

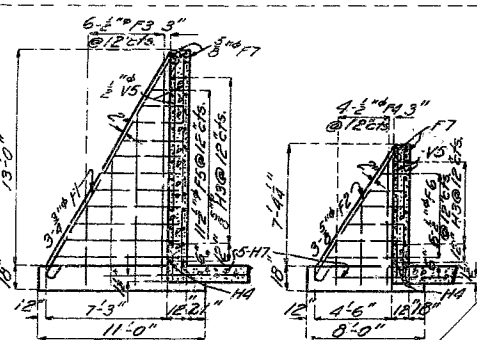
MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	2353D (U.S. 71 TR)	19		

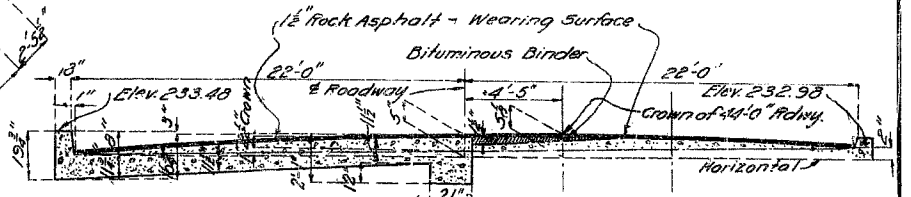
Note: Channel to be opened to a free inlet and outlet at ends.

Note: Elevations given are based on the elevation of top of present roadway of edge of curb being 232.98.

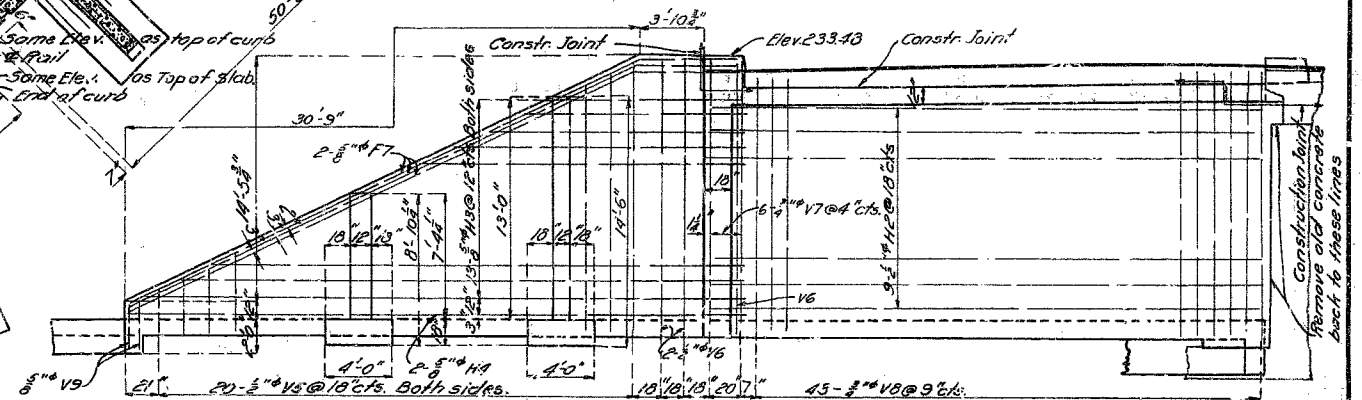
Note: Top of roadway to have 2% crown at E and to be constructed as a parabolic curve from curb to curb.



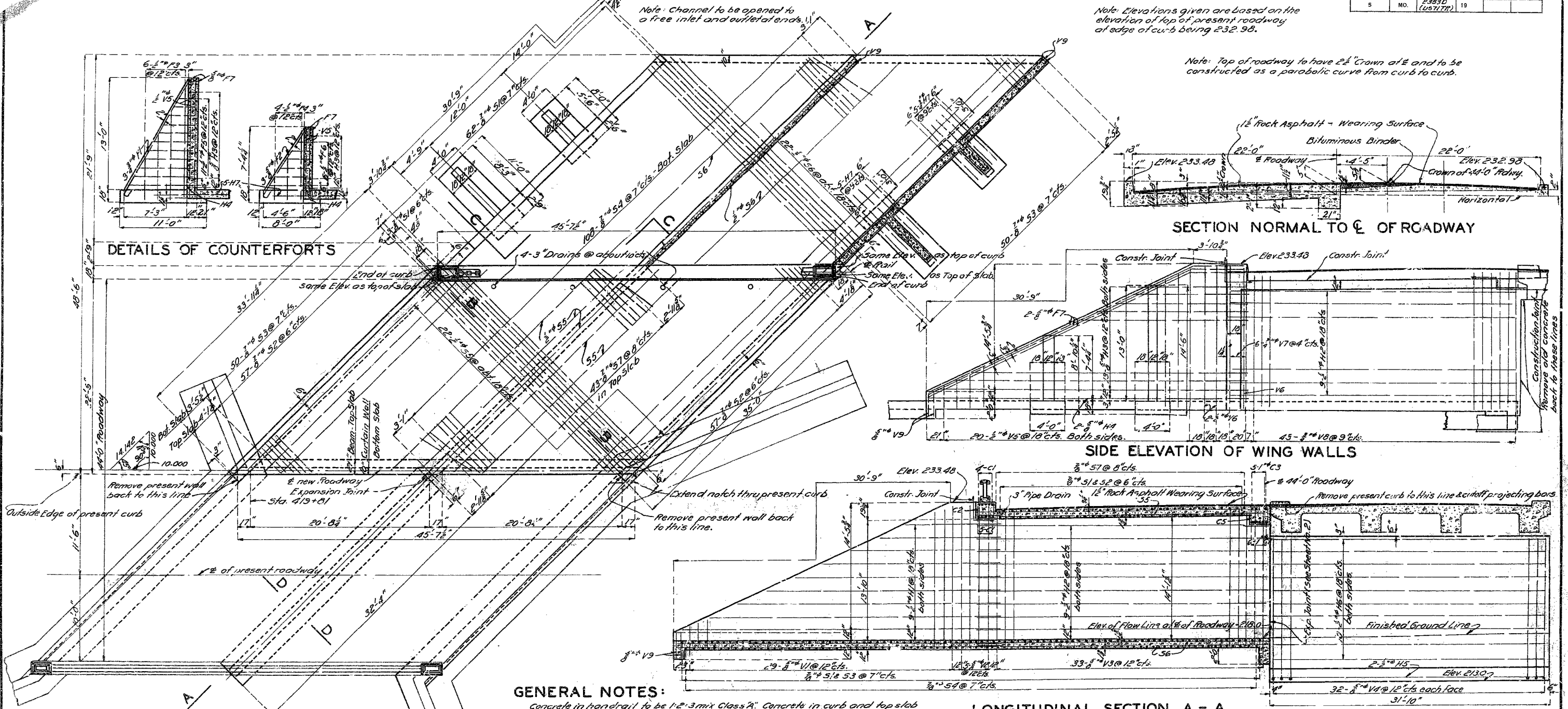
DETAILS OF COUNTERFORTS



SECTION NORMAL TO C OF ROADWAY



SIDE ELEVATION OF WING WALLS



PLAN

GENERAL NOTES:

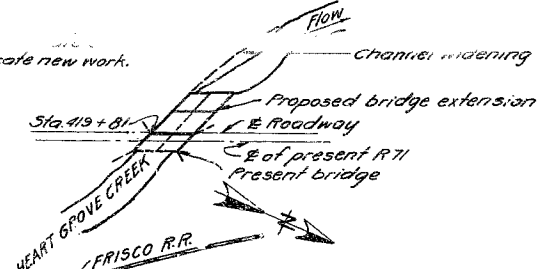
Concrete in handrail to be 1:2:3 mix Class A. Concrete in curb and top slab to be 1:2:3 1/2 mix Class X. All other concrete to be 1:2:4 mix, Class B. Exposed edges to be beveled 3/4" where no other bevel is noted. Where bituminous felt is used in expansion or partition joints in concrete, slitch felt in vertical joint securely to one face of concrete with copper wire. Bridge excavation in accordance with Section I of standard specifications issued April 1, 1930, except that quantities paid for will be computed from extreme low water elevation if this elevation is below this elevation. All surfaces to receive new concrete to be roughened by bush-hammering and then painted with cement wash. Where concrete is to be brought to new lines the old concrete shall be removed a sufficient distance back to bring the concrete to red lines. Old name plate to be carefully removed by contractor from old rail post and reset in new rail post. Cost of removing and resetting old name plate to be included in price bid for other items.

LONGITUDINAL SECTION A - A

ESTIMATED QUANTITIES

ITEM	SUBSTR.	SUPERSTR.	TOTAL
Concrete 1:2:3 mix A	Cu. Yds.	24	24
Concrete 1:2:3 1/2 mix X	Cu. Yds.	43.6	43.6
Concrete 1:2:4 mix B	Cu. Yds.	276.9	276.9
Reinforcing Steel	Lbs.	2170	23900
Excavation Class I	Cu. Yds.	26	26
Excavation Class II	Cu. Yds.	538	538
Rock Asphalt Wearing Surf. 50 Yds.		223	223

Note: Bridge excavation above Elev. 222.0 will be paid for as Class I Bridge Excavation. Bridge excavation below Elev. 222.0 will be paid for as Class II Bridge Excavation.



LOCATION SKETCH

Drawn Oct. 1931 by I. B. HEU.
Traced Oct. 1931 by H. E. U.
Checked Nov. 1931 by R. H. S.

Extended by H-33R1

B.M. Elev. 236.19 - X on Concrete Base Frisco Signal Tower 165' Right of Sta. 413 + 60.

BRIDGE OVER HEART GROVE CREEK

STATE ROAD FROM KANSAS CITY TO HICKMAN MILLS ABOUT 2.5 MILES S.E. OF DODSON PROJECT NO. E353D (U.S. 71 TR) STA. 419 + 81

JACKSON COUNTY

SUBMITTED BY: *M.R. Jays* DATE: 3/17/32
APPROVED BY: *M. Lottin* DATE: 3/17/32
BRIDGE ENGINEER
CHIEF ENGINEER

Extended by H-33R1

Sheet No. 1 of 2

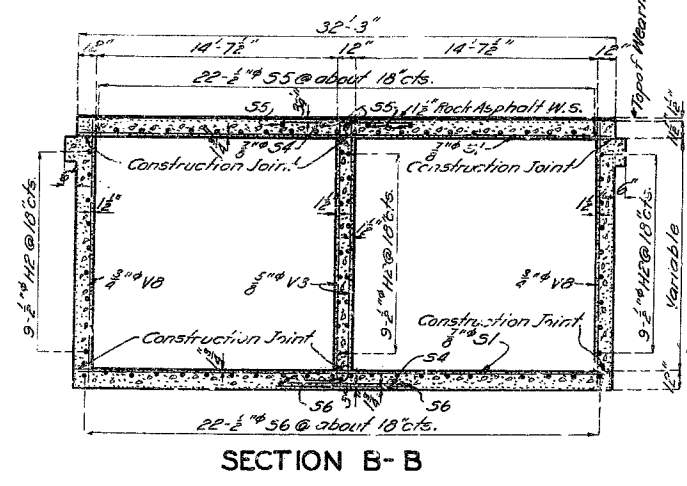
H-33 R

F.A.

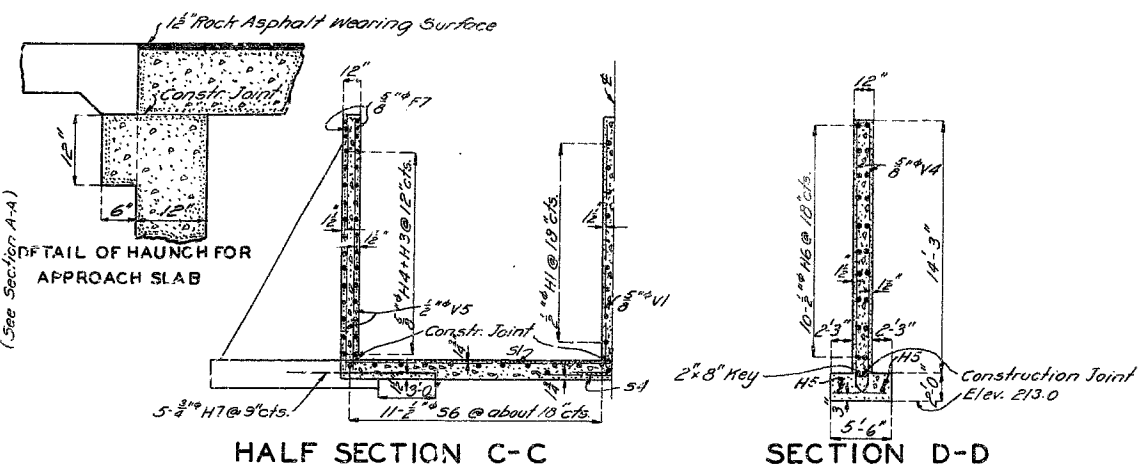
226

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	2333D (U.S. 717R)	19		

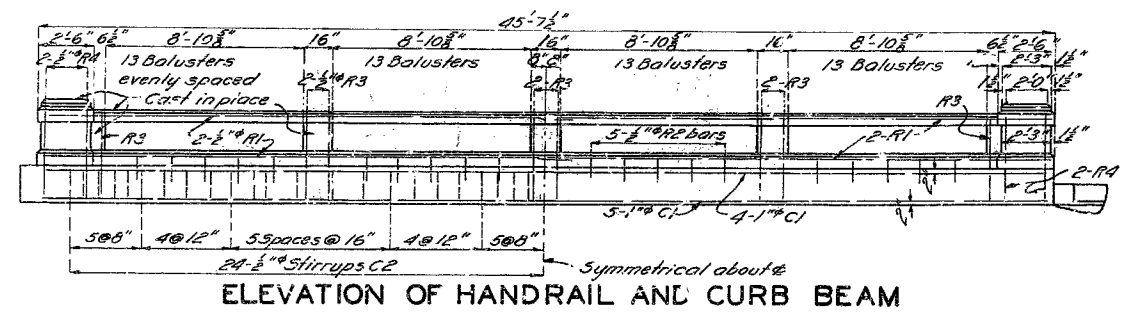


SECTION B-B

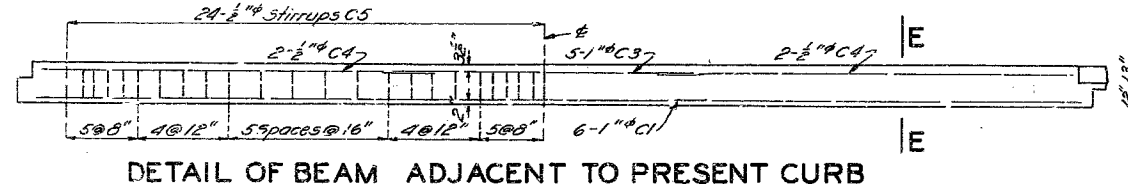


HALF SECTION C-C

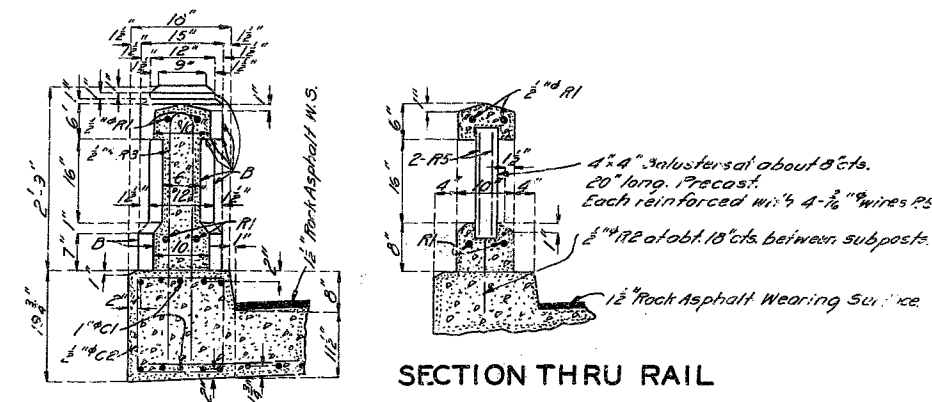
SECTION D-D



ELEVATION OF HANDRAIL AND CURB BEAM



DETAIL OF BEAM ADJACENT TO PRESENT CURB



SECTION THRU RAIL

SECTION THRU SUBPOST

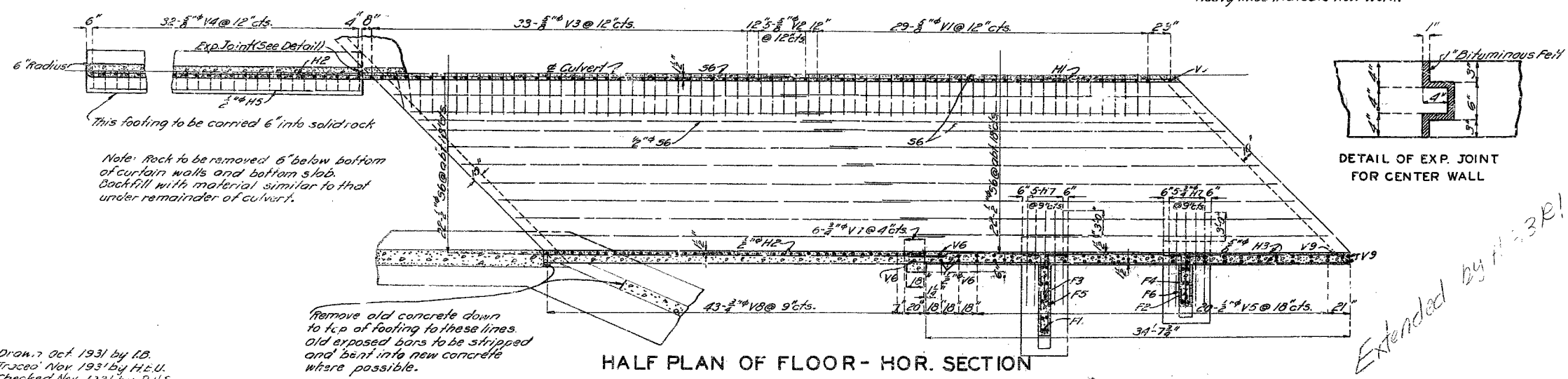
Note: All edges marked 'B' on post and railing to be bevel'd.
 1/2" bevel to be used at all turn-in joints.

No.	Size	Length	Nbr.	Location	Bending Sketches & C. Ring Diagrams
8	1/2"	23'-9"	R1	Rail	6" 3'-9"
20	1/2"	12"	R2	"	13" 6'-6"
2	1/2"	7'-9"	R3	Subpost	3'-9" 3'-9"
0	1/2"	4'-0"	R4	"	6'-6" 16'-9"
208	1/2"	18"	R5	Baluster	35'-6" 28'-9"
15	1"	44'-0"	C1	Headwall	57-52 Cut 57
47	1"	6'-3"	C2	"	7" 3'-1"
5	1"	17'-0"	C3	Slab Beam	
4	1"	17'-0"	C4	"	3'-1" 3'-1"
47	1"	7'-6"	C5	"	3'-1" 3'-1"
65	1"	32'-0"	S1	Top Slab	30-53 Cut 50
57	1"	33'-6"	S2	Top Slab	11-F5 Cut 11.3"
30	1"	34'-9"	S3	Bot. Slab	3'-3" 11-1"
108	1"	8'-0"	S4	Bot. "	
27	1"	33'-6"	S5	Top Slab	11-1" 36'-5"
50	1"	35'-3"	S6	Bot. Slab	11-1" 13'-3"
9	1"	47'-6"	H1	Wing	47'-6" 20'-6"
36	1"	37'-6"	H2	Wall	9-11 Cut 9
26	1"	46'-5"	H3	Wing	2'-11" 10'-4"
4	1"	36'-6"	H4	"	
2	1"	37'-5"	H5	Footing	
29	1"	27'-6"	V1	Wing	10'-6" 36'-0"
10	1"	17'-9"	V2	"	46'-6" 3'-0"
66	1"	17'-3"	V3	Wall	13-43 Cut 16
64	1"	18'-6"	V4	"	5'-8" 4'-2"
40	1"	18'-3"	V5	Wing	
10	1"	16'-0"	V6	"	
12	1"	16'-0"	V7	Wall	4'-2" 17'-3"
86	1"	15'-6"	V8	"	21'-6" 11-2-3&4
9	1"	2'-9"	V9	Cul. H Wall	29-V1 Cut 29
6	1"	11'-0"	F1	Counterfort	5'-2" 2'-4"
6	1"	11'-9"	F2	"	F5-6 F3-4
6	1"	37'-3"	F3	"	
4	1"	22'-9"	F4	"	
11	1"	26'-3"	F5	"	11-13-5" 11-13-5"
6	1"	20'-6"	F6	"	13'-3" 12'-9"
12	1"	38'-6"	F7	Wing	20-V5 Cut 40
43	1"	12'-6"	S7	Top Slab	3'-1" 9'-6"
20	1"	31'-3"	H6	Wall	5'-6" 27'-8"
20	1"	8'-9"	H7	Counterfort	3'-7" 3"

Note: Dimensions of bars are given along centerline and are for computed lengths.
 Reinforcing bars 3/4" or over in diameter, which are bent to an angle greater than 90°, shall be of structural grade.

ITEM	SUBSTR.	SUPERSTR.	TOTAL
Concrete 1:2:3 mix	Cu Yds	2.4	3.4
" 1:2:3 "	"	43.5	43.5
" 1:2:4 "	"	216.9	216.9
Reinforcing Steel	Lbs	21170	29910
Excavation Class I	Cu Yds	27	27
" " " II	"	394	394
Rock Asphalt Wearing Sur.	Sq. Yds	249	249
Special Work	L. Sum		1100.00
Heating Concrete	Cu Yds	216.9	262.9
Backing Old Handrail	Sq. Ft.		45.54
Asphalt Binder	Sq. Ft.		16.6
Cleaning with Highpr.	"	223	223

Extended by H-33R
BRIDGE OVER HEART GROVE CREEK
 STATE ROAD FROM KANSAS CITY TO HICKMAN MILL S
 ABOUT 2.5 MILES S.E. OF DODSON
 PROJECT NO. F353D (U.S. 717R) STA. 419 + 81
JACKSON COUNTY
 SUBMITTED BY: *W.R. Lacy* DATE: 3/17/32
 APPROVED BY: *J.H. Miller* DATE: 3/17/32
 BRIDGE ENGINEER
 CHIEF ENGINEER



HALF PLAN OF FLOOR - HOR. SECTION

DETAIL OF EXP. JOINT FOR CENTER WALL

Drawn Oct. 1931 by I.B.
 Traced Nov. 1931 by H.E.U.
 Checked Nov. 1931 by P.H.S.

Remove old concrete down to top of footing to these lines. Old exposed bars to be stripped and bent into new concrete where possible.

Extended by H-33R
 Sheet No. 2 of 2

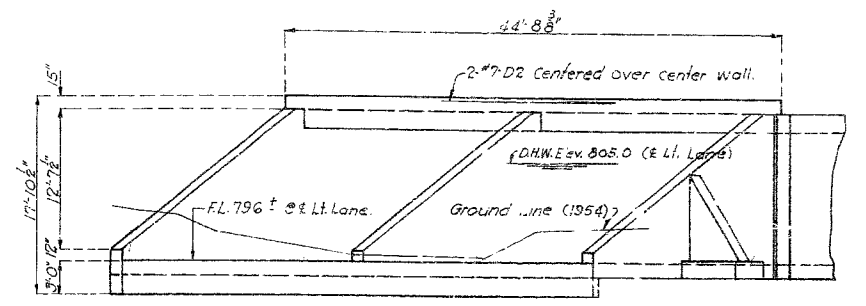
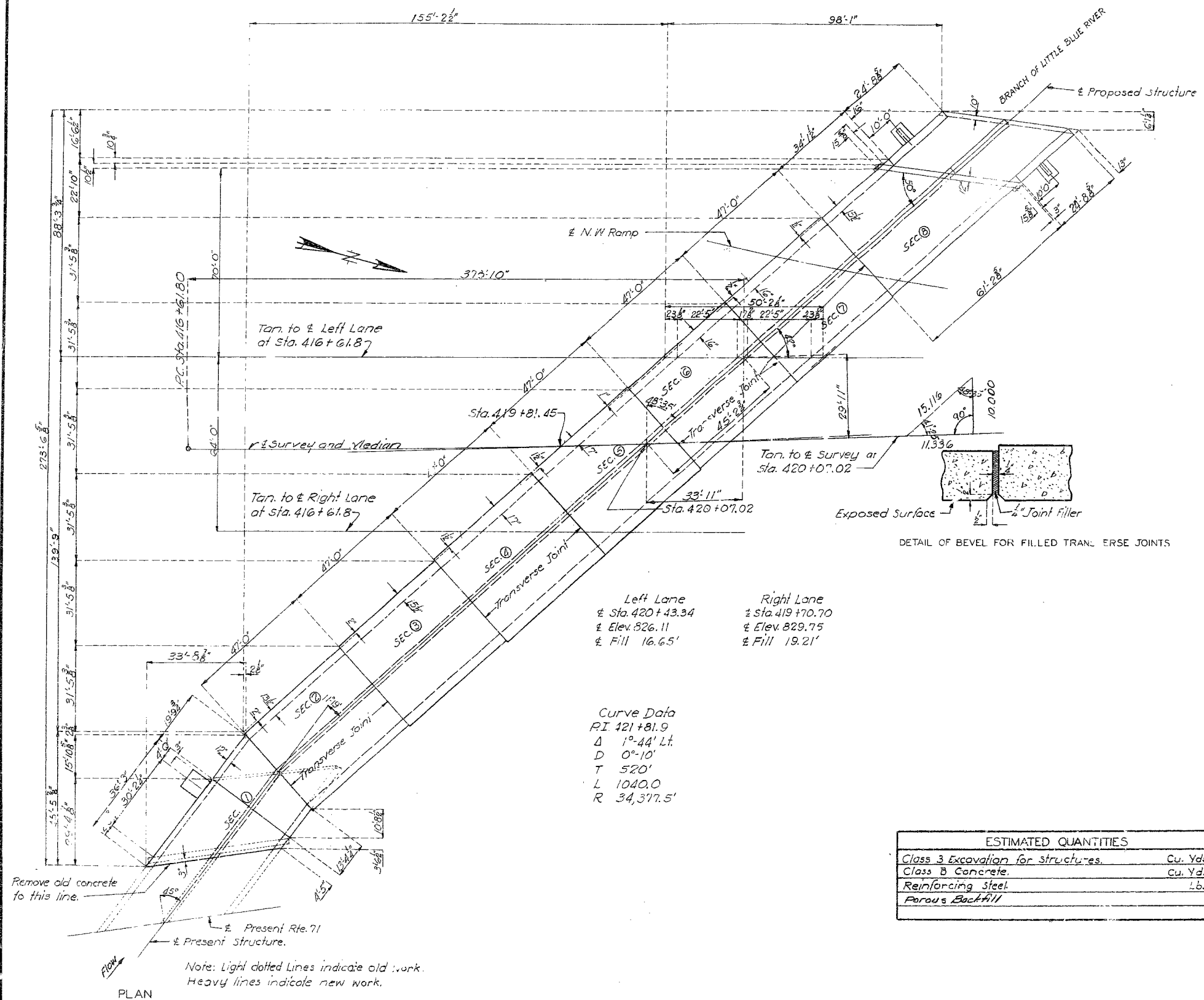
F.A.

H-33R

122

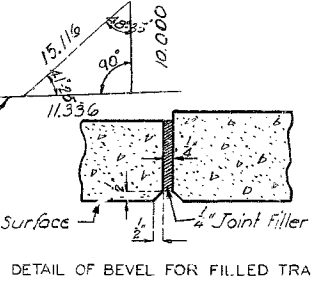
MISSOURI STATE HIGHWAY DEPARTMENT

FEJ. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	106	



Note: Channel to be opened to a free outlet of downstream end.

GENERAL NOTES:
 Design Specifications A.A.S.H.O.-1957
 Loading #20-44
 Reinforcing Steel Stress 20,000 ψ / in^2
 Concrete Class B Stress 1200 ψ / in^2
 All concrete shall be Class B (Air Entrained).
 Bar supports and spacers required in top slab.
 Where joint filler is specified on the plans it shall conform with the requirements of Section 157:2.5 of the Standard Specifications.



Left Lane
 ± Sta. 420+43.34
 ± Elev. 826.11
 ± Fill 16.65'

Right Lane
 ± Sta. 419+70.70
 ± Elev. 829.75
 ± Fill 19.21'

Curve Data
 PI 421+81.9
 Δ 1°-44' Lt.
 D 0°-10'
 T 520'
 L 1040.0
 R 34,377.5'

ESTIMATED QUANTITIES		Final	Rev. Price
Class 3 Excavation for structures.	Cu. Yds.	18.90	16.34
Class B Concrete.	Cu. Yds.	2075.9	2075.9
Reinforcing Steel.	Lbs.	307,360	307,860
Parous Backfill			182.8

B.M. #25 Elev. 813.82 on Corner N. Abutment 17C' Rt. Sta. 418+75 (L.L. Lane).

FINISHED FINISHED

BRIDGE OVER BRANCH OF LITTLE BLUE RIVER

STATE ROAD FROM GRANDVIEW TO KANSAS CITY
 ABOUT 5.2 MILES N. OF GRANDVIEW
 PROJECT NO. FFG-353(22)(RTE. 71) STA. 419+81.45 (± SURVEY)

JACKSON COUNTY

DESIGNED BY *Leo K. Beck* DATE 10-7-60
 APPROVED BY *Rex M. Whitton* DATE 12-10-60

Drawn NOV. 1957 by K.R.W.
 Checked Dec. 1957 by W.M.C.

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

Sheet No. 1 of 7

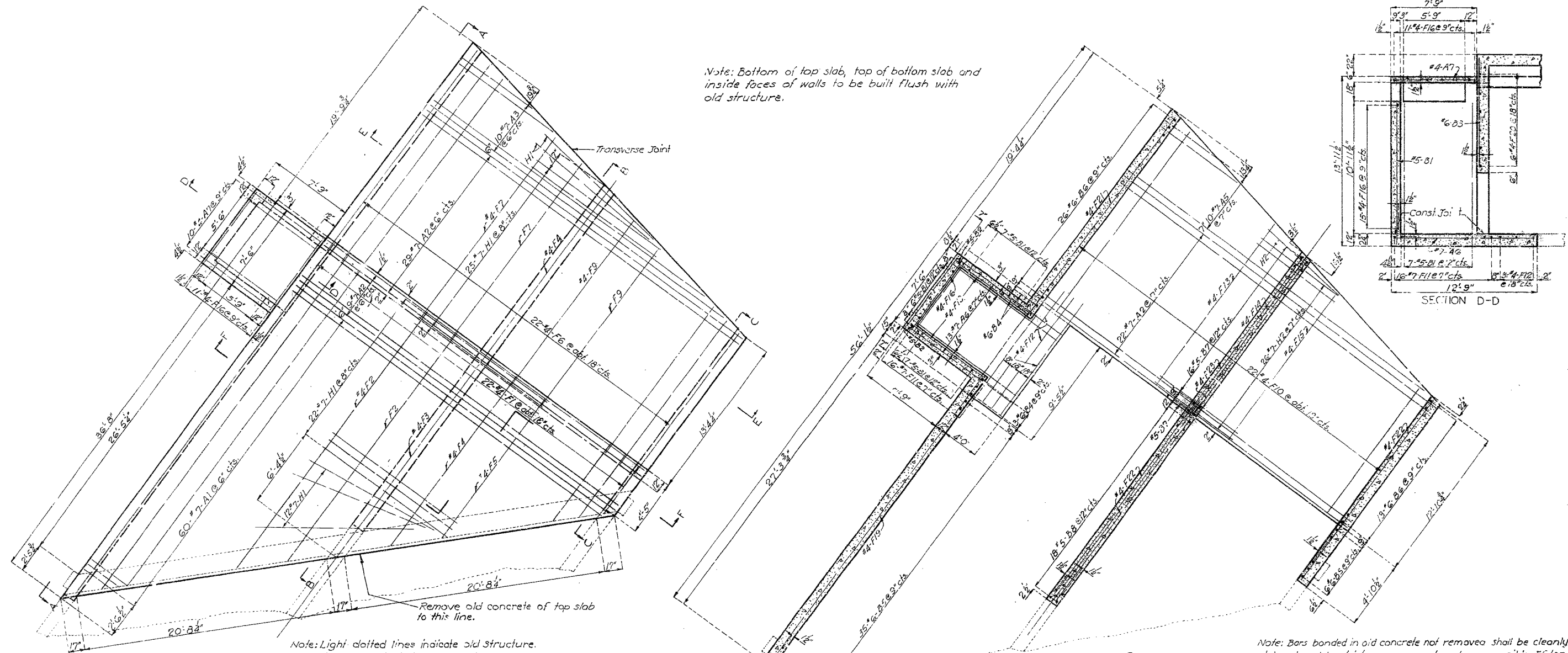
FINAL PLANS

STD 54-00
 H-33A

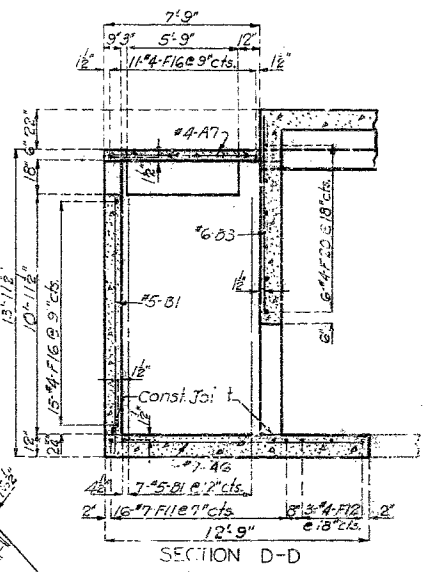
822

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	107	

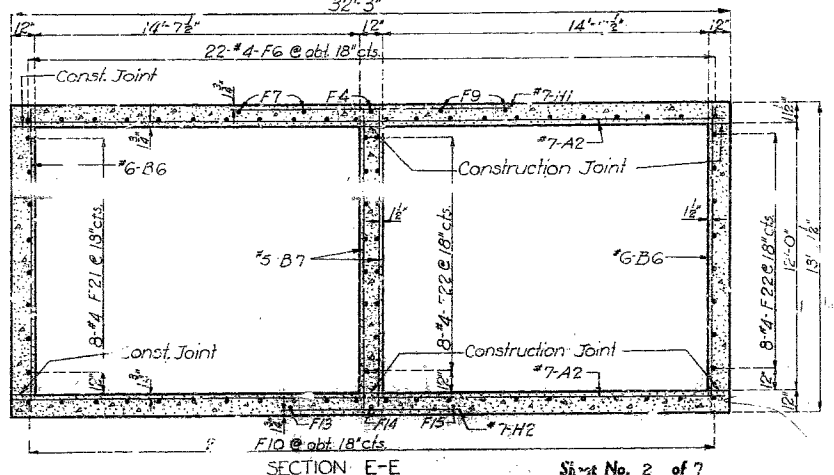
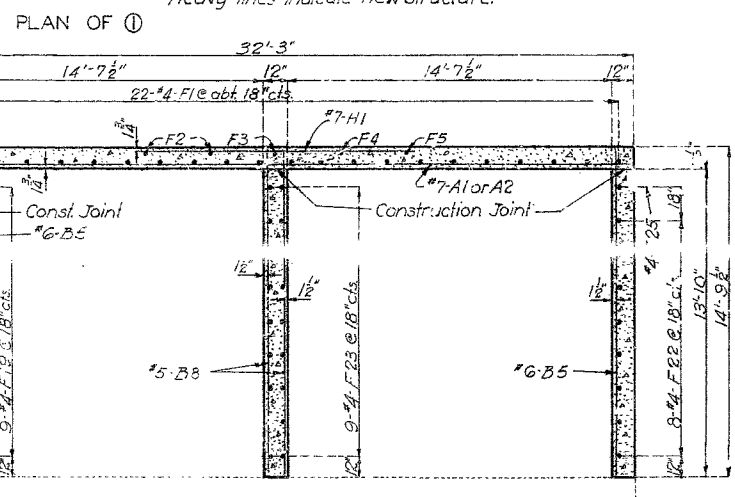


Note: Bottom of top slab, top of bottom slab and inside faces of walls to be built flush with old structure.



Note: Light dotted lines indicate old structure. Heavy lines indicate new structure.

Note: Bars bonded in old concrete not removed shall be cleanly stripped and bent into new concrete where possible. If length is available old bars shall extend into new concrete of least 40 diameters.



622

Drawn Nov. 1957 by K.R.K.
Checked Dec. 1957 by W.M.C.

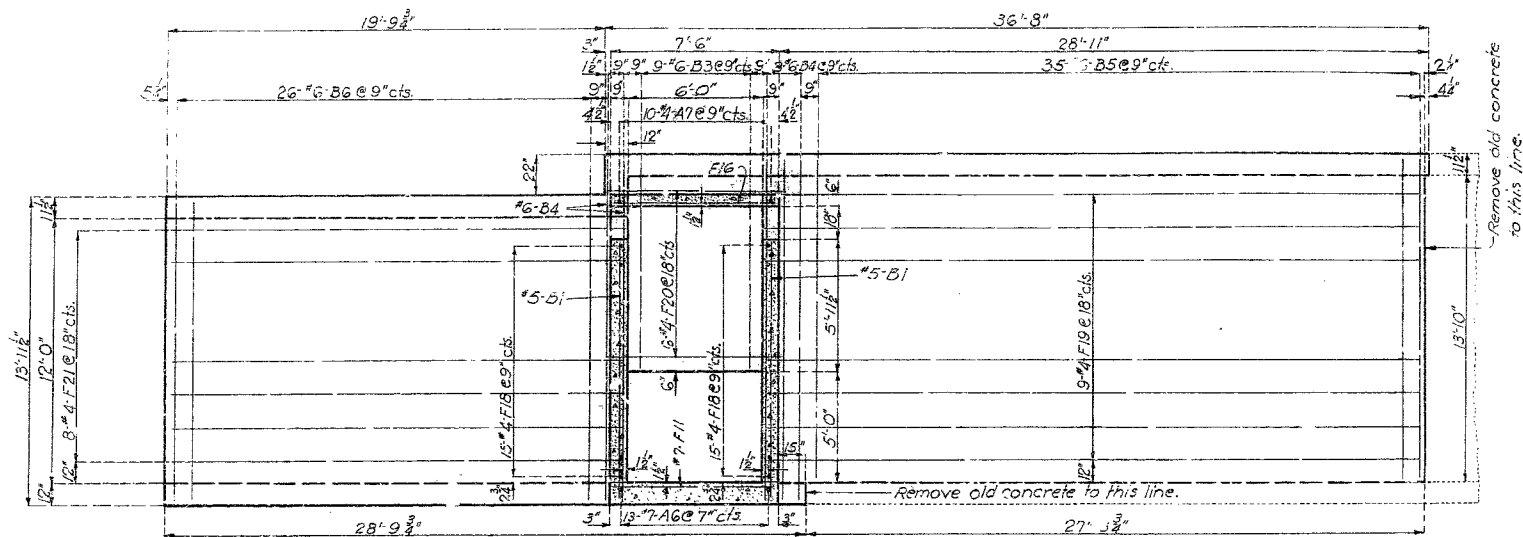
BRIDGE OVER BRANCH OF LITTLE BLUE RIVER
STATE ROAD FROM GRANDVIEW TO KANSAS CITY
ABOUT 5.2 MILES N. OF GRANDVIEW
PROJECT NO. F-G-353(22)(RTE. 71) STA. 419+81.45 (± SURVEY)
JACKSON COUNTY

NO CONSTRUCTION CHANGES

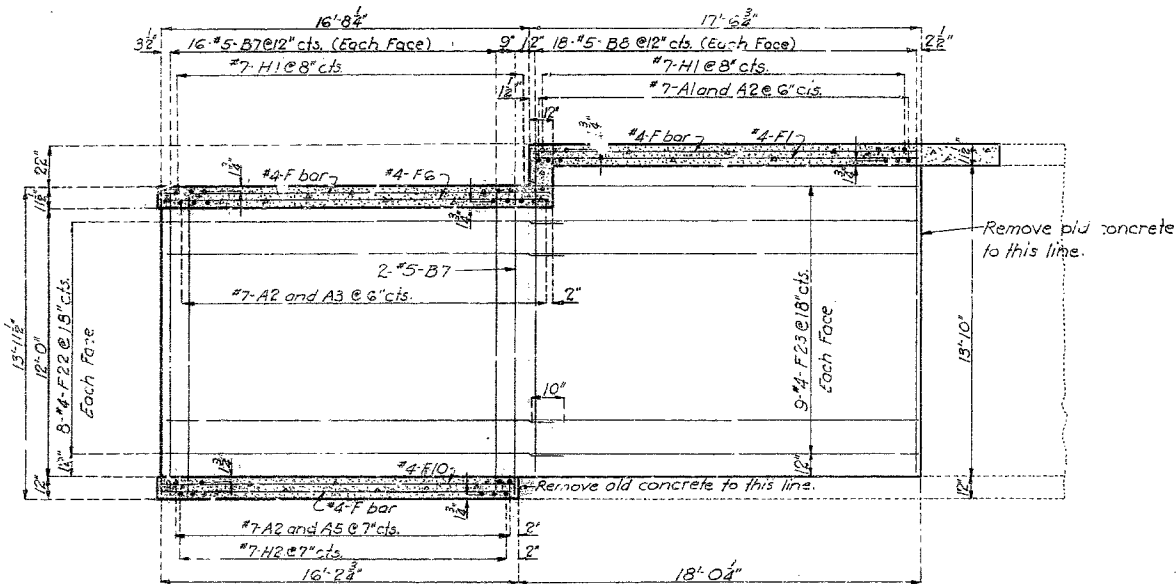
H-33R

MISSOURI STATE HIGHWAY DEPARTMENT

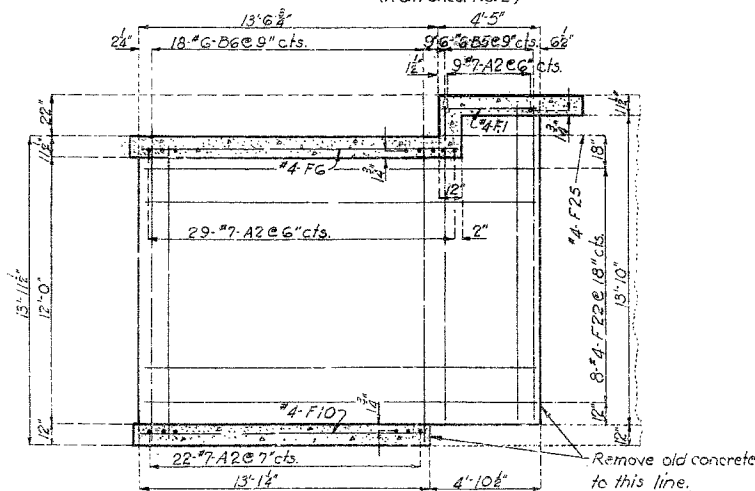
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	108	



ELEVATION A-A (From Sheet No. 2)



SECTION B-B (From Sheet No. 2)



SECTION C-C (From Sheet No. 2)

Note: Light dotted lines indicate old work
Heavy line indicate new work.

Drawn Nov. 1957 by K.R.W.
Checked Dec. 1957 by W.M.C.

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

SECTION (1)				BENDING SKETCHES & CUTTING DIAGRAMS				SECTION (6)			
NO.	SIZE	LENGTH	MARK					NO.	SIZE	LENGTH	MARK
30	#7	34'-0"	A1	31'-9"	2'-3"	29'-9"	2'-6"	30'-10 1/2"	4'-7 1/2"	35'-9"	4'-9"
60	#7	32'-0"	A2								
5	#7	37'-0"	A3								
5	#7	35'-6"	A5	17'-3"	16'-9"	19'-9"	17'-3"	19'-2 1/2"	16'-3 1/2"	20'-9"	19'-3"
13	#7	12'-6"	A6	34'-0"		37'-0"		35'-5"		40'-0"	
10	#4	7'-6"	A7	30-A1 CUT 30				5-A3 CUT 5			
20	#5	11'-6"	B1								
2	#5	13'-6"	B2								
9	#6	9'-6"	B3	20'-0 1/2"	13'-11 1/2"	18'-6 1/2"	12'-5 1/2"	32'-9 1/2"	3'-5 1/2"	32'-6 1/2"	3'-5 1/2"
5	#6	15'-6"	B4								
41	#6	14'-6"	B5	17'-1 1/2"	15'-10 1/2"	15'-7 1/2"	15'-4 1/2"	18'-6 1/2"	17'-8 1/2"	18'-3 1/2"	17'-8 1/2"
44	#6	13'-9"	B6	34'-0"		31'-0"		36'-3"		36'-0"	
34	#5	13'-9"	B7	11-F6 CUT 11				11-F10 CUT 11			
38	#5	14'-6"	B8								
11	#4	40'-0"	F1								
2	#4	22'-3"	F2	30'-2 1/2"	3'-9 1/2"	29'-2 1/2"	2'-9 1/2"	23'-2"	7'-11 1/2"	2'-11 1/2"	6'-11 1/2"
1	#4	20'-0"	F3								
2	#4	17'-9"	F4								
1	#4	14'-0"	F5	17'-7 1/2"	16'-4 1/2"	16'-7 1/2"	15'-4 1/2"	2'-11 1/2"	27'-6 1/2"	6'-11 1/2"	24'-6 1/2"
11	#4	34'-0"	F6	34'-0"		32'-0"		35'-6"		31'-6"	
2	#4	17'-9"	F7	11-F28 CUT 11				7 F36 CUT 7			
2	#4	16'-0"	F9								
11	#4	31'-0"	F10								
16	#7	7'-3"	F11	9 1/2"	3'-1 1/2"	6'-3'-0"		9 1/2"	3'-1 1/2"	18 1/2"	2'-4 1/2"
3	#4	10'-9"	F12								
1	#4	16'-6"	F13								
1	#4	15'-6"	F14	5'-1 1/2"	14'-7 1/2"	3'-0"	14'-0"	3'-1 1/2"	15'-10 3/4"	2'-4 1/2"	8'-4 1/2"
1	#4	14'-6"	F15	17'-9"		17'-0"		17'-0"		10'-9"	
26	#4	7'-3"	F16	16-G1 CUT 16				23-G2 CUT 23			
30	#4	6'-6"	F18								
9	#4	29'-0"	F19	15 1/2"	7'-1 1/2"	14 1/2"		9 1/2"		10'-5"	
6	#4	8'-0"	F20								
8	#4	30'-3"	F21								
24	#4	17'-6"	F22	7'-1 1/2"	15'-1 1/2"	17'-0"					
18	#4	17'-3"	F23	22'-3"							
1	#4	4'-0"	F25	7-K2 CUT 7 BEND AS SHOWN				K2			
61	#7	12'-6"	H1								
27	#7	8'-9"	H2								
SECTION (2)				SECTION (3)				SECTION (4)			
158	#6	33'-0"	A8	4'-2 1/2"	J1	3'-5 1/2"	J2	4'-6 1/2"	J3	3'-10 1/2"	J4
188	#5	13'-9"	B9	12'-3"	J5	12'-11"	J6	4'-0"	J7	13'-1"	J8
47	#7	10'-9"	H3	4'-2 1/2"	J9	4'-2 1/2"	J10	4'-0"	J11	2'-11 1/2"	J12
46	#7	6'-6"	H4								
75	#8	10'-0"	H5								
208	#4	23'-9"	F26								
114	#6	17'-3"	J1								
150	#6	6'-9"	J2								
SECTION (5)				SECTION (6)				SECTION (7)			
142	#8	33'-3"	A9	12'-3"	J1	12'-3"	J2	12'-3"	J3	12'-10 1/2"	J4
188	#5	15'-3"	B10								
47	#10	11'-9"	H6								
44	#10	11'-9"	H6								
43	#10	7'-3"	H7								
87	#10	11'-0"	H8								
208	#4	23'-9"	F26								
174	#9	18'-3"	J3								
174	#9	8'-9"	J4								
SECTION (8)				SECTION (9)				SECTION (10)			
162	#8	33'-6"	A10	4'-0"	M1	4'-0"	M2	4'-0"	M3	4'-3"	M4
188	#5	15'-3"	B11								
47	#10	11'-9"	H6								
46	#10	11'-9"	H6								
94	#10	11'-0"	H8								
208	#4	23'-9"	F26								
188	#9	18'-6"	J5								
188	#9	9'-0"	J6								

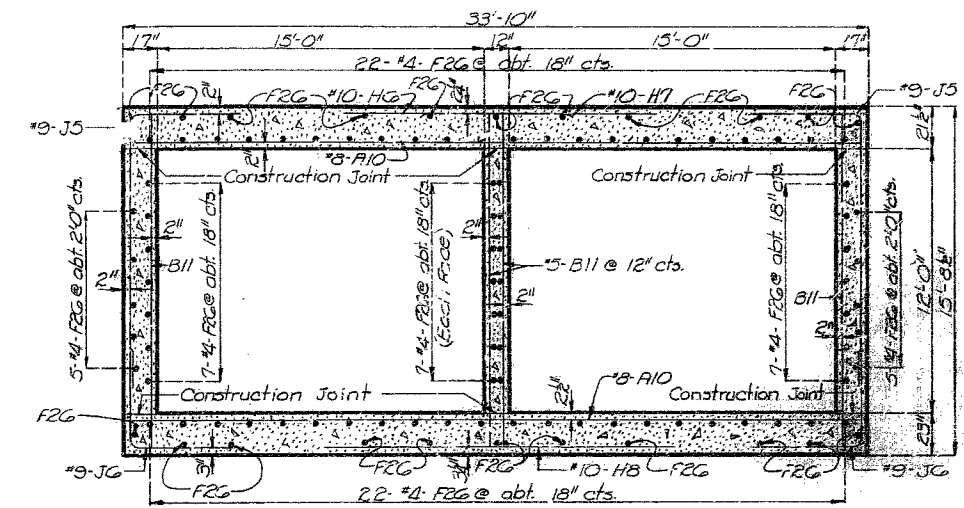
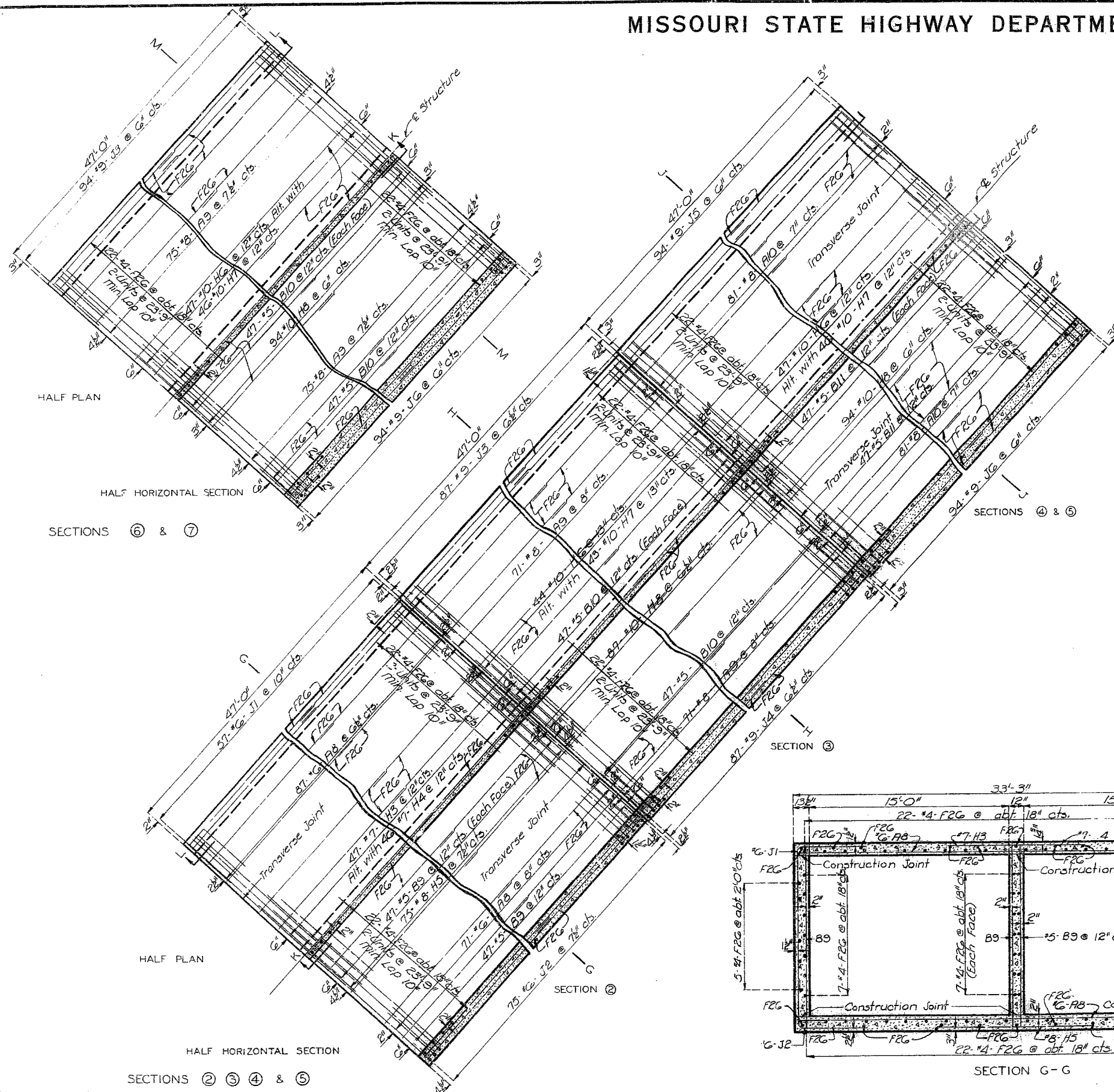
BRIDGE OVER BRANCH OF LITTLE BLUE RIVER

STATE ROAD FROM GRANDVIEW TO KANSAS CITY
ABOUT 5.2 MILES N OF GRANDVIEW
PROJECT NO. FFG-353(22)RTE. 71 STA. 419+81.45 (E SURVEY)

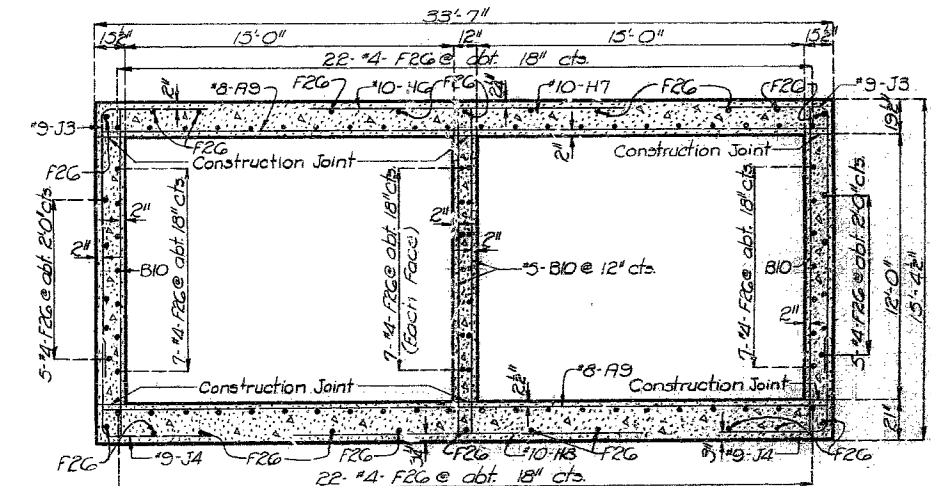
JACKSON COUNTY

MISSOURI STATE HIGHWAY DEPARTMENT

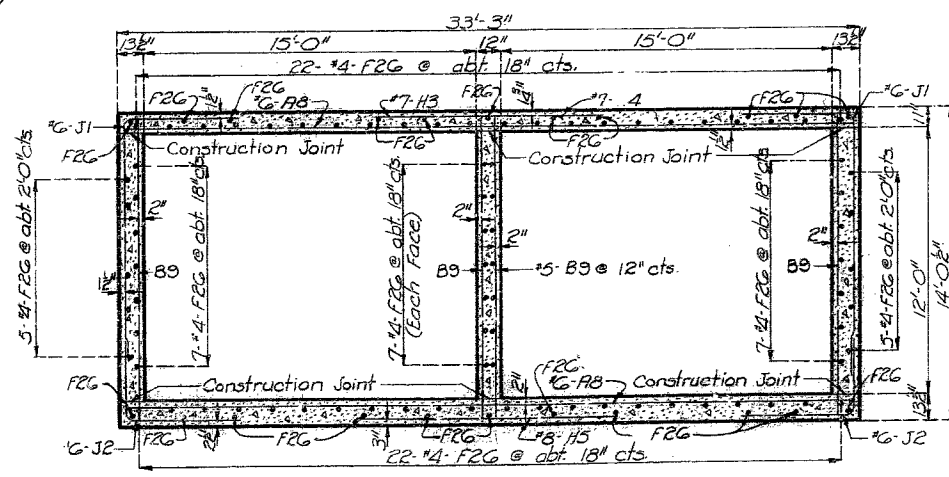
FED. ROAD DIST. NO.	STATE NO.	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	NO.		19	109	



SECTION J - J



SECTION H - H



SECTION G - G

281

BRIDGE OVER BRANCH OF LITTLE BLUE RIVER
 STATE ROAD FROM GRANDVIEW TO KANSAS CITY
 ABOUT 5.2 MILES N. OF GRANDVIEW
 PROJECT NO. F-FG-353(22)(RT. 71) STA. 419+81.45 (E SURVEY)

JACKSON COUNTY

Drawn Nov. 1957 by J.L.L.
 Checked Dec. 1957 by W.M.C.

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

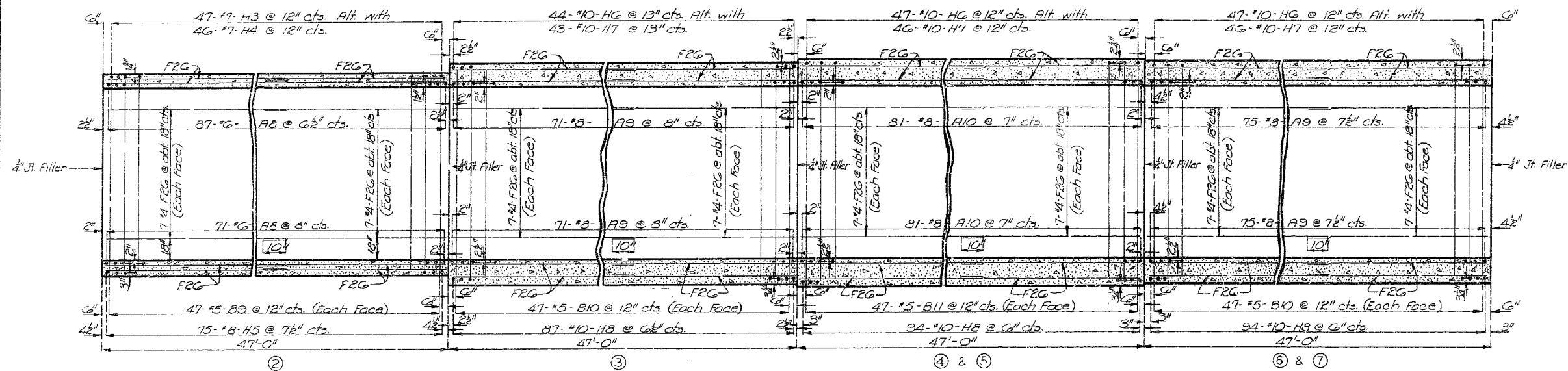
Sheet No. 4 of 7

NO CONSTRUCTION CHANGES

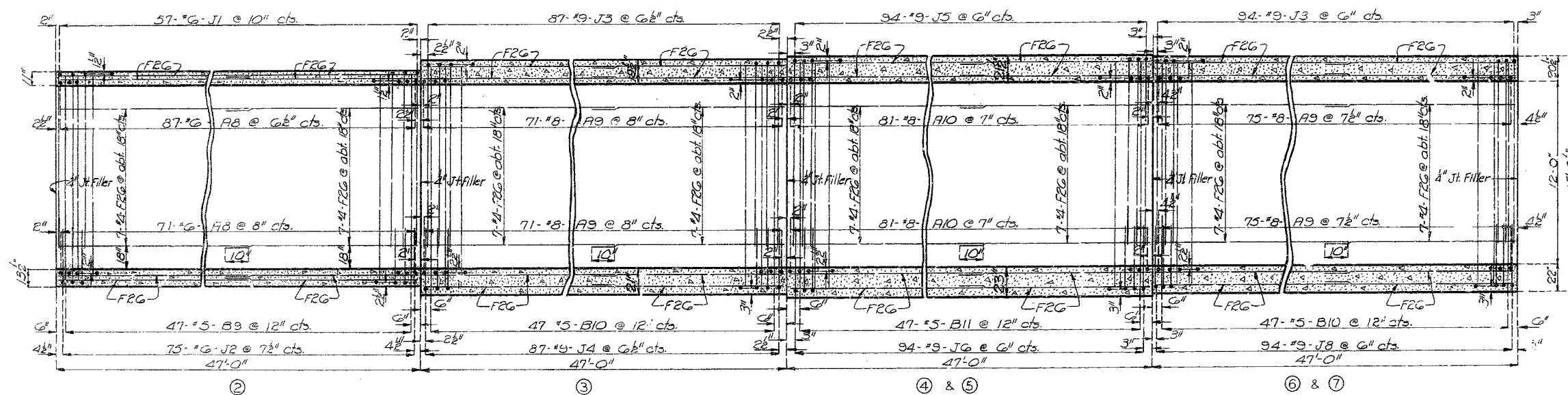
H-33R1

MISSOURI STATE HIGHWAY DEPARTMENT

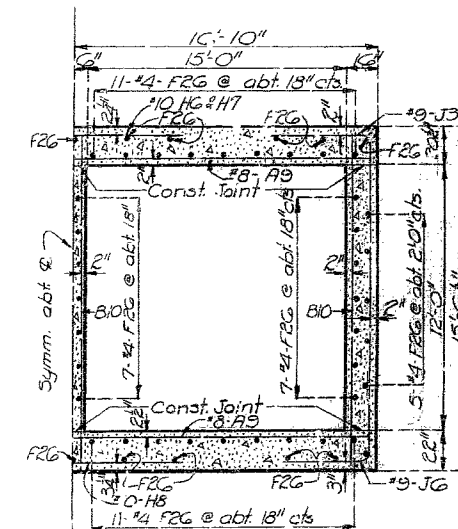
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	110	



SECTION K-K



SECTION L-L



HALF SECTION M-M
(from Sheet No. 4)

232

Drawn Nov. 1937 by J.L.L.
Checked Dec. 1937 by V.M.C.

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

Sheet No. 5 of 7

NO CONSTRUCTION CHANGES

BRIDGE OVER BRANCH OF LITTLE BLUE RIVER

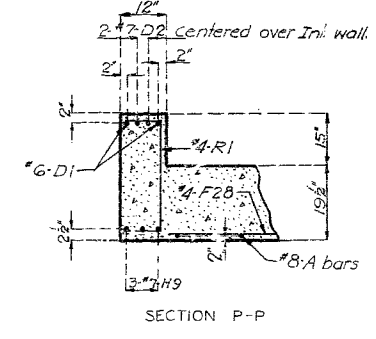
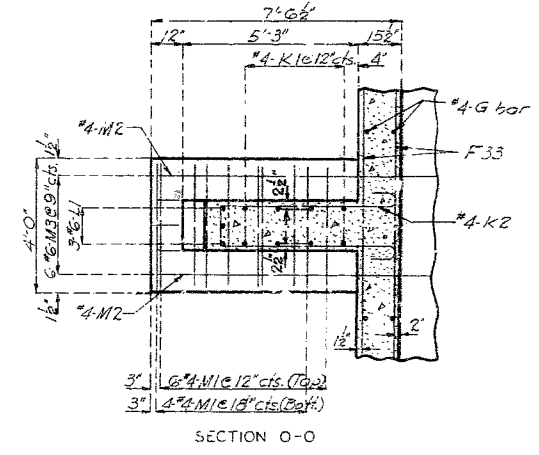
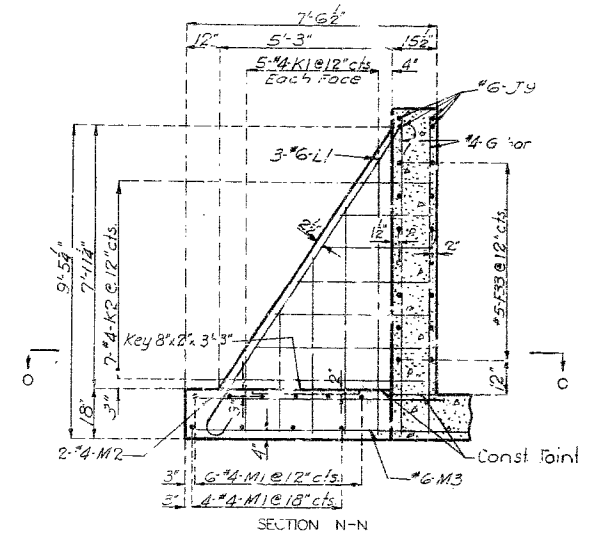
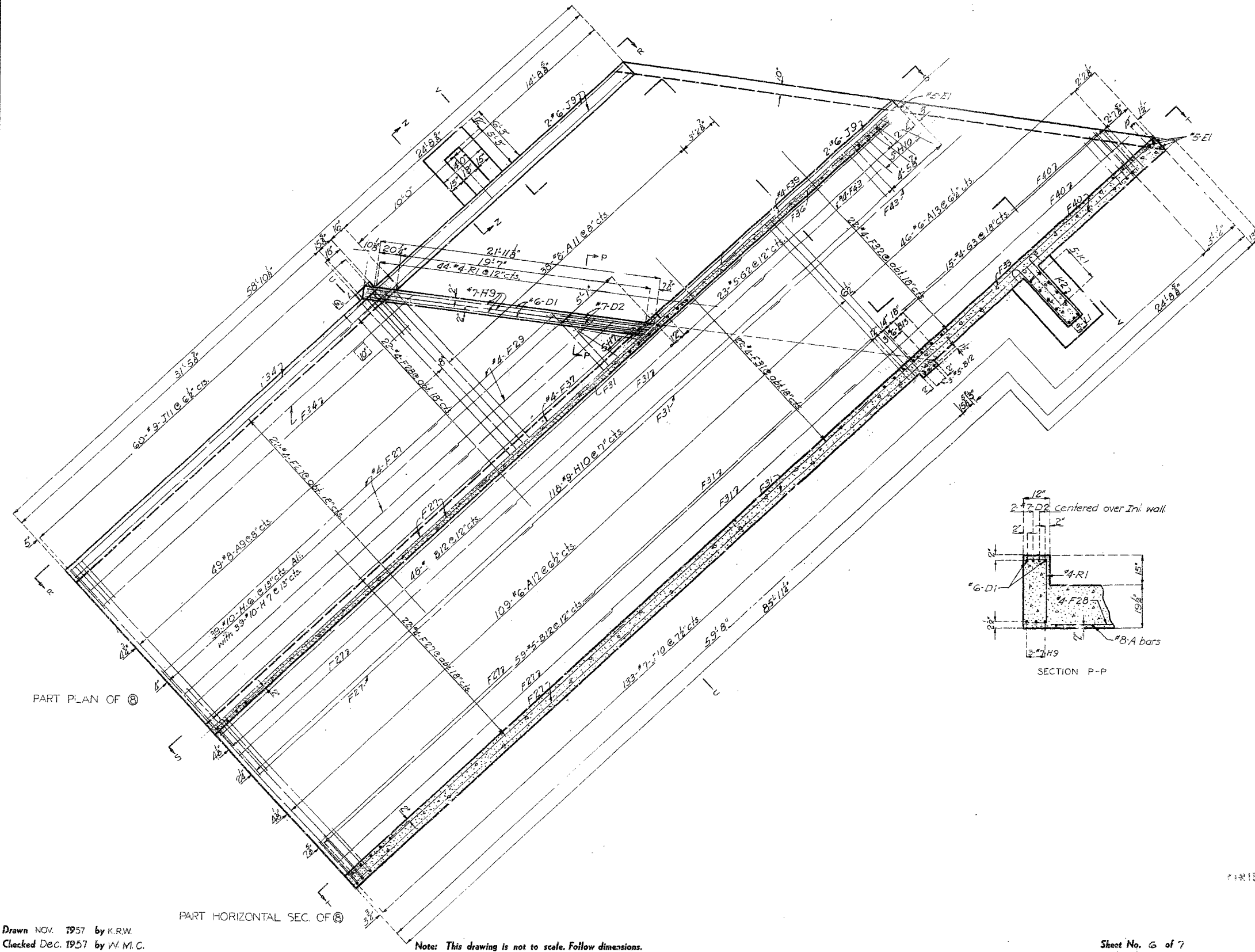
STATE ROAD FROM GRANDVIEW TO KANSAS CITY
ABOUT 5.2 MILES N. OF GRANDVIEW
PROJECT NO. FG-35322X(RTE. 71) STA. 419+81.45 (E. SURVEY)

JACKSON COUNTY

H-33RI

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	111	



233

PART PLAN OF Ⓢ

PART HORIZONTAL SEC. OF Ⓢ

Drawn NOV. 1957 by K.R.W.
Checked Dec. 1957 by W.M.C.

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

Sheet No. 6 of 7

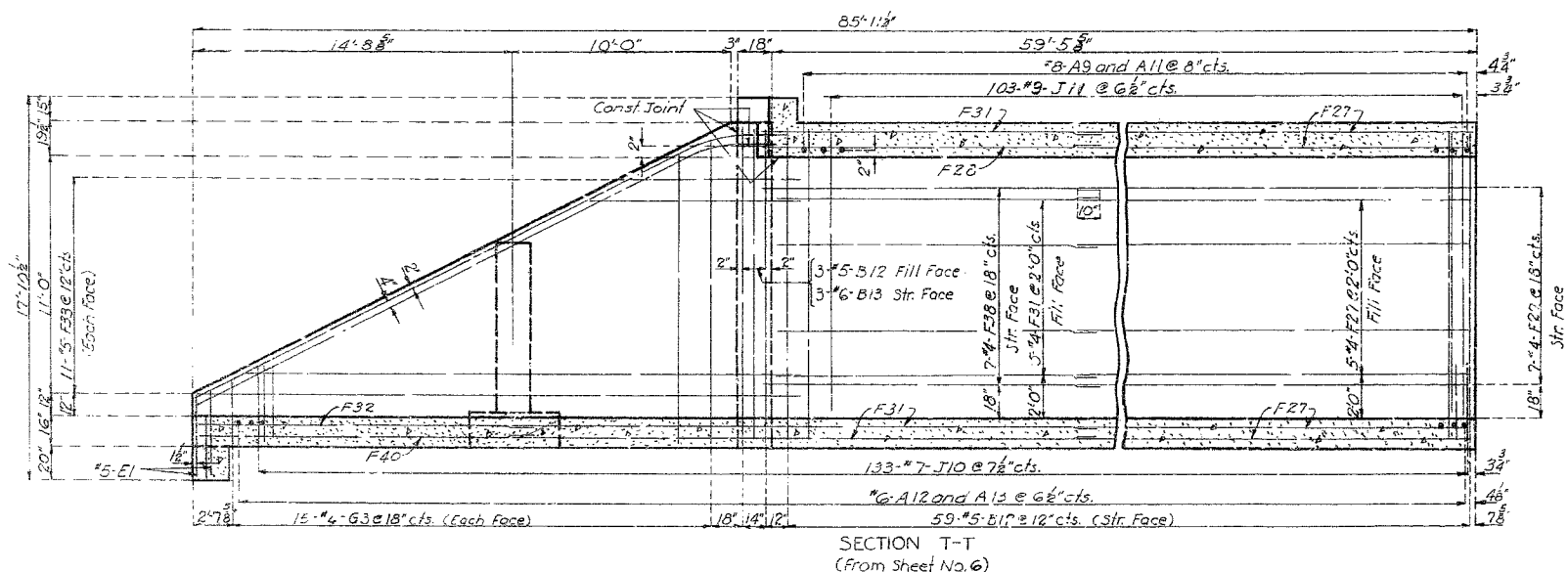
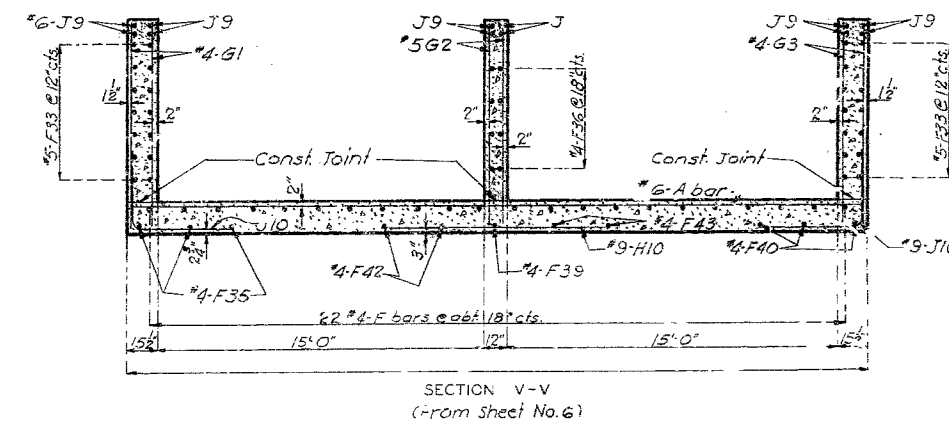
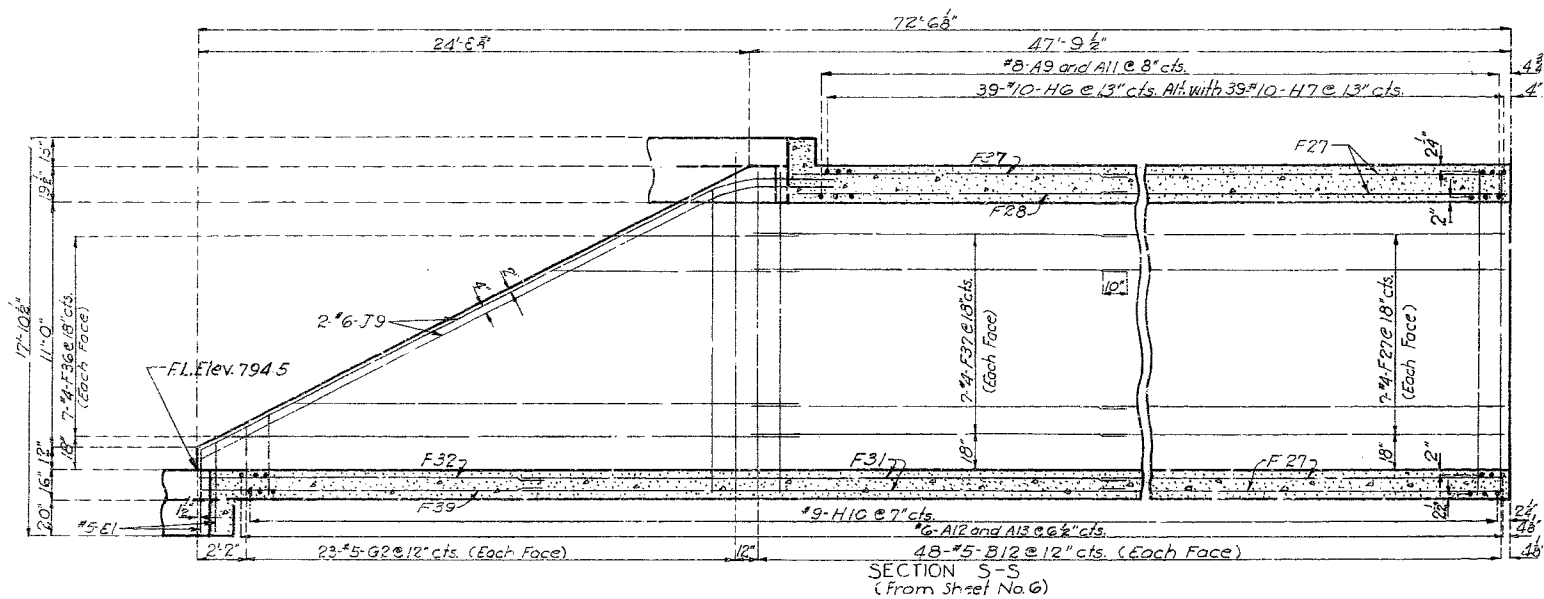
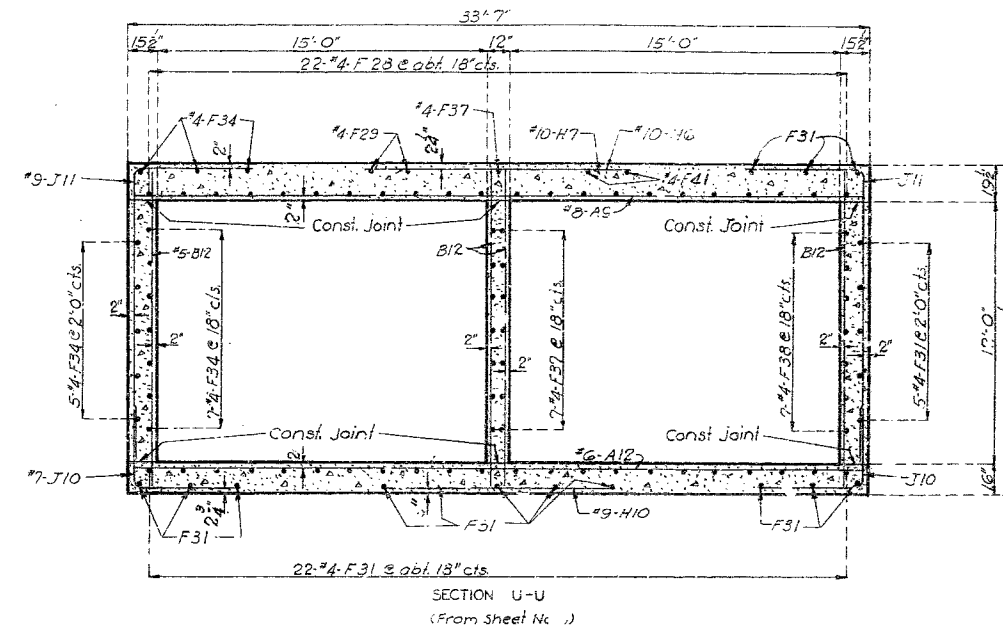
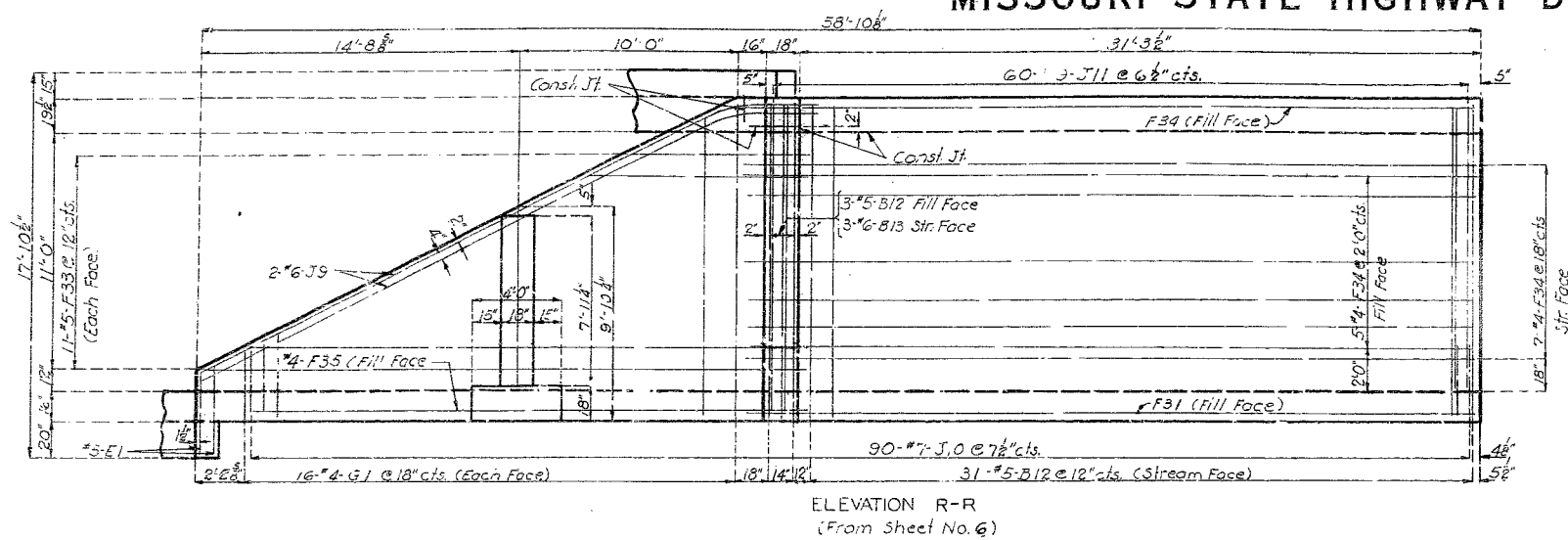
BRIDGE OVER BRANCH OF LITTLE BLUE RIVER
STATE ROAD FROM GRANDVIEW TO KANSAS CITY
ABOUT 5.2 MILES N. OF GRANDVIEW
PROJECT NO. F-FG-353(22) (RTE. 71) STA. 419 + 81.45 (± SURVEY)
JACKSON COUNTY

NO CONSTRUCTION CHANGES

H-33R1

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	112	



BRIDGE OVER BRANCH OF LITTLE BLUE RIVER

STATE ROAD FROM GRANDVIEW TO KANSAS CITY
 ABOUT 5.2 MILES N. OF GRANDVIEW
 PROJECT NO. F-G-353(22)RTE. 71(DISTA. 419 + 81.45 (E SURVEY))

JACKSON COUNTY

Drawn NOV. 1957 by K.R.W.
 Checked Dec. 1957 by W.M.C.

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

Sheet No. 7 of 7

NO CONSTRUCTION CHANGES

H-33.1

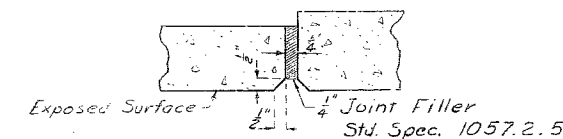
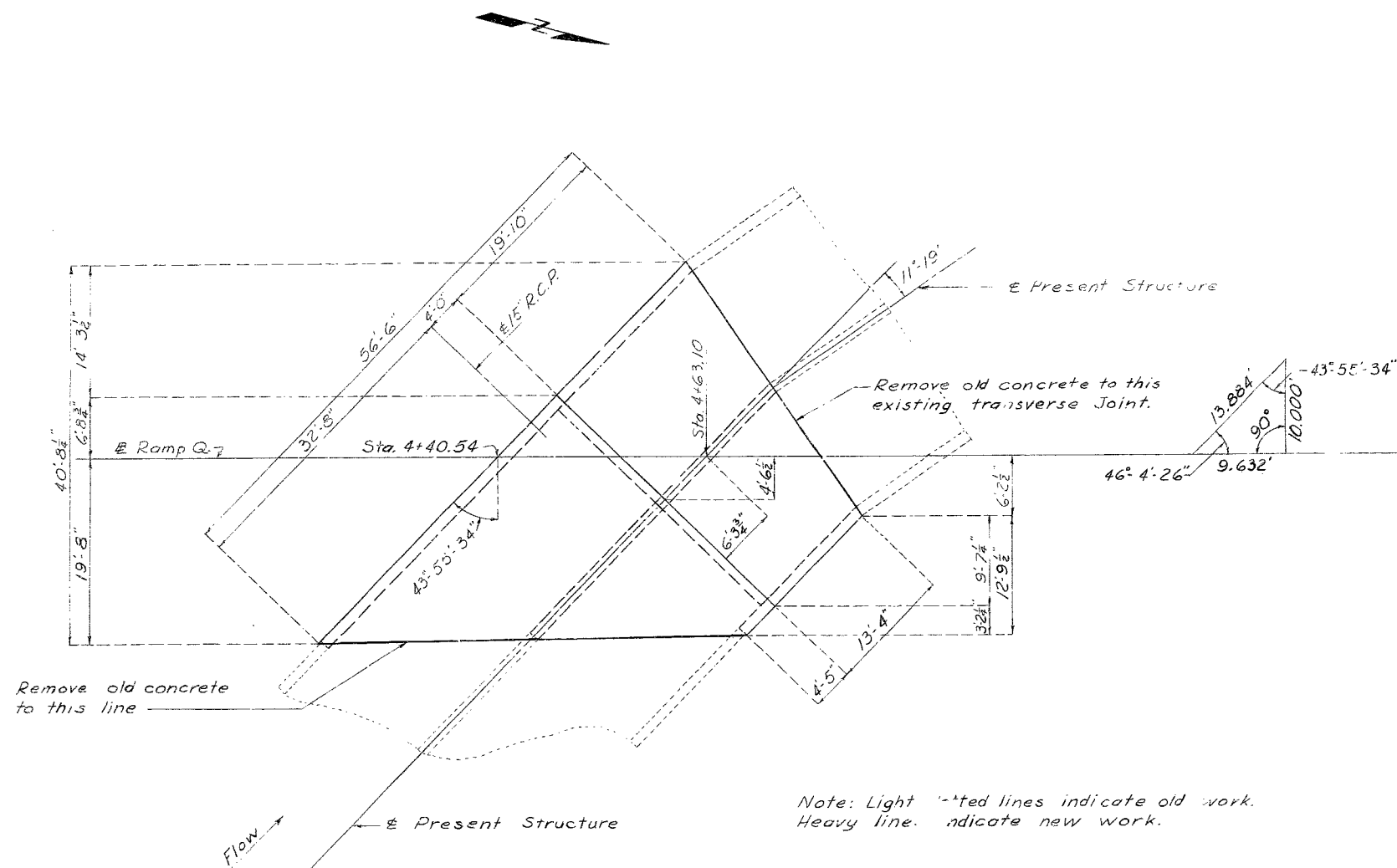
234

MISSOURI STATE HIGHWAY DEPARTMENT

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

GENERAL NOTES:

Design Specifications: A.A.S.H.O. - 1969
 Loading H520-44 Earth 120# Equivalent Fluid Pressure 30"
 Reinforcing Steel stress 20,000 psi
 Concrete Class B stress 1,200 psi
 Minimum clearance to reinforcing steel shall be 1/2" unless otherwise shown.



SECTION AT TRANSVERSE JOINT

B.M. #67-B Elev. 811.21-4 on S corner of inlet 7' Left Sta 4+35 Ramp Q

ESTIMATED QUANTITIES		FINAL QUANTITIES
Class 3 Excavation	Cu. Yds. 800	
Class B Concrete	Cu. Yds. 192.3	
Reinforcing Steel	Lbs. 20190	

ALTERATIONS TO
BRIDGE OVER BRANCH OF LITTLE BLUE RIVER
 STATE ROAD FROM GRANDVIEW TO KANSAS CITY
 ABOUT 5.2 MILES N. OF GRANDVIEW
 PROJECT NO. U-UG-71-4 (21) (RTE 71) STA. 4+40.54 (R.R. Q)
 JACKSON COUNTY

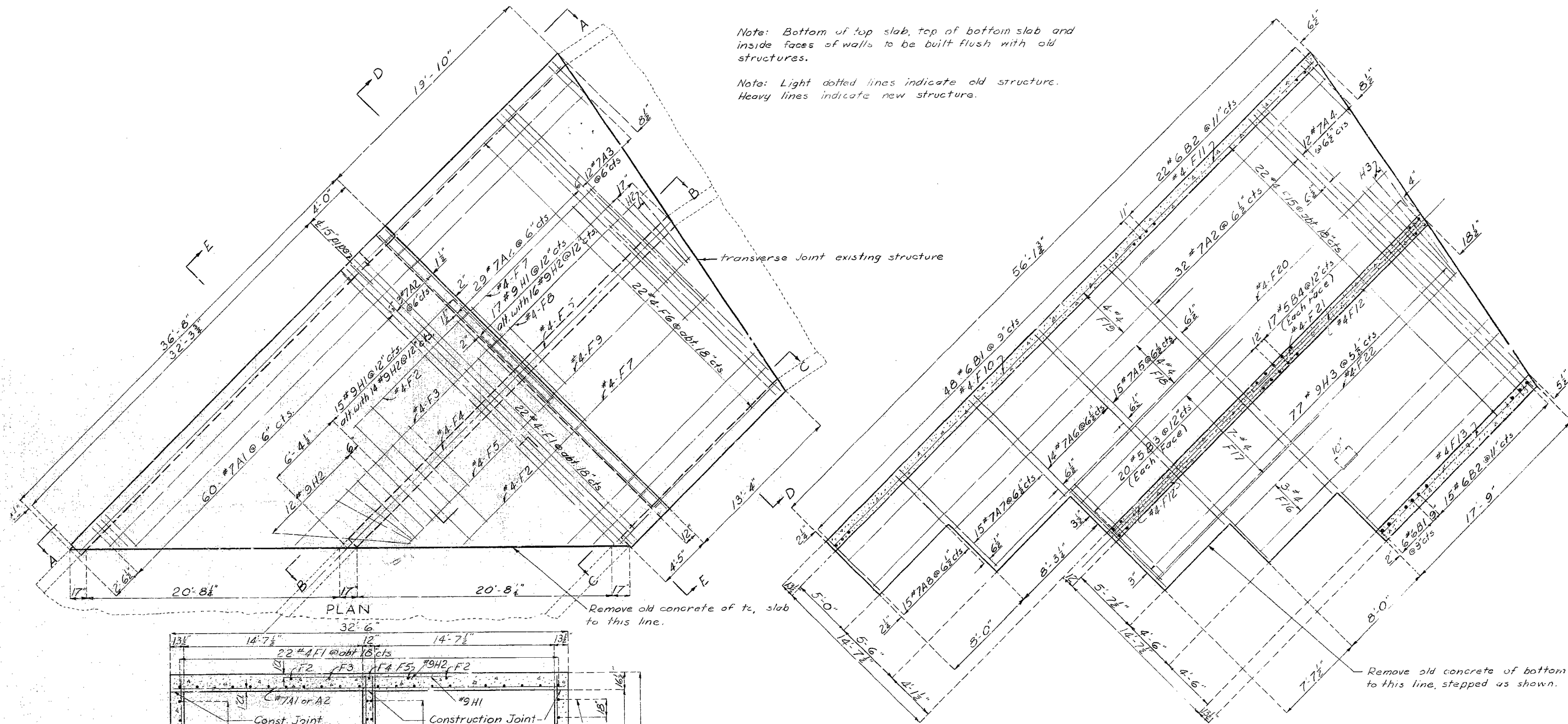
SUBMITTED BY *W.D. Conroy* DATE 12-10-70
 BRIDGE ENGINEER
 APPROVED BY *Robert M. Heister* DATE 12-10-70
 CHIEF ENGINEER

STD. 703.60
STD. 706.30
H-33R2

520

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD D. ST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		75	29	



Note: Bottom of top slab, top of bottom slab and inside faces of walls to be built flush with old structures.

Note: Light dotted lines indicate old structure. Heavy lines indicate new structure.

Remove old concrete of top slab to this line.

Remove old concrete of bottom slab to this line, stepped as shown.

Note: Bars bonded in old concrete not removed shall be cleanly stripped and bent into new concrete where possible. If length is available old bars shall extend into new concrete at least 40 diameters.

521

DETAILED OCT. 1970 BY MARTIN
CHECKED NOV. 1970 BY WOODS

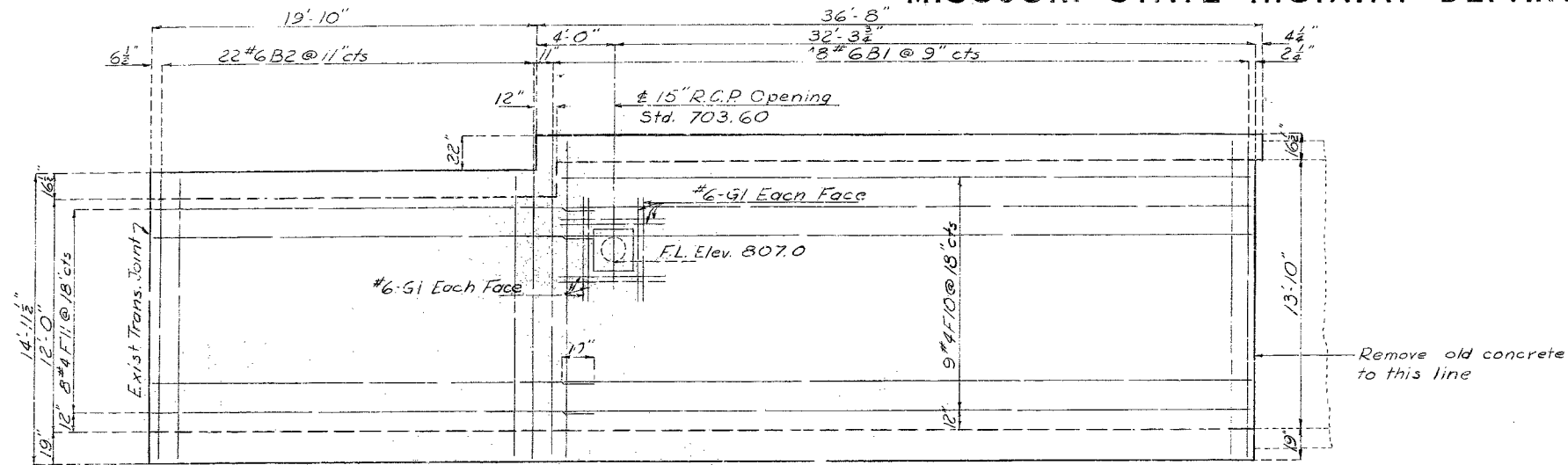
SECTION E-E Note: This drawing is not to scale. Follow dimensions.

Sheet No. 2 of 3.

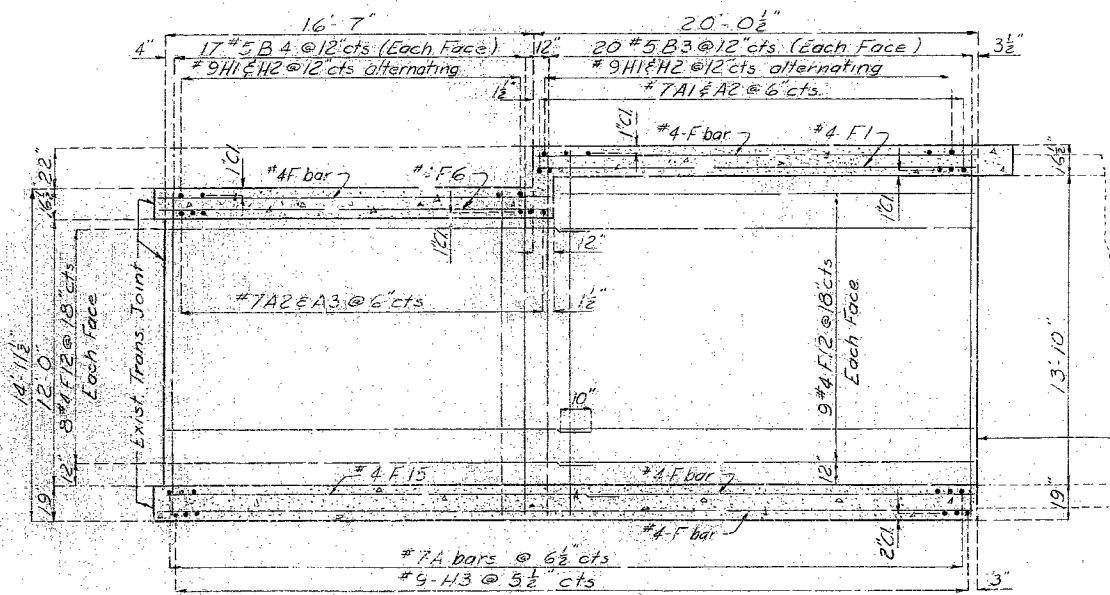
JACKSON COUNTY H33R2

MISSOURI STATE HIGHWAY DEPARTMENT

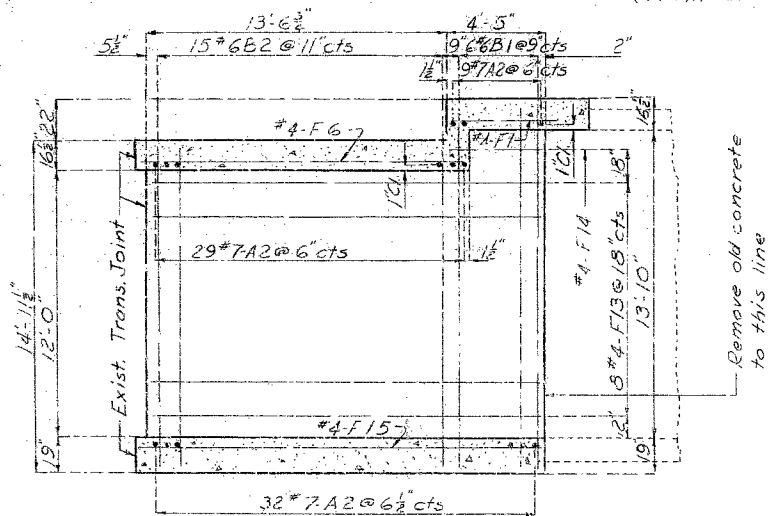
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	19	



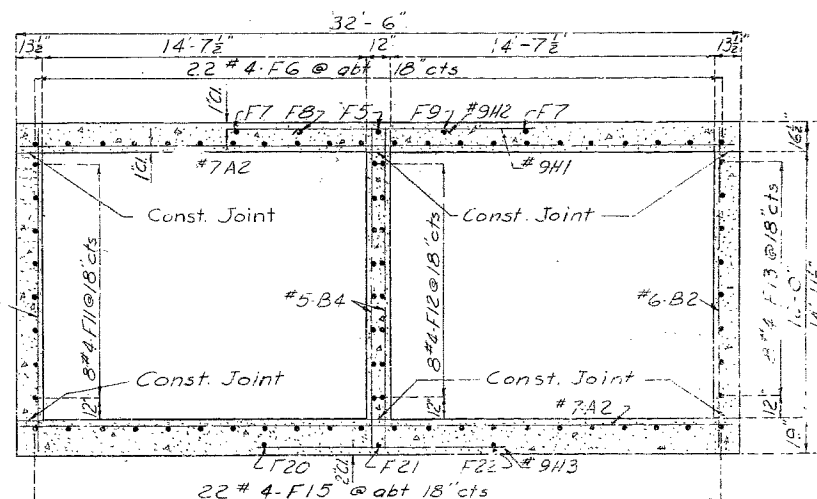
ELEVATION A-A
(From Sheet No. 2)



SECTION B-B
(From Sheet No. 2)



SECTION C-C
(From Sheet No. 2)



SECTION D-D
(From Sheet No. 2)

COMPLETE BILL OF REINFORCING STEEL					
NO	SIZE	LENGTH	MARK	CUTTING DIAGRAMS	
30	#7	34'-2"	A1	6"	
70	#7	32'-3"	A2	31'-10" 2'-4"	30'-0" 2'-6"
6	#7	32'-6"	A3		
6	#7	34'-8"	A4		
15	#7	26'-7"	A5	17'-4" 16'-10"	17'-6" 15'-0"
14	#7	22'-1"	A6	34'-2"	32'-6"
15	#7	11'-4"	A7		
15	#7	5'-10"	A8		
54	#6	16'-6"	B1	30 A1 Cut 30	6 A3 Cut 6
37	#6	14'-8"	B2	2'-8 1/2"	17 1/2"
40	#5	16'-6"	B3	32'-2 3/4" 2'-5 1/2"	35'-3 3/4" 4'-8 1/4"
34	#5	14'-8"	B4		
11	#4	40'-0"	F1	18'-8 1/2" 15'-11 1/2"	20'-8 3/4" 19'-3 3/4"
2	#4	13'-0"	F2	34'-8"	20'-0"
1	#4	23'-4"	F3	6 A4 Cut 6	11 F1 Cut 11
1	#4	20'-2"	F4	20'-3 3/4" 14'-2 1/4"	23'-7 3/4" 17'-6 1/4"
2	#4	17'-0"	F5		
17	#4	34'-6"	F6		
2	#4	15'-0"	F7	17'-4 3/4" 17'-1 1/2"	20'-8 3/4" 20'-5 1/4"
1	#4	17'-7"	F8	34'-6"	41'-2"
1	#4	16'-5"	F9	11 F6 Cut 11	11 F15 Cut 11
9	#4	35'-0"	F10		
8	#4	21'-6"	F11		
34	#4	18'-6"	F12		
8	#4	17'-"	F13		
1	#4	4'-2"	F14		
11	#4	11'-2"	F15		
3	#4	9'-2"	F16		
7	#4	17'-9"	F17		
4	#4	26'-0"	F18		
4	#4	34'-7"	F19		
1	#4	37'-3"	F20		
1	#4	36'-3"	F21		
1	#4	35'-3"	F22		
16	#6	5'-4"	G1		
32	#9	11'-"	H1		
44	#9	6'-11"	H2		
79	#9	10'-6"	H3		

522

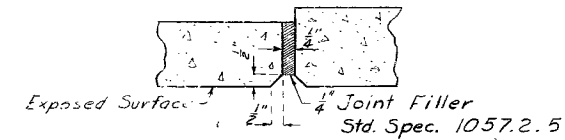
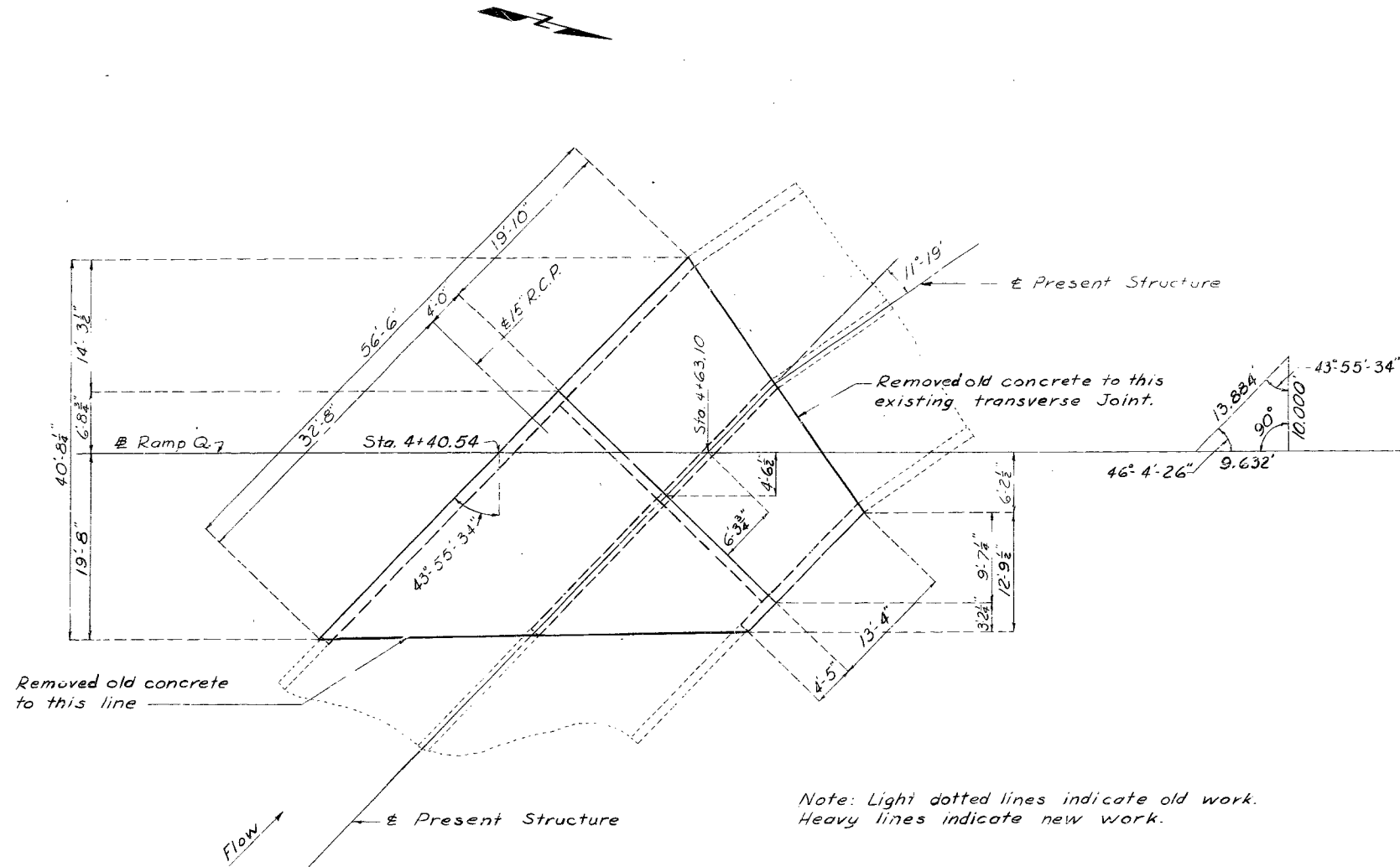
MISSOURI STATE HIGHWAY DEPARTMENT

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

FINAL PLANS

GENERAL NOTES:

Design Specifications: A.A.S.H.O. - 1969
 Loading HS20-44 Earth 120# Equivalent Fluid Pressure 30"
 Reinforcing Steel stress 20,000 psi
 Concrete Class B stress 1,200 psi
 Minimum clearance to reinforcing steel was $\frac{1}{2}$ " unless otherwise shown.



SECTION AT TRANSVERSE JOINT

Note: Light dotted lines indicate old work.
 Heavy lines indicate new work.

PLAN

ESTIMATED QUANTITIES		FINAL QUANTITIES
Class 3 Excavation	Cu. Yds. 800	785
Class B Concrete	Cu. Yds. 192.3	192.3
Reinforcing Steel	Lbs. 20190	20190

ALTERATIONS TO
BRIDGE OVER BRANCH OF LITTLE BLUE RIVER
 STATE ROAD FROM GRANDVIEW TO KANSAS CITY
 ABOUT 5.2 MILES N. OF GRANDVIEW
 PROJECT NO. 4-U-71-21A (21) (RTE 71) STA. 4+40.54 (R.P. Q)
 JACKSON COUNTY

SUBMITTED BY: W.D. Caney BRIDGE ENGINEER DATE: 12-10-70
 APPROVED BY: Robert N. Hunter CHIEF ENGINEER DATE: 12-10-70

STD. 703.60
STD. 706.30
H-33R2

DESIGNED OCT. 1970 BY MARTIN
 DETAILED OCT. 1970 BY MARTIN
 CHECKED NOV. 1970 BY WOODS

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

Sheet No. 1A of 3 FINAL PLAN

523

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

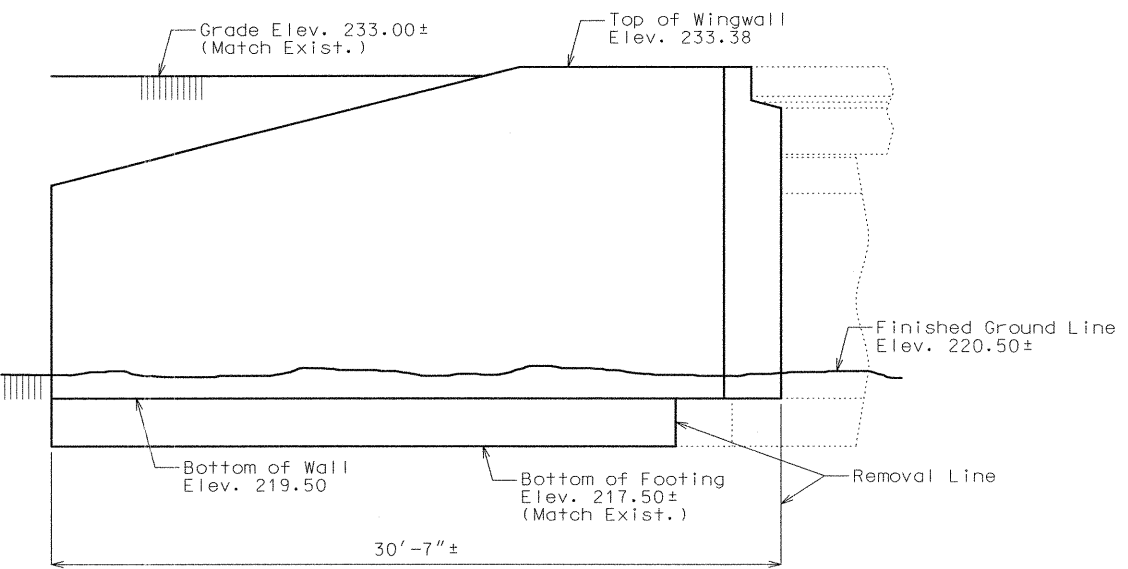
ROUTE	STATE	DISTRICT	SHEET NO.
71	MO	BR	β1
JOB NO. J4M0171			
CONTRACT ID			
PROJECT NO.			
COUNTY JACKSON			
DATE 7/18/06			
SEC/SUR	TWP	RGE	
26	48N	33W	



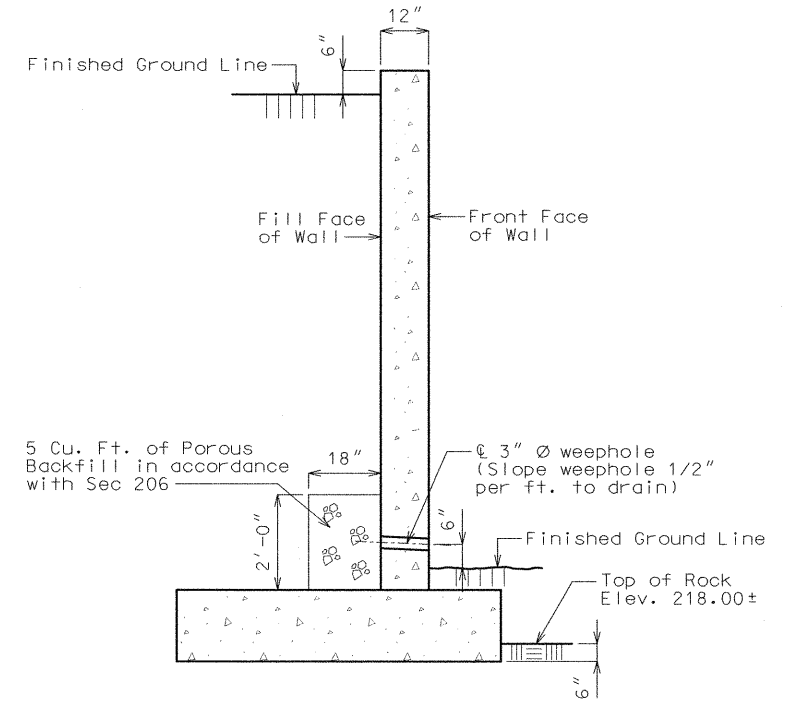
Estimated Quantities		
Item		Total
Class 1 Excavation	cu. yard	150
Temporary Shoring	lump sum	1
Partial Removal of Substructure Concrete	lump sum	1
Class B-1 Concrete (Substructure)	cu. yard	30.9
Reinforcing Steel (Bridges)	pound	3350

GENERAL NOTES:
 Design Specifications:
 2002 - AASHTO 17th Edition
 Load Factor Design
 Seismic Performance Category A
 Design Loading:
 $\phi = 27^\circ$ (Retained Material)
 Earth 120 #/Cu. Ft.
 Equivalent Fluid Pressure 45#/Cu. Ft.
 Design Unit Stresses:
 Class B-1 Concrete (Substructure) $f'c = 4,000$ psi
 Reinforcing Steel (Grade 60) $fy = 60,000$ psi
 Joint Filler:
 All joint filler shall be in accordance with Sec 1057 for preformed sponge rubber expansion and partition joint filler, except as noted.
 Reinforcing Steel:
 Minimum clearance to reinforcing steel shall be 1 1/2", unless otherwise shown.
 Resin Anchors:
 The contractor shall use one of the qualified resin anchor systems in accordance with Sec 1039.
 Cost of furnishing and installing the resin anchor system complete-in-place will be considered completely covered by the contract unit price for Reinforcing Steel.
 The minimum embedment depth in concrete with $f'c = 3,000$ psi for the resin anchor system shall be that required to meet the minimum ultimate pullout strength in accordance with Sec 1039 but shall not be less than 5".
 A #6 Grade 60 reinforcing bar extending 2'-1" into new concrete shall be substituted for the 3/4" ϕ threaded rod.
 A #8 Grade 60 reinforcing bar extending 3'-5" into new concrete shall be substituted for the 1" ϕ threaded rod.
 Miscellaneous:
 Fill for embankment in place & behind wingwall is a Roadway Item.
 Outline of old work is indicated by dashed lines. Heavy lines indicate new work.
 Contractor shall verify all dimensions in field before ordering new material.
 Bars bonded in old concrete not removed shall be cleanly stripped and embedded into new concrete where possible. If length is available, old bars shall extend into new concrete at least 40 diameters for smooth bars and 30 diameters for deformed bars, unless otherwise noted.
 The area exposed by the removal of concrete and not covered with new concrete shall be coated with an approved bituminous paint.
 Payment for Removal of Existing Wing Footing & Wingwall as shown will be considered completely covered by the contract lump sum price for Partial Removal of Substructure Concrete.
 Removal of existing conduit on structure will be considered completely covered by the contract unit price for other items.

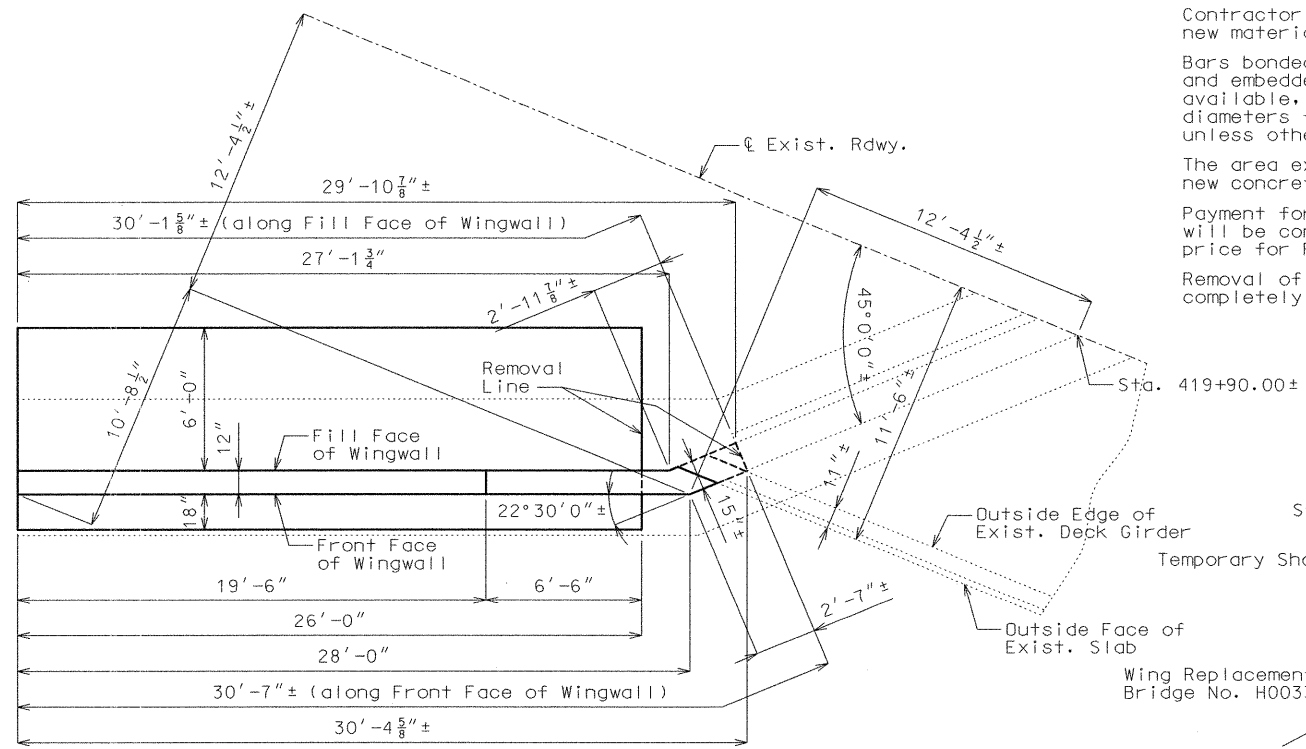
Footing Data	
Foundation Material	Rock
Design Bearing	ton/sq. foot 2.5



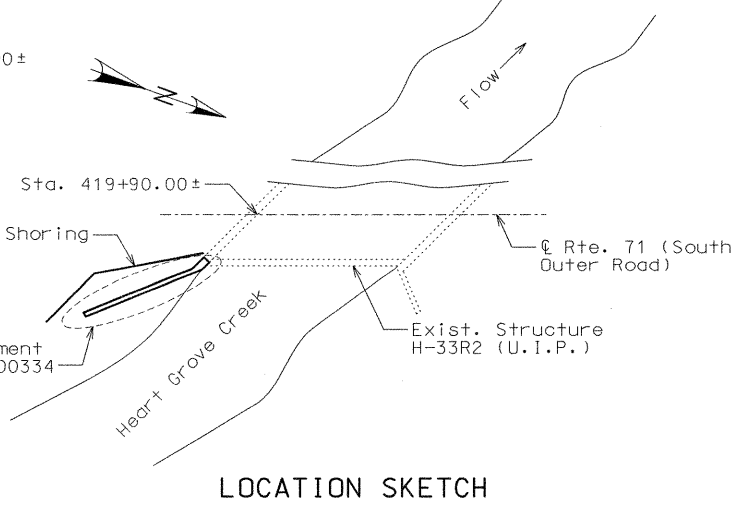
DEVELOPED ELEVATION



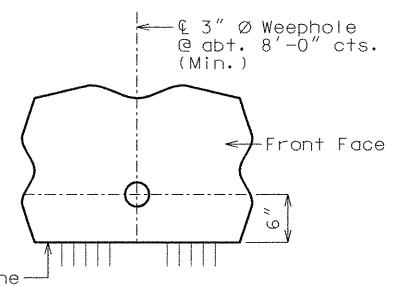
DETAILS OF FRENCH DRAIN



PART PLAN



LOCATION SKETCH



DETAILS OF WEEPHOLE

B.M. ELEVATION 235.25. MARK ON BASE OF S.W. WING WALL OF BRIDGE 50' RIGHT OF STA. 414+05
REPAIRS TO BRIDGE OVER HEART GROVE CREEK
 STATE ROAD FROM BANNISTER ROAD TO 87TH STREET IN KANSAS CITY
 PROJECT NO. J4M0171
 JOB NO. J4M0171
 STA. 419+90.00± (MATCH EXIST.)
 RTE. 71

Designed May 2006
 Detailed May 2006
 Checked July 2006

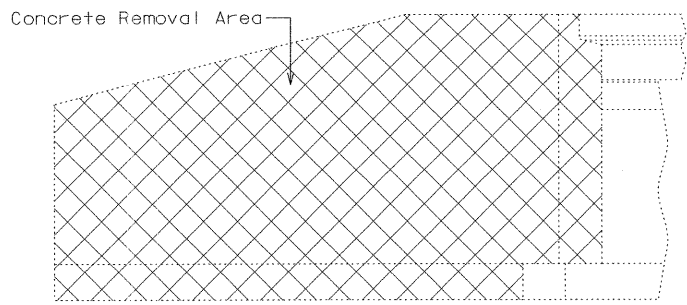
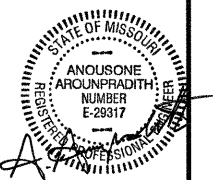
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 1 of 4

JACKSON COUNTY
 Date: 7/20/06

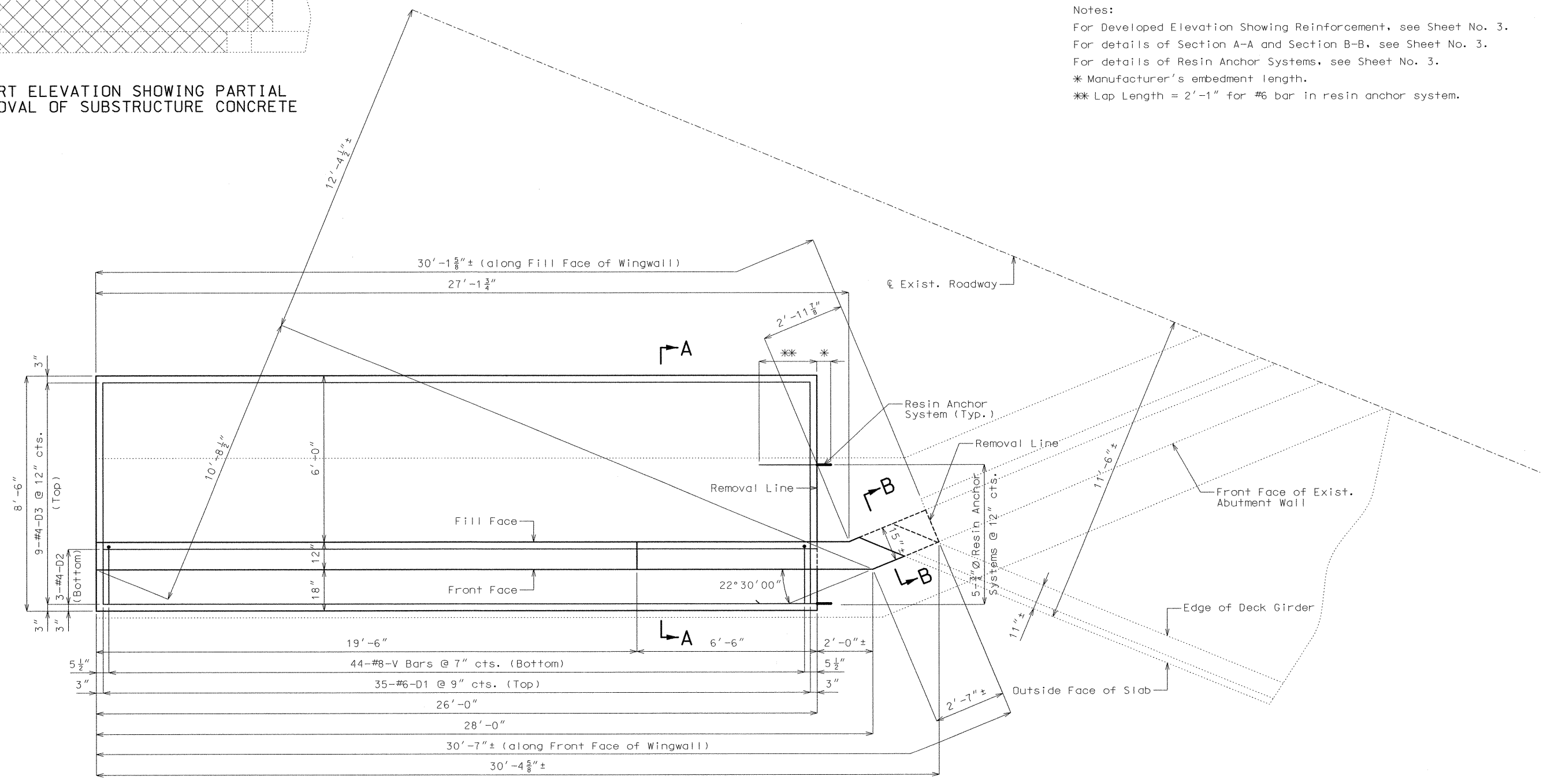
STD. 706.35
H00334

ROUTE 71	STATE MO	DISTRICT BR	SHEET NO. B2
JOB NO. J4M0171			
CONTRACT ID			
PROJECT NO.			
COUNTY JACKSON			
DATE 7/18/06			



PART ELEVATION SHOWING PARTIAL REMOVAL OF SUBSTRUCTURE CONCRETE

Notes:
 For Developed Elevation Showing Reinforcement, see Sheet No. 3.
 For details of Section A-A and Section B-B, see Sheet No. 3.
 For details of Resin Anchor Systems, see Sheet No. 3.
 * Manufacturer's embedment length.
 ** Lap Length = 2'-1" for #6 bar in resin anchor system.



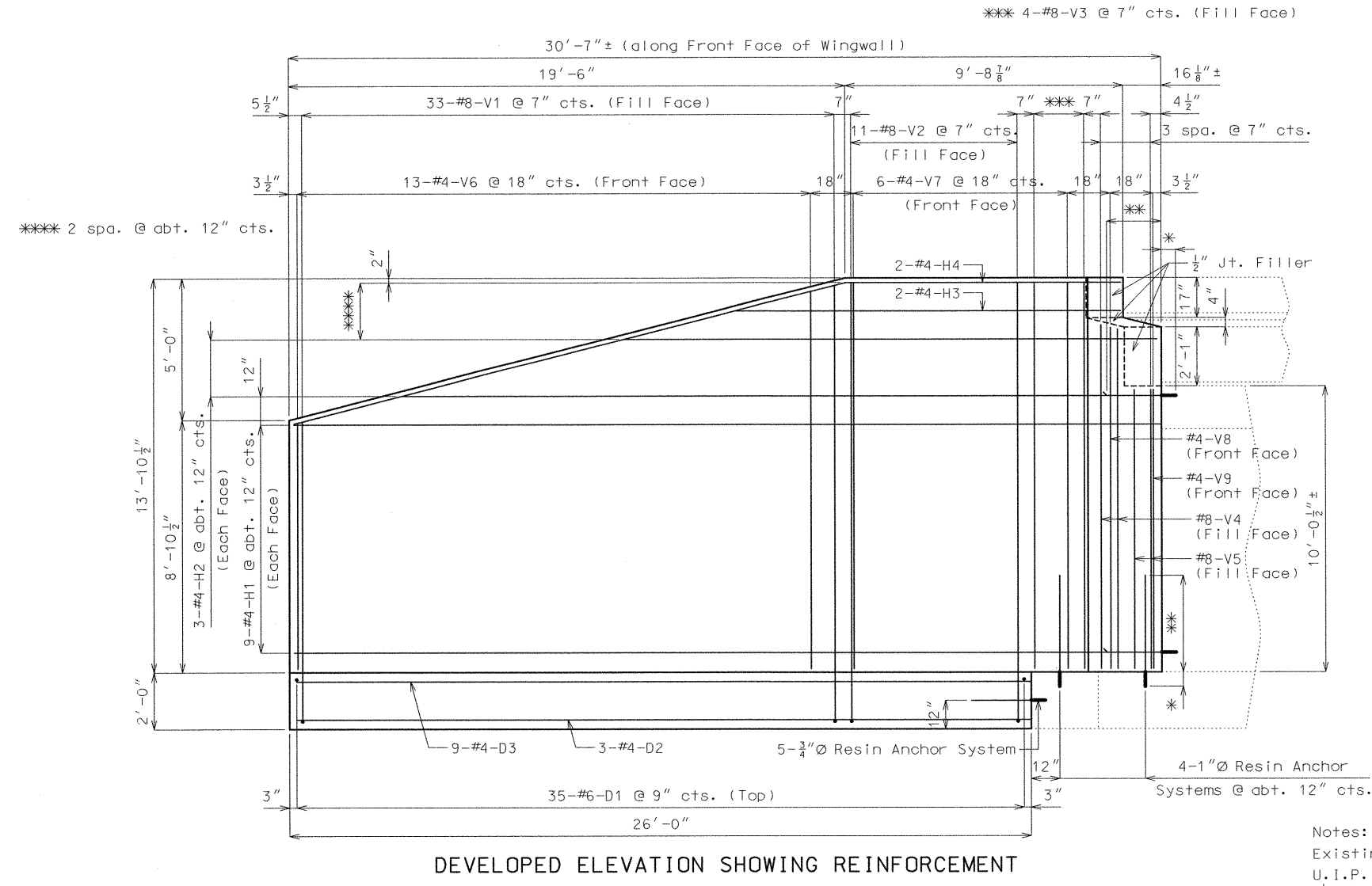
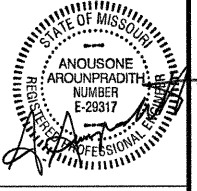
PLAN SHOWING FOOTING REINFORCEMENT
 Note: V-Bars & H-Bars not shown for clarity.

DETAILS OF WINGWALL

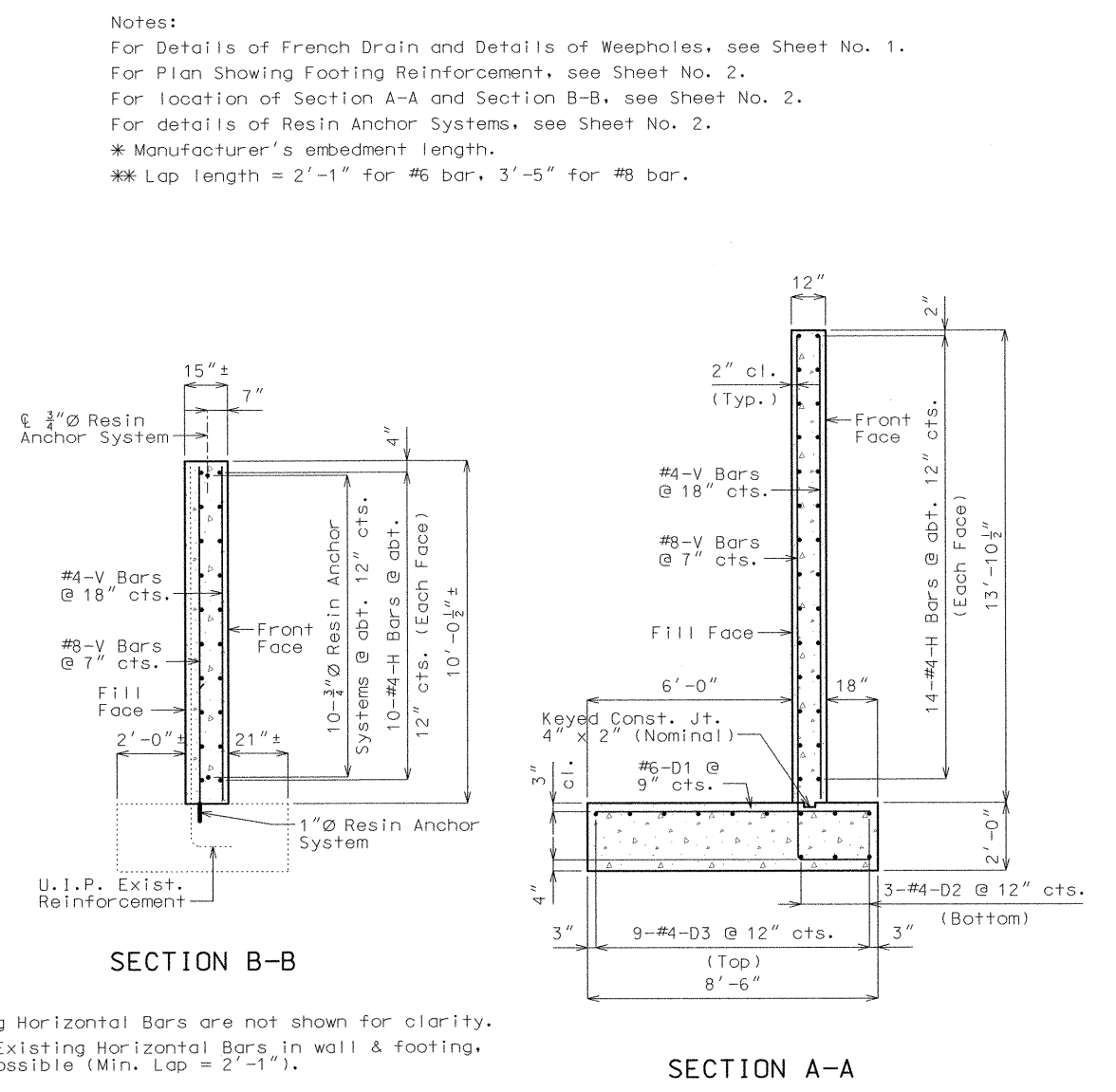
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 2 of 4

ROUTE 71	STATE MO	DISTRICT BR	SHEET NO. 63
JOB NO. J4M0171			
CONTRACT ID			
PROJECT NO.			
COUNTY JACKSON			
			DATE 7/18/06



DEVELOPED ELEVATION SHOWING REINFORCEMENT



SECTION B-B

SECTION A-A

Notes:
 For Details of French Drain and Details of Weepholes, see Sheet No. 1.
 For Plan Showing Footing Reinforcement, see Sheet No. 2.
 For location of Section A-A and Section B-B, see Sheet No. 2.
 For details of Resin Anchor Systems, see Sheet No. 2.
 * Manufacturer's embedment length.
 ** Lap length = 2'-1" for #6 bar, 3'-5" for #8 bar.

Notes:
 Existing Horizontal Bars are not shown for clarity.
 U.I.P. Existing Horizontal Bars in wall & footing, where possible (Min. Lap = 2'-1").

DETAILS OF WINGWALL

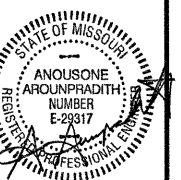
BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO.	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS															NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
									B		C		D		E		F		H		K					
									FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.			
		WINGWALL																								
35	6 D1	FOOTING		20					8	3.000											8	3	8	3	434	
3	4 D2	FOOTING		20					25	9.000											25	9	25	9	52	
9	4 D3	FOOTING		20					25	9.000											25	9	25	9	155	
18	4 H1	WALL		20					30	5.000											30	5	30	5	366	
6	4 H2	WALL		20				V 2	18	8.000											18	8	18	8		
		INCREMENT =							26	8.000											26	8	26	8	91	
		48.000 INCH																								
2	4 H3	WALL		20					13	6.000											13	6	13	6	18	
2	4 H4	WALL		20					9	7.000											9	7	9	7	13	
33	8 V1	FTG. & WALL		19				V 1	10	5.000	2	0.000									12	5	12	3		
		INCREMENT =							15	3.000	2	0.000									17	3	17	1	1292	
		1.750 INCH																								
11	8 V2	FTG. & WALL		19					15	4.000	2	0.000									17	4	17	2	504	
4	8 V3	WALL		20					13	7.000											13	7	13	7	145	
2	8 V4	WALL		20					12	0.000											12	0	12	0	64	
2	8 V5	WALL		20					9	9.000											9	9	9	9	52	
13	4 V6	WALL		20				V 1	8	7.000											8	7	8	7		
		INCREMENT =							13	3.000											13	3	13	3	95	
		4.625 INCH																								
6	4 V7	WALL		20					13	7.000											13	7	13	7	54	
1	4 V8	WALL		20					12	1.000											12	1	12	1	8	
1	4 V9	WING		20					9	11.000											9	11	9	11	7	
		TOTALS																								
		4																							859	
		6																							434	
		8																							2057	
		TOTAL																							3350	
		TOTAL	E																						0	

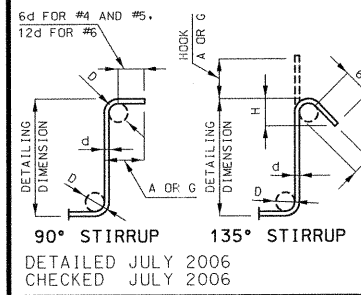
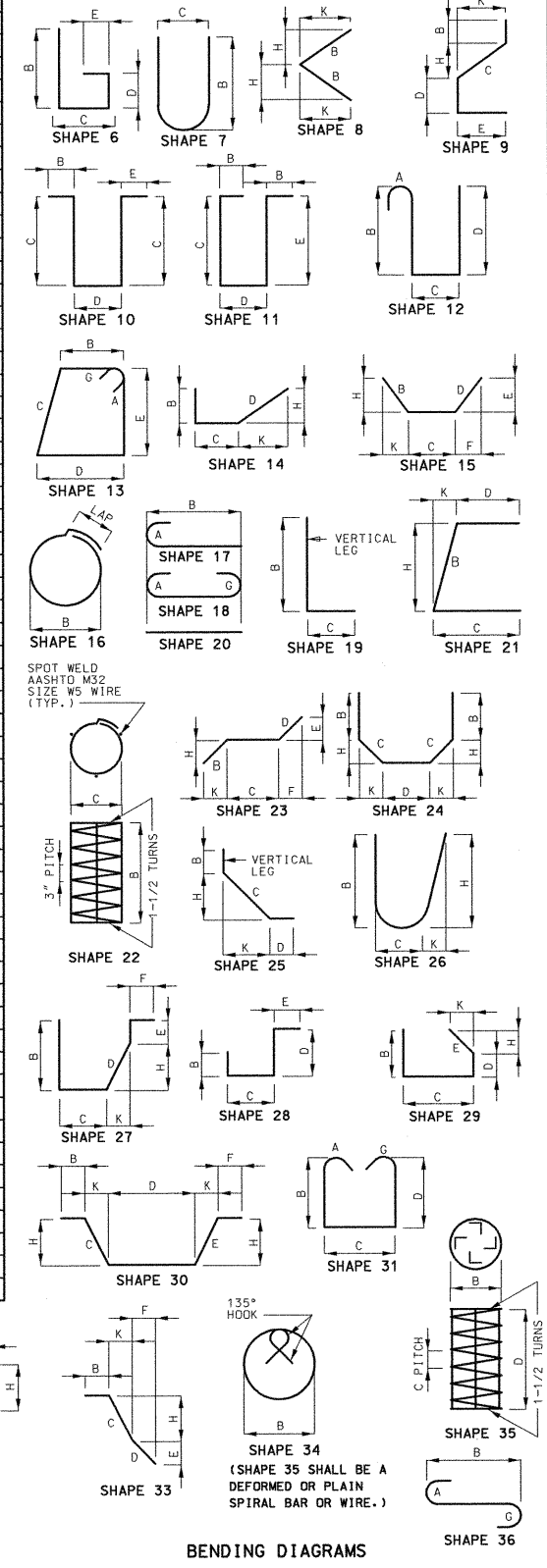
BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO.	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS															NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
									B		C		D		E		F		H		K					
									FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.			

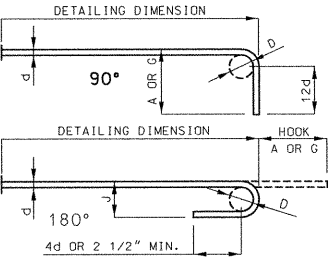
ROUTE	STATE	DISTRICT	SHEET NO.
71	MO	BR	84
JOB NO. J4M0171			
CONTRACT ID			
PROJECT NO.			
COUNTY JACKSON			



DATE 7/18/06



STIRRUP HOOK DIMENSIONS				
GRADES 40 - 50 - 60 KSI				
BAR SIZE	D (IN.)	90° HOOK A OR G	135° HOOK A OR G	APPROX. H
#4	2"	4 1/2"	4 1/2"	3"
#5	2 1/2"	6"	5 1/2"	3 3/4"
#6	4 1/2"	12"	8"	4 1/2"



BAR SIZE	D (IN.)	180° HOOKS		90° HOOKS	
		A OR G	J	A OR G	A OR G
#3	2 1/4"	5"	3"	6"	6"
#4	3"	6"	4"	8"	8"
#5	3 3/4"	7"	5"	10"	10"
#6	4 1/2"	8"	6"	12"	12"
#7	5 1/4"	10"	7"	14"	14"
#8	6"	11"	8"	16"	16"
#9	9 1/2"	15"	11 3/4"	19"	19"
#10	10 3/4"	17"	13 1/4"	22"	22"
#11	12"	19"	14 3/4"	2'-0"	2'-0"
#14	18 1/4"	2'-3"	21 3/4"	2'-7"	2'-7"

NOTE:
 ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEGREE ARE TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEGREE STANDARD 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.
 FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
 REINFORCING STEEL (GRADE 60) F_y = 60,000 PSI.