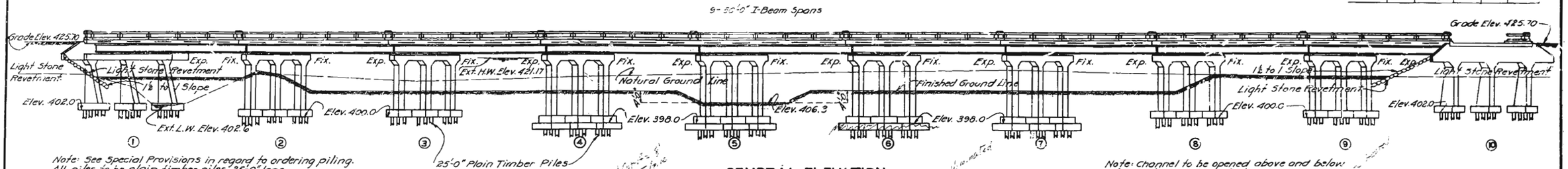
MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
9	MO.	R-15-S12	19		

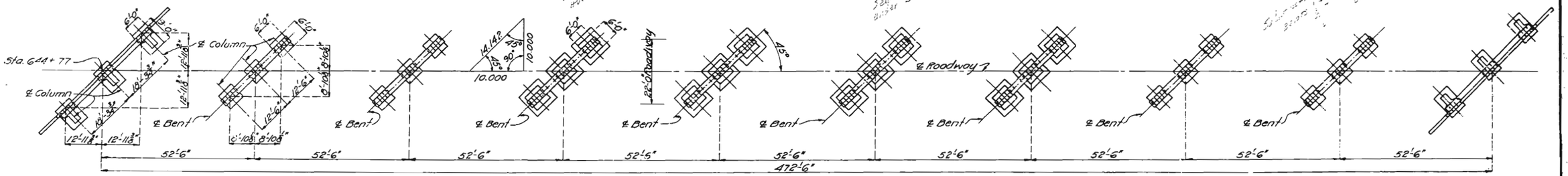


Note: See Special Provisions in regard to ordering piling. All piles to be plain timber piles 25'-0" long. Pile lengths include 3'-0" cut offs for Bents No. 1, 2, 3, 8, 9 and 10 and 7'-0" cut offs for Bents No. 4, 5, 6 and 7.

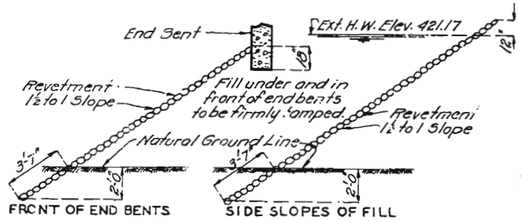
25'-0" Plain Timber Piles

GENERAL ELEVATION

Note: Channel to be opened above and below site as shown on road plans.

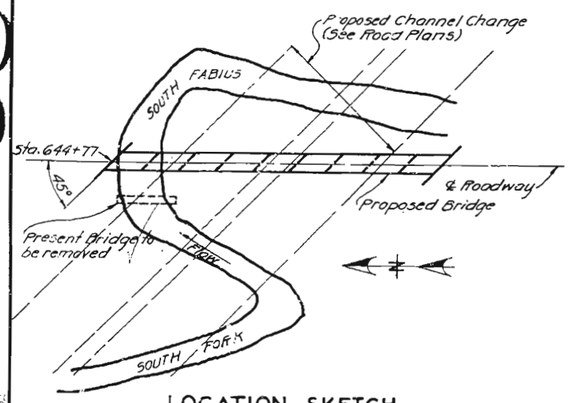


PLAN



Note: Light stone revetment shall be placed on fills at ends of bridge as shown in sketches. Approximately 550 Sq. Yds of revetment work included in road contract.

LIGHT STONE REVETMENT SKETCHES

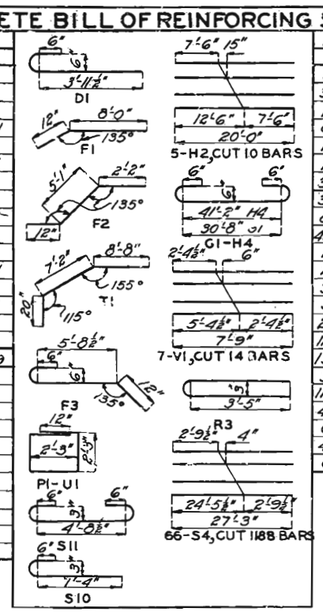


LOCATION SKETCH

Drawn Nov. 1932 By H.O.
Traced Nov. 1932 By H.E.U.
Checked Nov. 1932 By F.C.L.

COMPLETE BILL OF REINFORCING STEEL

No.	Size	Length	Mark	Location
		End Bents No. 1 & 10.		
36	⅝" ℄	5'-3"	D1	Footing
32	⅝" ℄	9'-0"	F1	Haunch
16	⅝" ℄	8'-3"	F2	"
16	⅝" ℄	13'-6"	H1	Wing Wall
10	⅝" ℄	20'-0"	H2	" "
4	⅝" ℄	20'-0"	H3	Backwall
32	1" ℄	43'-9"	H4	Beam
4	⅝" ℄	41'-9"	H5	"
8	⅝" ℄	17'-6"	T1	Wing Wall
4	⅝" ℄	36'-9"	T2	Backwall
104	⅝" ℄	10'-0"	U1	Beam
14	⅝" ℄	7'-3"	V1	Wing Wall
4	⅝" ℄	5'-9"	V2	" "
88	⅝" ℄	5'-0"	V3	Backwall
36	⅝" ℄	17'-3"	V4	Column
		Interior Bents No. 2, 3, 4, 5, 6, 7, 8 & 9		
96	⅝" ℄	5'-3"	D1	Footing
128	⅝" ℄	9'-0"	F1	Haunch
64	⅝" ℄	8'-0"	F2	"
104	1" ℄	33'-3"	G1	Beam
16	⅝" ℄	31'-0"	G2	"
288	⅝" ℄	10'-0"	P1	Column
48	⅝" ℄	[illegible]'-3"	P2	"
48	⅝" ℄	21'-3"	P3	"
320	⅝" ℄	10'-0"	U1	Beam



Note: Dimensions are given along ℄ of bars and are for computed lengths. Reinforcing bars ¾" or over in diameter, which are bent to an angle greater than 90° shall be of structural grade.

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

No.	Size	Length	Mark	Location
		Superstructure		
12	⅞" ℄	28'-9"	C1	Curb
360	⅝" ℄	12"	C2	"
12	⅞" ℄	26'-9"	C3	"
84	⅞" ℄	27'-6"	C4	"
12	⅞" ℄	12'-0"	R501R	Rail
12	⅞" ℄	11'-3"	R501L	"
360	⅝" ℄	9"	R2	"
324	⅝" ℄	7'-3"	R3	Subpost
80	⅝" ℄	3'-9"	R4	Post
468	⅝" ℄	18"	R5	Baluster
28	⅝" ℄	9'-9"	R506R	Rail
28	⅝" ℄	9'-0"	R506L	"
32	⅝" ℄	2'-3"	R7	Post
56	⅝" ℄	12'-0"	R508	Rail
224	⅝" ℄	9'-6"	R509	"
1184	⅞" ℄	24'-9"	S1	Slab
132	⅞" ℄	27'-0"	S2	"
36	⅞" ℄	35'-0"	S3	"
1188	⅞" ℄	27'-3"	S4	"
468	⅞" ℄	27'-3"	S5	"
64	⅞" ℄	5'-9"	S6	"
48	⅞" ℄	8'-3"	S10	"
8	⅞" ℄	6'-6"	S11	"

GENERAL NOTES:

Concrete in handrail to be 1:2:3 mix, Class "A". Concrete in slabs and curbs to be 1:2:3½ mix, Class "X". All other concrete to be 1:2:4 mix, Class "B".

Exposed edges to be beveled ¾" where no other bevel is noted.

Where rubber compound is specified on plans for use in partition and expansion joints, the premoulded joint shall be securely stitched to one face of concrete with copper wire.

Two name plates, type A, as shown on Std. S918R to be furnished and pinced by contractor. Cost of name plates to be included in price bid for other items.

Detail shop drawings for structural steel shall be submitted to the Missouri State Highway Department in duplicate and shall be approved before steel is fabricated.

See Special Provisions in regard to permissible beam substitutions and basis of payment.

Rivets ⅞" ℄ Holes 15/16" ℄

Field connections riveted.

Paint: Shop, none. Field, Surfaces inaccessible after erection three coats of red lead. No other paint to be applied by contractor. All paint required will be furnished by the Missouri State Highway Department.

Bridge excavation in accordance with Section I of Standard Specifications issued April 1, 1930, except that quantities paid for will be computed from extreme low water Elev. 402.6, where existing ground line is below this elevation, and that horizontal limits will be based on footings proper and not on seal courses.

Estimated quantities for Class "B" concrete includes concrete in seal courses to maximum horizontal limits of 18" outside of neat lines of footings. See Special Provisions. In case seal courses are omitted during construction by authority of the engineer, the bottoms of footings are to be built to elevations shown on these design plans for footing proper.

Piles to be driven to sustain a load of 20 ton per pile.

ESTIMATED QUANTITIES

Item		Superstr.	Substr.	Total	FINAL QUAN.
Excavation Class I	Cu. Yds.		825	825	121
Excavation Class II	Cu. Yds.		576	576	
Concrete 1:2:3 mix, "A"	Cu. Yds.	45.5		45.5	45.5
Concrete 1:2:4 mix, "B"	Cu. Yds.		418.2	418.2	382.2
Concrete 1:2:3½ mix, "X"	Cu. Yds.	306.1		306.1	306.1
Fabricated Structural Steel	Lbs.	268000		268000	265,530
Bearing Castings	Lbs.	4730		4730	4,730
Reinforcing Steel	Lbs.	92770	24640	117410	117,410
Plain Timber Piling	Lin. Ft.		2712	2712	2,262
Plain Timber Pile Cut-Offs	Lin. Ft.		588	588	1034

Note: Bridge excavation above Elev. 405.0 will be paid for as Class I Bridge Excavation. Bridge excavation below Elev. 405.0 will be paid for as Class II Bridge Excavation.

B.M. Elev. 418.98 - "X" nails in North side of 36" Elm - 130' Right of Sta. 645+00.

BRIDGE OVER SOUTH FORK SOUTH FABIUS

STATE ROAD FROM EDINA SOUTH

ABOUT 0.5 MILE S.E. OF EDINA

PROJECT NO. R15-S12 STA. 644 + 77

KNOX COUNTY

SUBMITTED BY T. M. Patrick, BRIDGE ENGINEER DATE 11/17/32

APPROVED BY T. H. Cutler, CHIEF ENGINEER DATE 11/17/32

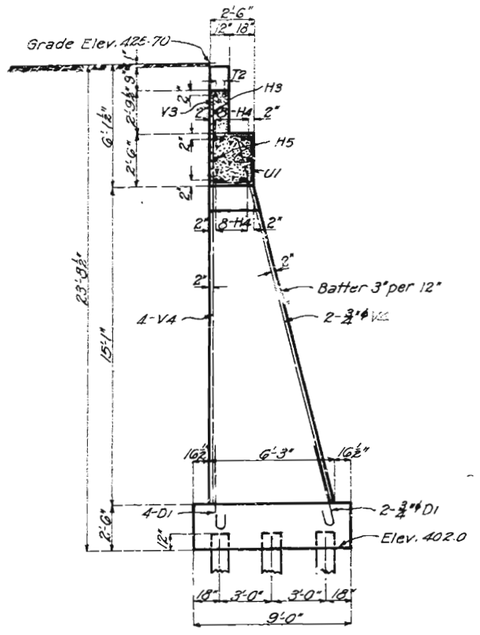
STD. S918R
STD. C6502R2
H-770

Sheet No. 1 of 5.

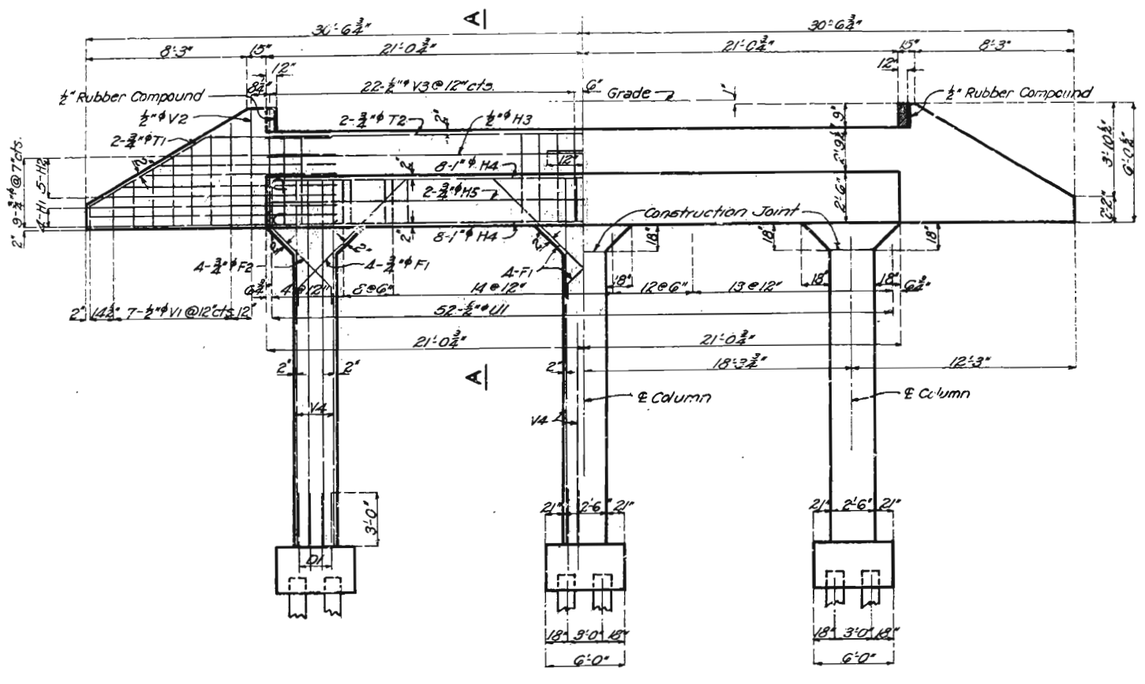
58

MISSOURI STATE HIGHWAY DEPARTMENT

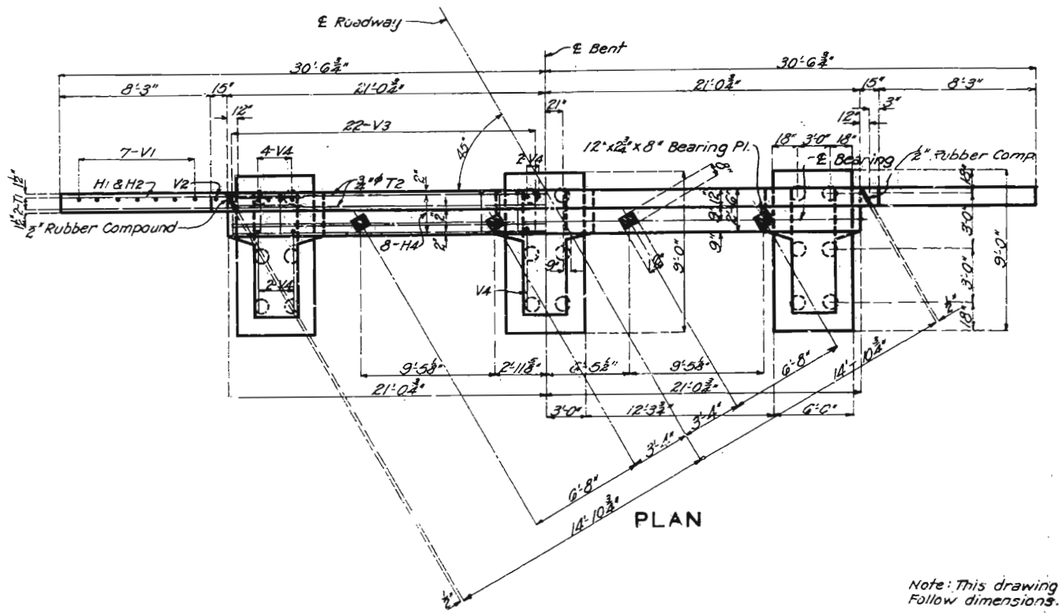
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	R15-3(12	19		



SECTION A-A



ELEVATION



PLAN

DETAILS OF END BENTS NO. 1 & 10

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

BRIDGE OVER SOUTH FORK SOUTH FABIUS

STATE ROAD FROM EDINA SOUTH — FINISHED

ABOUT 0.5 MILE S.E. OF EDINA

PROJECT NO. R15-S12 STA. 644+77

[illegible]OX COUNTY

FINISHED

Assembled Nov. 1932 By H.D.-G.W.
Checked Nov. 1932 By F.C.L.
Drawn June 1932 By R.J.G.
Traced June 1932 By R.J.G.
Checked July 1932 By P.H.S.

17-26-32

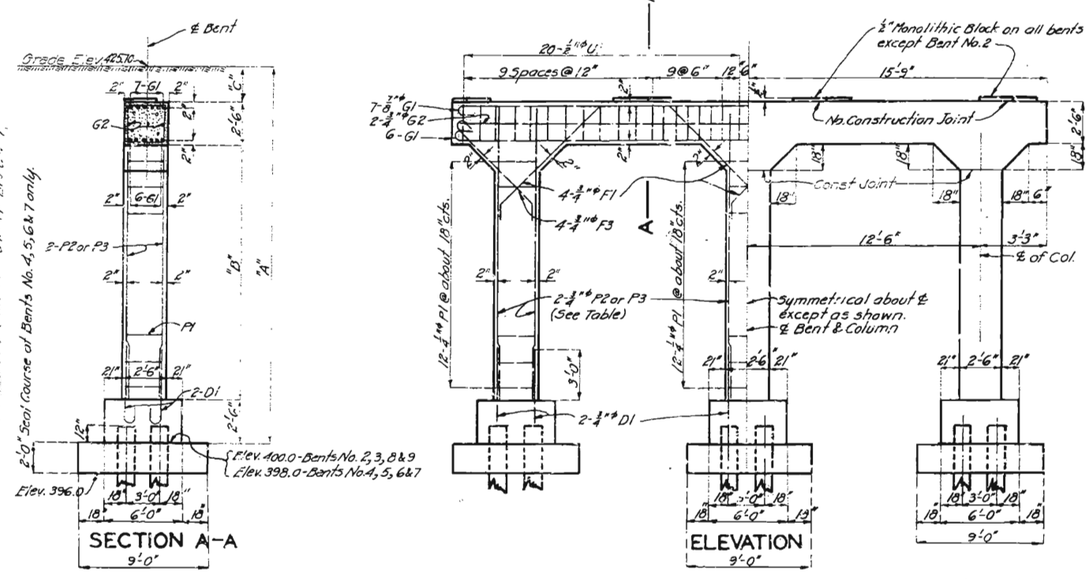
Sheet No. 2 of 5

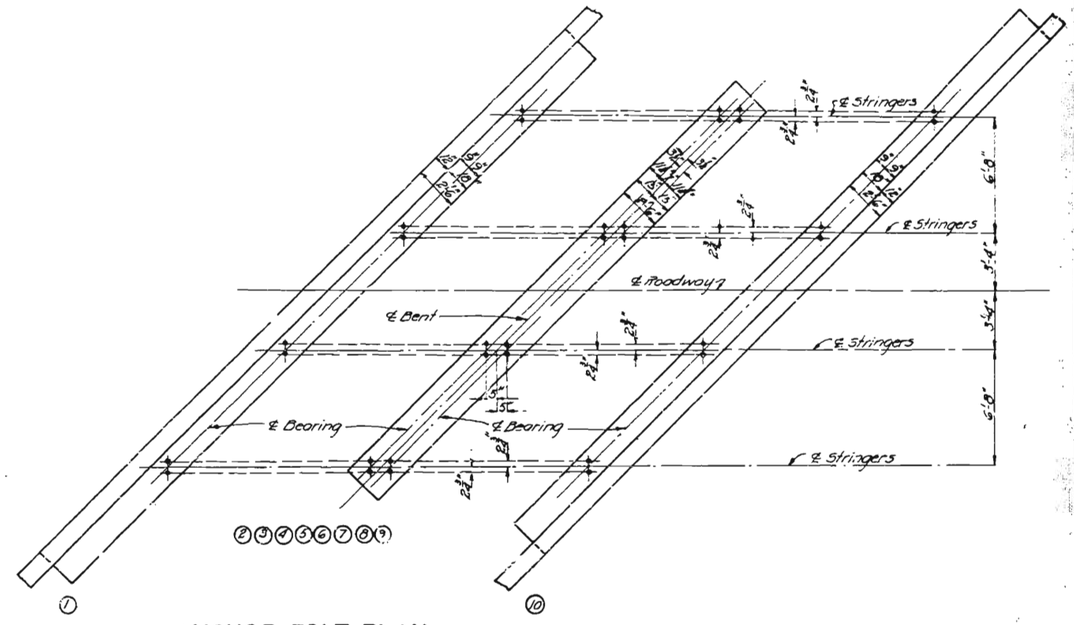
H-770

56

MISSOURI STATE HIGHWAY DEPARTMENT

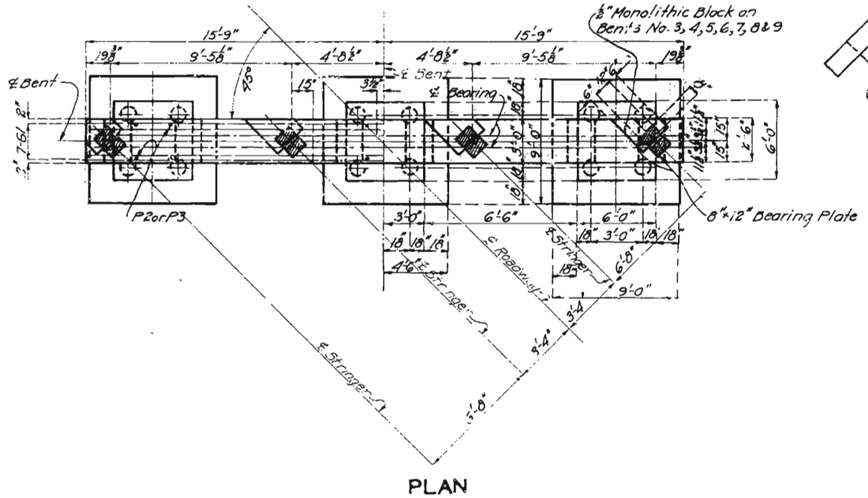
FED. ROAD DIST NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO	RP15-5(2)	19		





ANCHOR BOLT PLAN

TABLE OF DIMENSIONS				
Bent No.	"A"	"B"	"C"	P bars
2	25'-8½"	17'-1⅛"	3'-7"	P2
3	25'-8½"	17'-1"	3'-7⅛"	P2
4,5,6&7	27'-8½"	19'-1"	3'-7⅛"	P3
8&9	25'-8½"	17'-1"	3'-7⅛"	P2



PLAN

DETAILS OF BENTS NO. 2-3-4-5-6-7-8 & 9

60

Note This drawing is not to scale. Follow dimensions.

BRIDGE OVER SOUTH FORK SOUTH FABIUS

STATE ROAD FROM EDINA SOUTH

ABOUT 0.5 MILE S.E OF EDINA

PROJECT NO R15-S12 STA 644+77

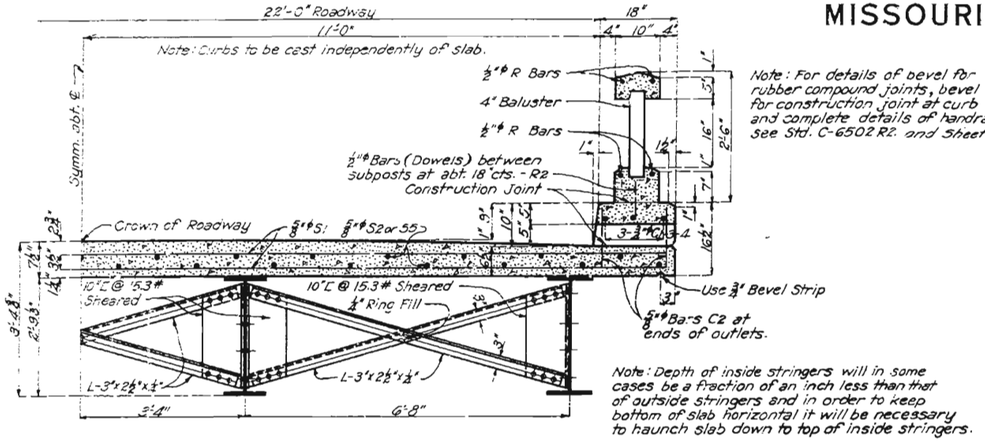
KNOX COUNTY

H-770

Assembled Nov. 1932 By H.D.-H.E.U.
Drawn Sept. 1932 By I.B.
Traced Sept. 1932 By H.W.H.
Checked Nov. 1932 By F.C.L.

MISSOURI STATE HIGHWAY DEPARTMENT

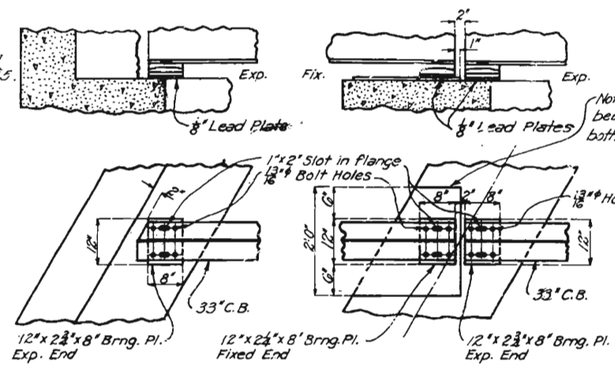
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	RI5-512	19		



Note: For details of bevel for rubber compound joints, bevel for construction joint at curb and complete details of handrail see Std. C-6502 R2. and Sheet #5.

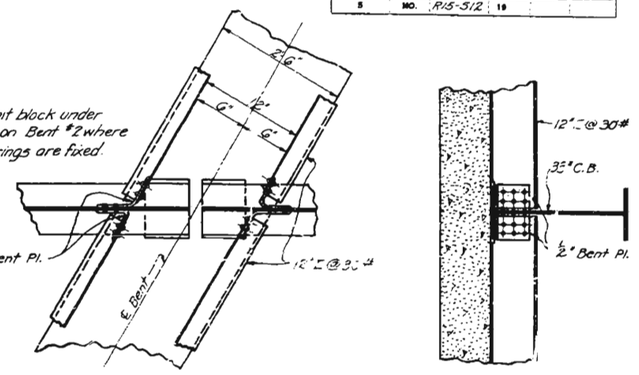
Note: Depth of inside stringers will in some cases be a fraction of an inch less than that of outside stringers and in order to keep bottom of slab horizontal it will be necessary to haunch slab down to top of inside stringers.

HALF SECTION THRU SPAN



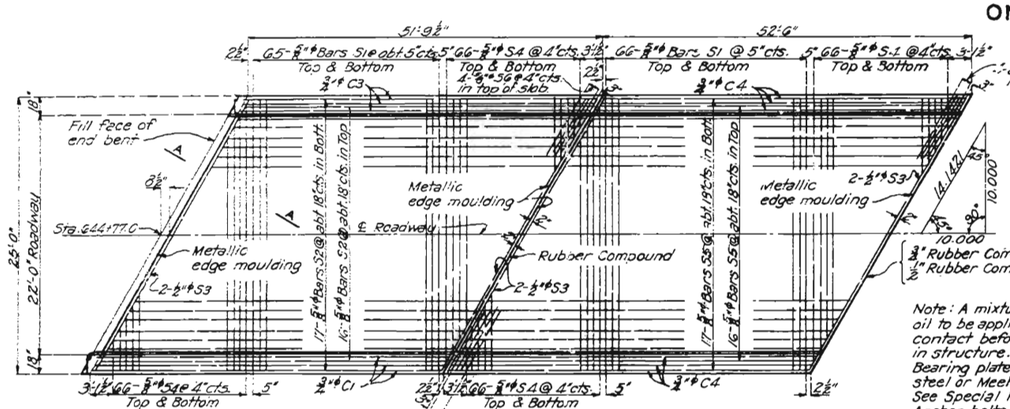
DETAILS OF BEARINGS ON BENTS NO. 1 & 10

DETAILS OF BEARINGS ON BENTS NO. 2,3,4,5,6,7,8 & 9



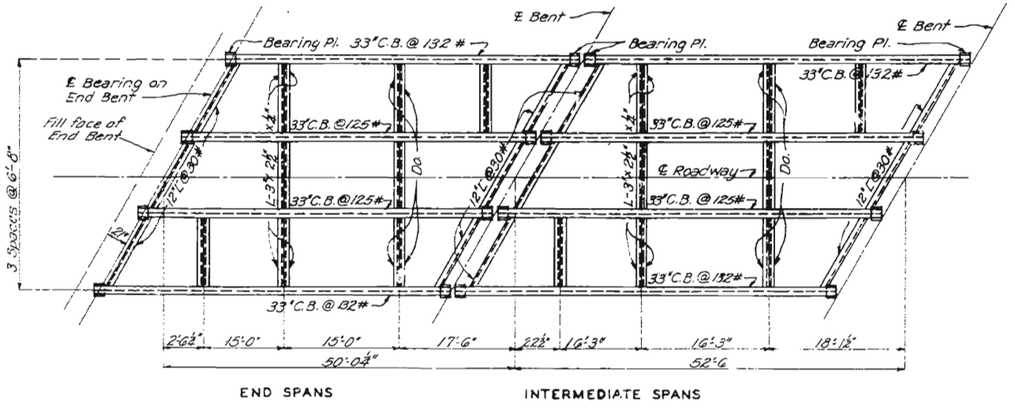
Note: Tops of channel separators at ends of span to be flush with bottom of slab.

DETAILS OF END CHANNEL SEPARATORS

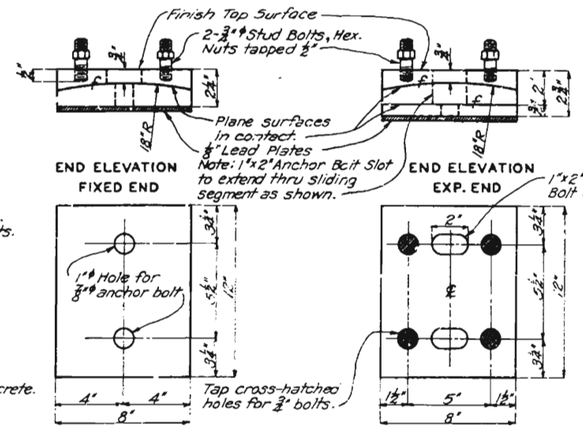


Note: Curb and slab at end bents to be modified as shown on Sheet No. 5.

PLAN OF SLAB SHOWING REINFORCEMENT



PLAN OF STRINGERS

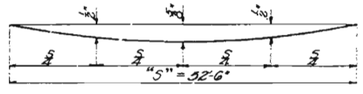


Note: Tops of bents to be finished as nearly as possible to within ⅛" of final elevation of bottom of plates. Plates to be seated to proper elevation by inserting soft lead plates between top of bent and bottom of plate. Concrete seat under lead plates to be dressed to a uniform level bearing with carborundum brick. Cost of lead plates to be included in price bid for other items.

DETAILS OF BEARING PLATES

Note: 4 Fixed and 4 expansion plates required for each span.

Note: A mixture of graphite and oil to be applied to surfaces in contact before placing plates in structure.
Bearing plates to be either cast steel or Meehanite metal.
See Special Provisions.
Anchor bolts to be ⅞"ϕ no heads, Hex. nuts and to extend 8" into concrete.
Stud bolts and nuts to be paid for as structural steel.



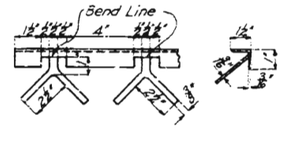
Note: Floor slab to be brought to grade and dead load deflection taken care of by increasing slab thickness. Depth of slab at outside face of curb to be kept uniform and bottom surface of slab warped between curb and outside beam to obtain required thickness at beam. Payment will be allowed for additional concrete required for thickening slab. Additional concrete is included in Estimated Quantities.

DEFLECTION DIAGRAM

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

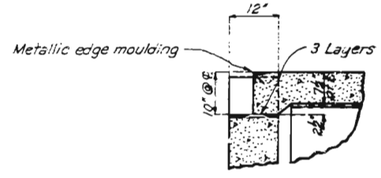
PERMISSIBLE BEAM SUBSTITUTIONS:
Outside Stringer 33" Bath. B. @ 132#
Inside Stringer 33" Bet'n. B. @ 125#

Note: See Special Provisions in regard to permissible beam substitutions and basis of payment.

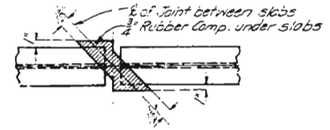


METALLIC EDGE MOULDING

Note: Cost of metallic edge moulding will be included in unit bid price for concrete.



SECTION A-A SHOWING SLAB AT END BENT



DETAIL OF RUBBER COMPOUND AT ENDS OF ADJOINING BEAMS

BRIDGE OVER SOUTH FORK SOUTH FABIUS

STATE ROAD FROM EDINA SOUTH
ABOUT 0.5 MILE S.E. OF EDINA
PROJECT NO. RI5-512 STA. 644+77
KNOX COUNTY

Drawn Aug. 1932 By R.J.G.
Traced Aug. 1932 By R.J.G. Assembled Nov. 1932 By H.D.-G.W.
Checked Nov. 1932 By F.C.L. Checked Nov. 1932 By F.C.L.

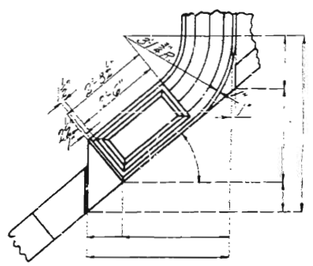
Sheet No. 4 of 5.

H-770

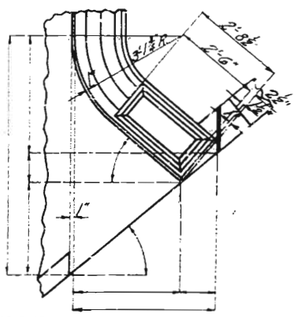
61

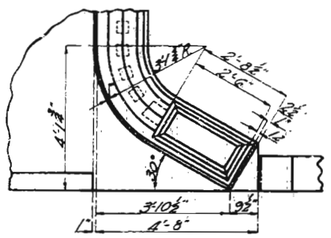
MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	R15-512	19		

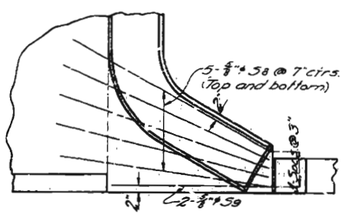


PLAN SHOWING DIMENSIONS



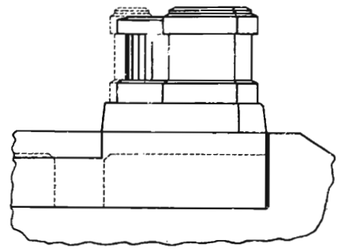


PLAN SHOWING DIMENSIONS

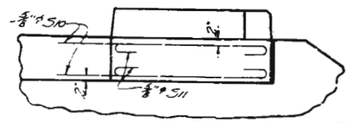


PLAN SHOWING REINFORCING

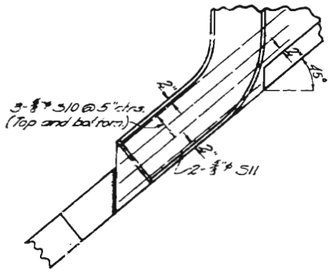
SQUARE END BENT

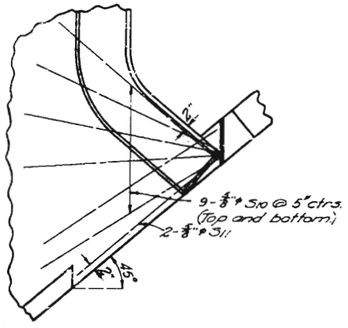


DECK GIRDER SPAN SHOWING POST

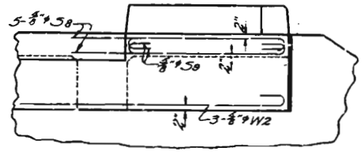


SLAB SPAN SHOWING REINFORCING

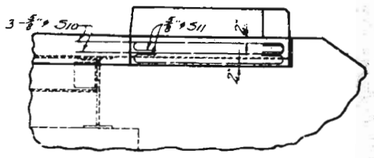




PLAN SHOWING REINFORCING

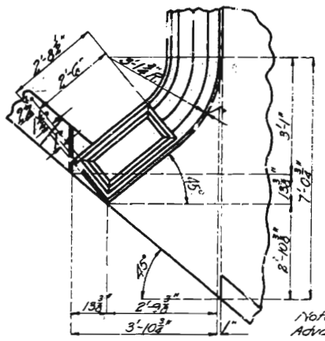


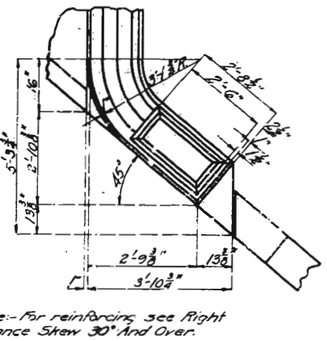
DECK GIRDER SPAN SHOWING REINFORCING



I-BEAM SPAN SHOWING REINFORCING

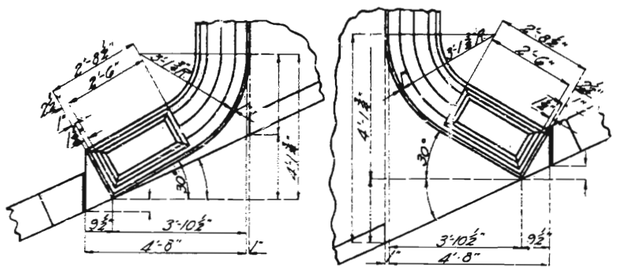
TYPICAL END ELEVATIONS



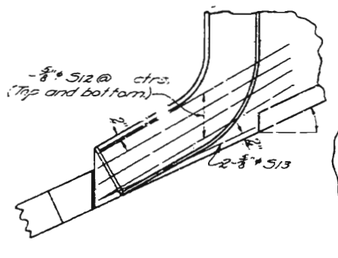


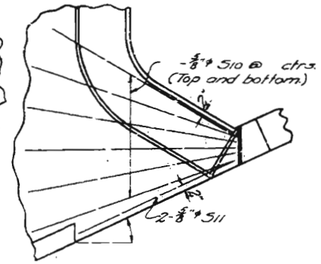
Note:- For reinforcing see Right Advance Skew 30° And Over.

LEFT ADVANCE SKEW 30° AND OVER



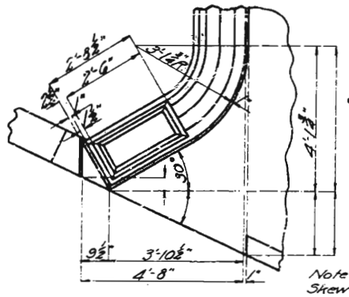
PLAN SHOWING DIMENSIONS

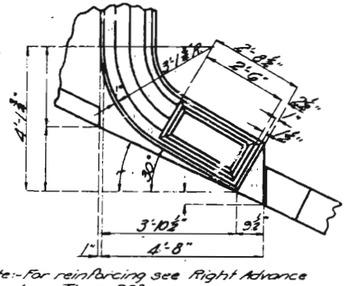




PLAN SHOWING REINFORCING

RIGHT ADVANCE SKEW LESS THAN 30°



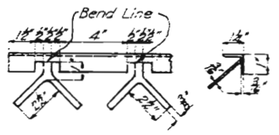


Note:- For reinforcing see Right Advance Skew Less Than 30°

LEFT ADVANCE SKEW LESS THAN 30°

GENERAL NOTES:

Reinforcing steel shown on this sheet will be used in addition to that required for straight curb and rail. For details of handrail see 50A, 50B and 50C on Standard C6502 R.E. Handrail, curb and slab to be modified at end bents as shown on this sheet.
Length of panels between subposts on right hand rail on 50A and left hand rail on 50C to be 8'-10½" each instead of 8'-6" and 8'-5". Use 13 balusters in each panel. Add letter R to bar mark for all longitudinal rail bars in these panels.
Length of panels between subposts on left handrail on 50A and right handrail on 50C to be 8'-1½" each instead of 8'-6" and 8'-5". Use 12 balusters in each panel. Add letter L to bar mark for all longitudinal rail bars in these panels.
Outlets to be centered between subposts.



METALLIC EDGE MOULDING

Note: Cost of metallic edge moulding will be included in unit bid price for concrete.

BRIDGE OVER SOUTH FORK SOUTH FABIUS

STATE ROAD FROM EDINA SOUTH
ABOUT 0.5 MILE S.E. OF EDINA
PROJECT NO. R15-512 STA. 644 + 77
KNOX COUNTY

62

Assembled Nov. 1932 by H.D.-H.E.U.
Checked Nov. 1932 by F.C.L.
Drawn April 1932 by C.A.F.
Checked Nov. 1932 by F.C.L.

Note:- This drawing is not in scale. Follow dimensions.

TYPICAL DETAILS OF CONCRETE RAIL AT END BENT

H-770

REV JUL ., 89

STATE	JOB NO.	SHEET NO.
MO	8-S-65-300B	34
DIST. NO.	PROJECT NO.	ROUTE
8	COUNTY TANEY	65 BUS.

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

STANDARD PLANS

✓	NO.	DESCRIPTION
✓	203.00E	EXCAVATION & EMBANKMENT
	203.02C	UNDERGRADING
	203.10A	TABULATED EARTHWORK & SECTION DATA
	203.20B	SUPERELEVATION SPIRALS & WIDENING (UNDIVIDED)
	203.21B	SUPERELEVATION SPIRALS & WIDENING (DIVIDED)
	203.30A	ENTRANCES & APPROACHES (LESS THAN 400 ADT)
	203.31B	ENTRANCES & APPROACHES (GREATER THAN 400 ADT - NO SAFETY ZONE)
	203.32D	ENTRANCES & APPROACHES (GREATER THAN 400 ADT - SAFETY ZONE)
	203.35A	MAILBOX TURNOUTS
	203.40E	TYPICAL DETAILS-RAMPS FOR INTERCHANGES (OTHER THAN 6:1 FORESLOPE)
	203.41E	TYPICAL DETAILS-RAMPS FOR INTERCHANGES (6:1 FORESLOPE)
	203.50J	TYPICAL CROSS-OVERS (DIVIDED HIGHWAYS)
	204.00D	EMBANKMENT CONTROL MEASURING DEVICES
	502.00M	CONCRETE PAVEMENT & BASE APPURTENANCES
	502.10E	DOWEL SUPPORTING UNITS
	503.00J	CONCRETE APPROACH SLABS TO BRIDGES.(ALSO INCLUDE 502.00)
	602.00A	RIGHT-OF-WAY & DRAIN MARKERS
	604.05B	PIPE CULVERT HEADWALLS - TYPE S *
	604.10B	HEADWALL-WITH ENERGY DISSIPATOR - 18"
	604.11B	HEADWALL-WITH ENERGY DISSIPATOR - 24"
	604.12B	HEADWALL-WITH ENERGY DISSIPATOR - 30"
	604.13B	HEADWALL-WITH ENERGY DISSIPATOR - 36"
	604.14B	HEADWALL-WITH ENERGY DISSIPATOR - 42"
	604.15B	HEADWALL-WITH ENERGY DISSIPATOR - 48"
	604.20B	DROP INLET - TYPE B
	604.21B	DROP INLET - TYPE C
	604.22B	DROP INLET - TYPE D
	604.23B	DROP INLET - TYPE E
	604.24B	DROP INLET - TYPE EE
	604.25C	DROP INLET - TYPE F *
	604.26D	DROP INLET - TYPE G *
	604.27C	DROP INLET - TYPE S (3 SHEETS)
	604.28E	DROP INLET - TYPE T (ALSO INCLUDE 614.30) *
✓	604.29C	DROP INLET - TYPE X
	604.30F	CONCRETE MANHOLES (ALSO INCLUDE 614.30)
✓	604.40E	PIPE COLLARS
	605.10A	CLASS A UNDERDRAINS
✓	606.00T	GUARD RAIL (2 SHEETS)
✓	606.20H	BRIDGE ANCHOR SECTION (BRUSH CURB)(ALSO INCLUDE 606.00) *
	606.21G	BRIDGE ANCHOR SECTION-CURB TYPE (ALSO INCLUDE 606.00) *
	606.22E	BRIDGE ANCHOR SECTION (SAFETY BARRIER CURB)(ALSO INCLUDE 606.00) *
✓	606.30E	TERMINAL SECTION (ALSO INCLUDE 606.00)
	606.40A	GUARD CABLE
	607.10R	CHAIN LINK FENCE *
	607.11B	CHAIN LINK FENCE FOR RETAINING WALLS
	607.20F	WOVEN WIRE FENCE (ALSO INCLUDE 607.10)

✓	NO.	DESCRIPTION
✓	608.00C	PAVED APPROACHES
✓	608.10G	CONCRETE SIDEWALK & WHEELCHAIR RAMPS
✓	608.20C	CONCRETE STEPS
✓	609.00G	CONCRETE CURB - CURB & GUTTER - GUTTER
✓	609.15A	PAVED DITCHES
	609.40D	DRAIN BASIN, SHOULDER PAVING & FILL SLOPE AT BRIDGE ENDS
	609.60A	DITCH LINER
	609.70C	ROCK LINING FOR CULVERT OUTLETS
	610.20E	BRICK MANHOLES (ALSO INCLUDE 614.30)
	611.60L	CONCRETE SLOPE PROTECTION
	612.10K	BARRICADES AND FLASHER SIGNS
	613.00A	PAVEMENT REPAIR *
✓	614.10N	CURB INLETS, GRATES & BEARING PLATES
✓	614.30D	MANHOLE FRAMES & COVERS
	615.00A	OFFICE FOR ENGINEER
✓	616.10K	TRAFFIC CONTROL DEVICES (3 SHEETS)(ALSO INCLUDE 903.01) *
	617.00V	CONCRETE TRAFFIC BARRIER (3 SHEETS)
	702.01E	16" CONCRETE PILES (APPROVED TYPES)(2 SHEETS)
	702.02B	CAST-IN-PLACE CONCRETE PILES (APPROVED TYPES)
	703.20D	CONCRETE BOX CULVERTS, H20 LOADING (3 SHTS)(INCL 706.35)
	703.21D	CONCRETE BOX CULVERTS, H20 LOADING (3 SHEETS)(FLARED WINGS)(INCL 706.35)
	703.24E	CONCRETE BOX CULVERTS, SKEW DATA (703.20 & 703.3C)(INCL 706.35) *
	703.25E	CONCRETE BOX CULVERTS, SKEW DATA (703.21)(3 SHTS)(FLRD WINGS)(INCL 706.35) *
	703.30E	CONCRETE BOX CULVERTS, 4' SPANS & LESS-ALL LOADING (INCL 706.35) *
	703.35B	CONCRETE BOX CULVERTS, CUTTING DETAILS (STRAIGHT WINGS) (INCL 706.35)
	703.36A	CONCRETE BOX CULVERTS, CUTTING DETAILS (FLARED WINGS) (INCL 706.35)
	703.50G	CONCRETE DOUBLE BOX STRUCTURE-SQUARE (INCL 706.35) *
	703.51F	CONCRETE DOUBLE BOX STRUCTURE-SKEWED (INCL 706.35) *
	703.52C	CONCRETE DOUBLE BOX STRUCTURE-CUT SECTIONS (INCL 706.35)*
	703.54D	DOUBLE BOX STRUCTURE REINFORCEMENT-H20 OR HS20 LOADING (8 SHEETS)
	703.55D	CONCRETE DOUBLE BOX STRUCTURE (FLARED WINGS) SQUARE (INCL 706.35) *
	703.56D	CONCRETE DOUBLE BOX STRUCTURE (FLARED WINGS) SKEWED (INCL 706.35) *
	703.60C	CONCRETE BOX STRUCTURE-PIPE INLET
	703.70C	CONCRETE TRIPLE BOX STRUCTURE-SQUARE (2 SHEETS) (INCL 706.35) *
	703.71C	CONCRETE TRIPLE BOX STRUCTURE-SKEWED (2 SHEETS) (INCL 706.35) *
	703.72C	CONCRETE TRIPLE BOX STRUCTURE-(FLARED WINGS)(SQUARE) (2 SHEETS)(INCL 706.35) *
	703.73C	CONCRETE TRIPLE BOX STRUCTURE-(FLARED WINGS)(SKEWED) (2 SHEETS)(INCL 706.35) *
	703.74C	CONCRETE TRIPLE BOX STRUCTURE-CUT SECTIONS (INCL 706.35) *
	703.76B	CONCRETE TRIPLE BOX STRUCTURE REINFORCEMENT-H20 OR HS20 LOADING (5 SHEETS)
	706.30F	REINFORCING BAR SUPPORTS
	706.35E	BAR SUPPORTS FOR CONCRETE REINFORCEMENT
	712.40E	STEEL DAMS FOR BRIDGES (6" CHANNEL)
	725.11C	METAL CURTAIN WALL AND METAL INLETS
✓	726.30C	CULVERT INSTALLATION METHODS
✓	731.00S	PRECAST MANHOLES (ALSO INCL 614.30) *
✓	731.10H	PRECAST DROP INLETS (4 SHTS)(ALSO INCL 614.30 & 614.10) *

✓	NO.	DESCRIPTION
✓	732.00L	FLARED END SECTION (2 SHEETS)
	806.02A	STAPLE PLACEMENT FOR PLASTIC NETTING
		HIGHWAY LIGHTING
	901.00P	POLES & APPURTENANCES-30' (3 SHEETS) *
	901.01U	POLES & APPURTENANCES-45' (3 SHEETS) *
	901.05A	CONTROL PANEL CABINET DETAILS (2 SHEETS)(SEE NOTE)
	901.12C	POLE MOUNT CONT STA-SECONDARY SERV-480 V MULTI CIR (NOT METERED)
	901.15E	POLE MOUNT CONT STA-SEC SERV-120,240, & 480 V MULTI CIR
	901.16D	POLE MOUNT CONT STA-SEC SERV-480 V MULTI CIR (METERED)
	901.18D	POLE MOUNT CONT STA-SEC SERV-120/240 V MULTI CIR
	901.19D	POLE MOUNT CONT STA-SEC SERV-240 V MULTI CIR (NOT METERED)
	901.20D	POLE MOUNT CONT STA-SEC SERV-120/240 V MULTI CIR (SIG METERED)
	901.22E	POLE MOUNT CONT STA-SEC SERV-120/240 & 480 V MULTI CIR (BOTH METERED)
	901.23E	POLE MOUNT CONT STA-SEC SERV-240 V MULTI CIR (METERED)
	901.24D	POLE MOUNT CONT STA-SEC SERV-240 V MULTI CIR (LIGHTS & SIGNALS-BOTH METERED)
	901.25D	BASE MOUNT CONT STA-SEC SERV-120/240 V MULTI CIR
		NOTE: ALSO INCLUDE 901.05 WITH 901.12 THROUGH 901.25 EXCEPT 901.18
		TRAFFIC SIGNALS
	902.00E	SIGNAL HEADS, LENSES AND MOUNTING
	902.10J	PULL BOXES, CONTROLLERS, COND LOCATION
	902.15D	POWER SUPPLY ASSEMBLY
	902.21B	TELEPHONE INTERCONNECT
	902.30G	CONCRETE BASES
	902.40H	TUBULAR STEEL POST *
	902.50E	DETECTORS
	902.60E	SPAN WIRE DETAILS-STEEL POST
	902.70B	SPAN WIRE DETAILS-WOOD POLE
	902.80A	TRAFFIC SIGNAL SYMBOLS
		HIGHWAY SIGNING
✓	903.01C	ALPHABETS (2 SHEETS)
	903.02W	HIGHWAY SIGNING (7 SHEETS)
	903.03AK	SIGN MOUNTING DETAILS (5 SHEETS) *
	903.04D	WEIGH STATION SIGNING
	903.05C	TUBULAR SPAN SUPPORT-ONE TUBE, TYPE S
	903.06C	TUBULAR SPAN SUPPORT-TWO TUBE, TYPE S
	903.07C	TUBULAR CANTILEVER SUPPORTS, TYPE C
	903.08C	TUBULAR BUTTERFLY SUPPORTS, TYPE B
	903.09C	LIGHTING SUPPORT BRACKET
	903.11	SIGN TRUS... (3 SHEETS)(INCL 903.03)
	903.12N	SIGN TRUSSES-BUTTERFLY & CANTILEVER-STEEL (7 SHEETS, (INCL 903.03)
	903.60S	SIGN TRUSSES-OVERHEAD STEEL (7 SHEETS)(INCL 903.03)

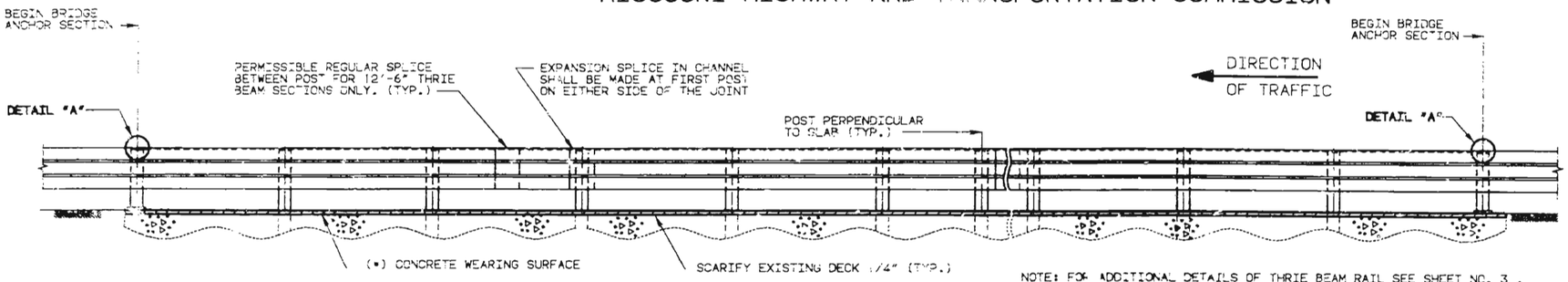
NOTES:
PLANS FOR THIS PROJECT WERE DEVELOPED USING DRAWINGS FROM THIS INDEX

* REVISED SINCE JANUARY 1988

97 21

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

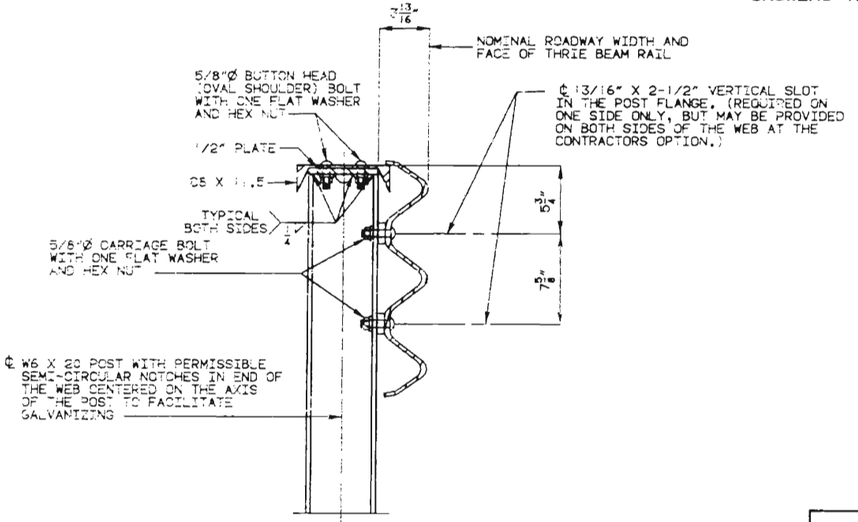
STATE	PROJ. NO.	SHEET NO.
MO.		/
SEC./SUR. 24	TWP. 52N	RGE. 12W



(*) ALT. "A" = 3/4" (MIN.) LATEX MODIFIED CONCRETE
ALT. "B" = 2 1/4" (MIN.) LOW SLUMP CONCRETE OVERLAY

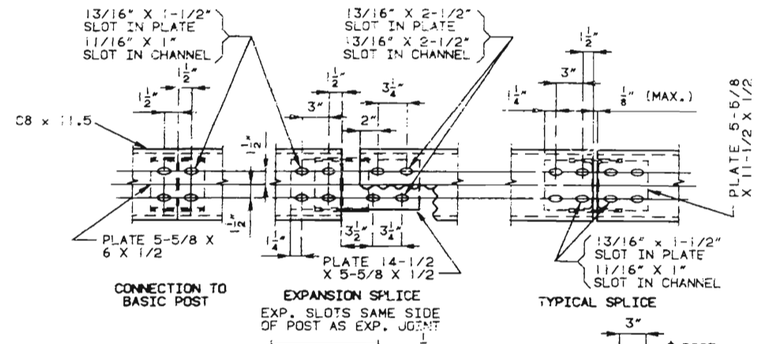
PART SECTION THRU SLAB SHOWING THRIE BEAM RAIL

NOTE: FOR ADDITIONAL DETAILS OF THRIE BEAM RAIL SEE SHEET NO. 3 .
FOR RAIL POST SPACING SEE SHEET NO. 2.

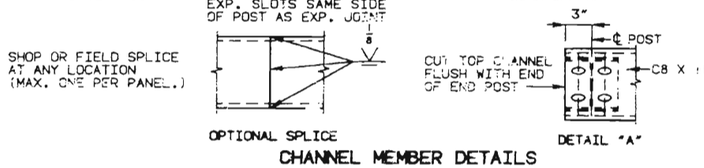


PART SECTION AT RAIL POST

NOTE: FOR DETAILS OF THRIE BEAM RAIL NOT SHOWN, SEE THE FOLLOWING SHEETS.

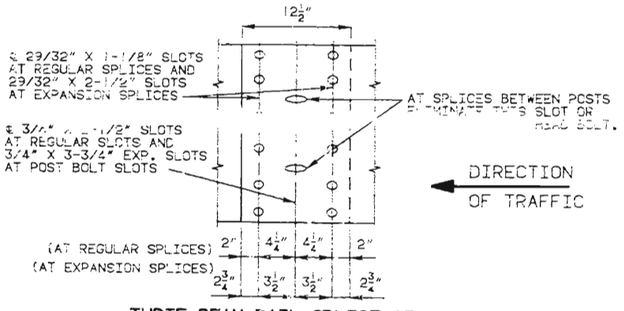


CONNECTION TO BASIC POST — EXPANSION SPLICE — TYPICAL SPLICE



OPTIONAL SPLICE — DETAIL "A"

CHANNEL MEMBER DETAILS



THRIE BEAM RAIL SPLICE DETAILS

ESTIMATED QUANTITIES		
ITEMS		TOTAL
CURB REMOVAL FOR THRIE BEAM INSTALLATION	LIN. FT.	943
SEAL COAT REMOVAL (BRIDGES)	SQ. FT.	10364
SUBSTRUCTURE REPAIR (UNFORMED) SEE SPECIAL PROVISIONS	SQ. FT.	40
SUPERSTRUCTURE REPAIR (UNFORMED) SEE SPECIAL PROVISIONS	SQ. FT.	260
REPAIRING CONCRETE DECK (HALF-SOLING)	SQ. FT.	207
FULL DEPTH REPAIR	SQ. FT.	104
SLAB EDGE REPAIR (BRIDGES)	LIN. FT.	220
CONCRETE WEARING SURFACE, SEE SPECIAL PROVISIONS	SQ. YD.	1309
BRIDGE GUARD RAIL (THRIE BEAM)	LIN. FT.	943

GENERAL NOTES FOR THRIE BEAM:

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, AND PLATES ARE CONSIDERED AS PART OF THE THRIE BEAM RAIL FOR PAYMENT.

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

RAIL POSTS SHALL BE SET PERPENDICULAR TO THE ROADWAY PROFILE GRADE AND VERTICALLY IN CROSS SECTION, AND ALIGNED ACCORDING TO SECTION 703 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 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 TO BE USED 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. THE POST, POST ATTACHMENTS, 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 MO. 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.

CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN FIELD BEFORE ORDERING MATERIALS.

MINIMUM LENGTH OF THRIE BEAM SECTIONS IS EQUAL TO ONE POST SPACE.

NOTE: OUTLINE OF OLD WORK IS INDICATED BY LIGHT DASHED LINES. HEAVY LINES INDICATE NEW WORK.

MAINTAIN ONE LANE OF TRAFFIC OVER STRUCTURE DURING CONSTRUCTION. (SEE ROADWAY PLANS)

ROADWAY SURFACING ADJACENT TO BRIDGE ENDS TO MATCH EXISTING CONCRETE DECK PLUS 1 1/2"± OR 2"± (ROADWAY ITEM).

THE CONTRACTOR SHALL USE ONE OF THE RESIN ANCHOR SYSTEMS LISTED IN THE JOB SPECIAL PROVISIONS FOR BRIDGE GUARD RAIL.

THESE ANCHOR SYSTEMS SHALL BE GALVANIZED AND BE INSTALLED ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS EXCEPT THAT THREADED ROD STUDS SHALL EXTEND 3" ABOVE TOP OF EXISTING CONCRETE.

COST OF FURNISHING AND INSTALLING THE ANCHOR SYSTEMS COMPLETE IN PLACE SHALL BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF BRIDGE RAIL (THRIE BEAM).

REPAIRS TO
BRIDGE OVER SOUTH FORK SOUTH FABIUS RIVER

STATE ROAD FROM EDINA SOUTH

ABOUT 0.5 MILES S.E. OF EDINA

PROJECT NO. F-6-3(9) SEC A STA. 644+77 ±

JOB NO. 3P-304B6 RTE. 6

KNOX COUNTY

DATE 1/9/90

STD. 606.23
STD. 606.00
H-770R

SEE FINAL PLANS

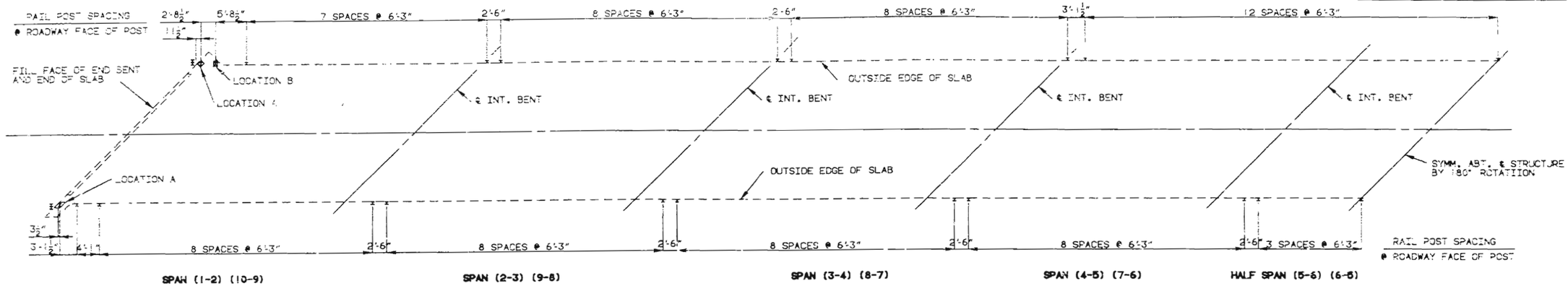
REHAB (T-BEAM)	REVISED
SEPT. 1985	OCT. 1989

DESIGNED DEC. 1989
DETAILED DEC. 1989
CHECKED DEC. 1989

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

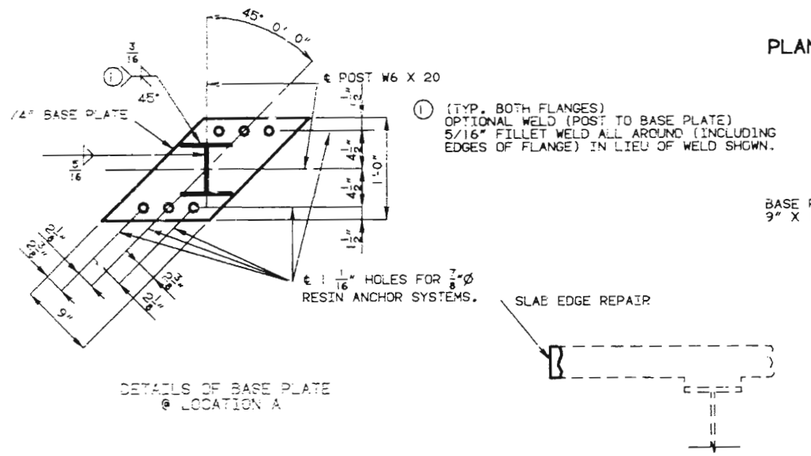
ST-72

STATE	PROJ. NO.	SHEET NO.
MO.		2

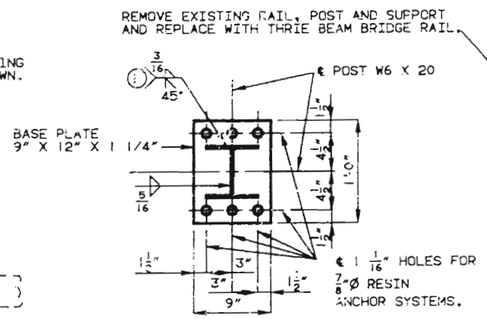


SPAN (1-2) (10-9) **SPAN (2-3) (9-8)** **SPAN (3-4) (8-7)** **SPAN (4-5) (7-6)** **HALF SPAN (5-6) (6-5)**

PLAN OF SLAB SHOWING RAIL POST SPACING

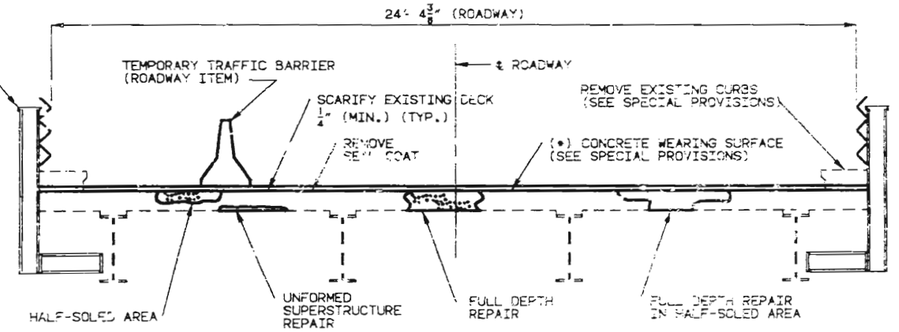


DETAILS OF BASE PLATE @ LOCATION A

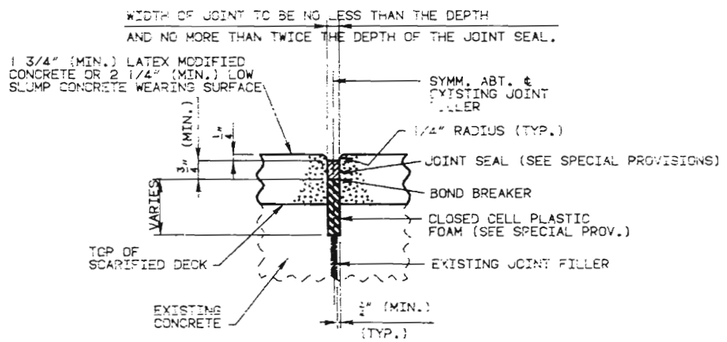


DETAILS OF BASE PLATE @ LOCATION B

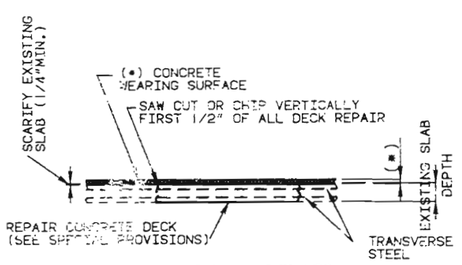
DETAIL OF SLAB EDGE REPAIR



TYPICAL SECTION THRU SLAB

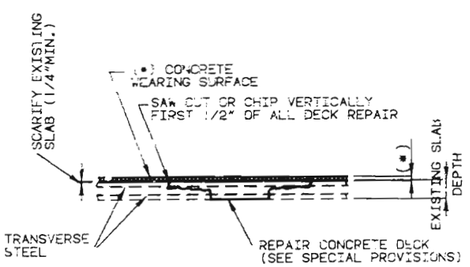


SECTION THRU JOINTS



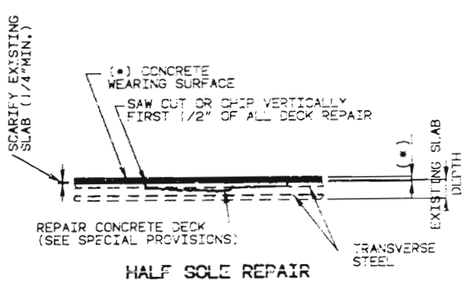
FULL DEPTH REPAIR

(•) 1 3/4" (MIN.) FOR LATEX MODIFIED CONCRETE
2 1/4" (MIN.) FOR LOW SLUMP CONCRETE



FULL DEPTH REPAIR
HALF-SOLED AREA

(•) 1 3/4" (MIN.) FOR LATEX MODIFIED CONCRETE
2 1/4" (MIN.) FOR LOW SLUMP CONCRETE



HALF SOLE REPAIR

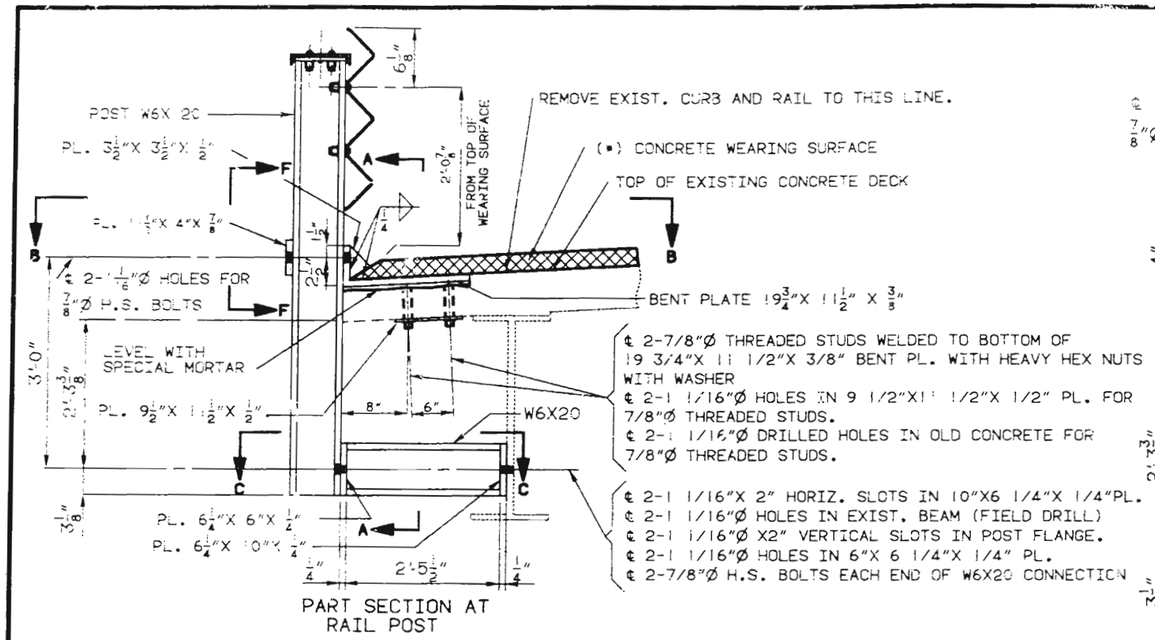
(•) 1 3/4" (MIN.) FOR LATEX MODIFIED CONCRETE
2 1/4" (MIN.) FOR LOW SLUMP CONCRETE

DETAILED DEC. 1989
CHECKED DEC. 1989

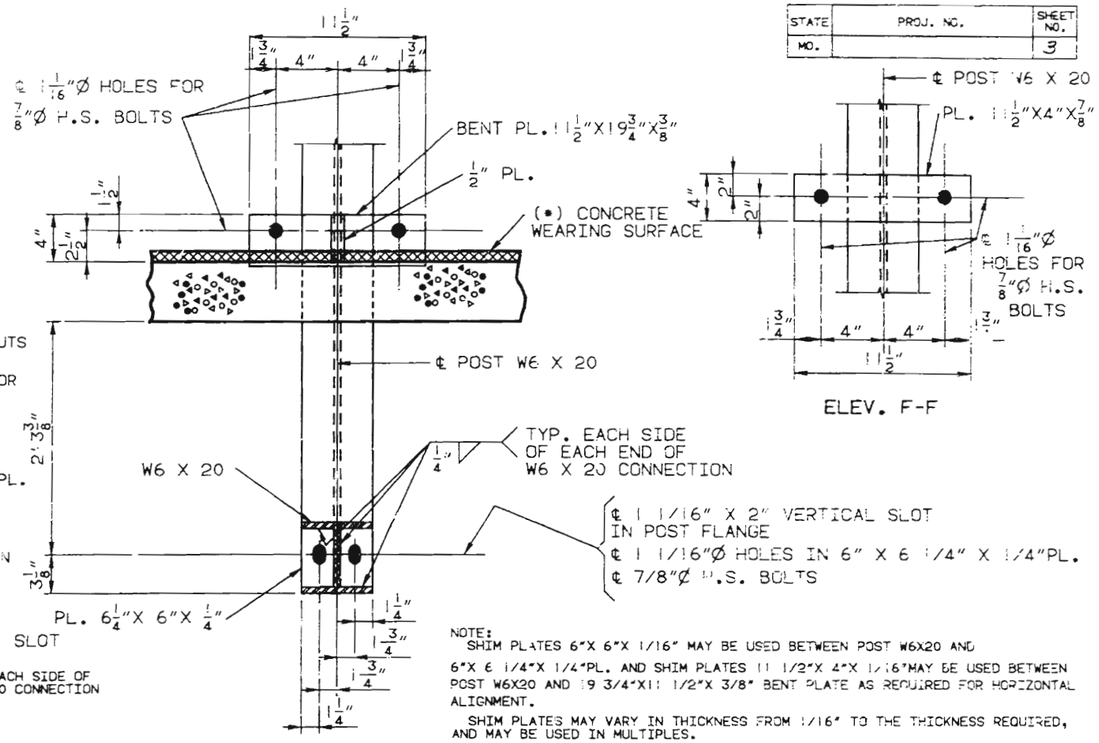
NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

KNOX COUNTY P-770R

STATE	PROJ. NO.	SHEET NO.
MO.		3



PART SECTION AT RAIL POST



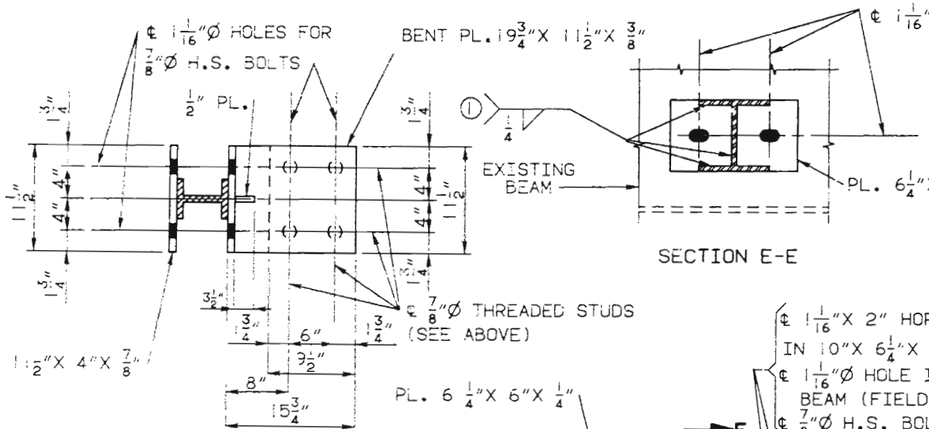
SECTION A-A

ELEV. F-F

NOTE:
SHIM PLATES 6"X 6"X 1/16" MAY BE USED BETWEEN POST W6X20 AND 6"X 6 1/4"X 1/4"PL. AND SHIM PLATES 11 1/2"X 4"X 1/16"MAY BE USED BETWEEN POST W6X20 AND 19 3/4"X11 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.

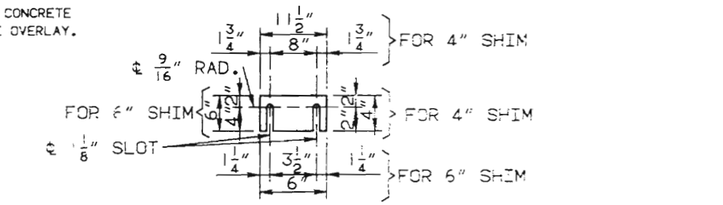
SHIM PLATES SHALL BE GALVANIZED AFTER FABRICATION.



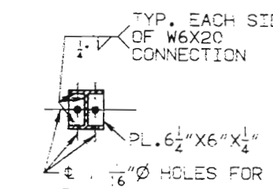
SECTION B-B

SECTION E-E

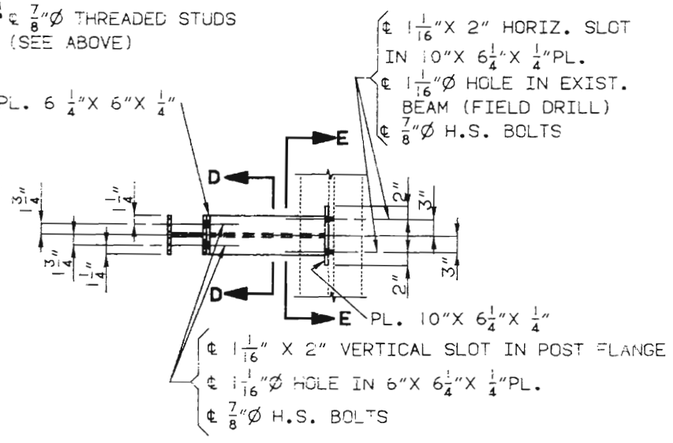
(•) ALT. "A" = 1 3/4" (MIN.) LATEX MODIFIED CONCRETE
ALT. "B" = 2¼" (MIN.) LOW SLUMP CONCRETE OVERLAY.



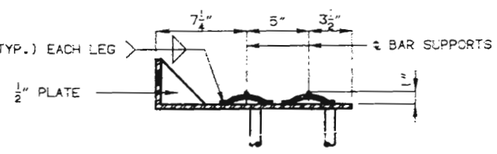
DETAIL OF SHIM PLATES



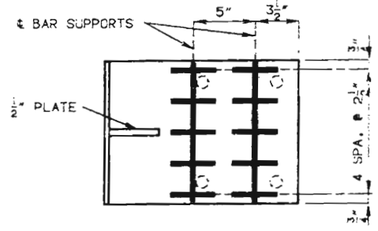
SECTION D-D



SECTION C-C



PART SECTION THRU PLATE



PLAN OF BENT PLATE

NOTE: BAR SUPPORTS SHALL BE BEAM BOLSTERS(BB) AND SHALL BE EPOXY COATED, PLASTIC COATED OR GALVANIZED.

DETAILS OF THRIE BEAM RAIL

DETAILED DEC. 1989
CHECKED DEC. 1989

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

KNOX COUNTY | H-770R