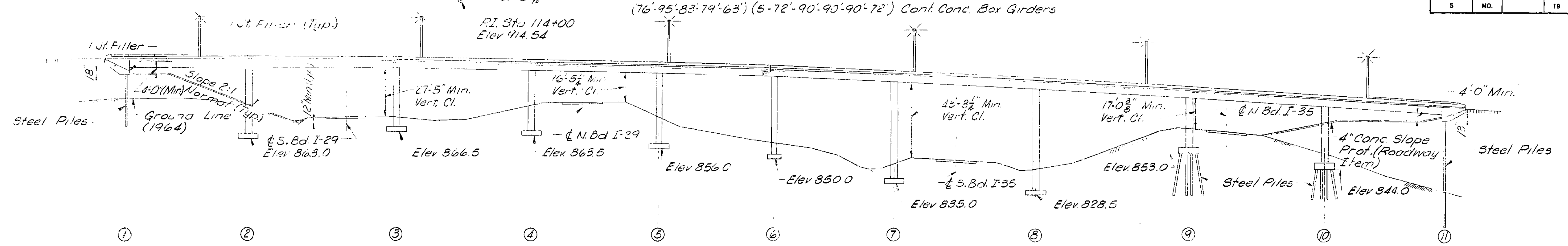
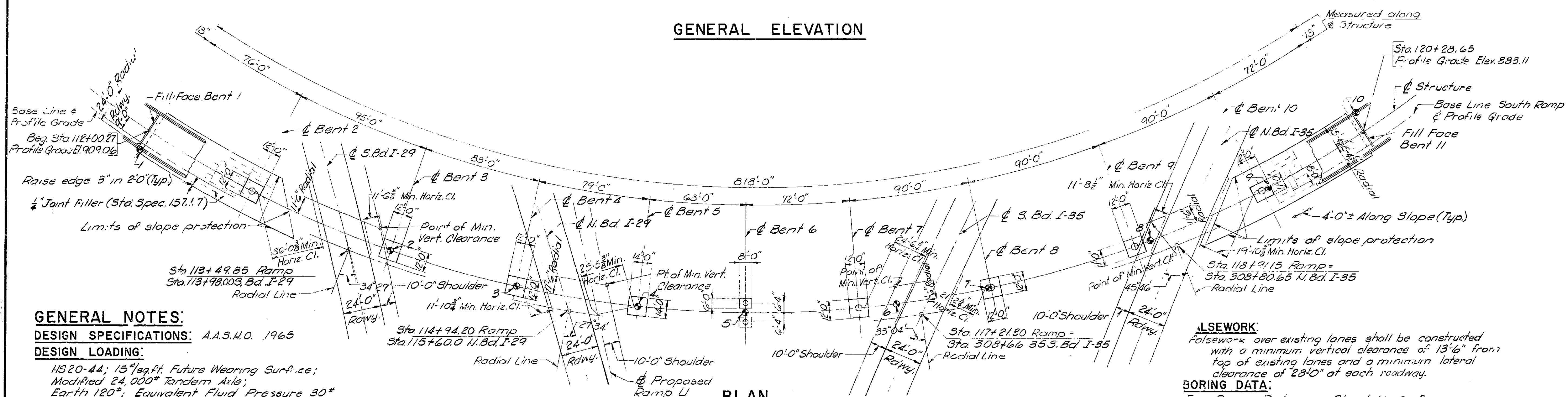
MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	95	



GENERAL ELEVATION



PLAN

GENERAL NOTES:

DESIGN SPECIFICATIONS: A.A.S.H.O. 1965

DESIGN LOADING:

HS20-44; 15#/sq.ft. Future Wearing Surface;
Modified 24,000# Tandem Axle;
Earth 120#; Equivalent Fluid Pressure 30#

DESIGN UNIT STRESSES:

Class B Concrete (substructure) fc = 1,200 p.s.i.
Class B1 Concrete (superstructure) fc = 1,600 p.s.i.
Reinforcing Steel fs = 20,000 p.s.i.
Structural Steel (A.S.T.M. A36-66) fs = 20,000 p.s.i.
Steel Pile (A.S.T.M. A36-66) fb = 9,000 p.s.i.

SURFACE SEAL:

Superstructure deck to be surface sealed.

PAINTING:

Structural steel bearings, expansion devices and access doors shall be cleaned and painted in the field or may be cleaned and painted one coat of red lead in the shop with the two remaining coats applied in the field, except that final coat on access doors shall be gray. No paint shall be applied to top surface of top plate and bottom surface of bottom plate of bearings. In lieu of painting, the contractor may, if he prefers, galvanize any or all of these items. All galvanizing shall be done after fabrication. Cost of painting or galvanizing to be included in price bid for other items.

FALSEWORK:

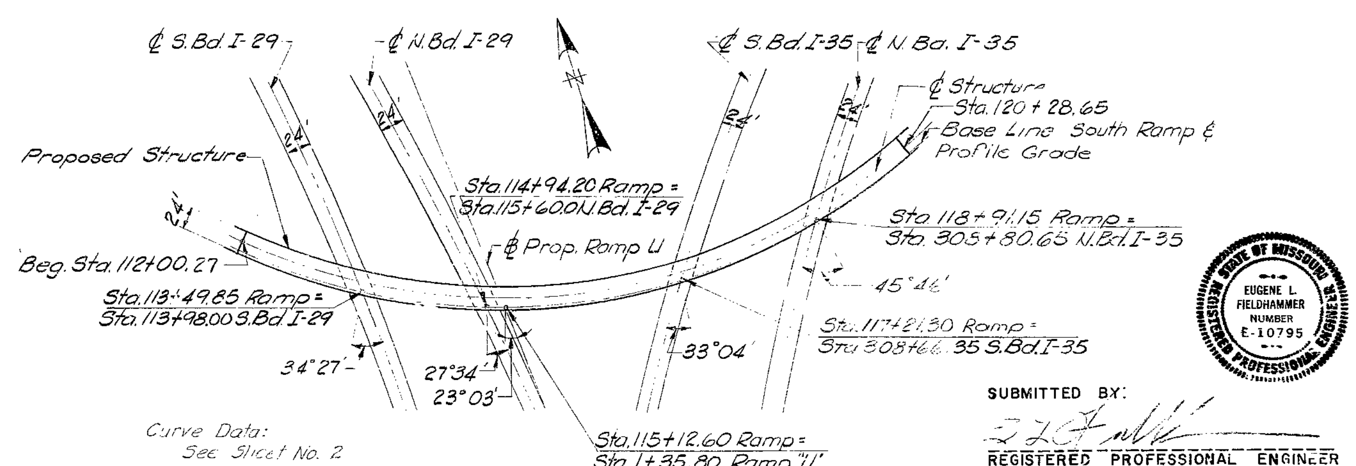
Falsework over existing lanes shall be constructed with a minimum vertical clearance of 13'-6" from top of existing lanes and a minimum lateral clearance of 28'-0" at each roadway.

BORING DATA:

For Boring Data see Sheet No. 3 of 17.
"⊗" Indicates location of Boring.

BENCH MARK:

B.M. Top N.E. bolt sign support
5' Left Sta. 119+40 Elev 864.16



Curve Data:
See Sheet No. 2

LOCATION SKETCH

392

DESIGNED July 1967 BY J. Parikh
DETAILED July 1967 BY Herd
CHECKED Aug. 1967 BY Mali

R. W. BOOKER & ASSOCIATES, INC.
CONSULTING ENGINEERS
1139 OLIVE STREET
ST. LOUIS, MISSOURI

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

SUBMITTED BY:
[signature]
REGISTERED PROFESSIONAL ENGINEER
MISSOURI NO. E-10795

STATE OF MISSOURI — EUGENE L. FIELDHAMMER — NUMBER E-10795 — REGISTERED PROFESSIONAL ENGINEER

Sheet No. 1 of 17.

BRIDGE OVER RTE. I-29 AND RTE. I-35

STATE ROAD SOUTH RAMP - INTERSTATE 29

IN KANSAS CITY

PROJECT NO. I-29-1 (22) (RTE. I-29) **STA.** 112 + 00.27

CLAY COUNTY

SUBMITTED BY D. B. [signature] BRIDGE ENGINEER DATE 10/25/67

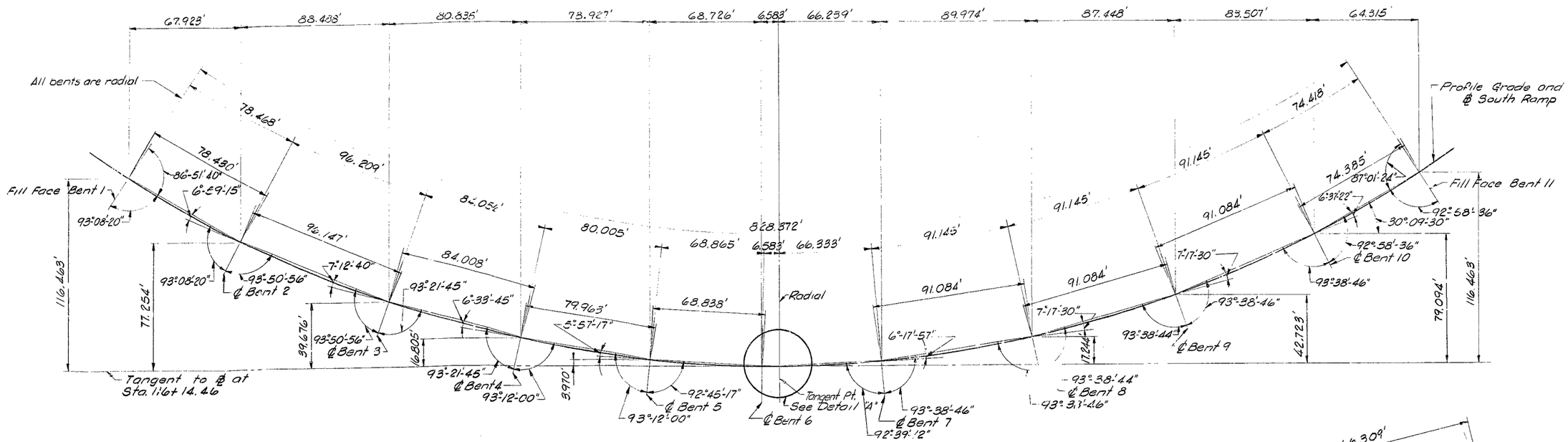
APPROVED BY M. [signature] CHIEF ENGINEER DATE 10/25/67

STD. 54.00

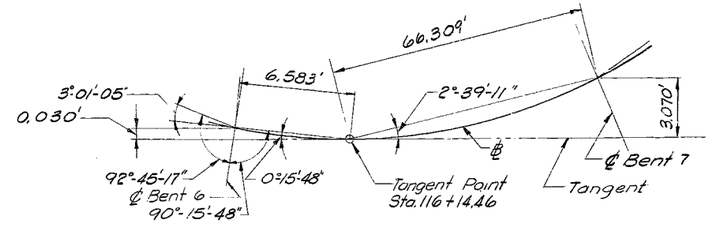
A-1763

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	2	



LAYOUT PLAN



DETAIL "A"

PILE AND FOOTING DATA

	Bent No.	1	2	3	4	5	6	7	8	9	10	11
BEARING PILE	Pile Type and Size	12BP53								14BP73	14BP73	12BP53
	Number	4								12	12	4
	Approximate Length Ft.	31								15	28	65
	Design Bearing Tons	57								92	92	57
	Hammer Energy Req'd Ft. Lbs.	12,800								21,600	21,600	12,800
SPREAD FOOTINGS	Foundation Material		Rock	Rock	Rock	Shale	Rock	Rock	Rock			
	Design Bearing Tons/Sq.Ft.		7.6	7.6	7.6	5.4	10.5	10.0	10.0			

ESTIMATED QUANTITIES

Item		Substr.	Superstr.	Total
Class 1 Excavation for Structures	Cu. Yd.	1065	———	1063
12" Steel Piles in Place	Lin. Ft.	384	———	384
14" Steel Piles in Place	Lin. Ft.	516	———	516
Class B Concrete	Cu. Yd.	194.0	———	194.0
Class B1 Concrete	Cu. Yd.	———	1890.8	1890.8
Reinforcing Steel	Lb.	52,640	(742,510)	(795,150)
Fabricated Structural Carbon Steel	Lb.	———	2860	2860
Bridge Rail (Single Tube)	Lin. Ft.	———	1664	1664
Conduit System (on Structures)	Lump sum	———	1	1
			740,730	793,370

△

CURVE DATA

P.I.-122+75.23
Δ - 126°-08'-09.8"
D - 8°-00'
R - 716.20'
L - 1576.71'
T - 1409.76'
S.E.-0.08'/'

QUANTITY NOTES:

All concrete and reinforcement above footings is included in superstructure quantities.
No payment for excavation will be allowed at End Bents 1 and 11.

PILE AND FOOTING NOTES:

Minimum energy requirement of hammer based on plan length and design bearing value of piles. Increase by the factor (Wtw)/2W when the weight of the ram (W) is less than the weight of the pile (w).
All piles shall be driven to practical refusal.
Compacted roadway fill (full roadway width) shall be placed up to elevation of bottom of concrete beam in front of and not less than 25'-0" in in back of End Bents No. 1 and 11 before steel piles are driven.
Footings shall be carried 6" into hard, solid, undisturbed rock or 18" into soft rock or shale and cast against vertical face of same.

HORIZONTAL CURVE

Bents cannot be accurately located from the reference point on the tangent by conventional survey methods based on 100' chords.

BRIDGE OVER RTE. I-29 AND RTE. I-35

STATE ROAD SOUTH RAMP - INTERSTATE 29

IN KANSAS CITY

PROJECT NO. I-29-1(22) (RTE. I-29) STA. 112+00.27

CLAY COUNTY

A-1763

393

DETAILED JUNE 1967 BY HERD
CHECKED AUG. 1967 BY MALI

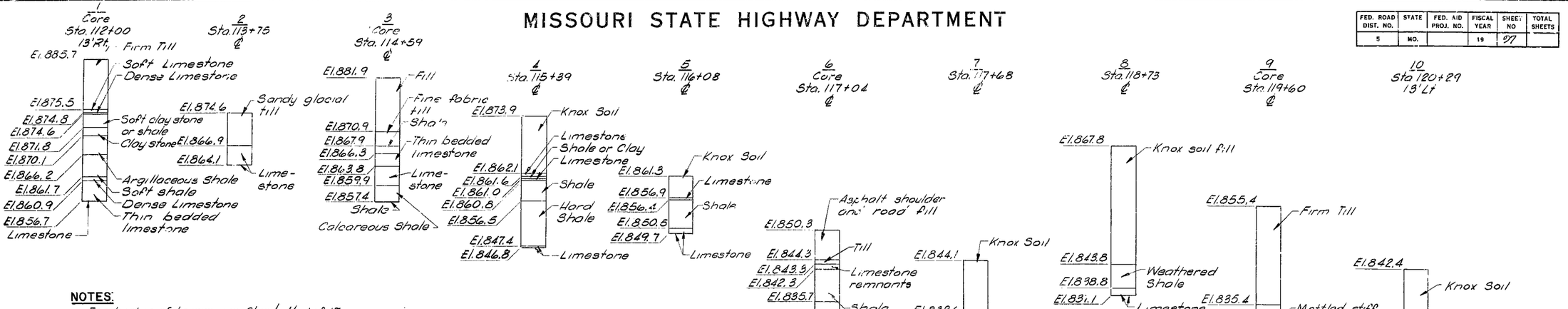
R. W. BOOKER & ASSOCIATES, INC.
CONSULTING ENGINEERS
1139 OLIVE STREET
ST. LOUIS, MISSOURI 63101

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

△ REV. 1-18-68

MISSOURI STATE HIGHWAY DEPARTMENT

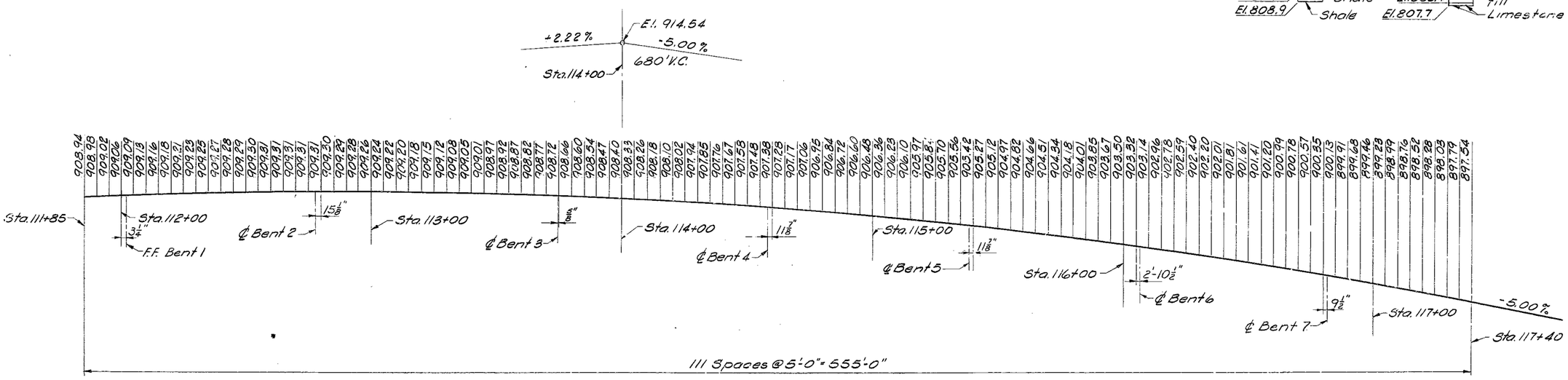
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO	TOTAL SHEETS
5	MO.		19	97	



NOTES:

For location of borings see Sheet No 1 of 17.
Core drill equipment - 2⅜" double tube core Bbl.

BORING DATA



PROFILE GRADE ELEVATIONS

BRIDGE OVER RTE. I-29 AND RTE. I-35
STATE ROAD SOUTH RAMP - INTERSTATE 29
IN KANSAS CITY
PROJECT NO. I-29-1 (22) (RTE. I-29) STA. 112 + 00.27
CLAY **COUNTY**

A-1763

394

DETAILED MAY 1967 BY HERD
CHECKED AUG. 1967 BY MALI

R. W. BOOKER & ASSOCIATES, INC.
CONSULTING ENGINEERS
1139 OLIVE STREET
ST. LOUIS, MISSOURI 63101

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

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	98	

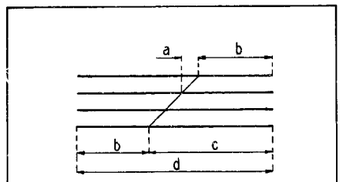
COMPLETE BILL OF REINFORCING STEEL

NO.	SIZE	LENGTH	MARK	LOCATION
SUPERSTRUCTURE				
72	#6	7'-0"	S1	Top Slab
52	#7	57'-0"	S2	"
26	#11	46'-0"	S3	"
28	#14S	32'-6"	S4	"
26	#7	55'-3"	S5	"
26	#11	44'-0"	S6	"
28	#14S	30'-0"	S7	"
26	#7	46'-6"	S8	"
26	#11	38'-0"	S9	"
28	#10	23'-0"	S10	"
26	#7	47'-3"	S11	"
26	#11	35'-9"	S12	"
28	#10	19'-6"	S13	"
26	#7	48'-6"	S14	"
2746	#6	26'-3"	S15	"
312	#7	26'-3"	S16	"
756	#6	22'-6"	S17	Bott. Slab
22	#11	56'-0"	S18	"
8	#14S	56'-0"	S19	"
16	#9	56'-0"	S20	"
22	#11	49'-6"	S21	"
22	#11	60'-0"	S22	"
16	#9	57'-6"	S23	"
8	#14S	57'-6"	S24	"
22	#7	32'-9"	S25	"
22	#10	56'-6"	S26	"
16	#7	47'-6"	S27	" △22
8	#11	47'-6"	S28	" △22
44	#7	29'-9"	S29	"
20	#6	5'-3"	S30	"
20	#6	4'-6"	S31	"
22	#10	54'-0"	S32	"
16	#7	46'-0"	S33	"
8	#11	46'-0"	S34	"
22	#10	49'-6"	S35	"
8	#11	45'-6"	S36	"
16	#7	46'-6"	S37	"
325	#7	32'-0"	S39	Top Slab
16	#10	19'-0"	S40	"
12	#8	19'-0"	S41	"
350	#7	31'-3"	S42	"
26	#11	40'-6"	S43	"
28	#11	24'-6"	S44	"
26	#7	53'-9"	S45	"
26	#10	45'-6"	S46	"
28	#14S	35'-0"	S47	"
26	#7	50'-3"	S48	"
26	#10	44'-0"	S49	"
28	#14S	34'-0"	S50	"
26	#7	51'-9"	S51	"
26	#10	41'-6"	S52	"
28	#14S	32'-0"	S53	"
26	#7	55'-3"	S54	"
22	#7	59'-9"	S55	Bott. Slab
16	#9	48'-6"	S56	"
8	#11	48'-6"	S57	"
22	#11	59'-6"	S58	"
16	#8	54'-6"	S59	"
8	#14S	54'-6"	S60	"
44	#11	45'-9"	S61	"
22	#11	57'-6"	S62	"
16	#8	51'-0"	S63	"
8	#11	51'-0"	S64	"
22	#7	31'-9"	S65	"
22	#11	58'-0"	S66	"
16	#8	52'-0"	S67	"
8	#11	52'-0"	S68	"
22	#11	53'-0"	S69	"

NO.	SIZE	LENGTH	MARK	LOCATION
SUPERSTRUCTURE (CONT.)				
16	#6	53'-0"	S70	Bott. Slab
8	#14S	53'-0"	S71	"
22	#7	34'-6"	S72	"
288	#4	6'-6"	G1	Diaphragm
32	#6	22'-6"	G2	"
160	#5	9'-0"	G3	Webs
3636	#5	7'-6"	G4	"
3622	#5	7'-6"	G5	"
44	#5	36'-6"	G6	"
14	#8	57'-3"	G7	"
44	#5	37'-6"	G8	"
14	#8	59'-0"	G9	"
44	#5	37'-3"	G10	"
14	#8	58'-0"	G11	"
14	#8	58'-6"	G12	"
8	#5	22'-3"	G13	"
8	#5	39'-6"	G14	"
12	#5	30'-0"	G15	"
8	#5	40'-0"	G16	"
8	#5	32'-3"	G17	"
4	#5	34'-6"	G18	"
16	#8	52'-9"	G19	"
16	#8	54'-6"	G20	"
44	#5	38'-3"	G21	"
44	#5	39'-6"	G22	"
(44)	#5	38'-6"	G23	"
(44)	#5	39'-0"	G24	"
16	#8	53'-3"	G25	"
16	#8	53'-9"	G26	"
16	#5	21'-0"	G27	"
16	#5	37'-3"	G28	"
24	#5	30'-3"	G29	"
16	#9	7'-0"	G30	"
8	#5	4'-9"	R1	End Posts
8	#5	5'-9"	R2	"
8	#5	6'-6"	R3	"
4	#5	7'-0"	R4	"
8	#5	7'-3"	R5	"
8	#5	7'-6"	R6	"
16	#6	10'-3"	R31	"
1634	#5	5'-3"	R7	Parapets
43	#5	4'-3"	R8	"
12	#5	7'-9"	R9	"
6	#5	33'-6"	R10	"
8	#5	35'-0"	R11	"
136	#5	9'-9"	R12	"
8	#5	37'-0"	R13	"
8	#5	39'-0"	R14	"
8	#5	31'-3"	R15	"
8	#5	32'-9"	R16	"
8	#5	29'-3"	R17	"
8	#5	30'-3"	R18	"
8	#5	27'-0"	R19	"
8	#5	28'-0"	R20	"
8	#5	3'-3"	R21	"
8	#5	3'-6"	R22	"
8	#5	25'-9"	R23	"
8	#5	27'-3"	R24	"
31	#5	5'-9"	R25	"
24	#5	34'-9"	R26	"
24	#5	36'-3"	R27	"
8	#5	31'-6"	R28	"
8	#5	33'-0"	R29	"
4	#5	10'-9"	R30	"
1634	#5	3'-6"	C1	Curbs
55	#5	3'-3"	C2	"
6	#6	11'-9"	C3	"
4	#5	38'-6"	C4	"

NO.	SIZE	LENGTH	MARK	LOCATION
SUPERSTRUCTURE (CONT.)				
4	#5	40'-0"	C5	Curbs
6	#5	31'-9"	C6	"
10	#5	33'-0"	C7	"
6	#6	28'-0"	C8	"
6	#5	29'-0"	C9	"
4	#5	39'-3"	C10	"
6	#5	27'-6"	C11	"
4	#6	32'-0"	C12	"
2	#5	3'-3"	C13	"
2	#5	3'-6"	C14	"
4	#6	36'-0"	C15	"
4	#5	37'-3"	C16	"
12	#5	30'-3"	C17	"
18	#5	31'-3"	C18	"
6	#6	30'-3"	C19	"
4	#5	36'-6"	C20	"
4	#5	38'-0"	C21	"
2	#6	14'-9"	C22	"
SUPERSTR. END BENTS 1 & 11				
44	#6	26'-3"	H1	Beams
100	#5	12'-0"	U1	"
36	#6	8'-6"	H2	Wings
12	#6	13'-3"	H3	"
27	#6	17'-9"	H4	"
9	#7	21'-9"	H5	"
4	#6	16'-3"	H6	"
16	#4	8'-6"	V1	Wings
30	#4	10'-6"	V3	"
13	#4	10'-6"	V5	"
6	#6	17'-3"	T1	Wings
2	#6	19'-9"	T2	"
SUPERSTR. INT BENTS 2,3,4 & 5				
56	#11	25'-3"	H7	Beam
44	#6	22'-6"	H21	"
248	#5	18'-0"	U3	"
56	#11	22'-0"	H22	"
37	#5	14'-6"	V4	Col. Bt. 2
10	#18S	41'-0"	V7	"
10	#18S	35'-0"	V8	"
33	#5	14'-6"	V4	Col. Bt. 3
10	#18S	36'-9"	V9	"
10	#18S	30'-9"	V10	"
34	#5	14'-6"	V4	Col. Bt. 4
10	#18S	38'-6"	V11	"
10	#18S	32'-6"	V12	"
40	#5	14'-6"	V4	Col. Bt. 5
10	#18S	44'-0"	V13	"
10	#18S	38'-0"	V14	"
SUPERSTR. INT. BENT 6				
2	#5	2'-6"	H8	Beam
12	#10	25'-3"	H9	"
4	#10	22'-6"	H10	"
46	#5	12'-0"	U2	"
30	#6	7'-3"	U4	Hinge
28	#10	9'-0"	U5	"
2	#10	8'-9"	U6	"
4	#4	5'-0"	U7	"
31	#6	10'-6"	U8	"
31	#10	10'-6"	U9	"

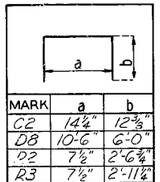
BENDING SKETCHES & CUTTING DIAGRAMS



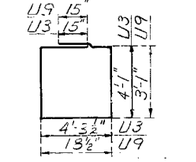
*BEND AS SHOWN

CUTTING SCHEDULE

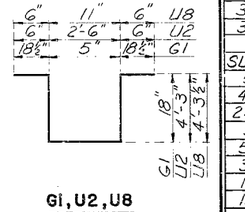
REMARKS	a	b	c	d
9H4 Cut 27	12"	4'-9"	13'-0"	17'-9"
9H5 Cut 9	16⅝"	5'-6"	16'-3"	21'-9"
10V2 Cut 30	8¾"	2'-0"	8'-6"	10'-6"
13V3 Cut 13	6⅝"	2'-3"	8'-7"	10'-6"



MARK	a	b
C2	14½"	12⅜"
D8	10'-6"	6'-0"
D2	7½"	2'-6⅜"
R3	7½"	2'-11¾"
R4	7½"	3'-2¾"
R5	7½"	3'-3⅝"
R6	7½"	3'-5¼"
R25	7½"	2'-6⅜"
U1	2'-9"	4'-7⅝"
U4	4'-2"	12½"
U7	19"	20½"
G4	4'-5¼"	18⅜"
R31	9"	4'-9"

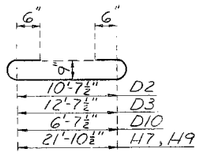


U3, U9

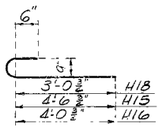


G1, U2, U8

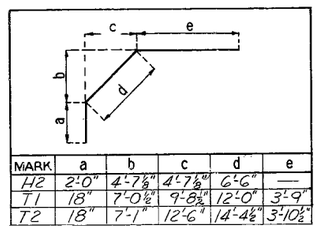
G3



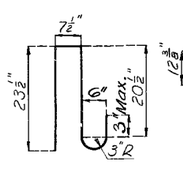
D2, D3, D10, H7, H9



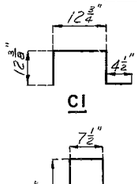
H15, H16, H18



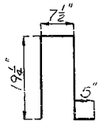
MARK	a	b	c	d	e
H2	2'-0"	4'-7⅝"	4'-7⅝"	6'-6"	—
T1	18"	7'-0⅝"	9'-8½"	12'-0"	3'-9"
T2	18"	7'-1"	12'-6"	14'-4½"	3'-10½"



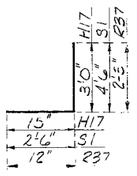
R7



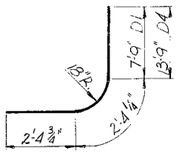
C1



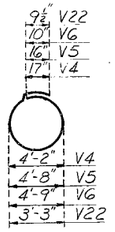
R8



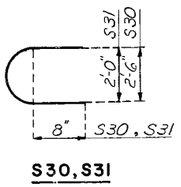
H17, S1, R37



D1, D4

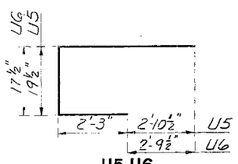


V4, V5, V6, V22

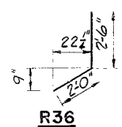


S30, S31

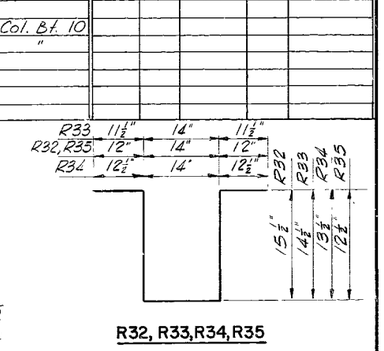
G5



U5, U6



R36



R32, R33, R34, R35

G30

NO.	SIZE	LENGTH	MARK	LOCATION
SUPERSTR. INT. BENT 6 (CONT.)				
13	#5	22'-6"	H8	Hinge
6	#5	26'-3"	H11	"
4	#5	9'-9"	H12	"
2	#5	5'-0"	H13	"
3	#5	21'-9"	H14	"
56	#9	6'-3"	H15	"
4	#9	5'-9"	H16	"
4	#4	4'-3"	H17	"
62	#9	4'-9"	H18	"
6	#5	4'-3"	H19	"
6	#5	3'-3"	H20	"
89	#3	11'-0"	V22	Columns
32	#11	47'-3"	V23	"
32	#11	48'-3"	V24	"
SUPERSTR. INT. BENTS 7,8,9 & 10				
56	#11	25'-3"	H7	Beam
44	#6	22'-6"	H21	"
248	#5	18'-0"	U3	"
56	#11	22'-0"	H22	"
56	#5	16'-0"	V5	Col. Bt. 7
30	#18S	35'-6"	V15	"
15	#18S	29'-[illegible]	V16	"
15	#18S	23'-6"	V17	"
58	#5	16'-0"	V5	Col. Bt. 8
30	#18S	35'-6"	V15	"
15	#18S	32'-0"	V18	"
15	#18S	26'-0"	V19	"
29	#3	15'-9"	V6	Col. Bt. 9
30	#11	32'-0"	V20	"
34	#3	15'-9"	V6	Col. Bt. 10
36	#11	36'-6"	V21	"

NO.	SIZE	LENGTH	MARK	LOCATION
SUBSTR. INT. BENTS 2,3,4 & 5				
40	#18S	12'-6"	D1	Footings
138	#10	14'-0"	D2	"
54	#9	16'-0"	D3	"
40	#18S	18'-6"	D4	"
SUBSTR. INT. BENT 6				
64	#5	2'-6"	D9	Footings
22	#8	10'-0"	D10	"
30	#5	5'-6"	D11	"
SUBSTR. INT. BENTS 7 & 8				
30	#18S	12'-6"	D1	Footings
92	#10	14'-0"	D2	"
30	#18S	16'-6"	D4	"
SUBSTR. INT. BENTS 9 & 10				
66	#11	5'-9"	D5	Footings
42	#9	10'-6"	D6	"
32	#10	11'-6"	D7	"
4	#9	22'-6"	D8	"
SUPERSTRUCTURE				
6	#5	5'-9"	R32	Lgt. Std. Sup.
6	#5	5'-6"	R33	"
6	#5	5'-6"	R34	"
6	#5	5'-3"	R35	"
18	#5	4'-6"	R36	"
12	#5	3'-3"	R37	"

BRIDGE OVER RTE. I-29 AND RTE. I-35

STATE ROAD SOUTH RAMP - INTERSTATE 29

IN KANSAS CITY

PROJECT NO. I-29-1(22)(RTE. I-29) STA. 112+90.27

CLAY COUNTY

A-1763

395

No. 90.4	Aug. 1963	Revised	Dec. 1964

DETAILED SEPT. 1967 BY MOORE

CHECKED SEPT. 1967 BY SHANK

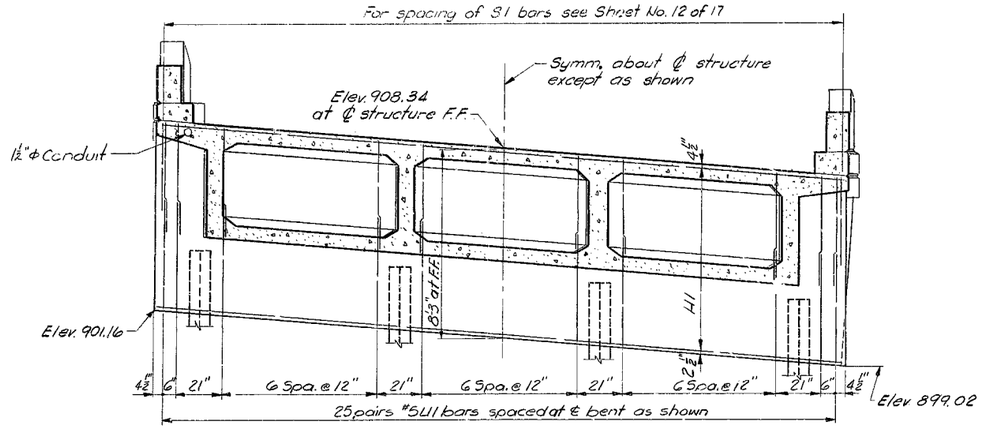
R. W. BOOKER & ASSOCIATES, INC.
CONSULTING ENGINEERS
1139 OLIVE STREET
ST. LOUIS, MISSOURI 63101

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

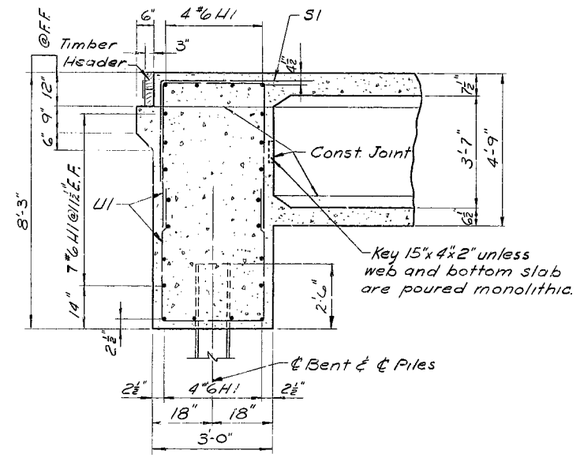
△ Rev. 1-18-68

MISSOURI STATE HIGHWAY DEPARTMENT

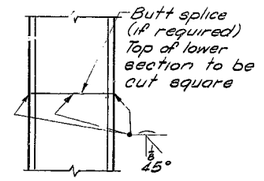
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	99	



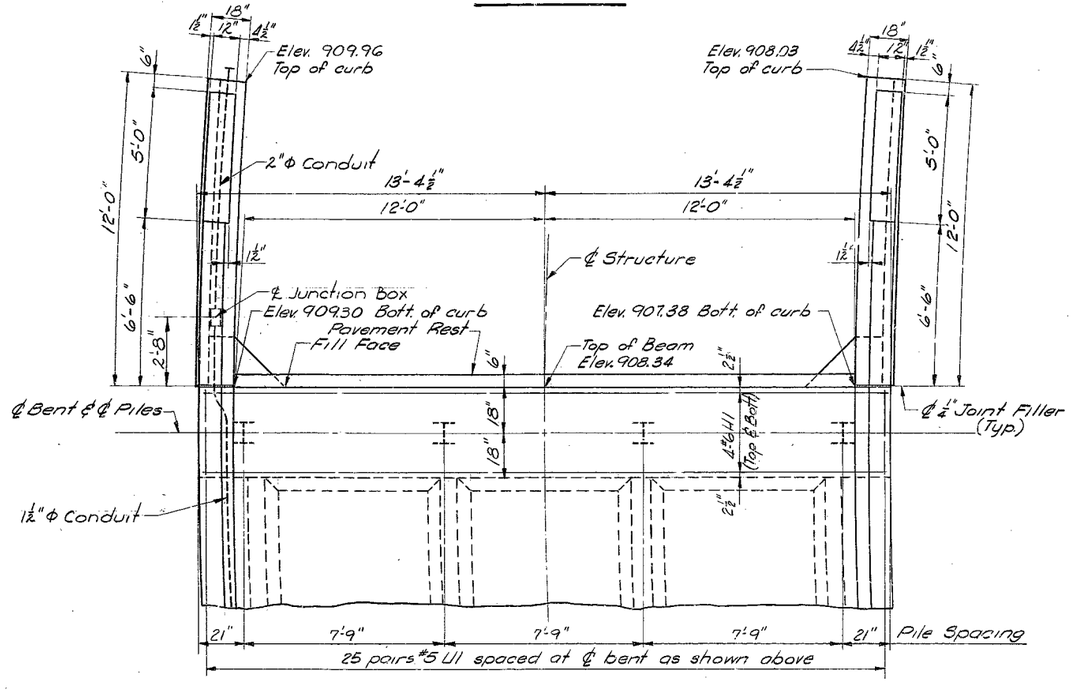
ELEVATION



SECTION AT ℄

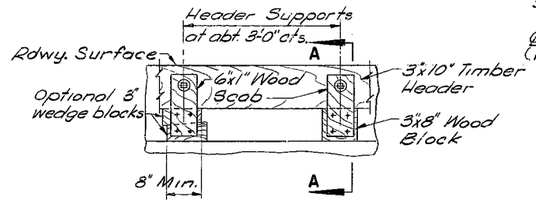


STEEL PILE SPLICE

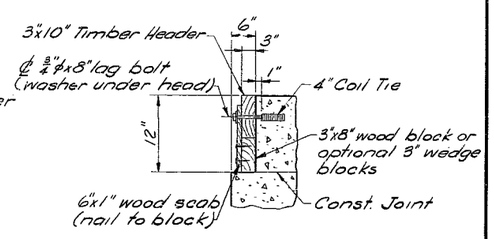


PLAN

END BENT 1



PART ELEVATION



SECTION A-A

TIMBER HEADER DETAIL

NOTES:

Wingwalls shall be constructed on a horizontal curve. For offsets, see Sheet No. 9 of 17.
Fill at End Bent 1 shall not be carried above bottom of beam and wings until adjacent superstructure span is in place.
For wingwall elevation and reinforcement, see Sheet No. 6 of 17.
For reinforcement in curb, parapet and end post, see Sheet No. 16 of 17 and Sheet No. 17 of 17.
Cost of timber headers complete in place to be included in price bid for concrete.

BRIDGE OVER RTE. I-29 AND RTE. I-35
STATE ROAD SOUTH RAMP – INTERSTATE 29
IN KANSAS CITY
PROJECT NO. I-29-1 (22) **(RTE. I-29) STA.** 112+00.27
CLAY **COUNTY**

A-1763

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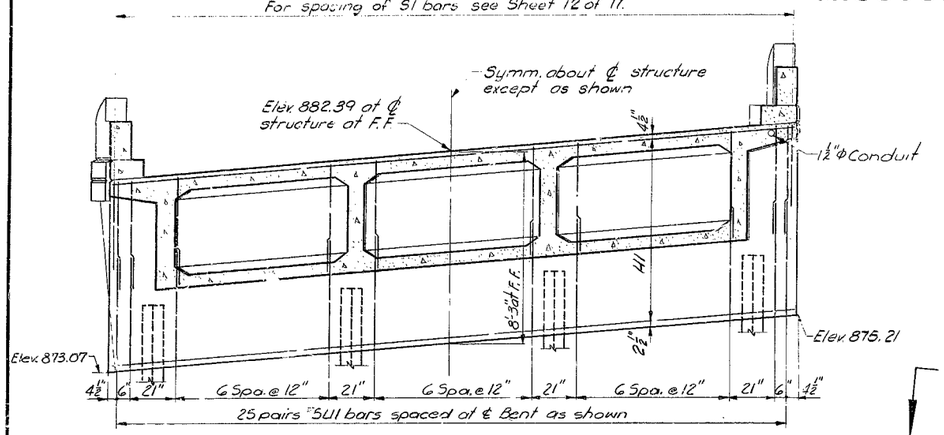
DETAILED JUNE 1967 BY HERD
CHECKED AUG. 1967 BY MOORE

R. W. BOOKER & ASSOCIATES, INC.
CONSULTING ENGINEERS
1139 OLIVE STREET
ST. LOUIS, MISSOURI 63101

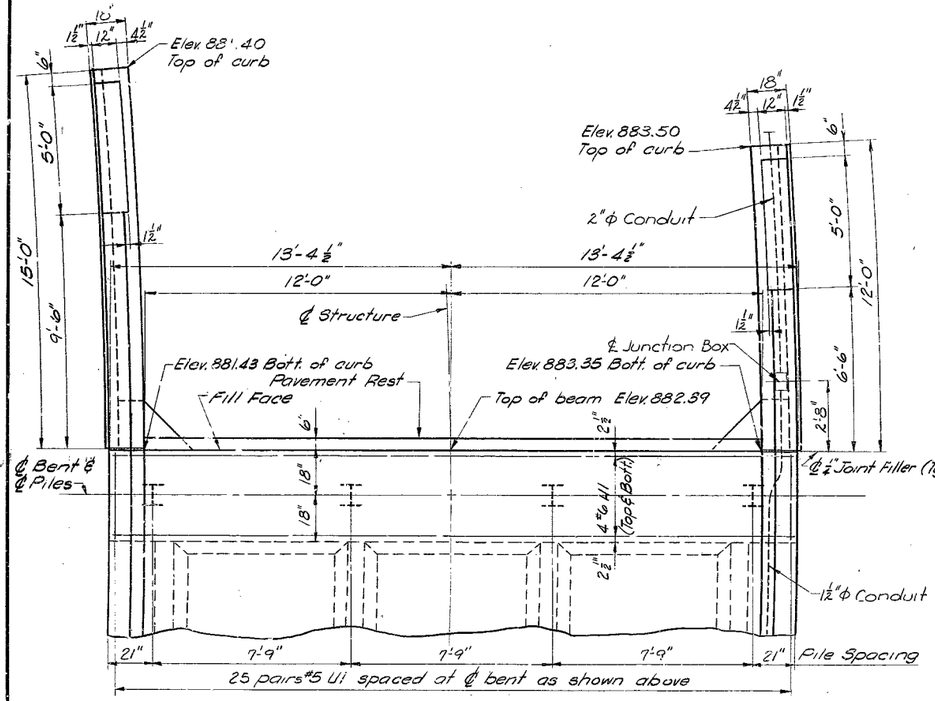
Note: This drawing is not to scale. Follow dimensions.

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	100	

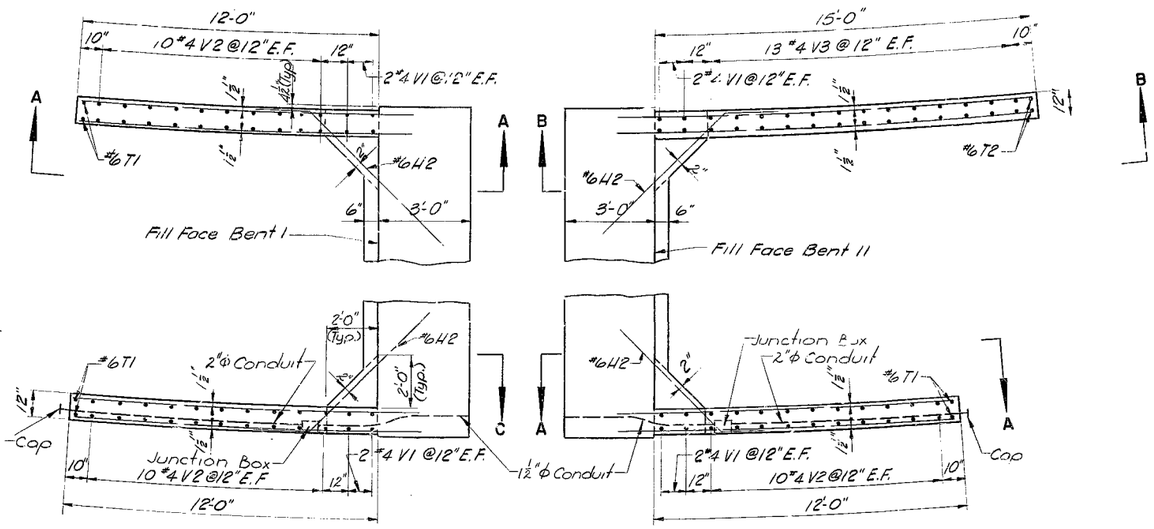


ELEVATION

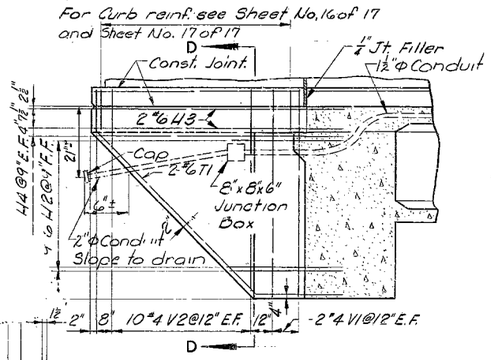


PLAN

END BENT II

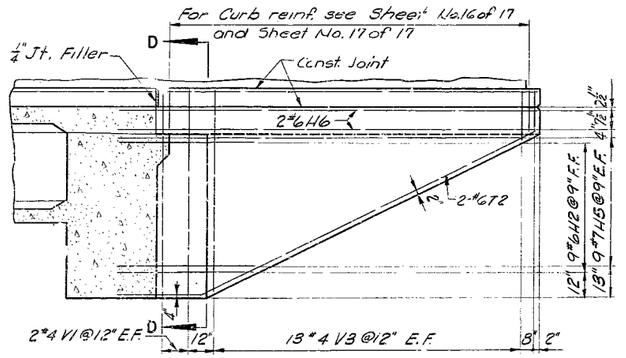


PLAN OF WINGWALLS

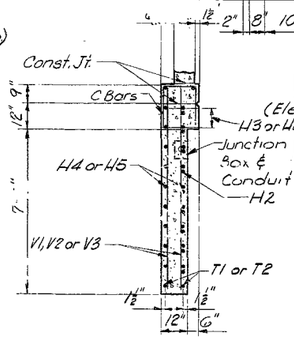


ELEVATION A-A

(Elevation C-C opposite hand)



ELEVATION B-B



SECTION D-D

NOTES:

Wingwalls shall be constructed on a horizontal curve. For offsets, see Sheet No. 9 of 17.
For Timber Header Detail, Section @ ℄ Bent and Steel Pile Splice, see Sheet No. 5 of 17.
Fill at End Bent .1 shall not be carried above bottom of beam and wings until adjacent superstructure span is in place.
For reinforcement in curb, parapet and end post, see Sheet No. 16 of 17 and Sheet No. 17 of 17.
#6H2 bars to be bent in field.

BRIDGE OVER RTE. I-29 AND RTE. I-35

STATE ROAD SOUTH RAMP - INTERSTATE 29

IN KANSAS CITY

PROJECT NO. I-29-1 (22) (RTE. I-29) STA. 112+00.27

CLAY COUNTY

DETAILED JUNE 1967 BY HERD
CHECKED AUG. 1967 BY MOORE

R. W. BOOKER & ASSOCIATES, INC.
CONSULTING ENGINEERS
1139 OLIVE STREET
ST. LOUIS, MISSOURI 63101

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

A-1763

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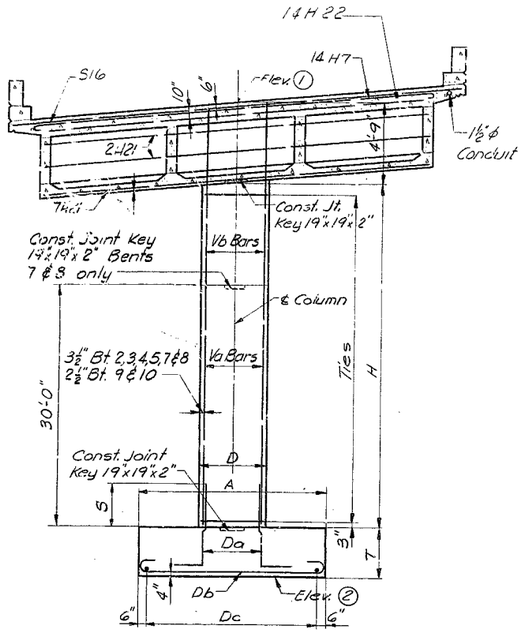
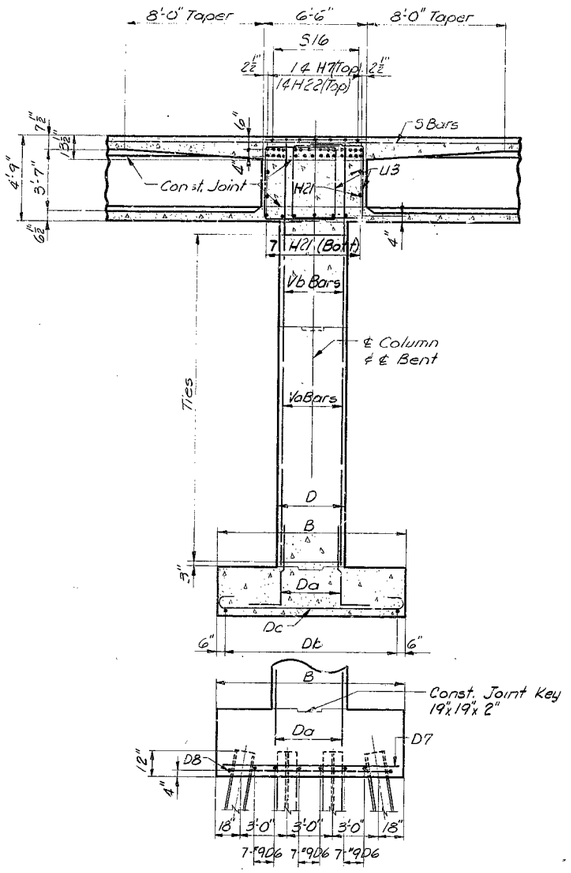
MISSOURI STATE HIGHWAY DEPARTMENT

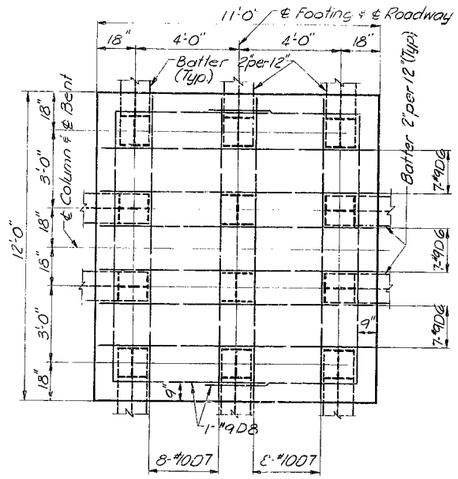
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	101	



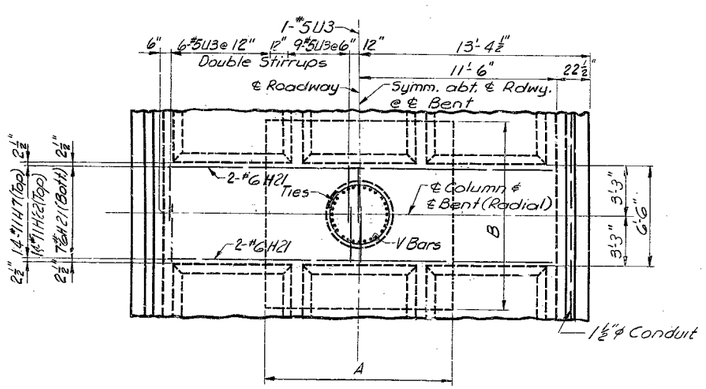
ELEVATION



SECTION AT ℄



PILE FOOTING
(Bents No. 9 ℄ 10)



PLAN

INT. BENTS NO. 2,3,4,5,7,8,9 & 10

BENT NO.	DIMENSIONS FOOTING A	B	T	COLUMN H	D	ELEVATIONS ①	②
2	12'-0"	12'-0"	4'-3"	36'-7"	4'-6"	908.59	863.00
3	12'-0"	12'-0"	4'-3"	32'-6"	4'-6"	908.00	866.50
4	12'-0"	12'-0"	4'-3"	34'-2⅛"	4'-6"	906.68	863.50
5	14'-0"	14'-0"	4'-3"	29'-8¾"	4'-6"	901.72	856.00
7	12'-0"	12'-0"	4'-3"	55'-7⅛"	5'-0"	899.59	835.00
8	12'-0"	12'-0"	4'-3"	57'-8⅛"	5'-0"	895.22	828.50
9	11'-0"	12'-0"	4'-0"	28'-11"	5'-0"	890.67	853.00
10	11'-0"	12'-0"	4'-0"	33'-4¼"	5'-0"	886.11	844.00

REINFORCING

BENT NO.	COLUMNS Va BARS	Vb BARS	TIES	FOOTINGS Da BARS	S	Db BARS	Dc BARS	REMARKS
2		10-#18S V7 & 10-#18S V8	37-#5 V4 @ 12"	10-#18S D1 & 10-#18S D4	5'-6" for D1 11'-6" for D4	23-#10 D2	23-#10 D2	Stagger alt. bar splices in col.
3		10-#18S V9 & 10-#18S V10	33-#5 V4 @ 12"	do	do	23-#10 D2	23-#10 D2	do
4		10-#18S V11 & 10-#18S V12	34-#5 V4 @ 12"	do	do	23-#10 D2	23-#10 D2	do
5		10-#18S V13 & 10-#18S V14	40-#5 V4 @ 12"	do	do	27-#9 D3	27-#9 D3	do
7	30-#18S V15	15-#18S V16 & 15-#18S V17	56-#5 V5 @ 12"	15-#18S D1 & 15-#18S D4	do	23-#10 D2	23-#10 D2	do
8	30-#18S V15	15-#18S V18 & 15-#18S V19	58-#5 V5 @ 12"	do	do.	23-#10 D2	23-#10 D2	do
9	30-#11 V20		29-#3 V6 @ 12"	30-#11 D5	2'-10½"	21-#9 D6	16-#10 D7	Da, Db & Dc bars are straight
10	36-#11 V21		34-#3 V6 @ 12"	36-#11 D5	2'-10½"	21-#9 D6	16-#10 D7	do

NOTES: Min. Splice Length: #18S bars-5'-6"; #11 bars-2'-10"
Extend 18S 4'-6" into beam.
Alternate D1 with D4, V7 with V8, V9 with V10, V11 with V12, V13 with V14, V16 with V17, and V18 with V19 bars.

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DETAILED JUNE 1967 BY SHANK
CHECKED AUG. 1967 BY MALI

R. W. BOOKER & ASSOCIATES, INC.
CONSULTING ENGINEERS
1139 OLIVE STREET
ST. LOUIS, MISSOURI 63101

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

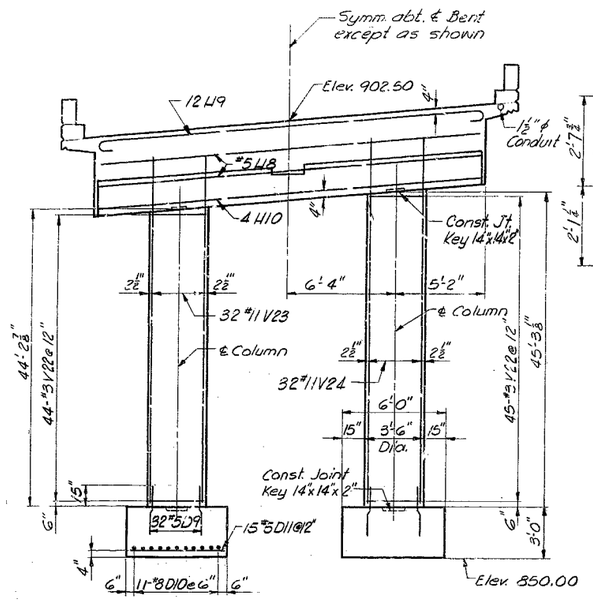
Sheet No. 7 of 17.

BRIDGE OVER RTE. I-29 AND RTE. I-35
STATE ROAD SOUTH RAMP - INTERSTATE 29
IN KANSAS CITY
PROJECT NO. I-29-1 (22) (RTE. I-29) STA. 112 + 00.27
CLAY COUNTY

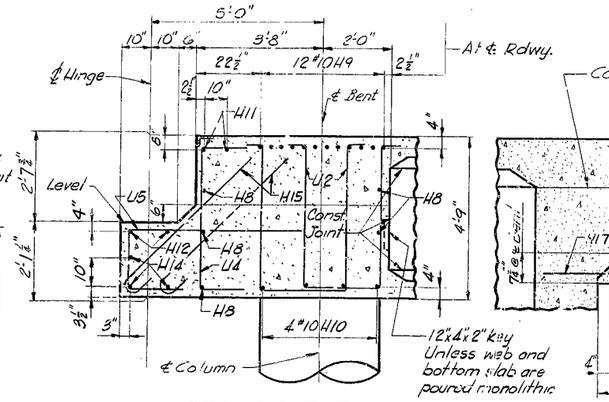
A-1762

MISSOURI STATE HIGHWAY DEPARTMENT

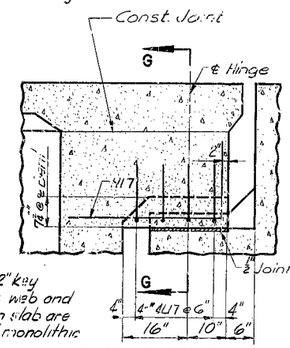
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		12	102	



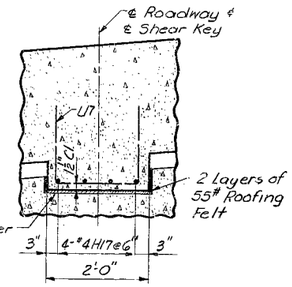
ELEVATION



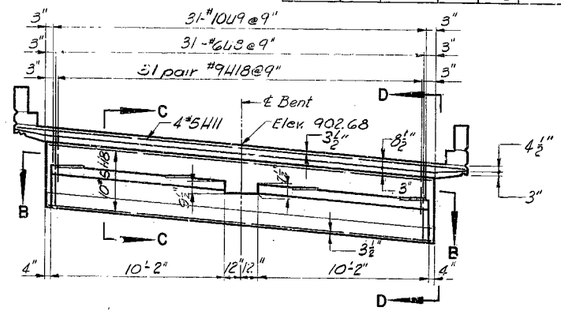
SECTION E-E



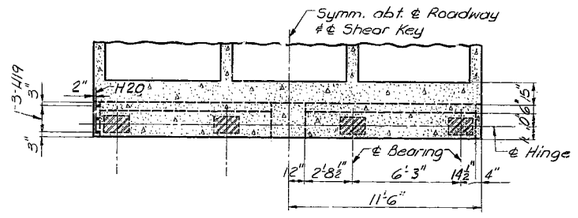
SECTION THRU SHEAR KEY



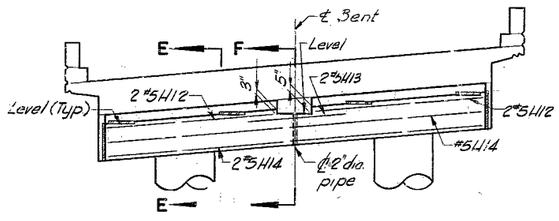
SECTION G-G



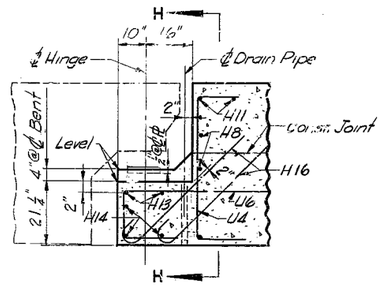
ELEVATION AT ℄ HINGE
(Looking Down Station)



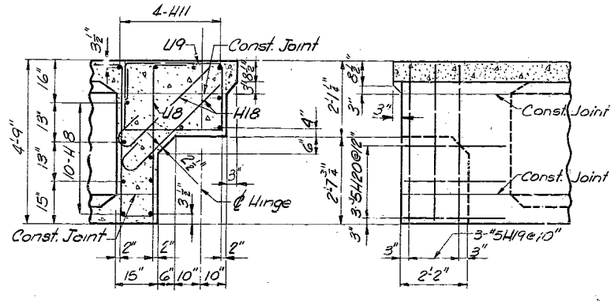
SECTION B-B



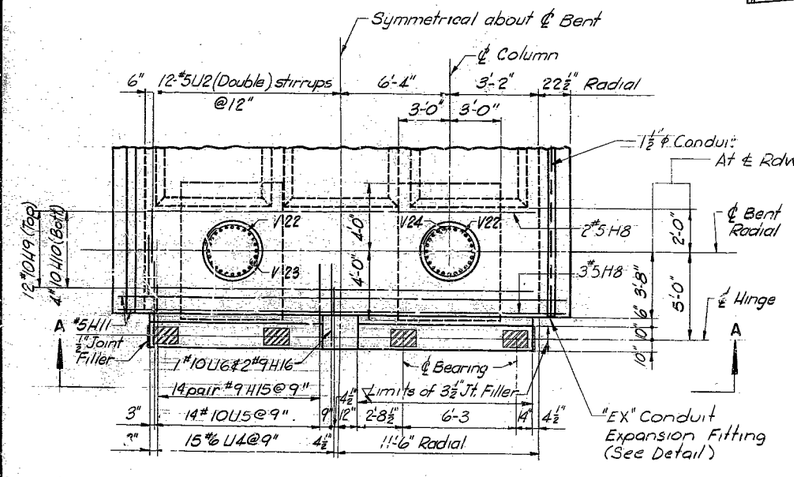
ELEVATION A-A



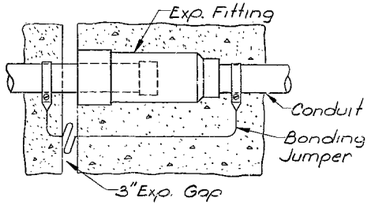
SECTION F-F



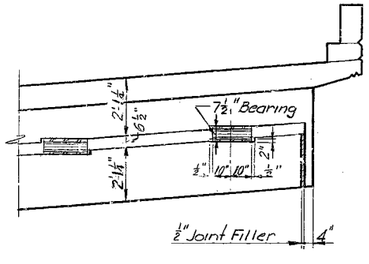
SECTION C-C VIEW D-D



PLAN



"EX" CONDUIT EXPANSION FITTING



SECTION H-H

NOTES:
For Expansion Device see Sheet No. 11 of 17.
For Bearings see sheet No. 14 of 17.

INTERMEDIATE BENT NO. 6

BRIDGE OVER RTE. I-29 AND RTE. I-35
STATE ROAD SOUTH RAMP-INTERSTATE 29
IN KANSAS CITY
PROJECT NO. I-29-1(22)(RTE. I-29) **STA.** 112+00.27
CLAY **COUNTY**

DETAILED AUG 1967 BY SHANK
CHECKED AUG 1967 BY MALI

R. W. BOOKER & ASSOCIATES, INC.
CONSULTING ENGINEERS
1139 OLIVE STREET
ST. LOUIS, MISSOURI 63101

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

A-1763

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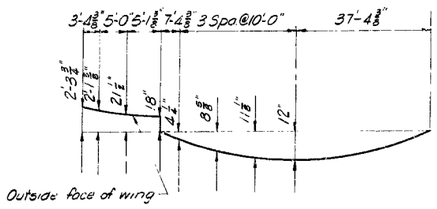
MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	103	



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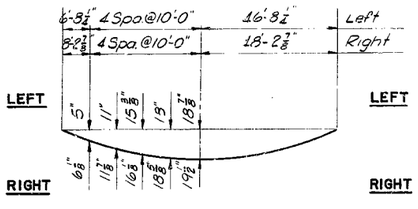
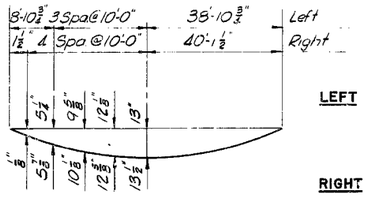


SPAN (2-3)



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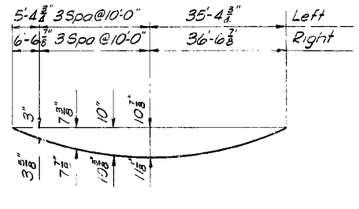
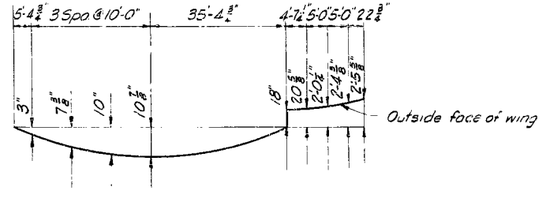


SPAN (6-7)



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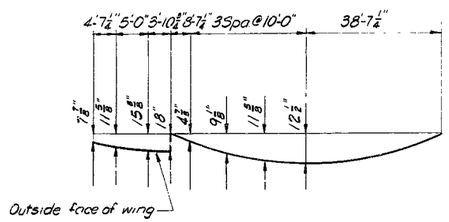

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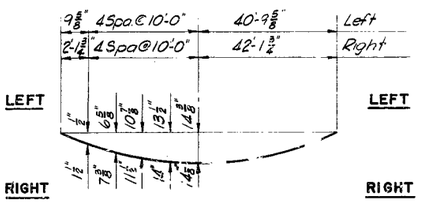
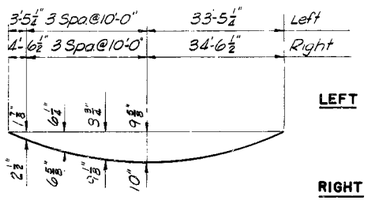
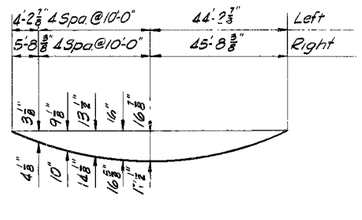
SPAN (1-2)



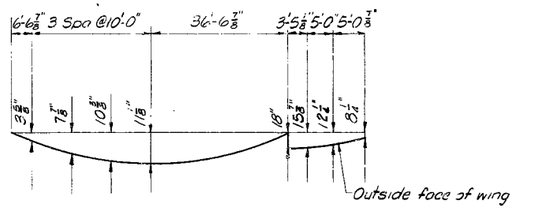
SPAN (3-4)



SPAN (5-6)

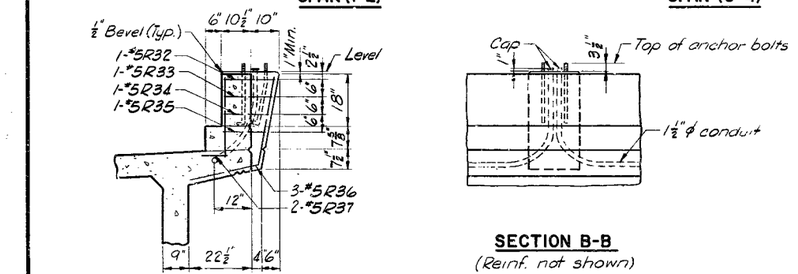


SPAN (7-8)

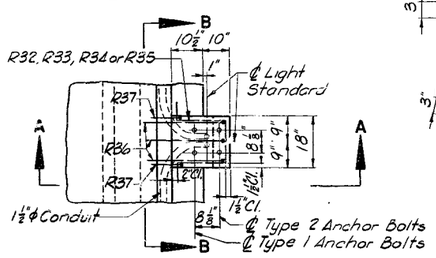


RIGHT

SPAN (10-11)

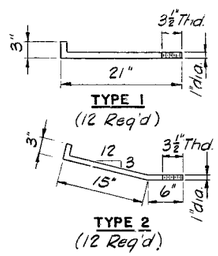


SECTION A-A



PLAN

SECTION B-B
(Reinf. not shown)



ANCHOR BOLT DETAILS

SPAN (3-4)

SPAN (5-6)

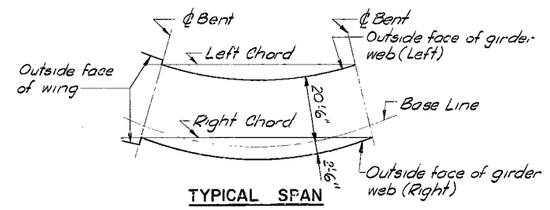
CURVE OFFSETS

CONDUIT SYSTEM NOTES:

Cost of furnishing and placing conduit expansion fittings, junction boxes and anchor bolts for light standard shall be included in contract unit price of conduit system (on structures.)
Anchor bolts to be furnished complete with Standard Hex. nuts and washers, all galvanized.
Light standards, wiring and fixtures to be furnished and installed by others.
All conduit to be rigid galvanized steel with 3" minimum cover in concrete.
Shift reinforcing steel in field where necessary to clear conduit and junction boxes.
Conduit shall be secured to concrete with clamps at about 5'-0" centers.
Top of light standard supports to be made horizontal, anchor bolts to be placed vertically.
For details of light standards and wiring see Electrical Plans.
Galvanized Expansion Fittings shall provide a minimum of movement in either direction of 4" at open joints and 1" at filled joints. Fittings shall be equal to O.Z. Elec. Mfg. Co. Expansion Fitting "EX" with approved bonding jumper. (See Sheet 8 of 17.)
All junction boxes shall be flush mounted and equal to O.Z. Elec. Mfg. Co. Type "YU".
Place ½"ϕ drain holes at low points in conduits and junction boxes.

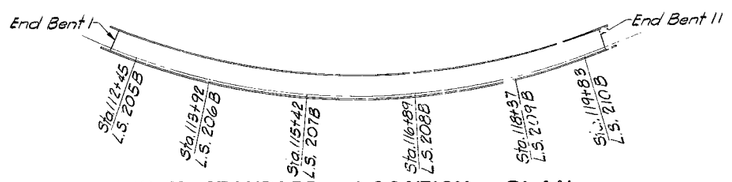
SPAN (7-8)
SPAN (8-9)
SPAN (9-10)

RIGHT
SPAN (10-11)



TYPICAL SPAN

CURVE OFFSET LOCATION PLAN



LIGHT STANDARD LOCATION PLAN

LIGHT STANDARD DETAILS

DETAILED SEPT. 1967 BY HERD.
CHECKED SEPT. 1967 BY MALI

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

R. W. BOOKER & ASSOCIATES, INC.
CONSULTING ENGINEERS
1139 OLIVE STREET
ST. LOUIS, MISSOURI 63101

BRIDGE OVER RTE. I-29 AND RTE. I-35

STATE ROAD SOUTH RAMP - INTERSTATE 29

IN KANSAS CITY

PROJECT NO. I-29-1(22)(RTE.I-29) **STA.** 112+00.27

CLAY **COUNTY**

Sheet No. 9 of 17.

A-1763

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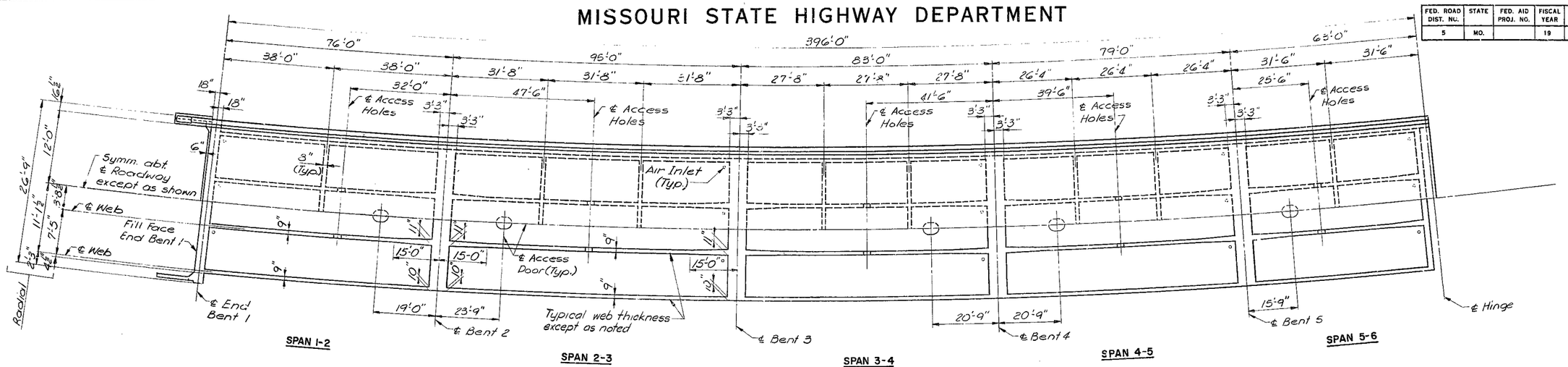
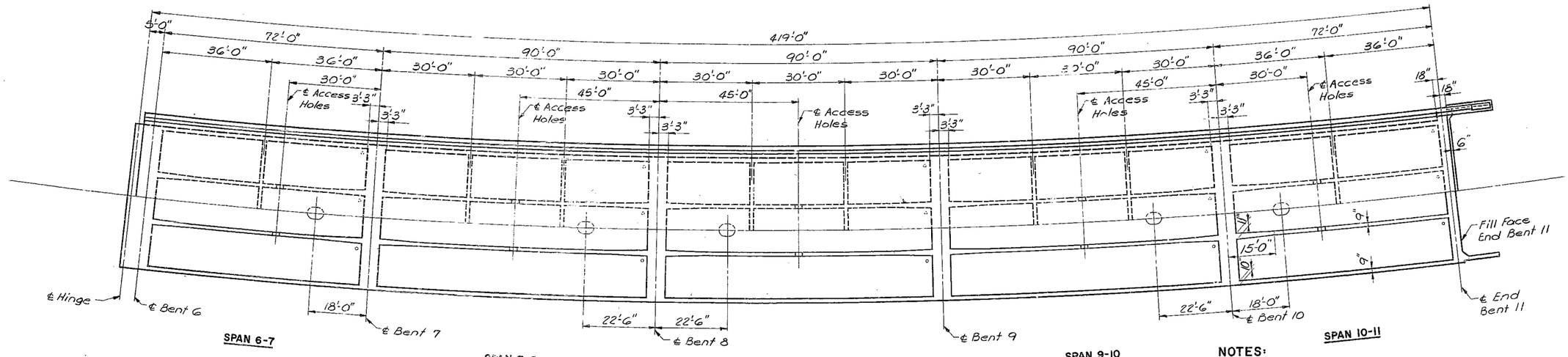
MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	104	



SPAN 1-2 THRU SPAN 5-6



SPAN 6-7 THRU SPAN 10-11

HALF PLAN & SECTION

NOTES:

All longitudinal dimensions shown are measured along ℄ Rdwy.
For Transverse Section see Sheet No. 11 of 17.
For Air Inlet Detail, Access Door Detail and Pouring Sequence see Sheet No. 15 of 17.

BRIDGE OVER RTE. I-29 AND RTE. I-35

STATE ROAD SOUTH RAMP - INTERSTATE 29

IN KANSAS CITY

PROJECT NO. I-29-1 (22) (RTE. I-29) **STA.** 112 + 00.27

CLAY **COUNTY**

A-1763

401

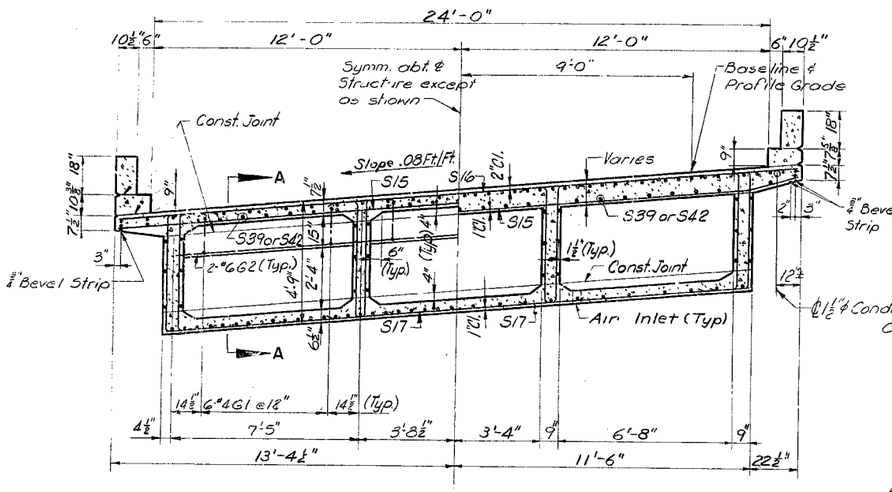
DETAILED JUNE 1967 BY SHANK
CHECKED AUG 1967 BY MALI

R. W. BOOKER & ASSOCIATES, INC.
CONSULTING ENGINEERS
1139 OLIVE STREET
ST. LOUIS, MISSOURI 63101

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

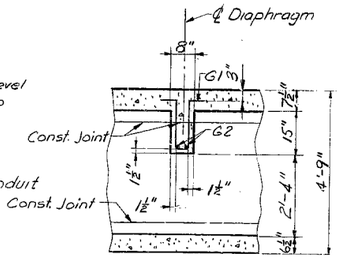
MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	105	

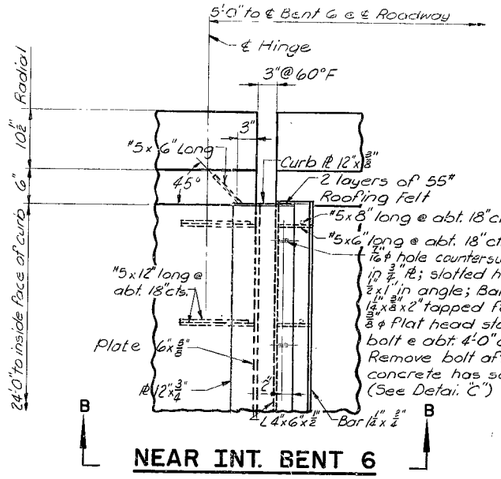


HALF SECTION NEAR DIAPHRAGMS

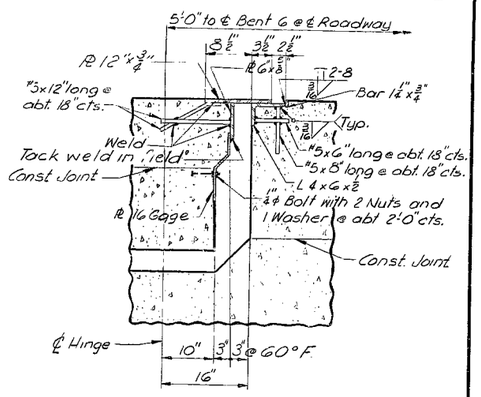
HALF SECTION NEAR INT. BENTS



SECTION A-A

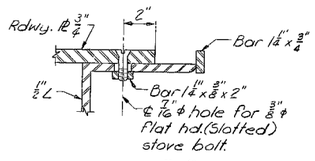


NEAR INT. BENT 6

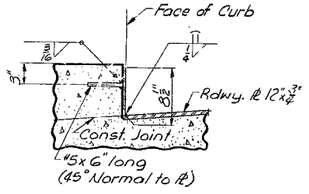


SECTION B-B

DETAILS OF PLATE EXPANSION DEVICE



DETAIL "C"



SECTION THRU CURB

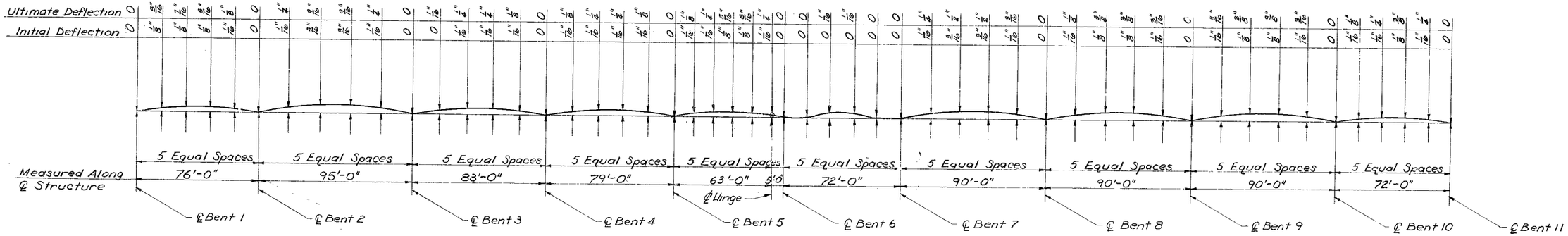
GENERAL NOTES:

Expansion device shall be fabricated in one section, except that when the length is over 40 Feet, splicing is permissible. The expansion device shall be bent to conform to crown of roadway.

#5 Bars for expansion device shall be structural grade. Approved stud welded anchors may be used in lieu of #5 bars shown.

Use 2 layers of 55# roofing felt between the sliding contact surface of curb plate and concrete curb.

Weight of all Expansion Device material is included in the Estimated Weight of Fabricated Structural Carbon Steel.



CAMBER DIAGRAM

BRIDGE OVER RTE. I-29 AND RTE. I-35

STATE ROAD SOUTH RAMP - INTERSTATE 29

IN KANSAS CITY

PROJECT NO. I-29-1(22)(RTE.I-29) STA. 112+00.27

CLAY COUNTY

DETAILED JUNE 1967 BY GREENWELL & SHANK
CHECKED AUG 1967 BY MALI

R. W. BOOKER & ASSOCIATES, INC.
CONSULTING ENGINEERS
1139 OLIVE STREET
ST. LOUIS, MISSOURI 63101

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

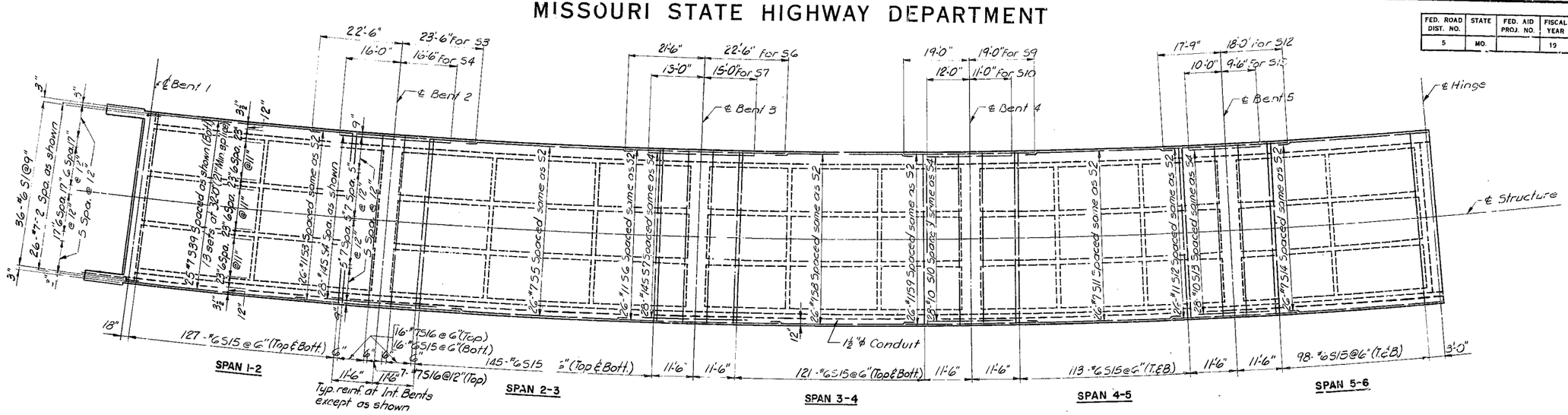
Sheet No. 11 of 17.

A-1763

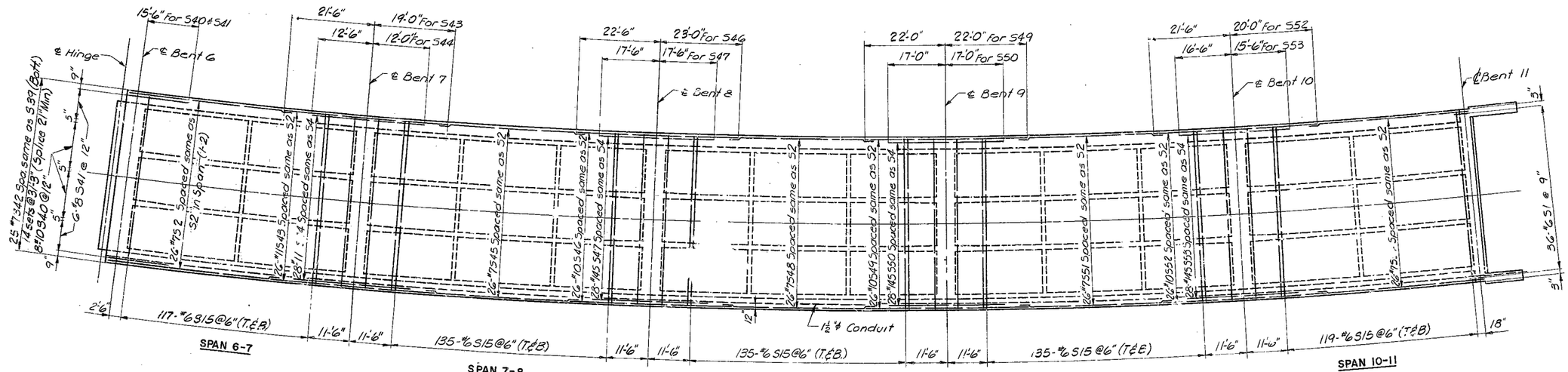
402

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		13	106	



SPAN 1-2 THRU SPAN 5-6



SPAN 6-7 THRU SPAN 10-11

TOP SLAB PLAN

NOTES:

All longitudinal reinforcing shown is for top of top slab except as noted.
All longitudinal dimensions are measured along ℄ Structure along curve.
All transverse dimensions are radial.
Longitudinal reinf. steel shall be placed so that ends shall not be more than 1"± from ⅝" plate and 6x4"L @ Exp. Device.

BRIDGE OVER RTE. I-29 AND RTE. I-35

STATE ROAD SOUTH RAMP-INTERSTATE 29

IN KANSAS CITY

PROJECT NO. I-29-1(22)(RTE. I-29) **STA.** 112+00.27

CLAY **COUNTY**

DETAILED JUNE 1967 BY SHANK
CHECKED AUG 1967 BY MALI

R. W. BOOKER & ASSOCIATES, INC.
CONSULTING ENGINEERS
1139 OLIVE STREET
ST. LOUIS, MISSOURI 63101

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

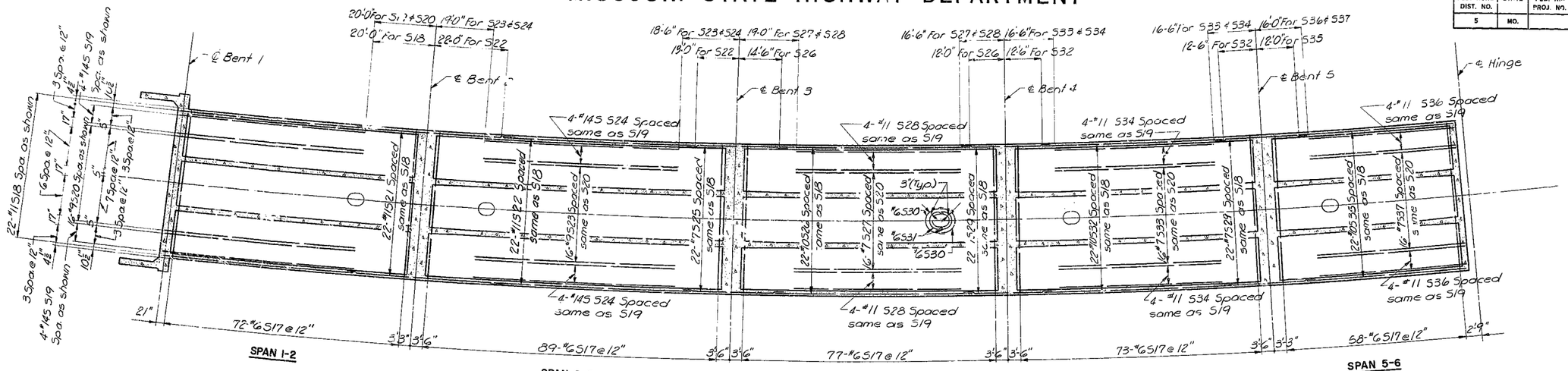
Sheet No. 12 of 17.

A-1763

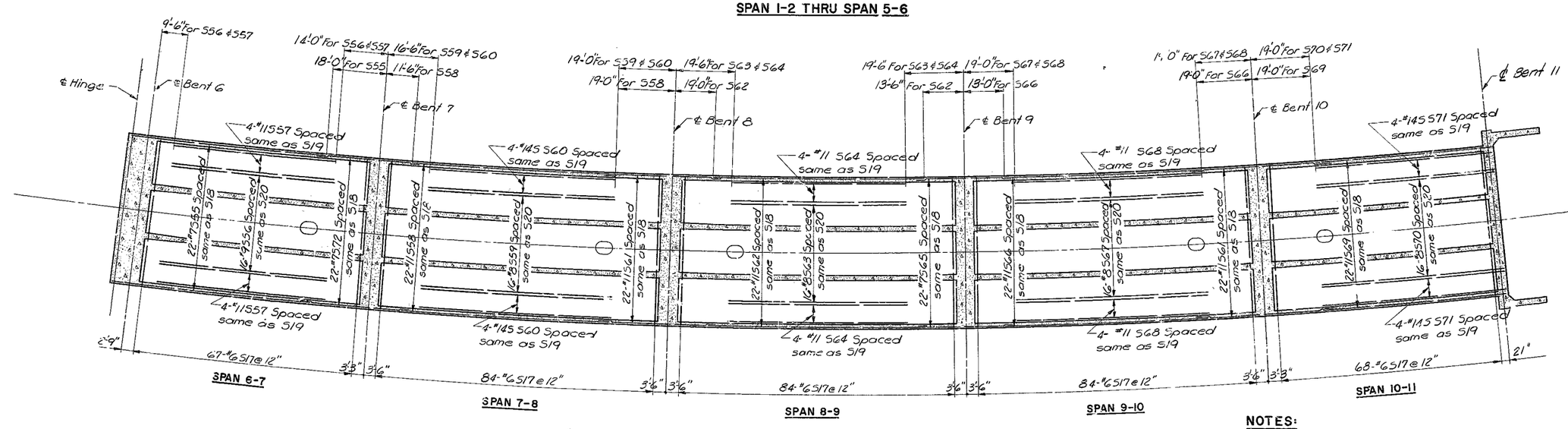
403

MISSOURI STATE HIGHWAY DEPARTMENT

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



SPAN 1-2 THRU SPAN 5-6



SPAN 6-7 THRU SPAN 10-11

BOTTOM SLAB PLAN

NOTES:

For location of access doors see Sheet No. 10 of 17.
For section thru slab see Sheet No. 11 of 17.
Bottom slab reinforcing shall be cut in field to allow access door installation.
All longitudinal dimensions shown are measured along ℄ Structure along curve.
All transverse dimensions are radial.

BRIDGE OVER RTE. I-29 AND RTE. I-35

STATE ROAD SOUTH RAMP-INTERSTATE 29

IN KANSAS CITY

PROJECT NO. I-29-1(22)(RTE. I-29) **STA.** 112+00.27

CLAY **COUNTY**

DETAILED JUNE 1967 BY SHANK
CHECKED AUG 1967 BY MALI

R. W. BOOKER & ASSOCIATES, INC.
CONSULTING ENGINEERS
1139 OLIVE STREET
ST. LOUIS, MISSOURI 63101

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

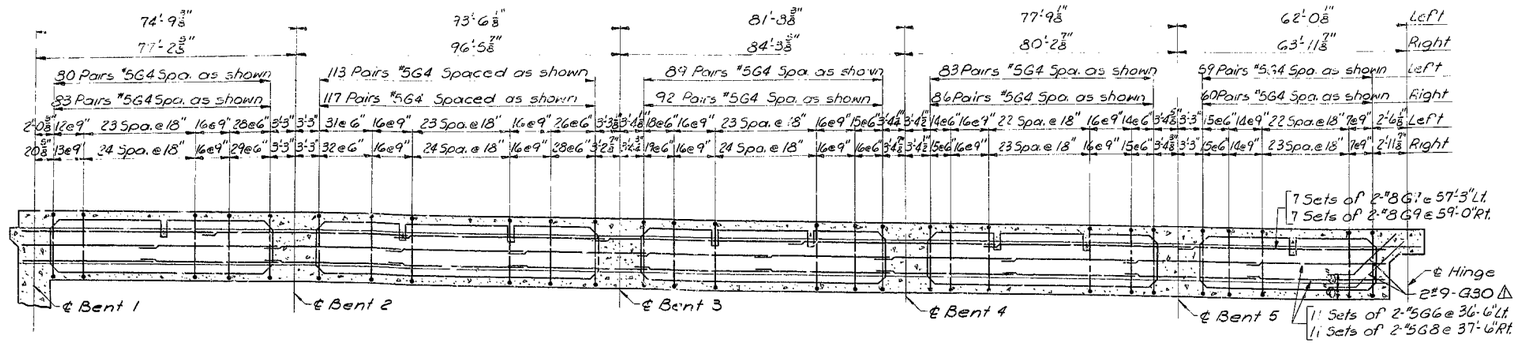
Sheet No. 13 of 17.

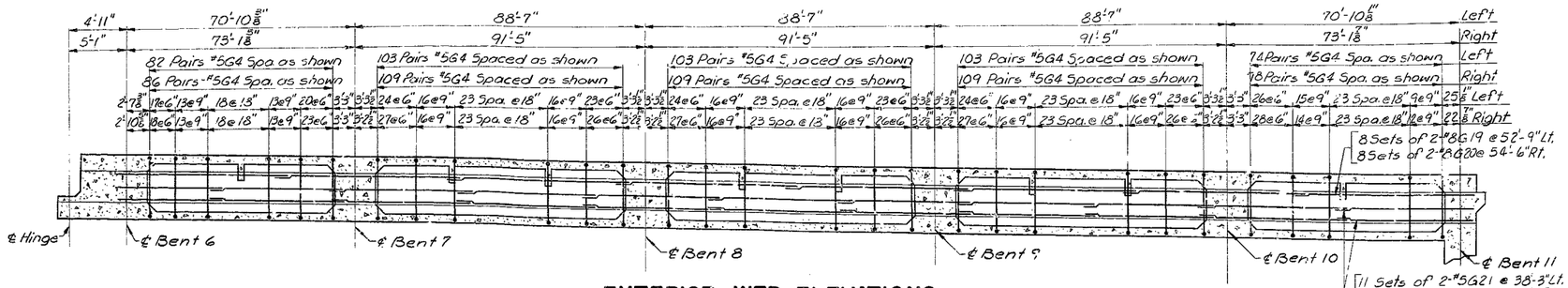
A-1763

404

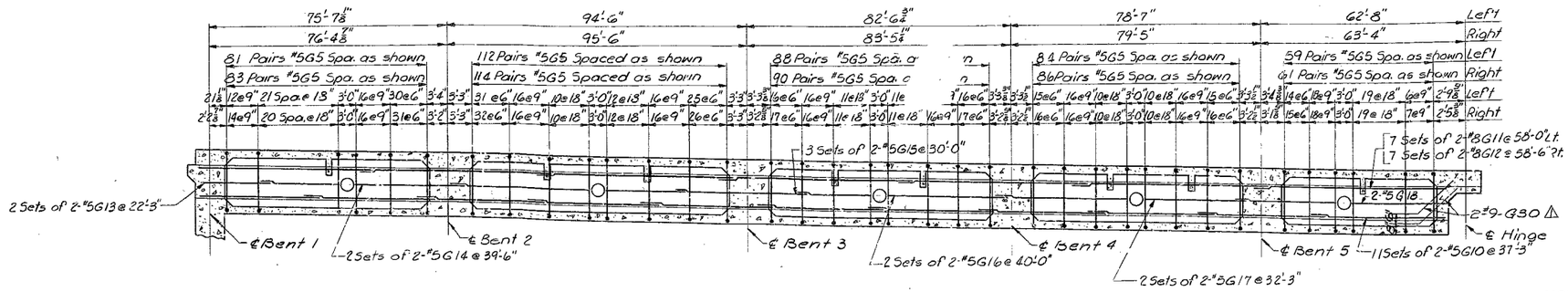
MISSOURI STATE HIGHWAY DEPARTMENT

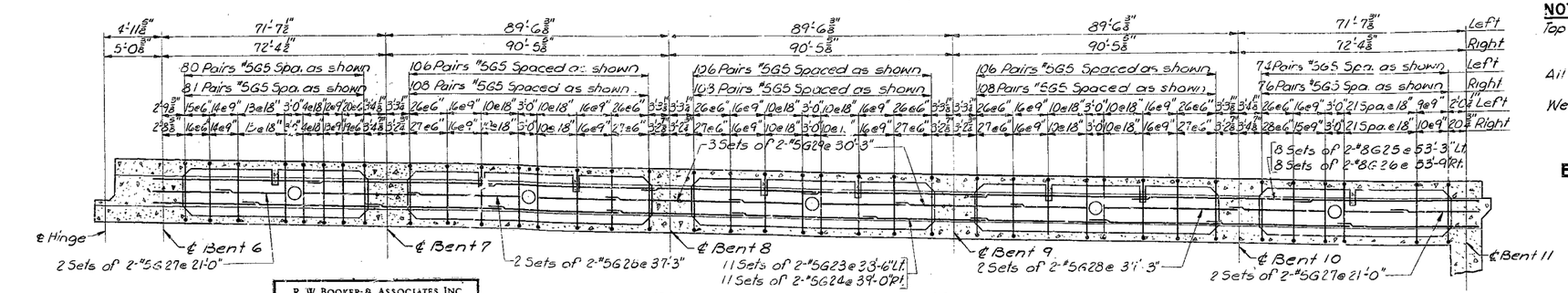
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	108	



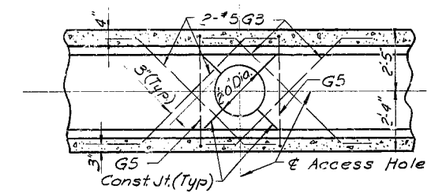


EXTERIOR WEB ELEVATIONS

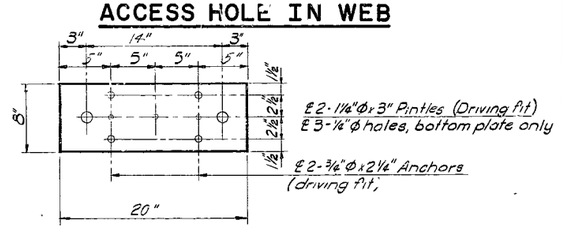




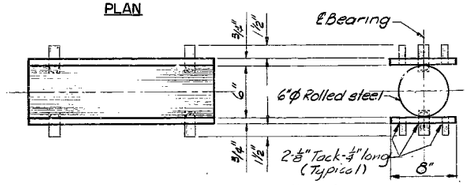
INTERIOR WEB ELEVATIONS



ACCESS HOLE IN WEB

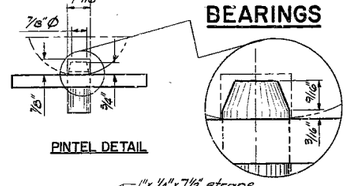


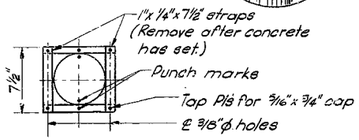
PLAN



ELEVATION

BEARINGS





NOTES:

Top and bottom plates to be ASTM A514-67 alloy steel. Material for pintles and roller shall be cold finished carbon steel AISI C1045 or C1042. (Turned and polished.)

All bearing plates shall be straightened to plane surfaces.

Weight of expansion rollers is included in Fabricated Structural Carbon Steel item.

BRIDGE OVER RTE. I-29 AND RTE. I-35

STATE ROAD SOUTH RAMP - INTERSTATE 29

IN KANSAS CITY

PROJECT NO. I-29-1 (22) (RTE. I-29) STA. 112+00.27

CLAY COUNTY

A-1763

DETAILED JUNE 1967 BY MERTZ & SHANK

CHECKED AUG 1967 BY MALI

R W BOOKER & ASSOCIATES, INC.
CONSULTING ENGINEERS
1139 OLIVE STREET
ST. LOUIS, MISSOURI 63101

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

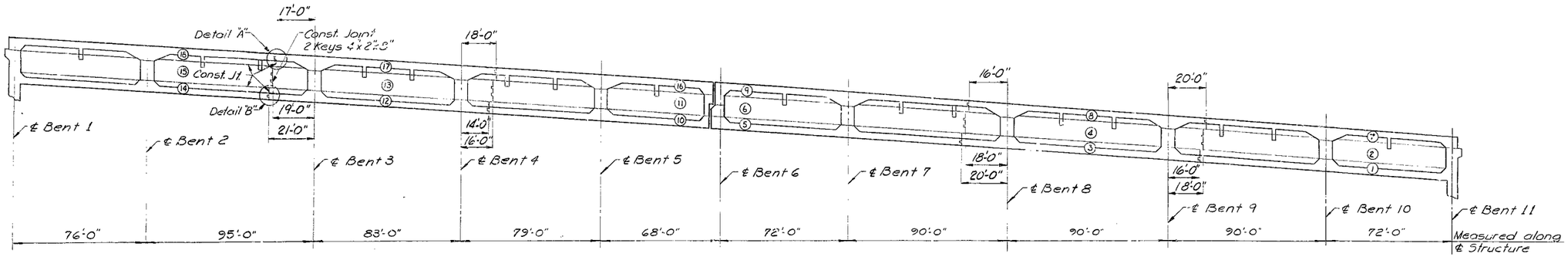
⚠ Rev. 1-18-68

Sheet No. 14 of 17.

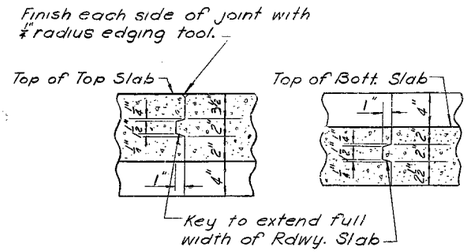
405

MISSOURI STATE HIGHWAY DEPARTMENT

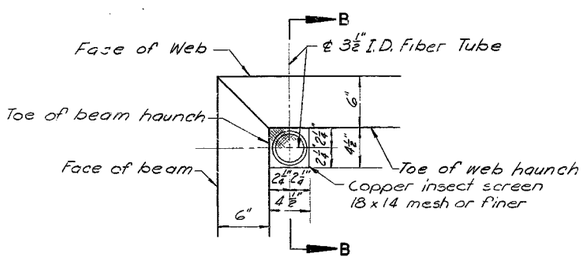
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	109	



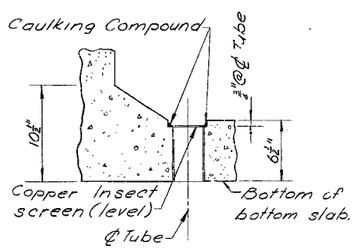
POURING SEQUENCE



DETAIL "A" DETAIL "B"

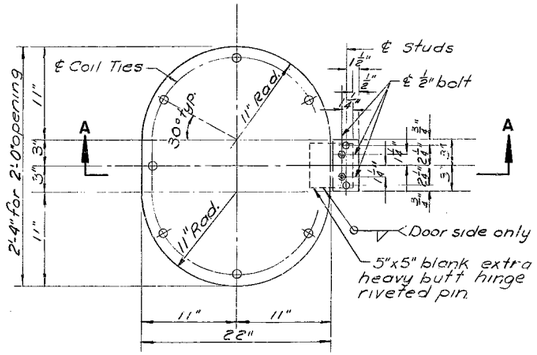


PLAN

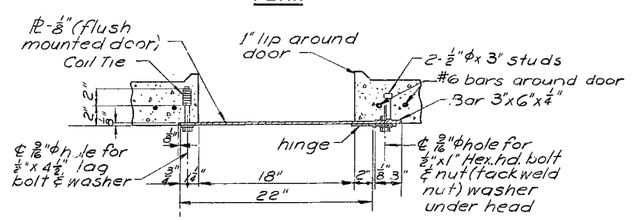


SECTION B-B

AIR INLET DETAIL



PLAN



SECTION A-A

ACCESS DOOR DETAILS

(10 Required)

NOTES:

Numbers in circles indicate the basic pouring sequence. Longitudinal joints in roadway slabs, unless specifically on plans, will not be permitted.

The contractor shall use an approved oscillating screed type, self-propelled mechanical finishing machine and shall pour roadway slabs at a rate of not less than 25 cubic yards per hour. He shall observe the basic pouring sequence unless he can demonstrate to the engineer that he can pour and satisfactorily finish the superstructure concrete at a rate which will permit the combining of such of the basic pours as may be specifically designated by the engineer as being compatible with design. Finishing machine loads will not be permitted on concrete less than 48 hours old.

With use of forms and basic falsework meeting the approval of the engineer, the girder webs and diaphragms may be poured with the bottom slab sections on which they bear.

All forms shall be removed from the interior of box girders except top slab forms which may be left in place.

Payment for furnishing and placing fiber tube, copper screen and caulking compound shall be included in price bid for other items of work.

Access doors to be assembled and in place while slab is being poured. Weight of access door is included in Estimated Weight of Fabricated Structural Carbon Steel.

Bottom surface of door to be flush with bottom slab. For location of access doors see Sheet No. 10 of 17.

BRIDGE OVER RTE. I-29 AND RTE. I-35

STATE ROAD SOUTH RAMP- INTERSTATE 29

IN KANSAS CITY

PROJECT NO. I-29-1 (22) (RTE. I-29) STA. 112+00.27

CLAY COUNTY

A-1763

409

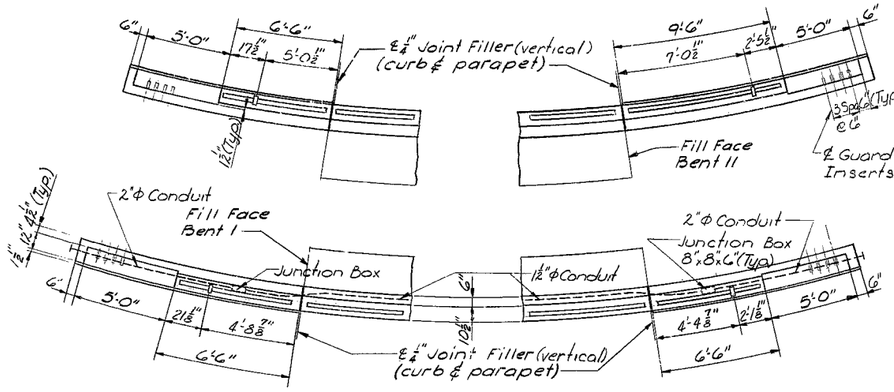
DETAILED JUNE 1967 BY F. MERTZ
CHECKED AUG 1967 BY MALI

R. W. BOOKER & ASSOCIATES, INC.
CONSULTING ENGINEERS
1139 OLIVE STREET
ST. LOUIS, MISSOURI 63101

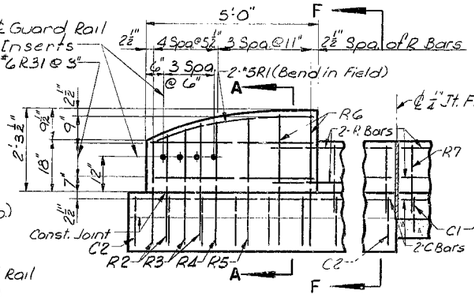
Note: This drawing is not to scale. Follow dimensions.

MISSOURI STATE HIGHWAY DEPARTMENT

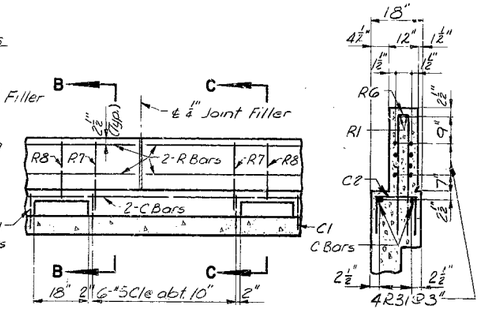
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	110	



PLAN OF END POSTS



SECTION AT END POST



SECTION AT OUTLETS

SECTION A-A

NOTES:

Cost of plastic Waterstop complete in place to be included in unit price bid for concrete.

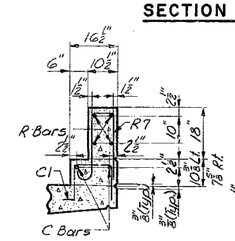
Plastic waterstop shall be placed in all parapet and curb filled joints on left side of bridge only.

All longitudinal dimension shown are measured along outside face of parapet along the curve except as shown.

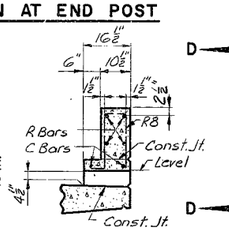
All transverse dimension shown are radial.

Anchors for attaching guard rail shall be ¾" threaded malleable (galv.) inserts having a min. depth of 3½" and filled with a plastic closing plug. Cost for furnishing and installing the insert and plug will be included in price bid for other items.

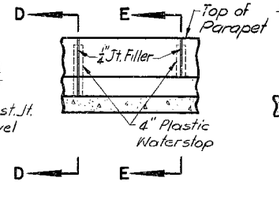
For details of curb and parapet not shown and end post ordinates see Sheet No. 17 of 17.



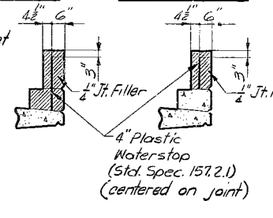
SECTION B-B



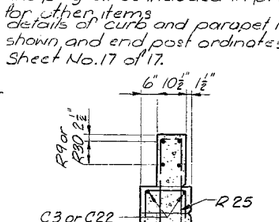
SECTION C-C



ELEVATION



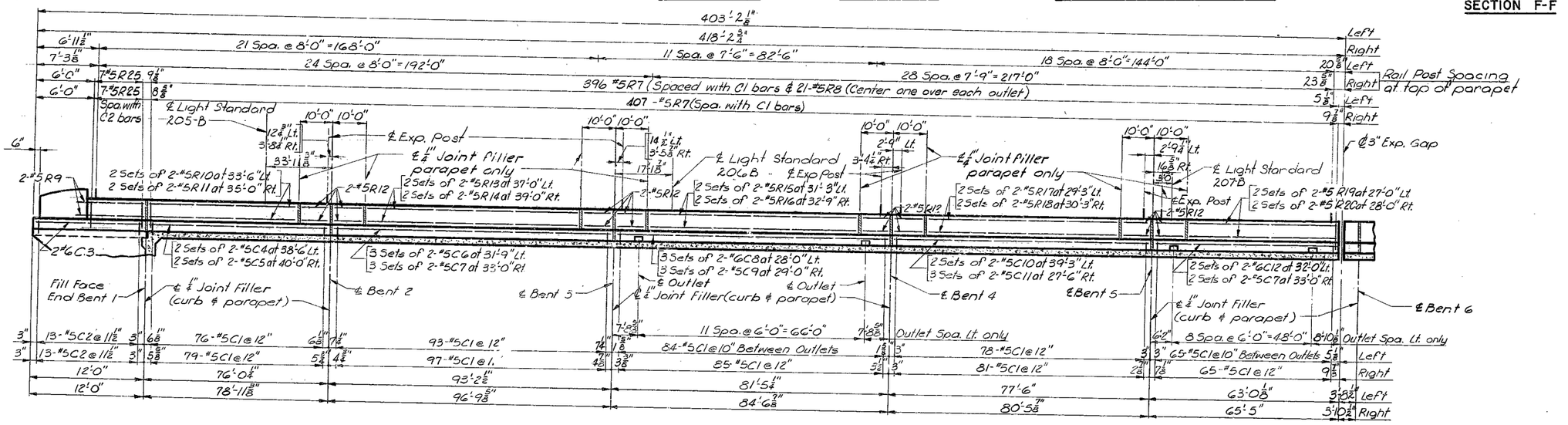
SECTION D-D



SECTION E-E

SECTION F-F

PLASTIC WATERSTOPS



SPAN 1-2 THRU SPAN 5-6

CURB & PARAPET ELEVATION

NOTES:

Light Standards are on Right Parapet only and measured along top of parapet.

For Light Standard Details see Sheet No. 9 of 17.

BRIDGE OVER RTE. I-29 AND RTE. I-35

STATE ROAD SOUTH RAMP - INTERSTATE 29

IN KANSAS CITY

PROJECT NO. I-29-1 (22) (RTE. I-29) **STA.** 112 +00.27

CLAY **COUNTY**

A-1763

DETAILED JUNE 1967 BY MANNISI & SHANK

CHECKED AUG. 1967 BY MOORE

R. W. BOOKER & ASSOCIATES, INC.
CONSULTING ENGINEERS
1130 OLIVE STREET
ST. LOUIS, MISSOURI 63101

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

Sheet No. 16 of 17.

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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		19	111	

GENERAL NOTES:

All handrail posts shall be set normal to grade.

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

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

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

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

All fillets ¼" except as noted.

All drafts 3° except as noted.

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

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

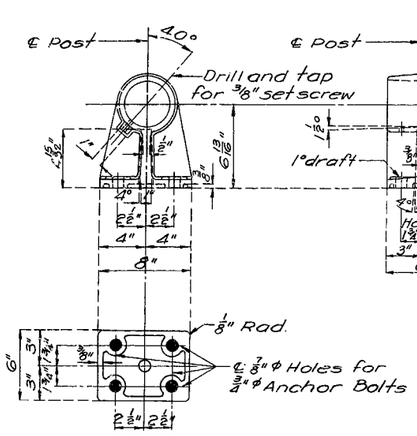
Top of curbs and parapets to be built parallel to grade with curb and parapet joints (except at end posts) normal to grade.

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

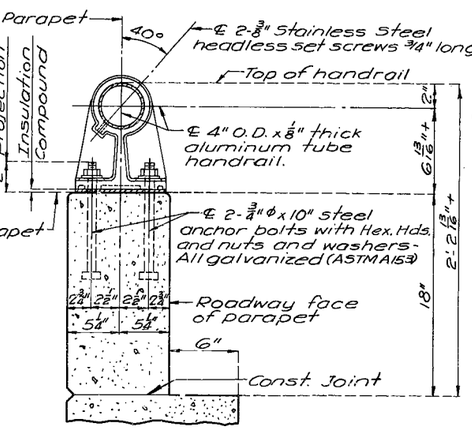
If the contractor desires, he may use drive fit cast aluminum end caps in lieu of welded aluminum closure plates.

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

Concrete end posts to be vertical.

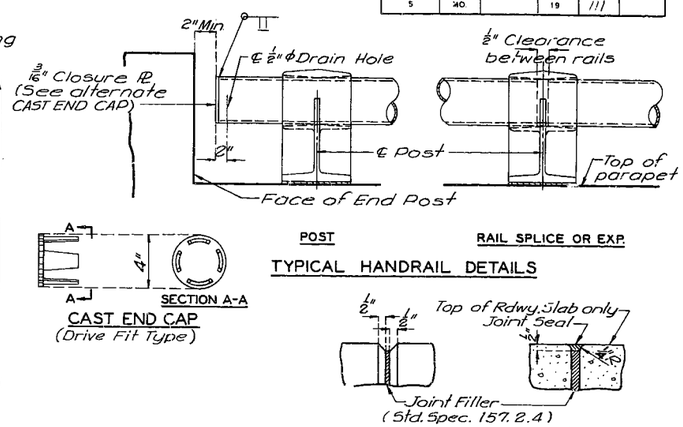


POST DETAILS



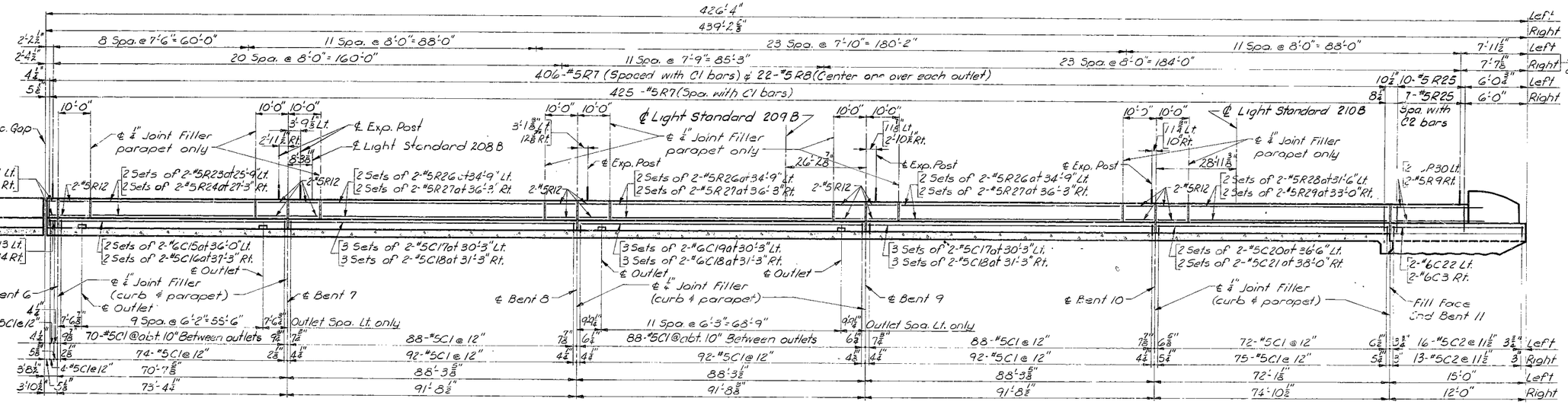
SECTION THRU HANDRAIL

SINGLE TUBE ALUMINUM RAILING



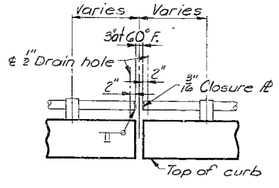
TYPICAL HANDRAIL DETAILS

FILLED JOINT DETAILS

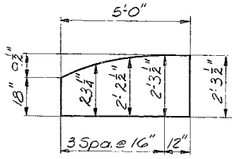


SPAN 6-7 THRU SPAN 10-11

CURB & PARAPET ELEVATION



EXP. GAP NEAR BENT 6



END POST ORDINATES

NOTE

For additional details and notes see Sheet No. 16 of 17.
Light Standards are on the Right Parapet only and measured along top of parapet.
For Light Standard Details see Sheet No. 9 of 17.

BRIDGE OVER RTE. I-29 AND RTE. I-35

STATE ROAD SOUTH RAMP-INTERSTATE 29

IN KANSAS CITY

PROJECT NO. I-29-1(22)(RTE. I-29) **STA.** 112+00.27

CLAY COUNTY

No.	Revised	Oct. 1965.
1.5.2	Nov. 1963	

DETAILED JULY 1967 BY SHANK

CHECKED AUG 1967 BY MOORE

R. W. BOOKER & ASSOCIATES, INC.
CONSULTING ENGINEERS
1139 OLIVE STREET
ST. LOUIS, MISSOURI 63101

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

A-1763

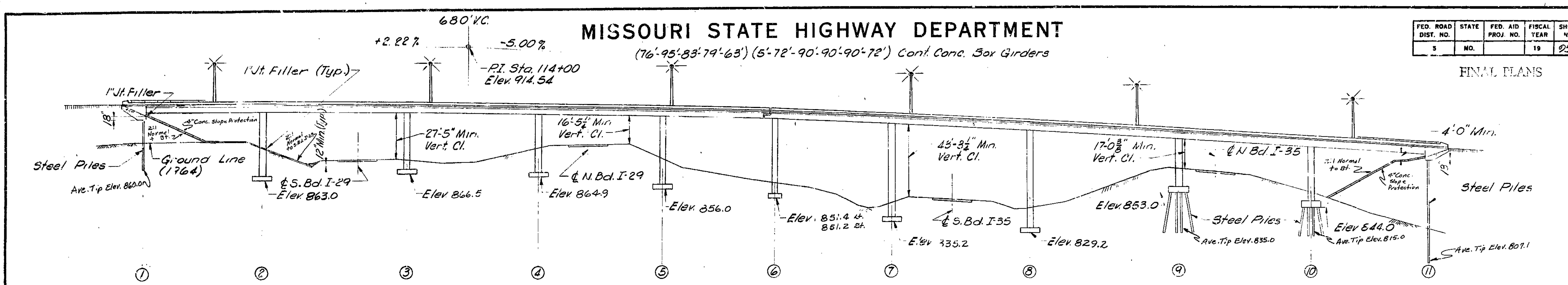
408

MISSOURI STATE HIGHWAY DEPARTMENT

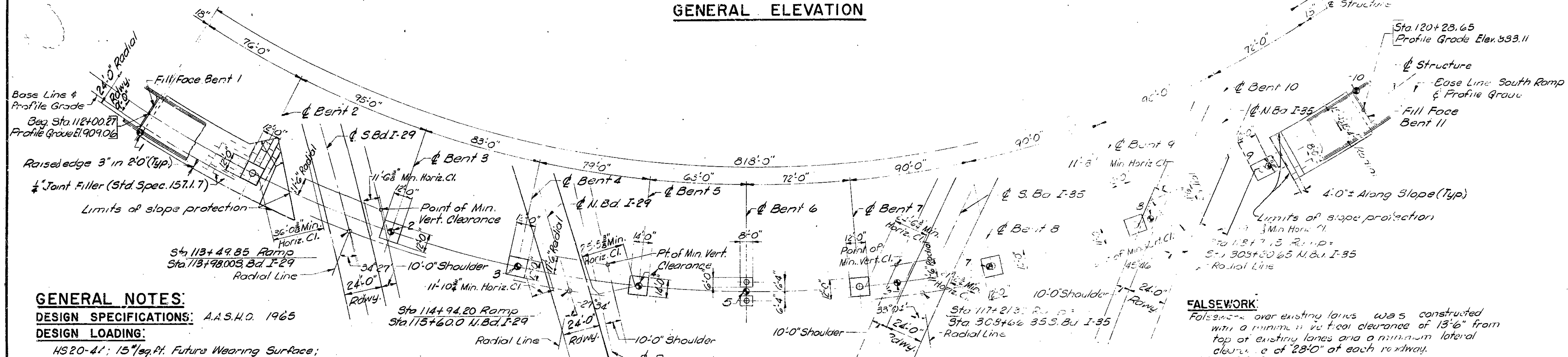
(76'-95'-83'-79'-63') (5'-72'-90'-90'-90'-72') Cont. Conc. Box Girders

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	95	

FINAL PLANS



GENERAL ELEVATION



PLAN

GENERAL NOTES:

DESIGN SPECIFICATIONS: A.A.S.H.O. 1965

DESIGN LOADING:

HS20-44; 15#/sq.ft. Future Wearing Surface;
Modified 24,000# Tandem Axle;
Earth 120#; Equivalent Fluid Pressure 30#

DESIGN UNIT STRESSES:

Class B Concrete (substructure) f'c = 1,200 p.s.i.
Class B1 Concrete (superstructure) f'c = 1,600 p.s.i.
Reinforcing Steel fs = 20,000 p.s.i.
Structural Steel (A.S.T.M. A36-66) fs = 20,000 p.s.i.
Steel Pile (A.S.T.M. A36-66) fb = 9,000 p.s.i.

SURFACE SEAL:

Superstructure deck was surface sealed.

PAINTING:

Structural steel bearings, were cleaned & painted one coat of red lead in the shop, with the two remaining coats applied in the field. No paint was applied to top surface of top plate or bottom surface of bottom plate of bearings. In lieu of painting, the expansion devices and access doors were galvanized, all galvanizing was done after fabrication. Cost of painting & galvanizing was included in price bid for other items.

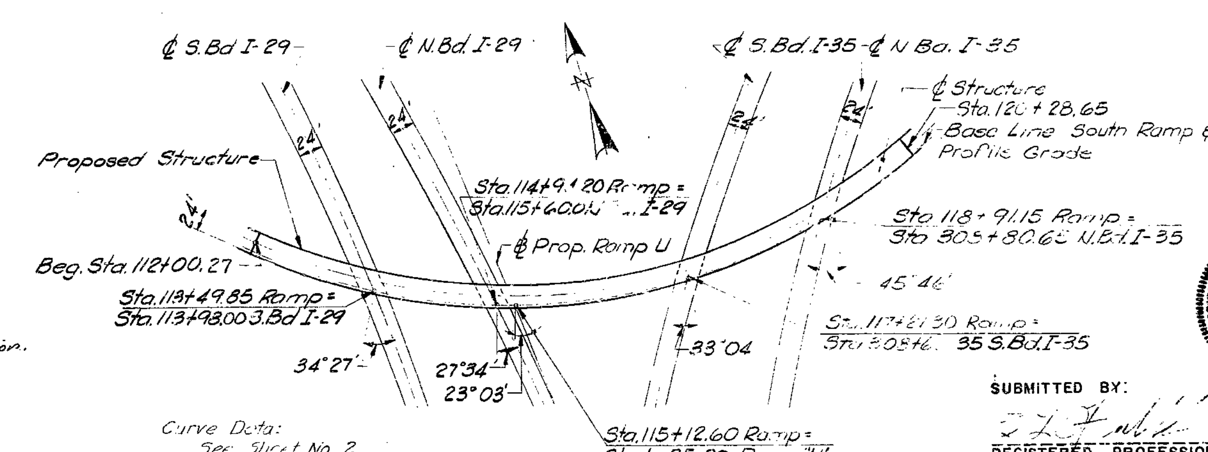
FALSEWORK:

Falsework over existing lanes was constructed with a minimum vertical clearance of 13'-6" from top of existing lanes and a minimum lateral clearance of 28'-0" at each roadway.

BORING DATA:

For Boring Data see Sheet No. 3 of 17.
"●" Indicates location of Boring.

BENCH MARK: Elev. 908.11, "□" on curb Lt. @ Bent No. 1



Curve Data: See Sheet No. 2

LOCATION SKETCH

DESIGNED July 1967 BY J. Parikh
DETAILED July 1967 BY Herd
CHECKED Aug. 1967 BY Mali

R. W. BOOKER & ASSOCIATES INC
CONSULTING ENGINEERS
1139 OLIVE STREET
ST. LOUIS, MISSOURI 63101

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

SUBMITTED BY: [illegible]
REGISTERED PROFESSIONAL ENGINEER
MISSOURI NO. E-10795

STATE OF MISSOURI · EUGENE L. FIELDHAMMER · NUMBER E-10795 · REGISTERED PROFESSIONAL ENGINEER

Sheet No. 1A of 5.

FINISHED

BRIDGE OVER RTE I-29 AND RTE. I-35

STATE ROAD SOUTH RAMP – INTERSTATE 29
IN KANSAS CITY
PROJECT NO. I-29-1 (22) (RTE. I-29) STA. 112 + 00.27
CLAY COUNTY

SUBMITTED BY D. B. Jenkins, BRIDGE ENGINEER, DATE 10/25/67
APPROVED BY [illegible], CHIEF ENGINEER, DATE 10/25/67

STD. 54.00
A-1763

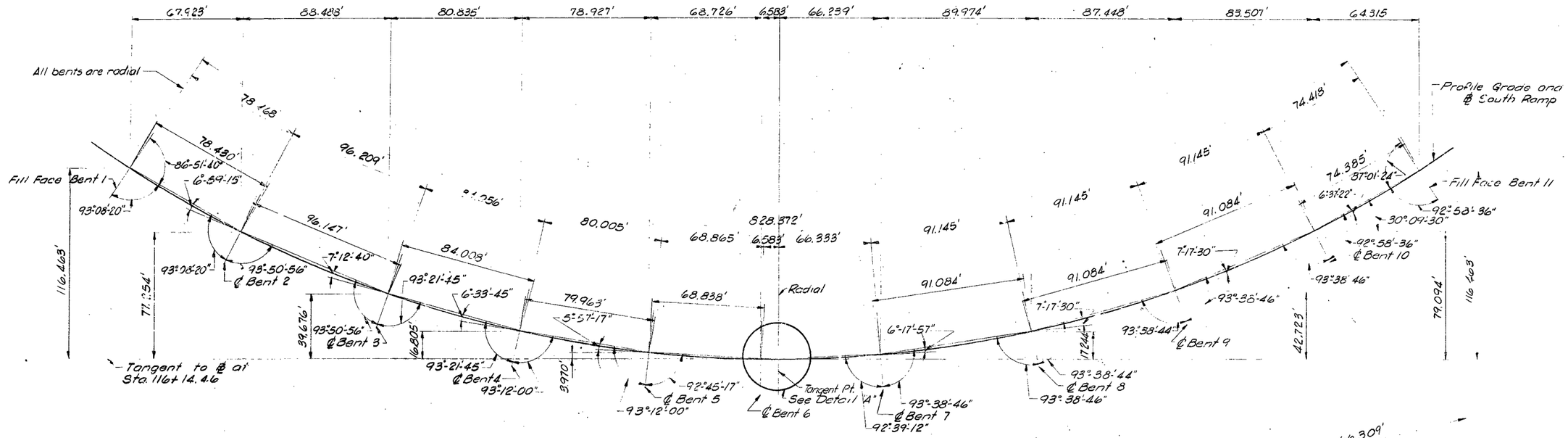
FINAL PLANS

409

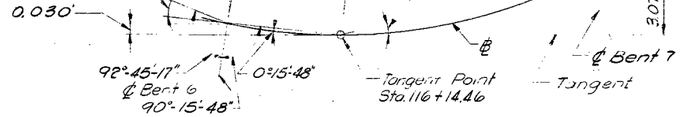
MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	5/6	

FINAL PLANS



LAYOUT PLAN



DETAIL "A"

PILE AND FOOTING DATA

Bent No.		1	2	3	4	5	6	7	8	9	10	11
BEARING PILE	Pile Type and Size	12BP53								14BP73	14BP73	12BP53
	Number	4								12	12	4
	Approximate Length Ft	40								15	28	67
	Design Bearing Tons	57								92	92	57
	Hammer Energy Req'd Ft Lbs.	12,800								21,600	21,600	12,800
SPREAD FOOTINGS	Foundation Material		Rock	Rock	Rock	Shale	Rock	Rock	Rock			
	Design Bearing Tons/Sq.ft.		7.6	7.6	7.6	5.4	10.5	10.0	10.0			

QUANTITIES

Item		Substr.	Superstr.	Total
Class 1 Excavation For Structures	Cu.Yd.	965.5	——	965.5 ✓
12" Steel Piles in Place	Lin. Ft.	422	——	422 ✓
14" Steel Piles in Place	Lin. Ft.	566	——	566 ✓
Class B Concrete	Cu. Yd.	194.0	——	194.0 ✓
Class B1 Concrete	Cu. Yd.	——	1867.4	1867.4 ✓
Reinforcing Steel	Lb.	52640	740,730	793,370 ✓
Fabricated Structural Carbon Steel	Lb.	——	2770	2770 ✓
Bridge Rail (Single Tube)	Lin. Ft.	——	1664	1664 ✓
Conduit System (on Structures)	Lump sum	——	1	1 ✓
Class B Concrete in lieu of Class B1	Cu. Yd.	——	21.0	21.0 ✓
Test Holes	L.F.	41	——	41 ✓
Crevice Concrete	Cu. Yd.	0.9	—	0.9 ✓
12" Steel Pile @ 90% Bid Price	Lin. Ft.	8	—	8 ✓

CURVE DATA

P.I. - 122+75.23
Δ - 126°08'09.87"
D - 8°00'
R - 716.20'
L - 1576.71'
T - 1409.76'
S.E. - 0.08'

QUANTITY NOTES:

All concrete and reinforcement above footings is included in superstructure quantities.
No payment for excavation was allowed at End Bents 1 and 11.

PILE AND FOOTING NOTES:

Minimum energy requirement of hammer based on plan length and design bearing value of piles. Increased by the factor (W+w)/2W when the weight of the ram (W) was less than the weight of the pile (w).
All piles were driven to practical refusal.
Compacted roadway fill (full roadway width) was placed up to elevation of bottom of concrete beam in front of and not less than 25'0" in back of End Bents No. 1 and 11 before steel piles were driven.
Footings were carried 6" into hard, solid undisturbed rock or 18" into soft rock or shale and cast against vertical face of same.

HORIZONTAL CURVE

Bents cannot be accurately located from the reference point on the tangent by conventional survey methods based on 100' chords.

DESIGNED

BRIDGE OVER RTE. I-29 AND RTE. I-35

STATE ROAD SOUTH RAMP - INTERSTATE 29

IN KANSAS CITY

PROJECT NO. I-29-1 (22) (RTE. I-29) STA. 112+00.27

CLAY COUNTY

A-1763

DETAILED JUNE 1967 BY HERD
CHECKED AUG. 1967 BY MALI

R W BOOKER & ASSOCIATES, INC
CONSULTING ENGINEERS
1139 OLIVE STREET
ST. LOUIS, MISSOURI 63101

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

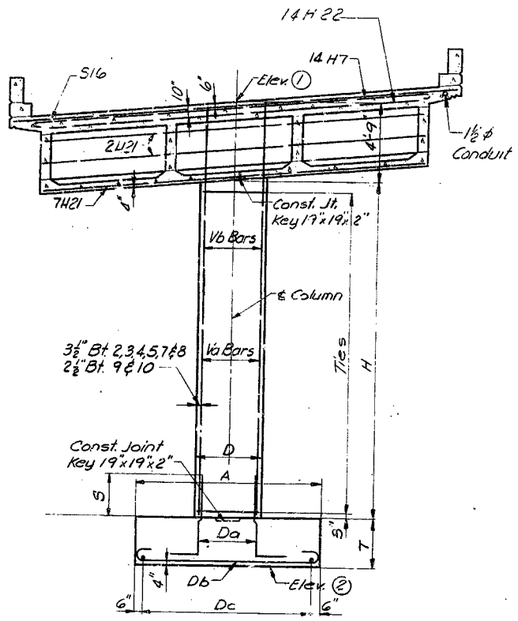
FINAL PLANS

410

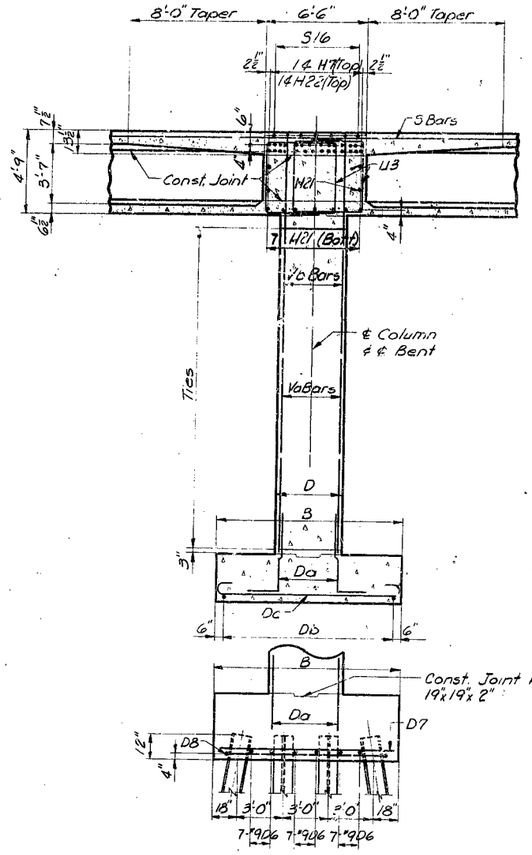
MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	101	

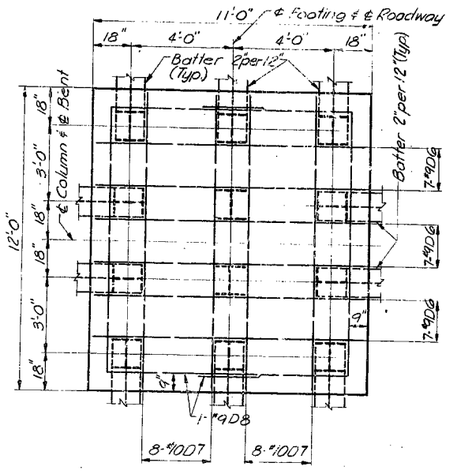
FINAL PLANS



ELEVATION



SECTION AT ℄

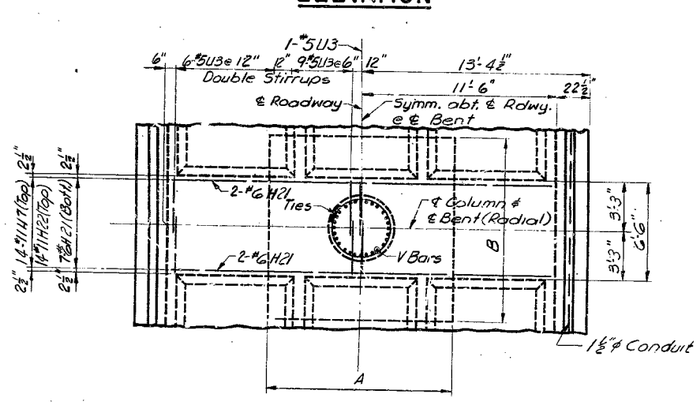


PILE FOOTING
(Bents No. 9 & 10)

BENT NO.	DIMENSIONS FOOTING A	B	T	COLUMN H	D	ELEVATIONS ①	②
2	12'-0"	12'-0"	4'-3"	36'-7"	4'-6"	908.59	863.0
3	12'-0"	12'-0"	4'-3"	32'-6"	4'-6"	908.00	866.5
4	12'-0"	12'-0"	4'-3"	32'-9⅜"	4'-6"	906.68	864.9
5	14'-0"	14'-0"	4'-3"	39'-8¾"	4'-6"	904.72	856.0
7	12'-0"	12'-0"	4'-3"	55'-4⅜"	5'-0"	899.59	835.2
	12'-0"	12'-0"	4'-3"	57'-0½"	5'-0"	895.22	829.2
	11'-0"	12'-0"	4'-0"	28'-11"	5'-0"	890.67	853.00
10	11'-0"	12'-0"	4'-0"	33'-4½"	5'-0"	886.11	844.00

BENT NO.	COLUMNS Va BARS	Vb BARS	TIES	FOOTINGS Da BARS	S	Db BARS	Dc BARS	REMARKS
2		10"#8S V7 & 10"#8S V8	37"#5 V4 @12"	10"#8S D1 & 10"#8S D4	5'-6" for D1 11'-6" for D4	23"#10 D2	23"#10 D2	Staggered alt. bar splices in col.
3		10"#8S V9 & 10"#8S V10	33"#5 V4 @12"	do	do	23"#10 D2	23"#10 D2	do
4		10"#8S V11 & 10"#8S V12	34"#5 V4@12"	do	do	23"#10 D2	23"#10 D2	do
5		10"#8S V13 & 10"#8S V14	40"#5 V4@12"	do	do	27"#9 D3	27"#9 D3	do
7	30"#8S V15	15"#8S V16 & 15"#8S V17	56"#5 V5@12"	15"#8S D1 & 15"#8S D4	do	23"#10 D2	23"#10 D2	do
8	30"#8S V15	15"#8S V18 & 15"#8S V19	58"#5 V5@12"	do	do	23"#10 D2	23"#10 D2	do
9	30"#11 V20		29"#3 V6@12"	30"#11 D5	2'-10½"	21"#9 D6	16"#10 D7	Da, D6 & Dc bars are straight
10	36"#11 V21		34"#3 V6@12"	36"#11 D5	2'-10½"	21"#9 D6	16"#10 D7	do

NOTES: Min. Splice Length: #8S bars-5'-6"; #11 bars-2'-10"
Extended #8S 4'-6" into beam.
Alternated D1 with D4, V7 with V8, V9 with V10, V11 with V12, V13 with V14, V16 with V17, and V18 with V19 bars.



PLAN

INT. BENTS NO. 2,3,4,5,7,8,9 & 10

DETAILED JUNE 1967 BY SHANK
CHECKED AUG. 1967 BY MALI

R. W. BOOKER & ASSOCIATES, INC.
CONSULTING ENGINEERS
1139 OLIVE STREET
ST. LOUIS, MISSOURI 63101

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

411

ENGINEER

BRIDGE OVER RTE. I-29 AND RTE. I-35
STATE ROAD SOUTH RAMP - INTERSTATE 29
IN KANSAS CITY
PROJECT NO. I-29-1 (22) (RTE. I-29) STA. 112+00.27
CLAY COUNTY

Sheet No. 7A of 15.

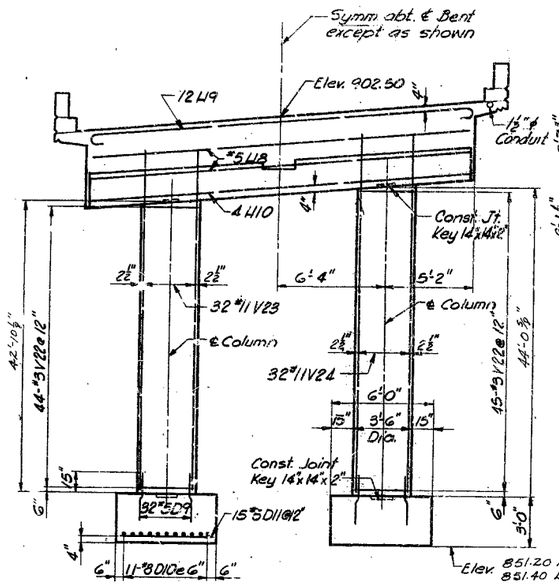
A-1763

FINAL PLANS

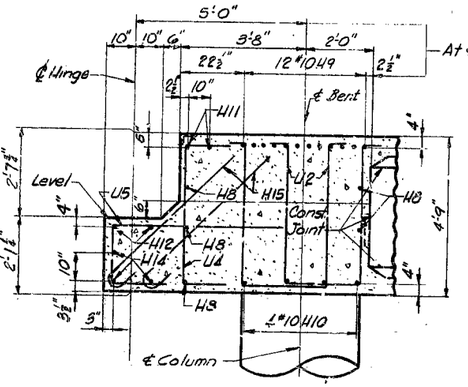
MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	102	

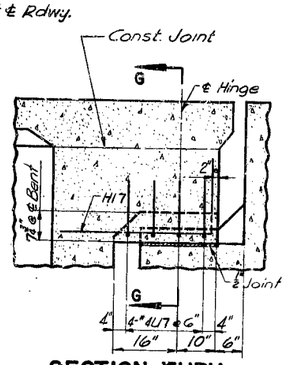
FINAL PLANS



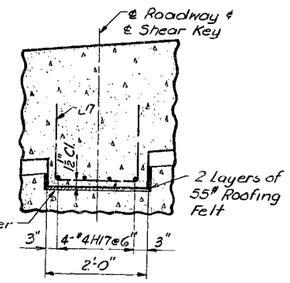
ELEVATION



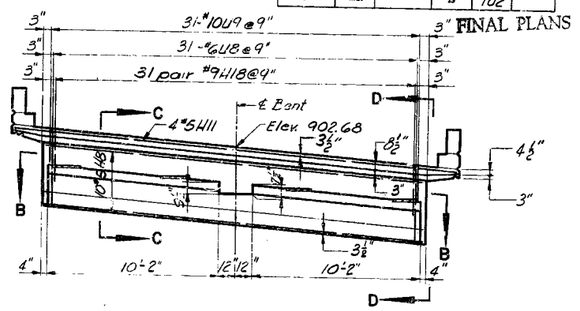
SECTION E-E



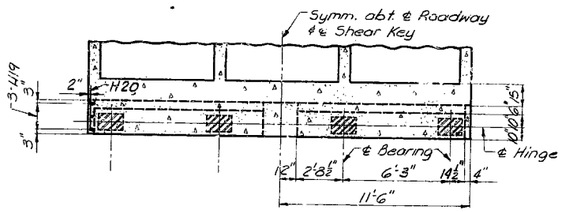
SECTION THRU SHEAR KEY



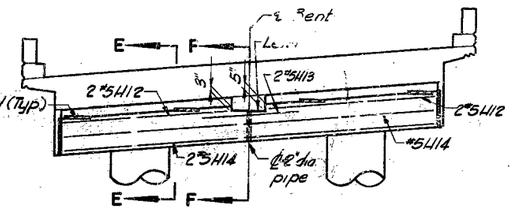
SECTION G-G



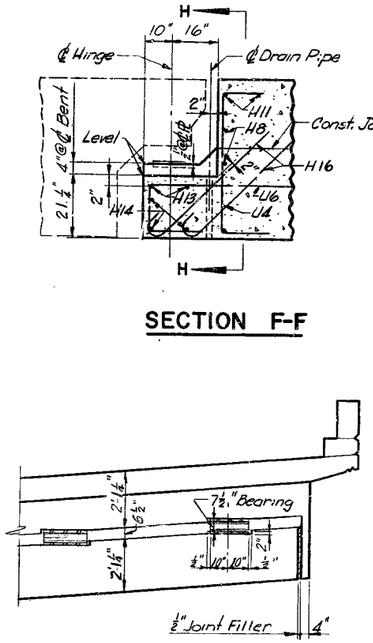
ELEVATION AT ℄ HINGE
(Looking Down Station)



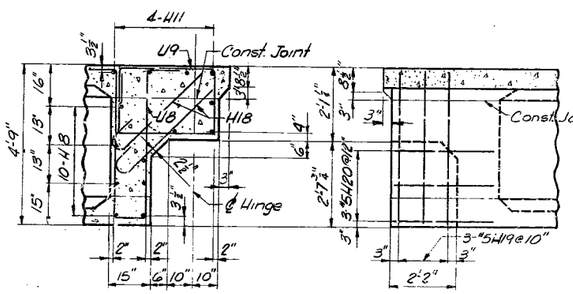
SECTION B-B



ELEVATION A-A

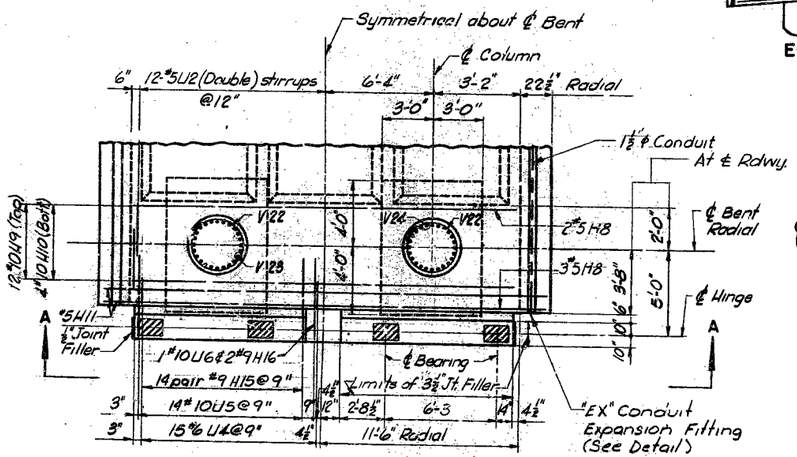


SECTION F-F

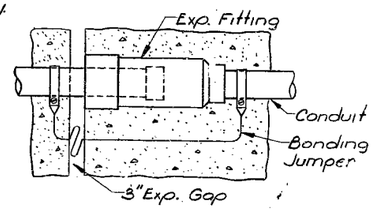


SECTION C-C

VIEW D-D



PLAN



"EX" CONDUIT EXPANSION FITTING

SECTION H-H

NOTES:
For Expansion Device see Sheet No. 11 of 17.
For Bearings see sheet No. 14 of 17.

INTERMEDIATE BENT NO. 6

BRIDGE OVER RTE. I-29 AND RTE. I-35
STATE ROAD SOUTH RAMP - INTERSTATE 29
IN KANSAS CITY
PROJECT NO. I-29-1(22)(RTE. I-29) **STA.** 112+00.27
CLAY COUNTY

412

DETAILED AUG. 1967 BY SHANK
CHECKED AUG. 1967 BY MALI

R. W. BECKER & ASSOCIATES, INC.
CONSULTING ENGINEERS
1130 OLIVE STREET
ST. LOUIS, MISSOURI 63101

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

Sheet No. 8A of 5

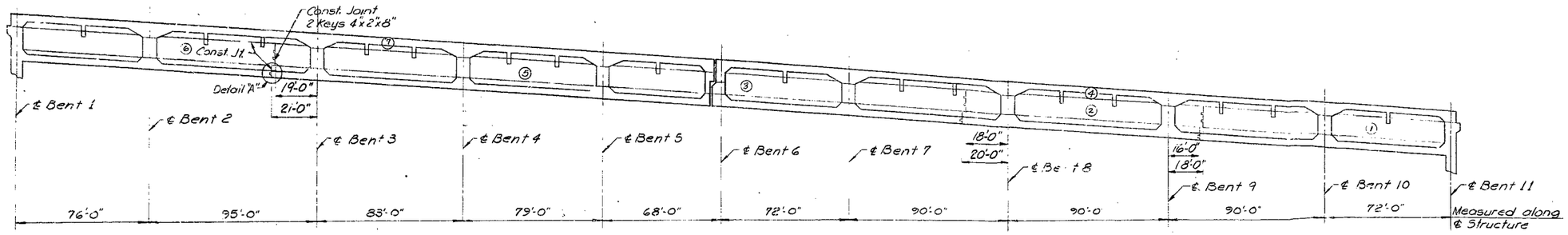
A-1763

FINAL PLANS

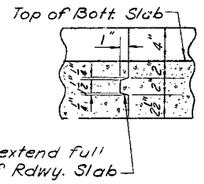
MISSOURI STATE HIGHWAY DEPARTMENT

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

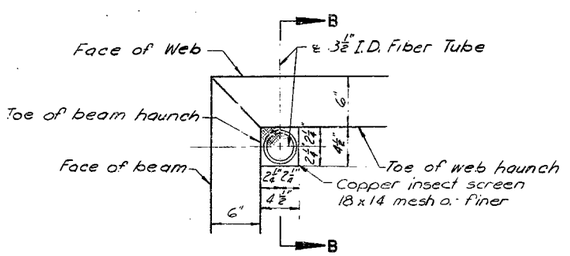
FINAL PLANS



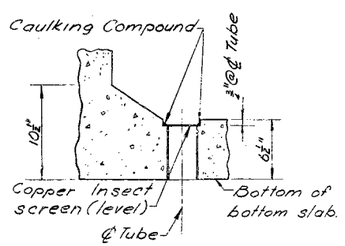
POURING SEQUENCE



DETAIL "A"

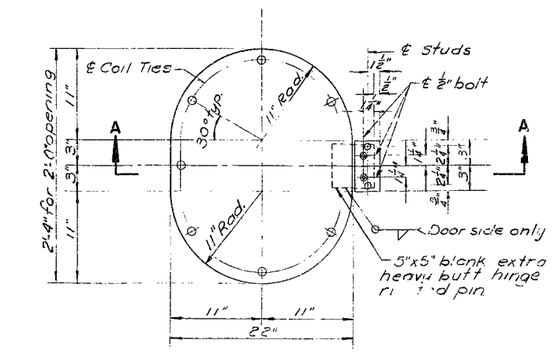


PLAN

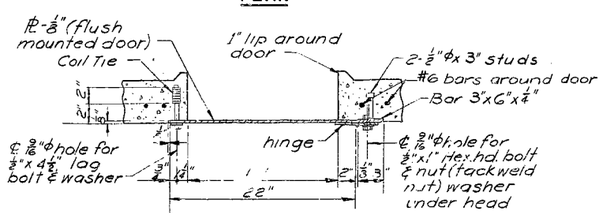


SECTION B-B

AIR INLET DETAIL



PLAN



SECTION A-A

ACCESS DOOR DETAILS

(10 Required)

AIR INLET DETAIL

NOTES:

Numbers in circles indicate the basic pouring sequence. Longitudinal joints in roadway slabs, were not permitted.

The contractor did use an approved oscillating screed type, self-propelled mechanical finishing machine and poured the roadway slabs at a rate of not less than 25 cubic yards per hour. He did observe the basic pouring sequence except that he demonstrated to the engineer that he could pour and satisfactorily finish the superstructure concrete at a rate which permitted the combining of such of the basic pours as were specifically designated by the engineer as being compatible with design. Finishing machine loads were not permitted on concrete less than 48 hours old.

With use of forms and basic falsework meeting the approval of the engineer, the girder webs and diaphragms were poured with the bottom slab sections on which they bear.

All forms were removed from the interior of box girders except top slab forms which were left in place.

Payment for furnishing and placing fiber tube, copper screen and caulking compound was included in price bid for other items of work.

Access doors were assembled and in place while slab was being poured. Weight of access door is included in Estimated Weight of Fabricated Structural Carbon Steel.

Bottom surface of doors were flush with bottom slab. for location of access doors see Sheet No. 10 of 14.

BRIDGE OVER RTE. I-29 AND RTE. I-35

STATE ROAD SOUTH RAMP- INTERSTATE 29

IN KANSAS CITY

PROJECT NO. I-29-1 (22) (RTE. I-29) STA. 112+00.27

CLAY COUNTY

A-1763

DETAILED JUNE 1967 BY F. MERTZ
CHECKED AUG 1967 BY MALI

R W BOOKER & ASSOCIATES, INC.
CONSULTING ENGINEERS
1139 OLIVE STREET
ST. LOUIS, MISSOURI 63101

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

Sheet No. 15 of 15

FINAL PLANS

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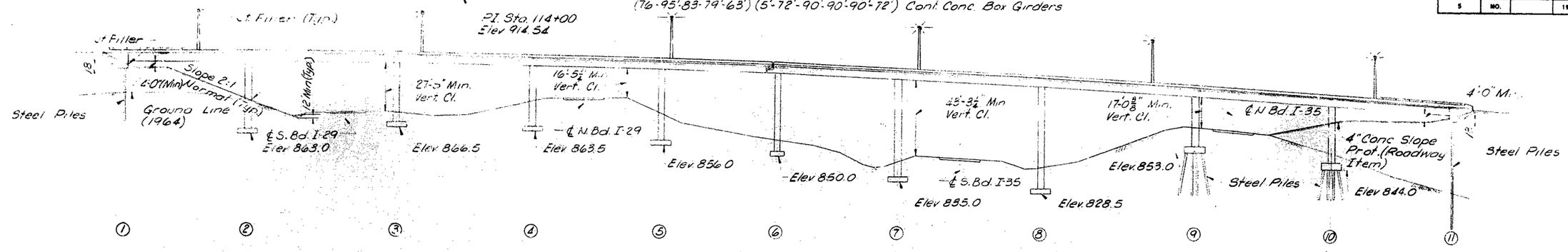
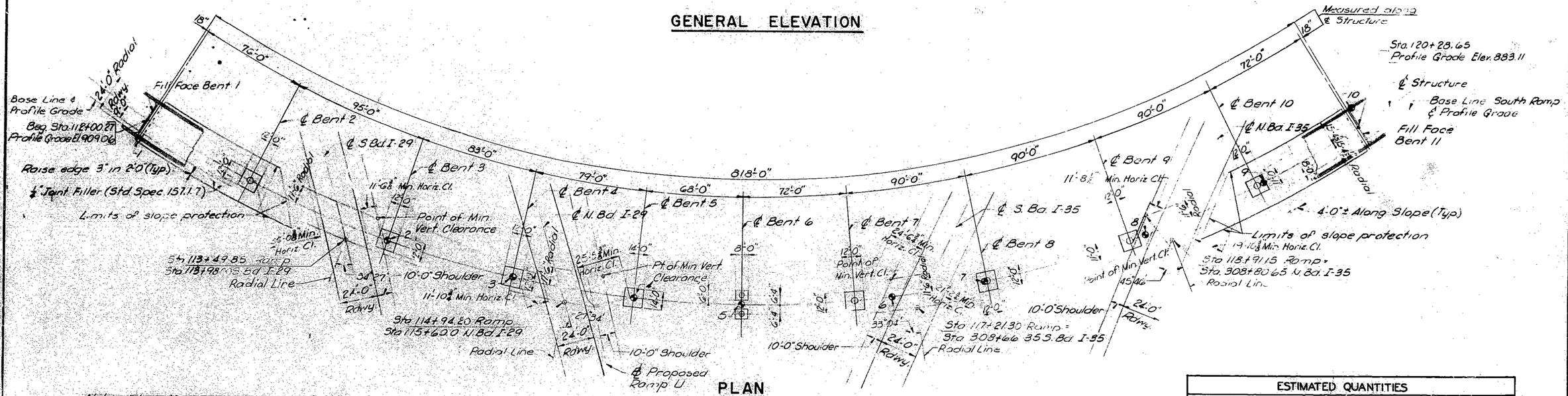
MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	3	

(76'-95'-83'-79'-63') (5'-72'-90'-90'-90'-72') Cont. Conc. Box Girders

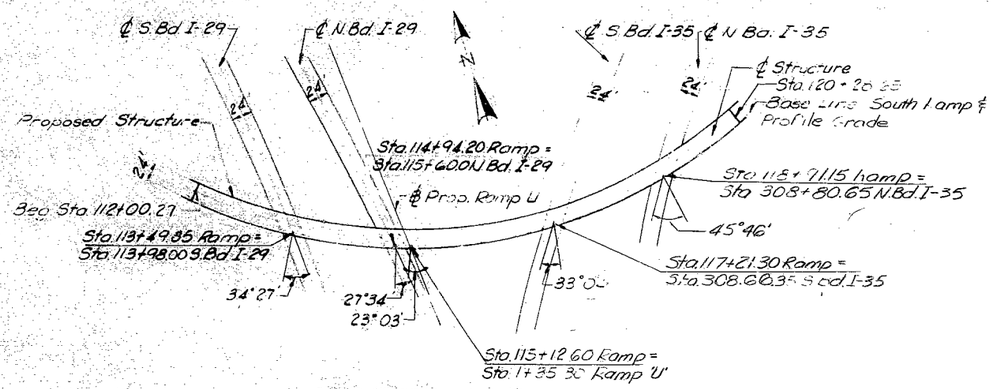


GENERAL ELEVATION



PLAN

Note: Elevations shown are existing elevations.



LOCATION SKETCH

ESTIMATED QUANTITIES		
Item		Total
Latex Concrete Wearing Surface	Syd.	2181
Repairing Concrete (Half-Sole)	Sq. ft.	3926
Full Depth Repair	Sq. yd.	393
Special Work	Lump Sum	1
Reinforced Neoprene Expansion Jt. Seal	Lin. ft.	24

B.M. Elev. 908.11 "D" on left curb (Bk. #1) Br. A-1763

BRIDGE SOUTH RAMP OVER I-35

STATE ROAD I-35 TO RTE. 169

IN KANSAS CITY

PROJECT NO. I-29-1(55) STA. 112+00.27

JOB NO. 4 1029 136 RTE. I-29

CLAY COUNTY

DESIGNED May 1977

DETAILED July 1977

CHECKED July 1977

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

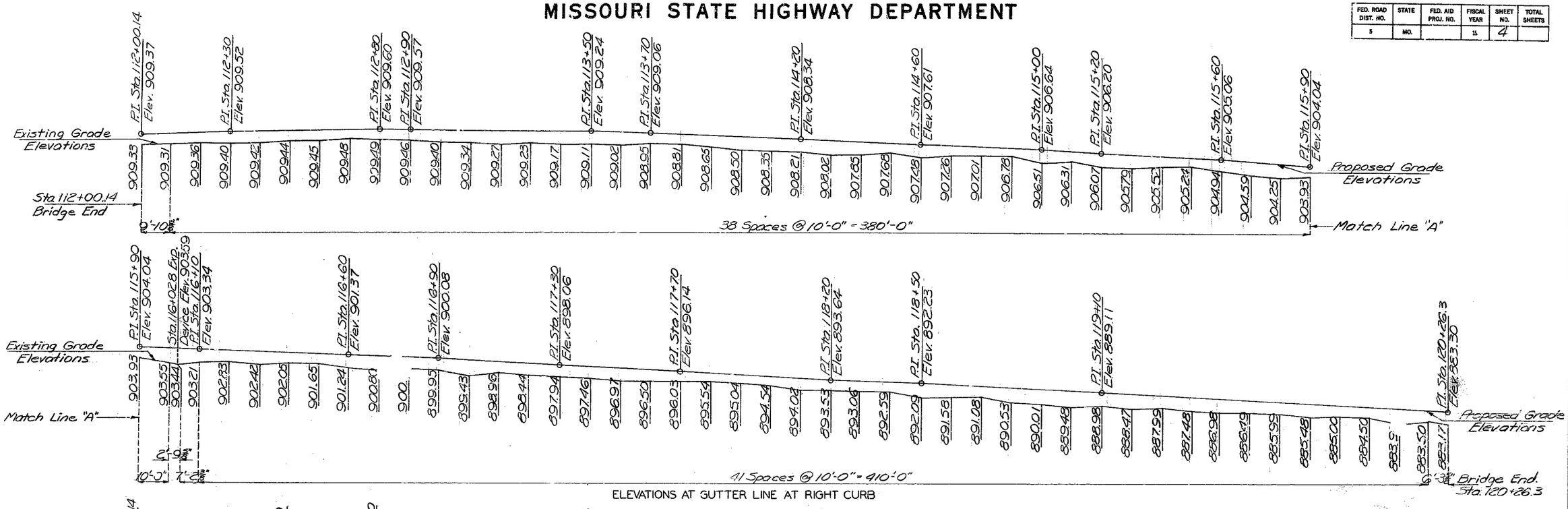
Sheet No. 1 of 4

SEE FINAL PLANS

A-1763R

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		11	4	



Note: The minimum thickness of the latex concrete overlay shall be 1½". The existing grade elevations shown are for estimating purposes only.
Proposed grades are on straight line tangents between P.I.s
No vertical curves

PROPOSED AND EXISTING ELEVATIONS

DETAILED June 1977
CHECKED July 1977

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

Sheet No. 2 of 4

CLAY COUNTY

A-1763R

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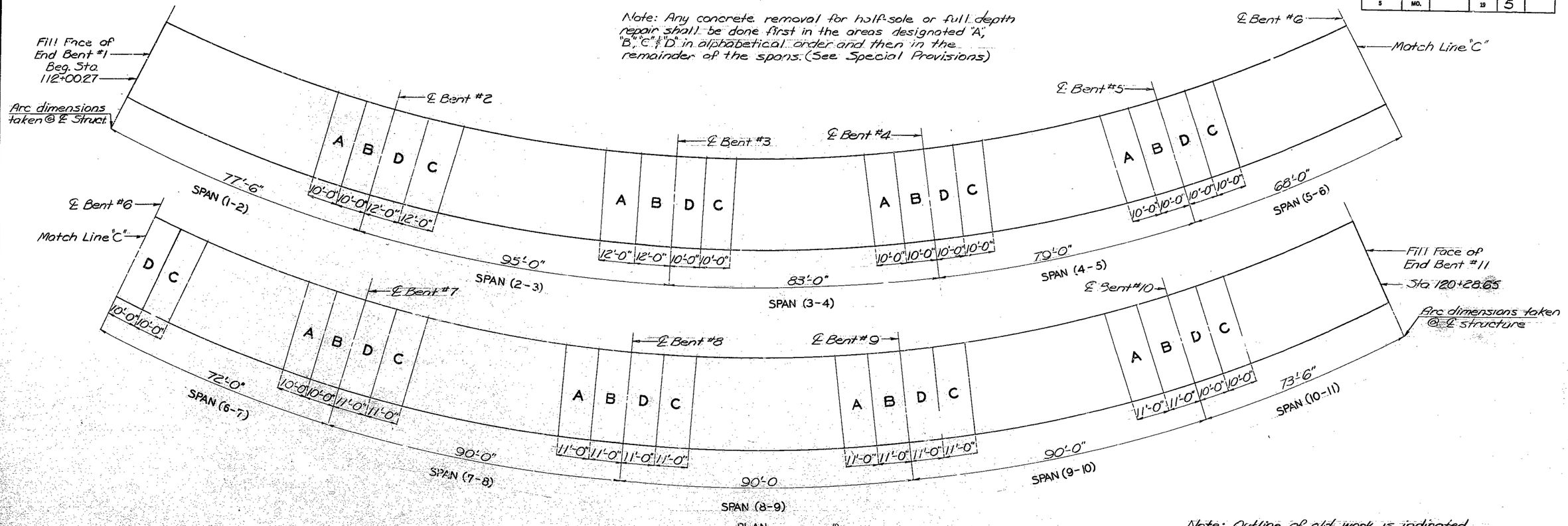
MISSOURI STATE HIGHWAY DEPARTMENT

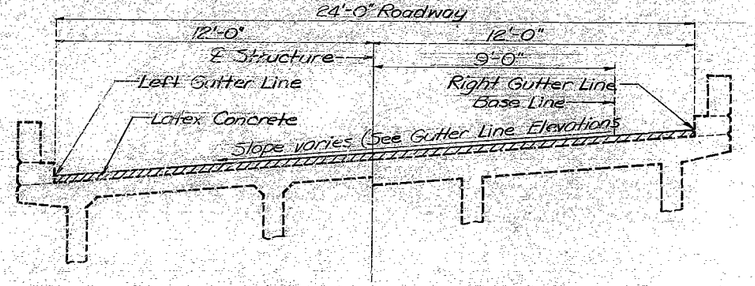
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	5	

Note: Any concrete removal for half-sole or full depth repair shall be done first in the areas designated "A", "B", "C" & "D" in alphabetical order and then in the remainder of the spans. (See Special Provisions)



PLAN

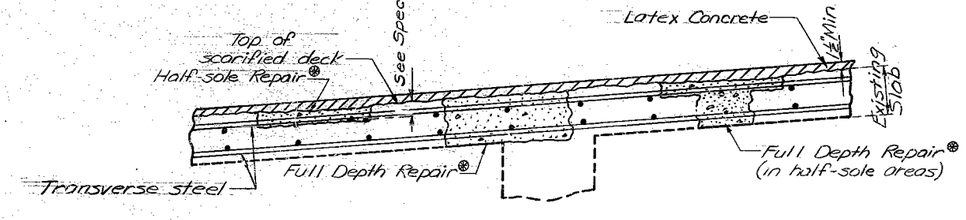
Note: Outline of old work is indicated by light dashed lines. Heavy lines indicate new work.



PART HALF SECTION NEAR DIAPHRAMS

PART HALF SECTION NEAR INT. BENTS

Note: For Gutter line Elevations see sheet No. 2



TYPICAL DECK REPAIR

⊛ Use concrete for repair

102

DETAILED June 1977
CHECKED July 1977

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

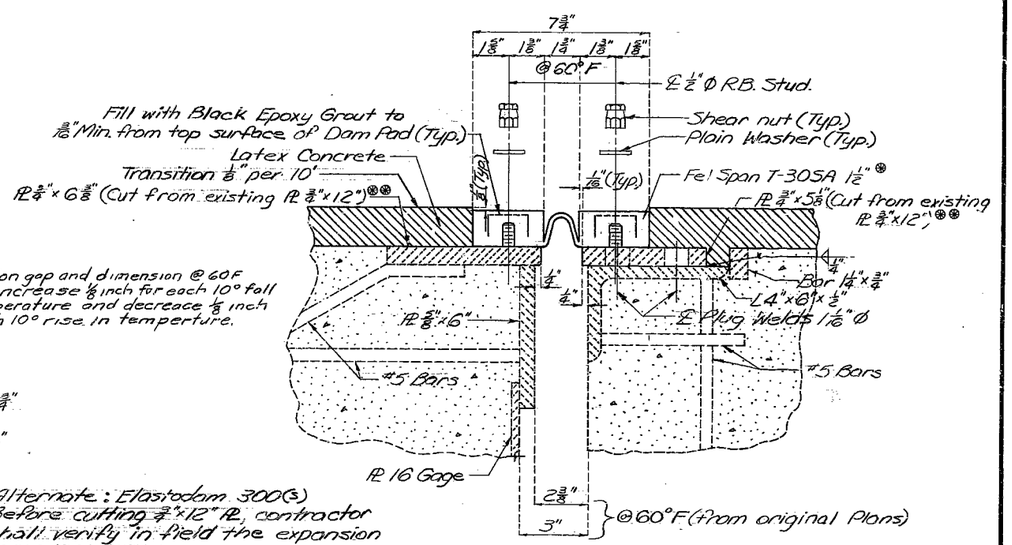
Sheet No. 3 of 4

CLAY COUNTY

A-1763R

MISSOURI STATE HIGHWAY DEPARTMENT

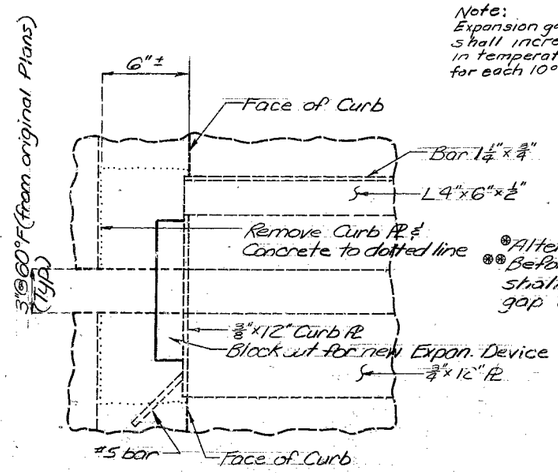
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	6	



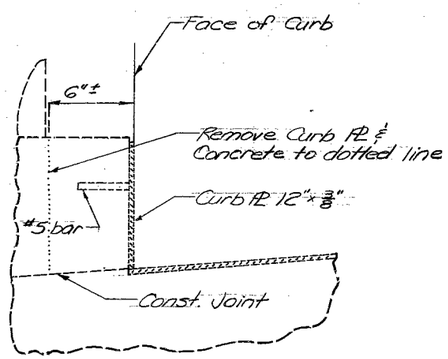
Note:
Expansion gap and dimension @ 60F shall increase ⅛ inch for each 10° fall in temperature and decrease ⅛ inch for each 10° rise in temperture.

⊛ Alternate : Elastodam 300(3)
⊛⊛ Before cutting ¾"x12" PL, contractor shall verify in field the expansion gap dimensions.

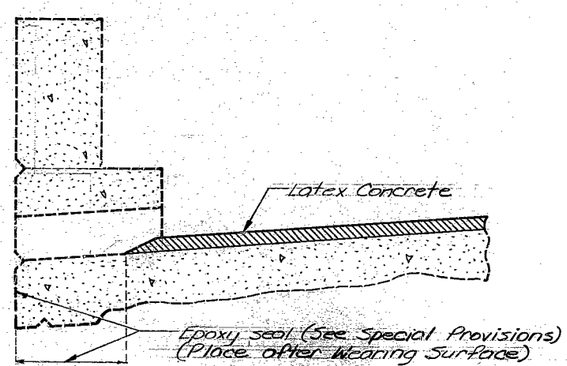
SECTION THRU EXPANSION DEVICE



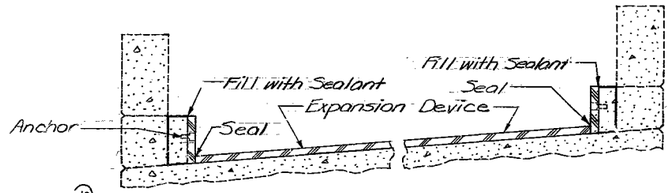
PART PLAN OF CURB AT EXISTING EXPANSION DEVICE



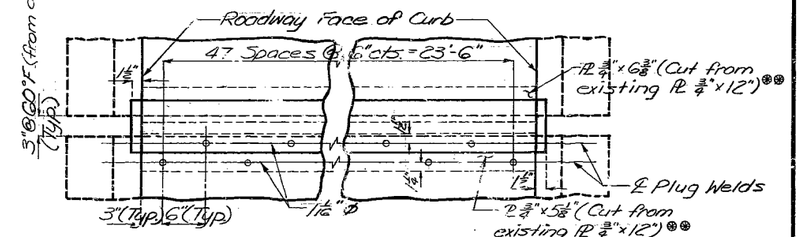
PART SECTION



TYPICAL PART SECTION THRU OUTLET



PART SECTION THRU CURB AT EXPAN. DEVICE



PART PLAN AT EXPANSION DEVICE
SHOWING LOCATION OF PLUG WELDS

DETAILED June 1977
CHECKED July 1977

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

Sheet No. 4 of 4

CLAY COUNTY

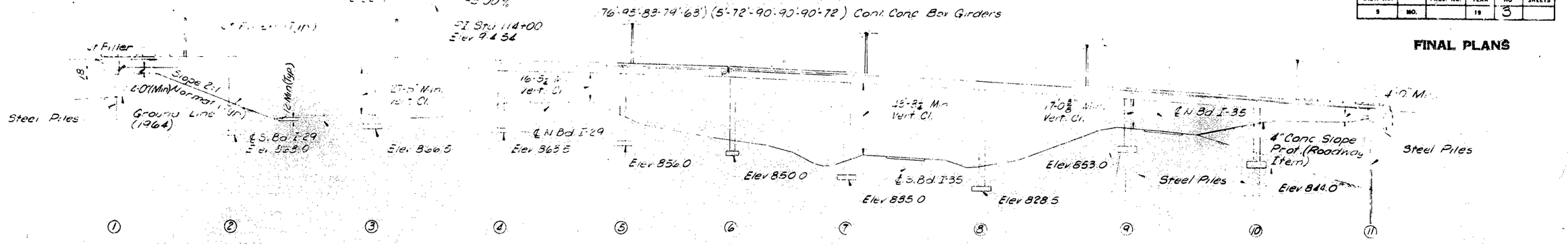
A-1763R

MISSOURI STATE HIGHWAY DEPARTMENT

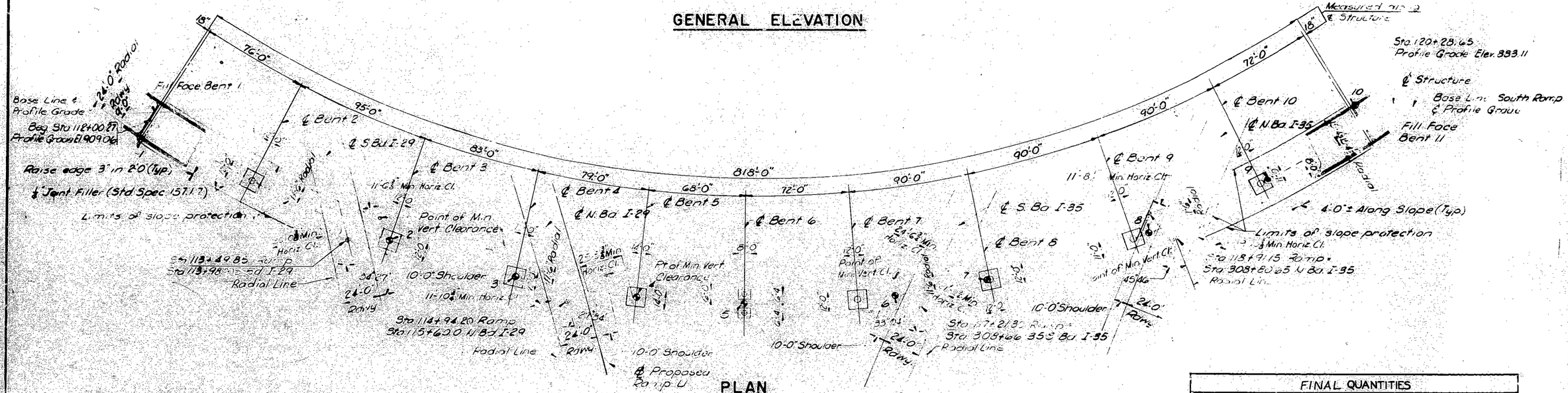
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	YEAR	SHEET NO	TOTAL SHEETS
9	MO.		19	3	

76'-95'-83'-79'-68') (5'-72'-90'-90'-90'-72') Cont. Conc. Box Girders

FINAL PLANS

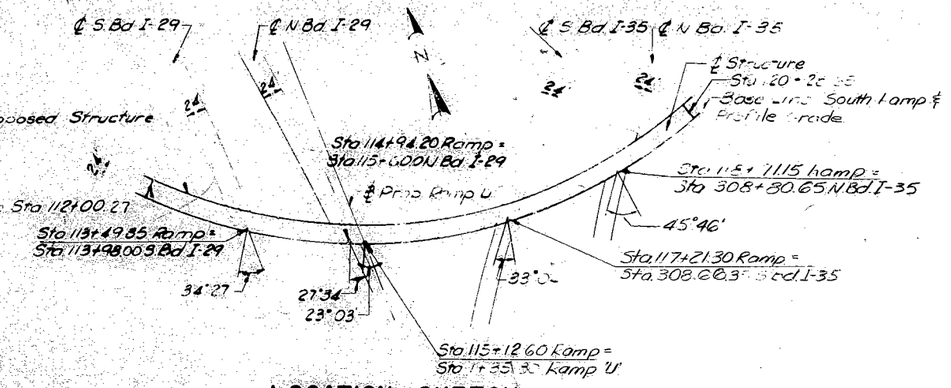


GENERAL ELEVATION



PLAN

Note: Elevations shown are existing elevations.



LOCATION SKETCH

FINAL QUANTITIES		
Item		Total
Latex Concrete Wearing Surface	Sq.yd.	2181
Repairing Concrete (Half-Sole)	Sq.ft.	396
Full Depth Repair	Sq.ft.	9
Special Work	Lump Sum	1
Reinforced Neoprene Expansion Jt. Seal	Lin.ft.	24

B.M. Elev. 908.11 ℄ on left curb (Bk.#1) Br. A-1763

BRIDGE SOUTH RAMP OVER I-35

STATE ROAD I-35 TO RTE. 169

IN KANSAS CITY

PROJECT NO. I-29-1(55) STA. 112+00.27

JOB NO. 4 1029 136 RTE. I-29

CLAY COUNTY

DESIGNED May 1977

DETAILED July 1977

CHECKED July 1977

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

Sheet No. 1 of 4

A-1763R

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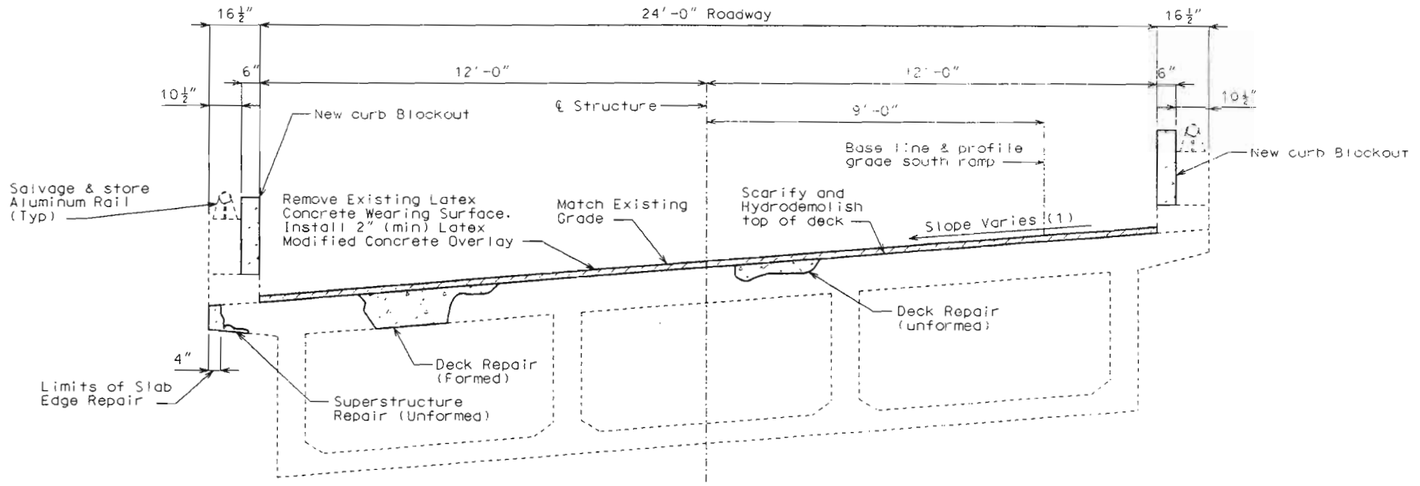
MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

State	Proj. No.	Sheet No.
MO		B 20
SEC/SUR 1	TWP 50N	RGE 33W

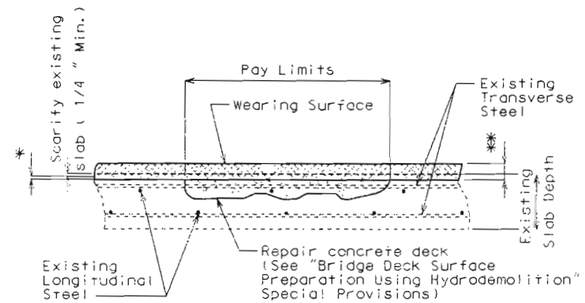


TYPICAL SECTION THRU SLAB

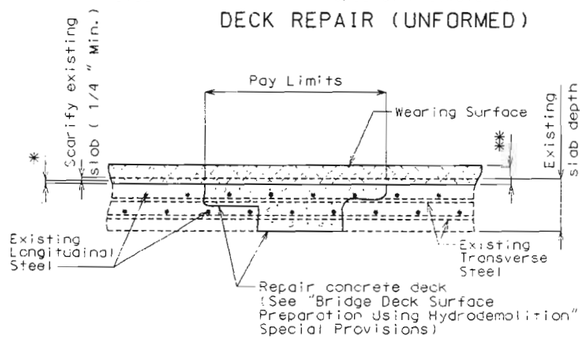
(1) See sheet No. 2 of Existing Bridge Plans A1763R for Gutter line Elevations.

ESTIMATED QUANTITIES		
ITEM		TOTAL
Scarification of Bridge Deck	sq. yd.	2181
Removal and Storage of Existing Bridge Rail	lin. ft.	1664
Curb Removal (Bridges)	lin. ft.	22
Removal of Latex Concrete Wearing Surface	sq. ft.	19632
Superstructure Repair (Unformed)	sq. ft.	200
Curb Blockout	lin. ft.	1687
Deck Repair (Formed)	sq. ft.	4100
Deck Repair (Unformed)	sq. ft.	9600
Slab Edge Repair (Bridges)	lin. ft.	280
Latex Concrete Wearing Surface	sq. yd.	2181
Strip Seal Expansion Joint System	lin. ft.	24
Modification of Existing Expansion Joint	lin. ft.	24
Hydrodemolition	sq. yd.	2181

Note: Payment for the removal of existing end posts shall be included in the unit price for "Curb Removal (Bridges)" per lin. ft.



DECK REPAIR (UNFORMED)



* Remove additional 1/4" to 1/2" of sound concrete by Hydrodemolition.

** 2" (min.) (variable depth) for Latex Modified Concrete

DECK REPAIR (FORMED)

Note:

Repair concrete shall be terminated at a vertical face of existing concrete. The repair shall not taper to less than 1" in thickness.

General Notes:

Design Specifications:
AASHTO - 1996 and Interims thru 1998

Design Unit Stresses:
Class B1 Concrete (Curb Blockout and End Posts) f'c = 4,000 psi
Class B2 Concrete (Deck Repair Formed and Deck Repair Unformed) f'c = 4,000 psi
Reinforcing Steel (Grade 60) fy = 60,000 psi

Joint Filler:
All joint filler shall meet the requirements of Section 1057.2.4 of the Missouri Standard Specifications, except as noted.

Reinforcing Steel:
Minimum clearance to reinforcing steel shall be 1-1/2", unless otherwise shown.

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.

Traffic:
See roadway plans for traffic control during construction.

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

The 5/8" diameter resin anchor systems shall have a minimum ultimate pullout strength of 15,500 lbs. in concrete with f'c = 4,000 psi, see special provisions

An epoxy coated #5 Grade 60 reinforcing bar shall be substituted for the 5/8" Ø threaded rod stud. For shape and length of reinforcing bar, see sheet no. 2.

Curb Blockouts:
Measurement of curb blockout is to the nearest linear foot, measured at the gutter line from end of slab to end of slab.

All exposed edges of curb blockout shall have 1/2" radius or 3/8" bevel unless otherwise shown.

Payment for concrete, reinforcing steel, resin anchors, and any other work incidental to the curb blockout and end posts, complete in place, shall be included in the contract unit price for the Curb Blockout per linear foot.

Cost of any concrete curb and parapet repair shall be considered completely covered in the unit price bid for Curb Blockout.

All reinforcement shall be epoxy coated.

Aluminum Rail:
Salvage and store aluminum rail components at MoDOT Platte Co. Rte. N Maintenance Facility.

Miscellaneous:
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.

Roadway surfacing adjacent to bridge ends to match bridge overlay.

In order to maintain grade and minimum thickness of overlay as shown on plans it may be necessary to use additional quantities of overlay at various locations throughout the structure. Payment shall be considered completely covered in the unit price bid for Latex Concrete Wearing Surface.

B.M. Elev. 908.11. "□" on curb Lt. @ Bent no. 1.

REPAIRS TO BRIDGE OVER
RTE. I-29 & RTE. I-35

STATE ROAD 1-35 TO RTE. 169
IN KANSAS CITY
PROJECT NO.
JOB NO. J411328

STA. 112+00.27± (MATCH EXISTING)
RTE. I-29 S.B.L. RAMP

CLAY COUNTY
Date: 9/11/00

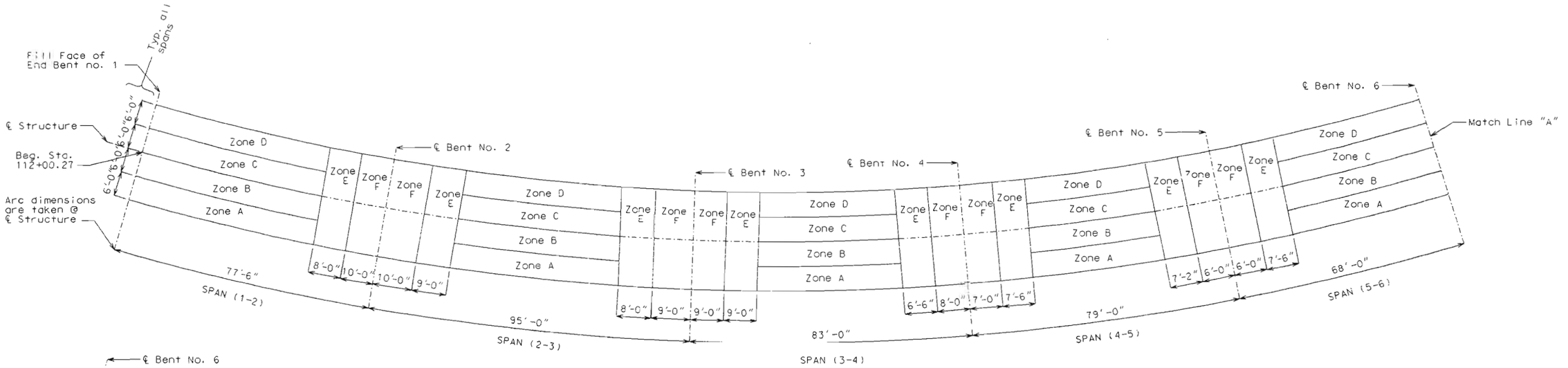
STATE OF MISSOURI
KURT E. GRIBBLE
NUMBER E-23578
REGISTERED PROFESSIONAL ENGINEER
DATE 9-7-00

STD.	
STD.	
STD.	
STD. 706.35	
A17632	REV.

Designed MAY 2000
Detailed MAY 2000
Checked AUG. 2000

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

State	Proj. No.	Sheet No.
MO		B 21



PLAN OF SLAB SHOWING SPECIAL REPAIR ZONES

Notes:

Concrete removal shall be done first in the areas designated Zone "A", "B", "C", "D", "E" & "F" in alphabetical order. Unformed and Formed Deck Repairs shall be made in each zone before concrete is removed from the next zone. (See Special Provisions)

Zones with the same letter designation may be repaired at the same time.

STATE OF MISSOURI
KURT E. GRIBBLE
NUMBER E-23578
REGISTERED PROFESSIONAL ENGINEER
DATE 9-7-00

Detailed MAY 2000
Checked AUG. 2000

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

CLAY COUNTY A17632 REV.

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State	Proj. No.	Sheet No.
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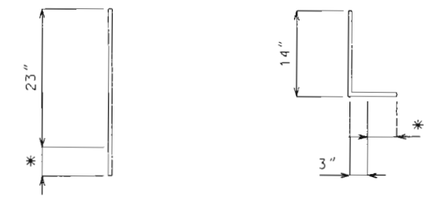
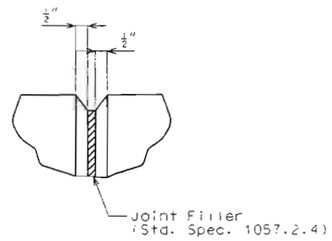


(916 req'd)
(Install in curb)

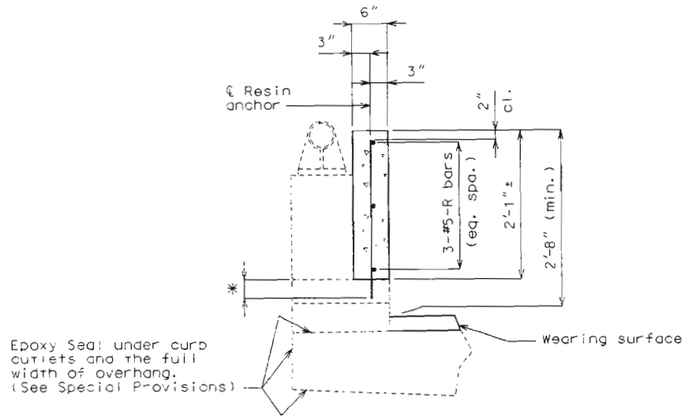
(878 req'd)
(Install in parapet)

* Manufacturer's embedment length (6" max. and 3 1/2 " max at curb outlets for vertical anchors)

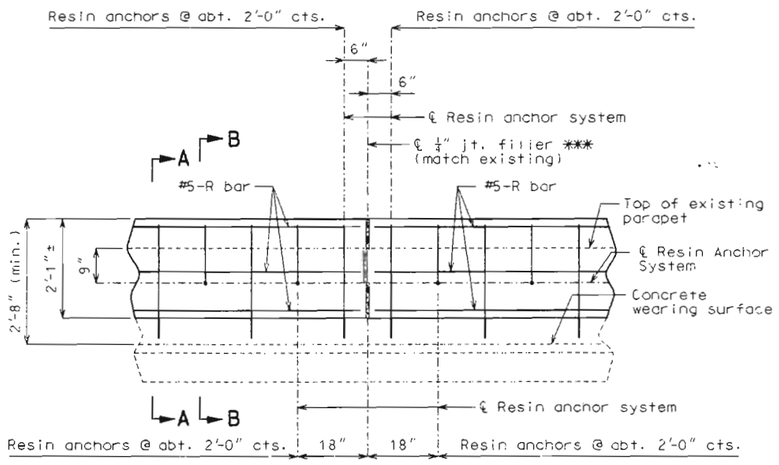
DETAILS OF RESIN ANCHORS



FILLED JOINT DETAIL

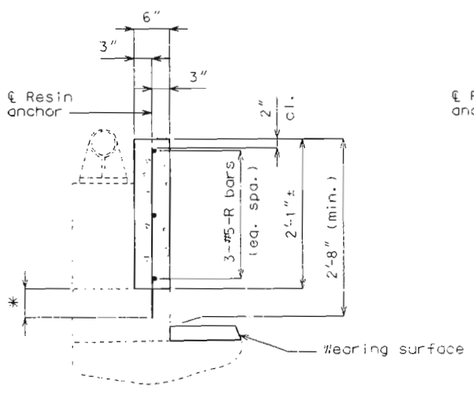


TYPICAL SECTION OF EXISTING CURB SHOWING OUTLET

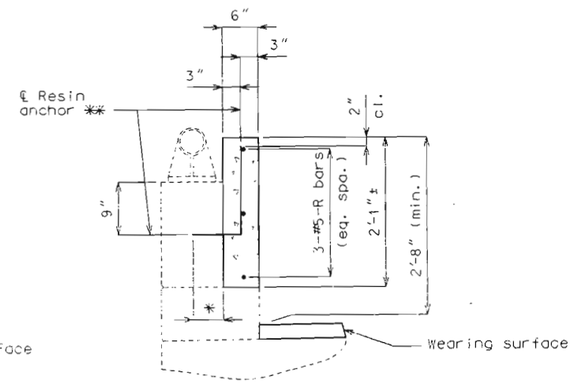


PART SECTION NEAR CURB BLOCKOUT

*** Except Int. Bent No. 6 see sheet no. 8 for details.



SECTION A-A



SECTION B-B

** Shift resin anchors where necessary to clear existing anchor bolts for tube rail.

STATE OF MISSOURI
KURT E. GRIBBLE
NUMBER E-23576
REGISTERED PROFESSIONAL ENGINEER
DATE 9-7-00

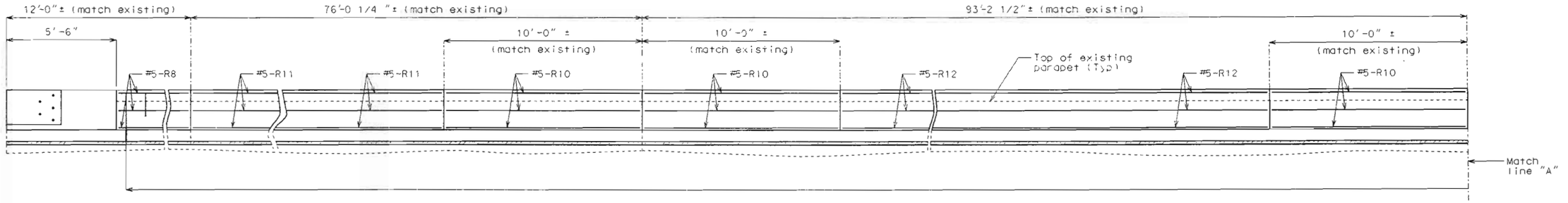
DETAILS OF CURB BLOCKOUT

Detailed MAY 2000
Checked AUG. 2000

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

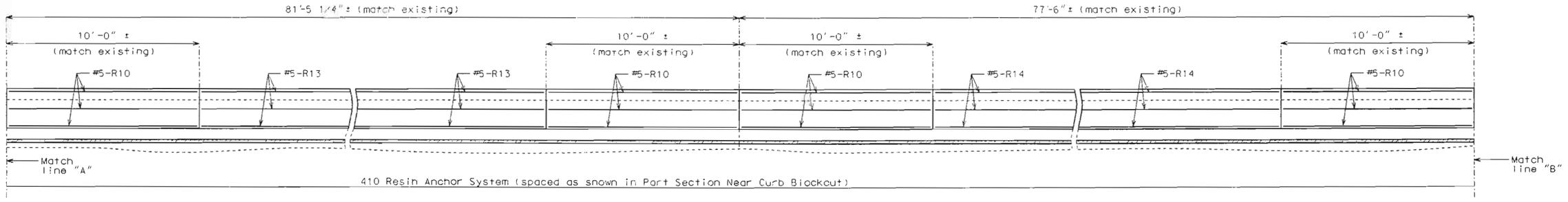
CLAY COUNTY A17632

State	Proj. No.	Sheet No.
MO		B23



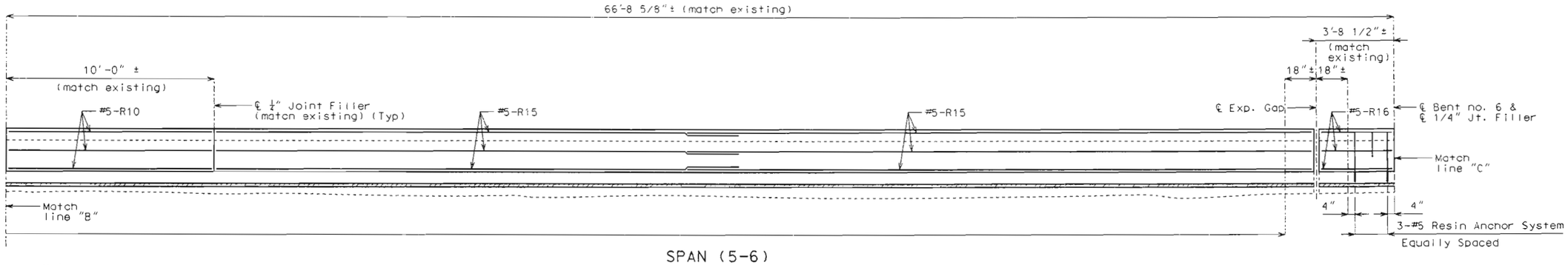
SPAN (1-2)

SPAN (2-3)



SPAN (3-4)

SPAN (4-5)



SPAN (5-6)

Note:

For details of end post, see sheet no. 9.

For details of curb blockout, see sheet no. 3.

For elevation near right curb blockout, see sheet no. 6 & 7.

All longitudinal dimensions shown are measured along outside face of parapet along the curve.

For details of curb near Bent no. 6, see sheet no. 8.

SECTION NEAR LEFT CURB BLOCKOUT SPANS (1-2) THRU (5-6)

DETAILS OF CURB BLOCKOUT

STATE OF MISSOURI
KURT E. GRIBBLE
NUMBER E-23576
REGISTERED PROFESSIONAL ENGINEER

DATE 9-7-00

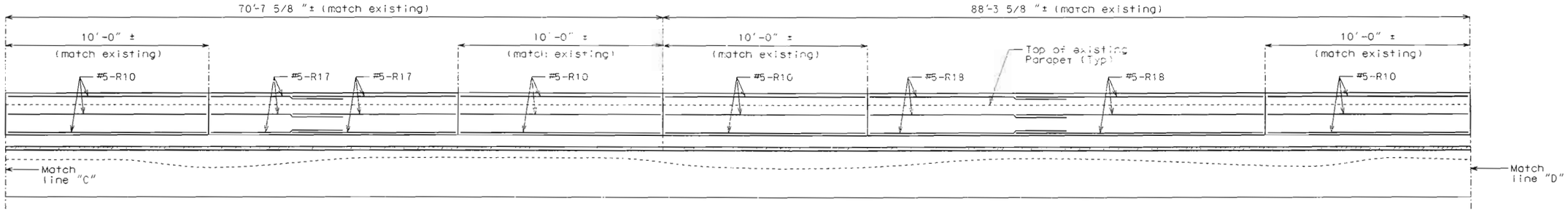
Detailed MAY 2000
Checked AUG. 2000

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

CLAY COUNTY A17632

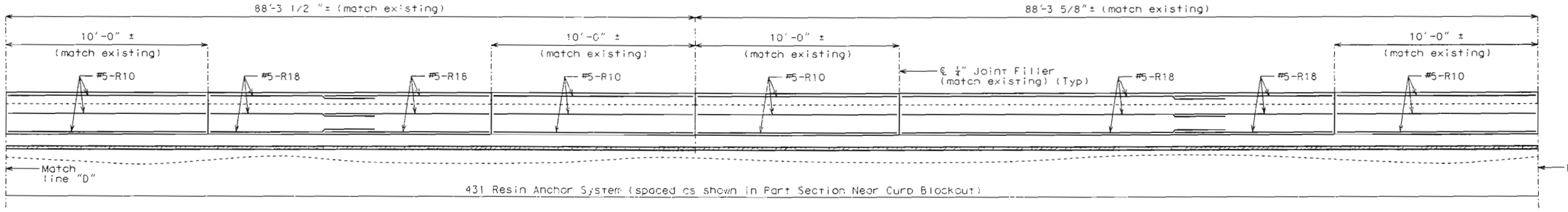
REV.

State	Proj. No.	Sheet No.
MO		B24



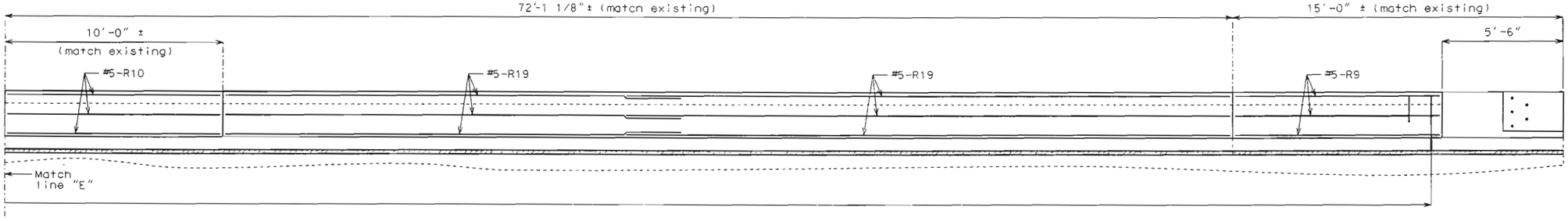
SPAN (6-7)

SPAN (7-8)



SPAN (8-9)

SPAN (9-10)



SPAN (10-11)

Note:

For details of end post, see sheet no. 9.

For details of curb blockout, see sheet no. 3.

For elevation near right curb blockout, see sheet no. 6 & 7.

All longitudinal dimensions shown are measured along outside face of parapet along the curve.

SECTION NEAR LEFT CURB BLOCKOUT SPANS (6-7) THRU (10-11)

DETAILS OF CURB BLOCKOUT

STATE OF MISSOURI
KURT E. GRIBBLE
NUMBER E-23578
REGISTERED PROFESSIONAL ENGINEER

DATE 9-7-00

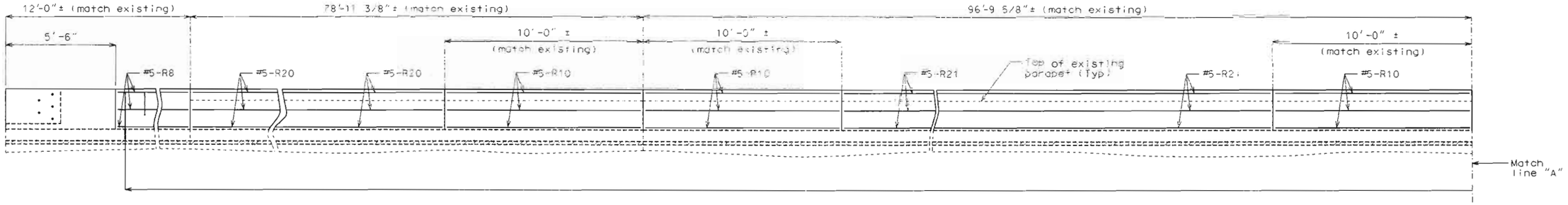
Detailed MAY 2000
Checked AUG. 2000

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

CLAY COUNTY A17632

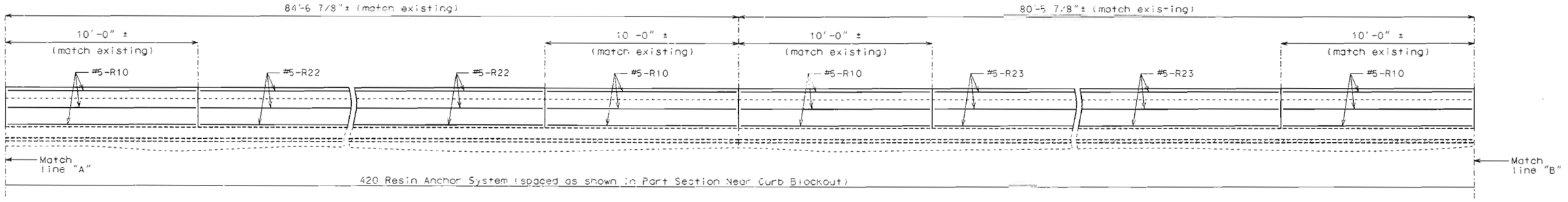
REV.

State	Proj. No.	Sheet No.
MO		B25



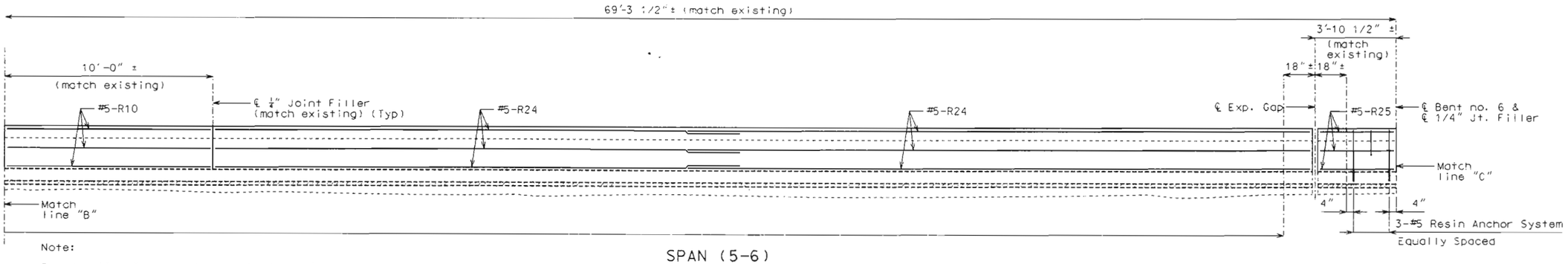
SPAN (1-2)

SPAN (2-3)



SPAN (3-4)

SPAN (4-5)



SPAN (5-6)

Note:

For details of end post, see sheet no. 9.

For details of curb blockout, see sheet no. 3.

For section near left curb blockout, see sheet no. 4 & 5.

All longitudinal dimensions shown are measured along outside face of parapet along the curve.

For details of curb near Bent no. 6, see sheet no. 8.

ELEVATION NEAR RIGHT CURB BLOCKOUT SPANS (1-2) THRU (5-6)

DETAILS OF CURB BLOCKOUT

STATE OF MISSOURI
KURT E. GRIBBLE
NUMBER E-23576
REGISTERED PROFESSIONAL ENGINEER

DATE 9.7.05

Detailed APR. 2000
Checked APR. 2000

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

CLAY COUNTY A17632

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State	Proj. No.	Sheet No.
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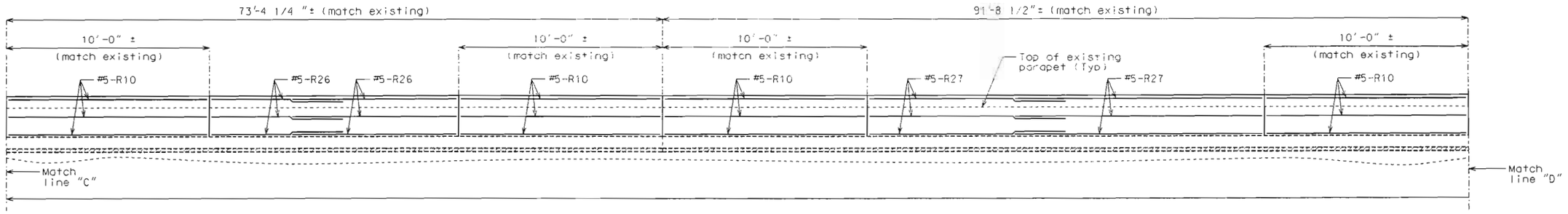
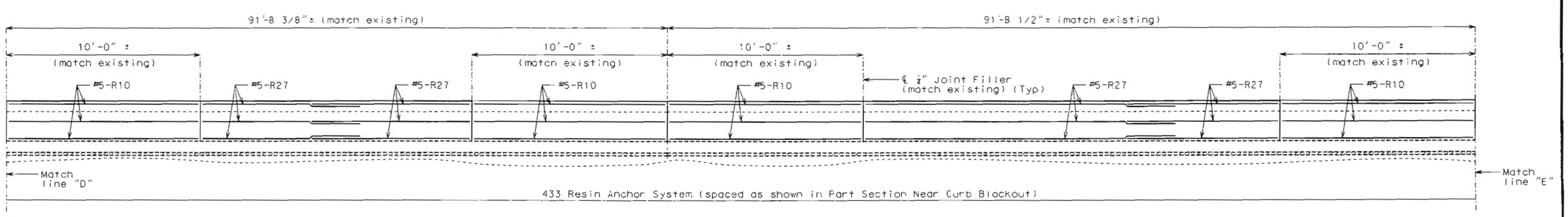


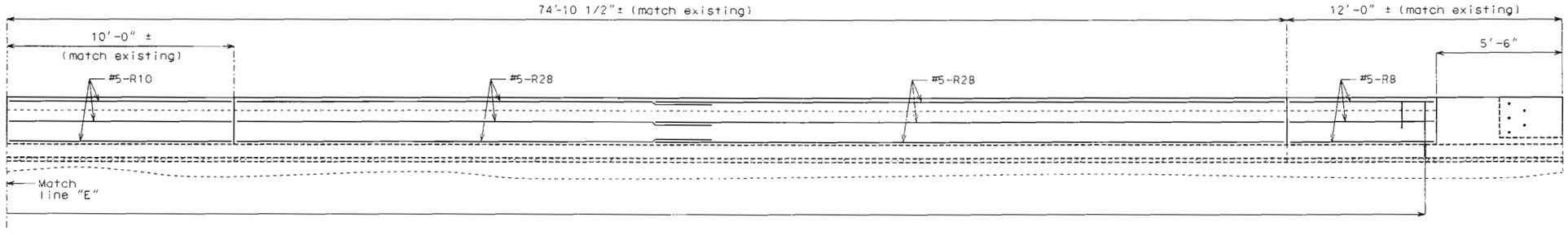
SPAN (6-7)

SPAN (7-8)



SPAN (8-9)

SPAN (9-10)



SPAN (10-11)

Note:

For details of end post, see sheet no. 9.

For details of curb blockout, see sheet no. 3.

For section near left curb blockout, see sheet no. 4 & 5.

ELEVATION NEAR RIGHT CURB BLOCKOUT SPANS (6-7) THRU (10-11)

DETAILS OF CURB BLOCKOUT

STATE OF MISSOURI
KURT E. GRIBBLE
NUMBER E-23576
REGISTERED PROFESSIONAL ENGINEER

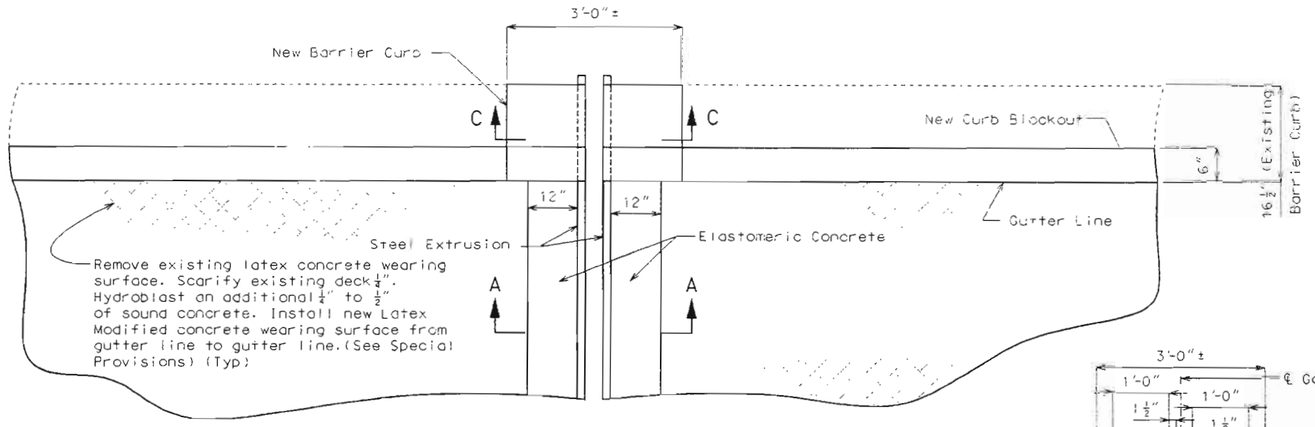
DATE 9-7-00

Detailed APR. 2000
Checked AUG. 2000

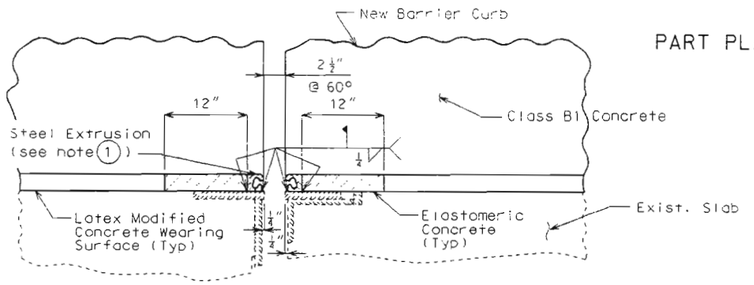
Note: This drawing is not to scale. Follow dimensions.

CLAY COUNTY A17632

State	Proj. No.	Sheet No.
MO		B27

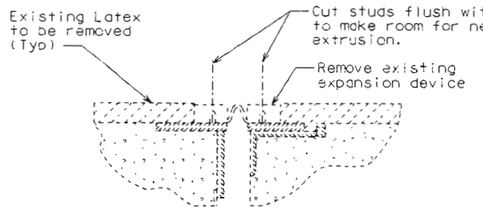


PART PLAN

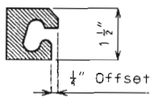


SECTION A-A @ BENT 6

Note: Expansion Joint Dimensions shall be increased $\frac{1}{32}$" for each 10° fall in temperature and decreased $\frac{1}{32}$" for each 10° rise in temperature at installation.



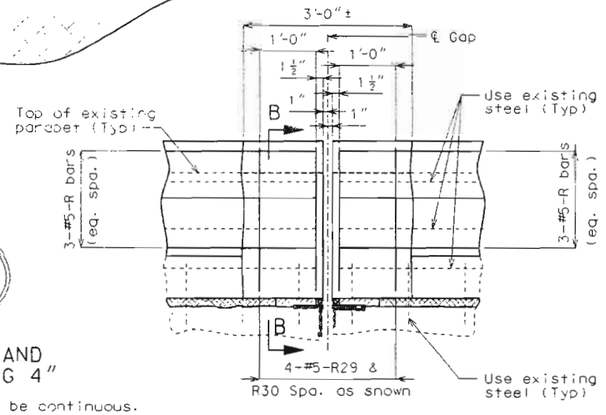
TYPICAL SECTION THRU EXISTING EXPANSION DEVICE



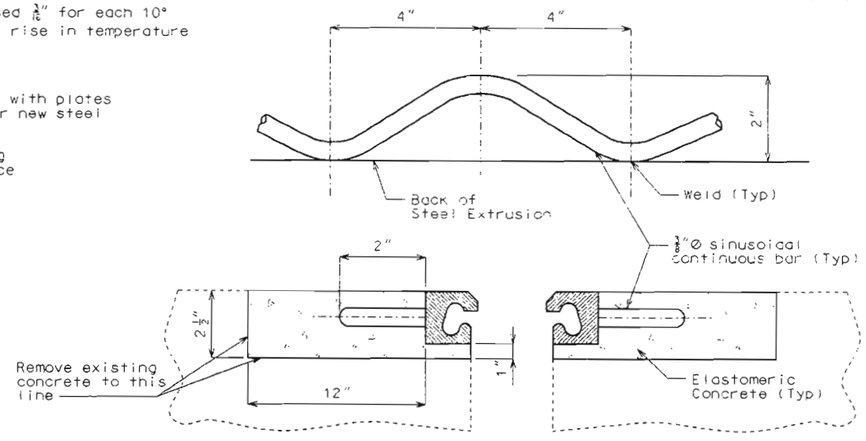
DETAIL OF STEEL EXTRUSIONS

STRIP SEAL GLAND MOVEMENT RATING 4"

Note: Strip Seal Gland shall be continuous. Field splicing shall not be allowed.



ELEVATION OF BARRIER CURB @ BENT NO. 6

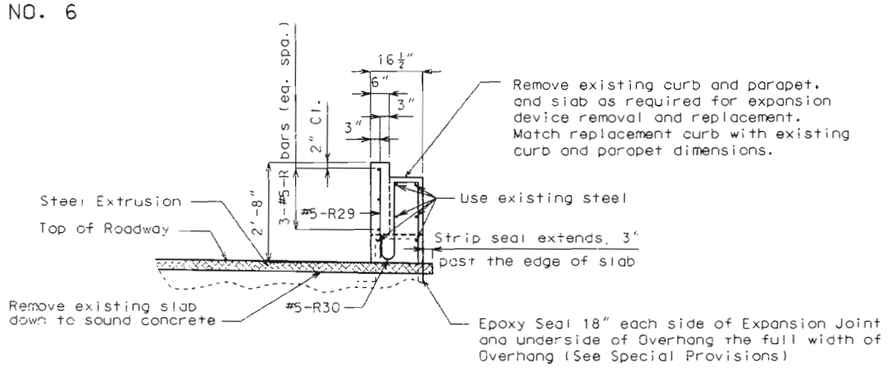


SECTION C-C
(Curb not shown for clarity)

Note:

Sinusoidal bar shall be welded to strip seal extrusion with approprite weld to meet AASHTO Fatigue Category C for conection.

The sinusoidal bar shall be used in the areas were the Steel Extrusion can not be welded to existing plates.



SECTION B-B

Note ① = Steel extrusion shall extend over full width of barrier curb and shall conform to crown and grade of roadway.

NOTE:

The expansion device shall be fabricated and installed in accordance with the recommendations of the manufacturer, and as set forth in the Special Provisions.

The contractor shall verify all dimensions prior to fabrication.

All welds shall conform to Section 712 of the Standard Specifications.

Splices of steel extrusion shall develop full strength.

All steel shall be ASTM A709 Grade 36, except steel extrusions shall be ASTM A709 Grade 50W or Grade 36.

Neoprene Strip Seal shall meet ASTM D-2628.

Payment for furnishing and installing steel extrusions, elastomeric concrete and neoprene strip seal shall be made under the contract unit price for Strip Seal Expansion Joint System.

Structural steel for the expansion joint system shall be coated with a minimum of two coats of inorganic zinc primer (5 mils minimum). The interior portion of the extrusion which will be in contact with the gland shall not be coated. Anchorage for extrusion need not be protected from overspray.

Payment for furnishing, coating and placing steel extrusions shall be included in the contract unit price for Strip Seal Expansion Joint System.

The expansion device shall be bent to conform to crown and grade of Roadway.

Payment for removal of existing expansion device, curb and parapet removal & replacement and preparation for installation of new expansion device shall be included in the contract unit price for Modification of Existing Expansion Joint. (See Special Provisions)

STATE OF MISSOURI
KURT E. GRIBBLE
NUMBER E-23576
REGISTERED PROFESSIONAL ENGINEER

DATE 9-7-00

DETAILS OF STRIP SEAL EXPANSION JOINT SYSTEM

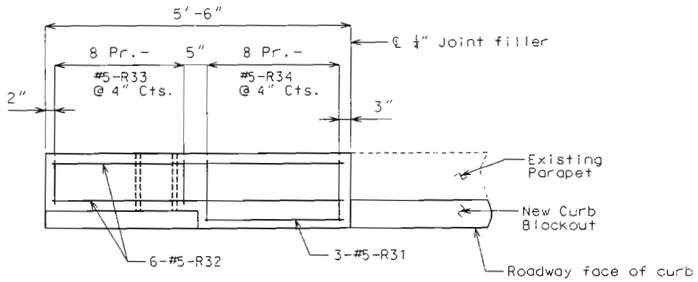
Detailed MAY 2000
Checked AUG. 2000

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

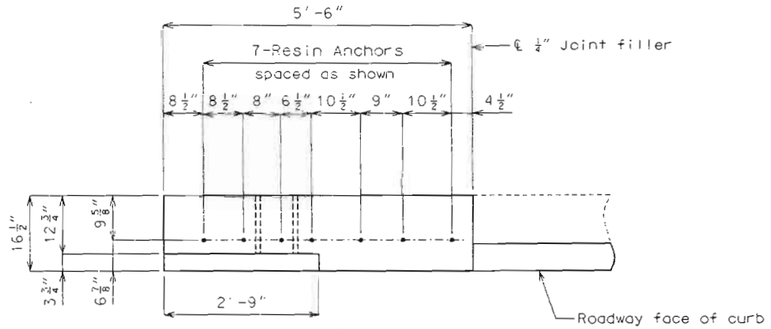
CLAY COUNTY A17632

REV.

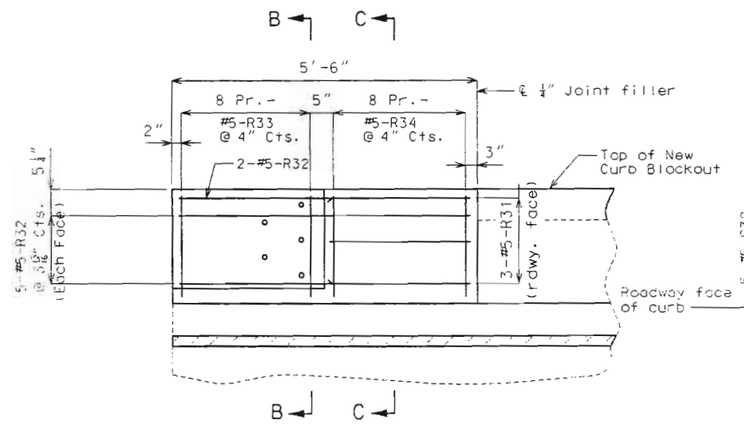
State	Proj. No.	Sheet No.
MO		B2F



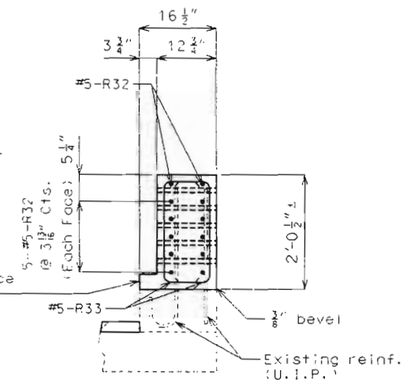
PLAN SHOWING END POST REINFORCEMENT



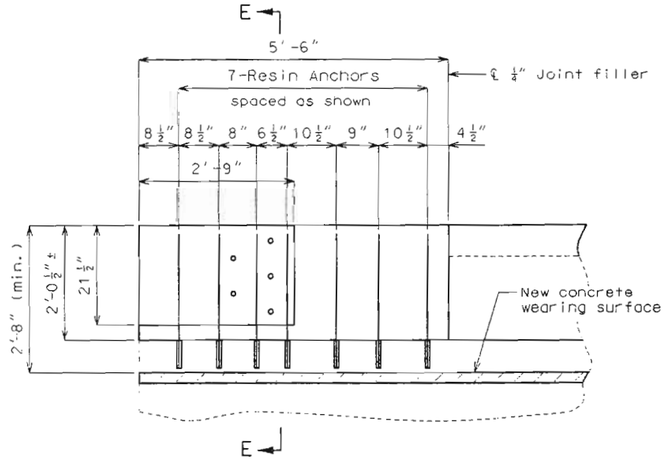
PLAN SHOWING END POST RESIN ANCHOR SYSTEMS & DIMENSIONS



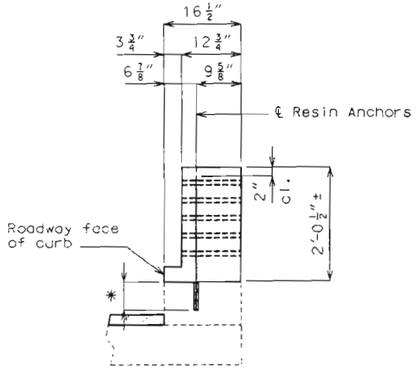
SECTION SHOWING END POST REINFORCEMENT



SECTION B-B

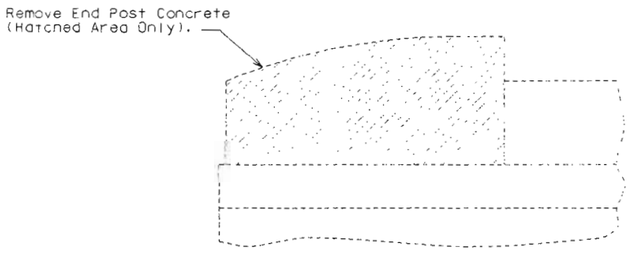


ELEVATION SHOWING END POST RESIN ANCHOR SYSTEMS & DIMENSIONS

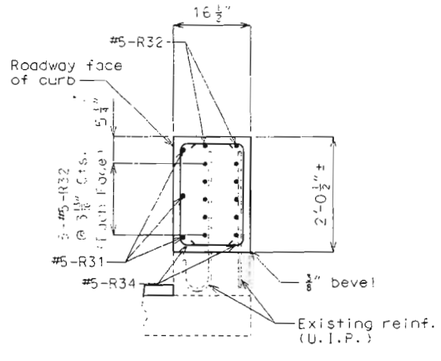


SECTION E-E

* Manufacturer's embedment length (6" max.)

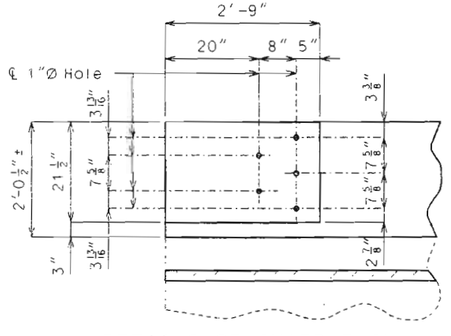


ELEVATION OF EXISTING END POST SHOWING CONCRETE REMOVAL



SECTION C-C

DETAILS OF END POST



DETAILS OF GUARD RAIL ATTACHMENT

Note:

Connector plate detail on Missouri Standard Plans Sheet 606.22 is not required for Bridge Anchor Section.

STATE OF MISSOURI
KURT E. GRIBBLE
NUMBER E-23578
REGISTERED PROFESSIONAL ENGINEER

DATE 9-7-00

Detailed MAY 2000
Checked AUG. 2000

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

CLAY COUNTY A17632

REV.

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bardbill.i Oct. 1991

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE	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.
			BLOCKOUT																									
9	5	R8	BLOCKOUT	E	20					6	3.000													6	3	6	3	59
3	5	R9	BLOCKOUT	E	20					9	3.000													9	3	9	3	29
104	5	R10	BLOCKOUT	E	20					9	9.000													9	9	9	9	1058
6	5	R11	BLOCKOUT	E	20					34	2.000													34	2	34	2	214
6	5	R12	BLOCKOUT	E	20					37	9.000													37	9	37	9	236
6	5	R13	BLOCKOUT	E	20					31	10.000													31	10	31	10	199
6	5	R14	BLOCKOUT	E	20					29	11.000													29	11	29	11	187
6	5	R15	BLOCKOUT	E	20					27	7.000													27	7	27	7	173
3	5	R16	BLOCKOUT	E	20					3	4.000													3	4	3	4	10
6	5	R17	BLOCKOUT	E	20					26	7.000													26	7	26	7	166
18	5	R18	BLOCKOUT	E	20					35	5.000													35	5	35	5	665
6	5	R19	BLOCKOUT	E	20					32	3.000													32	3	32	3	202
6	5	R20	BLOCKOUT	E	20					35	7.000													35	7	35	7	223
6	5	R21	BLOCKOUT	E	20					39	6.000													39	6	39	6	247
6	5	R22	BLOCKOUT	E	20					33	4.000													33	4	33	4	209
6	5	R23	BLOCKOUT	E	20					31	4.000													31	4	31	4	196
6	5	R24	BLOCKOUT	E	20					28	9.000													28	9	28	9	180
3	5	R25	BLOCKOUT	E	20					3	6.000													3	6	3	6	11
6	5	R26	BLOCKOUT	E	20					27	9.000													27	9	27	9	174
18	5	R27	BLOCKOUT	E	20					36	11.000													36	11	36	11	693
6	5	R28	BLOCKOUT	E	20					33	6.000													33	6	33	6	210
8	5	R29	BLOCKOUT	E	20					2	6.500													2	7	2	7	22
8	5	R30	BLOCKOUT	E	12					2	0.000	7	6.000	2	0.000									5	3	5	0	42
12	5	R31	END POST	E	20					2	6.000													2	6	2	6	31
48	5	R32	END POST	E	20					5	3.000													5	3	5	3	263
64	5	R33	END POST	E	10	S						9	9.750	21	6.000									3	5	3	3	217
64	5	R34	END POST	E	10	S						13	6.500	21	6.000									4	1	3	10	256
			TOTALS																									
	5			E																								6172

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE	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.

State	Proj. No.	Sheet No.
MO		B24

SHAPE 6 SHAPE 7 SHAPE 8

SHAPE 9 SHAPE 10 SHAPE 11

SHAPE 12 SHAPE 13 SHAPE 14

SHAPE 15 SHAPE 16 SHAPE 17 SHAPE 18 SHAPE 20

SHAPE 19 SHAPE 21 SPOT WELD AASHTO M32 SIZE W5 WIRE (TYP.)

SHAPE 23 SHAPE 24 SHAPE 22

SHAPE 25 SHAPE 26 SHAPE 27

SHAPE 28 SHAPE 29 SHAPE 31

SHAPE 30 SHAPE 32

SHAPE 36 SHAPE 35 SHAPE 34 SHAPE 33

(SHAPE 35 SHALL BE A SMOOTH BAR OR WIRE.)

BENDING DIAGRAMS

6d FOR #4 AND #5. 12d FOR #6

90° STIRRUP 135° STIRRUP

DETAILED MAY 2000
CHECKED AUG. 2000

STIRRUP HOOK DIMENSIONS

GRADES 40 - 50 - 60 KSI

BAR SIZE	D (IN.)	90° HOOK A OR G	90° HOOK J	135° HOOK A OR G	135° HOOK APPROX. J
#4	2"	4-1/2"	4-1/2"	4-1/2"	3"
#5	2-1/2"	6"	5-1/2"	5-1/2"	3-3/4"
#6	4-1/2"	12"	8"	4-1/2"	4-1/2"

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

DETAILING DIMENSION 90° 12d HOOK A OR G 180° 4d OR 2-1/2" MIN.

END HOOK DIMENSIONS

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

TWO ADDITIONAL #5-R10 ARE INCLUDED IN THE BAR BILL FOR TESTING.

NOTE:
ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH THE 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 FABRICATOR'S 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) = FY 60,000 PSI.

STATE OF MISSOURI KURT E. GRIBBLE NUMBER E-23576 REGISTERED PROFESSIONAL ENGINEER

DATE 9-7-00

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

SHEET NO. 10 OF 10

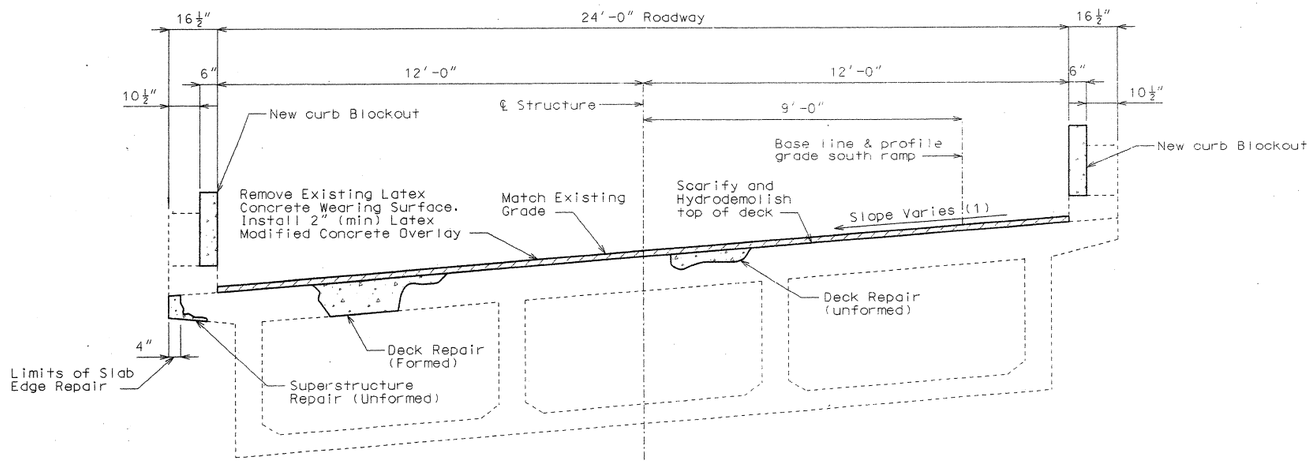
CLAY COUNTY

A17632

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

State	Proj. No.	Sheet No.
MO	FAI-29-1(102)	B 20
SEC/SUR 1	TWP 50N	RGE 33W

Contract I.D. 001215-402



TYPICAL SECTION THRU SLAB

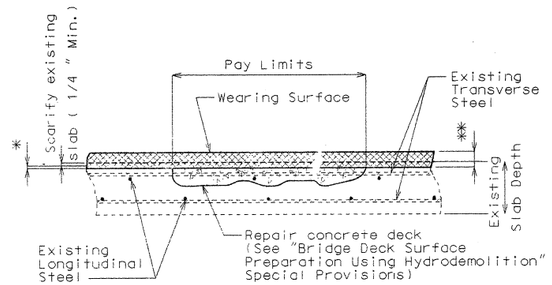
(1) See sheet No. 2 of Existing Bridge Plans A1763R for Gutter line Elevations.

FINAL ~ QUANTITIES

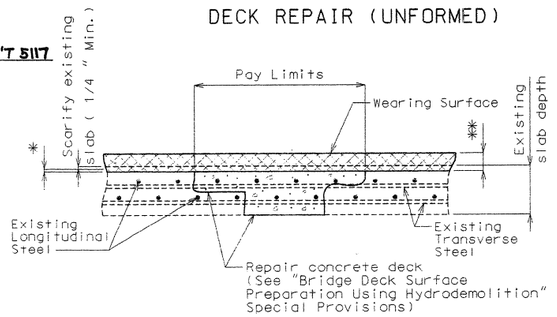
ITEM		TOTAL
↘Scarification of Bridge Deck	sq. yd.	↘2181
↘Removal of Existing Bridge Rail	lin. ft.	↘1664
↘Curb Removal (Bridges)	lin. ft.	↘22
↘Removal of Latex Concrete Wearing Surface	sq. ft.	↘19632
↘Superstructure Repair (Unformed)	sq. ft.	↘179
↘Curb Blockout	lin. ft.	↘1687
↘Deck Repair (Formed)	sq. ft.	↘610
↘Deck Repair (Unformed)	sq. ft.	↘14091
↘Slab Edge Repair (Bridges)	lin. ft.	↘273
↘Latex Concrete Wearing Surface	sq. yd.	↘2181
↘Strip Seal Expansion Joint System	lin. ft.	↘24
↘Modification of Existing Expansion Joint	lin. ft.	↘24
↘Hydrodemolition	sq. yd.	↘2181

CON'T 5117

Note: ↘ Payment for the removal of existing end posts shall be included in the unit price for "Curb Removal (Bridges)" per lin. ft.



DECK REPAIR (UNFORMED)



* Remove additional 1/4" to 1/2" of sound concrete by Hydrodemolition.

** 2" (min.) (variable depth) for Latex Modified Concrete

DECK REPAIR (FORMED)

Note:

Repair concrete shall be terminated at a vertical face of existing concrete. The repair shall not taper to less than 1" in thickness.

General Notes:

Design Specifications:
AASHTO - 1996 and Interims thru 1998

Design Unit Stresses:
Class B1 Concrete (Curb Blockout and End Posts) f'c = 4,000 psi
Class B2 Concrete (Deck Repair Formed and Deck Repair Unformed) f'c = 4,000 psi
Reinforcing Steel (Grade 60) fy = 60,000 psi

Joint Filler:
All joint filler shall meet the requirements of Section 1057.2.4 of the Missouri Standard Specifications, except as noted.

Reinforcing Steel:
Minimum clearance to reinforcing steel shall be 1-1/2", unless otherwise shown.

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.

Traffic:
See roadway plans for traffic control during construction.

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

The 5/8" diameter resin anchor systems shall have a minimum ultimate pullout strength of 15,500 lbs. in concrete with f'c = 4,000 psi, see special provisions

An epoxy coated #5 Grade 60 reinforcing bar shall be substituted for the 5/8" Ø threaded rod stud. For shape and length of reinforcing bar, see sheet no. 2.

Curb Blockouts:
Measurement of curb blockout is to the nearest linear foot, measured at the gutter line from end of slab to end of slab.

All exposed edges of curb blockout shall have 1/2" radius or 3/8" bevel unless otherwise shown.

Payment for concrete, reinforcing steel, resin anchors, and any other work incidental to the curb blockout and end posts, complete in place, shall be included in the contract unit price for the Curb Blockout per linear foot.

Cost of any concrete curb and parapet repair shall be considered completely covered in the unit price bid for Curb Blockout.

All reinforcement shall be epoxy coated.

Miscellaneous:
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.

Roadway surfacing adjacent to bridge ends to match bridge overlay.

In order to maintain grade and minimum thickness of overlay as shown on plans it may be necessary to use additional quantities of overlay at various locations throughout the structure. Payment shall be considered completely covered in the unit price bid for Latex Concrete Wearing Surface.

Final Plans

I certify that this plan sheet accurately depicts the configuration and location of the roadway and all its appurtenant features, to the best of my knowledge, as I and my staff have observed the contractor's construction of this project. I specifically disclaim any responsibility for the design of this project, except as I and my staff may have modified or authorized the modification of the project design during its construction; and I disclaim responsibility for the contractor's actual construction of the project, except as I and my staff may have directed or ordered that the project be constructed.

Signature

Date 4/8/02

STATE OF MISSOURI JON GERARD VOSS NUMBER E-2001821?? REGISTERED PROFESSIONAL ENGINEER 4/8/02

STATE OF MISSOURI KURT E. GRIBBLE NUMBER E-23576 REGISTERED PROFESSIONAL ENGINEER DATE 9-7-00

B.M. Elev. 908.11, "□" on curb Lt. @ Bent no. 1.

REPAIRS TO BRIDGE OVER RTE. I-29 & RTE. I-35

STATE ROAD 1-35 TO RTE. 169

IN KANSAS CITY

PROJECT NO. STA. 112+00.27± (MATCH EXISTING)

JOB NO. J4I1328 RTE. I-29 S.B.L. RAMP

CLAY COUNTY

Date: 9/11/00

STD.
STD.
STD.
STD. 706.35
A17632

REV.

Designed MAY 2000
Detailed MAY 2000
Checked AUG. 2000

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

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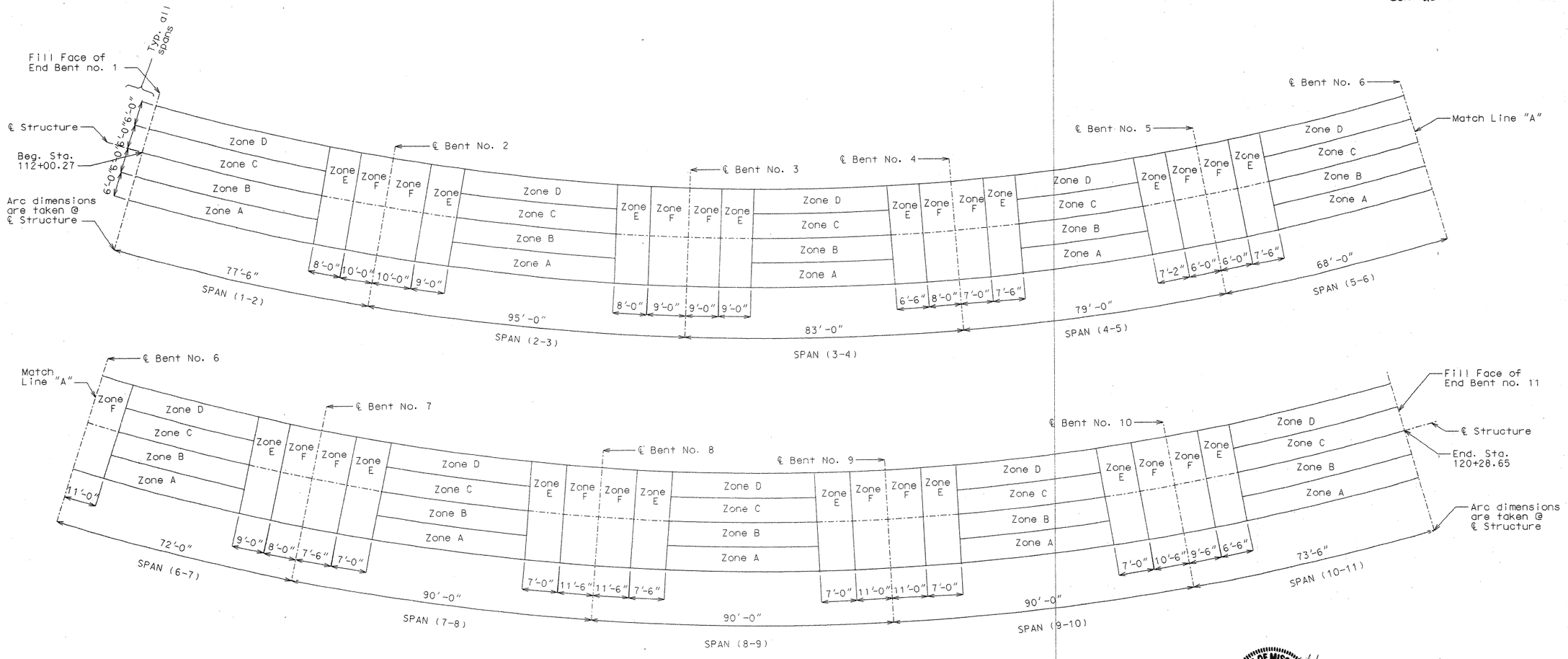
State	Proj. No.	Sheet No.
MO	FAI-29-1(102)	B21

Contract I.D. 001215-402



PLAN OF SLAB SHOWING SPECIAL REPAIR ZONES

Notes:

Concrete removal shall be done first in the areas designated Zone "A", "B", "C", "D", "E" & "F" in alphabetical order. Unformed and Formed Deck Repairs shall be made in each zone before concrete is removed from the next zone. (See Special Provisions)

Zones with the same letter designation may be repaired at the same time.

STATE OF MISSOURI JASON GERARD LOESS NUMBER E-2000162177 REGISTERED PROFESSIONAL ENGINEER 4/8/02

Final Plans

I certify that this plan sheet accurately depicts the configuration and location of the roadway and all its appurtenant features, to the best of my knowledge, as I and my staff have observed the contractor's construction of this project. I specifically disclaim any responsibility for the design of this project, except as I and my staff may have modified or authorized the modification of the project design during its construction; and I disclaim responsibility for the contractor's actual construction of the project, except as I and my staff may have directed or ordered that the project be constructed.

Signature Jason Loess Date 4/8/02

STATE OF MISSOURI KURT E GRIBBLE NUMBER E-23576 REGISTERED PROFESSIONAL ENGINEER

DATE 9-7-00

Detailed MAY 2000
Checked AUG. 2000

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

CLAY COUNTY A17632

REV.

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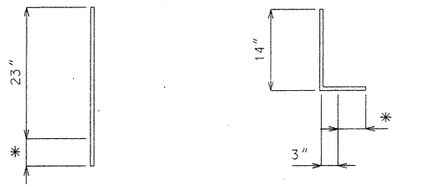
8

State	Proj. No.	Sheet No.
MO	FAI-29-1(102)	B22

Contract I.D. 001215-402

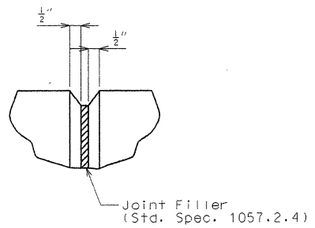


(916 req'd)
(Install in curb)

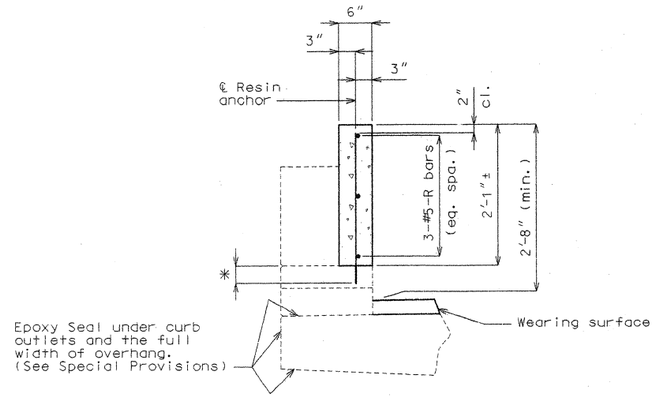
(878 req'd)
(Install in parapet)

* Manufacturer's embedment length (6" max. and 3 1/2 " max at curb outlets for vertical anchors)

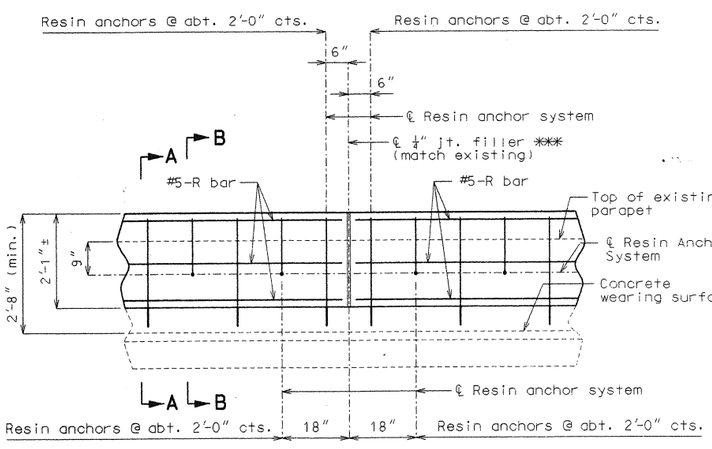
DETAILS OF RESIN ANCHORS



FILLED JOINT DETAIL

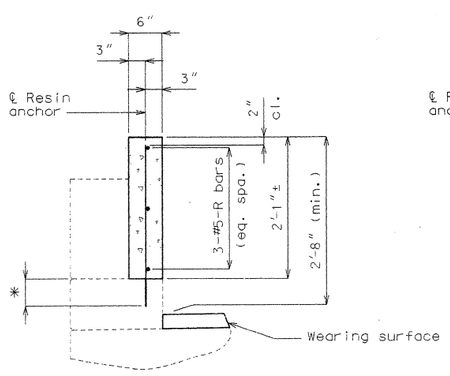


TYPICAL SECTION OF EXISTING CURB SHOWING OUTLET

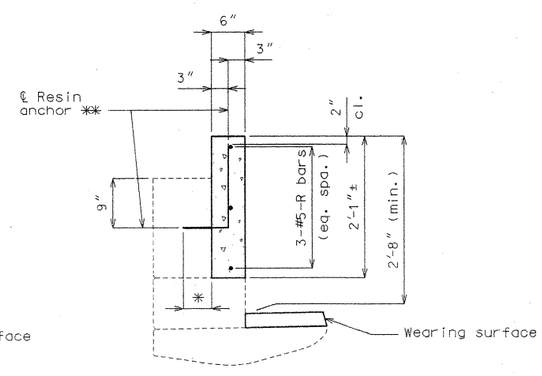


PART SECTION NEAR CURB BLOCKOUT

*** Except Int. Bent No. 6 see sheet no. 8 for details.



SECTION A-A



SECTION B-B

** Shift resin anchors where necessary to clear existing anchor bolts for tube rail.

DETAILS OF CURB BLOCKOUT

Final Plans

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Signature

4/8/02
Date

STATE OF MISSOURI
JON GERARD
NUMBER
E-2000182177
REGISTERED PROFESSIONAL ENGINEER
4/8/02

STATE OF MISSOURI
KURT E. GRIBBLE
NUMBER
E-23578
REGISTERED PROFESSIONAL ENGINEER

DATE 9-7-00

Detailed MAY 2000
Checked AUG. 2000

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

Sheet No. 3 of 10

CLAY COUNTY A17632 REV.

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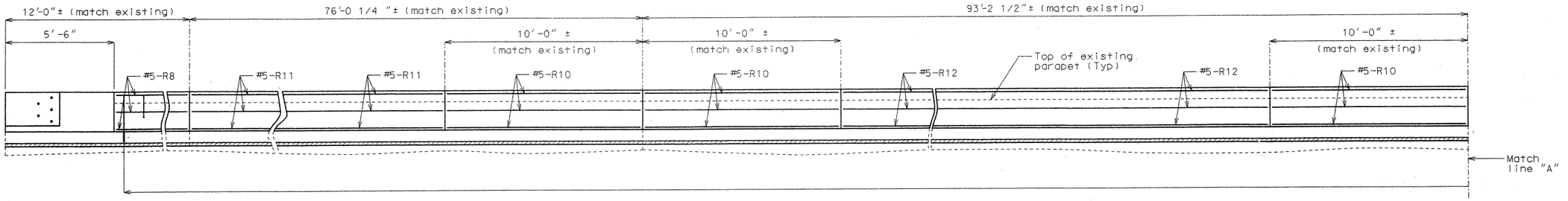
9

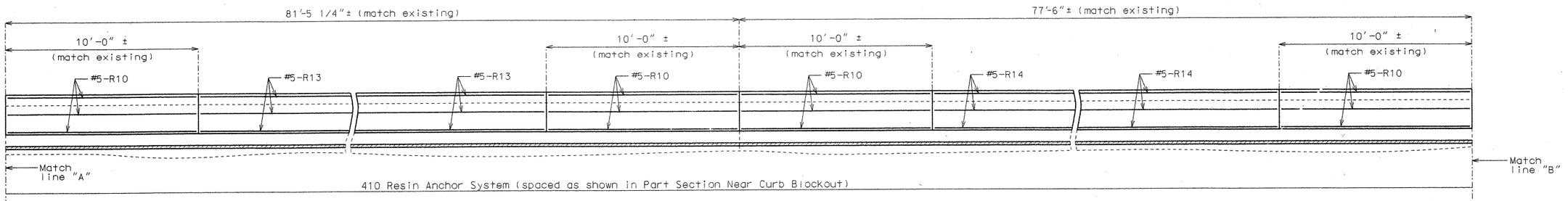
State	Proj. No.	Sheet No.
MO	FAI-29-1(102)	B23

Contract I.D. 001215-402



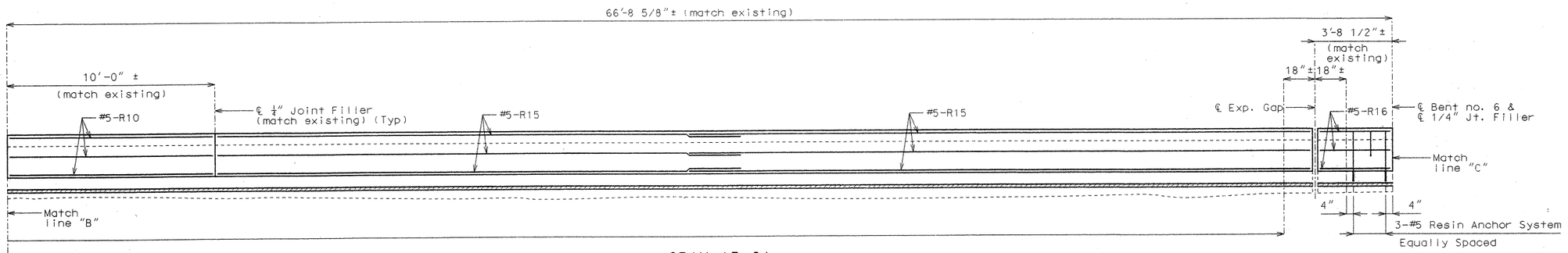
SPAN (1-2)

SPAN (2-3)



SPAN (3-4)

SPAN (4-5)



SPAN (5-6)

Note:

For details of end post, see sheet no. 9.

For details of curb blockout, see sheet no. 3.

For elevation near right curb blockout, see sheet no. 6 & 7.

All longitudinal dimensions shown are measured along outside face of parapet along the curve.

For details of curb near Bent no. 6, see sheet no. 8.

SECTION NEAR LEFT CURB BLOCKOUT SPANS (1-2) THRU (5-6)

DETAILS OF CURB BLOCKOUT

Final Plans

I certify that this plan sheet accurately depicts the configuration and location of the roadway and all its appurtenant features, to the best of my knowledge, as I and my staff have observed the contractor's construction of this project. I specifically disclaim any responsibility for the design of this project, except as I and my staff may have modified or authorized the modification of the project design during its construction; and I disclaim responsibility for the contractor's actual construction of the project, except as I and my staff may have directed or ordered that the project be constructed.

Signature Jon Gross Date 4/8/02

STATE OF MISSOURI JON GERARD GROSS NUMBER E-2000162177 REGISTERED PROFESSIONAL ENGINEER 4/9/02

STATE OF MISSOURI KURT E GRIBBLE NUMBER E-23576 REGISTERED PROFESSIONAL ENGINEER

DATE 9-7-00

Detailed MAY 2000
Checked AUG. 2000

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

CLAY COUNTY A17632

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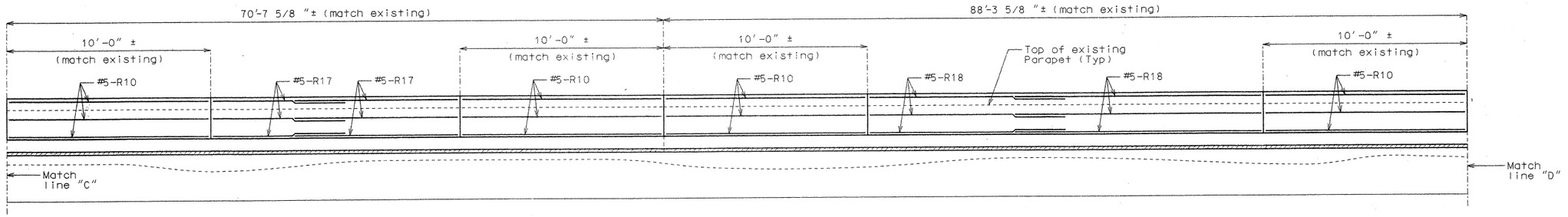
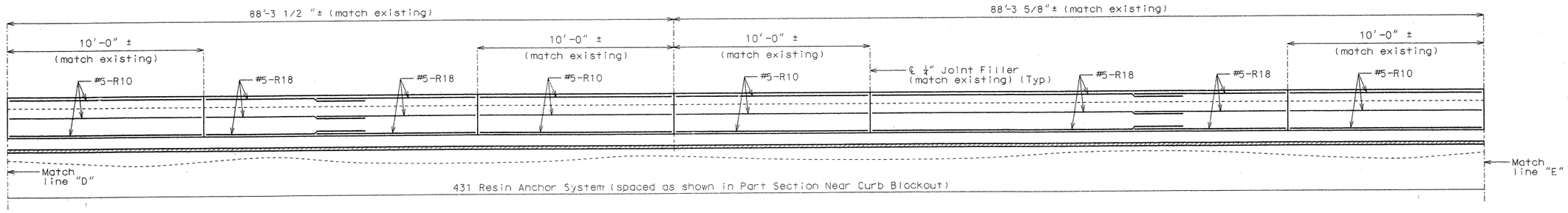
State	Proj. No.	Sheet No.
MO	FAI-29-1(102)	B24

Contract I.D. 001215-402



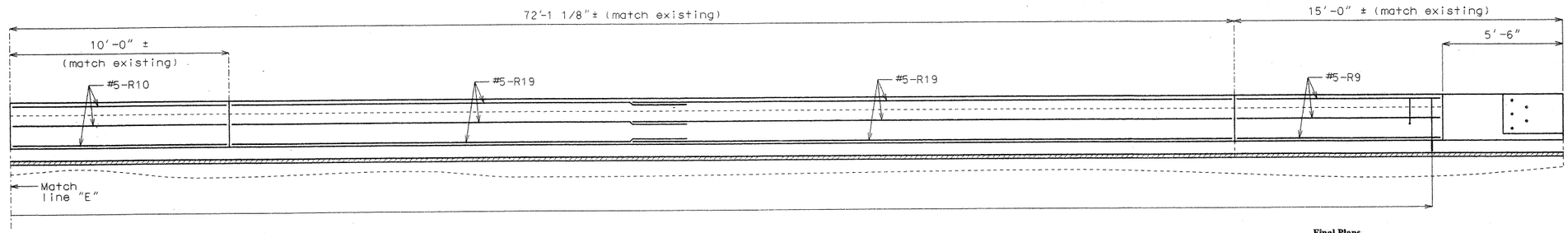
SPAN (6-7)

SPAN (7-8)



SPAN (8-9)

SPAN (9-10)



SPAN (10-11)

Note:

For details of end post, see sheet no. 9.

For details of curb blockout, see sheet no. 3.

For elevation near right curb blockout, see sheet no. 6 & 7.

All longitudinal dimensions shown are measured along outside face of parapet along the curve.

SECTION NEAR LEFT CURB BLOCKOUT SPANS (6-7) THRU (10-11)

DETAILS OF CURB BLOCKOUT

Final Plans

I certify that this plan sheet accurately depicts the configuration and location of the roadway and all its appurtenant features, to the best of my knowledge, as I and my staff have observed the contractor's construction of this project. I specifically disclaim any responsibility for the design of this project, except as I and my staff may have modified or authorized the modification of the project design during its construction; and I disclaim responsibility for the contractor's actual construction of the project, except as I and my staff may have directed or ordered that the project be constructed. .

Signature _____ Date 4/8/02

STATE OF MISSOURI JON GERARD VOSS NUMBER E-2000152177 REGISTERED PROFESSIONAL ENGINEER 4/8/02

STATE OF MISSOURI KURT E. GRIBBLE NUMBER E-23576 REGISTERED PROFESSIONAL ENGINEER

DATE 9-7-00

Detailed MAY 2000
Checked AUG. 2000

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

CLAY COUNTY A17632

REV.

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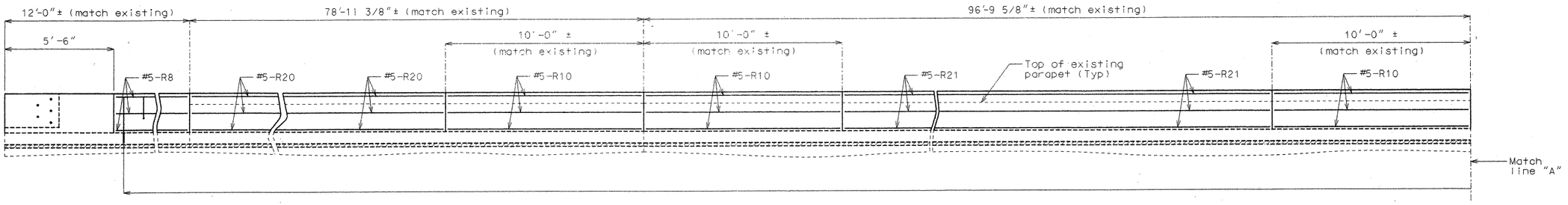
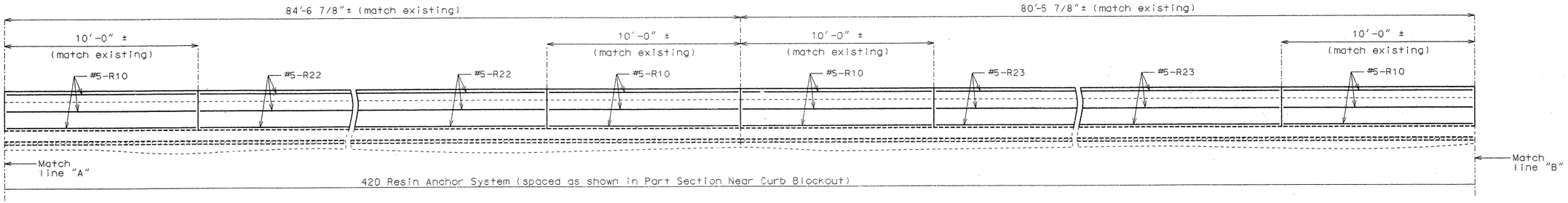
State	Proj. No.	Sheet No.
MO	FAI-29-1-(102)	B25

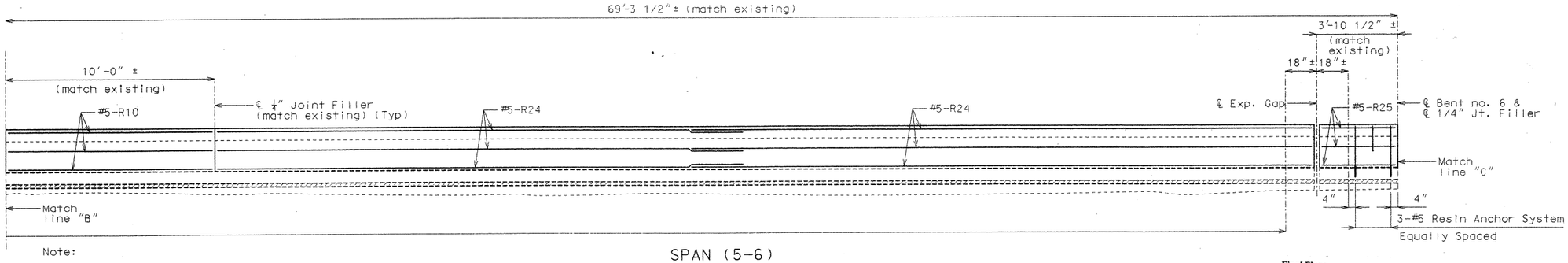
Contract I.D. 001215-402



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



SPAN (3-4) SPAN (4-5)



SPAN (5-6)

Note:

For details of end post, see sheet no. 9.

For details of curb blockout, see sheet no. 3.

For section near left curb blockout, see sheet no. 4 & 5.

All longitudinal dimensions shown are measured along outside face of parapet along the curve.

For details of curb near Bent no. 6, see sheet no. 8.

ELEVATION NEAR RIGHT CURB BLOCKOUT SPANS (1-2) THRU (5-6)

DETAILS OF CURB BLOCKOUT

Final Plans

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Signature 4/8/02 Date

STATE OF MISSOURI JON GERARD VOSS NUMBER E-2000152177 REGISTERED PROFESSIONAL ENGINEER 4/8/02

STATE OF MISSOURI KURT E. GRIBBLE NUMBER E-23576 REGISTERED PROFESSIONAL ENGINEER

DATE 9-7-00

Detailed APR. 2000
Checked APR. 2000

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

CLAY COUNTY A17632

REV.

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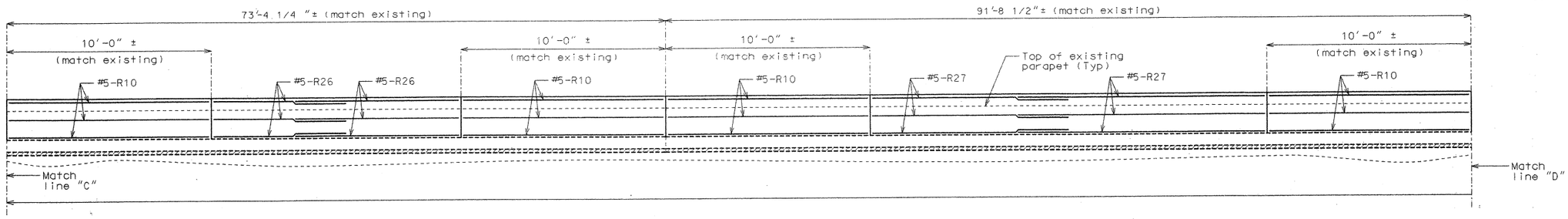
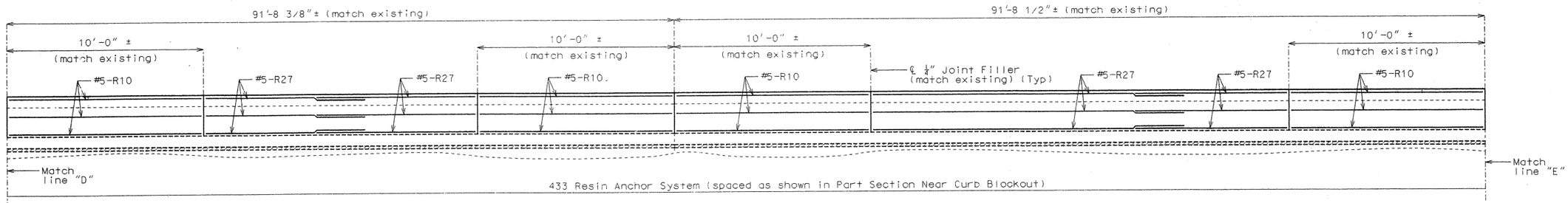
State	Proj. No.	Sheet No.
MO	FAI-29-1(102)	B26

Contract I. D. 001215-402



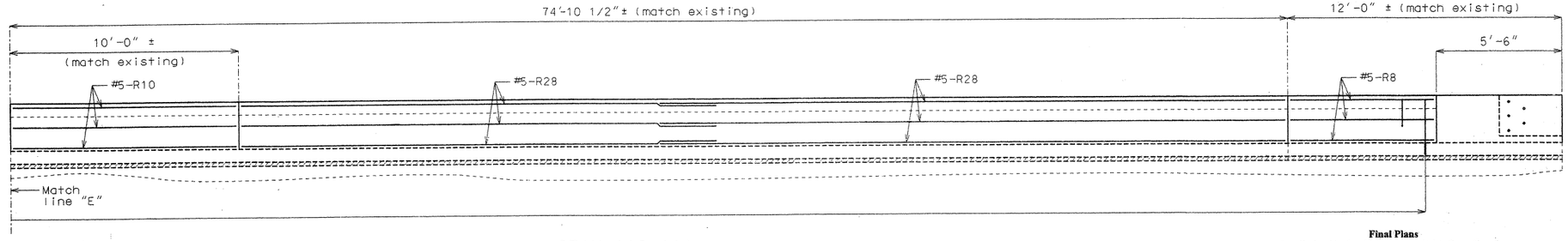
SPAN (6-7)

SPAN (7-8)



SPAN (8-9)

SPAN (9-10)



SPAN (10-11)

Note:

For details of end post, see sheet no. 9.

For details of curb blockout, see sheet no. 3.

For section near left curb blockout, see sheet no. 4 & 5.

ELEVATION NEAR RIGHT CURB BLOCKOUT SPANS (6-7) THRU (10-11)

DETAILS OF CURB BLOCKOUT

Final Plans

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Signature 4/8/02 Date

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STATE OF MISSOURI KURT E. GRIBBLE NUMBER E-23576 REGISTERED PROFESSIONAL ENGINEER

DATE 9-7-00

Detailed APR. 2000
Checked AUG. 2000

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CLAY COUNTY A17632

REV.

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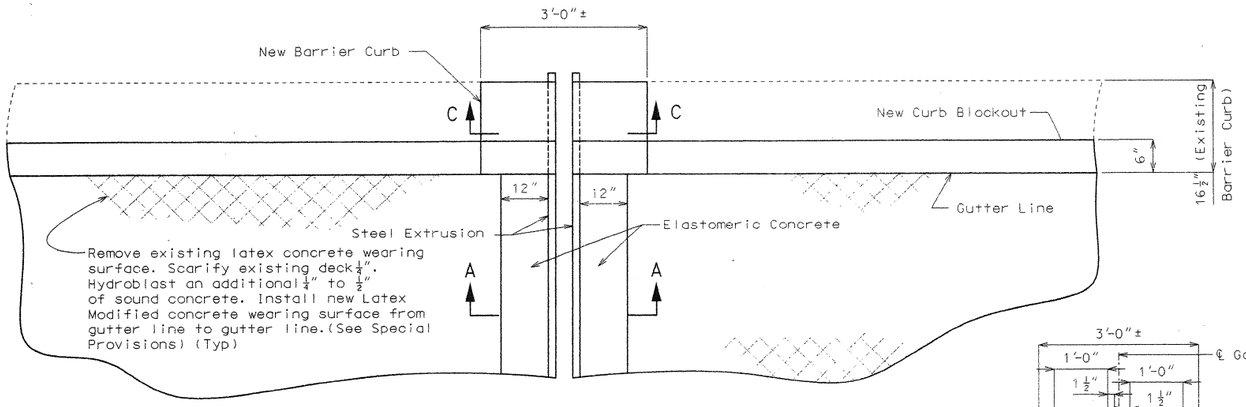
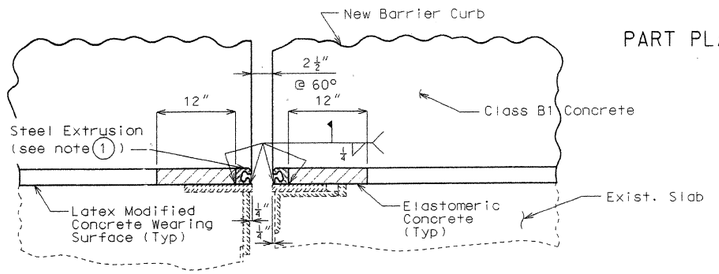
Contract I.D. 001215-402

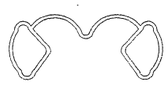
State	Proj. No.	Sheet No.
MO	FAI-29-1-(102)	B27



PART PLAN

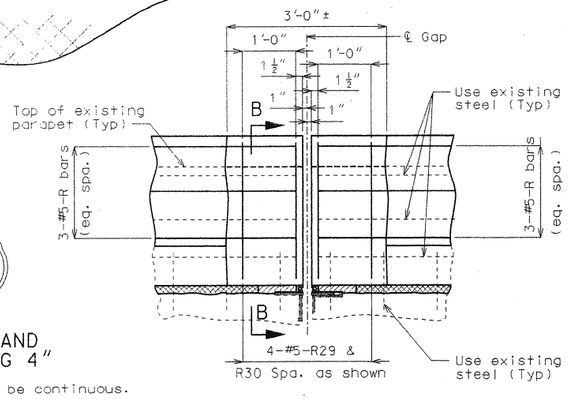


SECTION A-A @ BENT 6



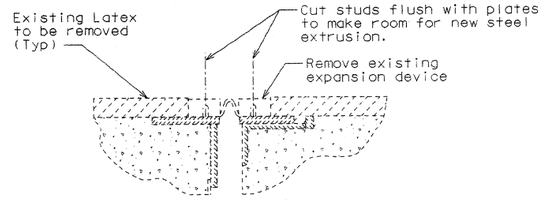
STRIP SEAL GLAND
MOVEMENT RATING 4"

Note: Strip Seal Gland shall be continuous. Field splicing shall not be allowed.

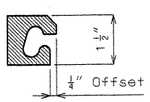


ELEVATION OF BARRIER CURB @ BENT NO. 6

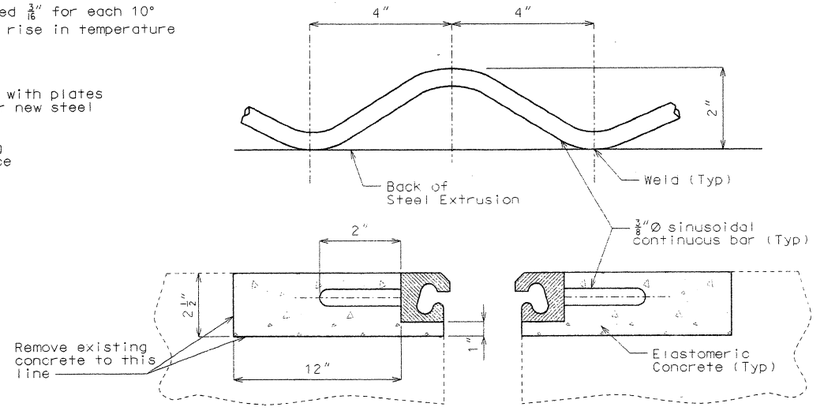
Note: Expansion Joint Dimensions shall be increased 3/16" for each 10° fall in temperature and decreased 3/16" for each 10° rise in temperature at installation.



TYPICAL SECTION THRU
EXISTING EXPANSION DEVICE



DETAIL OF
STEEL EXTRUSIONS

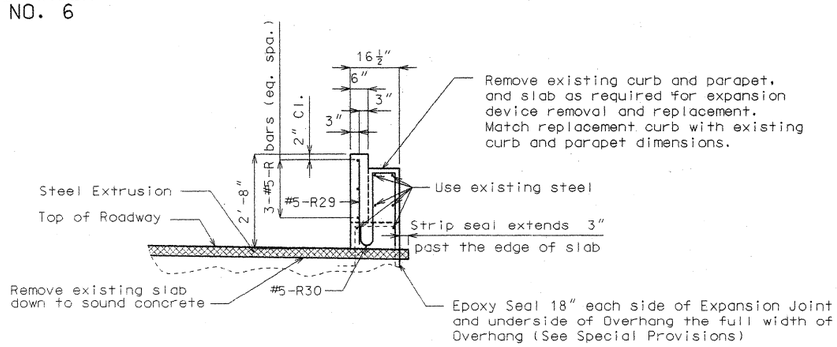


SECTION C-C
(Curb not shown for clarity)

Note:

Sinusoidal bar shall be welded to strip seal extrusion with approprite weld to meet AASHTO Fatigue Category C for conection.

The sinusoidal bar shall be used in the areas were the Steel Extrusion can not be welded to existing plates.



SECTION B-B

NOTE:

The expansion device shall be fabricated and installed in accordance with the recommendations of the manufacturer, and as set forth in the Special Provisions.

The contractor shall verify all dimensions prior to fabrication.

All welds shall conform to Section 712 of the Standard Specifications.

Splices of steel extrusion shall develop full strength.

All steel shall be ASTM A709 Grade 36, except steel extrusions shall be ASTM A709 Grade 50W or Grade 36.

Neoprene Strip Seal shall meet ASTM D-2628.

Payment for furnishing and installing steel extrusions, elastomeric concrete and neoprene strip seal shall be made under the contract unit price for Strip Seal Expansion Joint System.

Structural steel for the expansion joint system shall be coated with a minimum of two coats of inorganic zinc primer (5 mils minimum). The interior portion of the extrusion which will be in contact with the gland shall not be coated. Anchorage for extrusion need not be protected from overspray.

Payment for furnishing, coating and placing steel extrusions shall be included in the contract unit price for Strip Seal Expansion Joint System.

The expansion device shall be bent to conform to crown and grade of Roadway.

Payment for removal of existing expansion device, curb and parapet removal & replacement and preparation for installation of new expansion device shall be included in the contract unit price for Modification of Existing Expansion Joint. (See Special Provisions)

Note (1) = Steel extrusion shall extend over full width of barrier curb and shall conform to crown and grade of roadway.

Final Plans

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Jon D Hoss 4/8/02
Signature Date

STATE OF MISSOURI JON GERARD HOSS NUMBER E-2000162177 REGISTERED PROFESSIONAL ENGINEER 4/8/02

STATE OF MISSOURI KURT E. GRIBBLE NUMBER E-23576 REGISTERED PROFESSIONAL ENGINEER

DATE 9-7-00

Detailed MAY 2000
Checked AUG. 2000

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

Sheet No. 8 of 10

DETAILS OF STRIP SEAL EXPANSION JOINT SYSTEM

CLAY COUNTY

A17632 REV.

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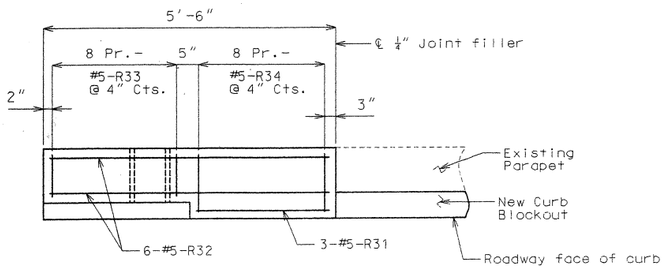
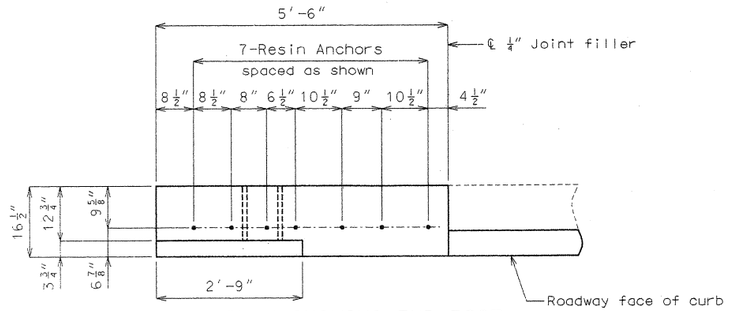
State	Proj. No.	Sheet No.
MO	FAI-29-1(102)	B28

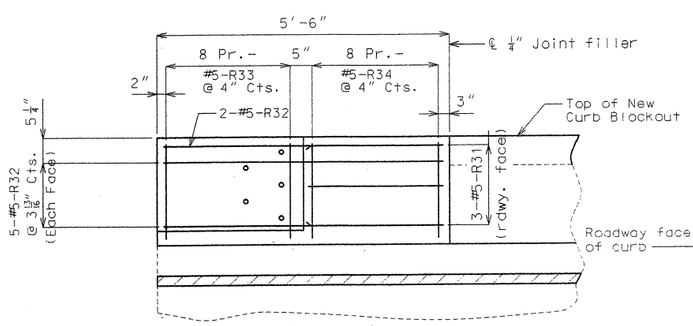
Contract I.D. 001215-402



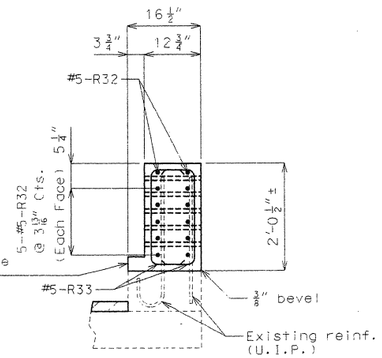
PLAN SHOWING END POST REINFORCEMENT



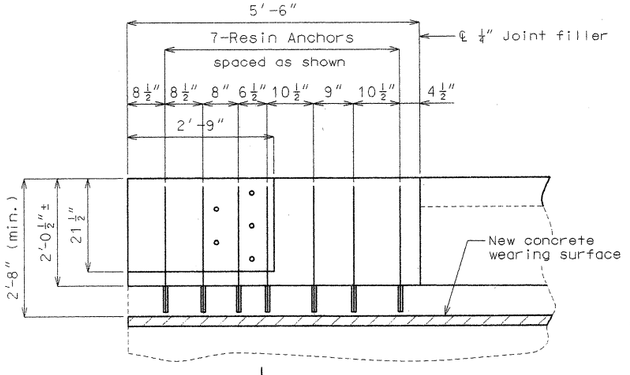
PLAN SHOWING END POST RESIN ANCHOR SYSTEMS & DIMENSIONS



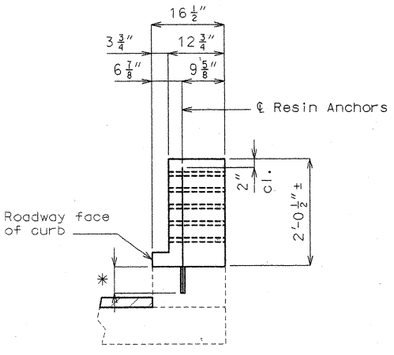
SECTION SHOWING END POST REINFORCEMENT



SECTION B-B

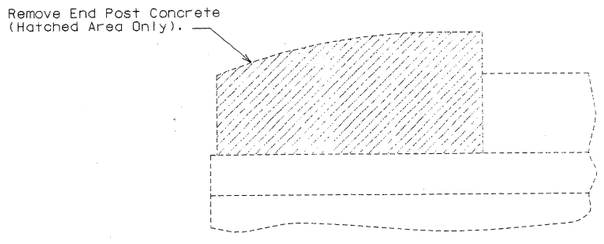


ELEVATION SHOWING END POST RESIN ANCHOR SYSTEMS & DIMENSIONS

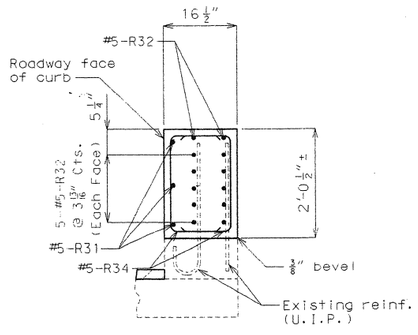


SECTION E-E

✳ Manufacturer's embedment length (6" max.)

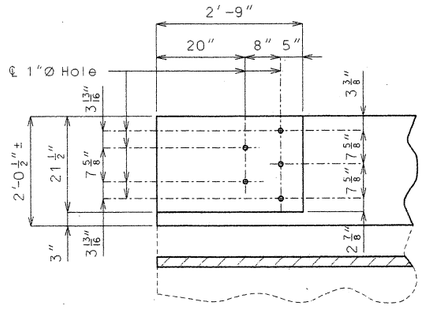


ELEVATION OF EXISTING END POST SHOWING CONCRETE REMOVAL



SECTION C-C

DETAILS OF END POST



DETAILS OF GUARD RAIL ATTACHMENT

Note:

Connector plate detail on Missouri Standard Plans Sheet 606.22 is not required for Bridge Anchor Section.

Final Plans

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Signature 4/8/02 Date

STATE OF MISSOURI JON GERARD NUMBER E-2000162177 REGISTERED PROFESSIONAL ENGINEER 7/8/02

STATE OF MISSOURI KURT E. GRIBBLE NUMBER E-23576 REGISTERED PROFESSIONAL ENGINEER

DATE 9-7-00

Detailed MAY 2000
Checked AUG. 2000

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

CLAY COUNTY A17632 REV.

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BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE	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.
			BLOCKOUT																									
9	5	R8	BLOCKOUT	E	20					6	3.000													6	3	6	3	59
3	5	R9	BLOCKOUT	E	20					9	3.000													9	3	9	3	29
104	5	R10	BLOCKOUT	E	20					9	9.000													9	9	9	9	1058
6	5	R11	BLOCKOUT	E	20					34	2.000													34	2	34	2	214
6	5	R12	BLOCKOUT	E	20					37	9.000													37	9	37	9	236
6	5	R13	BLOCKOUT	E	20					31	10.000													31	10	31	10	199
6	5	R14	BLOCKOUT	E	20					29	11.000													29	11	29	11	187
6	5	R15	BLOCKOUT	E	20					27	7.000													27	7	27	7	173
3	5	R16	BLOCKOUT	E	20					3	4.000													3	4	3	4	10
6	5	R17	BLOCKOUT	E	20					26	7.000													26	7	26	7	166
18	5	R18	BLOCKOUT	E	20					35	5.000													35	5	35	5	665
6	5	R19	BLOCKOUT	E	20					32	3.000													32	3	32	3	202
6	5	R20	BLOCKOUT	E	20					35	7.000													35	7	35	7	223
6	5	R21	BLOCKOUT	E	20					39	6.000													39	6	39	6	247
6	5	R22	BLOCKOUT	E	20					33	4.000													33	4	33	4	209
6	5	R23	BLOCKOUT	E	20					31	4.000													31	4	31	4	196
6	5	R24	BLOCKOUT	E	20					28	9.000													28	9	28	9	180
3	5	R25	BLOCKOUT	E	20					3	6.000													3	6	3	6	11
6	5	R26	BLOCKOUT	E	20					27	9.000													27	9	27	9	174
18	5	R27	BLOCKOUT	E	20					36	11.000													36	11	36	11	693
6	5	R28	BLOCKOUT	E	20					33	6.000													33	6	33	6	210
8	5	R29	BLOCKOUT	E	20					2	6.500													2	7	2	7	22
8	5	R30	BLOCKOUT	E	12					2	0.000	7.500		2	0.000									5	3	5	0	42
12	5	R31	END POST	E	20					2	6.000													2	6	2	6	31
48	5	R32	END POST	E	20					5	3.000													5	3	5	3	263
64	5	R33	END POST	E	10	S						9.750		21.500										3	5	3	3	217
64	5	R34	END POST	E	10	S						13.500		21.500										4	1	3	10	256
			TOTALS																									
	5			E																								6172

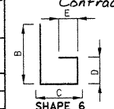
BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE	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.

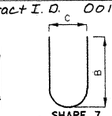
State	Proj. No.	Sheet No.
MO	FAI-29-1(102)	B29

Contract I.D. 001216-402

SHAPE 6



SHAPE 7



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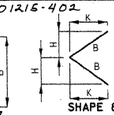

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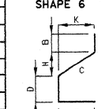
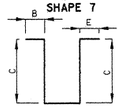
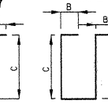


SHAPE 10



SHAPE 11



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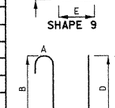

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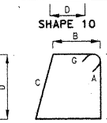
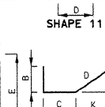
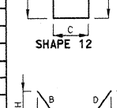


SHAPE 14



SHAPE 15



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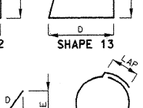
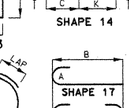


SHAPE 17

SHAPE 18

SHAPE 20



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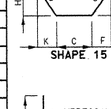

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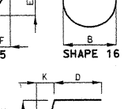
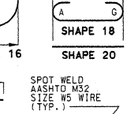


SPOT WELD AASHTO M32 SIZE W5 WIRE (TYP.)

SHAPE 22



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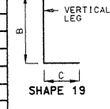

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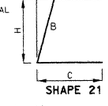

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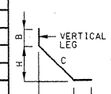
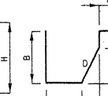


SHAPE 26

SHAPE 27



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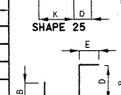

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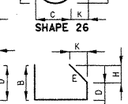

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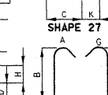
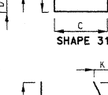


SHAPE 30

SHAPE 32



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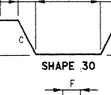

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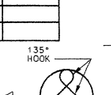
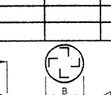


(SHAPE 35 SHALL BE A SMOOTH BAR OR WIRE.)

SHAPE 35



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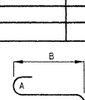


BENDING DIAGRAMS

Final Plans

I certify that this plan sheet accurately depicts the configuration and location of the roadway and all its appurtenant features, to the best of my knowledge, as I and my staff have observed the contractor's construction of this project. I specifically disclaim any responsibility for the design of the project, except as I and my staff may have modified or authorized the modification of the project design during its construction; and I disclaim responsibility for the contractor's actual construction of the project, except as I and my staff may have directed or ordered that the project be constructed.

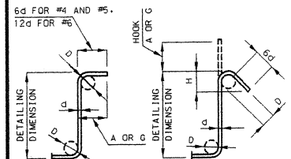
Signature _____ Date 4/8/02

STATE OF MISSOURI JON GERARD WOOD NUMBER E-2000162177 REGISTERED PROFESSIONAL ENGINEER 4/8/02

STATE OF MISSOURI KURT E. GRIBBLE NUMBER E-23576 REGISTERED PROFESSIONAL ENGINEER

DATE 9-7-00

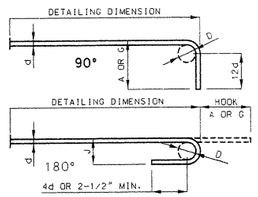
6d FOR #4 AND #5. 12d FOR #6



DETAILED MAY 2000
CHECKED AUG. 2000

STIRRUP HOOK DIMENSIONS GRADES 40 - 50 - 60 KSI				
BAR SIZE	D (IN.)	90° HOOK HOOK A OR G	135° HOOK 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"

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



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

TWO ADDITIONAL #5-R10 ARE INCLUDED IN THE BAR BILL FOR TESTING.

NOTE:
ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH THE 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 FABRICATOR'S 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) = FY 60,000 PSI.

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

SHEET NO. 10 OF 10

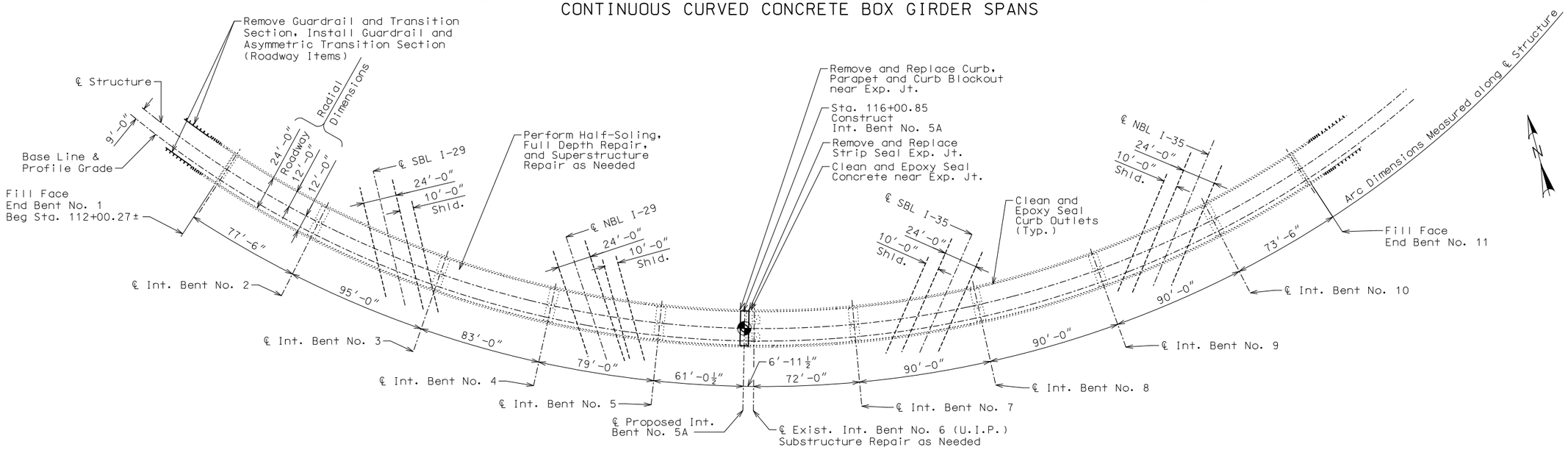
CLAY COUNTY

A17632

SEC/SUR 1 TWP 50N RGE 33W

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

U.I.P. & REHAB EXISTING (76′– 95′– 83′– 79′– 63′)(5′– 72′– 90′– 90′– 90′– 72′) CONTINUOUS CURVED CONCRETE BOX GIRDER SPANS



PLAN

Note: All Bents are radial.

BENCH MARK:

B.M. #1: Top NE Bolt on Sign Support
Sta. 119+40, 5.0′ Lt.
Elev. 864.16

"◓" Indicates location of borings.

Notice and Disclaimer Regarding Boring Log Data

The locations of all subsurface borings for this structure are shown on the plan sheet(s) for this structure. The boring data for all locations indicated, as well as any other boring logs or other factual records of subsurface data and investigations performed by the department for the design of the project, are shown on Sheet(s) No. 14 & 15 or will be available from the Project Contact upon written request. No greater significance or weight should be given to the boring data depicted on the plan sheets than is given to the subsurface data available from the district or elsewhere.

The Commission does not represent or warrant that any such boring data accurately depicts the conditions to be encountered in constructing this project. A contractor assumes all risks it may encounter in basing its bid prices, time or schedule of performance on the boring data depicted here or those available from the district, or on any other documentation not expressly warranted, which the contractor may obtain from the Commission.

REPAIRS TO BRIDGE: RAMP (I-29 S.B. TO I-35 N.B.) OVER I-29 AND I-35

STATE ROAD AT I-29 AND I-35 INTERCHANGE
IN KANSAS CITY
STA. 112+00.27±(MATCH EXISTING)

STD. 606.22
STD. 606.00
STD. 706.35

Designed AUG 2014
Detailed AUG 2014

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

STATE OF MISSOURI
JUSTIN M. DAVIS
NUMBER PE-2007020256
PROFESSIONAL ENGINEER

DATE
1/7/2015
DATE PREPARED
1/2/2015
ROUTE I-29
STATE MO
DISTRICT BR
SHEET NO. 1
COUNTY CLAY
JOB NO. J4I3021
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A17633

DESCRIPTION | DATE | REV.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

benesch
14 W. 3rd Street, SUITE 220
KANSAS CITY, MO 64105
816/221-4222, FAX 913/441-1468
CERTIFICATE OF AUTHORITY NUMBER F00970024

General Notes:

Design Specifications
(New Construction except for Drilled Shaft):

2002 - AASHTO LFD (17th Ed.) Standard Specifications
Seismic Performance Category A
Bridge Deck Rating = 6

Design Specifications (Drilled Shaft):

2012 AASHTO LRFD Bridge Design Specifications (6th Ed.) and 2013 Interim Revisions

Design Loading:

HS20-44 & Military 24,000# Tandem Axle (New Construction except for Drilled Shaft)
HL-93 (Drilled Shaft)
No Future Wearing Surface
Earth 120 lb/cf, Equivalent fluid pressure 30 lb/cf

Design Unit Stresses:

Class B Concrete (Substructure)	f'c = 3,000 psi
Class B-1 Concrete (Superstructure, Curb & Parapet, Curb Blockout)	f'c = 4,000 psi
Class B-2 Concrete (Drilled Shafts & Rock Sockets)	f'c = 4,000 psi
Reinforcing Steel (Grade 60)	fy = 60,000 psi
Structural Low Alloy Steel (ASTM A709 Grade 50)	fy = 50,000 psi

Reinforcing Steel:

Minimum clearance to reinforcing steel shall be 1-1/2", unless otherwise shown.

Concrete Protective Coatings:

Protective coating for concrete bents and piers (Epoxy) shall be applied as shown on the bridge plans and in accordance with Sec 711.

Miscellaneous:

High strength bolts, nuts and washers will be sampled for quality assurance as specified in Sec 106.

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

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

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 plain 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 qualified special mortar in accordance with Sec 704.

Joint Filler:

All joint filler shall be in accordance with Sec 1057 for preformed sponge rubber expansion and partition joint filler, except as noted.

Traffic Handling:

Structure will be closed during construction except construction of Bent 5A. See Roadway plans for Traffic Control Plan.

FOUNDATION DATA

TYPE		DESIGN DATA		BENT NO. 5A
Rock Socket (Drilled Shaft)		Number		1
	Layer 1	Foundation Material		Rock
		Elevation Range	ft	848-841
		Minimum Nominal Axial Compressive Resistance (Side Resistance)	ksf	22.8
	Layer 2	Foundation Material		Shale
		Elevation Range	ft	841-835
		Minimum Nominal Axial Compressive Resistance (Side Resistance)	ksf	6.9
	Layer 3	Foundation Material		Rock
		Elevation Range	ft	835-824
		Minimum Nominal Axial Compressive Resistance (Side Resistance)	ksf	22.8
		Minimum Nominal Axial Compressive Resistance (Tip Resistance)	ksf	100

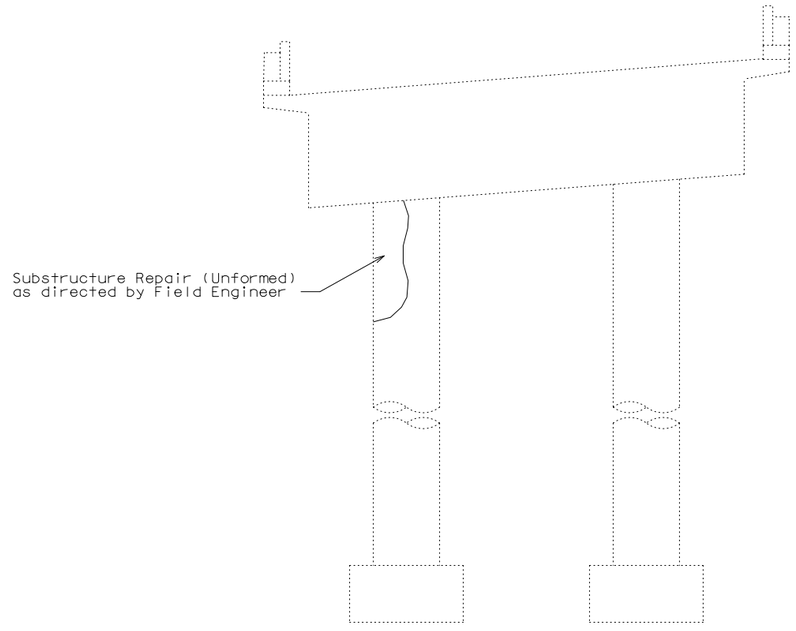
$$\text{Minimum Nominal Axial Compressive Resistance (Side Resistance + Tip Resistance)} = \frac{\text{Maximum Factored Loads}}{\text{Resistance Factors}}$$

ESTIMATED QUANTITIES

Item		Substr.	Superstr.	Total
Removal of Existing Expansion Joints & Adjacent Concrete	linear foot		24	24
Drilled Shafts (6 ft. 6 in. Dia.)	linear foot	9.5		9.5
Rock Sockets (6 ft. 0 in. Dia.)	linear foot	11.0		11.0
Supplementary Television Camera Inspection	each	1		1
Foundation Inspection Holes	linear foot	21.0		21.0
Sonic Logging Testing	each	1		1
Class B Concrete (Substructure)	cu. yard	63.5		63.5
Class B-1 Concrete (Superstructure)	cu. yard		5.1	5.1
Substructure Repair (Unformed)	sq. foot	100		100
Superstructure Repair (Unformed)	sq. foot		1,000	1,000
Repairing Concrete Deck (Half-Soling)	sq. foot		400	400
Full Depth Repair	sq. foot		40	40
Clean and Epoxy Seal	sq. foot		3,400	3,400
Reinforcing Steel (Bridges)	pound	11,280		11,280
Reinforcing Steel (Epoxy Coated)	pound	4,300	900	5,200
Protective Coating - Concrete Bents and Piers (Epoxy)	lump sum			1*
Fabricated Structural Low Alloy Steel (Misc.)	pound		2,590	2,590
Laminated Neoprene Bearing Pad Assembly	each		4	4
Strip Seal Expansion Joint System	linear foot		24	24

The cost of any required excavation to the top of the drilled shafts will be considered completely covered by the contract unit price for other items.

* Estimated quantity of 700 sq. foot of Protective Coating - Concrete Bents and Piers (Epoxy) at Int. Bent No. 5A.



INT. BENT NO. 6 SUBSTRUCTURE REPAIR

STATE OF MISSOURI
JUSTIN M. DAVIS
NUMBER PE-2007020256
PROFESSIONAL ENGINEER

DATE: 1/7/2015
DATE PREPARED: 1/2/2015
ROUTE: I-29
STATE: MO
DISTRICT: BR
SHEET NO.: 2
COUNTY: CLAY
JOB NO.: J4I3021
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A17633

DATE	DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

benesch
14 W. 3rd Street, SUITE 220
KANSAS CITY, MO 64105
816/221-4222 - FAX 913/441-1468
CERTIFICATE OF AUTHORITY NUMBER F00970024

REV.

Designed AUG 2014
Detailed AUG 2014

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

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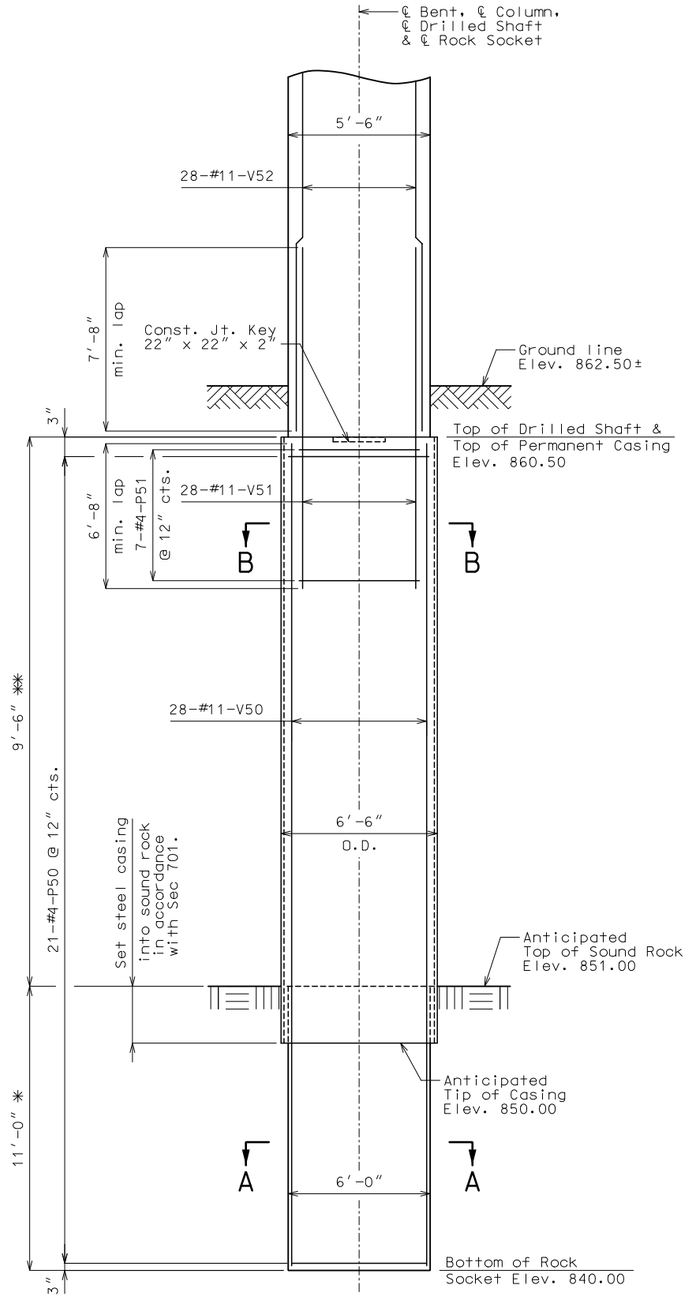
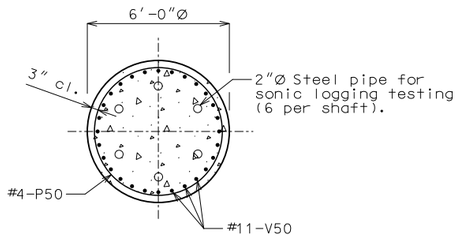


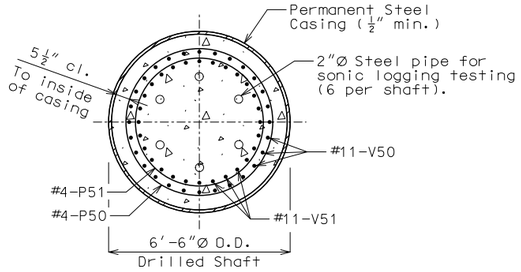
PART ELEVATION SHOWING DRILLED SHAFT AND ROCK SOCKET

✱ Pay Limits of Rock Socket (6′-0″ diameter)

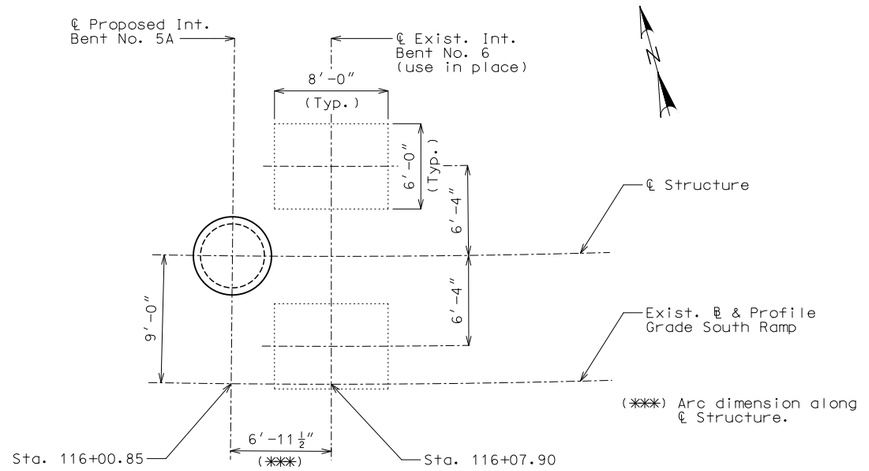
✱✱ Pay Limits of Drilled Shaft (6′-6″ diameter)



SECTION A-A



SECTION B-B



PART PLAN SHOWING LOCATION
OF PROPOSED INT. BENT NO. 5A

SUBSTRUCTURE QUANTITY TABLE FOR INT. BENT NO. 5A		
Item		Quantity
Drilled Shafts (6 ft. 6 in. Dia.)	linear foot	9.5
Rock Sockets (6 ft. 0 in. Dia.)	linear foot	11.0
Supplementary Television Camera Inspection	each	1
Foundation Inspection Holes	linear foot	21.0
Sonic Logging Testing	each	1
Class B Concrete (Substructure)	cu. yard	63.5
Reinforcing Steel (Bridges)	pound	11,280
Reinforcing Steel (Epoxy Coated)	pound	4,300

Notes:
These quantities are included in the Estimated Quantities Table on Sheet No. 2.

An additional 4 feet has been added to V-bar lengths and an additional 4-#4-P-bars have been added in the quantities, if required, for possible change in drilled shaft or rock socket lengths. The additional V-bar length shall be cut off if not required. The additional P-bars shall be spaced similarly to that shown in elevation, if required, or to a lesser spacing if not required, but not less than 6″ cts.

Sonic logging testing shall be performed on drilled shaft and rock socket.

Thickness of permanent steel casing shall be as shown on the plans and in accordance with Sec 701.

All reinforcement in drilled shaft and rock socket is included in the Substructure Quantities.

For details of Intermediate Bent No. 5A not shown, see Sheets No. 4,5,6 & 7.

DETAILS OF INTERMEDIATE BENT NO. 5A

Designed AUG 2014
Detailed AUG 2014

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

STATE OF MISSOURI
JUSTIN M. DAVIS
NUMBER PE-2007020256
PROFESSIONAL ENGINEER

DATE
1/7/2015
DATE PREPARED
1/2/2015
ROUTE I-29
STATE MO
DISTRICT BR
SHEET NO. 3
COUNTY CLAY
JOB NO. J4I3021
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A17633

DESCRIPTION | DATE | REV.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

benesch
14 W. 3rd Street, SUITE 220
KANSAS CITY, MO 64105
816/221-4222, FAX 913/441-1468
CERTIFICATE OF AUTHORITY NUMBER F00970024

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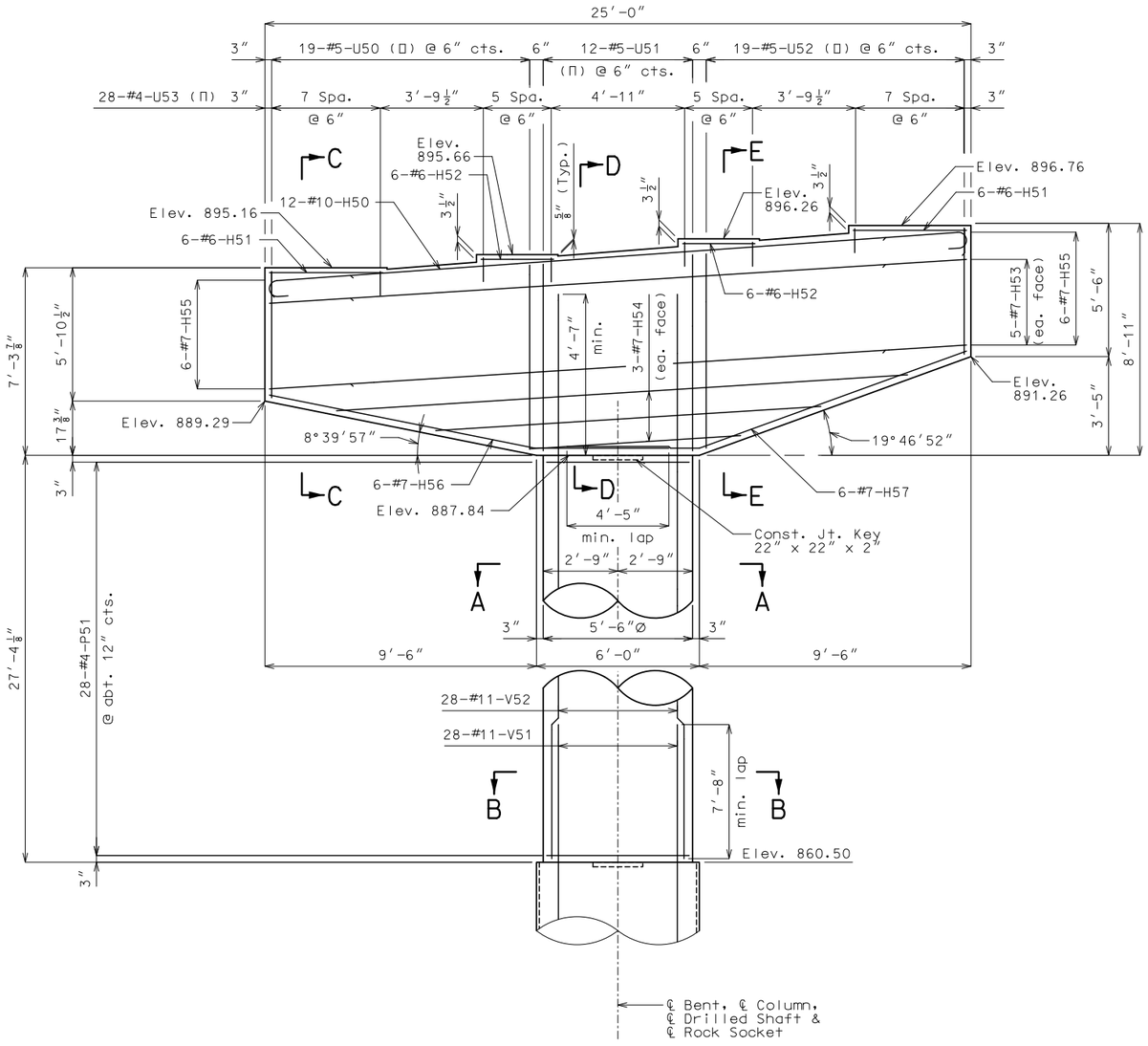
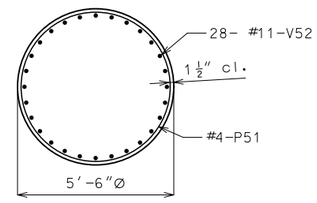
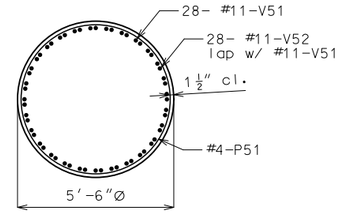


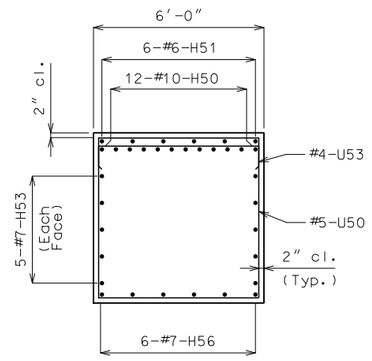
PART ELEVATION SHOWING COLUMN AND BEARING BEAM



SECTION A-A

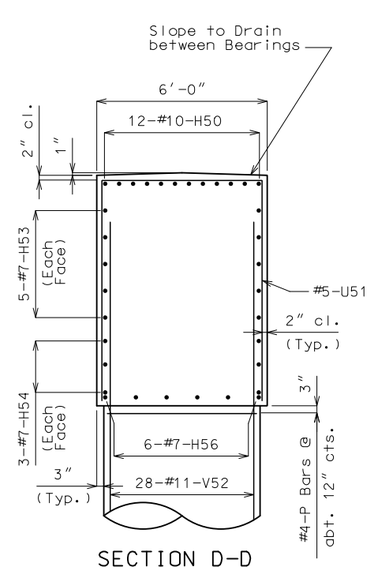


SECTION B-B

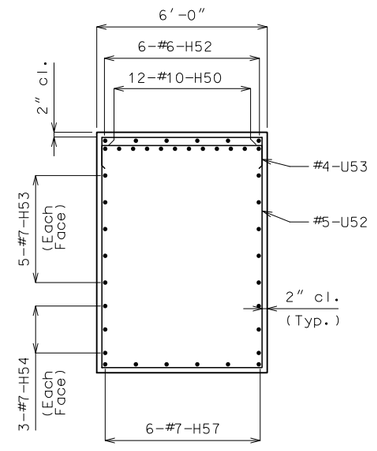


SECTION C-C

Note:
#7-H55 not shown for clarity.



SECTION D-D



SECTION E-E

Note:
For details of Intermediate Bent No. 5A not shown, see Sheets No. 3,5,6 & 7.

DETAILS OF INTERMEDIATE BENT NO. 5A

Designed AUG 2014
Detailed AUG 2014

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

Sheet No. 4 of 15

STATE OF MISSOURI
JUSTIN M. DAVIS
NUMBER PE-2007020256
PROFESSIONAL ENGINEER

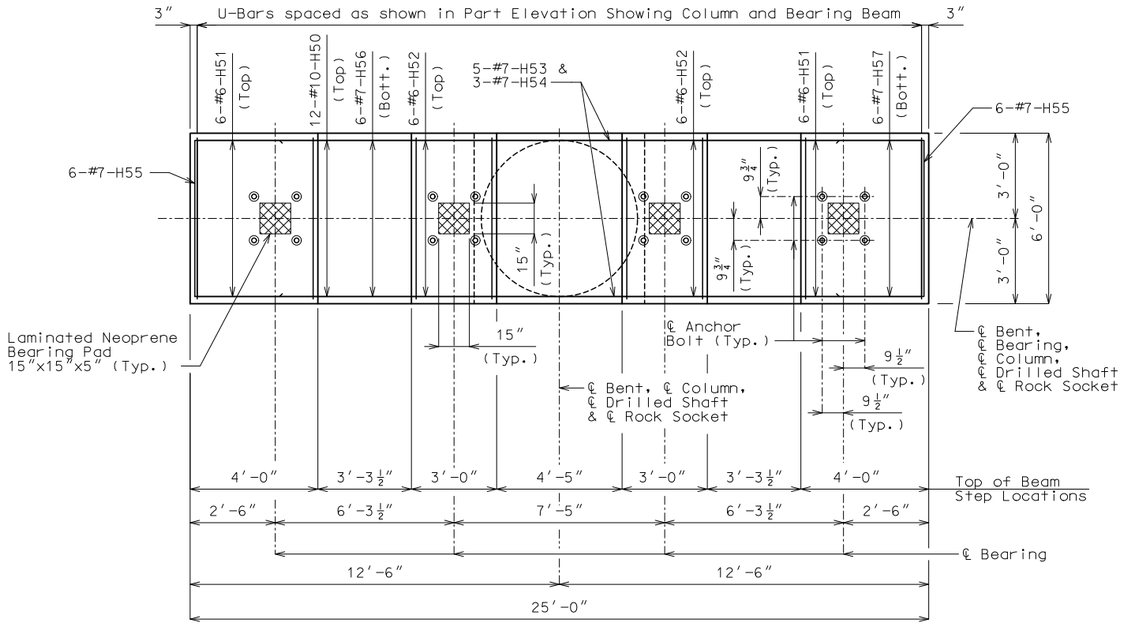
DATE
1/7/2015
DATE PREPARED
1/2/2015
ROUTE I-29
STATE MO
DISTRICT BR
SHEET NO. 4
COUNTY CLAY
JOB NO. J4I3021
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A17633

DESCRIPTION | DATE | REV.

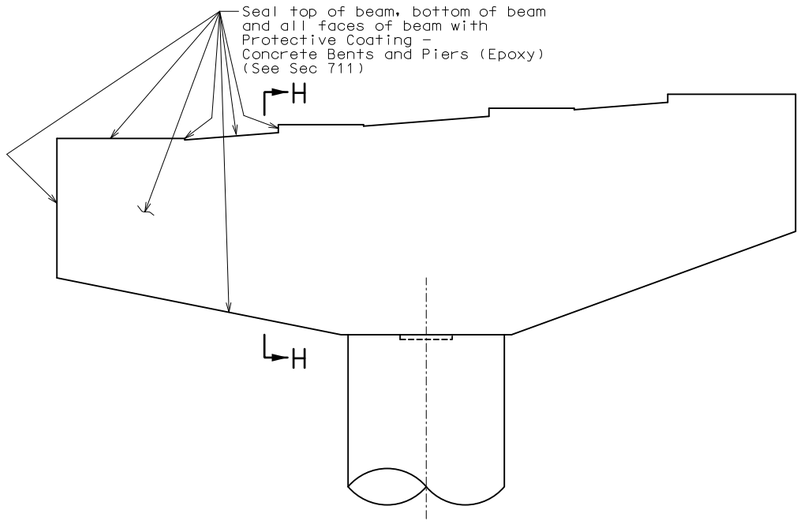
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

benesch
14 W. 3rd Street, SUITE 220
KANSAS CITY, MO 64105
816/221-4222, FAX 913/441-1468
CERTIFICATE OF AUTHORITY NUMBER F00970024

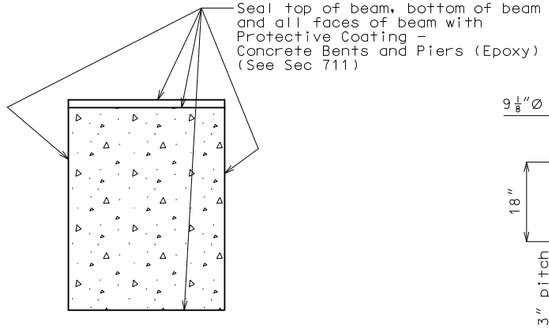
Y:\Bonner Springs\130200S\00130247.00\Eng-Docs\A1763\B_A17633_004_J4I3021_INT BENT 5A DETAILS.dgn 4:13:40 PM 1/7/2015



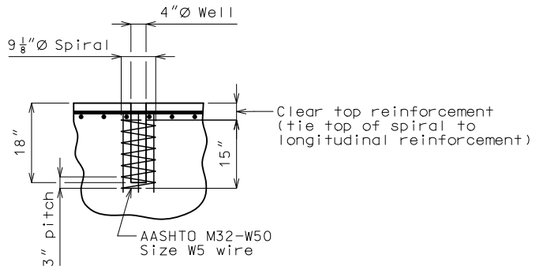
PLAN



PART ELEVATION SHOWING PROTECTIVE COATING – CONCRETE BENTS AND PIERS (EPOXY)



SECTION H–H



DETAIL OF ANCHOR BOLT WELLS

Notes:
Reinforcing steel shall be shifted to clear anchor bolt wells by at least 1/2".

Holes for anchor bolts may be drilled into the substructure.

Anchor bolt wells shall not be formed with galvanized corrugated steel pipe.

For details of Intermediate Bent No. 5A not shown, see Sheets No. 3,4,6 & 7.

DETAILS OF INTERMEDIATE BENT NO. 5A

Designed AUG 2014
Detailed AUG 2014

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

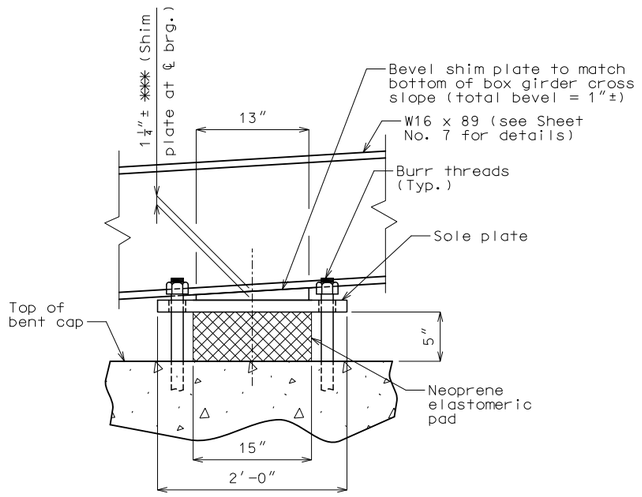
STATE OF MISSOURI
JUSTIN M. DAVIS
NUMBER PE-2007020256
PROFESSIONAL ENGINEER

DATE
1/7/2015
DATE PREPARED
1/2/2015
ROUTE I-29
STATE MO
DISTRICT BR
SHEET NO. 5
COUNTY CLAY
JOB NO. J4I3021
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A17633

DESCRIPTION | DATE | REV.

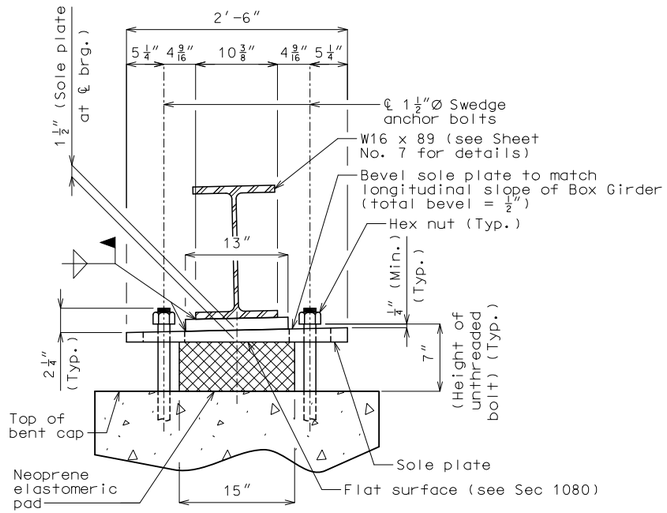
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

benesch
14 W. 3rd Street, SUITE 220
KANSAS CITY, MO 64105
816/221-4222, FAX 913/441-1468
CERTIFICATE OF AUTHORITY NUMBER F00970024

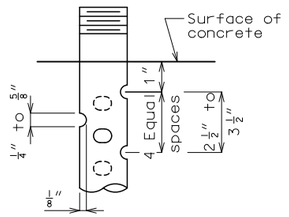


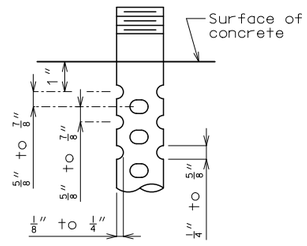
END VIEW

(✱✱✱) Shim plate thickness and slope requirement shall be field verified before fabrication. Shim plate shall be one plate.



SIDE VIEW

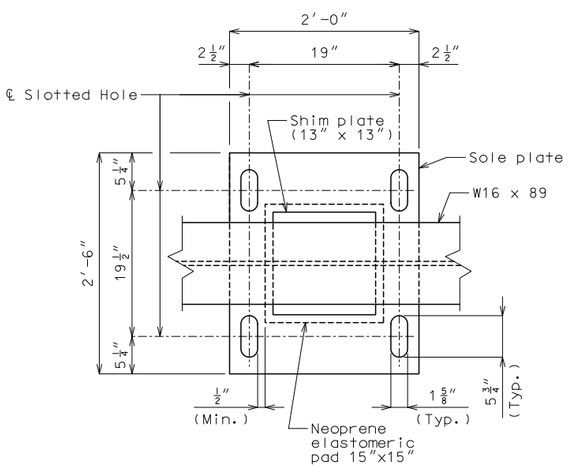




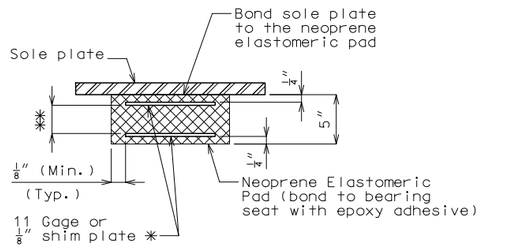
DETAIL OF 3/4″Ø THRU 2 1/2″Ø ANCHOR BOLTS

OPTIONAL DETAIL OF 1 3/8″Ø THRU 2 1/2″Ø ANCHOR BOLTS

SWEDGE ANCHOR BOLT DETAILS



PART PLAN



(✱) The required shim plate shall be placed between layers of elastomer and molded together to form an integral unit.

(✱✱✱) Seven layers of ½″ elastomer alternating with eight 11 gage or ⅛″ shim plates

NEOPRENE ELASTOMERIC PAD

GENERAL NOTES:

Anchor bolts shall be 1 ½″Ø ASTM F1554 Grade 55 swedged bolts and shall extend 15″ into the concrete with AASHTO M291 (ASTM A563) Grade A Hex or Heavy Hex nuts. Actual manufacturer's certified mill test reports (chemical and mechanical) shall be provided. Swedging shall be 1″ less than extension into the concrete.

Anchor bolt shall be at the ℄ of slotted hole at 60°F. Bearing position shall be adjusted ⅛″ for each 10° fall or rise in temperature at installation.

All structural steel for the anchor bolts and heavy hexagon nuts shall be coated with a minimum of two coats of inorganic zinc primer (5 mils minimum).

Neoprene Elastomeric Pads shall be 60 Durometer.

Structural steel for sole plate and wide flange shim plate shall be ASTM A709 Grade 36 and shall be coated with a minimum of two coats of inorganic zinc primer (5 mils minimum).

Laminated Neoprene Bearing Pad Assembly shall be in accordance with Sec 716.

DETAILS OF LAMINATED NEOPRENE BEARING PAD ASSEMBLY AT INT. BENT NO. 5A

Designed AUG 2014
Detailed AUG 2014

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

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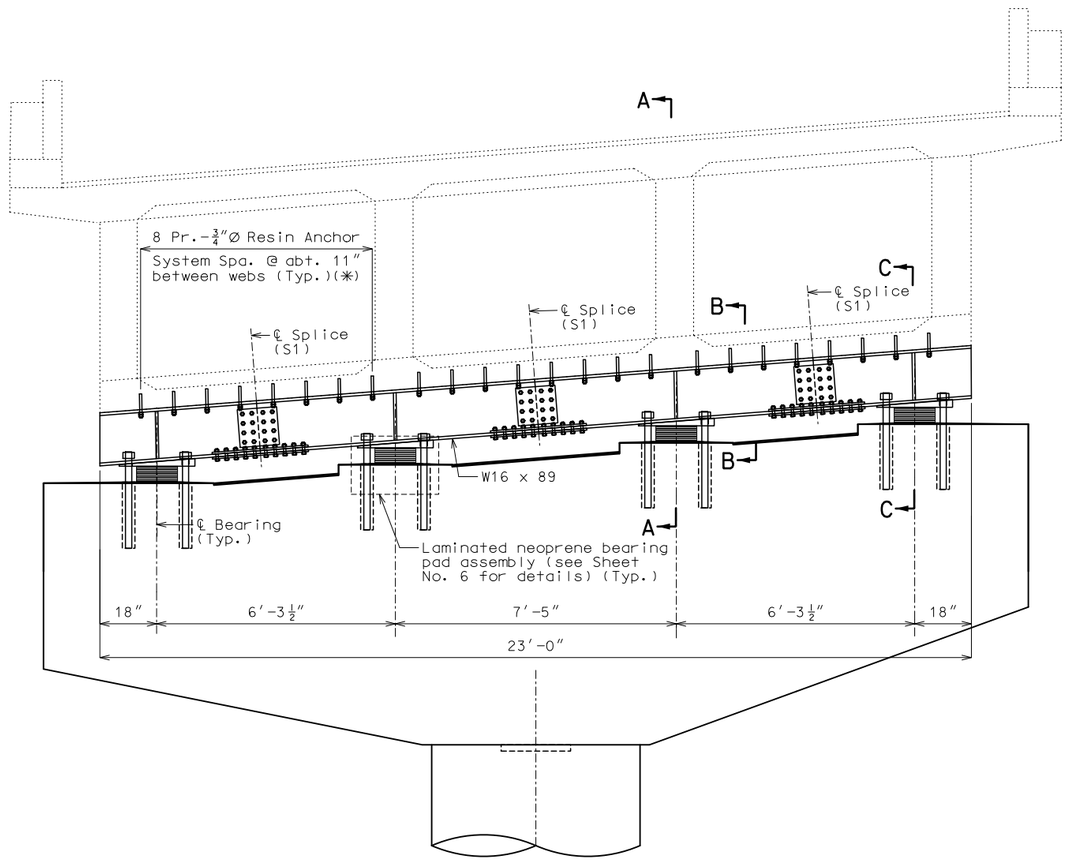
STATE OF MISSOURI
JUSTIN M. DAVIS
NUMBER PE-2007020256
PROFESSIONAL ENGINEER

DATE
1/7/2015
DATE PREPARED
1/2/2015
ROUTE I-29
STATE MO
DISTRICT BR
SHEET NO. 6
COUNTY CLAY
JOB NO. J4I3021
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A17633

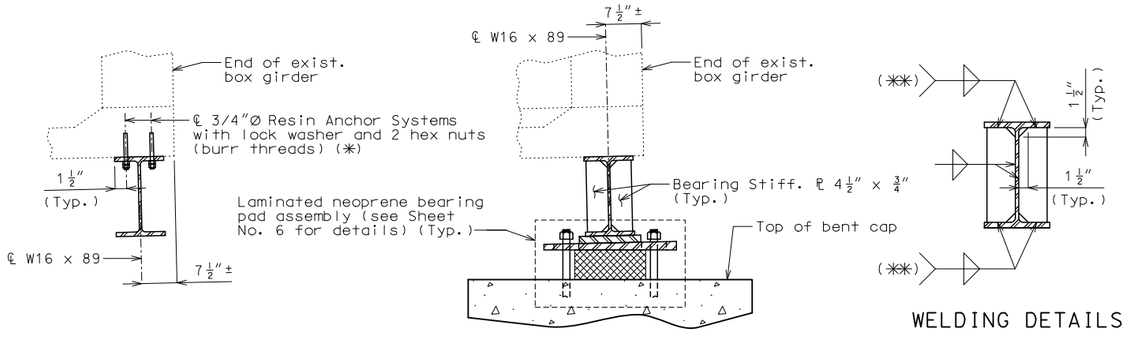
REV.	DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

benesch
14 W. 3rd Street, SUITE 220
KANSAS CITY, MO 64105
816/221-4222 FAX 913/441-1468
CERTIFICATE OF AUTHORITY NUMBER F00970024



ELEVATION SHOWING BEARING EXTENSION AT INT. BENT NO. 5A

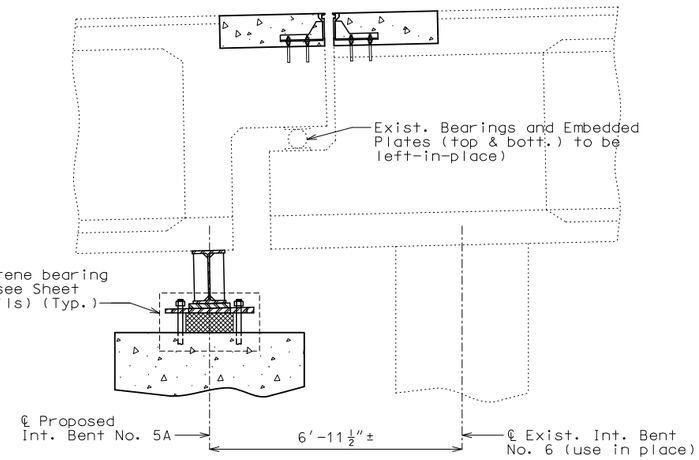


SECTION B-B

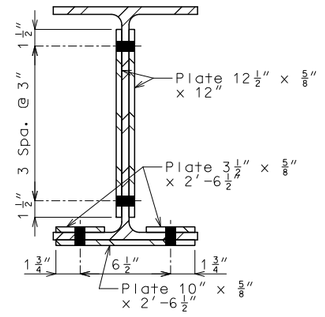
SECTION C-C

WELDING DETAILS

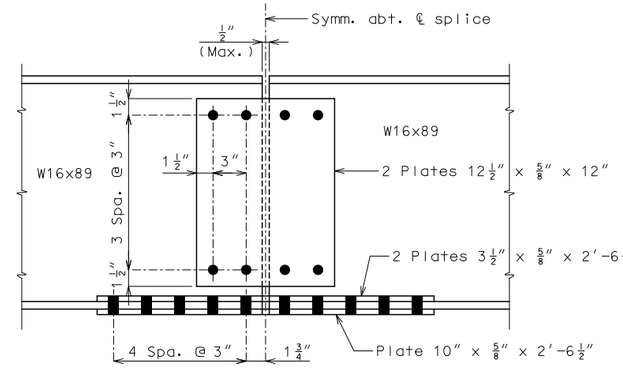
(**) Grind or mill to bear.



SECTION A-A



SECTION THRU BOLTED FIELD SPLICE (S1)



DETAIL OF BOLTED FIELD SPLICE (S1)

Notes:
The temporary supports shall be capable of safely supporting a load of 95 kips per bearing (service dead load plus 50 psf construction load without factor of safety), see Special Provisions.

Fabricated structural steel shall be ASTM A709 Grade 50, except as noted.

Protective Coating: System G in accordance with Sec 1081.

Prime Coat: The cost of the prime coat will be considered completely covered by the contract unit price for the fabricated structural steel. Tint of the prime coat for System G shall be similar to the color of the field coat to be used.

Field Coat(s): The color of the field coat(s) shall be Gray (Federal Standard #26373). The cost of the intermediate field coat will be considered completely covered by the contract unit price for Fabricated Structural Low Alloy Steel (Misc.). The cost of the finish field coat will be considered completely covered by the contract unit price for Fabricated Structural Low Alloy Steel (Misc.).

The contractor shall use one of the qualified resin anchor systems in accordance with Sec 1039.

The minimum embedment depth in concrete with f'c = 4,000 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".

(*) 3/4"Ø resin anchor systems shall be placed to clear exist. reinforcing steel and not directly below existing webs.

Cost of bearing extension and resin anchors, complete in place, will be considered completely covered by the contract unit price for Fabricated Structural Low Alloy Steel (Misc.).

Use 7/8"Ø high strength bolts with 15/16"Ø holes.

Contact surfaces shall be in accordance with Sec 1081 for surface preparation.

15/16"Ø Holes to be field drilled in W16 x 89 web and flange using holes in splice plates as templates.

DETAILS OF BEARING EXTENSION AT INT. BENT NO. 5A

Designed AUG 2014
Detailed AUG 2014

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

Sheet No. 7 of 15

STATE OF MISSOURI
JUSTIN M. DAVIS
NUMBER PE-2007020256
PROFESSIONAL ENGINEER

DATE	1/7/2015
DATE PREPARED	1/2/2015
ROUTE	I-29
STATE	MO
DISTRICT	BR
SHEET NO.	7
COUNTY	CLAY
JOB NO.	J4I3021
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A17633

DESCRIPTION | DATE | REV.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

benesch
14 W. 3rd Street, SUITE 220
KANSAS CITY, MO 64105
816/221-4222, FAX 913/441-1468
CERTIFICATE OF AUTHORITY NUMBER F00970024

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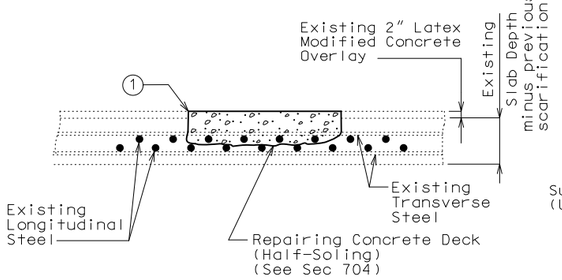
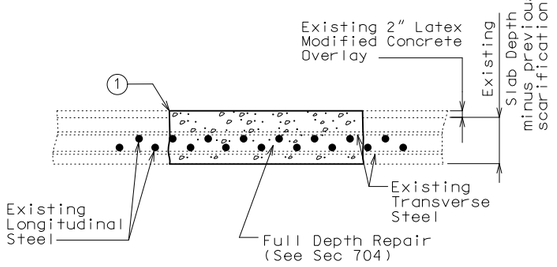
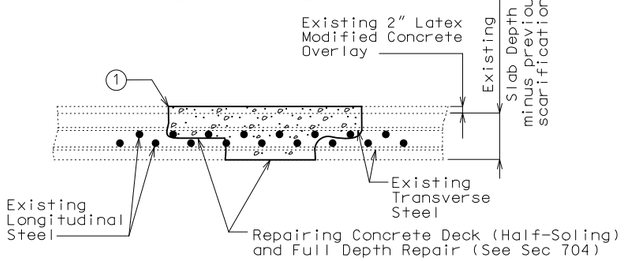


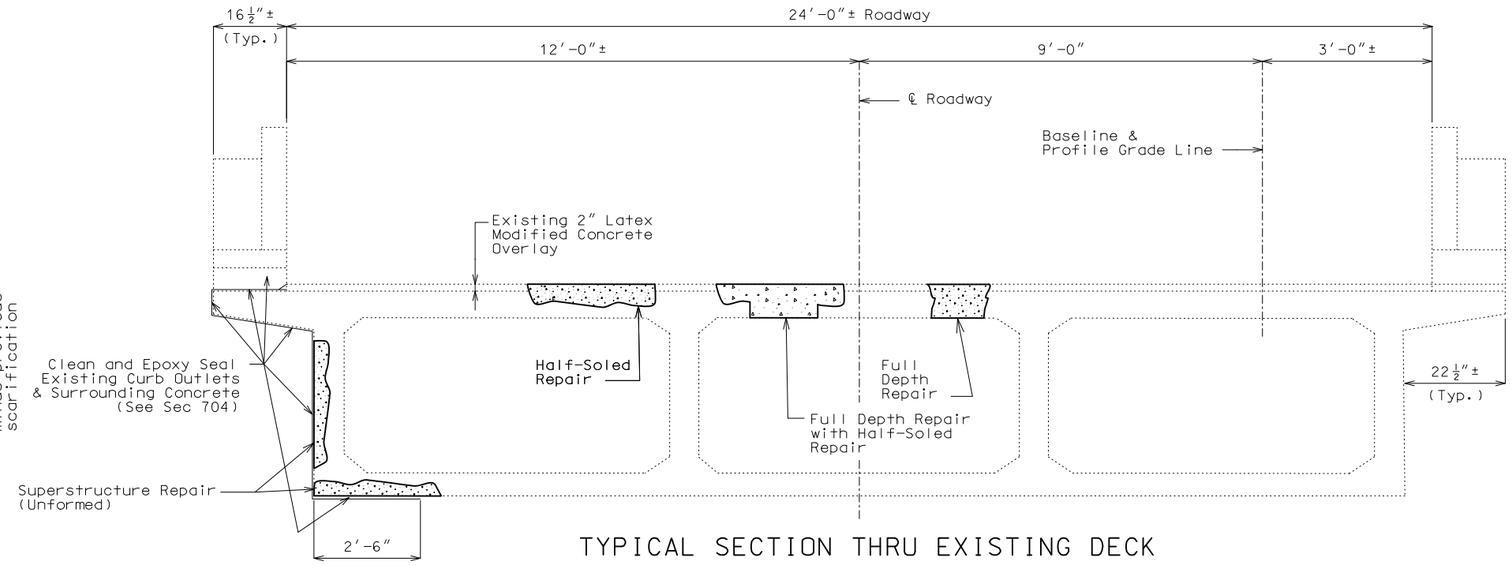
HALF-SOLED REPAIR



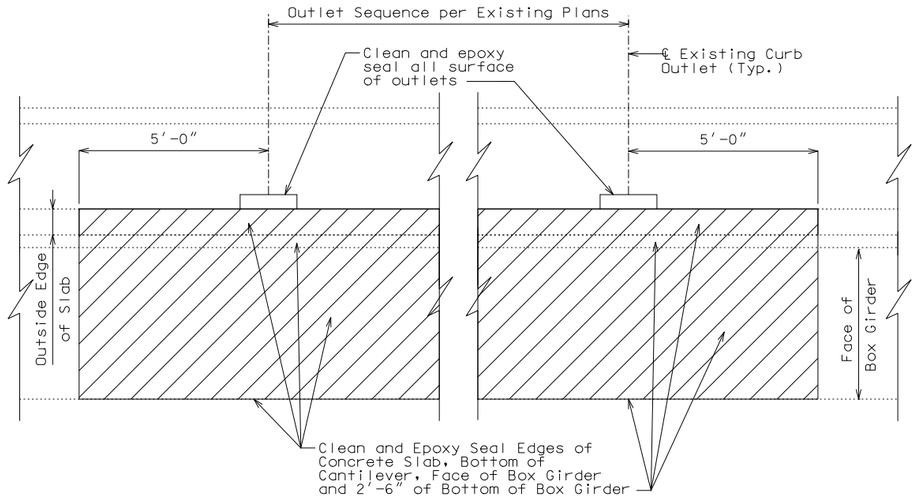
FULL DEPTH REPAIR



FULL DEPTH REPAIR
WITH HALF-SOLED REPAIR



TYPICAL SECTION THRU EXISTING DECK



PART ELEVATION SHOWING LIMITS OF
CLEAN AND EPOXY SEALING

① One inch vertical side shall be established outside the deteriorated area. See Sec 704.

DECK REPAIR DETAILS

Designed AUG 2014
Detailed AUG 2014

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

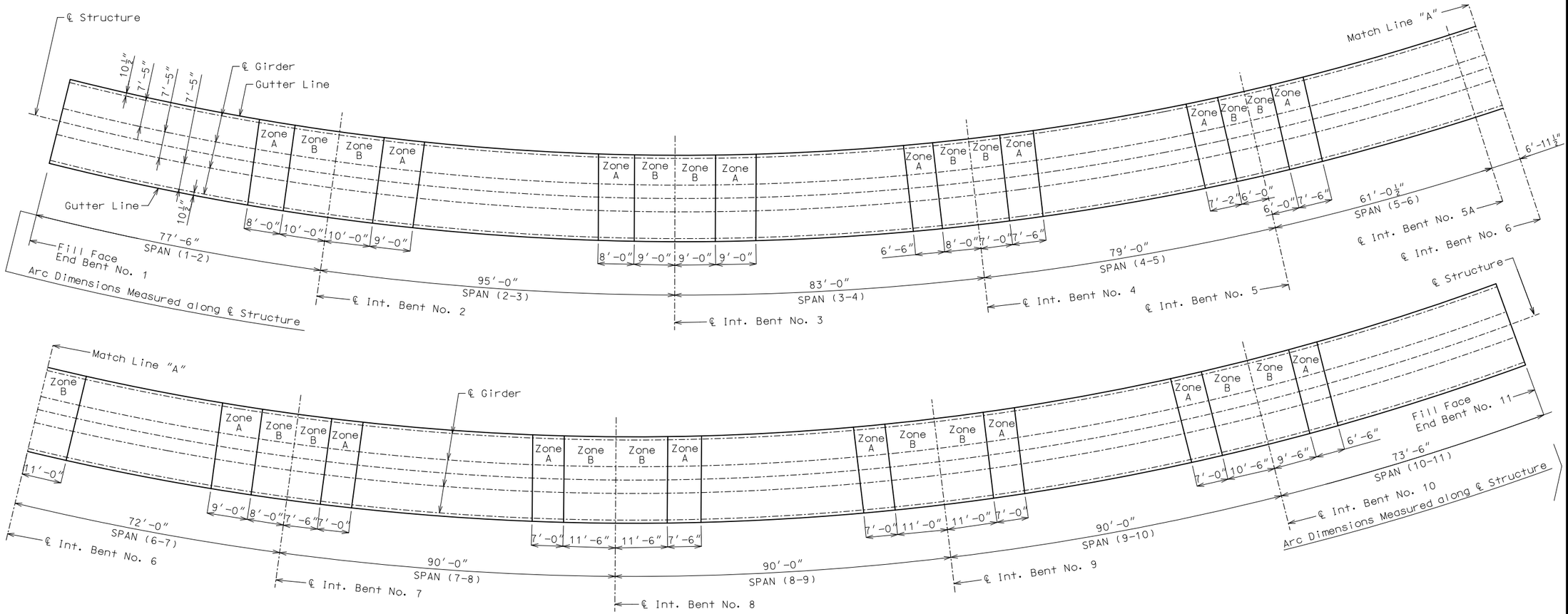
STATE OF MISSOURI
JUSTIN M. DAVIS
NUMBER PE-2007020256
PROFESSIONAL ENGINEER

DATE
1/7/2015
DATE PREPARED
1/2/2015
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 8
COUNTY
CLAY
JOB NO.
J4I3021
CONTRACT ID.
PROJECT NO.
BRIDGE NO.
A17633

DESCRIPTION | DATE | REV.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

benesch
14 W. 3rd Street, SUITE 220
KANSAS CITY, MO 64105
816/221-4222, FAX 913/441-1468
CERTIFICATE OF AUTHORITY NUMBER F00970024



PLAN OF SLAB SHOWING SPECIAL REPAIR ZONES

Note: All Bents are radial.

Longitudinal dimensions shown are horizontal dimensions along ℄ Roadway

Special Repair Zone Notes:

Any half-soling required in the areas designated as special repair zones shall be completed in alphabetical sequence. Any repair in the remainder of the bridge that is adjacent to Zone A and not designated as a special repair zone shall be completed prior to work in Zone A.

Removal and repair shall be completed in one special repair zone and concrete shall have attained a compressive strength of 3200 psi before work can be started in the next special repair zone. Before placing concrete in areas adjacent to areas of subsequent repair, the concrete shall be separated with a material such as polyethylene sheets to aid in removal of old concrete.

Zones with the same letter designation may be repaired at the same time except for the zones directly adjacent to the centerline of bent. If either of the zones adjacent to centerline of bent has a single repair area of over 10 square feet or a total repair area of over 20 square feet, that zone shall be repaired before removing concrete in the other zone of the same designation at that bent.

Total width of full depth repair shall not exceed 1/3 of the deck width at one time. For any area of deck repair that extends over a concrete girder and is more than 18 inches in length along the girder, the concrete removal shall stop at the centerline of girder and repair completed in this area. Prior to continuing work in this area, the concrete shall have attained a compressive strength of 3200 psi. No traffic shall be permitted over the girder that is undergoing repair.

Notes continued:

When the full depth repair extends over a diaphragm or girder and the deteriorated concrete extends into the diaphragm or girder, all deteriorated concrete shall be removed and replaced as full depth repair. Concrete in girders shall not be removed below the deck haunch of the girder without prior review and approval from the engineer.

Interior falsework installed by the contractor resting on the bottom slab shall be removed where entry access is available.

If any single repair area does not exceed 9 square feet in size and the total repair within a special repair zone does not exceed 27 square feet, the special repair zone requirement does not apply for that zone. Half-soling repair in the special repair zone, on either side of the intermediate bents, shall be to a depth that will not expose half the diameter of the longitudinal reinforcing bar. Full depth repair shall be made when removal of deteriorated concrete exposes half or more of the diameter of the longitudinal reinforcing bar.

Designed AUG 2014
Detailed AUG 2014

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

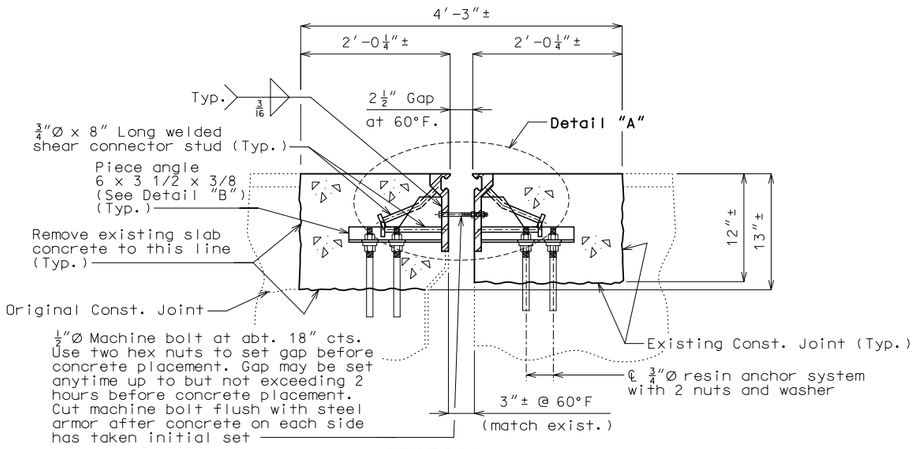
STATE OF MISSOURI
JUSTIN M. DAVIS
NUMBER PE-2007020256
PROFESSIONAL ENGINEER

DATE
1/7/2015
DATE PREPARED
1/2/2015
ROUTE I-29
STATE MO
DISTRICT BR
SHEET NO. 9
COUNTY CLAY
JOB NO. J4I3021
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A17633

DESCRIPTION | DATE | REV.

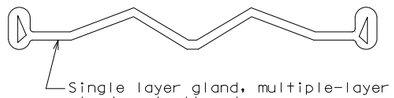
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

benesch
14 W. 3rd Street, SUITE 220
KANSAS CITY, MO 64105
816/221-4222 • FAX 913/441-1468
CERTIFICATE OF AUTHORITY NUMBER F00970024



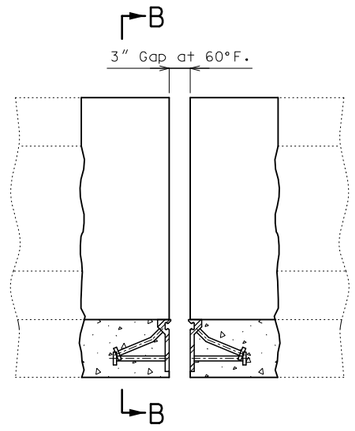
SECTION A-A

Note: Strip seal gland and reinforcement not shown for clarity.



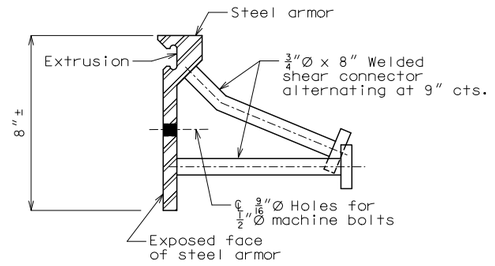
Strip seal gland size = 5"

DETAIL OF GLAND

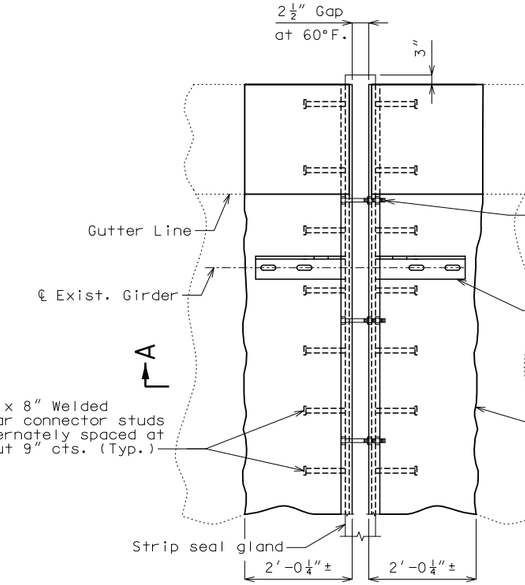


Note: Strip seal gland not shown for clarity.

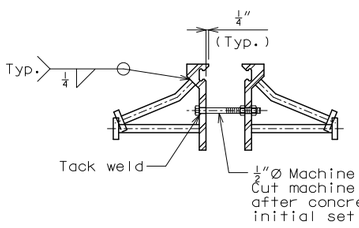
PART ELEVATION OF BARRIER CURB



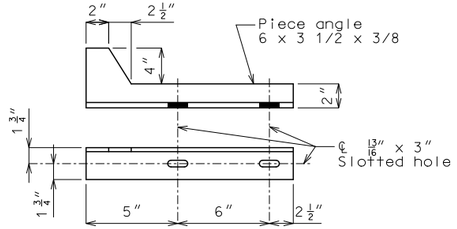
DETAIL OF JOINT ARMOR



PART PLAN



DETAIL "A"



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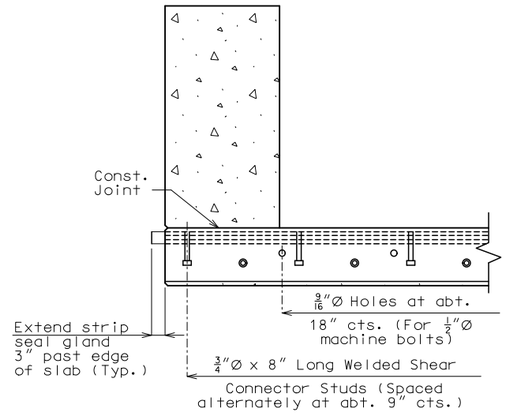
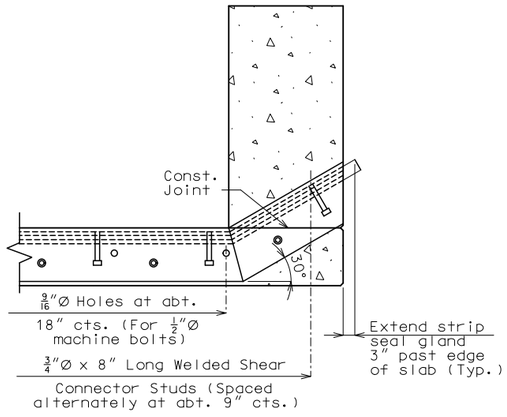


PART SECTION B-B (LEFT SIDE)



PART SECTION B-B (RIGHT SIDE)

GENERAL NOTES:

Expansion joint system shall be fabricated in one section, except for stage construction and when the length is over 50 feet. A complete joint penetration groove welded splice shall be required. Welds shall be ground flush to provide a smooth surface. The expansion joint system shall be fabricated and installed to the crown and grade of the roadway.

The strip seal gland shall be installed in joints in one continuous piece without field splices. Factory splicing will be permitted for joints in excess of 53 feet.

Structural steel for the expansion joint system shall be ASTM A709 Grade 36 except the steel armor may be ASTM A709 Grade 50W. Anchors for the expansion joint system shall be in accordance with Sec 1037. Strip seal expansion joint system shall be in accordance with Sec 717.

Structural steel for the expansion joint system shall be coated with a minimum of two coats of inorganic zinc primer (5 mils minimum) or galvanized in accordance with ASTM A123. Anchors need not be protected from overspray.

Plan dimensions are based on installation at 60°F. The expansion gap and other dimensions shall be increased or decreased 1/4" for each 10° fall or rise in temperature at installation.

Exist. longitudinal reinforcing steel shall be cut/bent so that ends shall not be more than ±1" from vertical leg of the steel armor at the expansion joint system.

Concrete shall be forced under and around steel armor and anchors. Proper consolidation of the concrete shall be achieved by localized internal vibration.

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 Strip Seal Expansion Joint System.

The minimum embedment depth in concrete with f'c = 4,000 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".

STATE OF MISSOURI
JUSTIN M. DAVIS
NUMBER
PE-2007020256
PROFESSIONAL ENGINEER

DATE
1/7/2015
DATE PREPARED
1/2/2015
ROUTE I-29
STATE MO
DISTRICT BR
SHEET NO. 10
COUNTY CLAY
JOB NO. J4I3021
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A17633

DESCRIPTION | DATE | REV.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

benesch
14 W. 3rd Street, SUITE 220
KANSAS CITY, MO 64105
816/221-4222, FAX 913/441-1468
CERTIFICATE OF AUTHORITY NUMBER F00970024

DETAILS OF STRIP SEAL NEAR INT. BENT NO. 5A

Designed AUG 2014
Detailed AUG 2014

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

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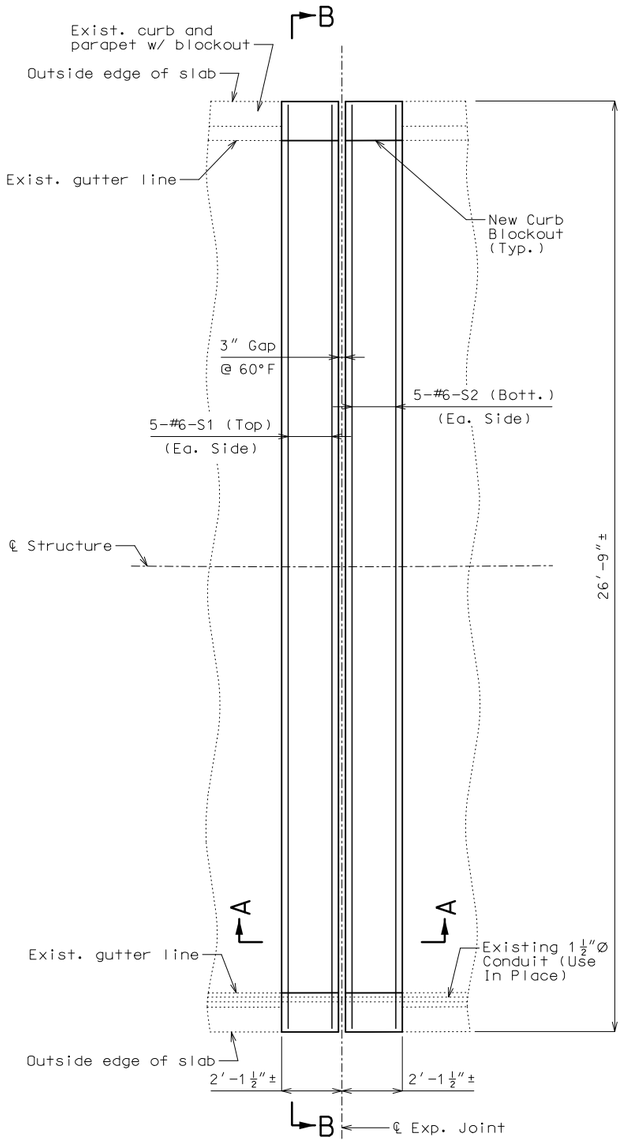
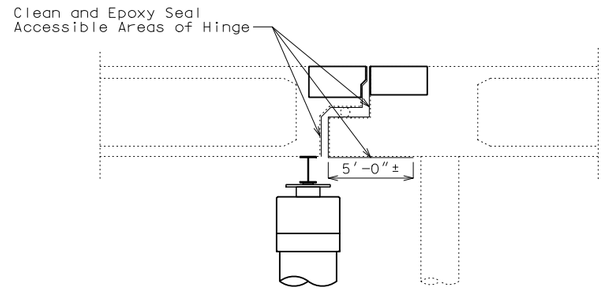


PART PLAN OF SLAB NEAR INT. BENT NO. 5A

Note: Joint armor not shown for clarity.



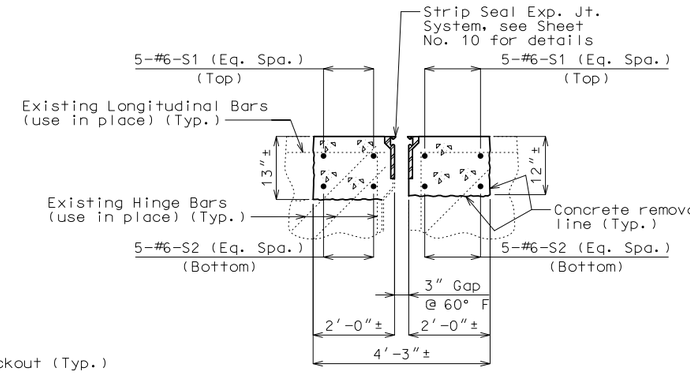
PART ELEVATION OF HINGE

Notes:
Shift #6-S bars where necessary to clear shear connector studs on the expansion joint system.

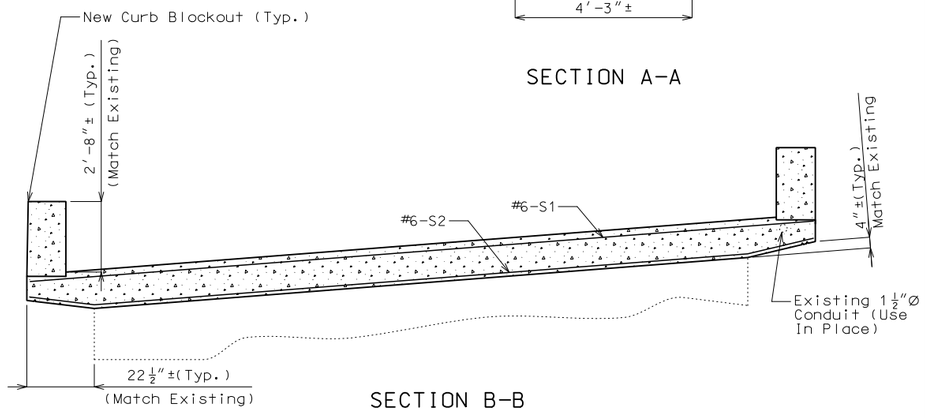
Payment for slab and curb blockout concrete complete-in-place, for expansion joint replacement will be considered completely covered by the contract unit price for Class B-1 Concrete.

Payment for furnishing and installing reinforcing steel in slab and curb blockout for expansion joint replacement will be considered completely covered by the contract unit price for Reinforcing Steel (Epoxy Coated).

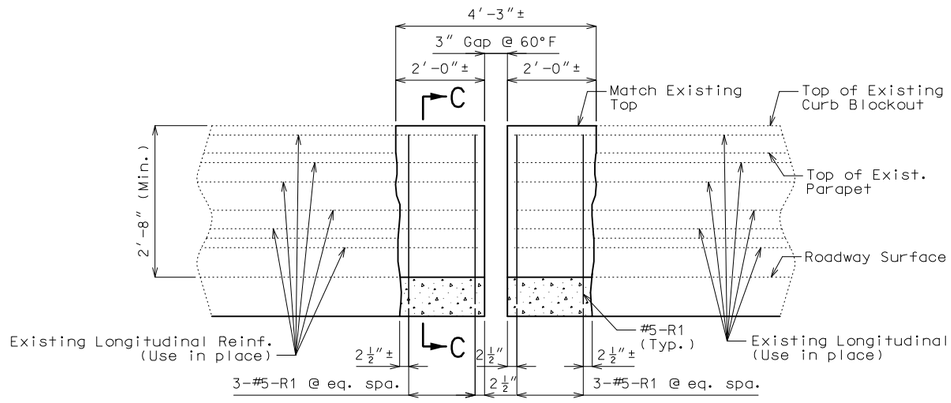
Cost of removing existing expansion joint and slab concrete, wearing surface, curb, parapet and blockout within the limits shown will be considered completely covered by the contract unit price for Removal of Existing Expansion Joints & Adjacent Concrete.



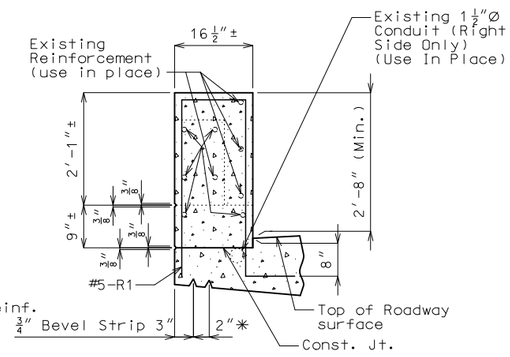
SECTION A-A



SECTION B-B



PART SECTION NEAR LEFT CURB BLOCKOUT AT EXPANSION JOINT REPLACEMENT AREA



SECTION C-C

* Right Side Only

Notes: All existing longitudinal and hinge area reinforcement shall be cleaned and reused.

All exposed edges of curb & parapet with blockout shall have either a ½" radius or a ¾" bevel, unless otherwise noted.

All exposed edges of new curb & parapet with blockout shall match existing except for top of parapet shall be level with the curb blockout.

STATE OF MISSOURI
JUSTIN M. DAVIS
NUMBER PE-2007020256
PROFESSIONAL ENGINEER

DATE: 1/7/2015
DATE PREPARED: 1/2/2015
ROUTE: I-29 | STATE: MO
DISTRICT: BR | SHEET NO.: 11
COUNTY: CLAY
JOB NO.: J4I3021
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A17633

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

benesch
14 W. 3rd Street, SUITE 220
KANSAS CITY, MO 64105
816/221-4222 • FAX 913/441-1468
CERTIFICATE OF AUTHORITY NUMBER F00970024

Designed AUG 2014
Detailed AUG 2014

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

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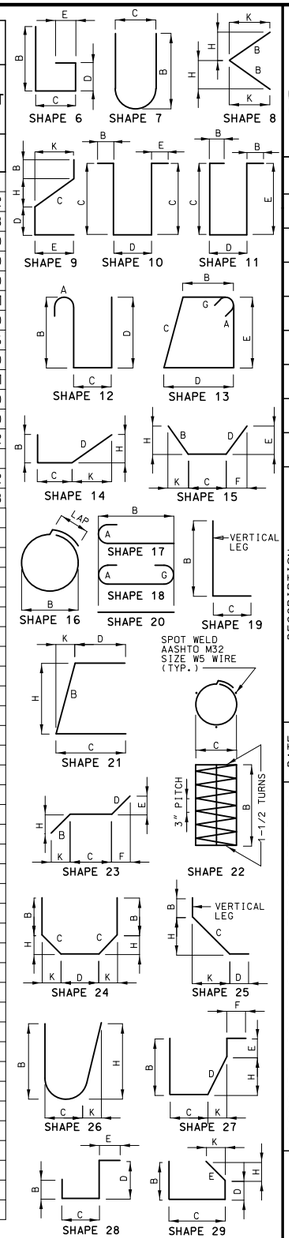
BILL OF REINFORCING STEEL

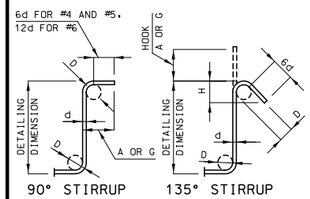
NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B FT. IN.	C FT. IN.	D FT. IN.	E FT. IN.	F FT. IN.	H FT. IN.	K FT. IN.	NOMINAL LENGTH FT. IN.	ACTUAL LENGTH FT. IN.	WEIGHT LBS.
	SUBSTRUCTURE																	
	INTERMEDIATE BENT NO. 5A																	
12	10 H50	Beam	E	18		X			24 6.000							27 4	27 4	1411
12	6 H51	Beam	E	20		X			3 8.000							3 8	3 8	66
12	6 H52	Beam	E	20		X			2 8.000							2 8	2 8	48
10	7 H53	Beam	E	20		X			24 6.000							24 6	24 6	501
6	7 H54	Beam	E	20		X	V	2	9 0.000							9 0	9 0	201
	Inc. = 7′ - 4.500″								23 9.000							23 9	23 9	
12	7 H55	Beam	E	10		X				3 0.000	5 7.000					11 7	11 3	276
6	7 H56	Beam	E	14		X				5 3.000	9 6.000			17.000	9 4.500	14 9	14 9	181
6	7 H57	Beam	E	14		X				5 3.000	10 0.000			3 5.000	9 4.500	15 3	15 3	187
25	4 P50	D.S./R.S.		16		X			5 6.000							18 9	18 9	313
35	4 P51	Column		16		X			5 3.000							17 11	17 11	419
19	5 U50	Beam	E	13	S	X	V	1	5 8.000	5 2.000	5 8.000	5 2.000				22 10	22 6	487
	Inc. = 2.778″									7 3.000		7 3.000				27 0	26 8	
12	5 U51	Beam	E	10	S	X	V	1		7 4.000	5 8.000					20 4	20 2	258
	Inc. = 0.909″									7 9.000						21 2	21 0	
19	5 U52	Beam	E	13	S	X	V	1	5 8.000	5 2.000	5 8.000	5 2.000				22 10	22 6	495
	Inc. = 3.333″									7 8.000		7 8.000				27 10	27 6	
28	4 U53	Beam	E	10	S	X				8.000	5 8.000					7 0	6 10	128
28	11 V50	D.S./R.S.		20		X			24 3.000							24 3	24 3	3608
28	11 V51	D. Shaft		20		X			14 8.000							14 8	14 8	2182
28	11 V52	Column		20		X			32 0.000							32 0	32 0	4760
16	W5 W50	Beam	E	22		X			15.000	9.125						23 0	23 0	62
	SUPERSTRUCTURE																	
	SLAB																	
10	6 S1	Slab	E	20					26 6.000							26 6	26 6	398
10	6 S2	Slab	E	24						21.375	23 0.000			4.000	21.000	26 7	26 7	399
	CURB BLOCKOUT																	
12	5 R1	Curb	E	28	S				3 0.000	13.500	3 2.000	12.000				8 4	8 0	100

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B FT. IN.	C FT. IN.	D FT. IN.	E FT. IN.	F FT. IN.	H FT. IN.	K FT. IN.	NOMINAL LENGTH FT. IN.	ACTUAL LENGTH FT. IN.	WEIGHT LBS.
	TOTALS																	
	4																	732
	4		E															128
	5																	0
	5		E															1340
	6																	0
	6		E															911
	7																	0
	7		E															1346
	10																	0
	10		E															1411
	11																	10550
	11		E															0
	W5		E															62
		TOTAL																11282
		TOTAL	E															5198

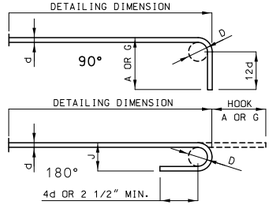


BENDING DIAGRAMS



STIRRUP HOOK DIMENSIONS			
GRADES 40 - 50 - 60 KSI			
BAR SIZE	D (IN.)	90° HOOK	135° HOOK
		HOOK A OR G	HOOK A OR G	APPROX. H
#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″

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



END HOOK DIMENSIONS				
BAR SIZE	D (IN.)	ALL GRADES		
		180° HOOKS		90° HOOKS
		A OR G	J	A OR G
#3	2 1/4″	5″	3″	6″
#4	3″	6″	4″	8″
#5	3 3/4″	7″	5″	10″
#6	4 1/2″	8″	6″	12″
#7	5 1/4″	10″	7″	14″
#8	6″	11″	8″	16″
#9	9 1/2″	15″	11 3/4″	19″
#10	10 3/4″	17″	13 1/4″	22″
#11	12″	19″	14 3/4″	2′-0″
#14	18 1/4″	2′-3″	21 3/4″	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) FY = 60,000 PSI.

Designed AUG 2014
Detailed AUG 2014

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

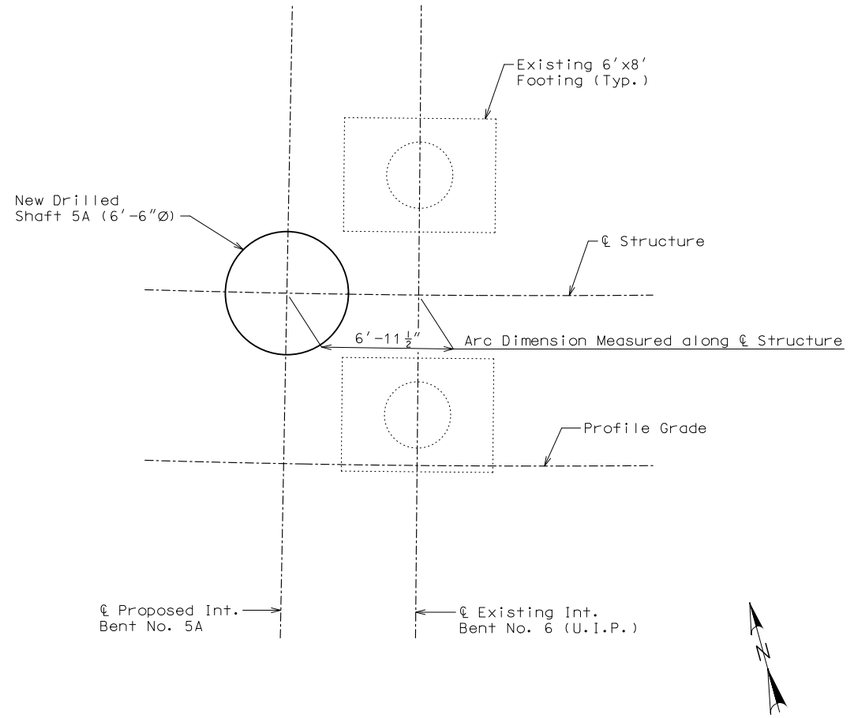
STATE OF MISSOURI
JUSTIN M. HAAS
NUMBER PE-2007020256
PROFESSIONAL ENGINEER

DATE: 1/7/2015
DATE PREPARED: 1/2/2015
ROUTE: I-29
STATE: MO
DISTRICT: BR
SHEET NO.: 12
COUNTY: CLAY
JOB NO.: J4I3021
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A17633

DESCRIPTION | DATE | REV.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

benesch
14 W. 3rd Street, SUITE 220
KANSAS CITY, MO 64105
816/221-4222, FAX 913/441-1468
CERTIFICATE OF AUTHORITY NUMBER F00970024



PART PLAN SHOWING DRILLED SHAFT NUMBERING FOR RECORDING AS-BUILT DRILLED SHAFT DATA

Note: All Bents are Radial.

As-Built Drilled Shaft Data				
Shaft No.	Top of Sound Rock (Elev.)	Tip of Casing (Elev.)	Bottom of Rock Socket (Elev.)	Remarks
				Int. Bent No. 5A
5A				

Notes:
Indicate remarks in the remarks column.

This sheet is to be completed by MoDOT construction personel.

STATE OF MISSOURI
JUSTIN M. DAVIS
NUMBER PE-2007020256
PROFESSIONAL ENGINEER

DATE
1/7/2015
DATE PREPARED
1/2/2015
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 13
COUNTY
CLAY
JOB NO.
J4I3021
CONTRACT ID.
PROJECT NO.
BRIDGE NO.
A17633

DATE	DESCRIPTION	REV.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

benesch
14 W. 3rd Street, SUITE 220
KANSAS CITY, MO 64105
816/221-4222 FAX 913/441-1468
CERTIFICATE OF AUTHORITY NUMBER F00970024

Designed AUG 2014
Detailed AUG 2014

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

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Missouri Department of Transportation
Construction and Materials

BORING NO. O-14-81
Page 1 of 2

Job No.: J4I3021 **County:** Clay **Route:** I-29/-35
Design: A17633 **Skew:** **Location:** Kansas City
Bent: **Logged By:** Sheri Lamberson **Operator:** Raymond Murray
Station: 116+00.9 **Northing:** 1093642.3 **Date of Work:** 11/18/14-11/18/14
Offset: 7 R **Easting:** 2772327 **Depth to Water:**
Elevation: 862.5 **Requested Northing:** **Depth Hole Open:**
Requested Station: **Requested Easting:** **Time Change:**
Requested Offset: **Equipment:** Acker Soil XLS ,Split-Spoon Sampler, NQ
Requested Elevation: **Location Note:**
Drill No.: G-9462 **Hammer Efficiency:** 69% **Drilling Method:** Hollow Stem Auger

Depth (ft)	Graphic	Description	Elevation (ft)	Sample Type	REC % (RQD %)	Blow Counts (N_{60})	Shear Strength Data	Field Tests	Index Tests
0		0-2.4' Gray, LEAN CLAY, hard, dry	860						
5		2.4-5.3' Reddish tan, CLAYEY SAND, dense, moist							
		5.3-6.8' Weathered limestone layer or boulder			80	18-40-21 (70)			MC = 13.2%
10		6.8-11.6' Dark brown and gray, SANDY LEAN CLAY to laminated clay shale, hard, moist	855		100	7-15-19 (39)		PP = 8.00 tsf	MC = 16.7% LL = 40 PL = 19
15		11.6-24.3' Limestone, gray and yellowish tan, medium bedded, medium hard, fine to medium grained, with shaley limestone layers	850		96 (74)		Qu Test Results UCS = 412.12 ksf MC = 0% γ_{moist} = 163.4 pcf		
			845		100 (41)		Qu Test Results UCS = 889.2 ksf MC = 0% γ_{moist} = 164.6 pcf		
20		21.6-26.6' RQD=89% and is taken on limestone portion only	840		100		Qu Test Results UCS = 20.02 ksf MC = 12.5% γ_{moist} = 144.4 pcf		
25		24.3-27.2' Shale, gray to black, soft							
		26.6-31.6' RQD=40% and is taken on limestone portion only	835		100		Qu Test Results UCS = 25.92 ksf MC = 10.1% γ_{moist} = 144 pcf		
30		27.2-39.2' Limestone, tannish gray, thin to medium bedded, medium hard, fine grained, scattered shaley limestone layers							
35			830		90 (40)		Qu Test Results UCS = 420.92 ksf MC = 0% γ_{moist} = 161.1		

N_{60} = (Em/60)Nm N_{60} - Corrected N value for standard 60% SPT efficiency; Em - Measured hammer efficiency in percent; Nm - Observed N-value
(1) = Assumed, (2) = Actual

Coordinate System: U.S. State Plane 1983 **Coordinate Zone:** Missouri West **Coordinate Proj. Factor:** 1.000095
Coordinate Datum: NAD 83 (CONUS) **Coordinate Units:** U.S. Survey Feet

* Persons using this information are cautioned that the materials shown are determined by the equipment noted and accuracy of the "log of materials" is limited thereby and by judgement of the operator. THIS INFORMATION IS FOR DESIGN PURPOSES ONLY.

LETTER BOREHOLE - R35G-S2109.GPJ - 12/11/14 08:16 - J:\SG\GINT\PROJECT FILES\J4I3021.GPJ

Missouri Department of Transportation
Construction and Materials

BORING NO. O-14-81
Page 2 of 2

Job No.: J4I3021 **County:** Clay **Route:** I-29/-35
Design: A17633 **Skew:** **Location:** Kansas City
Bent: **Logged By:** Sheri Lamberson **Operator:** Raymond Murray
Station: 116+00.9 **Northing:** 1093642.3 **Date of Work:** 11/18/14-11/18/14
Offset: 7 R **Easting:** 2772327 **Depth to Water:**
Elevation: 862.5 **Requested Northing:** **Depth Hole Open:**
Requested Station: **Requested Easting:** **Time Change:**
Requested Offset: **Equipment:** Acker Soil XLS ,Split-Spoon Sampler, NQ
Requested Elevation: **Location Note:**
Drill No.: G-9462 **Hammer Efficiency:** 69% **Drilling Method:** Hollow Stem Auger

Depth (ft)	Graphic	Description	Elevation (ft)	Sample Type	REC % (RQD %)	Blow Counts (N_{60})	Shear Strength Data	Field Tests	Index Tests
35		27.2-39.2' Limestone, tannish gray, thin to medium bedded, medium hard, fine grained, scattered shaley limestone layers *(continued)* 36.6-41.6' RQD=58% and is taken on limestone portion ony	825		100		pcf Qu Test Results UCS = 2.6 ksf MC = 15% γ_{moist} = 139.3 pcf		
40		39.2-41.6' Clay Shale, dark gray, very soft							
		Bottom of borehole at 41.6 feet.							

N_{60} = (Em/60)Nm N_{60} - Corrected N value for standard 60% SPT efficiency; Em - Measured hammer efficiency in percent; Nm - Observed N-value
(1) = Assumed, (2) = Actual

Coordinate System: U.S. State Plane 1983 **Coordinate Zone:** Missouri West **Coordinate Proj. Factor:** 1.000095
Coordinate Datum: NAD 83 (CONUS) **Coordinate Units:** U.S. Survey Feet

* Persons using this information are cautioned that the materials shown are determined by the equipment noted and accuracy of the "log of materials" is limited thereby and by judgement of the operator. THIS INFORMATION IS FOR DESIGN PURPOSES ONLY.

LETTER BOREHOLE - R35G-S2109.GPJ - 12/11/14 08:16 - J:\SG\GINT\PROJECT FILES\J4I3021.GPJ

DATE PREPARED 1/2/2015
ROUTE I-29 STATE MO
DISTRICT BR SHEET NO. 14
COUNTY CLAY
JOB NO. J4I3021
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A17633

DESCRIPTION | DATE | REV.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

benesch
14 W. 3rd Street, SUITE 220
KANSAS CITY, MO 64105
816/221-4222, FAX 913/441-1468
CERTIFICATE OF AUTHORITY NUMBER F00970024

BORING DATA NEAR INTERMEDIATE BENT NO. 5A

Note: For locations of borings, see Sheet No. 1.

Designed AUG 2014
Detailed AUG 2014

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

Y:\Bonner Springs\130200S\00130247.00\Eng-Docs\A1763\B_A1763_014_J4I3021_Boring.dgn 12:56:20 PM 1/5/2015

KEY TO SYMBOLS

Missouri Department of Transportation
1617 Mo. Blvd.
Jefferson City, Mo. 65109

CLIENT _____ **PROJECT NAME** Bridge

PROJECT NUMBER J4I3021 **PROJECT LOCATION** Kansas City

LITHOLOGIC SYMBOLS
(Unified Soil Classification System)

- BLDRCBBL: Boulders and cobbles
- CL: USCS Low Plasticity Clay
- CLS: USCS Low Plasticity Sandy Clay
- LIMESTONE: Limestone
- SHALE: Shale
- SW-SC: USCS Well-graded Sand with Clay

SAMPLER SYMBOLS

- Rock Core Barrel
- Split-Spoon Sampler

WELL CONSTRUCTION SYMBOLS

ABBREVIATIONS

LL	- LIQUID LIMIT (%)	TV	- TORVANE
PI	- PLASTIC INDEX (%)	PID	- PHOTOIONIZATION DETECTOR
W	- MOISTURE CONTENT (%)	UC	- UNCONFINED COMPRESSION
DD	- DRY DENSITY (PCF)	ppm	- PARTS PER MILLION
NP	- NON PLASTIC		
-200	- PERCENT PASSING NO. 200 SIEVE		
PP	- POCKET PENETROMETER (TSF)		

- Water Level at Time of Drilling
- Water Level at End of Drilling
- Water Level after Drilling

KEY TO SYMBOLS - MISSOURI DOT.GDT - 12/11/14 08:19 - J:\SGIGINT\PROJECT FILES\J4I3021.GPJ

BORING DATA LEGEND

DATE PREPARED 1/2/2015
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 15
COUNTY CLAY
JOB NO. J4I3021
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A17633

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

benesch
14 W. 3rd Street, SUITE 220
KANSAS CITY, MO 64105
816/221-4222, FAX 913/441-1468
CERTIFICATE OF AUTHORITY NUMBER F00970024

REV.

Designed AUG 2014
Detailed AUG 2014

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

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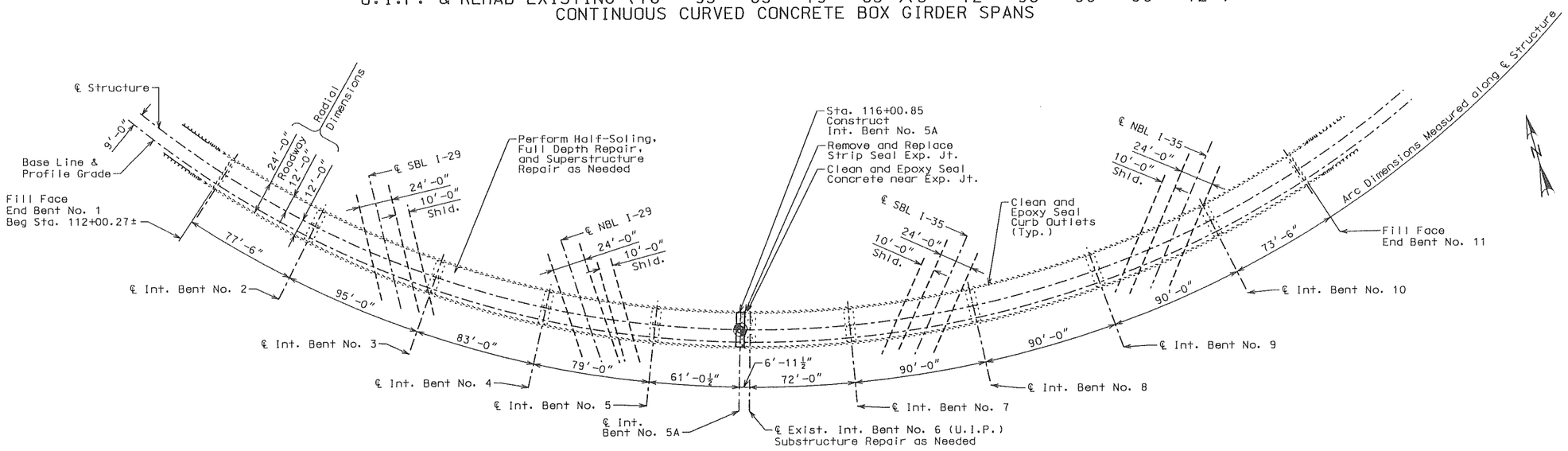
SEC/SUR 1 TWP 50N RGE 33W

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

U.I.P. & REHAB EXISTING (76'- 95'- 83'- 79'- 63')(5'- 72'- 90'- 90'- 90'- 72')
CONTINUOUS CURVED CONCRETE BOX GIRDER SPANS



PLAN

Note: All Bents are radial.

BENCH MARK:

B.M. #1: Top NE Bolt on Sign Support
Sta. 119+40, 5.0' Lt.
Elev. 864.16

"⊕" Indicates location of borings.

Notice and Disclaimer Regarding Boring Log Data

The locations of all subsurface borings for this structure are shown on the plan sheet(s) for this structure. The boring data for all locations indicated, as well as any other boring logs or other factual records of subsurface data and investigations performed by the department for the design of the project, are shown on Sheet(s) No. 14 & 15 or will be available from the Project Contact upon written request. No greater significance or weight should be given to the boring data depicted on the plan sheets than is given to the subsurface data available from the district or elsewhere.

The Commission does not represent or warrant that any such boring data accurately depicts the conditions to be encountered in constructing this project. A contractor assumes all risks it may encounter in basing its bid prices, time or schedule of performance on the boring data depicted here or those available from the district, or on any other documentation not expressly warranted, which the contractor may obtain from the Commission.

REPAIRS TO BRIDGE: RAMP (I-29 S.B. TO I-35 N.B.) OVER I-29 AND I-35

STATE ROAD AT I-29 AND I-35 INTERCHANGE
IN KANSAS CITY
STA. 112+00.27±(MATCH EXISTING)

FINAL PLANS

STD. 606.22
STD. 606.00
STD. 706.35

Designed AUG 2014
Detailed AUG 2014

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

DATE 1/7/2015
DATE PREPARED 11/24/2015
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 1
COUNTY CLAY
JOB NO. J4I3021
CONTRACT ID. 150320-C04
PROJECT NO. FAS-S300(34)
BRIDGE NO. A17633

NO.	DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

benesch
14 W. 3rd Street, SUITE 220
KANSAS CITY, MO 64105
816.472.1201 FAX 816.441-1468
CERTIFICATE OF AUTHORITY NUMBER F00970024

REV.

General Notes:

Design Specifications
(New Construction except for Drilled Shaft):
2002 - AASHTO LFD (17th Ed.) Standard Specifications
Seismic Performance Category A
Bridge Deck Rating = 6

Design Specifications (Drilled Shaft):
2012 AASHTO LRFD Bridge Design Specifications (6th Ed.) and 2013 Interim Revisions

Design Loading:
HS20-44 & Military 24,000# Tandem Axle (New Construction except for Drilled Shaft)
HL-93 (Drilled Shaft)
No Future Wearing Surface
Earth 120 lb/cf, Equivalent fluid pressure 30 lb/cf

Design Unit Stresses:

Class B Concrete (Substructure)	f'c = 3,000 psi
Class B-1 Concrete (Superstructure, Curb & Parapet, Curb Blockout)	f'c = 4,000 psi
Class B-2 Concrete (Drilled Shafts & Rock Sockets)	f'c = 4,000 psi
Reinforcing Steel (Grade 60)	fy = 60,000 psi
Structural Low Alloy Steel (ASTM A709 Grade 50)	fy = 50,000 psi

Reinforcing Steel:
Minimum clearance to reinforcing steel shall be 1-1/2", unless otherwise shown.

Concrete Protective Coatings:
Protective coating for concrete bents and piers (Epoxy) shall be applied as shown on the bridge plans and in accordance with Sec 711.

Miscellaneous:
High strength bolts, nuts and washers will be sampled for quality assurance as specified in Sec 106.

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

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

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 plain 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 qualified special mortar in accordance with Sec 704.

Joint Filler:
All joint filler shall be in accordance with Sec 1057 for preformed sponge rubber expansion and partition joint filler, except as noted.

Traffic Handling:
Structure will be closed during construction except construction of Bent 5A. See Roadway plans for Traffic Control Plan.

FOUNDATION DATA

TYPE		DESIGN DATA		BENT NO. 5A
Rock Socket (Drilled Shaft)		Number		1
	Layer 1	Foundation Material		Rock
		Elevation Range	ft	848-841
		Minimum Nominal Axial Compressive Resistance (Side Resistance)	ksf	22.8
	Layer 2	Foundation Material		Shale
		Elevation Range	ft	841-835
		Minimum Nominal Axial Compressive Resistance (Side Resistance)	ksf	6.9
	Layer 3	Foundation Material		Rock
		Elevation Range	ft	835-824
		Minimum Nominal Axial Compressive Resistance (Side Resistance)	ksf	22.8
		Minimum Nominal Axial Compressive Resistance (Tip Resistance)	ksf	100

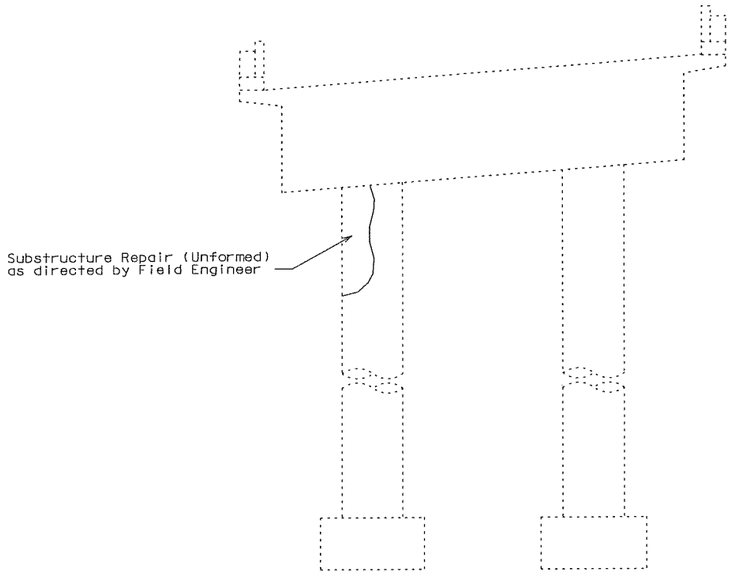
$$\text{Minimum Nominal Axial Compressive Resistance (Side Resistance + Tip Resistance)} = \frac{\text{Maximum Factored Loads}}{\text{Resistance Factors}}$$

FINAL QUANTITIES

Item			Substr.	Superstr.	Total
Removal of Existing Expansion Joints & Adjacent Concrete	Line No. 0540	linear foot		24	24
Drilled Shafts (6 ft. 6 in. Dia.)	Line No. 0550	linear foot	9.5		9.5
Rock Sockets (6 ft. 0 in. Dia.)	Line No. 0560	linear foot	11.0		11.0
Supplementary Television Camera Inspection	Line No. 0570	each	1		1
Foundation Inspection Holes	Line No. 0580	linear foot	21.0		21.0
Sonic Logging Testing	Line No. 0590	each	1		1
Class B Concrete (Substructure)	Line No. 0600	cu. yard	63.5		63.5
Class B-1 Concrete (Superstructure)	Line No. 0610	cu. yard		5.1	5.1
Substructure Repair (Unformed)	Line No. 0620	sq. foot	25		25
Superstructure Repair (Unformed)	Line No. 0630	sq. foot		1,139	1,139
Repairing Concrete Deck (Half-Soling)	Line No. 0640	sq. foot		351	351
Full Depth Repair	Line No. 0650	sq. foot		0	0
Clean and Epoxy Seal	Line No. 0660	sq. foot		3,400	3,400
Reinforcing Steel (Bridges)	Line No. 0670	pound	11,280		11,280
Reinforcing Steel (Epoxy Coated)	Line No. 0680	pound	4,300	900	5,200
Protective Coating - Concrete Bents and Piers (Epoxy)	Line No. 0690	lump sum			1*
Fabricated Structural Low Alloy Steel (Misc.)	Line No. 0700	pound		2,590	2,590
Laminated Neoprene Bearing Pad Assembly	Line No. 0710	each		4	4
Strip Seal Expansion Joint System	Line No. 0720	linear foot		24	24

The cost of any required excavation to the top of the drilled shafts will be considered completely covered by the contract unit price for other items.

* Final quantity of 700 sq. foot of Protective Coating - Concrete Bents and Piers (Epoxy) at Int. Bent No. 5A.



INT. BENT NO. 6 SUBSTRUCTURE REPAIR

FINAL PLANS

DATE: 1/7/2015
DATE PREPARED: 11/24/2015
ROUTE: I-29 | STATE: MO
DISTRICT: BR | SHEET NO.: 2
COUNTY: CLAY
JOB NO.: J4I3021
CONTRACT ID.: 150320-C04
PROJECT NO.: FAS-S300(34)
BRIDGE NO.: A17633

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

benesch
14 W. 3rd Street, SUITE 220
KANSAS CITY, MO 64105
816/221-4222, FAX 913/441-1468
CERTIFICATE OF AUTHORITY NUMBER F00970024

REV.

Designed AUG 2014
Detailed AUG 2014

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

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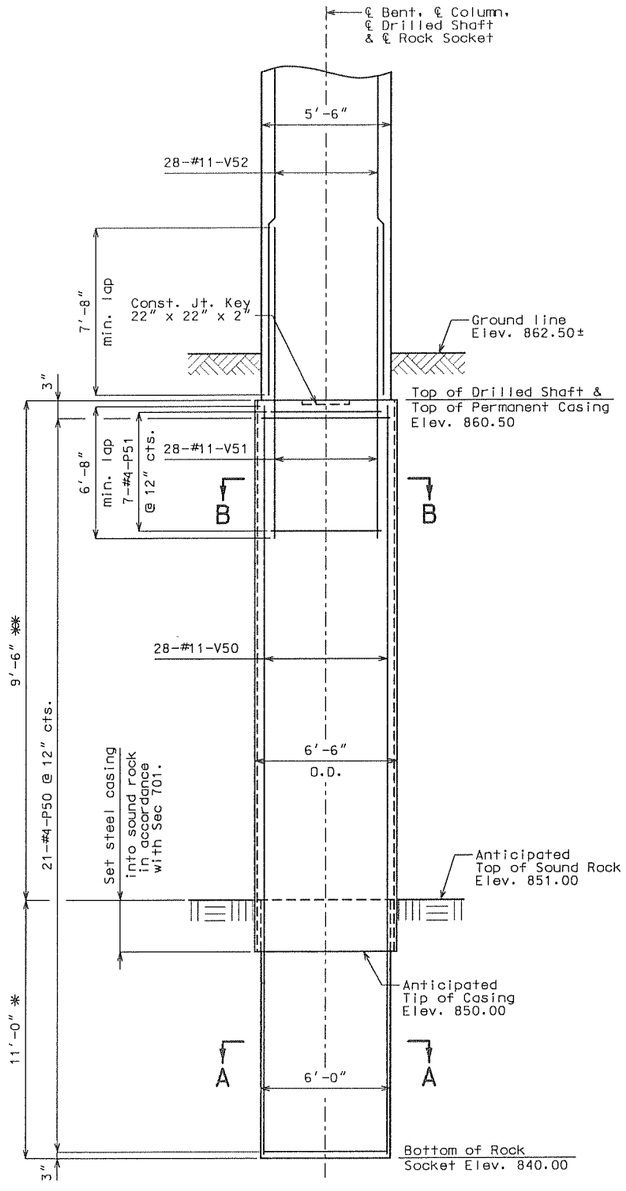
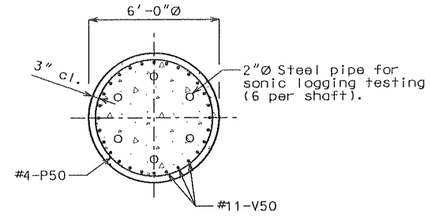


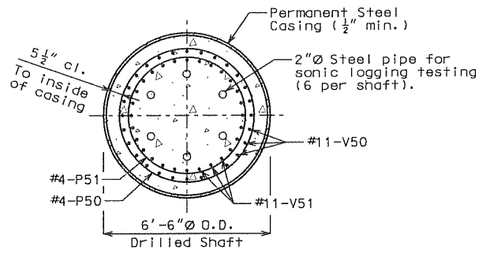
PART ELEVATION SHOWING DRILLED SHAFT AND ROCK SOCKET

* Pay Limits of Rock Socket (6′-0″ diameter)

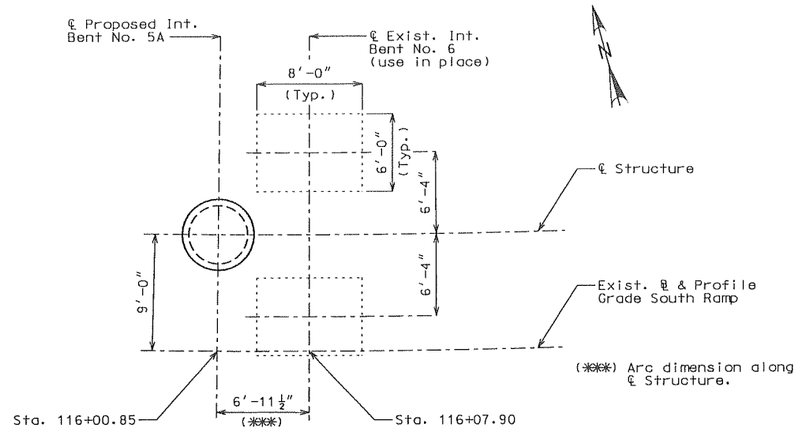
** Pay Limits of Drilled Shaft (6′-6″ diameter)



SECTION A-A



SECTION B-B



PART PLAN SHOWING LOCATION OF PROPOSED INT. BENT NO. 5A

SUBSTRUCTURE QUANTITY TABLE FOR INT. BENT NO. 5A			
Item			Quantity
Drilled Shafts (6 ft. 6 in. Dia.)	Line No. 0550	linear foot	9.5
Rock Sockets (6 ft. 0 in. Dia.)	Line No. 0560	linear foot	11.0
Supplementary Television Camera Inspection	Line No. 0570	each	1
Foundation Inspection Holes	Line No. 0580	linear foot	21.0
Sonic Logging Testing	Line No. 0590	each	1
Class B Concrete (Substructure)	Line No. 0600	cu. yard	63.5
Reinforcing Steel (Bridges)	Line No. 0670	pound	11,280
Reinforcing Steel (Epoxy Coated)	Line No. 0680	pound	4,300

Notes:
These quantities are included in the Final Quantities Table on Sheet No. 2.

An additional 4 feet has been added to V-bar lengths and an additional 4-#4-P-bars have been added in the quantities, if required, for possible change in drilled shaft or rock socket lengths. The additional V-bar length shall be cut off if not required. The additional P-bars shall be spaced similarly to that shown in elevation, if required, or to a lesser spacing if not required, but not less than 6″ cts.

Sonic logging testing shall be performed on drilled shaft and rock socket.

Thickness of permanent steel casing shall be as shown on the plans and in accordance with Sec 701.

All reinforcement in drilled shaft and rock socket is included in the Substructure Quantities.

For details of Intermediate Bent No. 5A not shown, see Sheets No. 4,5,6 & 7.

DETAILS OF INTERMEDIATE BENT NO. 5A

FINAL PLANS

Designed AUG 2014
Detailed AUG 2014

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

DATE 1/7/2015
DATE PREPARED 11/24/2015
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 3
COUNTY CLAY
JOB NO. J4I3021
CONTRACT ID. 150320-C04
PROJECT NO. FAS-S300(34)
BRIDGE NO. A17633

DESCRIPTION | DATE | REV.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

benesch
14 W. 3rd Street, SUITE 220
KANSAS CITY, MO 64105
816/221-4222, FAX 913/441-1468
CERTIFICATE OF AUTHORITY NUMBER F00970024

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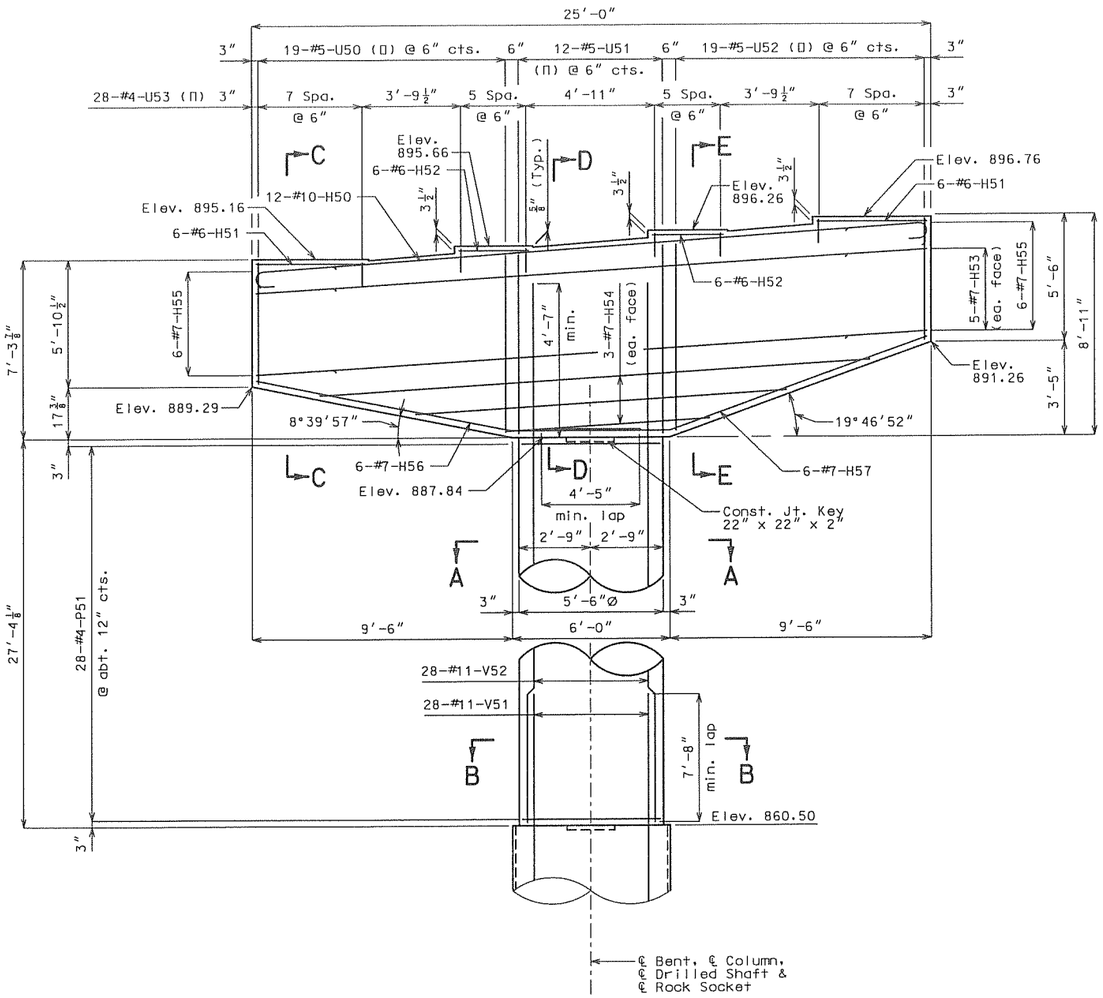
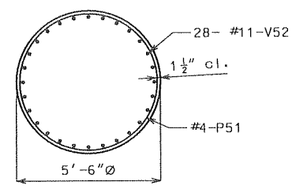
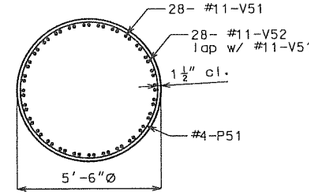


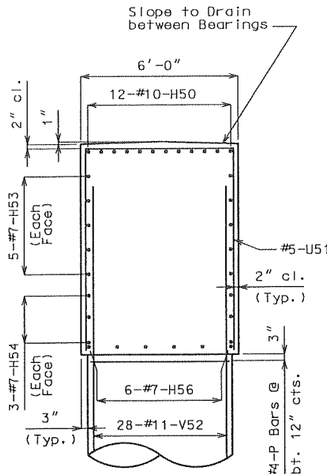
PART ELEVATION SHOWING COLUMN AND BEARING BEAM



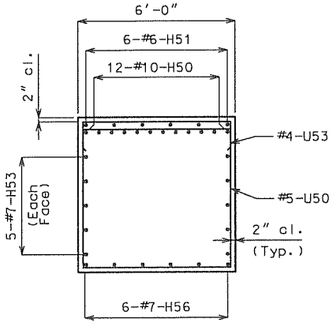
SECTION A-A



SECTION B-B

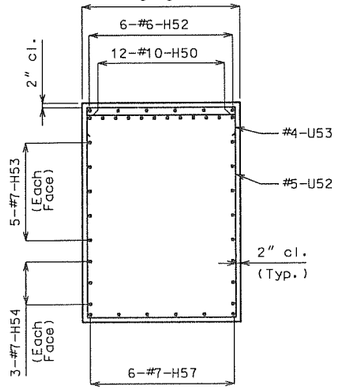


SECTION D-D



SECTION C-C

Note:
#7-H55 not shown for clarity.



SECTION E-E

Note:
For details of Intermediate Bent No. 5A not shown, see Sheets No. 3,5,6 & 7.

DETAILS OF INTERMEDIATE BENT NO. 5A

Designed AUG 2014
Detailed AUG 2014

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

Sheet No. 4 of 15

FINAL PLANS

DATE	1/7/2015
DATE PREPARED	11/24/2015
ROUTE	I-29
STATE	MO
DISTRICT	BR
SHEET NO.	4
COUNTY	CLAY
JOB NO.	J4I3021
CONTRACT ID.	150320-C04
PROJECT NO.	FAS-S300-(34)
BRIDGE NO.	A17633

DESCRIPTION | DATE | REV.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

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14 W. 3rd Street, SUITE 220
KANSAS CITY, MO 64105 816/441-1468
KS CA 1272, KY 91, 816/441-1468
CERTIFICATE OF AUTHORITY NUMBER F00970024

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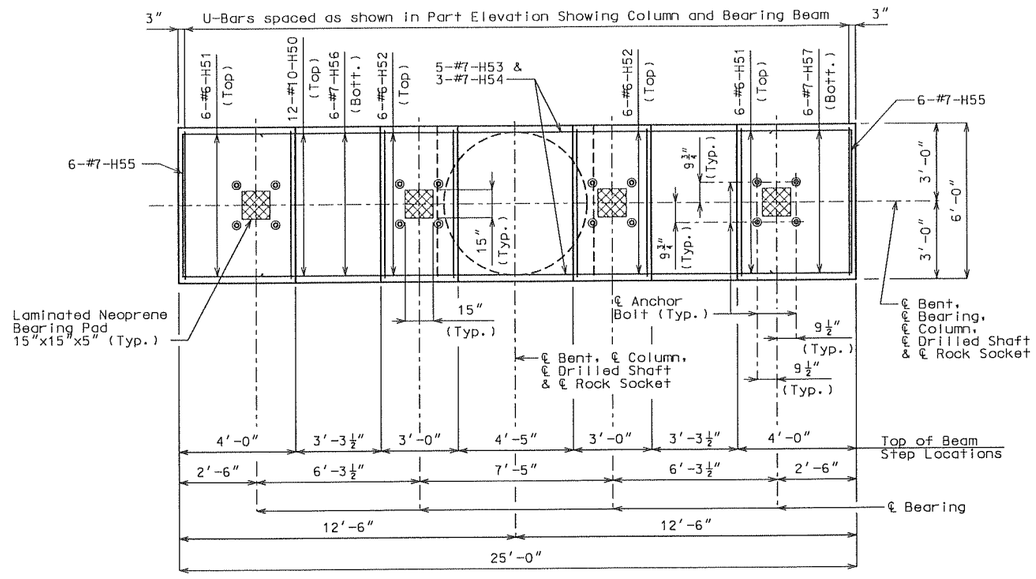
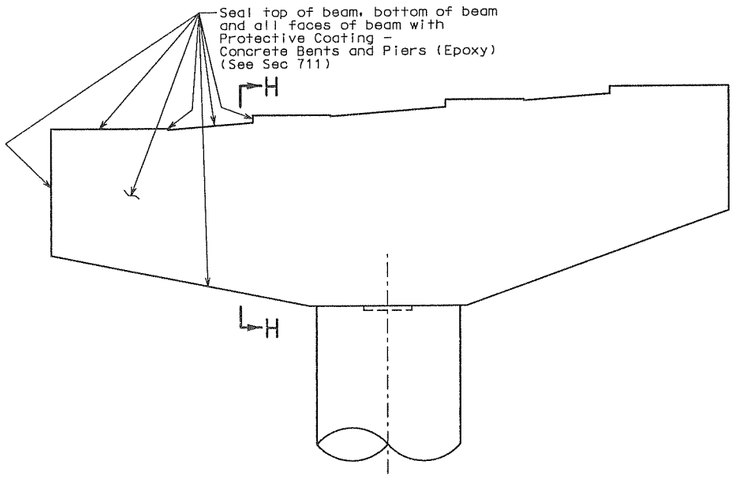
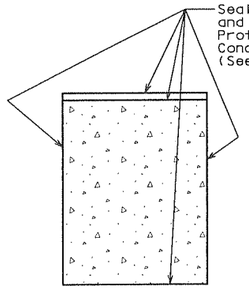


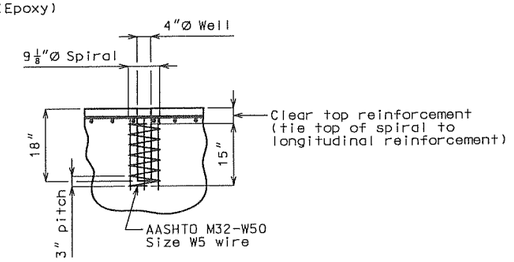
PLAN



PART ELEVATION SHOWING PROTECTIVE COATING - CONCRETE BENTS AND PIERS (EPOXY)



SECTION H-H



DETAIL OF ANCHOR BOLT WELLS

Notes:
Reinforcing steel shall be shifted to clear anchor bolt wells by at least 1/2".

Holes for anchor bolts may be drilled into the substructure.

Anchor bolt wells shall not be formed with galvanized corrugated steel pipe.

For details of Intermediate Bent No. 5A not shown, see Sheets No. 3,4,6 & 7.

DETAILS OF INTERMEDIATE BENT NO. 5A

FINAL PLANS

Designed AUG 2014
Detailed AUG 2014

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

DATE 1/7/2015
DATE PREPARED 11/24/2015
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 5
COUNTY CLAY
JOB NO. J4I3021
CONTRACT ID. 150320-C04
PROJECT NO. FAS-S300(34)
BRIDGE NO. A17633

REV.	DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

benesch
1414 W. 3rd Street, SUITE 220
KANSAS CITY, MO 64101
816/221-4222. FAX 913/441-1468
CERTIFICATE OF AUTHORITY NUMBER F00970024

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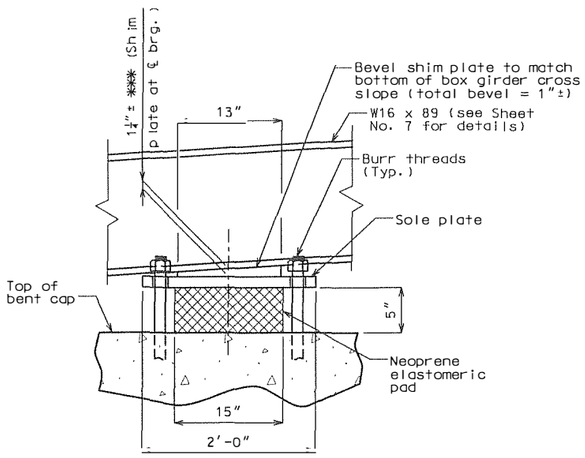
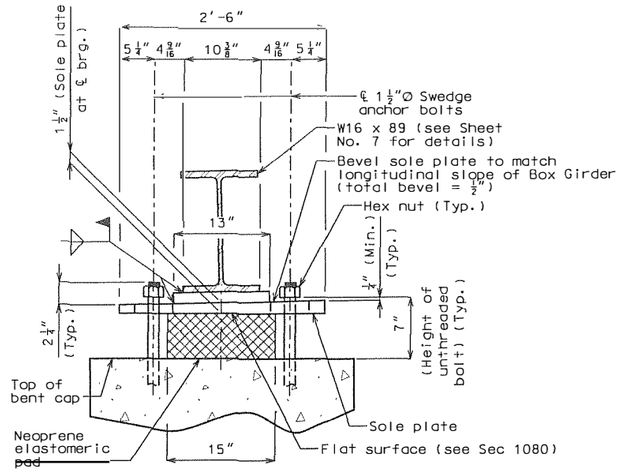
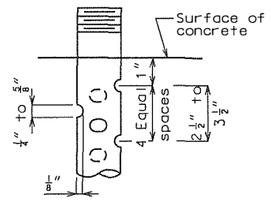


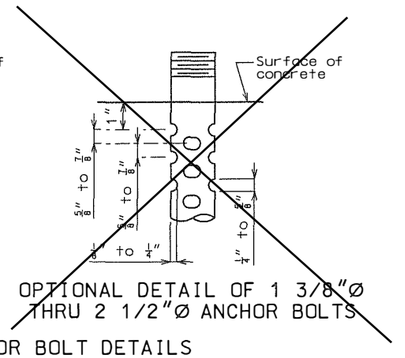
END VIEW

(***) Shim plate thickness and slope requirement shall be field verified before fabrication. Shim plate shall be one plate.



SIDE VIEW

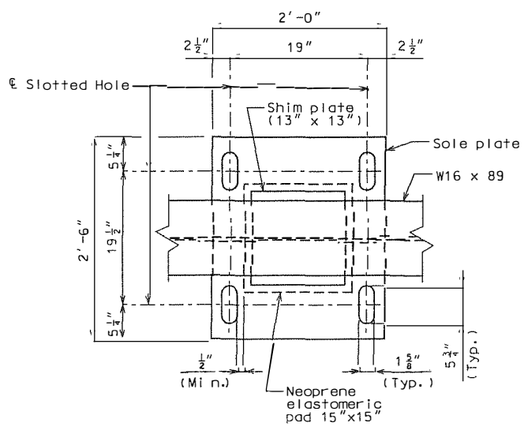




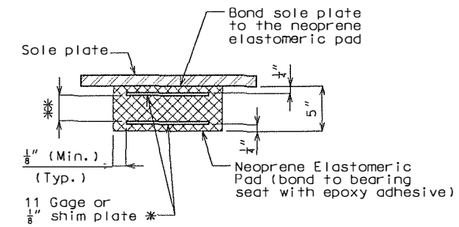
DETAIL OF 3/4"Ø THRU 2 1/2"Ø ANCHOR BOLTS

OPTIONAL DETAIL OF 1 3/8"Ø THRU 2 1/2"Ø ANCHOR BOLTS

SWEDGE ANCHOR BOLT DETAILS



PART PLAN



(*) The required shim plate shall be placed between layers of elastomer and molded together to form an integral unit.

(**) Seven layers of 1/2" elastomer alternating with eight 11 gage or 1/8" shim plates

NEOPRENE ELASTOMERIC PAD

GENERAL NOTES:

Anchor bolts shall be 1 1/2"Ø ASTM F1554 Grade 55 swedged bolts and shall extend 15" into the concrete with AASHTO M291 (ASTM A563) Grade A Hex. Actual manufacturer's certified mill test reports (chemical and mechanical) shall be provided. Swedging shall be 1" less than extension into the concrete.

Anchor bolt shall be at the ℄ of slotted hole at 60°F. Bearing position shall be adjusted 1/8" for each 10° fall or rise in temperature at installation.

All structural steel for the anchor bolts and heavy hexagon nuts shall be coated with a minimum of two coats of inorganic zinc primer (5 mils minimum).

Neoprene Elastomeric Pads shall be 60 Durometer.

Structural steel for sole plate and wide flange shim plate shall be ASTM A709 Grade 36 and shall be coated with a minimum of two coats of inorganic zinc primer (5 mils minimum).

Laminated Neoprene Bearing Pad Assembly shall be in accordance with Sec 716.

DETAILS OF LAMINATED NEOPRENE BEARING PAD ASSEMBLY AT INT. BENT NO. 5A

FINAL PLANS

Designed AUG 2014
Detailed AUG 2014

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

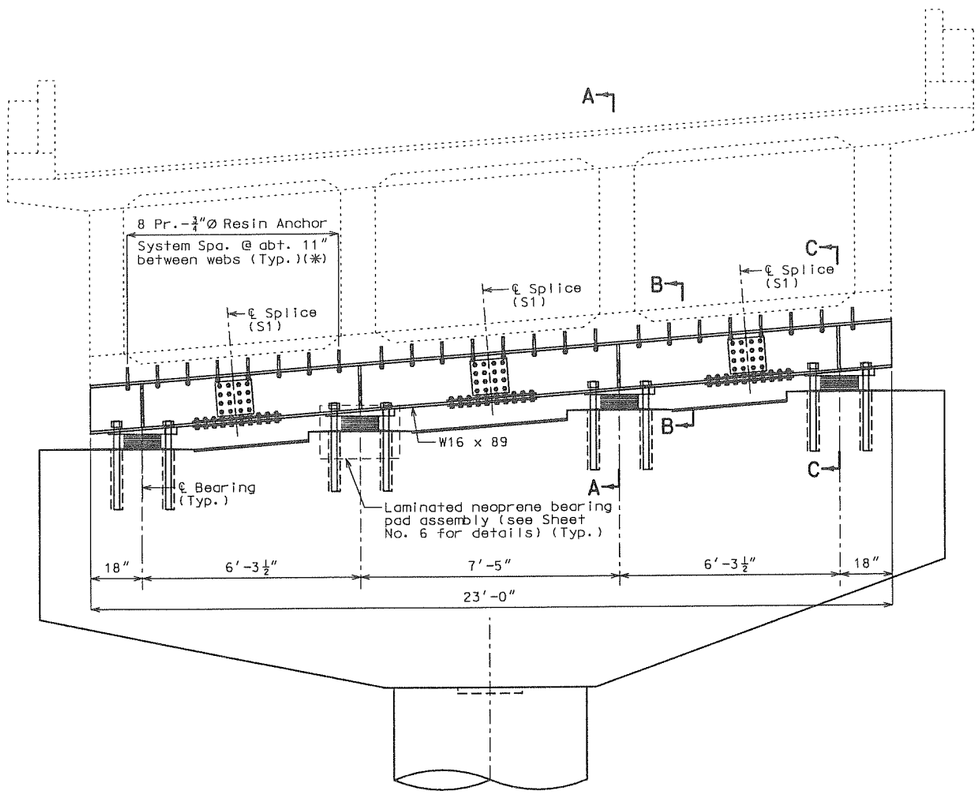
DATE
1/7/2015
DATE PREPARED
11/24/2015
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 6
COUNTY CLAY
JOB NO. J4I3021
CONTRACT ID. J4I3021
PROJECT NO. FAS-S300(34)
BRIDGE NO. A17633

DESCRIPTION | DATE

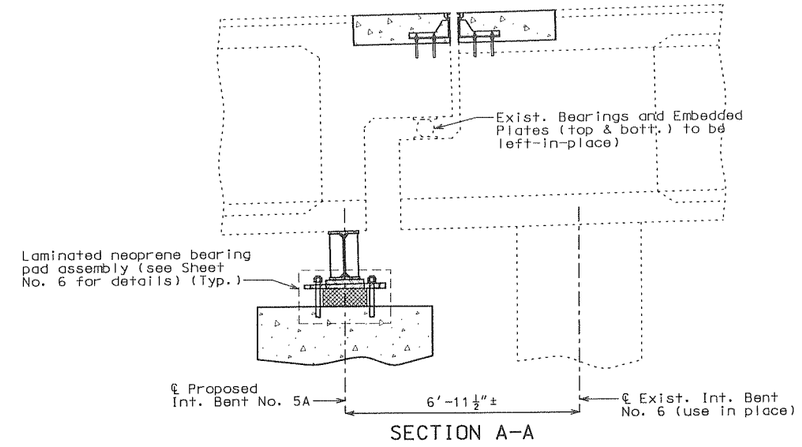
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

benesch
14 W. 3rd Street, SUITE 220
KANSAS CITY, MO 64105
816/228-4222 FAX 913/441-1468
CERTIFICATE OF AUTHORITY NUMBER F00970024

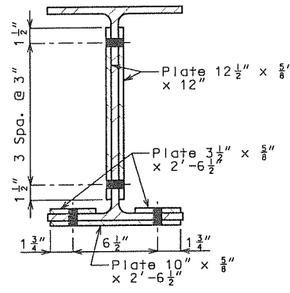
REV.



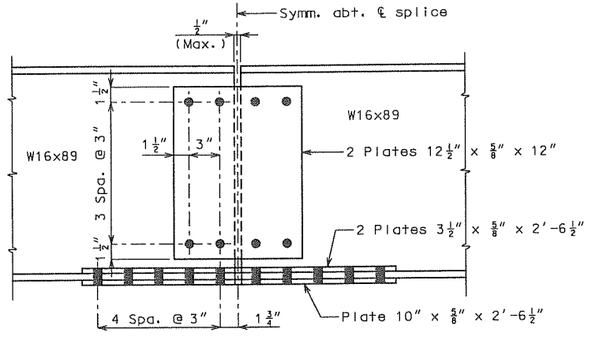
ELEVATION SHOWING BEARING EXTENSION AT INT. BENT NO. 5A



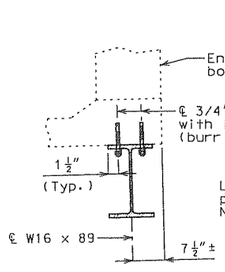
SECTION A-A



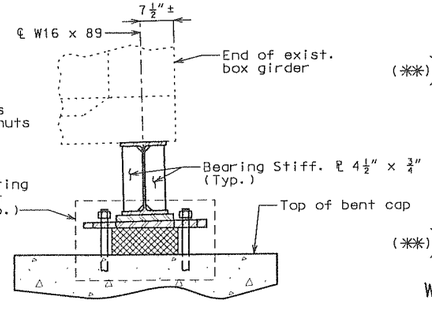
SECTION THRU BOLTED FIELD SPLICE (S1)



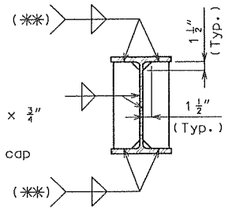
DETAIL OF BOLTED FIELD SPLICE (S1)



SECTION B-B



SECTION C-C



WELDING DETAILS

(**) Grind or mill to bear.

Notes:
The temporary supports shall be capable of safely supporting a load of 95 kips per bearing (service dead load plus 50 psf construction load without factor of safety). see Special Provisions.

Fabricated structural steel shall be ASTM A709 Grade 50, except as noted.

Protective Coating: System G in accordance with Sec 1081.

Prime Coat: The cost of the prime coat will be considered completely covered by the contract unit price for the fabricated structural steel. Tint of the prime coat for System G shall be similar to the color of the field coat to be used.

Field Coat(s): The color of the field coat(s) shall be Gray (Federal Standard #26373). The cost of the intermediate field coat will be considered completely covered by the contract unit price for Fabricated Structural Low Alloy Steel (Misc.). The cost of the finish field coat will be considered completely covered by the contract unit price for Fabricated Structural Low Alloy Steel (Misc.).

The contractor shall use one of the qualified resin anchor systems in accordance with Sec 1039.

The minimum embedment depth in concrete with f'c = 4,000 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".

(*) 3/4"Ø resin anchor systems shall be placed to clear exist. reinforcing steel and not directly below existing webs.

Cost of bearing extension and resin anchors, complete in place, will be considered completely covered by the contract unit price for Fabricated Structural Low Alloy Steel (Misc.).

Use 7/8"Ø high strength bolts with 15/16"Ø holes.

Contact surfaces shall be in accordance with Sec 1081 for surface preparation.

15/16"Ø Holes to be field drilled in W16 x 89 web and flange using holes in splice plates as templates.

DATE
1/7/2015
DATE PREPARED
11/24/2015
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 7
COUNTY
CLAY
JOB NO.
J4I3021
CONTRACT ID.
150320-C04
PROJECT NO.
FAS-S300(34)
BRIDGE NO.
A17633

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
MoDOT
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

benesch
14 W. 3rd Street, SUITE 220
KANSAS CITY, MO 64105
816/221-1422 FAX 913/441-1468
CERTIFICATE OF AUTHORITY NUMBER F00970024

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Designed AUG 2014
Detailed AUG 2014

DETAILS OF BEARING EXTENSION AT INT. BENT NO. 5A

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

Sheet No. 7 of 15

FINAL PLANS

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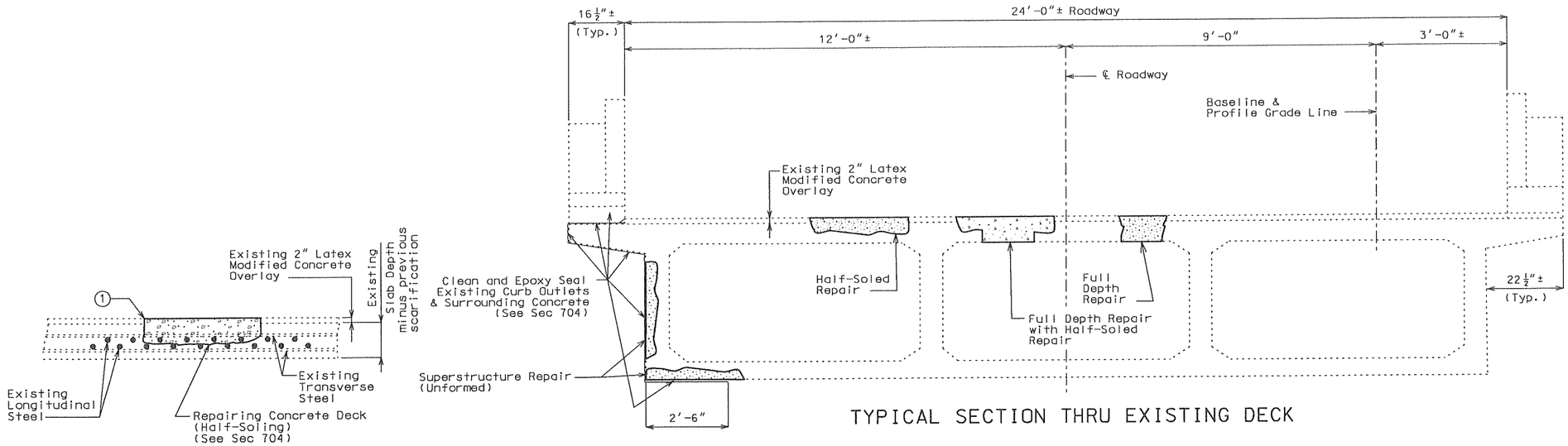
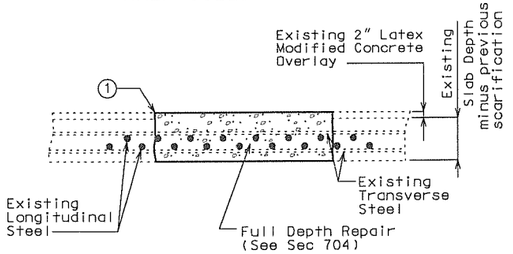
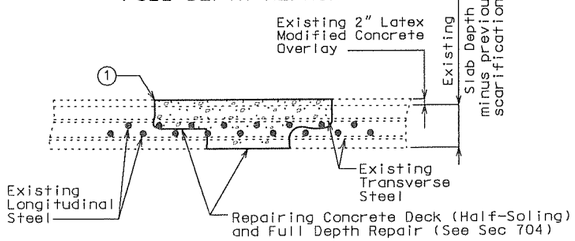


TYPICAL SECTION THRU EXISTING DECK

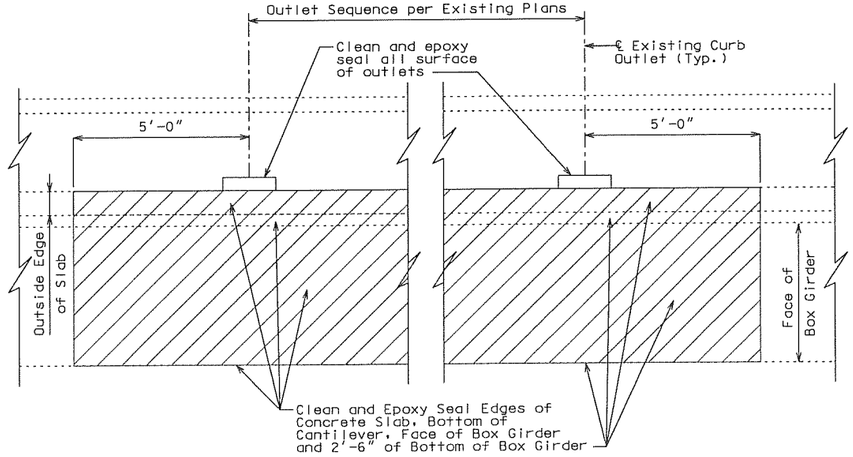
HALF-SOLED REPAIR



FULL DEPTH REPAIR



FULL DEPTH REPAIR
WITH HALF-SOLED REPAIR



PART ELEVATION SHOWING LIMITS OF
CLEAN AND EPOXY SEALING

(1) One inch vertical side shall be established outside the deteriorated area. See Sec 704.

DECK REPAIR DETAILS

Designed AUG 2014
Detailed AUG 2014

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

Sheet No. 8 of 15

FINAL PLANS

DATE	1/7/2015
DATE PREPARED	11/24/2015
ROUTE	I-29
STATE	MO
DISTRICT	BR
SHEET NO.	8
COUNTY	CLAY
JOB NO.	J4I3021
CONTRACT ID.	150320-C04
PROJECT NO.	FAS-S300(34)
BRIDGE NO.	A17633

DESCRIPTION | DATE | REV.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
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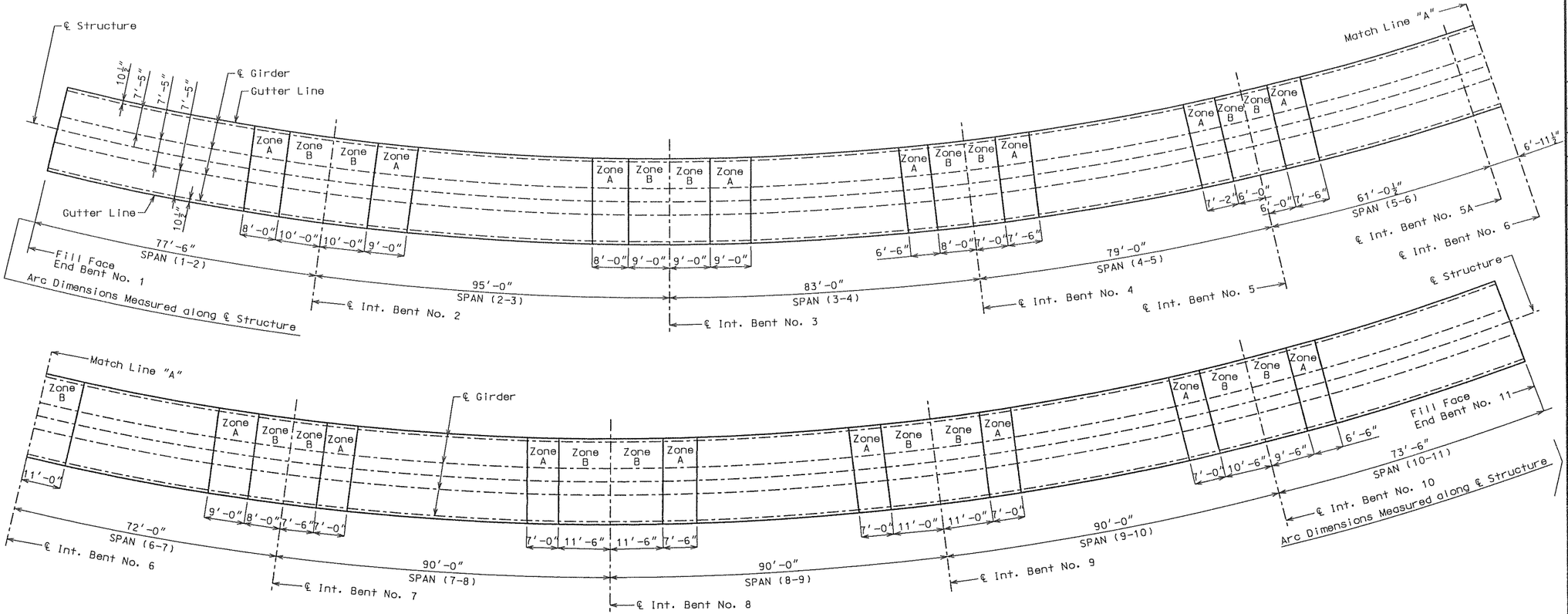
benesch
14 W. 3rd Street, SUITE 220
KANSAS CITY, MO 64105
816/221-4222, FAX 913/441-1468
CERTIFICATE OF AUTHORITY NUMBER F00970024



PLAN OF SLAB SHOWING SPECIAL REPAIR ZONES

Note: All Bents are radial.

Longitudinal dimensions shown are horizontal dimensions along ℄ Roadway

Special Repair Zone Notes:

Any half-soling required in the areas designated as special repair zones shall be completed in alphabetical sequence. Any repair in the remainder of the bridge that is adjacent to Zone A and not designated as a special repair zone shall be completed prior to work in Zone A.

Removal and repair shall be completed in one special repair zone and concrete shall have attained a compressive strength of 3200 psi before work can be started in the next special repair zone. Before placing concrete in areas adjacent to areas of subsequent repair, the concrete shall be separated with a material such as polyethylene sheets to aid in removal of old concrete.

Zones with the same letter designation may be repaired at the same time except for the zones directly adjacent to the centerline of bent. If either of the zones adjacent to centerline of bent has a single repair area of over 10 square feet or a total repair area of over 20 square feet, that zone shall be repaired before removing concrete in the other zone of the same designation at that bent.

Total width of full depth repair shall not exceed 1/3 of the deck width at one time. For any area of deck repair that extends over a concrete girder and is more than 18 inches in length along the girder, the concrete removal shall stop at the centerline of girder and repair completed in this area. Prior to continuing work in this area, the concrete shall have attained a compressive strength of 3200 psi. No traffic shall be permitted over the girder that is undergoing repair.

Notes continued:

When the full depth repair extends over a diaphragm or girder and the deteriorated concrete extends into the diaphragm or girder, all deteriorated concrete shall be removed and replaced as full depth repair. Concrete in girders shall not be removed below the deck haunch of the girder without prior review and approval from the engineer.

Interior falsework installed by the contractor resting on the bottom slab shall be removed where entry access is available.

If any single repair area does not exceed 9 square feet in size and the total repair within a special repair zone does not exceed 27 square feet, the special repair zone requirement does not apply for that zone. Half-soling repair in the special repair zone, on either side of the intermediate bents, shall be to a depth that will not expose half the diameter of the longitudinal reinforcing bar. Full depth repair shall be made when removal of deteriorated concrete exposes half or more of the diameter of the longitudinal reinforcing bar.

Designed AUG 2014
Detailed AUG 2014

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

FINAL PLANS

DATE	1/7/2015
DATE PREPARED	11/24/2015
ROUTE	I-29
STATE	MO
DISTRICT	BR
SHEET NO.	9
COUNTY	CLAY
JOB NO.	J4I3021
CONTRACT ID.	150320-C04
PROJECT NO.	FAS-S300-(34)
BRIDGE NO.	A17633

DESCRIPTION | DATE | REV.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
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JEFFERSON CITY, MO 65102
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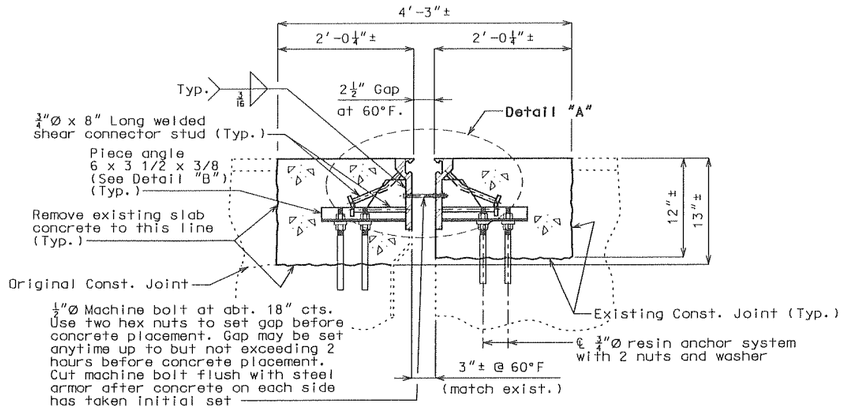
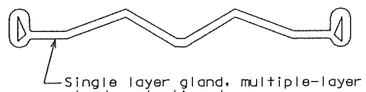
14 W. 3rd Street, SUITE 220
KANSAS CITY, MO 64105
816/221-4222, FAX 913/441-1468
CERTIFICATE OF AUTHORITY NUMBER F00970024



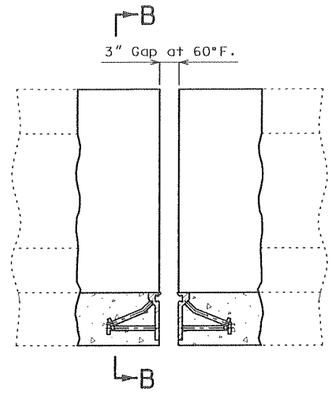
SECTION A-A

Note: Strip seal gland and reinforcement not shown for clarity.



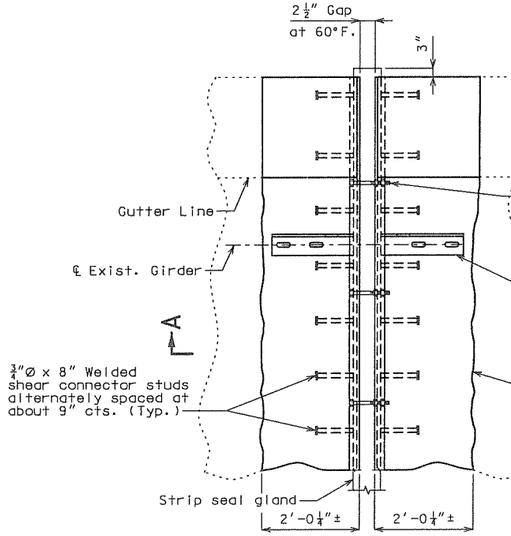
Strip seal gland size = 5"

DETAIL OF GLAND

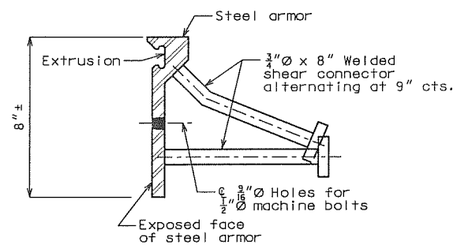


Note: Strip seal gland not shown for clarity.

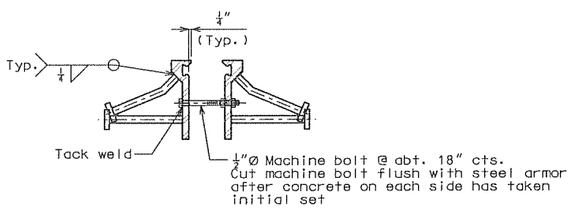
PART ELEVATION OF BARRIER CURB



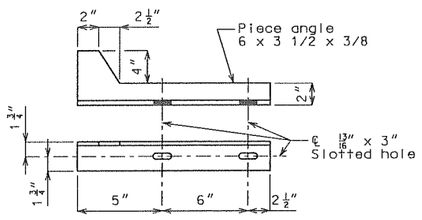
PART PLAN



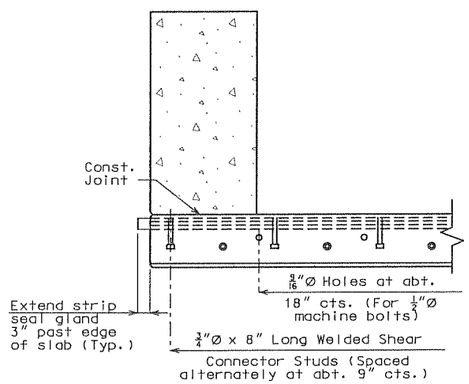
DETAIL OF JOINT ARMOR



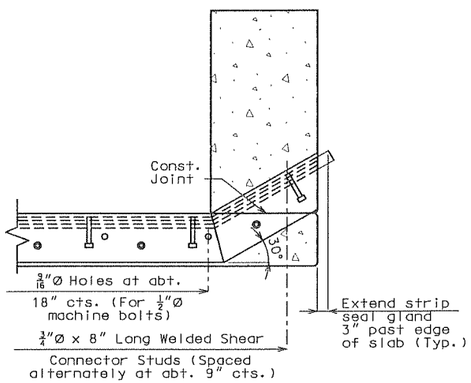
DETAIL "A"



DETAIL "B"



PART SECTION B-B
(LEFT SIDE)



PART SECTION B-B
(RIGHT SIDE)

GENERAL NOTES:

Expansion joint system shall be fabricated in one section, except for stage construction and when the length is over 50 feet. A complete joint penetration groove welded splice shall be required. Welds shall be ground flush to provide a smooth surface. The expansion joint system shall be fabricated and installed to the crown and grade of the roadway.

The strip seal gland shall be installed in joints in one continuous piece without field splices. Factory splicing will be permitted for joints in excess of 53 feet.

Structural steel for the expansion joint system shall be ASTM A709 Grade 36 except the steel armor may be ASTM A709 Grade 50W. Anchors for the expansion joint system shall be in accordance with Sec 1037. Strip seal expansion joint system shall be in accordance with Sec 717.

Structural steel for the expansion joint system shall be ~~coated with a minimum of two coats of inorganic zinc primer (5 mils minimum) or~~ galvanized in accordance with ASTM A123. Anchors need not be protected from overspray.

Plan dimensions are based on installation at 60°F. The expansion gap and other dimensions shall be increased or decreased 1/4" for each 10° fall or rise in temperature at installation.

Exist. longitudinal reinforcing steel shall be cut/bent so that ends shall not be more than ±1" from vertical leg of the steel armor at the expansion joint system.

Concrete shall be forced under and around steel armor and anchors. Proper consolidation of the concrete shall be achieved by localized internal vibration.

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 Strip Seal Expansion Joint System.

The minimum embedment depth in concrete with f'c = 4,000 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".

DATE 1/7/2015
DATE PREPARED 11/24/2015
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 10
COUNTY CLAY
JOB NO. J4I3021
CONTRACT ID. 150320-C04
PROJECT NO. FAS-S300-(34)
BRIDGE NO. A17633

DESCRIPTION | DATE | REV.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
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CERTIFICATE OF AUTHORITY NUMBER F00970024

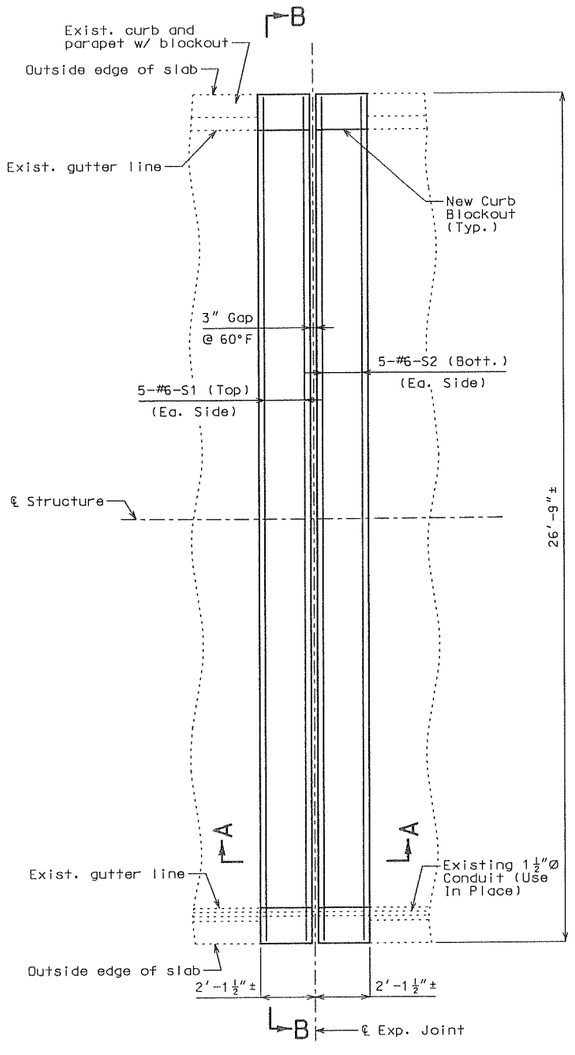
DETAILS OF STRIP SEAL NEAR INT. BENT NO. 5A

Designed AUG 2014
Detailed AUG 2014

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

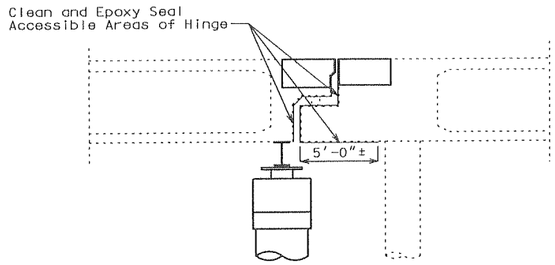
Sheet No. 10 of 15

FINAL PLANS



PART PLAN OF SLAB NEAR INT. BENT NO. 5A

Note: Joint armor not shown for clarity.



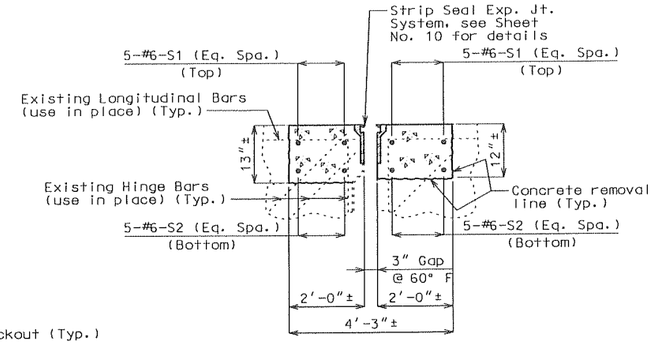
PART ELEVATION OF HINGE

Notes:
Shift #6-S bars where necessary to clear shear connector studs on the expansion joint system.

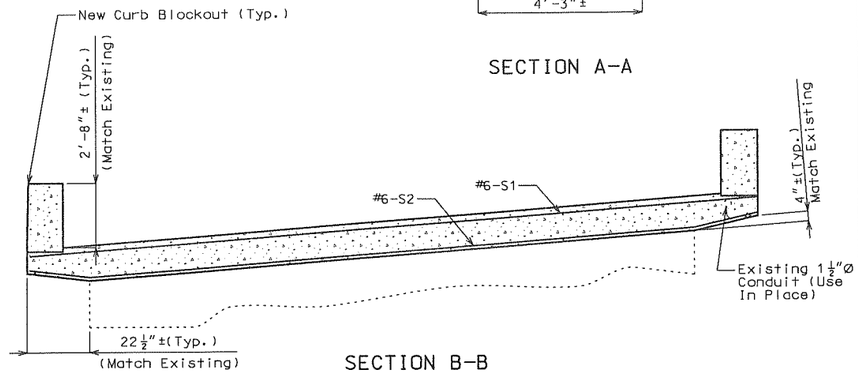
Payment for slab and curb blockout concrete complete-in-place, for expansion joint replacement will be considered completely covered by the contract unit price for Class B-1 Concrete.

Payment for furnishing and installing reinforcing steel in slab and curb blockout for expansion joint replacement will be considered completely covered by the contract unit price for Reinforcing Steel (Epoxy Coated).

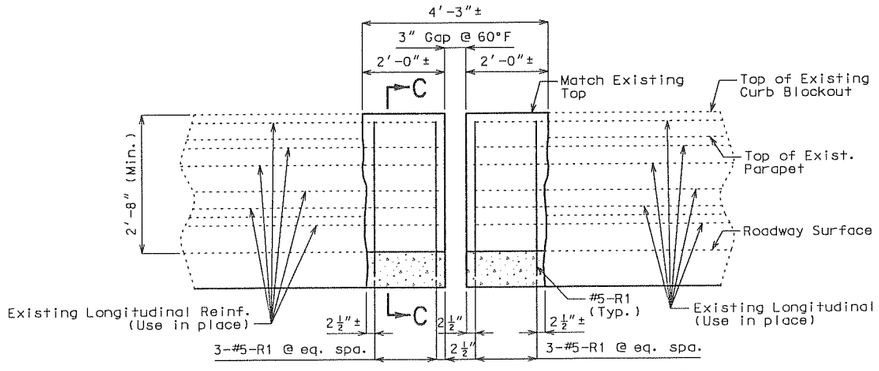
Cost of removing existing expansion joint and slab concrete, wearing surface, curb, parapet and blockout within the limits shown will be considered completely covered by the contract unit price for Removal of Existing Expansion Joints & Adjacent Concrete.



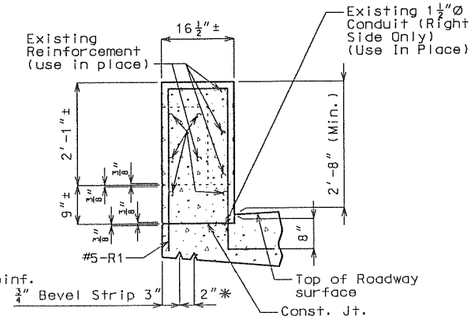
SECTION A-A



SECTION B-B



PART SECTION NEAR LEFT CURB BLOCKOUT AT EXPANSION JOINT REPLACEMENT AREA



SECTION C-C

* Right Side Only

Notes: All existing longitudinal and hinge area reinforcement shall be cleaned and reused.

All exposed edges of curb & parapet with blockout shall have a ½" radius ~~or bevel.~~ unless otherwise noted.

All exposed edges of new curb & parapet with blockout shall match existing except for top of parapet shall be level with the curb blockout.

DATE
1/7/2015
DATE PREPARED
1/2/2015
ROUTE I-29
STATE MO
DISTRICT BR
SHEET NO. 11
COUNTY CLAY
JOB NO. J4I3021
CONTRACT ID. 150320-C04
PROJECT NO. FAS-S300(34)
BRIDGE NO. A17633

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
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14 W. 3rd Street, SUITE 220
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816.523.1222 FAX 913/441-1468
CERTIFICATE OF AUTHORITY NUMBER F00970024

Designed AUG 2014
Detailed AUG 2014

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

Sheet No. 11 of 15

FINAL PLANS

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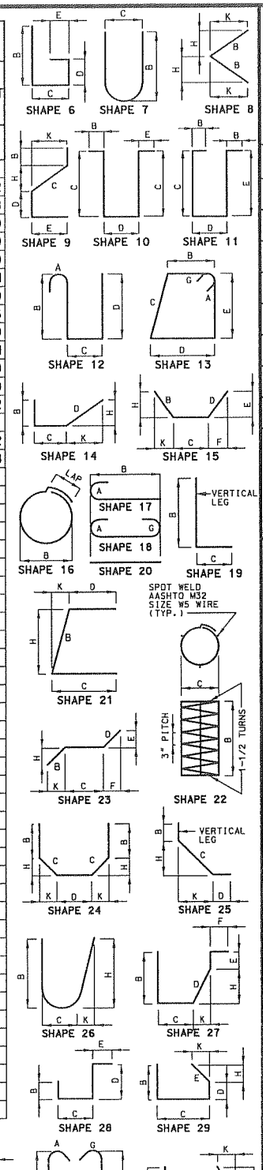
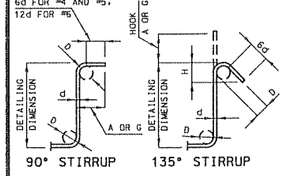
BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B FT. IN.	C FT. IN.	D FT. IN.	E FT. IN.	F FT. IN.	H FT. IN.	K FT. IN.	NOMINAL LENGTH FT. IN.	ACTUAL LENGTH FT. IN.	WEIGHT LBS.
		SUBSTRUCTURE																
		INTERMEDIATE BENT NO. 5A																
12	10 H50	Beam	E	18		X			24 6.000							27 4	27 4	1411
12	6 H51	Beam	E	20		X			3 8.000							3 8	3 8	66
12	6 H52	Beam	E	20		X			2 8.000							2 8	2 8	48
10	7 H53	Beam	E	20		X			24 6.000							24 6	24 6	501
6	7 H54	Beam	E	20		X	V	2	9 0.000							9 0	9 0	201
		Inc. = 7' - 4.500"							23 9.000							23 9	23 9	
12	7 H55	Beam	E	10		X				3 0.000	5 7.000					11 7	11 3	276
6	7 H56	Beam	E	14		X				5 3.000	9 6.000			17.000	9 4.500	14 9	14 9	181
6	7 H57	Beam	E	14		X				5 3.000	10 0.000			3 5.000	9 4.500	15 3	15 3	187
25	4 P50	D.S./R.S.		16		X			5 6.000							18 9	18 9	313
35	4 P51	Column		16		X			5 3.000							17 11	17 11	419
19	5 U50	Beam	E	13	S	X	V	1	5 8.000	5 2.000	5 8.000	5 2.000				22 10	22 6	487
		Inc. = 2.778"								7 3.000		7 3.000				27 0	26 8	
12	5 U51	Beam	E	10	S	X	V	1		7 4.000	5 8.000					20 4	20 2	258
		Inc. = 0.909"								7 9.000						21 2	21 0	
19	5 U52	Beam	E	13	S	X	V	1	5 8.000	5 2.000	5 8.000	5 2.000				22 10	22 6	495
		Inc. = 3.333"								7 8.000		7 8.000				27 10	27 6	
28	4 U53	Beam	E	10	S	X				8.000	5 8.000					7 0	6 10	128
28	11 V50	D.S./R.S.		20		X			24 3.000							24 3	24 3	3608
28	11 V51	D. Shaft		20		X			14 8.000							14 8	14 8	2182
28	11 V52	Column		20		X			32 0.000							32 0	32 0	4760
16	W5 W50	Beam	E	22		X			15.000	9.125						23 0	23 0	62
		SUPERSTRUCTURE																
		SLAB																
10	6 S1	Slab	E	20					26 6.000							26 6	26 6	398
10	6 S2	Slab	E	24						21.375	23 0.000			4.000	21.000	26 7	26 7	399
		CURB BLOCKOUT																
12	5 R1	Curb	E	28	S				3 0.000	13.500	3 2.000	12.000				8 4	8 0	100

BILL OF REINFORCING STEEL

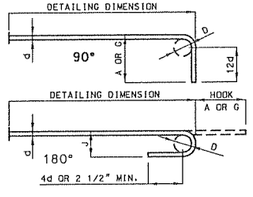
NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B FT. IN.	C FT. IN.	D FT. IN.	E FT. IN.	F FT. IN.	H FT. IN.	K FT. IN.	NOMINAL LENGTH FT. IN.	ACTUAL LENGTH FT. IN.	WEIGHT LBS.
		TOTALS																
	4																	732
	4		E															128
	5																	0
	5		E															1340
	6																	0
	6		E															911
	7																	0
	7		E															1346
	10																	0
	10		E															1411
	11																	10550
	11		E															0
	W5		E															62
		TOTAL																11282
		TOTAL	E															5198





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
#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"

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



END HOOK DIMENSIONS				
BAR SIZE	D (IN.)	ALL GRADES 180° HOOKS A OR G	J	90° HOOKS A OR G
#3	2 1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3 3/4"	7"	5"	10"
#6	4 1/2"	8"	6"	12"
#7	5 1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9 1/2"	15"	11 3/4"	19"
#10	10 3/4"	17"	13 1/4"	22"
#11	12"	19"	14 3/4"	2'-0"
#14	18 1/4"	2'-3"	21 3/4"	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) FY = 60.000 PSI.

BENDING DIAGRAMS

DATE 1/7/2015
DATE PREPARED 11/24/2015
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 12
COUNTY CLAY
JOB NO. J4I3021
CONTRACT ID. 150320-C04
PROJECT NO. FAS-S300(34)
BRIDGE NO. A17633

DESCRIPTION | DATE | REV.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

benesch
14 W. 3rd Street, SUITE 220
KANSAS CITY, MO 64122
PH. 913/441-1468
CERTIFICATE OF AUTHORITY NUMBER F00970024

Designed AUG 2014
Detailed AUG 2014

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

Sheet No. 12 of 15

FINAL PLANS

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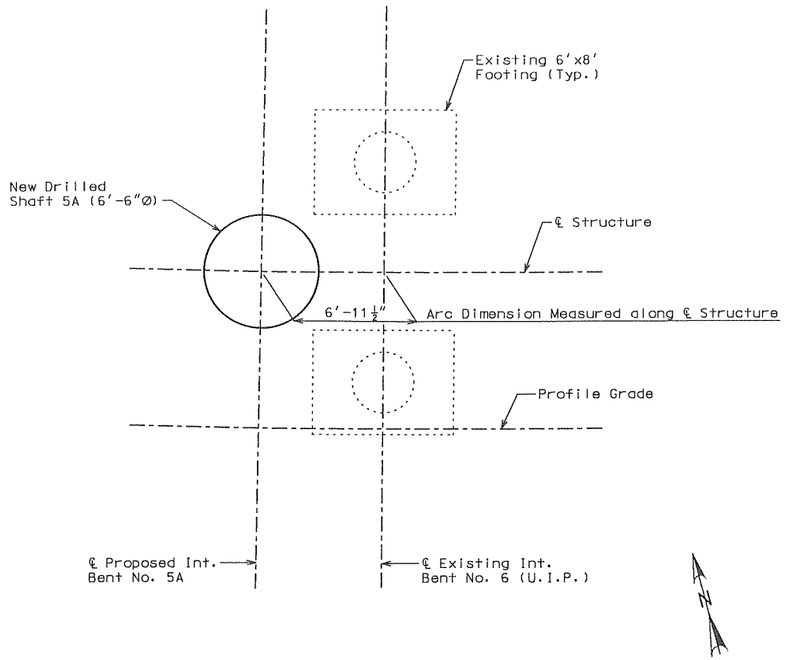

PART PLAN SHOWING DRILLED SHAFT NUMBERING FOR RECORDING AS-BUILT DRILLED SHAFT DATA

Note: All Bents are Radial.

As-Built Drilled Shaft Data				
Shaft No.	Top of Sound Rock (Elev.)	Tip of Casing (Elev.)	Bottom of Rock Socket (Elev.)	Remarks
				Int. Bent No. 5A
5A	851.00	850.00	840.00	Structure was build to plan with no change in elev.

Notes:
Indicate remarks in the remarks column.

This sheet is to be completed
by MoDOT construction personel.

FINAL PLANS

DATE
1/7/2015
DATE PREPARED
11/24/2015
ROUTE I-29 | STATE MO
DISTRICT BR | SHEET NO. 13
COUNTY
CLAY
JOB NO.
J4I3021
CONTRACT ID.
150320-C04
PROJECT NO.
FAS-S300(34)
BRIDGE NO.
A17633

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

benesch
14 W. 3rd Street, SUITE 220
KANSAS CITY, MO 64105
816/221-1422 FAX 913/441-1468
CERTIFICATE OF AUTHORITY NUMBER F00970024

REV.

Designed AUG 2014
Detailed AUG 2014

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

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Missouri Department of Transportation
Construction and Materials

BORING NO. O-14-81
Page 1 of 2

Job No.: J4I3021
Design: A17633
Bent:
Station: 116+00.9
Offset: 7 R
Elevation: 862.5
Requested Station:
Requested Offset:
Requested Elevation:
Drill No.: G-9462

County: Clay
Skew:
Logged By: Sheri Lamberson
Northing: 1093642.3
Easting: 2772327
Requested Northing:
Requested Easting:
Equipment: Acker Soil XLS ,Split-Spoon Sampler, NQ
Location Note:
Hammer Efficiency: 69%

Route: I-29/-35
Location: Kansas City
Operator: Raymond Murray
Date of Work: 11/18/14-11/18/14
Depth to Water:
Depth Hole Open:
Time Change:
Drilling Method: Hollow Stem Auger

Depth (ft)	Graphic	Description	Elevation (ft)	Sample Type	REC % (RQD %)	Blow Counts (N_{60})	Shear Strength Data	Field Tests	Index Tests
0		0-2.4' Gray, LEAN CLAY, hard, dry	860						
5		2.4-5.3' Reddish tan, CLAYEY SAND, dense, moist							
		5.3-6.8' Weathered limestone layer or boulder		X	80	18-40-21 (70)			MC = 13.2%
		6.8-11.6' Dark brown and gray, SANDY LEAN CLAY to laminated clay shale, hard, moist	855						
10				X	100	7-15-19 (39)		PP = 8.00 tsf	MC = 16.7% LL = 40 PL = 19
		11.6-24.3' Limestone, gray and yellowish tan, medium bedded, medium hard, fine to medium grained, with shaley limestone layers	850		96	(74)	Qu Test Results UCS = 412.12 ksf MC = 0% γ_{moist} = 163.4 pcf		
15			845		100	(41)	Qu Test Results UCS = 889.2 ksf MC = 0% γ_{moist} = 164.6 pcf		
20		21.6-26.6' RQD=89% and is taken on limestone portion only	840		100		Qu Test Results UCS = 20.02 ksf MC = 12.5% γ_{moist} = 144.4 pcf		
25		24.3-27.2' Shale, gray to black, soft							
		26.6-31.6' RQD=40% and is taken on limestone portion only	835						
30		27.2-39.2' Limestone, tannish gray, thin to medium bedded, medium hard, fine grained, scattered shaley limestone layers			100		Qu Test Results UCS = 25.92 ksf MC = 10.1% γ_{moist} = 144 pcf		
			830						
35					90	(40)	Qu Test Results UCS = 420.92 ksf MC = 0% γ_{moist} = 161.1		

N_{60} = (Em/60)Nm N_{60} - Corrected N value for standard 60% SPT efficiency; Em - Measured hammer efficiency in percent; Nm - Observed N-value
(1) = Assumed, (2) = Actual

Coordinate System: U.S. State Plane 1983 Coordinate Zone: Missouri West Coordinate Proj. Factor: 1.000095
Coordinate Datum: NAD 83 (CONUS) Coordinate Units: U.S. Survey Feet

* Persons using this information are cautioned that the materials shown are determined by the equipment noted and accuracy of the "log of materials" is limited thereby and by judgement of the operator. THIS INFORMATION IS FOR DESIGN PURPOSES ONLY.

LETTER BOREHOLE - R35G-S2109.GPJ - 12/11/14 08:16 - J:\SIGINT\PROJECT FILES\J413021.GPJ

Missouri Department of Transportation
Construction and Materials

BORING NO. O-14-81
Page 2 of 2

Job No.: J4I3021
Design: A17633
Bent:
Station: 116+00.9
Offset: 7 R
Elevation: 862.5
Requested Station:
Requested Offset:
Requested Elevation:
Drill No.: G-9462

County: Clay
Skew:
Logged By: Sheri Lamberson
Northing: 1093642.3
Easting: 2772327
Requested Northing:
Requested Easting:
Equipment: Acker Soil XLS ,Split-Spoon Sampler, NQ
Location Note:
Hammer Efficiency: 69%

Route: I-29/-35
Location: Kansas City
Operator: Raymond Murray
Date of Work: 11/18/14-11/18/14
Depth to Water:
Depth Hole Open:
Time Change:
Drilling Method: Hollow Stem Auger

Depth (ft)	Graphic	Description	Elevation (ft)	Sample Type	REC % (RQD %)	Blow Counts (N_{60})	Shear Strength Data	Field Tests	Index Tests
35		27.2-39.2' Limestone, tannish gray, thin to medium bedded, medium hard, fine grained, scattered shaley limestone layers *(continued)* 36.6-41.6' RQD=58% and is taken on limestone portion only	825		100		psi Qu Test Results UCS = 2.6 ksf MC = 15% γ_{moist} = 139.3 pcf		
40		39.2-41.6' Clay Shale, dark gray, very soft							
		Bottom of borehole at 41.6 feet.							

N_{60} = (Em/60)Nm N_{60} - Corrected N value for standard 60% SPT efficiency; Em - Measured hammer efficiency in percent; Nm - Observed N-value
(1) = Assumed, (2) = Actual

Coordinate System: U.S. State Plane 1983 Coordinate Zone: Missouri West Coordinate Proj. Factor: 1.000095
Coordinate Datum: NAD 83 (CONUS) Coordinate Units: U.S. Survey Feet

* Persons using this information are cautioned that the materials shown are determined by the equipment noted and accuracy of the "log of materials" is limited thereby and by judgement of the operator. THIS INFORMATION IS FOR DESIGN PURPOSES ONLY.

LETTER BOREHOLE - R35G-S2109.GPJ - 12/11/14 08:16 - J:\SIGINT\PROJECT FILES\J413021.GPJ

BORING DATA NEAR INTERMEDIATE BENT NO. 5A

Note: For locations of borings, see Sheet No. 1.

Designed AUG 2014
Detailed AUG 2014

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

Sheet No. 14 of 15

FINAL PLANS

DATE PREPARED 1/2/2015
ROUTE I-29 STATE MO
DISTRICT BR SHEET NO. 14
COUNTY CLAY
JOB NO. J4I3021
CONTRACT ID. 150320-C04
PROJECT NO. FAS-S300(34)
BRIDGE NO. A17633

DESCRIPTION
DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

benesch
14 W. 3rd Street, SUITE 220
KANSAS CITY, MO 64105/441-1468
816/421-1412 FAX
CERTIFICATE OF AUTHORITY NUMBER F00970024

REV.

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Missouri Department of Transportation
1617 Mo. Blvd.
Jefferson City, Mo. 65109

KEY TO SYMBOLS

CLIENT _____ PROJECT NAME Bridge

PROJECT NUMBER J4I3021 PROJECT LOCATION Kansas City

LITHOLOGIC SYMBOLS
(Unified Soil Classification System)

- BLDRCBBL: Boulders and cobbles
- CL: USCS Low Plasticity Clay
- CLS: USCS Low Plasticity Sandy Clay
- LIMESTONE: Limestone
- SHALE: Shale
- SW-SC: USCS Well-graded Sand with Clay

SAMPLER SYMBOLS

- Rock Core Barrel
- Split-Spoon Sampler

WELL CONSTRUCTION SYMBOLS

ABBREVIATIONS

LL - LIQUID LIMIT (%)
PI - PLASTIC INDEX (%)
W - MOISTURE CONTENT (%)
DD - DRY DENSITY (PCF)
NP - NON PLASTIC
-200 - PERCENT PASSING NO. 200 SIEVE
PP - POCKET PENETROMETER (TSF)
TV - TORVANE
PID - PHOTOIONIZATION DETECTOR
UC - UNCONFINED COMPRESSION
ppm - PARTS PER MILLION
Water Level at Time of Drilling
Water Level at End of Drilling
Water Level after Drilling

KEY TO SYMBOLS - MISSOURI DOT.GDT - 12/11/14 08:19 - J:\SIGINT\PROJECT FILES\J4I3021.GPJ

BORING DATA LEGEND

FINAL PLANS

DATE PREPARED 1/2/2015
ROUTE I-29 STATE MO
DISTRICT BR SHEET NO. 15
COUNTY CLAY
JOB NO. J4I3021
CONTRACT ID. 150320-C04
PROJECT NO. FAS-S300(34)
BRIDGE NO. A17633

REV.	DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

benesch
14 W. 3rd Street, SUITE 220
KANSAS CITY, MO 64105
816.472.1201 FAX 816.472.7441-1468
CERTIFICATE OF AUTHORITY NUMBER F00970024

Designed AUG 2014
Detailed AUG 2014

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

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

May 2, 2024
4:17:50pm

COUNTY : CLAY **BRIDGE :** A1763 3 **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.	1459
27	Year Built	1967
106	Year Reconstructed	0
42A	Type of Service On	OVERPASS
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	NONE EXISTS
103	Temporary Structure	NOT TEMPORARY
112	NBIS Bridge Length	YES

ROUTE DESIGNATION INFORMATION

5A	Record Type	ROUTE CARRIED 'ON' STRUCT
5B	Route Signing Prefix	MO
5C	Designated Level of Service	RAMP, WYE, CONNECTOR, ETC
5D	Route Number	00000
5E	Directional Suffix	NOT APPLICABLE
7	Facility Carried	RP IS29S TO IS35N
12	Base Hwy. Network	YES
13A	LRS Inventory Route No.	0000005420
13B	Subroute No.	00
20	Toll Status	ON FREE ROAD
26	Functional Classification	11-UR PRNCPL ARTERIAL-IS
28A	Lanes on Structure	01
100	STRAHNET Designation	RTE NOT 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	GALLATIN
	Code	26290
9	Location	S 1 T 50 N R 33 W
11	Milepoint	0.47 miles
16	Latitude	39 D 10 M 13 S
17	Longitude	94 D 33 M 28 S

STRUCTURE TRAFFIC INFORMATION

29	AADT	16553
30	AADT Year	2023
102	Direction of Traffic	1-WAY TRAFFIC
109	AADT Truck Percent	12%
114	Future AADT	29795
115	Future AADT Year	2043

UNDERRECORD INFORMATION

6	Features Intersected	IS 35, IS 29
42B	Type of Service Under	HIGHWAY
28B	Lanes Under Structure	08
54A	Vert. Clearance Ref.	HIGHWAY
54B	Vert. Clearance	15 Ft. 8 In.
55A	Rt. Lat Clear Ref.	HIGHWAY
55B	Rt. Lat Clearance	19 Ft. 8 In.
56	Left Lat Clearance	11 Ft. 6 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	3.10 miles
32	Approach Roadway Width	29 Ft. 10 In.
34	Skew	0.00 Degrees
35	Struct. Flared	NO
47	Total Horiz. Clear	23 Ft. 11 In.
48	Maximum Span Length	95 Ft. 2 In.
49	Structure Length	817 Ft. 11 In.
50A	Left Curb/Sidewalk Width	0 Ft. 8 In.
50B	Right Curb/Sidewalk Width	0 Ft. 8 In.
51	Curb to Curb Br. Width	23 Ft. 11 In.
52	Deck Width (Out-Out)	26 Ft. 11 In.
53	Vert.Clearance Over Deck	99 Ft. 99 In.

Design_No = A1763

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

May 2, 2024
4:17:50pm

COUNTY : CLAY **BRIDGE :** A1763 3 **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	P - POSTED FOR LOAD
63	Oper. Rating Meth.	LOAD FACTOR
64	Operating Rating	64 Tons.
65	Inventory Rating Meth	LOAD FACTOR
66	Inventory Rating	39 Tons.
70	Bridge Posting Code	=>LEGAL LOADS

PROPOSED IMPROVEMENT INFORMATION

	Sufficiency Rating	76.0 Percent
	Deficiency Rating	NOT DEFICIENT
	Funding Eligibility	
75A	Proposed Work	
75B	Work Done By	
76	New Struc Length	11 Ft. 6 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	7
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-C3

	Ton1	Ton2	Ton3
Tonnage Values for Posting Sign	65		

General Text for Posting Sign

WEIGHT LIMIT 65 TONS.

MATERIAL/CONSTRUCTION INFORMATION

43A	Main Struc. Mat type	CONCRETE CONTINUOUS
43B	Main struc Constr. Type	BOX BEAM OR GIRDERS- SING
45	# of Main Spans	10
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.	3 LATEX CONCRETE
108B	Membrane Mat/Constr.	0 NONE
108C	Deck Protect Mat/Constr.	0 NONE

CONDITION RATING INFORMATION

58	Deck Cond. Rating	5
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	4 / 23	
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-C3

	Ton1	Ton2	Ton3
Tonnage Values for Posting Sign	65		

General Text for Posting Sign

WEIGHT LIMIT 65 TONS.

Design_No = A1763

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

May 2, 2024
4:17:50pm

COUNTY : CLAY **BRIDGE :** A1763 3 **REVIEW STATUS :** APPROVED **NBI STATUS :** P
RECORD TYPE : 1 RTE THAT GOES 'UNDER' S **RUN DATE :** 3/7/2024 **SUBMITTAL YEAR :** 2023

GENERAL STRUCTURE INFORMATION

1	State	MISSOURI
2	District	KC
3	County	CLAY
8	Federal ID No.	1459
27	Year Built	1967
106	Year Reconstructed	0
42A	Type of Service On	OVERPASS
21	Structure Maintenance	
22	Structure Owner	
33	Br. Median Code	
37	Historical Significance	
101	Parallel Struc Desg	NONE EXISTS
103	Temporary Structure	NOT TEMPORARY
112	NBIS Bridge Length	

ROUTE DESIGNATION INFORMATION

5A	Record Type	1 RTE THAT GOES 'UNDER' S	Code : A
5B	Route Signing Prefix	IS	
5C	Designated Level of Service	MAINLINE	
5D	Route Number	00035	
5E	Directional Suffix	NOT APPLICABLE	
7	Facility Carried	RP IS29S TO IS35N	
12	Base Hwy. Network		
13A	LRS Inventory Route No.		
13B	Subroute No.		
20	Toll Status	ON FREE ROAD	
26	Functional Classification	11-UR PRNCPL ARTERIAL-IS	
28A	Lanes on Structure	01	
100	STRAHNET Designation	ON A DEFENSE HWY	
104	National Highway System	ON NHS	
105	Federal Lands Highway		
110	Designated Nat. Network	YES	

STRUCTURE LOCATION INFORMATION

4	Place	GALLATIN
	Code	26290
9	Location	S 1 T 50 N R 33 W
11	Milepoint	105.50 miles
16	Latitude	39 D 10 M 13 S
17	Longitude	94 D 33 M 28 S

STRUCTURE TRAFFIC INFORMATION

29	AADT	27700
30	AADT Year	2023
102	Direction of Traffic	1-WAY TRAFFIC
109	AADT Truck Percent	18%
114	Future AADT	
115	Future AADT Year	

UNDERRECORD INFORMATION

6	Features Intersected	IS 35
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	20 Ft. 2 In.
19	By pass Detour Length	0.00 miles
32	Approach Roadway Width	
34	Skew	
35	Struct. Flared	
47	Total Horiz. Clear	71 Ft. 6 In.
48	Maximum Span Length	95 Ft. 2 In.
49	Structure Length	817 Ft. 11 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 = A1763

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

May 2, 2024
4:17:50pm

COUNTY :	CLAY	**BRIDGE :**	A1763 3	**REVIEW STATUS :**	APPROVED	**NBI STATUS :**	P
RECORD TYPE :	1 RTE THAT GOES 'UNDER' S			**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

MATERIAL/CONSTRUCTION INFORMATION

43A	Main Struc. Mat type	CONCRETE CONTINUOUS
43B	Main struc Constr. Type	BOX BEAM OR GIRDERS- SING
45	# of Main Spans	
44A	Appr Struc. Mat type	
44B	Appr Struc. Cnstr. type	
46	# of Approach Span	
107	Deck Mat/Constr.	
108A	Wear Surf Mat/Constr.	
108B	Membrane Mat/Constr.	
108C	Deck Protect Mat/Constr.	

CONDITION RATING INFORMATION

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

INSPECTION INFORMATION

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

BORDER BRIDGE INFORMATION

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

APPROVED POSTING INFORMATION

Approved Posting Category

Ton1 Ton2 Ton3

Tonnage Values for Posting Sign

General Text for Posting Sign

FIELD POSTING INFORMATION

Field Posting Category

Ton1 Ton2 Ton3

Tonnage Values for Posting Sign

General Text for Posting Sign

Design_No = A1763

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

May 2, 2024
4:17:50pm

COUNTY : CLAY **BRIDGE :** A1763 3 **REVIEW STATUS :** APPROVED **NBI STATUS :** P
RECORD TYPE : 2ND RTE THAT GOES 'UNDR'S **RUN DATE :** 3/7/2024 **SUBMITTAL YEAR :** 2023

GENERAL STRUCTURE INFORMATION

1	State	MISSOURI
2	District	KC
3	County	CLAY
8	Federal ID No.	1459
27	Year Built	1967
106	Year Reconstructed	0
42A	Type of Service On	OVERPASS
21	Structure Maintenance	
22	Structure Owner	
33	Br. Median Code	
37	Historical Significance	
101	Parallel Struc Desg	NONE EXISTS
103	Temporary Structure	NOT TEMPORARY
112	NBIS Bridge Length	

ROUTE DESIGNATION INFORMATION

5A	Record Type	2ND RTE THAT GOES 'UNDR'S Code : B
5B	Route Signing Prefix	IS
5C	Designated Level of Service	MAINLINE
5D	Route Number	00035
5E	Directional Suffix	NOT APPLICABLE
7	Facility Carried	RP IS29S TO IS35N
12	Base Hwy. Network	
13A	LRS Inventory Route No.	
13B	Subroute No.	
20	Toll Status	ON FREE ROAD
26	Functional Classification	11-UR PRNCPL ARTERIAL-IS
28A	Lanes on Structure	01
100	STRAHNET Designation	ON A DEFENSE HWY
104	National Highway System	ON NHS
105	Federal Lands Highway	
110	Designated Nat. Network	YES

STRUCTURE LOCATION INFORMATION

4	Place	GALLATIN
	Code	26290
9	Location	S 1 T 50 N R 33 W
11	Milepoint	8.68 miles
16	Latitude	39 D 10 M 13 S
17	Longitude	94 D 33 M 28 S

STRUCTURE TRAFFIC INFORMATION

29	AADT	26874
30	AADT Year	2023
102	Direction of Traffic	1-WAY TRAFFIC
109	AADT Truck Percent	9%
114	Future AADT	
115	Future AADT Year	

UNDERRECORD INFORMATION

6	Features Intersected	IS 35
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	15 Ft. 8 In.
19	By pass Detour Length	3.10 miles
32	Approach Roadway Width	
34	Skew	
35	Struct. Flared	
47	Total Horiz. Clear	61 Ft. 4 In.
48	Maximum Span Length	95 Ft. 2 In.
49	Structure Length	817 Ft. 11 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 = A1763

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

May 2, 2024
4:17:50pm

COUNTY :	**CLAY**	**BRIDGE :**	**A1763 3**	**REVIEW STATUS :**	**APPROVED**	**NBI STATUS :**	**P**
RECORD TYPE :	**2ND RTE THAT GOES 'UNDR'S**			**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

MATERIAL/CONSTRUCTION INFORMATION

43A	Main Struc. Mat type	CONCRETE CONTINUOUS
43B	Main struc Constr. Type	BOX BEAM OR GIRDERS- SING
45	# of Main Spans	
44A	Appr Struc. Mat type	
44B	Appr Struc. Cnstr. type	
46	# of Approach Span	
107	Deck Mat/Constr.	
108A	Wear Surf Mat/Constr.	
108B	Membrane Mat/Constr.	
108C	Deck Protect Mat/Constr.	

CONDITION RATING INFORMATION

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

INSPECTION INFORMATION

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

BORDER BRIDGE INFORMATION

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

APPROVED POSTING INFORMATION

Approved Posting Category

Ton1 Ton2 Ton3

Tonnage Values for Posting Sign

General Text for Posting Sign

FIELD POSTING INFORMATION

Field Posting Category

Ton1 Ton2 Ton3

Tonnage Values for Posting Sign

General Text for Posting Sign

Design_No = A1763

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

May 2, 2024
4:17:50pm

COUNTY : CLAY **BRIDGE :** A1763 3 **REVIEW STATUS :** APPROVED **NBI STATUS :** P
RECORD TYPE : 3RD RTE THAT GOES 'UNDR' **RUN DATE :** 3/7/2024 **SUBMITTAL YEAR :** 2023

GENERAL STRUCTURE INFORMATION

1	State	MISSOURI
2	District	KC
3	County	CLAY
8	Federal ID No.	1459
27	Year Built	1967
106	Year Reconstructed	0
42A	Type of Service On	OVERPASS
21	Structure Maintenance	
22	Structure Owner	
33	Br. Median Code	
37	Historical Significance	
101	Parallel Struc Desg	NONE EXISTS
103	Temporary Structure	NOT TEMPORARY
112	NBIS Bridge Length	

ROUTE DESIGNATION INFORMATION

5A	Record Type	3RD RTE THAT GOES 'UNDR'	Code : C
5B	Route Signing Prefix	IS	
5C	Designated Level of Service	MAINLINE	
5D	Route Number	00029	
5E	Directional Suffix	NOT APPLICABLE	
7	Facility Carried	RP IS29S TO IS35N	
12	Base Hwy. Network		
13A	LRS Inventory Route No.		
13B	Subroute No.		
20	Toll Status	ON FREE ROAD	
26	Functional Classification	11-UR PRNCPL ARTERIAL-IS	
28A	Lanes on Structure	01	
100	STRAHNET Designation	ON A DEFENSE HWY	
104	National Highway System	ON NHS	
105	Federal Lands Highway		
110	Designated Nat. Network	YES	

STRUCTURE LOCATION INFORMATION

4	Place	GALLATIN
	Code	26290
9	Location	S 1 T 50 N R 33 W
11	Milepoint	123.64 miles
16	Latitude	39 D 10 M 13 S
17	Longitude	94 D 33 M 28 S

STRUCTURE TRAFFIC INFORMATION

29	AADT	27284
30	AADT Year	2023
102	Direction of Traffic	1-WAY TRAFFIC
109	AADT Truck Percent	8%
114	Future AADT	
115	Future AADT Year	

UNDERRECORD INFORMATION

6	Features Intersected	IS 29
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	25 Ft. 2 In.
19	By pass Detour Length	0.00 miles
32	Approach Roadway Width	
34	Skew	
35	Struct. Flared	
47	Total Horiz. Clear	36 Ft. 1 In.
48	Maximum Span Length	95 Ft. 2 In.
49	Structure Length	817 Ft. 11 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 = A1763

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

May 2, 2024
4:17:50pm

COUNTY :	**CLAY**	**BRIDGE :**	**A1763 3**	**REVIEW STATUS :**	**APPROVED**	**NBI STATUS :**	**P**
RECORD TYPE :	**3RD RTE THAT GOES 'UNDR'**			**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

MATERIAL/CONSTRUCTION INFORMATION

43A	Main Struc. Mat type	CONCRETE CONTINUOUS
43B	Main struc Constr. Type	BOX BEAM OR GIRDERS- SING
45	# of Main Spans	
44A	Appr Struc. Mat type	
44B	Appr Struc. Cnstr. type	
46	# of Approach Span	
107	Deck Mat/Constr.	
108A	Wear Surf Mat/Constr.	
108B	Membrane Mat/Constr.	
108C	Deck Protect Mat/Constr.	

CONDITION RATING INFORMATION

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

INSPECTION INFORMATION

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

BORDER BRIDGE INFORMATION

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

APPROVED POSTING INFORMATION

Approved Posting Category

Ton1 Ton2 Ton3

Tonnage Values for Posting Sign

General Text for Posting Sign

FIELD POSTING INFORMATION

Field Posting Category

Ton1 Ton2 Ton3

Tonnage Values for Posting Sign

General Text for Posting Sign

Design_No = A1763

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

May 2, 2024
4:17:50pm

COUNTY : CLAY **BRIDGE :** A1763 3 **REVIEW STATUS :** APPROVED **NBI STATUS :** P
RECORD TYPE : 4TH RTE THAT GOES 'UNDR' **RUN DATE :** 3/7/2024 **SUBMITTAL YEAR :** 2023

GENERAL STRUCTURE INFORMATION

1	State	MISSOURI
2	District	KC
3	County	CLAY
8	Federal ID No.	1459
27	Year Built	1967
106	Year Reconstructed	0
42A	Type of Service On	OVERPASS
21	Structure Maintenance	
22	Structure Owner	
33	Br. Median Code	
37	Historical Significance	
101	Parallel Struc Desg	NONE EXISTS
103	Temporary Structure	NOT TEMPORARY
112	NBIS Bridge Length	

ROUTE DESIGNATION INFORMATION

5A	Record Type	4TH RTE THAT GOES 'UNDR'	Code : D
5B	Route Signing Prefix	IS	
5C	Designated Level of Service	MAINLINE	
5D	Route Number	00029	
5E	Directional Suffix	NOT APPLICABLE	
7	Facility Carried	RP IS29S TO IS35N	
12	Base Hwy. Network		
13A	LRS Inventory Route No.		
13B	Subroute No.		
20	Toll Status	ON FREE ROAD	
26	Functional Classification	11-UR PRNCPL ARTERIAL-IS	
28A	Lanes on Structure	01	
100	STRAHNET Designation	ON A DEFENSE HWY	
104	National Highway System	ON NHS	
105	Federal Lands Highway		
110	Designated Nat. Network	YES	

STRUCTURE LOCATION INFORMATION

4	Place	GALLATIN
	Code	26290
9	Location	S 1 T 50 N R 33 W
11	Milepoint	4.80 miles
16	Latitude	39 D 10 M 13 S
17	Longitude	94 D 33 M 28 S

STRUCTURE TRAFFIC INFORMATION

29	AADT	28458
30	AADT Year	2023
102	Direction of Traffic	1-WAY TRAFFIC
109	AADT Truck Percent	18%
114	Future AADT	
115	Future AADT Year	

UNDERRECORD INFORMATION

6	Features Intersected	IS 29
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	15 Ft. 11 In.
19	By pass Detour Length	0.00 miles
32	Approach Roadway Width	
34	Skew	
35	Struct. Flared	
47	Total Horiz. Clear	25 Ft. 3 In.
48	Maximum Span Length	95 Ft. 2 In.
49	Structure Length	817 Ft. 11 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 = A1763

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

May 2, 2024
4:17:50pm

COUNTY : CLAY **BRIDGE :** A1763 3 **REVIEW STATUS :** APPROVED **NBI STATUS :** P
RECORD TYPE : 4TH RTE THAT GOES 'UNDR' **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

MATERIAL/CONSTRUCTION INFORMATION

43A	Main Struc. Mat type	CONCRETE CONTINUOUS
43B	Main struc Constr. Type	BOX BEAM OR GIRDERS- SING
45	# of Main Spans	
44A	Appr Struc. Mat type	
44B	Appr Struc. Cnstr. type	
46	# of Approach Span	
107	Deck Mat/Constr.	
108A	Wear Surf Mat/Constr.	
108B	Membrane Mat/Constr.	
108C	Deck Protect Mat/Constr.	

CONDITION RATING INFORMATION

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

INSPECTION INFORMATION

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

BORDER BRIDGE INFORMATION

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

APPROVED POSTING INFORMATION

Approved Posting Category

Ton1 Ton2 Ton3

Tonnage Values for Posting Sign

General Text for Posting Sign

FIELD POSTING INFORMATION

Field Posting Category

Ton1 Ton2 Ton3

Tonnage Values for Posting Sign

General Text for Posting Sign

Design_No = A1763

Missouri Department of Transportation
State Bridge Inspection Report

May 02, 2024
4:08:28PM

COUNTY: CLAY **DISTRICT: KC** **CLASS: STATBR** **FED-ID: 1459** **BRIDGE: A1763**

GENERAL STRUCTURE INFORMATION

ROUTE:	RPIS29S TO IS35NN	**# SPANS:**	10
FEATURE:	IS 35, IS 29	**LANES ON:**	1
STATUS:	P-POSTLOAD	**LANES UNDER:**	8
LOG MILE:	0.469	**COMPASS DIRECTION:**	WEST to EAST
DETOUR:	3.00 MILES	**DIRECTION OF TRAFFIC:**	1-WAY TRAF
NHS:	YES	**FUNCTIONAL CLASS:**	UR-INTERSTATE
BUILT:	1967	**NBI OWNER:**	MODOT
REHAB:		**NBI MAINTAINED:**	MODOT
LOCATION:	S 1 T 50 R 33 W	**MAINTENANCE DISTRICT:**	KC
LATITUDE:	39 10 12.72 (DMS)	**MAINTENANCE COUNTY:**	CLAY
LONGITUDE:	94 33 27.76 (DMS)	**SUB AREA:**	7C36

PLACE CODE:	26290 GALLATIN
LENGTH:	818 FT 0 IN
MAXIMUM SPAN:	95 FT 0 IN
APPROACH ROADWAY:	30 FT 0 IN
CURB TO CURB:	24 FT 0 IN
OUT TO OUT:	26 FT 10 IN
AADT:	16553
AADT YEAR:	2023
AADT TRUCK:	11.5%
FUTURE AADT:	29795
FUTURE AADT YEAR:	2043

BRIDGE INSPECTION INFORMATION

DATE:	04/05/2023	**RESPONSIBILITY:**	BRIDGEDIV
FREQUENCY:	24	**CALCULATED INTERVAL**:**	23
TEAM LEADER:	STEVE HULBERT	**ELEMENT:**	YES
INSPECTOR 2:	DUSTIN PIERCE	**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: 1459** **BRIDGE: A1763**

STRUCTURE POSTING

APPROVED CATEGORY: S-C3 WEIGHT LIMIT 65 TONS.
Ton 1: 65 **Ton 2:** **Ton 3:**
COMMENTS:

FIELD CATEGORY: S-C3 WEIGHT LIMIT 65 TONS.
Ton 1: 65 **Ton 2:** **Ton 3:** **PROBLEM:** **PROBLEM DIRECTION:**
COMMENTS:

GENERAL COMMENTS/MAJOR RATED ITEMS

GENERAL COMMENTS: (BOWDEJ1, 09/25/2008)--(76'-95'-83'-79'-63')(5'-72'-90'-90'-90'-72') CONT CONC BOX GDR SPAN

[ITEM 58] DECK: 5-FAIR CONDITION
RATING : 09/28/2016
COMMENTS: (MADSEJ, 06/05/2019)--MODERATE OVERHANG DETERIORATION AT THE CURB OUTLETS.

[ITEM 59] SUPER: 5-FAIR CONDITION
RATING : 09/28/2016
COMMENTS: (MADSEJ, 06/05/2019)--VERTICAL CRACKS, DELAMINATIONS, AND SPALLS THROUGHOUT THE BOX GIRDER EDGES AT THE DECK CURB OUTLETS.

[ITEM 60] SUB: 6-SATISFACTORY CONDITION
RATING : 07/06/2017
COMMENTS: (MADSEJ, 06/05/2019)--A FEW VERTICAL CRACKS AND DELAMINATIONS ON A THE OF THE 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	BLOCKOUT	BOTH	

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	COMMENT
VERTICAL CRACKS	THROUGHOUT		MANY	
REINFORCED CONCRETE	PARAPET	BOTH		

[ITEM 36B] TRANSITION RAILING RATING: *MEETS CURRENT STANDARDS-1* ***RATING :*** *03/11/2004* ***COMMENTS:***

MATERIAL	CONSTRUCTION	DIRECTION	COMMENTS
GALVANIZED STEEL	THRIE BEAM TO W-BEAM	ALL	

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

COUNTY: CLAY **DISTRICT: KC** **CLASS: STATBR** **FED-ID: 1459** **BRIDGE: A1763**

MATERIAL	CONSTRUCTION	DIRECTION	COMMENTS
GALVANIZED STEEL	W-BEAM	ALL	

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	COMMENT
COLLISION DAMAGE	THROUGHOUT		MINOR	(HULBES1, 04/05/2023)--NORTHWEST

[ITEM 36D] RAIL END TREATMENT RATING: *MEETS CURRENT STANDARDS-1* ***RATING :*** *03/06/2002* ***COMMENTS:***

MATERIAL	CONSTRUCTION	DIRECTION	COMMENTS
GALVANIZED STEEL	ENERGY ABSORBING	SOUTHWEST	

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

MATERIAL	CONSTRUCTION	DIRECTION	CONDITION*	COMMENTS
REINFORCED CONCRETE	SLAB	BOTH	FAIR	

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

DECK PROTECTIVE COMPONENTS:

SERIES TYPE-#	COMPONENT	MATERIAL	CONSTRUCTION	THICKNESS	YEAR APPLIED	MANUFACTURE	OVERALL CONDITION
MAIN SERIES-1	*WEARING SURFACE*	*PLAIN CONCRETE*	*LATEX MODIFIED*				*FAIR*

COMMENT:

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	COMMENT
PATCHES	THROUGHOUT		MANY	
TRANSVERSE CRACKS	THROUGHOUT		LARGE	

DECK PROTECTION *NOTAPPLICABLE* *NONE*

COMMENT:

MEMBRANE *NOTAPPLICABLE* *NONE*

COMMENT:

MAIN SERIES-2 *WEARING SURFACE* *PLAIN CONCRETE* *LATEX MODIFIED* *FAIR*

COMMENT:

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	COMMENT
PATCHES	THROUGHOUT		MANY	
TRANSVERSE CRACKS	THROUGHOUT		LARGE	

DECK PROTECTION *NOTAPPLICABLE* *NONE*

COMMENT:

MEMBRANE *NOTAPPLICABLE* *NONE*

COMMENT:

DRAINAGE COMPONENTS:

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

EXPANSION DEVICE COMPONENTS:

SUB UNIT-#	SUB LABEL	COMPONENT	MATERIAL	CONSTRUCTION	GAP	YEAR APPLIED	MANUFACTURE	OVERALL CONDITION
BENT-6		*CLOSED EXPANSION JOINT*	*ELASTOMERIC*	*STRIP SEAL*				*GOOD*

COMMENT:

COUNTY: CLAY DISTRICT: KC CLASS: STATBR FED-ID: 1459 BRIDGE: A1763

BANK/SLOPE PROTECTION COMPONENTS:

COMPONENT	MATERIAL	CONSTRUCTION	DIRECTION	COMMENTS
BANK PROTECTION	PLAIN CONCRETE	PAVEDSLOPE	BOTH	

DECK COMPONENTS

SPAN TYPE-#	COMPONENT	MATERIAL	CONSTRUCTION	COMMENTS
MAIN SPANS-1	DECK	REINFORCED CONCRETE	CAST-IN-PLACE	
MAIN SPANS-2	DECK	REINFORCED CONCRETE	CAST-IN-PLACE	
MAIN SPANS-3	DECK	REINFORCED CONCRETE	CAST-IN-PLACE	

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
DETERIORATION	AT OUTLETS		MODERATE		

SPAN TYPE-#	COMPONENT	MATERIAL	CONSTRUCTION	COMMENTS
MAIN SPANS-4	DECK	REINFORCED CONCRETE	CAST-IN-PLACE	
MAIN SPANS-5	DECK	REINFORCED CONCRETE	CAST-IN-PLACE	

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
DETERIORATION	AT OUTLETS		MODERATE		

SPAN TYPE-#	COMPONENT	MATERIAL	CONSTRUCTION	COMMENTS
MAIN SPANS-6	DECK	REINFORCED CONCRETE	CAST-IN-PLACE	

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
DETERIORATION	AT OUTLETS		MODERATE		
EFFLORESCENCE	EDGE		LIGHT		

SPAN TYPE-#	COMPONENT	MATERIAL	CONSTRUCTION	COMMENTS
MAIN SPANS-7	DECK	REINFORCED CONCRETE	CAST-IN-PLACE	
MAIN SPANS-8	DECK	REINFORCED CONCRETE	CAST-IN-PLACE	

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
DETERIORATION	AT OUTLETS		MODERATE		

SPAN TYPE-#	COMPONENT	MATERIAL	CONSTRUCTION	COMMENTS
MAIN SPANS-9	DECK	REINFORCED CONCRETE	CAST-IN-PLACE	
MAIN SPANS-10	DECK	REINFORCED CONCRETE	CAST-IN-PLACE	

SUPERSTRUCTURE COMPONENTS

SERIES TYPE-#	SPAN TYPE	MATERIAL	CONSTRUCTION	LABEL	COMMENTS
MAIN SERIES-1	CONTINUOUS SPAN	REINFORCED CONCRETE	BOX GIR-CIP MUL CELL		

SPAN	COMPOSITE INDICATOR	LENGTH	WEATHERING STEEL	COMMENTS
MAIN SPANS-1	NON-COMPOSITE	76 FT 0 IN	NO	

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
VERTICAL CRACKS	EDGE		FEW		

MAIN SPANS-2 NON-COMPOSITE 95 FT 0 IN NO

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
VERTICAL CRACKS	EDGE		FEW		

MAIN SPANS-3 NON-COMPOSITE 83 FT 0 IN NO

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
DELAMINATION	EDGE		FEW		
PATCHES	THROUGHOUT		LARGE		(HULBES1, 04/05/2023)--NORTHSIDE SEALED

MAIN SPANS-4 NON-COMPOSITE 79 FT 0 IN NO

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
VERTICAL CRACKS	EDGE		FEW		

MAIN SPANS-5 NON-COMPOSITE 68 FT 0 IN NO

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
DELAMINATION	EDGE		LARGE		
PATCHES	BOTTOM	AT CANTILEVER	LARGE		

MAIN SERIES-2 CONTINUOUS SPAN REINFORCED CONCRETE BOX GIR-CIP MUL CELL

SPAN	COMPOSITE INDICATOR	LENGTH	WEATHERING STEEL	COMMENTS
MAIN SPANS-6	NON-COMPOSITE	72 FT 0 IN	NO	

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
DELAMINATION	EDGE		FEW		
VERTICAL CRACKS	EDGE		FEW		

MAIN SPANS-7 NON-COMPOSITE 90 FT 0 IN NO

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT

MAIN SPANS-8 NON-COMPOSITE 90 FT 0 IN NO

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
DELAMINATION	EDGE		LARGE		
SPALLS	EDGE		FEW		

MAIN SPANS-9 NON-COMPOSITE 90 FT 0 IN NO

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
DELAMINATION	EDGE		FEW		
TRANSVERSE CRACKS	BOTTOM	THROUGHOUT	FEW		

MAIN SPANS-10 NON-COMPOSITE 72 FT 0 IN NO

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
VERTICAL CRACKS	EDGE		FEW		

SUBSTRUCTURE COMPONENTS

SUBSTRUCTURE	SKEW	LENGTH	MATERIAL	CONSTRUCTION	LABEL	COMMENTS
ABUTMENT-1		*26 FT 9 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
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**

BENT-2 *REINFORCED CONCRETE* *SINGLE COLUMN*

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
ASSOCIATED COMPONENT	**MATERIAL**	**CONSTRUCTION**			
COLUMN	REINFORCED CONCRETE	INTEGRAL CAST-IN-PLACE			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**
FOOTING	REINFORCED CONCRETE	SPREAD			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**

BENT-3 *REINFORCED CONCRETE* *SINGLE COLUMN*

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
ASSOCIATED COMPONENT	**MATERIAL**	**CONSTRUCTION**			
COLUMN	REINFORCED CONCRETE	INTEGRAL CAST-IN-PLACE			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**
FOOTING	REINFORCED CONCRETE	SPREAD			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**

BENT-4 *REINFORCED CONCRETE* *SINGLE COLUMN*

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
ASSOCIATED COMPONENT	**MATERIAL**	**CONSTRUCTION**			
COLUMN	REINFORCED CONCRETE	INTEGRAL CAST-IN-PLACE			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**
FOOTING	REINFORCED CONCRETE	SPREAD			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**

BENT-5 *REINFORCED CONCRETE* *SINGLE COLUMN*

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
ASSOCIATED COMPONENT	**MATERIAL**	**CONSTRUCTION**			
COLUMN	REINFORCED CONCRETE	INTEGRAL CAST-IN-PLACE			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**
FOOTING	REINFORCED CONCRETE	SPREAD			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**

BENT-6 *REINFORCED CONCRETE* *MULTIPLE COLUMN*

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
ASSOCIATED COMPONENT	**MATERIAL**	**CONSTRUCTION**			
COLUMN	REINFORCED CONCRETE	INTEGRAL CAST-IN-PLACE			
CONDITION	**LOCATION 1**	**LOCATION 2**	**SEVERITY**	**MEASUREMENT**	**COMMENT**
DELAMINATION PATCHES	THROUGHOUT TOP		LARGE FEW		
FOOTING	REINFORCED CONCRETE	SPREAD			
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**

SEALED	THROUGHOUT		EPOXY		
COLUMN	REINFORCED CONCRETE	CAST-IN-PLACE			
CONDITION	***LOCATION 1***	***LOCATION 2***	***SEVERITY***	***MEASUREMENT***	***COMMENT***
DRILLED SHAFT	REINFORCED CONCRETE	CAST-IN-PLACE			
CONDITION	***LOCATION 1***	***LOCATION 2***	***SEVERITY***	***MEASUREMENT***	***COMMENT***
EXPANSION BEARING	ELASTOMERIC	LAMINATED NEOPRENE			
CONDITION	***LOCATION 1***	***LOCATION 2***	***SEVERITY***	***MEASUREMENT***	***COMMENT***

BENT-7 *REINFORCED CONCRETE* *SINGLE COLUMN*

CONDITION	***LOCATION 1***	***LOCATION 2***	***SEVERITY***	***MEASUREMENT***	***COMMENT***
ASSOCIATED COMPONENT	***MATERIAL***	***CONSTRUCTION***			
COLUMN	REINFORCED CONCRETE	INTEGRAL CAST-IN-PLACE			
CONDITION	***LOCATION 1***	***LOCATION 2***	***SEVERITY***	***MEASUREMENT***	***COMMENT***
DELAMINATION	BOTTOM	THROUGHOUT	FEW		
FOOTING	REINFORCED CONCRETE	SPREAD			
CONDITION	***LOCATION 1***	***LOCATION 2***	***SEVERITY***	***MEASUREMENT***	***COMMENT***

BENT-8 *REINFORCED CONCRETE* *SINGLE COLUMN*

CONDITION	***LOCATION 1***	***LOCATION 2***	***SEVERITY***	***MEASUREMENT***	***COMMENT***
ASSOCIATED COMPONENT	***MATERIAL***	***CONSTRUCTION***			
COLUMN	REINFORCED CONCRETE	INTEGRAL CAST-IN-PLACE			
CONDITION	***LOCATION 1***	***LOCATION 2***	***SEVERITY***	***MEASUREMENT***	***COMMENT***
FOOTING	REINFORCED CONCRETE	SPREAD			
CONDITION	***LOCATION 1***	***LOCATION 2***	***SEVERITY***	***MEASUREMENT***	***COMMENT***

BENT-9 *REINFORCED CONCRETE* *SINGLE COLUMN*

CONDITION	***LOCATION 1***	***LOCATION 2***	***SEVERITY***	***MEASUREMENT***	***COMMENT***
VERTICAL CRACKS	THROUGHOUT		FEW		
ASSOCIATED COMPONENT	***MATERIAL***	***CONSTRUCTION***			
COLUMN	REINFORCED CONCRETE	INTEGRAL CAST-IN-PLACE			
CONDITION	***LOCATION 1***	***LOCATION 2***	***SEVERITY***	***MEASUREMENT***	***COMMENT***
FOOTING	REINFORCED CONCRETE	H-PILE			
CONDITION	***LOCATION 1***	***LOCATION 2***	***SEVERITY***	***MEASUREMENT***	***COMMENT***

BENT-10 *REINFORCED CONCRETE* *SINGLE COLUMN*

CONDITION	***LOCATION 1***	***LOCATION 2***	***SEVERITY***	***MEASUREMENT***	***COMMENT***
VERTICAL CRACKS	THROUGHOUT		FEW		
ASSOCIATED COMPONENT	***MATERIAL***	***CONSTRUCTION***			
COLUMN	REINFORCED CONCRETE	INTEGRAL CAST-IN-PLACE			
CONDITION	***LOCATION 1***	***LOCATION 2***	***SEVERITY***	***MEASUREMENT***	***COMMENT***
FOOTING	REINFORCED CONCRETE	H-PILE			
CONDITION	***LOCATION 1***	***LOCATION 2***	***SEVERITY***	***MEASUREMENT***	***COMMENT***

ABUTMENT-11 *26 FT 9 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***
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*

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	IS 35 S	2	1-WAY TRAF	19 FT 10 IN	11 FT 7 IN	3426

VERTICAL CLEARANCE TYPE**	VALUE	DIRECTION	DATE	COMMENT
ACTUAL	20 FT 2 IN			

RECORD #	ROUTE	# LANES	DIRECTION OF TRAFFIC	RIGHT LATERAL CLEARANCE	LEFT LATERAL CLEARANCE	UR-ID
2	IS 35 N	2	1-WAY TRAF	19 FT 10 IN	11 FT 7 IN	3427

VERTICAL CLEARANCE TYPE**	VALUE	DIRECTION	DATE	COMMENT
ACTUAL	15 FT 8 IN		10/28/2015	

RECORD #	ROUTE	# LANES	DIRECTION OF TRAFFIC	RIGHT LATERAL CLEARANCE	LEFT LATERAL CLEARANCE	UR-ID
3	IS 29 S	2	1-WAY TRAF			93295

VERTICAL CLEARANCE TYPE**	VALUE	DIRECTION	DATE	COMMENT
ACTUAL	25 FT 2 IN		02/06/2020	

RECORD #	ROUTE	# LANES	DIRECTION OF TRAFFIC	RIGHT LATERAL CLEARANCE	LEFT LATERAL CLEARANCE	UR-ID
4	IS 29 N	2	1-WAY TRAF			93296

VERTICAL CLEARANCE TYPE**	VALUE	DIRECTION	DATE	COMMENT
ACTUAL	15 FT 11 IN		03/09/2012	

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	SLOPE	CUT BRSH&TREES SPAYVINES	SLOPE	3	05/22/2017	
DISTRICT ROUTINE	SLOPE	REPAIR EROSION	SLOPE	2	06/05/2019	(MADSEJ, 06/05/2019)--REPAIR THE SLOPE EROSION UNDER SPAN 8.

UTILITY ATTACHMENTS

UTILITY	OWNER	METHOD	MEASUREMENT TYPE	VALUE	NUMBER	UTILITY ATTACHMENT COMMENT

PROGRAM NOTES INFORMATION

YEAR	PROJECT #	MONTH LET	YEAR LET	ITEMS	COMMENT
2015	J4I3021	3	2015	SUBSTRUCTURE REPAIR	(OTISL1, 10/01/2014)--REPLACE JOIINT, NEW BENT, SUPERSTRUCTURE REPAIR

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	10/3/2016
[Item 68] Deck Geometry Rating:	7-BETTER THAN PRESENT MIN	3/20/2002
[Item 69] Underclearance:	4-MEETS MINIMUM TOLERABLE	1/19/2022
Sufficiency Rating:	76.0%	3/7/2024
Deficiency:	NOT DEFICIENT	10/3/2016
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: