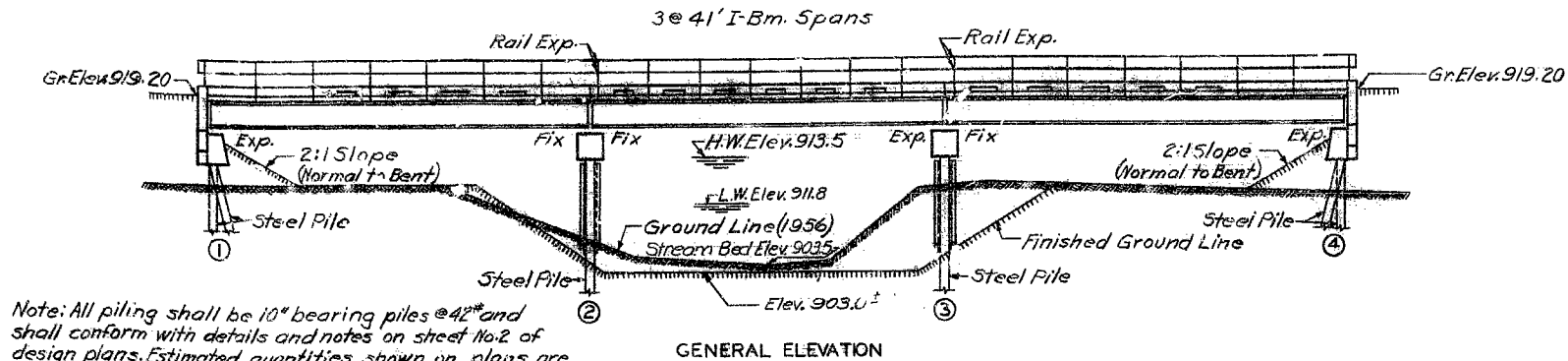
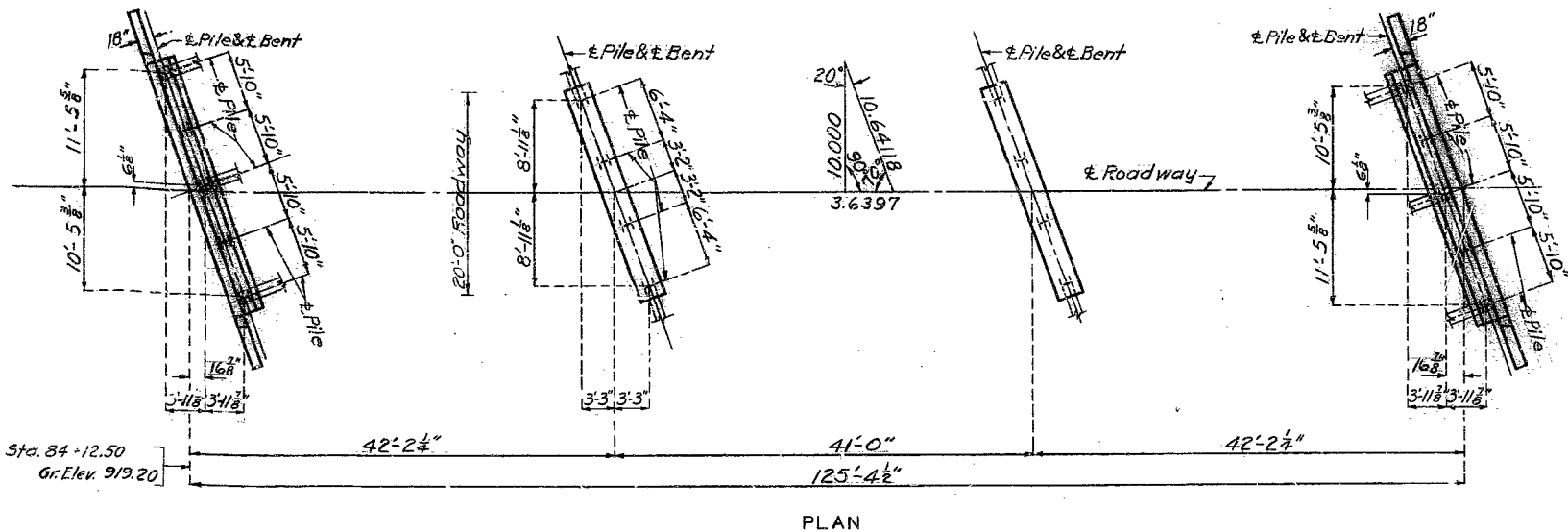


MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	20	



Note: All piling shall be 10" bearing piles @ 42" and shall conform with details and notes on sheet No. 2 of design plans. Estimated quantities shown on plans are based on the following lengths: 9 @ 50'-0" and 9 @ 45'-0". These indicated lengths are approximate only. Proper lengths to give required bearing and/or penetration will be authorized by the Engineer. All piling shall be driven to or into solid rock, boulders, shale, or cemented gravel, or to not less than full length authorized and to sustain a load of at least 37 tons per pile. A gravity hammer may be used for driving piles if desired.



GENERAL NOTES:

Design Specifications: AA.S.H.O. 1953.  
Loading: H10-44.  
Structural Steel Stress: 18,000 #/sq. in.  
Reinforcing Steel Stress: 20,000 #/sq. in.  
Concrete Class "B" Stress: 1200 #/sq. in.  
All Concrete shall be Class "B".  
Rivets 3/4" holes 1/2" except in handrail where rivets shall be 5/8" holes 1/2".  
Field connections shall be riveted except as noted in handrail details or, if the Contractor desires to eliminate all field riveting on this project, he may use machine bolts except for the 3/4" rivet head bolts specified for handrail. Heads and nuts of machine bolts shall be American Standard Regular.  
Paint: Shop, none; Field contact surfaces of bolted field connections, one coat of red lead and surfaces inaccessible after erection three coats of red lead. No other paint to be applied by Contractor except as noted for steel piles. Red lead required shall be furnished by Contractor. Payment for cleaning and painting such surfaces will be included in unit price bid for Fabricated Structural Steel.  
Where joint filler is specified on the plans it shall conform with the requirements for Premoulded Material for Filler as given in Section 59-22D of the Standard Specifications. See Section 22-9C of Standard Specifications for required painting of steel piles. Qualification of welding operators will be required.

COMPLETE BILL OF REINFORCING STEEL

No.	Size	Length	Mark	Location	Bending Sketches & Cutting Diagrams
<b>Superstructure</b>					
184	#5	21'-9"	C1	Curb	<p>16 1/2" 3'-6 3/4"</p> <p>14-53 CUT 28</p>
12	#6	21'-9"	C2	"	
12	#6	22'-0"	C3	"	
12	#6	21'-6"	C4	"	
412	#4	22'-0"	S1	Slab	<p>3'-6 3/4" 21'-3 1/4"</p> <p>25'-0"</p> <p>14-53 CUT 28</p>
128	#4	22'-6"	S2	"	
28	#4	25'-0"	S3	"	
52	#4	22'-9"	S4	"	
8	#4	23'-6"	S5	"	<p>3'-1 1/4" 19'-7 1/4"</p> <p>22'-9"</p> <p>13-54 CUT 52</p>
64	#4	21'-9"	S6	"	
<b>End Bents No. 1 &amp; No. 4</b>					
16	#6	18'-3"	H1	Beam	<p>2'-3" U2</p> <p>9'-6" C1</p> <p>2'-2 1/2" U4</p> <p>CI-U2-U4</p>
8	#6	26'-3"	H2	"	
4	#6	26'-6"	H3	Br. wall	
1	#8	9'-6"	H4	Wing	
4	#6	8'-9"	H5	"	<p>2'-10" 7'-7 1/2" T1</p> <p>5'-1" 3'-9 1/4" T2</p> <p>2'-10" 2'-10" 2'-10" 2'-10"</p> <p>2'-10" 2'-10" 2'-10" 2'-10"</p> <p>2'-10" 2'-10" 2'-10" 2'-10"</p> <p>2'-10" 2'-10" 2'-10" 2'-10"</p> <p>2'-10" 2'-10" 2'-10" 2'-10"</p> <p>2'-10" 2'-10" 2'-10" 2'-10"</p> <p>2'-10" 2'-10" 2'-10" 2'-10"</p> <p>2'-10" 2'-10" 2'-10" 2'-10"</p> <p>2'-10" 2'-10" 2'-10" 2'-10"</p> <p>2'-10" 2'-10" 2'-10" 2'-10"</p> <p>2'-10" 2'-10" 2'-10" 2'-10"</p> <p>2'-10" 2'-10" 2'-10" 2'-10"</p> <p>2'-10" 2'-10" 2'-10" 2'-10"</p> <p>2'-10" 2'-10" 2'-10" 2'-10"</p> <p>2'-10" 2'-10" 2'-10" 2'-10"</p> <p>2'-10" 2'-10" 2'-10" 2'-10"</p> <p>2'-10" 2'-10" 2'-10" 2'-10"</p> <p>2'-10" 2'-10" 2'-10" 2'-10"</p> <p>2'-10" 2'-10" 2'-10" 2'-10"</p> <p>2'-10" 2'-10" 2'-10" 2'-10"</p> <p>2'-10" 2'-10" 2'-10" 2'-10"</p> <p>2'-10" 2'-10" 2'-10" 2'-10"</p> <p>2'-10" 2'-10" 2'-10" 2'-10"</p> <p>2'-10" 2'-10" 2'-10" 2'-10"</p> <p>2'-10" 2'-10" 2'-10" 2'-10"</p> <p>2'-10" 2'-10" 2'-10" 2'-10"</p> <p>2'-10" 2'-10" 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ESTIMATED QUANTITIES

Item	Substr.	Superstr.	Total
Class I Excavation for Structures	Cu. Yds.	10	10
Class B Concrete	Cu. Yds.	34.0	60.2
Fabricated Structural Steel	Lbs.	17,620	19,020
Gray Iron Alloy Castings	Lbs.	1,290	1,290
Reinforcing Steel	Lbs.	3,440	15,440
Steel Pile in Place	Lin. Ft.	801	801
Steel Pile Cut-Offs	Lin. Ft.	34	34

All excavation for bridge will be paid for as Class I Excavation for Structures. Estimated Weight of Fabricated Structural Steel includes weight of angles required for Steel Pile bents.

B.M. #8 Elev. 910.71 N.I.R. 24" Pin Oak 40' L. Sta. 84+00.

BRIDGE OVER HOWELL CREEK

STATE ROAD FROM RTE. 63 EAST OF WEST PLAINS EASTERLY ABOUT 2.4 MILES E. OF WEST PLAINS  
PROJECT NO. S-1952 (IN SEC. 4 (S22)) STA. 84+12.5

HOWELL COUNTY

SUBMITTED BY J. A. Williams DATE 2-5-1959  
APPROVED BY Res. M. Wharton DATE 2-5-1959

ENGINEER

STDC-1007  
N-497

Drawn Feb. 1958 by K.P.S.  
Checked Dec. 1958 by M.E.L.

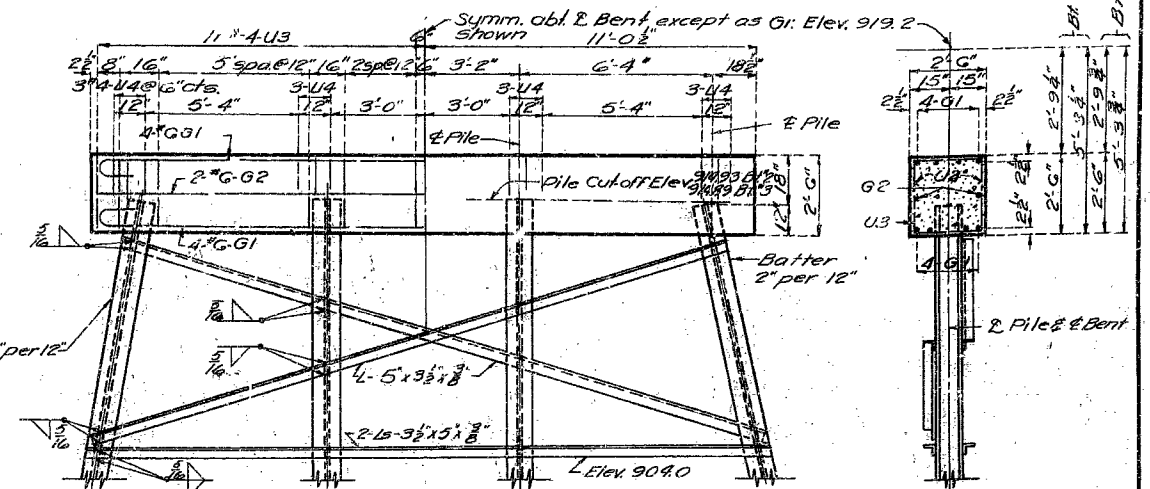
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 1 of 4

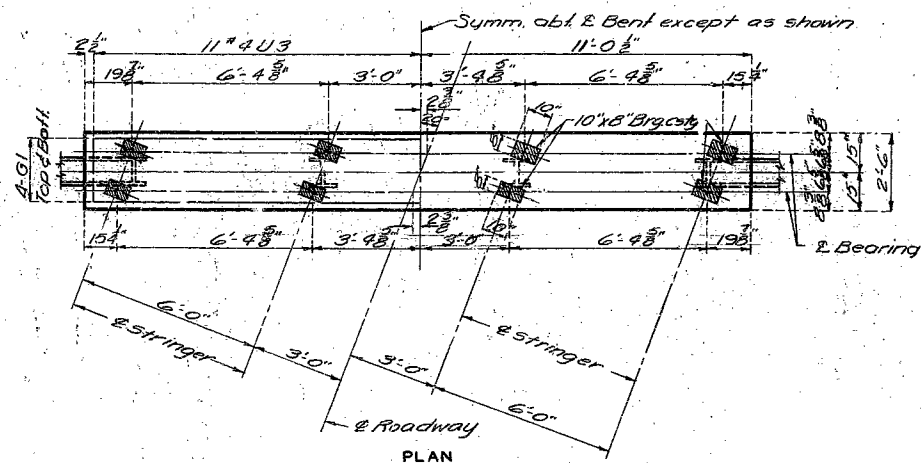
SEE FINAL PLANS BROWN-LINES

## 2

REF: 3455



SECTION AT C



DETAILS OF INTERMEDIATE BENT NO. 2&3

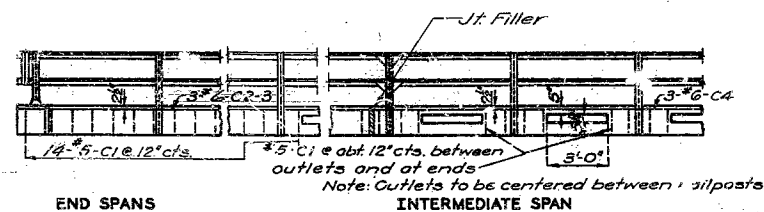
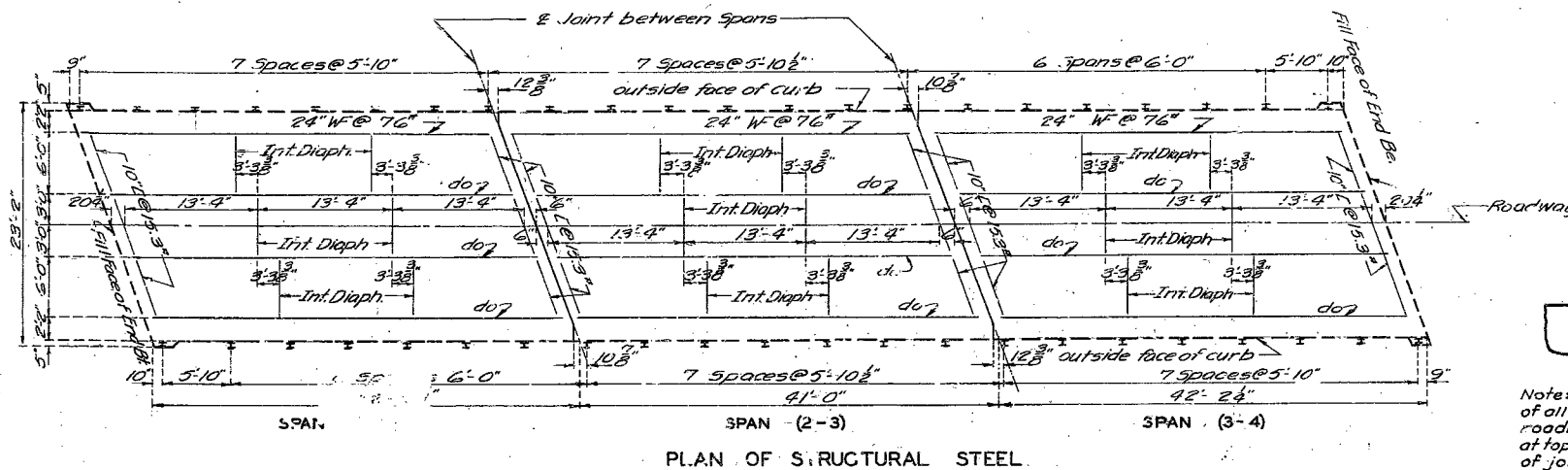
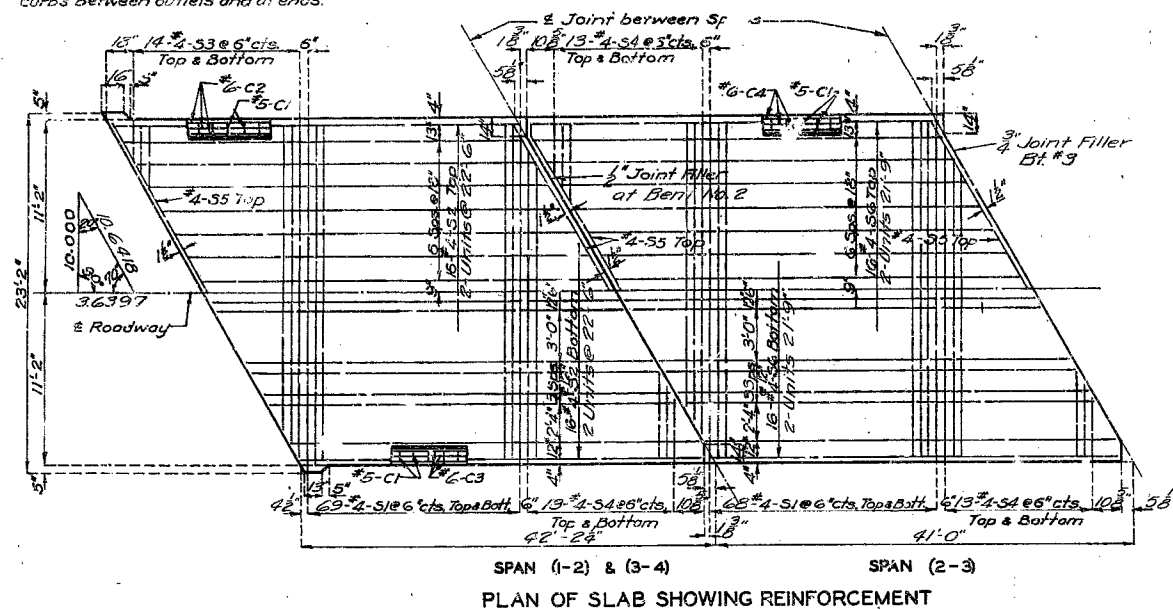
REF: 3455

N-497

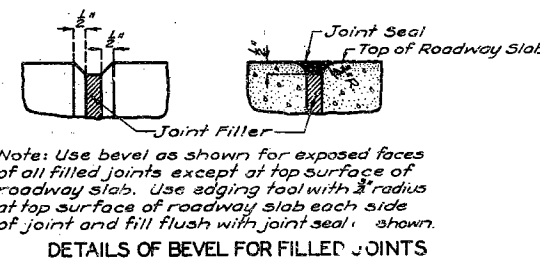
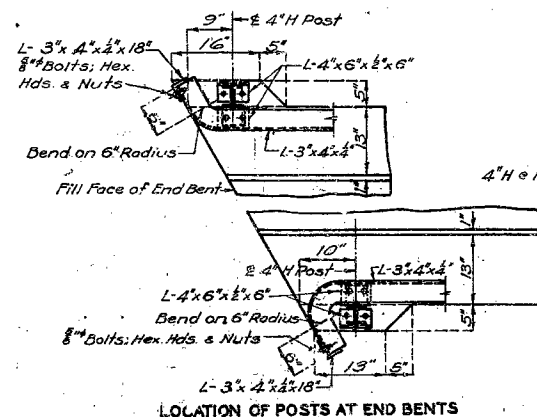
# MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISC. YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	22	

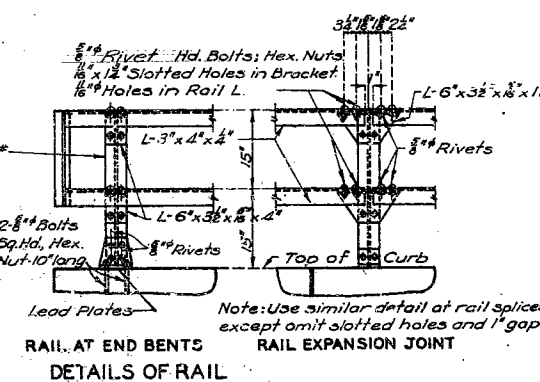
Note: Space dowel bars C1 at approximately 12" centers in curbs between outlets and at ends.



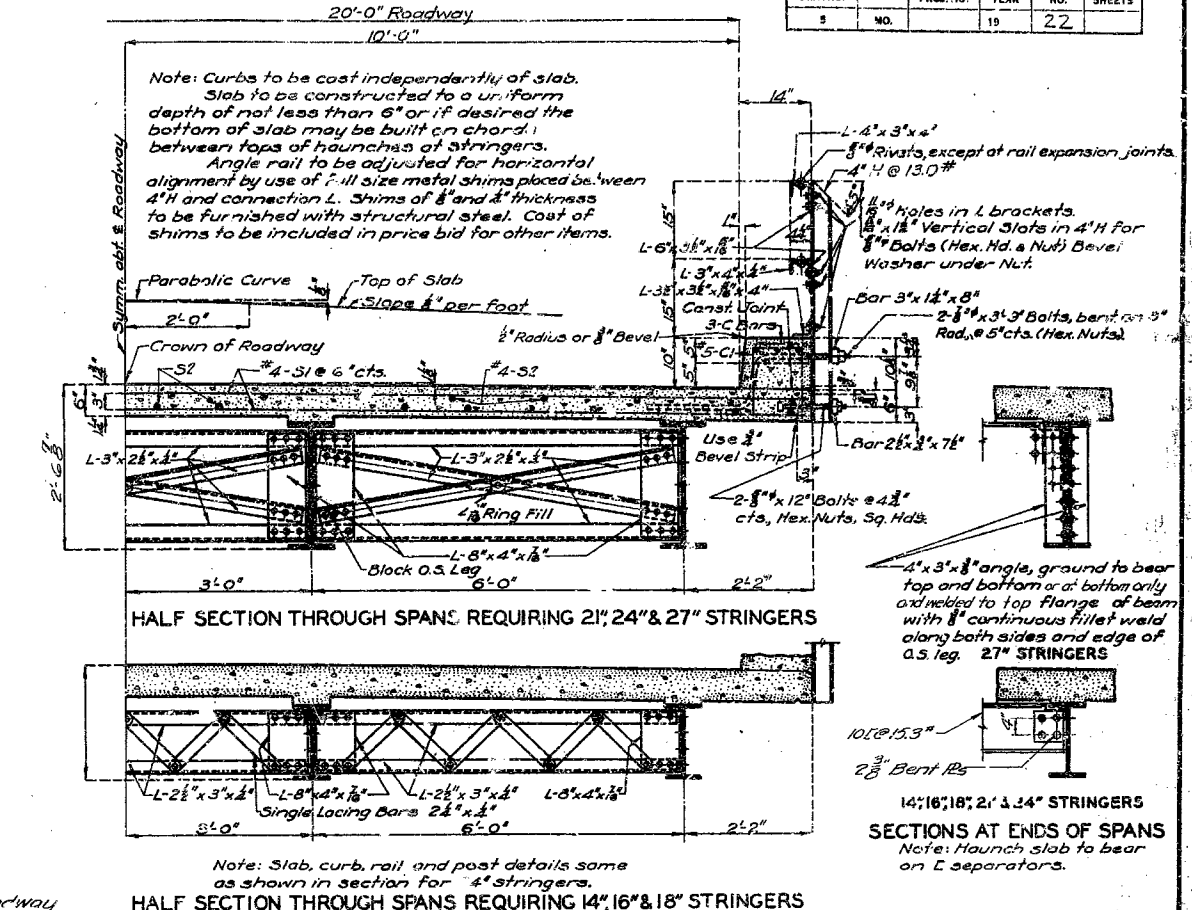
Note: Top of curbs under end posts shall be finished to a smooth surface parallel to grade. Not less than or nor more than four soft lead plates of 1/2\"/>



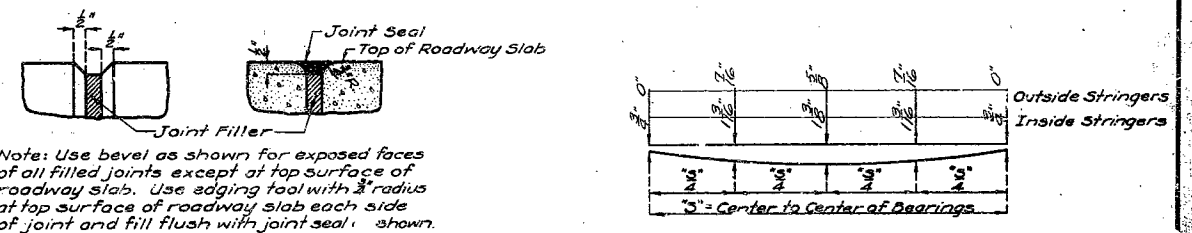
Note: Use bevel as shown for exposed faces of all filled joints except at top surface of roadway slab. Use adging tool with 3/8\"/>



Note: Use similar detail at rail splices except omit slotted holes and 1\"/>

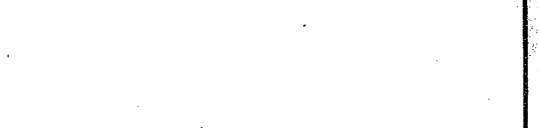


Note: Slab, curb, rail and post details same as shown in section for 4\"/>



Note: Slab shall be built parallel to grade and to a minimum thickness of 6\"/>

SLAB HAUNCHING DIAGRAM



BRIDGE OVER HOWELL CREEK  
STATE ROAD FROM RTE. 63 EAST OF WEST PLAINS EASTERLY  
ABOUT 2.4 MILES E. OF WEST PLAINS  
PROJECT NO. S-1952 (3) SEC. A (S2) STA. 84 + 12.5  
HOWELL COUNTY

Assembled Dec. 1957 by A.M. & J.C.F.  
Checked Dec. 1955 by J.C.F.

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

Sheet No. 3 of 4.

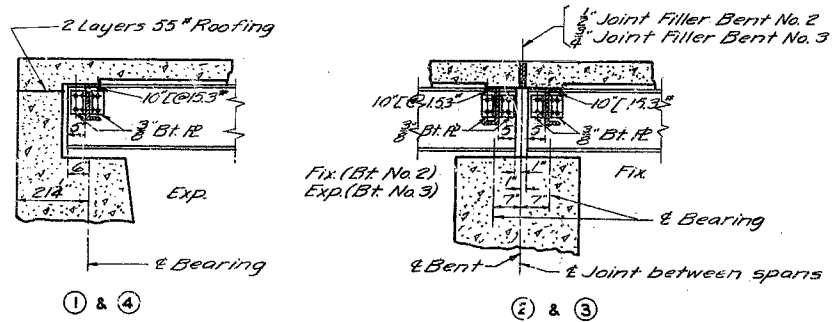
NO CONSTRUCTION CHANGES

N-497

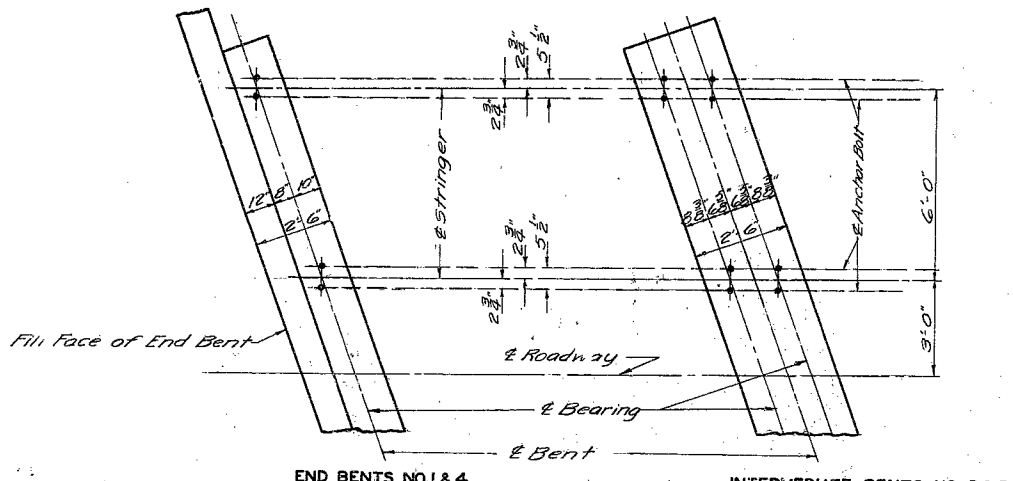
R. T. 20-H-10  
Rev. Feb. 1955

# MISSOURI STATE HIGHWAY DEPARTMENT

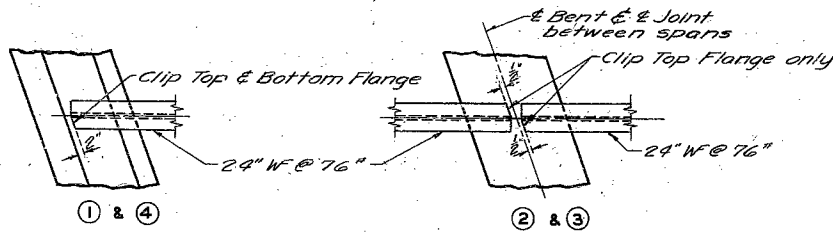
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	10		19	23	



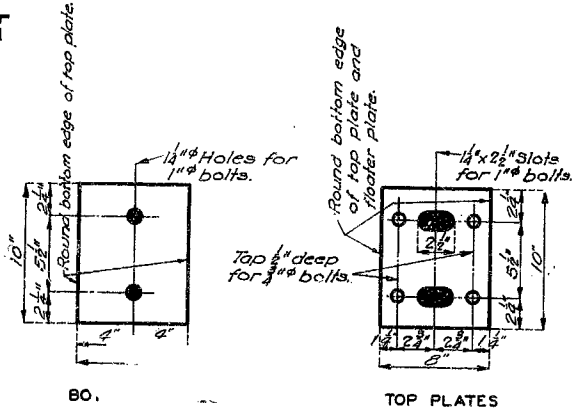
PART LONGITUDINAL SECTION



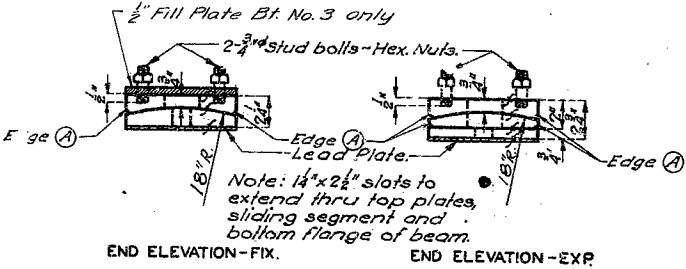
PART ANCHOR BOLT PLAN



PART PLAN OF STRINGERS



Note: Plan of Fill Plates same as plan of Top casting.



Required: 12 sets 8' x 10" Each set consists of 5 plates each.  
4- 8' x 10' x 1/2" Fill Plates

## GENERAL NOTES:

- Finish all surfaces marked f.
- Bearing castings shall be either Cast Steel or Gray Iron Alloy, but payment will be made as Gray Iron Alloy.
- Anchor bolts to be 1" swaged bolts no heads, or nuts and shall extend 10" into concrete.
- Top of Anchor Bolts shall be above the top of castings, but not higher than 4" below top surface of bottom flange of beam.
- All bolts, nuts and fill plates to be paid for as structural steel.
- All lead plates shall weigh 8 1/2 lbs. (Approximately 8" thick) Cost of lead plates shall be included in price bid for other items.
- Edge A to be rounded 1/4" to 3/4" Radius.
- Material for Fill Plates shall be fabricated Structural Steel.

## BRIDGE OVER HOWELL CREEK

STATE ROAD FROM RTE. 63 EAST OF WEST PLAINS EASTERLY  
ABOUT 2.4 MILES E. OF WEST PLAINS  
PROJECT NO. S-1952(1) SEC. A (C22) STA. 84+12.5

HOWELL COUNTY

FINISHED

FINISHED

N-497

Assembled Jan. 1957 by: A.M.E. J.C.F.  
Checked Dec. 1958 by M.E.L.

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

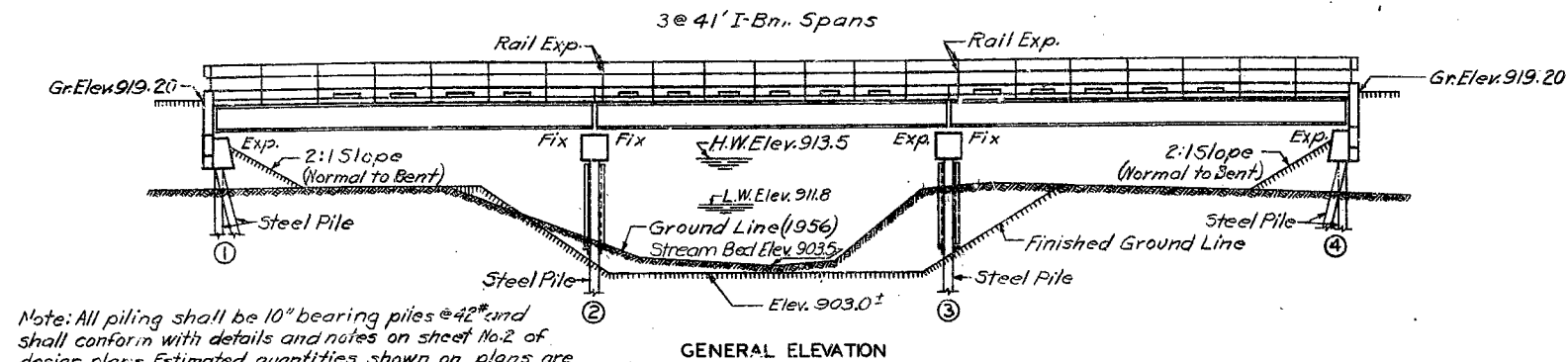
Sheet No. 4 of 4.

NO CONSTRUCTION CHANGES

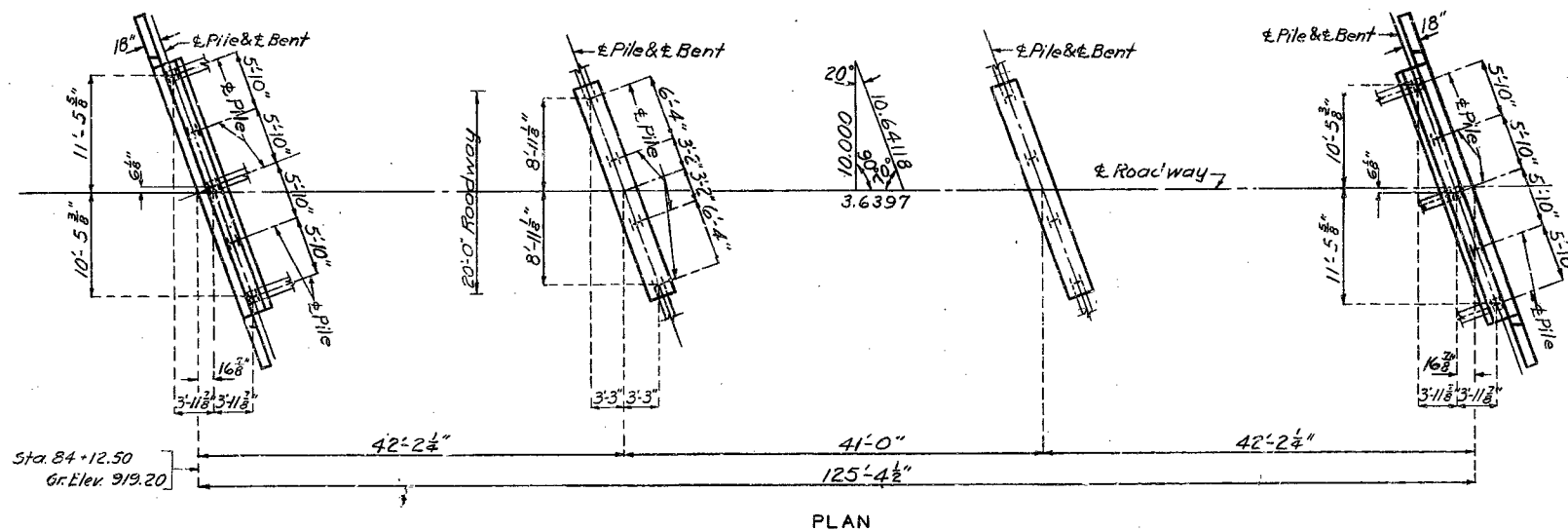
93

# MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	20	



Note: All piling shall be 10" bearing piles @ 42" and shall conform with details and notes on sheet No. 2 of design plans. Estimated quantities shown on plans are based on the following lengths: 7 @ 50'-0" and 9 @ 45'-0". These indicated lengths are approximate only. Proper lengths to give required bearing and/or penetration will be authorized by the Engineer. All piling shall be driven to or into solid rock, boulders, shale, or cemented gravel, or to not less than full length authorized and to sustain a load of at least 37 tons per pile. A gravity hammer may be used for driving piles if desired.



## GENERAL NOTES:

Design Specifications: AA.S.H.O. 1953.  
Loading: H10-44.  
Structural Steel Stress: 18,000  $\psi$ /in.  
Reinforcing Steel Stress: 20,000  $\psi$ /in.  
Concrete Class "B" Stress: 1200  $\psi$ /in.  
All Concrete shall be Class "B".  
Rivets  $\frac{3}{4}$ " holes  $\frac{13}{16}$ " except in handrail where rivets shall be  $\frac{5}{8}$ " holes  $\frac{11}{16}$ ".  
Field connections shall be riveted except as noted in handrail details or, if the Contractor desires to eliminate all field riveting on this project, he may use machine bolts except for the  $\frac{3}{4}$ " rivet head bolts specified for handrail. Heads and nuts of machine bolts shall be American Standard Regular.  
Paint: Shop, none; Field contact surfaces of bolted field connections, one coat of red lead and surfaces inaccessible after erection three coats of red lead. No other paint to be applied by Contractor except as noted for steel piles. Red lead required shall be furnished by Contractor. Payment for cleaning and painting such surfaces will be included in unit price bid for Fabricated Structural Steel.  
Where joint filler is specified on the plans it shall conform with the requirements for Premoulded Material for Filler as given in Section 59-22D of the Standard Specifications. See Section 22-9C of Standard Specifications for required painting of steel piles. Qualification of welding operators will be required.

## COMPLETE BILL OF REINFORCING STEEL

No.	Size	Length	Mark	Location	Bending Sketches & Cutting Diagrams
<b>Superstructure</b>					
184	#5	2'-9"	C1	Curb	16 1/2" 3'-6 3/4"
12	#6	21'-9"	C2	"	16 1/2" 3'-1 1/2"
12	#6	22'-0"	C3	"	10 1/2" 2'-2"
12	#6	21'-6"	C4	"	2'-2 1/4"
412	#4	22'-0"	S1	Slab	3'-6 3/4" 21'-5 1/4"
128	#4	22'-6"	S2	"	25'-0"
28	#4	25'-0"	S3	"	14-53 CUT 28
52	#4	22'-9"	S4	"	13-54 CUT 52
8	#4	23'-6"	S5	"	5-V2 CUT 10
64	#4	21'-9"	S6	"	U3
<b>End Bents No. 1 &amp; No. 4</b>					
16	#6	28'-3"	H1	Beam	2'-3" U2
8	#4	26'-3"	H2	"	9 1/2" C1
4	#6	26'-6"	H3	Bk. wall	2'-2 1/4" U4
12	#6	9'-6"	H4	Wing	2'-3"
4	#6	8'-9"	H5	"	2'-8 1/4"
8	#6	12'-9"	T1	Wing	2'-10" 7'-7 1/2" T1
8	#6	10'-9"	T2	"	5'-1" 3'-9 1/2" T2
52	#4	11'-3"	U1	Beam	2'-7 1/2"
16	#4	3'-3"	U2	"	2'-8 1/4"
100	#5	4'-0"	V1	Bk. wall	6"
10	#4	7'-9"	V2	"	25'-8" H1
4	#4	6'-3"	V3	"	21'-2" G1
<b>Int. Bents No. 2 &amp; No. 3</b>					
16	#6	23'-9"	G1	Beam	6"
4	#6	21'-9"	G2	"	25'-8" H1
24	#4	3'-3"	U4	Beam	21'-2" G1
44	#4	9'-9"	U3	"	G1-H1

QUANTITIES			
Item	Substr.	Superstr.	Total
Class I Excavation for Structures	Cu. Yds.	0	0
Class "B" Concrete	Cu. Yds.	34.0	60.2
Fabricated Structural Steel	Lbs.	51840	51840
Gray Iron Alloy Castings	Lbs.	1280	1280
Reinforcing Steel	Lbs.	3440	12000
Steel Pile in Place	Lin. Ft.	843	843
Steel Pile Cut-Offs	Lin. Ft.	60	60

All excavation for bridge will be paid for as Class I Excavation for Structures. Estimated weight of fabricated structural steel includes weight of angles required for steel pile bents.

B.M. #8 Elev.

## BRIDGE OVER HOWELL CREEK

STATE ROAD FROM RTE. 63 EAST OF WEST PLAINS EASTERLY ABOUT 2.4 MILES E. OF WEST PLAINS  
PROJECT NO. 5-1952 (1) SEC. A (SZZ) STA. 84+12.5

HOWELL COUNTY

SUBMITTED BY J. A. Williams DATE 2-5-1959  
APPROVED BY Geo. M. Watter DATE 2-5-1959

STD. C-1007  
N-497

Drawn Feb. 1958 by KRS.  
Checked Dec. 1958 by M.E.L.

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

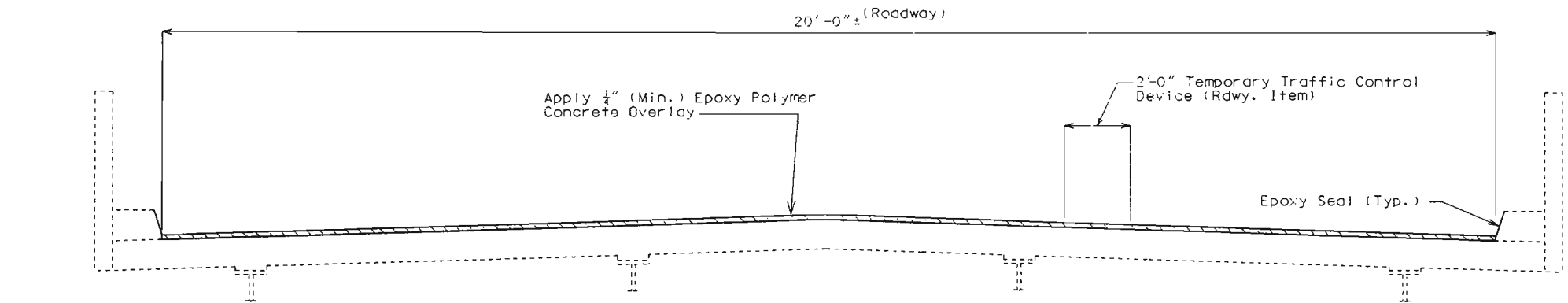
Sheet No. 1A of 1.

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION  
U.I.P. EXISTING (41') (41') (41') I-BEAM SPANS

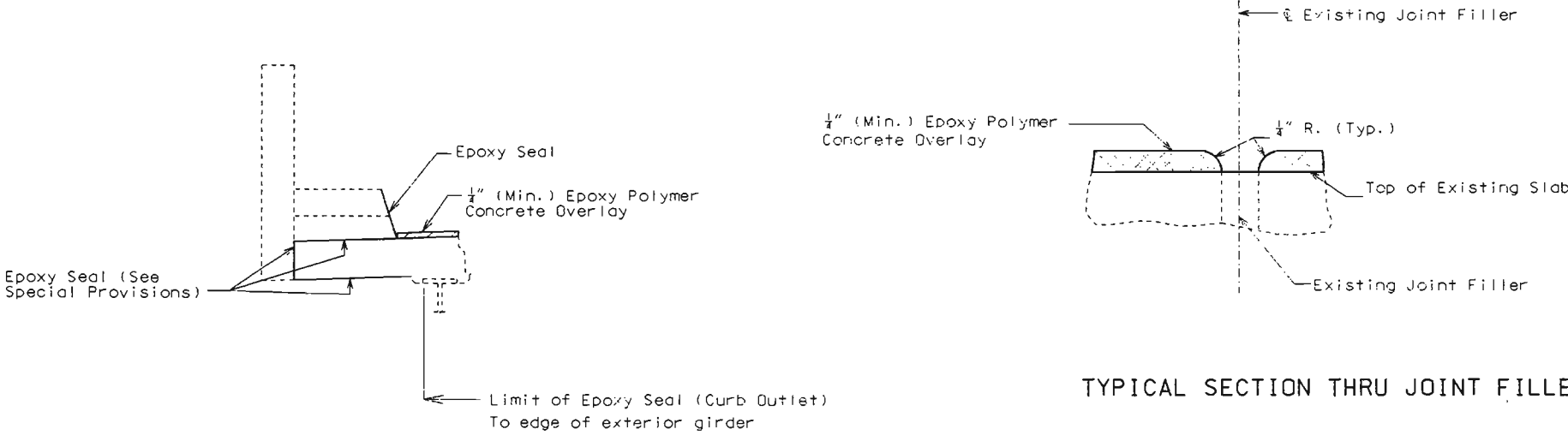
State	Proj. No.	Sheet No.
MO		81
SEC/SUR 36	TWP 24N	RGE 8W

GENERAL NOTES:

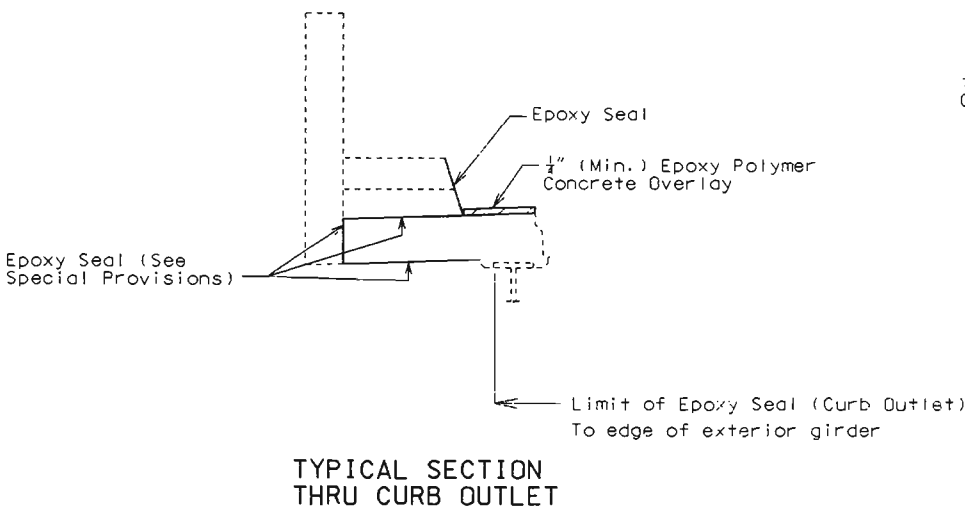
- Design Specifications:  
2002 - AASHTO 17th Edition
- Traffic:  
Traffic over structure to be maintained during construction.  
(See roadway plans for traffic control)
- Miscellaneous:  
In order to maintain grade and a minimum thickness of overlay as shown on plans it may be necessary to use additional quantities of overlay at various locations throughout the structure. No payment will be allowed for additional labor, materials or equipment for variations in thickness of overlay.
- Outline of old work is indicated by dashed lines, heavy lines indicate new work.
- Contractor shall verify all dimensions in field before ordering new materials.
- All exposed edges of overlay shall have a 1/4" radius, unless otherwise noted.
- The contractor shall exercise care to ensure spillage over joint edges is prevented and that a neat line is obtained along any terminating edge of the epoxy polymer concrete.



SECTION THRU SLAB

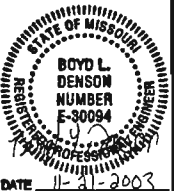


TYPICAL SECTION THRU JOINT FILLER



TYPICAL SECTION THRU CURB OUTLET

ESTIMATED QUANTITIES		
ITEM		TOTAL
Epoxy Polymer Concrete Overlay	sq. yard	279



REPAIRS TO BRIDGE OVER HOWELL CREEK

STATE ROAD FROM RTE. 63 EAST OF WEST PLAINS  
ABOUT 2.4 MILES EAST OF WEST PLAINS  
PROJECT NO. STA. 84+12.50± (Match Existing)  
JOB NO. J9M0036 RTE. ZZ

Designed Oct. 2003  
Detailed Oct. 2003  
Checked Nov. 2003

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

Sheet No. 1 of 1

Date: 11/24/03

HOWELL COUNTY N04971

T:\br-proj\robinc\J9M0036\N04971\AN04971\_SPECSHEET.dgn 09:26:13 AM 11/21/2003

Contract I.D. 040521-901



MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION  
U.I.P. EXISTING (41') (41') (41') I-BEAM SPANS

State	Proj. No.	Sheet No.
MO	J9M0036	B1
SEC/SUR 36	TWP 24N	RGE 8W

GENERAL NOTES:

- Design Specifications:  
2002 - AASHTO 17th Edition
- Traffic:  
Traffic over structure to be maintained during construction.  
(See roadway plans for traffic control)
- Miscellaneous:

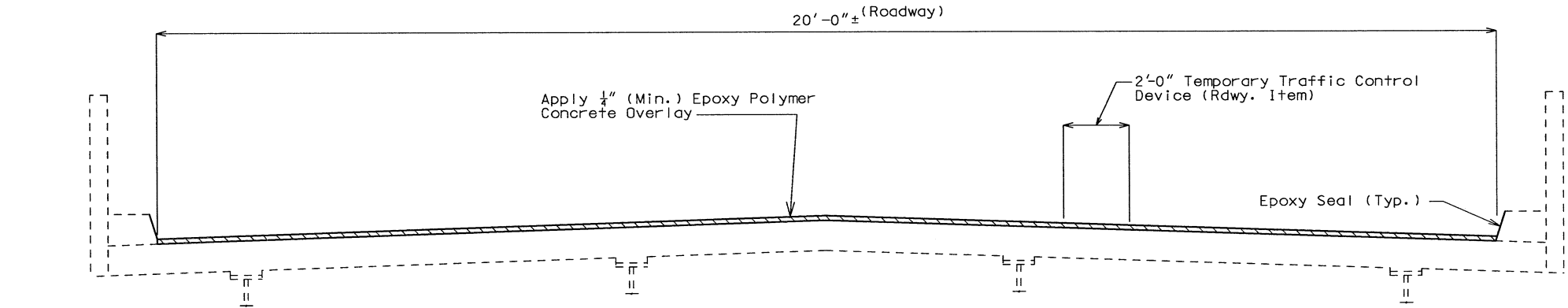
In order to maintain grade and a minimum thickness of overlay as shown on plans it may be necessary to use additional quantities of overlay at various locations throughout the structure. No payment will be allowed for additional labor, materials or equipment for variations in thickness of overlay.

Outline of old work is indicated by dashed lines, heavy lines indicate new work.

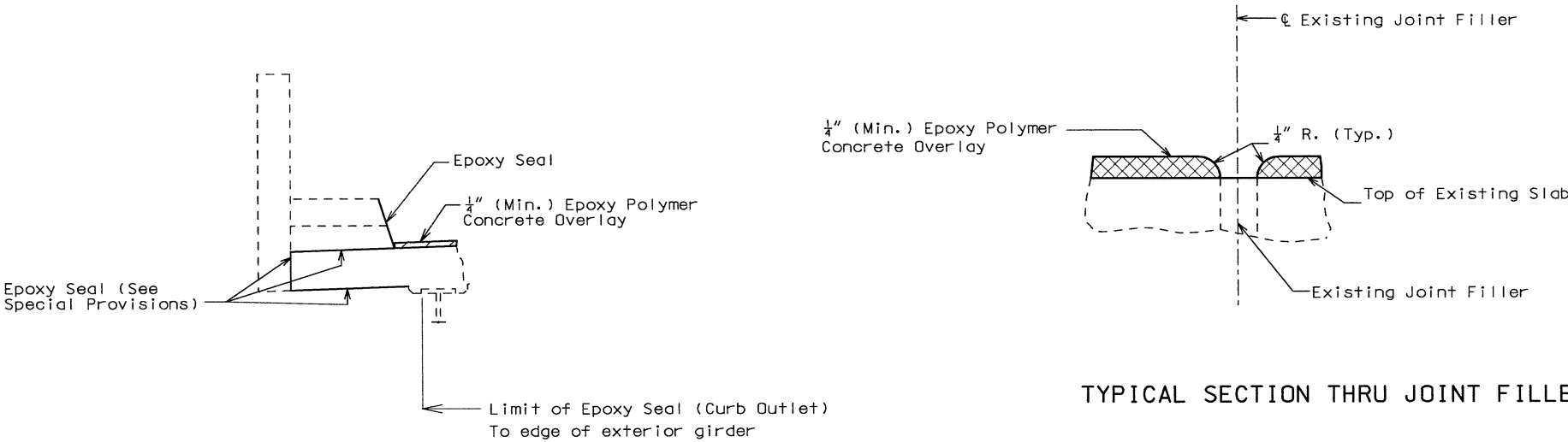
Contractor shall verify all dimensions in field before ordering new materials.

All exposed edges of overlay shall have a 1/4" radius, unless otherwise noted.

The contractor shall exercise care to ensure spillage over joint edges is prevented and that a neat line is obtained along any terminating edge of the epoxy polymer concrete.



SECTION THRU SLAB



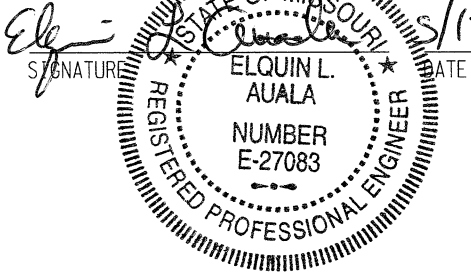
TYPICAL SECTION THRU JOINT FILLER

TYPICAL SECTION THRU CURB OUTLET

FINAL QUANTITIES		
ITEM		TOTAL
Epoxy Polymer Concrete Overlay	sq. yard	279

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 HAVE DIRECTED OR ORDERED THAT THE PROJECT BE CONSTRUCTED.



REPAIRS TO BRIDGE OVER HOWELL CREEK

STATE ROAD FROM RTE. 63 EAST OF WEST PLAINS  
ABOUT 2.4 MILES EAST OF WEST PLAINS  
PROJECT NO. J9M0036 STA. 84+12.50± (Match Existing)  
JOB NO. J9M0036 RTE. ZZ  
CONTRACT ID: 040521-901

HOWELL COUNTY N04971