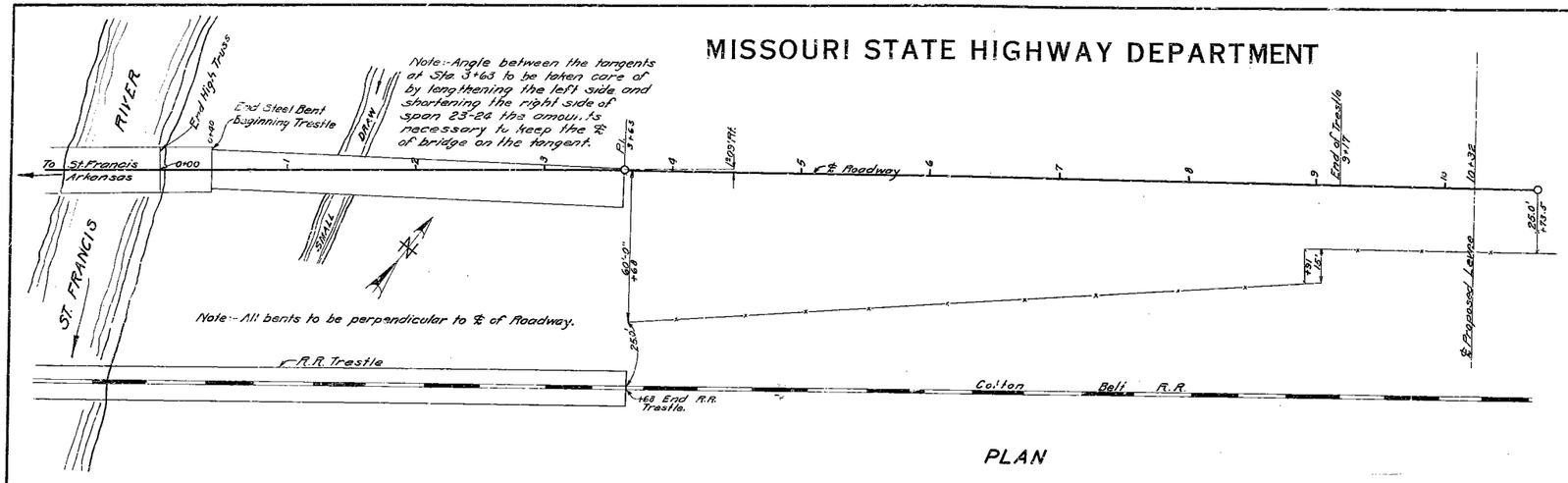
MISSOURI STATE HIGHWAY DEPARTMENT

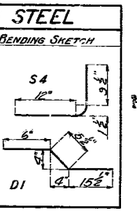
FED.ROAD DIST. NO.	STATE	FED.AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	REF.NO.10	192		



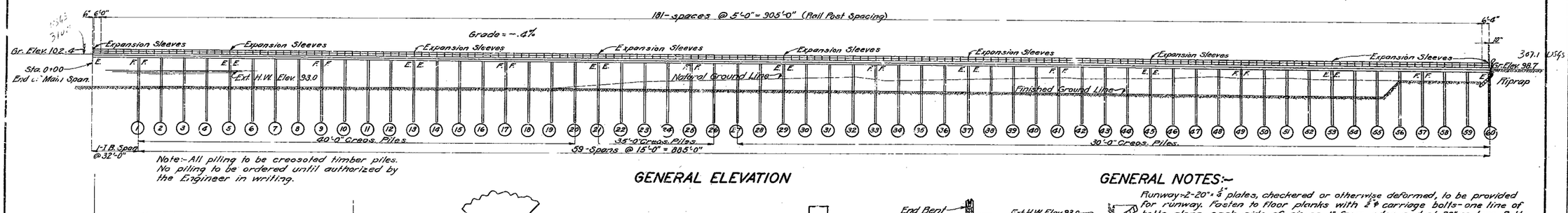
PLAN

BILL OF REINFORCING STEEL

No.	Size	Length	Mark	Location
		Superstructure		
1298	½" ℄	14'-9"	S1	Slab
356	⅝" ℄	14'-9"	S2	Curb
3068	½" ℄	17'-3"	S3	Slab
1464	⅝" ℄	2'-0"	S4	Curb
3	⅝" ℄	15'-0"	S5	Pier
110	½" ℄	16'-9"	S6	Slab T.B.Span
44	½" ℄	17'-0"	S7	" " "
12	⅝" ℄	17'-0"	S8	Curb T.B.Span
15	⅝" ℄	2'-3"	D1	Pier

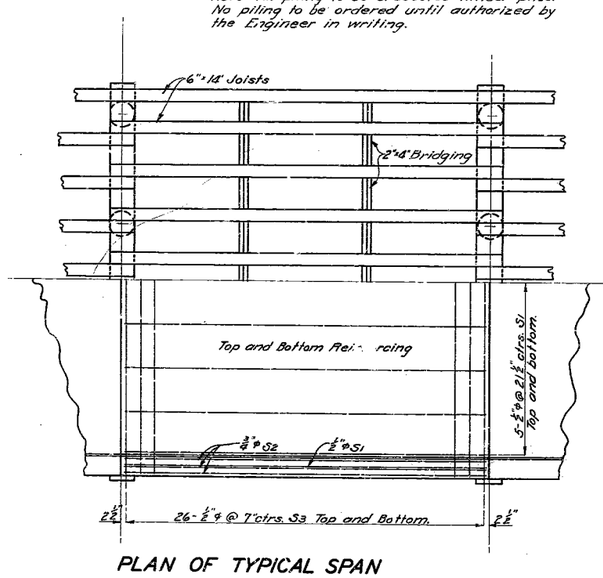


Bridge + 208.3' = USGS

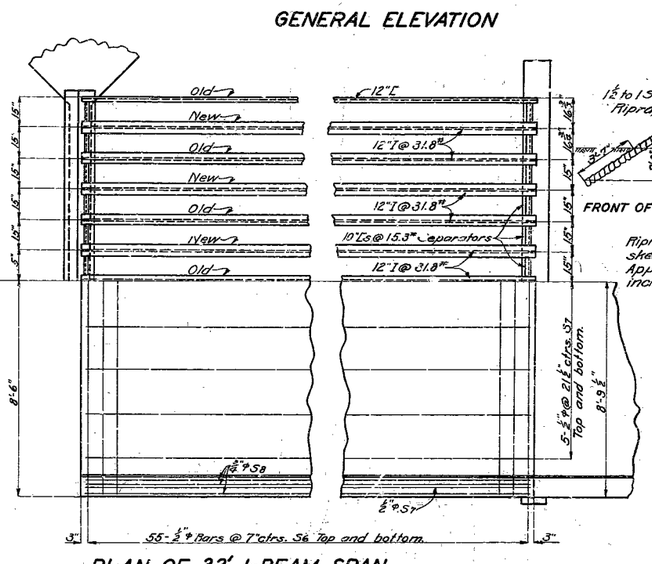


GENERAL ELEVATION

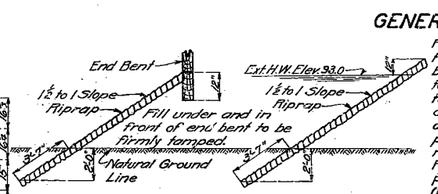
Note:-All piling to be creosoted timber piles. No piling to be ordered until authorized by the Engineer in writing.



PLAN OF TYPICAL SPAN



PLAN OF 32' I-BEAM SPAN



Riprap fill at end of bridge as shown in sketches. Extend riprap 111'-0" back of end bent. Approximately 506 sq. yds. of riprap work included in road contract.

RIPRAP SKETCHES

GENERAL NOTES:-

Runway-2-20"×½" plates, checkered or otherwise deformed, to be provided for runway. Fasten to floor planks with ⅞" ø carriage bolts-one line of bolts along each side of planks 1" from edge and of 20" centers. Bolts to have lock washer under nut and square shank under head. Plates to be punched with square holes to match shank on bolts. Details of plates to be submitted to the Missouri State Highway Commission for approval. Floor planks to be adzed where necessary to afford bearing of plates. Prior to placing plates the floor along that portion which is to receive the plates, to be treated with a heavy coat of hot asphalt or tar. Piles to be driven to full penetration if possible and to sustain a load of 12 ton per pile. All timber to be creosoted dense yellow pine or Douglas fir of Coast Region. One name plate, type "C", as shown on Std. 5818, to be furnished and placed on east end of bridge by contractor. Cost of name plate to be included in price bid for other items. Floor plank to be of uniform width and thickness; S1S1E. Rivets ⅞" ø-Holes ⅞" ø-Bolts ⅞" ø turned bolts. Field connections to be bolted. All concrete to be 1-2:3½ mix. Paint:- Shop; Contact surfaces one coat of red lead; surfaces inaccessible after erection, 3 coats of red lead.
Field; Three coats of paint as furnished by the Missouri State Highway Department.
Exposed edges to be beveled ¾" where no other bevel is noted. Contractor to verify dimensions of I-beam span in field before ordering new steel. Detail shop drawings for the 32' I-beam span and all handrail details shall be submitted to the State Highway Department in duplicate and shall be approved before steel is fabricated.

B.M. #2. Elev. 87.07 U.S.G.S.B.M. at M.P. 69/15 30' Rt. Sta. 8+60.

11406

ESTIMATED QUANTITIES

Item		Superstr.	Substr.	Total
Creo. Timber Piles	Lin. Ft.		8180	8180
Creo. Timber Pile Cut-offs	Lin. Ft.		726	726
Traffic Plates	Lin. Ft.	128		128
Creo. Timber	F.B.M.	72,790	20,050	92,840
Concrete 1-2:3½ mix	Cu. Yds.	282.5		282.5
Reinforcing Steel	Lbs.	61,190		61,190
Fab. Structural Steel	Lbs.	8390		8390
Gas Pipe Rail	Lin. Ft.	4589		4589

BRIDGE OVER ST. FRANCIS RIVER

STATE ROAD FROM CAMPBELL S.W. TO STATE LINE

ABOUT 23 MILE N.E. OF ST. FRANCIS, ARK.

PROJECT NO. REF. NO. 10 STA 0+00

DUNKLIN COUNTY Replaced by H-927R

SUBMITTED BY [signature] DATE 12/7/28 BRIDGE ENGINEER

APPROVED BY [signature] DATE CHIEF ENGINEER

STD. 5818

H927

FINISHED

FINISHED

Drawn June 1928 by A.O.U.
Traced June 1928 by C.A.F.
Checked July 1928 by E.B.

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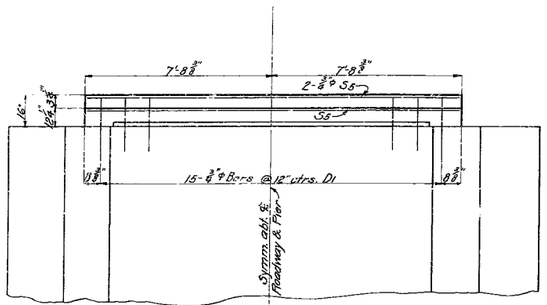
Sheet No. 1

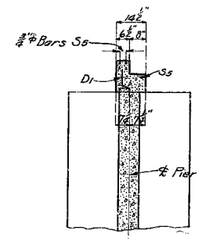
MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	REF. NO. 10	192		

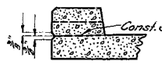


Note:- Surface of old concrete to be well roughened. Holes to be drilled 12" into old concrete and dowel bars D1 grouted in.

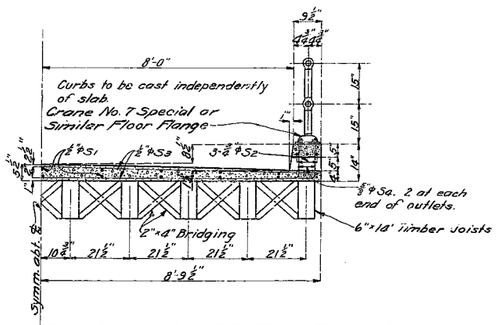
PART ELEVATION



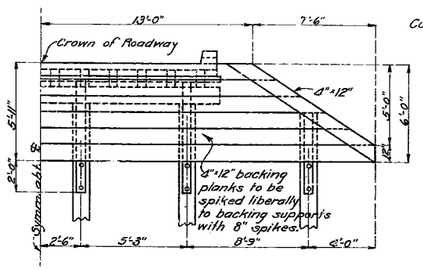
PART SECTION AT ℄ ROADWAY



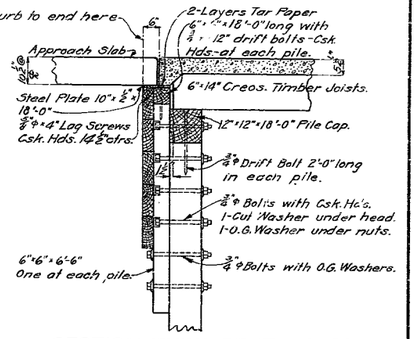
DETAIL OF BEVEL FOR CONST. JOINT AT CURB



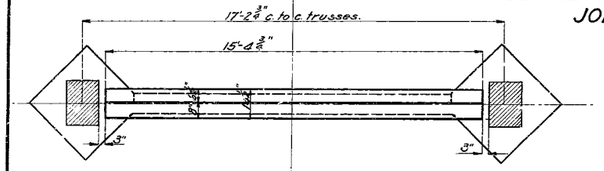
TYPICAL HALF SECTION THRU SPAN



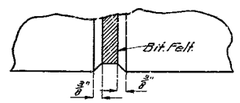
HALF ELEVATION OF BENT NO. 60



SECTION THRU BENT NO. 60 AT ℄ ROADWAY

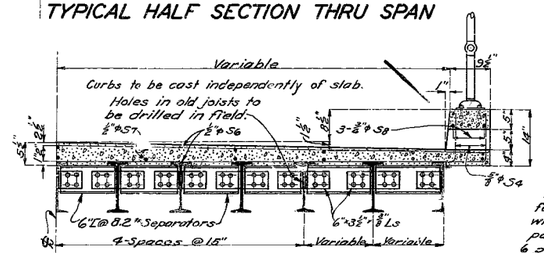


PLAN

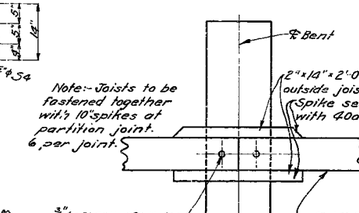


Note:- Use bevel as shown for exposed faces of all joints consisting of bituminous felt except at top surface of roadway slab.

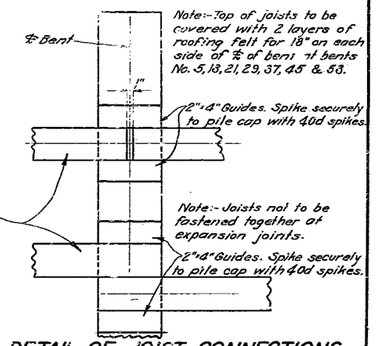
DETAIL OF BEVEL FOR BIT. FELT JOINTS



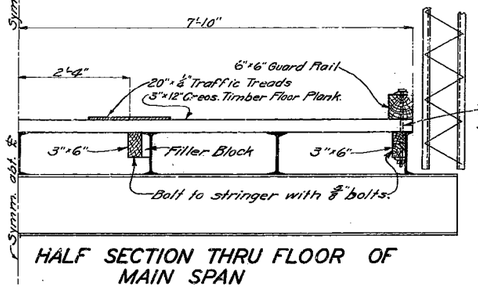
HALF SECTION THRU I-BEAM SPAN



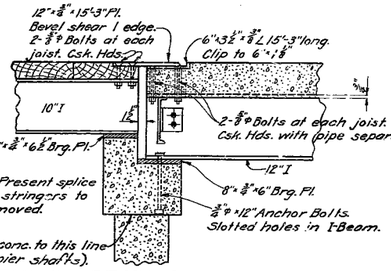
DETAIL OF JOIST CONNECTIONS AT PARTITION JOINTS



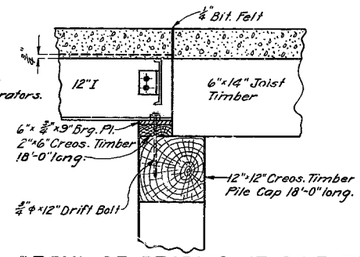
DETAIL OF JOIST CONNECTIONS AT EXPANSION JOINTS



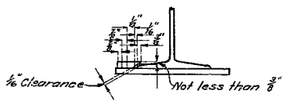
HALF SECTION THRU FLOOR OF MAIN SPAN



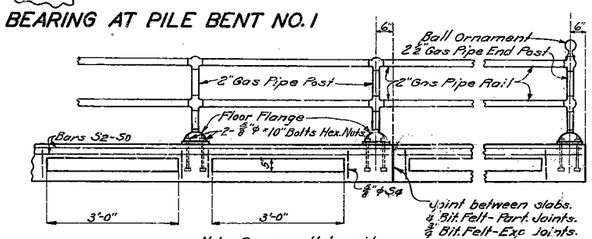
DETAIL OF BEARING AT EAST PIER MAIN SPAN



DETAIL OF BEARING AT PILE BENT NO. 1

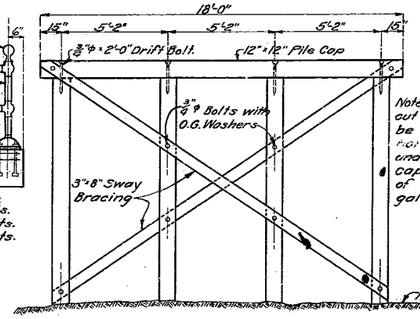


DETAIL OF FLANGE CLAMP

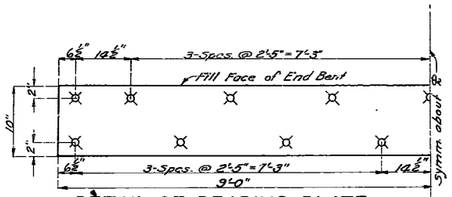


Note:- Space outlets midway between rail posts.

PART ELEVATION OF OUTLETS & RAIL



DETAIL OF INTERIOR BENTS



DETAIL OF BEARING PLATE ON BENT NO. 60

BRIDGE OVER ST. FRANCIS RIVER

STATE ROAD FROM CAMPBELL S.W. TO STATE LINE ABOUT .25 MILE N.E. OF ST. FRANCIS, ARK.

PROJECT NO. REF. NO. 10 STA. 0+00

DUNKLIN COUNTY

SUBMITTED BY _____ DATE 7/12/28 BRIDGE ENGINEER

APPROVED BY _____ DATE CHIEF ENGINEER

Replaced by H-9178

STD. 3818

H927

FINISHED

47

Drawn June 1928 by A.O.U.
Traced June 1928 by C.A.F
Checked July 1928 by E.B.

Sheet No. 2

FISCAL YEAR	Job No.	SHEET No.	TOTAL SHEETS
1928	10119	1	4

STATE OF ARKANSAS

STATE HIGHWAY DEPARTMENT

PLAN OF PROPOSED BRIDGE
OVER
ST. FRANCIS RIVER
CLAY COUNTY

ROUTE 39 SEC. 3

JOB Nº 10119

FEDERAL AID PROJECT No.

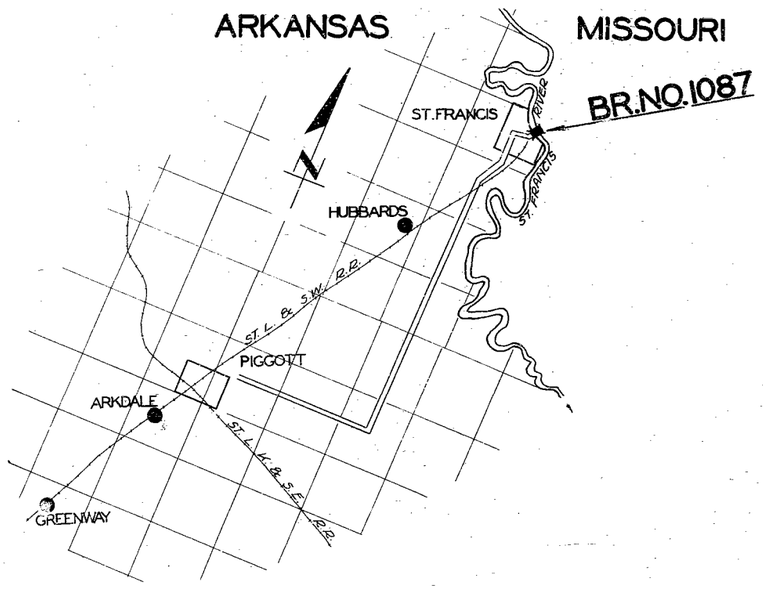
INDEX OF SHEETS

Sheet No. 1	Drg # 1395	Title Sheet.
" " 2	" # 1396	Layout Br # 1087.
" " 3	" " 1397	Details for Renewal of Br # 1087.
" " 4	" " 16	Details of 19'-0" Span Std. Timber Trestle - 19'-0" Roadway.

Treated Timber Piling Cut-off	1	
Repair of Old Steel Span	2	
Treated Br. Timber Supplementary P.922	1	

QUANTITIES

Item No. 17	Borrow	300	Cu. Yds.
" " 52	Untreated Timber	2,781	M.B.M.
" " 52	Treated "	79,080	M.B.M.
" " 56	Structural Steel in Beams	12,475	Lbs.
" " 67	Treated Timber Piling	2,564	Lin. Ft.
" S.P.	Cut Offs	168	" "
" " 69	Rip Rap 1 Ft. thick	230	Sq. Yds.
" S.P.	Removing I-Beam span, timber trestle, steel tower & footings, and timber floor on half of truss span; cleaning & painting all structural steel in Truss & I-Beam spans; making alterations to pier.		Lump Sum.



LAYOUT

Scale: 1" = 1 MI.

GROSS LENGTH OF PROJECT 458'-2" = 0.087 Mile
NET LENGTH OF PROJECT

APPROVED
[redacted]
COMMISSIONER - STATE LANDS, HIGHWAYS AND IMPROVEMENTS

APPROVED
[redacted]
STATE HIGHWAY ENGINEER

RECOMMENDED FOR APPROVAL
[redacted]
DISTRICT ENGINEER - U. S. BUREAU OF PUBLIC ROADS

RECOMMENDED FOR APPROVAL
Replaced by H-9217
CHIEF ENGINEER - U. S. BUREAU OF PUBLIC ROADS

APPROVED
H-927
DIRECTOR - U. S. BUREAU OF PUBLIC ROADS

M. B. Barr
BRIDGE ENGINEER
Sheet 3

H-927

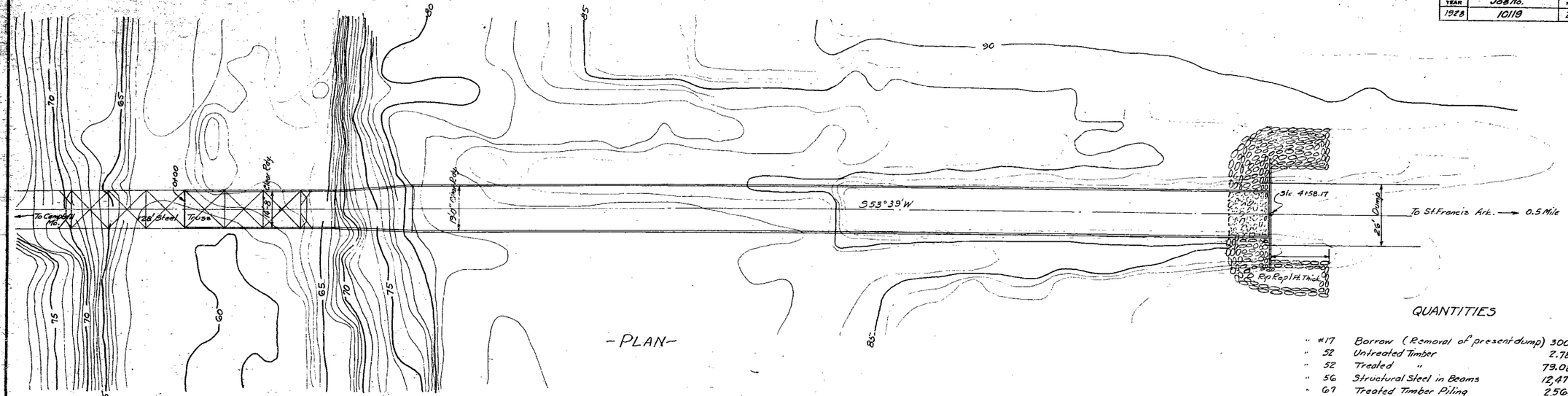
BRIDGE No. ~~1087~~

DRAWING No. 1395

48

H-927

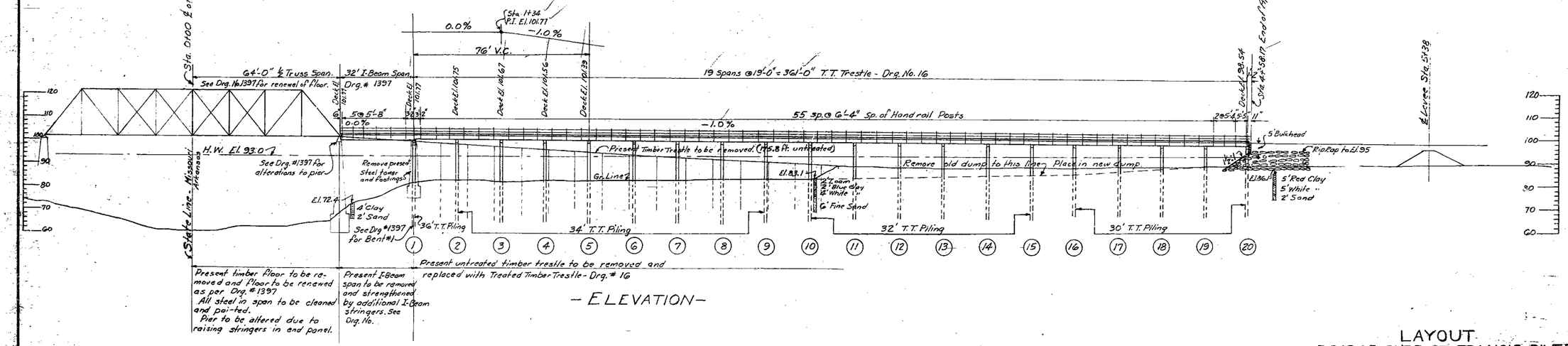
FISCAL YEAR	Job No.	SHEET No.	TOTAL SHEETS
1928	10119	2	4



-PLAN-

QUANTITIES

" #17	Borrow (Removal of present dump)	300	Cu.Yds.
" 52	Untreated Timber	2.781	M.B.M.
" 52	Treated "	79.080	M.B.M.
" 56	Structural Steel in Beams	12,475	Lbs.
" 67	Treated Timber Piling	2,564	Lin.Ft.
" S.P.	Cut off's	168	" "
" 69	Rip Rap 1 Ft. thick	230	Sq.Yds.
" S.P.	Removing I-Beam span, present timber trestle, steel tower and footings, and timber floor on truss span; cleaning and painting half of truss span remaining in place; alterations to pier.	Lump Sum.	



-ELEVATION-

B.M. Elev. 90.71 R.R. Spike in 16" Walnut 100' West Sta. 6+00

B.M. " 87.07 U.S.G.S. B.M. on Mo. side of river

Note: Lengths of piling shown are for estimating quantities only. Actual lengths to be determined in the field.

Sheet 4

M.B. Garver
BRIDGE ENGINEER

LAYOUT
BRIDGE OVER ST. FRANCIS RIVER.
CLAY CO.

ROUTE 39 SEC. 3

ARKANSAS STATE HIGHWAY DEPARTMENT
LITTLE ROCK, ARK.

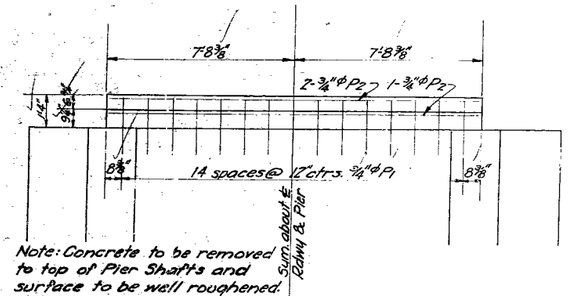
Drawn By: CBC Date: 2-8-29
Traced By: CBC Date: 2-9-29
Checked By: Date:

Scale: 1 in. = 20 ft.

BRIDGE No. ~~1087~~ H927 DRAWING NO. 1396

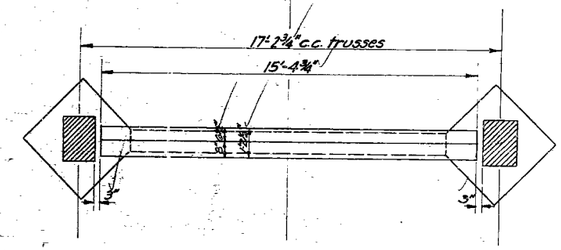
49

FISCAL YEAR	Job No.	SHEET No.	TOTAL SHEETS
1928	10119	3	4

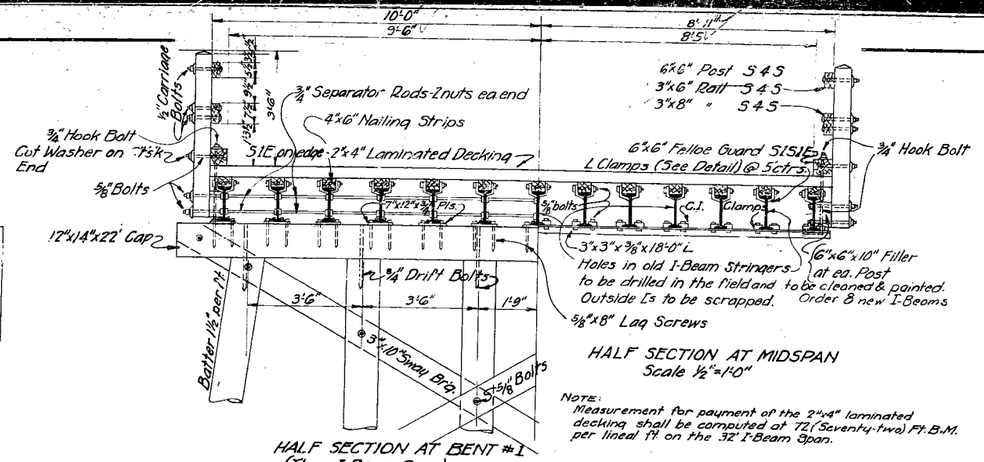


Note: Concrete to be removed to top of Pier Shafts and surface to be well roughened. Holes to be drilled 12" in old concrete and dowel bars P1 grouted in.

PART ELEVATION
Scale 3/8"=1'-0"



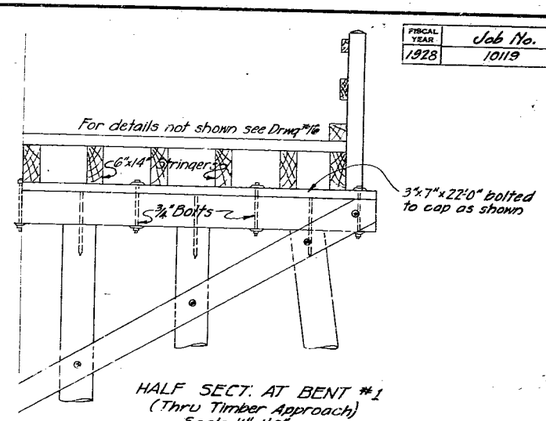
PLAN
Scale 3/8"=1'-0"



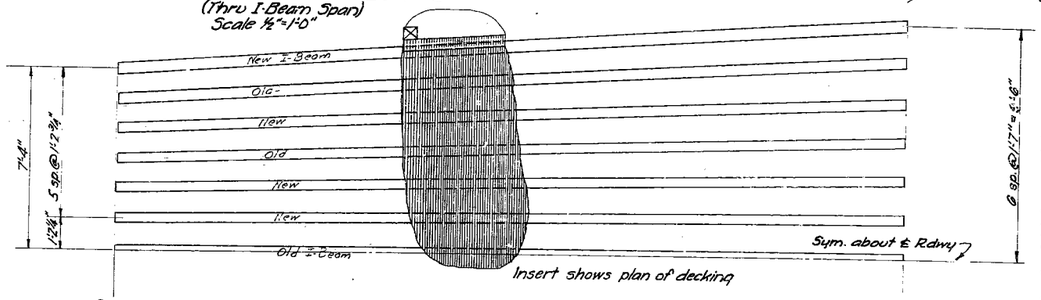
HALF SECTION AT MIDSPAN
Scale 1/2"=1'-0"

Note:
Measurement for payment of the 2"x4" laminated decking shall be computed at 72 (Seventy-two) Ft. B.M. per lineal ft. on the 32' I-Beam Span.

HALF SECTION AT BENT #1
(Thru I-Beam Span)
Scale 1/2"=1'-0"



HALF SECT. AT BENT #1
(Thru Timber Approach)
Scale 1/2"=1'-0"



Insert shows plan of decking

Pier

HALF PLAN OF 32' I-BEAM SPAN
Showing Spacing of Stringers
Scale 3/8"=1'-0"

Bent #1

NOTES

Runway - 2-20"x1/4" Plates, checkered or otherwise deformed, to be provided for runway. Fasten to floor planks with 1/2"ϕ carriage bolts. One line of bolts along each side of plates and 1" from edge and at 20' centers. Bolts to have lock washer under nut, and square shank under head. Plates to be punched with square holes to match shank. Details of plates to be submitted for approval. Floor planks to be adzed where necessary to afford bearing of plates. Prior to placing plates, that portion of the floor is to be treated with a heavy coat of hot asphalt or tar.

Contractor to verify dimensions of I-Beam span in field before ordering new steel. Detail shop drawings for 32' I-Beam span to be submitted for approval before fabrication of steel.

2"x4" Laminated Decking S1E. Each piece to be nailed to each adjacent piece once between each stringer with 30d. nails. Each piece to be nailed to alternate nailers with 20d nails. Alternate pieces to be nailed to alternate nailers. Random length pieces of 2"x4" decking may be used under the following conditions:

1. Each joint to be made on stringers.
2. Each piece to cover at least 3 stringers.
3. No more than one joint in any length (lamina)
4. Each joint to be followed by at least 3 full length pieces.

Use sway bracing on all bents of 5'-0" or over in height.

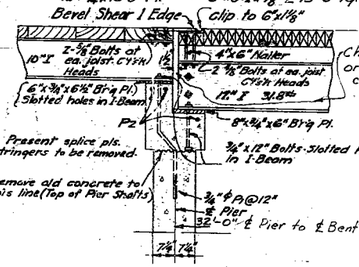
Use malleable or cast iron washers on both ends of machine bolts unless noted.

All timber and piling, except 3"x6" and 3"x8" rail members, to be treated. Treatment to be by empty cell process, and in accordance with paragraph 522.(d) of Ark. Std. Specifications.

3"x6" and 3"x8" rail members shall be untreated, seasoned, dressed lumber, given three coats of paint in accordance with paragraph 523(d) of Spec. Specifications: Ark. State Road and Bridge Spec., Adopted May 30, 1925

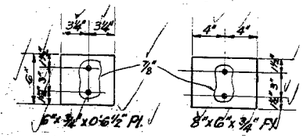
Note:

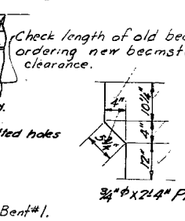
Traffic Tread to be pc. 3 for as Structural Steel.



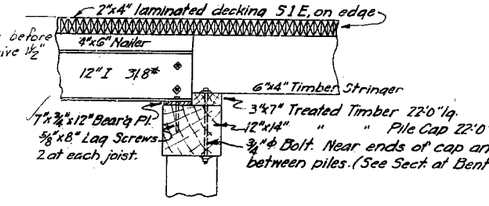
Note: Present splice pls. on stringers to be removed.

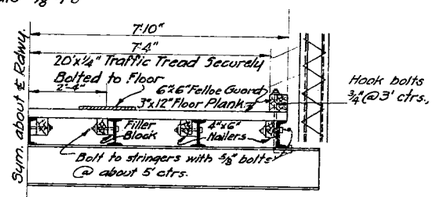
DETAIL OF BEARING AT PIER
MAIN SPAN
Scale 3/4"=1'-0"





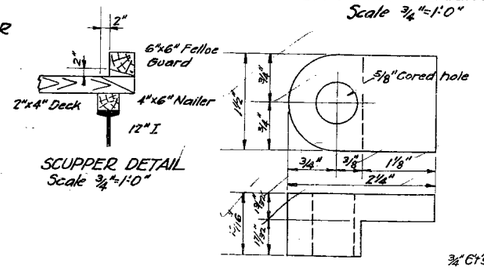
(Check length of old beams before ordering new beams to give 1 1/2" clearance.





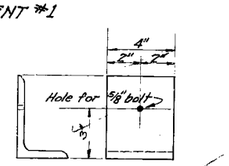
DETAIL OF BEARING-BENT #1
Scale 3/4"=1'-0"

HALF SECT. THRU MAIN SPAN
Scale 1/2"=1'-0"

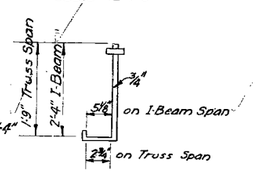


SCUPPER DETAIL
Scale 3/4"=1'-0"

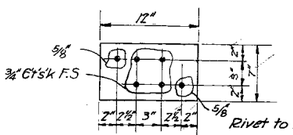
DETAIL OF C.I. CLAMP



DETAIL L CLAMP-5"x3"x3/8"x0'-4"



DETAIL HOOK BOLTS



DETAIL BEAR'G PLATE AT BENT #1
7"x12"x3/4 Pl.

DETAILS FOR RENEWAL OF BR. OVER ST. FRANCIS R. CLAY COUNTY

ROUTE 39 SEC. 3

ARKANSAS STATE HIGHWAY DEPARTMENT
LITTLE ROCK, ARK.

Drawn By: L.P.S. Date: 2-8-29
Traced By: G.A. Date: 2-13-29
Checked By: R.E.I. Date: 2/14/29

BRIDGE NO. 1887492 7 DRAWING NO. 1397

Sheet 5

BRIDGE ENGINEER

50

INDEX OF SHEETS

Sheet No. F.A.P. No. F-788(2) (Part I-Arkansas)	Sheet No. F.A.P. No. F-788 (2) (Part II-Missouri)	Sheet No. Job No. 10405	DWG No.	TITLE
1	1	1	8129	Title Sheet Job No. 10405
2	2	2	8130	Typical Section of Improvement and Estimate and Summary of Quantities
3	3	3	8131	Schedule of Bridge Quantities
4	4	4	8132	Plan and Profile Sheet
5	5 & 6	5 & 6	8133 A & B	Layout of Bridge over St. Francis River - Br. No. 1087A
6	7	7	5199	Details of Bents for Std 30'-0" I-Beam Spans.
	8	8	5199A	Supplementary Details of Bents for Std 30'-0" I-Beam Spans.
8	9	9	8134	Details of Piers No. 1 and 4
9	10	10	8135	Details of Piers No. 2 and 3
10	11	11	5200	Details of 30'-0" I-Beam Spans
11	12	12	8136	Details of 188'-0" Cantilever I-Beam Unit - Sheet No. 1
12	13	13	8137	Details of 188'-0" Cantilever I-Beam Unit - Sheet No. 2
13		14	2389	Details of Project Markers, R/W Markers and Bridge Name Plates
14		15	3T3	Tables and Methods for Superelevation
15	14	16	GR6	Steel Plate Guard Fence
16	15	17	1888	Embankment Construction at Bridge Ends and Backfill for Structures
17	16	18	1891	Basis for Computing Excavation for Structures
18	17	19	1896	Standard Barricade, Warning and Signs
19 & 20	20 & 21	20 & 21	8138 A & B	Cross Sections
	18-30	22-34	8139 C-O	Cross Sections

STATE OF MISSOURI
STATE OF ARKANSAS
STATE HIGHWAY COMMISSIONS

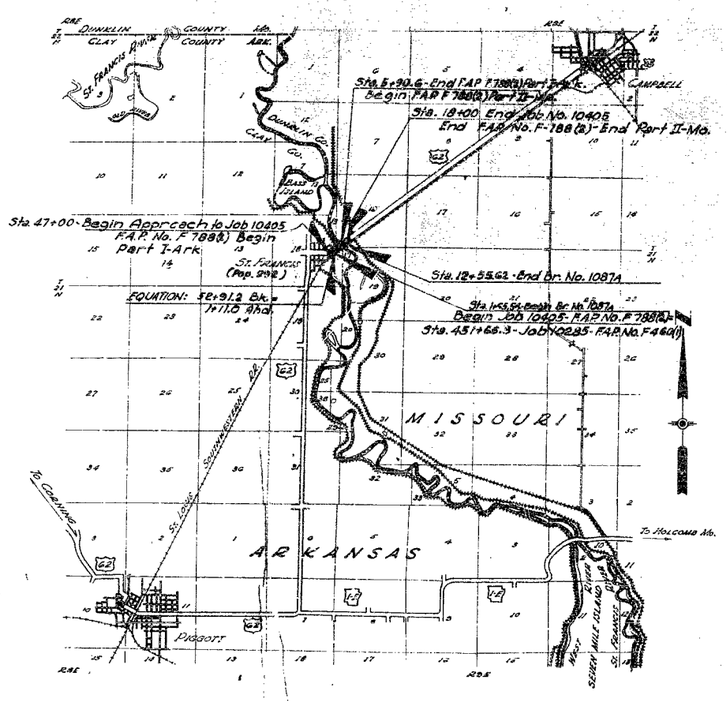
PLAN AND PROFILE OF PROPOSED
STATE HIGHWAY
ST. FRANCIS RIVER BRIDGE
AT ST. FRANCIS, ARK.
CLAY COUNTY, ARK.
DUNKLIN COUNTY, MO.

ROUTE 62 SECTION 21

F.A.P. NO. F-788(2)

JOB 10405

LAYOUT SCALE 1" = 2500'



	F.A.P. NO. F 788(2) (PART I - ARKANSAS)	F.A.P. No. F788(2) (PART II - MISSOURI)	Job No. 10405 PARTS I & II
GROSS LENGTH OF PROJECT	425.06 FEET OR 0.080 MILES	1209.40 FEET OR 0.229 MILES	1634.46 FEET OR 0.309 MILES
NET " " ROADWAY	0.0 " " 0.0 "	544.38 " " 0.103 "	544.38 " " 0.103 "
NET " " BRIDGES	425.06 " " 0.080 "	665.02 " " 0.126 "	1090.08 " " 0.206 "
NET " " PROJECTS	425.06 " " 0.080 "	1209.40 " " 0.229 "	1634.46 " " 0.309 "

CONVENTIONAL SIGNS

STATE LINE
COUNTY LINE
CITY OR VILLAGE
TOWNSHIP LINE
SECTION LINE
GRANT LINE
FENCE LINE
UNFENCED PROPERTY
RIGHT OF WAY LINE
TRAVELED WAY
RAILROADS
RETAINING WALL
BASE OR SURVEY LINE
LEVEE
CULVERTS
DROP INLET
TROLLEY POLE
POWER POLE
TELEPHONE OR TELEGRAPH
MARSH
HEDGE
BUILDINGS

SCALES PLAN 1" = 100'
PROFILE HORIZ. 1" = 100' VERTICAL 1" = 10'

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	ARK.	F-788(2)	1952	1	20
5	MO.	788(2)		1	30
JOB NO.		10405		1	34

Specifications Adopted by Arkansas State Highway Commission March 1, 1940 with Special Provisions as follows:

Division	Part
I	
II	1, 5, 8A, 8B, 9.

IV
Special Provisions

Number	Title	No. Sheets
	Required Contract Provisions	7
2-1	Competency of Bidders	2
2-2	Equipment List Required	1
2-4	State License for Contractors	1
3-8	Termination of Contract	1
4-1	Revision of Article 4.9	1
9-3	Special Provisions Pertaining to the Required Contract Provisions for Federal Aid Projects	2
9-5	Partial Payments	1
107-5	Overhaul	1
205-18	Revision of Section 205	3
504-6	Tandem Rollers	1
504-9	Revision of Article 504-6	1
510-13	Medium Curing Cut-Back Asphalts	1
510-14	Rapid Curing Cut-Back Asphalts	1
510-19	Mineral Aggregate	1
511	Prime Coat Application	3
803-5	Revision of Article 803.21-Bar Reinforcement (20,000#/sq in Design)	1
804-2	Precast Piling	1
805-3	Steel Plate Guard Rail (Rev. 12-28-49)	1
850-1	Engineers Field Office	1
853-1	Machine Mixing	1
***925-7	Revision of Article 925.20(a) Rev. 3-20-50)	1
107-1	Removing and Replacing Existing Surfacing	1
*9-9	Federal Excise Tax on Freight Shipments	1
*101-5	Revision of Section 101	1
**123	Special Compaction of Earthwork	3
Job 10405	Removal of Existing Bridge-Arkansas Portion	1
Job 10405	Removal of Existing Bridge-Missouri Portion	1
***926-11	Sod Mulch	2
*** 951	Right of Way Markers and Project Marker Posts	1
*** 954-1	Engineers Field Laboratory	1
Job 10405	Arkansas-Missouri Joint Project	1

DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS
DIVISION NO. 8

RECOMMENDED FOR APPROVAL

DISTRICT ENGINEER — DATE

APPROVED

DIVISION ENGINEER — DATE

APPROVED

MISSOURI-VICE CHAIRMAN-STATE HIGHWAY COMMISSION

APPROVED

MISSOURI-STATE HIGHWAY ENGINEER

APPROVED:

ARKANSAS CHAIRMAN — STATE HIGHWAY COMMISSION

APPROVED:

ARKANSAS — STATE HIGHWAY ENGINEER

DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS
DIVISION NO. 6

RECOMMENDED FOR APPROVAL:

DISTRICT ENGINEER — DATE

APPROVED:

DIVISION ENGINEER — DATE

Revised 1-22-53 H.B.
3-26-53 H.B.

FINISHED

Wade Bookman
BRIDGE DESIGN ENGINEER - ARKANSAS

BRIDGE No. 1087-A DRAWING No. 8129

Sheet No. 1 of 14. DUNKLIN COUNTY H-927R

FINISHED

521

6	ARK	F 788(2)	—	11 Mi	2	29
3	MO.	F 788(2)			2	30
STATE JOB NO. 10405				1952	2	31

EARTHWORK

PROJECT	STATION	STATION	COMMON EXCAVATION NORMAL Cu. Yds	COMMON EXCAVATION ADD'L Cu Yds	COMMON EXCAVATION TOTAL Cu Yds	SPECIAL COMPACTION Cu. Yds
F 788(2) Part I	47+00	1+65.54	526		505	
F 788(2) Part II	12+55.62	18+00	183	21067	21210	19955
TOTAL			648	21067	21715	19955

* 20460 Cu. Yds for Embankment - Roadway.
1255 " " " " - Ramp.

REMOVAL AND REPLACMENT OF SURFACE COURSES

PROJECT	STATION	STATION	CU. YDS.
F 788(2) Part I	47+00	1+65.54	500
F 788(2) Part II	16+00.5	18+00	115
TOTAL			615

CLEARING & GRUBBING

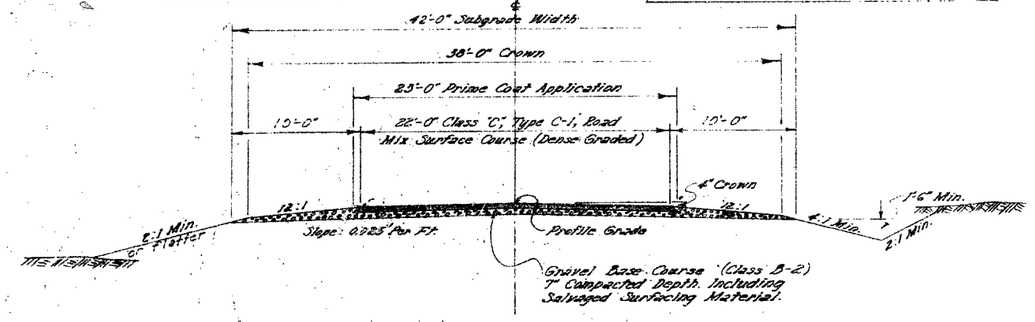
PROJ.	STATION	STATION	CLEARING ACRE	GRUBBING ACRE
F 788(2) Part II	6+00	15+00	1.05	1.05
TOTAL			1.05	1.05

STEEL PLATE GUARD FENCE

PROJ.	STATION	STATION	LOCATION	LIN. FT.
F 788(2) Part I	1+36.7	1+65.2	Rt & Lt	57
F 788(2) Part II	12+56.1	12+84.6	Rt & Lt	57
Total				114

CONCRETE SPILLWAYS

PROJECT	STATION	LOCATION	Class A Conc. Cu. Yds
F 788(2) Part I	1453	On Rt & Lt	4.2
F 788(2) Part II	12+66.1	On Rt & Lt	6.4
Total			10.6



TYPICAL SECTION OF IMPROVEMENT

PROJECT MARKER PLATES

PROJECT	STATION	LOCATION	TYPE	QUANTITY EACH
F 788(2) Part I	1+65.1	In Curb on Rt	ALI	1
F 788(2) Part II	18+00	In Post 45' Lt	ALI	1
Total				2

SOD MULCH

PROJECT	STATION	STATION	LOCATION	CU. YDS
F 788(2) Part II	12+18	17+00	Rt & Lt Side Slopes	360
Total				360

SUMMARY OF QUANTITIES

ITEM NO	ITEM	QUANTITIES F.A.P. No. F 788(2) (PART I ARKANSAS)	Final Quant. Missouri Portion	Est. Inc. Total F 788(2) (PART II Missouri)	JOB NO 10405 PART I & II	UNIT
SP-101	Clearing		.867	1.05	1.05	Acre
SP-101	Grubbing		.456	1.05	1.05	Acre
102	Common Excavation	505	21231.1	21210	21715	Cu Yd
	Concrete Pile Cut-offs		25.70			Lin. Ft.
SP-125	Special Compaction of Earthwork		19824	19955	19955	Cu. Yd.
SP-305-18	Gravel Base Course (Class B-2)	178	598	457	635	Cu. Yd.
S.P. # 504	Class 25, Min. Aggr. in Cl. C, Type C-1, Road Mix Surface Course (Dense Graded)	114	100	96	210	Cu. Yd.
S.P. # 504	Cl. 17 or 21, Min. Aggr. in Cl. C, Type C-1, Road Mix Surface Course (Dense Graded)	14	12.5	12	26	Cu. Yd.
S.P. # 504	Med. Cur. Cut-Back Asphalt in Cl. C, Type C-1, Road Mix Surface Course (Dense Graded)	2385	1709	2014	4899	Gal
S.P. # 504	Rap. Cur. Cut-Back Asphalt in Cl. C, Type C-1, Road Mix Surface Course (Dense Graded)	397	330	336	733	Gal
S.P. - 511	Prime Coat Application	665	562	561	1226	Gal
S.P. # 925	Steel Plate Guard Fence (12 Ga.)	57	57	57	114	Lin. Ft.
925	Project Marker Plates	1	1	1	2	Each
SP-351	Project Marker Posts			1	1	Each
SP-1011-1	Removal and Replacement of Surface Courses	500		115	615	Cu. Yd.
	STRUCTURES OVER 20 FT.					
103	Dry Excavation for Structures	47	67.24	56	103	Cu. Yd.
103	Wet Excavation for Structures	244	298.21	216	460	Cu. Yd.
S.P. # 802	Class "A" Concrete for Bridges	163.4	175.99	167.7	331.1	Cu. Yd.
S.P. # 802	Class "S" Concrete for Bridges	336.9	533.09	533.6	870.0	Cu. Yd.
S.P. # 803	Reinforcing Steel	72000	107993	106480	178480	Lb.
S.P. # 804	Concrete Piling (16" Octagonal)	2467	7344.35	4778	7245	Lin. Ft.
S.P. 805-*	Steel Plate Guard Rail (10 Ga.)	859	1389	1339	2198	Lin. Ft.
807	Structural Steel in Beam Spans	226.390	334.026	335.030	561.420	Lb.
929	Bridge Name Plates (Type "C")	1	0		1	Each
S.P.	Removal of Existing Bridge - Arkansas Portion	100%			100%	Complete Item
S.P.	Removal of Existing Bridge - Missouri Portion		100%	100%	100%	Complete Item
* 913	Concrete Spillways	4.2	7.105	6.4	10.6	Cu. Yd.
** SP-926-11	Sod Mulch		328	390	980	Sq. Yd.
*** SP-851	Right of Way Markers	2	4	4	6	Ea.

SURFACING QUANTITIES

PROJECT	STATION	STATION	LIN. FT.	GRAVEL BASE COURSE (CL. B-2) NORMAL Cu. Yds.	23' SURFACE WIDTH NORMAL Sq. Yds.	23' SURFACE WIDTH ADD'L. Sq. Yds.	23' SURFACE WIDTH TOTAL Sq. Yds.	PRIME COAT APPLICATION Gallons	22' SURFACE WIDTH NORMAL Sq. Yds.	22' SURFACE WIDTH ADD'L. Sq. Yds.	22' SURFACE WIDTH TOTAL Sq. Yds.	CLASS 25 MINERAL AGGREGATE Cu. Yds.	CL. 17 or 21 MINERAL AGGREGATE Cu. Yds.	MED. CUR. CUT-BACK ASPHALT Gallons	RAP. CUR. CUT-BACK ASPHALT Gallons
F.A.P. No. F 788(2) (Part I Arkansas)	47+00	52+91.2	591.20	162.0	1510.84	2.29	1513.13	605.50	1445.16	2.29	1447.45	103.8	12.73	2171.58	361.43
	1+11.0	1+65.54	54.54	15.0	139.93	2.82	142.35	59.50	133.46	2.82	142.28	10.2	1.27	213.42	35.57
	Total for Part I (Ark.)		645.74	178.0	1650.37	11.11	1661.48	665.00	1578.62	11.11	1589.73	114.0	14.00	2385.00	397.00
F.A.P. No. F 788(2) (Part II Mo.)	12+55.62	18+00	544.78	457.0	1392.22	11.11	1403.33	561.00	1331.68	11.11	1342.79	96.0	12.00	2014.00	336.00
	Total for Part II (Mo.)		544.78	457.0	1392.22	11.11	1403.33	561.00	1331.68	11.11	1342.79	96.0	12.00	2014.00	336.00
Totals for Job 10405			1190.52	635.0	3042.59	22.22	3064.81	1226.00	2910.30	22.22	2932.52	210.0	26.00	4399.00	733.00

BASIS OF ESTIMATE:

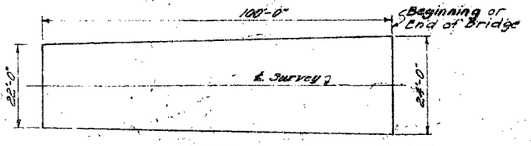
Class 25 Mineral Aggregate = 200 Lb. Per Sq. Yd., 2800 Lb. Per Cu. Yd.
Cl. 17 or 21 Mineral Aggregate = 25 Lb. Per Sq. Yd. " " " "
Medium Curing Cut-Back Asphalt = 1.50 Gal. Per Sq. Yd.
Rapid Curing Cut-Back Asphalt = 0.25 Gal. Per Sq. Yd.
Prime Coat Application = 0.90 Gal. Per Sq. Yd.
Gravel Base Course (Class B-2) = 105 Cu. Yds. Per 100' Station Including Salvaged surfacing material.

PROJECT MARKER POSTS

PROJECT	STATION	LOCATION	QUANTITY EACH
F 788(2) PART II	18+00	45 Lt.	1
Total			1

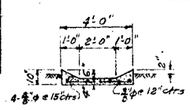
RIGHT OF WAY MARKERS

PROJECT	STATION	LOCATION	QUANTITY EACH
F 788(2) PART I	1+65.54	60' Lt.	1
	5+00	60' Lt.	1
F 788(2) PART II	7+00	110' Lt.	1
	12+00	110' Lt.	1
	17+44	110' & 45' Lt.	2
Total			6

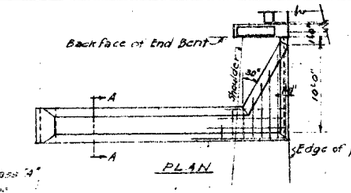


DETAILS OF BRIDGE TRANSIT ON

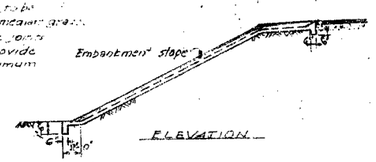
Revisions: 1-22-53 H.B.
8-18-53 W.C.H.
9-30-53 H.B.



SECTION A-A
Scale ½"=1'-0"



Notes. Concrete to be Class "A"
Reinforcing steel to be deformed bars - intermediate grade.
Poured transverse joints to be placed to provide sections of 10' maximum length.



DETAILS OF CONCRETE SPILLWAY
Scale ½"=1'-0"

Wade Graham
BRIDGE ENGINEER

TYPICAL SECTION OF IMPROVEMENT AND ESTIMATE AND SUMMARY OF QUANTITIES

ST. FRANCIS RIVER BRIDGE
AT ST. FRANCIS, ARK.
CLAY COUNTY, ARK.
DUNKLIN COUNTY, MO.
ROUTE 62 SEC. 21

FINISHED

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

Drawn By: Date:
Traced By: A.L. Date: 2-12-54
Checked By: H.E. Date: 2-21-52
Scale: 10. = 1"

BRIDGE No. 1087-A DRAWING No. 8130

FINISHED Sheet No. 2 of 14. DUNKLIN COUNTY.

H-927R

522

JOB NO.	ITEM		SHEET NO.	TOTAL SHEETS
C	ARK. F 788(2)	1952	2	34
S	MO. F 788(2)		2	34
STATE JOB NO. 10405			2	34

SCHEDULE OF BRIDGE QUANTITIES

FEDERAL AID PROJECT NUMBER	CODE NO.	ITEM NO. / ITEM / UNIT OF BRIDGE / UNIT	103 DRY EXCAVATION FOR STRUCTURES (CU. YD.)	103 WET EXCAVATION FOR STRUCTURES (CU. YD.)	S.P. & 802 CLASS "A" CONCRETE FOR BRIDGES (CU. YD.)	S.P. & 802 CLASS "S" CONCRETE FOR BRIDGES (CU. YD.)	S.P. & 803 REINFORCING STEEL (LB.)	S.P. & 804 CONCRETE PILING - 16" OCTAGONAL PRECAST (LIN. FT.)	S.P. 805-3 STEEL PLATE GUARD RAIL (10 Ga.) (LIN. FT.)	807 STRUCTURAL STEEL IN BEAM SPANS (LB.)		929 BRIDGE NAME PLATES (TYPE "C") (EACH)	S.P. REMOVAL OF EXISTING BRIDGE SEC. PORTION (COMPLETE ITEM)	S.P. REMOVAL OF EXISTING BRIDGE MO. PORTION (COMPLETE ITEM)
F-788-(2) (PART 1-ARKANSAS)	X031	End Bent No. 1.	8			10.65	1690	192	11.0	660		1		
		Interior Bents No. 2-11 incl.	-			52.40	9300	1518						
		Pier No. 1.	39		26.60		3210	312						
		Pier No. 2.		244	136.80		10,790	445						
		Two End 30'-0" I-Beam Spans No. 1 and 11.				38.68	6640		120.0	27,840				
		Nine Int. 30'-0" I-Beam Spans No. 2-10 incl.				174.42	29,880		540.0	122,815				
		One 66'-6" Cantilever I-Beam Span No. 12.				43.00	7430		133.0	32,210				
		One-Half 55'-0" Suspended I-Beam Span No. 13.				17.24	3,060		55.0	22,865				
		Total for F.A.P. No. F-788-(2) -(Part 1-Arkansas)	47	244	163.40	336.40	72,000	2467	859.0	226,390		1	100%	
F-788(2) (PART 2-MISSOURI)	X031	Pier No. 3.		216	136.80		10,790	440						
		Pier No. 4.	56		30.90		3620	272						
		Interior Bents No. 12-29 incl.				94.32	16,740	3716						
		End Bent No. 30.				10.88	1,760	350	11.0	510		—		
		One-Half 55'-0" Suspended I-Beam Span No. 13.				17.24	3,060		55.0	22,865				
		One 66'-6" Cantilever I-Beam Span No. 14.				43.00	7,430		133.0	32,210				
		Two End 30'-0" I-Beam Spans No. 15 and 33.				38.68	6,640		120.0	27,760				
		Seventeen Int. 30'-0" I-Beam Spans No. 16-32 incl.				329.48	56,440		1020.0	231,685				
		Total for F.A.P. No. F-788-(2) -(Part 2-Missouri)	56	216	167.70	533.60	106,480	4778	1339.0	335,030		—		100%
TOTAL FOR JOB NO. 10405 & F.A.P. No. F-788-(2)			103	460	331.10	870.00	178,480	7245	2198.0	561,420		1	100%	100%

CONTROLLED MATERIALS (STEEL)

CLASSIFICATION		QUANTITY F.A.P. No. F-788-(2) PART 1-ARKANSAS	QUANTITY F.A.P. No. F-788(2) PART 2-MISSOURI	TOTALS FOR JOB 10405 & F.A.P. No. F-788-(2)
02	Reinforcing Bars	55.8 Tons	103.9 Tons	159.7 Tons
03	Other Bars, Light Shapes	5.9 "	8.5 "	14.4 "
13	Plates	1.8 "	1.8 "	3.6 "
14	Shapes	105.6 "	157.2 "	262.8 "
17	Other (Mill Products)	3.4 "	6.1 "	9.5 "
	Totals	172.5 "	277.5 "	450.0 "
80	Class "B" Products (Information Only)	4.5 Tons	6.9 Tons	11.4 Tons

Revisions: 1-22-53 H.B.
3-18-53 W.C.H.
5-26-53 H.B.

Wade Boardman
BRIDGE DESIGN ENGINEER

SCHEDULE OF
BRIDGE QUANTITIES
ST. FRANCIS RIVER BRIDGE
CLAY COUNTY, ARK.
DUNKLIN COUNTY, MO.
ROUTE 62 SEC. 21

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

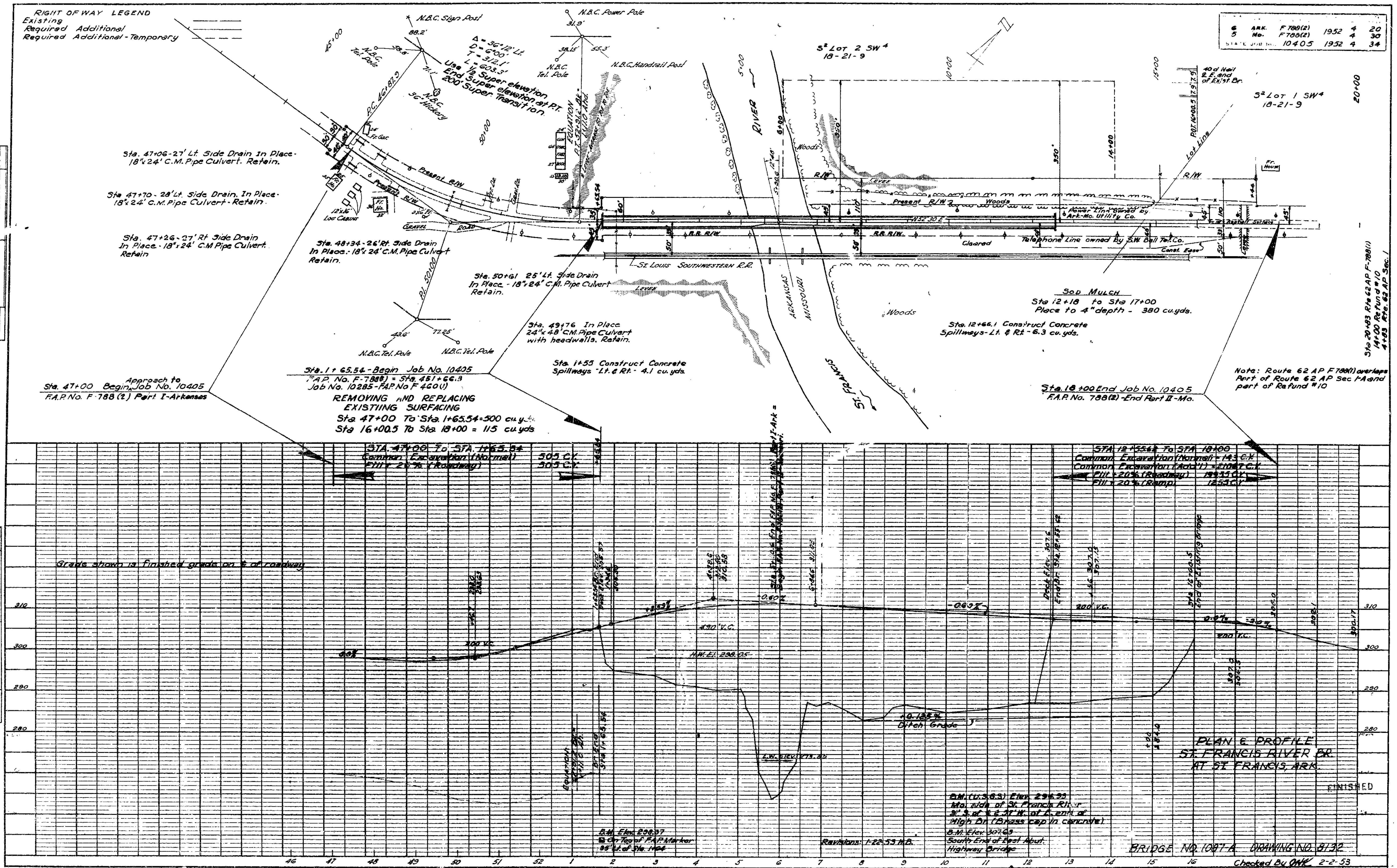
Drawn By: W.C.H. Date: 11-5-52
Traced By: ___ Date: ___
Checked By: H.B. Date: 2-3-53

BRIDGE NO. 1087-A DRAWING NO. 8131

FINISHED

FINISHED Sheet No. 3 of 14. DUNKLIN COUNTY FINISHED H-927R

523



524

PLATE 1—PLAN—PROFILE O. P. R. & R. E. STANDARD
KEUFFEL & ESSER CO., NEW YORK

Sheet No. 4 of 14. DUNKLIN COUNTY

FED. ROAD DIST. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
9	ARK.	F-788(1)	1952	5	10
5	Mo.	F-788(2)		5	30
STATE JOB NO. 10405			1952	5	34

525

N.B.C. Power Pole
N.B.C. Tel. Pole
N.B.C. Tel. Pole
N.B.C. Tel. Pole
N.B.C. Handrail Post
P.I. Sta 50+00
43.6'
112.5'
31.9'
153.3'
38.15'
At Sta 52+02.28 = 1+11.0 Rt.
N 52° 30' E
380' Crown Width
4"
1'-0"
Begin Br. Sta. 1+65.54
Tangent Dist. 86.46'
St. Francis, Ark.
12'-6"
12'-6"
21'
21'
1.6' Walk
24'-0" Clear Roadway
1.6' Walk
Steel plate guard fence (12 ga). To be the same type and painted the same as the guard rail on the bridge.
Contractor to remove portion of existing bridge consisting of 19-19'-0" and 59-15'-0" timber spans, 2-32'-0" I-beam spans and 1-128'-0" High Truss Span. Substructure units consisting of timber pile bents for timber and I-beam spans and concrete piers for truss span, shall be removed down to the natural ground line, and to clear new construction. The channel shall be cleared to the satisfaction of the District Engineer of the Corps of Engineers, U.S. Army, Memphis District.
St. Louis & S.W. R.R. Bridge
ST. FRANCIS RIVER
Clearance Line Parallel to Stream Thru Bridge
Clearance Line Parallel to Stream R.R. Bridge
7'-0" Min. Horizontal Clearance Above L.W. Elev. 273.55
Left Limit Clearance
Lift Span 75'-0" Clear
Pier #4 Sta. 6+84.6
19 I-beam spans @ 30'-0" = 570'-0" See Dwg. No. 8133-B
℄ of Roadway
To Campbell, Mo.
2+00
3+00
4+00
5+00
6+00
7+00

General Notes

All concrete to be poured in the dry. Exposed corners to be chamfered ¾" unless otherwise noted.

Concrete deck slab of cantilever I-beam span unit to be poured in the order indicated on the sequence diagram, unless otherwise directed by the Engineer.

All piling to be 16" octagonal precast concrete and to be driven to a minimum capacity of 32 tons per pile and to a minimum penetration of 20 feet.

Lengths of piling shown are assumed for estimating quantities only. Actual lengths to be determined in the field. Drive one pile each in Bents No. 4 and 10, and Pier No. 2 as a test pile. Cast piles 40, 45 and 25' respectively.

In general, all construction joints in End Bent and Piers shall be horizontal and shall be provided with keys not less than 3" high covering the middle third of both dimensions.

Specifications: Arkansas State Highway Commission Standard Specifications for Road and Bridge Construction, adopted March 1, 1940.
For Details of Std. Concrete Pile Bents, see Dwg No. 5199
For Details of Piers No. 1 & 4, see Dwg. No. 8134
For Details of Piers No. 2 & 3, see Dwg. No. 8135
For Details of Std. 30'-0" I-Beam Spans, see Dwg No. 5200
For Details of 188'-0" Cantilever I-Beam Unit-Sheet No. 1, see Dwg. No. 8136
For Details of 188'-0" Cantilever I-Beam Unit-Sheet No. 2, see Dwg. No. 8137
For Details of Sheet 2 of Layout of Bridge over St. Francis River, See Dwg. No. 8133-B.
For Supplemental Details of Bents for 30'-0" I-Beam Spans, see Dwg No. 5199-A.

PLAN

Pt. Sta 4+39.6
Elev. 312.5
+ 2.53 %
- 0.60 %
490' V.C.
Part I-Arkansas | Part II-Missouri
℄ Pier #1 Sta. 4+56.5 Deck Elev. 311.03
℄ Pier #2 Sta. 5+31.6 Deck Elev. 311.26
℄ Pier #3 Sta. 6+29.6 Deck Elev. 311.26
℄ Pier #4 Sta. 6+84.6 Deck Elev. 311.03
℄ Bent #9 Sta. 4+16.6 Deck Elev. 310.23
℄ Bent #10 Sta. 4+36.6 Deck Elev. 310.59
℄ Bent #11 Sta. 4+56.6 Deck Elev. 310.82
℄ Bent #8 Sta. 3+76.6 Deck Elev. 309.85
℄ Bent #7 Sta. 3+46.6 Deck Elev. 309.41
℄ Bent #6 Sta. 3+16.6 Deck Elev. 308.91
℄ Bent #5 Sta. 2+86.6 Deck Elev. 308.36
℄ Bent #4 Sta. 2+56.6 Deck Elev. 307.75
℄ Bent #3 Sta. 2+26.6 Deck Elev. 307.28
℄ Bent #2 Sta. 1+96.6 Deck Elev. 306.35
Begin Br. Sta. 1+65.54 Deck Elev. 305.57
Total Length of Bridge (New) = 1090'-1"
14½"
30'-0" I-Beam Span
9 I-Beam Spans @ 30'-0" = 270'-0"
30'-0" I-Beam Span
66'-6" Cantilever I-Beam Span
55'-0" Suspended I-Beam Span
188'-0" Cantilever I-Beam Unit
66'-6" Cantilever I-Beam Span
19 I-Beam Spans @ 30'-0" = 570'-0" See Dwg. No. 8133-B
55'-0" c. to c. of Piers
78'-0" c. to c. of Piers
55'-0" c. to c. of Piers
11'-6"
11'-6"
Steel Plate Guard Rail (10 Ga) - Concrete Posts
2'-8"
3'-3½"
3'-6½"
3'-3½"
3'-6½"
3'-3½"
2'-8"
2:1
2-32' Batter Piles
4-32' Piles
4-35' Piles
Elev. 293.9
12' Clay
14' Sand
11' Clay
4-38' Piles
4-40' Piles
H.W. Elev. 294.25 (1945)
23'-3"
Elev. 285.09
14' Top Soil
8-37' Piles
14' Clay & Fine Sand
26' Clay
Elev. 290.1
54'-0"
Low Steel Elev. 307.9
H.W. Elev. 298.05 (1927)
9.85' Clearance
W.L. Elev. 282.8 (7-31-51)
L.W. Elev. 273.55
30' R
30' L
Elev. 253.74
22-20' Piles
Elev. 287.4
28'-3½"
12' Top Soil
Gravey Sand (Fine)
4' Sand & Clay (Firm)
Elev. 253.74
30' Clay (Firm)
Elev. 280.09
8-32' Piles
END BENT No. 1
Sta. 2+54-8' Lt.
PIER NO. 1
Sta. 5+15-℄
PIER NO. 2
PIER NO. 3
PIER NO. 4
Sta. 6+71-℄

ELEVATION

Design Specifications:- AASHO 1949 Rev.; Live Load: H20 Loading.

Unit Stresses	
Class "S" Concrete (n=10)	1200 #/in²
Class "A" Concrete (n=15)	840 #/in²
Reinforcing Steel	20,000 #/in²
Structural Steel	18,000 #/in²
Concrete Piling	32 Tons per pile

Revisions: Pier Figs, transition span H.B. 9-7-51
Extend Bridge; deleted transition span - H.B. 10-27-52
Piers No. 1 & 4 H.B. 1-22-53
Footing Elev. on #4 lowered W.C.H. 3-16-53

B.M. Elev. 307.63 M.G.L.
South End of East Abutment Hwy. Bridge.
B.M. Elev. 294.93 M.G.L.
U.S.G.S. B.M. Mo. Side of St. Francis R. 31' S. of ℄ and 57' +/- of E. end of Hwy Br; 41' N. & 38' W. of E. end of R.R. Br.; Brass Cap in concrete.

SHEET NO. 1 OF 2

LAYOUT OF BRIDGE OVER ST. FRANCIS RIVER

AT ST. FRANCIS, ARK.
CLAY COUNTY, ARK.
DUNKLIN COUNTY, MO.
ROUTE 62 SEC. 21

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

Drawn By: HB Date: 8-12-51
Traced By: JH Date: 4-9-52
Checked By: AM Date: 2-6-53
Scale: 1 in. = 20 ft.

BRIDGE NO. 1087-A DRAWING NO. 8133-A

Wade Goodman
BRIDGE DESIGN ENGINEER

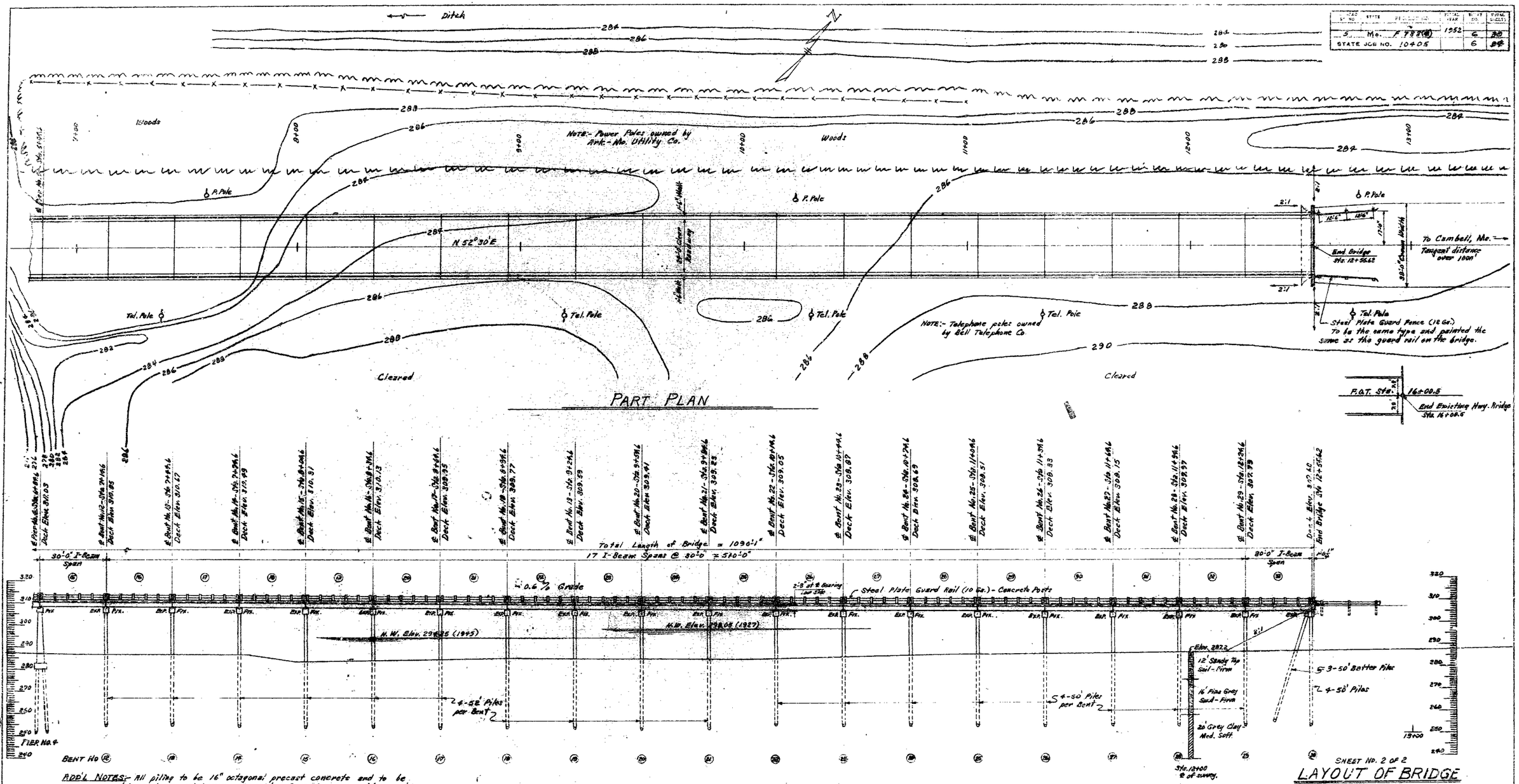
FINISHED

Sheet No. 5 of 14. DUNKLIN COUNTY

FINISHED

11-927R

ROAD SYSTEM NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	Mo.	F 788(8)	1952	6	30
STATE JOB NO. 10405				6	34



ADD'L NOTES:- All piling to be 16" octagonal precast concrete and to be driven to a minimum capacity of 32 tons per pile.
All piles in east approach to be driven to at least Elev. 255.0.
Drive one pile each in Bents No. 14, 19, 24 & 28 as test piles. Cast test piles 60' long.
Piles in Bents No. 1, 29 and 30 to be driven after embankment has been placed.

DESIGN SPECIFICATIONS:- A.A.S.H.O. 49 REV.; LIVE LOAD — H-20 LOADING.

UNIT STRESSES:-

Class "S" Concrete (n=10)	1200 #/□"
Class "A" Concrete (n=15)	840 #/□"
Reinforcing Steel	20,000 #/□"
Structural Steel	18,000 #/□"
Concrete Piling - Design Load	32 Tons/Pile.

B.M. Elev. 307.63 M.S.L.
South End of E. Abut. Hwy Br.
Rt. Sta. 16+00.5
B.M. Elev. 298.93 M.G.L.
U.S.G.S. B.M. No. side of St. Francis River. 51' So. of ℄ and 57' Rt. of E. end of Hwy. Br. 47' N. & 30' W. of E. end of R.R. Br. Brass cap in concrete.

Revisions: Bridge extended - H.B. 10-27-52
Added add'l test piles - H.B. 1-12-53
Footing of Pier No. 4 lowered - M.C.B. 3-18-53

Wade Goodman
ENGINEER DESIGN ENGINEER

SHEET NO. 2 OF 2

LAYOUT OF BRIDGE OVER ST. FRANCIS RIVER AT ST. FRANCIS, ARK. CLAY COUNTY, ARK. DUNKLIN COUNTY, MO.

FINISHED

ROUTE 62 SEC. 21

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

Drawn By: W.C.H. Date: 10-27-52
Traced By: ____ Date: ____
Checked By: R.H.M. Date: 2-3-53

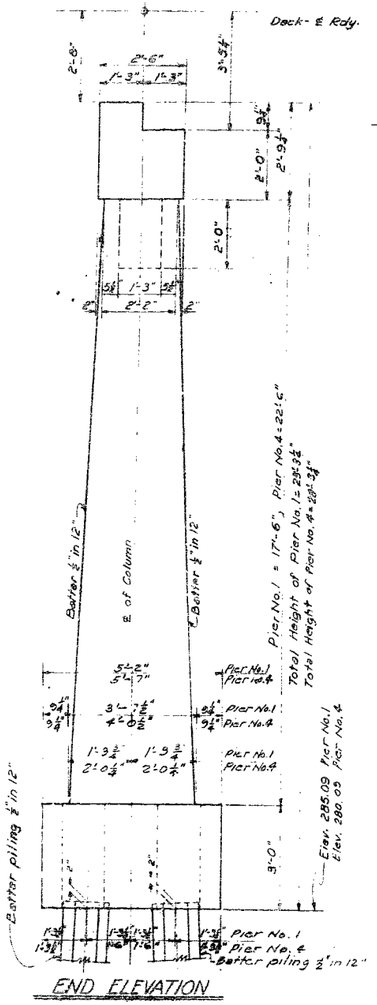
Scale:- 1" = 20'-0"

BRIDGE NO. 1087-A DRAWING NO. 8133-B

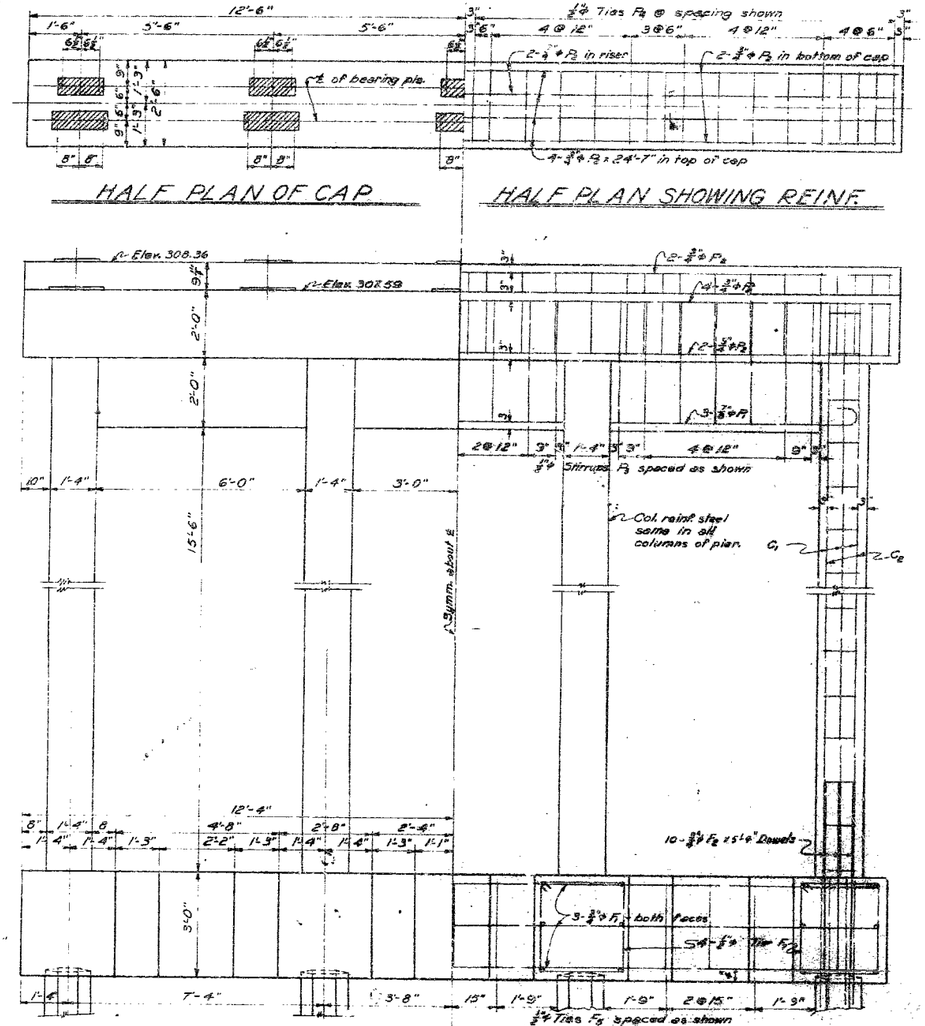
Sheet No. 6 of 14. DUNKLIN COUNTY, MO. A-927R

526

JET HWAY SYS. NO.	ITEMS	PROJECT NO.	F. AID YEAR	SHEET NO.	TOTAL SHEETS
6	ARK.	F-752(8)	1952	8	30
2	MO.	F-788(8)		9	30
STATE JOB NO.		10405	1952	9	34

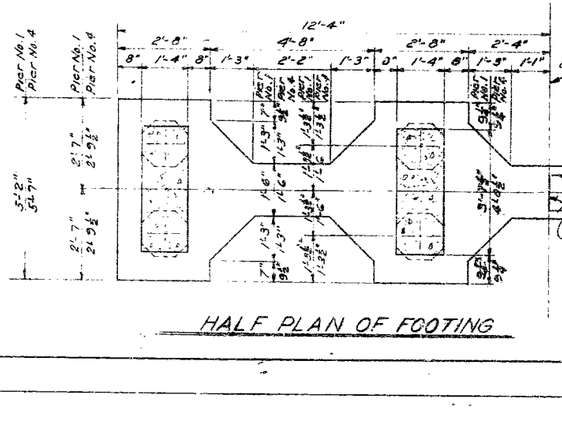


END ELEVATION

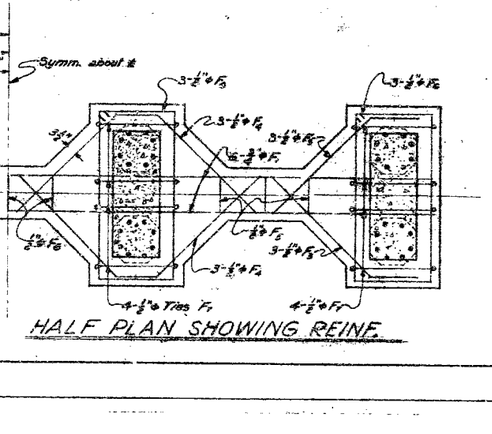


HALF ELEVATION

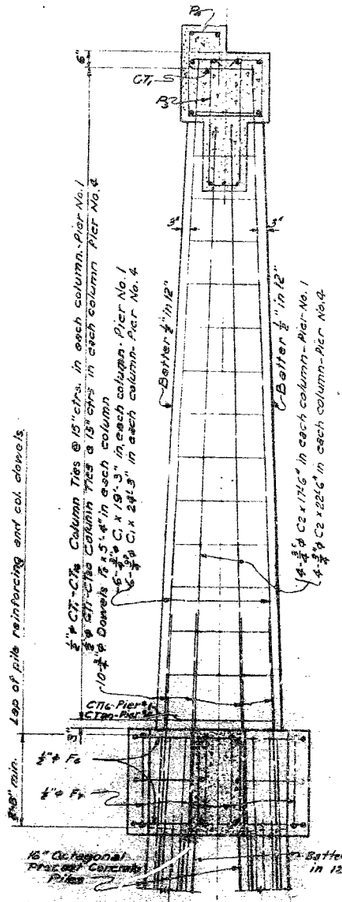
HALF PLAN SHOWING REINF.



HALF PLAN OF FOOTING



HALF PLAN SHOWING REINF.



℄ SECTION SHOWING REINF.

BAR LIST FOR PIERS 1 & 4 - EACH

BENT BARS

	Mark	Size	No.	Length	A	B	Bending Diagram
	P1	⅝"ø	3	24'-10"	22'-10"	0'-8"	
	P2	⅝"ø	21	8'-10"	—	—	
	P4	⅝"ø	34	11'-4½"	—	—	
	F3	½"ø	12	5'-6"	—	—	
	F4	½"ø	12	9'-4"	—	—	
	F5	½"ø	9	8'-3"	1'-1½"	2'-7½"	
Pier #1	F6	⅝"ø	12	14'-11"	2'-3½"	4'-5½"	
Pier #4	F6	⅝"ø	12	15'-9"	2'-3½"	5'-2½"	
	F7	½"ø	16	10'-9"	2'-4½"	2'-7½"	
Pier #1 @ Pier #4	CT1 to CT16	½"ø	4 Each	Var. by 2½" 6'-0" to 9'-1⅓"	Var. by ½" 1'-8" to 3'-2½"	0'-11½"	
Pier #4	CT17 to CT20	½"ø	4 Each	Var. by 2½" 9'-4" to 9'-11⅝"	Var. by ⅓" 3'-4" to 3'-7⅝"	0'-11½"	

Note: Dimensions relating to reinforcing steel are to centers of bars

STRAIGHT BARS

Mark	Size	No.	Length Pier #1	Length Pier #4
P2	¾"ø	8	24'-7"	24'-7"
C1	¾"ø	24	19'-3"	24'-3"
C2	¾"ø	16	17'-6"	22'-6"

Mark	Size	No.	Length
F1	⅝"ø	6	24'-3"
F2	¾"ø	40	5'-4"

GENERAL NOTES

All concrete in piers to be Class "A" and to be poured in the dry. Exposed corners to be chamfered ¾" unless otherwise noted.

Class "S" Concrete shall be used for foundation piling, which shall be 16" octagonal precast piles. For details of precast concrete piles, see Dwg. No. 5199.

Reinforcing steel to be deformed bars of intermediate grade, unless modified by Special Provisions. Shop lists and bending diagrams shall be submitted and approval secured before fabrication is begun.

Construction joints in piers shall be horizontal and shall be provided with keys not less than 3" high covering the middle third of both dimensions.

SPECIFICATIONS: Arkansas State Highway Commission Standard Specifications for Road and Bridge Construction, adopted March 1, 1950.

For Details of T Beam spans, see Dwg. No. 5200, 8136 and 8137.

SPECIAL CONCRETE PILE NOTES

Top of pile concrete to extend 2" into pier footing and reinforcing steel shall extend an additional 1'-6" to provide lap with footing dowel bars.

Measurement for payment of concrete piling shall be made from tip of piles to top of pier footing, with an additional allowance of 2'-0" for work of removing pile concrete to provide lap of reinforcing steel. No additional allowance of 2'-0" will be made for work and materials required to make build-up, if necessary.

Additional cut-off above top of pier footing, if necessary, shall be paid for in accordance with Section 504 of the Standard Specifications.

Volume occupied by embedded pile heads will not be included in the pay quantity of concrete in footings.

Revised: 1-26-53
Pier #4 - 9-18-53 H.B.

DETAILS OF PIERS NO. 1 & 4
BRIDGE OVER ST. FRANCIS RIVER
AT ST. FRANCIS, ARK.

CLAY COUNTY, ARK.
DUNKLIN COUNTY, MO.

FINISHED

ROUTE 62 SEC. 21

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

Drawn By: A.J.H. Date: 10-9-51
Traced By: W.E.H. Date: 1-26-53
Checked By: H.H.H. Date: 2-9-53
Scale: ¼ In. = 1 Ft.

BRIDGE NO. 1037-A DRAWING NO. 8134

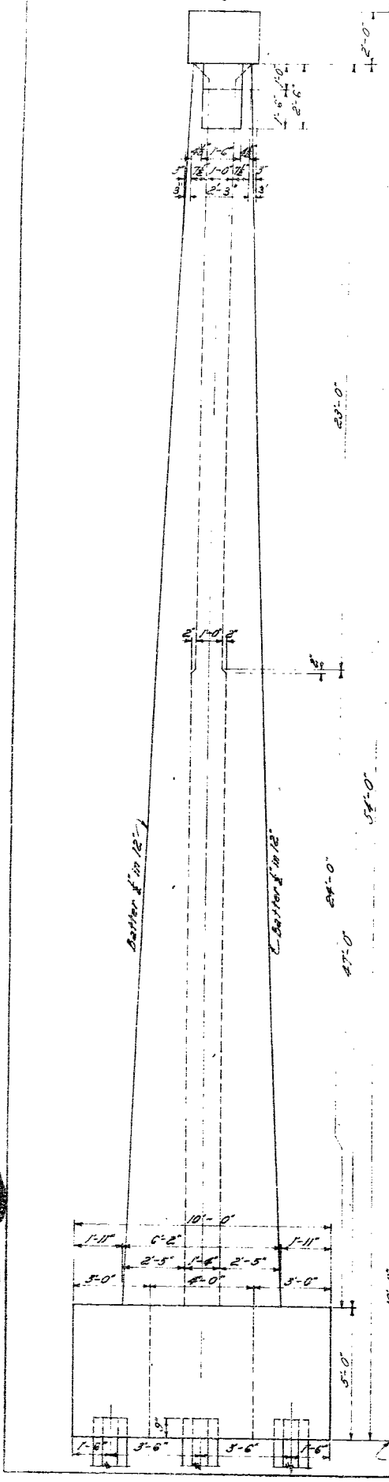
Wood Bridge Design Engineer

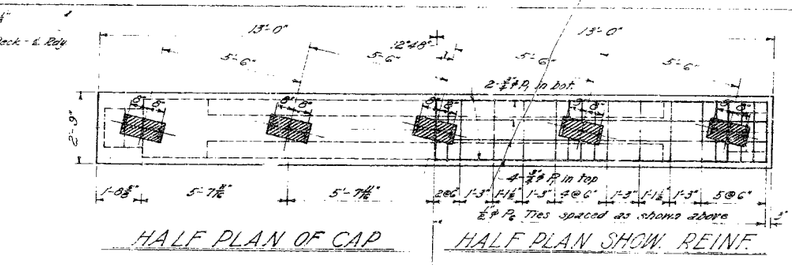
FINISHED Sheet No. 7 of 14. DUNKLIN COUNTY FINISHED

H-927R

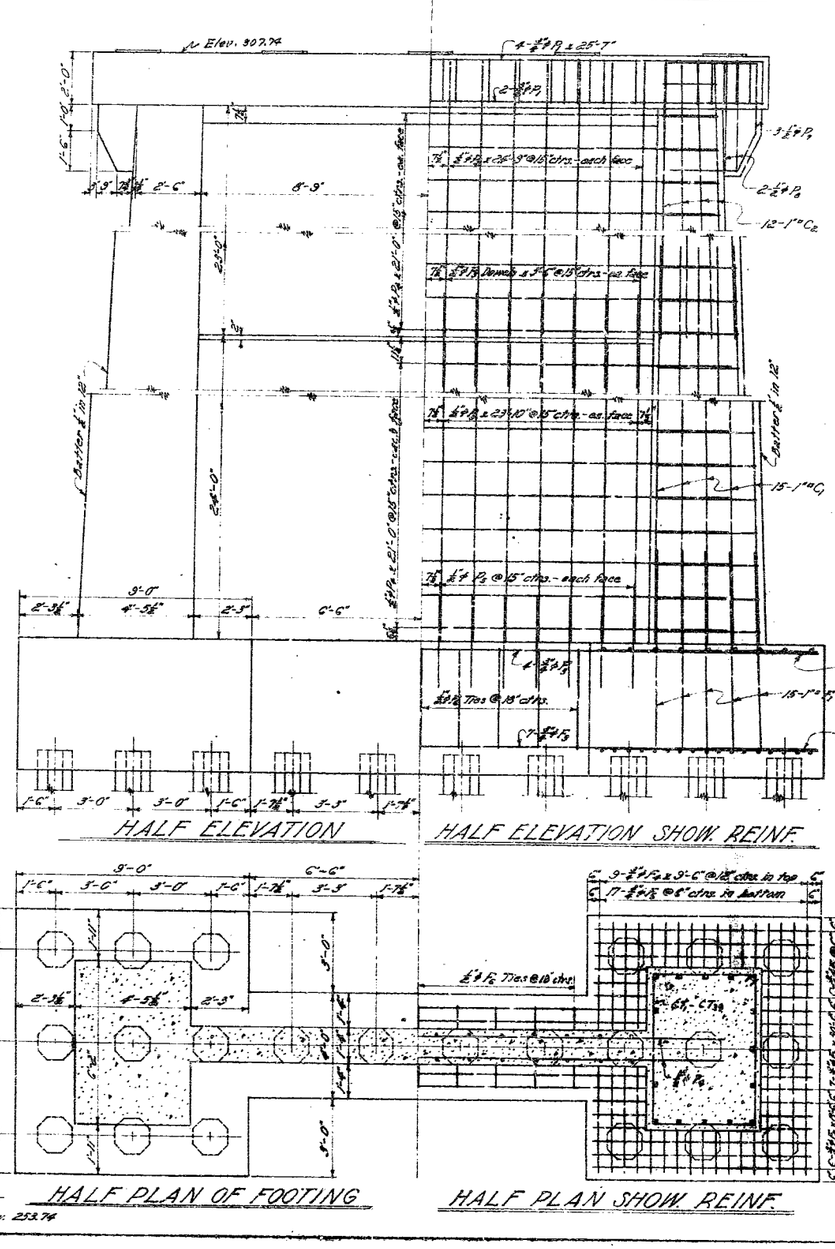
927

G	ARK.	F 7888(1)	1952	20
B	MO.	F 7888(1)	10	34
STATE JOB NO.		10205	1952	10 34





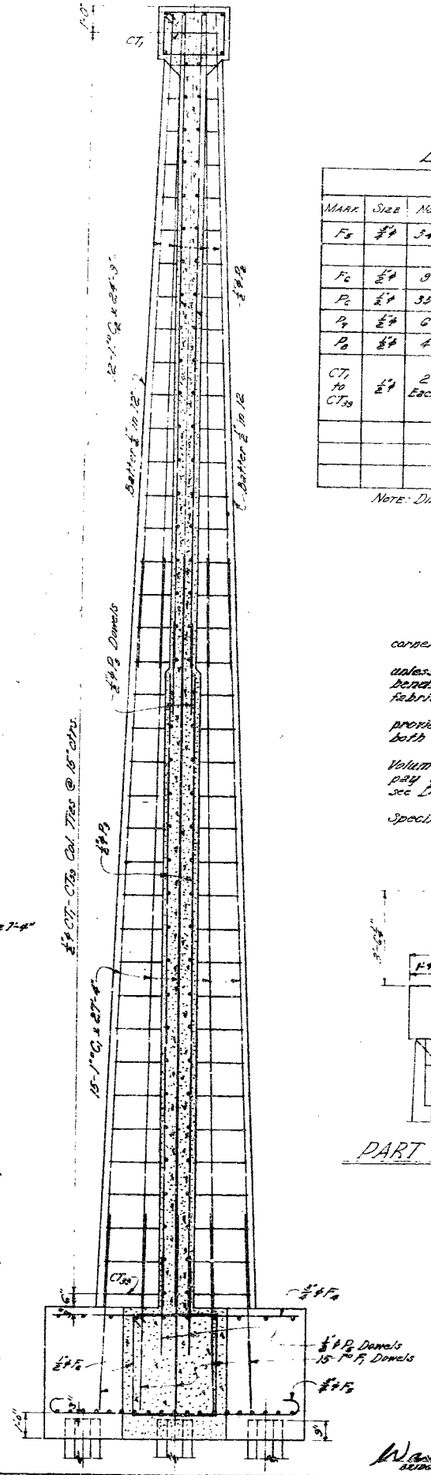
HALF PLAN OF CAP



HALF ELEVATION

HALF PLAN OF FOOTING

HALF PLAN SHOW. REINF.



HALF ELEVATION SHOW. REINF.

BAR LIST FOR PIERS 2 & 3 - EACH

BENT BARS

Mark	Size	No.	Length	A	B	Bending Diagram
F_3	1¼	34	11'-0"	—	—	
F_2	1¼	9	14'-7"	3'-3"	3'-2"	
P_2	1¼	35	8'-11"	2'-5"	1'-8"	
P_3	1¼	6	10'-2"	—	—	
P_1	1¼	4	10'-1"	—	—	
C_1 to C_{1a}	1"	2 Each	Var. by 3½" from 6'-6" to 20'-5"	Var. by ½" from 1'-3½" to 5'-9"	Var. by ½" from 2'-1" to 4'-1"	

STRAIGHT BARS

Mark	Size	No	Length
C_1	1"	30	27'-4"
C_2	1"	24	24'-9"
F_1	1"	30	7'-4"
F_2	1¼	36	9'-6"
F_3	1¼	11	30'-6"
F_4	1¼	10	9'-6"
P_1	1¼	6	25'-7"
P_2	1¼	28	24'-9"
P_3	1¼	28	23'-10"
P_4	1¼	76	21'-0"
P_5	1¼	56	3'-6"

Note: Dimensions relating to reinforcing steel are to centers of bars.

GENERAL NOTES

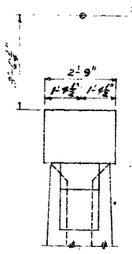
All concrete to be Class "A" and to be poured in the dry. Exposed corners to be chamfered ¾" unless otherwise noted.

Reinforcing steel to be deformed bars of intermediate grade unless otherwise modified by Special Provisions. Shop lists and bending diagrams shall be submitted and approved before fabrication is begun.

Construction joints in piers shall be horizontal and shall be provided with keys not less than 3" high covering the middle third of both dimensions.

Foundation piling shall be 16" octagonal precast concrete. Volume occupied by embedded pile heads will not be included in the pay quantity of concrete in footings. For Details of concrete piling, see Dwg. No. 5198 or 5198A.

SPECIFICATIONS: Arkansas State Highway Commission Standard Specifications for Road and Bridge Construction, adopted March 1, 1940. For Details of Superstructure, see Dwg. Nos. 8136 and 8137.



PART ELEVATION

Note: See sketch showing revised footing details for Pier No. 3.

DETAILS OF PIERS NO. 2 & 3 BRIDGE OVER ST. FRANCIS RIVER AT ST. FRANCIS, ARK.

CLAY COUNTY, ARK.
DUNKLIN COUNTY, MO.

ROUTE 62 SEC 21

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

Drawn: By A.J. Date: 10-18-51 Scale: ⅜" = 1'-0"

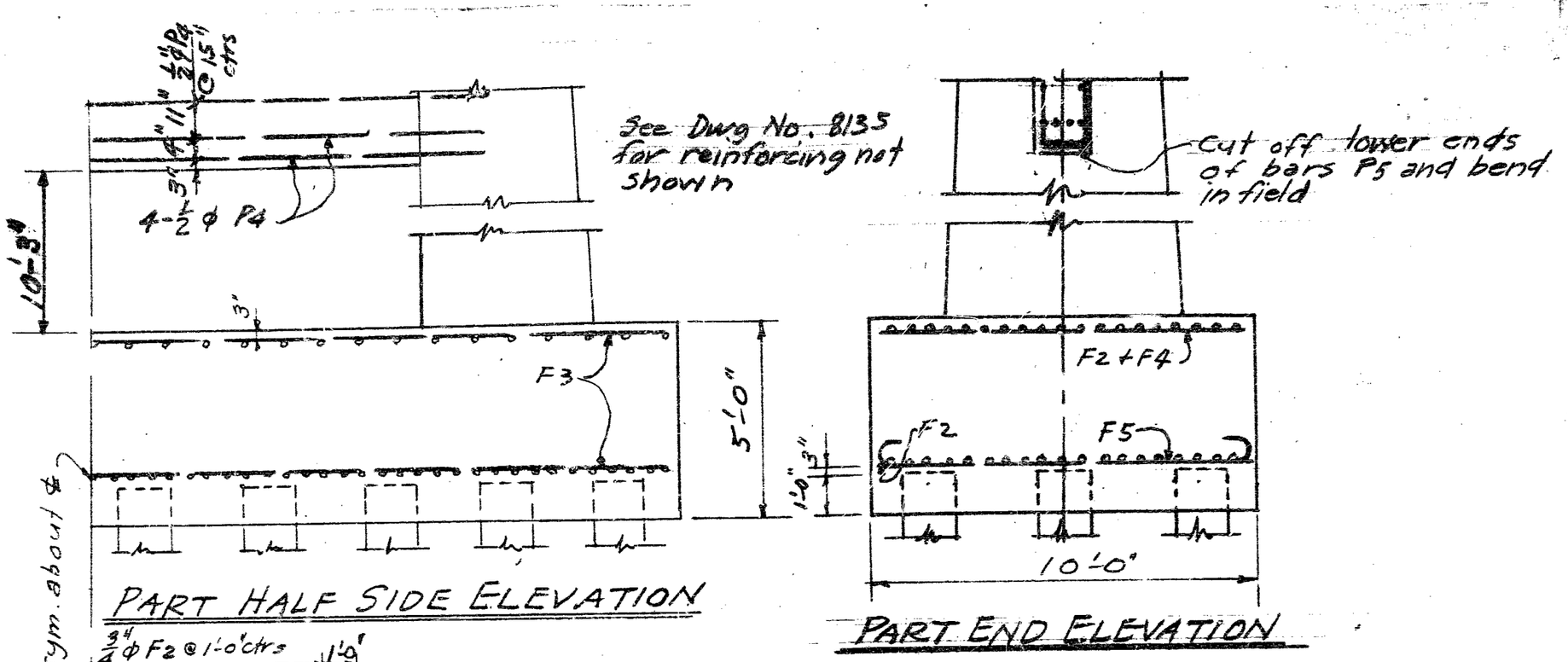
Checked by R.H.M. Date: 2-4-53

BRIDGE NO. 10874A DRAWING No. 8135

Wade Goodman
BRIDGE DESIGN ENGINEER

Sheet No. 8 of 14. DUNKLIN COUNTY

328



Additional Reinforcing Steel Required

4-¾" ϕ F2 x 8'-6", Straight

27-¾" ϕ F3 x 30'-6", " "

FIELD CHANGE NO.

REVISED DETAILS OF PIER NO. 3

BRIDGE OVER ST FRANCIS RIVER

AT ST. FRANCIS, ARK

DUNKLIN COUNTY, MO.

Date: 11-4-53. Scale ½" = 1'-0"

ARKANSAS STATE HIGHWAY COMMISSION

JOB NO. 10405 FAP 788(2)-B

Sh. 8A [illegible] H-927R

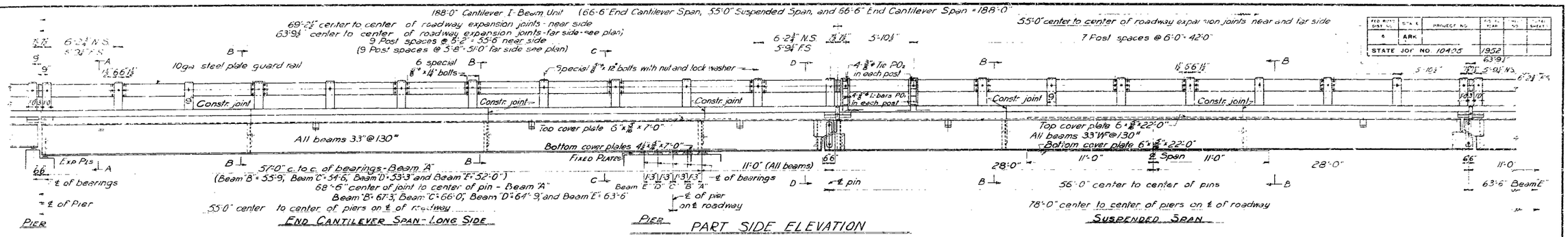
5284

FED. ROAD DIST. NO.	STATE	PROJECT NO.	FISCAL YEAR	NO.	SHEET NO.
6	ARK.				
STATE JOB NO. 104035			1952		

188'-0" Cantilever I-Beam Unit (66'-6" End Cantilever Span, 55'-0" Suspended Span, and 66'-6" End Cantilever Span = 188'-0"

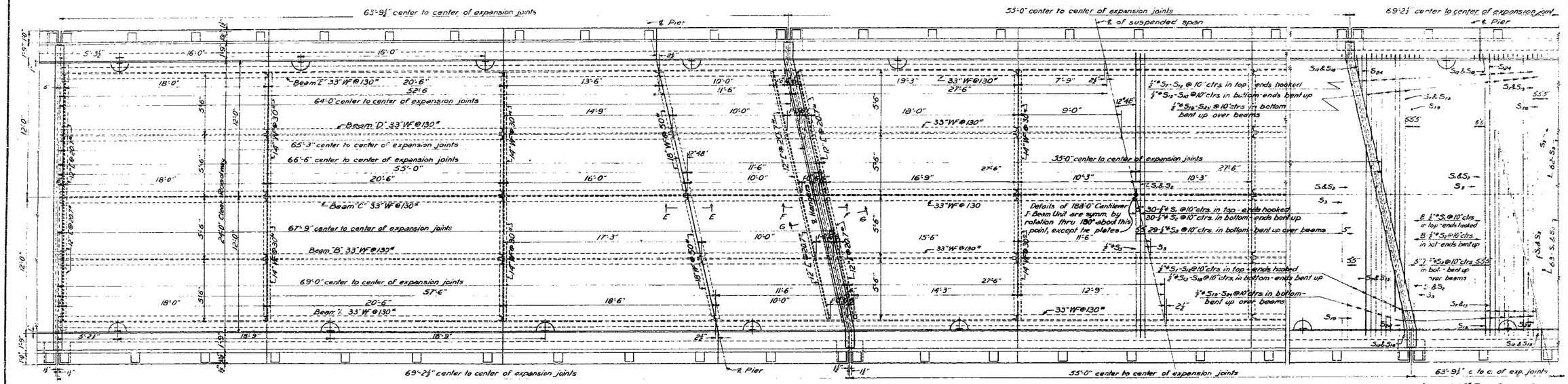
69'-2½" center to center of roadway expansion joints - near side
63'-9½" center to center of roadway expansion joints - far side - see plan)
9 Post spaces @ 5'-2" = 55'-6" near side
(9 Post spaces @ 5'-6" = 51'-0" far side see plan)

55'-0" center to center of roadway expansion joints near and far side
7 Post spaces @ 6'-0" = 42'-0"



PIER — END CANTILEVER SPAN - LONG SIDE — PIER — SUSPENDED SPAN

PART SIDE ELEVATION



66'-6" END CANTILEVER SPAN — 55'-0" SUSPENDED SPAN — PART 66'-6" END CANTI. SPAN

PART PLAN OF 188'-0" CANTILEVER I-BEAM UNIT

BAR LIST PER SPAN

MARK	SIZE	No. REQD. PER SPAN: CANTILEVER SPAN "E" & "2"	SUSPENDED SPAN "D" & "3"	CANTILEVER SPAN "C" & "4"	LENGTH	A	BENDING DIAGRAM
S_1	⅞" ℄	71	60	71	25'-11"		
S_2	⅞" ℄	71	60	71	27'-0"		
S_3	⅞" ℄	69	58	69	26'-10½"		
S_4	⅝" ℄	47	—	47	18'-2"	Straight	
		47	—	47	24'-0"		
		47	—	47	Varies 24'-5" to 23'-10"		
		—	94	—	28'-0"		
S_5	⅞" ℄	226	186	226	6'-9"		
S_6	⅝" ℄	8	8	8	4'-0"		
S_7 to S_9	⅝" ℄	3 Each	2 Each	3 Each	Varies 21'-0" to 6'-6"	Varies 20'-11" to 5'-11½"	
S_{10}	⅝" ℄	3	2	3	3'-6"	3'-1½"	
S_{11} to S_{17}	⅝" ℄	3 Each	2 Each	3 Each	Varies 21'-7" to 6'-11"	Varies 20'-8" to 6'-0"	
S_{18}	⅝" ℄	3	2	3	4'-1"	3'-2"	
PO_1	⅞" ℄	96	80	96	4'-0"		
PO_2	⅞" ℄	96	80	96	2'-9"		

MARK	SIZE	No. REQD. PER SPAN: CANTILEVER SPAN "E" & "2"	SUSPENDED SPAN "D" & "3"	CANTILEVER SPAN "C" & "4"	LENGTH	a	b	c	d	e	f	g	h	i	j	k	l	m
S_{19}	⅝" ℄	3	2	3	23'-9"	22'-6¾"	2'-9"	3½"	2'-2"	3½"	2'-9"	4"	2'-2"	4"	2'-9"	3½"	2'-2"	3½"	2'-11¾"
S_{20}	⅝" ℄	3	2	3	19'-11½"	18'-10¾"	"	"	"	"	"	"	"	"	2'-9"	3½"	1'-3¾"	0	
S_{21}	⅝" ℄	3	2	3	16'-2"	15'-2¼"	"	"	"	"	"	"	"	"	2'-9"	4"	2'-2"	4"	1'-1¾"	0
S_{22}	⅝" ℄	3	2	3	12'-3"	11'-6¼"	"	"	"	2'-2"	3½"	3'-0¾"	0						
S_{23}	⅝" ℄	3	2	3	8'-5¾"	7'-10¼"	2'-9"	3½"	1'-10¾"	0									
S_{24}	⅝" ℄	3	2	3	4'-8"	4'-2¼"	1'-2¾"	0											

Note:- Dimensions relating to reinforcing steel are to centers of bars.

GENERAL NOTES

All concrete to be Class "S". All exposed corners to be chamfered ¾" unless otherwise noted.

Rivets ⅞" ℄. Open holes 1⅛" ℄. Use machine bolts where bolts are indicated.

Ends of all stiffener angles shall be ground to bear against beam flanges.

Structural shapes of equal or greater strength may be substituted for shapes shown but payment will be made on shapes shown or actually used whichever is the lesser.

All weld connections to be ¼" fillet shop welds, except as noted. Welding to be by the electric arc process in accordance with current specifications for Welded Highway and Railway Bridges of the American Welding Society.

All bearing plates are to be structural steel. All top plates to be shop welded to 33" Bms. with ⅜" fillet welds extending entire length of all edges and surfaces in contact. Masonry plates to be seated on 3 layers of burlap saturated with red lead.

All bearing and roadway expansion devices to be paid for at the unit price bid for "Structural Steel in Beam Spans."

Shop Paint:- All structural steel shall be given one coat of red lead and raw linseed oil before shipment, except surfaces in contact with concrete.

Field Paint:- 1st coat, white lead tinted with lamp black. 2nd coat aluminum paint

Cast iron drains are to be painted the same as structural steel and are to be paid for at unit price per pound bid for "Structural Steel in Beam Spans."

Reinforcing steel to be deformed bars of intermediate grade, unless modified by Special Provisions. Shop lists and bending diagrams must be submitted and approval secured before fabrication is begun.

All reinforcing steel shall be accurately located in the forms and firmly held in place by means of steel wire supports sufficient in number and size to prevent displacement during the course of construction and to keep the steel a proper distance from the forms.

Wire supports will not be paid for directly but will be considered subsidiary to the item of "Reinforcing Steel." Shop lists and diagrams must be submitted for approval.

No tolerance will be permitted in the angle between flange and web of beams at points of bearing.

The steel plate guard rail shall be of the type shown or an equivalent rigid type as approved by the Engineer. The steel plate guard rail, including all concrete posts, shall be paid for at the unit price bid per linear foot for "Steel Plate Guard Rail"; to be painted same as structural steel.

CAMBER:- To provide for dead load deflection and vertical curve camber of steel beams, the bearing for the suspended span shall be cambered 1½" as shown. Camber for the cantilever spans shall be taken care of by increasing the thickness of slab on the anchor arms approximately ½" at mid-span and ¾" at quarter points, if necessary.

Slab pours are to be made as scheduled by number in the pouring schedule at right.

These drawings show general features of design only. Shop drawings shall be made in accordance with the specifications, submitted and approval secured before fabrication is begun.

SPECIFICATIONS:- Arkansas State Highway Commission Standard Specifications for Road and Bridge Construction, adopted March 1, 1940.

DESIGN SPECIFICATIONS:- A.A.S.H.O. 49 REV.; LIVE LOAD - H-20 LOADING

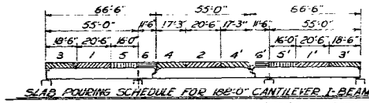
Load distribution to Interior Beams - Dead Load 720 #/Lin. Ft.
Live Load 1.10 Wheels or 0.55 Lanes 27.7% Imp.

Load distribution to Outside Beams - Dead Load 1000 #/Lin Ft.
Live Load 0.82 Wheels or 0.384 Lanes 27.7% Imp.

UNIT STRESSES:-

Class "S" Concrete (n=10)	1200 #/□"
Reinforcing Steel - Int. Grade	20,000 #/□"
Structural Steel	18,000 #/□"

Ward Goodman
BRIDGE ENGINEER



SLAB POURING SCHEDULE FOR 188'-0" CANTILEVER I-BEAM UNIT

Note: Slab pours are to be made as scheduled by number as shown on schedule above. Pours marked 1 and 1', etc. may be poured simultaneously or immediately following each other.

Note:- For remainder of details see sheet No. 2. Drawing No. 8137.

SHEET NO. 1 OF 2

DETAILS OF 188'-0" CANTILEVER I-BEAM UNIT

24'-0" CLEAR ROADWAY 2 SIDEWALKS @ 1'-6"
5 GIRDER TYPE

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

Drawn By: W.G.H. Date: 2-12-52
Traced By: J.E.H. Date: 6-10-52
Checked By: R.H.M. Date: 2-5-53

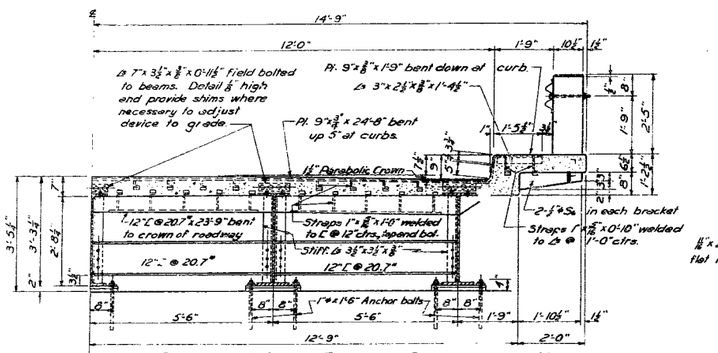
Scale: 4 in. = 1 ft.

BRIDGE NO. 1087-1. DRAWING NO. 8136

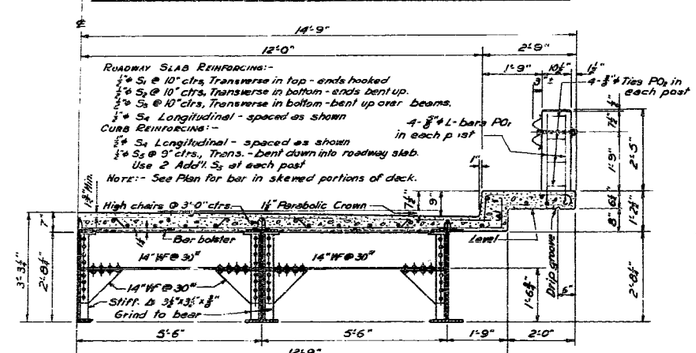
529

FED. ROAD DIST. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	ARK.				
STATE JOB NO. 10405			1952		

530

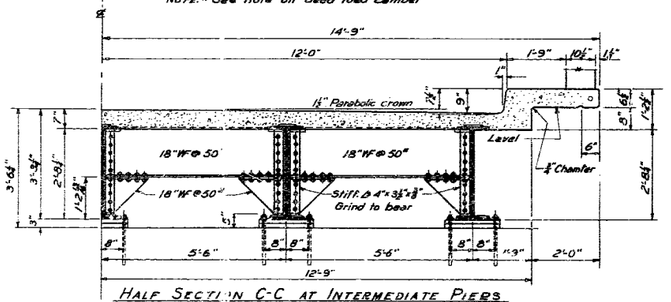


HALF SECTION A-A AT ENDS OF CANTILEVER UNIT

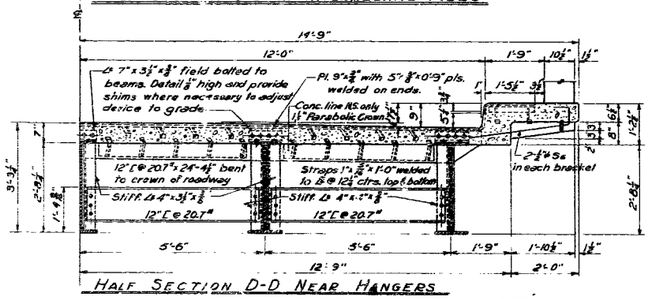


HALF SECTION B-B AT INTERMEDIATE CONSTRUCTION JOINTS

NOTE:- See note on dead load camber

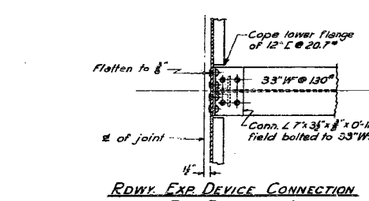


HALF SECTION C-C AT INTERMEDIATE PIERS

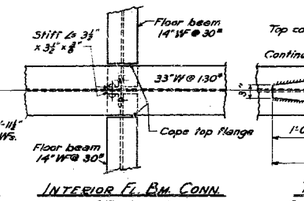


HALF SECTION D-D NEAR HANGERS

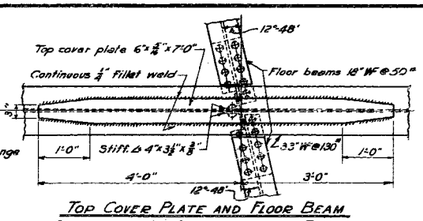
NOTE:- For details of sidewalk expansion device not shown, see SECTION A-A



ROWY. EXP. DEVICE CONNECTION AT END EXPANSION JOINT.



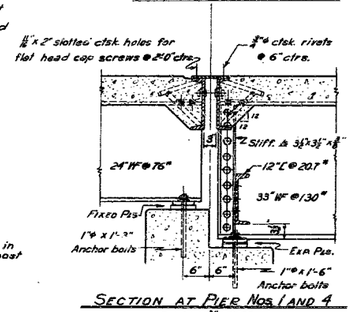
INTERIOR FL. BM. CONN. AT CONSTR. JOINT



TOP COVER PLATE AND FLOOR BEAM CONNECTION AT INTERMEDIATE PIERS

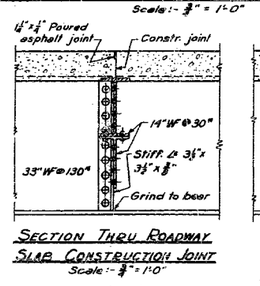
CONNECTION DETAILS AT TOP FLANGE

Scale:- ¾" = 1'-0"



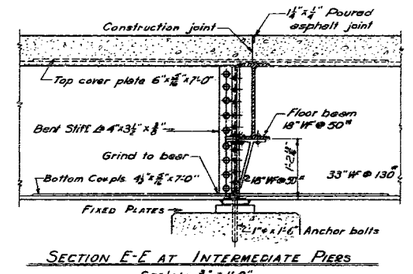
SECTION AT PIER NOS. 1 AND 4

Scale:- ¾" = 1'-0"



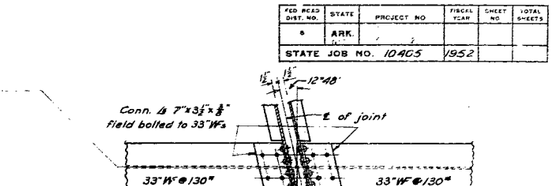
SECTION THRU ROADWAY SLAB CONSTRUCTION JOINT

Scale:- ¾" = 1'-0"



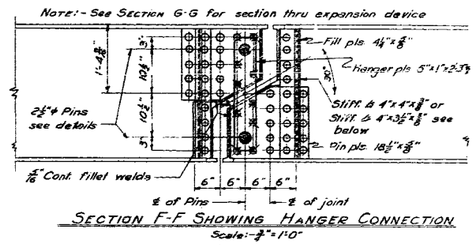
SECTION E-E AT INTERMEDIATE PIERS

Scale:- ¾" = 1'-0"



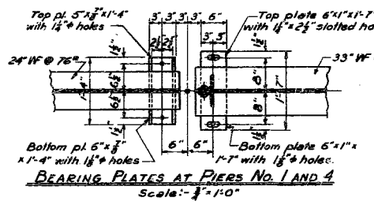
ROWY. EXP. DEVICE CONNECTION AT HANGER

Scale:- ¾" = 1'-0"



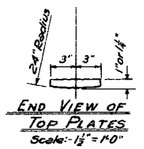
SECTION F-F SHOWING HANGER CONNECTION

Scale:- ¾" = 1'-0"



BEARING PLATES AT PIERS NO. 1 AND 4

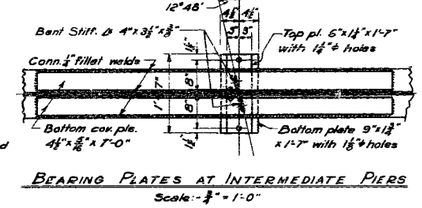
Scale:- ¾" = 1'-0"



END VIEW OF TOP PLATES

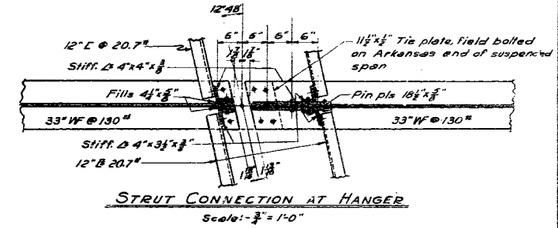
Scale:- 1½" = 1'-0"

NOTE:- Top plates to be welded to 33"WF beams with ⅜" cont. shop fillet welds.



BEARING PLATES AT INTERMEDIATE PIERS

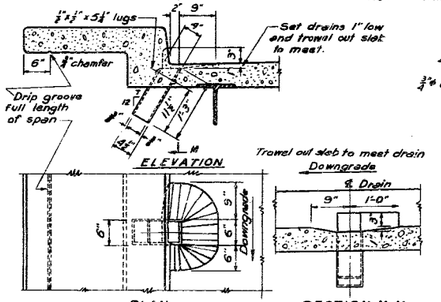
Scale:- ¾" = 1'-0"



STRUT CONNECTION AT HANGER

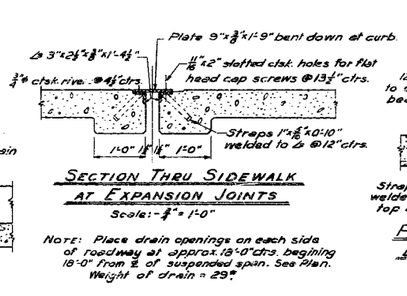
Scale:- ¾" = 1'-0"

NOTE:- Omit stiffener Δ on outside of outside beams.



DETAIL OF C.I. DRAINS

Scale:- ¾" = 1'-0"



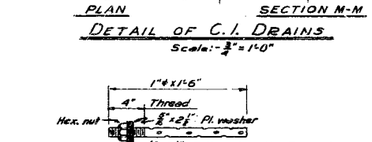
SECTION THRU SIDEWALK AT EXPANSION JOINTS

Scale:- ¾" = 1'-0"

PART SECTION G-G THRU ROADWAY EXPANSION JOINTS AT HANGERS

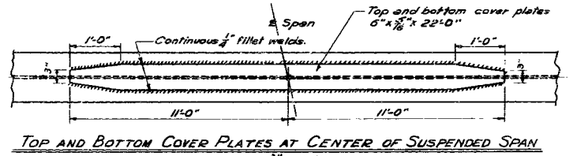
Scale:- ¾" = 1'-0"

NOTE: Place drain openings on each side of roadway at approx. 18'-0" ctrs. begining 18'-0" from ℄ of suspended span. See Plan. Weight of drain = 29#.



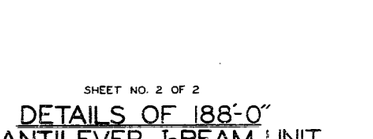
DETAIL OF ANCHOR BOLT

Scale:- 1½" = 1'-0"



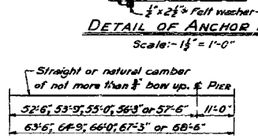
TOP AND BOTTOM COVER PLATES AT CENTER OF SUSPENDED SPAN

Scale:- ¾" = 1'-0"

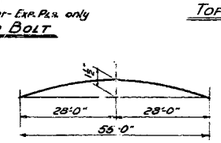


DETAILS OF HANGER PINS

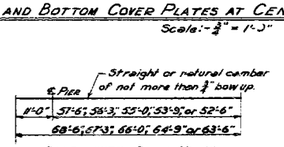
Scale:- 3" = 1'-0"



CANTILEVER SPAN No. 12



SUSPENDED SPAN No. 13



CANTILEVER SPAN No. 14

CAMBER FOR 33" WF BEAMS FOR 188'-0" CANTILEVER I-BEAM UNIT

REVISIONS:- Rdwy. Exp. Pl.; & Hanger Pins. W.C.H. 12-8-52.

Wade Bradshaw
BRIDGE ENGINEER

SHEET NO. 2 OF 2

DETAILS OF 188'-0" CANTILEVER I-BEAM UNIT

24'-0" CLEAR ROADWAY 2 SIDEWALKS @ 1'-6"

5 GIRDER TYPE

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

Drawn By: W.C.H. Date: 2-11-52
Traced By: J.E.H. Date: 6-20-52
Checked By: J.N.K. Date: 2-4-53

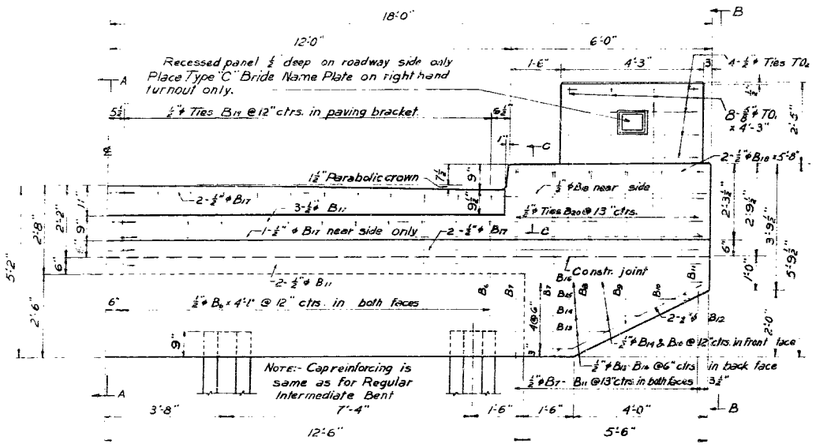
Scale: ½ in. = 1 ft. EXCEPT AS NOTED

BRIDGE NO. 1087-A DRAWING NO. 8137

FINISHED

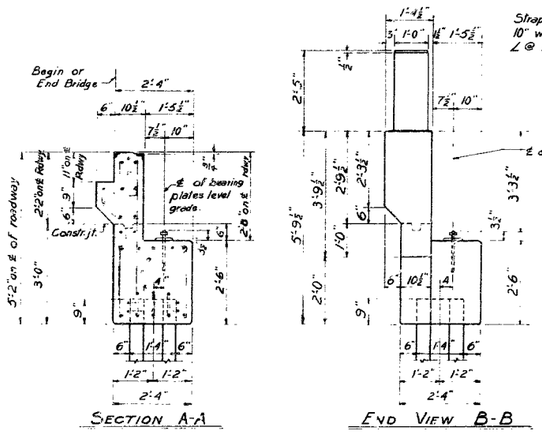
Sheet No. 10 of 14. DUNKLIN COUNTY H-927R

FED. ROAD DIST. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
STATE JOB NO.					



HALF REAR ELEVATION OF REGULAR END BENT

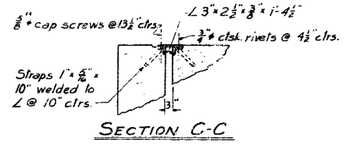
NOTE: See details below for location of batter piles for Two Batter Pile End Bent.



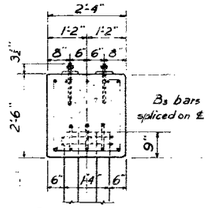
SECTION A-A

END VIEW B-B

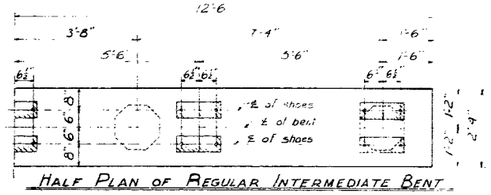
NOTE:- Volume occupied by embedded pile heads will not be included in the pay quantity of concrete in caps.



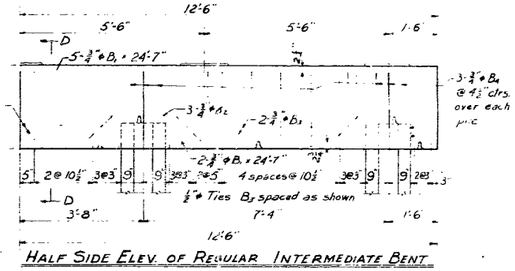
SECTION C-C



SECTION D-D



HALF PLAN OF REGULAR INTERMEDIATE BENT



HALF SIDE ELEV. OF REGULAR INTERMEDIATE BENT

GENERAL NOTES

All concrete to be Class "S" and shall be poured in the dry. All exposed corners to be chamfered ¾" unless otherwise noted.

Reinforcing steel to be deformed bars of intermediate grade, unless modified by special provisions. Shop lists and bending diagrams are to be submitted for approval.

Maximum design pile load for regular intermediate bents is 29.0 Tons and 30.0 Tons per pile for 30'-0" and 32'-0" spans, respectively.

All piles are to be driven to a minimum capacity of 32.0 Tons each.

For details of standard 30'-0" and 32'-0" I beam spans, see Drawing No. 5200.

Volume occupied by embedded pile heads will not be included in the pay quantity of concrete in caps.

SPECIFICATIONS:- Arkansas State Highway Commission Standard Specifications for Road and Bridge Construction, adopted March 1, 1940.

DESIGN SPECIFICATIONS:- A.R.S.H.O. 49 REV.; LIVE LOAD - H-20 LOADING

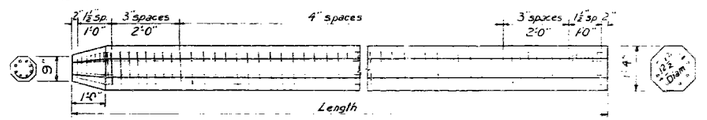
DESIGN UNIT STRESSES:-

Class "S" Concrete (n=10)	1200 #/-
Reinforcing steel (Intermediate)	20000 #/-
Structural steel	18000 #/-
Concrete piles	32 tons

BAR LIST PER BENT

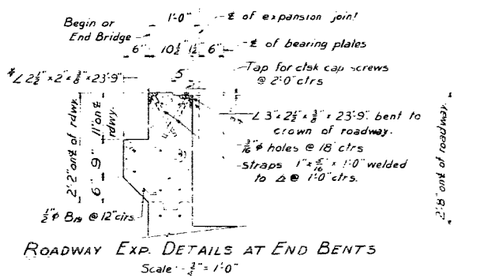
MARK	SIZE	No. REQ'D PER END	No. REQ'D PER BENT INT	LENGTH	A	B	BENDING DIAGRAM
B_1	¾" ϕ	7	7	24'-7"	Straight		
B_2	¾" ϕ	3	3	26'-4"	—	—	
B_3	¾" ϕ	4	4	27'-5"	13'-0"	1'-5"	
B_4	¾" ϕ	12	12	6'-4"	2'-2"	2'-0"	
① BP_1	¾" ϕ	⑥ 6 ⑨ 9	—	6'-11"	—	—	
② BP_2	¾" ϕ	⑨ * ⑥ 6	—	11'-3"	—	—	
B_5	⅝" ϕ	45	45	9'-1"	2'-2"	2'-0"	
B_6	½" ϕ	48	—	4'-1"	Straight		
B_7	½" ϕ	8	—	5'-5"	Straight		
B_8	½" ϕ	4	—	5'-2"	Straight		
B_9	½" ϕ	4	—	4'-7"	Straight		
B_{10}	½" ϕ	4	—	4'-1"	Straight		
B_{11}	½" ϕ	4	—	3'-6"	Straight		
B_{12}	½" ϕ	4	—	9'-3"	—	—	
B_{13}	½" ϕ	2	—	4'-3"	Straight		
B_{14}	½" ϕ	4	—	5'-3"	Straight		
B_{15}	½" ϕ	2	—	6'-3"	Straight		
B_{16}	½" ϕ	4	—	7'-0"	Straight		
B_{17}	½" ϕ	20	—	18'-8"	Straight		
B_{18}	½" ϕ	6	—	5'-0"	Straight		
B_{19}	½" ϕ	24	—	3'-1"	0'-6"	—	
B_{20}	½" ϕ	12	—	4'-7"	2'-0"	—	
$T0_1$	⅞" ϕ	16	—	4'-3"	Straight		
$T0_2$	½" ϕ	8	—	9'-11"	3'-11"	0'-8"	

Note- Dimensions relating to reinforcing steel are to centers of bars.
① BP₁ & BP₂ bars to be used in Two and Three Batter Pile End Bents only
② Two Batter Pile End Bent. ③ Three Batter Pile End Bent.



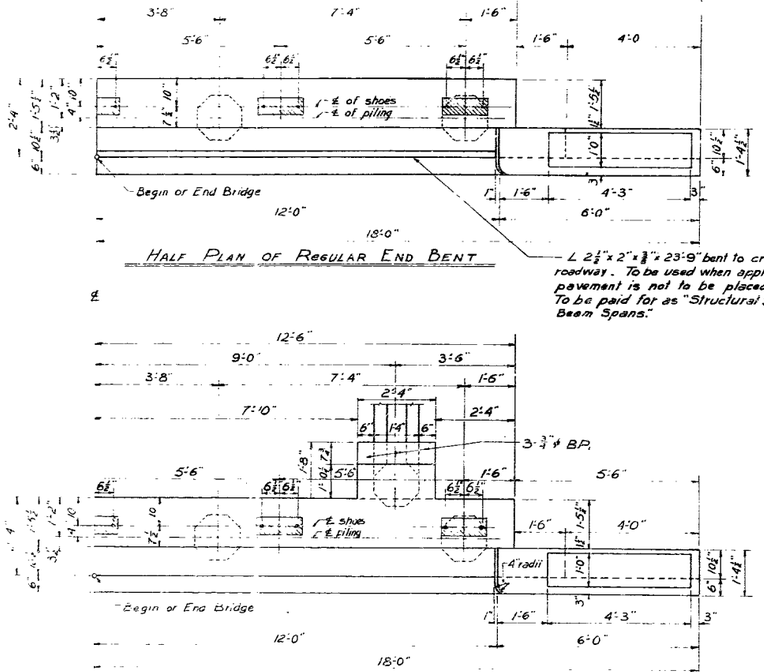
Reinforcing:- Vertical Bars:- 8-⅝" ϕ for lengths up to and including 35'
8-¾" ϕ for lengths 35' to 45'; 8-1" ϕ for lengths 45' to 60'.
Spiral:- No. 4 wire for all lengths.

DETAILS OF 16" OCTAGONAL PRECAST CONCRETE PILE



ROADWAY EXP. DETAILS AT END BENTS

Scale: ¾" = 1'-0"



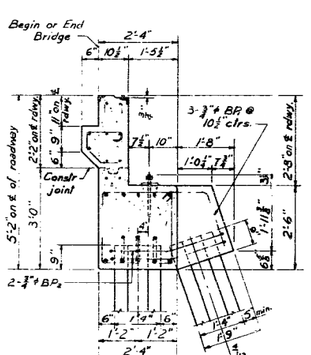
HALF PLAN OF REGULAR END BENT

℄

∠ 2½" x 2" x ⅜" x 23'-9" bent to crown of roadway. To be used when approach pavement is not to be placed immediately. To be paid for as "Structural Steel in Beam Spans."

HALF PLAN OF END BENT WITH TWO BATTER PILES

See Drawing No. 5199-A for Half Plan of End Bent with Three Batter Piles.



SECTION A'-A'

DETAILS OF BENTS FOR STANDARD 30'-0" AND 32'-0" I-BEAM SPANS 24'-0" CLEAR ROADWAY, 2 SIDEWALKS @ 1'-6" S GIRDER TYPE

ROUTE SEC. FINISHED

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

Drawn By: W.C.H. Date: 7-28-50
Traced By: J.E.H. Date: 3-5-52
Checked By: J.H.K. Date: 10-5-51 2-4-53

Scale: ¾" = 1 ft.

BRIDGE ENGINEER

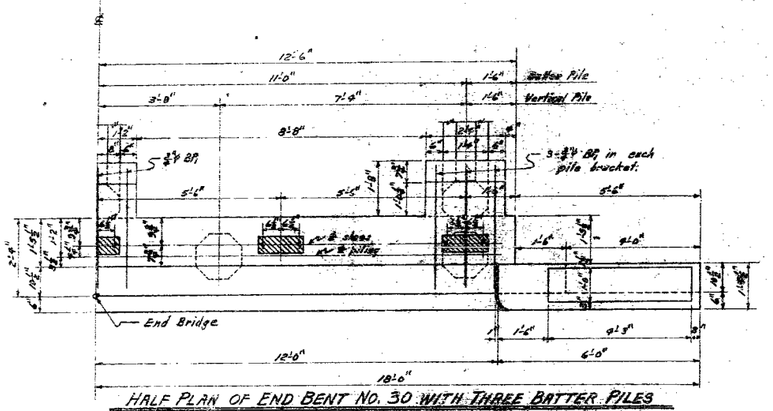
BRIDGE No.

DRAWING NO 5199

Sheet No. 11 of 14. DUNKLIN COUNTY FINISHED H-927R

531

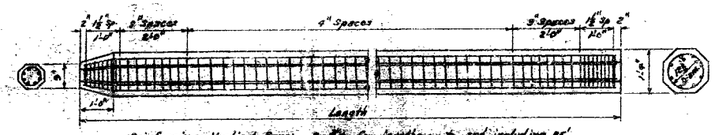
C	ABK	F.1880)	1952	7	21
S	Ma.	F.2980)		8	3
STATE JOB NO. 10405				8	22



HALF PLAN OF END BENT NO. 30 WITH THREE BATTER PILES

Scale:- 1/4" = 1'-0"

NOTE:- Omit Bridge Name Plate and guard angle on backwall at Bent No. 30.



Reinforcing:- Vertical Bars:- 8-#5 for lengths up to and including 35'
8-#6 for lengths 35'-1" to 45'
8-#7 for lengths 45' TO 60'

Spiral:- No.4 wire for all lengths

DETAILS OF 16" OCTAGONAL PRECAST CONCRETE PILE

Scale:- 1" = 1'-0"

PILE HANDLING DATA

LENGTH OF PILING	PICK-UP A	PICK-UP B
20'-0"	8'-0"	0
25'-0"	2'-0"	0
30'-0"	7'-4"	0
35'-0"	8'-5"	0
40'-0"	10'-0"	0
45'-0"	12'-0"	0
50'-0"	13'-6"	0
55'-0"	13'-6"	12'-6"
60'-0"	14'-6"	13'-6"

POINTS OF SUPPORT FOR HANDLING

PICK UP POINTS FOR UP ENDING

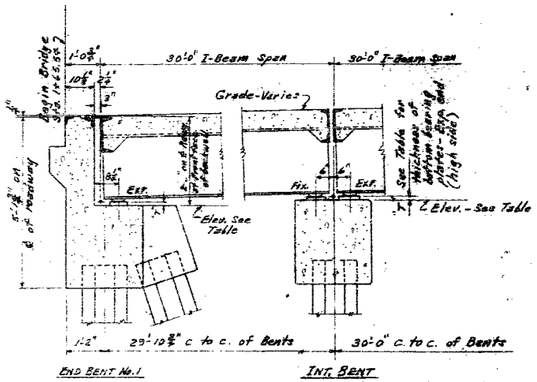
POINTS OF SUPPORT FOR HORIZONTAL HANDLING

ELEVATION OF BENT CAPS AND THICKNESS OF EXP. BEARING PLATES

BENT NUMBER	"T" = THICKNESS OF BOTTOM PLATE EXP. (HIGH SIDE)	ELEVATION OF TOP OF CAP
1	1/8"	302.32
2	1/8"	303.67
3	1/8"	304.90
4	1/8"	306.07
5	1/8"	305.68
6	1/8"	306.24
7	1/8"	306.74
8	1/8"	307.18
9	1/8"	307.56
10	1/8"	307.88
11	1/16"	308.15
12	1/16"	308.38
13	1/16"	308.56
14	1/16"	307.82
15	1/16"	307.44
16	1/16"	307.94
17	1/16"	307.28
18	1/16"	307.12
19	1/16"	306.92
20	1/16"	306.74
21	1/16"	306.54
22	1/16"	306.38
23	1/16"	306.20
24	1/16"	306.02
25	1/16"	305.83
26	1/16"	305.66
27	1/16"	305.78
28	1/16"	305.90
29	1/16"	306.12
30	1/16"	306.34

Note:- All intermediate 30'-0" I-Beam Spans to be detailed the same. Width of expansion joint may vary with change in grade.

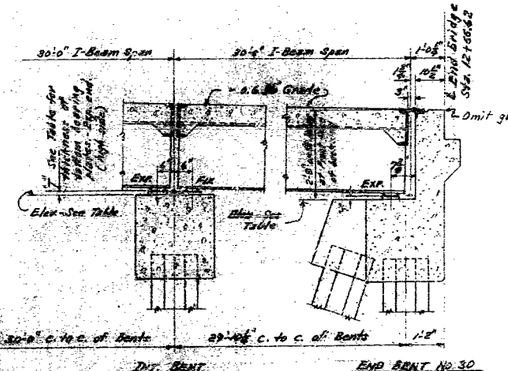
SPECIAL NOTE:-
The Contractor shall construct anchor bolt wells in accordance with and at the locations shown on the design plans. The anchor bolt wells shall be tightly sealed in a manner satisfactory to the Engineer to prevent damage from freezing or other source prior to the placing of the anchor bolts in permanent position. Payment for placing and protecting anchor bolt wells as described above will be considered as full, covered under unit contract prices for Class "A" and Class "S" Concrete for Bridges.



END BENT No.1 INT. BENT

SPECIAL DETAILS OF BENTS FOR STD. 30'-0" I-BEAM SPANS

Scale:- 1/4" = 1'-0"



INT. BENT END BENT No. 30

SPECIAL DETAILS OF BENTS FOR STD. 30'-0" I-BEAM SPANS

Scale:- 1/4" = 1'-0"

NOTE:- For details not shown see Drawing No. 5199.

SUPPLEMENTARY
DETAILS OF BENTS FOR STANDARD
30'-0" AND 32'-0" I-BEAM SPANS
24'-0" CLEAR ROADWAY 2 SIDEWALKS @ 1'-6"
5 GIRDER TYPE
ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK

Drawn By: W.C.H. Date: 11-3-52
Traced By: Date:
Checked By: F.A.B. Date: 2-9-53

Scale:- As shown

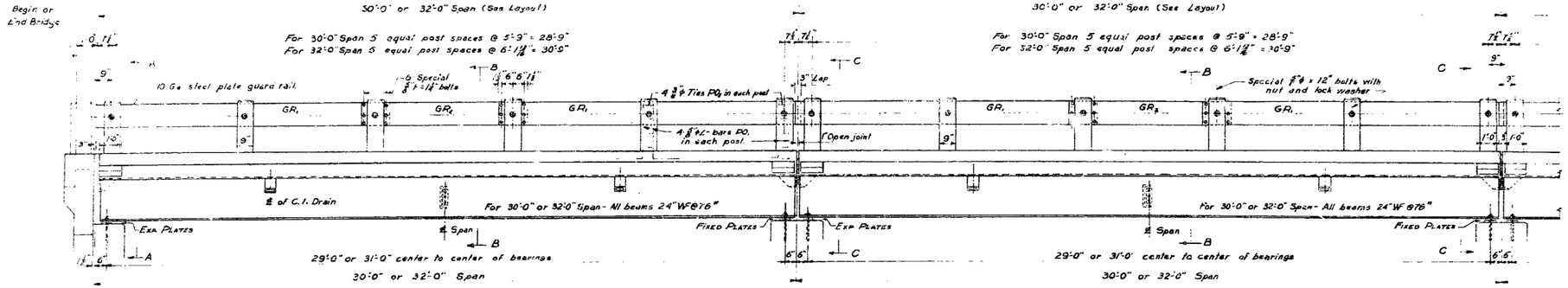
BRIDGE NO. 1097-A DRAWING NO. 5199-A

Wade Gordon
BRIDGE DESIGN ENGINEER

Sheet No. 12 of 14. DUNKLIN COUNTY. #327R

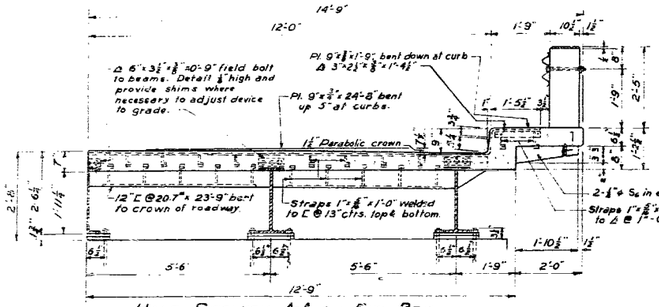
532

FED. ROAD DIST. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	S.R.K.				
STATE JOB NO.					

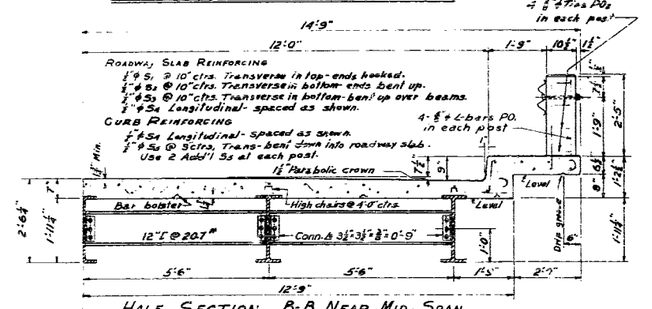


SIDE ELEVATION

Scale:- 3/8" = 1'-0"

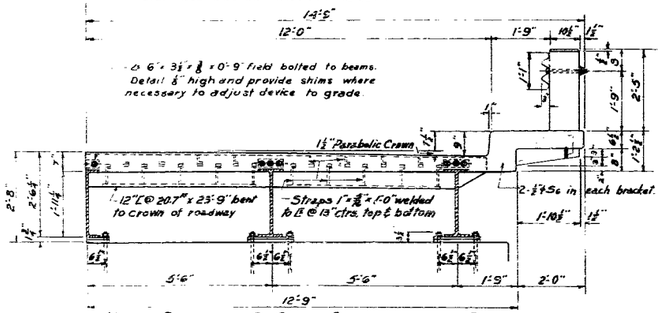


HALF SECTION A-A AT END BENT

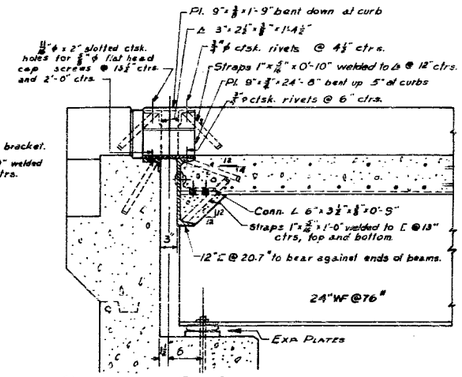


HALF SECTION B-B NEAR MID-SPAN

Note:- See note on dead load camber.

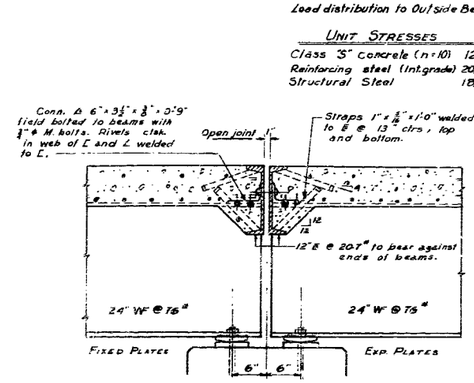


HALF SECTION C-C AT INTERMEDIATE BENTS



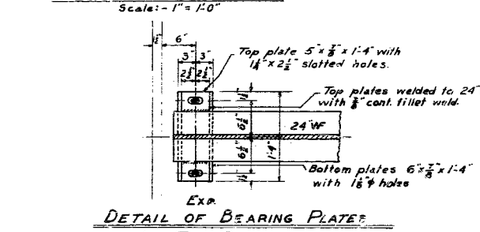
SECTION AT END BENTS

Scale:- 1" = 1'-0"



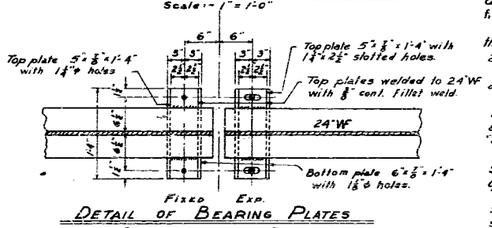
SECTION AT INTERMEDIATE BENTS

Scale:- 1" = 1'-0"



DETAIL OF BEARING PLATES AT END BENT

Scale:- 1" = 1'-0"



DETAIL OF BEARING PLATES AT INTERMEDIATE BENTS

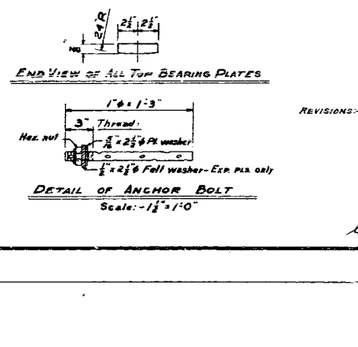
Scale:- 1" = 1'-0"

NOTE:- See layout for type of bearing plate to be used. Increase thickness of bottom plates on up-grade side for spans on grade or vertical curve.

BAR LIST PER SPAN

MARK	SIZE	NO REQ'D PER SPAN 30'-0"	NO REQ'D PER SPAN 32'-0"	LENGTH	BENDING DIAGRAM
S_1	1/2" ø	36	38	25'-11"	
S_2	1/2" ø	36	38	27'-0"	
S_3	1/2" ø	35	37	26'-10 1/2"	
S_4	1/2" ø	47	—	29'-6" Straight	
		—	47	31'-6" Straight	
S_5	1/2" ø	104	108	6'-9"	
S_6	1/2" ø	8	8	4'-0"	
PO_1	5/8" ø	48	48	4'-0"	
PO_2	5/8" ø	48	48	2'-9"	

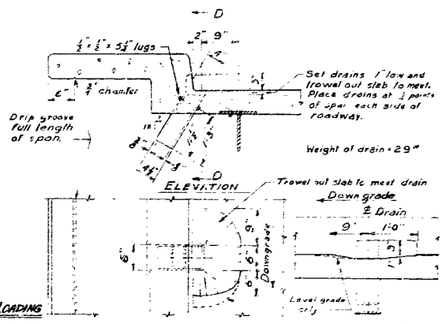
NOTE:- Dimensions relating to reinforcing steel are to centers of bars.



END VIEW OF ALL TOP BEARING PLATES

DETAIL OF ANCHOR BOLT

Scale:- 1 1/2" = 1'-0"



DETAIL OF C.I. DRAINS

Scale:- 3/4" = 1'-0"

DESIGN SPECIFICATIONS:- A.A.S.H.O. 49 REV.; LIVE LOAD - H-20 LOADING

Load distribution to Interior Beams:- Dead Load = 625#/Lin. Ft.
Live Load = 1.10 Wheels 30% Imp.

Load distribution to Out Side Beams:- Dead Load = 910#/Lin. Ft.
Live Load = 0.82 Wheels 30% Imp.

UNIT STRESSES

Class "S" concrete (n=10)	1200 #/-
Reinforcing steel (Int. grade)	20,000 #/-
Structural Steel	18,000 #/-

GENERAL NOTES

All concrete to be Class "S". All exposed corners to be chamfered 3/4" unless otherwise noted.

Rivets 3/4" ø. Open holes 13/16" ø. Use machine bolts where bolts are indicated.

Structural shapes of equal or greater strength may be substituted for shapes shown but payment will be made on shapes shown or actually used whichever is the lesser.

All weld connections to be 5/16" fillet shop welds, except as noted. Welding to be by the electric arc process in accordance with current specifications for Welded Highway and Railway Bridges of the American Welding Society.

All bearing plates are to be structural steel. All top plates to be shop welded to 24" WF beams with 5/16" fillet welds extending entire length of all edges and surfaces in contact. Masonry plates are to be sealed on 3 layers of burlap saturated with red lead.

All bearing and roadway expansion devices to be paid for at the unit price bid for "Structural Steel in Beam Spans."

Shop Paint:- All structural steel shall be given one coat of red lead and raw linseed oil before shipment, except surfaces in contact with concrete.

Field Paint:- 1st coat white lead tinted with lampblack. 2nd coat, aluminum paint.

Cast iron drains are to be painted the same as structural steel, and are to be paid for at unit price per pound bid for "Structural Steel in Beam Spans."

Reinforcing steel to be deformed bars of intermediate grade. Shop lists and bending diagrams must be submitted and approval secured before fabrication is begun.

All reinforcing steel shall be accurately located in the forms and firmly held in place by means of steel wire supports sufficient in number and size to prevent displacement during the course of construction and to keep the steel a proper distance from the forms.

Wire supports will not be paid for directly but will be considered subsidiary to the item of "Reinforcing Steel." Shop lists and diagrams must be submitted for approval.

No tolerance will be permitted in the angle between flange and web of beams at points of bearing.

The steel plate guard rail shall be of the type shown or an equivalent rigid type as approved by the Engineer. The steel plate guard rail, including all concrete posts, shall be paid for at the unit price bid per linear foot for "Steel Plate Guard Rail." To be painted same as structural steel.

CAMBER:- Unless camber is provided for bridges on a vertical curve the slab is to be approximately 1/4" thicker at mid-span and 3/4" thicker at the quarter points to provide for dead load deflection of steel beams.

This drawing shows general features of design only. Shop drawings shall be made in accordance with the specifications, submitted and approval secured before fabrication is begun.

SPECIFICATIONS:- Arkansas State Highway Commision, Standard Specifications For Road and Bridge Construction, adopted March 1, 1940.

REVISIONS:- Rdwy. Exp. Hts. 12-16, 11-3-52

DETAILS OF STANDARD 30'-0" AND 32'-0" I-BEAM SPANS 24'-0" CLEAR ROADWAY 2 SIDEWALKS @ 1'-6" 5 GIRDER TYPE

ROUTE SEC. FINISHED

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

Drawn By: W.C.H. Date: 7-28-50
Traced By: J.E.M. Date: 2-25-52
Checked By: J.H.K. Date: 10-8-51

Scale: 1/4 in. = 1 ft. EXCEPT AS NOTED

Ward Goodman BRIDGE ENGINEER

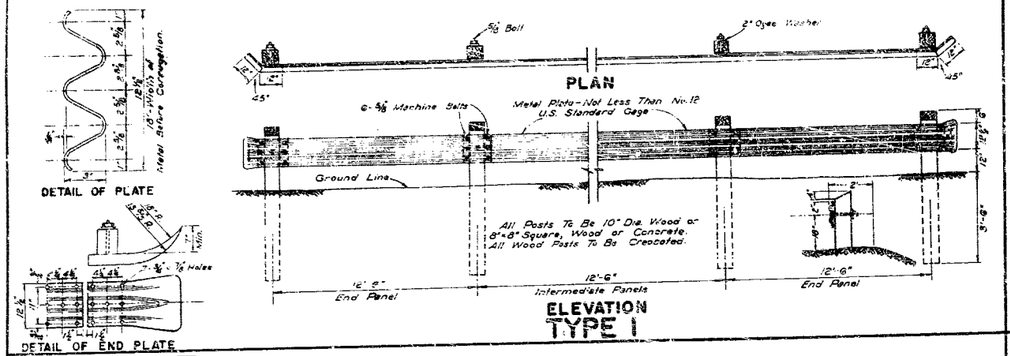
BRIDGE NO. DRAWING NO. 5200

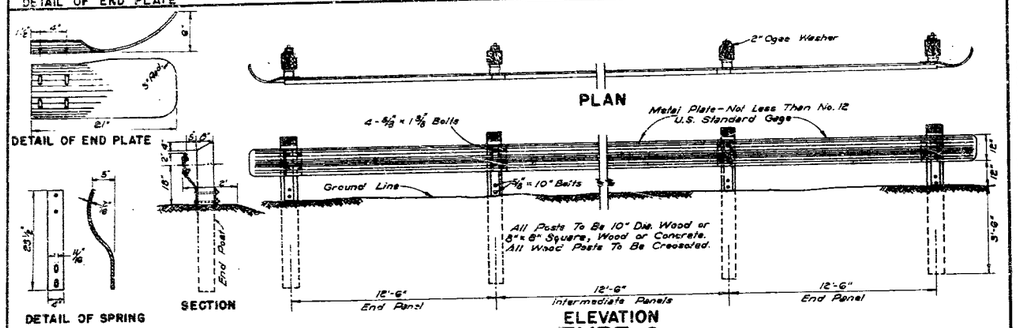
Sheet No. 13 of 14. DUNKLIN COUNTY H-92TR

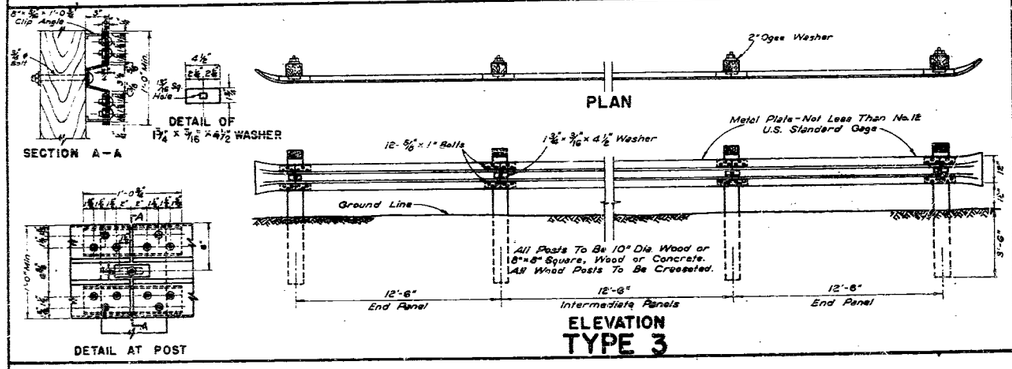
FINISHED

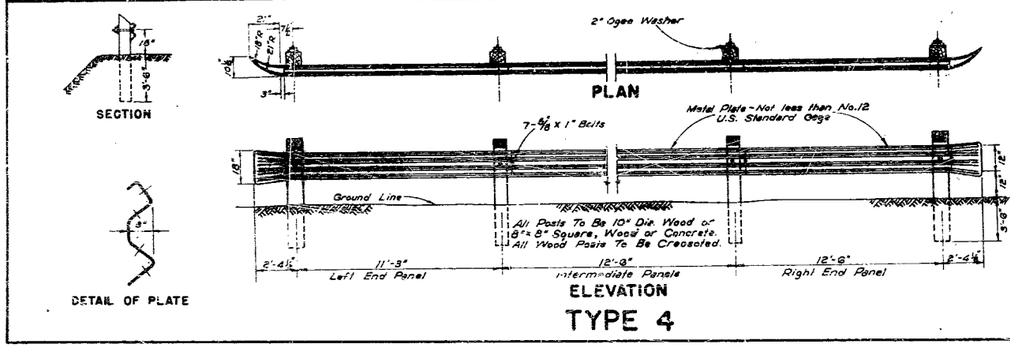
533

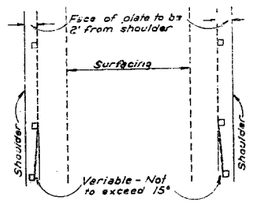
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	ARK.				
JOB NO.					



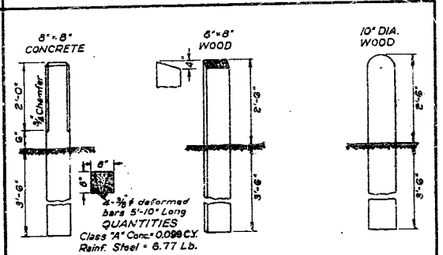






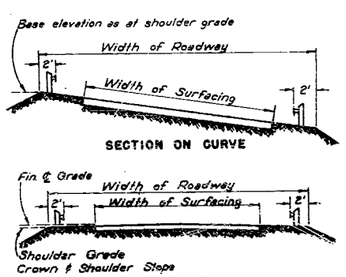


DETAILS SHOWING END PANEL FLARED WHERE CONDITIONS WILL PERMIT ON ALL TYPES GUARD RAIL

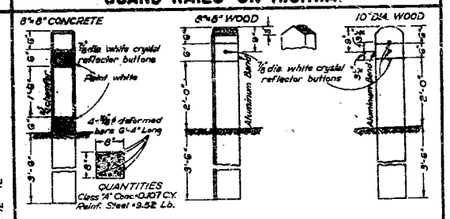


GENERAL NOTES:- Guard Rail Posts to be placed as indicated on plans and shall be either 10" dia. wood or 8"x8" wood or concrete. All wood posts to be treated with creosote in accordance with Section 925.30 of the standard specifications. Holes to be spaced to fit an individual type.

GUARD RAIL POSTS

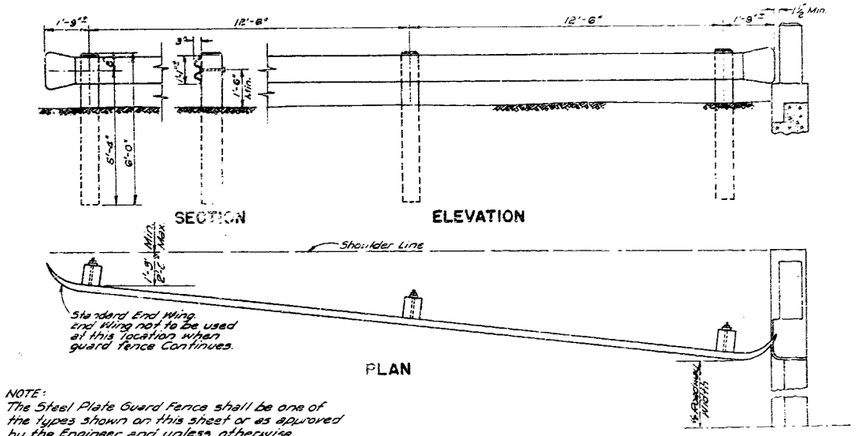


DETAILS SHOWING POSITION OF GUARD RAILS ON HIGHWAY



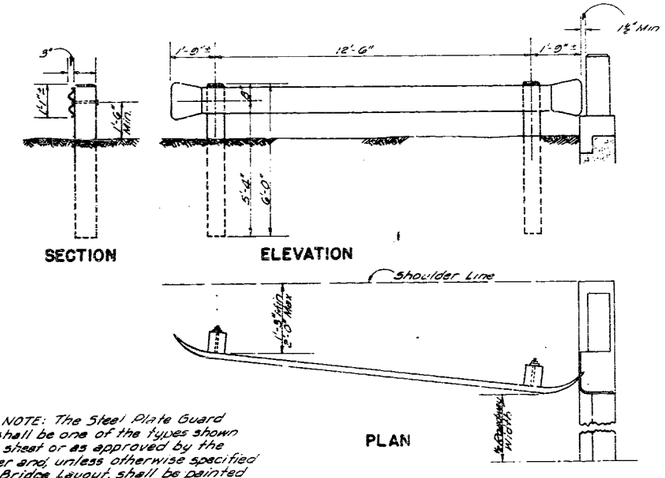
GENERAL NOTES:- Delineator posts of either 10" diameter wood or 8"x8" wood or concrete to be placed as Bridge Markers, Bridge Wing Markers, Culvert or Culvert Wing Markers, on curves or high fills or at locations designated by the Engineer. One mill Finish aluminum band, one side bright, 6" wide and a minimum of 1/32 in thickness to be securely fastened to all wood posts. All wood posts to be treated with creosote in accordance with Section 925.30 of the standard specifications. Place three 3/8 dia. white crystal reflector buttons on one side of Bridge Markers and one button on each side of all other markers.

DELINEATOR POSTS



NOTE:
The Steel Plate Guard Fence shall be one of the types shown on this sheet or as approved by the Engineer and, unless otherwise specified on the Bridge Layout, shall be painted in accordance with the provisions of section 925 of the standard specifications.

DETAILS AT BRIDGE END TWO OR MORE PANELS



NOTE: The Steel Plate Guard Fence shall be one of the types shown on this sheet or as approved by the Engineer and, unless otherwise specified on the Bridge Layout, shall be painted in accordance with the provisions of Section 925 of the Standard Specifications.

DETAILS AT BRIDGE END ONE PANEL.

REVISIONS	
DESCRIPTION	DATE
Revised and Retraced	12-26-58

ARKANSAS STATE HIGHWAY COMMISSION

STEEL PLATE GUARD FENCE

DRWG. NO. GR-6.

Sheet No. 14 of 14. DUNKLIN COUNTY | H-927R

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