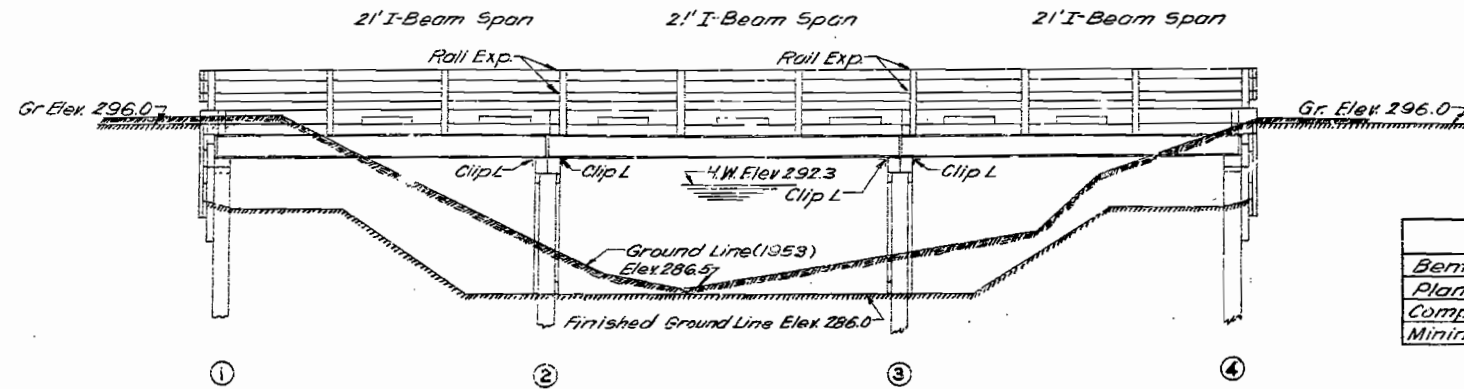


MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	AID NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5-284	MO	20(64)	19		



DATA FOR PILE DRIVING			
Bent No. (N. including wing piles)	184	283	
Plan Capacity Per Pile	16.0	16.0	
Computed Capacity Required Per Pile	11.70n	13.57n	
Minimum Penetration (Pile Tip Elev.)	271.0	263.0	

BILL OF REINFORCING STEEL									
No.	Size	Length	Mark	Location	Bearing	Sketches	Cutting Diagrams		
100	#5	3'-0"	C1	Curb					
6	#6	2'-6"	C2	"					
6	#6	2'-3"	C3	"					
6	#6	2'-9"	C2	"					
94	#5	2'-3"	S1	Slab					
45	#5	2'-9"	S2	"					
90	#5	2'-6"	S3	"					
16	#5	3'-0"	S4	"					
32	#5	2'-3"	S5	"					
6	#5	2'-9"	S6	"					
45	#5	2'-9"	S7	"					

GENERAL ELEVATION

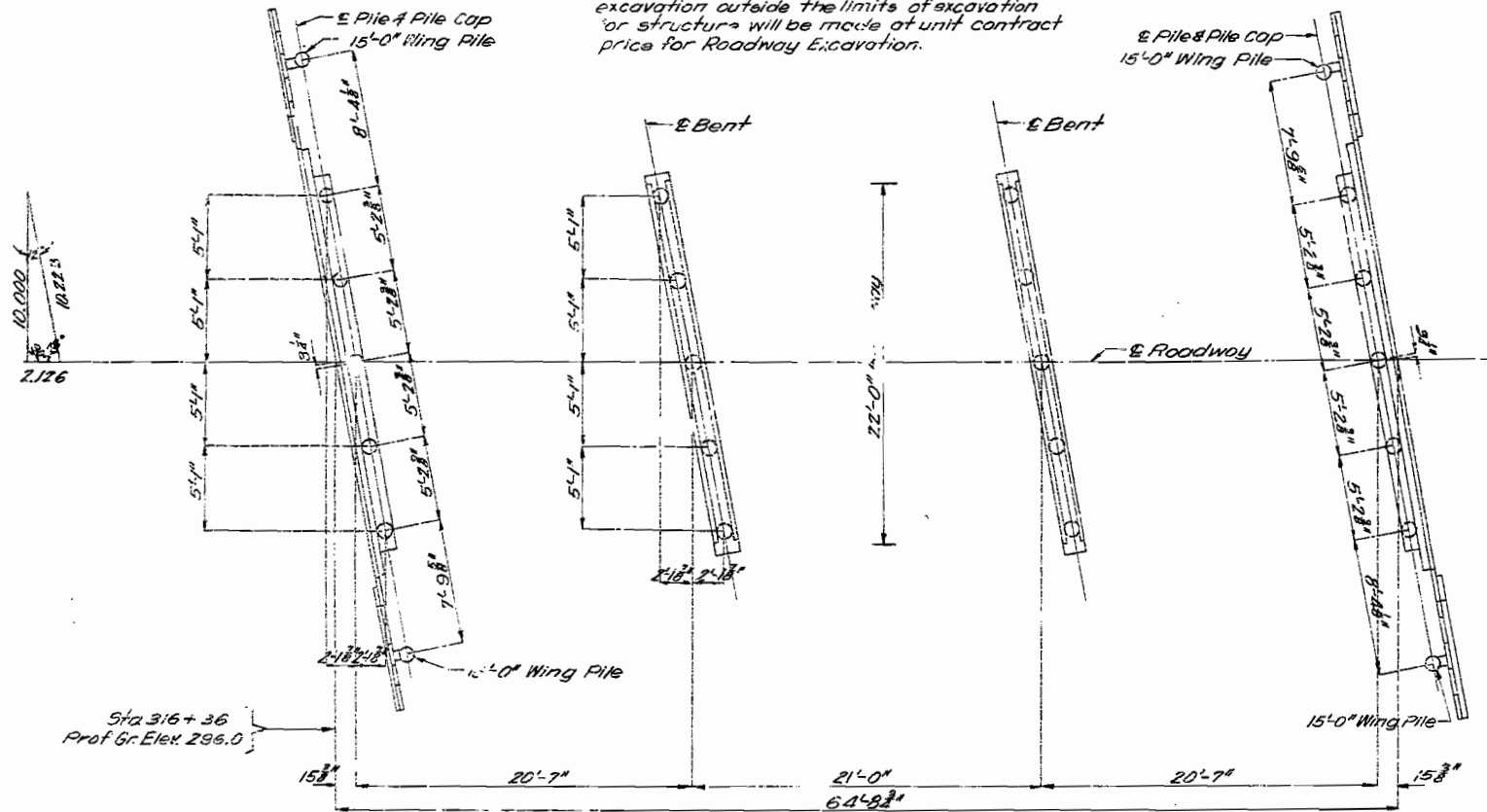
Note: Excavation of all existing materials under bridge shall be made to not less than 3'-0" below bottom of steel and not less than 4'-0" outside of curb lines. Payment for this excavation outside the limits of excavation for structure will be made at unit contract price for Roadway Excavation.

Note: All permanent piling shall be creosoted timber. Estimated quantities shown on plans are based on following lengths: 10 @ 35'-0", 10 @ 30'-0", 4 @ 15'-0". These indicated lengths are approximate only. Proper lengths to give required bearing and/or penetration will be authorized by the Engineer.

Two timber test piles shall be driven, one near Bent No. 1 and one near Bent No. 3. All wing pile shall be driven to full penetration of lengths given on plans. Piles other than wing piles shall be driven to not less than the specified "Plan" capacities, and to the minimum penetration noted, unless the pile lengths authorized and furnished fail to give "Plan" capacities in which cases not less than the "Computed" capacities shall be obtained.

GENERAL NOTES:

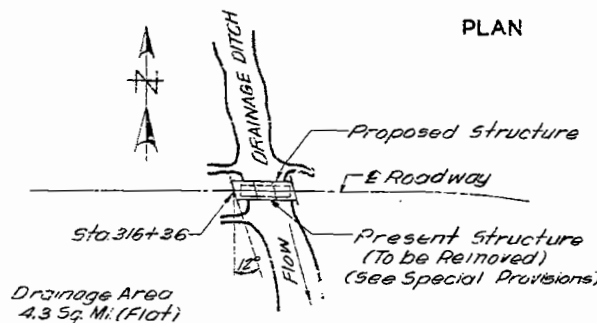
Design Specifications A. S. H. C. - 1953
 Loading H15-44
 Class "B" Concrete Stress 1,000 ψ /in.
 Reinforcing Steel Stress 18,000 ψ /in.
 Structural Steel Stress 18,000 ψ /in.
 Creosoted Timber Stress 1,600 ψ /in.
 All concrete shall be Class "B".
 All timber shall be creosoted and shall be 1600°F Douglas Fir or the West Coast Region or either Longleaf or Shortleaf 1600°F Southern Yellow Pine.
 All timber shall be standard sawn except as noted in timber bill for pile caps.
 All timber shall be cut to billed lengths and shapes and shall be bored as shown before treating. All backing, plank and 6" long and are to be re-cut and fitted in the field.
 Rivets 3/8" Holes 1/2" except as noted.
 Field connections shall be riveted or if the Contractor desires he may use high tensile steel bolts with carburized washers in place of rivets except for connections noted in handrail details. See Special Provisions.
 Paint: Shop, none; Field, contact surfaces of bolted rail connections one coat of red lead and surfaces inaccessible after erection three coats of red lead. No other paint to be applied by the Contractor. Red lead required shall be furnished by the Contractor. Payment for cleaning and painting such surfaces will be included in unit price bid for Fabricated Structural Steel.
 Where joint filler is specified on plans it shall conform with the requirements for Premolded Material for filler as given in Section 38-19 A.U.H. of the Standard Specifications.



PLAN

ESTIMATED QUANTITIES				
Item	Substr.	Superstr.	Total	
Class I Excavation for Structures	Cu. Yds.	120		120
Class "B" Concrete	Cu. Yds.	346		346
Fabricated Structural Steel	Lbs.	26530		26530
Reinforcing Steel	Lbs.	9120		9120
Creosoted Timber Piles in Place	Lin. Ft.	638		638
Creosoted Timber Pile Cut-offs	Lin. Ft.	72		72
Creosoted Timber	F.B.M.	3440		3440
Test Piles	Lin. Ft.	85		85

Note: Bridge excavation will be allowed for all bents within the horizontal limits shown and noted on bent details. This excavation will be computed from existing ground line to bottom end of 6"x6" backing supports for end bents and to bottom of sway bracing for interior bents.
 All bridge excavation will be paid for as Class I Excavation for Structures.



LOCATION SKETCH

Drawn Jan. 1954 by H.G.M. & W.G.S.
 Traced
 Checked Mar. 1954 by N.W.R.

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

Sheet No. 1 of 3

B.M. Elev. 295.25 Chiseled "D" in S.E. Abt. Bridge
 Sta. 317+00 (U.S.G.S. Datum)

OVER DRAINAGE DITCH

STATE ROAD FROM CANALOU TO MATTHEWS

ABOUT 0.2 MILE W. OF MATTHEWS

PROJECT NO. S-274(4) (SH) STA. 316+35

NEW MADRID COUNTY

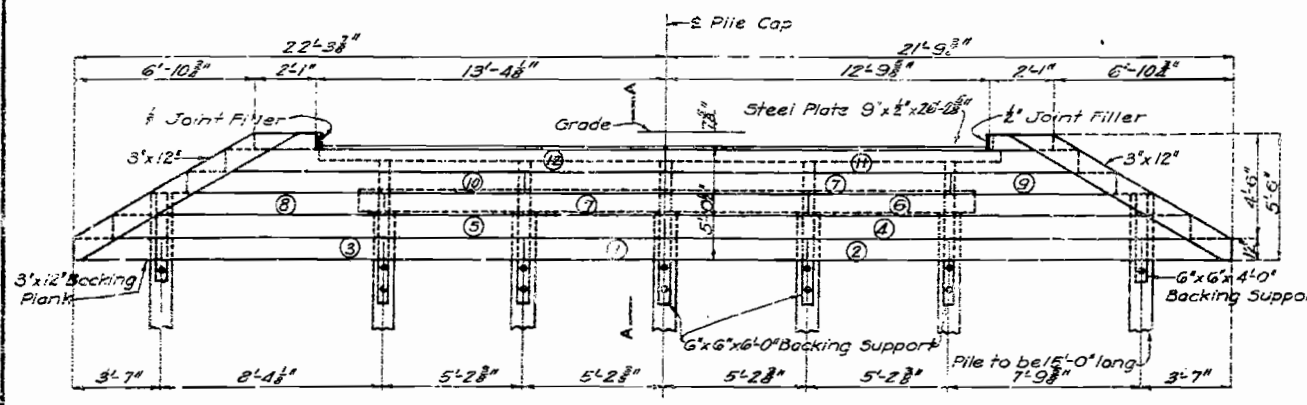
SUBMITTED BY J.A. Williams DATE 3/25/1954
 BRIDGE ENGINEER
 APPROVED BY B.M. Whitton DATE 3/25/1954
 CHIEF ENGINEER

STD. C-110R3
 L-620

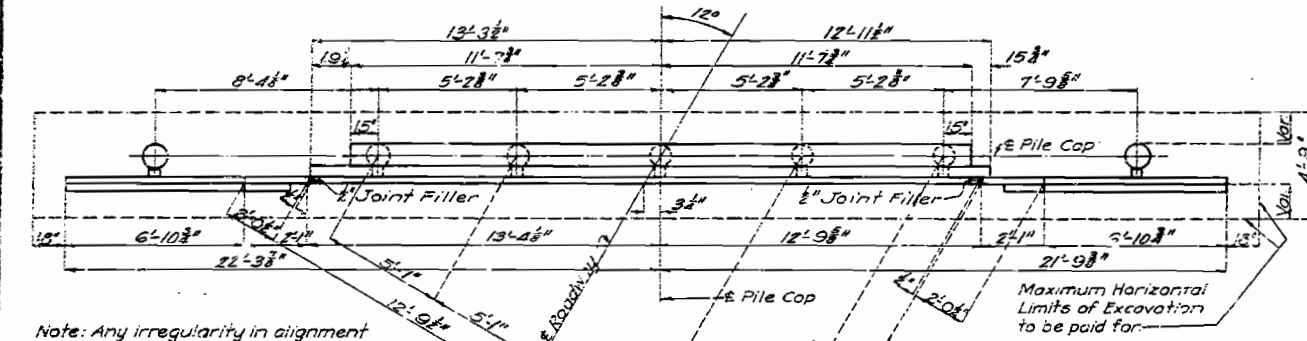
APPROVED BY J.A. Williams DATE 3/25/1954
 BRIDGE ENGINEER

MISSOURI STATE HIGHWAY DEPARTMENT

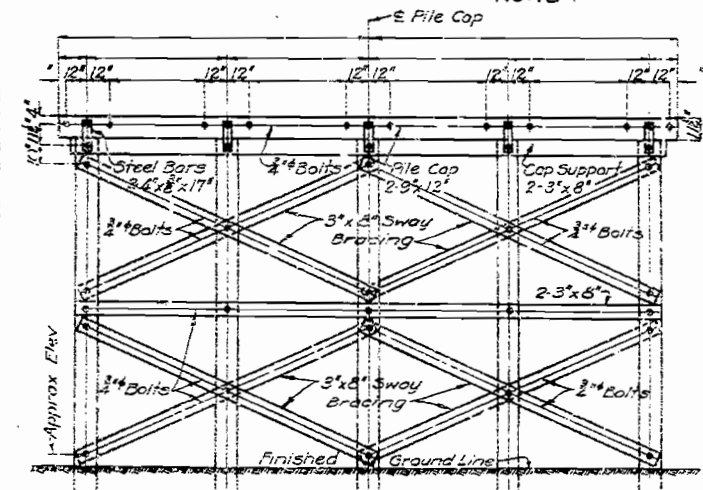
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SK. NO.	TOTAL SHEETS
5	MO	S-294	1934	15	15



ELEVATION OF END BENTS NO. 1 & 4

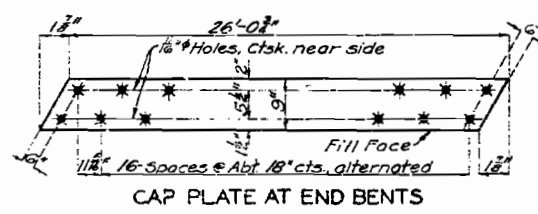


PLAN OF END BENTS NO. 1 & 4

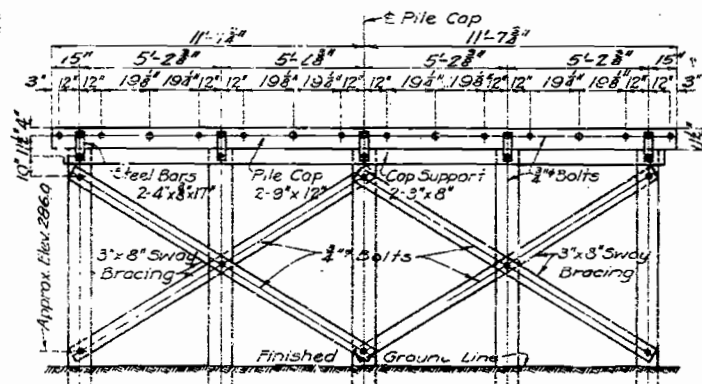


DETAIL OF INTERIOR BENT NO. 1

Note: Omit sway bracing when distance from bottom of pile cap to ground is less than 5'0".
Excavation will be allowed for interior bents within the maximum horizontal limits of 4'9" in width and 23'32" in length.
All 4' x 8' x 17' bars required for attaching pile cap to pile cap supports are to be considered substructure hardware and will be included in price bid for timber in place.
As noted in Section 30-4 of Specifications an approved spike timber grid shall be used between piles and sway bracing of all interior bents.



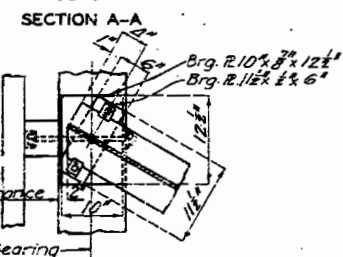
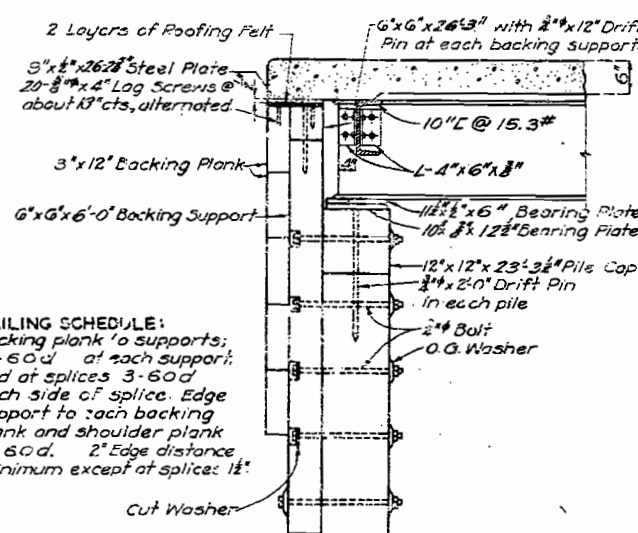
CAP PLATE AT END BENTS



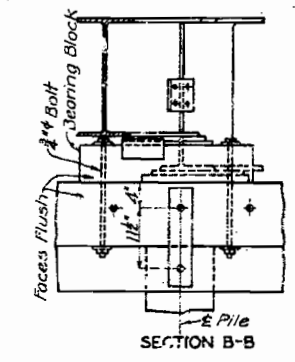
INTERIOR BENT NO. 2 & 3

BENT NO.	Cut-Off ELEV.	BENT NO.	Cut-Off ELEV.
BENT NO. 12345	292.99	BENT NO. 12345	292.99
Bearing Piles	292.99	Bearing Piles	292.99
Wing Piles	292.99	Wing Piles	292.99

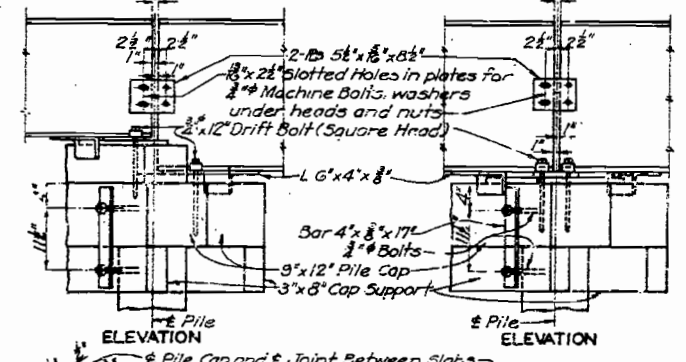
Note: This drawing is not to scale. Follow dimensions.



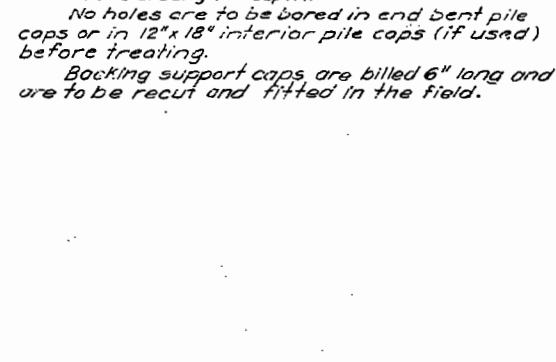
PLAN AT END BENT



SECTION B-B

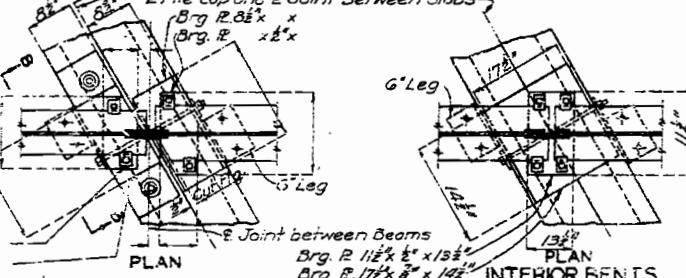


ELEVATION



ELEVATION

Note: Holes in 6' x 4' L to be drilled in field to match holes shop punched in stringers. Vertical leg of clip angle to be notched where angle interferes with 4' bars.



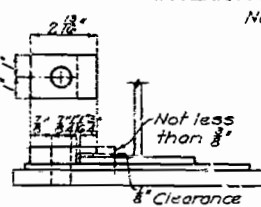
PLAN



PLAN

INTERIOR BENTS FOR UNEQUAL DEPTH STRINGERS FOR EQUAL DEPTH STRINGERS

Note: All bearing plates shall be straightened to plane surfaces. Pile caps 12' x 18' may be substituted for 2' x 9' x 12' pile caps shown. Field drill lower hole in one 4' x 17' bar of each pile.



DETAILS OF FLANGE CLAMP

Piece	No.	Size	Length	Remarks	Shaping and Boring Sketches
Backing Plank	1	2	3' x 12'	10' x 10' Cut to length	
	2	2	3' x 12'	17' x 17'	
	3	2	3' x 12'	17' x 7'	
	4	2	3' x 12'	20' x 9'	
	5	2	3' x 12'	21' x 3'	
	6	2	3' x 12'	14' x 0'	
	7	4	3' x 12'	16' x 18'	
	8	2	3' x 12'	9' x 4'	
	9	2	3' x 12'	7' x 3'	
	10	2	3' x 12'	13' x 0'	
	11	2	3' x 12'	16' x 18'	
	12	2	3' x 12'	16' x 8'	
Edge Support	4	3' x 12'	10' x 3'	Cut to length & shape	
Shoulder Plank	2	3' x 6'	2' x 18'		
	2	3' x 6'	2' x 1'		
Backing Support	4	6' x 6'	4' x 0'		
	10	6' x 6'	6' x 0'		
Backing Support Cap	2	6' x 6'	13' x 8'	Cut to length	
	2	6' x 6'	13' x 0'		
Pile Cap	2	12' x 12'	23' x 3'		
	4	9' x 12'	23' x 3'		
Cap Support	4	3' x 3'	22' x 3'		
Sway Bracing	8	3' x 8'	13' x 4'		
Bearing Plates	2	6' x 6'	54' x 24'		

Note: See Detail of Interior Bent for location of holes to be bored in 9' x 12' pile caps before treating.

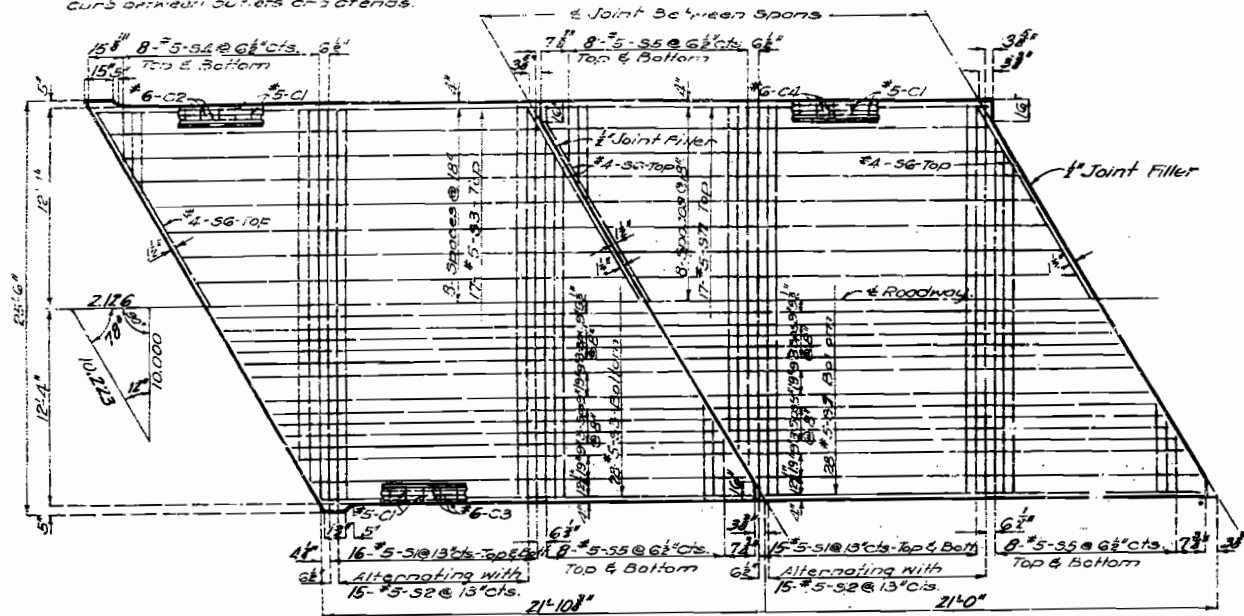
Note: Pile caps to be classified as "Beams and Stringers". All other timber to be classified as "Joists and Plank". * 525 to exactly 112" depth. No holes are to be bored in end bent pile caps or in 12' x 18' interior pile caps (if used) before treating. Backing support caps are billed 6" long and are to be recut and fitted in the field.

BRIDGE OVER DRAINAGE
STATE ROAD FROM CANALOU TO MATTHEWS
ABOUT 0.2 MILE W. OF MATTHEWS
PROJECT NO. S-294(4) (SH) STA. 316+36
NEW MADRID COUNTY

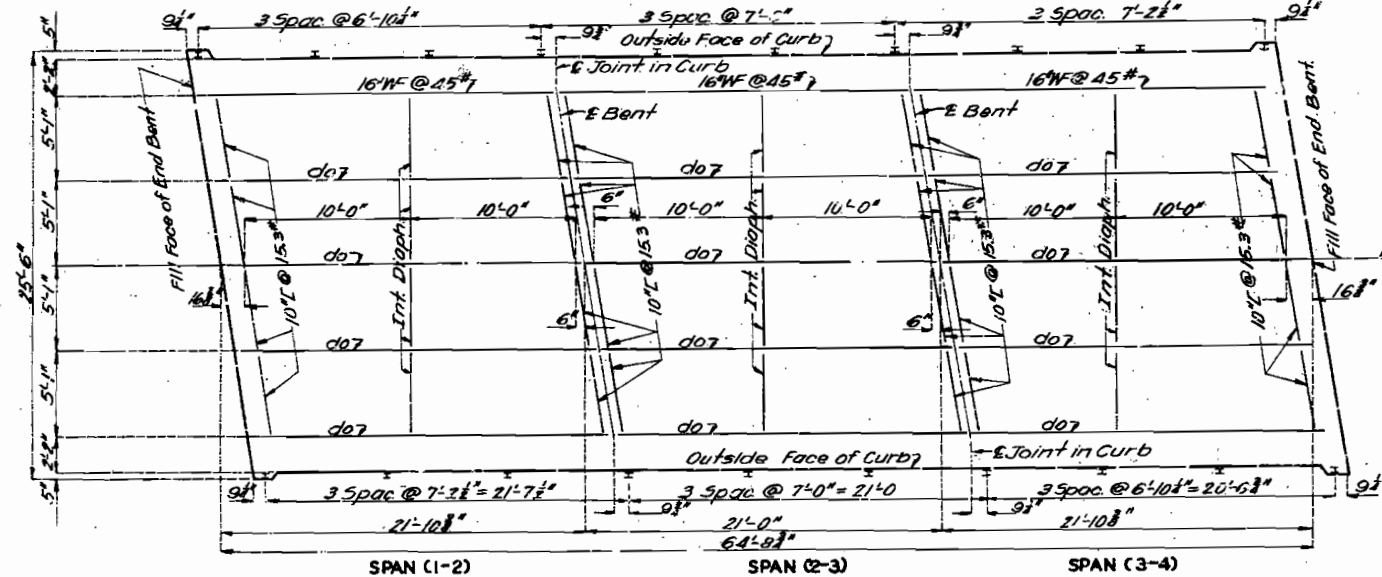
376

MISSOURI STATE HIGHWAY DEPARTMENT.

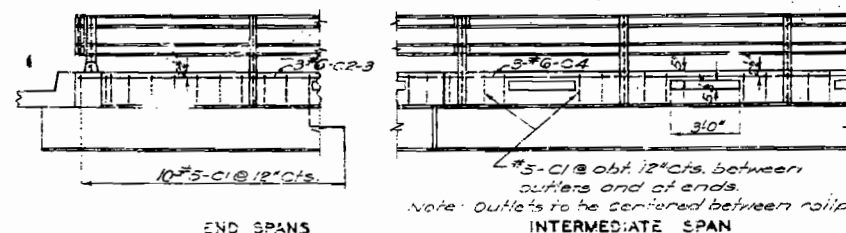
Note: For concrete slabs, bars of not less than #4 and not more than 12" centers in curb between curbs and strands.



PLAN OF SLAB SHOWING REINFORCING



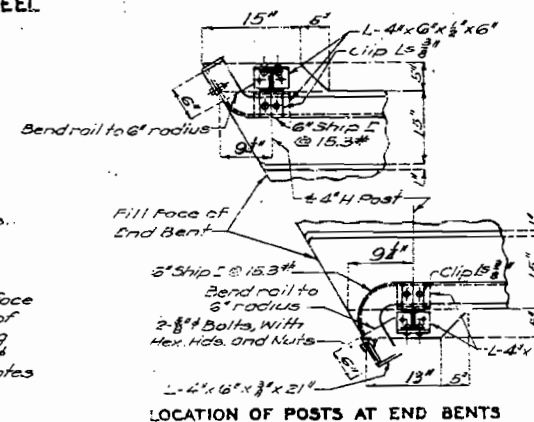
PLAN OF STRUCTURAL STEEL



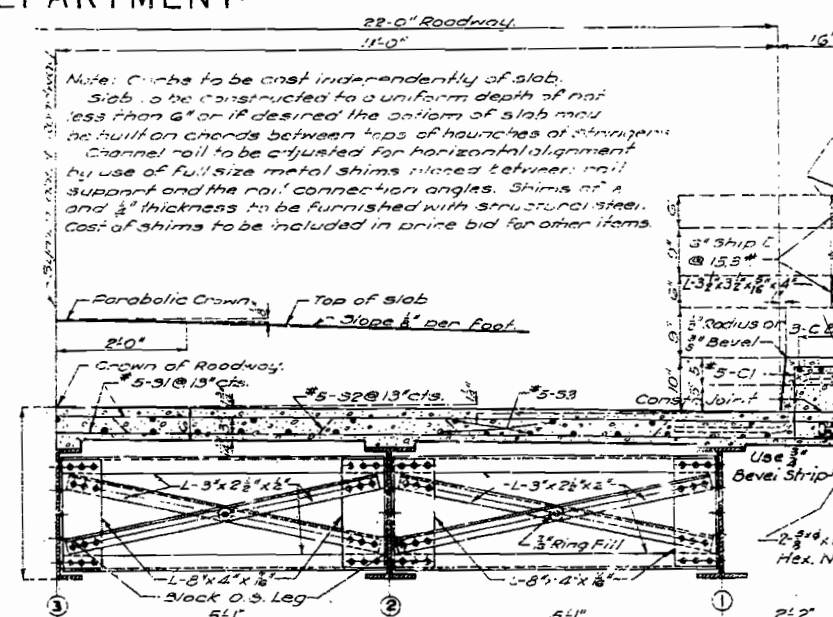
END SPANS

TYPICAL CURB DETAILS

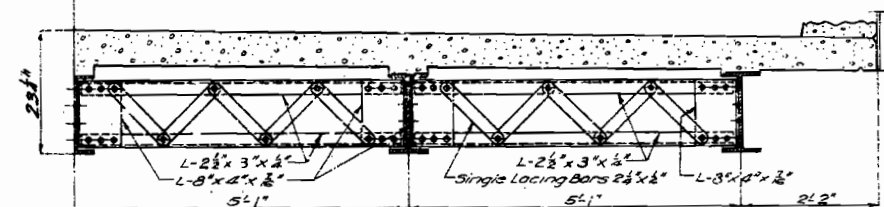
Note: Top of curbs under end posts shall be finished to a smooth surface parallel to grade. Not less than one nor more than four soft lead plates of 1/8" thickness shall be used under angles of each end rail post for aligning. Plates shall be 8" x 6" and shall be punched 1/8" on same gage as the angles. No grouting permitted. Cost of lead plates to be included in price bid for other items.



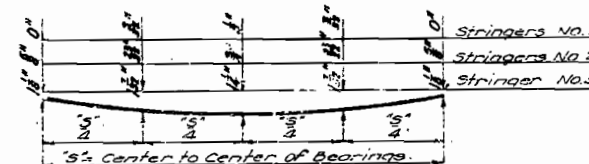
LOCATION OF POSTS AT END BENTS



HALF SECTION THRU SPANS REQUIRING 21", 24" & 27" STRINGERS

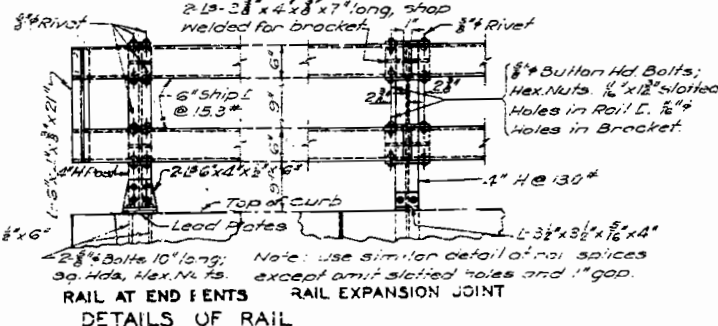


HALF SECTION THRU SPANS REQUIRING 14", 16" & 18" STRINGERS

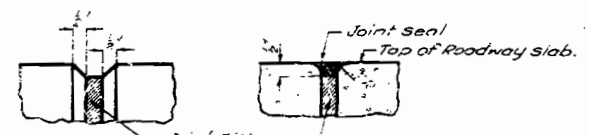


Note: Slab shall be built parallel to grade and to a minimum thickness of 6". Dead load deflection, vertical curve (if any), crown and any difference in depth of stringers shall be taken care of by haunching to stringers by the amounts shown above. This additional concrete is included in "Estimated Quantities."

SLAB HAUNCHING DIAGRAM



DETAILS OF RAIL



SECTION AT ENDS OF SPANS

Note: Haunch slab to bear on L separate.

BRIDGE OVER DRAINAGE DITCH

STATE ROAD FROM CANALOU TO MATTHEWS
ABOUT 2 MILE W. OF MATTHEWS
PROJECT NO. 5-294(4) (SH) STA 316+36

NEW MADRID COUNTY

FINISHED

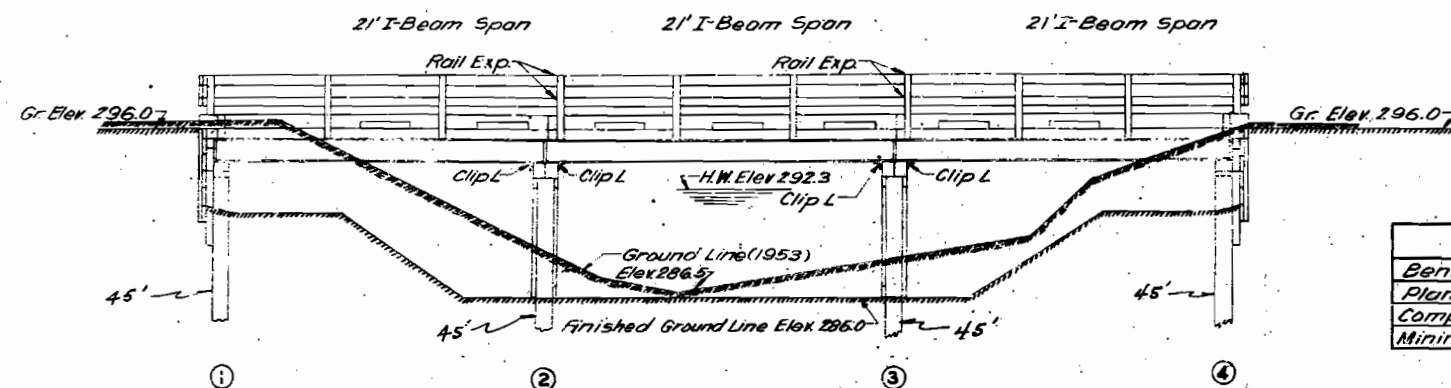
FINISHED

L-620

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO	294(4)	19	18	

FINAL PLANS



DATA FOR PILE DRIVING		
Bent No. (Not including wing piles)	1 & 4	2 & 3
Plan Capacity Per Pile	16	16.0
Computed Capacity Required Per Pile	11 Ton	13.5 Ton
Minimum Penetration (Pile Tip Elev.)	271.0	266.0

BILL OF REINFORCING STEEL				
No.	Size	Length	Location	Bending Sketches & Cutting Diagrams
100	#5	5'-0"	CI	Curb
6	#6	21'-6"	CS	"
6	#6	21'-3"	CS	"
6	#6	20'-9"	CS	"
94	#5	5'-3"	SI	Slab
15	#5	26'-9"	SI	"
90	#5	21'-6"	SI	"
12	#5	12'-0"	SI	"
32	#5	29'-3"	SI	"
6	#5	24'-9"	SI	"
45	#5	20'-9"	SI	"

GENERAL ELEVATION

Note: Excavation of all existing materials under bridge shall be made to not less than 3'-0" below bottom of steel and not less than 4'-0" outside of curb lines. Payment for this excavation outside the limits of excavation for structure will be made of unit contract price for Roadway Excavation.

Note: All permanent piling shall be creosoted timber. Estimated quantities shown on plans are based on following lengths: 10 @ 35'-0", 10 @ 30'-0", 4 @ 15'-0". These indicated lengths are approximate only. Proper lengths to give required bearing and/or penetration will be authorized by the Engineer.

Two timber test piles shall be driven, one near Bent No. 1 and one near Bent No. 3.

All wing pile shall be driven to full penetration of lengths given on plans. Piles other than wing piles shall be driven to not less than the specified "Plan" capacities, and to the minimum penetration noted, unless the pile lengths authorized and furnished fail to give "Plan" capacities in which cases not less than the "Computed" capacities shall be obtained.

GENERAL NOTES:

Design Specifications A A S H O 1953
Loading H-15
Class B Concrete Strength 1,000 psi
Reinforcing Steel Strength 30,000 psi
Allowable Steel Stress 18,000 psi
Creosoting Timber Strength 1,600 psi
A concrete shall be Class B
All timbers shall be creosoted and shall be 1600°F Douglas fir or the West Coast Region or other longleaf or shortleaf 1600°F Southern Yellow Pine.
All timber shall be standard sawn except as noted in timber pile for pile caps.
All timber shall be cut to specified lengths and shapes and shall be provided with proper bracing. All backing plank and bracing shall be provided and fastened in the field.
All connections shall be riveted or if the Contractor desires he may use high tensile steel bolts with corbused washers in place of rivets except for connections noted in handrail details. See Special Provisions.
Paint: Shop, non; Field, contact surfaces of bolted rail connections one coat of red lead and surfaces inaccessible after erection three coats of red lead. No other paint to be applied by the Contractor. Red lead required shall be furnished by the Contractor. Payment for cleaning and painting such surfaces will be included in unit price bid for fabricated structural steel.
Where joint filler is specified on plans it shall conform with the requirements for Prepacked Material for filler as given in Section 38-19 A(1)h of the Standard Specifications.

B.M. Elev. 296.73
on East End of South Curb New Br 12' R/S Sta. 317+03

BRIDGE OVER DRAINAGE DITCH

STATE ROAD FROM CANALOU TO MATTHEWS
ABOUT 0.2 MILE W. OF MATTHEWS
PROJECT NO. 5-294(4) (SH) STA. 316+36

NEW MADRID COUNTY

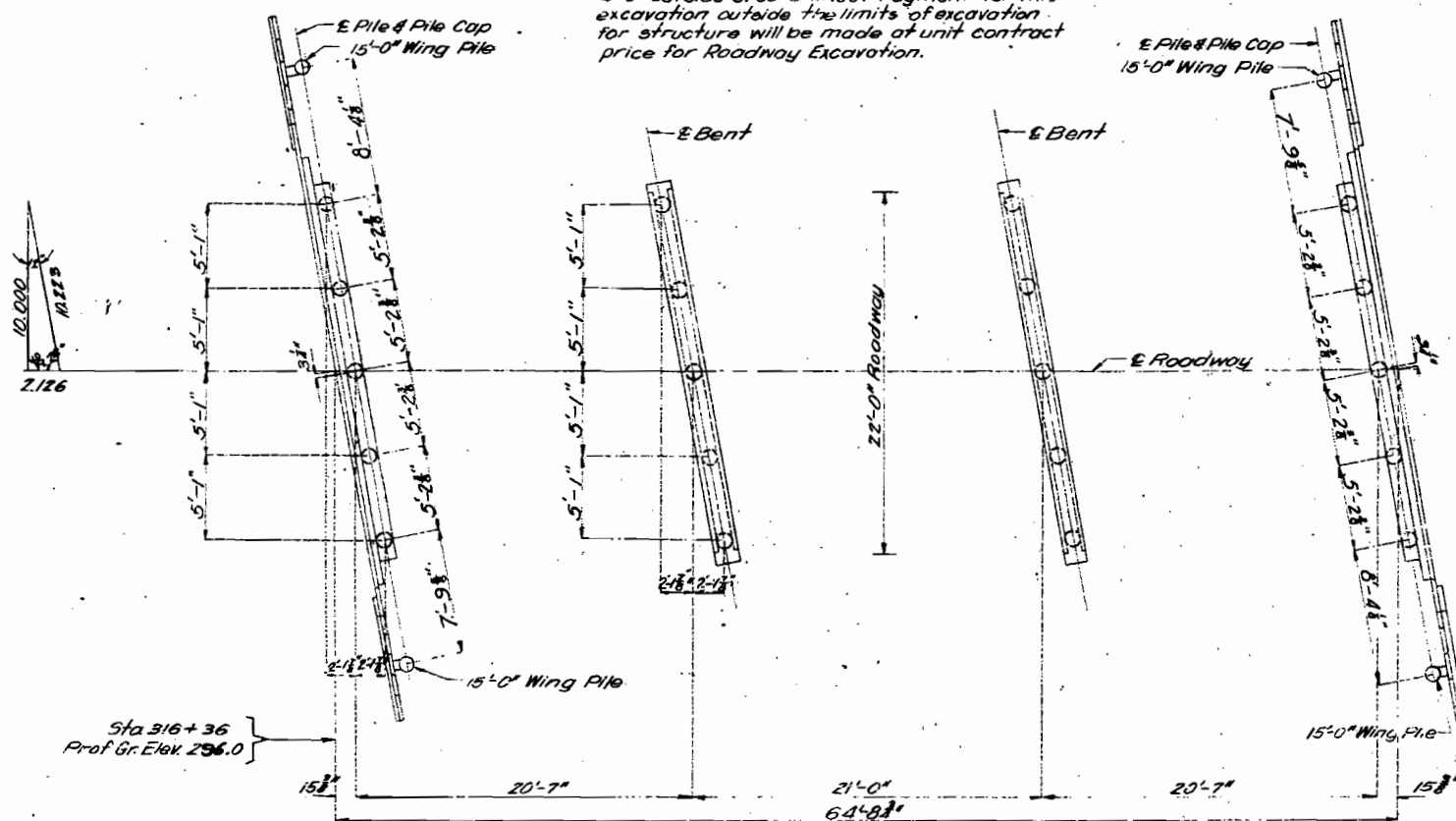
SUBMITTED BY J. A. Williams DATE 3/25/1954
APPROVED BY R. M. Wharton DATE 3/25/1954
BRIDGE ENGINEER CHIEF ENGINEER

STD. C-110R3

L-620

FINAL PLANS

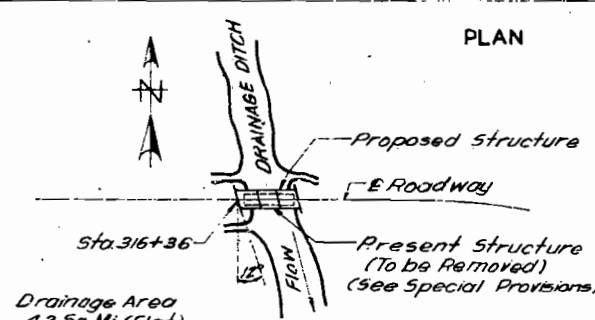
2-1/2" x 3-1/2" x 1/2" on 1951
2nd Mar. 1954



PLAN

FINAL QUANTITIES			
Item	Substr.	Superstr.	Total
Class I Excavation for Structures	Cu. Yds.	108.5	108.5
Class B Concrete	Cu. Yds.	24.6	24.6
Fabricated Structural Steel	LBS.	26530	26530
Reinforcing Steel	LBS.	9120	9120
Creosoted Timber Piles in Place	Lin. Ft.	702	702
Creosoted Timber Pile Cut-offs	Lin. Ft.	258	258
Creosoted Timber	Lin. Ft.	3440	3440
Test Piles	Lin. Ft.	80	80

Note: Bridge excavation will be allowed for all bents within the horizontal limits shown and noted on bent details. This excavation will be computed from existing ground line to bottom end of 6"x6" backing supports for end bents and to bottom of sway bracing for interior bents.
All bridge excavation will be paid for as Class I Excavation for Structures.



LOCATION SKETCH

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

Drawn Jan. 1954 by H.G.M. & W.G.S.
Traced
Checked Mar. 1954 by N.W.R.

Sheet No. 1A of 1

2-1/2" x 3-1/2" x 1/2" on 1951
2nd Mar. 1954