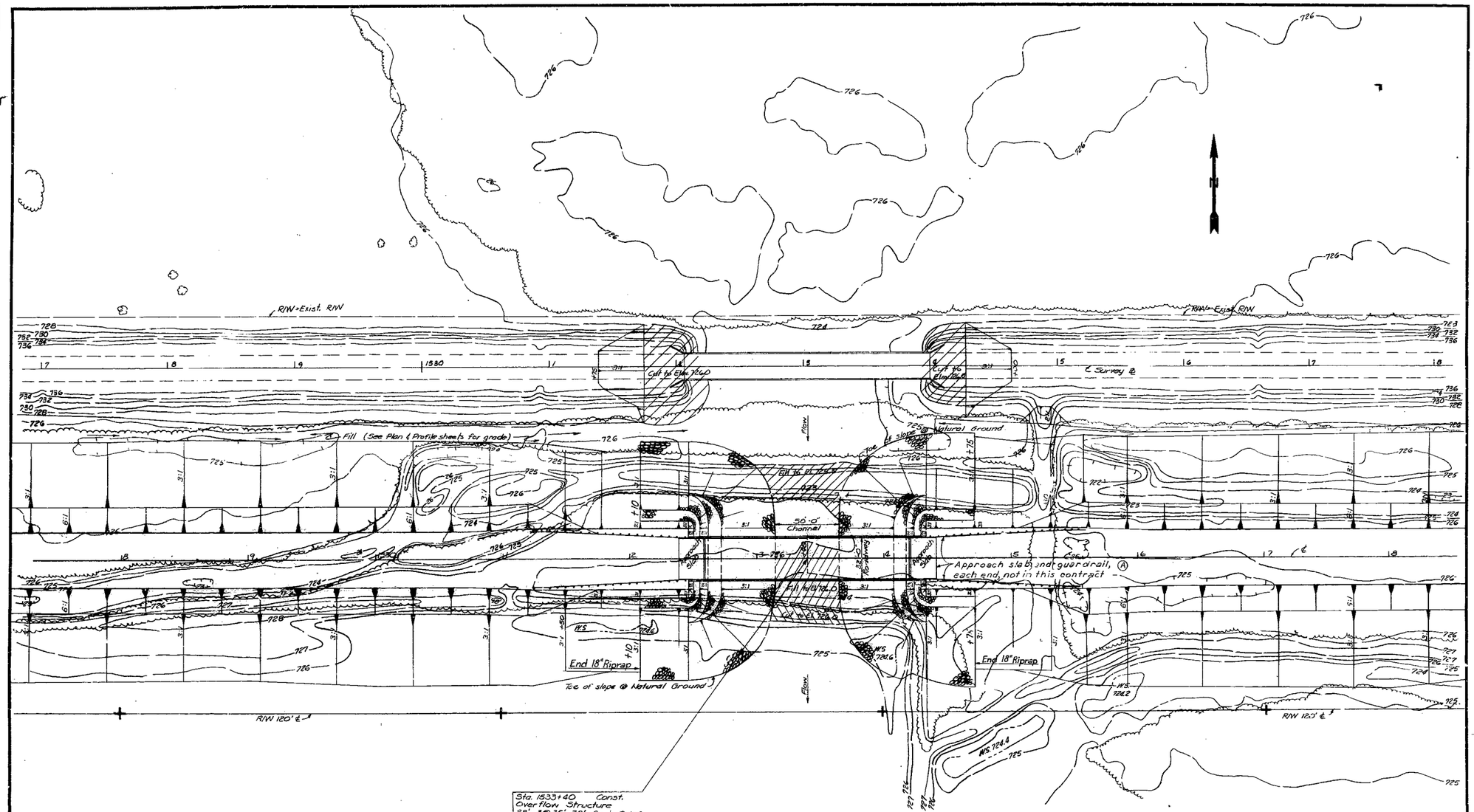
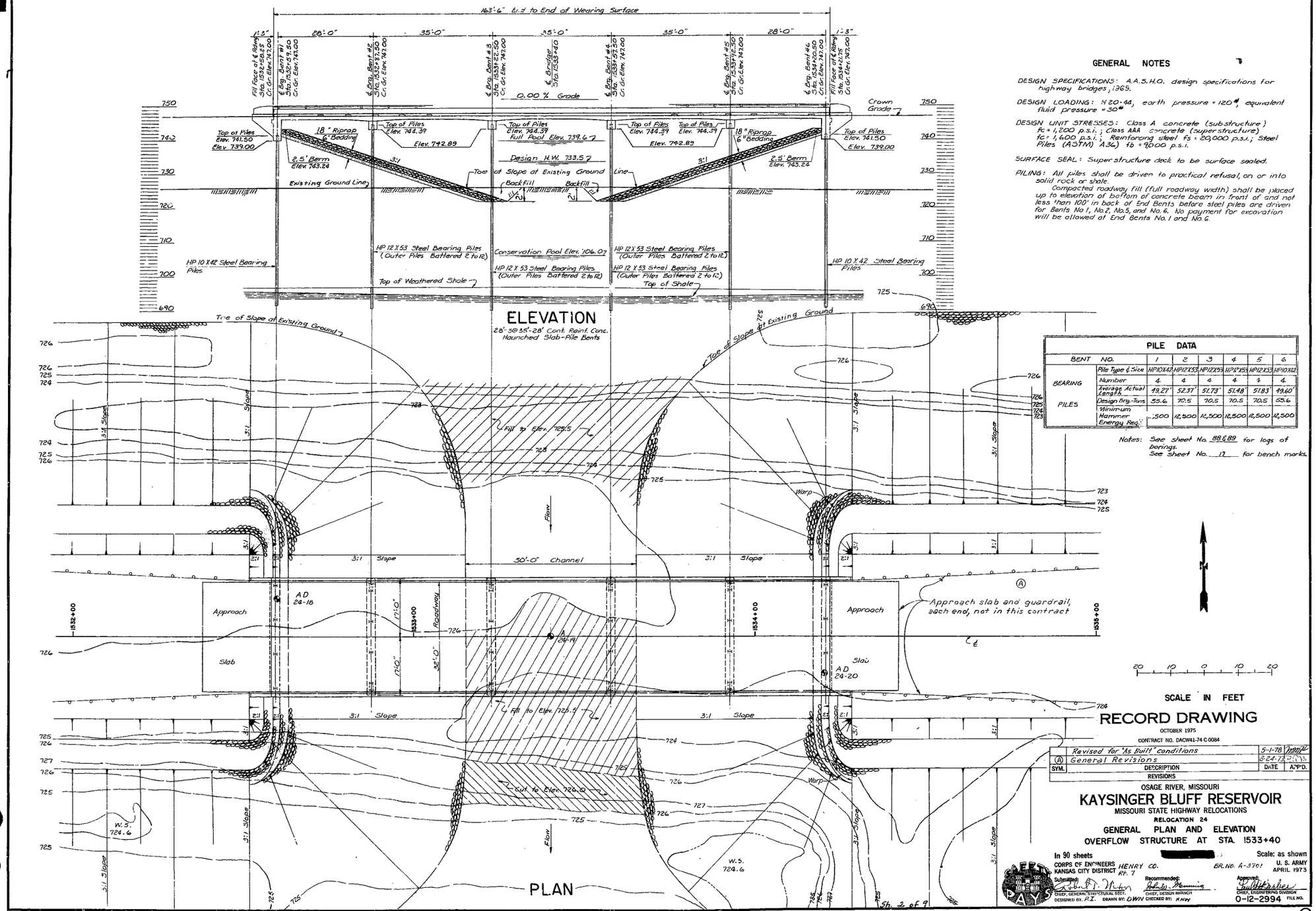


502

862 29 TO 1



GENERAL NOTES

DESIGN SPECIFICATIONS: A.A.S.H.O. design specifications for highway bridges, 1969.

DESIGN LOADING: H 20-44, earth pressure = 120#, equivalent fluid pressure = 30#

DESIGN UNIT STRESSES: Class A concrete (substructure) fc = 1,200 p.s.i.; Class AAA concrete (superstructure) fc = 1,600 p.s.i.; Reinforcing steel fs = 20,000 p.s.i.; Steel Piles (ASTM) A36) fb = 9000 p.s.i.

SURFACE SEAL: Superstructure deck to be surface sealed.

PILING: All piles shall be driven to practical refusal on or into solid rock or shale.
Compacted roadway fill (full roadway width) shall be placed up to elevation of bottom of concrete beam in front of and not less than 100' in back of End Bents before steel piles are driven for Bents No 1, No 2, No.5, and No. 6. No payment for excavation will be allowed at End Bents No. 1 and No. 6.

PILE DATA

BENT NO.		1	2	3	4	5	6
BEARING PILES	Pile Type & Size	HP10X42	HP12X53	HP12X53	HP12X53	HP12X53	HP10X42
	Number	4	4	4	4	4	4
	Average Actual Length	49.27'	52.37'	51.73'	51.48'	51.83'	49.60'
	Design Brg.-Tons	55.6	70.5	70.5	70.5	70.5	55.6
	Minimum Hammer Energy Req.:	...500	12,500	12,500	12,500	12,500	12,500

Notes: See sheet No. 88 & 89 for logs of borings.
See sheet No. 17 for bench marks.

SCALE IN FEET

RECORD DRAWING

OCTOBER 1975

CONTRACT NO. DACW41-74-C-0084

SYM.	DESCRIPTION REVISIONS	DATE	APP'D.
	Revised for "As Built" conditions	5-1-78	
(A)	General Revisions	8-24-73	

OSAGE RIVER, MISSOURI

KAYSINGER BLUFF RESERVOIR

MISSOURI STATE HIGHWAY RELOCATIONS

RELOCATION 24

GENERAL PLAN AND ELEVATION
OVERFLOW STRUCTURE AT STA. 1533+40

In 90 sheets [redacted] Scale: as shown

CORPS OF ENGINEERS KANSAS CITY DISTRICT HENRY CO. RT. 7

BR. NO. A-3761 U. S. ARMY APRIL 1973

Submitted: Robert T. Mitchell, CHIEF, GENERAL STRUCTURAL SECT. DESIGNED BY: P.I. DRAWN BY: DWN CHECKED BY: M.Nay

Recommended: Robert D. Manning, CHIEF, DESIGN BRANCH

Approved: Paul H. Rashes, CHIEF, ENGINEERING DIVISION

0-12-2994 FILE NO.

Sh. 2 of 9

BUCHER & WILLIS, Consulting Engineers, Planners & Architects

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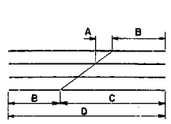
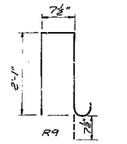
862 29 TO 1

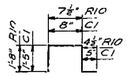
NO.	SIZE	LENGTH	MARK	LOCATION
		END BENTS NO. 1 & 6		
240	5	11'-2"	D1	Beam
32	6	33'-8"	D2	"
24	6	9'-9"	A1	Wingwall
24	4	8'-10"	A2	"
8	6	12'-7"	A3	"
4	5	4'-0"	A4	"
12	5	8'-3"	A5	"
8	6	6'-2"	A6	"
8	5	5'-9"	R1	End Post
16	5	5'-6"	R2	"
12	5	4'-9"	R3	"
4	5	4'-3"	R4	"
4	5	6'-0"	R5	"
4	5	5'-6"	R6	"
4	5	4'-10"	R7	"
8	5	6'-3"	C4	Curb
28	5	3'-10"	C5	"
		BENTS NO. 2,3,4,& 5		
32	8	33'-8"	P1	Cap Beam
8	6	33'-8"	P2	"
140	5	10'-2"	P3	"
16	7	5'-8"	P4	"
		SUPERSTRUCTURE		
46	10	10'-0"	S1	Slab
48	7	18'-2"	S2	"
120	10	24'-0"	S3	"
40	11	24'-0"	S4	"
116	10	16'-0"	S5	"
102	7	14'-6"	S6	"
58	9	20'-0"	S7	"
20	11	25'-6"	S8	"
70	8	23'-6"	S9	"
87	9	14'-0"	S10	"
30	11	24'-0"	S11	"
70	8	25'-0"	S12	"
44.3	4	33'-6"	S13	"
60	9	23'-6"	S14	"
90	9	24'-0"	S15	"
8	5	12'-0"	R8	Parapet
382	5	5'-5"	R9	"
36	5	4'-4"	R10	"
14	5	18'-6"	R11	"
14	5	10'-9"	R12	"
32	5	11'-0"	R13	"
14	5	10'-0"	R14	"
14	5	13'-0"	R15	"
382	5	3'-11"	C1	Curb
8	6	29'-0"	C2	"
12	6	34'-6"	C3	"

NO.	SIZE	LENGTH	MARK	LOCATION

BENDING AND CUTTING DIAGRAMS

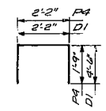


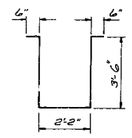


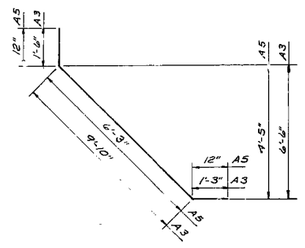


REMARKS	A	B	C	D
6-A1, Cut 24	1'-2"	1'-9"	7'-7"	9'-4"
6-A2, Cut 24	9"	2'-4"	6'-6"	8'-10"

MARK	A	B
R3	2'-10⅝"	7⅛"
R4	2'-9⅜"	7⅛"
R5	2'-8⅝"	7⅛"
R6	2'-5⅝"	7⅛"
R7	2'-1⅝"	7⅛"
C5	1'-7"	8"







NOTE: All dimensions are shown out to out of bars.

CONCRETE QUANTITIES		
	Class A Cubic Yds.	Class AAA Cubic Yds.
Bent #1	5.54	
Bent #6	5.54	
Bent #2	9.44	
Bent #3	9.44	
Bent #4	9.54	
Bent #5	9.54	
Superstructure		245.67
Total	85.58	245.67

RECORD DRAWING

OCTOBER 1975

CONTRACT NO. DACW41-74-C-0084

SYM.	DESCRIPTION	DATE	APP'D.
	Revised for "As Built" conditions	5-1-78	mjw
	REVISIONS		

OSAGE RIVER, MISSOURI

KAYSINGER BLUFF RESERVOIR

MISSOURI STATE HIGHWAY RELOCATIONS

RELOCATION 24

BILL OF REINFORCING STEEL

OVERFLOW STRUCTURE AT STA. 1533 + 40

In 90 sheets [redacted] Scale: as shown

CORPS OF ENGINEERS KANSAS CITY DISTRICT HENRY CO. MO. ER-NO. A-3761 U. S. ARMY APRIL 1973

Submitted: Robert T. Nolen, CHIEF, GENERAL STRUCTURAL SECT. DESIGNED BY: RJ DRAWN BY: PT

Recommended: [signature], CHIEF, DESIGN BRANCH CHECKED BY: KNW

Approved: [signature], CHIEF, ENGINEERING DIVISION 0-12-2995 FILE NO.

BUCHER & WILLIS, Consulting Engineers, Planners & Architects

Sh. 3 of 9

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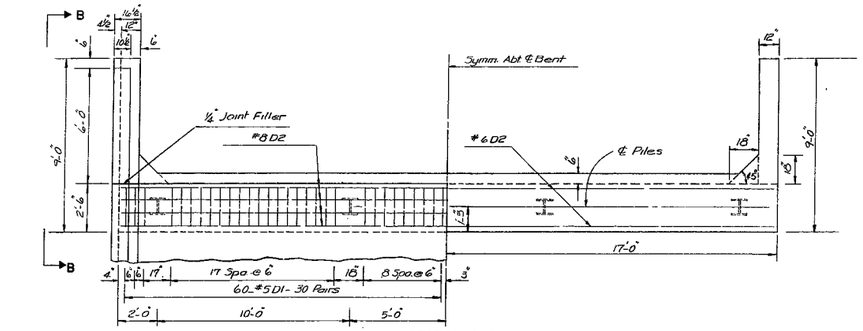
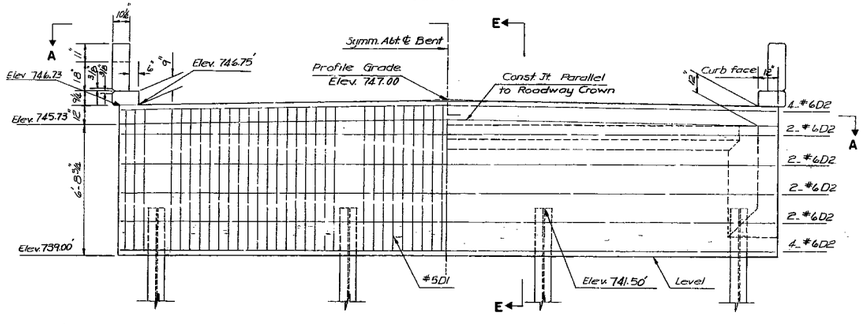
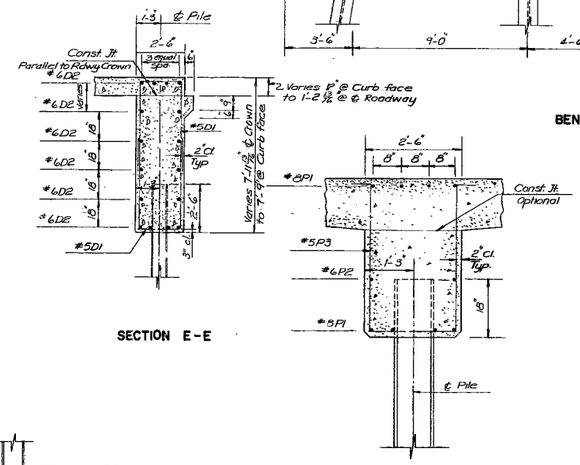
862 29 TO 1



SECTION A-A



ELEVATION



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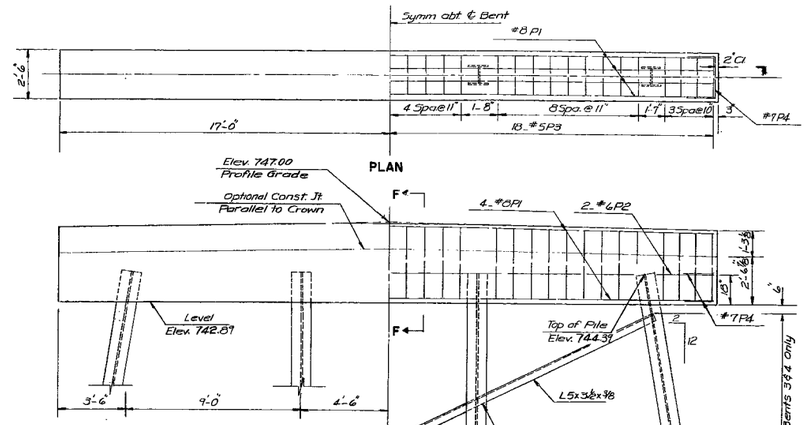

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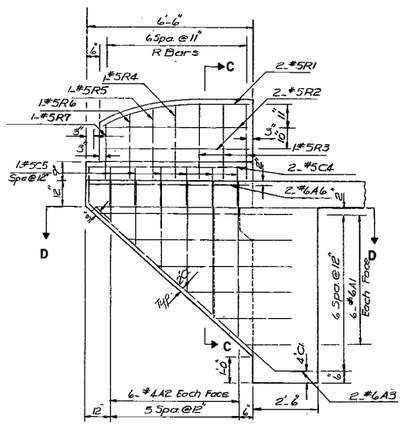

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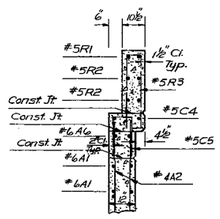
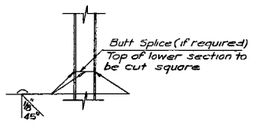
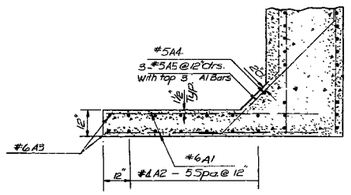


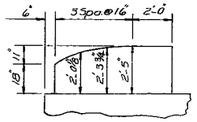
SECTION C-C



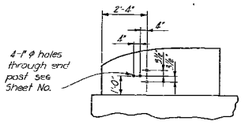
PILE SPLICE DETAIL



SECTION D-D



END POST



GUARDRAIL CONNECTION

END BENTS 1 & 6

GENERAL NOTES

For notes and details of railing see sheet No. 67
Piles are to be HP10 X 42 at end bents, and HP12 X 53 at intermediate bents.
Fill at End bents No. 1 & 6 shall not be carried above bottom of beam and wings until adjacent superstructure span is in place.

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

Sh. 4 of 9

RECORD DRAWING

OCTOBER 1975

CONTRACT NO. DACW41-74-C-0084

SYM.	DESCRIPTION	DATE	APP'D.
	Revised for "As Built" conditions	5-1-78	[illegible]

REVISIONS

OSAGE RIVER, MISSOURI

KAYSINGER BLUFF RESERVOIR

MISSOURI STATE HIGHWAY RELOCATIONS

RELOCATION 24

BENTS 1, 2, 3, 4, 5 & 6

OVERFLOW STRUCTURE AT STA. 1533+40

In 90 sheets [redacted] Scale: as shown

CORPS OF ENGINEERS
KANSAS CITY DISTRICT

HENRY CO. BR. NO. A-3761

U. S. ARMY
APRIL 1973

Submitted: [signature] CHIEF, GENERAL STRUCTURAL SECT.
DESIGNED BY: PJ DRAWN BY: PJ

Recommended: [signature] CHIEF, DESIGN BRANCH
CHECKED BY: KNW

Approved: [signature] CHIEF, ENGINEERING DIVISION

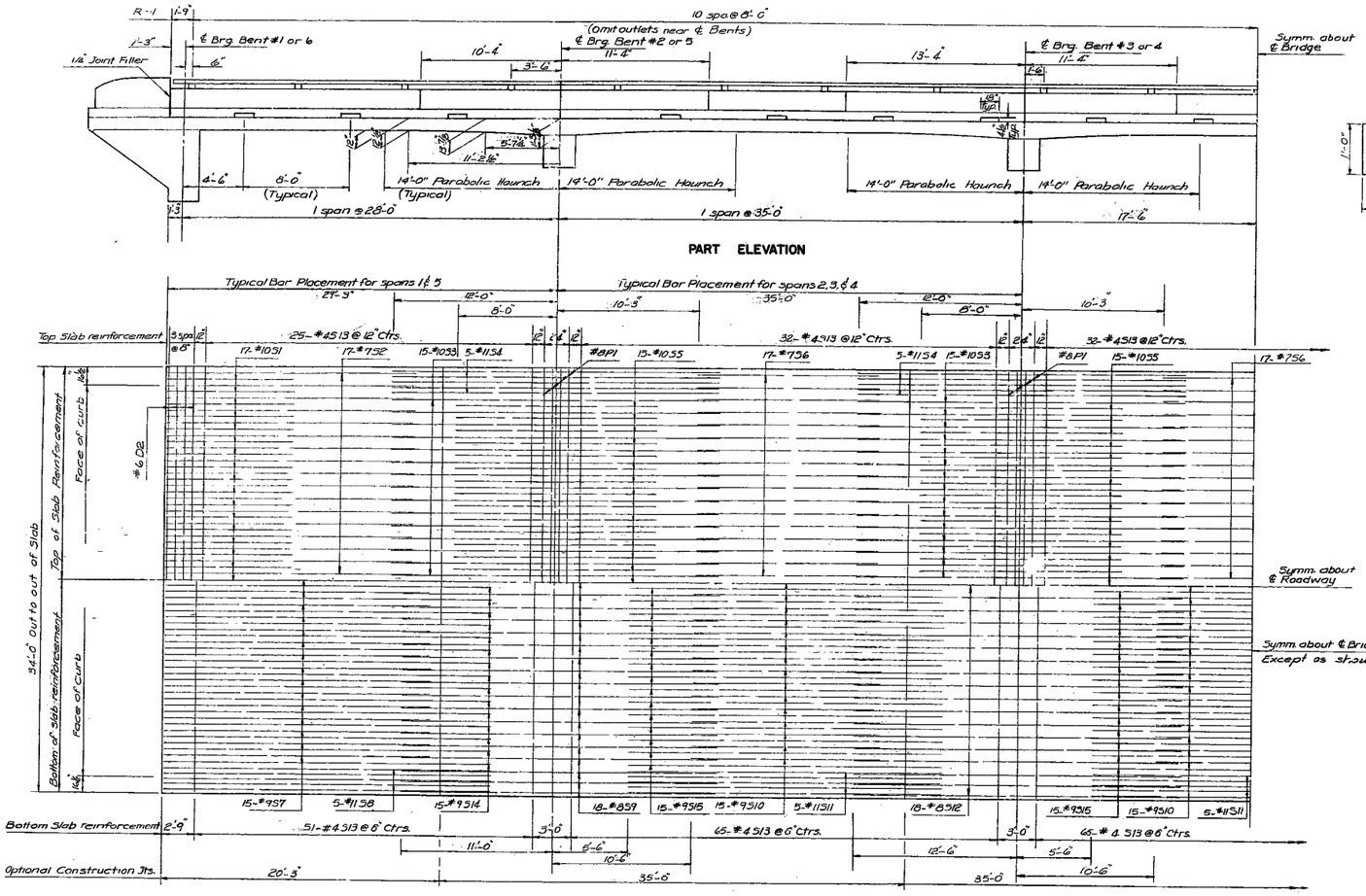
0-12-2996 FILE NO.

BUCHER & WILLIS, Consulting Engineers, Planners & Architects

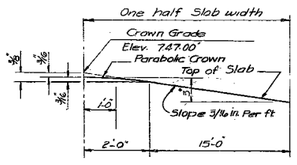
(65)

505

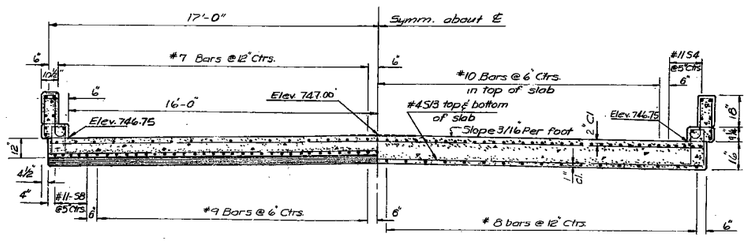
862 29 TO 1



SLAB PLAN SHOWING REINFORCING STEEL



STANDARD CROWN



SECTION AT MIDSPAN SECTION AT PIER

TYPICAL ROADWAY CROSS SECTION

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

GENERAL NOTES

For Handrail, Parapet, and Curb Details and notes see sheet No. 67.
For Slab Pouring Sequence and optional Construction Joints see Sheet No. 67.

RECORD DRAWING
OCTOBER 1975
CONTRACT NO. DACW41-74-C-0084

SYM.	DESCRIPTION	DATE	APP'D.
	Revised for "As Built" conditions	5-1-78	[illegible]
	REVISIONS		

OSAGE RIVER, MISSOURI

KAYSINGER BLUFF RESERVOIR

MISSOURI STATE HIGHWAY RELOCATIONS
RELOCATION 24

SLAB PLAN AND CROSS SECTION
OVERFLOW STRUCTURE AT STA. 1533+40

In 90 sheets [redacted] Scale: as shown
CORPS OF ENGINEERS KANSAS CITY DISTRICT HENRY CO. BR. NO. 4-3701 U. S. ARMY APRIL 1973
Submitted: [signature] CHIEF, GENERAL STRUCTURAL SECT.
Recommended: [signature] CHIEF, DESIGN BRANCH
Approved: [signature] CHIEF, ENGINEERING DIVISION
DESIGNED BY: P.I. DRAWN BY: P.I. CHECKED BY: KNW
0-12-2997 FILE NO.

BUCHER & WILLIS, Consulting Engineers, Planners & Architects

Sh. 5 of 9

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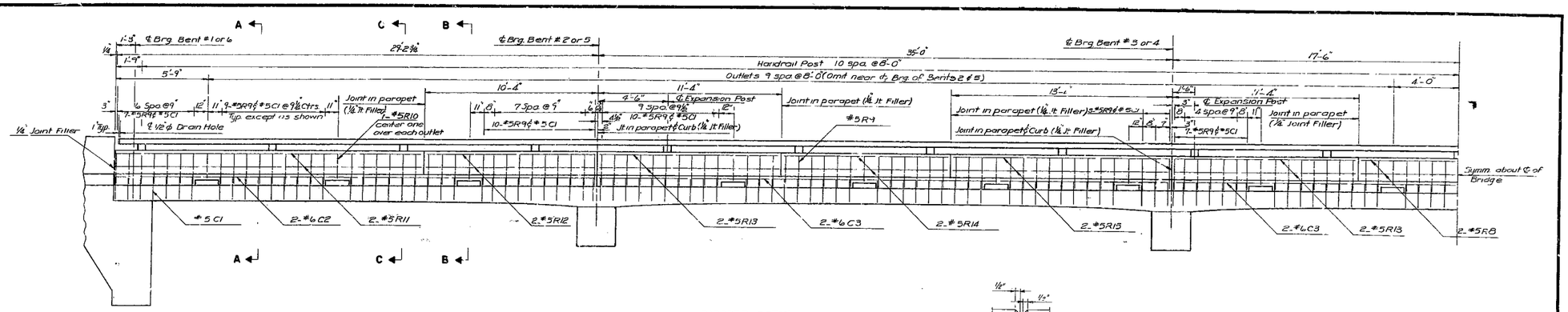
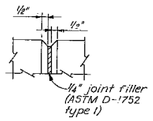
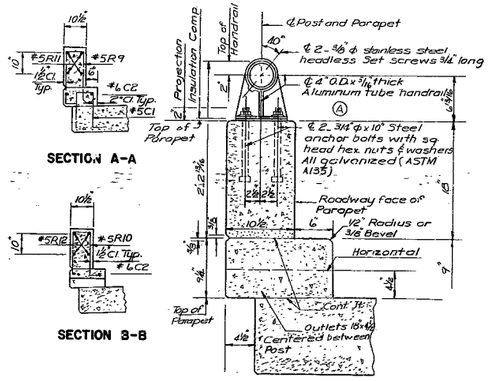
862 29 TO 1

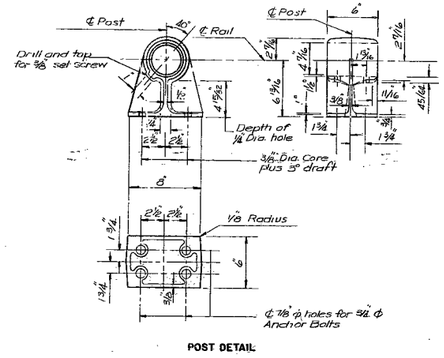


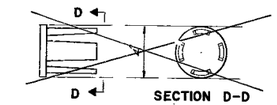
PARAPET DETAIL



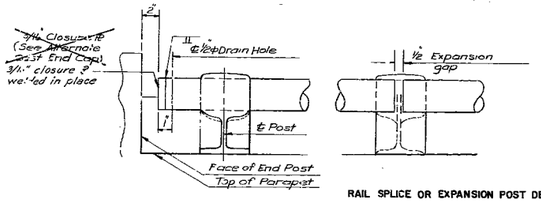
FILLED JOINT DETAIL







CAST END CAP (DRIVE FIT TYPE)



RAIL SPLICE OR EXPANSION POST DETAIL

GENERAL NOTES

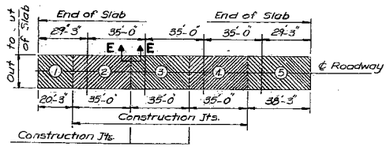
All handrail posts shall be set normal to grade.
Aluminum washer shims between top of parapet and post base may be used for adjusting handrail alignment. Maximum thickness of shims to be ⅜. Where more fitting of post is required for proper alignment concrete bearing areas shall be ground down.
All parts of handrail, except anchor bolts, nuts, washers, and Set Screws are to be of Aluminum material.
All fillets ¼ except as noted.
All drains 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. Vertical faces of End posts to be vertical.
All exposed edges of end posts, parapets, and curbs shall have ½" radius or ⅜ bevel.
Curbs shall be placed independently of slab and not sooner than five days after slab has been placed. Curb placement shall follow the same pouring sequence as the slab unless otherwise approved.

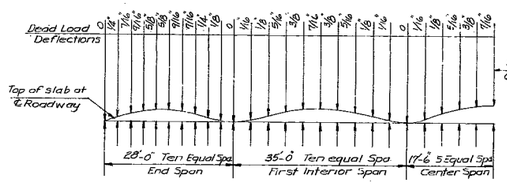
HANDRAIL DETAILS

SLAB POURING SEQUENCE

	SEQUENCE OF POURS				
	Direction				
Basic Sequence	1	2	3	4	5
	Either Dir.	3 to 1	4 to 2	5 to 3	End to 4
Alternate "A" Pour	1+2+3+4+5				
	End to End				

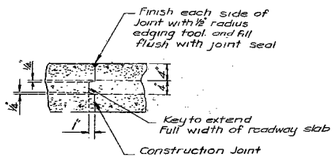
The contractor shall use an approved oscillating screed type, self propelled mechanical finishing machine and shall pour and satisfactorily finish the roadway slab at a rate of not less than 30 cubic yards per hour. He shall observe the transverse construction joints shown on plans unless he can demonstrate to the satisfaction of engineer that he is equiped to pour and satisfactorily finish the roadway slab at a rate which will permit a continuous pouring through some or all of these joints. Finishing machine loads will not be permitted on concrete less than 48 hours old.





Structure to be cambered for Dead Load Deflection

CAMBER DIAGRAM



SECTION E-E

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

SYM.	DESCRIPTION	DATE	APP'D.
	REVISIONS		
(A)	General Revisions	12-24-73	[illegible]
	Revised for "As built" conditions	5-1-78	[illegible]

OSAGE RIVER, MISSOURI

KAYSINGER BLUFF RESERVOIR

MISSOURI STATE HIGHWAY RELOCATIONS

RELOCATION 24

PARAPET, HANDRAIL & MISCELLANEOUS DETAILS OVERFLOW STRUCTURE AT STA. 1533+40

In 90 sheets [redacted] Scale: as shown

CORPS OF ENGINEERS KANSAS CITY DISTRICT — HENRY CO. RP. 7 — E.B. Init. A-3761 — U. S. ARMY APRIL 1973

Submitted: [signature] CHIEF, GENERAL STRUCTURAL DIST.
Recommended: [signature] CHIEF, DESIGN BRANCH
Approved: [signature] CHIEF, ENGINEERING DIVISION
DESIGNED BY: P.I. DRAWN BY: P.I. CHECKED BY: K.N.W.
0-12-2998 FILE NO.

RECORD DRAWING
OCTOBER 1975
CONTRACT NO. DACW41-74-C-0084

BUCHER & WILLIS, Consulting Engineers, Planners & Architects

Sh. 6 of 9

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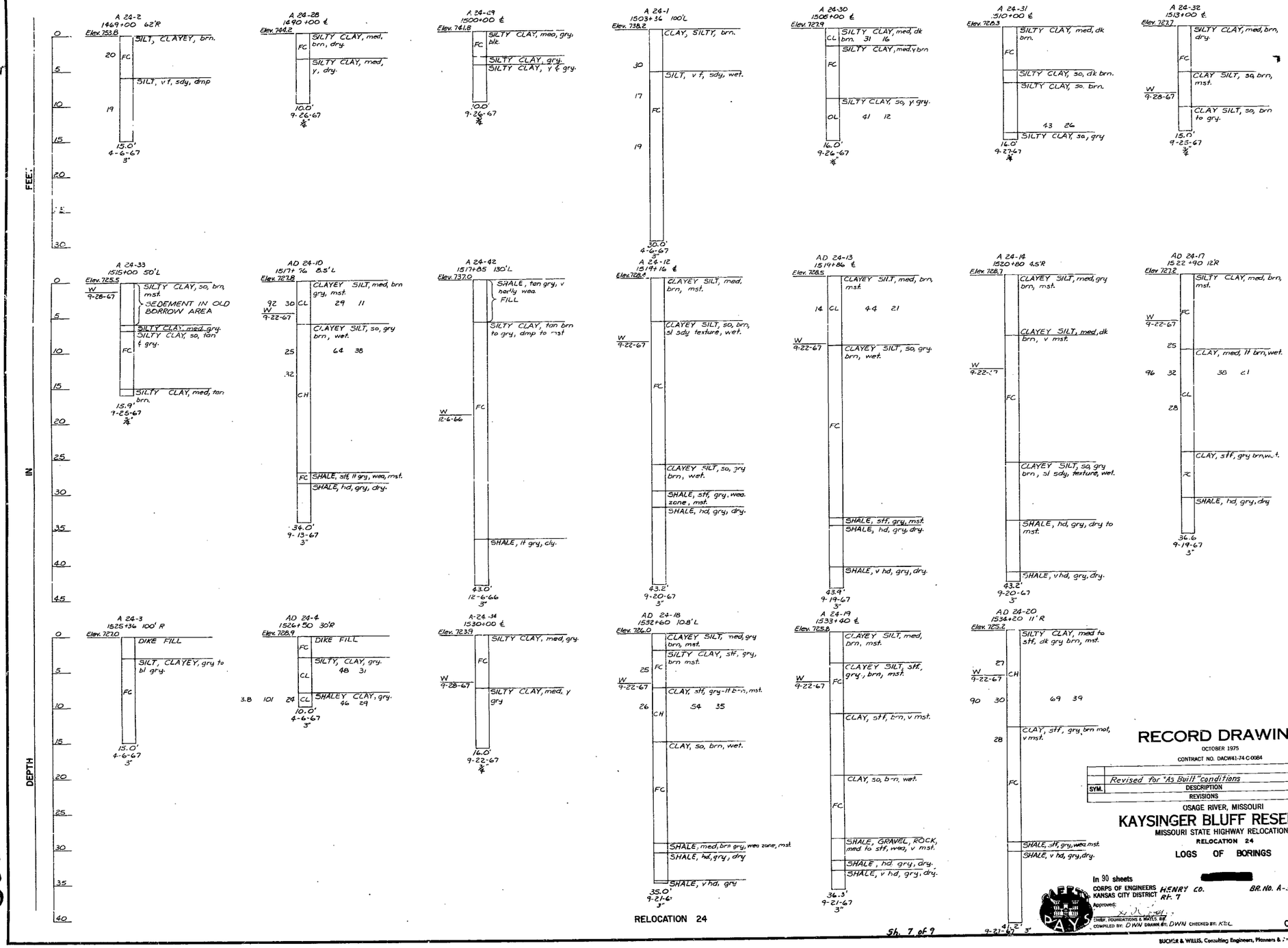
862 29 TO 1


A 24-2
1469+00 62'R
Elev. 753.8
SILT, CLAYEY, brn.
20
FC
SILT, v f, sdy, dmp
19
15.0'
4-6-67
3"
A 24-28
1490+00 ℄
Elev. 744.2
SILTY CLAY, med, brn, dry.
FC
SILTY CLAY, med, y, dry.
10.0'
9-26-67
3"
A 24-29
1500+00 ℄
Elev. 741.8
SILTY CLAY, med, gry, blk.
FC
SILTY CLAY, gry.
SILTY CLAY, y & gry.
10.0'
9-26-67
3"
A 24-1
1503+36 100'L
Elev. 738.2
CLAY, SILTY, brn.
30
SILT, v f, sdy, wet.
17
FC
19
30.0'
4-6-67
3"
A 24-30
1508+00 ℄
Elev. 727.9
SILTY CLAY, med, dk brn. 31 16
CL
SILTY CLAY, med, y brn
FC
SILTY CLAY, so, y gry.
OL 41 12
16.0'
9-26-67
3"
A 24-31
1510+00 ℄
Elev. 726.3
SILTY CLAY, med, dk brn.
FC
SILTY CLAY, so, dk brn.
SILTY CLAY, so. brn.
43 26
SILTY CLAY, so, gry
16.0'
9-27-67
3"
A 24-32
1513+00 ℄
Elev. 727.7
SILTY CLAY, med, brn, dry.
FC
CLAY SILT, so, brn, mst.
W
9-28-67
CLAY SILT, so, brn to gry.
15.0'
9-25-67
3"
A 24-33
1515+00 50'L
Elev. 725.5
W
9-28-67
SILTY CLAY, so, brn, mst.
SEDEMENT IN OLD BORROW AREA
SILTY CLAY, med, gry.
SILTY CLAY, so, tan & gry.
FC
SILTY CLAY, med, tan brn.
15.9'
9-25-67
3"
AD 24-10
1517+76 8.5'L
Elev. 727.8
CLAYEY SILT, med, brn gry, mst.
92 30 CL 29 11
W
9-22-67
CLAYEY SILT, so, gry brn, wet.
25
64 38
32
CH
FC
SHALE, stf, lt gry, wea, mst.
SHALE, hd, gry, dry.
34.0'
9-13-67
3"
A 24-42
1517+85 130'L
Elev. 737.0
SHALE, tan gry, v hrdly wea.
FILL
SILTY CLAY, tan brn to gry, dmp to mst
FC
W
12-6-66
SHALE, lt gry, cly.
43.0'
12-6-66
3"
A 24-12
1519+16 ℄
Elev. 728.4
CLAYEY SILT, med, brn, mst.
CLAYEY SILT, so, brn, sl sdy texture, wet.
W
9-22-67
FC
CLAYEY SILT, so, gry brn, wet.
SHALE, stf, gry, wea zone, mst.
SHALE, hd, gry, dry.
43.2'
9-20-67
3"
AD 24-13
1519+86 ℄
Elev. 728.5
CLAYEY SILT, med, brn, mst
14 CL 44 21
W
9-22-67
CLAYEY SILT, so, gry. brn, wet.
FC
SHALE, stf, gry, mst.
SHALE, hd, gry, dry.
SHALE, v hd, gry, dry.
43.9'
9-19-67
3"
A 24-14
1520+80 45'R
Elev. 728.7
CLAYEY SILT, med, gry brn, mst.
W
9-22-67
CLAYEY SILT, med, dk brn, v mst.
FC
CLAYEY SILT, so, gry brn, sl sdy, texture, wet.
SHALE, hd, gry, dry to mst.
SHALE, v hd, gry, dry.
43.2'
9-20-67
3"
AD 24-17
1522+90 12R
Elev. 727.2
SILTY CLAY, med, brn, mst.
W
9-22-67
FC
25
CLAY, med, lt brn, wet.
96 32
38 61
CL
28
CLAY, stf, gry brn, w. t.
FC
SHALE, hd, gry, dry
36.6
9-19-67
3"
A 24-3
1525+36 100' R
Elev. 727.0
DIKE FILL
SILT, CLAYEY, gry to bl gry.
FC
15.0'
4-6-67
3"
AD 24-4
1526+50 30'R
Elev. 728.9
DIKE FILL
FC
SILTY, CLAY, gry.
48 31
CL
3.8 101 24 CL SHALEY CLAY, gry.
46 29
10.0'
4-6-67
3"
A 24-34
1530+00 ℄
Elev. 723.9
SILTY CLAY, med, gry.
FC
W
9-28-67
SILTY CLAY, med, y gry
16.0'
9-22-67
3"
AD 24-18
1532+60 10.8'L
Elev. 726.0
CLAYEY SILT, med, gry brn, mst.
SILTY CLAY, stf, gry, brn mst.
25
FC
W
9-22-67
CLAY, stf, gry-lt brn, mst.
26 CH 54 35
CLAY, stf, brn, v mst.
CLAY, so, brn, wet.
FC
SHALE, med, brn gry, wea zone, mst.
SHALE, hd, gry, dry
SHALE, v hd, gry
35.0'
9-21-67
3"
A 24-19
1533+40 ℄
Elev. 725.8
CLAYEY SILT, med, brn, mst.
CLAYEY SILT, stf, gry, brn, mst.
W
9-22-67
FC
CLAY, stf, brn, v mst.
CLAY, so, brn, wet.
FC
SHALE, GRAVEL, ROCK, med to stf, wea, v mst.
SHALE, hd, gry, dry.
SHALE, v hd, gry, dry.
36.3'
9-21-67
3"
AD 24-20
1534+20 11'R
Elev. 725.2
SILTY CLAY, med to stf, dk gry brn, mst.
27
W
9-22-67
CH
90 30
69 39
CLAY, stf, gry brn mst, v mst.
28
FC
SHALE, stf, gry, wea mst.
SHALE, v hd, gry, dry.
41.2'
9-21-67
3"
DEPTH IN FEET
0
5
10
15
20
25
30
35
40
45
RECORD DRAWING
OCTOBER 1975
CONTRACT NO. DACW41-74-C-0084
SYM. DESCRIPTION DATE APP'D.
REVISIONS
Revised for "As Built" conditions 5-1-78
OSAGE RIVER, MISSOURI
KAYSINGER BLUFF RESERVOIR
MISSOURI STATE HIGHWAY RELOCATIONS
RELOCATION 24
LOGS OF BORINGS
In 90 sheets
Scale: as shown
CORPS OF ENGINEERS KANSAS CITY DISTRICT
HENRY CO.
RF. 7
BR. NO. A-3701
U. S. ARMY APRIL 1973
Approved:
CHIEF, FOUNDATIONS & MATLS. BR.
COMPILED BY: DWN DRAWN BY: DWN CHECKED BY: KEL
0-12-3019 FILE NO.
BUCHER & WILLIS, Consulting Engineers, Planners & Architects
RELOCATION 24
Sh. 7 of 9
508
862 29 TO 1

FEET

IN

DEPTH

AD 24-5
1535+36 23' L
Elev. 725.8
SILT, CLAYEY, bl gry.
19
SILT, CLAYEY, y tan.
21 FC
SILT, lt gry, v f sdy.
1.5 97 27 CL
20.0'
4-6-67
3"

A 24-35
1539 +00 ℄
Elev. 726.1
W 9-28-67
SILTY CLAY, med, brn.
CL 49 28
SILTY CLAY, med, gry.
19.5'
9-27-67
¾"

A 24-36
1543+00 ℄
Elev. 725.0
SILTY CLAY, med, brn, dry.
W 9-28-67
FC
SILTY CLAY, so, gry.
SILTY CLAY, med, y gry, mst.
15'0
9-27-67
¾"

AD 24-21
1546+55 9'L
Elev. 725.1
CLAYEY SILT, med, brn, mst.
FC
CLAYEY SILT, med, dk brn, mst.
W 9-22-67
35
CH
32 56 31
CLAYEY SILT, med to stf, brn, mst to wet.
33
FC
GRAVEL AND CLAY SILT, v stf.
SHALE, hd, gry, dry.
SHALE, v hd, gry, dry.
32.9'
9-20-67
3"
Refusal

A 24-22
1547+40 115'R
Elev. 725.2
CLAYEY SILT, med, brn, mst.
W 9-22-67
CLAY, med to stf, gry brn mot, mst.
FC
CLAY, so, lt brn, wet.
GRAVEL AND SANDSTONE
SHALE med gry, wea. zone, mst.
SHALE, v hd, gry, dry.
33.0'
9-22-67
3"

AD 24-23
1548+25 10'L
Elev. 728.8
CLAYEY SILT, med, brn, mst.
CH
W 9-22-67
29
CLAYEY SILT, med to stf, brn gry, mst.
FC
34
CLAYEY SILT, so, brn, wet.
84 27
53 35
CH
FC
SHALE, stf, brn gry, wea, mst.
SHALE, hd, gry, dry.
ROCK AND SHALE ZONE
SHALE, hd, gry, dry.
38.5'
9-20-67
3"

A 24-37
1551+00 ℄
Elev. 723.3
W 9-28-67
SILT, v so, t'r.
SILTY CLAY, so, y gry.
SILTY CLAY, gry.
FC
11.0'
9-27-67
¾"

A 24-6
1557+63 75'R
Elev. 728.0
SILT, CLAYEY, bl gry.
36
FC
SHALE, wea.
19
SHALE, gry, sdy.
29.0'
4-6-67
3"

AD 24-24
1559+65 ℄
Elev. 723.8
W 9-28-67
CLAYEY SILT, med, dk gry, v mst.
CL Sediment in old Borrow Pit
38 48 23
CLAYEY SILT, med to stf, gry brn, v mst.
32
FC
28
CLAYEY SILT, so, gry brn, wet.
SHALE, med, gry, mst.
SHALE, v hd, gry, dry
35.0'
9-13-67
3"

A 24-27
1561+75 110'R
Elev. 723.0
W 9-21-67
SILTY CLAY, tan, gry.
FC
SILTY CLAY, color change.
SAND AND GRAVEL ZONE
SHALE, bl gry, dry.
26.3'
9-21-67
¾"

A 24-25
1562+20 140'L
Elev. 722.3
W 9-15-67
SILTY CLAY, tan & gry.
FC
SAND, GRAVEL AND PEBBLES
SHALE
27.2'
9-15-67
¾"

A 24-26
1565+65 2'L
Elev. 722.3
W 9-15-67
SILTY CLAY, lt gry to tan und grvl
FC
SILTY CLAY, w/n im pebbles & grvl, gry.
24.5'
9-15-67
¾"

A 24-26A
1565+23 93'L
Elev. 735.7
SILTY CLAY, med, brn, mst.
Sediment in old Borrow Pit
CLAY, stf, dk brn, mst.
FC
W 9-28-67
W 9-22-67
SILTY CLAY, stf, brn, v mst.
SILTY CLAY, so, gry brn, wet.
SANDSTONE CAP AND SHALE, stf, gry brn, wea, v mst.
SHALE, v hd, gry, dry.
41.0'
9-22-67
3"

A 24-38
1568+00 ℄
W 9-28-67
Elev. 721.6
CH SILTY CLAY, v so, brn.
65 36
SILTY CLAY, v so, gry.
CL 39 15
16.0'
9-28-67
¾"

A 24-34
1570+00 ℄
W 9-28-67
Elev. 721.6
SILTY CLAY, v so, brn.
SILTY CLAY, v so, gry.
FC
18.0'
9-28-67
¾"

A 24-7
1575+37 34'L
Elev. 734.2
FILL
CLAY, SILTY, y tan.
FC
SHALE, wea.
22
36.0'
4-6-67
3"

A 24-40
1576+50
Elev. 733.0
W 9-28-67
SILT, v so, blk.
SILTY CLAY, med, y gry.
FC
SILTY CLAY, gry.
FC
CLAY, med, sdy, rod.
CL SILTY CLAY, y gry.
49 24
15.5'
9-28-67
¾"

A 24-41
1580+50
Elev. 740.8
CLAY, med, gry-y. dry
FC
W 9-28-67
8.0'
9-28-67
¾"

A 24-8
1591+60 75'R
Elev. 741.0
SILT, CLAYEY, y tan
15
FC
18 SILT, y tan, v f, sdy.
12 SHALE, wea.
12.0'
6-6-67
3"

RELOCATION 24

Sh. 8 of 9

RECORD DRAWING

OCTOBER 1975

CONTRACT NO. DACW41-74-C-0084

SYM.	DESCRIPTION	DATE	APP'D.
	Revised for "As Built" conditions	5-1-78	
	REVISIONS		

OSAGE RIVER, MISSOURI

KAYSINGER BLUFF RESERVOIR

MISSOURI STATE HIGHWAY RELOCATIONS

RELOCATION 24

LOGS OF BORINGS

In 90 sheets [redacted] Scale: as shown

CORPS OF ENGINEERS HENRY CO. BR. NO. A-3701 U. S. ARMY
KANSAS CITY DISTRICT RT. 7 APRIL 1973

Approved:
CHIEF, FOUNDATIONS & MATLS. BR.
COMPILED BY: DWN DRAWN BY: DWN CHECKED BY: PEL

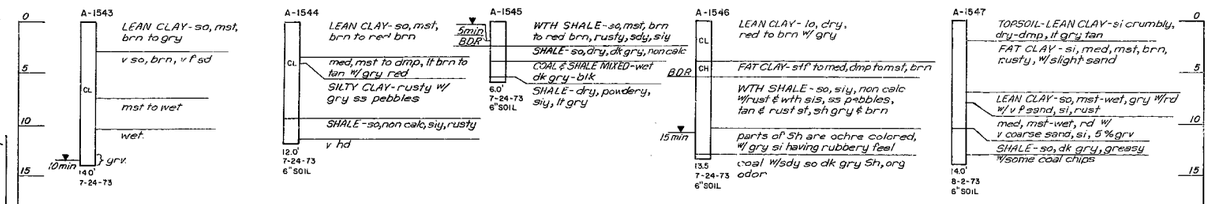
0-12-3020 FILE NO.

BUCHER & WILLIS, Consulting Engineers, Planners & Architects

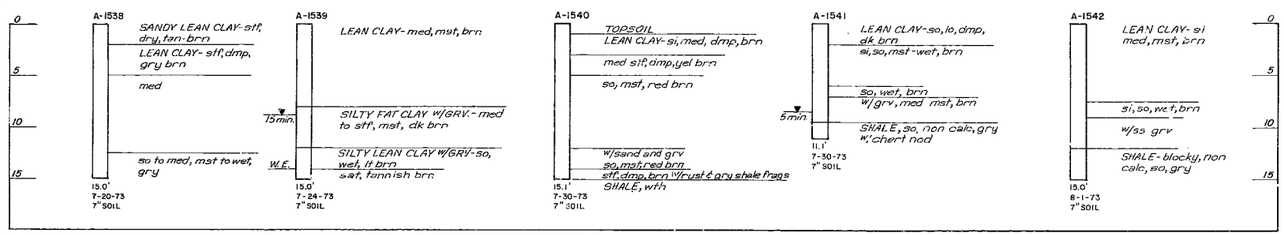
A-3701

509

862 29 TO 1

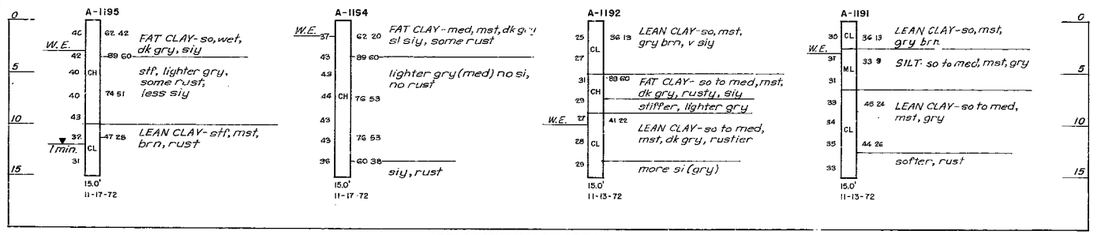


RELOCATION 12 BORROW AREA

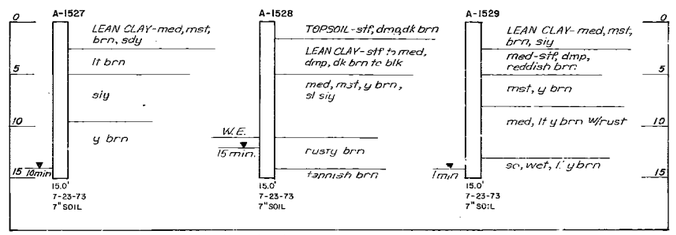


RELOCATION 23 BORROW AREA

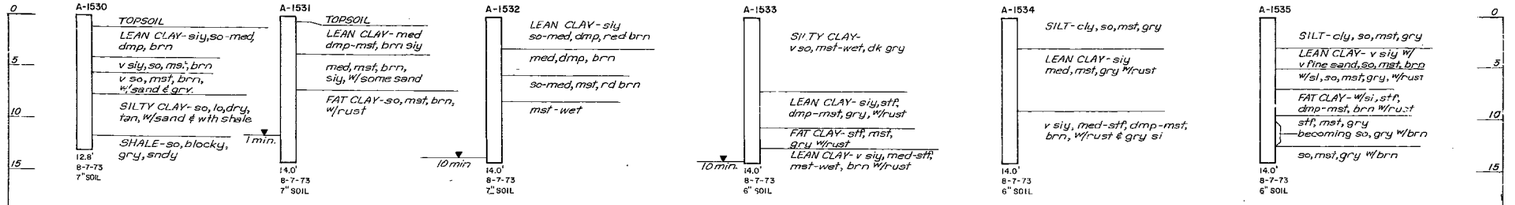
NOTES:
1. For location of borings for Relocation 23 & 24, see Sheet No. 1A
2. For location of borings for Relocation 12, see Sheet Nos. 23 & 24



RELOCATION 24 BORROW AREA



RELOCATION 24 BORROW AREA



RELOCATION 24 BORROW AREA

RECORD DRAWING

OCTOBER 1975

CONTRACT NO. DACW41-74-C-0084

SYM.	DESCRIPTION	DATE	APP'D.
	REVISIONS		
(A)	General revisions	8-24-73	
	Revised for "As Built" conditions	3-1-78	

OSAGE RIVER, MISSOURI

KAYSINGER BLUFF RESERVOIR

MISSOURI STATE HIGHWAY RELOCATIONS

RELOCATION 12, 23 & 24

LOGS OF BORINGS
BORROW AREAS

In 90 sheets [redacted] Scale: as shown

CORPS OF ENGINEERS KANSAS CITY DISTRICT — HENRY CO. — BR. NO. A-3701 — U. S. ARMY APRIL 1973

Submitted: CHIEF, FOUNDATIONS & MATLS. BR.

COMPILED BY: L.M.R. DRAWN BY: J.M.M. CHECKED BY: F.S.B.

FILE NO. 0-12-3021

Sh. 9 of 9

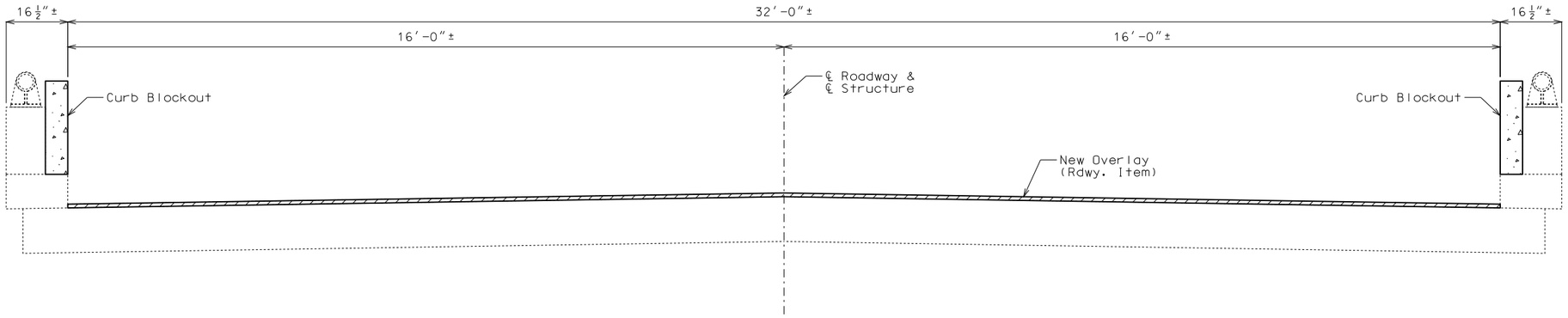
(90)

510

862 29 TO 1

SEC/SUR 15 TWP 42N RGE 27W

U.I.P. AND REHAB. EXISTING (28′-35′-35′-35′-28′) CONT. REINF. CONC. HAUNCHED SLAB



SECTION THRU SLAB

GENERAL NOTES:

Design Specifications:
2002 AASHTO LFD (17th Ed.) Standard Specifications

Design Unit Stresses:
Class B-1 Concrete f′c = 4,000 psi
Reinforcing Steel (Grade 60) fy = 60,000 psi

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

All curb blockout steel shall be epoxy coated.

Resin Anchors:
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″.

An epoxy coated #5 Grade 60 reinforcing bar shall be substituted for the 5/8″ Ø threaded rod.

Cost of furnishing and installing the resin anchor system complete-in-place will be considered completely covered by the contract unit price for Curb Blockout.

Miscellaneous:
One lane of traffic shall remain open during construction. See Roadway plans for traffic control.

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

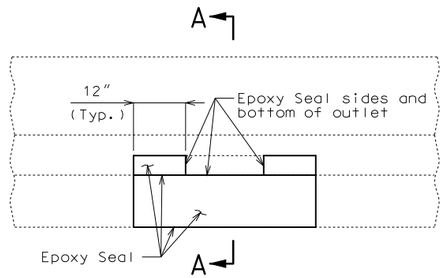
Outline of old work is indicated by light dashed lines. Heavy line indicate new work.

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

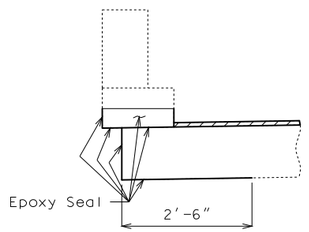
Bars bonded in old concrete not removed shall be cleanly stripped and embedded into new concrete where possible. If length is available, old bars shall extend into new concrete at least 40 diameters for plain bars and 30 diameters for deformed bars, unless otherwise noted.

Estimated Quantities

Item		Total
Curb Blockout	linear foot	353
Clean and Epoxy Seal	sq. foot	629



TYPICAL ELEVATION OF EXISTING CURB OUTLET SHOWING LIMITS OF EPOXY SEAL



SECTION A-A

REPAIRS TO BRIDGE: ROUTE 7 OVER BIG CREEK OVERFLOW

ROUTE 7 FROM RTE. B TO RTE. O
ABOUT 1.9 MILES N.W. OF RTE. O
STA. 1532+58.25± (Match Existing)

STD. 606.22
STD. 617.10

Detailed Aug. 2015
Checked Aug. 2015

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

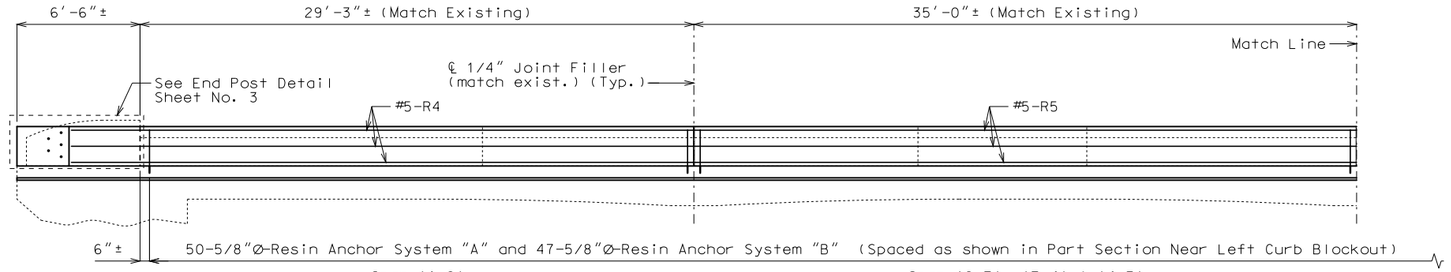
STATE OF MISSOURI
BRYAN A. HARTNAGEL
NUMBER PE-2002024473
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

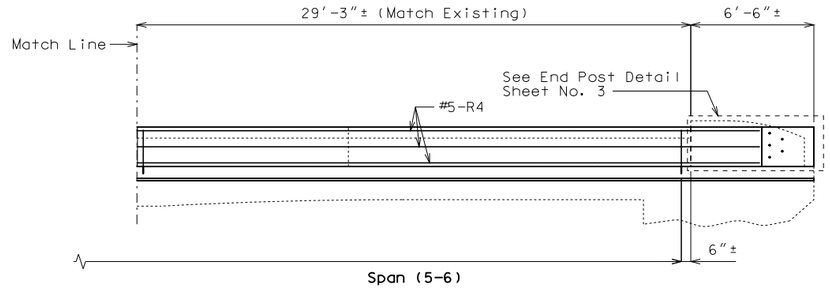
DATE PREPARED 8/17/2015
ROUTE 7 | STATE MO
DISTRICT BR | SHEET NO. 1
COUNTY HENRY
JOB NO. J7P3047
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A37011

DATE | DESCRIPTION

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

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

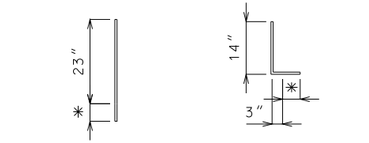




SECTION NEAR LEFT CURB BLOCKOUT
(Right curb blockout similar)

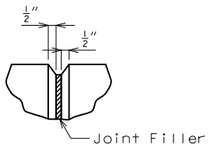
Note: Longitudinal dimensions shown are along grade and are taken at top outside edge of parapet.

Bridge rail not shown for clarity.

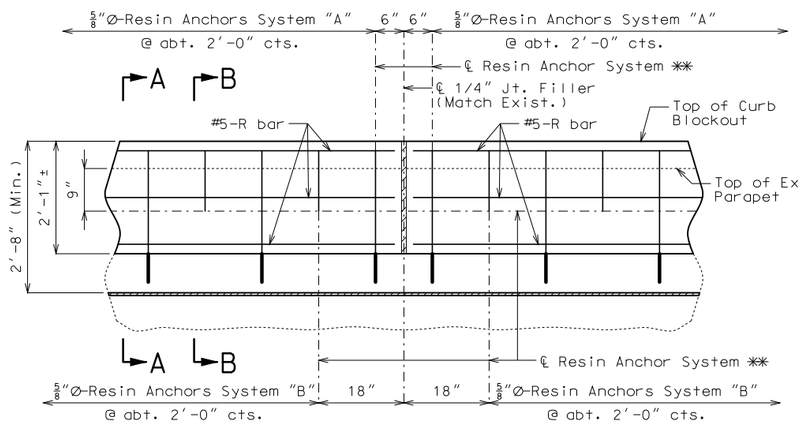


✳ Use manufacturer's embedment length. (5″ minimum embedment)

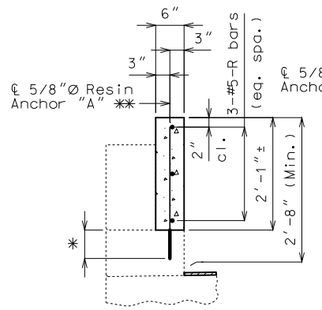
DETAILS OF RESIN ANCHORS



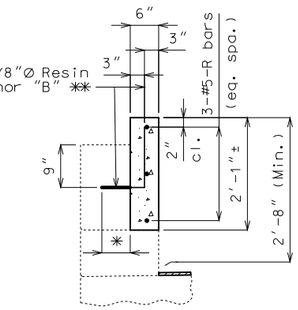
FILLED JOINT DETAIL



PART SECTION NEAR LEFT CURB BLOCKOUT



SECTION A-A



SECTION B-B

DETAILS OF LEFT CURB BLOCKOUT

Notes:
Concrete in curb blockout shall be Class B-1 with f′c = 4000 psi.

Measurement of curb blockout is to the nearest linear foot, measured at the top outside edge of parapet from end of wing to end of wing. (Match existing curb and parapet)

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, complete in place, will be included in the contract unit price for Curb Blockout per linear foot.

Cost of any concrete curb or parapet repair will be included in the contract unit price for Curb Blockout.

All reinforcement shall be epoxy coated.

✳✳ Shift resin anchors where necessary to clear existing anchor bolts for bridge rail, miss curb outlets (if present) and clear existing reinforcement.

Use a minimum lap of 2′-11″ for #5 horizontal curb blockout bars.

Concrete traffic barrier delineators shall be placed on top of the curb blockout similarly as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Delineators shall have retroreflective sheeting on side facing oncoming traffic only. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for "Curb Blockout".

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″.

An epoxy coated #5 Grade 60 reinforcing bar shall be substituted for the 5/8″Ø threaded rod.

Detailed Aug. 2015
Checked Aug. 2015

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

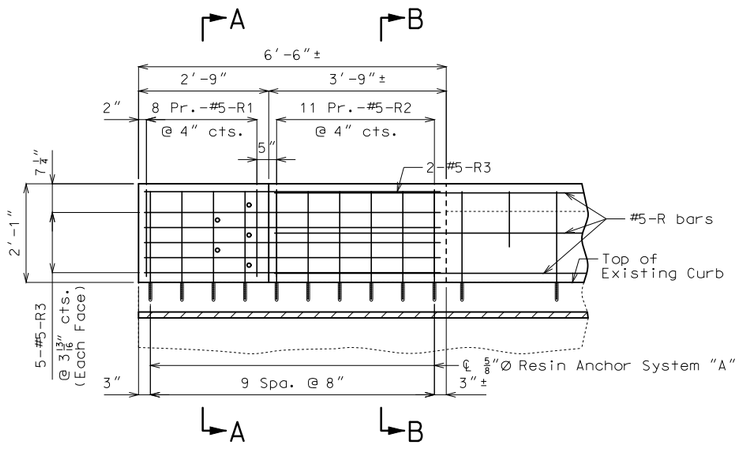
STATE OF MISSOURI
BRYAN A. HARTNAGEL
NUMBER PE-2002024473
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 8/17/2015
ROUTE 7 | STATE MO
DISTRICT BR | SHEET NO. 2
COUNTY HENRY
JOB NO. J7P3047
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A37011

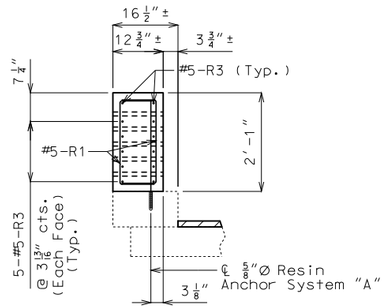
DESCRIPTION | DATE

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

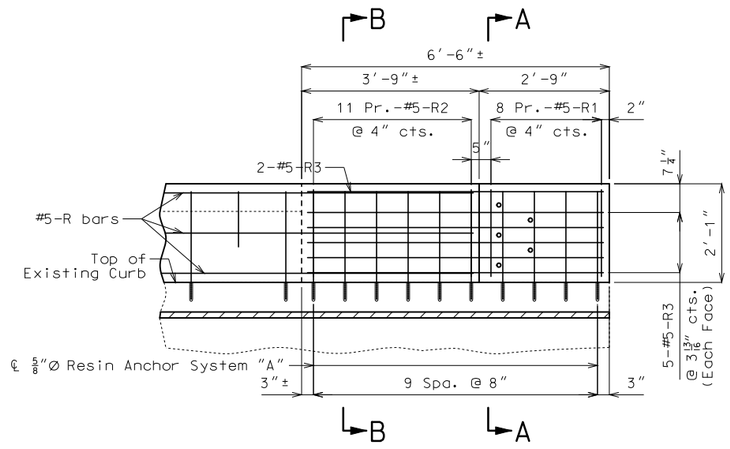
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



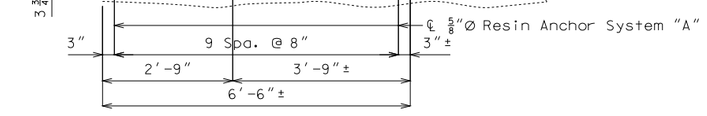
ELEVATION SHOWING LEFT END POST
AT EXISTING END BENT NO. 1
(Right End Post at End Bent No. 1 similar)



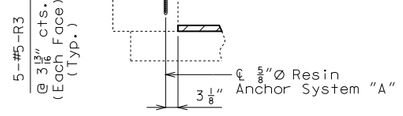
SECTION A-A



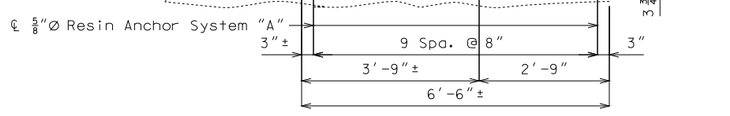
ELEVATION SHOWING LEFT END POST
AT EXISTING END BENT NO. 6
(Right End Post at End Bent No. 6 similar)



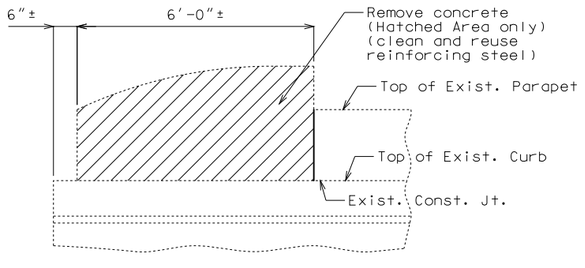
PLAN SHOWING LEFT END POST
AT EXISTING END BENT NO. 1



SECTION B-B



PLAN SHOWING LEFT END POST
AT EXISTING END BENT NO. 6



PART ELEVATION SHOWING END POST
CONCRETE REMOVAL

Note:

Cost of removing existing end posts will be considered completely covered by the contract unit price for Curb Blockout.

Notes:

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, complete in place, will be included in the contract unit price for Curb Blockout per linear foot.

Cost of any concrete curb or parapet repair will be included in the contract unit price for Curb Blockout.

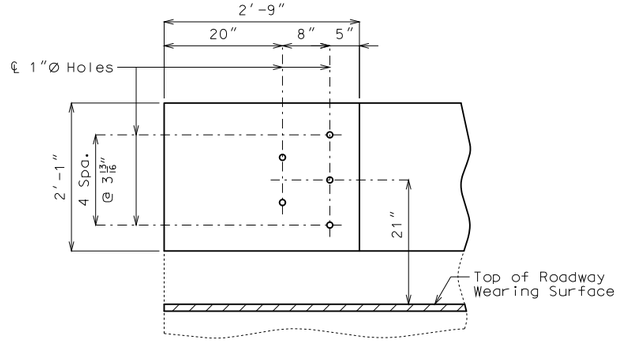
Aluminum railing is not shown for clarity.

All reinforcement shall be epoxy coated.

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".

An epoxy coated #5 Grade 60 reinforcing bar shall be substituted for the 5/8"Ø threaded rod.



DETAILS OF GUARD RAIL
ATTACHMENT

DETAILS OF END POST AT END BENTS

Detailed Aug. 2015
Checked Aug. 2015

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

STATE OF MISSOURI
BRYAN A. HARTNAGEL
NUMBER PE-2002024473
PROFESSIONAL ENGINEER
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DATE PREPARED 8/17/2015

ROUTE	STATE
7	MO
DISTRICT	SHEET NO.
BR	3

COUNTY HENRY

JOB NO. J7P3047

CONTRACT ID.

PROJECT NO.

BRIDGE NO. A37011

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

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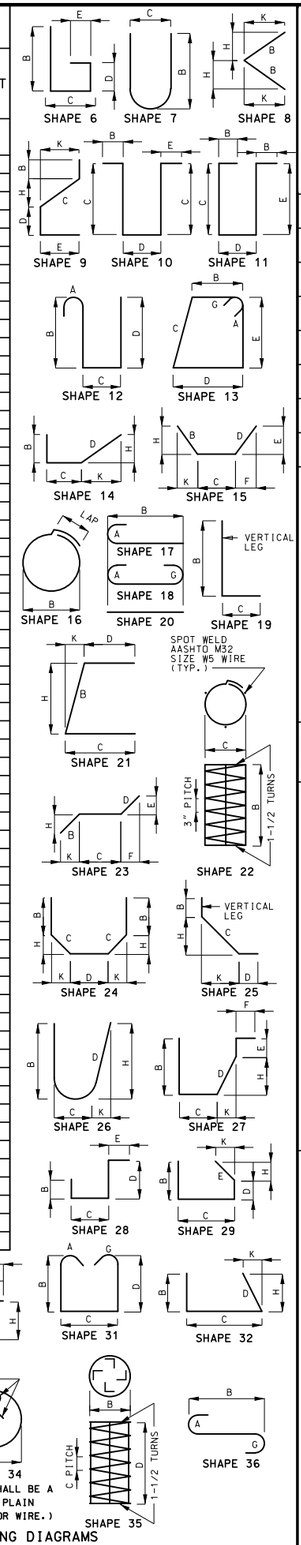
BILL OF REINFORCING STEEL

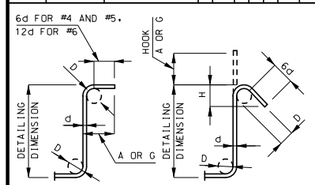
NO. REQ'D.	MARK NO. SIZE	MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	H FT.	H IN.	K FT.	K IN.	NOMINAL LENGTH FT.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT.	ACTUAL LENGTH IN.	WEIGHT LBS.
			BLOCKOUT																									
64	5	R1	BLOCKOUT	E	10	S						9.750		22.000										3	6	3	3	217
88	5	R2	BLOCKOUT	E	10	S						13.500		22.000										4	1	3	11	359
48	5	R3	BLOCKOUT	E	20					6	3.000													6	3	6	3	313
12	5	R4	BLOCKOUT	E	20					32	9.000													32	9	32	9	410
18	5	R5	BLOCKOUT	E	20					34	9.000													34	9	34	9	652
			TOTALS																									
	5			E																								1951
			TOTAL																									0
			TOTAL	E																								1951

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.

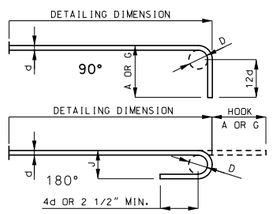


BENDING DIAGRAMS



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

STATE OF MISSOURI
BRYAN A HARTNAGEL
NUMBER PE-2002024473
PROFESSIONAL ENGINEER
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DATE PREPARED 8/17/2015
ROUTE 7 | STATE MO
DISTRICT BR | SHEET NO. 4
COUNTY HENRY
JOB NO. J7P3047
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A37011

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Detailed Aug. 2015
Checked Aug. 2015

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