Missouri Department of Transportation
State Bridge Inspection Report

May 02, 2024
4:10:14PM

COUNTY: CLAY **DISTRICT: KC** **CLASS: STATBR** **FED-ID: 6413** **BRIDGE: L0660**

GENERAL STRUCTURE INFORMATION

ROUTE: IS29N	**# SPANS:** 3	**PLACE CODE:** 02800 AVONDALE CITY	
FEATURE: CST NE PARVIN RD	**LANES ON:** 3	**LENGTH:** 138 FT 0 IN	
STATUS: A-OPEN	**LANES UNDER:** 2	**MAXIMUM SPAN:** 62 FT 1 IN	
LOG MILE: 4.539	**COMPASS DIRECTION:** SOUTH to NORTH	**APPROACH ROADWAY:** 52 FT 0 IN	
DETOUR: 1.00 MILES	**DIRECTION OF TRAFFIC:** 1-WAY TRAF	**CURB TO CURB:** 50 FT 10 IN	
NHS: YES	**FUNCTIONAL CLASS:** UR-INTERSTATE	**OUT TO OUT:** 53 FT 6 IN	
BUILT: 1954	**NBI OWNER:** MODOT	**AADT:** 56042	
REHAB: 1983	**NBI MAINTAINED:** MODOT	**AADT YEAR:** 2023	
LOCATION: S 1 T 50 R 33 W	**MAINTENANCE DISTRICT:** KC	**AADT TRUCK:** 11.8%	
LATITUDE: 39 9 59.73 (DMS)	**MAINTENANCE COUNTY:** CLAY	**FUTURE AADT:** 100876	
LONGITUDE: 94 33 30.57 (DMS)	**SUB AREA:** 7C25	**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: 6413** **BRIDGE: L0660**

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)--(37'-62'-37') CONT P/S CONC I-GDR SPANS

[ITEM 58] DECK: 7-GOOD CONDITION
RATING : 02/02/2007
COMMENTS: (OTISL1, 09/29/2016)--T CRACKS
(OTISL1, 10/10/2018)--WEAR

[ITEM 59] SUPER: 5-FAIR CONDITION
RATING : 10/10/2018
COMMENTS: (OTISL1, 10/10/2018)--OPEN CRACKING, SPALLING GIRDER 6, SPAN 1

[ITEM 60] SUB: 6-SATISFACTORY CONDITION
RATING : 10/02/2014
COMMENTS: (OTISL1, 10/05/2020)--MODERATE SPALLS @ COLUMNS

[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	

[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-SOUTH	
GALVANIZED STEEL	THRIE BEAM TO W-BEAM	NORTHEAST	

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

COUNTY: CLAY **DISTRICT: KC** **CLASS: STATBR** **FED-ID: 6413** **BRIDGE: L0660**

MATERIAL	CONSTRUCTION	DIRECTION	COMMENTS
GALVANIZED STEEL	W-BEAM	BOTH-SOUTH	
GALVANIZED STEEL	W-BEAM	NORTHEAST	

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

MATERIAL	CONSTRUCTION	DIRECTION	COMMENTS
GALVANIZED STEEL	BREKAWAY SYSTEM	SOUTH	

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

MATERIAL	CONSTRUCTION	DIRECTION	CONDITION*	COMMENTS
ASPHALT/CONCRETE	BITUMINOUS MAT/SLAB	BOTH	GOOD	

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	COMMENT
SPALLS	ENDS		MODERATE	

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*				
	DECK PROTECTION	*EPOXY POLYMER*	*COATED REBAR*				
	MEMBRANE	*NOTAPPLICABLE*	*NONE*				

COMMENT: ***COMMENT:*** ***COMMENT:***

DRAINAGE COMPONENTS:

COMPONENT	MATERIAL	CONSTRUCTION	DIRECTION	COMMENTS

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*	*BOTH*	

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
TRANSVERSE CRACKS	THROUGHOUT		FEW		
WEAR	THROUGHOUT		MEDIUM		

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

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
TRANSVERSE CRACKS	THROUGHOUT		FEW		
WEAR	THROUGHOUT		MEDIUM		

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

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
TRANSVERSE CRACKS	THROUGHOUT		FEW		
WEAR	THROUGHOUT		MEDIUM		

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	37 FT 8 IN	NO	

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
LEACHING	GIRDER ENCASEMENT		MODERATE		
LONGITUDINAL CRACKS	GDR6		MINOR		
RUST STAINS	GDR6		MINOR		
SHEAR CRACKS	GDR6		FINE		
SPALLS	GDR6		MODERATE		

SPAN	COMPOSITE INDICATOR	LENGTH	WEATHERING STEEL	COMMENTS
MAIN SPANS-2	COMPOSITE	62 FT 1 IN	NO	

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT

SPAN	COMPOSITE INDICATOR	LENGTH	WEATHERING STEEL	COMMENTS
MAIN SPANS-3	COMPOSITE	37 FT 8 IN	NO	

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
LEACHING	GIRDER ENCASEMENT		MODERATE		
VERTICAL CRACKS	DIAPHRAGMS		MINOR		

SUBSTRUCTURE COMPONENTS

SUBSTRUCTURE	SKEW	LENGTH	MATERIAL	CONSTRUCTION	LABEL	COMMENTS
ABUTMENT-1	*RA-14 DEGREES*	*55 FT 2 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
EFFLORESCENCE	THROUGHOUT		MODERATE		
SPALLS	THROUGHOUT		MINOR		(OTISL1, 10/05/2020)--AT GIRDER
VERTICAL CRACKS	THROUGHOUT		MANY		

ASSOCIATED COMPONENT	MATERIAL	CONSTRUCTION
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

BENT-2	RA-14 DEGREES	51 FT 10 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
DELAMINATION	THROUGHOUT		MINOR		
COLUMN	REINFORCED CONCRETE	CAST-IN-PLACE			
CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
DELAMINATION	THROUGHOUT		MANY		
REBAR EXPOSED	BOTTOM		FEW		
SPALLS	BOTTOM		MODERATE		
FOOTING	REINFORCED CONCRETE	SPREAD			
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-14 DEGREES 51 FT 10 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	BOTTOM		MODERATE		
VERTICAL CRACKS	THROUGHOUT		FEW		
FOOTING	REINFORCED CONCRETE	SPREAD			
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-14 DEGREES 55 FT 2 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
DELAMINATION	THROUGHOUT		MINOR		
LEACHING	TOP		MINOR		
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
SPALLS	THROUGHOUT		FEW		
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

*****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	6 FT 6 IN		14193

VERTICAL CLEARANCE TYPE**	VALUE	DIRECTION	DATE	COMMENT
ACTUAL	18 FT 2 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:

RESPONSIBILITY	LOCATION	ITEM	CATEGORY	PRIORITY	DATE	WORK ITEM COMMENT
DISTRICT ROUTINE	SOUTH EAST	REPAIR EROSION	SLOPE	3	09/21/2016	
DISTRICT SPECIAL	ROADWAY SURFACE	SEAL WITH SILANE	DECK	3	04/11/2023	

UTILITY ATTACHMENTS

UTILITY	OWNER	METHOD	MEASUREMENT TYPE	VALUE	NUMBER	UTILITY ATTACHMENT COMMENT

PROGRAM NOTES INFORMATION

Design_No = l0660

YEAR	PROJECT #	MONTH LET	YEAR LET	ITEMS	COMMENT

COMPUTER GENERATED RATINGS AND DEFICIENCY ITEMS

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

Rated Item	Rating	Rating Date
[Item 67] Structure Evaluation Rating:	5-BETTER THAN MINIMUM	3/5/2018
[Item 68] Deck Geometry Rating:	5-BETTER THAN MINIMUM	5/18/2001
[Item 69] Underclearance:	4-MEETS MINIMUM TOLERABLE	3/25/2003
Sufficiency Rating:	71.6%	3/7/2024
Deficiency:	NOT DEFICIENT	5/18/2001
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

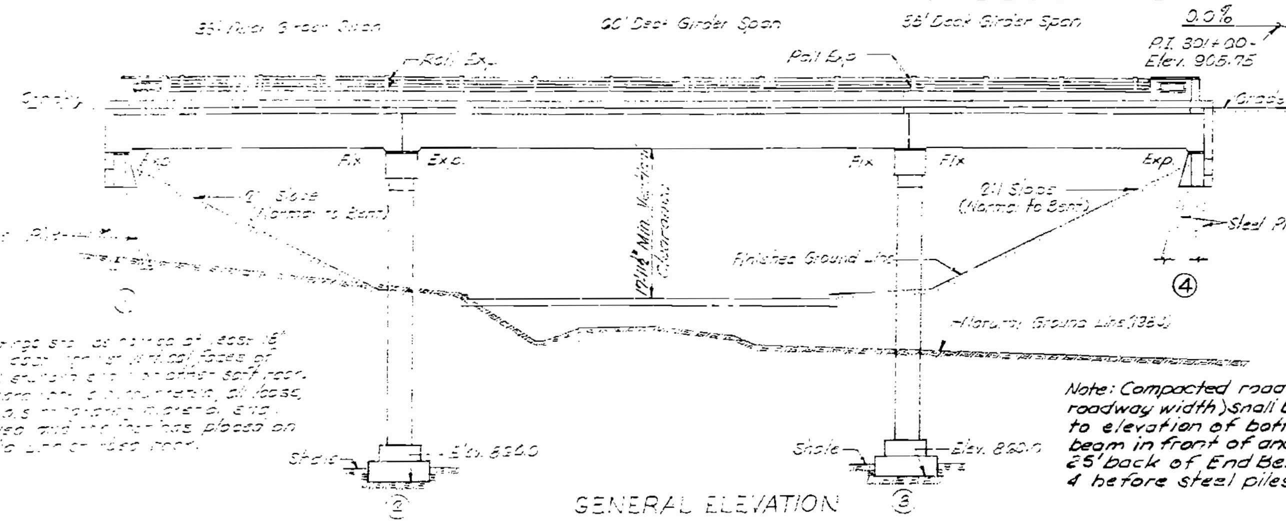
 # OUTFALLS: **INSPECTOR:**

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		



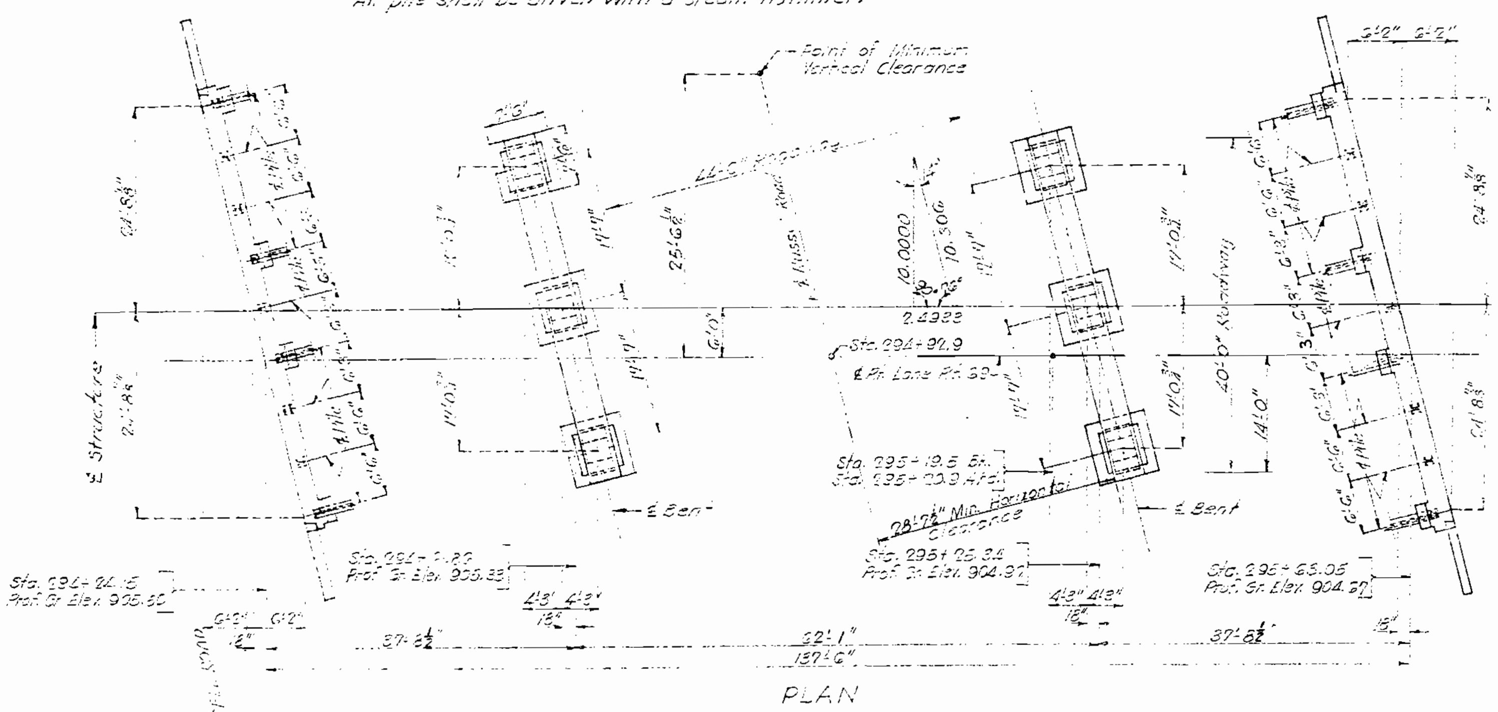
Note: Footings shall be notched at least 18" into and against the vertical faces of firm and stratified shale or other soft rock. If so, all loose, shelly or disintegrated material shall be removed and the footing placed on hard, solid shale or rock.

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 No. 1 and 4 before steel piles are driven.

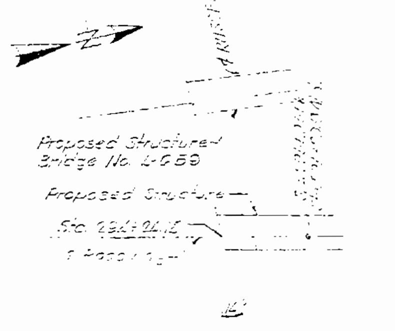
Note: All piling shall be 10" Bearing Pile @ 53# and shall conform with details and notes on Sheet No. 2 of design plans. All steel Pile required for this structure will be furnished by the State. See Special Provisions.

All piles shall be driven to or into solid rock, boulders, shale, or cemented gravel or to 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.



PLAN



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 35-1.9.B.2 of the Standard Specifications.

For requirements on welding electrodes see Special Provisions. Qualification of welding operators will be required.

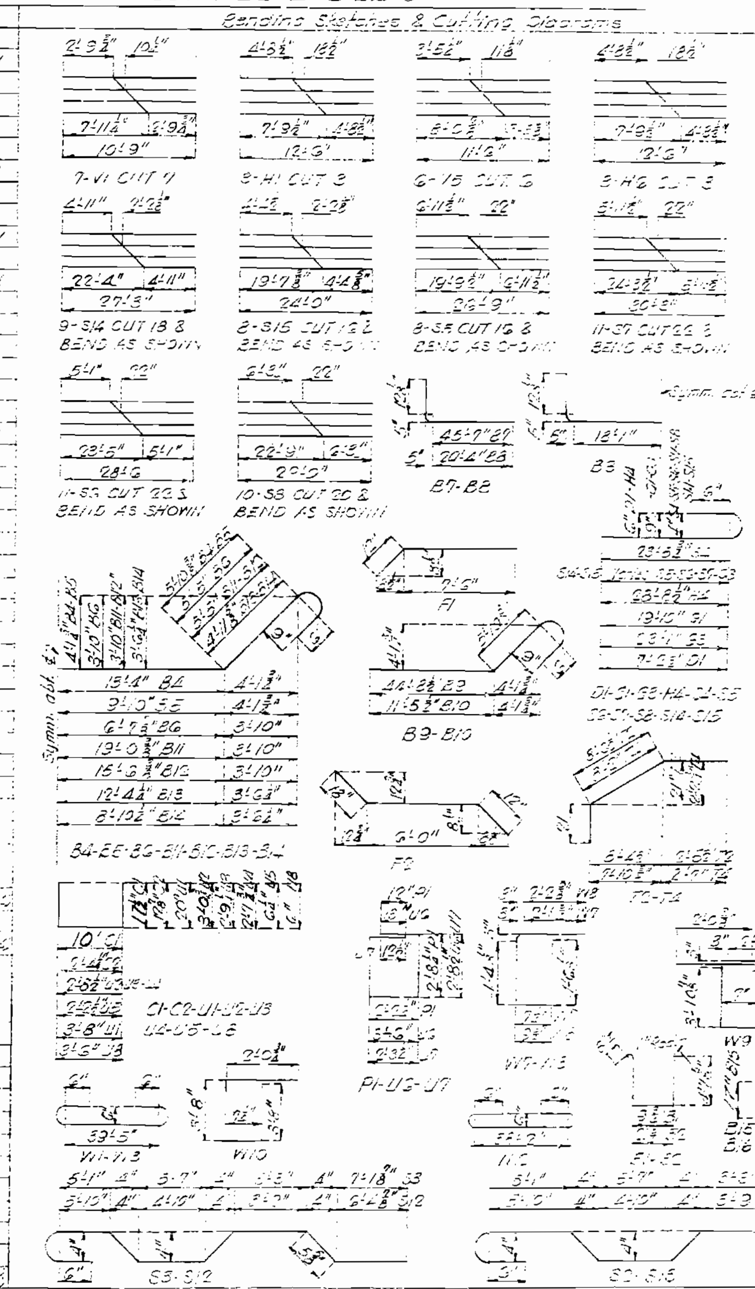
Surfaces of piles at Bents No. 1 & 4 from bottom of concrete cap to 3'-0" below bottom of concrete cap shall be painted with one coat of an approved brand of emulsified asphalt paint. Payment for excavating around piles to 3'-0" below bottom of cap and backfilling same, furnishing emulsified asphalt 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 and posts above top of curbs.

SCHEDULE OF BILL OF REINFORCING STEEL

No.	Size	Length	Mark	Location
		End Bents No. 1 & 4		
3	#4	12'-6"	H1	Wing Bt #1
10	#6	11'-0"	H2	" " "
2	#6	8'-0"	H3	" " "
22	#7	30'-0"	H4	Beam
16	#6	23'-3"	H5	"
3	#4	12'-6"	H6	Wing Bt #4
10	#6	10'-3"	H7	" " "
2	#6	7'-3"	H8	" " "
4	#6	15'-3"	T1	Wing Bt #1
4	#6	12'-9"	T2	" " "
4	#6	14'-9"	T3	Wing Bt #4
4	#6	12'-3"	T4	" "
200	#5	7'-0"	U1	Beam
64	#7	8'-9"	U2	"
16	#7	8'-3"	U3	"
16	#7	8'-0"	U4	"
26	#4	3'-3"	U5	"
7	#5	10'-9"	V1	Wing Bt #1
20	#6	3'-0"	V2	Wing
32	#4	3'-9"	V3	Bm. Hnch.
6	#5	11'-6"	V5	Wing Bt #4
		Int. Bents No. 2 & 3		
48	#8	8'-6"	D1	Footing
32	#6	8'-6"	F1	Col. Hnch.
16	#5	8'-6"	F2	" "
24	#10	21'-5"	G1	Beam
8	#6	22'-6"	G2	"
28	#11	24'-9"	G3	"
16	#10	10'-0"	G4	"
186	#3	10'-3"	P1	Column
74	#5	13'-6"	U6	Beam
40	#5	[illegible]	U7	"
22	#4	4'-6"	U8	"
48	#8	24'-9"	V4	Column
		Superstructure		
310	#4	10'-9"	B1	Gir. Sp. (1-2)(3-4)
235	#4	11'-9"	B2	Gir. Sp. (2-3)
30	#11	33'-6"	B3	Gir. Sp. (1-2)(3-4)
20	#11	41'-9"	B4	" "
10	#11	34'-9"	B5	" " " "
12	#9	27'-6"	B6	" " " "
30	#11	41'-3"	B7	Gir. Sp. (2-3)
30	#11	22'-0"	B8	" " "
30	#11	52'-3"	B9	" " "
30	#11	19'-0"	B10	" " "
15	#11	50'-6"	B11	"
15	#11	45'-3"	B12	" "
10	#11	38'-0"	B13	" " "
10	#11	31'-0"	B14	" " "
50	#6	4'-3"	B15	" " "
226	#4	3'-9"	C1	Curb
272	#5	4'-6"	C2	"
10	#5	33'-5"	C3	Lt. Curb Sp. (1-2), Rt. Curb Sp. (3-4)

No.	Size	Length	Mark	Location
		Superstructure (Cont'd)		
20	#5	[illegible]	C4	Curb Sp. [illegible]
10	#5	[illegible]	C5	[illegible]
4	#5	[illegible]	C6	Flared Curb
4	#5	3'-6"	C7	" "
4	#5	3'-0"	C8	" "
12	#4	2'-0"	P1	End Post
12	#4	5'-3"	P2	"
32	#4	3'-9"	P3	"
456	#5	25'-9"	S1	Slab
58	#5	27'-0"	S2	Slab Sp. (1-2)(3-4)
56	#5	23'-6"	S3	" "
100	#5	24'-6"	S4	Slab
16	#5	26'-9"	S5	Slab Sp. (1-2)(3-4)
16	#5	28'-3"	S6	" " " "
20	#5	26'-3"	S7	" " " "
20	#5	29'-0"	S8	" "
226	#5	19'-9"	S9	" " "
44	#5	5'-9"	S10	Flared Slab
156	#5	32'-6"	S11	Slab Sp. (2-3)
48	#5	25'-3"	S12	" " "
48	#5	27'-6"	S13	" " "
12	#5	27'-3"	S14	" " "
16	#5	24'-0"	S15	" " "
8	#6	42'-0"	W1	End Web Sp. (1-2)(3-4)
8	#6	22'-6"	W2	" " "
4	#8	20'-0"	W3	" " Sp. (2-3)
12	#8	25'-0"	W4	" " " "
52	#4	21'-3"	W5	End Web
72	#5	3'-5"	W6	End Web Sp. (1-2)(3-4)
56	#5	12'-0"	W7	" " "
20	#5	12'-3"	W8	" " "
32	#4	15'-3"	W9	Int. Web
132	#5	10'-0"	W10	End Web
15	#4	20'-3"	W11	Int. Web
5	#5	10'-9"	W12	" "
40	#6	4'-0	B16	Gir. Sp. (1-2)(3-4)



ESTIMATED QUANTITIES				
Item		Substr.	Superstr.	Total
Class 1 Excavation for Structures	Cu. Yds.	360		360
Class "B" Concrete	Cu. Yds.	174.3	398.4	572.7
Reinforcing Steel	Lbs.	22,410	97,290	119,700
Gray Iron Alloy Castings	Lbs.		3610	3610
Aluminum Alloy Handrail	Lin. Ft.		245	245
Steel piling in place (State Furnished)	Lin. Ft.	690		690

B.M. Pk. Elev. 878.80 R.R. Spike in ... Sta. ... 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+24.15 (RIGHT LANE)

CLAY **COUNTY**

FINISHED

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

APPROVED BY Rex M. Whitton, CHIEF ENGINEER, DATE 6/10/1954

9/7/58

STD. ... R3

Drawn May 1954 **by** M.R.L.

Checked May 1954 **by** J.E.L.

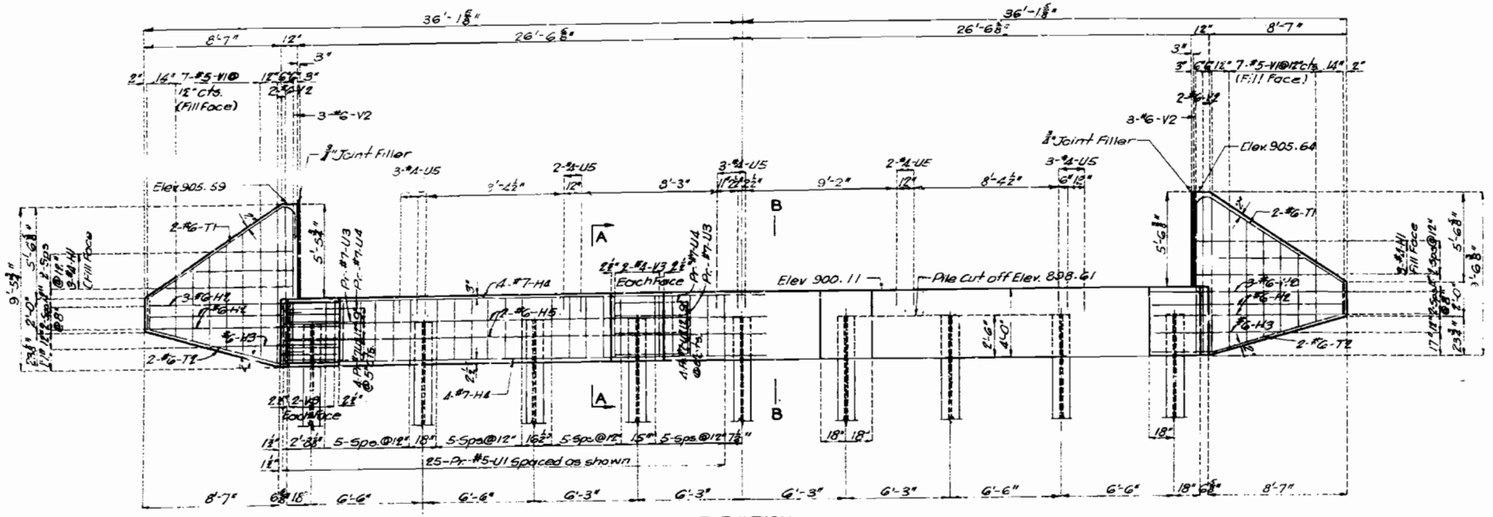
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 1 **of** 7

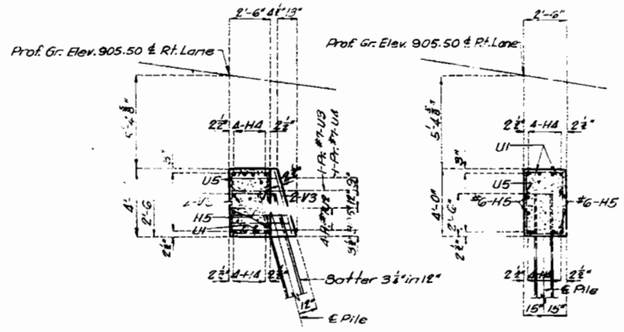
SEE FINAL PLANS BROWN-LINES

MISSOURI STATE HIGHWAY DEPARTMENT

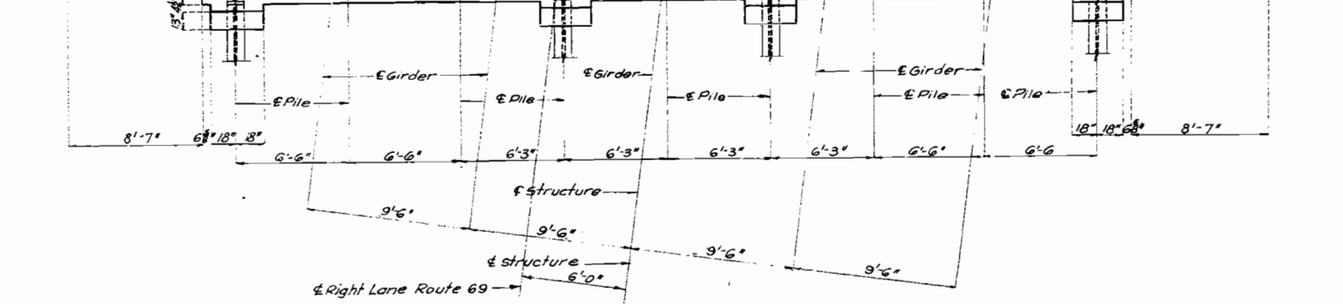
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	MO.	UI-99(6) (RT. 69)	19		



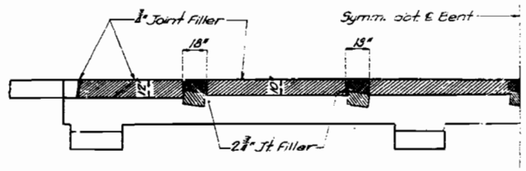
ELEVATION



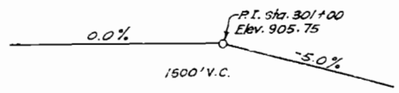
SECTION AA SECTION BB

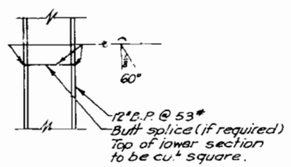


PLAN



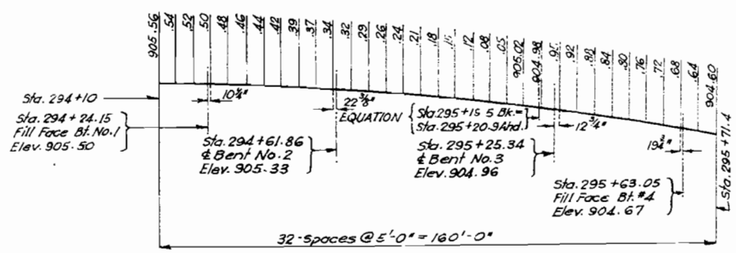
DETAILS OF JOINT FILLER





DETAILS OF STEEL PILE

DETAILS OF END BENT NO. 1



GRADE ELEVATIONS ALONG ℄ SURVEY (RIGHT 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+24.15 (RIGHT LANE)

CLAY COUNTY

L-660

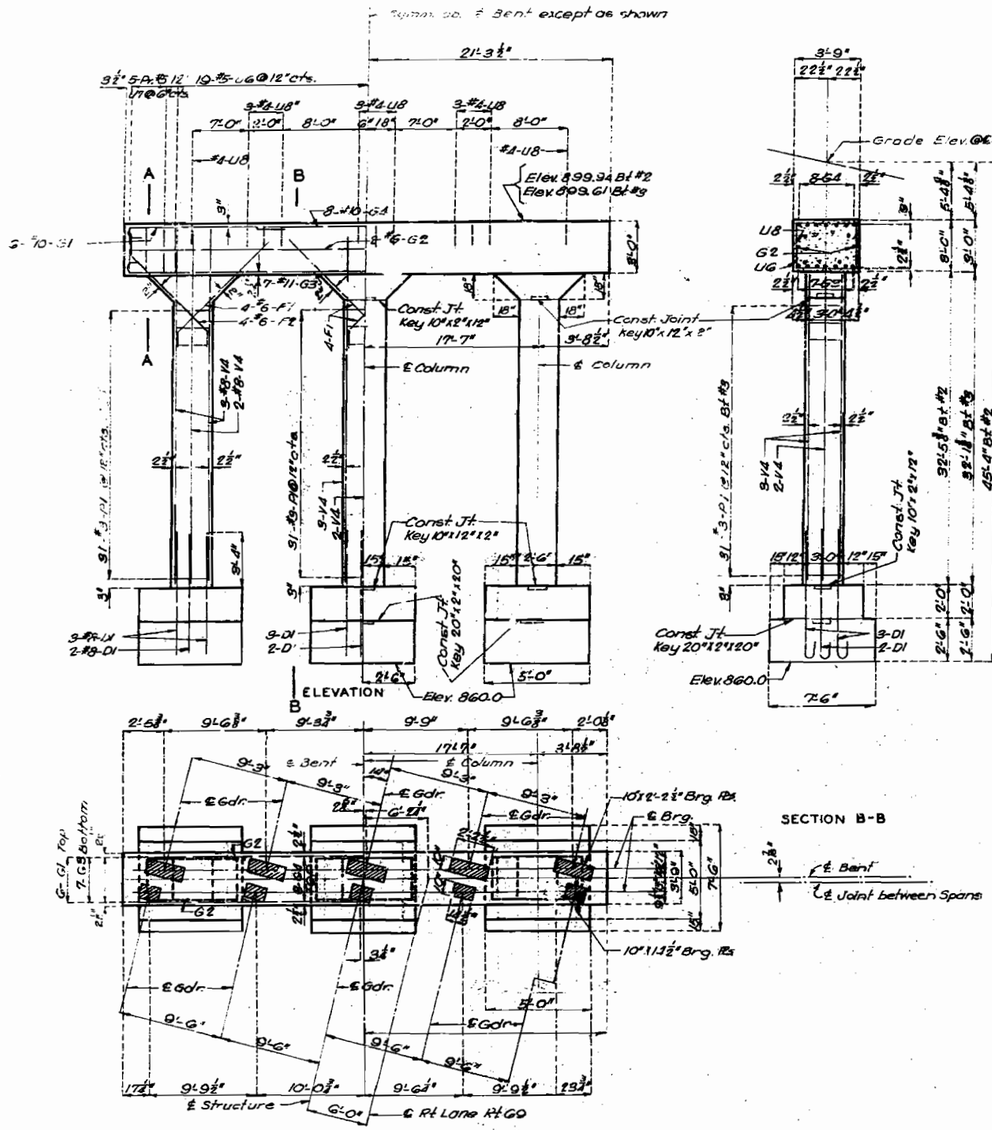
Drawn April 1954 by M.E.L. & J.T.F.
Checked May 1954 by J.E.L.

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

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	UI-99(6) (RT.69)	'53		

Typical exc. ℄ Bent except as shown



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+24.15 (RIGHT LANE)

CLAY COUNTY

L-660

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

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

THE FINAL PLANS GROUP LINES

2 or 3 Col. Int. Square or Skewed — All Loadings

1 of 2

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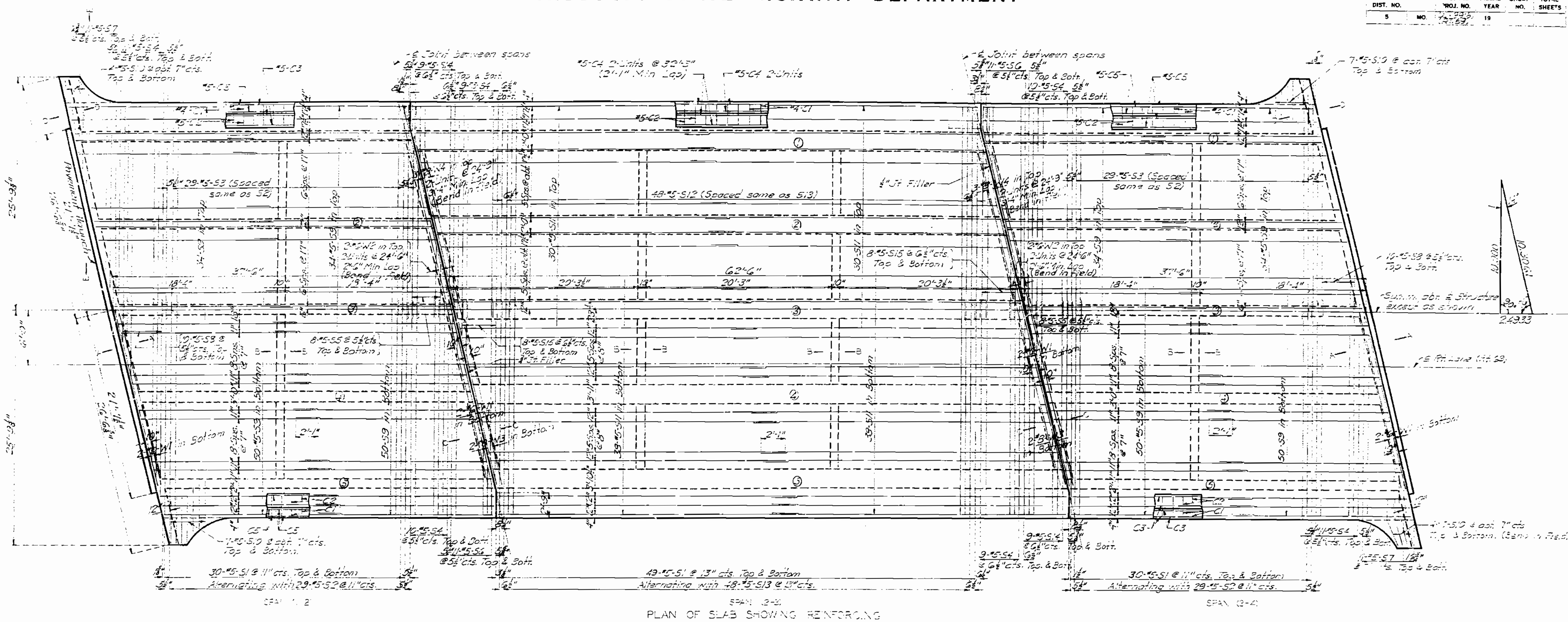
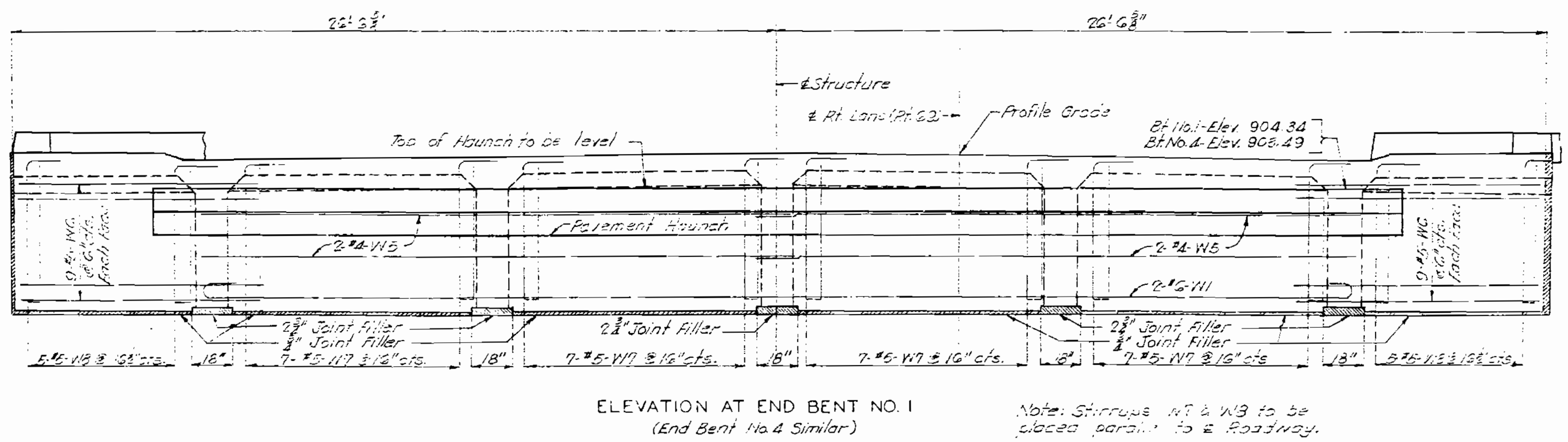
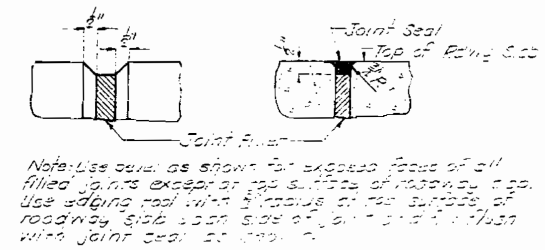
MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	[illegible] (RT.69)	19		







BRIDGE OVER RUSSELL ST.

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+24.15

CLAY COUNTY

Drawn Apr. 1954 by M.A.P.

Checked May 1954 by J.E.L.

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

Sheet No. 5 of 9

NO CONSTRUCTION CHANGES

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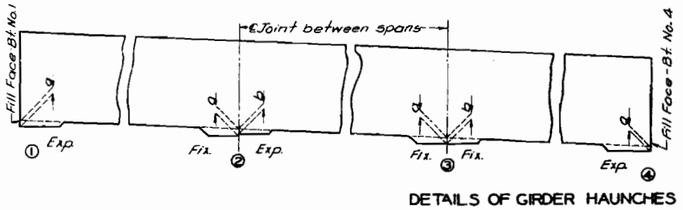
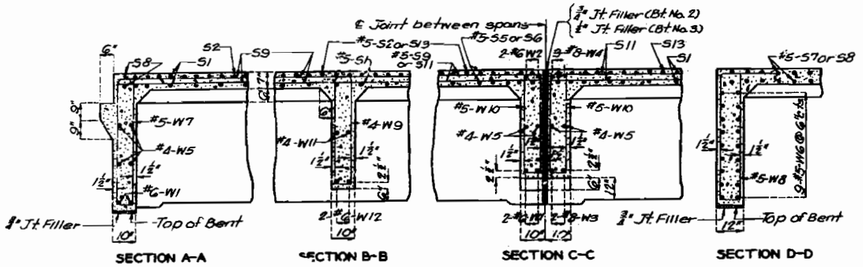
MISSOURI STATE HIGHWAY DEPARTMENT

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

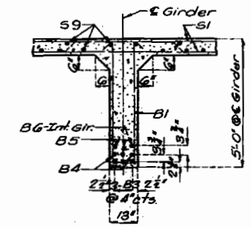


DETAILS OF GIRDER HAUNCHES

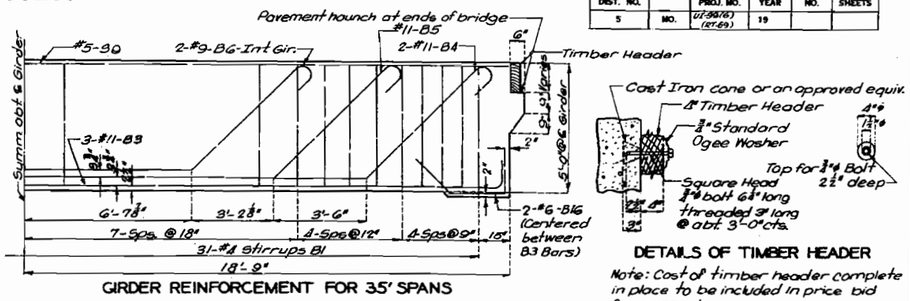
GIRDER HAUNCHES						
	Bt No.1	Bt No. 2		Bt No. 3		Bt No.4
Girder	a	a	b	a	b	a
①	8"	12"	3"	18"	1"	1"
②	12"	2 1/2"	1 3/4"	2"	2"	2"
③	2 3/4"	3 1/2"	2 3/4"	2 3/4"	2 3/4"	2 3/4"
④	1 1/2"	2 3/4"	1 1/2"	1 3/4"	1 3/4"	1 1/2"
⑤	1"	3"	3"	3"	3"	3"



PART LONGITUDINAL SECTION
Note: See sheet 7 of 7 for location of sections



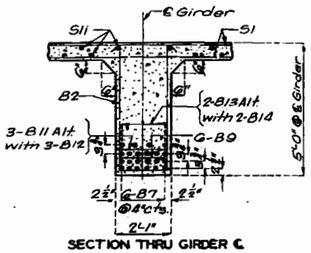
SECTION THRU GIRDER



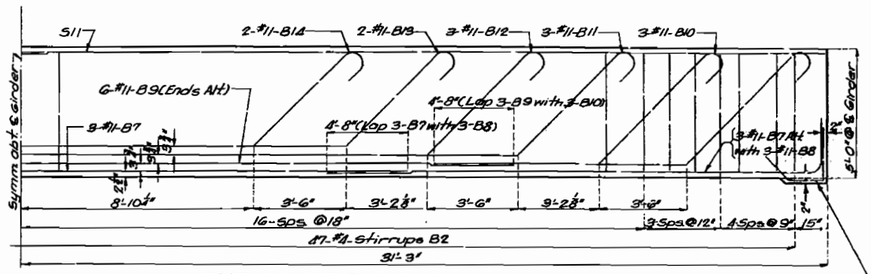
GIRDER REINFORCEMENT FOR 35' SPANS

DETAILS OF TIMBER HEADER

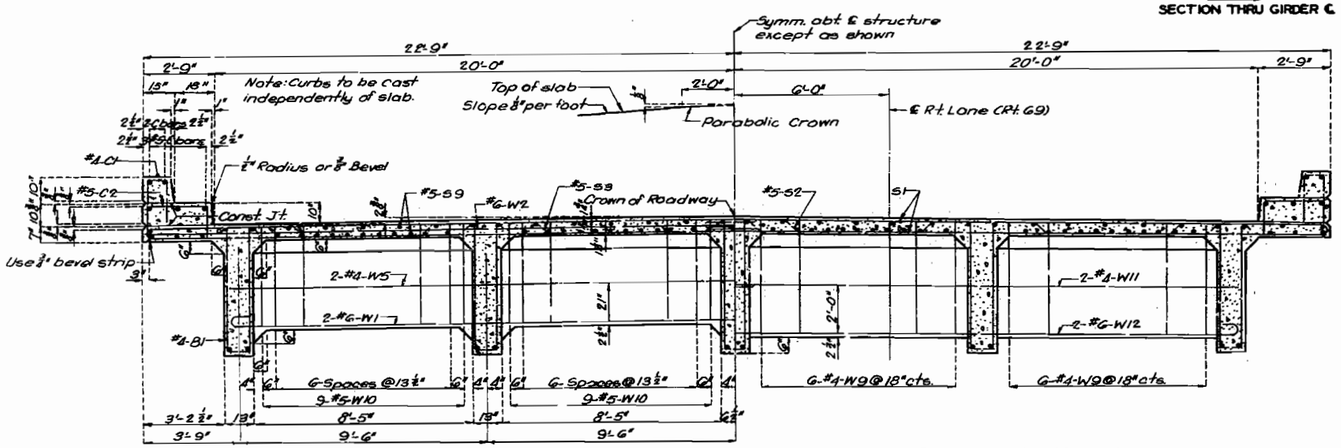
Note: Cost of timber header complete in place to be included in price bid for concrete.



SECTION THRU GIRDER ℄



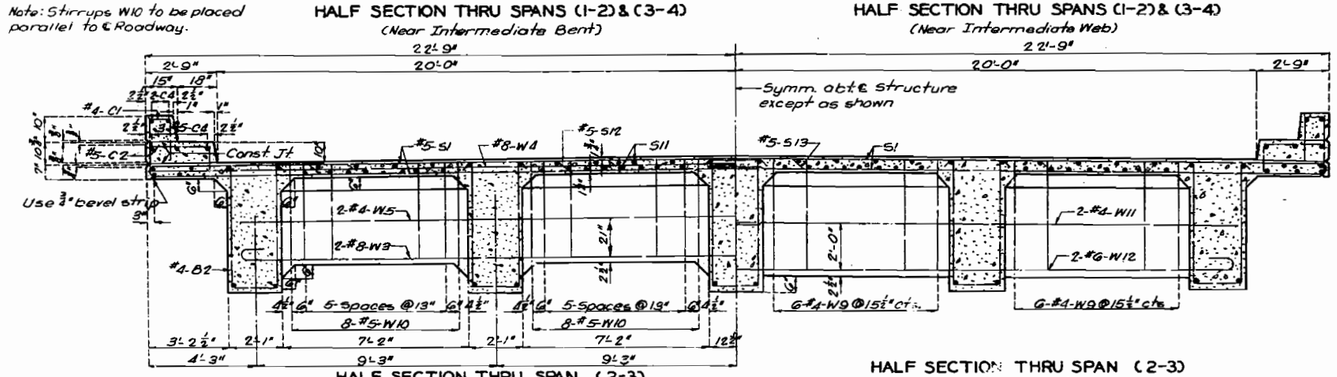
GIRDER REINFORCEMENT 60' SPAN



HALF SECTION THRU SPANS (1-2) & (3-4)
(Near Intermediate Bent)

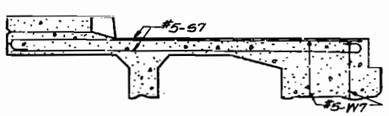
Note: Stirrups W10 to be placed parallel to ℄ Roadway.

HALF SECTION THRU SPANS (1-2) & (3-4)
(Near Intermediate Web)



HALF SECTION THRU SPAN (2-3)
(Near Intermediate Bent)

HALF SECTION THRU SPAN (2-3)
(Near Intermediate Web)



PART SECTION E-E

Note: This drawing is not to scale. Follow Dimensions

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

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+24.15 (RIGHT LANE)

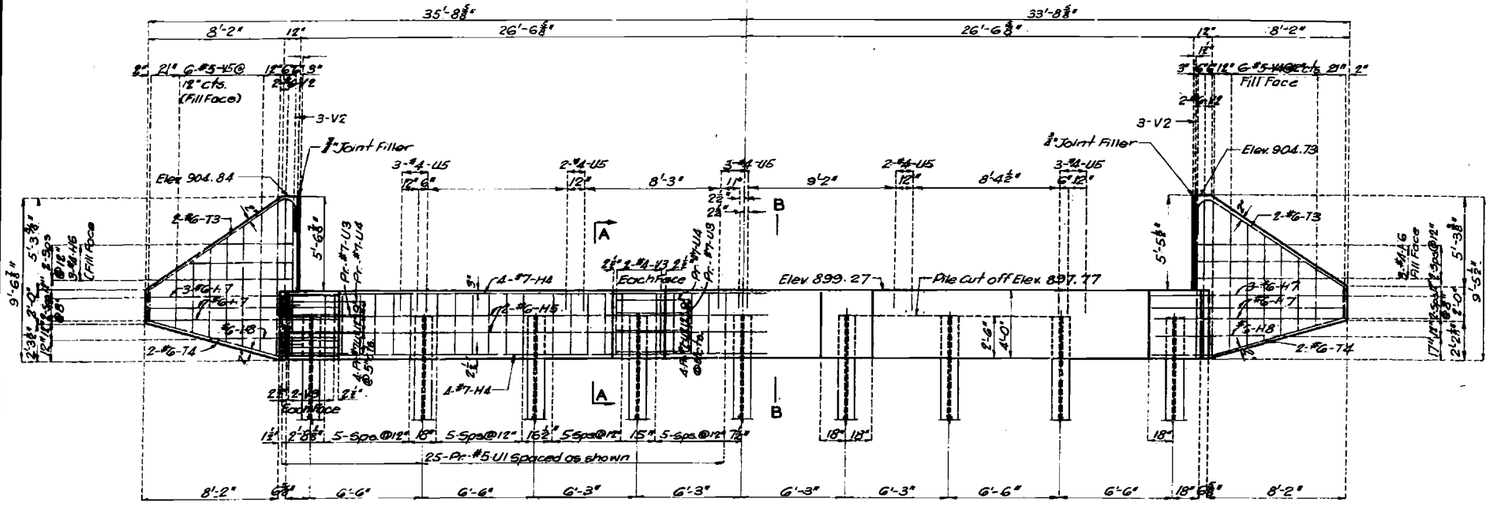
CLAY COUNTY

L-660

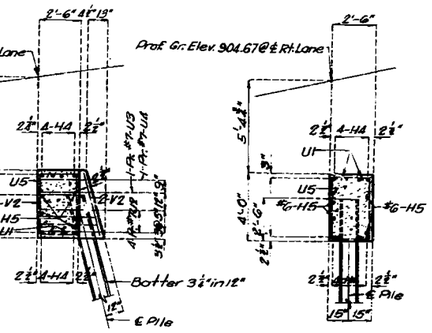
Sheet No. 5 of 7

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		

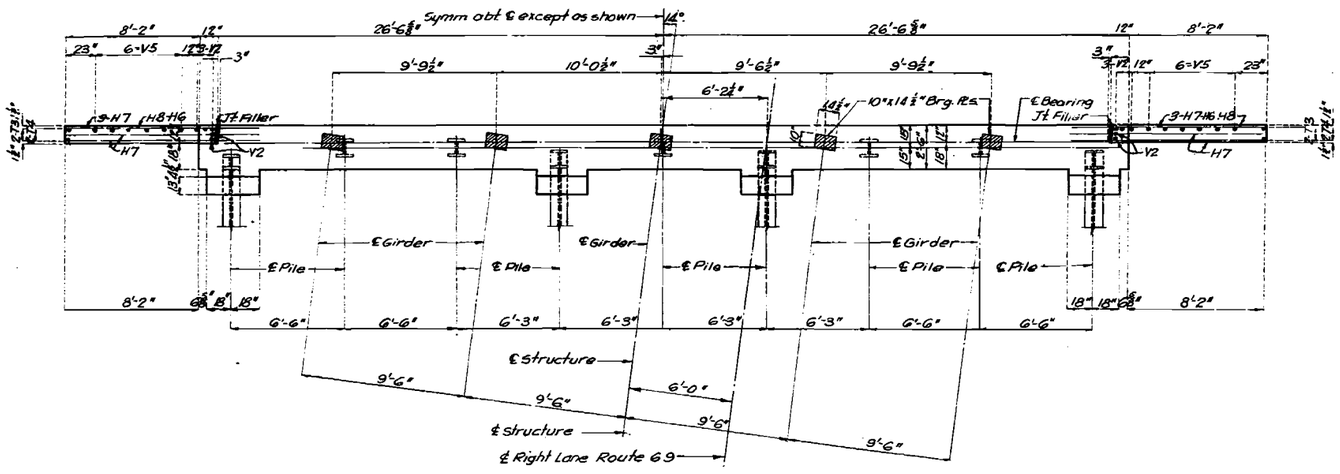


ELEVATION



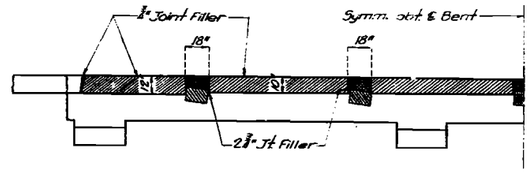
SECTION AA

SECTION BB



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+24.15 (RIGHT LANE)

CLAY COUNTY

L-660

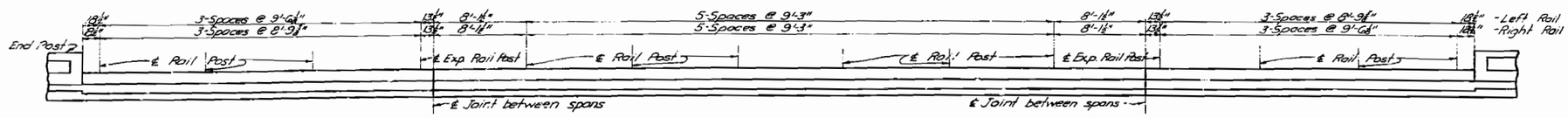
Drawn April 1954 by M.E.L. & J.T.F.
Checked May 1954 by J.E.L.

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

Sheet No. 4 of 7.

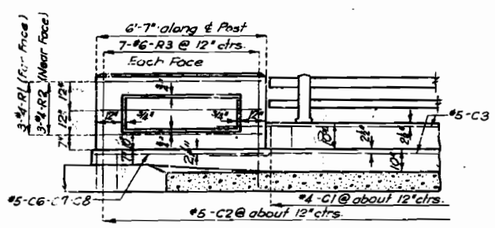
MISSOURI STATE HIGHWAY DEPARTMENT

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

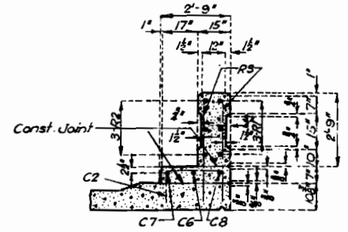


SPAN (1-2) SPAN (2-3) SPAN (3-4)

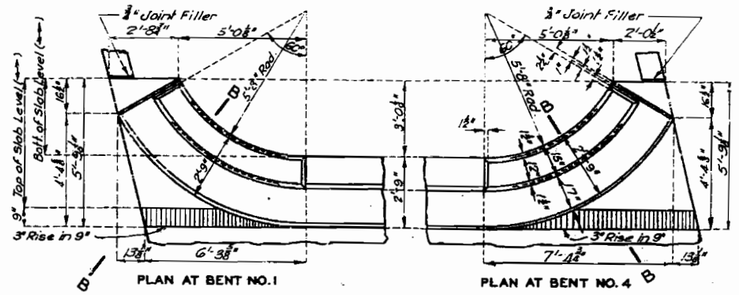
ELEVATION OF RAIL



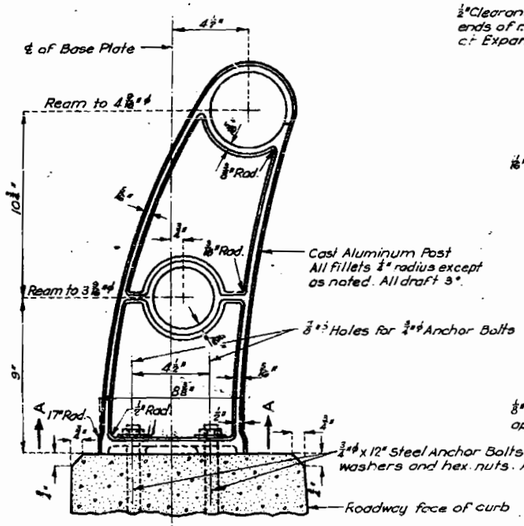
DEVELOPED ELEVATION-END POST



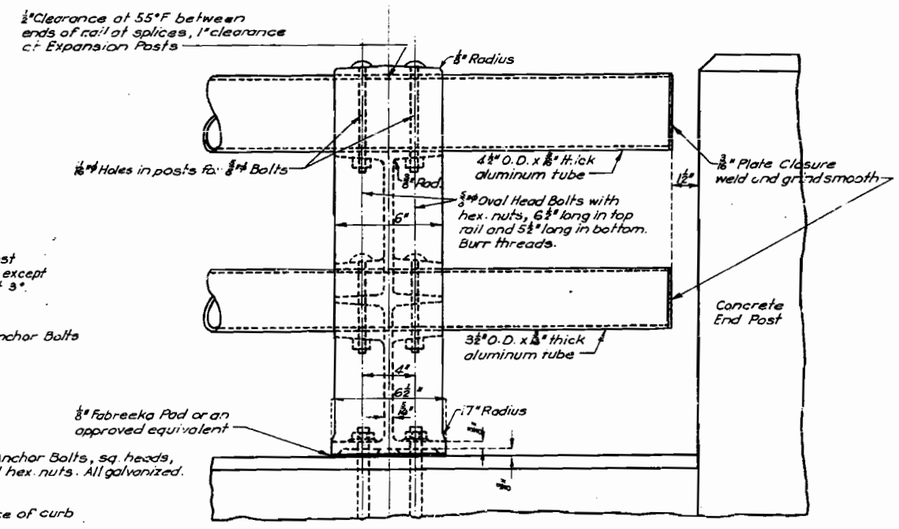
SECTION B-B



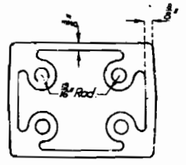
DETAILS OF END POSTS & FLARED CURB



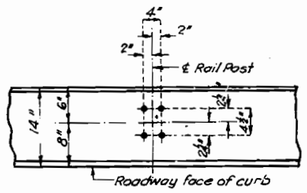
END VIEW



ELEVATION



SECTION A-A

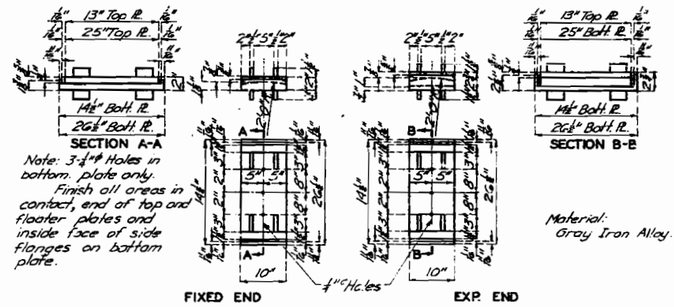


TYPICAL ANCHOR BOLT PLAN

DETAILS OF HANDRAIL

Note: All parts of handrail except steel anchor bolts and their washers and nuts to be aluminum. Bolt holes in tubes to be ⅝"x1" slotted holes centered on bolts at normal temperature of 55° except, at expansion posts where holes shall be ⅝"x1½" 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.



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+24.15 CRIGHT LANE)

CLAY COUNTY

L-660

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

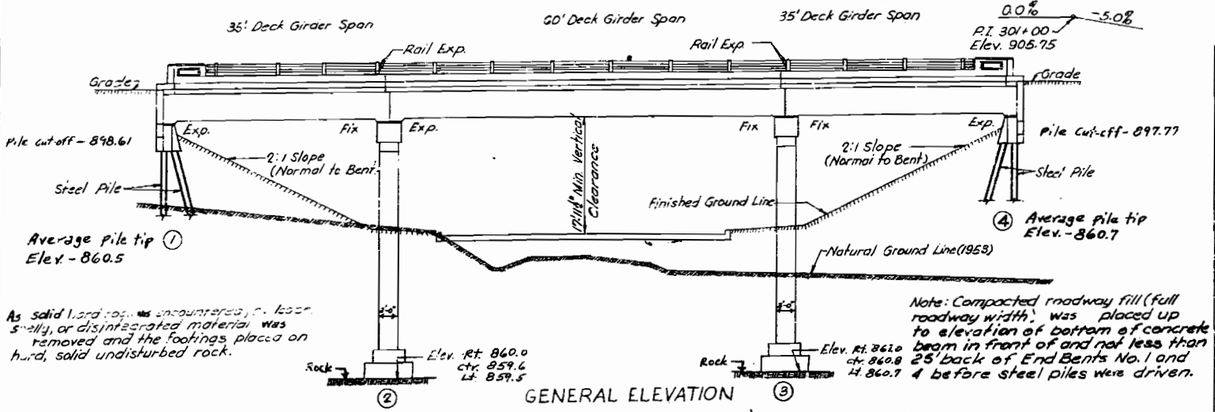
NO CONSTRUCTION CHANGES

MISSOURI STATE HIGHWAY DEPARTMENT

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

FINAL PLANS

FINAL PLANS

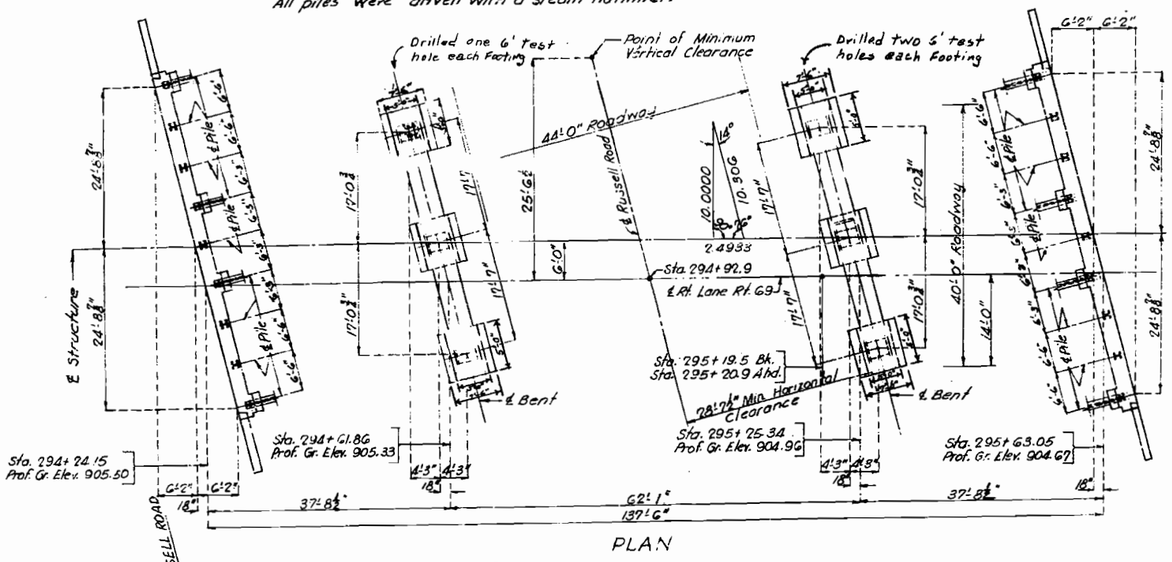


GENERAL ELEVATION

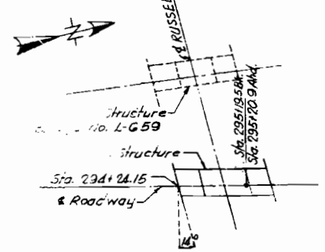
As solid bedrock was encountered, or loose, shelly, or disintegrated material was removed and the footings placed on hard, solid undisturbed rock.

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 No. 1 and 4 before steel piles were driven.

Note: All piling were 12" Bearing Pile @ 53# and conform with details and notes on Sheet no. 2 or 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 piles were driven with a steam hammer.



PLAN



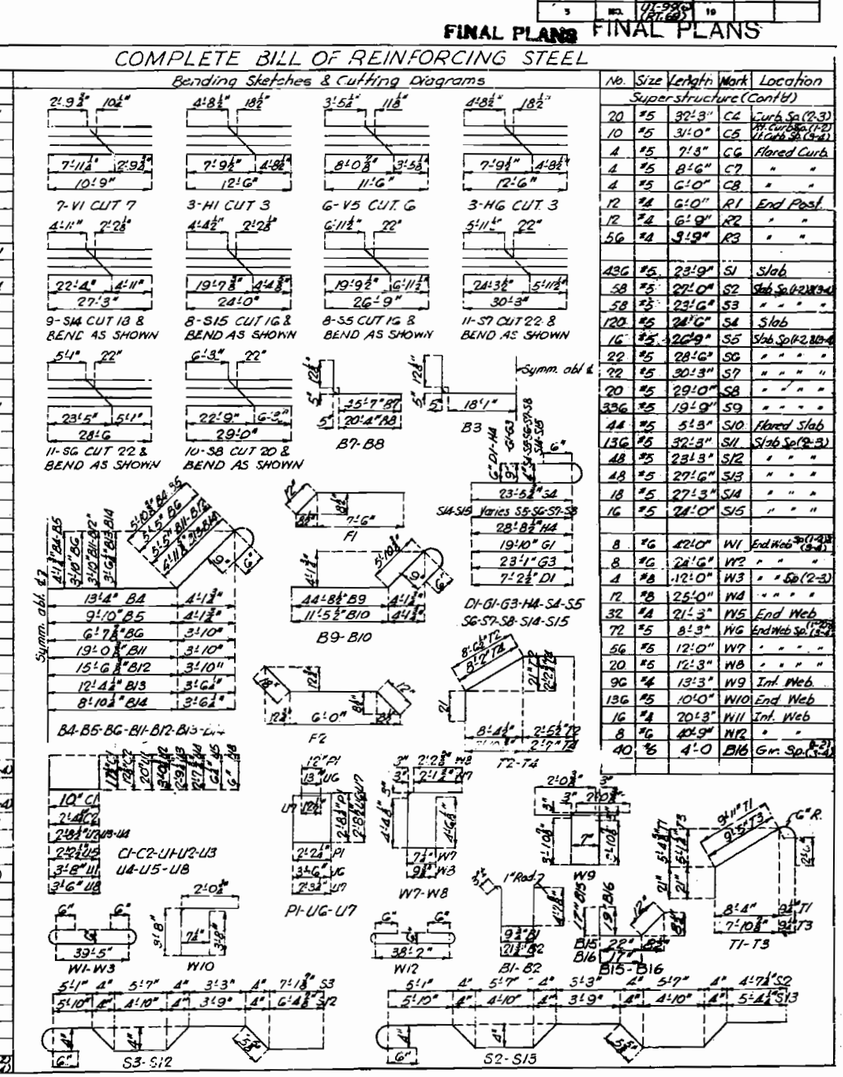
LOCATION SKETCH

GENERAL NOTES:
Design Specifications A.A.S.H.O 1953
Loading H20-S16-44
Reinforcing Steel Stress 18,000 #/in²
Class "B" Concrete Stress 1,000 #/in²
All concrete was Class "B". (Air-Entr[illegible]) conform with the requirements for Gray Rubber Compound Joints as given in Section 38-19 Rev. of the Standard Specifications.
Where joint filler is specified on plans it
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 was painted with one coat of an approved brand of emulsified asphalt paint. Payment for excavating around piles to 3'0" below L. tom. 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

No.	Size	Length	Mark	Location
		End Bents No. 1 & 4		
3	#4	12'-6"	H1	Wing Bl #1
10	#6	11'-0"	H2	" " "
2	#6	8'-0"	H3	" " "
32	#7	30'-0"	H4	Beam
16	#6	28'-3"	H5	"
3	#4	12'-6"	H6	Wing Bl #4
10	#6	10'-6"	H7	" " "
2	#6	7'-3"	H8	" " "
4	#6	15'-3"	T1	Wing Bl #1
4	#6	12'-9"	T2	" " "
4	#6	14'-9"	T3	Wing Bl #4
4	#6	12'-6"	T4	" " "
200	#5	7'-0"	U1	Beam
64	#7	8'-9"	U2	"
16	#7	8'-3"	U3	"
16	#7	8'-0"	U4	"
26	#4	3'-3"	U5	"
7	#5	10'-9"	V1	Wing Bl #1
20	#6	9'-0"	V2	Wing
32	#4	3'-9"	V3	Bm. Hnch.
6	#5	11'-6"	V5	Wing Bl #1
		Int. Bents No. 2 & 3		
48	#8	8'-6"	D1	Footing
32	#6	8'-6"	F1	Col. Hnch
16	#6	8'-6"	F2	" "
24	#10	21'-6"	G1	Beam
8	#6	22'-6"	G2	"
28	#11	24'-9"	G3	"
16	#10	10'-0"	G4	"
186	#3	10'-9"	P1	Column
74	#5	13'-6"	UG	Beam
40	#5	11'-0"	U7	"
22	#4	4'-6"	U8	"
48	#8	34'-9"	V4	Column
		Superstructure		
310	#4	10'-9"	B1	Gir. Sp. (1-2)(3-4)
235	#4	11'-9"	B2	Gir. Sp. (2-3)
30	#11	39'-6"	B3	Gir. Sp. (1-2)(3-4)
20	#11	41'-9"	B4	" " " "
10	#11	34'-9"	B5	" " " "
12	#9	27'-6"	B6	" " " "
30	#11	41'-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'-0"	B12	" " "
10	#11	36'-0"	B13	" " "
10	#11	31'-0"	B14	" " "
50	#6	4'-3"	B15	" " "
246	#4	9'-9"	C1	Curb
272	#5	4'-6"	C2	(1 Curb Sp. (1-2) (2 Curb Sp. (3-4)
10	#5	33'-3"	C3	" " " "

Bending Sketches & Cutting Diagrams



No.	Size	Length	Mark	Location
		Superstructure (Cont'd)		
20	#5	32'-3"	C4	Curb Sp. (1-2)
10	#5	31'-0"	C5	(1 Curb Sp. (3-4) (2 Curb Sp. (1-2)
4	#5	7'-3"	C6	Flared 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	9'-9"	R3	" "
436	#5	23'-9"	S1	Slab
58	#5	22'-0"	S2	Slab Sp. (1-2)(3-4)
58	#5	23'-9"	S3	" " " "
120	#5	28'-6"	S4	Slab
16	#5	22'-9"	S5	Slab Sp. (1-2)(3-4)
22	#5	28'-6"	S6	" " " "
22	#5	30'-3"	S7	" " " "
20	#5	29'-0"	S8	" " " "
336	#5	19'-9"	S9	" " " "
44	#5	5'-3"	S10	Flared Slab
136	#5	32'-3"	S11	Slab Sp. (2-3)
48	#5	28'-3"	S12	" " "
48	#5	27'-6"	S13	" " "
18	#5	27'-3"	S14	" " "
16	#5	24'-0"	S15	" " "
8	#6	42'-0"	W1	End Web Sp. (1-2)(3-4)
8	#6	24'-6"	W2	" " "
4	#8	12'-0"	W3	" " Sp. (2-3)
12	#8	25'-0"	W4	" " " "
32	#4	21'-3"	W5	End Web
72	#5	8'-3"	W6	End Web Sp. (1-2)(3-4)
56	#6	12'-0"	W7	" " " "
20	#5	12'-3"	W8	" " " "
90	#4	13'-3"	W9	Int. Web
136	#5	10'-0"	W10	End Web
16	#4	20'-3"	W11	Int. Web
8	#6	40'-9"	W12	" "
40	#6	4'-0	B16	Gir. Sp. (1-2) (3-4)

FINAL QUANTITIES FINAL PLANS

Item		Substr.	Superstr.	Total.
Class I Excavation for Structures	Cu. Yds.	3600		3600
Class "B" Concrete	Cu. Yds	174.2	398.1	572.3
Reinforcing Steel	Lbs.	22570	97290	119860
Gray Iron Alloy Castings	Lbs.		3610	3610
Aluminum Alloy Handrail	Lin. Ft.		245	245
Steel piling in place (Scale furnished)	Lin. Ft.	678		678
Class I Excavation for Structures plus 25%		3		3
Test holes		54		54

B.M. Elev. - 905.84 B on top of Lt. 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+24.15 (RIGHT LANE)

CLAY **COUNTY**

Submitted by J. A. Williamson 6/10/1954

Approved by Rex M. Whitton 6/10/1954

STD. C-110 R3

L-660

Drawn May 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 2

FINAL PLANS

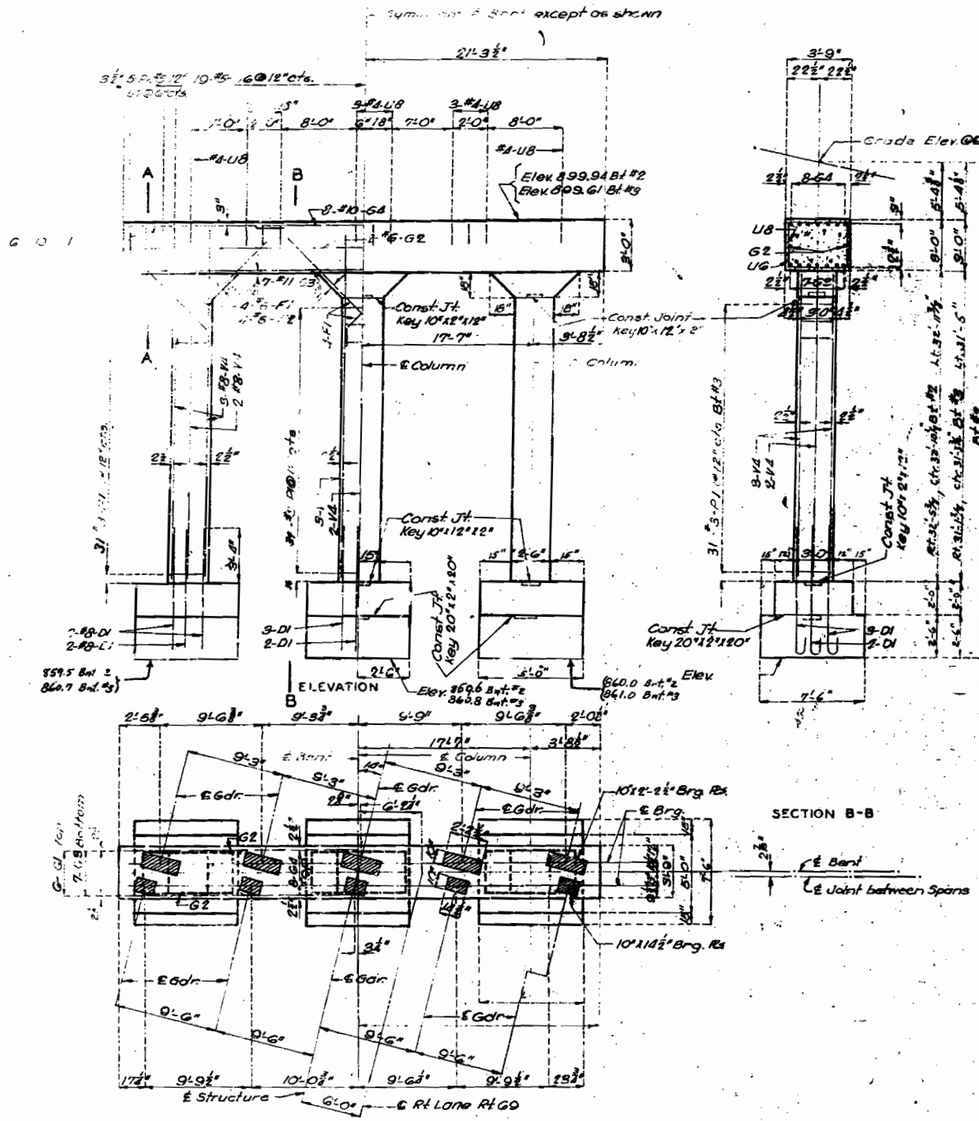
120

MISSOURI STATE HIGHWAY DEPARTMENT

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

FINAL PLANS

FINAL PLANS



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+24.15 (RIGHT LANE)

CLAY COUNTY

L-660

Drawn: April 1954 by M.E.L. E.W.G.S.
Traced: May 1954 by J.E.L.

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

Sheet No 3A of 2.

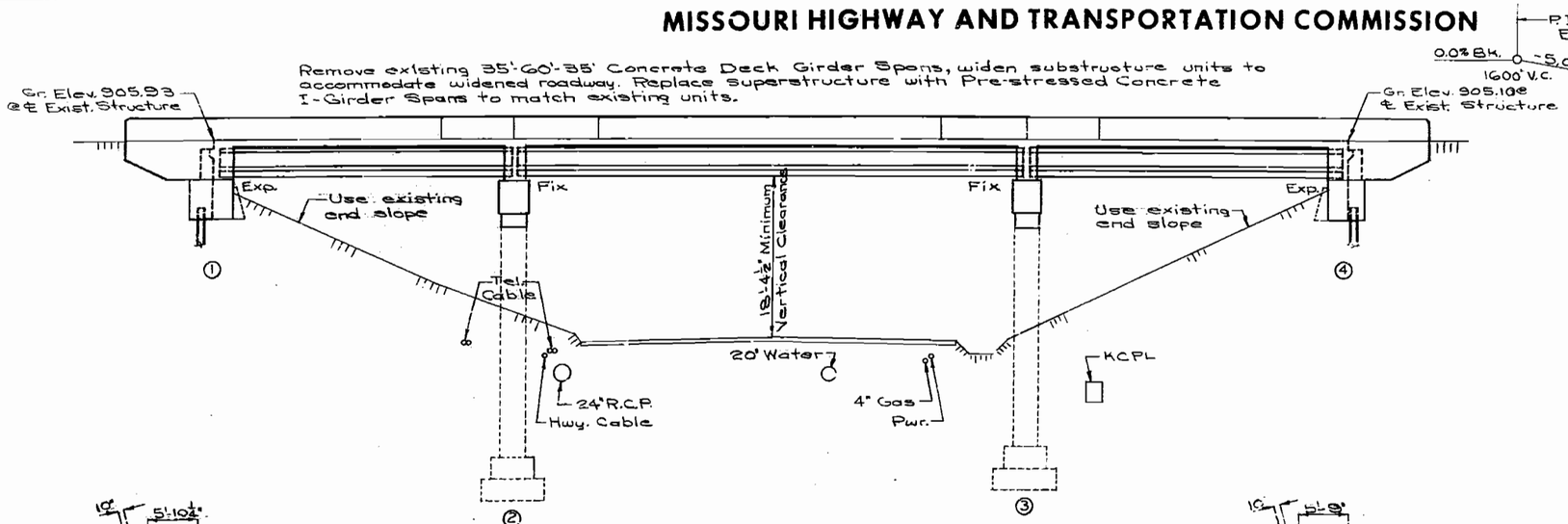
FINAL PLANS

2 or 3 Col. Int. Square or Skewed — All Loadings

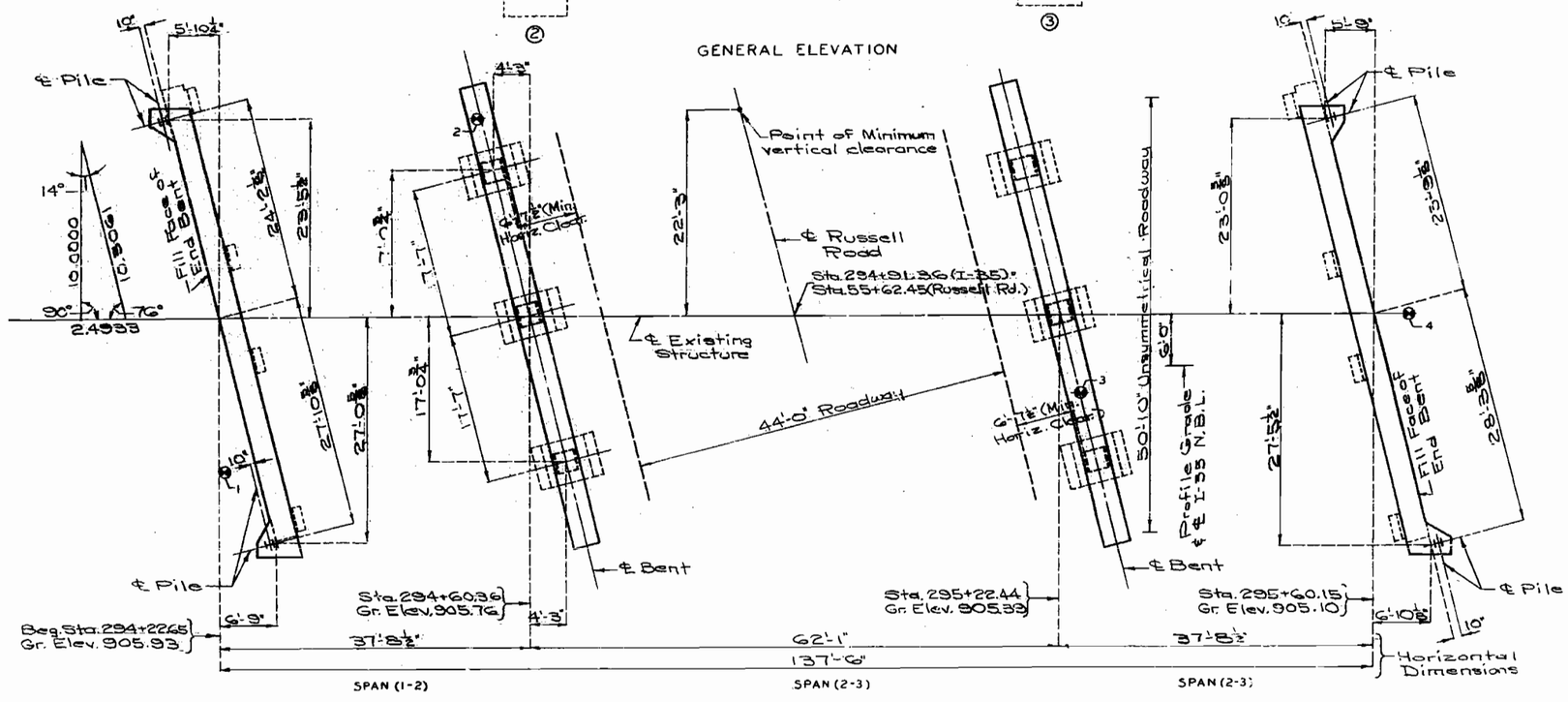
MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	44	
SEC. 1 & 12		TWP. 50N	RGE. 33W.		

Remove existing 35'-60'-35' Concrete Deck Girder Spans, widen substructure units to accommodate widened roadway. Replace superstructure with Pre-stressed Concrete I-Girder Spans to match existing units.



GENERAL ELEVATION



PLAN

Note: "B" Indicates location of Borings. For Boring Data see sheet No. 2.

Note: Estimated Quantities and Pile Data see sheet 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

Note: For Pre-stressed Girder Stresses see Sheet Nos. 9 & 10.

Neoprene Pads:
Bearings shall be 60 durometer Neoprene Pads.
Cost of furnishing, fabricating and installing Neoprene Bearing Pads complete in place, shall be paid for at the contract unit bid price for Plain and Laminated Neoprene Bearing Pads per each.

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

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

Construction Clearance:
A minimum vertical clearance of 13'-6" from [illegible] clearance of 33'-0" centered on existing lanes shall be maintained during construction.

Widen, Extension and Repair:
Outline of old work is indicated by light dashed lines. Heavy lines indicate new work.
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.

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+22.65
JOB NO. 4-I-35-340 **RTE.** I-35 N.B.L.
CLAY **COUNTY**
DATE 1/13/83

STD.
STD. 706.35
L-660R

DESIGNED DEC. 1981
DETAILED JAN. 1982
CHECKED FEB. 1982

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

Sheet No. 1 of 16. SEE SHEET NO. 2 FOR INDEX OF SHEETS

326

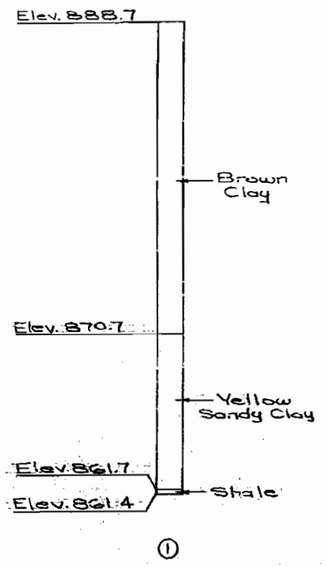
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	03	

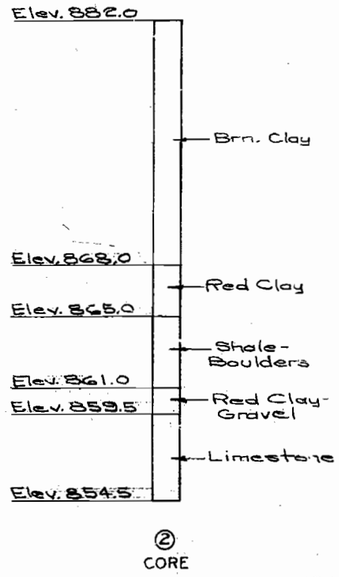
ESTIMATED QUANTITIES				
ITEM		SUBSTR.	SUPERSTR.	TOTAL
Special Work	Lump Sum			1
Removal of Existing Bridge Deck	Sq. Ft.		6298	6298
Structural Steel Piles (10")	Lin. Ft.	144		144
Class B Concrete	Cu. Yd.	70.5		70.5
( ) Slab On Concrete I-Girder *	Sq. Yd.		817	817
Safety Barrier Curb	Lin. Ft.		315	315
Plain Neoprene Bearing Pads	Each		24	24
Laminated Neoprene Bearing Pads	Each		12	12
Prestressed Concrete I-Girder 35 Ft. Span	Each		12	12
Prestressed Concrete I-Girder 60 Ft. Span	Each		6	6
Reinforcing Steel	Lb.	9460		9460

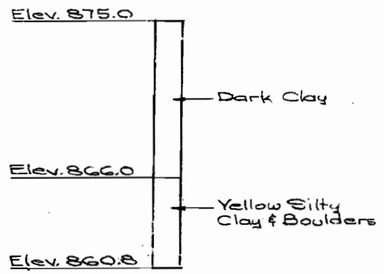
Note:
All concrete and reinforcement above lower construction joint in end bents are included with superstructure quantities.
Cost of ¾" ϕ coil tie rods placed in diaphragms is included in contract unit price per P/S member.
* See Special Provisions.

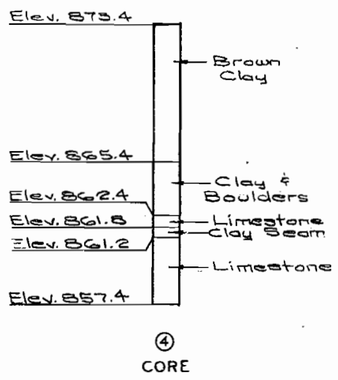
ESTIMATED QUANTITIES FOR ALTERNATE SLABS			
TYPE OF SLAB	SLAB ON CONC. I-GDR.		
	REINF. (L.S.)		CONC.
	EPOXY	PLAIN	CU. YD.
Cast-In-Place Conventional Forms	40250	27230	277.8
Precast Panel Forms	37150	5860	228.4
Stay-In-Place Forms **	40250	27230	277.8

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.







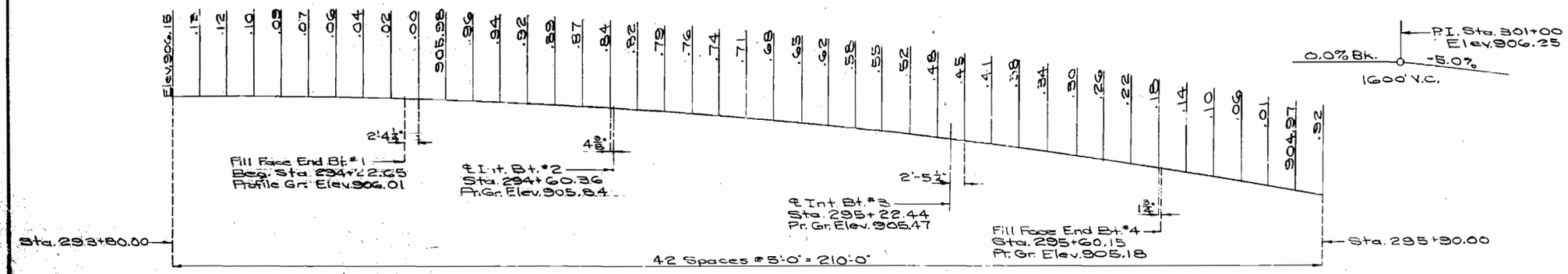


BORING DATA

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

PILE DATA					
BENT NO.		1	2	3	4
Pile Type and Size		HP10x42			HP10x42
Number		2			2
Approximate Length	Ft.	37			35
Design Bearing	Tons	26.3			26.3
Hammer Energy Required	Ft. Lbs.	7000			7000

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



PROFILE GRADE ELEVATIONS

DETAILED NOV. 1981
CHECKED FEB. 1982

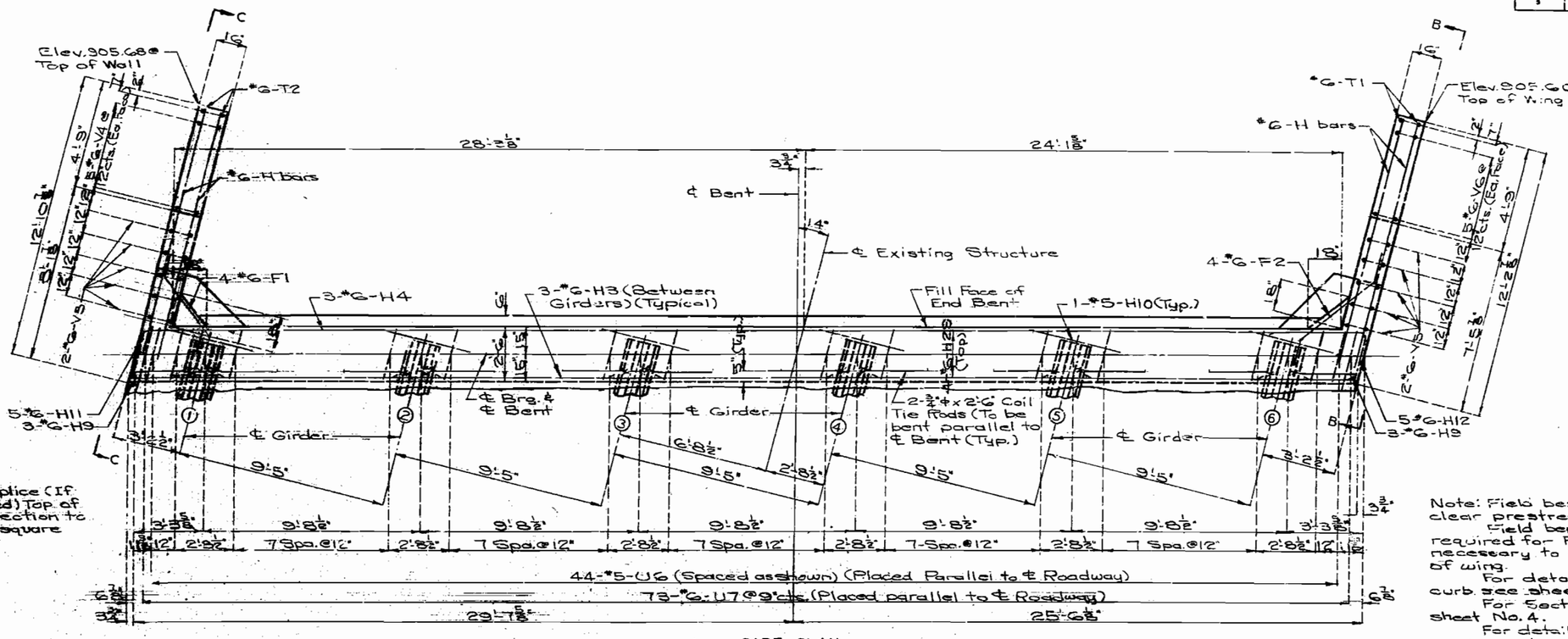
Note: This drawing is not to scale: Follow dimensions.

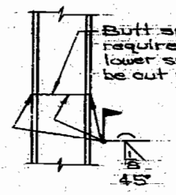
Sheet No. 2 of 16 .

CLAY COUNTY

L-660R

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	46	





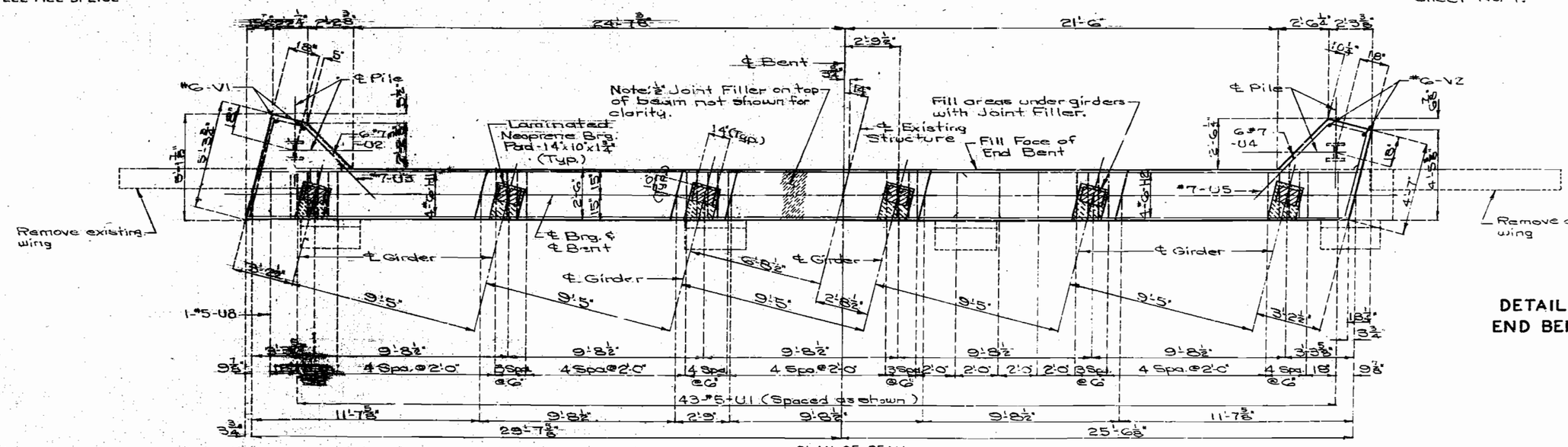
DETAIL OF STEEL PILE SPLICE

Note: Field bent F1 & F2 bars to clear prestressed beam flange. Field bending shall be required for F1 & F2 bars when necessary to conform to slope of wing.

For details of safety barrier curb see sheet No. 14.

For Section B-B & C-C see sheet No. 4.

For details of laminated neoprene bearing pads see sheet No. 4.



DETAILS OF END BENT NO. 1

REVISED DEC. 1981
CHECKED FES. 1982

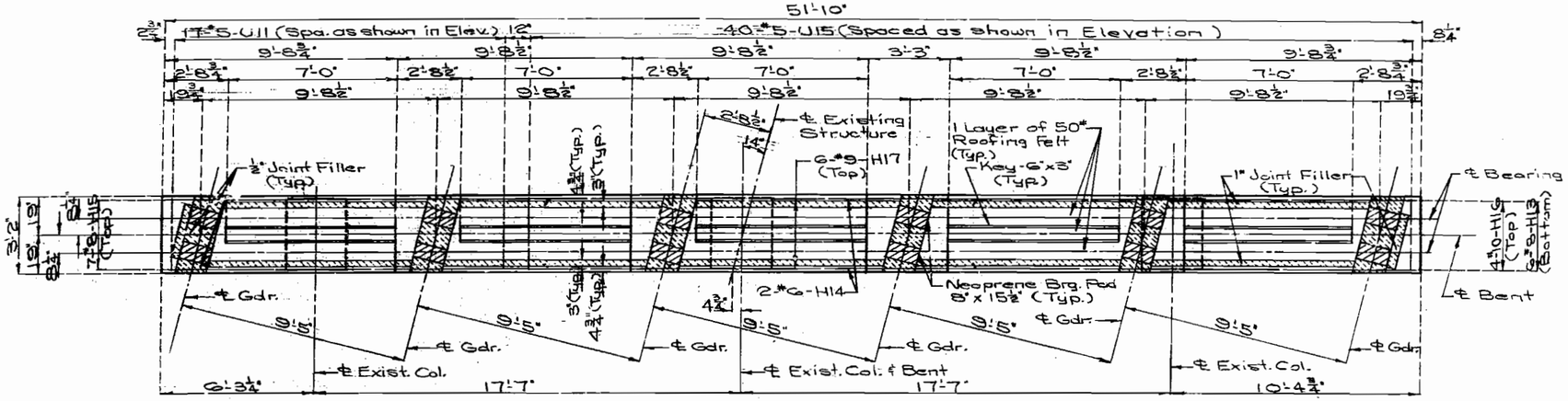
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 3 of 4.

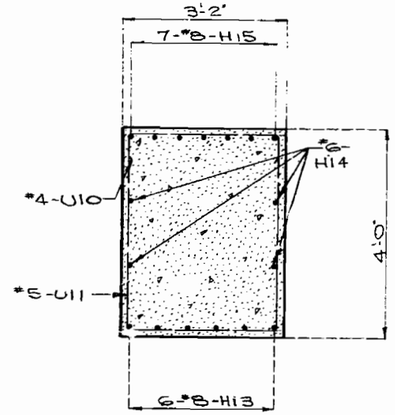
CLAY COUNTY

L-660R

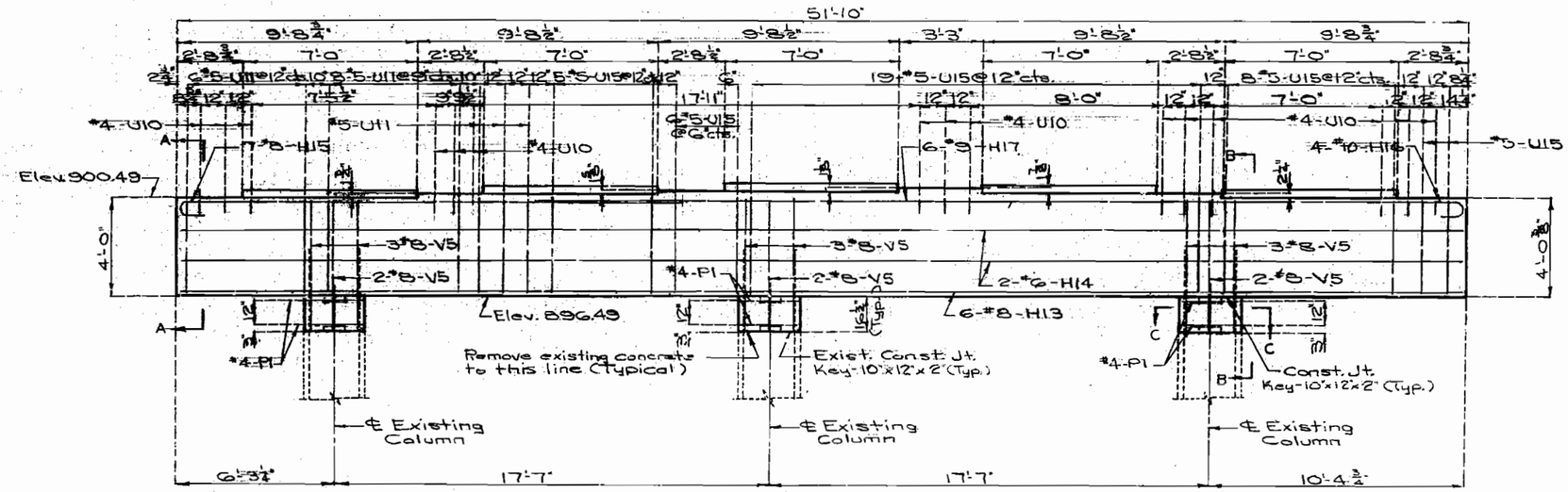
FED. ROAD U.ST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
-	MO.		19	49	



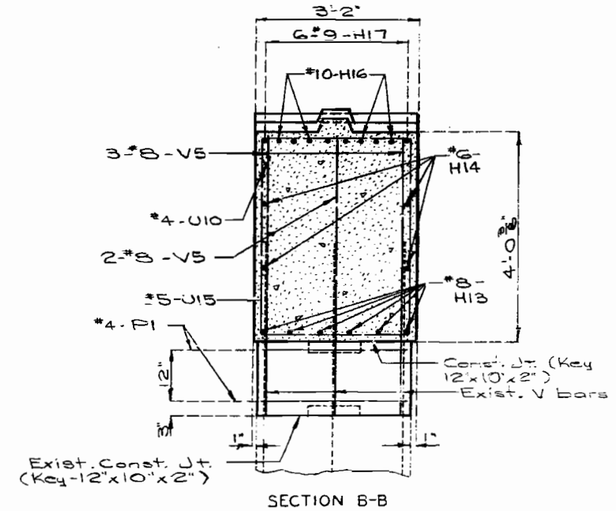
PLAN



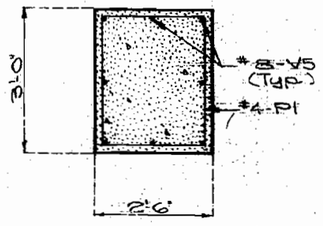
SECTION A-A



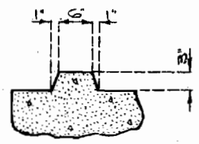
ELEVATION



SECTION B-B



SECTION C-C



SECTION THRU KEY

DETAILS OF INT. BENT NO. 3

DETAILED DEC. 1981
CHECKED FEB. 1982

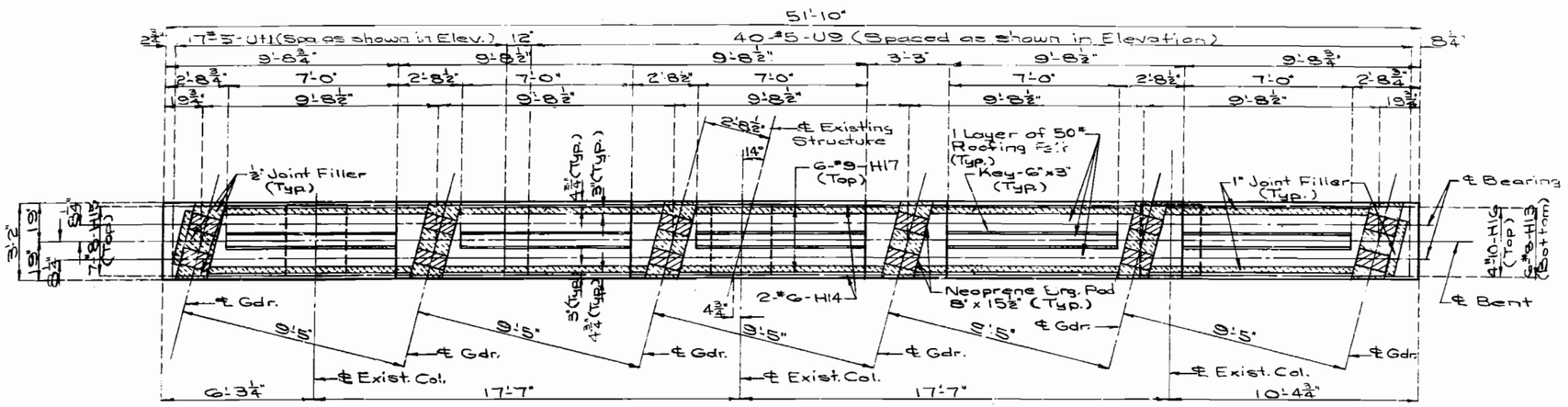
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 6 of 16.

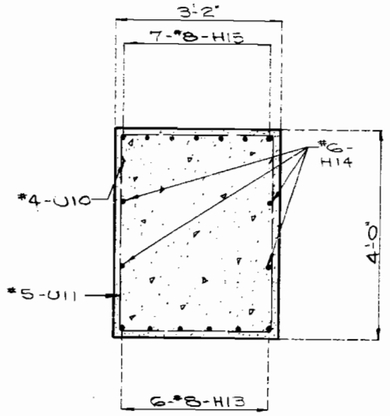
CLAY COUNTY

L-660R

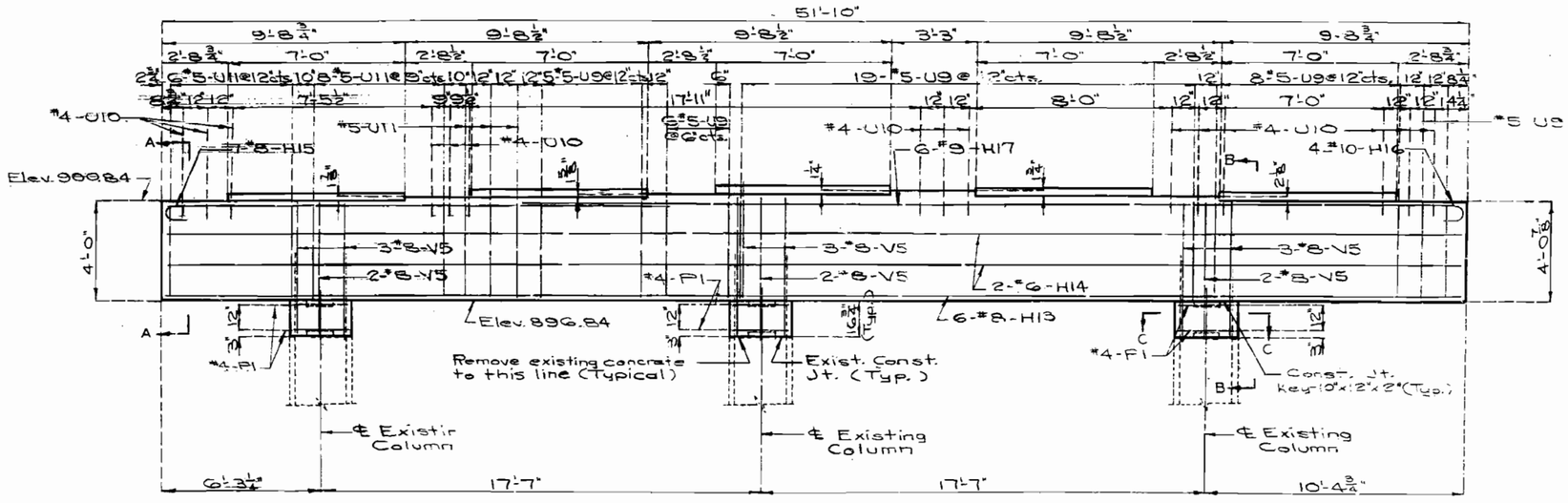
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	45	



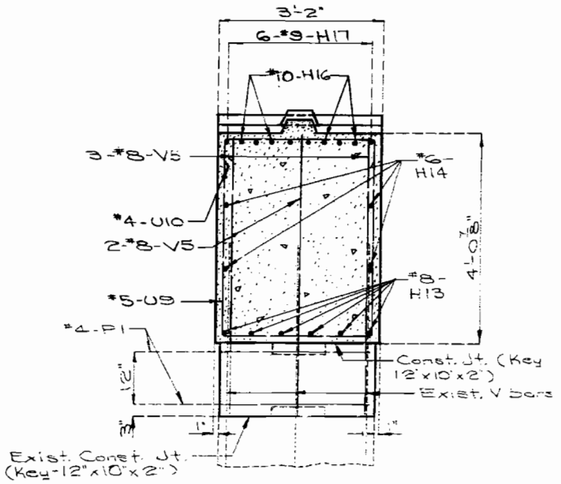
PLAN



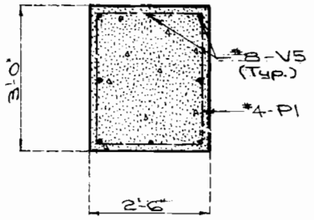
SECTION A-A



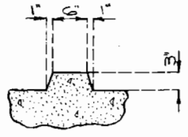
ELEVATION



SECTION B-B



SECTION C-C



SECTION THRU KEY

DETAILS OF INT. BENT NO. 2

DETAILED DEC. 1981
CHECKED FEB. 1982

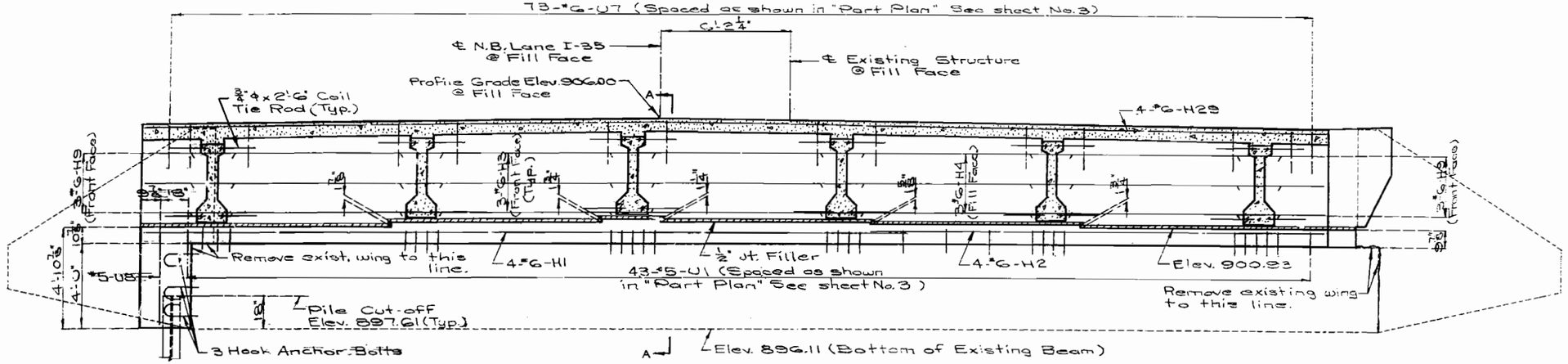
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 5 of [illegible]

CLAY **COUNTY**

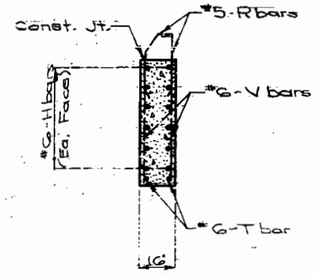
L-660R

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEET.
5	MO.		19	47	

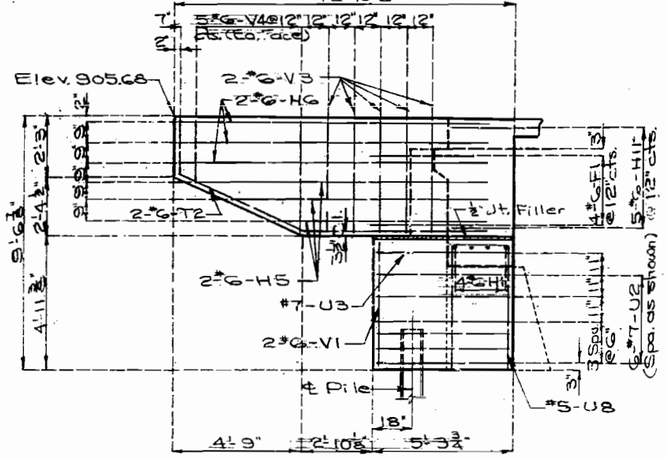


ELEVATION

Note: All concrete in the end bent above top of beam and below top of slab shall be Class B2.

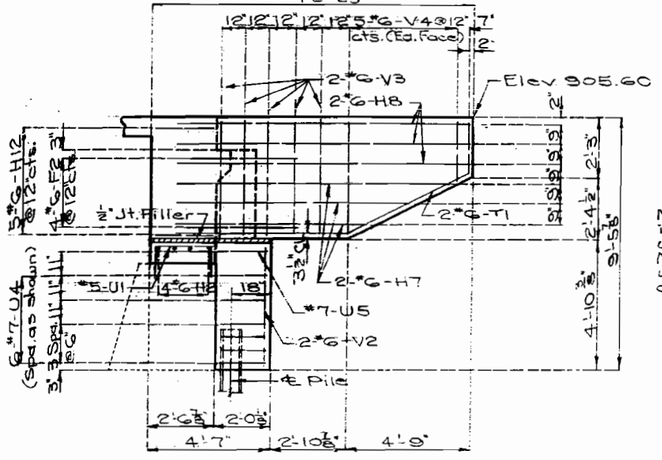


TYPICAL PART SECTION THRU WING



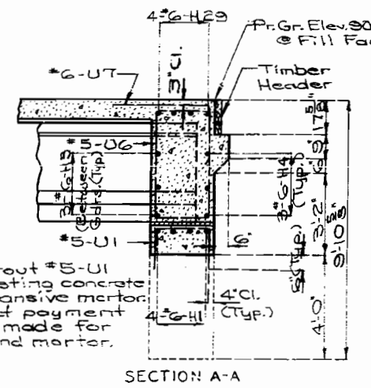
ELEVATION C-C

Note: For location of Elevation B-B & C-C see sheet No. 3.



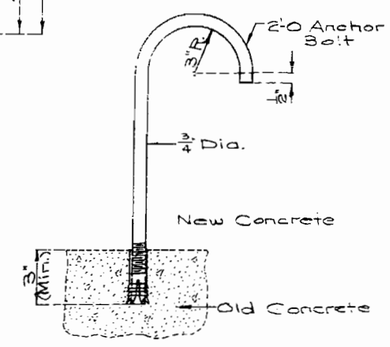
ELEVATION B-B

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.

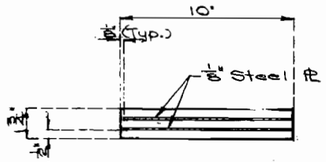


Note: Grout #5-U1 into existing concrete with expansive mortar. No direct payment will be made for drilling and mortar.

SECTION A-A



HOOK ANCHOR BOLT DETAILS



DETAILS OF LAMINATED NEOPRENE BEARING - END BENTS NO. 1 & 4

DETAILS OF END BENT NO. 1 (CONT.)

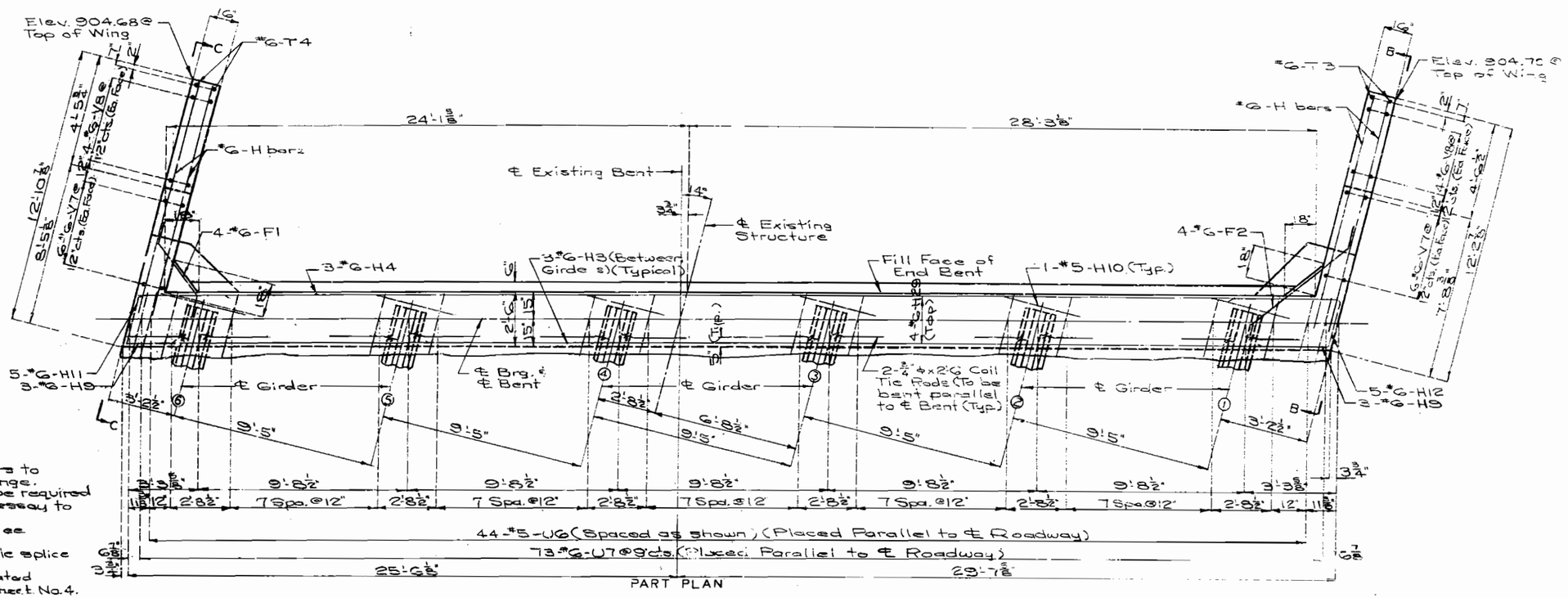
DETAILED DEC. 1981
CHECKED FEB. 1982

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

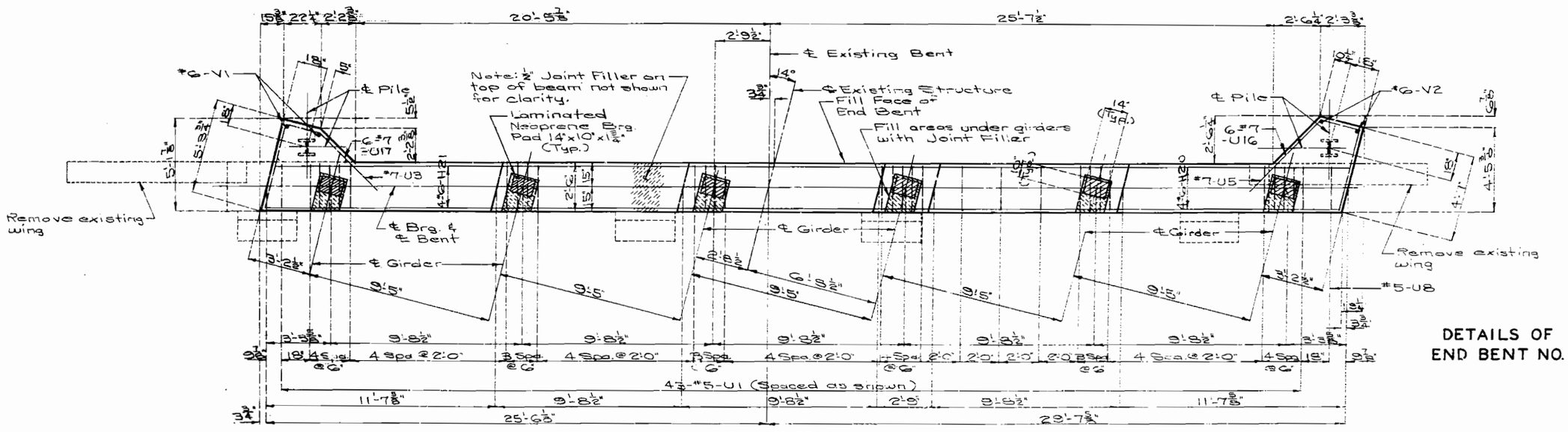
Sheet No. 4 of

CLAY COUNTY L-660R

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



Note: Field bend F1 & F2 bars to clear prestressed beam flange. Field bending shall be required for F1 & F2 bars when necessary to conform to slope of wing.
For section B-B & C-C see sheet No. 8.
For retail of steel pile splice see sheet No. 3.
For details of Laminated Neoprene Bearings see sheet No. 4.



PLAN OF BEAM
(BELOW LOWER CONST. JT.)

DETAILS OF END BENT NO. 4

DETAILED JAN. 1982
CHECKED FEB. 1982.

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

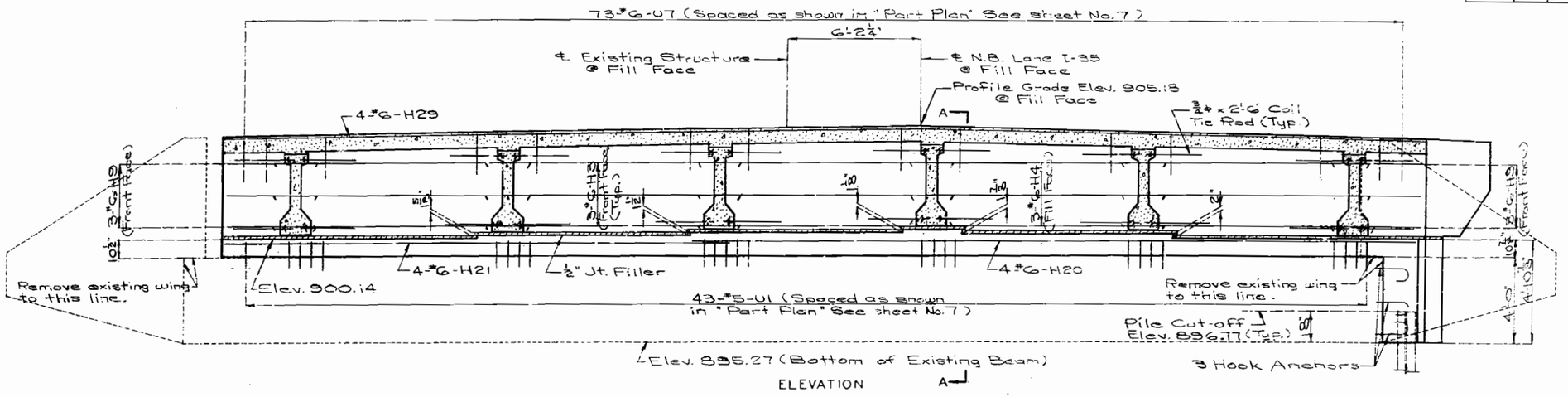
Sheet No. 7 of 16.

CLAY COUNTY

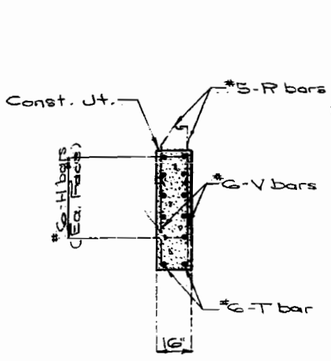
L-860R

236

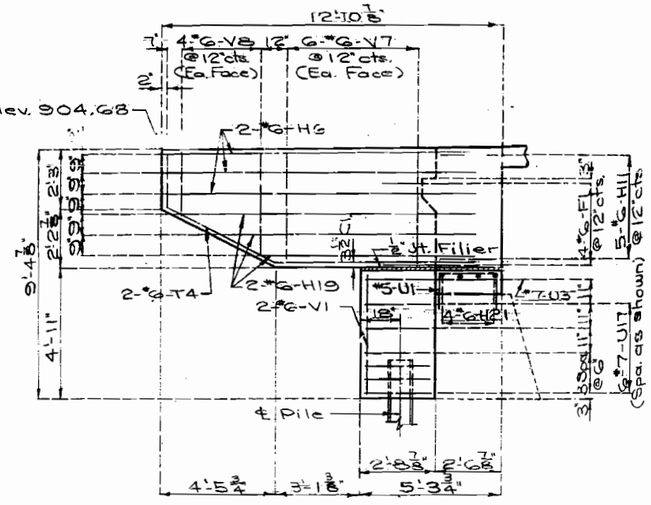
FED. ROAD DIST. NO.	STATE	STATE PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	51	



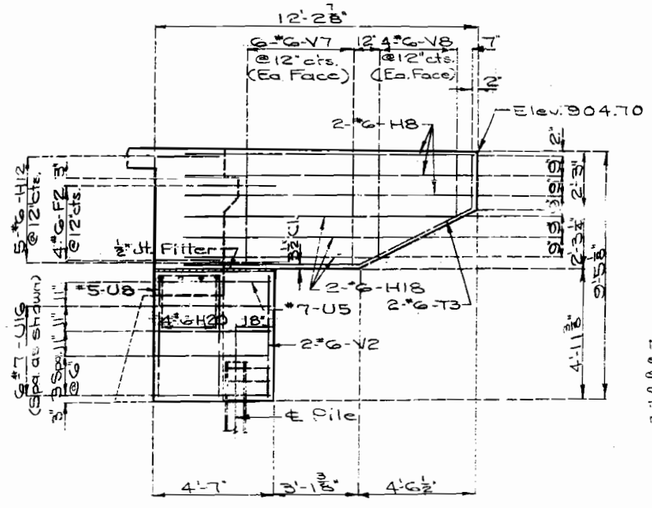
Note: All concrete in the end bent above top of beam and below top of slab shall be Class B2.



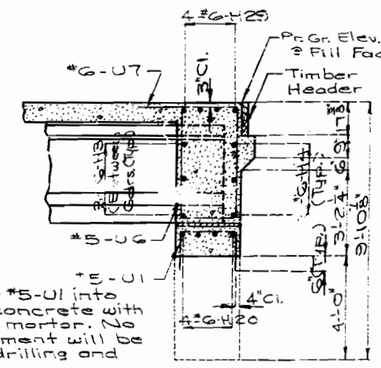
TYPICAL PART SECTION THRU WING



ELEVATION C-C



ELEVATION B-B



Note: Grout #5-U1 into existing concrete with expansive mortar. No direct payment will be made for drilling and mortar.

SECTION A-A

Note: For hook anchor bolt details see sheet No. 4.
For details of safety barrier curb see sheet No. 14.
For location of Elevation B-B or C-C see sheet No. 7.

DETAILS OF END BENT NO. 4 (CONT.)

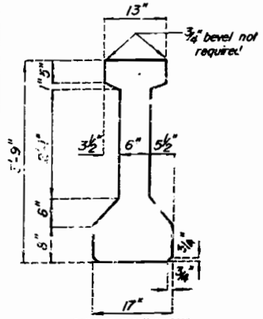
333

DETAILED JAN. 1982
CHECKED FEB. 1982

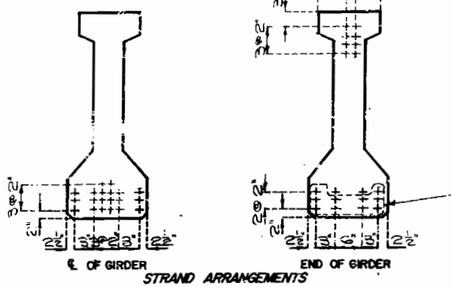
Note: This drawing is not to scale. Follow dimensions.

CLAY COUNTY

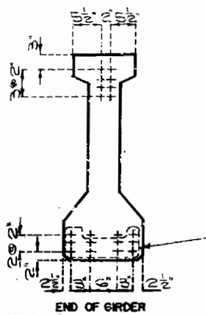
L-660R



GIRDER DIMENSIONS

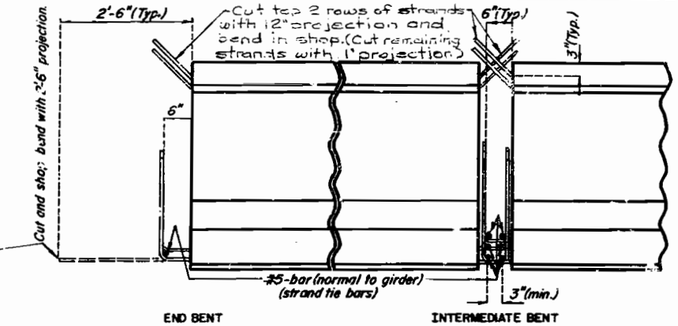


℄ OF GIRDER



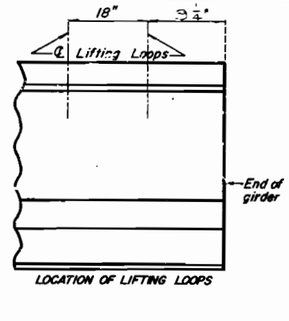
END OF GIRDER

STRAND ARRANGEMENTS



END BENT INTERMEDIATE BENT

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	52	

BILL OF REINFORCING STEEL - EACH GIRDER

NO.	SIZE & MARK	ACTUAL LENGTH	SHAPE	BENDING DIAGRAMS
1	5 A1	31'-7"	20	
104	5 B1	5'-3"	11	
8	5 B2	4'-3"	19	
52	4 C1	13"	10	
134	4 D1	3'-0"	9	

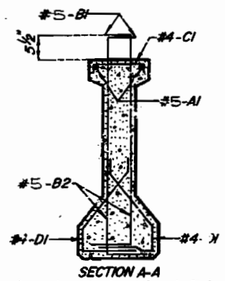
SHAPE 9 · SHAPE 11 · SHAPE 10 · SHAPE 20 · SHAPE 19

NOTE:

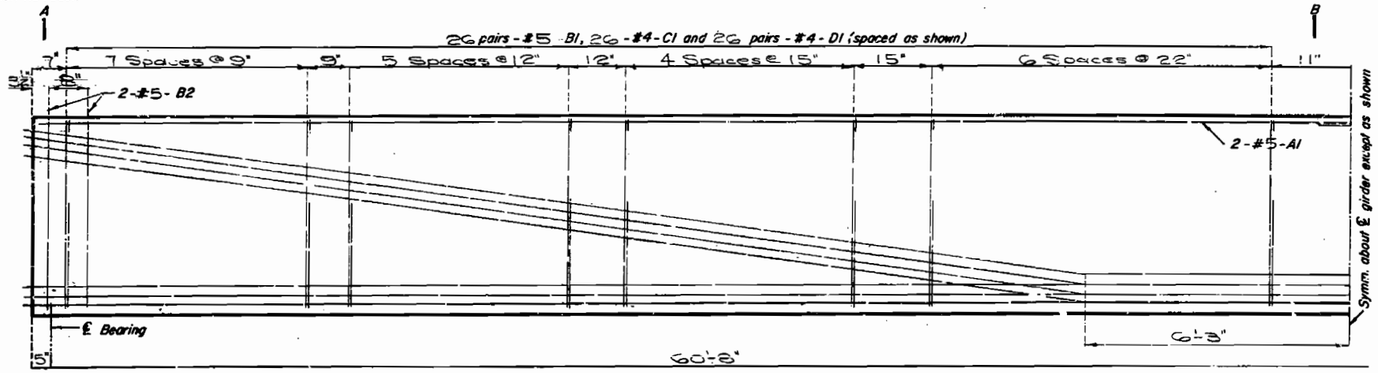
All dimensions are out to out.
Where deflecting strands interfere with placement, some in-place bending may be necessary.
Hooks and bends shall be in accordance with the CRSI Manual of Standard Practice for Detailing Reinforced Concrete Structures stirrup and tie dimensions.
Actual lengths are measured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

NOTE:

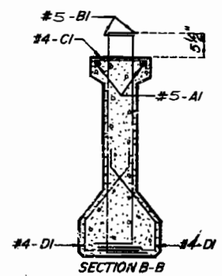
Concrete for prestressed girders shall be Class A1 with f'_c = 5,000 psi.
(+) indicates prestressed strand.
Use 20 strands with an initial prestress force of 578 kips.
Cost of ¾"Ø coil tie rods placed in diaphragms is included in contract unit price for prestress concrete members.
Coil ties shall be 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)
SPAN (2-3)

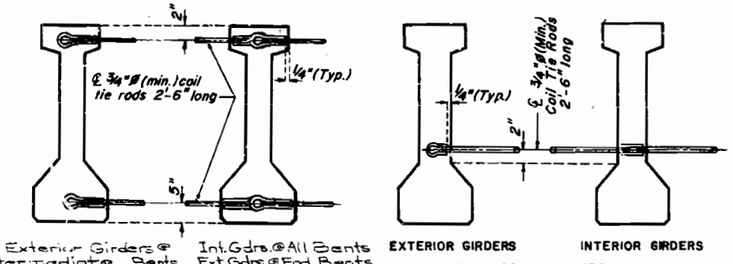


SECTION B-B
(strands not shown for clarity)

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.

Angles to be galvanized in accordance with ASTM A123.

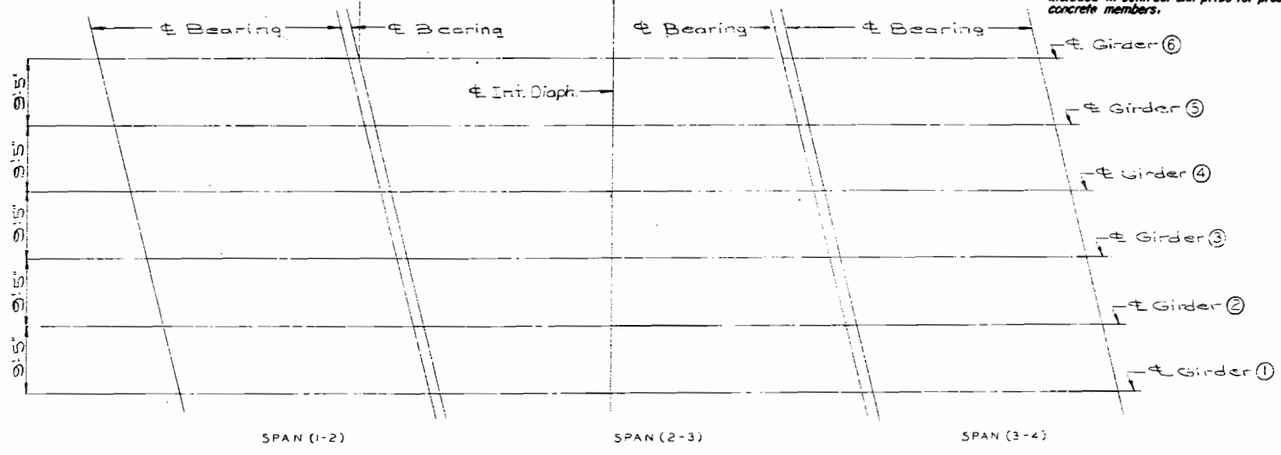


Exterior Girders @ Intermediate Bents Int. Gdrs. @ All Bents Ext. Gdrs. @ End Bents

DETAILS OF COIL TIES

EXTERIOR GIRDERS INTERIOR GIRDERS

DETAILS OF COIL TIES AT INTERMEDIATE DIAPHRAGMS



PLAN OF GIRDERS SHOWING LOCATION OF INTERMEDIATE DIAPHRAGMS

SPS 554.6 April 1973 | Revised MAY 1981

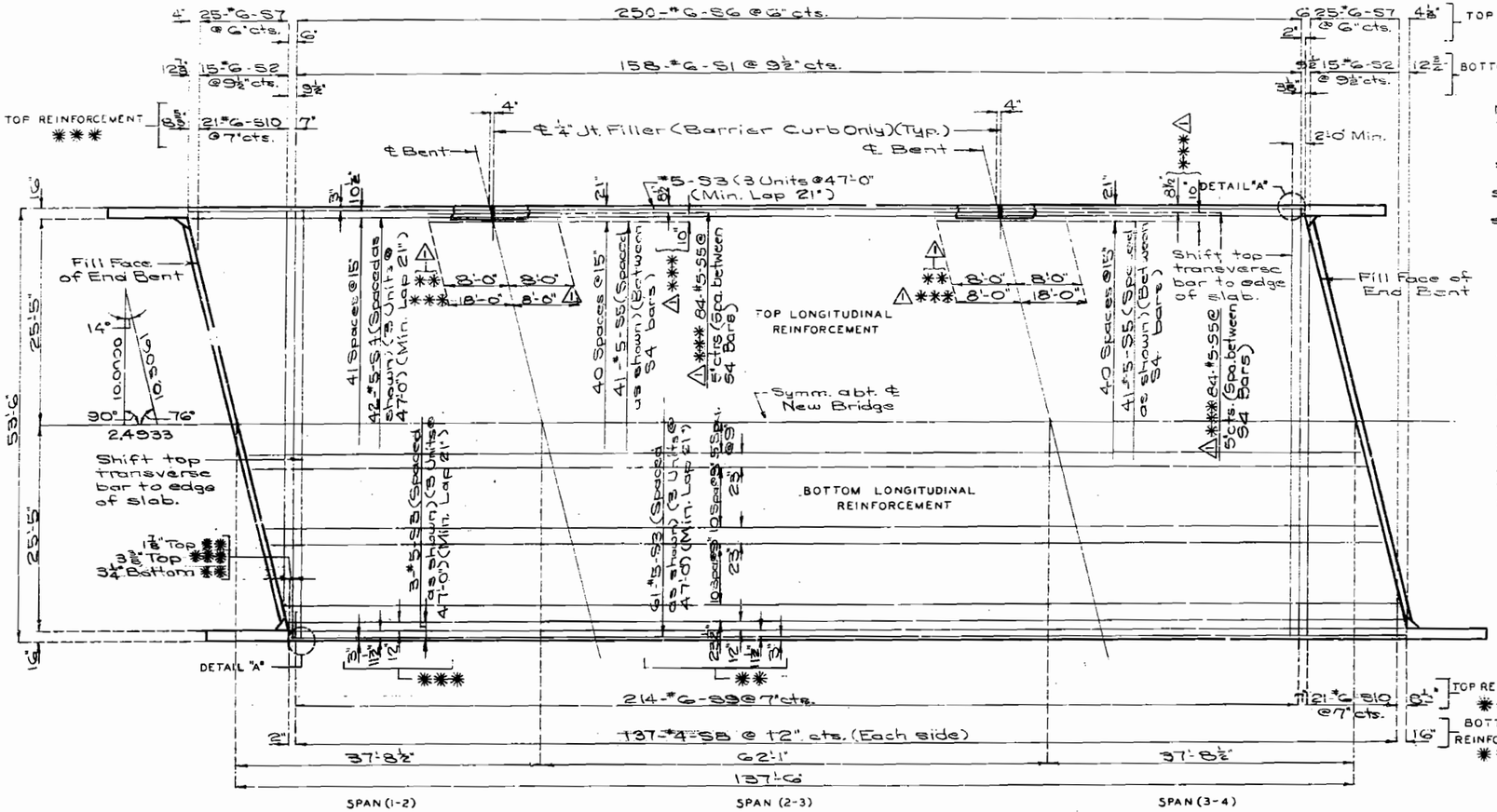
DETAILED JAN. 1982
CHECKED FEB. 1982

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

CLAY COUNTY

L-660R

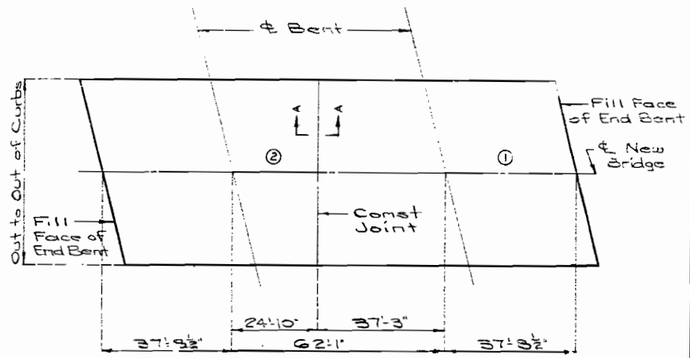
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	55	



PLAN OF SLAB SHOWING REINFORCEMENT

Note: ** C.I.P. & S.I.P. Option
*** Precast Panel Option

Note: Longitudinal dimensions shown are taken parallel to grade along ℄ new bridge at top of slab.
For Detail "A" see sheet No. 11.
For Girder Camber and Slab Haunching Diagrams see sheet No. 11.
For Details of Prestressed Panel Option see sheet No. 13.
For Details of Safety Barrier Curb not shown see sheet No. 14.



SLAB POURING SEQUENCE

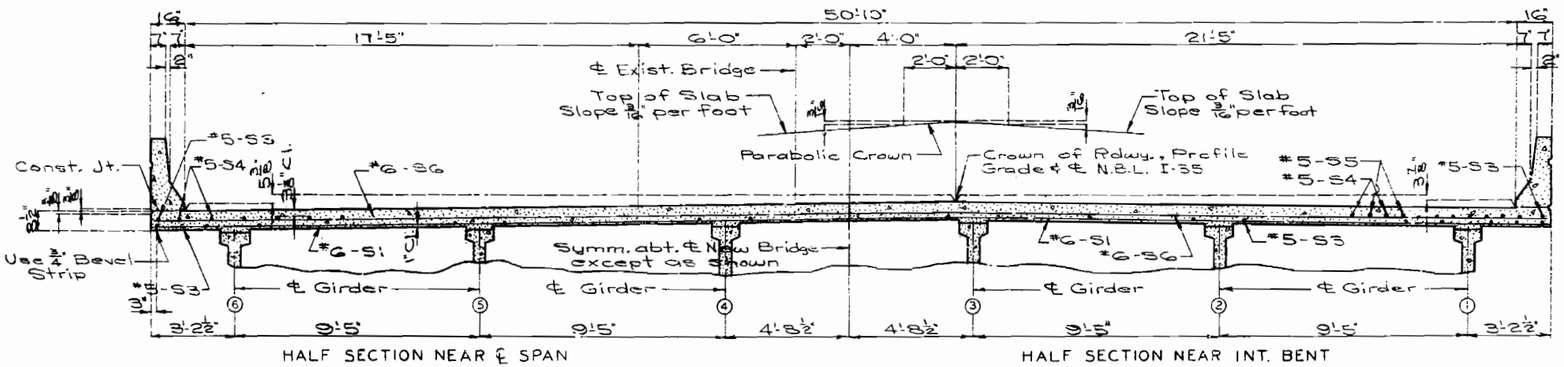
	SEQUENCE OF POURS		*
	DIRECTION		
BASIC SEQUENCE	1	2	28
	END TO 2	1 TO END	
Alternate pours to the basic sequence are subject to the approval of the engineer in accordance with section 703.3.12.4 of Missouri Standard Specifications.			
ALTERNATE "A" POURS	1+2		28
	END TO END		

* 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.

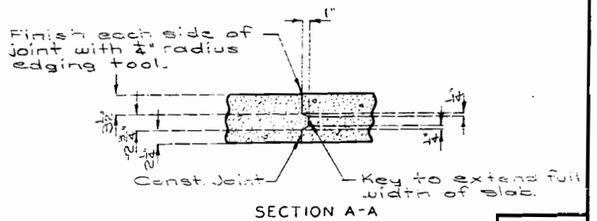
The diaphragm at the intermediate bents and end bents shall be poured a minimum of 30 minutes and a maximum of 2 hours before the slab is poured.

Intermediate diaphragms within spans may be poured with the construction joint between the diaphragms and slab or monolithic with slab.



HALF SECTION NEAR ℄ SPAN

HALF SECTION NEAR INT. BENT



SECTION A-A

DETAILED JAN. 1982
CHECKED FEB. 1982

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

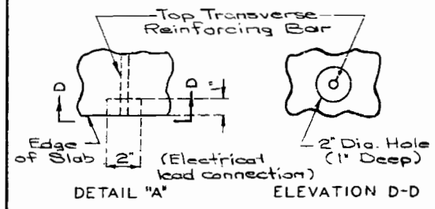
Sheet No. 12 of 16. △ Revised 3/25/83

CLAY COUNTY

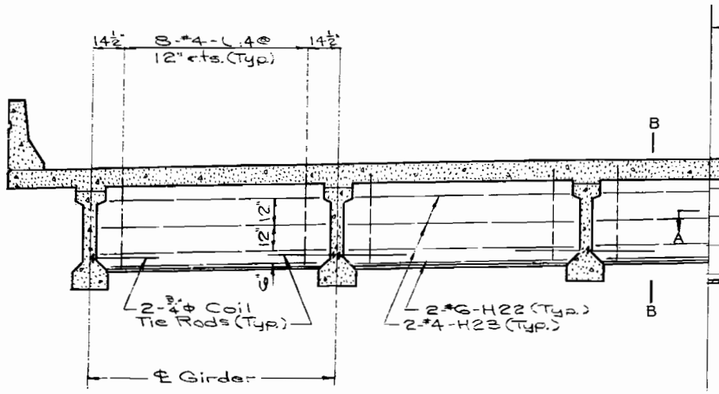
L-660R

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	54	

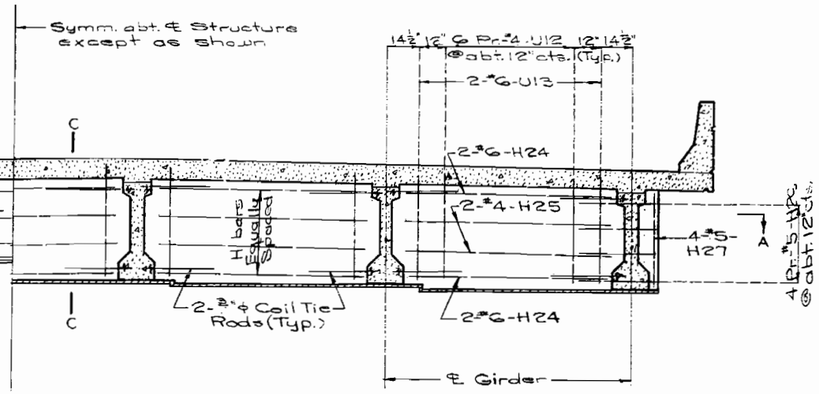
Note: For location of Detail "A" see Sheet No. 12.



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



HALF SECTION NEAR INT. DIAPH.

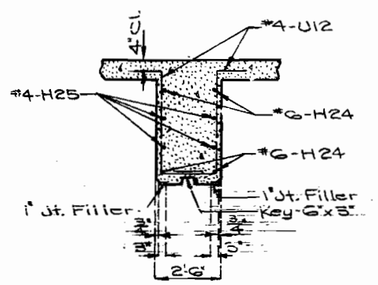


HALF SECTION NEAR INT. BENTS

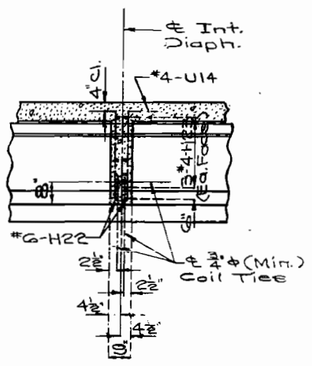
Note: For details of Coil Ties see Sheet No. 9.

Intermediate diaphragms are normal to grade.

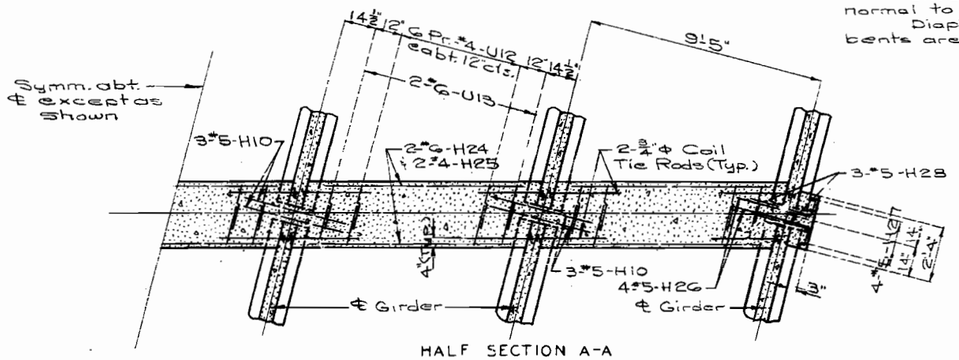
Diaphragms at intermediate bents are vertical.



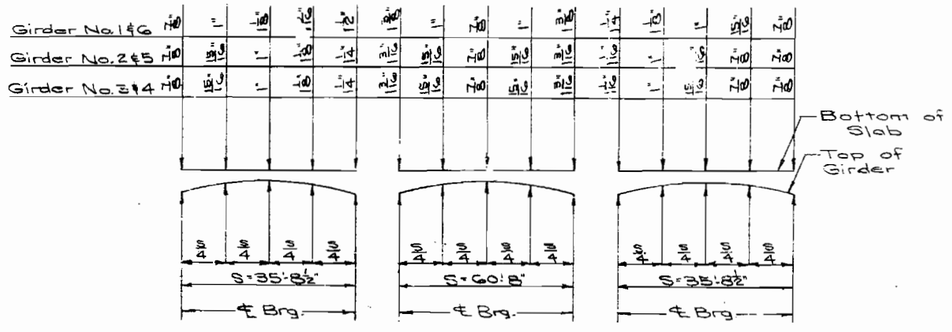
SECTION C-C



SECTION B-B

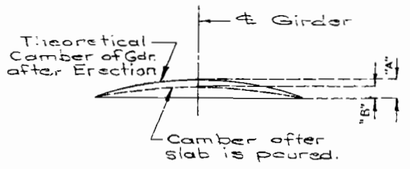


HALF SECTION A-A



THEORETICAL SLAB HAUNCHING DIAGRAM

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&6)	¼"	5/8"	1 7/16"	11/16"	¼"	5/8"
(2&5)	¼"	5/8"	1 7/16"	½"	¼"	5/8"
(3&4)	¼"	5/8"	1 7/16"	½"	¼"	5/8"



GIRDER CAMBER DIAGRAM

Note: Theoretical camber at .25 & .75 points equal .7125 of camber at half span.

Note: The slab is to be built parallel to grade and to a minimum thickness of 8½".

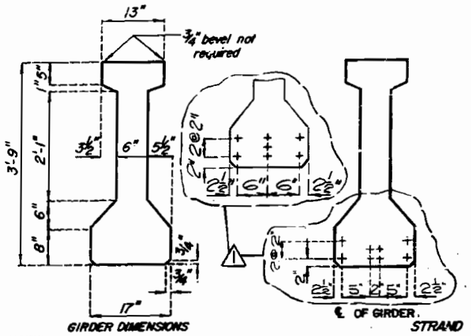
DETAILED JAN. 1982
CHECKED FEB. 1982

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

CLAY COUNTY

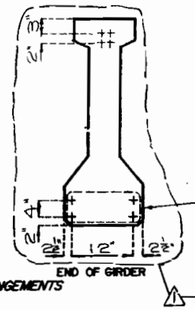
L-660R

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	53	



GIRDER DIMENSIONS

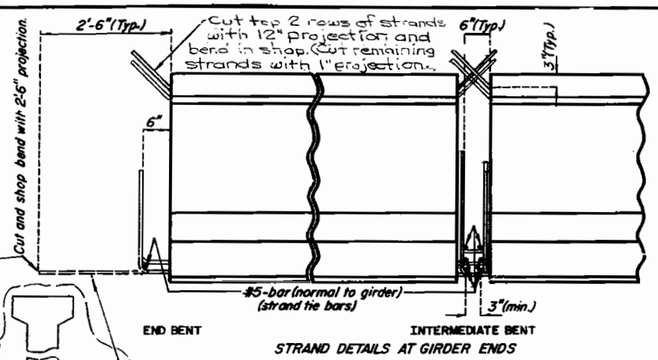
℄ OF GIRDER



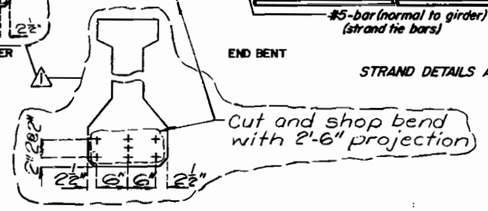
END OF GIRDER

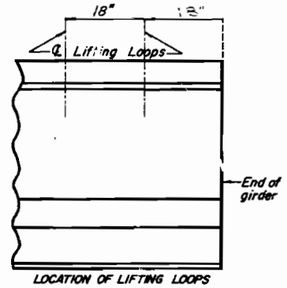
STRAND ARRANGEMENTS

NOTE:
Concrete for prestressed girders shall be Class A1 with f'c = 5,000 psi.
(+) indicates prestressed strand.
7△ Use (8) strands with an initial prestress force of (231) kips. △ 202
Cost of ¾" ø 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 shire-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



STRAND DETAILS AT GIRDER ENDS

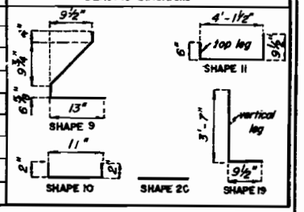




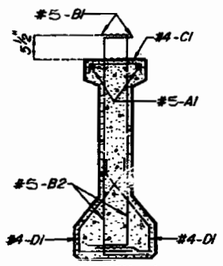
LOCATION OF LIFTING LOOPS

BILL OF REINFORCING STEEL - EACH GIRDER

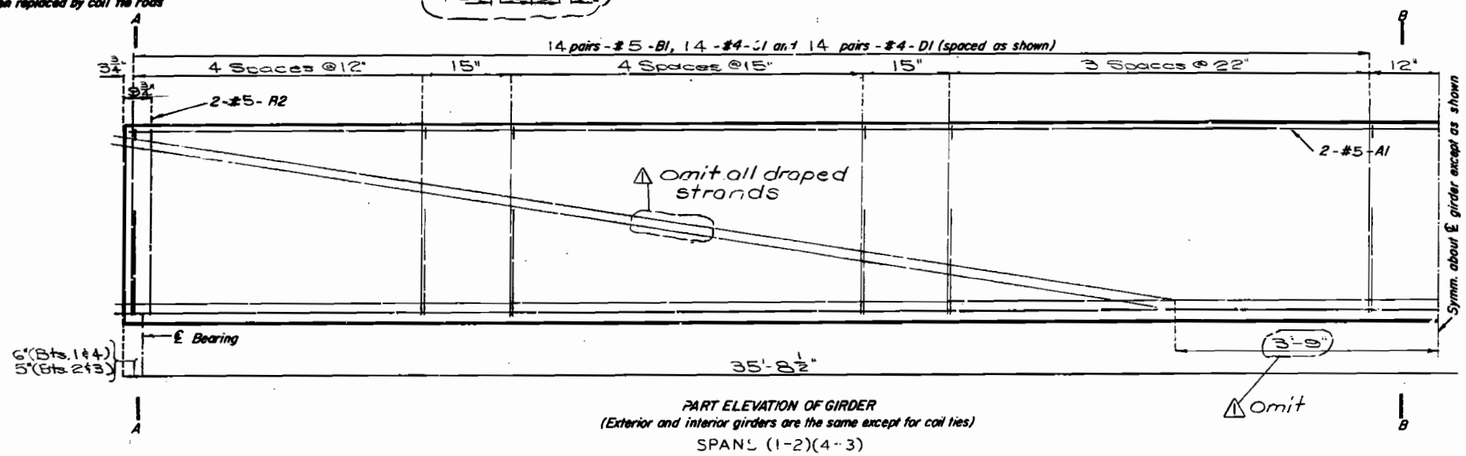
NO.	SIZE & MARK	ACTUAL LENGTH	SHAPE	BENDING DIAGRAMS
2	5 A1	36'-4"	20	
56	5 B1	5'-3"	11	
4	5 B2	4'-3"	19	
28	4 C1	13"	10	
56	4 D1	3'-0"	9	



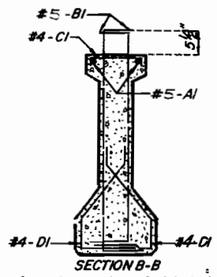
NOTE:
All dimensions are out to out.
Where deflecting strands interfere with placement, some in-place bending may be necessary.
Hooks and bends shall be in accordance with the CRSI Manual of Standard Practice for Detailing Reinforced Concrete Structures stirrup and tie dimensions.
Actual lengths are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



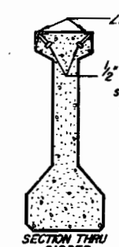
SECTION A-A
(strands not shown for clarity)



PART ELEVATION OF GIRDER
(Exterior and interior girders are the same except for coil ties)
SPANS (1-2)(4-3)

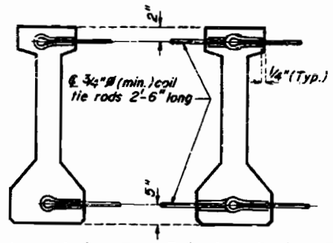


SECTION B-B
(strands not shown for clarity)



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.
Angles to be galvanized in accordance with ASTM A123.



Exterior Girders @ Intermediate Bents
Interior Girders @ All Bents
Exterior Girders @ End Bents

DETAILS OF COIL TIES

SPS 55.4.6 April 1973 | Revised MAY 1981

DETAILED JAN. 1982
CHECKED FEB. 1982

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

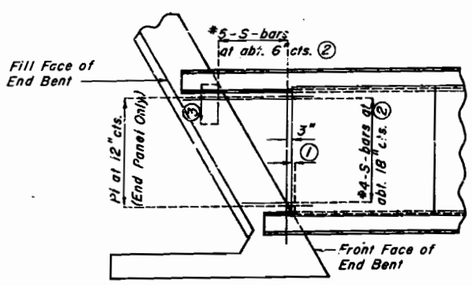
Sheet No. 10 of 14.

△ Revised 6-28-83

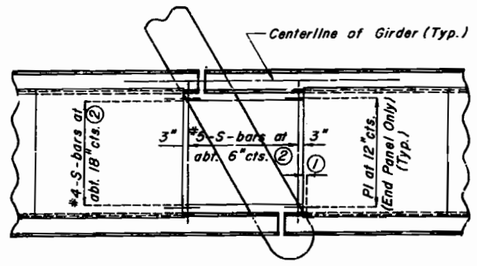
CLAY COUNTY

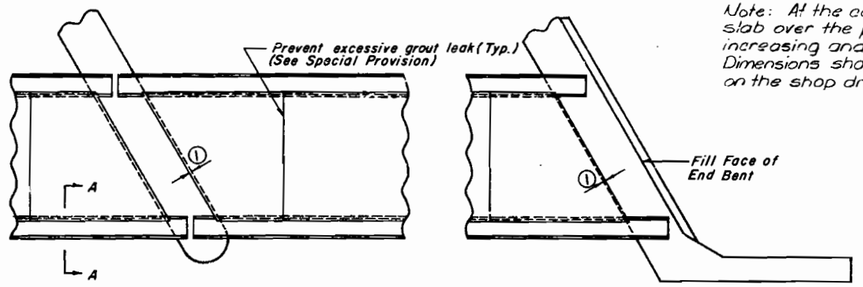
L-660R

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	56	



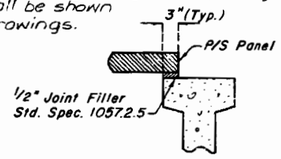
PANELS – SQUARED ENDS





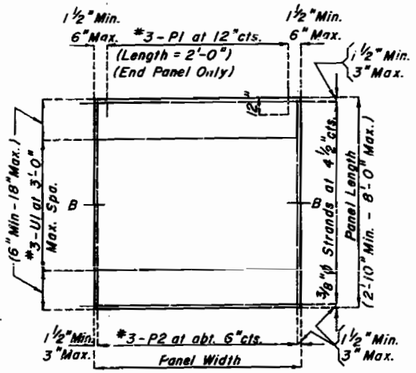
PANELS – SKEWED ENDS

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

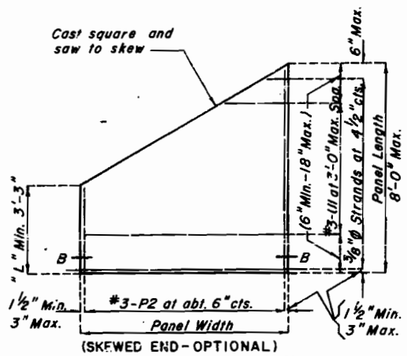


SECTION A-A

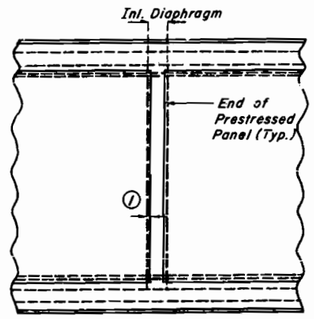
PLAN OF PRESTRESSED PANEL PLACEMENT



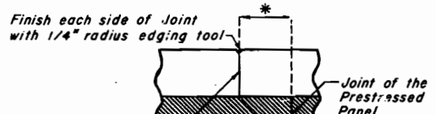
PLAN OF PRESTRESSED PANEL



(SKEWED END – OPTIONAL)
PLAN OF PRESTRESSED PANEL

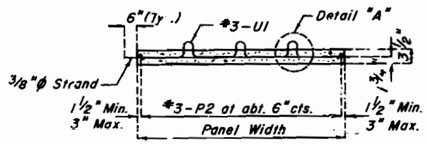


PLAN OF INT. DIAPHRAGM

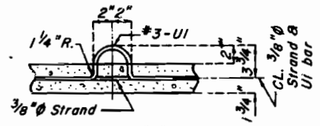


PERMISSIBLE CONST. JOINT

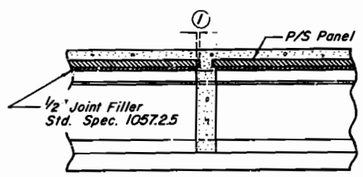
* Adjust the Permissible Const. Joint to a clearance of 6" min. from the joints of the Prestressed Panels.



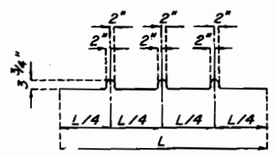
SECTION B-B



DETAIL "A"



SECTION THRU INT. DIAPHRAGM



BENDING DIAGRAM FOR UI 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.

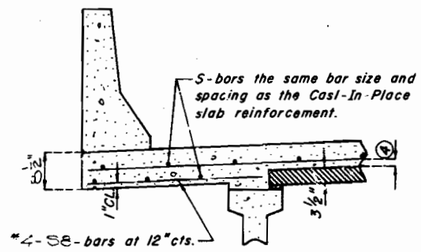
Cost of S-bars shall be included in price bid for Slab per sq. yd.

S-bars are not listed in bill of reinforcing.

NOTES CON'T.

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

(3) Extend S-bars 12" beyond Front Face of End Bent only.



SECTION THRU CANTILEVER

(4) 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.

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P/S Panel	Revised
JAN. 1980	NOV. 1981

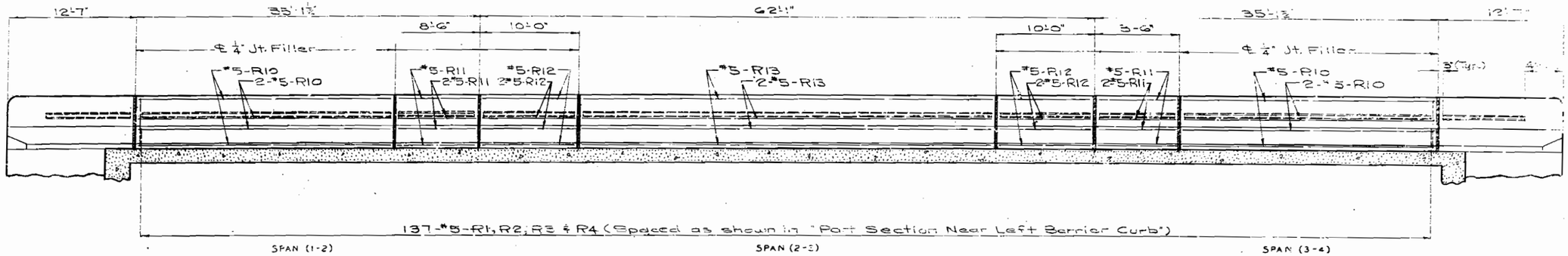
DETAILED JAN. 1982
CHECKED FEB. 1982

DETAILS OF PRECAST PRESTRESSED PANELS

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

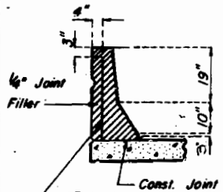
CLAY COUNTY L-660R

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	TOTAL SHEETS
5	MO.		



SECTION NEAR LEFT BARRIER CURB
(RIGHT BARRIER CURB SIMILAR)

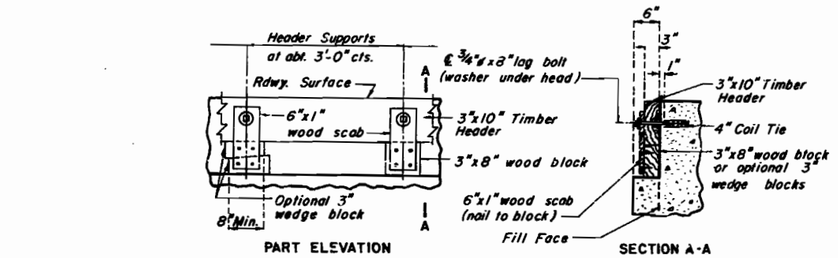
Note: Longitudinal dimensions are along top edge of slab parallel to grade.
All reinforcing steel in barrier curbs shall be epoxy coated.



Note: Plastic waterstop shall be placed in all safety barrier curb jilled joints.

Cost of plastic waterstop complete in place to be included in unit price bid for safety barrier curb.

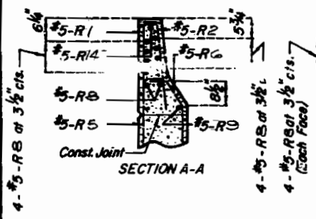
DETAILS OF PLASTIC WATERSTOP



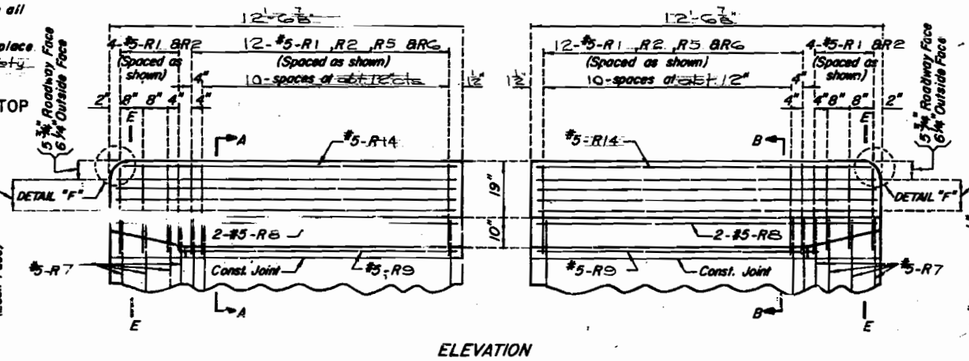
PART ELEVATION SECTION A-A

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

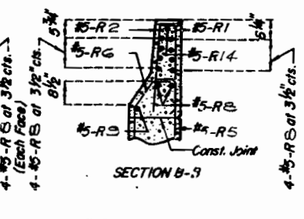
DETAILS OF TIMBER HEADER AT END BENTS



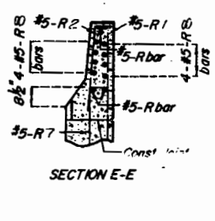
SECTION A-A



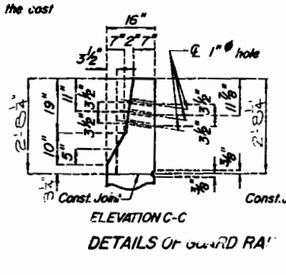
ELEVATION



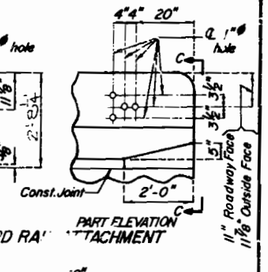
SECTION B-B



SECTION E-E



ELEVATION C-C



PART ELEVATION

DETAILS OF GUARD RAIL ATTACHMENT

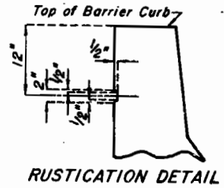
NOTES:

Top of barrier curb to be built parallel to grade with barrier curb joints (except at end bents) normal to grade.

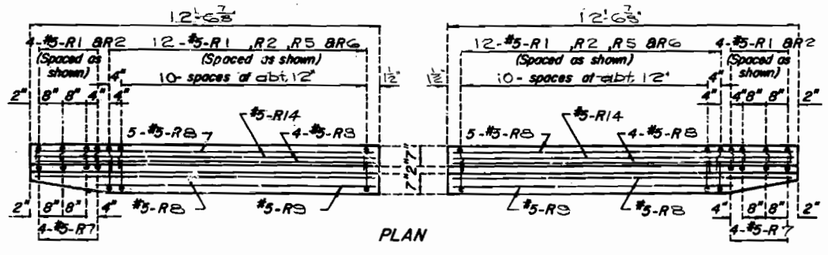
All exposed edges of barrier curb shall have ½" radius or ⅜ bevel unless otherwise noted.

When the barrier curb is bid by linear feet, the contract unit price shall include the cost of all concrete and reinforcement.

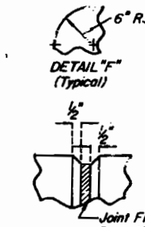
Concrete in the safety barrier curb shall be Class B1.



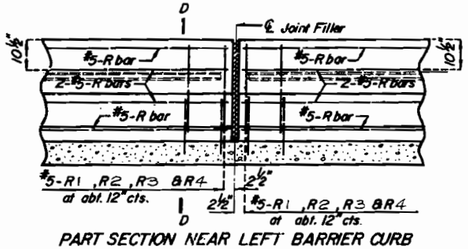
RUSTICATION DETAIL



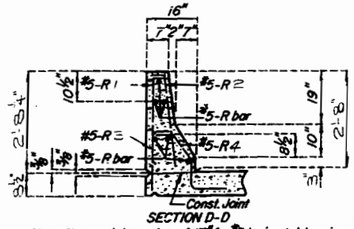
PLAN



FILLED JOINT DETAIL



PART SECTION NEAR LEFT BARRIER CURB



SECTION D-D

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

DETAILS OF BARRIER CURB AT END BENTS

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

337

REVISED	JUNE 1981
SPS 17.8(1)	AUG. 1978

DETAILED JAN. 1982
CHECKED FEB. 1982

Sheet No. 14 of 16.

CLAY COUNTY

L-660R

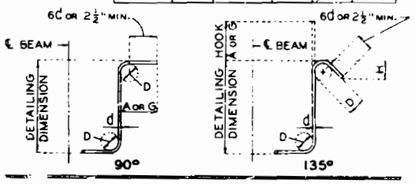
COMPLETE BILL OF REINFORCING STEEL

NO. REQD.	MARK NO. SIZE	MARK NO. MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	H FT.	H IN.	K FT.	K IN.	NOMINAL LENGTH FT.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT.	ACTUAL LENGTH IN.	WEIGHT LBS.
			SUBSTRUCTURE																									
			END BENT NO. 1																									
4	6H1		BEAM		20		X			35	10.000													35	10	35	10	215
4	6H2		BEAM		20		X			21	3.000													21	3	21	3	128
43	5U1		BEAM		10	S	X					6.875		2	3.000									3	5	3	2	142
6	7U2		BEAM		14		X			5	0.875	21.000		2	10.625					18.250		2	5.375	9	9	9	6	117
1	7U3		BEAM		14		X			5	0.875	21.000		4	9.250					2	6.000	4	0.750	11	5	11	5	23
6	7U4		BEAM		14		X				21.000	2	1.875	3	2.750					2	9.125	20.000		11	7	11	5	84
1	7U5		BEAM		14		X			4	4.000	2	1.875	5	2.625					4	5.750	2	8.125	11	9	11	5	23
1	5U8		BEAM		10	S	X					4	7.875	2	3.000									11	7	11	4	12
2	6V1		BEAM		20		X			4	8.000													4	8	4	8	14
2	6V2		BEAM		20		X			4	7.000													4	7	4	7	14
			INT. BENT NO. 2																									
6	8H13		BEAM		20		X			51	7.000													51	7	51	7	826
4	6H14		BEAM		20		X			51	7.000													51	7	51	7	310
7	8H15		BEAM		17		X			20	2.000													21	1	21	1	394
4	10H16		BEAM		17		X			21	2.000													22	7	22	7	389
6	9H17		BEAM		17		X			37	4.000													38	7	38	7	787
6	4P1		COLUMN		13	S	X			2	3.000	2	9.000	2	3.000	2	9.000							10	9	10	6	42
40	5U9		BEAM		13	S	X			2	11.000	3	9.875	2	11.000	3	9.875							14	5	14	1	588
15	4U10		BEAM		10	S	X					6.000		2	11.000									3	11	3	9	38
17	5U11		BEAM		13	S	X			2	11.000	3	9.000	2	11.000	3	9.000							14	3	13	11	247
24	8V5		COLUMN		20		X			5	3.000													5	3	5	3	336
			INT. BENT NO. 3																									
6	8H13		BEAM		20		X			51	7.000													51	7	51	7	826
4	6H14		BEAM		20		X			51	7.000													51	7	51	7	310
7	8H15		BEAM		17		X			20	2.000													21	1	21	1	394
4	10H16		BEAM		17		X			21	2.000													22	7	22	7	389
6	9H17		BEAM		17		X			37	4.000													38	7	38	7	787
6	4P1		COLUMN		13	S	X			2	3.000	2	9.000	2	3.000	2	9.000							10	9	10	6	42
40	5U15		BEAM		13	S	X			2	11.000	3	9.375	2	11.000	3	9.375							14	4	14	0	584
15	4U10		BEAM		10	S	X					6.000		2	11.000									3	11	3	9	38
17	5U11		BEAM		13	S	X			2	11.000	3	9.000	2	11.000	3	9.000							14	3	13	11	247
24	8V5		COLUMN		20		X			5	3.000													5	3	5	3	336
			END BENT NO. 4																									
4	6H20		BEAM		20		X			33	8.000													33	8	33	8	202

COMPLETE BILL OF REINFORCING STEEL

NO. REQD.	MARK NO. SIZE	MARK NO. MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	H FT.	H IN.	K FT.	K IN.	NOMINAL LENGTH FT.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT.	ACTUAL LENGTH IN.	WEIGHT LBS.
4	6H21		BEAM		20		X			23	5.000													23	5	23	5	141
43	5U1		BEAM		10	S	X					6.875		2	3.000													
6	7U17		BEAM		14		X			2	6.000	21.000		2	10.625					18.250		2	5.375	7	7	7	4	90
1	7U3		BEAM		14		X			5	0.875	21.000		4	9.250					2	6.000	4	0.750	11	7	11	5	23
6	7U16		BEAM		14		X			4	4.000	2	1.875	3	2.750					2	9.125	20.000		9	9	9	6	117
1	7U5		BEAM		14		X			4	4.000	2	1.875	5	2.625					4	5.750	2	9.125	11	9	11	5	23
1	5U8		BEAM		10	S	X					4	7.875	2	3.000									11	7	11	4	12
2	6V1		BEAM		20		X			4	8.000													4	8	4	8	14
2	6V2		BEAM		20		X			4	7.000													4	7	4	7	14
			SUPERSTRUCTURE																									
			END BENT NO. 1																									
4	6F1		WING & DIAPHRAGM		23					14	250	3	4.500	14	250	11	250	8	750	11	250	8	750	5	9	5	8	34
4	6F2		WING & DIAPHRAGM		23					14	250	4	4.750	14	250	8	750	11	250	8	750	11	250	6	9	6	9	41
15	6H3		DIAPHRAGM		20					7	8.000													7	8	7	8	173
3	6H4		DIAPHRAGM		20					54	10.000													54	10	54	10	247
6	6H5		WING		20			V	2	8	3.250													8	3	8	3	
			INCR = 18.500 IN							11	3.500													11	4	11	4	88
6	6H6		WING		20					11	9.000													11	9	11	9	106
6	6H7		WING		20			V	2	7	5.500													7	6	7	6	
			INCR = 18.000 IN							10	5.500													10	10	10	6	81
6	6H8		WING		20					11	1.060													11	1	11	1	100
6	6H9		DIAPHRAGM		20					2	4.000													2	4	2	4	21
6	5H10		DIAPHRAGM		20					3	11.000													3	11	3	11	24
5	6H11		DIAPHRAGM		15					2	3.875	4	8.750							2	3.000	6.750		7	1	6	11	52
5	6H12		DIAPHRAGM		21					2	3.875	5	1.250							2	3.000	6.750		7	5	7	2	54
4	6H20		DIAPHRAGM	E	20					54	10.000													54	10	54	10	329
2	6T1		WING		25	S				2	0.000	4	9.750	7	4.750					2	1.750	4	3.750	14	3	14	1	42
2	6T2		WING		25	S				2	0.000	4	9.500	6	8.000					2	1.500	4	3.500	13	6	13	4	40
44	5U6		DIAPHRAGM	E	15	S				2	4.000	4	0.000	2	4.000	4	0.000							13	7	13	3	608
73	6U7		DIAPHRAGM & SLAB	E	19	S				4	3.000	4	1.500											8	5	8	3	905
20	6V3		WING		20					4	4.000													4	4	4	4	130
20	6V4		WING		20			V	4	2	4.500													2	5	2	5	
			INCR = 5.750 IN							4	4.000													4	4	4	4	101
			END BENT NO. 4																									
4	6F1		WING & DIAPHRAGM		23					14	250	3	4.500	14	250	11	250	8	750	11	250	8	750	5	9	5	8	34
4	6F2		WING & DIAPHRAGM		23					14	250	4	4.750	14	250	8	750	11	250	8	750	11	250	6	9	6	9	41
4	6H29		DIAPHRAGM	E	20					54	10.000													54	10	54	10	329
6	6H9		DIAPHRAGM		20					2	4.000													2	4	2	4	21
15	6H3		DIAPHRAGM		20					7	8.000													7	8	7	8	173
3	6H4		DIAPHRAGM		20					54	10.000													54	10	54	10	247
6	6H6		WING		20					11	9.000													11	9	11	9	106
6	6H8		WING		20					11	1.000													11	1	11	1	100
6	5H10		DIAPHRAGM		20					3	11.000													3	11	3	11	24
5	6H11		DIAPHRAGM		15					2	3.875	4	8.750							2	3.000	6.750		7	1	6	11	52
5	6H12		DIAPHRAGM		21					2	3.875	5	1.250							2	3.000	6.750		7	5	7	2	54

FED. ROAD DIST. NO. 5 | STATE MO | FED. AID PROJ. NO. | FISCAL YEAR 19 | SHEET NO. 58 | TOTAL SHEETS

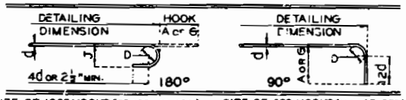


STIRRUP HOOK DIMENSIONS

GRADES 40-50-60 KSI

BAR SIZE	D (IN.)	90° HOOK A OR G	135° HOOK A OR G	135° HOOK APPROX. H
#3	1-1/2"	4"	4"	2-1/2"
#4	2"	3-1/2"	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 ALL GRADES 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 DIMENSION SHOWN ON THIS LINE AND THE FOLLOWING LINE.

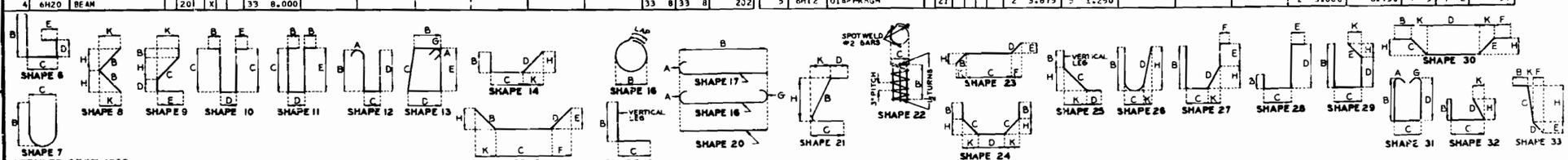
NO. EA. - NUMBER OF BARS OF EACH LENGTH.

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.

PAY WEIGHTS ARE BASED ON ACTUAL LENGTHS

Two additional #4 U12, #5 R11 & #6 U7 are included in bar bill for testing.



BENDING DIAGRAMS

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

STD. 90.8	REVISED SEPT. 1982
MAY 1974	

DETAILED SEPT. 1982
CHECKED SEPT. 1982

Sheet No. 15 of 16 .

CLAY COUNTY

L-660R

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO	TOTAL SHEETS
5	MO.		19	45	

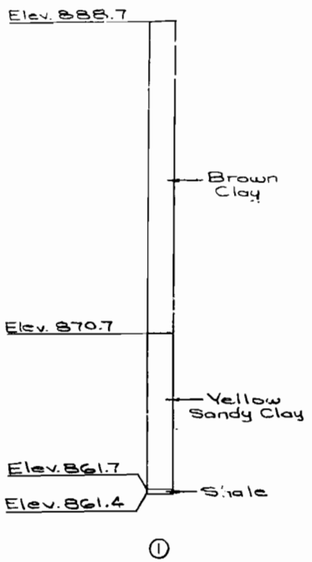
FINAL PLANS

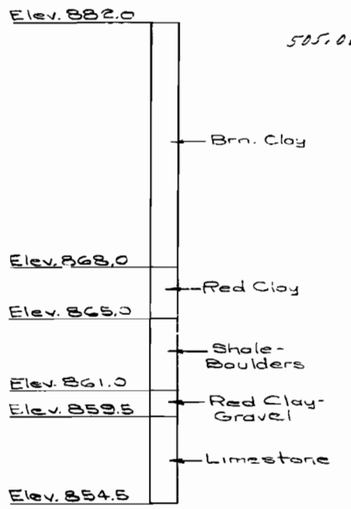
QUANTITIES					
ITEM			SUBSTR.	SUPERSTR	TOTAL
Special Work		Lump Sum			1
Removal of Existing Bridge Deck		Sq. Ft.		6298	6298
Structural Steel Piles (10")		Lin. Ft.	143		143
Class B Concrete		Cu. Yd.	70.5		70.5
( ) Slab On Concrete I-Girder *		Sq. Yd.		817	817
Safety Barrier Curb		Lin. Ft.		315	315
Plain Neoprene Bearing Pads		Each		24	24
Laminated Neoprene Bearing Pads		Each		12	12
Prestressed Concrete I-Girder 35 Ft. Span		Each		12	12
Prestressed Concrete I-Girder 60 Ft. Span		Each		6	6
Reinforcing Steel		Lb.	9460		9460
CONTINGENT					
505.01 Reinforcing Steel		Lb.		3190	3190

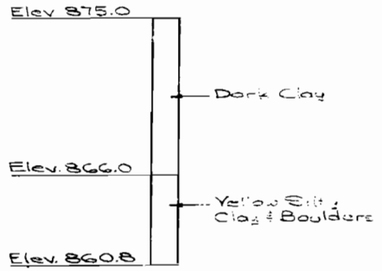
Note:
All concrete and reinforcement above lower construction joint in end bents are included with superstructure quantities.
Cost of ¾" ϕ coil tie rods placed in diaphragms is included in contract unit price per P/S member.
* See Special Provisions.

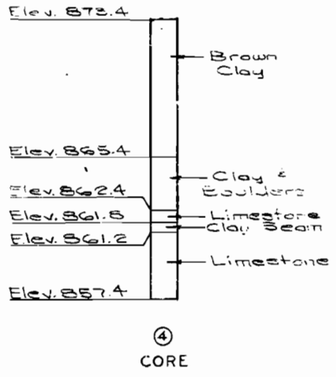
QUANTITIES FOR SLAB			
TYPE OF SLAB	SLAB ON CONC. I-GDR.		
	REINF (LBS.)		CONC.
	EPOXY	PLAIN	CU. YD.
Precast Panel Forms	37150	5860	2234

The total 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 estimates 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







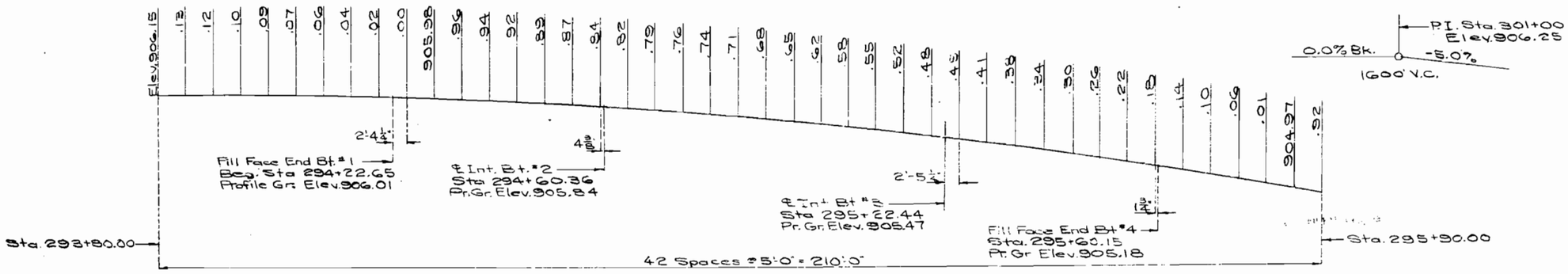


BORING DATA

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

PILE DATA				
BENT NO.	1	2	3	4
Pile Type and Size	HP10x42			HP10x42
Number	2			2
Approximate Length Ft.	37			36
Design Bearing Tons	26.3			26.3
Hammer Energy Required Ft. Lbs.	7000			7000

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



PROFILE GRADE ELEVATIONS

343

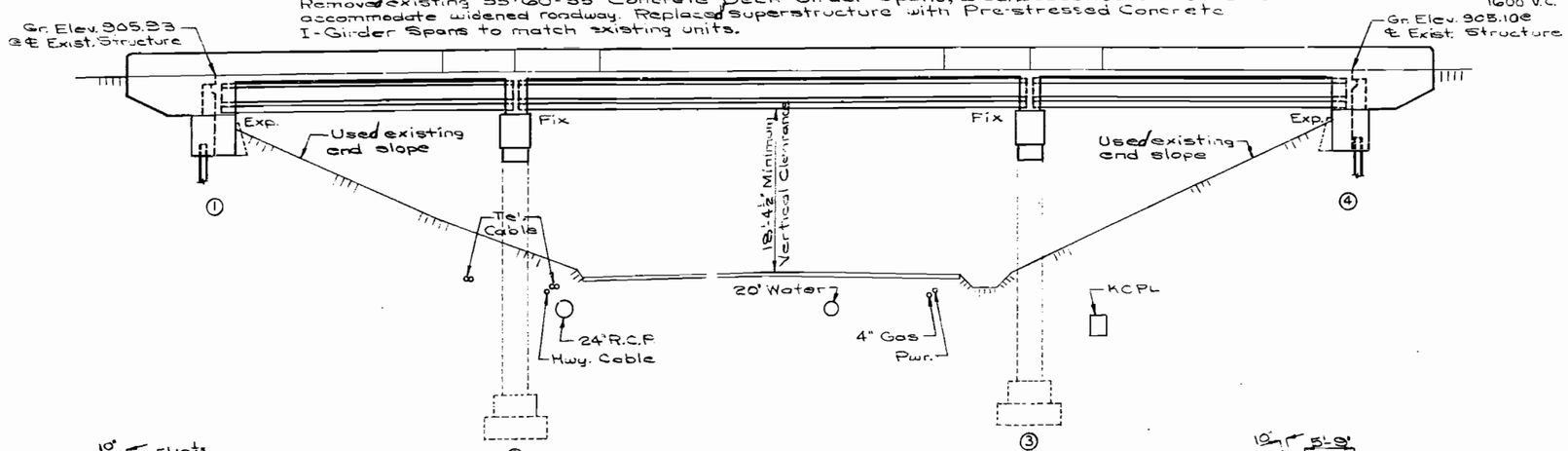
MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	44	
SEC. 14 & 12		TWP. 50 N	RGE. 33 W.		

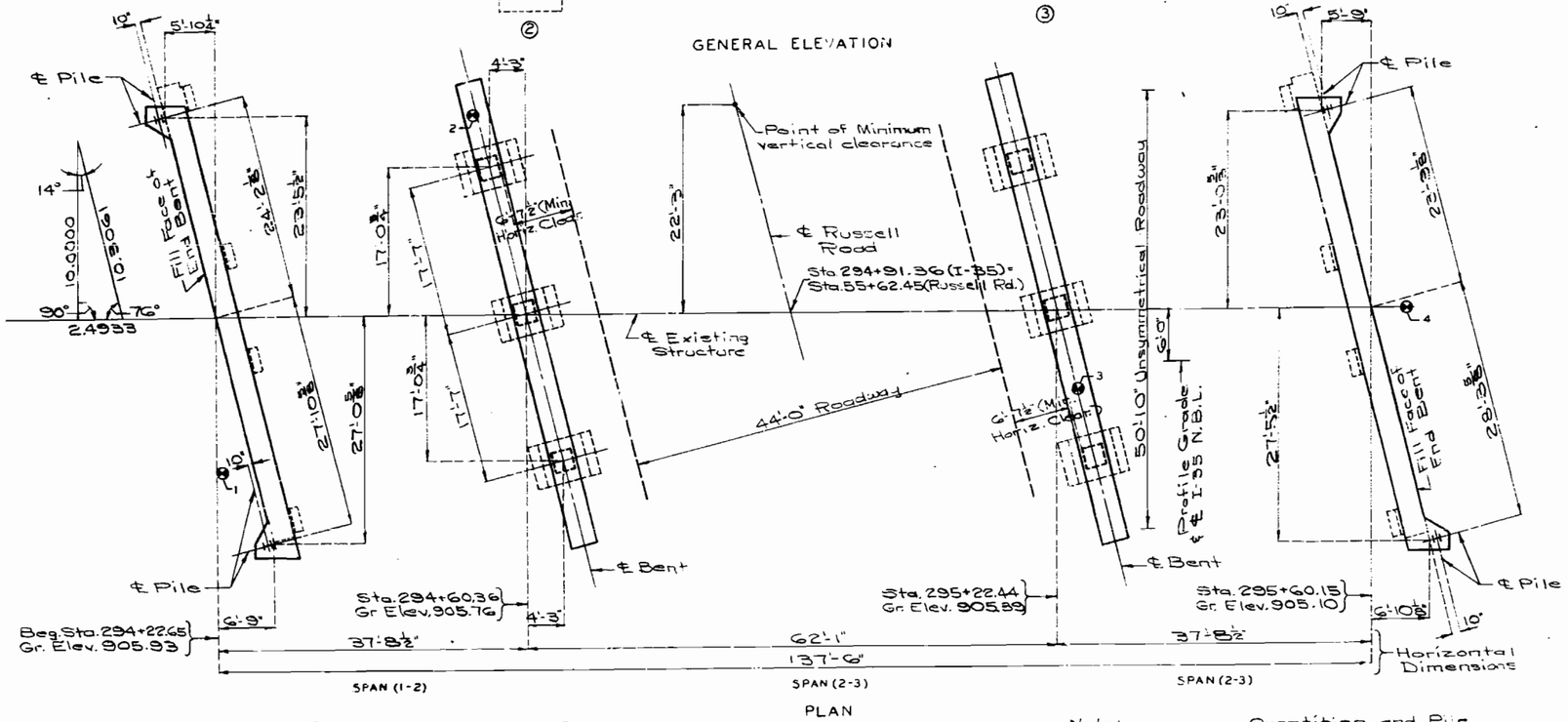
FINAL PLANS

Remove existing 35'-60'-35' Concrete Deck Girder Spans, widen substructure units to accommodate widened roadway. Replace superstructure with Pre-stressed Concrete I-Girder Spans to match existing units.

P.I. Sta. 301+00
Elev. 906.25
0.0% Bk. — -5.0% Ahd.
1600' V.C.



GENERAL ELEVATION



PLAN

Note: "B" Indicates location of Borings. For Boring Data see sheet No. 2.

Note: Quantities and Pile Data see sheet 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 E2 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

Note: For Pre-stressed Girder Stresses see Sheet Nos. 9 & 10.

Neoprene Pads:
Bearings were 60 durometer Neoprene Pads.
Cost of furnishing, fabricating and installing Neoprene Bearing Pads complete in place, was paid for at the contract unit bid price for Plain and Laminated Neoprene Bearing Pads per each.

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

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 was maintained during construction.

Widen, Extension and Repair:
Outline of old work is indicated by light dashed lines. Heavy lines indicate new work. Bars bonded in old concrete not removed were cleanly stripped and embedded into new concrete where possible. If length available, old bars did extend into new concrete at least 40 diameters for smooth bars and 30 diameters for deformed bars.

B.M. Elev. 904.60 on top of Rt. barrier curb
Bent No. 4 Sta. 295-47 Bridge L-659R

BRIDGE OVER RUSSELL ROAD
STATE ROAD FROM RTE. 210 NORTH
IN KANSAS CITY
PROJECT NO. I-IR-35-1(120) **STA.** 294+22.65
JOB NO. 4-I-35-340 **RTE.** I-35 N.B.L.
CLAY **COUNTY**
DATE 1/13/83

STD.
STD. 706.35
L-660R

DESIGNED DEC. 1981
DETAILED JAN. 1982
CHECKED FEB. 1982

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

Sheet No. 1A of 16.

342

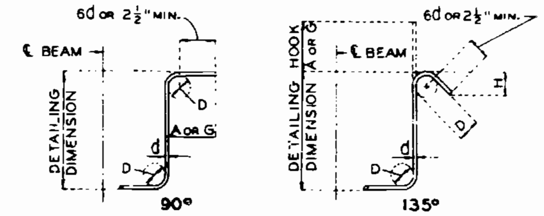
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO		19	59	

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.
6	6H18	WING		20			V	2	8 2.000							8 2	8 2	
		INCR = 18.500 IN							11 3.000							11 3	11 3	87
6	6H19	WING		20			V	2	8 0.000							8 0	8 0	
		INCR = 23.000 IN							11 10.000							11 10	11 10	89
2	6T3	WING		25	S				2 0.000	4 6.875	6 11.000			2 0.250	4 1.250	13 6	13 5	40
2	6T4	WING		25	S				2 0.000	4 6.625	7 7.000			2 0.250	4 1.000	14 2	14 1	42
44	5U6	DIAPHRAGM	E	13	S				2 4.000	4 0.000	2 4.000	4 0.000				13 7	13 3	678
75	6U7	DIAPHRAGM	E	19	S				4 3.000	4 1.500						8 5	8 3	929
24	6V7	WING		20					4 3.000							4 3	4 3	153
16	6V8	WING		20			V	4	2 4.000							2 4	2 4	
		INCR = 6.000 IN							3 10.000							3 10	3 10	74
		DIAPH.-INT.BT.																
60	5H10	DIAPHRAGM		20					3 11.000							3 11	3 11	245
40	6H24	DIAPHRAGM		20					7 0.000							7 0	7 0	421
40	4H25	DIAPHRAGM		20					7 7.000							7 7	7 7	203
32	5H26	DIAPHRAGM		19					11.000	2 9.500						3 9	3 7	120
16	5H27	DIAPHRAGM		20					3 7.000							3 7	3 7	60
24	5H28	DIAPHRAGM		20					2 8.000							2 8	2 8	67
122	4U12	DIAPHRAG	E	28	S					2 0.000	3 11.000	12.000				6 11	6 9	550
40	6U13	DIAPHRAGM	E	29	S					2 2.000	3 11.000	12.000				7 1	6 9	406
		INT. DIAPH.																
10	6H27	INT. DIAPH.		20					7 9.000							7 9	7 9	116
30	4H23	INT. DIAPH.		20					7 5.000							7 5	7 5	149
40	4U14	INT. DIAPH.	E	10	S				2.000	3 4.500	6.000	12.000				9 2	8 10	245
		BARRIER CURB																
338	5R1	BARRIER CURB	E	19	S				2 6.000	3.500						2 10	2 8	940
338	5R2	BARRIER CURB	E	15	S				2 6.125	3.500				2 6.000	3.000	2 10	2 9	969
274	5R3	BARRIER CURB	E	19	S				17.000	6.000						23	22	524
274	5R4	BARRIER CURB	E	27	S					6.000	11.125	7.000	12.000	9.125	6.375	3 0	2 10	810
48	5R5	BARRIER CURB	E	19	S				3 6.500	6.000						4 1	3 11	196
48	5R6	BARRIER CURB	E	27	S					6.000	11.125	14.625		9.125	6.375	2 8	2 7	129
16	5R7	BARRIER CURB	E	19	S				3 6.500	5.500						4 0	3 11	65
40	5R8	BARRIER CURB	F	20					12 3.000							12 3	12 3	511
4	5R9	BARRIER CURB	E	20					10 5.000							10 5	10 5	43
24	5R10	BARRIER CURB	E	20					26 4.000							26 4	26 4	659
26	5R11	BARRIER CURB	E	20					8 3.000							8 3	8 3	224
24	5R12	BARRIER CURB	E	20					9 9.000							9 9	9 9	244
12	5R13	BARRIER CURB	F	20					41 10.000							41 10	41 10	524
4	5R14	BARRIER CURB	E	20					12 0.000							12 0	12 0	50

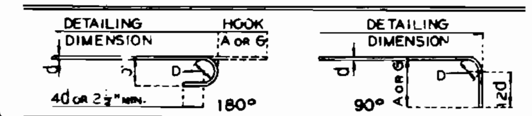
COMPLETE BILL OF REINFORCING STEEL

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.
		CAST-IN-PLACE																
		CONVENTIONAL																
		FORMS OR STAY-																
		IN-PLACE FORMS																
158	6S1	SLAB		20					53 3.000							53 3	53 3	12637
30	6S2	SLAB		20			V	2	5 0.125							5 0	5 0	
		INCR = 38.125 IN							49 5.625							49 6	49 6	1228
189	5S3	SLAB		20					47 0.000							47 0	47 0	9265
126	5S4	SLAB	E	20					47 0.000							47 0	47 0	6177
82	5S5	SLAB	E	20					16 0.000							16 0	16 0	1368
250	6S6	SLAB	E	20					53 3.000							53 3	53 3	19995
50	6S7	SLAB	E	20			V	2	2 1.000							2 1	2 1	
		INCR = 24.125 IN							50 2.625							50 3	50 3	1965
		PRECAST-P/S																
		PANEL FORMS																
24	5S3	SLAB		20					47 0.000							47 0	47 0	1177
126	5S4	SLAB	E	20					47 0.000							47 0	47 0	6177
82 (168 △1)	5S5	SLAB	E	20					16 0.000 (26 △1)							16 0 (△1 26)	16 0	1368 (4556 △1)
274	4S8	SLAB		20					3 2.000							3 2	3 2	589
214	6S9	SLAB	E	20					53 3.000							53 3	53 3	17116
42	6S10	SLAB	E	20			V	2	3 7.000							3 7	3 7	
		INCR = 28.750 IN							51 5.000							51 5	51 5	1735



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 ALL GRADES: 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.

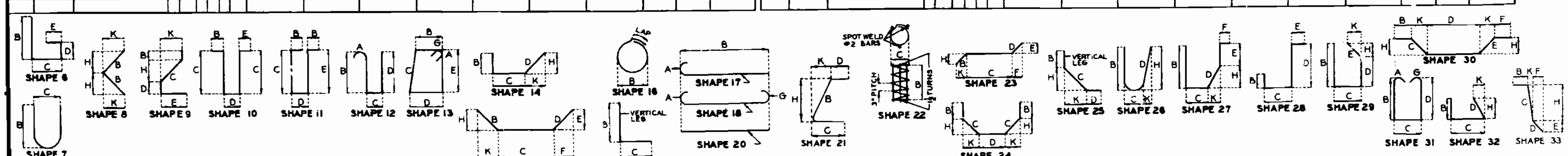
V - BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.

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.

PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS



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

BENDING DIAGRAMS

DETAILED SEPT. 1982
CHECKED SEPT. 1982

Sheet No. 6 of 6. △ Revised 3/25/83

CLAY COUNTY

L-660R

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

May 2, 2024
4:19:37pm

COUNTY : CLAY **BRIDGE :** L0660 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.	6413
27	Year Built	1954
106	Year Reconstructed	1983
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	RIGHT
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 N
12	Base Hwy. Network	YES
13A	LRS Inventory Route No.	0000005865
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	4.53 miles
16	Latitude	39 D 9 M 60 S
17	Longitude	94 D 33 M 31 S

STRUCTURE TRAFFIC INFORMATION

29	AADT	56042
30	AADT Year	2023
102	Direction of Traffic	1-WAY TRAFFIC
109	AADT Truck Percent	12%
114	Future AADT	100876
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	17 Ft. 11 In.
55A	Rt. Lat Clear Ref.	HIGHWAY
55B	Rt. Lat Clearance	6 Ft. 7 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	14.00 Degrees
35	Struct. Flared	NO
47	Total Horiz. Clear	51 Ft. 10 In.
48	Maximum Span Length	62 Ft. 0 In.
49	Structure Length	138 Ft. 1 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 = l0660

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

May 2, 2024
4:19:37pm

COUNTY : CLAY **BRIDGE :** L0660 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	61 Tons.
65	Inventory Rating Meth	LOAD FACTOR
66	Inventory Rating	26 Tons.
70	Bridge Posting Code	=>LEGAL LOADS

PROPOSED IMPROVEMENT INFORMATION

	Sufficiency Rating	71.6 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	5
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	5
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 = l0660

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

May 2, 2024
4:19:37pm

COUNTY : CLAY **BRIDGE :** L0660 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.	6413
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	RIGHT
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 N	
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	0.82 miles
16	Latitude	39 D 9 M 60 S
17	Longitude	94 D 33 M 31 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	17 Ft. 11 In.
19	By pass Detour Length	0.00 miles
32	Approach Roadway Width	
34	Skew	
35	Struct. Flared	
47	Total Horiz. Clear	18 Ft. 4 In.
48	Maximum Span Length	62 Ft. 0 In.
49	Structure Length	138 Ft. 1 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 = l0660

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

May 2, 2024
4:19:37pm

COUNTY :	**CLAY**	**BRIDGE :**	**L0660 R**	**REVIEW STATUS :**	**APPROVED**	**NBI STATUS :**	**P**
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

APPRAISAL RATING INFORMATION

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	
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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 = l0660