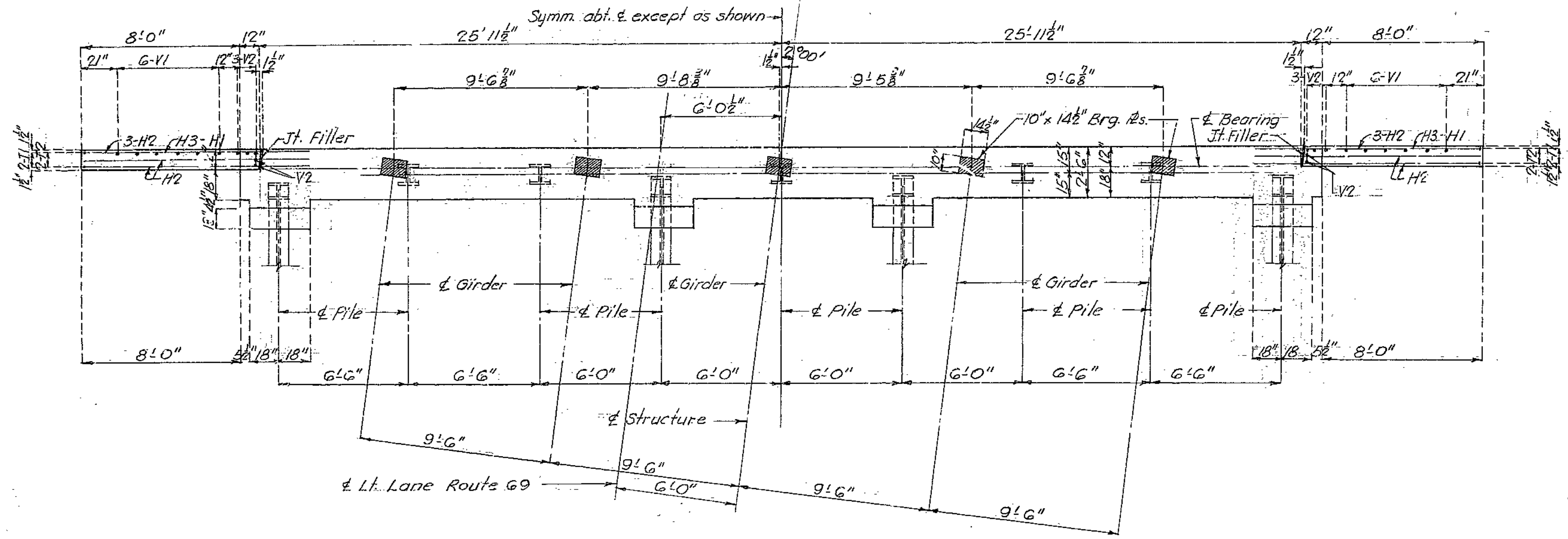
ELEVATION



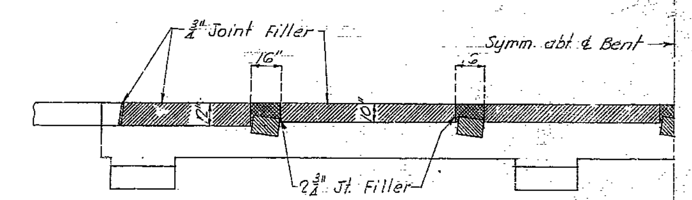
SECTION A-A



SECTION B-B

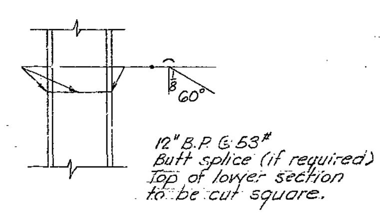


PLAN

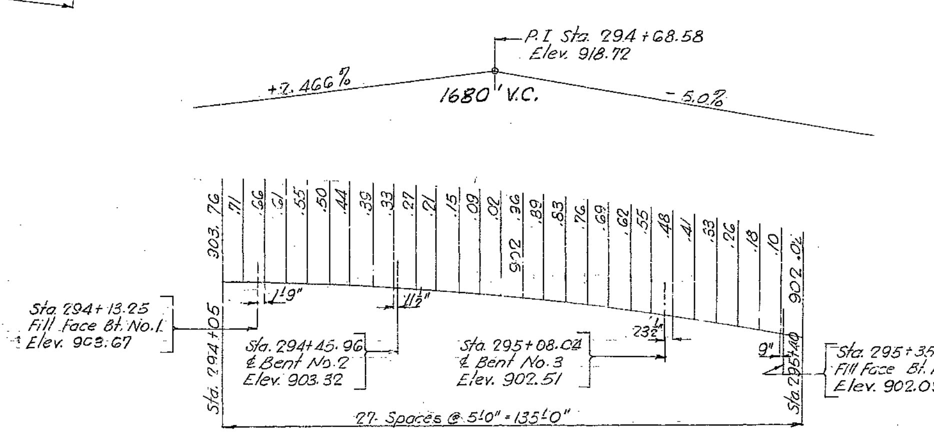


DETAILS OF JOINT FILLER

DETAILS OF END BENT NO. 1.



DETAILS OF STEEL PILE



GRADE ELEVATIONS ALONG ℄ SURVEY (LT. LANE)

BRIDGE OVER RUSSELL ROAD
STATE ROAD FROM ARMOUR ROAD IN NORTH KANSAS CITY N.E.
ABOUT 2 MILES NORTH OF NORTH KANSAS CITY
PROJECT NO. UI-99(6) (RT. 69) STA. 294+13.25 (LEFT LANE)
CLAY COUNTY

FINISHED FINISHED FINISHED

Drawn April 1954 by M.E.L.
Checked May 1954 by J.E.L.

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

Sheet No. 2 of 7.

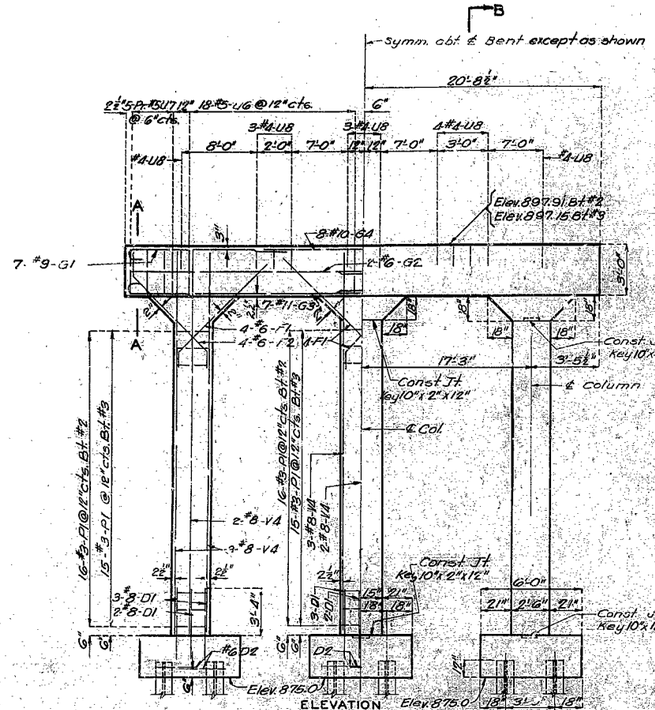
L-659

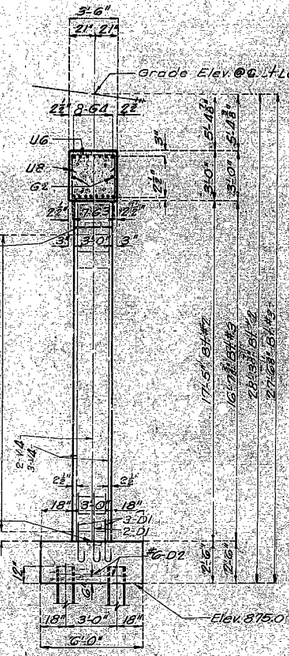
116

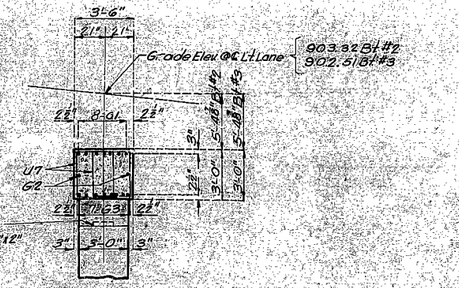
NO CONSTRUCTION CHANGES

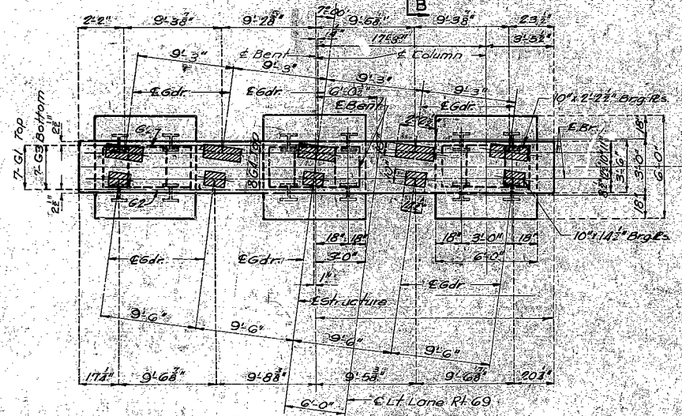
MISSOURI STATE HIGHWAY DEPARTMENT

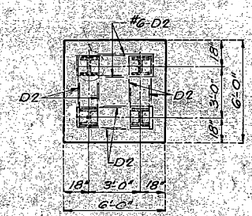
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	UI-99(6) (RT. 69)	19		











DETAILS OF INTERMEDIATE BENTS NO. 2&3

BRIDGE OVER RUSSELL ROAD

STATE ROAD FROM ARMOUR ROAD IN NORTH KANSAS CITY N. E.

ABOUT 2 MILES NORTH OF NORTH KANSAS CITY

PROJECT NO. UI-99(6) (RT. 69) STA. 294+13.25 (LEFT LANE)

CLAY COUNTY

FINISHED

FINISHED

FINISHED

L-659

Assembled April 1954 by M.E.L. E.W.G.S.
Checked May 1954 by J.E.L.

Note: This drawing is not to scale, follow dimensions.

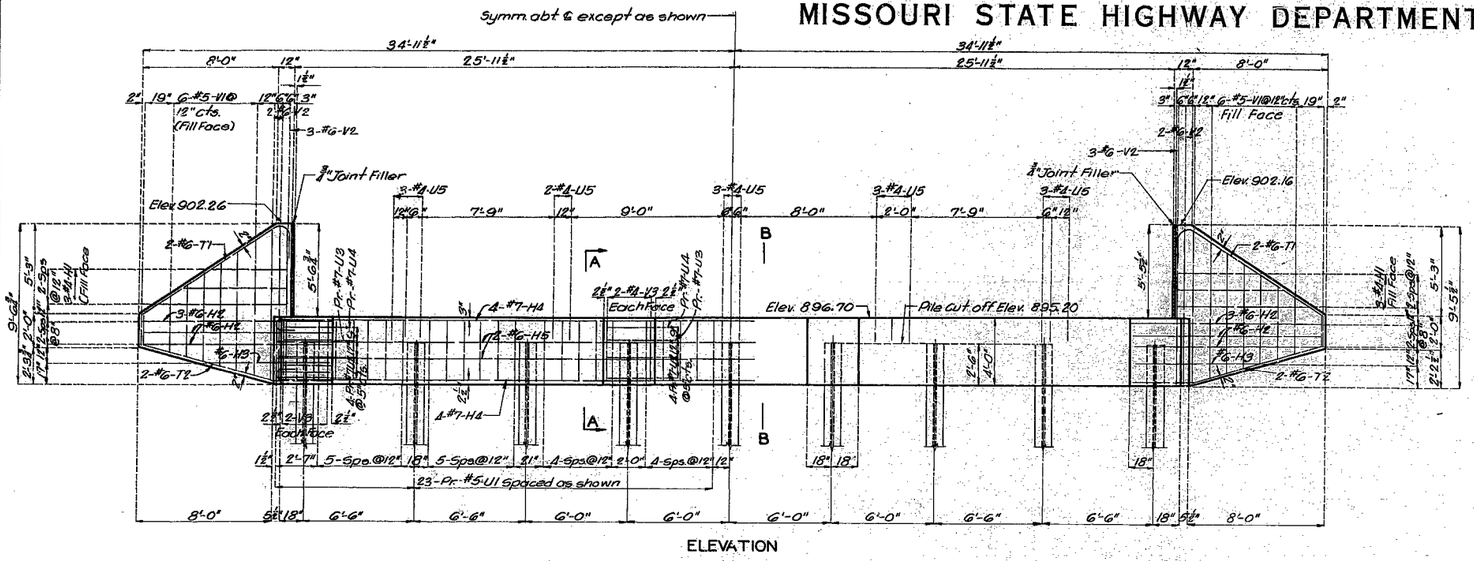
Sheet No. 3 of 7

NO CONS. UCTION CHANGES

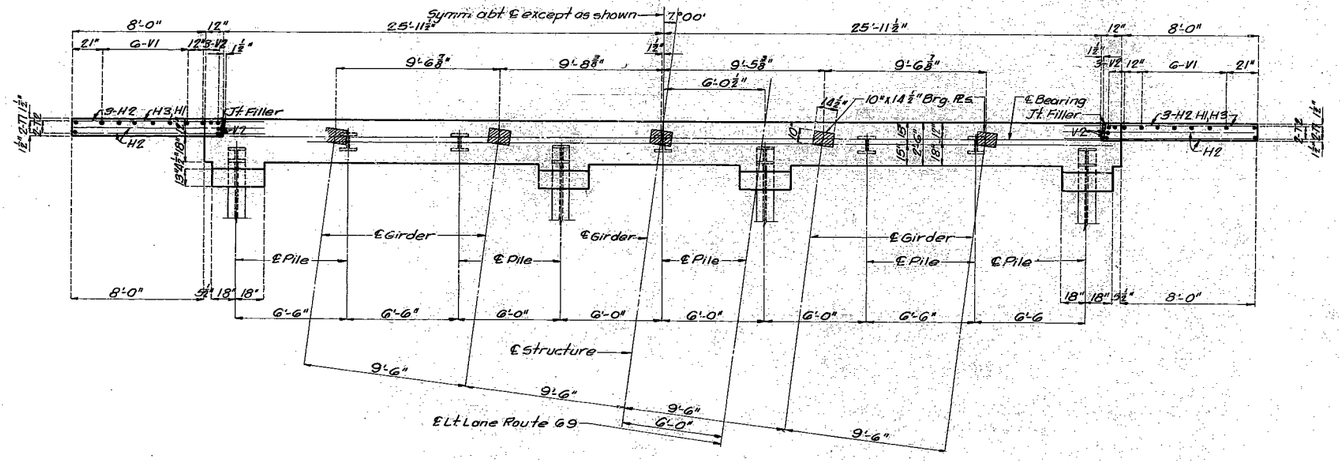
10

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	UI-99(6) (RT.69)	19		

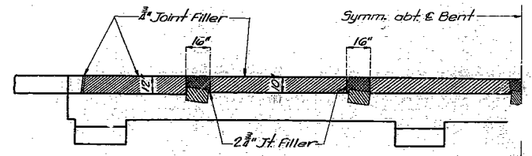


ELEVATION



PLAN

DETAILS OF END BENT NO. 4



DETAILS OF JOINT FILLER

BRIDGE OVER RUSSELL ROAD

STATE ROAD FROM ARMOUR ROAD IN NORTH KANSAS CITY N.E.
ABOUT 2 MILES NORTH OF NORTH KANSAS CITY
PROJECT NO. UI-99(6) (RT.69) STA. 294+13.25 (LEFT LANE)

CLAY COUNTY

FINISHED

FINISHED

FINISHED

L-659

Drawn April 1954 by M.E.L.&W.G.S.
Checked May 1954 by J.E.L.

Note: This drawing is not to scale. Follow Dimensions

Sheet No. 4 of 7

NO CONSTRUCTION CHANGES

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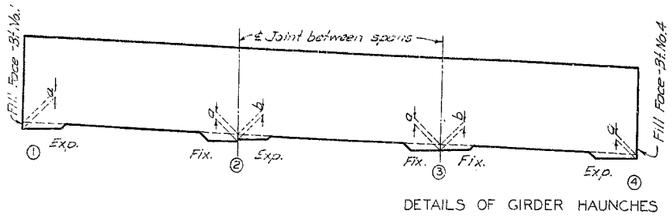
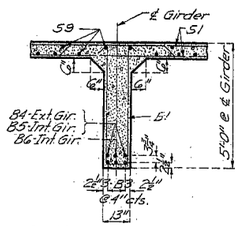
MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	(II-99(6)(RT. 69)	19		

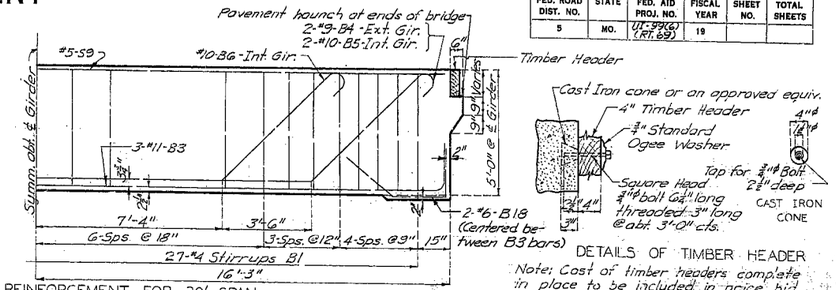


DETAILS OF GIRDER HAUNCHES

GIRDER HAUNCHES								
	Bl. No. 1		Bl. No. 2		Bl. No. 3		Bl. No. 4	
Girder	a	a	b	a	b	a	b	a
①	1"	1½"	1"	1¼"	1⅛"	⅜"	1⅛"	⅜"
②	2"	2½"	2"	2¼"	2¼"	1⅜"	2¼"	1⅜"
③	3"	3½"	2¾"	3"	3"	2¾"	3"	2¾"
④	1⅜"	2⅜"	1⅜"	1¾"	1⅜"	1⅜"	1⅜"	1⅜"
⑤	⅜"	1⅜"	⅜"	⅜"	⅜"	0"	⅜"	0"



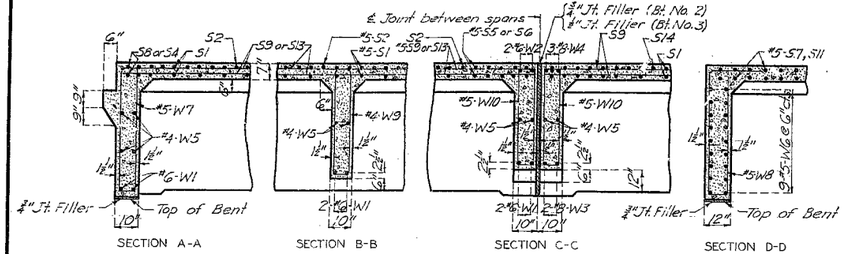
SECTION THRU GIRDER



GIRDER REINFORCEMENT FOR 30' SPAN

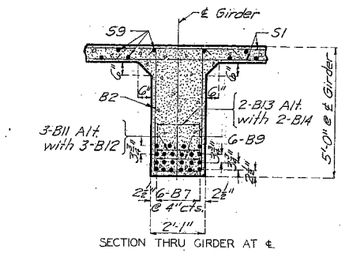
DETAILS OF TIMBER HEADER

Note: Cost of timber headers complete in place to be included in price bid for concrete.

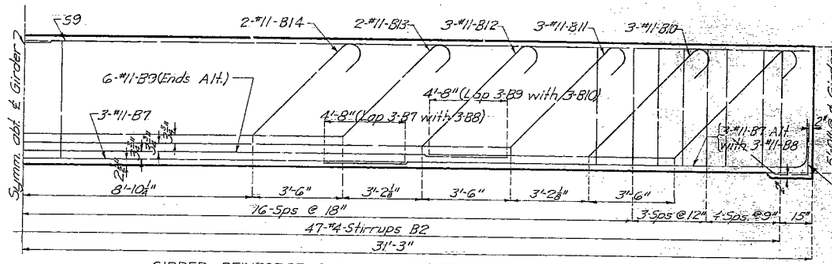


PART LONGITUDINAL SECTION

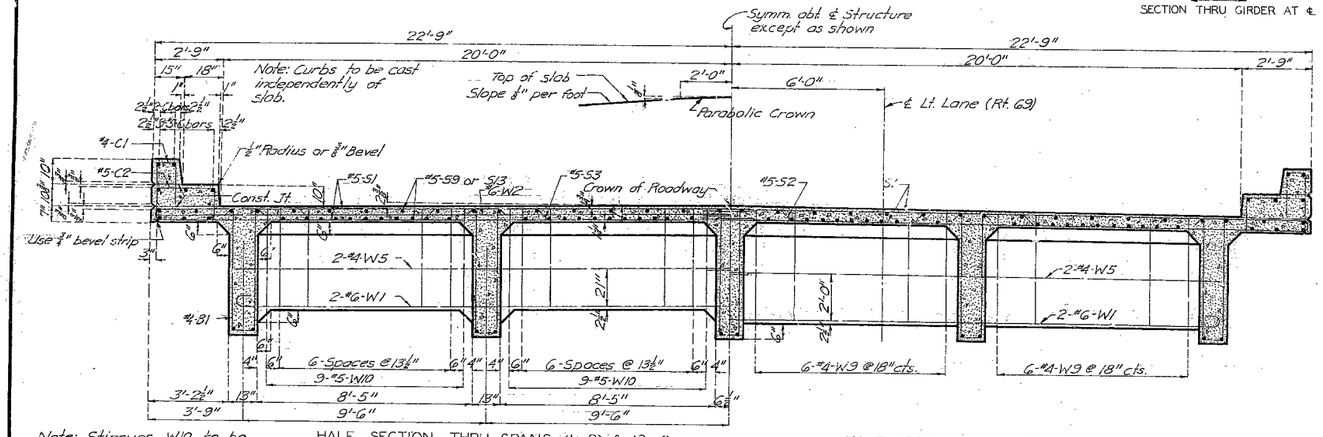
Note: See sheet 6 of 7 for location of sections.

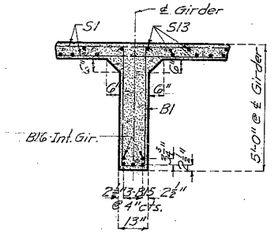


SECTION THRU GIRDER AT ℄

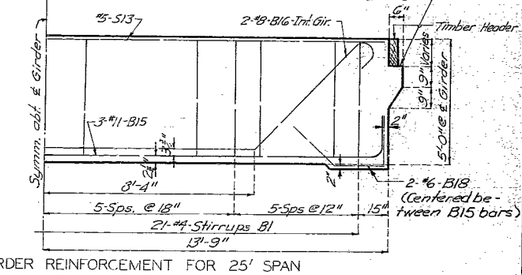


GIRDER REINFORCEMENT FOR 60' SPAN

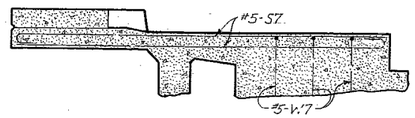




SECTION THRU GIRDER



GIRDER REINFORCEMENT FOR 25' SPAN



PART SECTION E-E

Note: See sheet 6 of 7 for location of section

BRIDGE OVER RUSSELL ROAD

STATE ROAD FROM ARMOUR ROAD IN NORTH KANSAS CITY N.E.
ABOUT 2 MILES NORTH OF NORTH KANSAS CITY
PROJECT NO. UI-99(6)(RT. 69) STA. 294+13.25 (LEFT LANE)

CLAY COUNTY

FINISHED

FINISHED

FINISHED

L-659

Drawn Apr. 1954 by M.H.P.
Checked May 1954 by J.E.L.

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

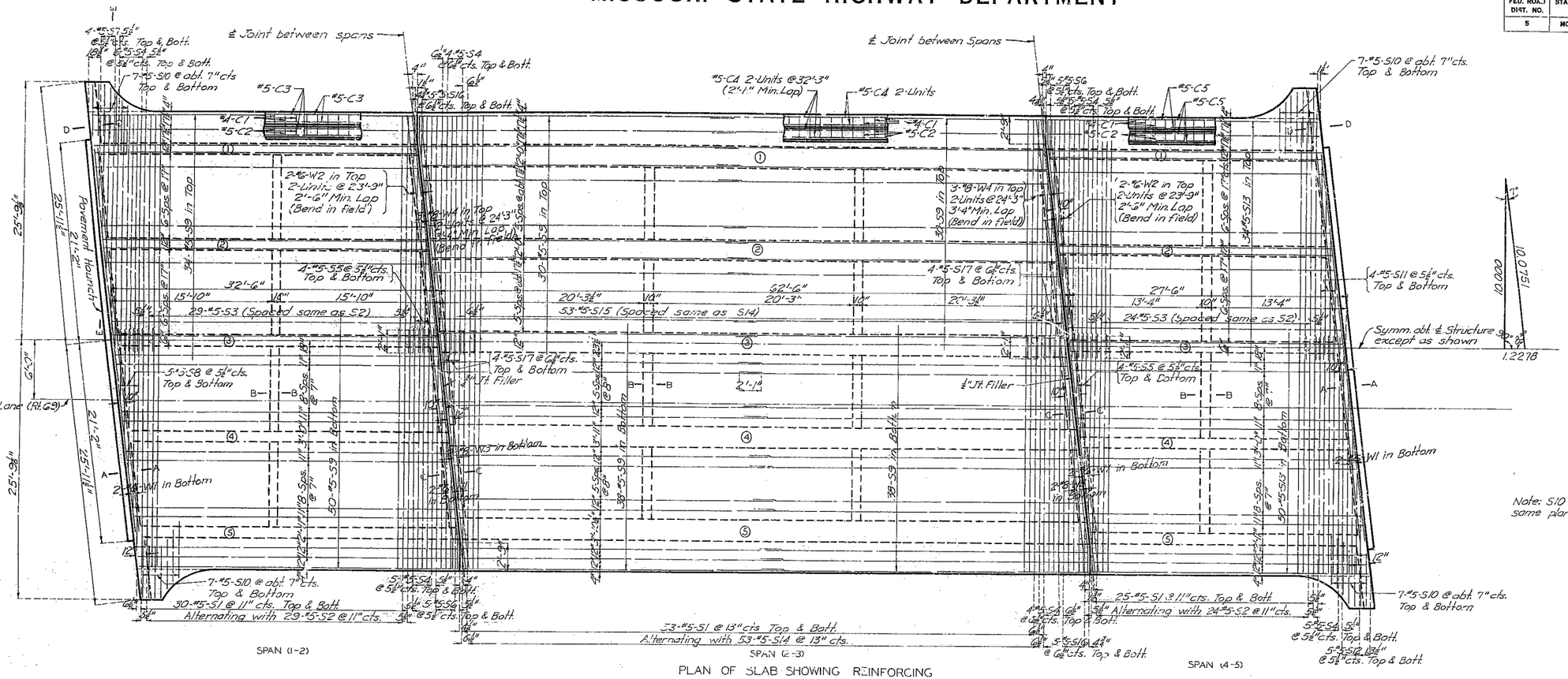
Sheet No. 5 of 7

NO CONSTRUCTION CHANGES

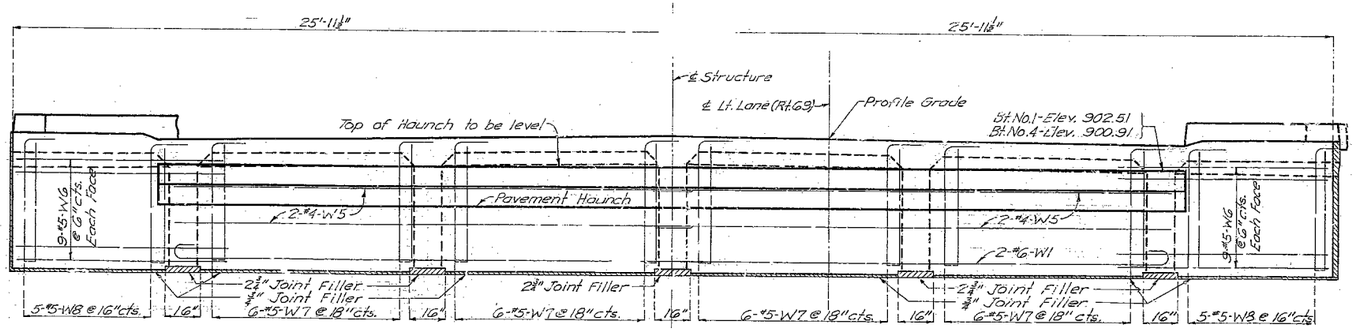
16

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	(UI-99(6) (RT. 69))	19		

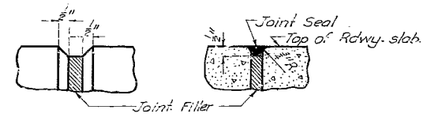


PLAN OF SLAB SHOWING REINFORCING



ELEVATION AT END BENT NO. 1
(End Bent No. 4 Similar.)

Note: Stirrups W7 & W8 to be placed parallel to ℄ Roadway.



Note: Use bevels 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

BRIDGE OVER RUSSELL ROAD

STATE ROAD FROM ARMOUR ROAD IN NORTH KANSAS CITY N.E.

ABOUT 2 MILES NORTH OF NORTH KANSAS CITY

PROJECT NO. UI-99(6) (RT. 69) **STA.** 294+13.25 (LEFT LANE)

CLAY **COUNTY** FINISHED

FINISHED

L-659

Drawn Apr. 1954 by M.H.P.
Checked Apr. 1954 by J.E.L.

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

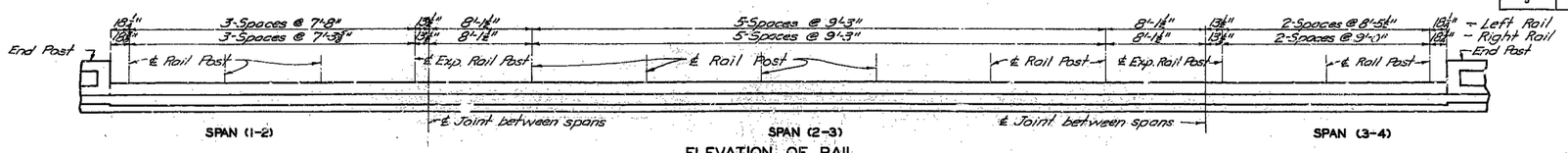
Sheet No. 6 of 7.

NO CONSTRUCTION CHANGES

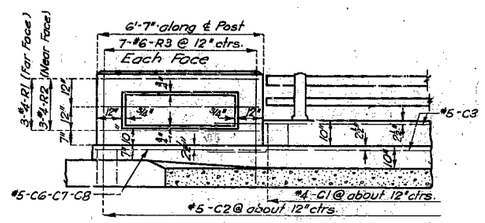
120

MISSOURI STATE HIGHWAY DEPARTMENT

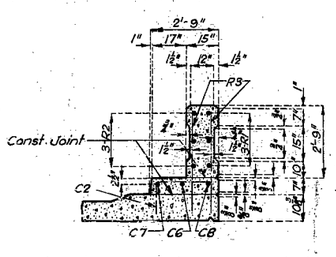
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	UI-99(6) (RT.69)	19		



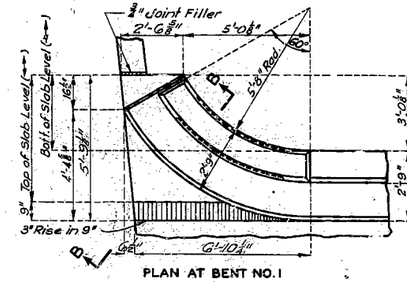
ELEVATION OF RAIL



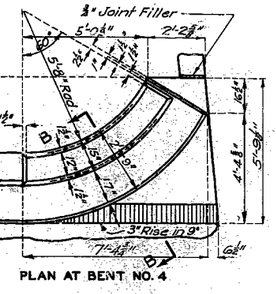
DEVELOPED ELEVATION-END POST



SECTION B-B

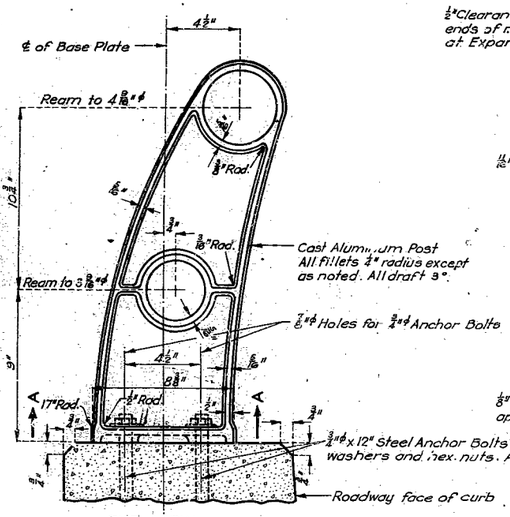


PLAN AT BENT NO. 1

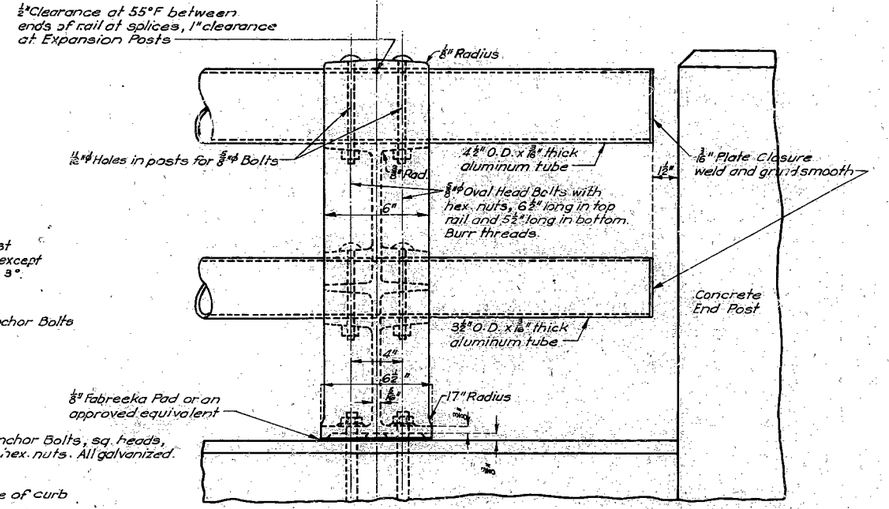


PLAN AT BENT NO. 4

DETAILS OF END POSTS & FLARED CURB



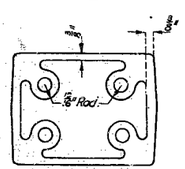
END VIEW



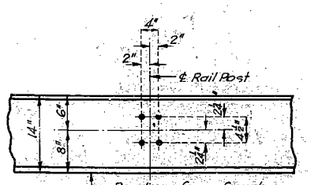
ELEVATION

Note: All parts of handrail except steel anchor bolts and their washers and nuts to be aluminum. Bolt holes in tubes to be 11/16" x 1" slotted holes centered on bolts at normal temperature of 55° except, at expansion posts where holes shall be 11/16" x 1½" slots.

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

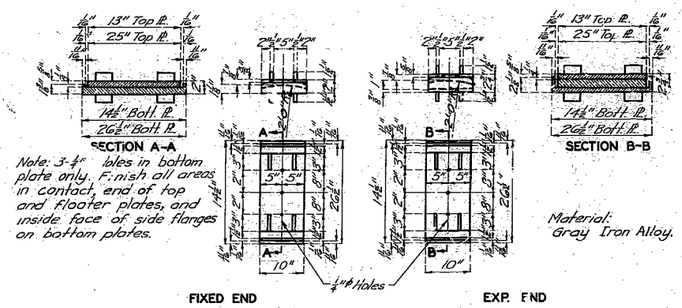


SECTION A-A



TYPICAL ANCHOR BOLT PLAN

DETAILS OF HANDRAIL



GRAY IRON ALLOY BEARING PLATES

Note: Bearing plates to be furnished in sets. Each set consisting of 1 top and 1 bottom plate for fixed end and 1 top plate, 1 floater plate and 1 bottom plate for expansion end.
Required: 10-Sets 10" x 13" plates.
5-Sets 10" x 25" plates.

BRIDGE OVER RUSSELL ROAD

STATE ROAD FROM ARMOUR ROAD IN NORTH KANSAS CITY N.E.
ABOUT 2 MILES NORTH OF NORTH KANSAS CITY
PROJECT NO. UI-99(6) (RT.69) STA. 294+13.25 (LEFT LANE)

FINISHED CLAY COUNTY FINISHED

FINISHED

L-659

Drawn Apr. 1954 By M.H.P.
Traced Apr. 1954 By M.H.P.
Checked May 1954 By J.E.L.

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

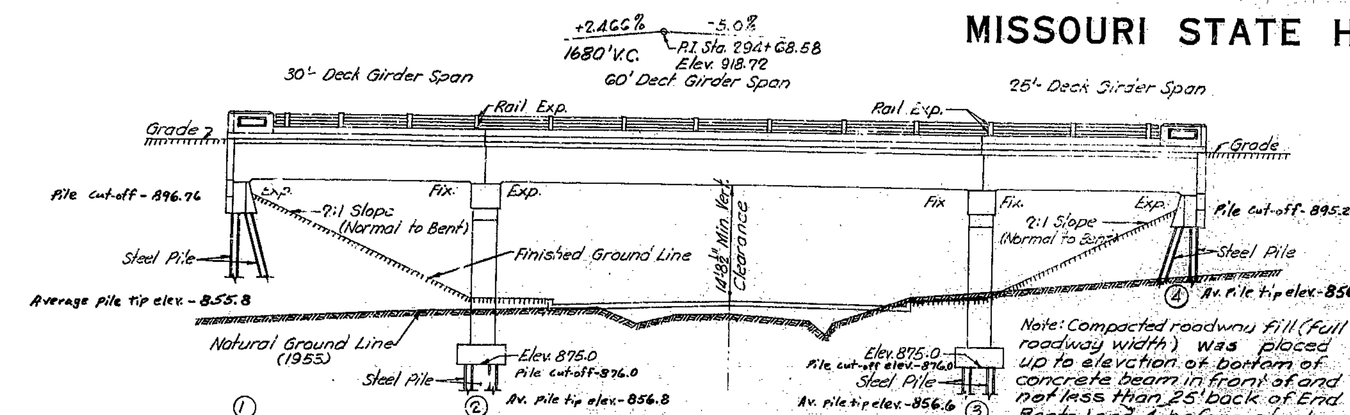
Sheet No. 7 of 7.

NO CONSTRUCTION CHANGES

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	UI-99(6) (RT. 69)	19		

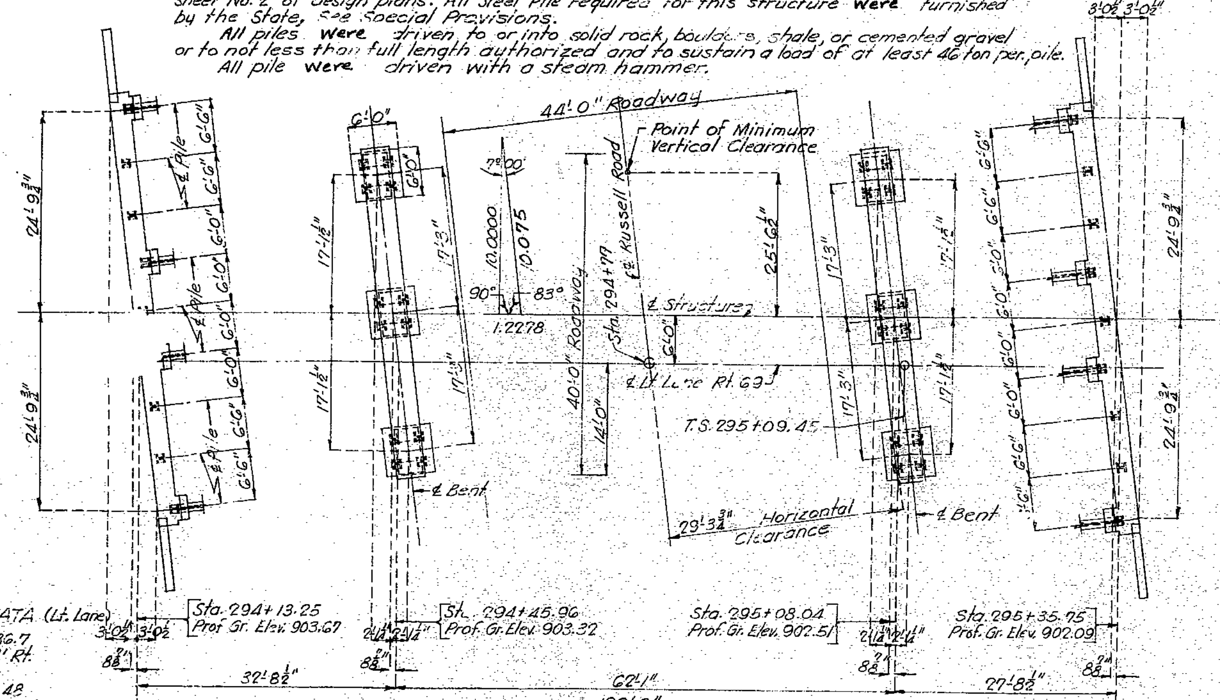
FINAL PLANS



GENERAL ELEVATION

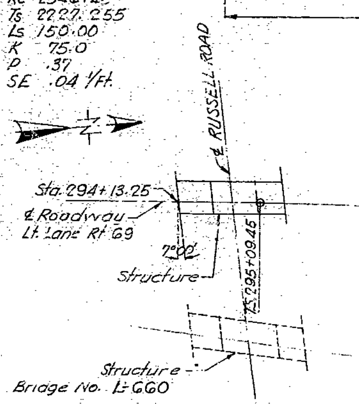
Note: Compacted roadway fill (Full roadway width) was placed up to elevation of bottom of concrete beam in front of and not less than 25' back of End Bents 1 and 4 before steel piles were driven.

Note: All piling were 12" Bearing Pile at 53# and conformed with details and notes on sheet No. 2 of design plans. All Steel Pile required for this structure were furnished by the State, See Special Provisions.
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 46 ton per pile.
All pile were driven with a steam hammer.



PLAN

CURVE DATA (Lt. Lane)
PI 317+36.7
Δ 80°24' Rt.
Dc 2°15'
Rc 2546.48
Ts 2227.255
Ls 150.00
K 75.0
P .37
SE .04 '/Ft.



LOCATION SKETCH

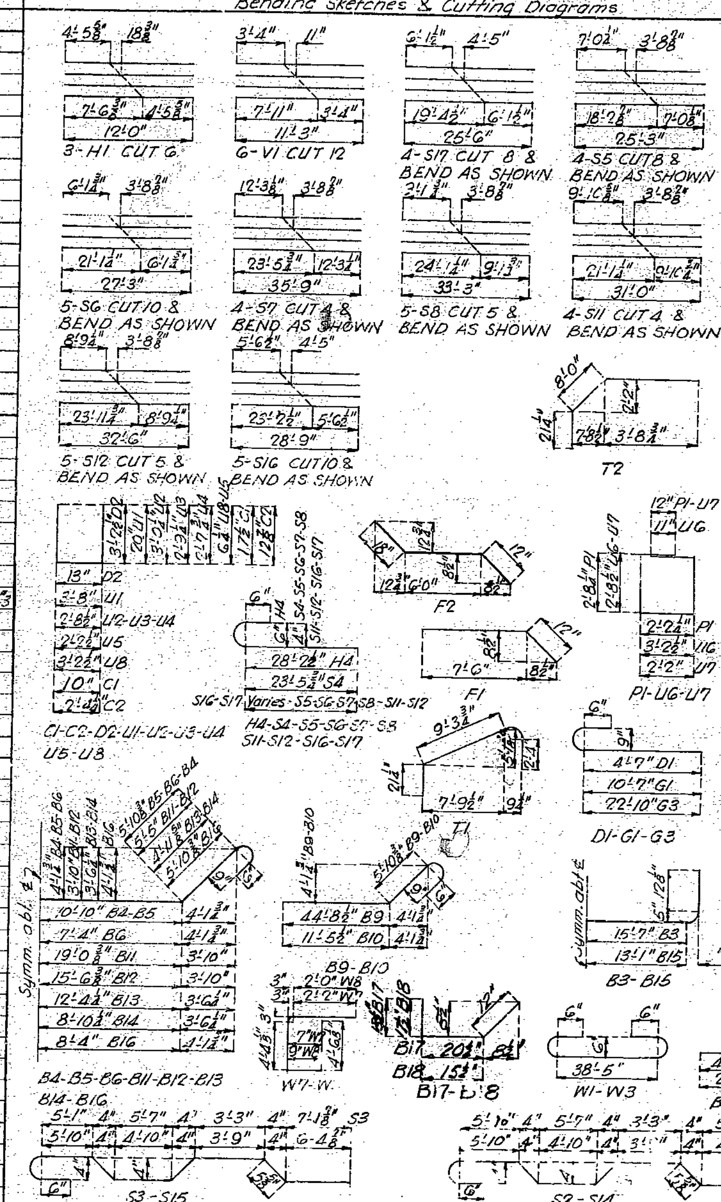
GENERAL NOTES:
Design Specifications A.A.S.H.O. 1953
Loading H20-S16-44
Reinforcing Steel Stress 18,000#/a"
Class "B" Concrete Stress 1,000#/a"
All concrete was Class "B" (Air Entrained)
Where joint filler is specified on plans it [illegible] conformed with the requirements for Gray Rubber Compound Joints as given in section 38-19.8(2) of the Standard Specifications.
For requirements on welding electrodes see Special Provisions. Qualification of Welding operators was required.
Surfaces of piles at Bents No. 1 & 4 from bottom of concrete cap to 3'-0" below bottom of concrete cap were painted with one coat of an approved brand of emulsified asphalt paint. Payment for excavating around piles to 3'-0" below bottom of cap and backfilling same, furnishing emulsified asphalt paint and cleaning and painting steel surfaces specified was included in the unit price bid for other items.
A rubbed surface finish was required on all exposed surfaces of concrete end posts above top of curbs.

COMPLETE BILL OF REINFORCING STEEL

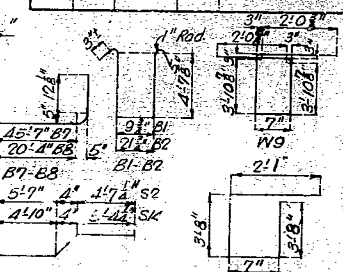
FINAL PLANS

No.	Size	Length	Mark	Location
END BENTS NO. 1 & 4				
6	#4	12'-0"	H1	Wing
20	#6	10'-6"	H2	"
4	#6	7'-0"	H3	"
32	#7	29'-6"	H4	Beam
16	#6	28'-0"	H5	"
8	#6	14'-6"	T1	Wing
8	#6	12'-6"	T2	"
184	#5	7'-0"	U1	Beam
64	#7	8'-9"	U2	
16	#7	8'-3"	U3	"
16	#7	8'-0"	U4	"
28	#4	3'-3"	U5	"
12	#5	11'-3"	V1	Wing
20	#6	9'-0"	V2	"
32	#4	3'-9"	V3	Beam
INT. BENTS NO. 2 & 3				
48	#8	6'-3"	D1	Footing
48	#6	7'-6"	D2	"
32	#6	8'-6"	F1	Col. Haunch
16	#6	8'-6"	F2	" "
28	#9	12'-3"	G1	Beam
8	#6	21'-9"	G2	"
28	#11	24'-6"	G3	"
16	#10	27'-3"	G4	"
93	#3	10'-9"	P1	Col. 48 Bt.2 45 Bt.3
72	#5	12'-9"	U6	Beam
40	#5	10'-9"	U7	"
24	#4	4'-3"	U8	"
48	#8	19'-3"	V4	Column
SUPERSTRUCTURE				
240	#4	10'-9"	B1	Gir. Sp. (1-2) & (3-4)
235	#4	11'-9"	B2	" " (2-3)
15	#11	34'-6"	B3	" " (1-2)
4	#9	36'-9"	B4	" " "
6	#10	36'-9"	B5	" " "
3	#10	29'-9"	B6	" " "
30	#11	47'-3"	B7	Gir. Sp. (2-3)
30	#11	22'-0"	B8	" "
30	#11	52'-3"	B9	" "
30	#11	19'-0"	B10	" "
15	#11	52'-3"	B11	" "
15	#11	45'-3"	B12	" "
10	#11	38'-0"	B13	" "
10	#11	31'-0"	B14	" "
15	#11	29'-6"	B15	Gir. Sp. (3-4)
6	#8	31'-9"	B16	" "
50	#6	4'-3"	B17	" (2-3)
40	#6	3'-9"	B18	" (1-2) & (3-4)
216	#4	3'-9"	C1	Curb
244	#5	4'-6"	C2	"
10	#5	27'-6"	C3	Curb Sp. (1-2)

Bending Sketches & Cutting Diagrams



No.	Size	Length	Mark	Location
Superstructure (Cont'd.)				
20	#5	32'-3"	C4	Curb Sp. (2-3)
10	#5	22'-6"	C5	Curb Sp. (3-4)
4	#5	7'-3"	C6	Flare Curb
4	#5	8'-6"	C7	" "
4	#5	6'-0"	C8	" "
12	#4	6'-0"	R1	End Post
12	#4	6'-9"	R2	" "
56	#4	3'-9"	R3	" "
432	#5	23'-9"	S1	Slab
53	#5	27'-0"	S2	Slab Sp. (1-2) & (3-4)
53	#5	23'-6"	S3	" " " "
58	#5	24'-6"	S4	Slab
8	#5	25'-3"	S5	Slab Sp. (1-2) & (3-4)
10	#5	27'-3"	S6	" " " "
4	#5	35'-9"	S7	Slab Sp. (1-2)
5	#5	33'-3"	S8	" " "
220	#5	32'-3"	S9	Slab Sp. (1-2) (2-3)
56	#5	5'-0"	S10	Slab Flare
4	#5	31'-0"	S11	Slab Sp. (3-4)
5	#5	32'-6"	S12	" " "
84	#5	27'-3"	S13	" " "
53	#5	27'-6"	S14	Slab Sp. (2-3)
53	#5	23'-3"	S15	" " "
10	#5	28'-9"	S16	" " "
8	#5	25'-6"	S17	" " "
16	#6	41'-0"	W1	Webs
8	#6	23'-9"	W2	End Web Sp. (1-2) & (3-4)
4	#8	41'-0"	W3	" " " (2-3)
12	#8	24'-3"	W4	" " " "
48	#4	20'-3"	W5	Webs
72	#5	8'-3"	W6	End Web Sp. (1-2) & (3-4)
48	#5	12'-0"	W7	" " " " "
20	#5	12'-0"	W8	" " " " "
96	#4	13'-3"	W9	Int. Web
128	#5	10'-0"	W10	End Web



FINAL QUANTITIES

FINAL PLANS

Item		Substr.	Super str.	Total
Class I Excavation for Structures	Cu. Yds.	164.5		164.5
Class "B" Concrete	Cu. Yds.	132.9	365.4	498.3
Reinforcing Steel	Lbs.	20120	84870	104990
Gray Iron Alloy Castings	Lbs.		3610	3610
Aluminum Alloy Handrail	Lin. Ft.		215	215
Steel Piling in Place (State Furnished)	Lin. Ft.	1201		1201

B.M. Elev. 902.15 □ on top of Right Wing Bent #4

BRIDGE OVER RUSSELL ROAD

STATE ROAD FROM ARMOUR ROAD IN NORTH KANSAS CITY N.E.
ABOUT 2 MILES NORTH OF NORTH KANSAS CITY
PROJECT NO. UI-99(6) (RT. 69) STA. 294+13.25 (LEFT LANE)

CLAY **COUNTY**

SUBMITTED BY J. A. Williams BRIDGE ENGINEER DATE 6/2/1954
APPROVED BY Rex M. Whitton CHIEF ENGINEER DATE 6/10/1954

FINISHED

FINISHED

FINISHED

STD. C-110 R3

L-659

Drawn April 1954 by M.E.L.
Checked May 1954 by J.E.L.

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

Sheet No. 1A of 1.

FINAL PLANS

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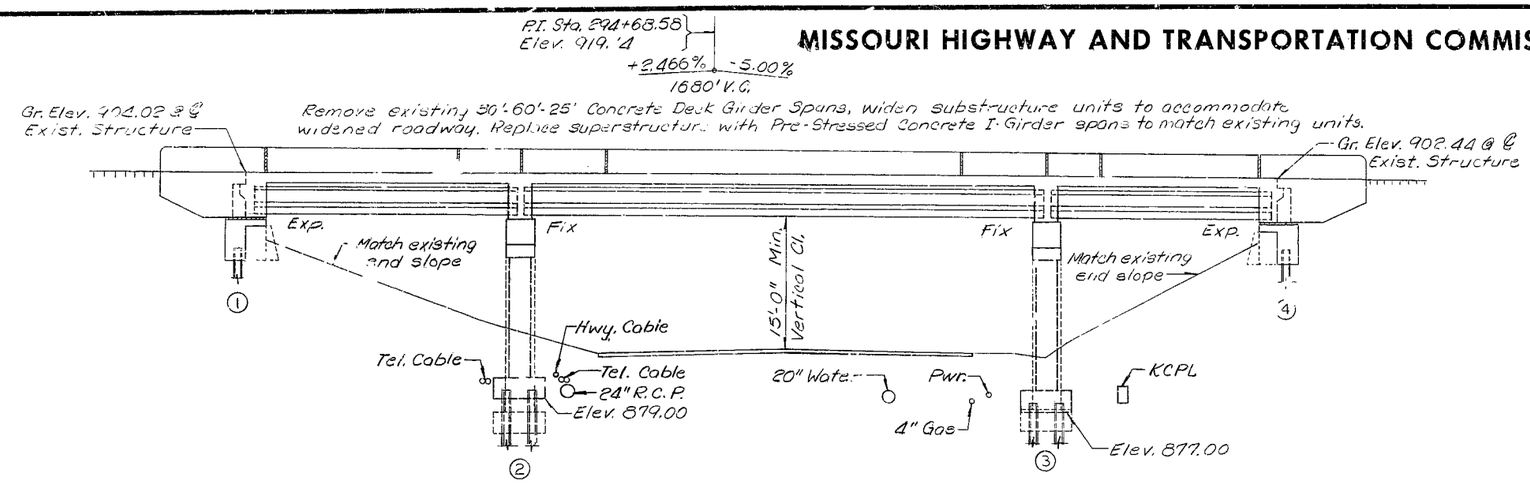
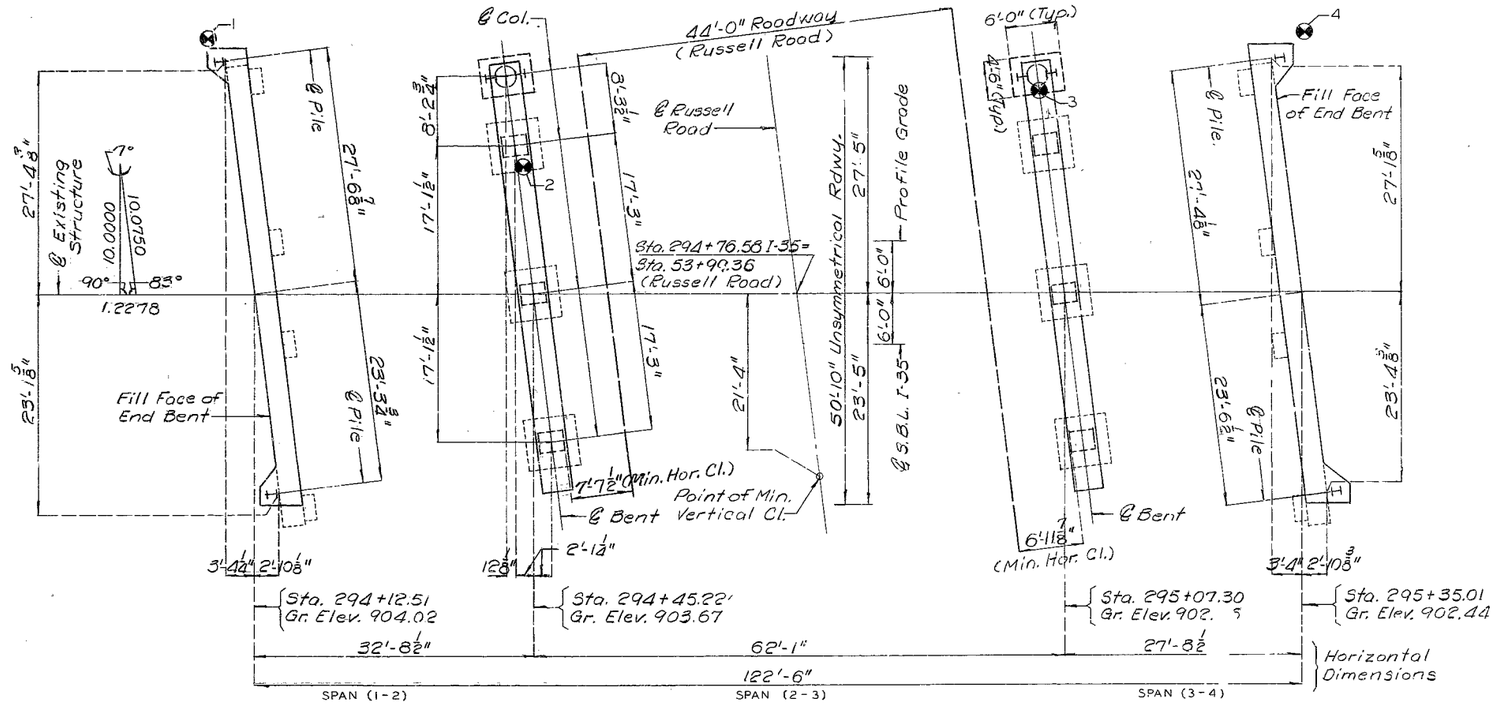
MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	30	
SEC. 1 & 12	TWP. 50N			RGE. 33W	



GENERAL ELEVATION



PLAN

Note:
"⊗" Indicates location of Borings.
For Boring Data see Sht. No. 2.

Note:
For Estimated Quantities and Pile & Footing Data see Sht. No. 2.

GENERAL NOTES:

Design Specifications: A.A.S.H.T.O. - 1977 Load Factor Design and Interim Specifications 1980

Design Loading:
H S20-44
15 # per sq. ft. Future Wearing Surface
Modified 24,000 # Tandem Axle
Earth 120 #, Equivalent Fluid Pressure 30 #
Superstructure: Simply supported non-composite for Dead Load. Continuous composite for Live Load.

Design Unit Stresses:
Class B Concrete (Substructure) f'c=3,000 psi
Class B1 Concrete (Safety Barrier Curb) f'c=4000 psi
Class B2 Concrete (Superstructure except Prestressed Girders and Safety Barrier Curb) f'c 4,000 psi
Reinforcing Steel (Grade 60) fy=60,000 psi
Steel Pile fb=9,000 psi

For Pre-Stressed Girder Stresses see Sheet Nos. 6, 7 and 8.

Bearings shall be 60 durometer Neoprene Pads.

Joint Filler: All Joint Filler shall meet the requirement of Std. Spec. 1057.2.4.

Reinforcing Steel: Minimum clearance to reinforcing steel shall be 1½" unless otherwise shown.

Construction Clearance: A minimum vertical clearance of 13'-6" from crown of existing lanes and a minimum lateral clearance of 33'-0" centered on existing lanes shall be maintained during construction.

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

Cost of furnishing, fabricating and installing Neoprene Bearing Pads complete in place, shall be paid for at the contract unit price for Plain and Laminated Neoprene Bearing Pads per each.

B.M. Elev. 902.15 ▫ On Top Of Rt Wing Bent No. 4 Sta. 295+35.75

BRIDGE OVER RUSSELL ROAD

STATE ROAD FROM RTE. 210 NORTH IN KANSAS CITY

PROJECT NO. I-IR-35-1(120) **STA.** 294+12.51

JOB NO. 4-1-35-340 **RTE.** I-35 S.B.L.

CLAY **COUNTY**

DATE 1/13/83

STD.
STD. 706.35
L-659R

DESIGNED AUG. 1981
DETAILED NOV. 1981
CHECKED DEC. 1981

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

Sheet No. 1 of 14.

305

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	31	

ESTIMATED QUANTITIES					
ITEM		SUBSTR.	SUPERSTR.	TOTAL
Special Work	Lump Sum		1	1
Removal Of Existing Bridge Deck	Sq. Ft.		5,574	5,574
Class 1 Excavation	Cu. Yd.	35		35
Structural Steel Piles (10 In.)	Lin. Ft.	244		244
Class B Concrete	Cu. Yd.	68.3		68.3
Reinforcing Steel	Pound	9,300		9,300
( ) Slab On Concrete I-Girder "*"	Sq. Yd.		728	728
Safety Barrier Curb	Lin. Ft.		285	285
Plain Neoprene Bearing Pads	Each		24	24
Laminated Neoprene Bearing Pads	Each		12	12
Prestressed Concrete I-Girder 30 Ft. Span	Each		6	6
Prestressed Concrete I-Girder 60 Ft. Span	Each		6	6
Prestressed Concrete I-Girder 25 Ft. Span	Each		6	6

Note;
All concrete and reinforcement above lower construction joint in end bents are included with superstructure quantities.
Cost of 3/4"⌀ coil tie rods placed in diaphragms is included in contract unit price for P/S members.
"*" See Special Provisions.

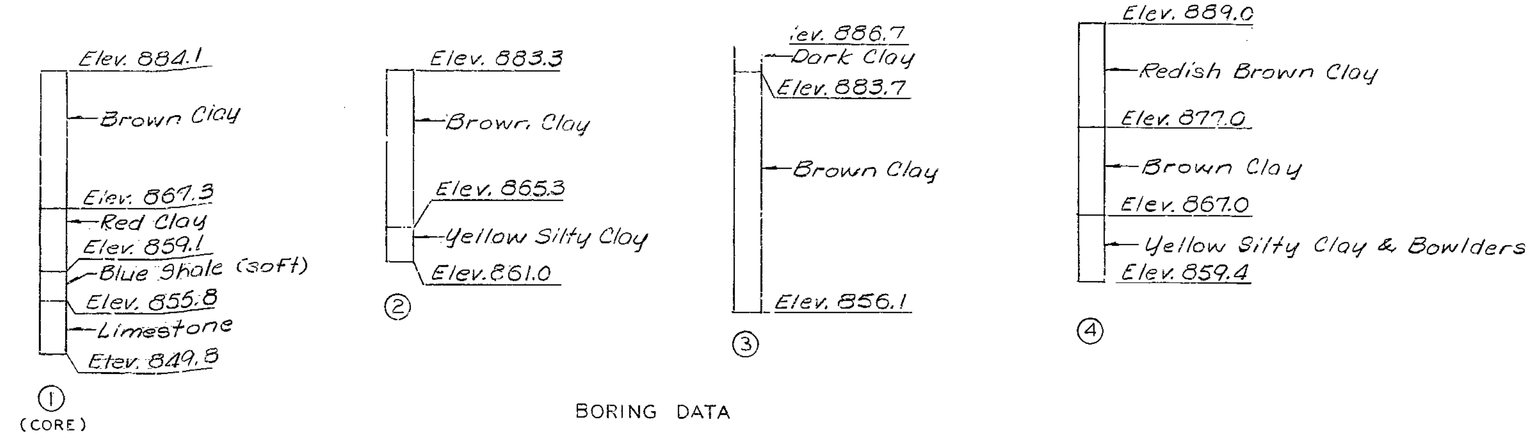
PILE DATA					
BENT NO.		1	2	3	4
Pile Type and size		HP10x42	HP10x42	HP10x42	HP10x42
Number		2	2	2	2
Approximate length	Ft.	40	24	22	36
Design Bearing	Tons	24	43	43	24
Hammer Energy required	Ft. lbs	7,000	9,600	9,600	7,000

Minimum energy requirement of hammer based on plan length and design bearing value of piles.
All pile shall be driven to practical refusal.

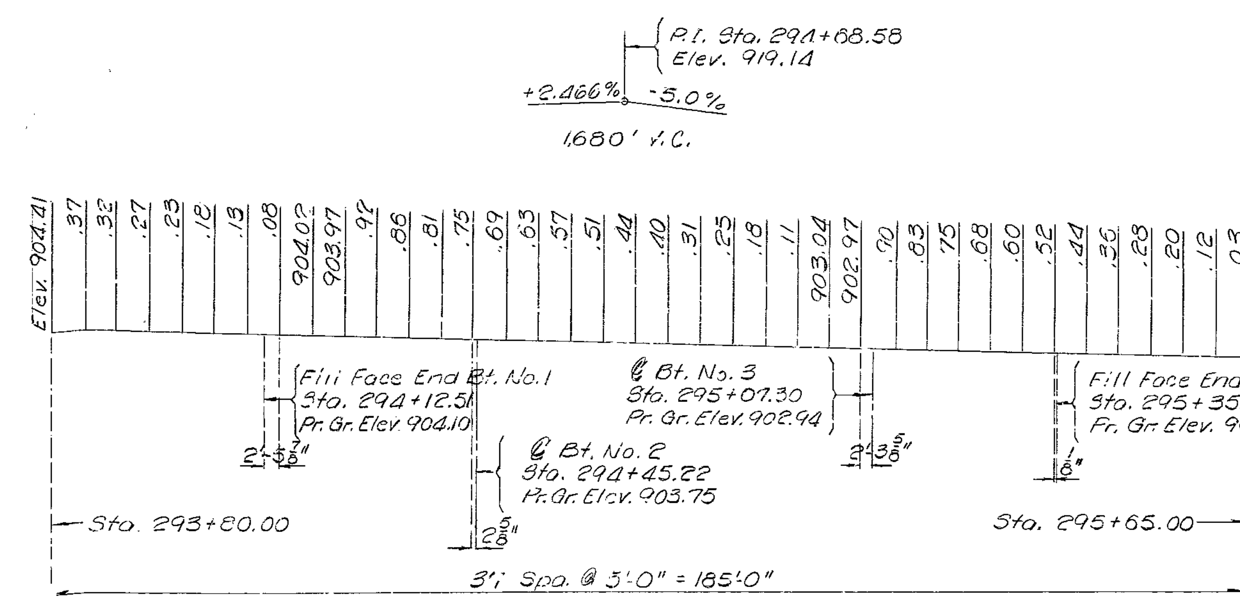
ESTIMATED QUANTITIES FOR ALTERNATE SLABS			
TYPE OF SLABS	Slab on Conc. I-Gdr.		
	Reinf. (Lbs.)		Conc.
	Epoxy	Plain	Cu. Yd.
Cast-In-Place Conventional Forms	28,680	26,580	256.7
Precast Panel Forms	28,680	7,590	219.2
Stay-In-Place Forms "**"	28,680	26,580	256.7

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.
Precast panel quantities based on skewed end panels.
"**" Does not include concrete required to fill corrugation of S.I.P. forms.

Note: For location of Borings see sheet No. 1.



BORING DATA



PROFILE GRADE ELEVATIONS

DETAILED Nov. 1981
CHECKED Nov. 1981

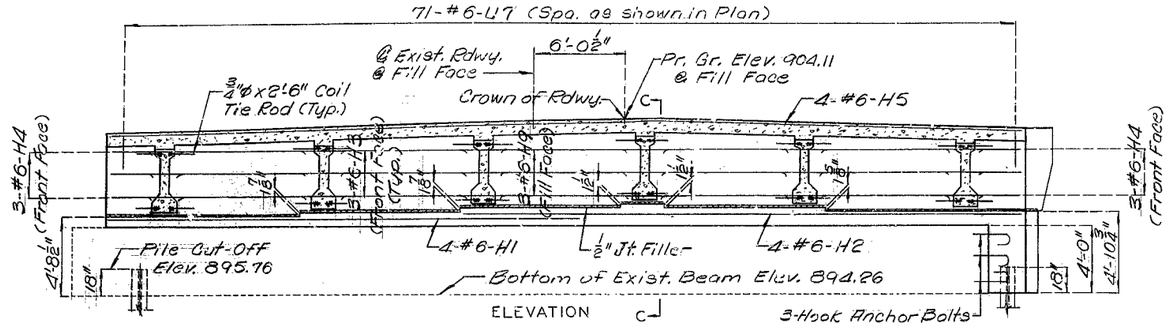
Note: This drawing is not to scale. Follow dimensions.

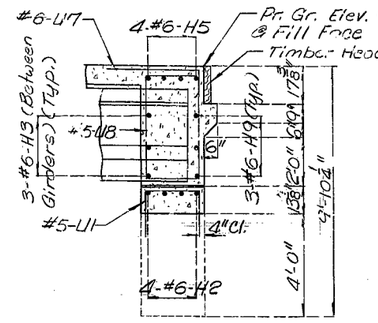
Sheet No. 2 of 14 . S... ...ANS

CLAY COUNTY

L-659R

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		13	32	

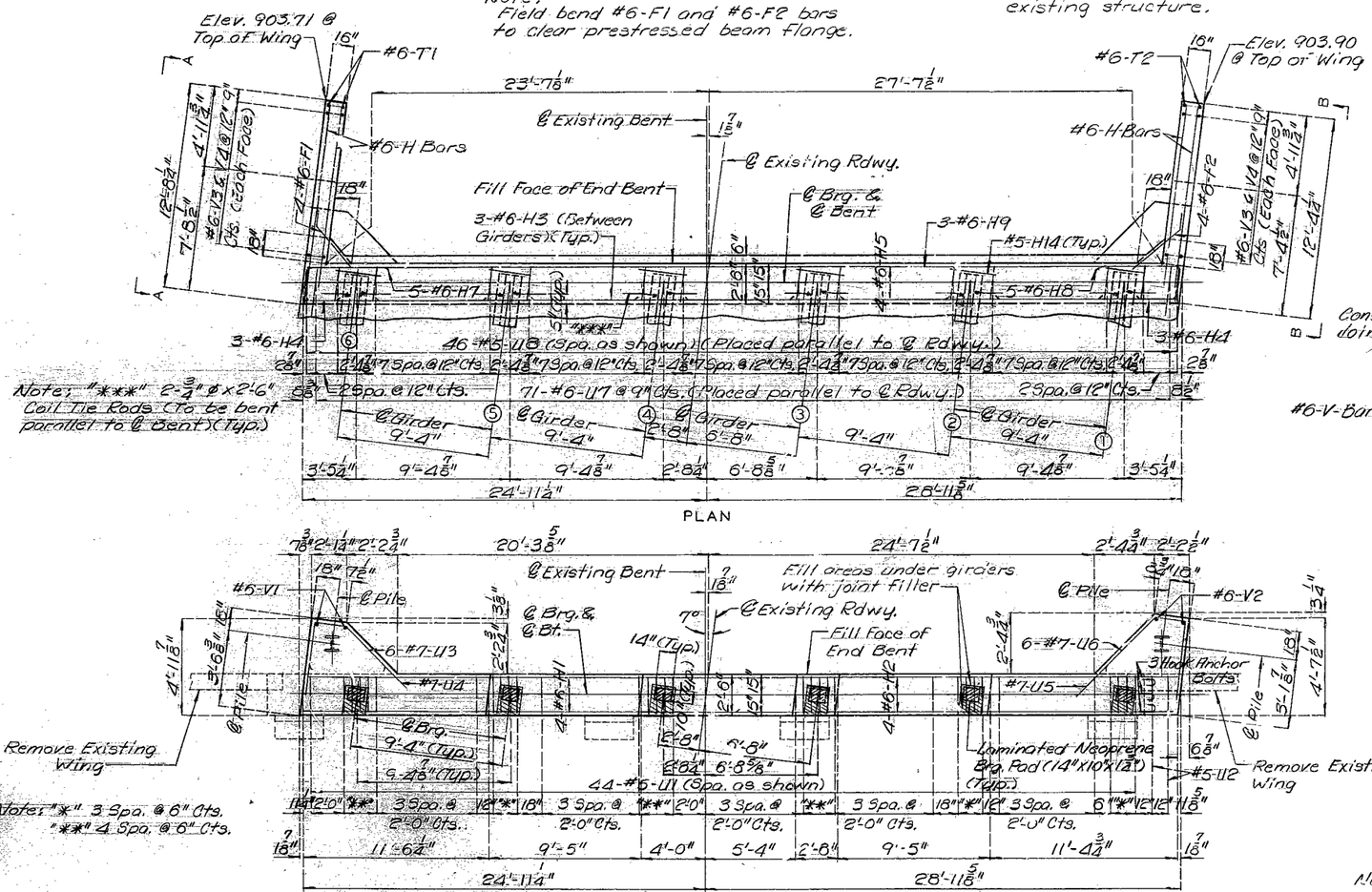


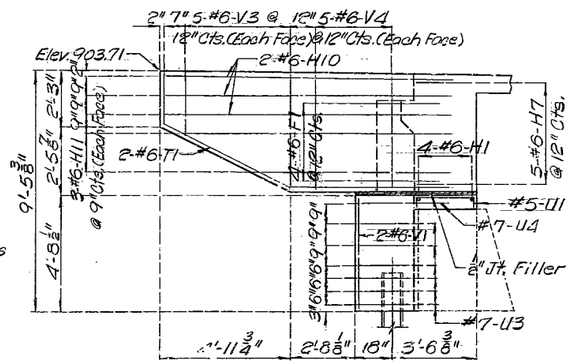


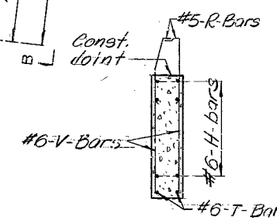
Note:
For details of Safety Barrier Curb see sheet No. 12.
All concrete in the end bent above top of beam and below top of slab shall be Class BZ.
Field bending shall be required for F1 & F2 Bars when necessary to conform to slope of wing.
Grout #5-U1 bars into existing concrete with expansive mortar. No direct payment will be made for drilling and mortar.

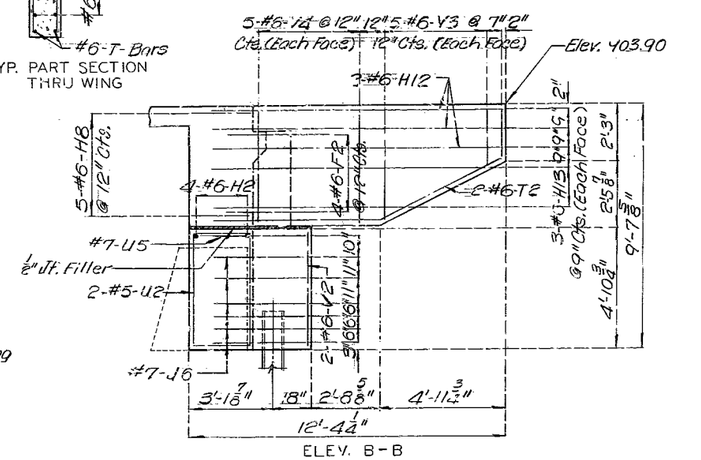
Note: Field bend #6-F1 and #6-F2 bars to clear prestressed beam flange.

Note: Light dashed lines indicate existing structure.









Note:
For Pile Splice detail see sheet No. 4.
For detail's of Hook Anchor Bolts see sheet No. 4.
For details of Laminated Neoprene Brg. Pad see Sht. No. 4.

Note: 1/2" Joint Filler on Top of beam not shown for clarity.

DETAILED Sept. 1981
CHECKED Nov. 1981

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

DETAILS OF END BENT NO. 1

Sheet No. 3 of 14.

CLAY COUNTY

L-659R

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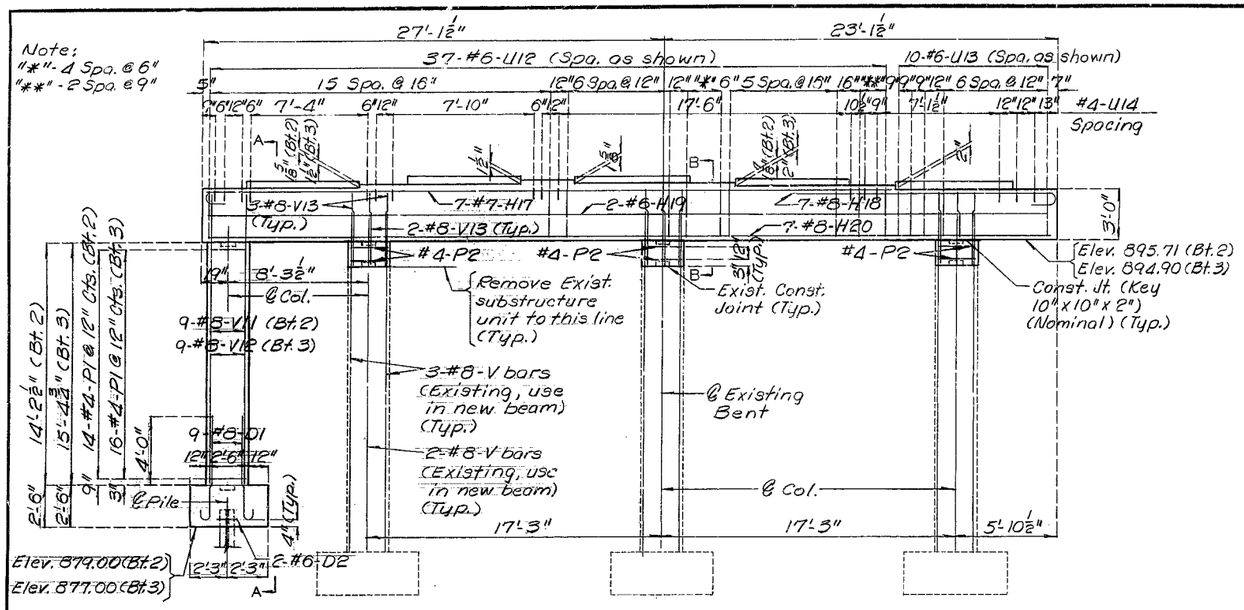
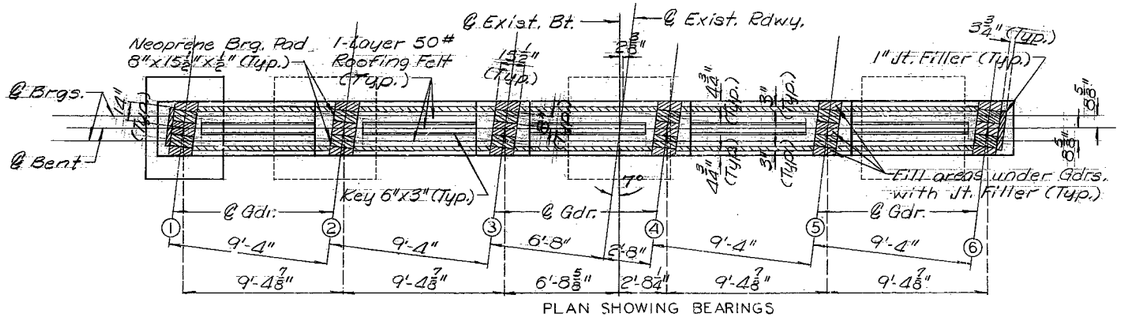
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	33	

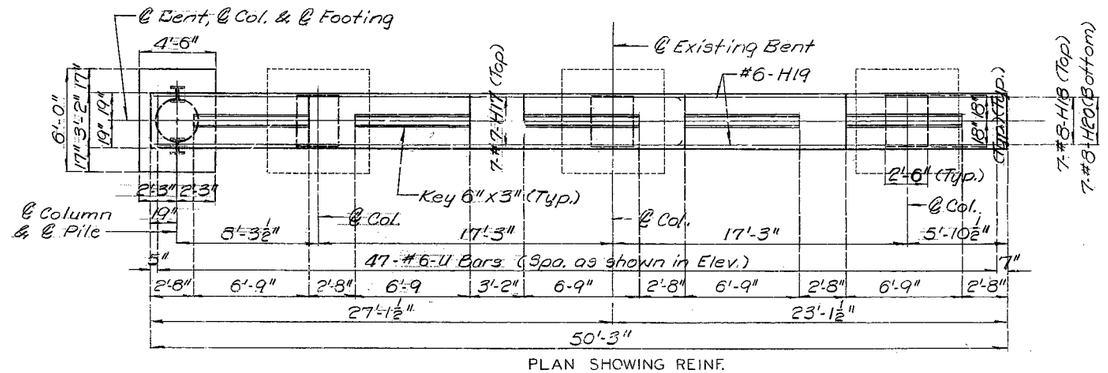


ELEVATION

Note:
Light dashed lines indicate existing structure.



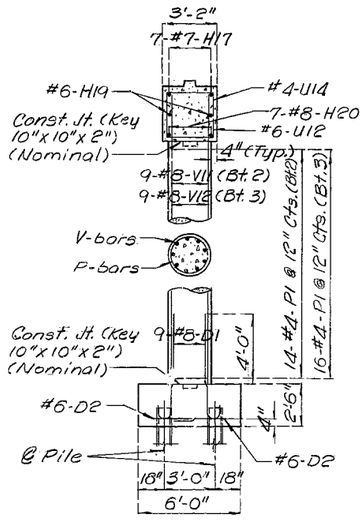
PLAN SHOWING BEARINGS



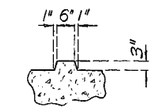
PLAN SHOWING REINF.

DETAILS OF INT. BT. NO. 2 & 3

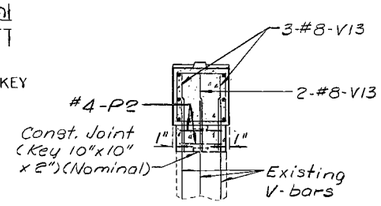
Note: This drawing is not to scale. Follow dimensions.



SECTION A-A

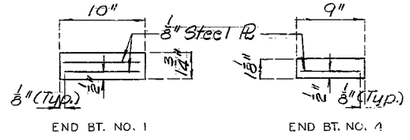


SECTION THRU KEY

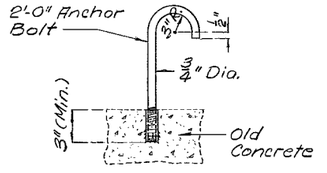


SECTION B-B

Note:
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.

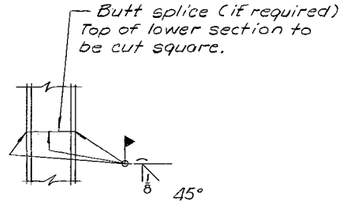


DETAILS OF LAMINATED NEOPRENE BRGS.



Note: Anchors shall be of the self drilling expansion type, made of casehardened and drawn carburized steel, with self-cutting annular broaching grooves.
Cost of furnishing and installing hook anchor bolt assemblies shall be included in contract unit price for concrete.

HOOK ANCHOR BOLT DETAILS



DETAIL OF STEEL PILE SPLICE

Note:
For location of Hook Anchor Bolts see Sht. No. 3 and Sht. No. 5.

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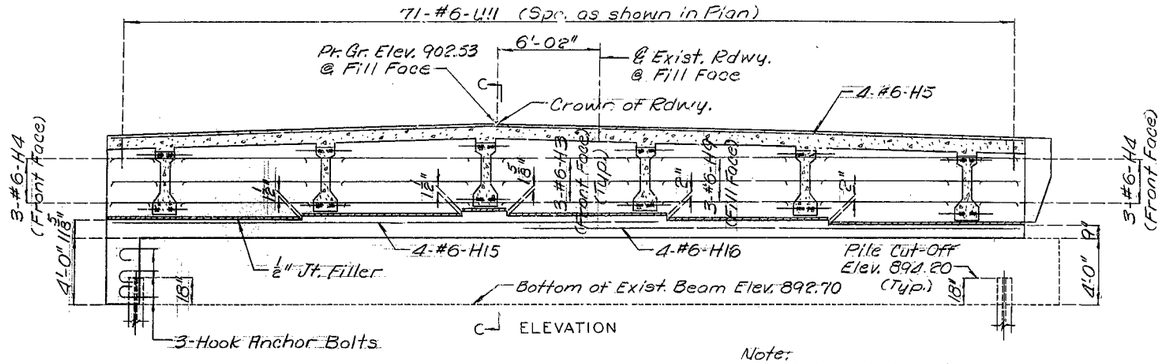
DETAILED Oct. 1981
CHECKED Nov. 1981

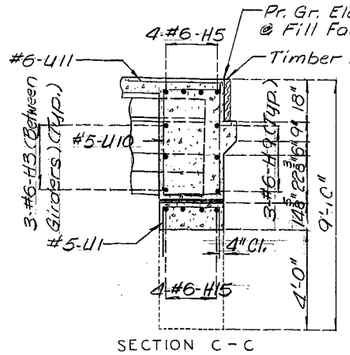
CLAY **COUNTY**

L-659R

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	34	

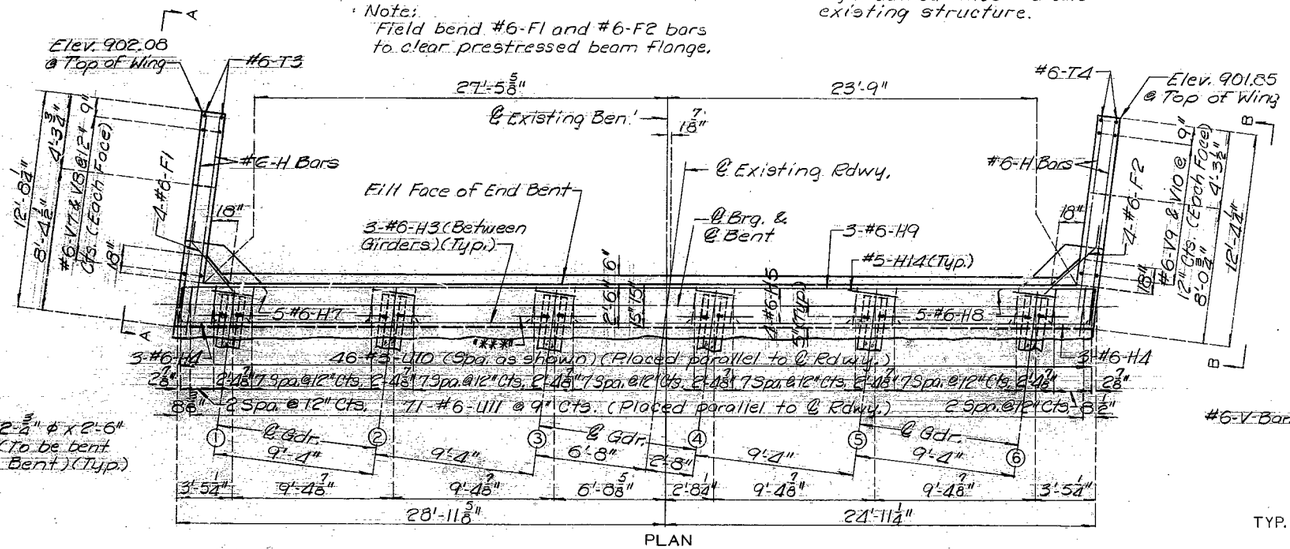


Note:
Light dashed lines indicate existing structure.



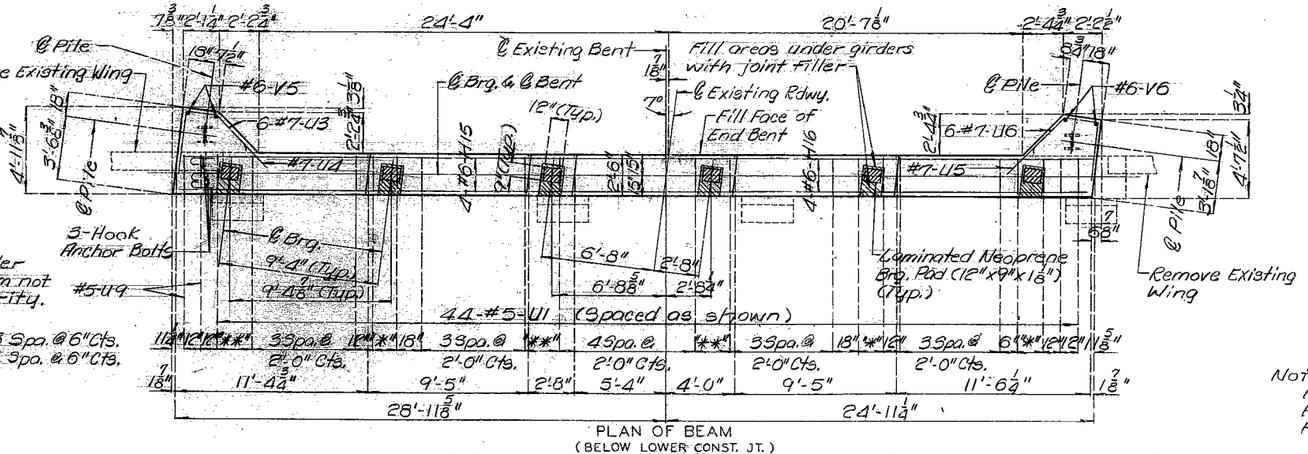
SECTION C-C

Note:
For details of Safety Barrier Curb see sheet No. 12.
All concrete in the end bent above top of beam and below top of slab shall be Class B2.
Field bending shall be required for F1 & F2 bars when necessary to conform to slope of wing.
Grout #5-U1 bars into existing concrete with exponsive mortar. No direct payment will be made for drilling and mortar.



PLAN

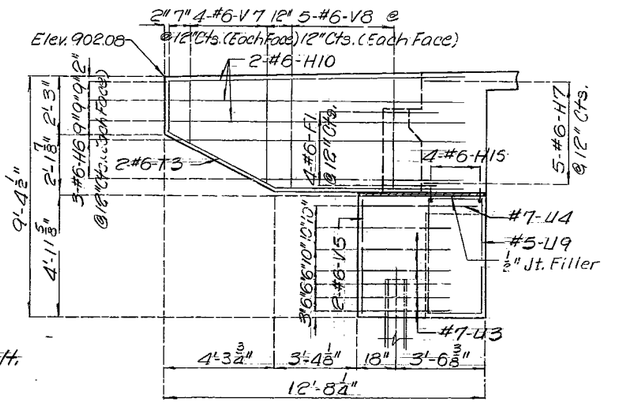
Note: "***" 2-3/4" ϕ x 2'-6" Coil Tie Rods (To be bent parallel to ℄ Bent) (Typ.)



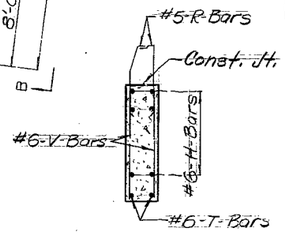
PLAN OF BEAM
(BELOW LOWER CONST. JT.)

Note:
"*" 3 Spa. @ 6" Cts.
"**" 4 Spa. @ 6" Cts.

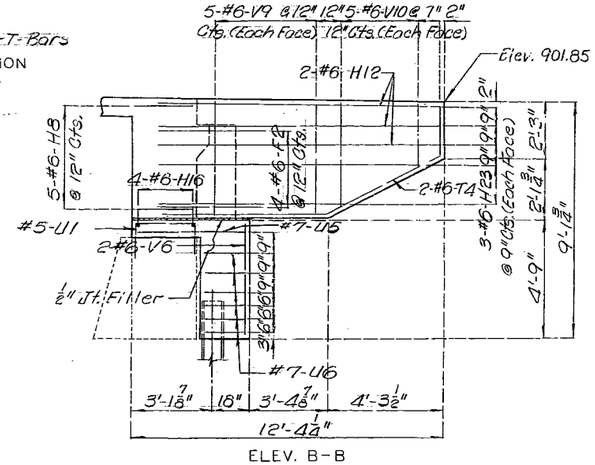
Note:
1/2" Joint Filler on top of beam not shown for clarity.



ELEV. A-A



TYP. PART SECTION THRU WING



ELEV. B-B

Note:
For Pile Splice detail see sheet No. 4.
For details of Hook Anchor Bolts see sheet No. 4.
For details of Laminated Neoprene Brg. Pad see Sht. No. 4.

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DETAILED Oct. 1981
CHECKED Nov, 1981

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

DETAILS OF END BENT NO. 4

Sheet No. 5 of 14.

CLAY COUNTY

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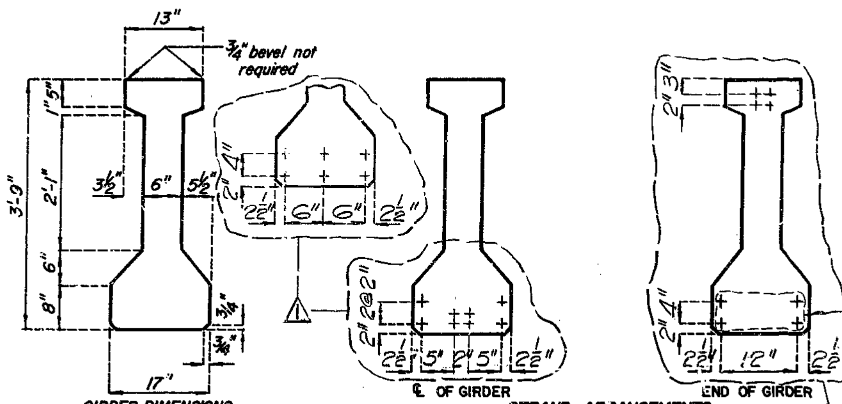
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	35	

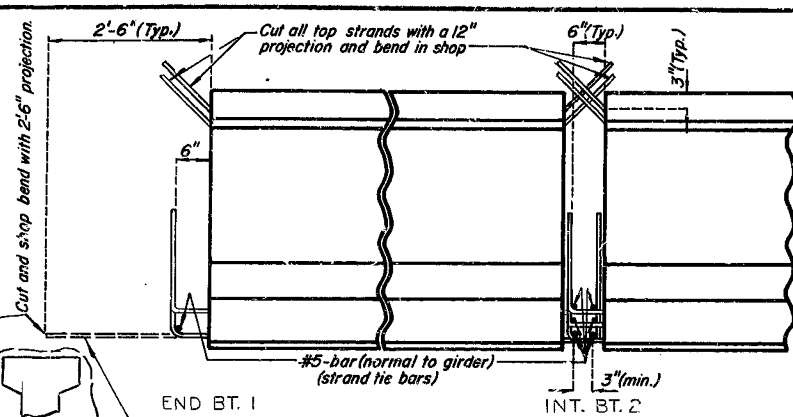


GIRDER DIMENSIONS

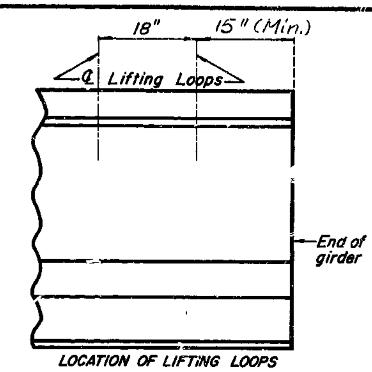
STRAND ARRANGEMENTS

℄ OF GIRDER

END OF GIRDER

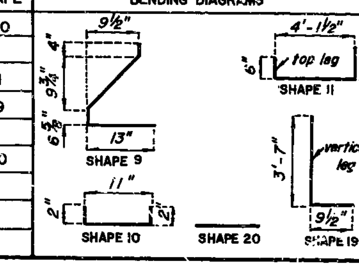


STRAND DETAILS AT GIRDER ENDS



LOCATION OF LIFTING LOOPS

BILL OF REINFORCING STEEL - EACH GIRDER				
NO.	SIZE & MARK	ACTUAL LENGTH	SHAPE	BENDING DIAGRAMS
2	6 A1	31'-5"	20	
42	5 B1	5'-3"	11	
4	5 B2	4'-3"	19	
21	4 C1	13"	10	
42	4 D1	3'-0"	9	



NOTE:

All dimensions are out to out.

Where deflecting strands interfere with placement, some in-place bending may be necessary.

Hooks and bends shall be in accordance with the CRSI Manual of Standard Practice for Detailing Reinforced Concrete Structures stirrup and tie dimensions.

Actual lengths are measured along centerline bar to the nearest inch. Minimum clearance to reinforcing shall be 1".

All reinforcement shall be Grade 60.

NOTE:

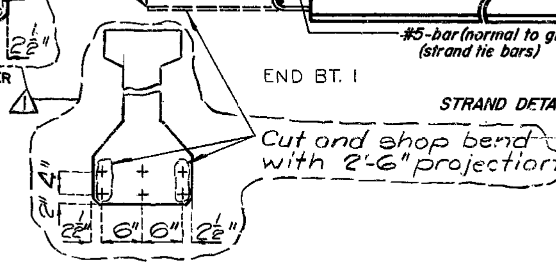
Concrete for prestressed girders shall be Class A1 with f'_c = 5,000 psi.

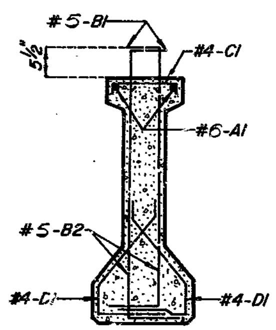
(+) indicates prestressed strand.

6 △1 Use 8 strands with an initial prestress force of 231 kips. △1 173

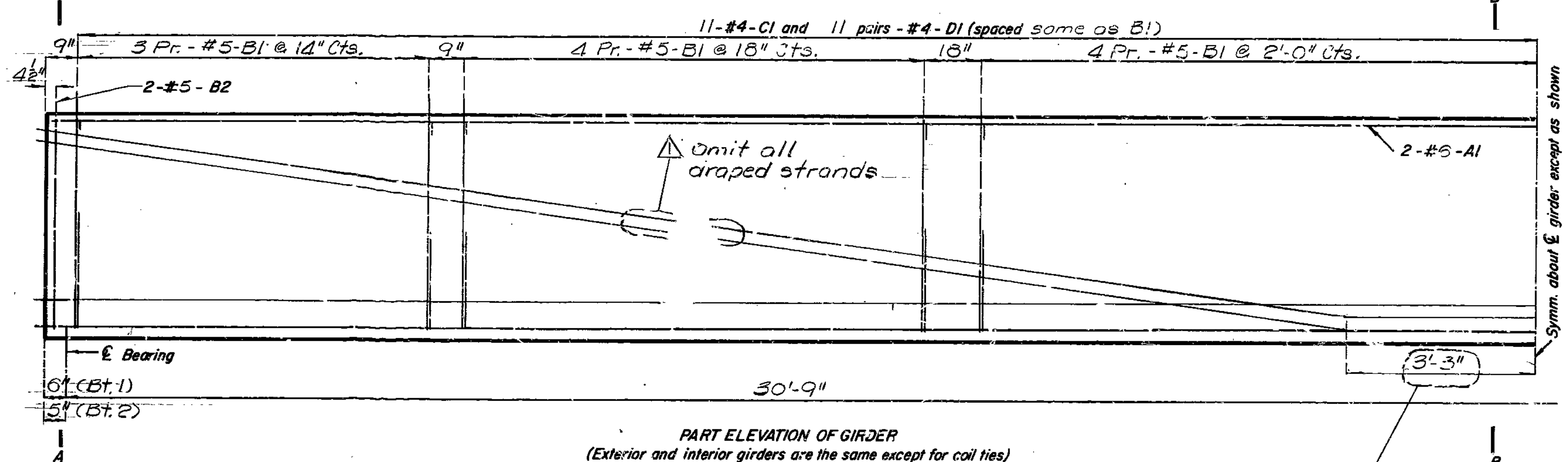
Cost of 3/4"⌀ coil tie rods placed in diaphragms is included in contract unit price for prestress concrete members.

Coil ties shall be held in place in the forms by slotted wire-setting-studs projecting thru forms. Studs are to be left in place or replaced with temporary plug until girders are erected and then replaced by coil tie rods.

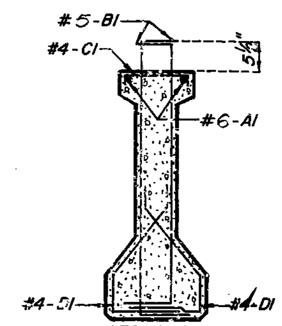




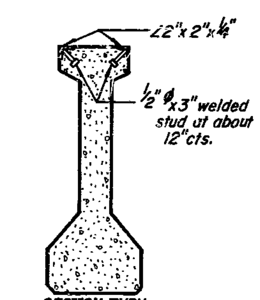
SECTION A-A
(strands not shown for clarity)



PART ELEVATION OF GIRDER
(Exterior and interior girders are the same except for coil ties)



SECTION B-B
(strands not shown for clarity)



SECTION THRU GIRDER

Note: Angles and welded studs to be cast-in-place on girders when alternate stay-in-place forms for slabs are used.

Angles to be placed no closer than 12" from end of girders.

Splices in the angles may be made at convenient lengths by a qualified welder.

Cost of angles and welded studs to be included in contract unit price for prestress concrete members.

Steel angles shall be galvanized in accordance with ASTM A123.

Note:
~~For location of Coil Ties see Sht. No. 3, 5 and 9.~~

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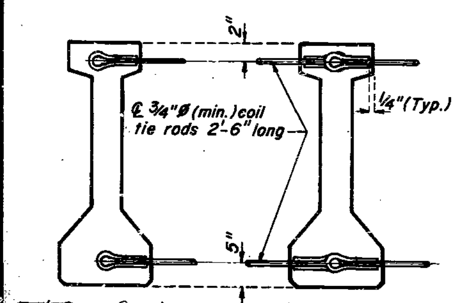
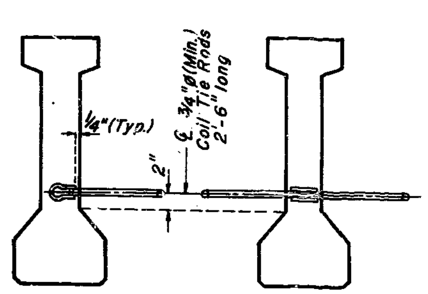


DETAILS OF COIL TIES



DETAILS OF COIL TIES AT INTERMEDIATE DIAPHRAGMS

DETAILS OF PRESTRESSED GIRDERS (SPAN 1-2)

SPS 55.4.6 April 1973	Revised MAY 1981

DETAILED Nov. 1981
CHECKED Nov. 1981

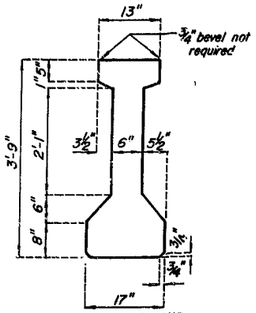
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 6 of 14.

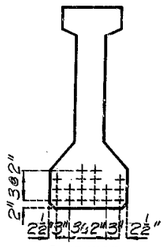
△1 Revised 6-20-83

CLAY COUNTY

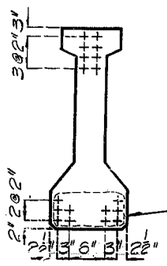
L-659R



GIRDER DIMENSIONS

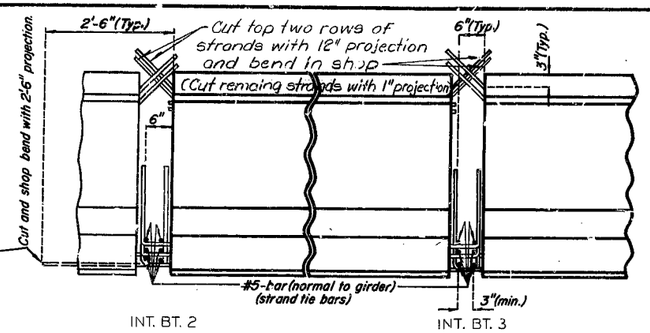


℄ OF GIRDER

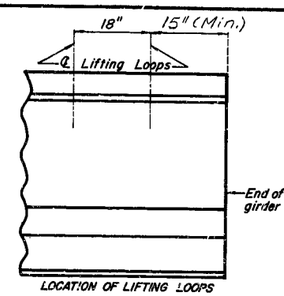


END OF GIRDER

STRAND ARRANGEMENTS



STRAND DETAILS AT GIRDER ENDS



LOCATION OF LIFTING LOOPS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	36	

BILL OF REINFORCING STEEL - EACH GIRDER

NO.	SIZE & MARK	ACTUAL LENGTH	SHAPE	BENDING DIAGRAMS
4	5 A1	32'-4"	20	
104	5 B1	5'-3"	11	
8	5 B2	4'-3"	19	
52	4 C1	13"	10	
104	4 D1	3'-0"	9	

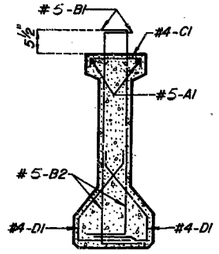
BENDING DIAGRAMS: 9½", 4", 9¾", 6", 13", SHAPE 9; 4'-1½", top leg, 6", 9½", SHAPE 11; 3'-7", vertical leg, 11", 2", SHAPE 10; SHAPE 20; 9½", SHAPE 19

NOTE:

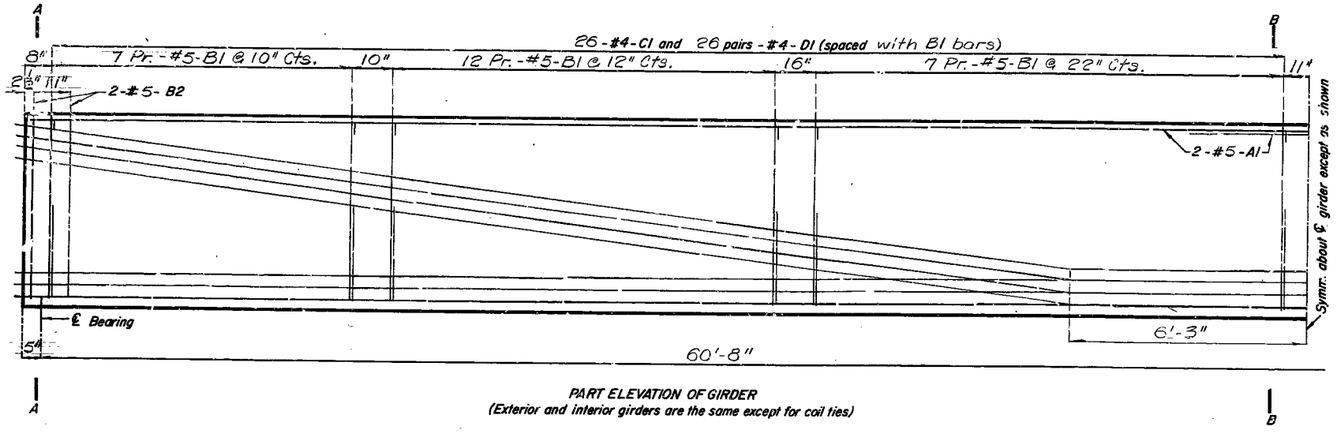
All dimensions are out to out.
Where deflecting strands interfere with placement, some in-place bending may be necessary.
Hooks and bends shall be in accordance with the CRSI Manual of Standard Practice for Detailing Reinforced Concrete Structures stirrup and tie dimensions.
Actual lengths are measured along centerline bar to the nearest inch.
Minimum clearance to reinforcing shall be 1".
All reinforcement shall be Grade 60.

NOTE:

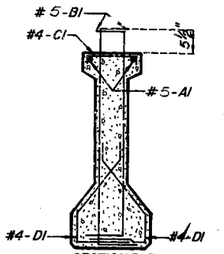
Concrete for prestressed girders shall be Class A1 with $f'_c = 5{,}000$ psi.
(+) indicates prestressed strand.
Use 15 strands with an initial prestress force of 520 kips.
Cost of ¾" ℄ coil tie rods placed in diaphragms is included in contract unit price for prestress concrete members.
Coil rods shall be held in place in the forms by slotted wire-setting-studs projecting thru forms. Studs are to be left in place or replaced with temporary plug until girders are erected and then replaced by coil tie rods.



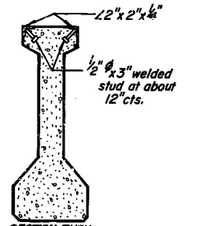
SECTION A-A
(strands not shown for clarity)



PART ELEVATION OF GIRDER
(Exterior and interior girders are the same except for coil ties)



SECTION B-B
(strands not shown for clarity)



SECTION THRU GIRDER

Note: Angles and welded studs to be cast-in-place on girders when alternate stay-in-place forms for slabs are used.
Angles to be placed no closer than 12" from end of girders.
Splices in the angles may be made at convenient lengths by a qualified welder.
Cost of angles and welded studs to be included in contract unit price for prestress concrete members.

Steel angles shall be galvanized in accordance with ASTM A123.

Note;
For Details of Coil Tie Rods see Sht. No. 6.

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SPS 55.4.6 April 1973	Revised MAY 1981

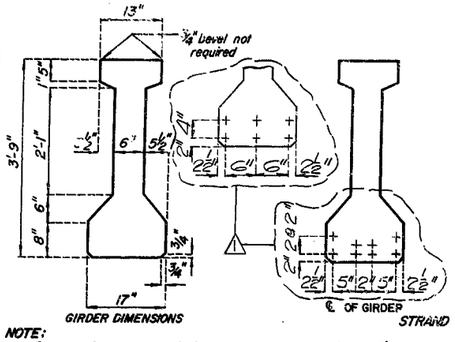
DETAILED Nov. 1981
CHECKED Nov. 1981

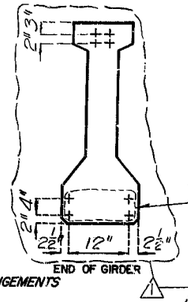
DETAILS OF PRESTRESSED GIRDERS (SPAN 2-3)

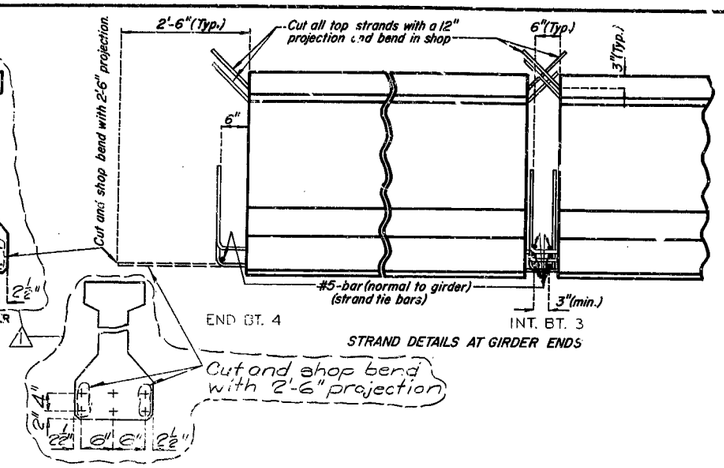
Note: This drawing is not to scale. Follow dimensions.

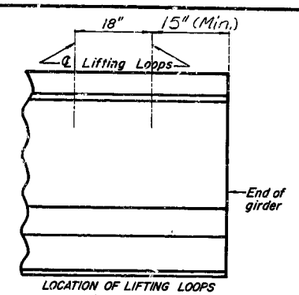
CLAY COUNTY

L-659R









FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	37	

BILL OF REINFORCING STEEL - EACH GIRDER

NO.	SIZE & MARK	ACTUAL LENGTH	SHAPE	BENDING DIAGRAMS
2	7 A1	26'-4"	20	
32	5 B1	5'-3"	11	
4	5 B2	4'-3"	19	
16	4 C1	13"	10	
32	4 D1	3'-0"	9	

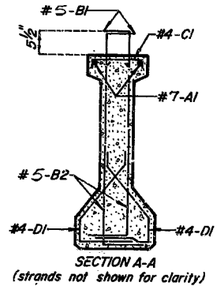
SHAPE 11 · SHAPE 9 · SHAPE 10 · SHAPE 20 · SHAPE 19

NOTE:

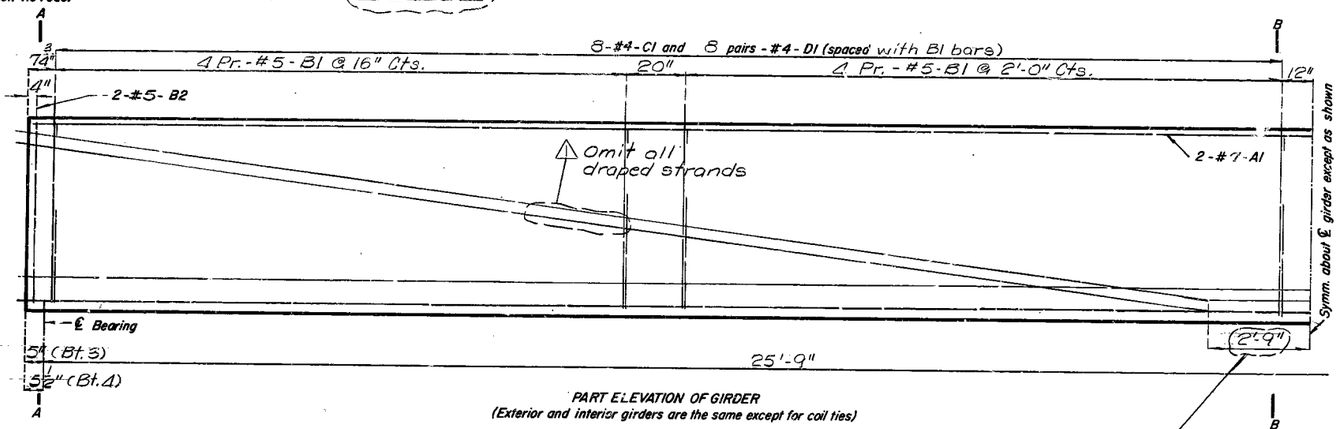
All dimensions are out to out.
Where deflecting strands interfere with placement, some in-place bending may be necessary.
Hooks and bends shall be in accordance with the CRSI Manual of Standard Practice for Detailing Reinforced Concrete Structures stirrup and tie dimensions.
Actual lengths are measured along centerline bar to the nearest inch.
Minimum clearance to reinforcing shall be 1".
All reinforcement shall be Grade 60.

NOTE:

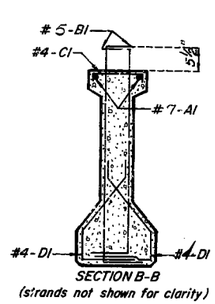
Concrete for prestressed girders shall be Class A1 with f'_c = 5,000 psi.
(+) indicates prestressed strand.
6 Use (8) strands with an initial prestress force of (221) kips. △173
Cost of ¾" ℄ coil tie rods placed in diaphragms is included in contract unit price for prestress concrete members.
Coil ties shall be held in place in the forms by slotted wire-setting-studs projecting thru forms. Studs are to be left in place or replaced with temporary plug until girders are erected and then replaced by coil tie rods.



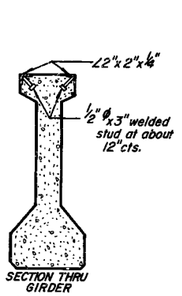
SECTION A-A
(strands not shown for clarity)



PART ELEVATION OF GIRDER
(Exterior and interior girders are the same except for coil ties)



SECTION B-B
(strands not shown for clarity)



SECTION THRU GIRDER

Note: Angles and welded studs to be cast-in-place on girders when alternate stay-in-place forms for slabs are used.
Angles to be placed no closer than 12" from end of girders.
Splices in the angles may be made at convenient lengths by a qualified welder.
Cost of angles and welded studs to be included in contract unit price for prestress concrete members.
Steel angles shall be galvanized in accordance with ASTM A123.

Note:
For Details of Coil Tie Rods
See Sht. No. 6.

3/12

SPS 55.4.6 | Revised April 1973 | MAY 1981

DETAILED Nov. 1981
CHECKED Nov. 1981

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

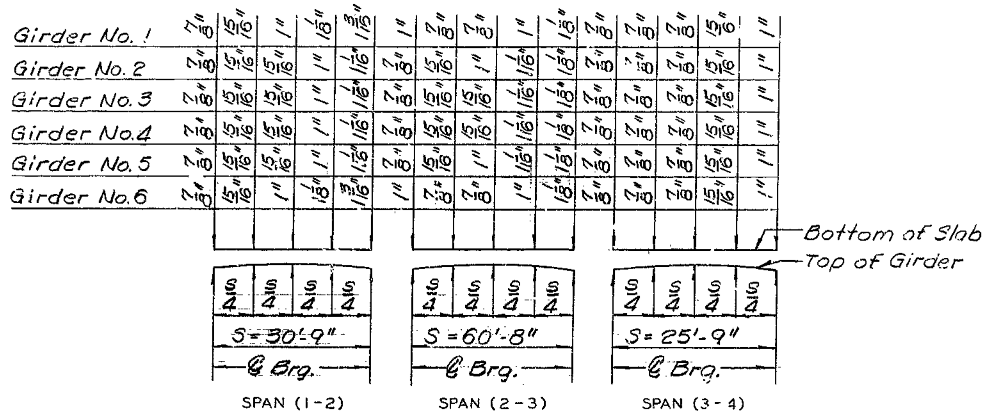
DETAILS OF PRESTRESSED GIRDERS (SPAN 3-4)

Sheet No. 8 of 14.

△ Revised 6-20-83

CLAY COUNTY

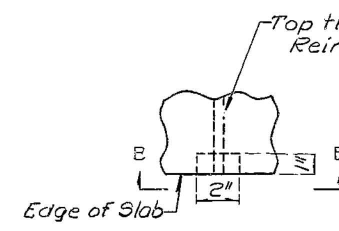
L-659R



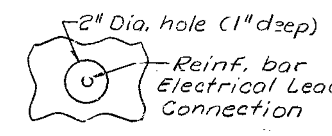
THEORETICAL SLAB HAUNCHING DIAGRAM

Note: Slab to be built parallel to grade and to a minimum thickness of 8½". Slab haunches to be adjusted for any difference in girder camber from that shown in the Camber Diagram. Concrete in slab haunches is included in the Estimated Quantities for Alternate Slabs.

Note: For location of Detail "A" see Sht. No. 10.

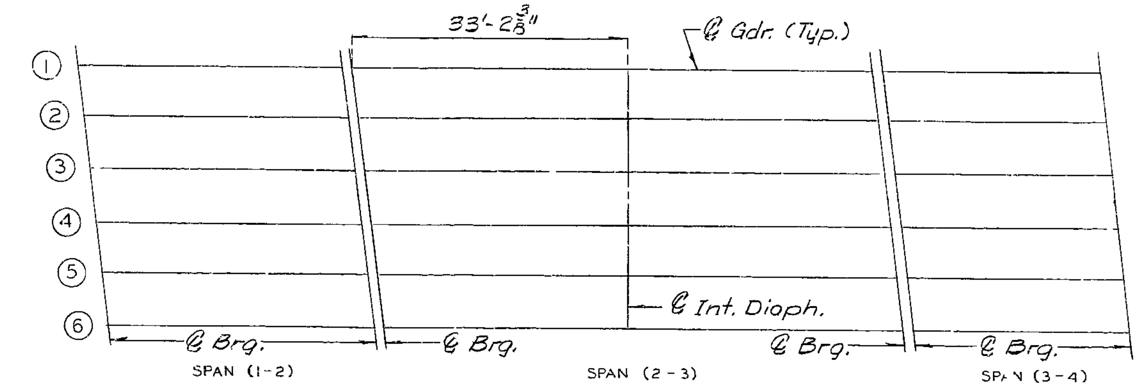


DETAIL "A"

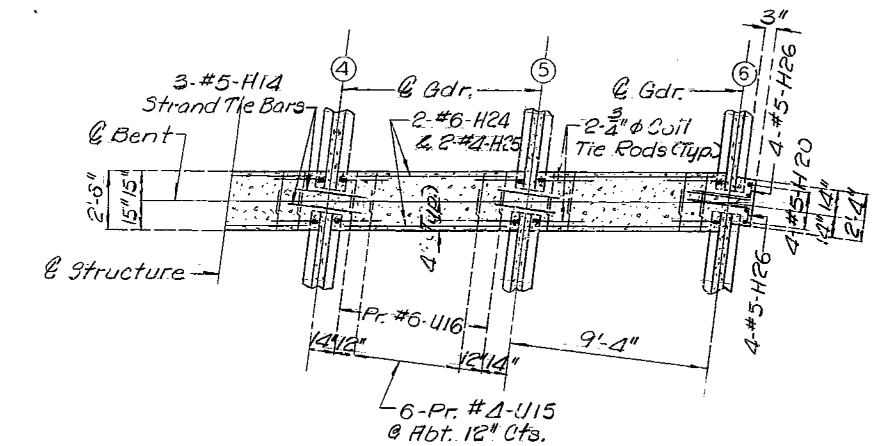


ELEVATION B-B

Note:
2 Electrical Lead Connections required. Actual location to be designated by the Engineer as part of the test system.

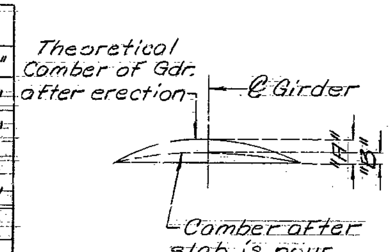


PLAN OF GIRDERS SHOWING LOCATION OF INTERMEDIATE DIAPHRAGMS



SECTION A-A

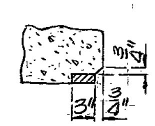
GDR. NO.	SPAN (1-2) "A"	SPAN (1-2) "B"	SPAN (2-3) "A"	SPAN (2-3) "B"	SPAN (3-4) "A"	SPAN (3-4) "B"
1	3/16"	1/8"	1 3/16"	7/16"	1/8"	1/8"
2	3/16"	1/8"	1 3/16"	1/4"	1/8"	1/8"
3	3/16"	1/8"	1 3/16"	5/16"	1/8"	1/8"
4	3/16"	1/8"	1 3/16"	5/16"	1/8"	1/8"
5	3/16"	1/8"	1 3/16"	1/4"	1/8"	1/8"
6	3/16"	1/8"	1 3/16"	7/16"	1/8"	1/8"



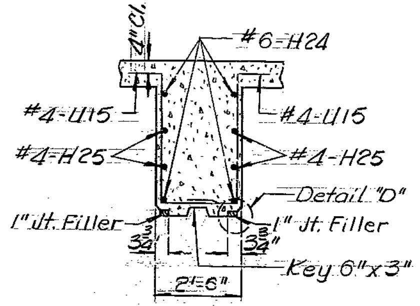
GIRDER CAMBER DIAGRAM

Note: Theoretical camber at .25 and .75 points equal 0.7125 of camber at half span.

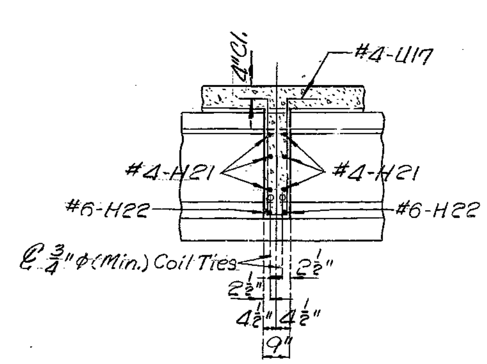
Note:
For Details of Coil Ties see Sht. No. 5
Intermediate diaphragms are normal to grade.
Diaphragms at intermediate bents are vertical.



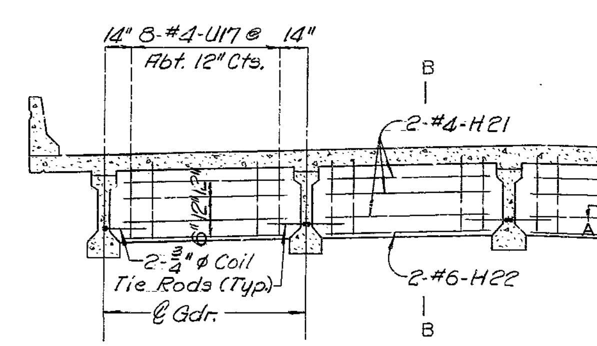
DETAIL "D"



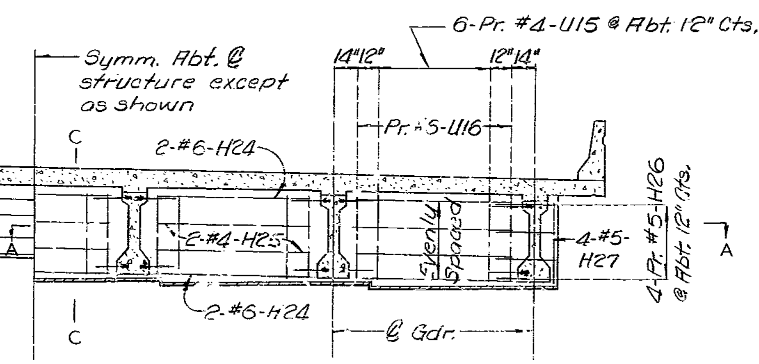
SECTION C-C



SECTION B-B

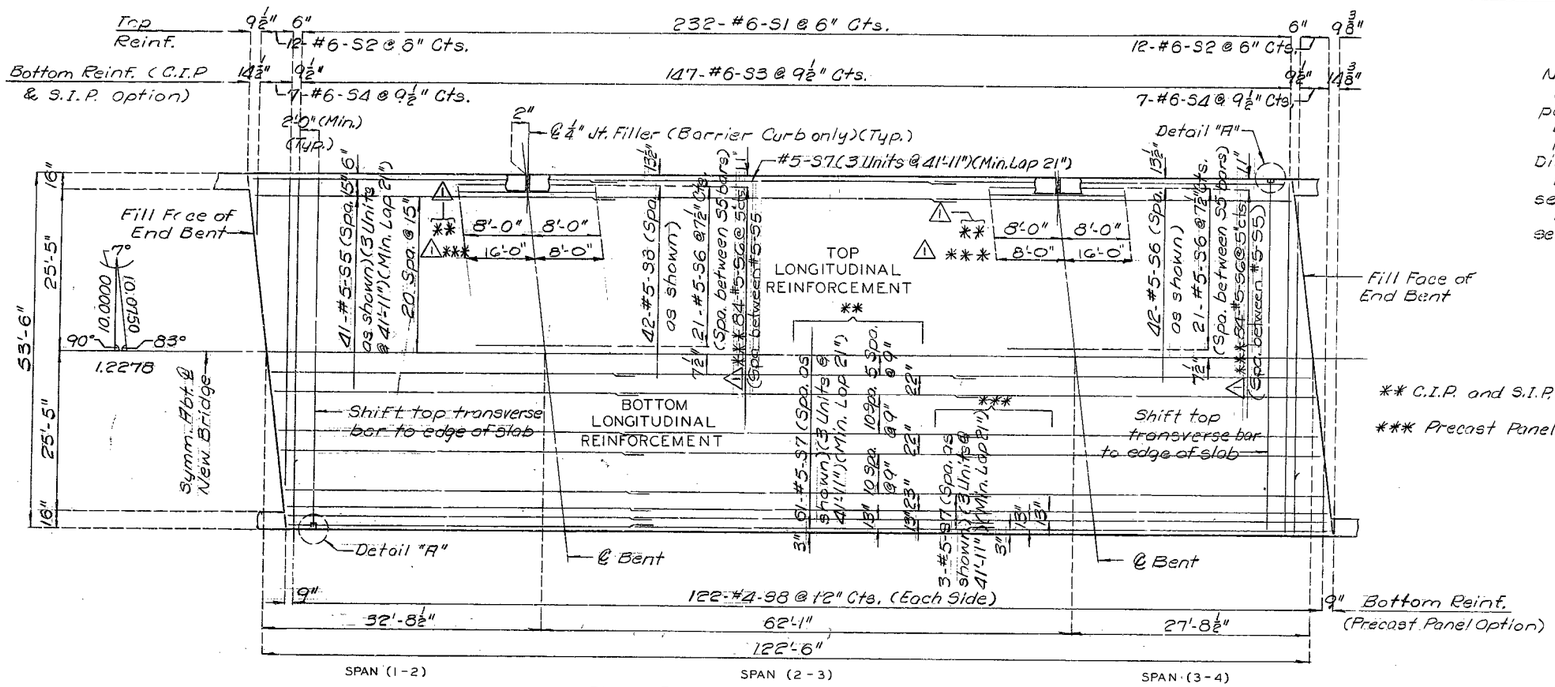


TYP. HALF SECTION NEAR INT. DIAPH.



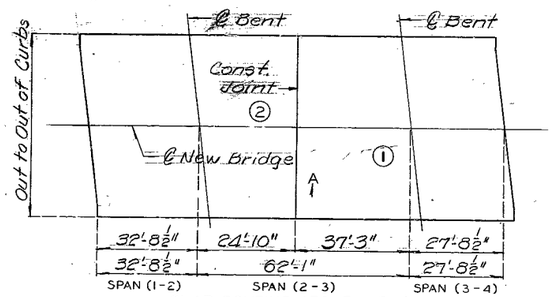
TYP. HALF SECTION NEAR INT. BENTS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	39	



PLAN OF SLAB SHOWING REINFORCEMENT

Note:
Longitudinal dimensions shown are taken parallel to grade along ℄ new bridge @ top of slab.
For Detail "A" see Sht. No. 9.
For Girder Camber and Slab Haunching Diagram see Sht. No. 9.
For Details of Prestressed Panel Option see Sht. No. 11.
For Details of Safety Barrier Curb not shown see Sht. No. 12.

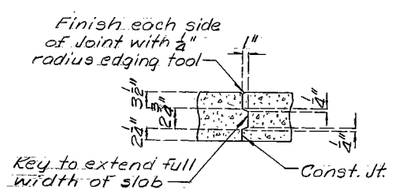


SLAB POURING SEQUENCE

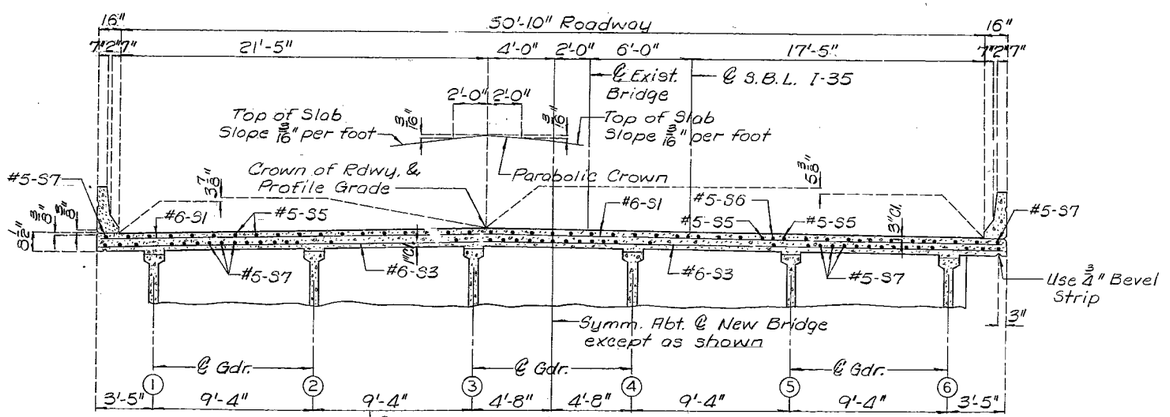
	SEQUENCE OF POURS		*
	DIRECTION		
BASIC SEQUENCE	1 END TO 2	2 1 TO END	28
Alternate pours to the basic sequence are subject to the approval of the engineer in accordance with section 703.3.12.4 of Missouri Standard Specifications.			
ALTERNATE "A" POURS	1 + 2 END TO END		28

* Min. Rate of Pour (Cu. Yds./Hr.)

Note:
The contractor shall furnish an approved retarder to retard the set of the concrete to 2.5 hours and shall pour and satisfactorily finish the slab pours at the rate given.
The diaphragm at the intermediate bents and end bents shall be poured a minimum of 30 minutes and a maximum of 2 hours before the slab is poured.
Intermediate diaphragms within spans may be poured with the construction joint between the diaphragm and slab or monolithic with slab.



SECTION A-A



HALF SECTION NEAR ℄ SPAN (2-3) — HALF SECTION NEAR INT. BTS.
SPAN (1-2) AND (3-4) SIMILAR

3/4

DETAILED Nov. 1981
CHECKED Nov. 1981

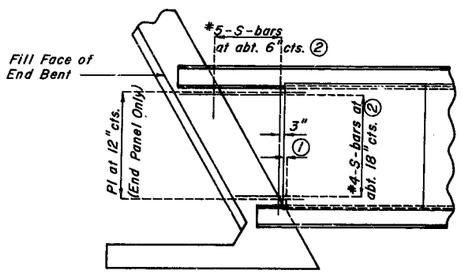
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 10 of 14. ⚠ Revised 3/25/83

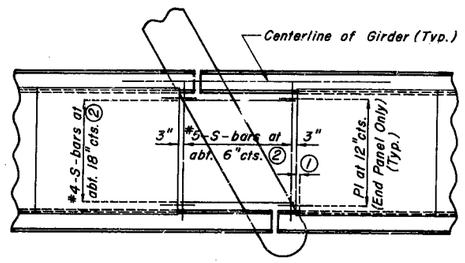
CLAY COUNTY

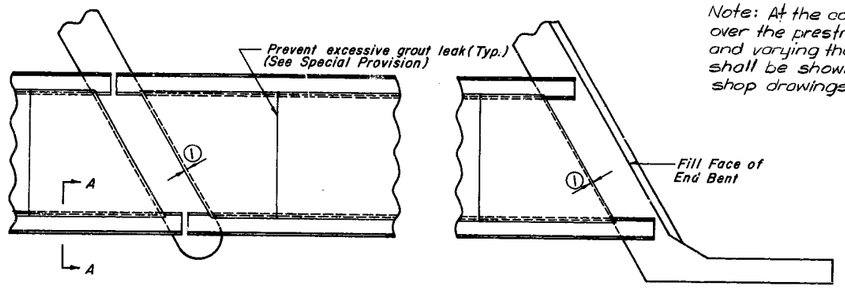
L-659R

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	40	



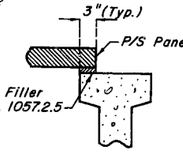
PANELS – SQUARED ENDS





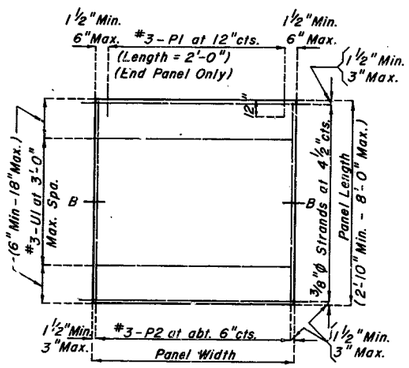
PANELS – SKEWED ENDS

Note: At the contractors option a 5⅜" min. depth slab over the prestressed panel may be used by increasing and varying the girder top flange depth. Dimensions shall be shown on the shop drawings.

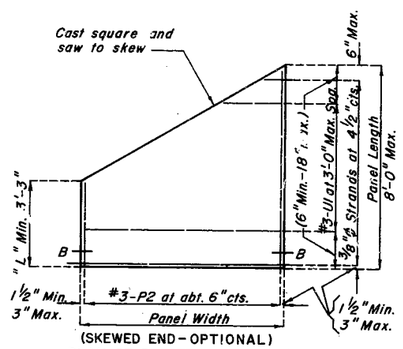


SECTION A-A

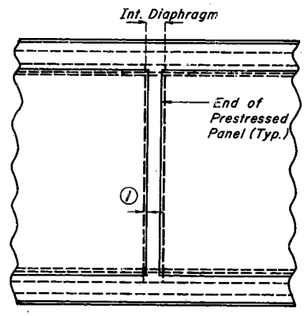
PLAN OF PRESTRESSED PANEL PLACEMENT



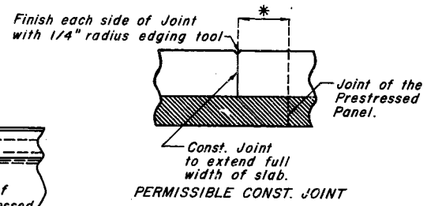
PLAN OF PRESTRESSED PANEL



(SKEWED END – OPTIONAL)
PLAN OF PRESTRESSED PANEL

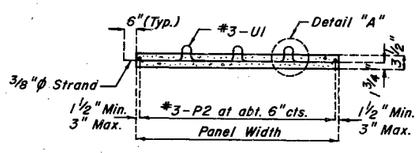


PLAN OF INT. DIAPHRAGM

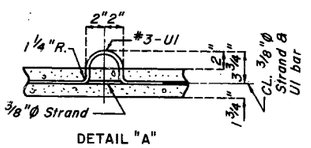


PERMISSIBLE CONST. JOINT

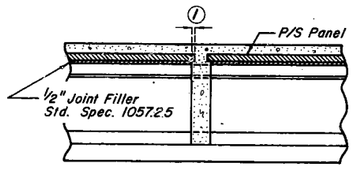
* Adjust the Permissible Const. Joint to a clearance of 6" min. from the joints of the Prestressed Panels.



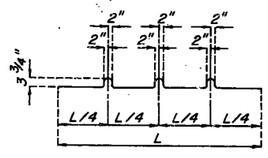
SECTION B-B



DETAIL "A"



SECTION THRU INT. DIAPHRAGM



BENDING DIAGRAM FOR U1 BAR

NOTE:

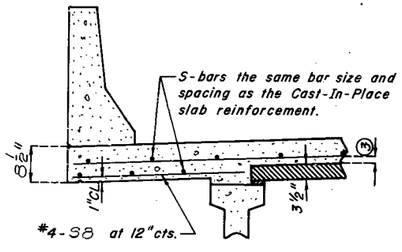
① End panel to be dimensioned 1" inside face of diaphragm.

② S-bars shown are bottom steel in slab between panels and used with squared end panels only.

Cost of S-bars shall be included in price bid for Slab per sq. yd.

NOTES CON'T.

Support from diaphragm forms required under optional skewed end until Cast-In-Place concrete has reached its minimum compressive strength.



SECTION THRU CANTILEVER

③ 1" CL. Min. #5 and #6 bars.

NOTE: Slab exterior girder haunch to be the same as Cast-In-Place.

Slab depth over Prestressed Panel varies due to girder camber. Top of slab above Prestressed Panels to be built parallel to grade and to a min. thickness of 5⅜"

GENERAL NOTES:

PRESTRESSED PANELS:

CONCRETE FOR PRESTRESSED PANELS SHALL BE CLASS A1 WITH f'c = 5,000 psi.

THE TOP SURFACE OF ALL PLANKS SHALL RECEIVE A SCORED FINISH WITH A DEPTH OF SCORING OF 1/8" PERPENDICULAR TO THE PRESTRESSING STRANDS IN THE PLANK (SEE SPECIAL PROVISIONS).

PRESTRESSING TENDON SHALL BE HIGH-TENSILE STRENGTH UNCOATED SEVEN-WIRE (7) STRESS RELIEVED STRANDS FOR PRESTRESSED CONCRETE CONFORMING TO A.S.T.M A-416 EXCEPT THAT NOMINAL DIAMETER OF STRAND = 3/8" AND NOMINAL AREA = 0.085 SQ. IN. AND MINIMUM ULTIMATE STRENGTH = 23,000 LBS. (270 KSI). LARGER STRANDS MAY BE USED WITH THE SAME SPACING AND INITIAL TENSION.

INITIAL PRESTRESSING FORCE = 16.1 KIPS/STRAND.

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

SUITABLE HOLES OR 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 SUPPORTS IT IS REQUIRED THAT THE SKEWED PORTION TO BE CAST-IN-PLACE. QUANTITIES ARE INCLUDED IN PAYMENT FOR SLAB ON CONCRETE I GIRDERS.

REINFORCING STEEL:

ALL DIMENSIONS ARE OUT TO OUT.

MINIMUM CLEARANCE TO REINFORCING STEEL SHALL BE 1-1/2" 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.

315

P/S Panel	JAN. 1980	Revised	SEPT. 1981

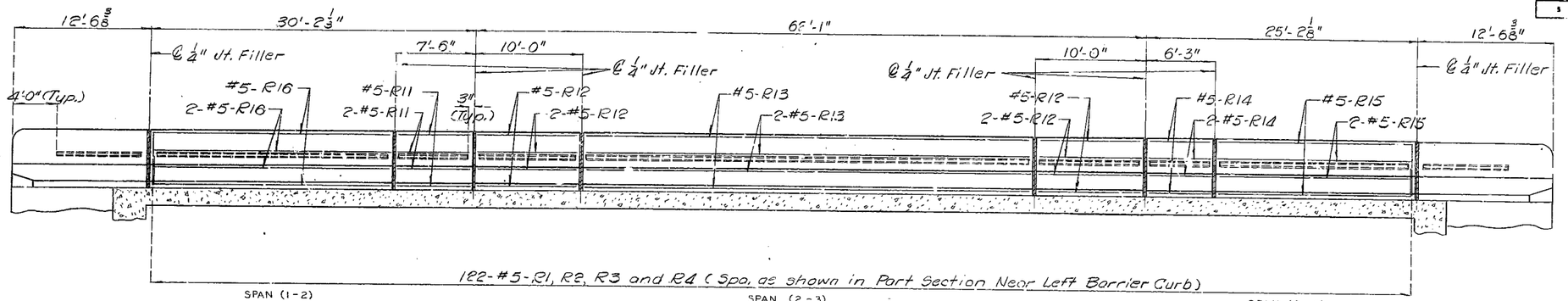
DETAILED Nov. 1981
CHECKED Nov. 1981

DETAILS OF PRECAST PRESTRESSED PANELS

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

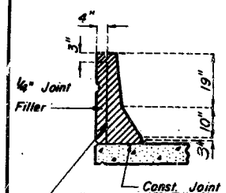
CLAY COUNTY L-659R

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	W.VA.		19	41	



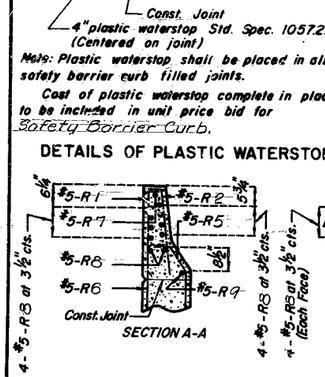
SECTION NEAR LEFT BARRIER CURB
(RIGHT BARRIER CURB SIMILAR)

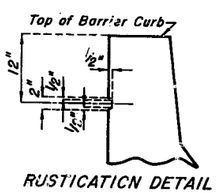
Note:
Longitudinal dimensions are along top edge of slab parallel to grade.
All reinforcing steel in barrier curbs shall be epoxy coated.

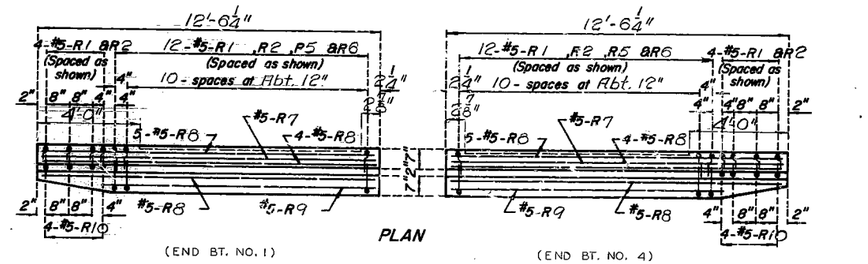


Note: Plastic waterstop shall be placed in all safety barrier curb filled joints.
Cost of plastic waterstop complete in place to be included in unit price bid for Safety Barrier Curb.

DETAILS OF PLASTIC WATERSTOP

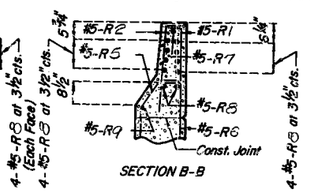


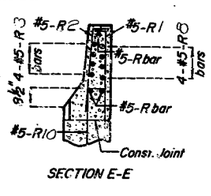


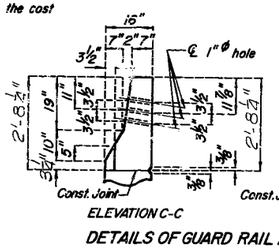


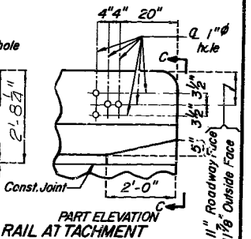
NOTES:

Top of barrier curb to be built parallel to grade with barrier curb joints (except at end bents) normal to grade.
All exposed edges of barrier curb shall have ½" radius or ⅜" bevel unless otherwise noted.
When the barrier curb is bid by linear feet, the contract unit price shall include the cost of all concrete and reinforcement.
Concrete in the safety barrier curb shall be Class B1.

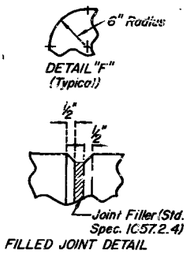




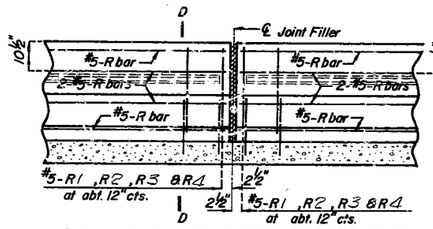




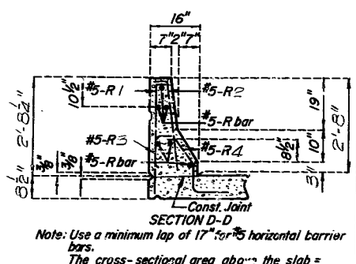
DETAILS OF GUARD RAIL AT TACHMENT



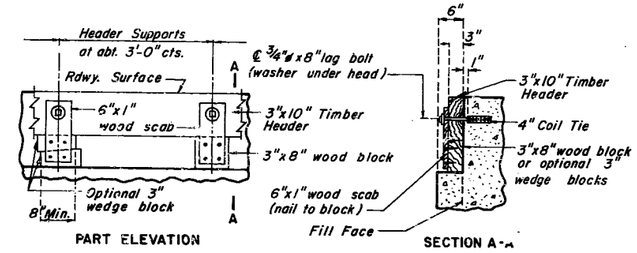
FILLED JOINT DETAIL



PART SECTION NEAR LEFT BARRIER CURB



Note: Use a minimum lap of 17" for #5 horizontal barrier bars.
The cross-sectional area above the slab = 2.27 sq. ft.



PART ELEVATION

Note: Cost of timber headers complete in place to be included in contract unit price for concrete.

DETAILS OF TIMBER HEADER AT END BENTS

DETAILS OF BARRIER CURB AT END BENTS

REVISED	JUNE 1981
SPS 17.8(1)	AUG. 1978

DETAILED Nov. 1981
CHECKED Nov. 1981

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

315

Sheet No. 12 of 14.

CLAY COUNTY

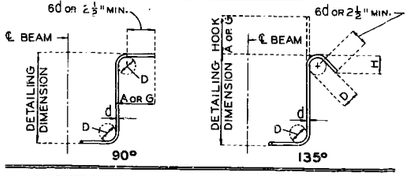
L-65QR

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. 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.
			SUBSTRUCTURE																
			ENC BENT NO. 1																
4	6H1		BEAM		20		X			25 0.							25 0	25 0	150
4	6H2		BEAM		20		X			32 8.000							32 8	32 8	196
44	5U1		BEAM		10	S	X				12.000	22.000					3 10	3 8	168
2	5U2		BEAM		13	S	X			2 3.000	4 7.750	2 3.000	4 7.750				14 9	14 5	30
6	7U3		BEAM		14		X			2 2.000	23.000	2 7.625			20.500	2 0.000	6 9	6 6	80
1	7U4		BEAM		14		X			4 1.000	23.000	4 9.250			2 10.750	3 9.500	10 9	10 7	22
1	7U5		BEAM		14		X			3 8.500	2 0.500	4 11.000			3 10.000	3 1.000	10 8	10 5	21
6	7U6		BEAM		14		X			22.000	2 0.500	2 11.625			2 4.000	22.000	6 10	6 7	81
2	6V1		BEAM		20		X			4 5.000							4 5	4 5	13
2	6V2		BEAM		20		Y			4 7.000							4 7	4 7	14
			INT. BENT NO. 2																
9	8D1		FOOTING		17		X			6 2.000							7 1	7 1	170
2	6D2		FOOTING		10	S	X				3 2.000	16.000					7 8	7 4	22
7	7H17		BEAM		17		X			40 7.000							41 5	41 5	593
7	8H18		BEAM		17		X			14 9.000							15 8	15 8	293
2	6H19		BEAM		20		X			50 0.000							50 0	50 0	150
7	8H20		BEAM		20		X			50 0.000							50 0	50 0	935
14	4P1		COLUMN		16		X			2 3.000							7 11	7 11	74
6	4P2		COLUMN		13	S	X			2 3.000	2 9.000	2 3.000	2 9.000				10 9	10 4	41
37	6U12		BEAM		13	S	X			2 11.000	2 11.000	2 11.000	2 11.000				12 10	12 4	685
10	6U13		BEAM		13	S	X			2 11.000	2 9.000	2 11.000	2 9.000				12 6	12 0	180
16	4U14		BEAM		10	S	X				6.000	2 11.000					3 11	3 9	40
9	8V11		COLUMN		20		X			16 6.000							16 6	16 6	396
24	8V13		COLUMN		20		X			4 3.000							4 3	4 3	272
			INT. BENT NO. 3																
9	8D1		FOOTING		17		X			6 2.000							7 1	7 1	170
2	6D2		FOOTING		10	S	X				3 2.000	16.000					7 8	7 4	22
7	7H17		BEAM		17		X			40 7.000							41 5	41 5	593
7	8H18		BEAM		17		X			14 9.000							15 8	15 8	293
2	6H19		BEAM		20		X			50 0.000							50 0	50 0	150
7	8H20		BEAM		20		X			50 0.000							50 0	50 0	935
16	4P1		COLUMN		16		X			2 3.000							7 11	7 11	85
6	4P2		COLUMN		13	S	X			2 3.000	2 9.000	2 3.000	2 9.000				10 9	10 4	41
37	6U12		BEAM		13	S	X			2 11.000	2 11.000	2 11.000	2 11.000				12 10	12 4	685
10	6U13		BEAM		13	S	X			2 11.000	2 9.000	2 11.000	2 9.000				12 6	12 0	180
16	4U14		BEAM		10	S	X				6.000	2 11.000					3 11	3 9	40
9	8V12		COLUMN		20		X			17 8.000							17 8	17 8	425
24	8V13		COLUMN		20		X			4 3.000							4 3	4 3	272

COMPLETE BILL OF REINFORCING STEEL

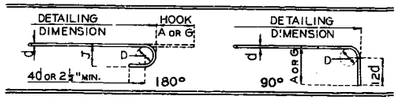
NO. REQD.	MARK NO. SIZE	MARK NO. MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B FT. IN.	C FT. IN.	D FT. IN.	E FT. IN.	F FT. IN.	H FT. IN.	K FT. IN.	NOMINAL LENGTH FT.IN.	ACTUAL LENGTH FT.IN.	WEIGHT LBS.
			ENC BENT NO. 4																
4	6H15		BEAM		20		X			32 8.000							32 8	32 8	196
4	6H16		BEAM		20		X			25 0.000							25 0	25 0	150
44	5U1		BEAM		10	S	X				12.000	22.000					3 10	3 8	168
6	7U3		BEAM		14		X			2 2.000	23.000	2 7.625			20.500	2 0.000	6 9	6 6	80
2	7U4		BEAM		14		X			4 1.000	23.000	4 9.250			2 10.750	3 9.500	10 9	10 7	22
1	7U5		BEAM		14		X			3 8.500	2 0.500	4 11.000			3 10.000	3 1.000	10 8	10 5	21
6	7U6		BEAM		14		X			22.000	2 0.500	2 11.625			2 4.000	22.000	6 10	6 7	81
2	5U9		BEAM		13	S	X			2 3.000	4 8.000	2 3.000	4 8.000				14 9	14 5	30
2	6V5		BEAM		20		Y			4 8.000							4 8	4 8	16
2	6V6		BEAM		20		X			4 6.000							4 6	4 6	14
			SUPERSTRUCTURE																
			ENC BENT NO. 1																
4	6F1		WING		23	S				14.125	4 5.000	14.125	9.500	10.500	9.500	10.500	6 9	6 8	40
4	6F2		WING		23	S				14.125	5 0.500	14.125	10.500	9.500	10.500	9.500	7 5	7 4	44
25	6H3		DIAPHRAGM		20					7 4.000							7 4	7 4	165
6	6H4		DIAPHRAGM		20					2 6.000							2 6	2 6	23
4	6H5		SLAB		20					53 8.000							53 8	53 8	322
5	6H7		DIAPHRAGM		23	S				2 3.250	5 2.000				2 3.000	3.375	7 5	7 4	55
5	6H8		DIAPHRAGM		21	S				2 3.250	5 2.000				2 3.000	3.375	7 5	7 3	54
3	6H9		DIAPHRAGM		20					53 8.000							53 8	53 8	242
6	6H10		WING		20					11 8.000							11 8	11 8	105
6	6H11		WING		20			V	2	7 7.000							7 7	7 7	
			INCR = 18.500 IN							10 8.000							10 8	10 8	82
6	6H12		WING		20					11 6.000							11 6	11 6	104
6	6H13		WING		20			V	2	7 5.000							7 5	7 5	
			INCR = 18.500 IN							10 6.000							10 6	10 6	81
6	5H14		DIAPHRAGM		20					3 11.000							3 11	3 11	25
2	6T1		WING		25	S				2 1.500	5 5.250	7 0.000			2 4.000	4 11.000	14 7	14 6	44
2	6T2		WING		25	S				2 1.500	5 5.250	6 7.000			2 4.000	4 11.000	14 2	14 1	42
71	6U7		SLAB	E	19	S				12.000	4 2.000						5 2	5 0	533
46	5U8		DIAPHRAGM		13	S				2 3.125	4 0.000	2 3.125	4 0.000				13 5	13 2	631
20	6V3		WING		20			V	4	2 3.000							2	3	
			INCR = 6.000 IN							4 3.000							4 3	4 3	98
20	6V4		WING		20					4 4.000							4 4	4 4	130
			ENC BENT NO. 4																
4	6F1		WING		23	S				14.125	4 5.000	14.125	9.500	10.500	9.500	10.500	6 9	6 8	40
4	6F2		WING		23	S				14.125	5 0.500	14.125	10.500	9.500	10.500	9.500	7 5	7 4	44
15	6H3		DIAPHRAGM		20					7 4.000							7 4	7 4	165
6	6H4		DIAPHRAGM		20					2 6.000							2 6	2 6	23
4	6H5		SLAB		20					53 8.000							53 8	53 8	322
6	6H6		WING		20			V	2	7 11.000							7 11	7 11	
			INCR = 17.500 IN							10 10.000							10 10	10 10	84
5	6H7		DIAPHRAGM		23	S				2 3.250	5 2.000				2 3.000	3.375	7 5	7 4	55
5	6H8		DIAPHRAGM		21	S				2 3.250	5 2.000				2 3.000	3.375	7 5	7 3	54
3	6H9		DIAPHRAGM		20					53 8.000							53 8	53 8	242
6	6H10		WING		20					11 8.000							11 8	11 8	105
6	6H12		WING		20					11 6.000							11 6	11 6	104
6	5H14		DIAPHRAGM		20					3 11.000							3 11	3 11	25



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.



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

BAR SIZE	180° HOOKS				90° HOOKS
	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"	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"	21-0"
#14	21-2"	20-1/2"	21-2"	20-1/2"	21-7"
#18	21-11"	21-3"	21-11"	21-3"	31-5"

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.

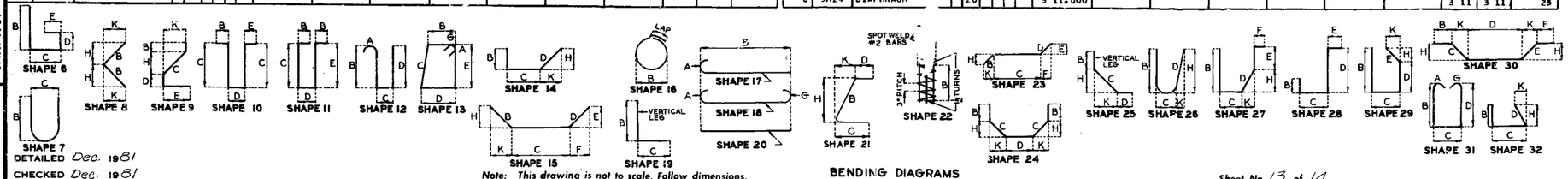
NO. EA. - NUMBER OF BARS OF EACH LENGTH.

NOMINAL LENGTHS - ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	42	

STD. 90.8 REVISED JAN. 1981
MAY 1974



DETAILED Dec. 1981
CHECKED Dec. 1981

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

BENDING DIAGRAMS

Sheet No. 13 of 14.

CLAY COUNTY L-659R

318

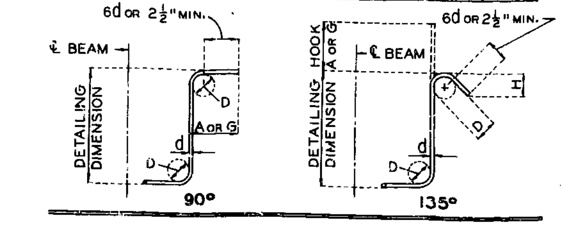
COMPLETE BILL OF REINFORCING STEEL

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.
4	6H23	WING		20			V	2	7 5.000							7 5	7 5	
		INCR = 18.500 IN							10 6.000							10 6	10 6	81
2	6T3	WING		25	S				2 1.500	4 7.750	7 3.000			2 0.125	4 2.250	14 0	13 11	42
2	6T4	WING		25	S				2 1.500	4 7.500	6 5.000			2 0.000	4 2.000	13 2	13 1	39
71	6U11	SLAB	E	19	S				12.000	4 2.000						5 2	5 0	533
46	5U10	DIAPHRAGM		13	S				2 3.125	4 0.000	2 3.125	4 0.000				13 5	13 2	631
8	6V7			20			V	2	2 3.000							2 3	2 3	
		INCR = 7.375 IN							4 1.000							4 1	4 1	38
10	6V8			20					4 3.000							4 3	4 3	64
10	6V9			20					4 3.000							4 3	4 3	64
10	6V10			20			V	2	2 3.000							2 3	2 3	
		INCR = 5.250 IN							4 0.000							4 0	4 0	47
		DIAPHRAGMS INT.																
		AND END																
72	5H14	END DIAPHS.		20					3 11.000							3 11	3 11	294
40	6H24	END DIAPHS.		20					7 10.000							7 10	7 10	471
40	4H25	END DIAPHS.		20					7 10.000							7 10	7 10	209
32	5H26	END DIAPHS.		19	S				11.000	2 3.000						3 2	3 1	103
16	5H27	END DIAPHS.		20					3 10.000							3 10	3 10	64
30	4H21	INT. DIAPH.		20					7 9.000							7 9	7 9	155
10	5H22	INT. DIAPH.		20					7 9.000							7 9	7 9	116
120	4U15	END DIAPHS.	E	28	S					20.000	3 10.000	12.000				6 6	6 4	508
40	6U16	END DIAPHS.	E	28	S					20.000	3 10.000	12.000				6 6	6 2	370
40	4U17	INT. DIAPH.	E	10	S				12.000	3 5.000	6.000	12.000				9 4	9 0	240
		CAST-IN-PLACE																
		CONVENTIONAL																
		FORMS OR																
		STAY-IN-PLACE																
		FORMS																
234	6S1	SLAB-TOP	E	20					53 3.000							53 3	53 3	18716
24	6S2	SLAB-TOP	E	20			V	2	5 4.000							5 4	5 4	
		INCR = 48.875 IN							50 1.000							50 1	50 1	999
147	6S3	SLAB-BOTTOM		20					53 3.000							53 3	53 3	11757
14	6S4	SLAB-BOTTOM		20			V	2	8 9.000							8 9	8 9	
		INCR = 77.125 IN							47 4.000							47 4	47 4	590
123	5S5	SLAB-TOP	E	20					41 11.000							41 11	41 11	5377
84	5S6	SLAB-TOP	E	20					16 0.000							16 0	16 0	1402
189	5S7	SLAB		20					41 11.000							41 11	41 11	8263
		PRECAST PANEL																
		FORMS																
234	6S1	SLAB-TOP	E	20					53 3.000							53 3	53 3	18716
24	6S2	SLAB-TOP	E	20			V	2	5 4.000							5 4	5 4	
		INCR = 48.875 IN							50 1.000							50 1	50 1	999
123	5S5	SLAB-TOP	E	20					41 11.000							41 11	41 11	5377
△168 — (84)	5S6	SLAB-TOP	E	20					(16) 0.000 — 24△						△24 —	(16) 0	(16) 0	(1402) — 4205△
24	5S7	SLAB		20					41 11.000							41 11	41 11	1049
244	4S8	SLAB-BOTTOM		20					3 6.000							3 6	3 6	570
		BARRIER CURB																
308	5R1	BARRIER CURB	E	19	S				2 6.000	3.500						2 10	2 8	857
308	5R2	BARRIER CURB	E	15	S				2 6.125	3.500				2 6.000	3.000	2 10	2 9	883
244	5R3	BARRIER CURB	E	19	S				17.000	6.000						23	22	467

COMPLETE BILL OF REINFORCING STEEL

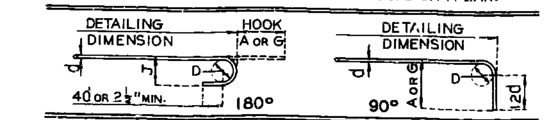
NO. REQD.	MARK NO. SIZE MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	B FT. IN.	C FT. IN.	D FT. IN.	E FT. IN.	F FT. IN.	H FT. IN.	K FT. IN.	NOMINAL LENGTH FT. IN.	ACTUAL LENGTH FT. IN.	WEIGHT LBS.
244	5R4	BARRIER CURB	E	27	S					6.000	11.125	7.000	12.000	9.125	6.375	3 0	2 10	721
48	5R5	BARRIER CURB	E	27	S					6.000	11.125	15.000		9.125	6.375	2 8	2 7	130
48	5R6	BARRIER CURB	E	19	S				2 0.000	6.000						2 6	2 5	121
4	5R7	BARRIER CURB	E	20					12 0.000							12 0	12 0	50
40	5R8	BARRIER CURB	E	20					12 3.000							12 3	12 3	511
4	5R9	BARRIER CURB	E	20					10 6.000							10 6	10 6	44
16	5R10	BARRIER CURB	E	10	S					2 0.000	4.000					4 4	4 2	70
12	5R11	BARRIER CURB	E	20					7 3.000							7 3	7 3	91
24	5R12	BARRIER CURB	E	20					9 9.000							9 9	9 9	244
12	5R13	BARRIER CURB	E	20					42 10.000							42 10	42 10	556
12	5R14	BARRIER CURB	E	20					6 0.000							6 0	6 0	75
12	5R15	BARRIER CURB	E	20					18 8.000							18 8	18 8	234
12	5R16	BARRIER CURB	E	20					22 5.000							22 5	22 5	281
		END OF BAR LIST																

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	43	



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

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



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					
BAR SIZE	180° HOOKS GRADE 40 A OR G	180° HOOKS GRADE 40 J	180° HOOKS GRADE 60 A OR G	180° HOOKS GRADE 60 J	90° HOOKS ALLGRADES 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"
#18	2'-11"	2'-3"	2'-11"	2'-3"	3'-5"

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.

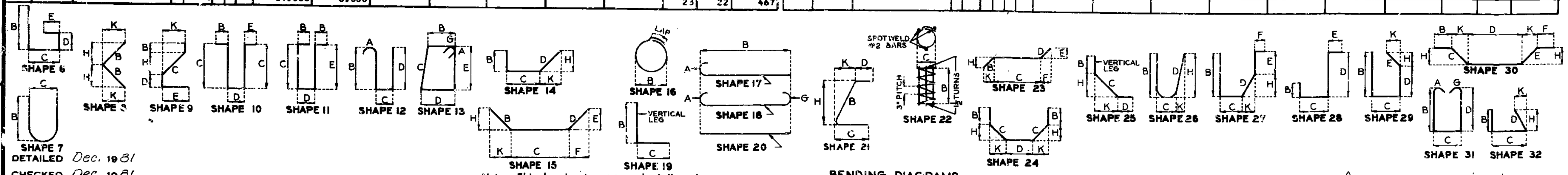
V - BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.

NO. EA. - NUMBER OF BARS OF EACH LENGTH.

NOMINAL LENGTHS - ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)

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

Note: "Two additional #6-S1 and #5-S2 are included in bar bill for testing. See Special Provisions."



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

BENDING DIAGRAMS

STD. 90.8 MAY 1974 | REVISED JAN. 1981

DETAILED Dec. 1981
CHECKED Dec. 1981

Sheet No. 14 of 14. △ Revised 3/25/83

CLAY COUNTY

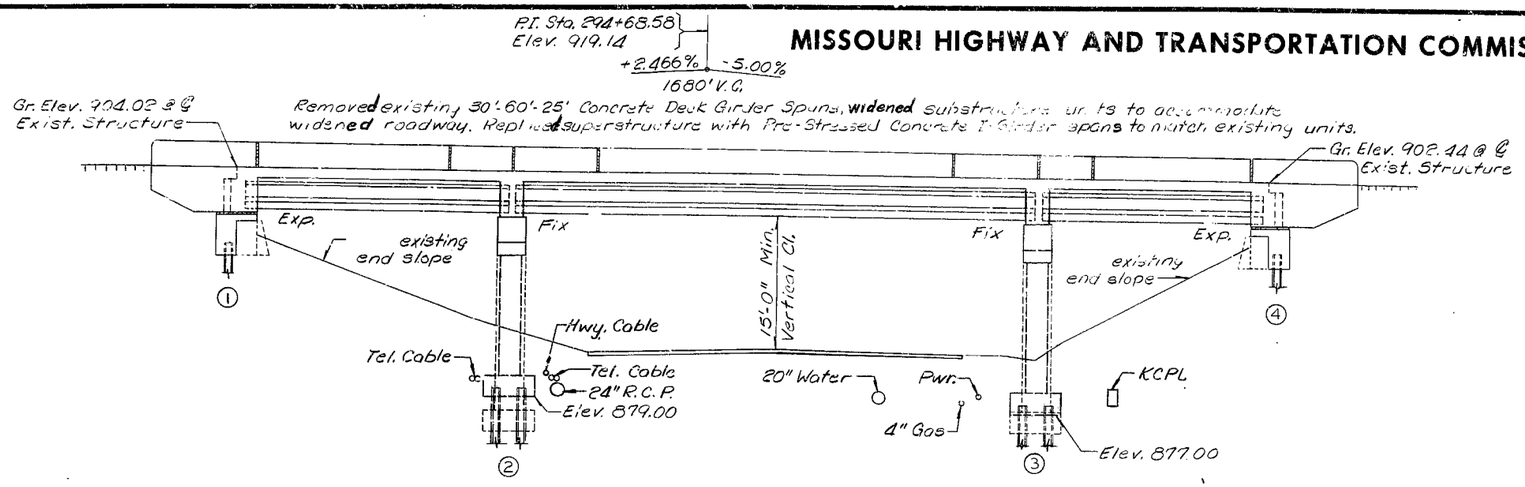
L-659R

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

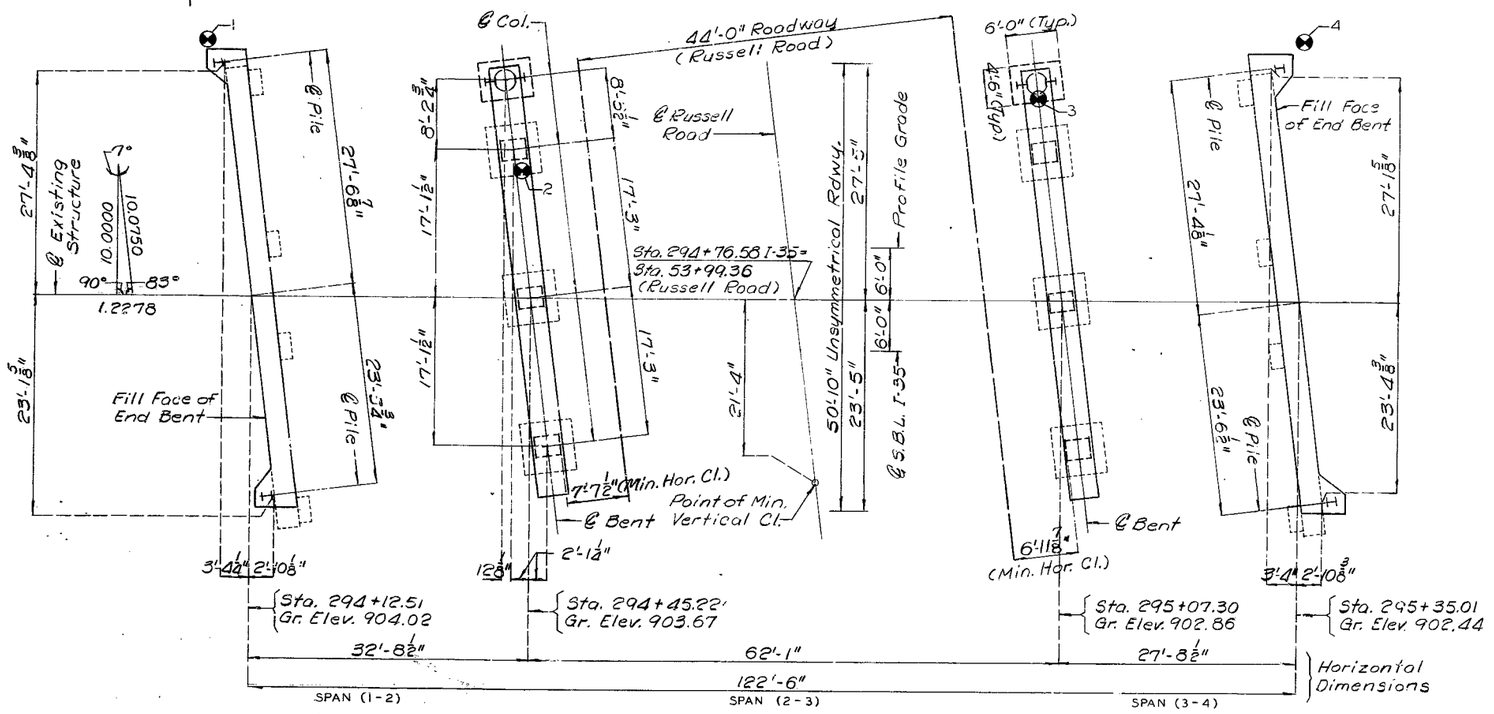
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	50	

SEC. 1 & 12 TWP. 50N RGE. 33W

FINAL PLANS



GENERAL ELEVATION



PLAN

Note:
"⊗" Indicates location of Borings.
For Boring Data see Sht. No. 2.

Note:
For Quantities and Pile & Footing Data see Sht. No. 2.

GENERAL NOTES:

Design Specifications: A.A.S.H.T.O. - 1977 Load Factor Design and Interim Specifications 1980

Design Loading:
HS20-44
15# per sq. ft. Future Wearing Surface
Modified 24,000 # Tandem Axle
Earth 120#, Equivalent Fluid Pressure 30#
Superstructure: Simply supported non-composite for Dead Load. Continuous composite for Live Load.

Design Unit Stresses:
Class B Concrete (Substructure) f'c=3,000 psi
Class B1 Concrete (Safety Barrier Curb) f'c=4,000 psi
Class B2 Concrete (Superstructure except Prestressed Girders and Safety Barrier Curb) f'c 4,000 psi
Reinforcing Steel (Grade 60) fy=60,000 psi
Steel Pile fb=9,000 psi

For Pre-stressed Girder Stresses see Sheet Nos. 6, 7 and 8.

Bearings were 60 durometer Neoprene Pads.

Joint Filler: All Joint Filler meet the requirement of Std. Spec. 1057.2.4.

Reinforcing Steel: Minimum clearance to reinforcing steel was 1½" unless otherwise shown.

Construction Clearance: A minimum vertical clearance of 13'-6" from crown of existing lanes and a minimum lateral clearance of 33'-0" centered on existing lanes were maintained during construction.

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

Cost of furnishing, fabricating and installing Neoprene Bearing Pads complete in place, were paid for at the contract unit price for Plain and Laminated Neoprene Bearing Pads per each.

B.M. Elev. 904.60 ▫ On Top Of Rt Barrier Curb Abut. No. 4 Sta. 295+47

BRIDGE OVER RUSSELL ROAD

STATE ROAD FROM RTE. 210 NORTH
IN KANSAS CITY

PROJECT NO. I-R-35-1(120) **STA.** 294 + 12.51

JOB NO. 4-I-35-340 **RTE.** I-35 S.B.L.

CLAY **COUNTY**

DATE 1/13/83

STD.
STD. 706.35
L-659R

DESIGNED AUG. 1981
DETAILED NOV. 1981
CHECKED DEC. 1981

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

Sheet No. 1A of 14.

319

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	31	

FINAL PLANS

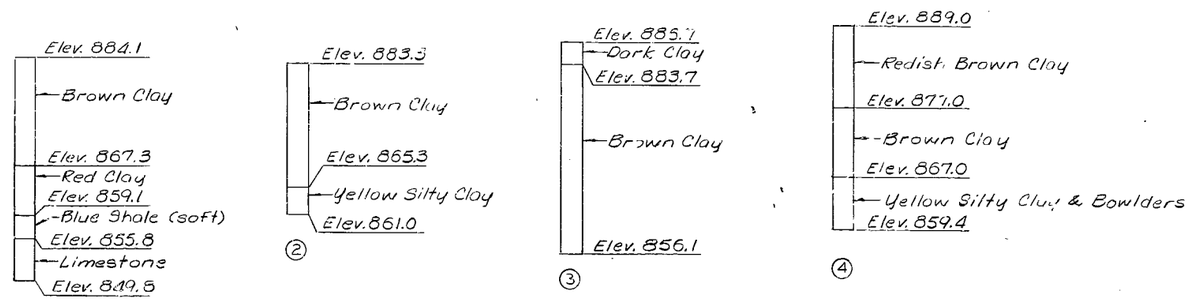
QUANTITIES					
ITEM			SUBSTR.	SUPERSTR.	TOTAL
Special Work	Lump Sum			1	1
Removal Of Existing Bridge Deck	Sq. Ft.			5574	5,574
Class 1 Excavation	Cu. Yd.		35.5		35.5
Structural Steel Piles (10 In.)	Lin. Ft.		240		240
Class B Concrete	Cu. Yd.		68.3		68.3
Reinforcing Steel	Pound		9,300		9,300
Slab On Concrete I-Girder "*"	Sq. Yd.			728	728
Safety Barrier Curb	Lin. Ft.			285	285
Plain Neoprene Bearing Pads	Each			24	24
Laminated Neoprene Bearing Pads	Each			12	12
Prestressed Concrete I-Girder 30 Ft. Span	Each			6	6
Prestressed Concrete I-Girder 60 Ft. Span	Each			6	6
Prestressed Concrete I-Girder 25 Ft. Span	Each			6	6
CONTINGENT					
504.01 Reinforcing Steel	Lb.			2800	2800

Note:
All concrete and reinforcement above lower construction joint in end bents are included with superstructure quantities.
Cost of $\frac{3}{4}$" ø coil tie rods placed in diaphragms is included in contract unit price for P/S members.
"*" See Special Provisions.

QUANTITIES FOR SLAB			
TYPE OF SLAB	Slab on Conc. I-Gdr.		
	Reinf. (Lbs.)		Conc.
	Epoxy	Plain	Cu. Yd.
Precast Panel Forms	31,480	7,590	219.2

Precast panel quantities based on skewed end panels.

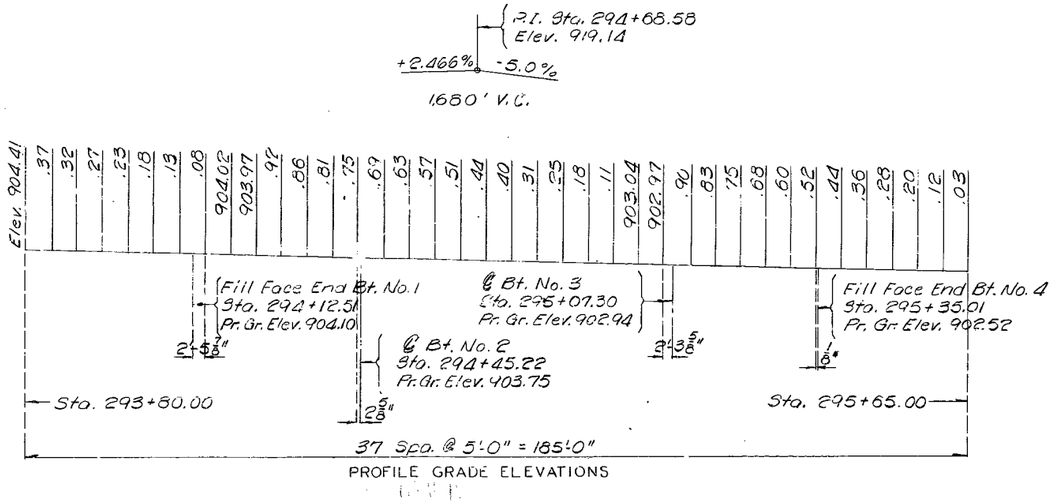
Note: For location of Borings see sheet No. 1.



BORING DATA

PILE DATA					
BENT NO.		1	2	3	4
Pile Type and size		HP10X42	HP10X42	HP10X42	HP10X42
Number		2	2	2	2
Approximate length	Ft.	38	24	21	37
Design Bearing	Tons	24	43	43	24
Hammer Energy required	Ft. Lbs	7,000	9,600	9,600	7,000

Minimum energy requirement of hammer based on plan length and design bearing value of piles.
All pile were driven to practical refusal.



PROFILE GRADE ELEVATIONS

320

DETAILED Nov. 1981
CHECKED Nov. 1981

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

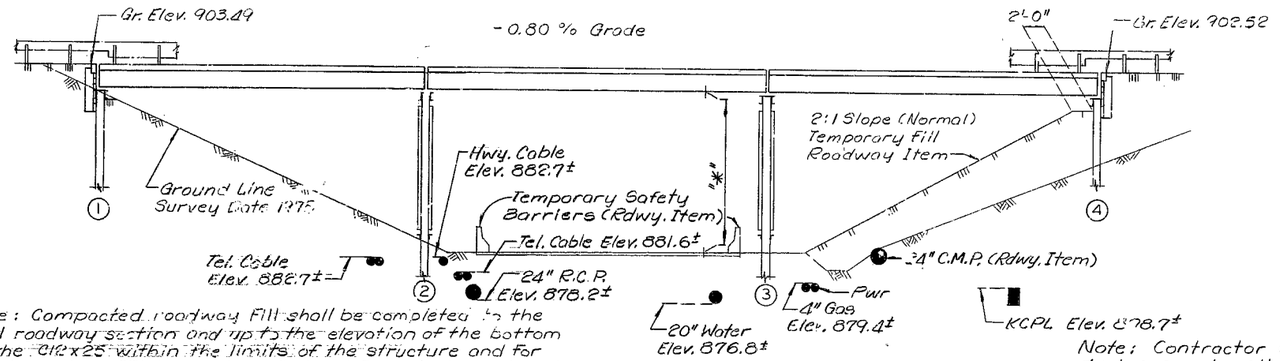
CLAY COUNTY

L-659R

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	26	
SEC. 1&12	TWP. 50N	RGE. 33W			

(40'-40'-40') PREFABRICATED SEGMENTED WF BEAM SPANS



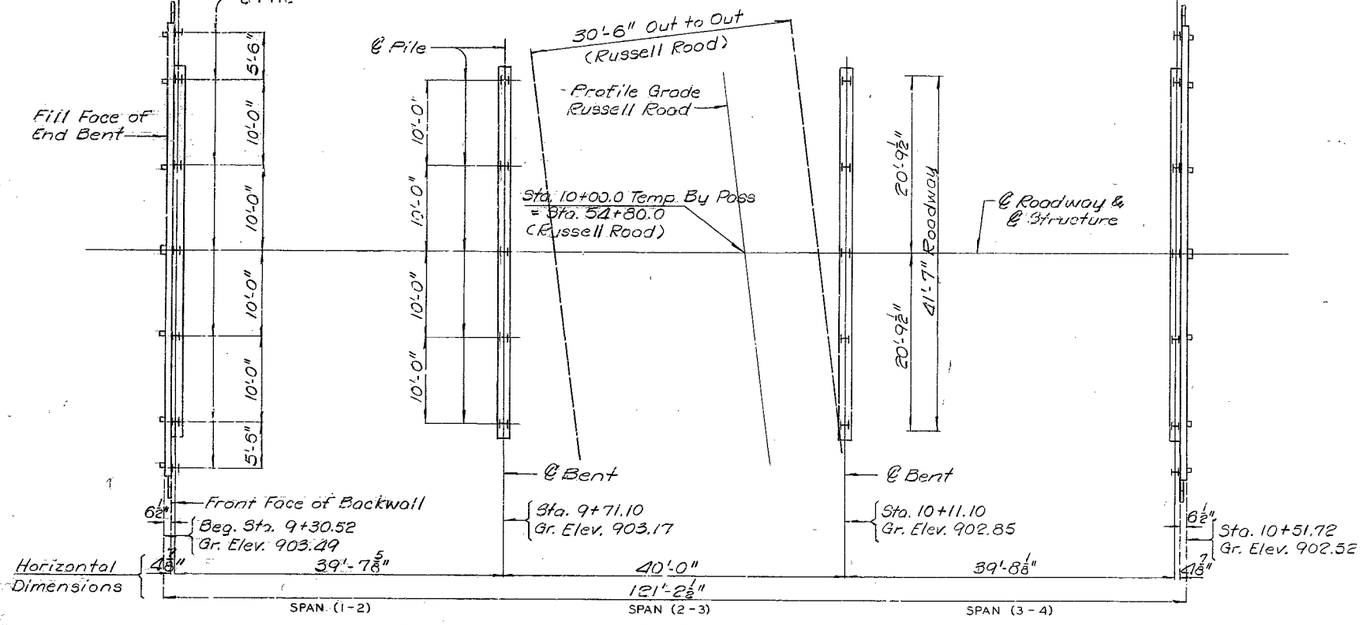
Note: Compacted roadway Fill shall be completed to the final roadway section and up to the elevation of the bottom of the 21"x25" within the limits of the structure and for not less than 25' in back of the Fill face of the end bents before piles are driven for any bents falling within the embankment section.

ELEVATION

Note: Contractor shall exercise caution during construction to prevent damage to existing underground utilities.

A minimum vertical clearance of 13'-6" from crown of existing lane to nearest temporary construction falsework shall be maintained during construction.

"*" Final vertical clearance from top of roadway to bottom of superstructure to be at least 15'-0".



PLAN

GENERAL NOTES:

Design Specifications: A.A.S.H.T.O. - 1977 Load Factor Design

Design Loading: H20-44

Design Unit Stresses:
Structural Steel (A.S.T.M. A588) fy = 50,000 psi
Structural Carbon Steel (Piling & Swing Bracing) fs = 20,000 psi
Steel Pile fb = 9,000 psi

Timber:
All timber shall be standard rough sawn.
All timber shall be treated with creosote or pentochlorophenol solution.
All timber shall have a minimum strength of 1500 psi and shall be either douglas fir conforming to the requirements of paragraph 123b (MC-19), 124b (MC-19) and 130bb of the Standard Grading Rules for West Coast Lumber, No. 16, December 1, 1976 Revised Edition or southern pine conforming to the requirements of paragraphs 312 (MC-19), 342 (MC-19) and 405.1 of the Southern Pine Inspection Bureau Grading Rules, 1977 Edition or a satisfactory grade of sound native oak.

Note: All bolts shall be High Tensile Strength Bolts.

ESTIMATED QUANTITIES		
ITEM		TOTAL
Structural Steel Pile (10")	Lin. Ft.	991
Furnishing Superstructure	Lump Sum	1
Erecting Superstructure	Lump Sum	1
Removing & Storing Superstructure	Lump Sum	1

PILE DATA					
BENT NO.		1	2	3	4
Pile Type and Size		HP10x42	HP10x42	HP10x42	HP10x42
Number		7	5	5	7
Approximate Length	Ft.	43	41	41	40
Design Bearing	Tons	15	22	22	15
Hammer Energy Req'd.	Ft. Lbs.	7000	7000	7000	7000

Note: Minimum energy requirement of hammer based on plan length and design bearing value of piles. All pile shall be driven to practical refusal.

B.M. Elev. 902.15 ▫ on top of Rt. wing bent No. 4 Sta. 295+35.75

TEMPORARY **BRIDGE** OVER RUSSELL ROAD

STATE ROAD FROM ROUTE 210 NORTH

IN KANSAS CITY

PROJECT NO. I-IR-35-1(120) **STA.** 9+30.52

JOB NO. 4-I-35-340 **RTE.** I-35

CLAY **COUNTY**

DATE 1/13/83

STD.
STD.
L-659T

DESIGNED Sept. 1981
DETAILED Nov. 1981
CHECKED Dec. 1981

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

Sheet No. 1 of 4 ...

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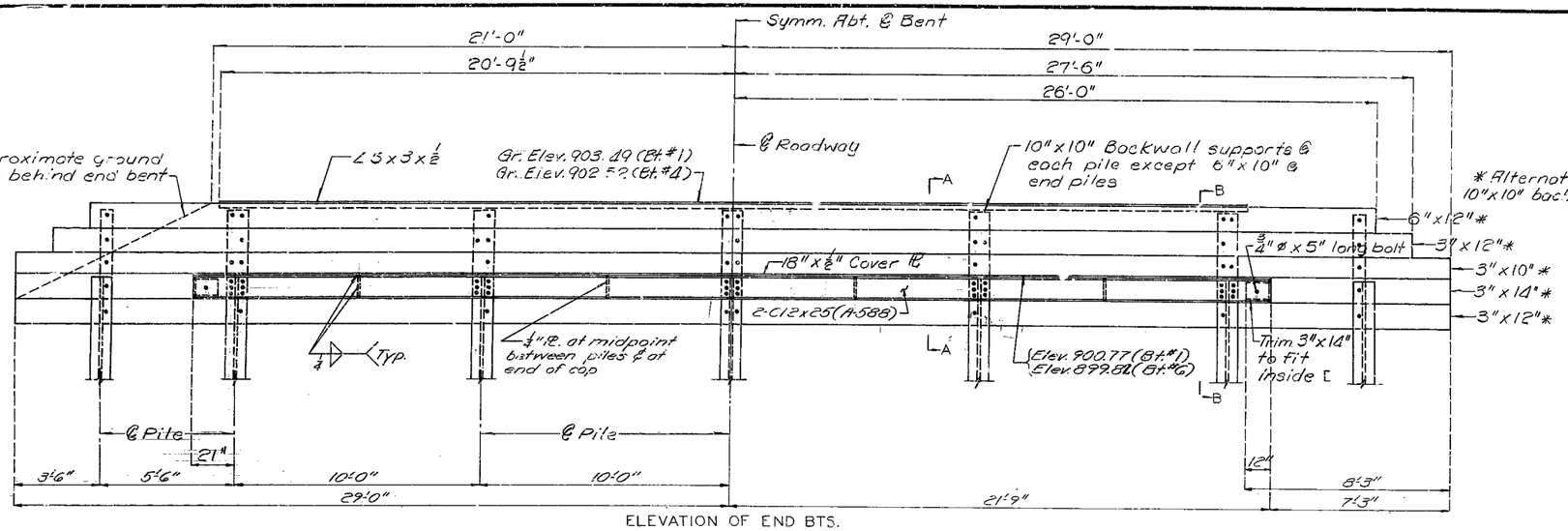
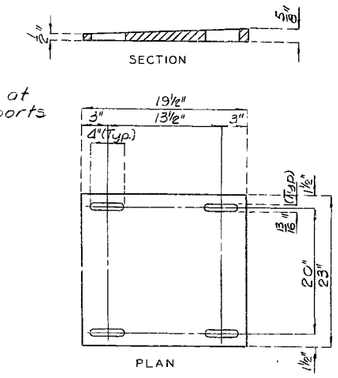
FED. ROAD DIST. NO.	STATE	F.A.S. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	27	

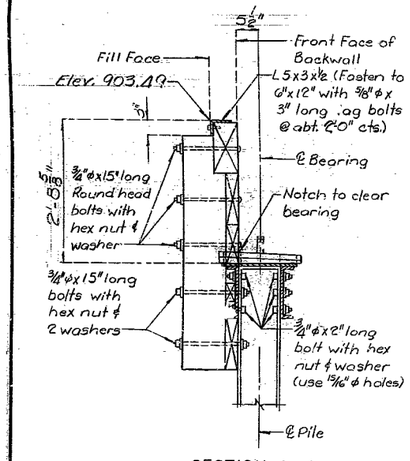


ELEVATION OF END BTS.

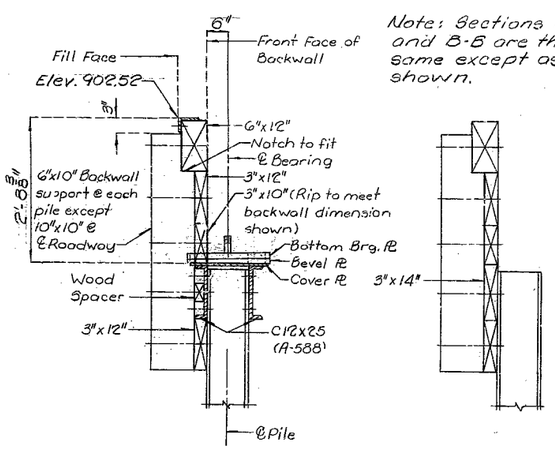
* Alternate splices at 10"x10" backwall supports



DETAILS OF BEVELED PLATE



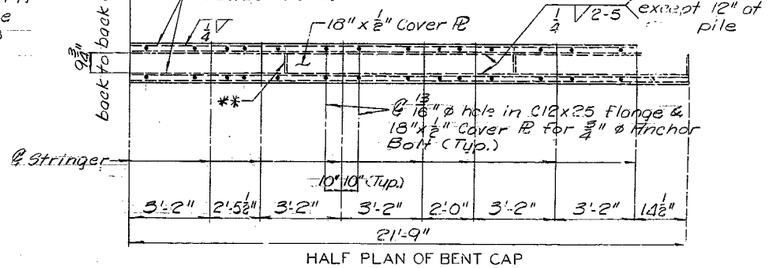
SECTION A-A
(END BENT NO. 1)



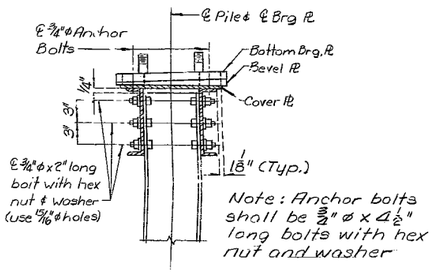
SECTION A-A
(END BENT NO. 4)

Note: Sections A-A and B-B are the same except as shown.

SECTION B-B



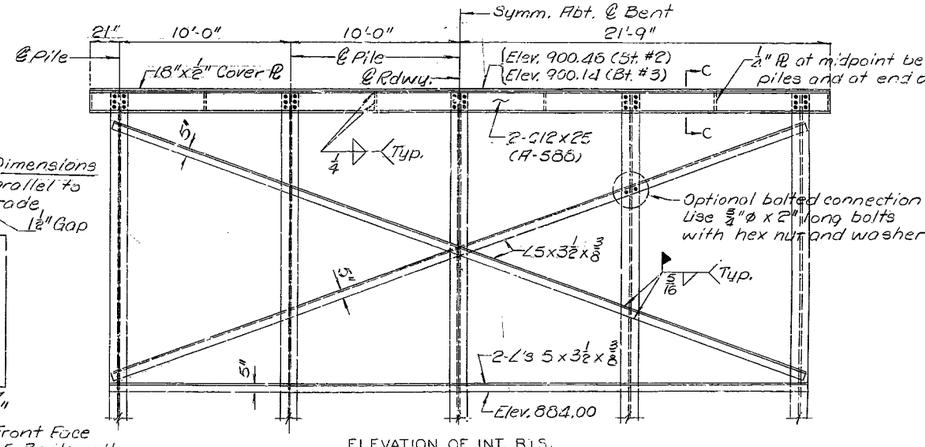
HALF PLAN OF BENT CAP
(All End Bents & Int. Bents)
(Bearing Pl's and Piles not shown)



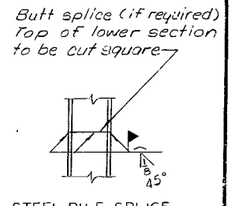
Note: Anchor bolts shall be ¾"ø x 4½" long bolts with hex nut and washer

SECTION C-C

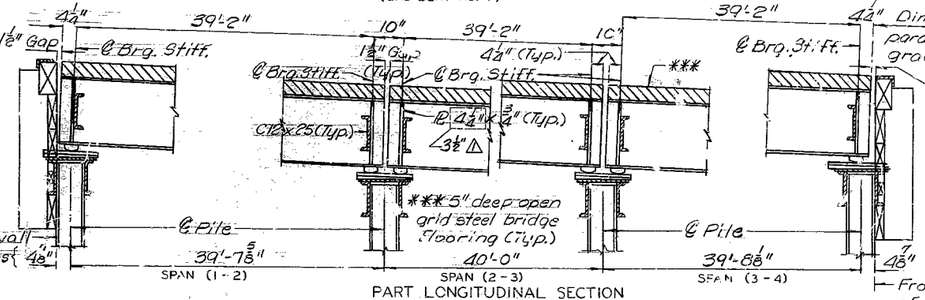
Note: Bolt spacing & pile clearance is same at End Bents & Int. Bents.



ELEVATION OF INT. BTS.



STEEL PILE SPLICE



PART LONGITUDINAL SECTION

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

△ Revised March 7, 1983

DETAILED Nov. 19 81
CHECKED Dec. 19 81

Sheet No. 2 of 4 .

CLAY COUNTY

L-659T

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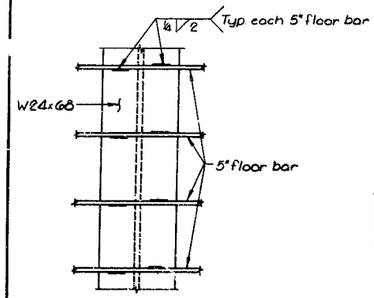
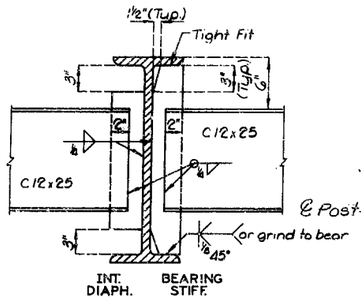
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	28	

Note: Field Connections, High Strength Bolts $\frac{7}{8}$" ø, holes $1\frac{1}{16}$" ø except as shown



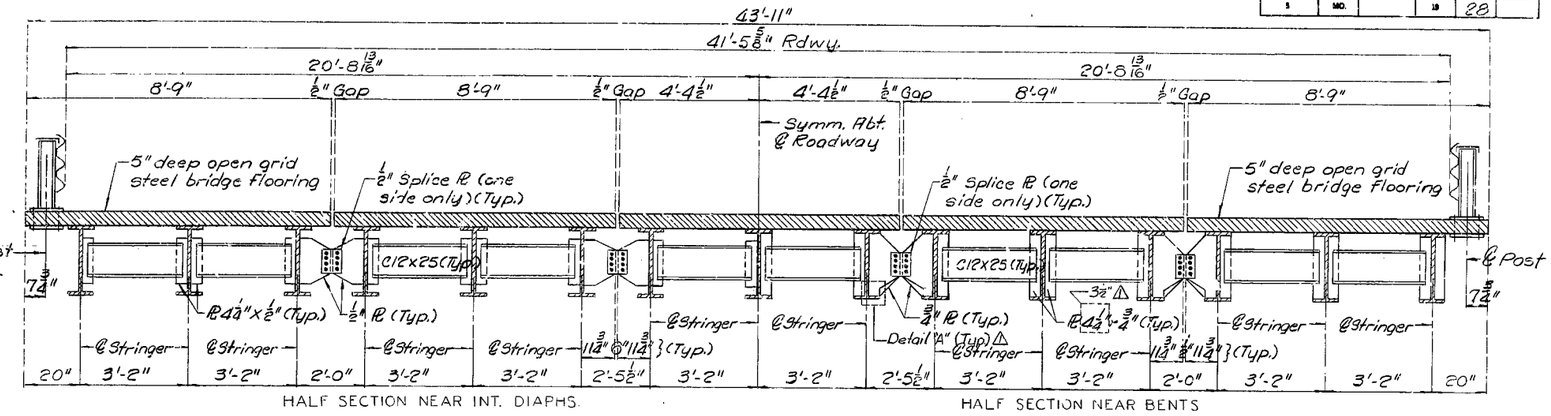
FLOORING TO STRINGER CONNECTION

Note: Typical connection at each stringer. Cross bars of steel grid floor are not shown for clarity.

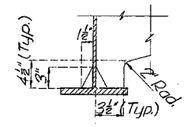


INT. DIAPH. BEARING STIFF.

WELDING DETAILS

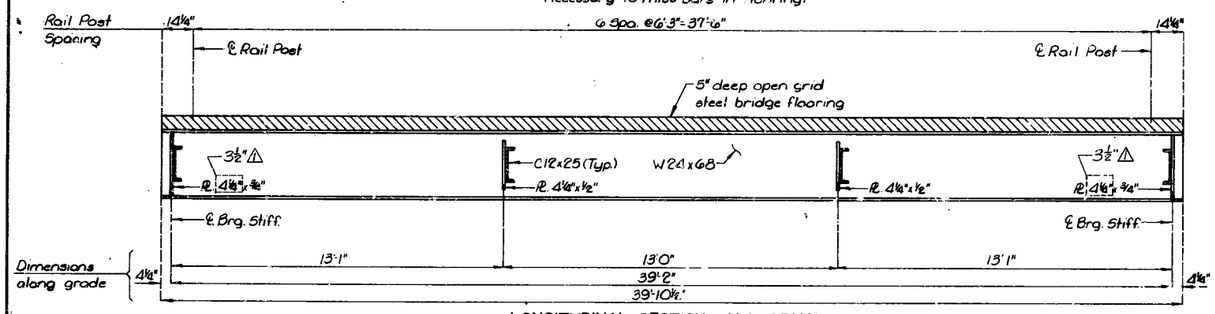


HALF SECTION NEAR INT. DIAPHS. HALF SECTION NEAR BENTS

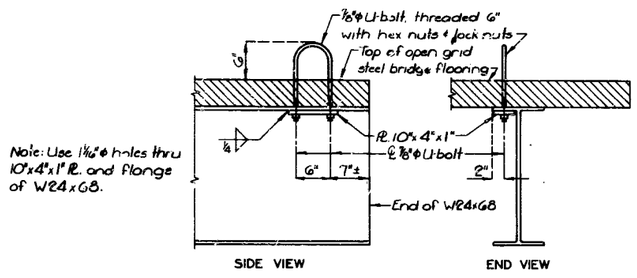


DETAIL "A" △

Note: Rail Post Spacing may be adjusted when necessary to miss bars in flooring.



LONGITUDINAL SECTION – ALL SPANS



Note: Use 1⅛"ø holes thru 10"x4"x1" Pl. and flange of W24x68.

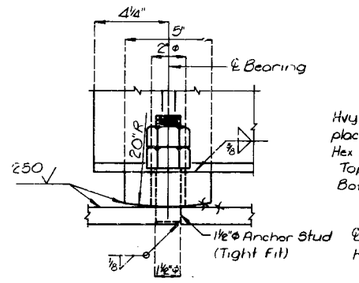
SIDE VIEW END VIEW

DETAILS OF U-BOLT LIFTING DEVICE

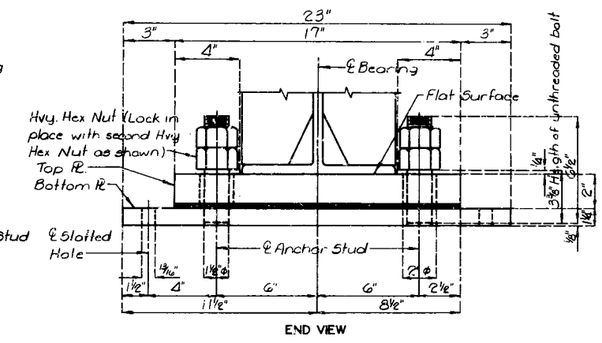
Note: U-bolt Lifting Device to be on the inside top flange at both ends of each exterior stringer of each unit. U-bolts to be removed during the time the bridge is open to traffic. Position of U-bolts may be shifted slightly to miss bars in flooring. 60 U-bolt Lifting Devices required.

Note: Steel bridge flooring shall be Greulich 5-Inch RB16.0M, Reliance 5" Weldlock Type "H", or Foster 5" Open Steel Bridge Flooring. Trim bars will be required at the sides and ends of each 39'-10⅛" unit.

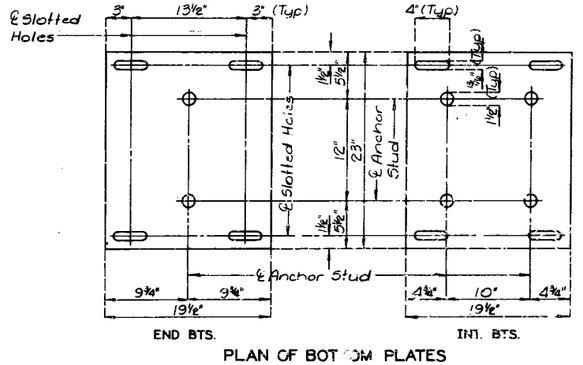
Note: All Structural Steel shall be A-538 except piles and sway bracing which shall be A-36.



SIDE VIEW



END VIEW



END BTS. INT. BTS.

PLAN OF BOTTOM PLATES

No. Required: 30 Top Pl's.
30 Bottom Pl's (Int. Bts.)
30 Bottom Pl's (End Bts.)

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DETAILED Nov. 1981
CHECKED Dec. 1981

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

△ Revised March 7, 1983

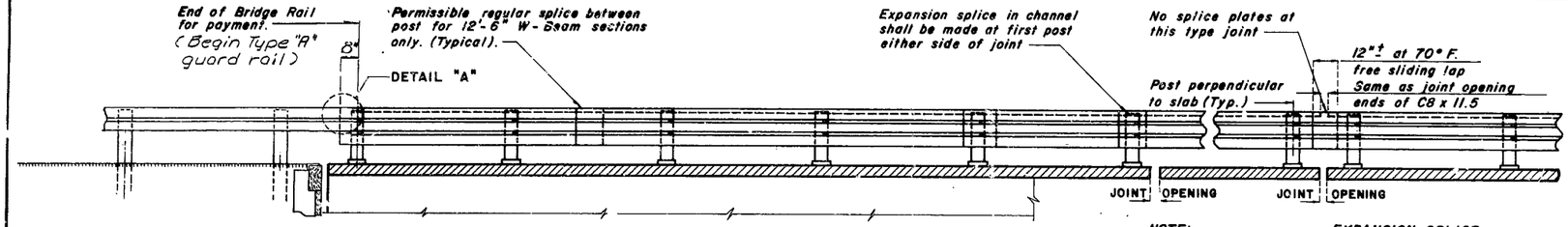
Sheet No. 3 of 4 .

DETAILS OF BEARINGS

CLAY COUNTY

L-659T

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	29	



AT END BENT

Note: See SHT. NO. 3. for rail post spacing

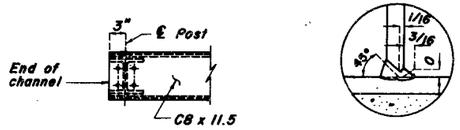
NOTE:

EXPANSION SPLICE

Expansion splice in W-Beam shall be made at either the first or second post either side of joint. When splice is made at second post, an expansion slot shall be provided in W-Beam for connection to first post to allow for movement.

EXPANSION JOINTS

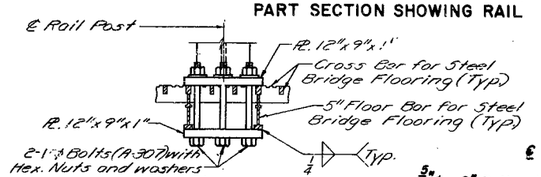
In addition to expansion provisions at these expansion joinrs, expansion splices in channel member only shall be provided at other locations so that the maximum length of channel without expansion provisions does not exceed 200 Ft.



PLAN
DETAIL "A"

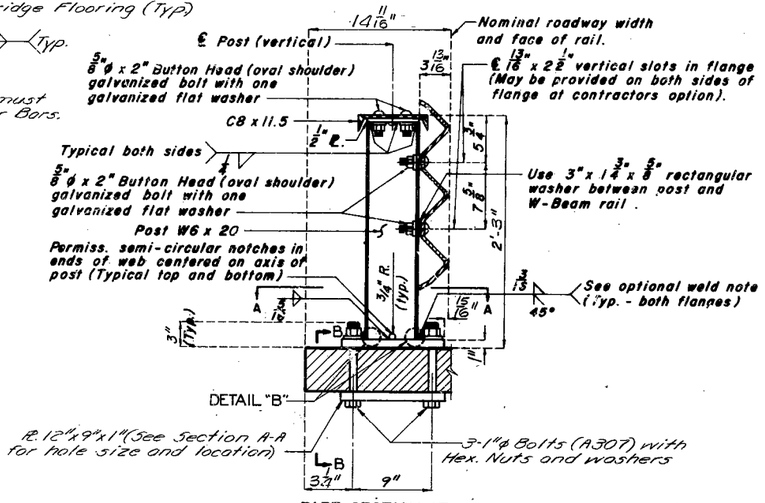
DETAIL "B"

PART SECTION SHOWING RAIL

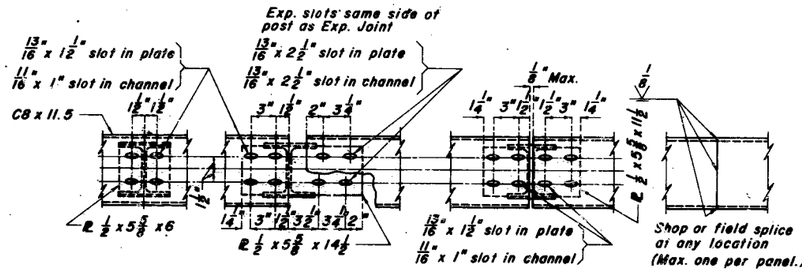


SECTION B-B

Note: Bottom Rt. 12"x 9"x 1" must be welded to two 5" Floor Bars.



PART SECTION AT RAIL POST

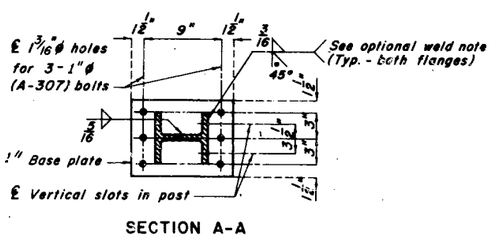


CONNECTION TO BASIC POST | EXPANSION SPLICE | TYPICAL SPLICE | OPT. SPLICE

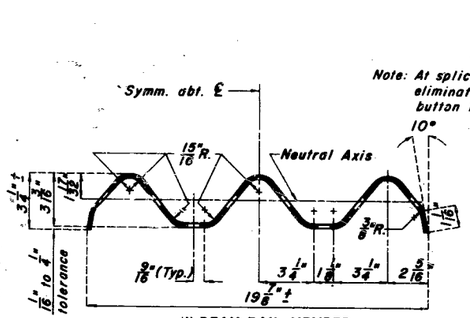
CHANNEL MEMBER DETAILS

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

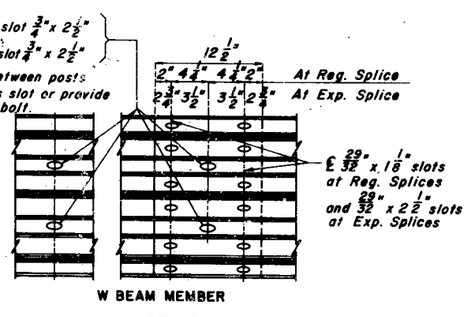
Note: Optional weld-post to base plate; 5/16" fillet weld all around (Including edges of flanges) in lieu of weld shown.



SECTION A-A



W BEAM RAIL MEMBER



W BEAM MEMBER

RAIL SPLICE DETAILS

Note: 5/8" ϕ x 1-1/4" Button Head Oval Shoulder Bolts with hex. nuts at all slots. (Thickness of hex. nuts = 3/8"). Special drilling of W-Beam may be required at splices. (All drilling details are to be shown on shop drawings).

GENERAL NOTES:

DESIGN AASHTO 1977 SPECIFICATIONS.

PANEL LENGTHS OF CHANNEL MEMBERS SHALL BE ATTACHED CONTINUOUSLY TO A MINIMUM OF FOUR POSTS AND A MAXIMUM OF SIX (EXCEPT AT END BENTS).

ALL BOLTS, NUTS, WASHERS, AND PLATES ARE CONSIDERED AS PARTS OF THE RAIL FOR PAYMENT.

ALL STEEL CONNECTING BOLTS AND FASTENERS FOR POST, RAILING AND ALL ANCHOR BOLTS, NUTS, WASHERS AND BOTTOM PLATES SHALL BE GALVANIZED AFTER FABRICATION. FOR PROTECTIVE COATING AND MATERIAL REQUIREMENT OF STEEL RAILING SEE SECTION 1040 OF THE STANDARD SPECIFICATIONS.

RAIL POSTS SHALL BE SET PERPENDICULAR TO ROADWAY PROFILE GRADE AND VERTICALLY IN CROSS SECTION, AND ALIGNED ACCORDING TO SECTION 713 OF THE STANDARD SPECIFICATIONS, EXCEPT THAT THE RAIL POST SHALL BE ALIGNED BY THE USE OF SHIMS SO THAT IN FINAL ADJUSTMENT NO PART SHALL DEVIATE MORE THAN ONE INCH FROM TRUE HORIZONTAL ALIGNMENT. THE SHIMS SHALL BE 3" X 1-3/4" AND PLACED BETWEEN THE POST AND W-BEAM RAIL. THE THICKNESS OF THE SHIMS SHALL BE DETERMINED BY THE CONTRACTOR AND VERIFIED BY THE ENGINEER BEFORE ORDERING MATERIAL FOR THIS WORK.

AT EXPANSION SLOTS IN W-BEAM RAILS AND CHANNELS, TIGHTEN BOLTS, BACK OFF ONE-HALF TURN AND BURR THREADS.

MINIMUM LENGTH OF W-BEAM SECTIONS IS EQUAL TO ONE POST SPACE.

W-BEAM GUARD RAIL TO BE MADE OF STEEL AND SHALL BE 12 GAGE, AND ERECTED IN ACCORDANCE WITH STANDARD PLAN 606.00.

POST, BASE PLATES, CHANNELS AND CHANNEL SPLICE PLATES TO BE FABRICATED FROM A-36 STEEL AND GALVANIZED.

THREADED RODS GRADE A-321 WITH 2 HEX. NUTS AND WASHERS MAY BE SUBSTITUTED FOR THE A-307 ANCHOR BOLTS.

WASHERS SHALL BE USED AT ALL POST BOLTS (BETWEEN BOLT HEAD AND BEAM). THEY SHALL BE RECTANGULAR IN SHAPE (3" X 1-3/4" X 3/16" MIN.) AND FLAT, OR WHEN NECESSARY OF SUCH DESIGN TO FIT THE CONTOUR OF THE BEAM. WASHER SHALL HAVE 1/16" X 1" HOLE.

FABRICATION OF STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH SECTION 712 OF THE STANDARD SPECIFICATIONS.

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SPS W-BEAM	Revised	JUNE 1981
	OCT. 1976	

DETAILED SEPT. 1981
CHECKED Dec. 1981

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

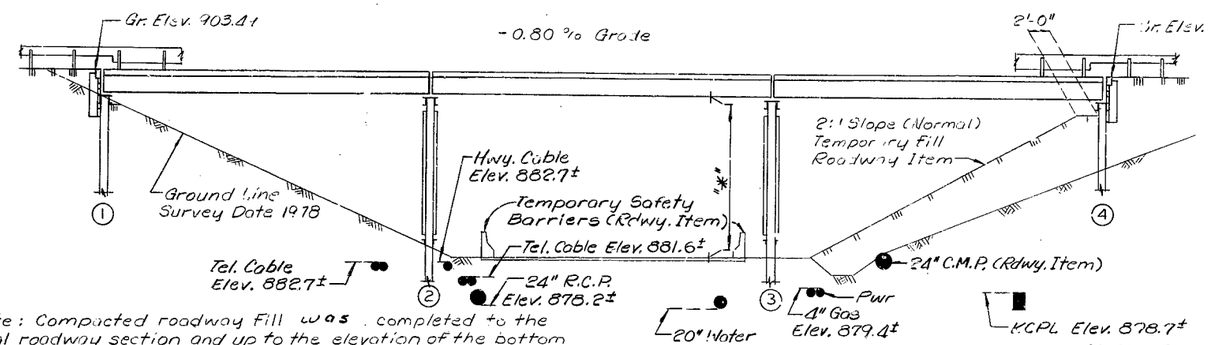
CLAY COUNTY

L-659 T

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	26	
SEC. 1 & 12		TWP. 50N		RGE. 33W	

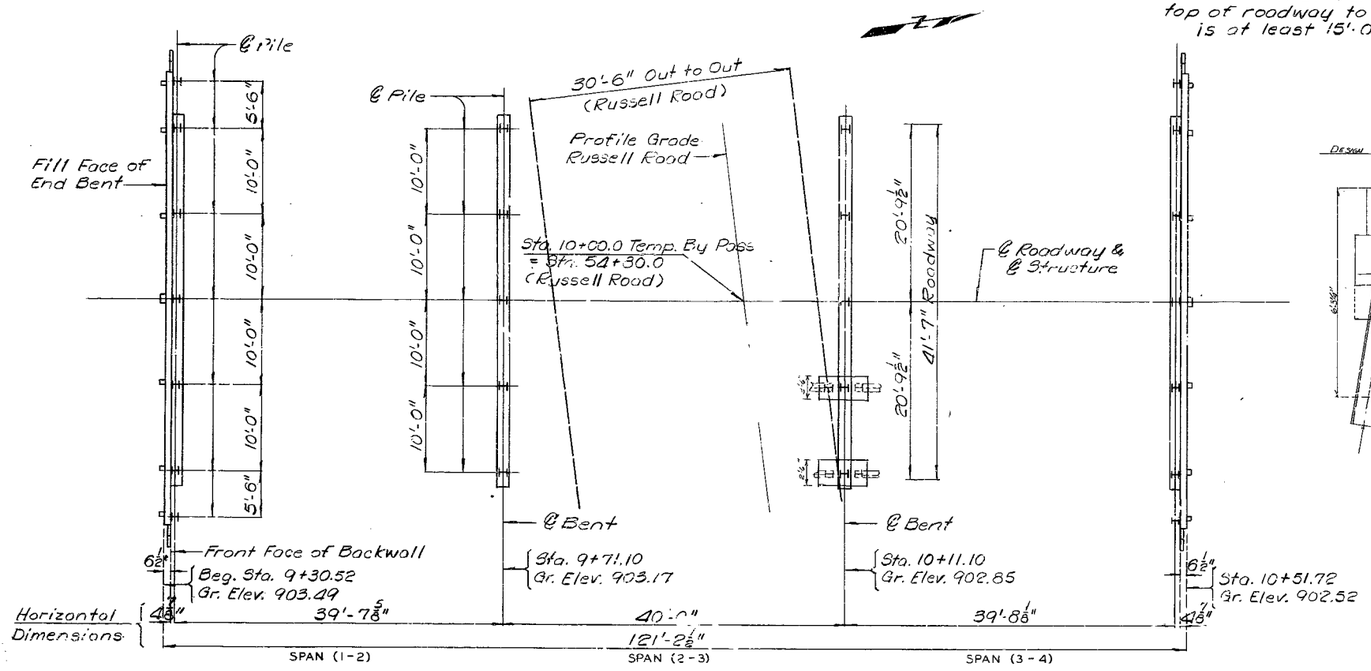
(40'-40'-40') PREFABRICATED SEGMENTED WF BEAM SPANS



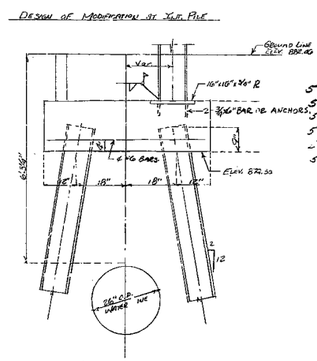
Note: Compacted roadway Fill **was** completed to the final roadway section and up to the elevation of the bottom of the C12x25 within the limits of the structure and for not less than 25' in back of the Fill face of the end bents before piles **were** driven for any bents falling within the embankment section.

ELEVATION

Note: Contractor **did** exercise caution during construction to prevent damage to existing underground utilities.
A minimum vertical clearance of 13'-6" from crown of existing lane to nearest temporary construction falsework **was** maintained during construction.
"*" Final vertical clearance from top of roadway to bottom of superstructure is at least 15'-0".



PLAN



GENERAL NOTES:

FINAL PLANS

Design Specifications: A.A.S.H.T.O. - 1977 Load Factor Design

Design Loading: H20-44

Design Unit Stresses:
Structural Steel (A.S.T.M. A588) fy = 50,000 psi
Structural Carbon Steel (Piling & Swing Bracing) fs = 20,000 psi
Steel Pile fb = 9,000 psi

Timber:
All timber **was** standard rough sawn.
All timber **was** treated with creosote or pentachlorophenol solution.
All timber **did** have a minimum strength of 1500 psi and **was** either douglas fir conforming to the requirements of paragraph 123b (MC-14), 124b (MC-14) and 130bb of the Standard Grading Rules for West Coast Lumber, No. 16, December 1, 1976 Revised Edition or southern pine conforming to the requirements of paragraphs 312 (MC-19), 342 (MC-19) and 405.1 of the Southern Pine Inspection Bureau Grading Rules, 1977 Edition or a satisfactory grade of sound native oak.

Note: All bolts **were** High Tensile Strength Bolts.

QUANTITIES		
ITEM		TOTAL
Structural Steel Pile (10")	Lin. Ft.	1050 ✓
Furnishing Superstructure	Lump Sum	1 ✓
Erecting Superstructure	Lump Sum	1 ✓
Removing & Storing Superstructure	Lump Sum	1 ✓
CONTINGENT ITEMS		
503.01 Class 1 Exc.	Cu. Yds.	2.7 ✓
503.02 Class "B" Concrete	Cu. Yds.	1.4 ✓
503.03 Furnish & install metal plates	Each	2 ✓
503.04 Remove & replace concrete Pavement	Lump Sum	1 ✓
503.05 Repair angle irons	F.A.	320.69 ✓
503.06 Repair angle irons	F.A.	337.16 ✓

PILE DATA					
BENT NO.		1	2	3	4
Pile Type and Size		HP10x42	HP10x42	HP10x42	HP10x42
Number		7	5	9	7
Approximate Length	Ft.	43	42	28	41
Design Bearing	Tons	15	22	22	15
Hammer Energy Req'd.	Ft. Lbs.	7000	7000	7000	7000

Note: Minimum energy requirement of hammer based on plan length and design bearing value of piles. All piles **were** driven to practical refusal.

B.M. Elev. 904.60 □ on top of Rt. barrier curb Abut. #4. Sta. 295+47, L-659R S.B.L.

TEMPORARY **BRIDGE** OVER RUSSELL ROAD

STATE ROAD FROM ROUTE 210 NORTH
IN KANSAS CITY

PROJECT NO. I-IR-35-1(120) **STA.** 9+30.52

JOB NO. 4-I-35-340 **RTE.** I-35

CLAY **COUNTY**

DATE 1/13/83

STD.
STD.
L-659T

325

DESIGNED Sept. 1981
DETAILED Nov. 1981
CHECKED Dec. 1981

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

Sheet No. 1A of 4.

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

May 2, 2024
4:18:47pm

COUNTY : CLAY **BRIDGE :** L0659 R **REVIEW STATUS :** APPROVED **NBI STATUS :** P
RECORD TYPE : ROUTE CARRIED 'ON' STRUCT **RUN DATE :** 3/7/2024 **SUBMITTAL YEAR :** 2023

GENERAL STRUCTURE INFORMATION

1	State	MISSOURI
2	District	KC
3	County	CLAY
8	Federal ID No.	6412
27	Year Built	1954
106	Year Reconstructed	0
42A	Type of Service On	HIGHWAY
21	Structure Maintenance	STATE HIGHWAY AGENCY
22	Structure Owner	STATE HIGHWAY AGENCY
33	Br. Median Code	NO MEDIAN
37	Historical Significance	NOT ELIGIBLE FOR NR OF HP
101	Parallel Struc Desg	LEFT
103	Temporary Structure	NOT TEMPORARY
112	NBIS Bridge Length	YES

ROUTE DESIGNATION INFORMATION

5A	Record Type	ROUTE CARRIED 'ON' STRUCT
5B	Route Signing Prefix	IS
5C	Designated Level of Service	MAINLINE
5D	Route Number	00029
5E	Directional Suffix	NOT APPLICABLE
7	Facility Carried	IS 29 S
12	Base Hwy. Network	YES
13A	LRS Inventory Route No.	0000005878
13B	Subroute No.	00
20	Toll Status	ON FREE ROAD
26	Functional Classification	11-UR PRNCPL ARTERIAL-IS
28A	Lanes on Structure	03
100	STRAHNET Designation	ON A DEFENSE HWY
104	National Highway System	ON NHS
105	Federal Lands Highway	NOT APPLICABLE
110	Designated Nat. Network	YES

STRUCTURE LOCATION INFORMATION

4	Place	AVONDALE CITY
	Code	02800
9	Location	S 1 T 50 N R 33 W
11	Milepoint	123.90 miles
16	Latitude	39 D 9 M 60 S
17	Longitude	94 D 33 M 33 S

STRUCTURE TRAFFIC INFORMATION

29	AADT	43245
30	AADT Year	2023
102	Direction of Traffic	1-WAY TRAFFIC
109	AADT Truck Percent	12%
114	Future AADT	77841
115	Future AADT Year	2043

UNDERRECORD INFORMATION

6	Features Intersected	CST NE PARVIN RD
42B	Type of Service Under	HIGHWAY
28B	Lanes Under Structure	02
54A	Vert. Clearance Ref.	HIGHWAY
54B	Vert. Clearance	14 Ft. 12 In.
55A	Rt. Lat Clear Ref.	HIGHWAY
55B	Rt. Lat Clearance	6 Ft. 11 In.
56	Left Lat Clearance	0 Ft. 0 In.
38	Navigation Control	N/A
39	Nav Vertical Clear	0 Ft. 0 In.
40	Nav Horizontal Clear	0 Ft. 0 In.
111	Nav. Pier Protection	
116	Nav. Cl. Vert. Clear	

STRUCTURE GEOMETRIC INFORMATION

10	Inventory Rte. Vert. Clear	99 Ft. 99 In.
19	By pass Detour Length	0.62 miles
32	Approach Roadway Width	51 Ft. 10 In.
34	Skew	7.00 Degrees
35	Struct. Flared	NO
47	Total Horiz. Clear	51 Ft. 10 In.
48	Maximum Span Length	62 Ft. 0 In.
49	Structure Length	123 Ft. 0 In.
50A	Left Curb/Sidewalk Width	0 Ft. 0 In.
50B	Right Curb/Sidewalk Width	0 Ft. 0 In.
51	Curb to Curb Br. Width	50 Ft. 10 In.
52	Deck Width (Out-Out)	53 Ft. 6 In.
53	Vert.Clearance Over Deck	99 Ft. 99 In.

Design_No = l0659

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

May 2, 2024
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COUNTY : CLAY **BRIDGE :** L0659 R **REVIEW STATUS :** APPROVED **NBI STATUS :** P
RECORD TYPE : ROUTE CARRIED 'ON' STRUCT **RUN DATE :** 3/7/2024 **SUBMITTAL YEAR :** 2023

LOAD RATING AND POSTING INFORMATION

31	Design Load	HS 20+MOD
41	Structure Status	A - OPEN NO RESTRICTIONS
63	Oper. Rating Meth.	LOAD FACTOR
64	Operating Rating	75 Tons.
65	Inventory Rating Meth	LOAD FACTOR
66	Inventory Rating	41 Tons.
70	Bridge Posting Code	=>LEGAL LOADS

PROPOSED IMPROVEMENT INFORMATION

	Sufficiency Rating	92.9 Percent
	Deficiency Rating	NOT DEFICIENT
	Funding Eligibility	
75A	Proposed Work	
75B	Work Done By	
76	New Struc Length	0 Ft. 0 In.
94	Struc Improve Cost	$ 0,000
95	Roadway Improve Cost	$ 0,000
96	Total Project Cost	$ 0,000
97	Year of Cost Estimates	0

APPRAISAL RATING INFORMATION

36A	Br. Rail App. Rating	MEETS ACCEPTBLE STND
36B	Transition Rail App. Rating	MEETS ACCEPTBLE STND
36C	Approach Rail App. Rating	MEETS ACCEPTBLE STND
36D	Rail End Treat. App. Rating	MEETS ACCEPTBLE STND
67	Struc Eval App. Rating	6
68	Deck Geometry App. Rating	5
69	Underclearance App. Rating	4
71	Waterway Adeq. App. Rating	N
72	Approach Road App. Rating	8
113	Scour Assess App. Rating	N

APPROVED POSTING INFORMATION

Approved Posting Category S-1

Ton1 Ton2 Ton3

Tonnage Values for Posting Sign

General Text for Posting Sign

NO POSTING REQUIRED

MATERIAL/CONSTRUCTION INFORMATION

43A	Main Struc. Mat type	PRESTRSED CONCRETE CONTIN
43B	Main struc Constr. Type	STRINGER/MULTIBEAM - GRD
45	# of Main Spans	3
44A	Appr Struc. Mat type	
44B	Appr Struc. Cnstr. type	
46	# of Approach Span	0
107	Deck Mat/Constr.	1 CONCRETE CIP
108A	Wear Surf Mat/Constr.	1 MONO CONCRETE
108B	Membrane Mat/Constr.	0 NONE
108C	Deck Protect Mat/Constr.	1 EPOXY

CONDITION RATING INFORMATION

58	Deck Cond. Rating	7
59	Superstructure Cond. Rating	6
60	Substructure Cond. Rating	6
61	Channel /Channel Protection Cond. Rating	N
62	Culvert Cond. Rating	N

INSPECTION INFORMATION

90	Gen. Insp Date	9 / 22	
91	Gen. Insp. Frequency	24	Months
92A	Frac. Critical Inspection	N	Months
93A	Frac. Critical Insp. Date		
92B	Underwater Inspection	N	Months
93B	Underwater Insp. Date		
92C	Special Inspection	N	Months
93C	Special Inspection Date		

BORDER BRIDGE INFORMATION

98	Neighboring State Code
98B	Neighboring State % Respon
99	Neighboring State Struc. No.

FIELD POSTING INFORMATION

Field Posting Category S-1

Ton1 Ton2 Ton3

Tonnage Values for Posting Sign

General Text for Posting Sign

NO POSTING REQUIRED

Design_No = l0659

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

May 2, 2024
4:18:47pm

COUNTY : CLAY **BRIDGE :** L0659 R **REVIEW STATUS :** APPROVED **NBI STATUS :** P
RECORD TYPE : ROUTE 'UNDER' STRUCT **RUN DATE :** 3/7/2024 **SUBMITTAL YEAR :** 2023

GENERAL STRUCTURE INFORMATION

1	State	MISSOURI
2	District	KC
3	County	CLAY
8	Federal ID No.	6412
27	Year Built	1954
106	Year Reconstructed	0
42A	Type of Service On	HIGHWAY
21	Structure Maintenance	
22	Structure Owner	
33	Br. Median Code	
37	Historical Significance	
101	Parallel Struc Desg	LEFT
103	Temporary Structure	NOT TEMPORARY
112	NBIS Bridge Length	

ROUTE DESIGNATION INFORMATION

5A	Record Type	ROUTE 'UNDER' STRUCT	Code : 2
5B	Route Signing Prefix	CST	
5C	Designated Level of Service	MAINLINE	
5D	Route Number	00000	
5E	Directional Suffix	NOT APPLICABLE	
7	Facility Carried	IS 29 S	
12	Base Hwy. Network		
13A	LRS Inventory Route No.		
13B	Subroute No.		
20	Toll Status	ON FREE ROAD	
26	Functional Classification	16-URBAN MINOR ARTERIAL	
28A	Lanes on Structure	03	
100	STRAHNET Designation	RTE NOT A DEFENSE HWY	
104	National Highway System	NOT ON NHS	
105	Federal Lands Highway		
110	Designated Nat. Network	NO	

STRUCTURE LOCATION INFORMATION

4	Place	AVONDALE CITY
	Code	02800
9	Location	S 1 T 50 N R 33 W
11	Milepoint	0.79 miles
16	Latitude	39 D 9 M 60 S
17	Longitude	94 D 33 M 33 S

STRUCTURE TRAFFIC INFORMATION

29	AADT	5728
30	AADT Year	2023
102	Direction of Traffic	2-WAY TRAFFIC
109	AADT Truck Percent	8%
114	Future AADT	
115	Future AADT Year	

UNDERRECORD INFORMATION

6	Features Intersected	CST NE PARVIN RD
42B	Type of Service Under	HIGHWAY
28B	Lanes Under Structure	02
54A	Vert. Clearance Ref.	
54B	Vert. Clearance	
55A	Rt. Lat Clear Ref.	
55B	Rt. Lat Clearance	
56	Left Lat Clearance	
38	Navigation Control	
39	Nav Vertical Clear	
40	Nav Horizontal Clear	
111	Nav. Pier Protection	
116	Nav. Cl. Vert. Clear	

STRUCTURE GEOMETRIC INFORMATION

10	Inventory Rte. Vert. Clear	14 Ft. 12 In.
19	By pass Detour Length	0.00 miles
32	Approach Roadway Width	
34	Skew	
35	Struct. Flared	
47	Total Horiz. Clear	15 Ft. 5 In.
48	Maximum Span Length	62 Ft. 0 In.
49	Structure Length	123 Ft. 0 In.
50A	Left Curb/Sidewalk Width	
50B	Right Curb/Sidewalk Width	
51	Curb to Curb Br. Width	
52	Deck Width (Out-Out)	
53	Vert.Clearance Over Deck	

Design_No = l0659

Missouri Department of Transportation
Bridge Inventory and Inspection System
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RECORD TYPE : ROUTE 'UNDER' STRUCT **RUN DATE :** 3/7/2024 **SUBMITTAL YEAR :** 2023

LOAD RATING AND POSTING INFORMATION

31	Design Load
41	Structure Status
63	Oper. Rating Meth.
64	Operating Rating
65	Inventory Rating Meth
66	Inventory Rating
70	Bridge Posting Code

PROPOSED IMPROVEMENT INFORMATION

	Sufficiency Rating
	Deficiency Rating
	Funding Eligibility
75A	Proposed Work
75B	Work Done By
76	New Struc Length
94	Struc Improve Cost
95	Roadway Improve Cost
96	Total Project Cost
97	Year of Cost Estimates

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36A	Br. Rail App. Rating
36B	Transition Rail App. Rating
36C	Approach Rail App. Rating
36D	Rail End Treat. App. Rating
67	Struc Eval App. Rating
68	Deck Geometry App. Rating
69	Underclearance App. Rating
71	Waterway Adeq. App. Rating
72	Approach Road App. Rating
113	Scour Assess App. Rating

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43B	Main struc Constr. Type	STRINGER/MULTIBEAM - GRD
45	# of Main Spans	
44A	Appr Struc. Mat type	
44B	Appr Struc. Cnstr. type	
46	# of Approach Span	
107	Deck Mat/Constr.	
108A	Wear Surf Mat/Constr.	
108B	Membrane Mat/Constr.	
108C	Deck Protect Mat/Constr.	

CONDITION RATING INFORMATION

58	Deck Cond. Rating
59	Superstructure Cond. Rating
60	Substructure Cond. Rating
61	Channel /Channel Protection Cond. Rating
62	Culvert Cond. Rating

INSPECTION INFORMATION

90	Gen. Insp Date
91	Gen. Insp. Frequency
92A	Frac. Critical Inspection
93A	Frac. Critical Insp. Date
92B	Underwater Inspection
93B	Underwater Insp. Date
92C	Special Inspection
93C	Special Inspection Date

BORDER BRIDGE INFORMATION

98	Neighboring State Code
98B	Neighboring State % Respon
99	Neighboring State Struc. No.

APPROVED POSTING INFORMATION

Approved Posting Category

Ton1 Ton2 Ton3

Tonnage Values for Posting Sign

General Text for Posting Sign

FIELD POSTING INFORMATION

Field Posting Category

Ton1 Ton2 Ton3

Tonnage Values for Posting Sign

General Text for Posting Sign

Design_No = l0659