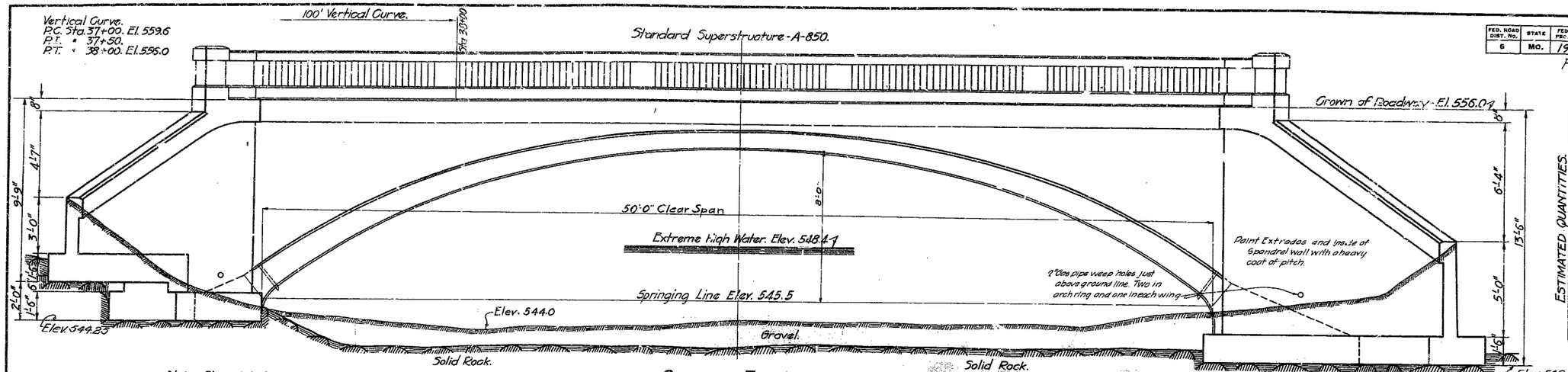
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
5	MO.	193	19	69	

A

Vertical Curve.
P.C. Sta. 37+00. El. 559.6
P.I. " 37+50.
P.T. " 38+00. El. 556.0

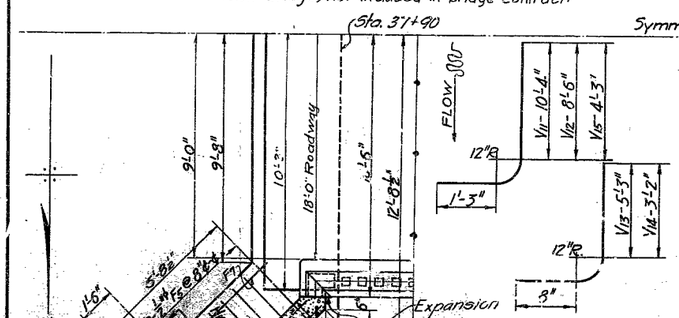


Note. Channel to be cleaned to rock 50'-0" above and below bridge; Not included in bridge contract.

GENERAL ELEVATION

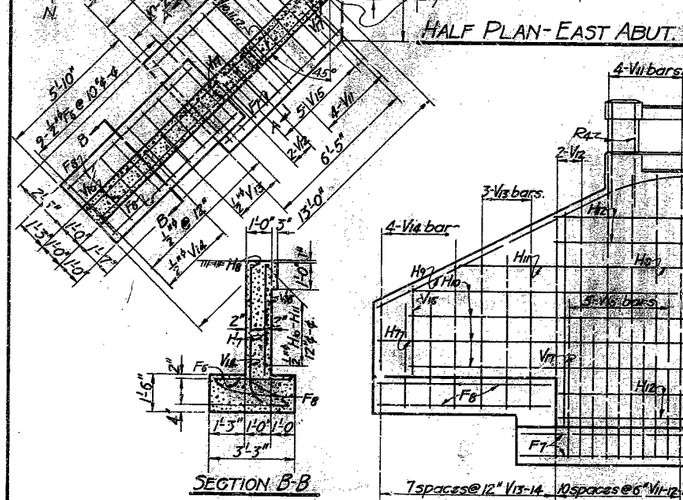
GENERAL NOTES.
All general notes on Standard A-850 apply to this drawing.
Concrete in Abutments 1:3:5 mix

ESTIMATED QUANTITIES.	Concrete Class A	Concrete Class B	Concrete Class C	Reinf. Steel.
Location.				
Handrail.	5.6			650
Spandrel Wall.		18.4		600
Arch Ring.		51.7		6940
Wings.		35.8		1590
Abutments.			23.2	1560
Total.	5.6	105.3	23.2	11340



HALF PLAN-EAST ABUT.

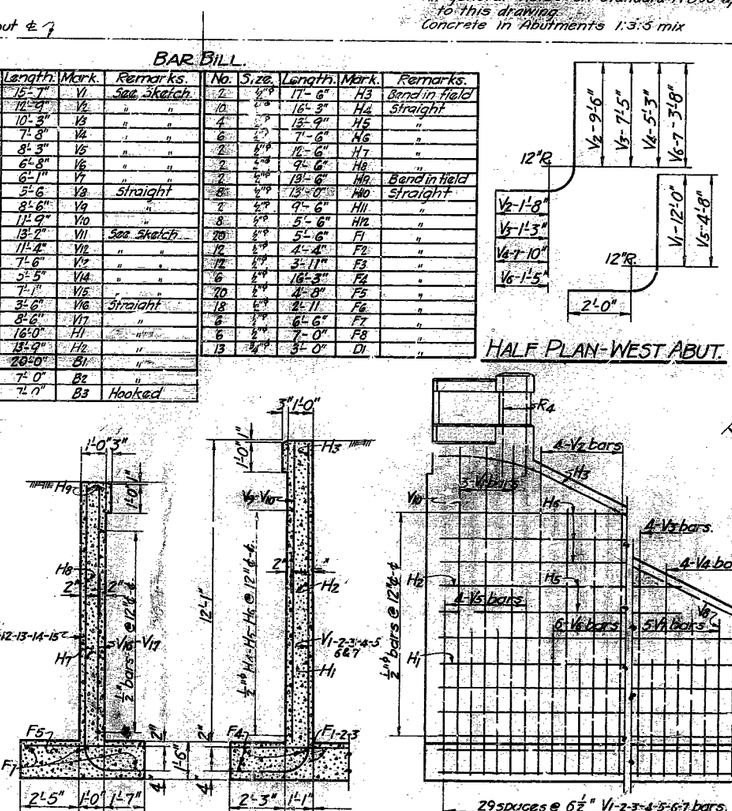
ELEVATION-EAST WING.



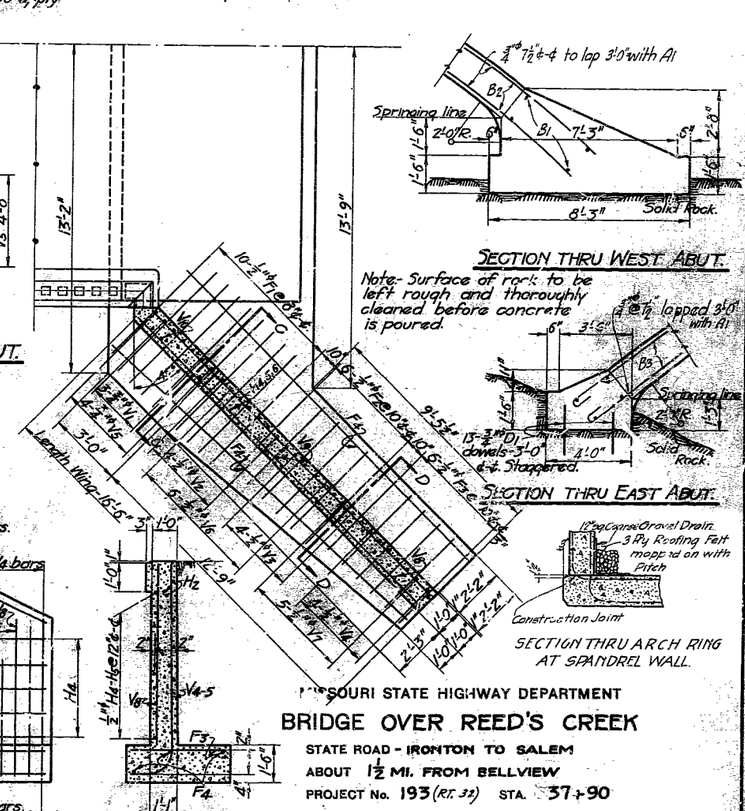
BAR BILL.

No.	Size.	Length.	Mark.	Remarks.
6	3/4" ϕ	15'-7"	V1	See Sketch.
8	1/2" ϕ	11'-9"	V2	" "
9	1/2" ϕ	10'-3"	V3	" "
8	1/2" ϕ	7'-8"	V4	" "
8	3/4" ϕ	8'-3"	V5	" "
12	1/2" ϕ	6'-8"	V6	" "
10	1/2" ϕ	6'-1"	V7	" "
2	1/2" ϕ	5'-6	V8	Straight
2	1/2" ϕ	8'-6"	V9	"
2	1/2" ϕ	11'-9"	V10	"
8	5/8" ϕ	13'-2"	V11	See Sketch.
4	1/2" ϕ	11'-4"	V12	" "
6	1/2" ϕ	7'-6"	V13	" "
8	1/2" ϕ	5'-5"	V14	" "
10	3/4" ϕ	7'-1"	V15	" "
2	1/2" ϕ	3'-6"	V16	Straight
4	1/2" ϕ	8'-6"	V17	"
2	1/2" ϕ	16'-0"	H1	"
2	1/2" ϕ	13'-9"	H2	"
8	1/2" ϕ	20'-0"	B1	"
66	3/4" ϕ	7'-0"	B2	"
66	3/4" ϕ	7'-0"	B3	Hooked

No.	Size.	Length.	Mark.	Remarks.
2	1/2" ϕ	17'-6"	H3	Bend in field
10	1/2" ϕ	16'-3"	H4	Straight
4	1/2" ϕ	12'-9"	H5	"
6	1/2" ϕ	7'-6"	H6	"
2	1/2" ϕ	12'-6"	H7	"
2	1/2" ϕ	9'-6"	H8	"
2	1/2" ϕ	19'-6"	H9	Bend in field
8	1/2" ϕ	13'-0"	H10	Straight
2	1/2" ϕ	9'-6"	H11	"
8	1/2" ϕ	5'-6"	H12	"
20	1/2" ϕ	5'-6"	F1	"
12	1/2" ϕ	4'-4"	F2	"
12	1/2" ϕ	3'-11"	F3	"
6	1/2" ϕ	16'-3"	F4	"
10	1/2" ϕ	4'-8"	F5	"
18	1/2" ϕ	2'-11	F6	"
6	1/2" ϕ	6'-6"	F7	"
6	1/2" ϕ	7'-0"	F8	"
13	3/4" ϕ	3'-0"	D1	"



HALF PLAN-WEST ABUT.



Drawn Apr., 1922 by Hbrk.
Ch'k'd Aug., 1922 by J.W.C.

MISSOURI STATE HIGHWAY DEPARTMENT

BRIDGE OVER REED'S CREEK

STATE ROAD - IRONTON TO SALEM
ABOUT 1½ MI. FROM BELLVIEW
PROJECT No. 193 (Rt. 32) STA. 37+90
IRON COUNTY

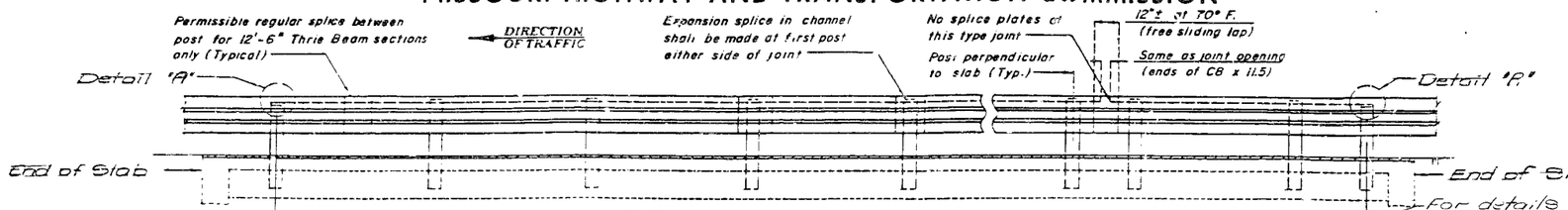
Submitted by C. H. Mann BRIDGE ENGINEER
Approved by [signature] STATE HIGHWAY ENGINEER

A-850
G-269

222

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

STATE	PROJ NO	
MO		F
SUR 834	TWP 35N	RGE 3E



PART SECTION SHOWING RAIL

For details of bridge anchor section see "Part Section At End of Slab" Sht. No. 2.

℄ First Post (W6x20) on bridge

℄ First Post (W6x20) on bridge

For details of bridge anchor section see "Part Section At End of Slab" Sht. No. 2.

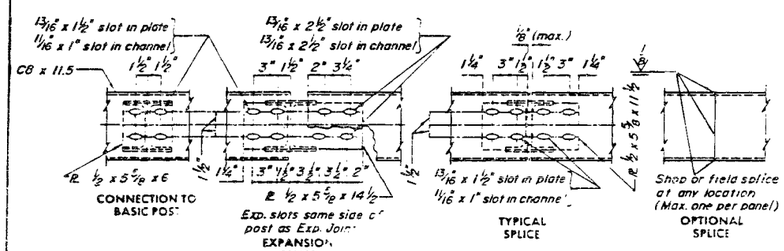
NOTE:

Maintain one lane of traffic during construction.

Light dashed lines indicate old work. Heavy lines indicate new work.

Contractor shall verify all dimensions in field before ordering materials.

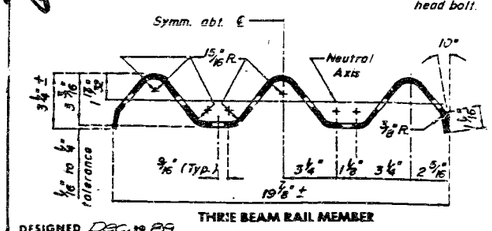
Roadway surfacing shall be used to build the existing riding surface on the bridge up to the elevation of the top of the existing concrete curbs (Rdwy. Item)



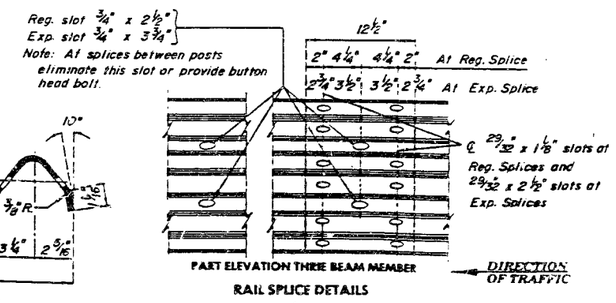
CHANNEL MEMBER DETAILS

ESTIMATED QUANTITIES	
ITEM	TOTAL
Bridge Guard Rail (Thrie Beam) Lin.Ft.	100
Curb Removal for Thrie Bm. Installation Lin.Ft.	120
Bridge Anchor Section (Thrie Beam) Each	4

Note:
"Curb Removal for Thrie Beam Installation" shall include end posts & balustar rails from End of Curb to End of Curb. Rails & end post shall be removed to top of existing curbs.

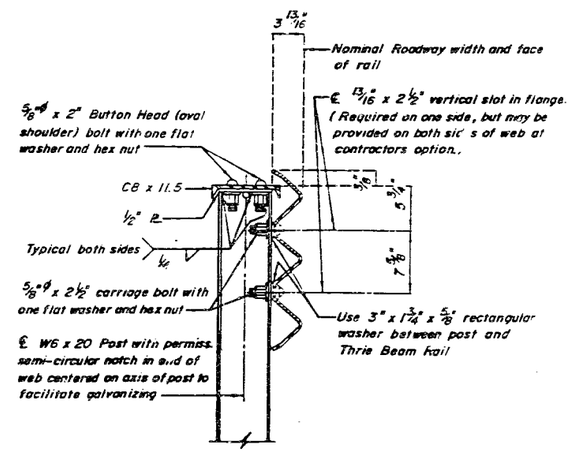


THRIE BEAM RAIL MEMBER



PART ELEVATION THRIE BEAM MEMBER

RAIL SPLICE DETAILS



PART SECTION AT RAIL POST

DESIGNED Dec. 1989
DETAILED Dec. 1989
CHECKED Dec. 1989

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

SEE FINAL

Sheet No. 1 of 4

REPAIRS TO
BRIDGE OVER REEDS CREEK

STATE ROAD FROM DENT CO. LINE TO RTE. 21

ABOUT 1.5 MILES WEST OF BELLEVILLE

PROJECT NO. F-32-2(11) Sec A **STA.** 37 + 90

JOB NO. 6-P-32-838 **RTE.** 32

IRON **COUNTY**

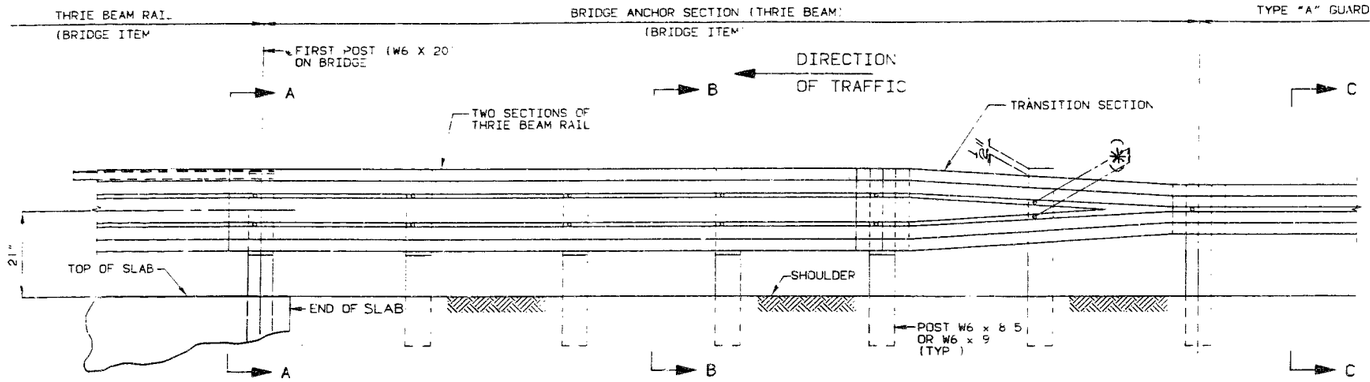
DATE 12/27/89

STD. 606.00
STD.
G-269R

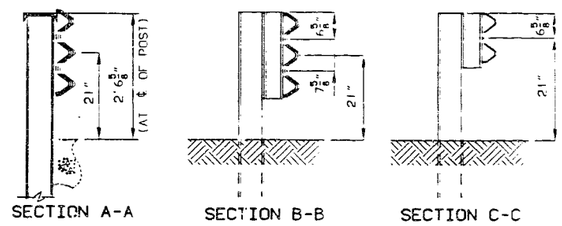
1682

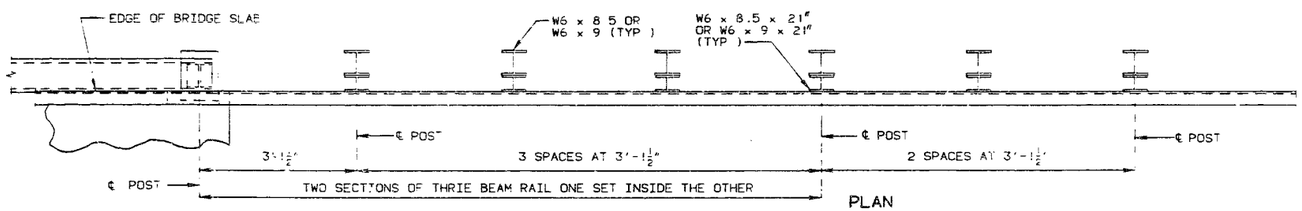
NOTE
SEE BRIDGE THRIE BEAM RAIL SHEET FOR DETAILS NOT SHOWN

STATE	PROJ NO	SHEET NO
MO		2



PART SECTION AT END OF SLAB





PLAN

NOTES:

DESIGN AASHTO 1989 SPECIFICATIONS (FOR THRIE BEAM RAIL DESIGN ONLY.

THE THRIE BEAM RAILS AND THE TRANSITION SECTION FOR THE BRIDGE ANCHOR SECTION SHALL BE MADE OF STEEL AND SHALL BE 12 GAGE ZINC COATING SHALL BE TYPE 2

FOR PROTECTIVE COATING AND MATERIAL REQUIREMENTS, SEE SECTION 1040 OF THE MISSOURI STANDARD SPECIFICATIONS

RAIL POSTS SHALL BE SET PERPENDICULAR TO THE ROADWAY PROFILE GRADE AND VERTICALLY IN CROSS SECTION

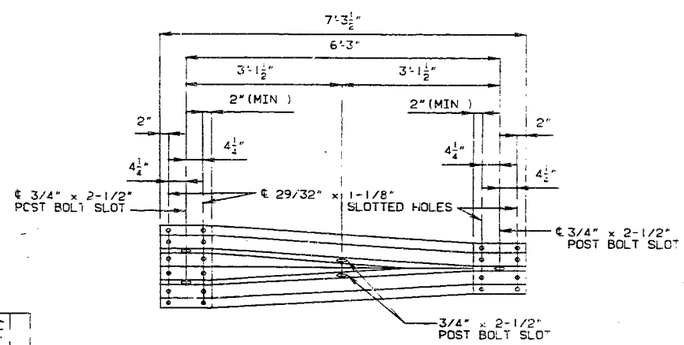
WASHERS SHALL BE USED AT ALL POST BOLTS (BETWEEN BOLT HEAD AND BEAM) THEY SHALL BE RECTANGULAR IN SHAPE (3" X 1-3/4" X 3/16" MIN.) AND FLAT, OR WHEN NECESSARY OF SUCH DESIGN AS TO FIT THE CONTOUR OF THE THRIE BEAM RAILING WASHERS SHALL HAVE A 11/16" x 1" SLOTTED HOLE

USE 5/8"ø BUTTON-HEAD OVAL SHOULDER BOLTS WITH HEX NUTS AT ALL SLOTS (THE THICKNESS OF THE HEX NUTS = 3/8".)

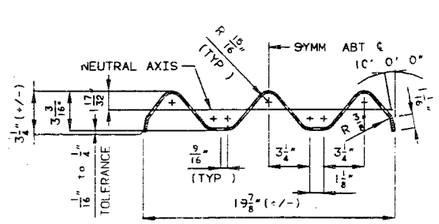
ALL LAP SPLICES SHALL BE MADE IN THE DIRECTION OF TRAFFIC

SEE MISSOURI STANDARD PLANS DRAWING 606.00 FOR DETAILS NOT SHOWN

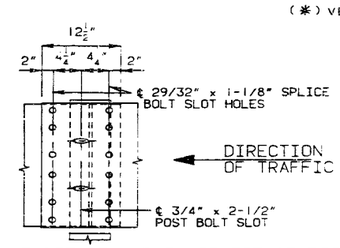
(*) VERIFY BY RAIL TRANSITION PRODUCER



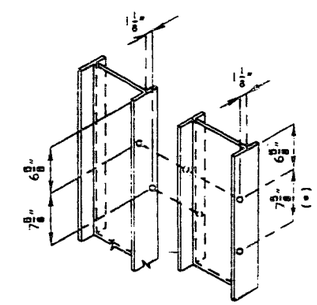
TRANSITION SECTION



SECTION THRU THRIE BEAM RAIL



THRIE BEAM RAIL SPLICE AT POST



(ALL HOLES 13/16" DIAMETER)

HOLE PUNCHING DETAILS
(FOR STEEL POST & BLOCKS)

ANCHOR SEC	REVISED (1)
AUG 1988	

DETAILED Dec. 1989
CHECKED Dec. 1989

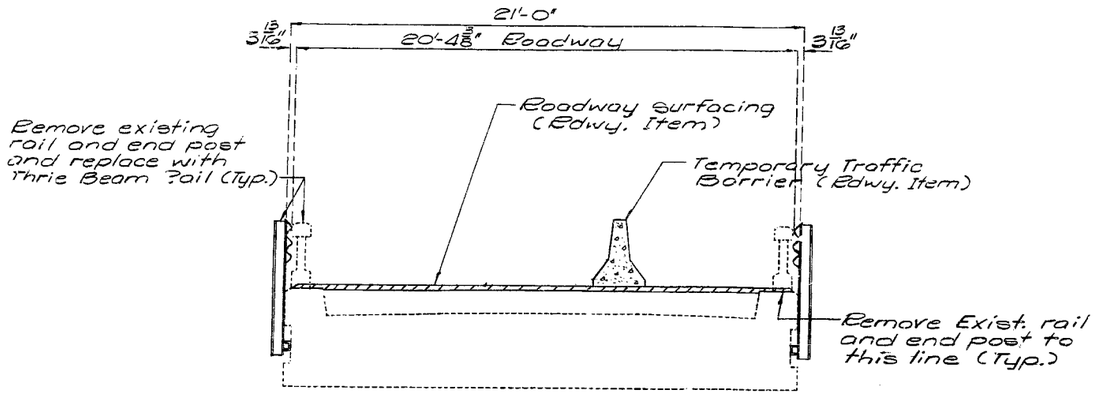
NOTE THIS DRAWING IS NOT TO SCALE FOLLOW DIMENSIONS

SHEET NO 2 OF 4

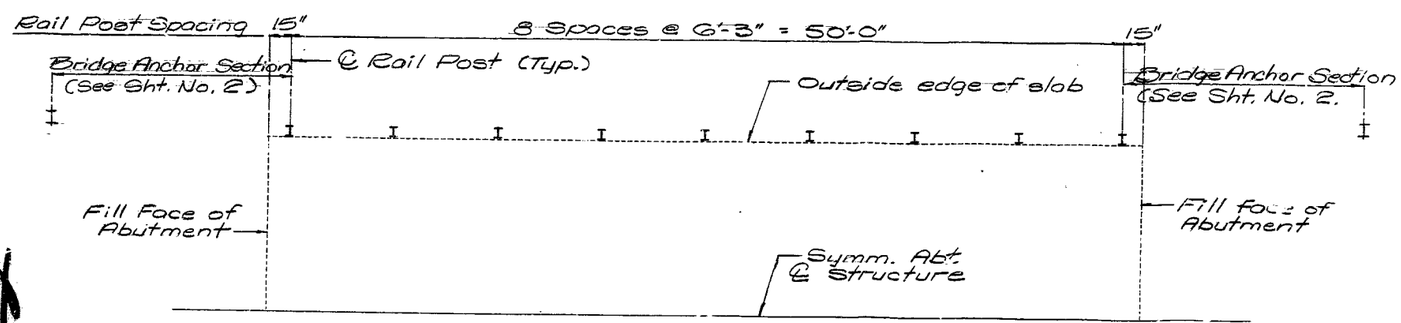
IRON COUNTY

G-269R

STATE	PROJ. NO	SHEET NO
MO	[illegible]	3



TYPICAL SECTION



HALF PLAN OF SLAB SHOWING RAIL POST SPACING

GENERAL NOTES:

DESIGN AASHTO 1989 SPECIFICATIONS.

PANEL LENGTHS OF CHANNEL MEMBERS SHALL BE ATTACHED CONTINUOUSLY TO A MINIMUM OF FOUR POSTS AND A MAXIMUM OF SIX POSTS (EXCEPT AT THE END BENTS).

ALL BOLTS, NUTS, WASHERS, PLATES AND ELASTOMERIC MATERIALS ARE CONSIDERED AS PART OF THE THRIE BEAM RAIL FOR PAYMENT.

ALL STEEL CONNECTING BOLTS AND FASTENERS FOR POST, RAILING AND ALL ANCHOR BOLTS, NUTS, WASHERS AND BOTTOM PLATES SHALL BE GALVANIZED AFTER FABRICATION. FOR PROTECTIVE COATING AND MATERIAL REQUIREMENT OF STEEL RAILING, SEE SECTION 1040 OF THE STANDARD SPECIFICATIONS.

RAIL POSTS SHALL BE SET PERPENDICULAR TO THE ROADWAY PROFILE GRADE AND VERTICALLY IN CROSS SECTION, AND ALIGNED ACCORDING TO SECTION 713 OF THE STANDARD SPECIFICATIONS, EXCEPT THAT THE RAIL POSTS SHALL BE ALIGNED BY THE USE OF SHIMS SO THAT IN THE FINAL ADJUSTMENT NO PART SHALL DEVIATE MORE THAN ONE INCH FROM TRUE HORIZONTAL ALIGNMENT. THE SHIMS SHALL BE 3" X 1-3/4" AND PLACED BETWEEN THE POST AND THE THRIE BEAM RAIL. THE THICKNESS OF THE SHIMS SHALL BE DETERMINED BY THE CONTRACTOR AND VERIFIED BY THE ENGINEER BEFORE ORDERING THE MATERIAL FOR THIS WORK.

AT THE EXPANSION SLOTS IN THE THRIE BEAM RAILS AND CHANNELS, TIGHTEN BOLTS, BACK OFF ONE- HALF TURN AND BURR THREADS.

USE 5/8 INCH BUTTON HEAD, OVAL SHOULDER BOLTS WITH HEX NUTS AT ALL SLOTS. (THICKNESS OF HEX NUTS = 3/8".

THRIE BEAM GUARD RAIL ON THE BRIDGE SHALL BE MADE OF STEEL AND SHALL BE 12 GAGE. POST, BASE PLATES, CHANNELS AND CHANNEL SPLICE PLATES ARE TO BE FABRICATED FROM A-36 STEEL AND GALVANIZED.

WASHERS SHALL BE USED AT ALL POST BOLTS (BETWEEN THE BOLT HEAD AND THRIE BEAM). THEY SHALL BE RECTANGULAR IN SHAPE (3" X 1-3/4" X 3/16" MIN.) AND FLAT WITH A 11/16" X 1" SLOT, OR WHEN NECESSARY OF SUCH DESIGN TO FIT THE CONTOUR OF THE BEAM.
(USE A 3" X 1-3/4" X 5/8" RECTANGULAR WASHER BETWEEN THE POST AND THE THRIE BEAM RAIL.)

SPECIAL DRILLING OF THE THRIE BEAM MAY BE REQUIRED AT THE SPLICES. (ALL DRILLING DETAILS ARE TO BE SHOWN ON THE SHOP DRAWINGS.)

FABRICATION OF THE STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH SECTION 712 OF THE STANDARD SPECIFICATIONS.

EXPANSION SPLICES IN THE THRIE BEAM RAIL SHALL BE MADE AT EITHER THE FIRST OR SECOND POST ON EITHER SIDE OF THE JOINT AND ON STRUCTURE AT BRIDGE ENDS. WHEN THE SPLICE IS MADE AT THE SECOND POST, AN EXPANSION SLOT SHALL BE PROVIDED IN THE THRIE BEAM RAIL FOR CONNECTION TO THE FIRST POST TO ALLOW FOR MOVEMENT.
IN ADDITION TO THE EXPANSION PROVISIONS AT THESE EXPANSION JOINTS, EXPANSION SPLICES IN THE THRIE BEAM RAIL AND THE CHANNEL SHALL BE PROVIDED AT OTHER LOCATIONS SO THAT THE MAXIMUM LENGTH WITHOUT EXPANSION PROVISIONS DOES NOT EXCEED 200 FT.

DETAILED Dec 1989
CHECKED Dec 1989

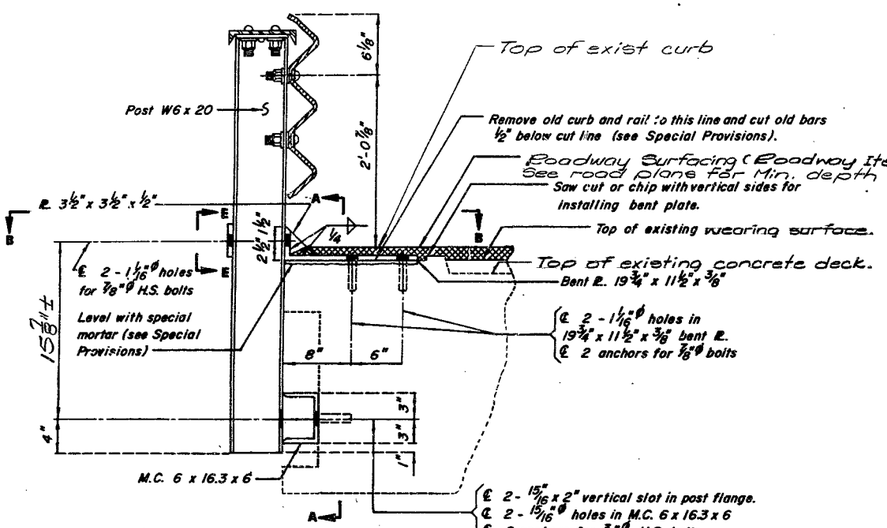
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 3 of 4.

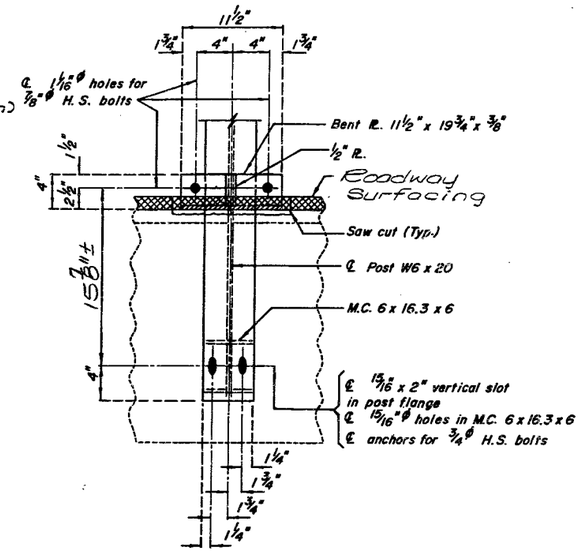
IRON COUNTY

G-269R

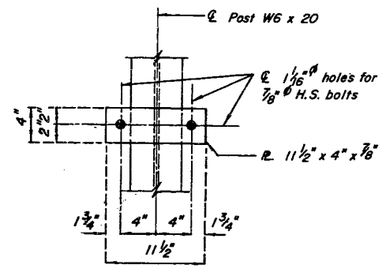
STATE	PROJ NO	SHEET NO
MO		4



PART SECTION AT RAIL POST



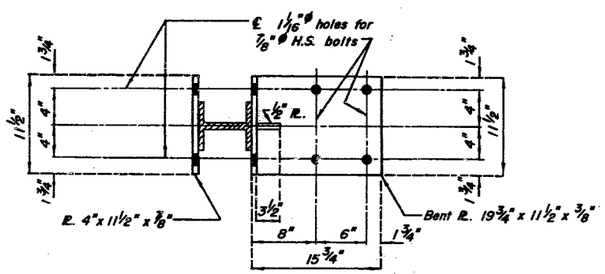
SECTION A-A



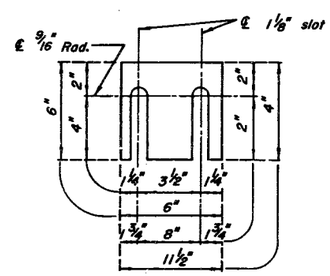
ELEV. E-E

NOTE:

AT THE OPTION OF THE CONTRACTOR ONE OF THE ANCHOR SYSTEMS LISTED IN THE JOB SPECIAL PROVISIONS MAY BE SUBSTITUTED FOR THE CONE EXPANSION TYPE CONCRETE ANCHORS NOTED ON THE PLANS.



SECTION B-B



DETAIL OF SHIM PLATES

Note:

Shim plates 6" x 6" x 1/16" may be used between M.C. 6 x 16.3 x 6" and old concrete and shim plates 11½" x 4" x 1/16" may be used between post W6 x 20 and 19¾" x 11½" x ⅜" bent plate as required for horizontal alignment.

Shim plates may vary in thickness from 1/16" to the thickness required and may be used in multiples.

Shim plates shall be galvanized after fabrication.

Note:

Concrete anchors shall be the cone expansion type for hot-dip galvanized bolts.

Concrete anchors shall have a certified concrete pull out strength (ultimate load) of at least 15,500 pounds in 3,000 psi concrete.

Rehab. (T-BM/DECK ON)	REVISED
SEPT. 1985	SEPT. 1986

DETAILED Dec. 1989
CHECKED Dec. 1989

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

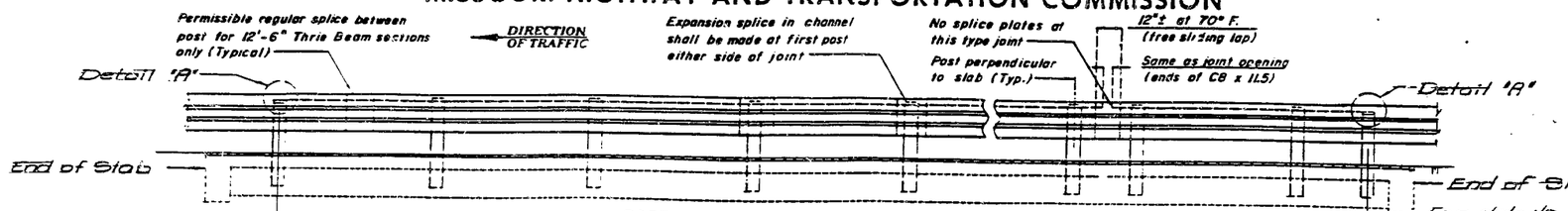
Sheet No. 4 of 4

IRON COUNTY

G-269R

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

STA.	PROJ. No. 6P 838-32	SHEET NO.
MO	JOB No. 6P 838-32	65
SJR 834	TWP 35N	RGE 3E



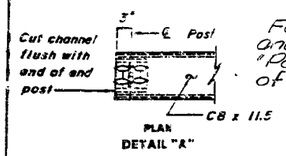
PART SECTION SHOWING RAIL

For details of bridge anchor section see "Part Section At End of Slab" Sht. No. 2.

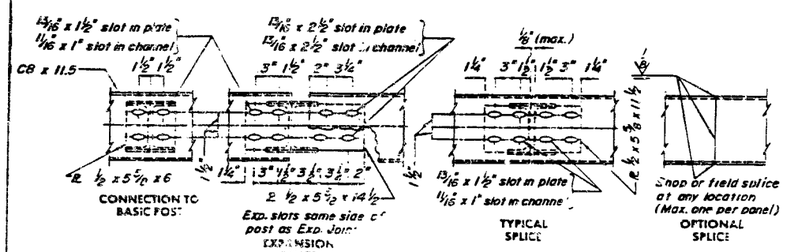
℄ First Post (W6x20) on bridge

℄ First Post (W6x20) on bridge

For details of bridge anchor section see "Part Section At End of Slab" Sht. No. 2.



PLAN
DETAIL "A"



CHANNEL MEMBER DETAILS

NOTE:

Maintain one lane of traffic during construction.

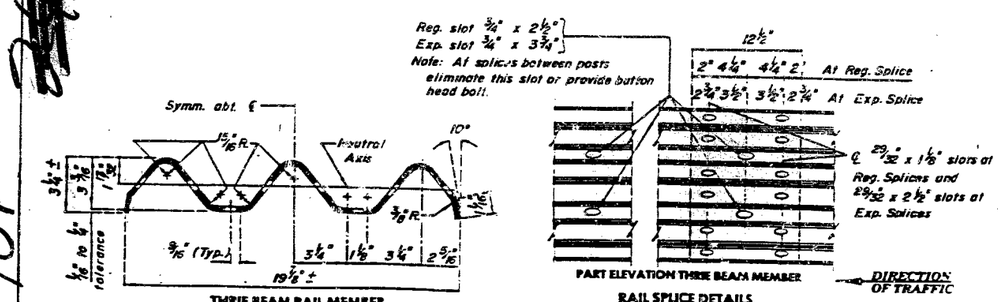
Light dashed lines indicate old work. Heavy lines indicate new work.

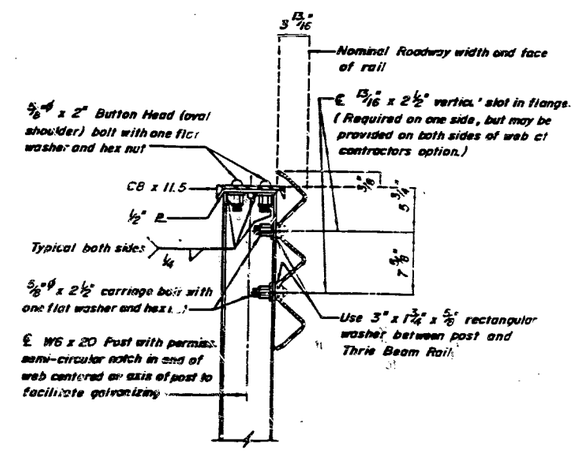
Contractor shall verify all dimensions in field before ordering materials.

Roadway surfacing shall be used to build the existing riding surface on the bridge up to the elevation of the top of the existing concrete curbs (Rdwy. Item)

FINAL QUANTITIES		
ITEM		TOTAL
Bridge Guard Rail (Thrie Beam)	Lin. Ft.	100
Curb Removal for Thrie Bm. Installation	Lin. Ft.	120
Bridge Anchor Section (Thrie Beam)	Each	4
Contingent Item		
Repair Bridge Damage (Force Account)	Each	524.23

Note:
"Curb Removal for Thrie Beam Installation" shall include end posts & baluster rails from End of Curb to End of Curb. Rails & end post shall be removed to top of existing curbs.





DESIGNED Dec. 1989
DETAILED Dec. 1989
CHECKED Dec. 1989

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

Sheet No. 1A of 4

REPAIRS TO
BRIDGE OVER REEDS CREEK

STATE ROAD FROM DENT CO. LINE TO RTE. 21

ABOUT 1.5 MILES WEST OF BELLEVILLE

PROJECT NO. 6P838-32-Sec. A **STA.** 37 + 90

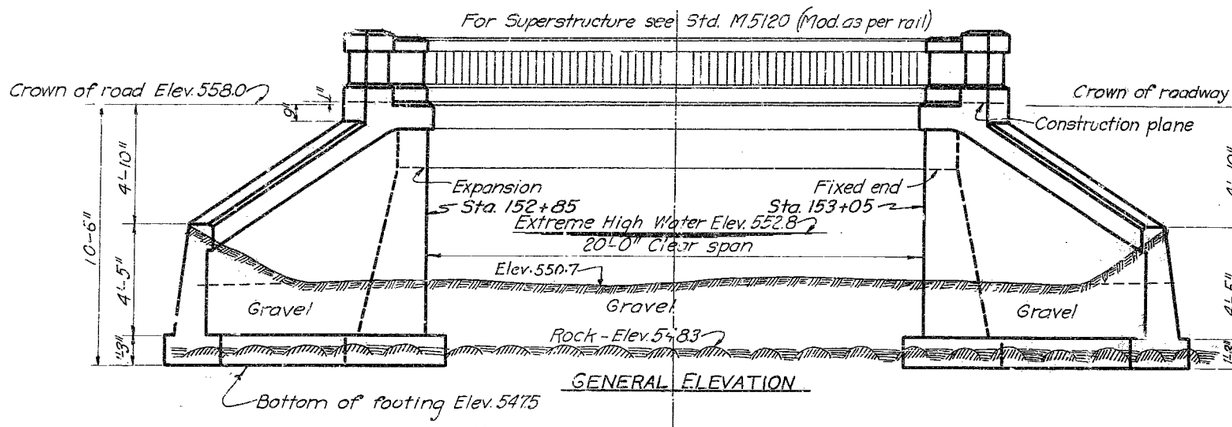
JOB NO. 6P 838-32 **RTE.** 32

IRON **COUNTY**

DATE 12/27/89

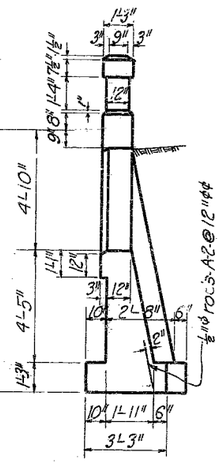
STD. 606.02
STD.
G-269R

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	193	1922	70	

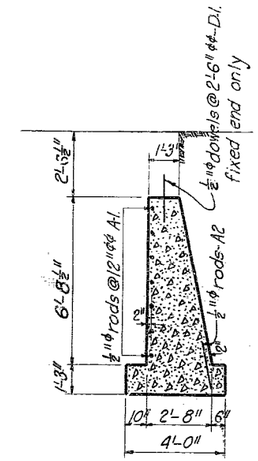


GENERAL ELEVATION

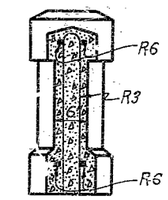
Note:-
Excavate channel to rock 50 feet above and below bridge; Not included in bridge contract.



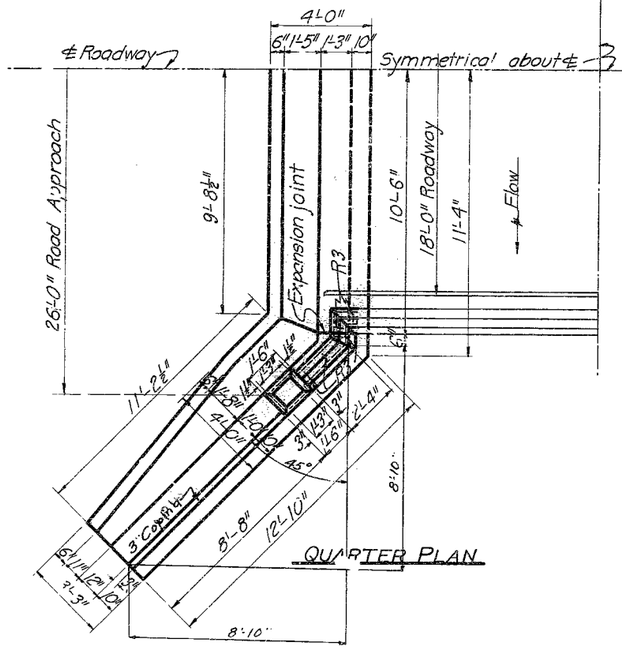
END VIEW OF WING



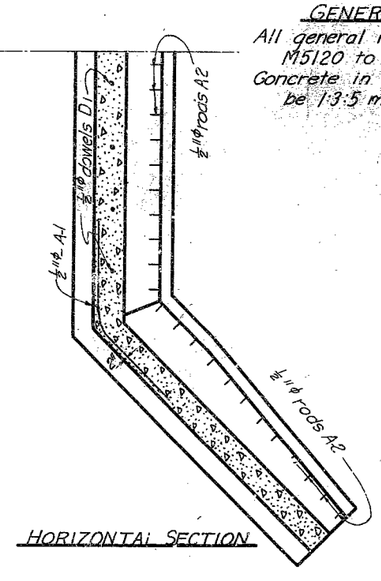
SECTION ON ℄



SECTION THRU RAIL ON TOP OF WING



QUARTER PLAN



HORIZONTAL SECTION

GENERAL - NOTES

All general notes on standard drawing M5120 to apply on this drawing. Concrete in wings and abutment to be 1:3:5 mix.

ESTIMATED QUANTITIES

Description	Rail	Slab and Curb.	Abutments and Wings	Total
1:2:3 Concrete	31 cu. yd			31 cu. yds.
1:2:4 "		293 cu. yds.		293 cu. yds.
1:3:5 "			59.4 cu. yds.	59.4 cu. yd.
Rein. Steel	510 lbs.	2700 lbs.	290 lbs.	3500 lbs.

BAR-BILL

No.	Size	Length	Mark	Remarks
8	½"φ	2'-0"	D1	Dowels
28	½"φ	8'-0"	A1	Bend in place
88	½"φ	2'-0"	A2	Straight

Changes in superstructure steel as given on Std. M5120.
Length of R1 bars changed to 2'-0".
No. of R3 bars changed to 24.
Add 16 R6 bars ½"φ - 3'-6" long. Bars are in rail over wing corresponding to R1 bars.

Drawn April, 1922 by J.O.H.
Ch'k'd Apr., 1922 by J.W.C.

MISSOURI STATE HIGHWAY DEPARTMENT

BRIDGE OVER McCLURG BRANCH

STATE ROAD FROM IRONTON TO SALEM
ABOUT 4 MI. FROM BELLVIEW
PROJECT No. 193 (RT. 32) STA. 152+85

IRON COUNTY

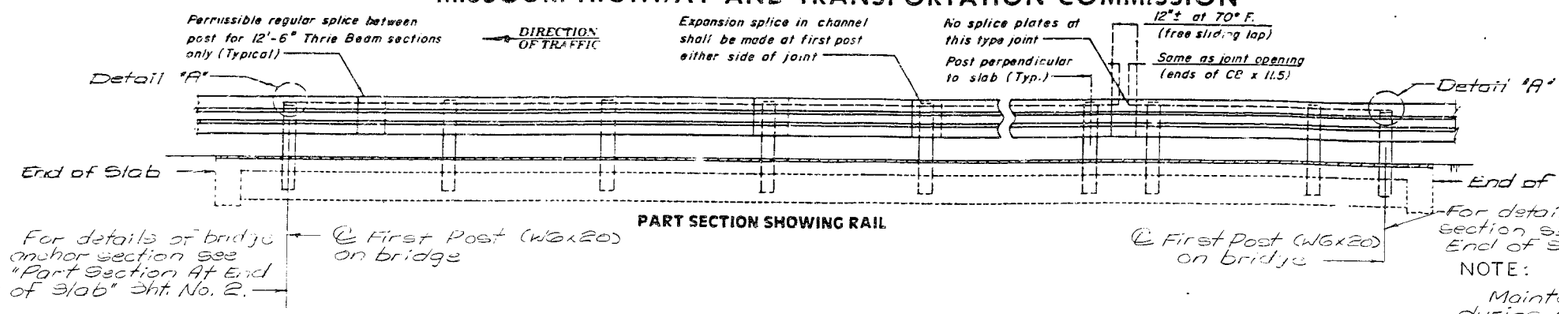
Submitted by C. H. Warner BRIDGE ENGINEER
Approved by [illegible] STATE HIGHWAY ENGINEER

M5120
G270

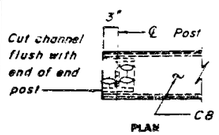
122

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

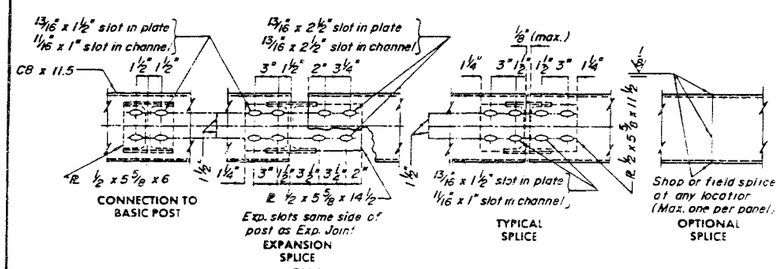
STATE	PROJ. NO.	SHEET NO.
MO		6
SUR 2184	TWP 35N	RGE 2E



PART SECTION SHOWING RAIL



PLAN
DETAIL "A"



CHANNEL MEMBER DETAILS

ESTIMATED QUANTITIES	
ITEM	TOTAL
Bridge Guard Rail (Thrie Beam) Lin. Ft.	38
Curb Removal for Thrie Bm. Installation Lin. Ft.	46
Bridge Anchor Section (Thrie Beam) Each	4

Note:
"Curb Removal for Thrie Beam Installation" shall include end posts & balustar rails from End of Curb to End of Curb. Rails & end post shall be removed to top of existing curbs.

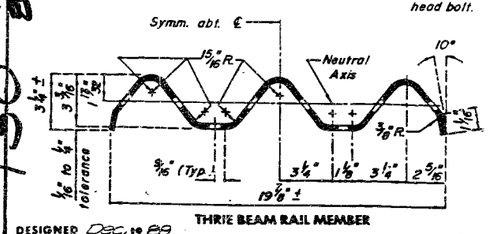
NOTE:

Maintain one lane of traffic during construction.

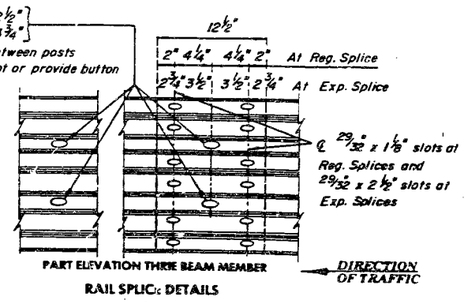
Light dashed lines indicate old work. Heavy lines indicate new work.

Contractor shall verify all dimensions in field before ordering materials.

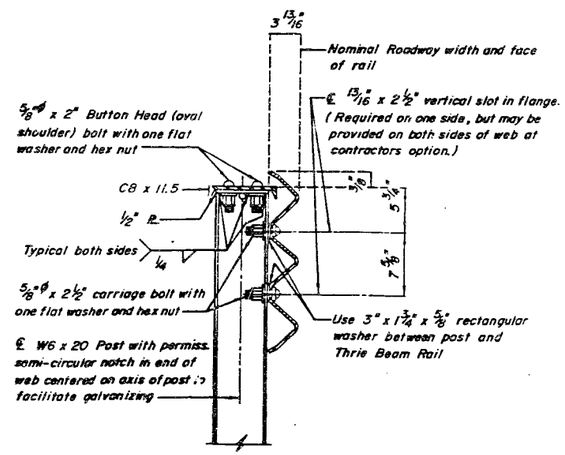
Remove an equivalent thickness of the existing asphalt mat prior to the placement of roadway surfacing across the bridge. (Rdwy. Item)



THRIE BEAM RAIL MEMBER



PART ELEVATION THRIE BEAM MEMBER
RAIL SPLICE DETAILS



PART SECTION AT RAIL POST

DESIGNED Dec. 1989
DETAILED Dec. 1989
CHECKED Dec. 1989

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

SEE FINAL PLANS

Sheet No. 1 of 4

REPAIRS TO
BRIDGE OVER BRANCH OF CEDAR CREEK

STATE ROAD FROM DENT CO. LINE TO ROUTE 21

ABOUT 4 MILES WEST OF BELLEVIEW

PROJECT NO. F-32-2(11), Sec A **STA.** 152 + 83.75

JOB NO. 6-P-32-838 **RTE.** 32

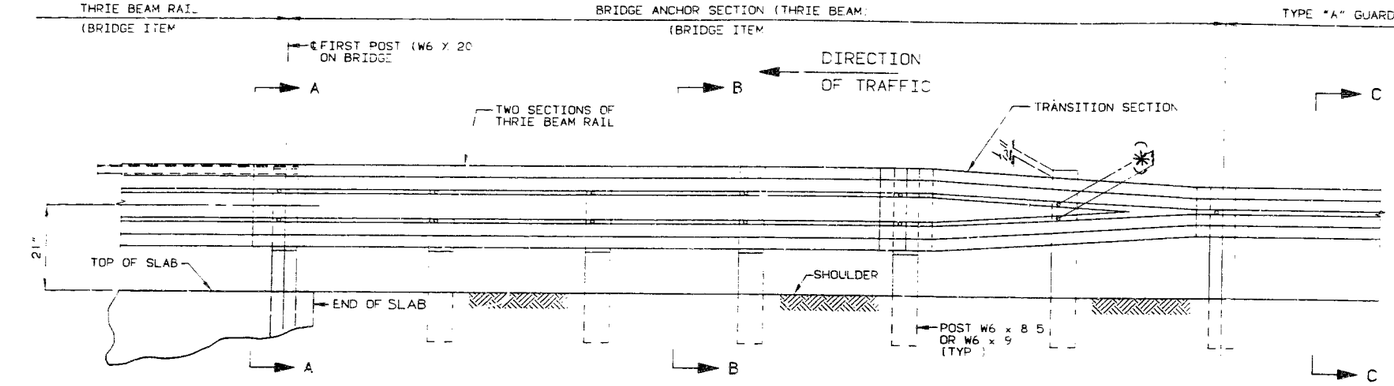
IRON **COUNTY**

DATE 12/27/89

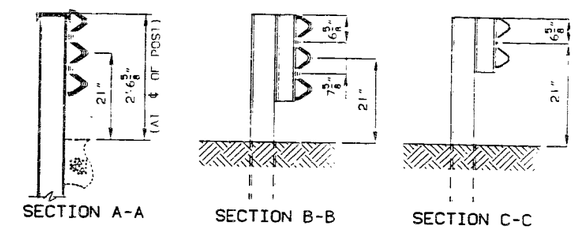
STD. 506.00
STD.
G-270R

NOTE
SEE BRIDGE THRIE BEAM RAIL SHEET FOR DETAILS NOT SHOWN

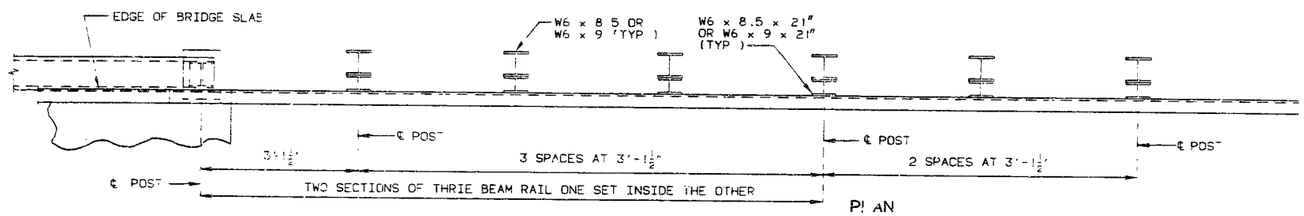
STATE	PROJ NO	SHEET NO
MO		7



PART SECTION AT END OF SLAB



SECTION A-A SECTION B-B SECTION C-C



PLAN

NOTES:

DESIGN AASHTO 1989 SPECIFICATIONS (FOR THRIE BEAM RAIL DESIGN ONLY).

THE THRIE BEAM RAILS AND THE TRANSITION SECTION FOR THE BRIDGE ANCHOR SECTION SHALL BE MADE OF STEEL AND SHALL BE 12 GAGE ZINC COATING SHALL BE TYPE 2

FOR PROTECTIVE COATING AND MATERIAL REQUIREMENTS, SEE SECTION 1040 OF THE MISSOURI STANDARD SPECIFICATIONS

RAIL POSTS SHALL BE SET PERPENDICULAR TO THE ROADWAY PROFILE GRADE AND VERTICALLY IN CROSS SECTION.

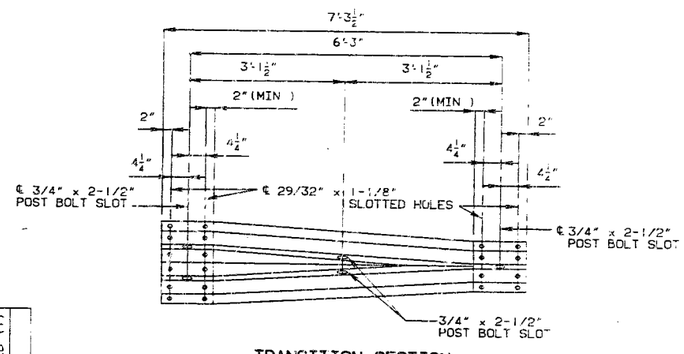
WASHERS SHALL BE USED AT ALL POST BOLTS (BETWEEN BOLT HEAD AND BEAM). THEY SHALL BE RECTANGULAR IN SHAPE (3" X 1-3/4" X 3/16" MIN.) AND FLAT, OR WHEN NECESSARY OF SUCH DESIGN AS TO FIT THE CONTOUR OF THE THRIE BEAM RAILING. WASHERS SHALL HAVE A 11/16" x 1" SLOTTED HOLE

USE 5/8"ø BUTTON-HEAD OVAL, SHOULDER BOLTS WITH HEX NUTS AT ALL SLOTS (THE THICKNESS OF THE HEX NUTS = 3/8".)

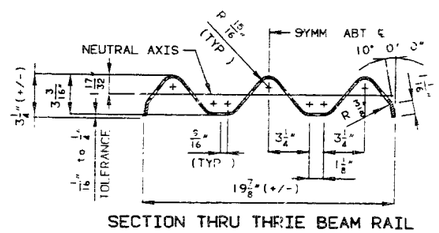
ALL LAP SPLICES SHALL BE MADE IN THE DIRECTION OF TRAFFIC

SEE MISSOURI STANDARD PLANS DRAWING 606.00 FOR DETAILS NOT SHOWN.

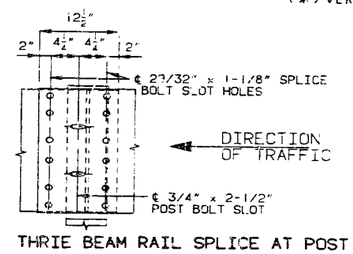
(*) VERIFY BY RAIL TRANSITION PRODUCER



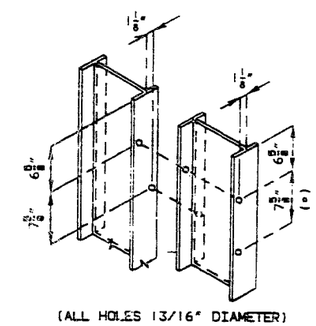
TRANSITION SECTION



SECTION THRU THRIE BEAM RAIL



THRIE BEAM RAIL SPLICE AT POST



(ALL HOLES 13/16" DIAMETER)

HOLE PUNCHING DETAILS
(FOR STEEL POST & BLOCKS)

ANCHOR SEC	REVISED (1)
AUG 1988	

DETAILED Dec. 1989
CHECKED Dec. 1989

NOTE THIS DRAWING IS NOT TO SCALE FOLLOW DIMENSIONS

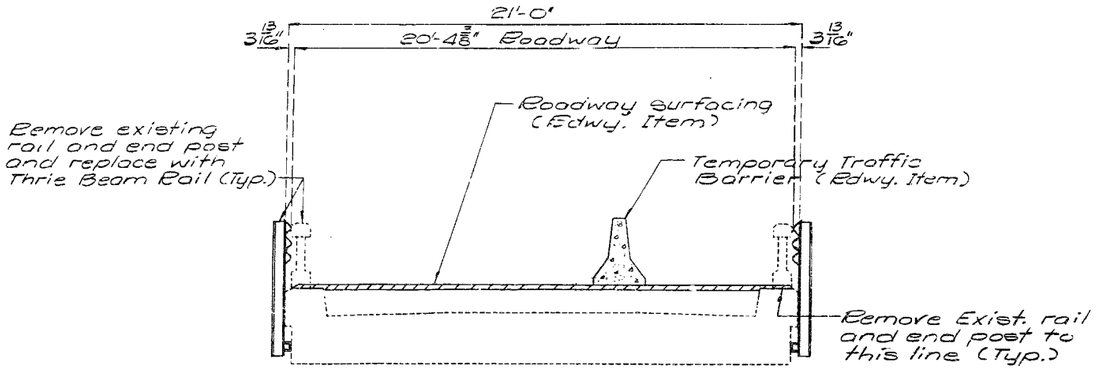
SHEET NO 2 OF 4

IRON COUNTY

G-270R

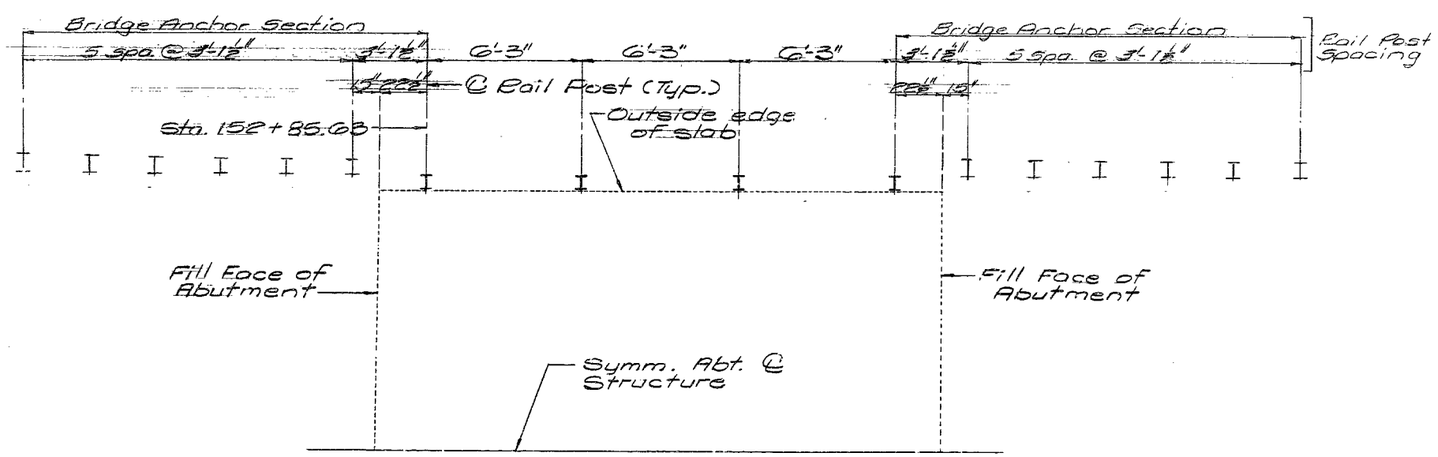
131

STATE	PROJ. NO	SHEET NO.
MO		8



TYPICAL SECTION

Note: For Details of Bridge Anchor Section see Sht. No. 2.



HALF PLAN OF SLAB SHOWING RAIL POST SPACING

GENERAL NOTES:

DESIGN AASHTO 1989 SPECIFICATIONS.

PANEL LENGTHS OF CHANNEL MEMBERS SHALL BE ATTACHED CONTINUOUSLY TO A MINIMUM OF FOUR POSTS AND A MAXIMUM OF SIX POSTS (EXCEPT AT THE END BENTS).

ALL BOLTS, NUTS, WASHERS, PLATES AND ELASTOMERIC MATERIALS ARE CONSIDERED AS PART OF THE THRIE BEAM RAIL FOR PAYMENT.

ALL STEEL CONNECTING BOLTS AND FASTENERS FOR POSTS, RAILING AND ALL ANCHOR BOLTS, NUTS, WASHERS AND BOTTOM PLATES SHALL BE GALVANIZED AFTER FABRICATION. FOR PROTECTIVE COATING AND MATERIAL REQUIREMENT OF STEEL RAILING, SEE SECTION 1040 OF THE STANDARD SPECIFICATIONS.

RAIL POSTS SHALL BE SET PERPENDICULAR TO THE ROADWAY PROFILE GRADE AND VERTICALLY IN CROSS SECTION, AND ALIGNED ACCORDING TO SECTION 713 OF THE STANDARD SPECIFICATIONS, EXCEPT THAT THE RAIL POSTS SHALL BE ALIGNED BY THE USE OF SHIMS SO THAT IN THE FINAL ADJUSTMENT NO PART SHALL DEVIATE MORE THAN ONE INCH FROM TRUE HORIZONTAL ALIGNMENT. THE SHIMS SHALL BE 3" X 1-3/4" AND PLACED BETWEEN THE POST AND THE THRIE BEAM RAIL. THE THICKNESS OF THE SHIMS SHALL BE DETERMINED BY THE CONTRACTOR AND VERIFIED BY THE ENGINEER BEFORE ORDERING THE MATERIAL FOR THIS WORK.

AT THE EXPANSION SLOTS IN THE THRIE BEAM RAILS AND CHANNELS, TIGHTEN BOLTS, BACK OFF ONE- HALF TURN AND BURR THREADS.

USE 5/8 INCH BUTTON HEAD, OVAL SHOULDER BOLTS WITH HEX NUTS AT ALL SLOTS. (THICKNESS OF HEX NUTS = 3/8".

THRIE BEAM GUARD RAIL ON THE BRIDGE SHALL BE MADE OF STEEL AND SHALL BE 12 GAGE. POST, BASE PLATES, CHANNELS AND CHANNEL SPLICE PLATES ARE TO BE FABRICATED FROM A-36 STEEL AND GALVANIZED.

WASHERS SHALL BE USED AT ALL POST BOLTS (BETWEEN THE BOLT HEAD AND THRIE BEAM). THEY SHALL BE RECTANGULAR IN SHAPE (3" X 1-3/4" X 3/16" MIN.) AND FLAT WITH A 11/16" X 1" SLOT, OR WHEN NECESSARY OF SUCH DESIGN TO FIT THE CONTOUR OF THE BEAM.
(USE A 3" X 1-3/4" X 5/8" RECTANGULAR WASHER BETWEEN THE POST AND THE THRIE BEAM RAIL)

SPECIAL DRILLING OF THE THRIE BEAM MAY BE REQUIRED AT THE SPLICES. (ALL DRILLING DETAILS ARE TO BE SHOWN ON THE SHOP DRAWINGS.)

FABRICATION OF THE STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH SECTION 712 OF THE STANDARD SPECIFICATIONS.

EXPANSION SPLICES IN THE THRIE BEAM RAIL SHALL BE MADE AT EITHER THE FIRST OR SECOND POST ON EITHER SIDE OF THE JOINT AND ON STRUCTURE AT BRIDGE ENDS. WHEN THE SPLICE IS MADE AT THE SECOND POST, AN EXPANSION SLOT SHALL BE PROVIDED IN THE THRIE BEAM RAIL FOR CONNECTION TO THE FIRST POST TO ALLOW FOR MOVEMENT.
IN ADDITION TO THE EXPANSION PROVISIONS AT THESE EXPANSION JOINTS, EXPANSION SPLICES IN THE THRIE BEAM RAIL AND THE CHANNEL SHALL BE PROVIDED AT OTHER LOCATIONS SO THAT THE MAXIMUM LENGTH WITHOUT EXPANSION PROVISIONS DOES NOT EXCEED 200 FT.

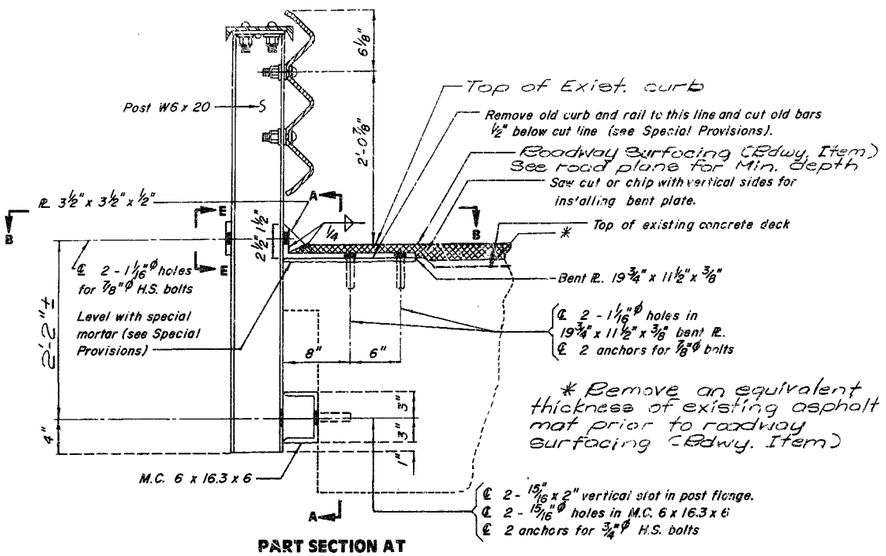
DETAILED Dec 1989
CHECKED Dec 1989

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

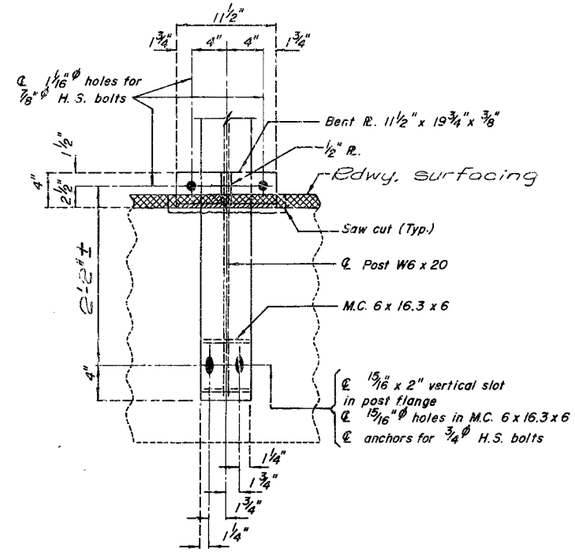
IRON COUNTY

G-270R

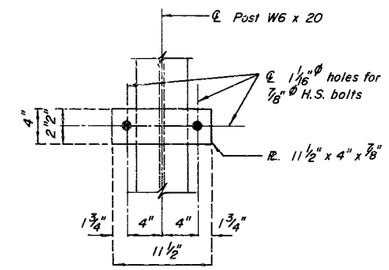
STATE	PROJ NO	SHEET NO
MO		9



PART SECTION AT RAIL POST



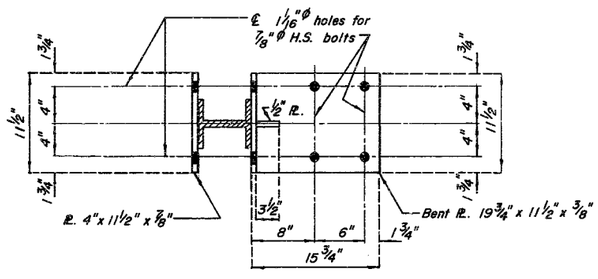
SECTION A-A



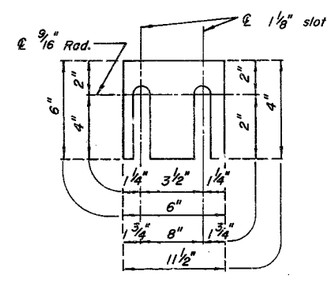
ELEV. E-E

NOTE:

AT THE OPTION OF THE CONTRACTOR ONE OF THE ANCHOR SYSTEMS LISTED IN THE JOB SPECIAL PROVISIONS MAY BE SUBSTITUTED FOR THE CONE EXPANSION TYPE CONCRETE ANCHORS NOTED ON THE PLANS.



SECTION B-B



DETAIL OF SHIM PLATES

Note:

Concrete anchors shall be the cone expansion type for hot-dip galvanized bolts.

Concrete anchors shall have a certified concrete pull out strength (ultimate load) of at least 15,500 pounds in 3,000 psi concrete.

Note:

Shim plates 6" x 6" x 1/16" may be used between M.C. 6 x 16.3 x 6" and old concrete and shim plates 11½" x 4" x 1/16" may be used between post W6 x 20 and 19¾" x 11½" x ⅜" bent plate as required for horizontal alignment.

Shim plates may vary in thickness from 1/16" to the thickness required and may be used in multiples.

Shim plates shall be galvanized after fabrication.

133

Rehab. (T-8M/DECK GDR) SEPT. 1985 REVISED SEPT. 1988

DETAILED Dec. 1989
CHECKED Dec. 1989

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

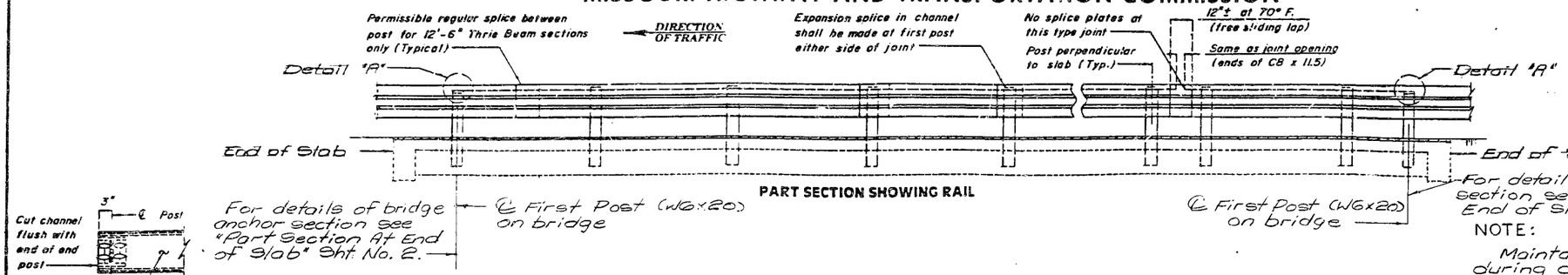
Sheet No. 4 of 4

IRON COUNTY

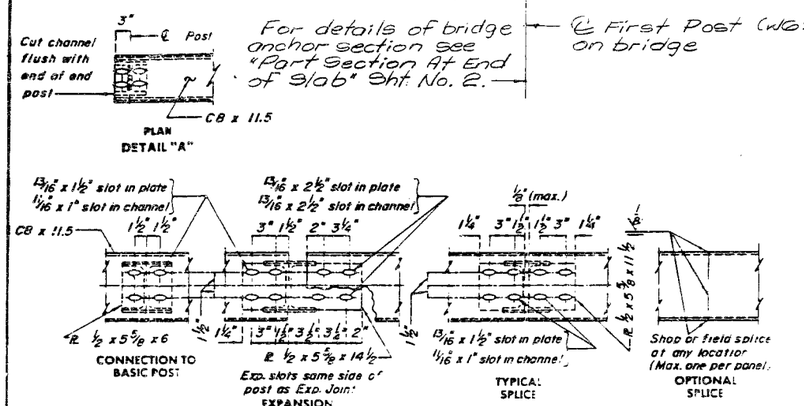
G-270R

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

STATE	PROJ. No. 6P 838-32	SHEET NO
MO	JOB No. 6P 838-32	66
SUR 2184	TWP 35N	RGE 2E



PART SECTION SHOWING RAIL



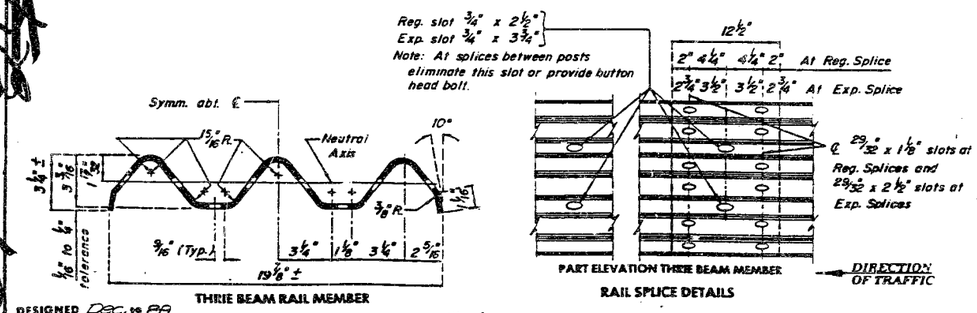
CHANNEL MEMBER DETAILS

FINAL QUANTITIES	
ITEM	TOTAL
Bridge Guard Rail (Thrie Beam) Lin. Ft.	38
Curb Removal for Thrie Bm. Installation Lin. Ft.	46
Bridge Anchor Section (Thrie Beam) Each	4

Note:
Curb Removal for Thrie Beam Installation" shall include end posts & baluster rails from End of Curb to End of Curb. Rails & end post shall be removed to top of existing curbs.

NOTE:

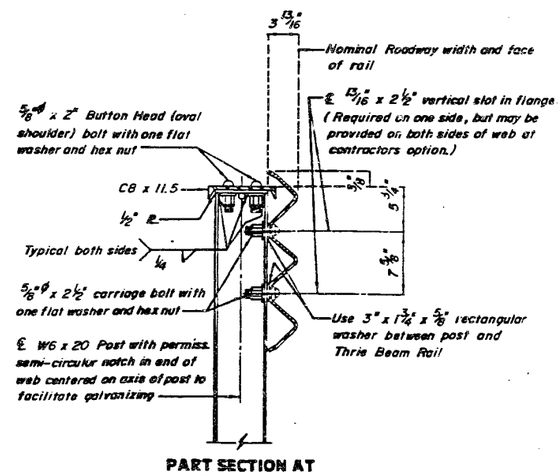
Maintain one lane of traffic during construction.
Light dashed lines indicate old work. Heavy lines indicate new work.
Contractor shall verify all dimensions in field before ordering materials.
Remove an equivalent thickness of the existing asphalt mat prior to the placement of roadway surfacing across the bridge. (Rdwy. Item)



THRIE BEAM RAIL MEMBER

PART ELEVATION THRIE BEAM MEMBER

RAIL SPLICE DETAILS



PART SECTION AT RAIL POST

DESIGNED Dec. 19 89
DETAILED Dec. 19 89
CHECKED Dec. 19 89

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

Sheet No. 14 of 4

REPAIRS TO
BRIDGE OVER BRANCH OF CEDAR CREEK
STATE ROAD FROM DENT CO. LINE TO ROUTE 21
ABOUT 4 MILES WEST OF BELLEVIEW
PROJECT NO. 6P838-32 Sec A **STA.** 152 + 83.75
JOB NO. 6P 838-32 **RTE.** 32
IRON **COUNTY**
DATE 12/27/89

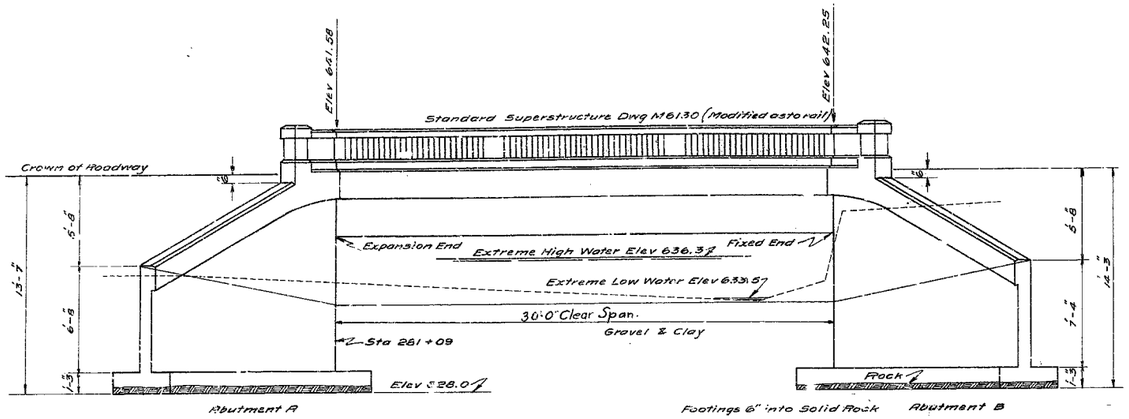
STD. 606.00
STD.
G-270R

134

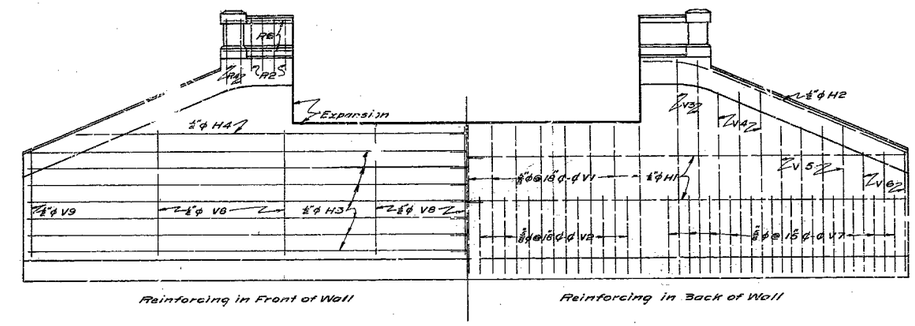
FED. ROAD DIST. No.	STATE	FED. AID PROJ. No	FISCAL YEAR	SHEET No.	TOTAL SHEETS
5	MO.	193	19	72	

A

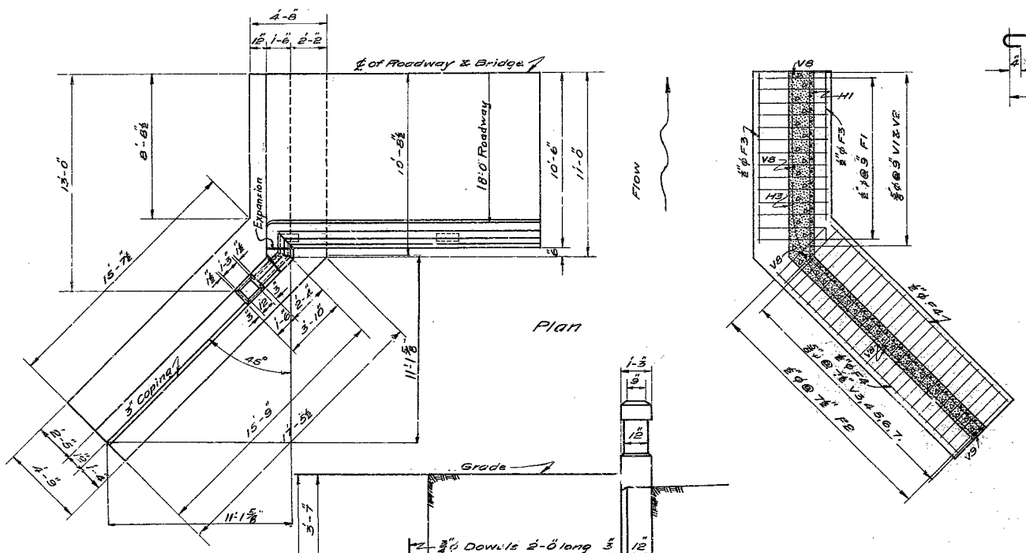
9

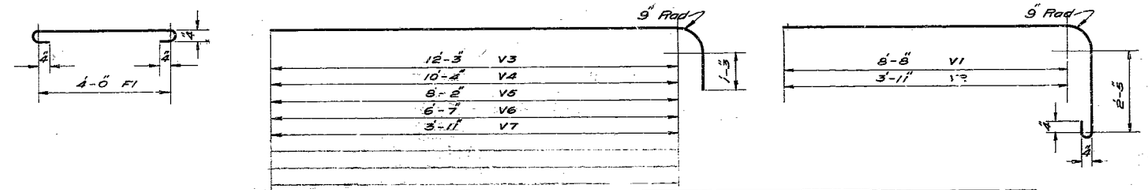


Elevation



Developed Elevation





Bill of Reinforcing Steel

No	Size	Mark	Length	Remarks
30	⅝"φ	V1	13'-1	See Sketch
28	⅝"φ	V2	8'-4"	" "
8	⅝"φ	V3	14'-6"	" "
12	⅝"φ	V4	12'-3"	" "
16	⅝"φ	V5	10'-7"	" "
12	⅝"φ	V6	9'-0"	" "
48	⅝"φ	V7	6'-11"	" "
14	½"φ	V8	7'-9"	Straight
4	½"φ	V9	6'-5"	"
8	½"φ	H1	26'-6"	Bent in field
4	½"φ	H2	16'-0"	" " "
28	½"φ	H3	27'-0"	" " "
4	½"φ	H4	24'-0"	" " "
56	½"φ	F1	5'-8"	See Sketch
100	½"φ	F2	4'-5"	Straight
6	½"φ	F3	20'-6"	"
12	½"φ	F4	15'-3"	"
8	¾"φ	D1	2'-0"	Dowels

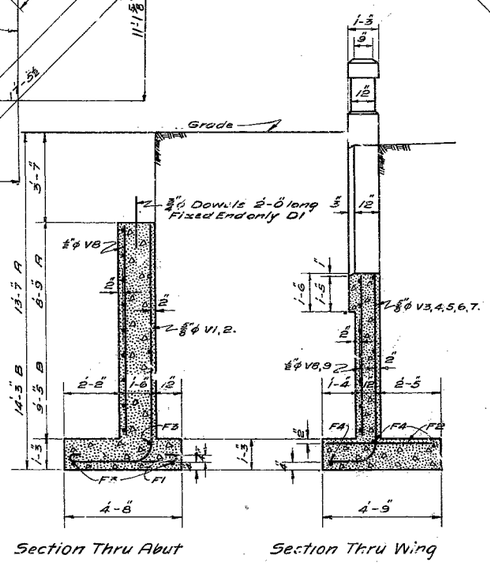
Estimated Quantities

Handrail	1:2:3	3.9	Cu Yds.
Beam & Slab	1:2:4	36.5	Cu Yds.
Abuts & Wings	1:2:4	69.7	Cu Yds
Reinforcing Steel	(Superstructure)	7370	Lbs.
Reinforcing Steel	(Abuts & Wings)	3110	Lbs.

General Notes :-

All general notes on Standard Dwg M6130 to apply to this bridge.
Concrete in Abutment & Wings 1:2:4 Mix.

Change in Superstructure Steel as given on Standard Dwg M6130.
Length of R1 bars decreased to 31'-2" long.
Number of R2 bars increased to 28.
Add 16-R6 bars ⅝"φ 3'-9" long in rail over Wing corresponding to R1 bars.



DRAWN May 1922 BY C.F.B.
CH'K'D May 1922 BY C.C.H.

MISSOURI STATE HIGHWAY DEPARTMENT

BRIDGE OVER KEESLING ~~BRANCH~~

STATE ROAD FROM IRONTON TO SALEM
ABOUT 7½ MI. FROM BELLEVIEW
PROJECT No. 193 (RT. 32) STA. 281+09

IRON COUNTY

SUBMITTED BY [signature] BRIDGE ENGINEER
APPROVED BY [signature] STATE HIGHWAY ENGINEER

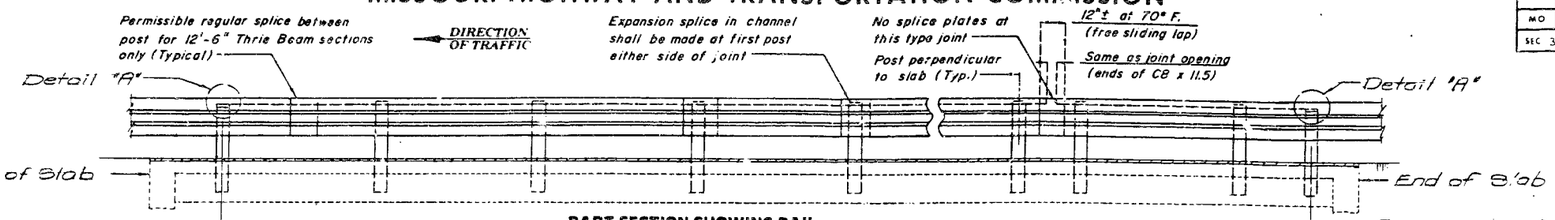
M6130
G272

275

AUCKERT CO. ST. L. MO.

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

STATE	PROJ NO	SHEET NO
MO		12
SEC 32	TWP 35N	RGE 2E



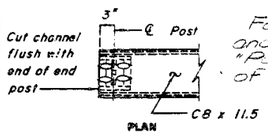
PART SECTION SHOWING RAIL

For details of bridge anchor section see "Part Section At End of Slab" Sht. No. 2.

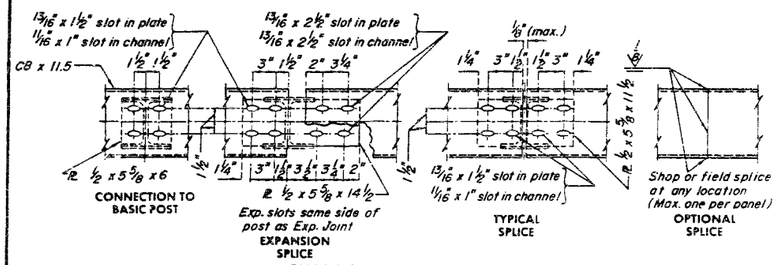
℄ First Post (W6x20) on bridge

℄ First Post (W6x20) on bridge

For details of bridge end or section see "Part Section At End of Slab" Sht. No. 2.



PLAN
DETAIL "A"



CHANNEL MEMBER DETAILS

ESTIMATED QUANTITIES	
ITEM	TOTAL
Bridge Guard Rail (Thrie Beam) Lin.Ft.	57
Curb Removal for Thrie Bm. Installation Lin.Ft.	82
Bridge Anchor Section (Thrie Beam) Each	4

Note:
"Curb Removal for Thrie Beam Installation" shall include end posts & baluster rails from End of Curb to End of Curb. Rails & end post shall be removed to top of existing curbs.

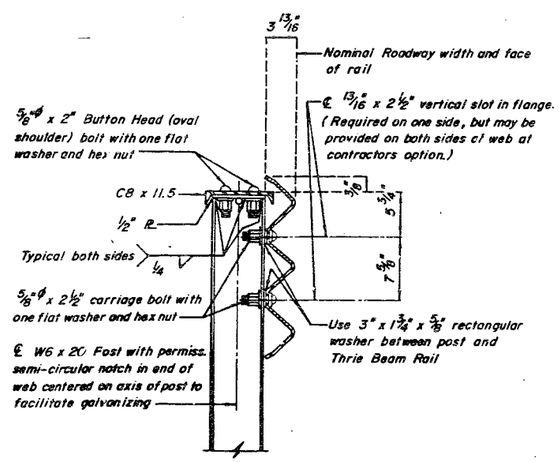
NOTE:

Maintain one line of traffic during construction.

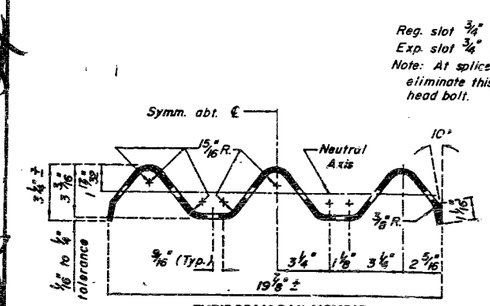
Light dashed lines indicate old work. Heavy lines indicate new work.

Contractor shall verify all dimensions in field before ordering materials.

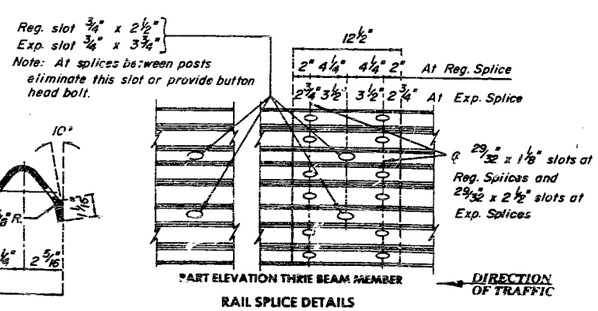
Roadway surfacing shall be used to build the existing riding surface on the bridge up to the elevation of the top of the existing concrete curbs (Rdwy. Item)



PART SECTION AT RAIL POST



THRIE BEAM RAIL MEMBER



RAIL SPLICE DETAILS

DESIGNED Dec. 1989
DETAILED Dec. 1989
CHECKED Dec. 1989

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

SIGNAL PLANS

Sheet No. 1 of 4

REPAIRS TO
BRIDGE OVER KEESLING BRANCH

STATE ROAD FROM DENT CO. LINE TO RTE. 21

ABOUT 7.5 MILES WEST OF BELLEVIEW

PROJECT NO. F-32-2(11)Sec A **STA.** 281 + 07.5

JOB NO. 6 - P - 32 - 838 **RTE.** 32

IRON **COUNTY**

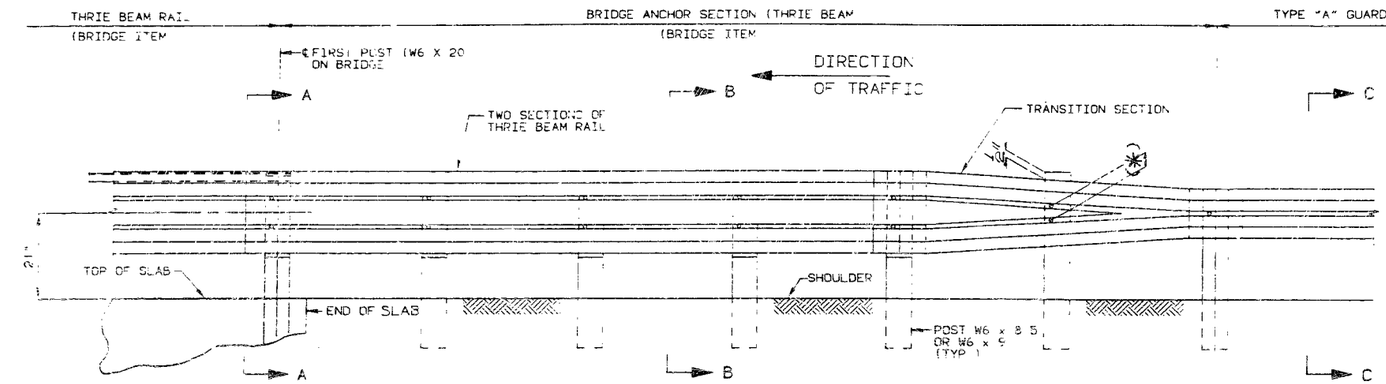
DATE 12/27/89

STD.
STD. 606.00
G-272R

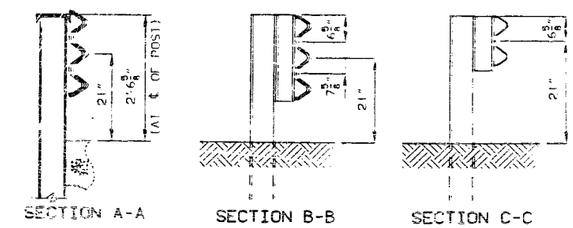
132 Sheet

NOTE
SEE GRIDGE THRIE BEAM RAIL SHEET FOR DETAILS NOT SHOWN

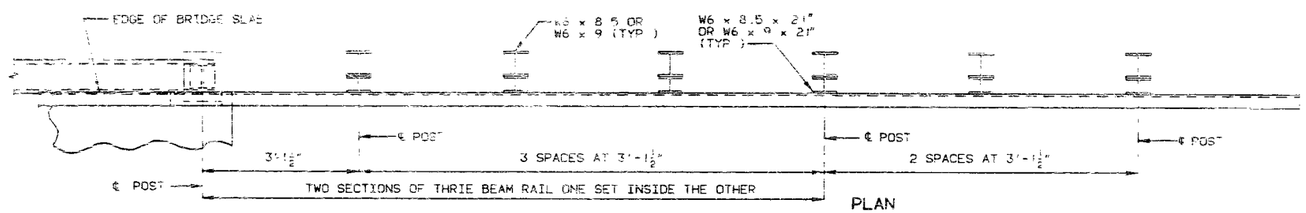
STATE	PROJ NO	SHEET NO
MO		13



PART SECTION AT END OF SLAB



SECTION A-A SECTION B-B SECTION C-C



PLAN

NOTES:

DESIGN AASHTO 1989 SPECIFICATIONS (FOR THRIE BEAM RAIL DESIGN ONLY)

THE THRIE BEAM RAILS AND THE TRANSITION SECTION FOR THE BRIDGE ANCHOR SECTION SHALL BE MADE OF STEEL AND SHALL BE 12 GAGE ZINC COATING SHALL BE TYPE 2

FOR PROTECTIVE COATING AND MATERIAL REQUIREMENTS, SEE SECTION 1040 OF THE MISSOURI STANDARD SPECIFICATIONS

RAIL POSTS SHALL BE SET PERPENDICULAR TO THE ROADWAY PROFILE GRADE AND VERTICALLY IN CROSS SECTION

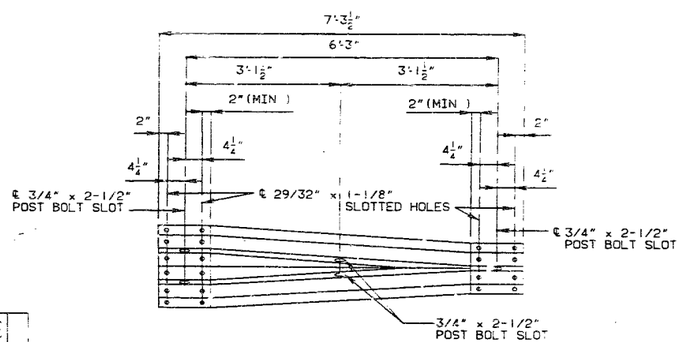
WASHERS SHALL BE USED AT ALL POST BOLTS (BETWEEN BOLT HEAD AND BEAM) THEY SHALL BE RECTANGULAR IN SHAPE (3" X 1-3/4" X 3/16" MIN) AND FLAT, OR WHEN NECESSARY OF SUCH DESIGN AS TO FIT THE CONTOUR OF THE THRIE BEAM RAILING WASHERS SHALL HAVE A 11/16" x 1" SLOTTED HOLE

USE 5/8"ø BUTTON-HEAD OVAL, SHOULDER BOLTS WITH HEX NUTS AT ALL SLOTS (THE THICKNESS OF THE HEX NUTS = 3/8".)

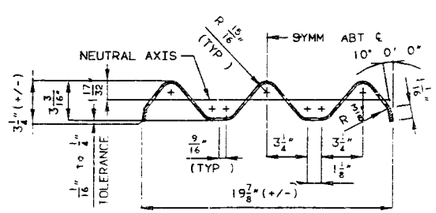
ALL LAP SPLICES SHALL BE MADE IN THE DIRECTION OF TRAFFIC

SEE MISSOURI STANDARD PLANS DRAWING 606.00 FOR DETAILS NOT SHOWN

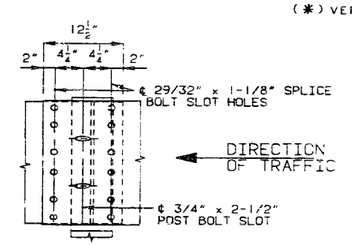
(*) VERIFY BY RAIL TRANSITION PRODUCER



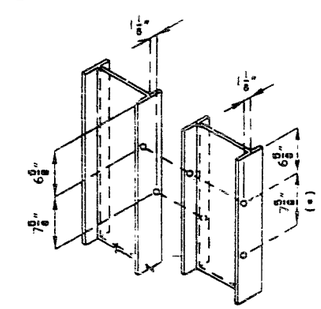
TRANSITION SECTION



SECTION THRU THRIE BEAM RAIL



THRIE BEAM RAIL SPLICE AT POST



(ALL HOLES 13/16" DIAMETER)

HOLE PUNCHING DETAILS
(FOR STEEL POST & BLOCKS)

ANCHOR SEC	REVISED (1)
AUG 1988	

DETAILED Dec. 1989
CHECKED Dec. 1989

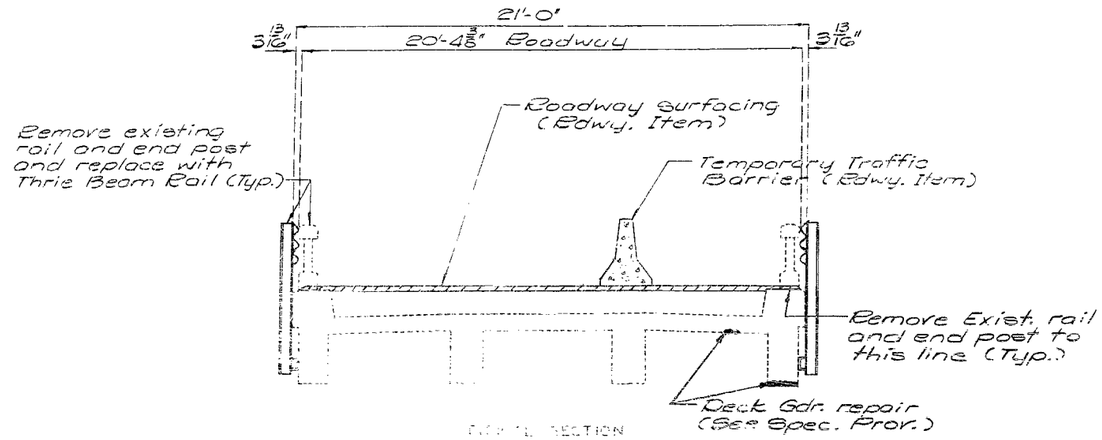
NOTE THIS DRAWING IS NOT TO SCALE FOLLOW DIMENSIONS

SHEET NO 2 OF 4

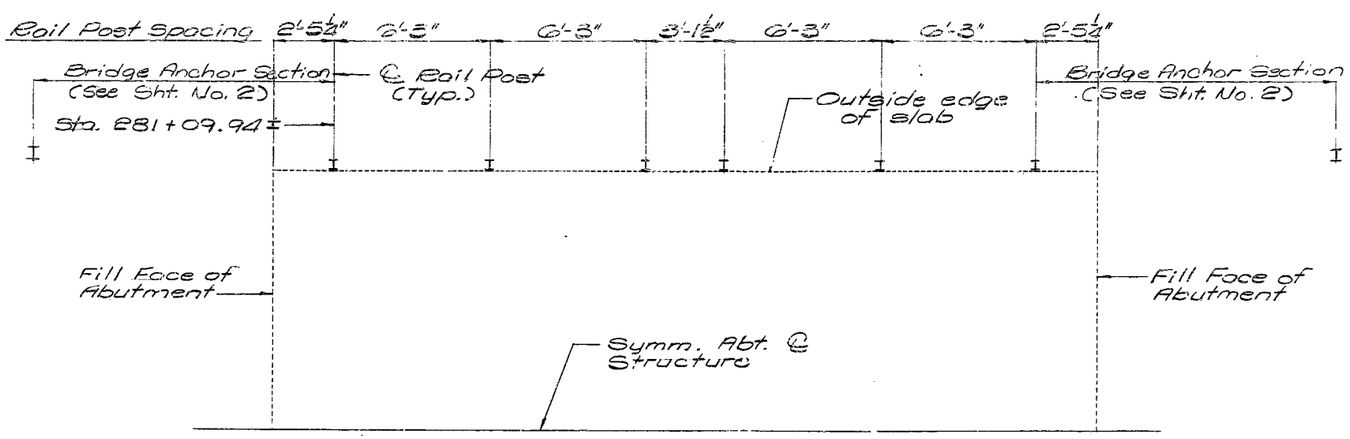
IRON COUNTY

G-272R

STATE	PROJ. NO	SHEET NO
MO		14



PARTIAL SECTION



HALF PLAN OF SLAB SHOWING RAIL POST SPACING

GENERAL NOTES:

DESIGN AASHTO 1989 SPECIFICATIONS.

PANEL LENGTHS OF CHANNEL MEMBERS SHALL BE ATTACHED CONTINUOUSLY TO A MINIMUM OF FOUR POSTS AND A MAXIMUM OF SIX POSTS (EXCEPT AT THE END BENTS).

ALL BOLTS, NUTS, WASHERS, PLATES AND ELASTOMERIC MATERIALS ARE CONSIDERED AS PART OF THE THRIE BEAM RAIL FOR PAYMENT.

ALL STEEL CONNECTING BOLTS AND FASTENERS FOR POST, RAILING AND ALL ANCHOR BOLTS, NUTS, WASHERS AND BOTTOM PLATES SHALL BE GALVANIZED AFTER FABRICATION. FOR PROTECTIVE COATING AND MATERIAL REQUIREMENT OF STEEL RAILING, SEE SECTION 1040 OF THE STANDARD SPECIFICATIONS.

RAIL POSTS SHALL BE SET PERPENDICULAR TO THE ROADWAY PROFILE GRADE AND VERTICALLY IN CROSS SECTION, AND ALIGNED ACCORDING TO SECTION 713 OF THE STANDARD SPECIFICATIONS, EXCEPT THAT THE RAIL POSTS SHALL BE ALIGNED BY THE USE OF SHIMS SO THAT IN THE FINAL ADJUSTMENT NO PART SHALL DEVIATE MORE THAN ONE INCH FROM TRUE HORIZONTAL ALIGNMENT. THE SHIMS SHALL BE 3" X 1-3/4" AND PLACED BETWEEN THE POST AND THE THRIE BEAM RAIL. THE THICKNESS OF THE SHIMS SHALL BE DETERMINED BY THE CONTRACTOR AND VERIFIED BY THE ENGINEER BEFORE ORDERING THE MATERIAL FOR THIS WORK.

AT THE EXPANSION SLOTS IN THE THRIE BEAM RAILS AND CHANNELS, TIGHTEN BOLTS, BACK OFF ONE- HALF TURN AND BURR THREADS.

USE 5/8 INCH BUTTON HEAD, OVAL SHOULDER BOLTS WITH HEX NUTS AT ALL SLOTS. (THICKNESS OF HEX NUTS = 3/8").

THRIE BEAM GUARD RAIL ON THE BRIDGE SHALL BE MADE OF STEEL AND SHALL BE 12 GAGE. POST, BASE PLATES, CHANNELS AND CHANNEL SPLICE PLATES ARE TO BE FABRICATED FROM A-36 STEEL AND GALVANIZED.

WASHERS SHALL BE USED AT ALL POST BOLTS (BETWEEN THE BOLT HEAD AND THRIE BEAM). THEY SHALL BE RECTANGULAR IN SHAPE (3" X 1-3/4" X 3/16" MIN.) AND FLAT WITH A 11/16" X 1" SLOT, OR WHEN NECESSARY OF SUCH DESIGN TO FIT THE CONTOUR OF THE BEAM.
(USE A 3" X 1-3/4" X 5/8" RECTANGULAR WASHER BETWEEN THE POST AND THE THRIE BEAM RAIL)

SPECIAL DRILLING OF THE THRIE BEAM MAY BE REQUIRED AT THE SPLICES. (ALL DRILLING DETAILS ARE TO BE SHOWN ON THE SHOP DRAWINGS.)

FABRICATION OF THE STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH SECTION 712 OF THE STANDARD SPECIFICATIONS.

EXPANSION SPLICES IN THE THRIE BEAM RAIL SHALL BE MADE AT EITHER THE FIRST OR SECOND POST ON EITHER SIDE OF THE JOINT AND ON STRUCTURE AT BRIDGE ENDS. WHEN THE SPLICE IS MADE AT THE SECOND POST, AN EXPANSION SLOT SHALL BE PROVIDED IN THE THRIE BEAM RAIL FOR CONNECTION TO THE FIRST POST TO ALLOW FOR MOVEMENT.
IN ADDITION TO THE EXPANSION PROVISIONS AT THESE EXPANSION JOINTS, EXPANSION SPLICES IN THE THRIE BEAM RAIL AND THE CHANNEL SHALL BE PROVIDED AT OTHER LOCATIONS SO THAT THE MAXIMUM LENGTH WITHOUT EXPANSION PROVISIONS DOES NOT EXCEED 200 FT.

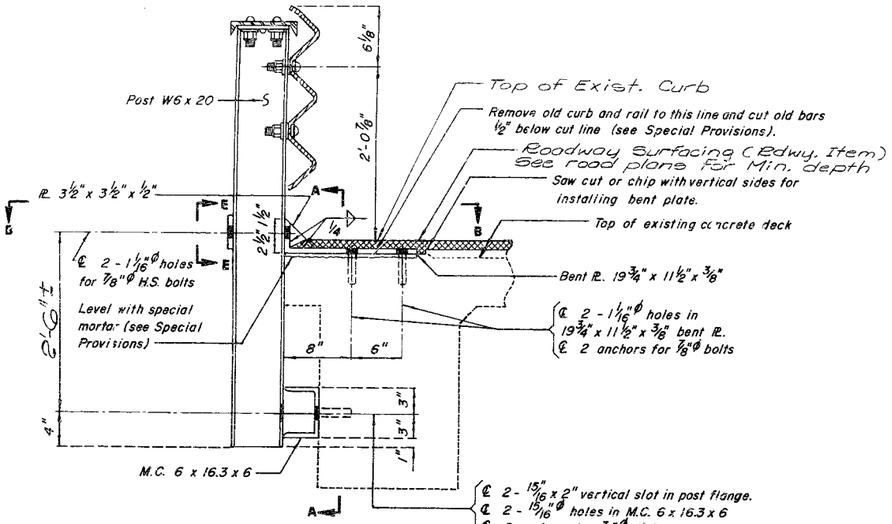
DETAILED Dec 1989
CHECKED Dec 1989

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

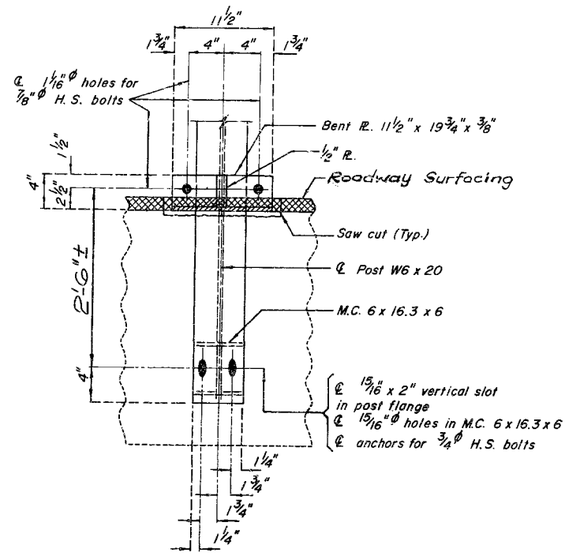
IRON COUNTY

G-272R

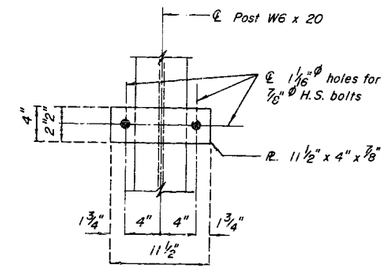
STATE	PROJ NO	SHEET NO
MO		15



PART SECTION AT RAIL POST



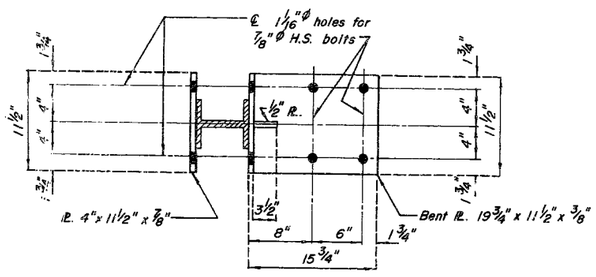
SECTION A-A



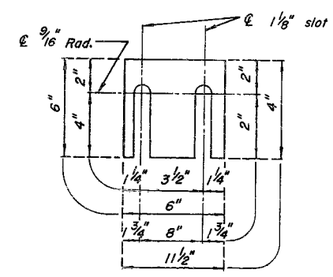
ELEV. E-E

NOTE:

AT THE OPTION OF THE CONTRACTOR ONE OF THE ANCHOR SYSTEMS LISTED IN THE JOB SPECIAL PROVISIONS MAY BE SUBSTITUTED FOR THE CONE EXPANSION TYPE CONCRETE ANCHORS NOTED ON THE PLANS.



SECTION B-B



DETAIL OF SHIM PLATES

Note:

Shim plates 6" x 6" x 1/16" may be used between M.C. 6 x 16.3 x 6" and old concrete and shim plates 11 1/2" x 4" x 1/16" may be used between post W6 x 20 and 19 3/4" x 11 1/2" x 3/8" bent plate as required for horizontal alignment.

Shim plates may vary in thickness from 1/16" to the thickness required and may be used in multiples.

Shim plates shall be galvanized after fabrication.

Note:

Concrete anchors shall be the cone expansion type for hot-dip galvanized bolts.

Concrete anchors shall have a certified concrete pull out strength (ultimate load) of at least 15,500 pounds in 3,000 psi concrete.

Rehab. (T-BM/DECK GDR)	REVISED
SEPT. 1985	SEPT. 1986

DETAILED Dec, 1989
CHECKED Dec, 1989

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

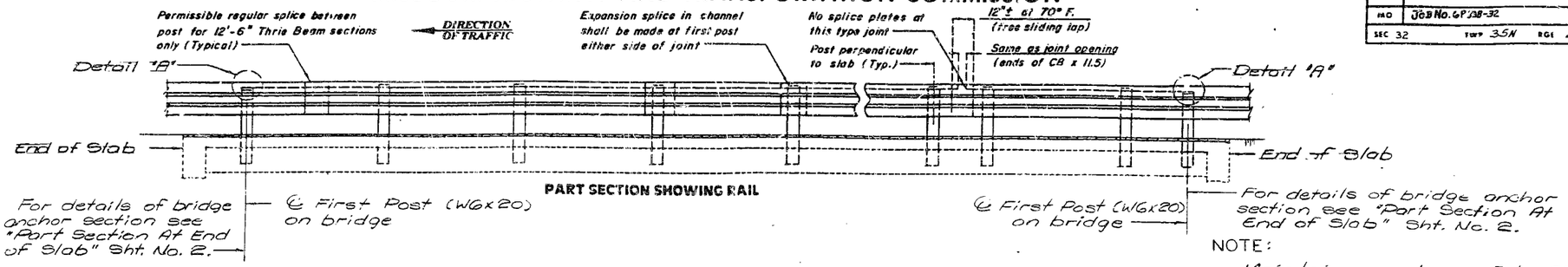
Sheet No. 4 of 4

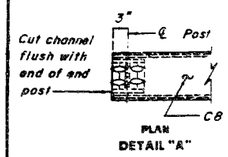
IRON COUNTY

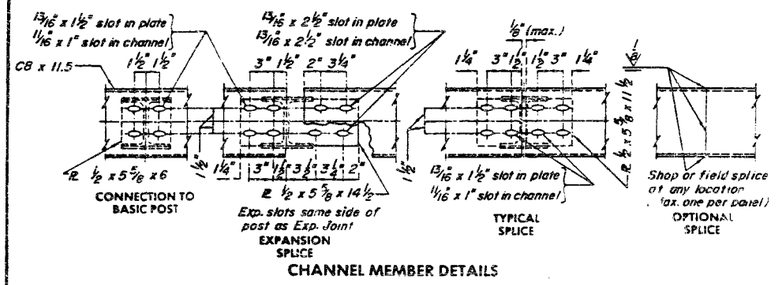
G-272R

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

STATE	PROJ. No. GP 838-32	SHEET NO
MO	JOB No. GP 838-32	67
SEC 32	TWP 35N	RGE 2E







CHANNEL MEMBER DETAILS

FINAL QUANTITIES	
ITEM	TOTAL
Bridge Guard Rail (Thrie Beam) Lin. Ft.	57
Curb Removal for Thrie Bm. Installation Lin. Ft.	82
Bridge Anchor Section (Thrie Beam) Each	4

Note:
"Curb Removal for Thrie Beam Installation" shall include end posts & baluster rails from End of Curb to End of Curb. Rails & end post shall be removed to top of existing curbs.

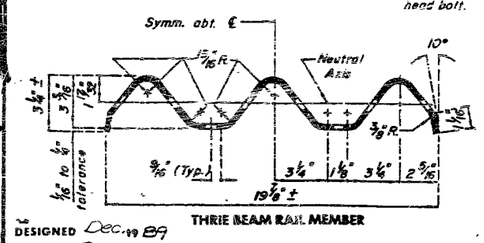
NOTE:

Maintain one lane of traffic during construction.

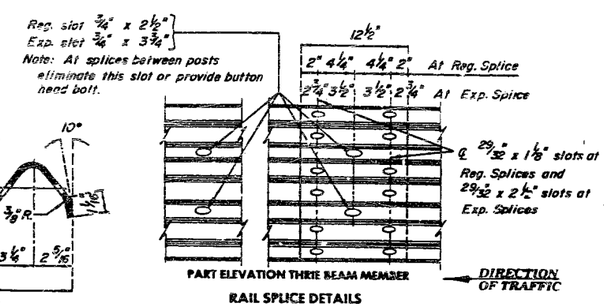
Light dashed lines indicate old work. Heavy lines indicate new work.

Contractor shall verify all dimensions in field before ordering materials.

Roadway surfacing shall be used to build the existing riding surface on the bridge up to the elevation of the top of the existing concrete curbs (Rdwy. Item)

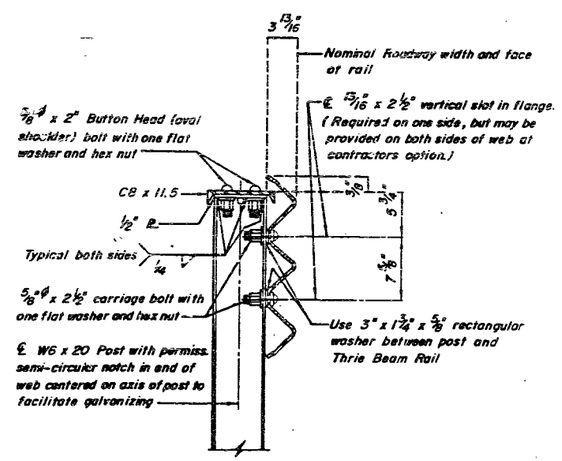


THRIE BEAM RAIL MEMBER



PART ELEVATION THRIE BEAM MEMBER

RAIL SPLICE DETAILS



PART SECTION AT RAIL POST

REPAIRS TO
BRIDGE OVER KEESLING BRANCH

STATE ROAD FROM DENT CO. LINE TO RTE. 8

ABOUT 7.5 MILES WEST OF BELLEVIEW

PROJECT NO. GP 838-32-Sec A **STA.** 281 + 07.5

JOB NO. GP 838-32 **RTE.** 32

IRON **COUNTY**

DATE 12/27/89

STD.
STD. 606.00
G-272R

DESIGNED Dec. 1989
DETAILED Dec. 1989
CHECKED Dec. 1989

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

Sheet No. 1A of 4

142

LOCATION ROUTE 21 WESTERLY TO THE EASTERN BOUNDRY OF THE CLARK NATIONAL FOREST

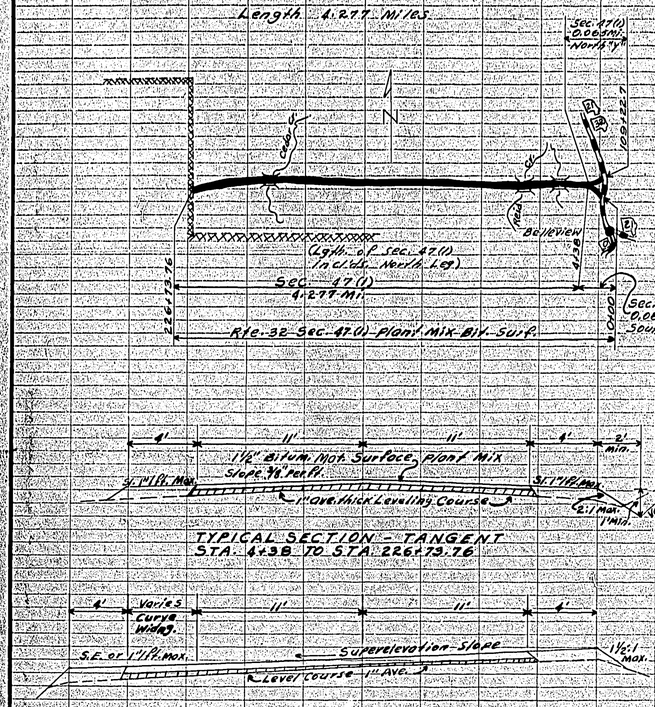
TYPE PLANT MIX BITUMINOUS SURFACE 22 FEET WIDE

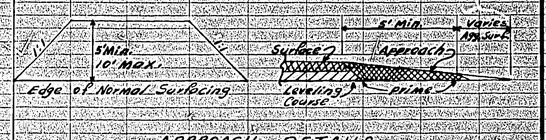
MISSOURI STATE HIGHWAY COMMISSION

SUMMARY OF QUANTITIES

FINAL PLANS

FED. ROAD DIST. No.	STATE	PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
5	MO.	SECTION 47 (1)			
DIST. No.		COUNTY		ROUTE	SEC. No.
6		IRON		32	





LENGTH OF PROJECT

End of Project	Station	226+73.76	
Beginning of Project	Station	4+38.00	
Apparent Length		22235.76	Feet
Equations and Exceptions:			
Additions			
South "Y" 510+00 TO 4+38		1438.00	*
North "Y" 510+09.22.7 TO 12+67.7		1244.40	
(* Not Included in State Length)			
Total Corrections		1244.40	Feet
Net Length of Project		22500.16	Feet
	State Length =	4.277	Miles
	Federal Length =	0	Miles

GENERAL SUMMARY

ITEM NO.	DESCRIPTION	UNIT	TOTAL UNITS	NO. UNITS FED. AID ONLY
23502	Shaping Shoulders	Mi.	4.36	
35064	Surface Material Chat (2)	C.Y.	38	
37207	Primer RC-0	Gal.	1890	
37015	Sanding Primer	Ton	37	
41067	Bituminous Material (Surf) (120-150)	Gal.	65310	
41005	Mineral Aggregate (Surf)	Ton	4455	
41167	Bituminous Material (Leveling) (120-150)	Gal.	8160	
41105	Mineral Aggregate (Leveling)	Ton	558	
87100	Construction Signs	L.S.	1	
	Contingent Item			
	Asphalt Pavement Samples	Ea.	9	

Prepared By A.G. SMITH Date Sept. 12 1963 Checked in Dist. Office By C.E. Hale Date 11/14 1963 Checked in Central Office By [illegible] Date [illegible] Revised By [illegible] Date [illegible]

538

504

MISSING FROM
FINALS

CO. Iron
RTE. 32
[redacted] - PROJ. F 193A
SH# TT

TITLE SHEET

[redacted]

[redacted]

[redacted]

FINAL SURVEY		BY	DATE
	SURVEYED		
	PLOTTED		
	TEMPLATE		
	AREAS		
NOTE BOOK			
NO.	AREAS CHECKED		

ORIGINAL SURVEY		BY	DATE
	SURVEYED		
	PLOTTED		
	TEMPLATE		
	AREAS		
NOTE BOOK			
NO.	AREAS CHECKED		

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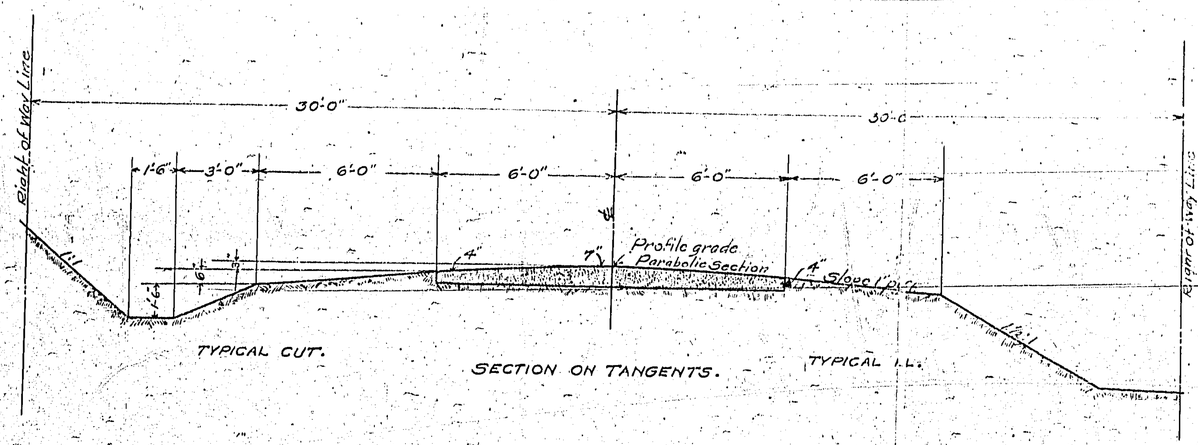
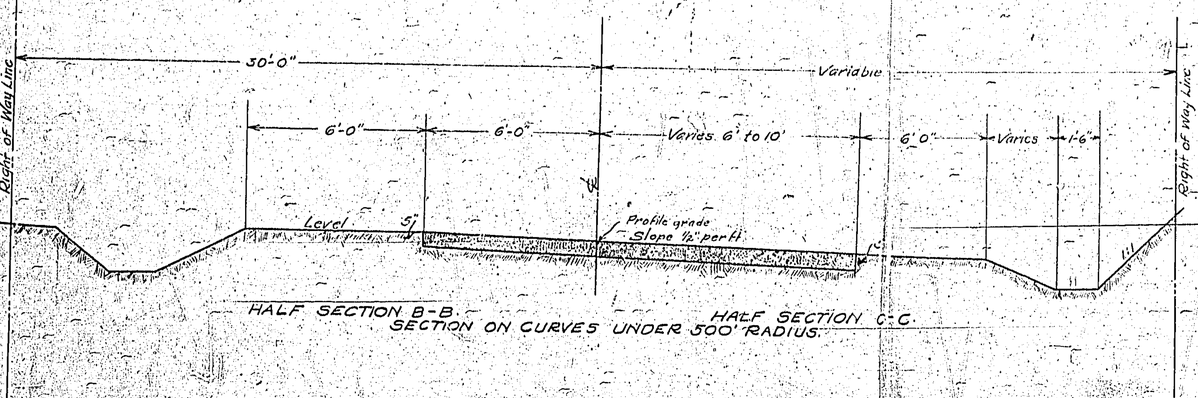
Drawing No.	Scale	Drawn by	Traced by	Date	Checked by	Approved by
5	No			1921		



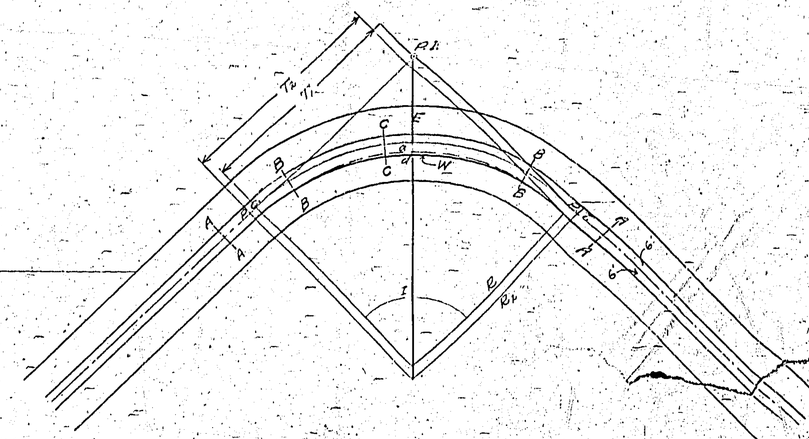
TYPICAL CUT. SECTION ON TANGENTS. TYPICAL F.L.

TYPICAL SECTIONS OF GRAVEL PAVEMENT.

Note: Gravel spread 9" at center and 6" at edges loose measurement should compact to the depths shown; requires approx. 1500 cu.yds. per mile.



HALF SECTION B-B. HALF SECTION C-C.
SECTION ON CURVES UNDER 500' RADIUS.



$W = 4'-0''$
$R_1 = R - 6'-0''$
$E = R \text{ exsec } \frac{I}{2}$
$R_2 = R - R \text{ exsec } \frac{I}{2}$
$T_1 = R_1 \tan \frac{I}{2}$
$T_2 = R_2 \tan \frac{I}{2}$
$\text{Area (abcda)} = \frac{\pi I}{360}(R_1^2 - R_2^2) + (R_1 + R_2)(T_2 - T_1)$

Superelevation begins at section AA 25' from P.C. or P.T. and attains its full value at section BB 50' from AA

TYPICAL PLAN OF CURVES UNDER 500' RADIUS

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(10)

MISSOURI STATE HIGHWAY DEPARTMENT

ESTIMATE SHEET

County of IRON

Length ~~7.37~~ 7.197 miles

FED. ROAD DIST. NO.	FEDERAL AID PROJ.	STATE ROUTE NO.	TOTAL SHEETS	SHEET NO.	CONTRACT SHEETS
1	1428		30	27	107

Description of paving 12' GRAVEL

Prepared by CST Date NOVEMBER 23RD 1922 Name of road BELLVIEW TO DENT COUNTY

EXCAVATION

Station	To Station	Earth	Rock	Borrow	Overhaul	Extra Earth
0+00	13+00	703.4		830.0	433.0	
	25+00	381.5				
	32+00	546.4	52.0	67.5		
	39+50		605.9	1805.0		
	52+00	171.0		18.3	808.0	12.0
	65+00	1079.8				4.0
	79+50	923.8			975.0	5.0
	88+00	601.2		710.0		15.0
	99+00	761.9	10.0			
	107+00	567.8				
	117+00	611.3		1598.0		
	129+00	828.1	10.0			
	140+00	120.7	127.0	1075.0		
	150+00	3.0	394.2	900.0		
	157+00	80.0	54.0	2044.3		
	165+20	450.0				6.0
	178+00	748.9			187.0	15.0
	189+00	746.4				10.0
	196+00	1175.1		1560.0		
	203+00	1143.0		2310.0		
	215+00	545.2				30.0
	284+50	1140.8				
	231+00	277.4				5.0
	241+00	1625.5				5.0
	247+50	1148.4				
	253+35	986.5				
	265+00	1010.4		110.4	50.0	10.0
	278+00	493.1				
	277+50	863.9				3.0
	289+00	1244.6		1013.0		7.0
	296+50	308.9				12.0
	308+00	877.1				
	311+50	1516.4				5.0
	319+25	1353.2				
	326+00	1543.4				
	339+00	1065.7		80.7		3.0
	348+00	868.9				6.0
	358+00	378.4				
	365+00	861.8				10.0
	374+25	773.7		19.9		
	386+00	509.5		110.0	420.0	10.0
		21714	1253.1	13960.4	2453.0	173.0

STD. CONCRETE CULV.

Station	Type	Size	Length	Concrete Cu. Yds.	Reinforcing Steel
01+71	M226	6X4	50	33.8	3129
17+53	RM224	4X2.5	24	13.3	1088
61+00	RM223	3X2	28	10.8	935
82+43	RM224	4X2.5	24	12.7	960
115+92	RM3210	10X5	24	38.1	2950
142+11	RM3210	10X5	26	40.2	3134
165+20	RM226	5X3	24	16.7	1175
172+43	RM224	4X2.5	24	12.7	960
195+00	RM328	8'X4'	26	31.6	2207
204+04	RM224	4X2.5	40	17.9	1502
218+71	M226	6X4	28	25.5	1878
232+65	RM328	8X4	40	43.4	3226
249+25	RM223	3X2	32	11.8	1050
253+54	RM3210	10X5	40	55.0	4422
279+43	RM225	5X3	30	19.3	1424
311+28	RM223	3X2	37	13.0	1194
				400.1	31234

STD. PIPE CULVERTS.

Station	15" CIP	18" CIP	24" CIP	Cubic Yds. Concrete
25+77		32		2.2
34+00		32		2.2
56+05		28		2.2
73+61			32	3.4
110+50		28		2.2
133+30		30		2.2
165+30		28		2.2
181+09		30		2.2
185+00		30		2.2
192+00			34	3.4
213+00	30			1.6
222+45		30		2.2
227+10		30		2.2
238+00		30		2.2
242+00		30		2.2
243+68		32		2.2
255+47		40		2.2
262+76	40			1.6
267+90			30	3.4
271+25	28'			1.6
275+00		30		2.2
287+00	30			1.6
294+00		30		2.2
308+08		30		2.2
307+54			32	3.4
314+88			34	3.4
322+48		46-28'		2.2
324+35		36		2.2
328+15		50-12'		2.2
334+43		44 " "		2.2
335+25	28'			1.6
336+51		34		2.2
347+00	30			1.6
137+		28		2.2
	186	755	162	77

SUMMARY

Item	Description	Unit	Quantity
1	Earth Excavation	Cu. Yd.	21714
2	Rock Excavation	" "	1253.1
3	Borrow	" "	13960.4
4	Overhaul	Yd. Sta.	2453.0
31	Class "B" Concrete Masonry	Cu. Yd.	400.1
33	Class "C" Concrete Masonry	" "	31.2
41	15" Corrugated Iron Pipe	Lin. Ft.	186.0
43	18" " " "	" "	618.0
43A	18" " " 1/4" Pipe	" "	140.0
44	24" " " "	" "	162.0
55	Stone Underdrain	" "	100.0
56	12" Vit. Clay Pipe	" "	60.0
67	Rip Rap	Sq. Yd.	120.0
79	Wooden Guard Railing	Lin. Ft.	820.0
80	Gravel Paving Spec. "C"	Sq. Yd.	31022.0
	Sta. 371+90 Bridge		
108	Concrete Masonry Class "A"	Cu. Yd.	5.6
109	" " " "B"	" "	105.3
110	" " " "C"	" "	23.2
112	Reinforcing Steel	Lb.	11340.0
	Sta. 152 x 85' Bridge		
108	Concrete Masonry Class "A"	Cu. Yd.	3.1
109	" " " "B"	" "	89.3
110	" " " "C"	" "	59.4
112	Reinforcing Steel	Lb.	3500.0
	Sta. 200 x 21'		
109	Concrete Masonry Class "B"	Cu. Yd.	88.0
112	Reinforcing Steel	Lb.	4080.0
116	Structural Steel	"	60970.0
117	Steel Castings	"	1630.0
119	G.P. Rail	Lin. Ft.	488.0
121	Creo. Lumber	F.B.M.	12430.0
	Sta. 88 x 103		
108	Concrete Masonry Cl. Class "A"	Cu. Yd.	3.9
109	" " " "B"	" "	106.2
112	Reinforcing Steel	"	10490.0

Standard Guard Rail Sta.-Sta.	Length
304+-304+50	220.0
197-200	600.0
	820.0

Rip Rap Sta.-Sta.	Sq. Yds.
41+50-42+50	35.0
54-55	35.0
151+50-153	50.0
	120.0

Stone Underdrain Sta.-Sta.	Length
291+50-292+50	100.0
Vit. Clay Pipe	60.0

GRAVEL PAVING SPEC. "C"

(38800-50) x 12 ÷ 27 x 2 = 31022.0 Sq. Yds.
9

Note: Sta. 0100 is 648+11.9 on Ironton - Caledonia Highway

Thos. Reed Survey - No. 3093

Hubert Russell

0+00 P.C.

Δ 44°20'
T 268.8
L 500.5
R 200.0

Highway Line

S 89° 30' W.

L. W. Crane Est.

Robt. Reed Survey - No. 11

Hubert Russell

Sta. 0+11 Construct Reinforced Concrete
Culvert 6' x 6' x 50' - M. 226 - 30° to ℄
Flows L to R - Elev. of Inlet 580.30
D.A. 80 Acres Hilly

Sta. 1+17.58 Construct Reinforced
Concrete Culvert 4' x 2' 6" x 26' - R.M.
22A - 90° to ℄ Flows L to R
Elev. of Inlet - 584.32 D.A. 30A - Hilly

Hubert Russell

Δ Rt. 30°50'
D 5°
T 316.0
L 616.6
R 1146.3

Sta. 26+45 Construct CT Pipe Culvert
18" x 32' - 90° to ℄ Flows Right
D.A. 4 Acres Hilly

B.M. - Tree 24" Black Oak Rt. of
644+30 on Ironton - Caledonia Road
Elev. 596.97

B.M. - Top of Curb Road Pass Left
23 100 - Elev. 597.73

Exc. 705.1
Emb. 1276.6
Bor. 330.0
O.H. 433.0

Exc. 576.1
Emb. 335.8

Exc. 8.6
Emb. 335.8

L.W. Crane, Est.
Hubert Russell
Hubert Russell
Red Creek
Geo. Phillips
Geo. Phillips
Geo. Bryant
Exc. Diversion Ditch
75' Left - 6' Wide on bottom - 1 to 1 slopes
use Exc. for Borrow
Sta. 35+60 - Construct C.I. Pipe Culvert - M-11 - 18" x 38' - 60° Skew - Flows R - D.A. 3 Acres Fully
Sta. 32+15 to 40+50 - Construct Wooden Guard Rail - Each Side of Road 270 Lin. Ft. Guard Rail
Sta. 38+65 - Special Bridge Design
Sta. 41+00 - Construct C.I.P. Culvert 28" x 28' - 70° Hdg. - Flows Left D.A. 5 Acres Rolling
Sta. 54+90 - Construct Reinforced Conc. Culvert M-226 - 6' x 4' x 26' - 70° Hdg. Flows Left - D.A. 150 Acres Rolling
Sta. 56+90 - Construct Diversion Ditch 2 feet wide on bottom with 1 to 1 slopes 75 feet Left Extra Acre 10 Cubic Yards to be included in the balance of Exc.
Note - This road will probably be abandoned in the near future
B.M. - Km. Limestone Rock 30' Lt. of 39+00 Elev. 549.73
B.M. - Root of 18" Maple 60' Lt. of 55+40 Elev. 579.97

Sec. 36 - T35N - R2E
Sec. 25 - T35N - R2E
T. E. Wallen
Joe Montgomery
Joe Phillips
Sta. 100 - Construct Reinforced Concrete
Sta. 73 - Construct Reinforced Concrete
Sta. 82 + 49 - Construct Reinforced Concrete
Fac - 6610
Amb - 10934
Bar - 702

Sta. 110+ Build
New 18x28 C.I.P.
M.11 Side Road Drain
Survey No. 3295
Sec. 36 T35N R2E
Sec. 25 T35N R2E
Sec. 26 T35N R2E
Sec. Corner
Wm Roh
Angle Rt. 0°39'
Sta. 115+92 Construct 10 x 5 x 24
Reinforced Concrete Culvert R.M. 3210
90° to ℄ T.L. W.S. Lt. to R. Elev. of Inlet
619.2 D.A. 600 A. Tailing

FED. ROAD DIST. NO.	STATE	FED. AID PROJ.	SHEET NO.	TOTAL SHEETS
5	MO.	1132	7	107

Survey No. 2293

Angle Lt. 2°45'

Angle Lt. 0°75'

Angle Rt. 2°20'

Angle Rt. 0°20'

U.M.C.W.

Sta. 133+50 Construct Pipe
Cert. I. Pipe Co. Pipe Arch
Head Walls Mill-Gov. Hwy.
Flow Line R-DH 2 Filter-Hill

Sec. 20 - T 35 N - R 2 E

Sta. 172+11 = 14.6 x 7.00 x 14 Conc. Pipe
Cert. Construct. Co. Pipe No. 3 Pipe
Construct Co. Pipe Arch 20 Tr. Pipe
Concrete Wing RM 3210 90°
Flow Line R-X Filter Hill 3623
DH 1250 A-Hill

Sta. 137+
Build New M-11
1-23 C.I.P.
Side Road Drain

Sta. 229+
Construct
Same M.S.C.

Russell

Angle Rt 1°45'

160+18.2

Survey 3295

Corner of Surveys and Sec. 26

Angle 2°30' Lt.

Survey 2184

Anderson

Angle Lt 1°30'

177+17.5

Right of Way Line

S 87°45' W

S 89°33' W

S 87°43' W

S 89°11' W

Russell

Survey 2119

No pipe necessary here, ditch road. Water drains Northern West side of Road

Sec. 26-T35N-R2E

Sta. 152+65 See special Design by Bridge Dept D.A. 629 A. Tilly

Sta. 160+18.2 Construct 4'x2'x24' Reinforced Conc. Culv. R.N. 227 9" Lt. Flow Line R. Elev. Inlet 560.8 D.A. 40 Acres Rolling

Sta. 172+45 - Construct 5'x3'x24' Reinforced Conc. Culv. R.N. 225 - Outlet Flow Line R. Elev. of Inlet 568.- D.A. 80. Rolling. Rock at this point makes bottom in the culvert unnecessary. See sketch for change in quantities.

B.M. – Root of 36" Black Oak 20' Left of 165+65 Elev. 563.94

B.M. – Root of 36" Locust 20' Left of 178+36 Elev. 580.24

Exc. 90.0 Emb. 237.2 Borrow 147.2

Exc. 440.2 Emb. 348.6

Exc. 115.5 Emb. 537.5 Borrow 421.9

Exc. 515.5 Emb. 450.8

Elev. 590 580 570 560 550

Sta. 130 1 2 3 4 135 6 7 8 9 160 1 2 3 4 165 6 7 8 9 170 1 2 3 4 175 6 7 8 9 180

Survey 2184
C. Alexander
T.L. Standley
Survey 2119
Sta. 195+00 Construct 8 x 4 x 26
Reinforced Concrete Culvert
Exc. 175
Emb. 14484
Bor. 1560
Exc. 443
Emb. 2296
Bor. 2310
180
185
190
195
200
205
210

Survey No 2189
Fr. Sec. 34-T35N-R2E
Sec. 33-T35N-R2E
S. Richards
Angle 0°00'
Angle 6°25' Rt
Sol. Nelson
R/W line
Sta. 213+00 (Construct CIP Reinforced Concrete Culvert N. 226 90° to ℄ Elev. of Inlet 3382 D.A. 80 ft. only)
Sta. 220+75 (Construct 18" Culvert 30' Long N. 90° to ℄ D.A. 5 ft. Plugged)
Sta. 222+75 (Construct 6'x7'x28' Reinforced Concrete Culvert Headwalls N. 90° to ℄ Elevation R. 3382 D.A. 20 ft.)
Sta. 232+00 (Construct 18" Culvert 30' Long N. 90° to ℄ D.A. 5 ft. Plugged)
Sta. 237+00 (Construct 18" Culvert 30' Long N. 90° to ℄ D.A. 5 ft. Plugged)
Sta. 242+00 (Construct 18" Culvert 30' Long N. 90° to ℄ D.A. 5 ft. Plugged)
Sta.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	193 A	[redacted]	11	107

198

Sec. 33-T-35 N-R 2 E
Sec. 32-T-35 N-R 2 E
S.D. Brooks
Sta. 281+40 - See Special Design Sheet No. 12
D.H. Lillo
Sta. 273+43 Construct 5'x8'x50' Reinforced Concrete Culvert
Sta. 276+00 Construct 18" Corr. Pipe Culvert
Elev. 1079.0
Elev. 1078.5
Elev. 1077.8
Elev. 1076.0
PLAN
PROFILE
CURRENT CONTRACT
NO. CONTRACTS
STATE
TWO.
PROJECT NO.

119199

C.O 2
Iron County
John Dammon
John Damman
Sta. 302+08 - Construct C.I.P. Culvert M-11 Headwalls - 18" x 30' - Flows Left - D.A. 5 Acres - Hilly.
Sta. 307+48 - Construct C.I.P. Culvert M-11 Headwalls - 24" x 34' - Flows Left - D.A. - 5 Acres - Hilly.
Sta. 311+34 - Construct 3' x 2' x 34' - Concrete Culvert - R.M. 223 - 90° to ℄ - Flows Left D.A. - 10 Acres - Hilly - Elev. at Inlet 712.92
Sta. 314+82 - Construct C.I.P. Culvert M-11 Headwalls - 24" x 32' - Flows Left - 90° to ℄ - D.A. 5 Acres - Hilly
Sta. 324+50 to 329+50 Construct Wooden Guard Rail - Left side only. 500 Lineal Feet
Guard Rail
Diversion Ditch
Sta. 325+00 - Construct C.I.P. Culvert M-11 Headwalls - 18" x 50' - 12 gauge - 90° to ℄ - Flows Left - D.A. - 3 Acres Hilly.
Sta. 328+78 - Construct C.I.P. Culvert M-11 Headwalls - 18" x 46' - 12 gauge 90° to ℄ - Flows Left - D.A. 3 Acres Hilly.
Exc. 1150.50
Emb. 902.50
Exc. 1252.40
Emb. 1128.40
Exc. 1420.00
Emb. 1565.90
Extra Exc. 333.89
300
310
320
330
PLAN

C.O. 2

Iron County

Sec 5-T34N R2E

Sec. 4-T34N-R2E

Sec 32-T35N-R2E

Sec. 31-T35N-R2E

John Damman

Olfert Creek Road

Present Road

Sta. 332+50 to 335+00
Construct Wooden Guard Rail
Left Side only
250 Linear Feet.

Sta 337+28 - Construct C.I.P. Culvert
M-11 Head walls - 90° to ℄ - 18" X 34'
Flows Left - D.A. - 3 Acres. Hilly.

Sta 334+28 - Construct C.I.P. Culvert
M-11 Head walls - 15" X 34'
90° to ℄ - Flows Left - D.A. - 1 Acre - Hilly.
Contour Location - See X section

Equation 349+856 = 349+219

Exc. 3106.0
Emb. 2810.0

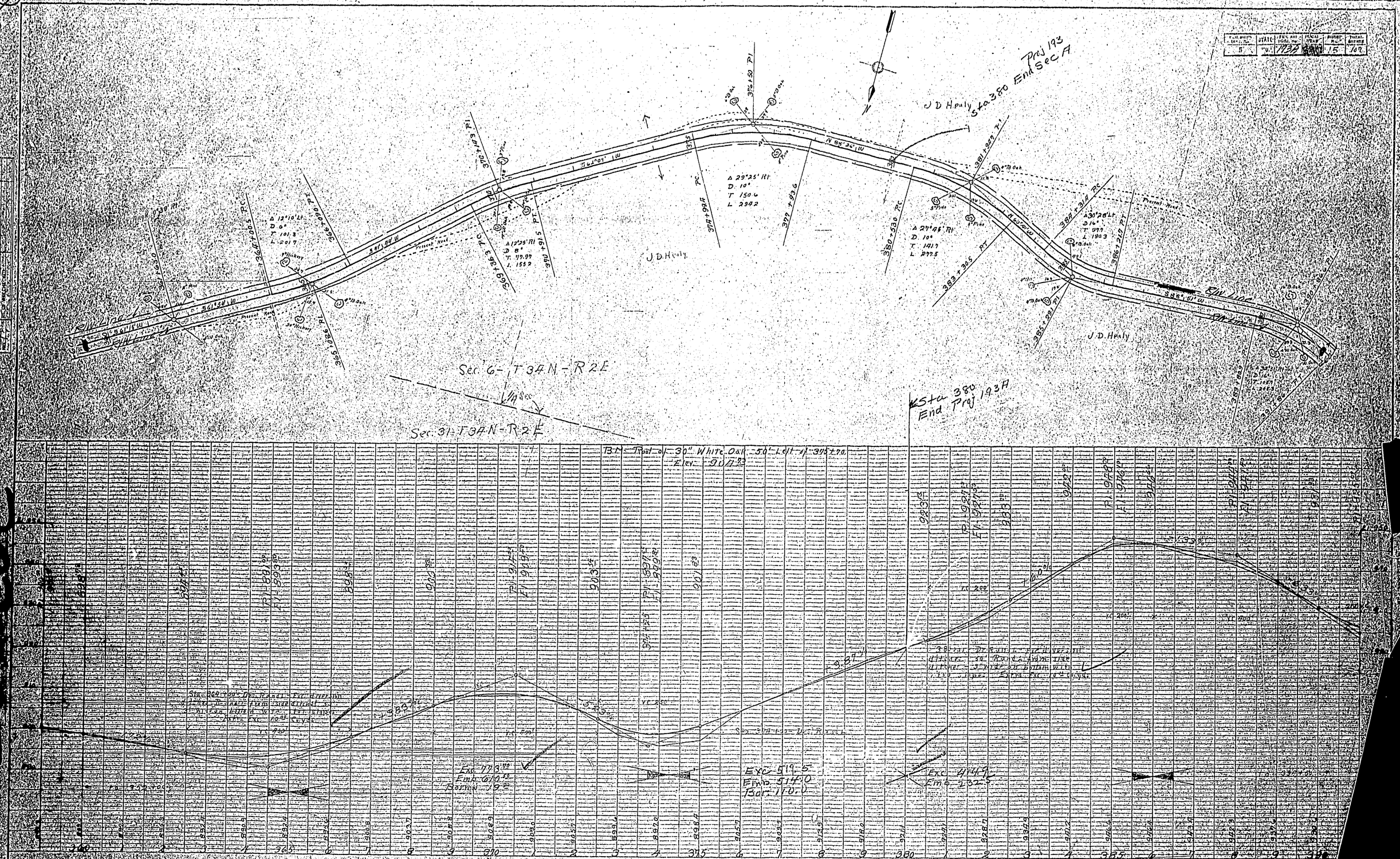
Exc. 1014.0
Emb. 852.0

Exc. 358.0
Emb. 193.0

Exc. 851.0
Emb. 661.0

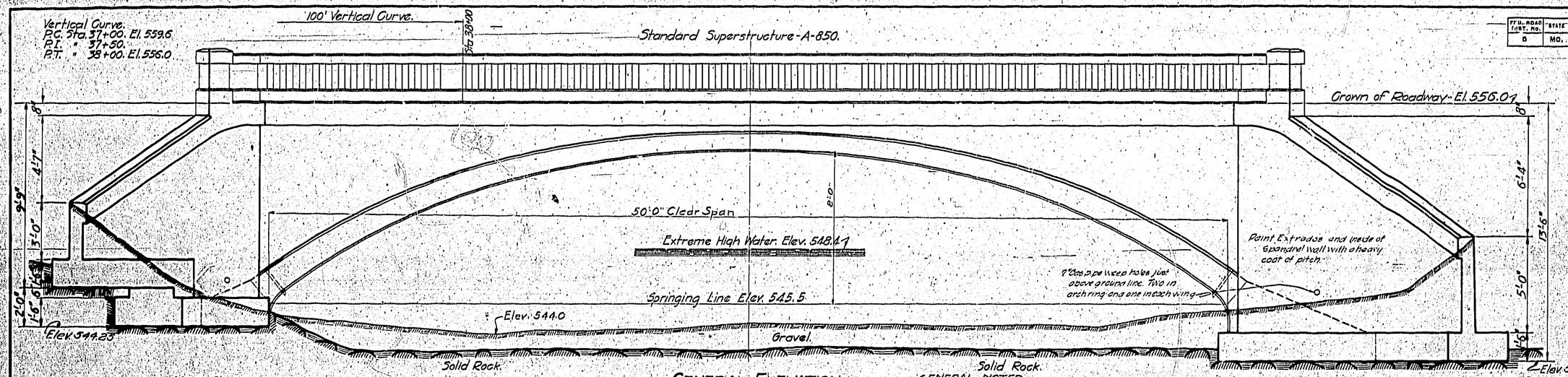
PLATE I - PLAN-PROFILE - C.P.R. & R.R. STANDARD

FED. REG. DIVISION	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	WY	1793	[illegible]	15	107



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
8	MO.	193	19	69	17

Vertical Curve.
P.C. Sta. 37+00. El. 559.6
P.I. " 37+50.
P.T. " 38+00. El. 556.0



Note. Channel to be cleaned to rock 50'-0" above and below bridge; Not included in bridge contract.

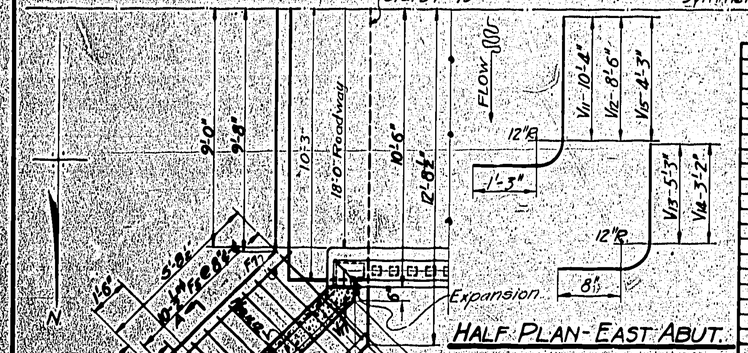
GENERAL ELEVATION

GENERAL NOTES
All general notes on Standard A-850 apply to this drawing.
Concrete in Abutments 1:3:5 mix

ESTIMATED QUANTITIES.

Location.	Concrete C.Y.	Reinf. Steel.
Handrail.	12.3	650
Spandrel Wall.	12.4	600
Arch Ring.	35.6	184
Wings.		6940
Abutments.		1590
Total.	35.6	1560
	122.3	1340

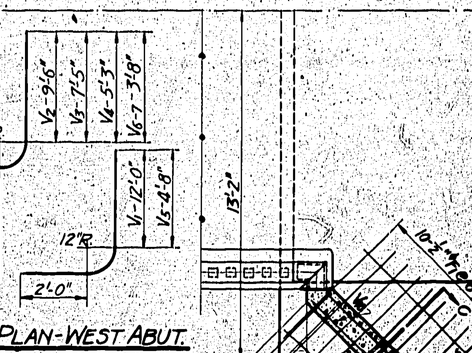
Sta. 37+90 — Symmetrical about ℄



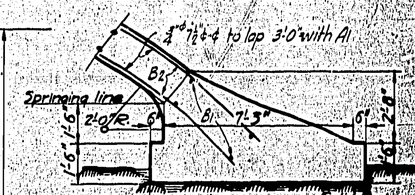
HALF PLAN-EAST ABUT.

BAR BILL.

No.	Size.	Length.	Mark.	Remarks.	No.	Size.	Length.	Mark.	Remarks.
6	¾" ⊗	15'-7"	V1	See Sketch	2	¾" ⊗	17'-6"	H3	Bend in field
8	½" ⊗	12'-9"	V2	" "	10	½" ⊗	16'-3"	H4	Straight
8	½" ⊗	10'-3"	V3	" "	4	½" ⊗	13'-9"	H5	"
8	½" ⊗	7'-8"	V4	" "	6	½" ⊗	7'-6"	H6	"
8	¾" ⊗	8'-3"	V5	" "	2	½" ⊗	12'-6"	H7	"
12	½" ⊗	6'-8"	V6	" "	2	½" ⊗	9'-6"	H8	"
10	½" ⊗	6'-1"	V7	" "	2	½" ⊗	13'-6"	H9	Bend in field
2	½" ⊗	5'-6	V8	Straight	8	½" ⊗	13'-0"	H10	Straight
2	½" ⊗	8'-6"	V9	"	2	½" ⊗	9'-6"	H11	"
2	½" ⊗	11'-9"	V10	"	8	½" ⊗	5'-6"	H12	"
8	¾" ⊗	13'-2"	V11	See Sketch	20	½" ⊗	5'-6"	F1	"
4	¾" ⊗	11'-4"	V12	" "	12	½" ⊗	2'-4"	F2	"
6	½" ⊗	7'-6"	V13	" "	12	½" ⊗	3'-11"	F3	"
8	½" ⊗	5'-5"	V14	" "	6	½" ⊗	16'-3"	F4	"
10	¾" ⊗	7'-1"	V15	" "	20	½" ⊗	4'-8"	F5	"
2	½" ⊗	3'-6"	V16	Straight	18	½" ⊗	2'-11	F6	"
4	½" ⊗	8'-6"	V17	"	6	½" ⊗	6'-6"	F7	"
2	½" ⊗	16'-0"	H1	"	6	½" ⊗	7'-0"	F8	"
2	½" ⊗	13'-9"	H2	"	13	½" ⊗	3'-0"	D1	"
8	½" ⊗	20'-0"	B1	"					
66	¾" ⊗	7'-0"	B2	"					
66	¾" ⊗	7'-0"	B3	Hooked					

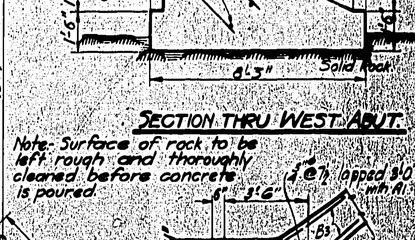


HALF PLAN-WEST ABUT.

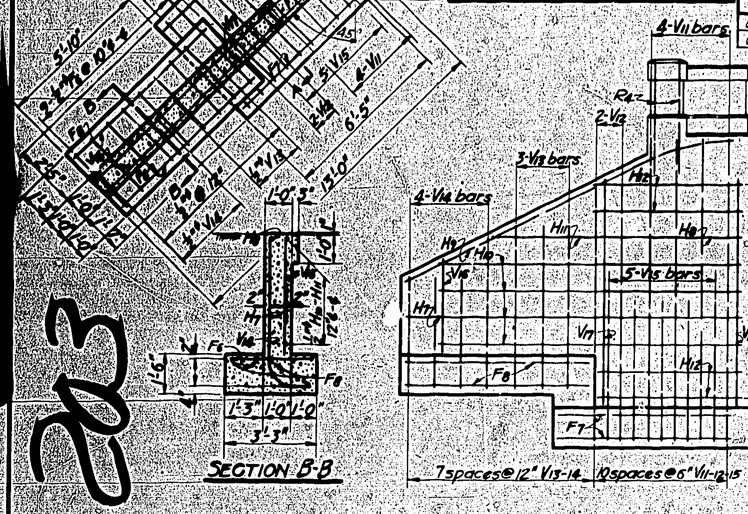


SECTION THRU WEST ABUT.

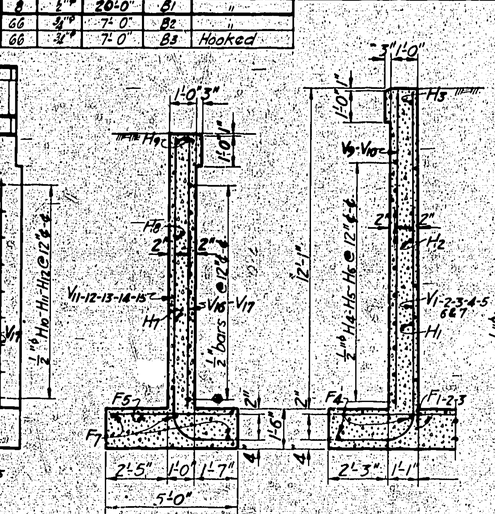
Note: Surface of rock to be left rough and thoroughly cleaned before concrete is poured.



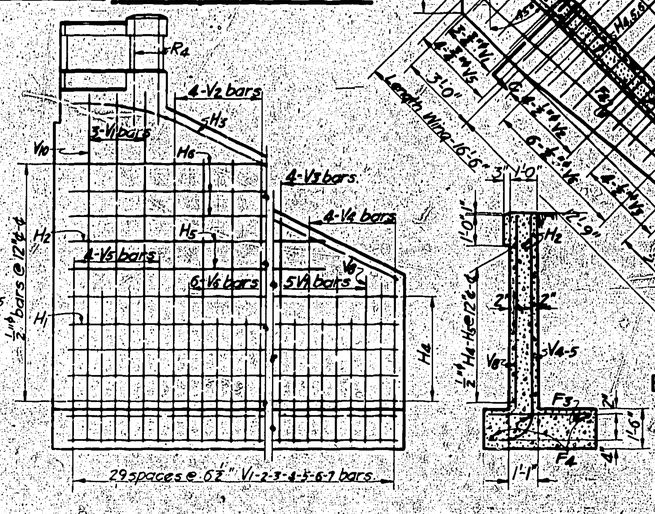
SECTION THRU EAST ABUT.



ELEVATION-EAST WING.



SECTION A-A. SECTION C-C.



ELEVATION-WEST WING. SECTION D-D.

SECTION B-B

SECTION THRU ARCH RING AT SPANDREL WALL

MISSOURI STATE HIGHWAY DEPARTMENT

BRIDGE OVER REED'S CREEK

STATE ROAD - IRONTON TO SALEM
ABOUT 1½ MI. FROM BELLVIEW
PROJECT No. 193 STA. 37+90
IRON COUNTY

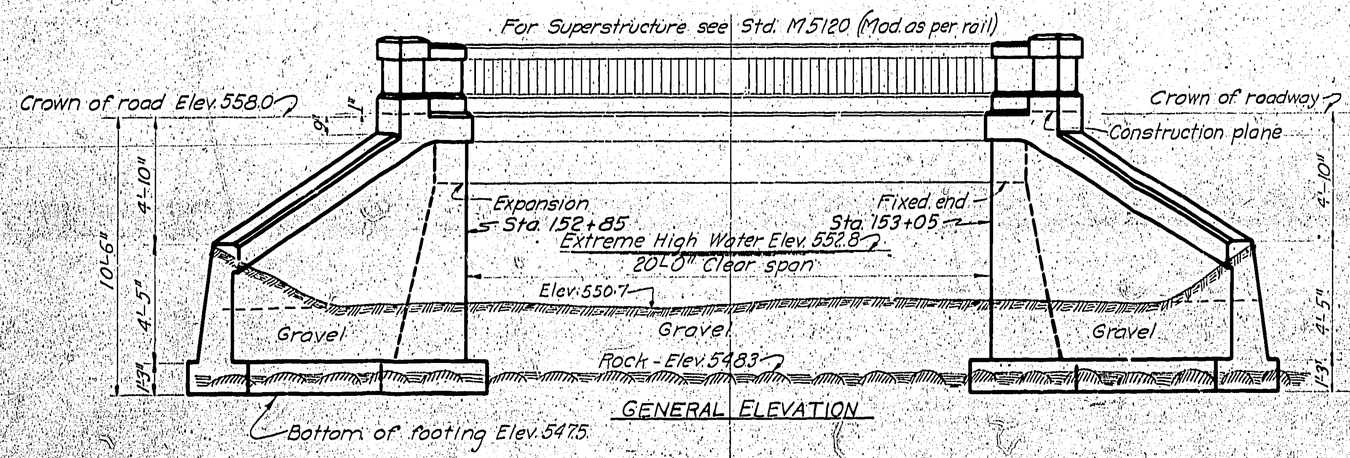
Submitted by C. H. Mann — BRIDGE ENGINEER
Approved by [signature] — STATE HIGHWAY ENGINEER

A-650
G-2A

Drawn Apr. 1922 by H.W.K.
Ch'k'd Aug. 1922 by J.W.C.

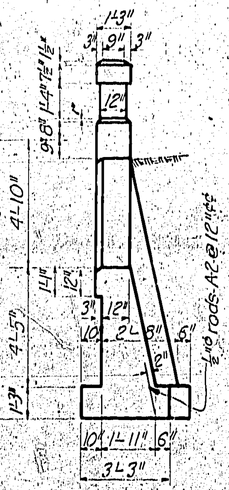
23

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	193	1922	70	

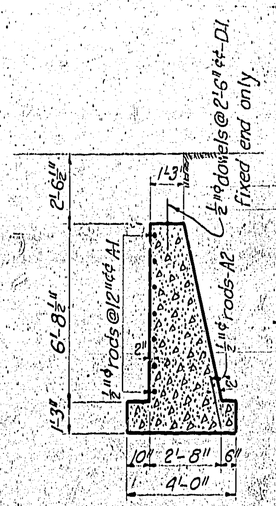


GENERAL ELEVATION

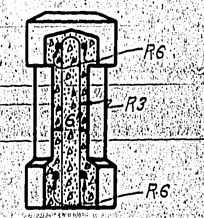
Note:-
Excavate channel to rock 50 feet above and below bridge; Not included in bridge contract.



END VIEW OF WING



SECTION ON ℄



SECTION THRU RAIL ON TOP OF WING

GENERAL - NOTES

All general notes on standard drawing M5120 to apply on this drawing. Concrete in wings and abutment to be 1:3:5 mix.

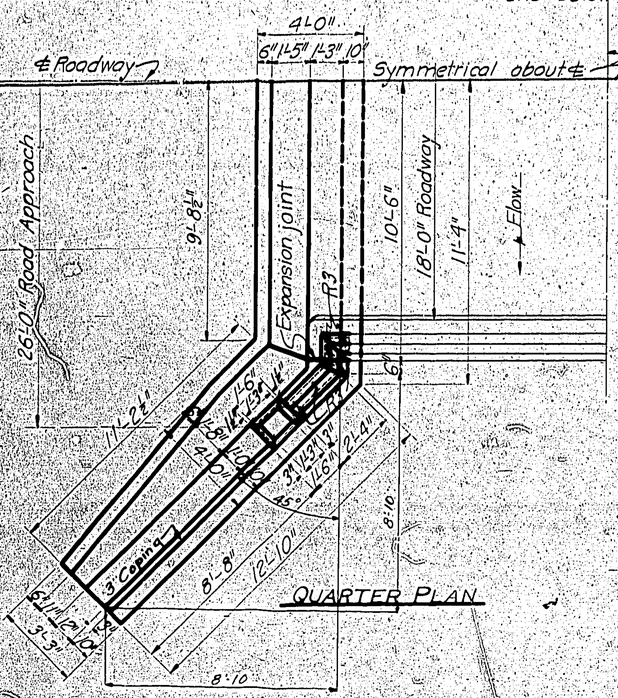
ESTIMATED QUANTITIES

Description	Rail	Slab and Wing	Abutments and Wings	Total
1:2:3 Concrete	31 cu. yd.			31 cu. yds.
1:2:4 "		29.3 cu. yds.		29.3 cu. yds.
1:3:5 "			59.4 cu. yds.	59.4 cu. yd.
Rein. Steel	510 lbs.	2700 lbs.	290 lbs.	3500 lbs.

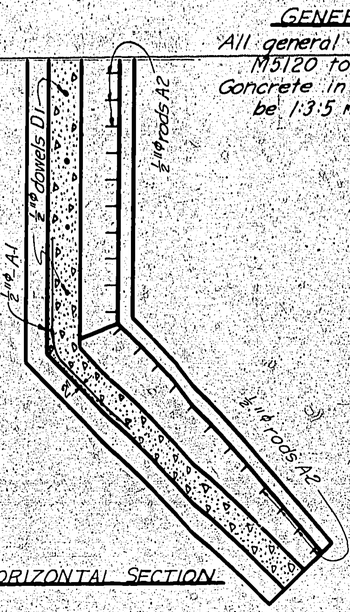
BAR - BILL

No.	Size	Length	Mark	Remarks
8	½"φ	2'-0"	D1	Dowels
28	¼"φ	8'-0"	A1	Bend in place
88	¼"φ	2'-0"	A2	Straight

Changes in superstructure steel as given on Std. M5120.
Length of R1 bars changed to 21'-0"
No. of R3 bars changed to 24
Add 16 R6 bars ¼"φ 3'-6" long. Bars are in rail over wing corresponding to R1 bars.



QUARTER PLAN



HORIZONTAL SECTION

Draw. April 1922 by J.O.H.
Ch'k'd Apr. 1922 by J.W.C.

MISSOURI STATE HIGHWAY DEPARTMENT

BRIDGE OVER McCLURG BRANCH

STATE ROAD FROM IRONTON TO SALEM
ABOUT 4 MI. FROM BELLVIEW
PROJECT No. 193 STA. 152+85

IRON COUNTY

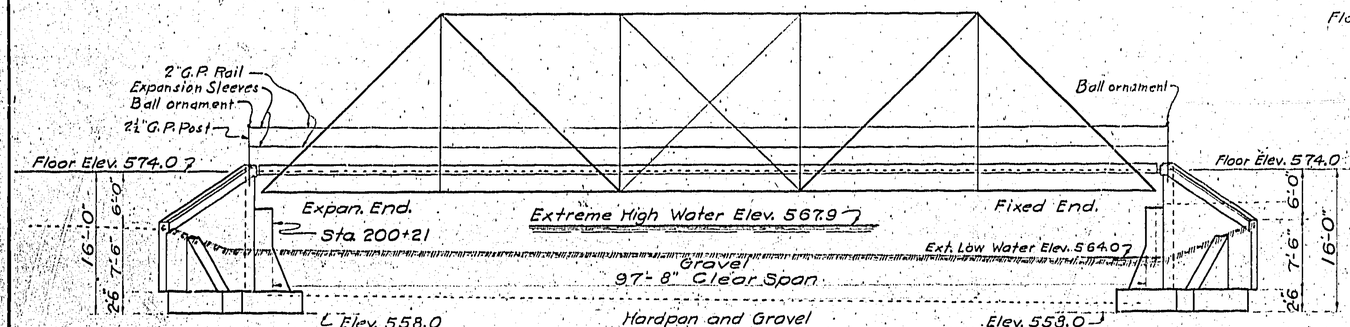
Submitted by [signature] BRIDGE ENGINEER
Approved by [signature] STATE HIGHWAY ENGINEER

M5120
G270

204

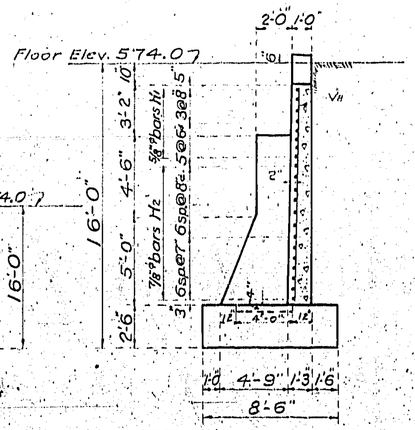
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TO SHE
5	MO.	193	19	71	

Superstructure as per Standards S 2100

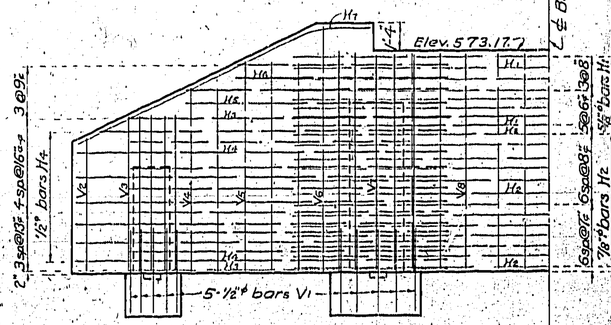


ELEVATION

Note. Make back fill on stream of abutment with boulders taken from the stream bed.



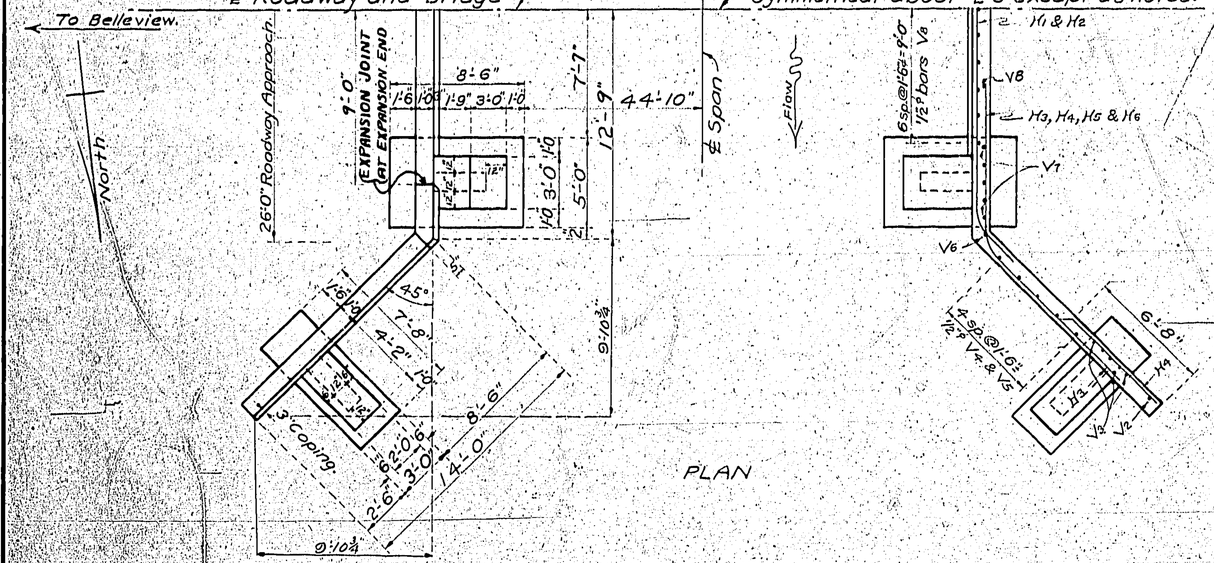
SECTION THRU ABUTMENT.



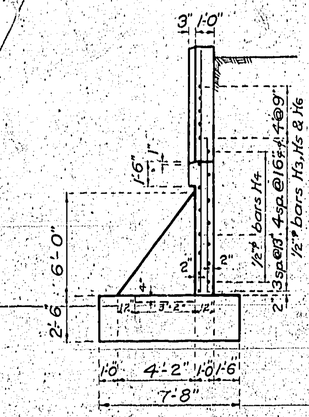
DEVELOPMENT OF BACK ELEVATION

℄ Roadway and Bridge

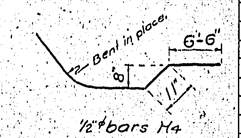
Symmetrical about ℄s except as noted.



PLAN



END ELEVATION OF WING.



BILL OF REINFORCING STEEL

No.	Size	Length	Mark	Remarks
16	5/8" ϕ	31'-0"	H1	Bent in place
26	7/8" ϕ	31'-0"	H2	" " "
32	1/2" ϕ	20'-0"	H3	" " "
28	1/2" ϕ	22'-6"	H4	See Sketch
8	1/2" ϕ	17'-0"	H5	Bent in place
8	1/2" ϕ	14'-0"	H6	" " "
4	1/2" ϕ	18'-2"	H7	" " "
40	1/2" ϕ	5'-0"	V1	Straight
4	1/2" ϕ	7'-4"	V2	" "
24	1/2" ϕ	8'-6"	V3	" "
8	1/2" ϕ	10'-4"	V4	" "
12	1/2" ϕ	11'-9"	V5	" "
4	1/2" ϕ	13'-8"	V6	" "
20	1/2" ϕ	12'-4"	V7	" "
26	1/2" ϕ	12'-4"	V8	" "

NOTE

S2100 TO BE FOLLOWED EXCEPT ROADWAY TO BE CHANGED FROM 17'-0" TO 18'-0" BETWEEN CURBS.

GENERAL NOTES

All general notes of Standard S 2100 to apply to this bridge.
All concrete to be 1:2:4 mix.
Rub exposed surfaces free from form marks to a smooth and uniform appearance. No plastering permitted.
Bevel exposed edges ½" where no other bevel is shown.
Reinforcing bars of billet steel, structural grade, of deformed type other than twisted squares. Net sectional areas not less than that of plain bars of the sizes given.
Bars to be blocked to the proper elevation, wired at intersections and positively secured against displacement. Arrangement and spacing to be approved by the engineer before concrete is poured.
All timber to be creosoted dense yellow pine. Floor plank dressed to uniform width and thickness (S1, S1, E).

EXPANSION JOINTS TO CONSIST OF THREE LAYERS OF TAR PAPER OR A HEAVY COAT OF TAR TO BE APPLIED ON SMOOTHLY TROWELED SURFACE.

ESTIMATED QUANTITIES.

	Superstructure	Abutment
Concrete, 1:2:4 mix., Cu. Yds.		89.0
Reinforcing Steel, Pounds.		4080
Structural Steel, Pounds.	6090	
Steel Castings, Pounds.	1630	
Lumber, Ft. B. M. Creo.	12450	
Gas Pipe Rail, Lin. Feet.	428	

REVISED AUG. 1 1922 R.L.S. 18' Roadway

Drawn Apr. 24, 1922 by R.L.T.
Ch'k'd May 1, 1922 by C.C.H.

MISSOURI STATE HIGHWAY DEPARTMENT

BRIDGE OVER CEDAR CREEK

STATE ROAD FROM IRONTON TO SALEM

ABOUT FIVE MILES FROM BELLEVIEW

PROJECT No. 193 STA. 200+21

IRON COUNTY

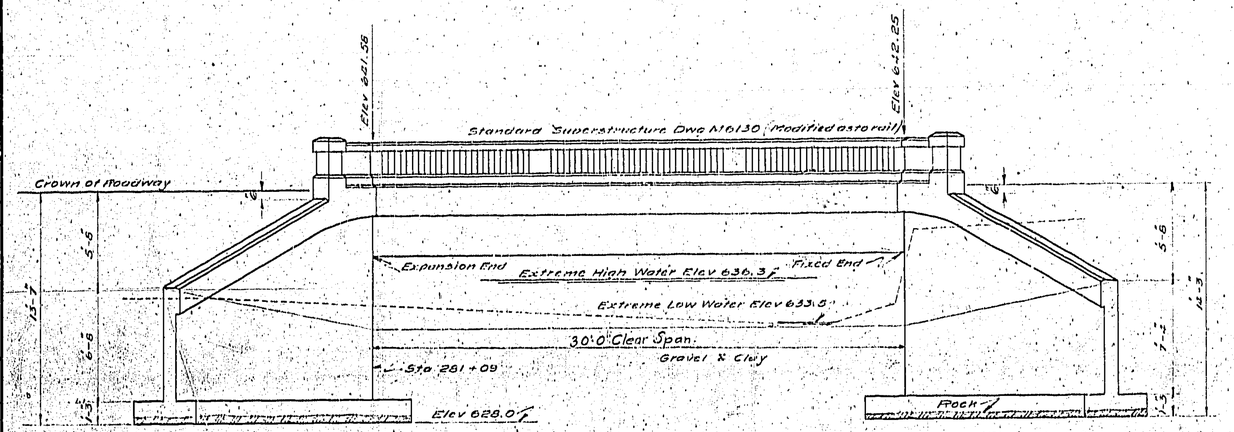
Submitted by C. H. Marin BRIDGE ENGINEER

Approved by [illegible] STATE HIGHWAY ENGINEER

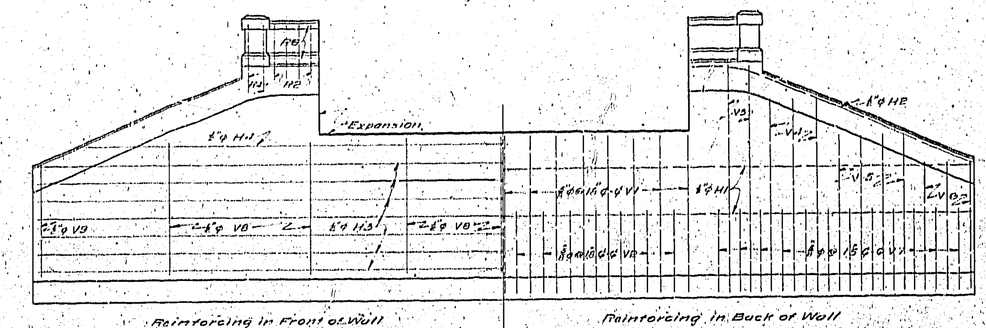
S100
S2100
G271

205

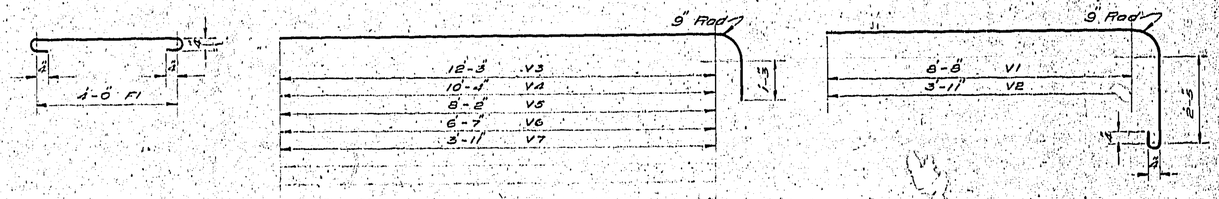
FED. ROAD DIST. No.	STATE	FED. AID PROJ. NO.	TOTAL SHEETS	SHEET NO.
5	MO	193	19	1

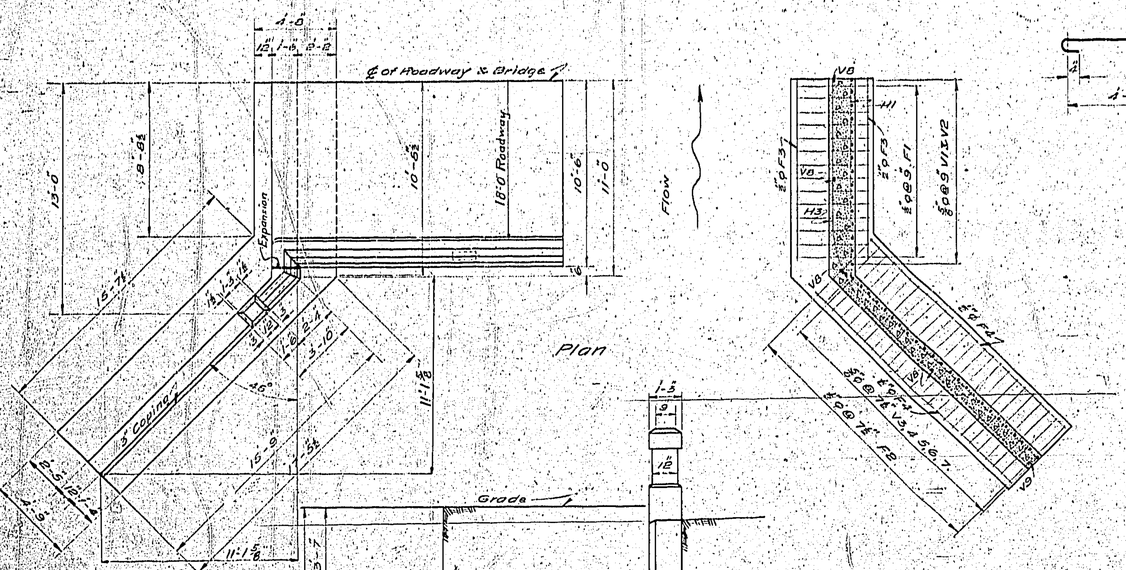


Elevation



Developed Elevation





Plan

Bill of Reinforcing Steel				
No	Size	Mark	Length	Remarks
30	5/8" φ	V1	13'-1	See Sketch
28	5/8" φ	V2	8'-4	" "
8	5/8" φ	V3	14'-8	" "
12	5/8" φ	V4	12'-3	" "
16	5/8" φ	V5	10'-7	" "
12	5/8" φ	V6	9'-0	" "
48	5/8" φ	V7	6'-11	" "
14	5/8" φ	V8	7'-9	Straight
4	5/8" φ	V9	6'-3	"
8	5/8" φ	H1	26'-6	Bent in field
4	5/8" φ	H2	16'-0	" " "
28	5/8" φ	H3	27'-0	" " "
4	5/8" φ	H4	22'-0	" " "
56	5/8" φ	F1	5'-8	See Sketch
100	5/8" φ	F2	4'-5	Straight
6	5/8" φ	F3	20'-6	"
12	5/8" φ	F4	15'-3	"
8	3/4" φ	D1	2'-0	Dowels

Estimated Quantities			
Handrail	1:2:3	3.9	Cu Yds.
Beam & Slab	1:2:4	36.5	Cu Yds.
Abuts & Wings	1:2:4	49.7	Cu Yds.
Reinforcing Steel	(Superstructure)	7370	Lbs.
Reinforcing Steel	(Abuts & Wings)	3110	Lbs.

General Notes:-

All general notes on Standard Dwg M6130 to apply to this bridge.
Concrete in Abutment & Wings 1:2:4 Mix.

Change in Superstructure Steel as given on Standard Dwg M6130.
Length of R1 bars decreased to 31'-2 long.
Number of R2 bars increased to 28.
Add 10 - R6 bars 5/8" φ 3'-9 long in rail over Wing corresponding to R1 bars.

MISSOURI STATE HIGHWAY DEPARTMENT

BRIDGE OVER KEESLING BRANCH

STATE ROAD FROM IRONTON TO SALEM
ABOUT 7½ MI FROM BELLEVIEW
PROJECT NO. 193 STA. 281+09

IRON COUNTY

SUBMITTED BY C. W. Marvin BRIDGE ENGINEER
APPROVED BY R. H. Jeffries STATE HIGHWAY ENGINEER

M6130
G272

DRAWN May 1922 BY C.F.B.
CH'KD May 1922 BY C.C.J.

RUCKERT CO. ST. LOUIS