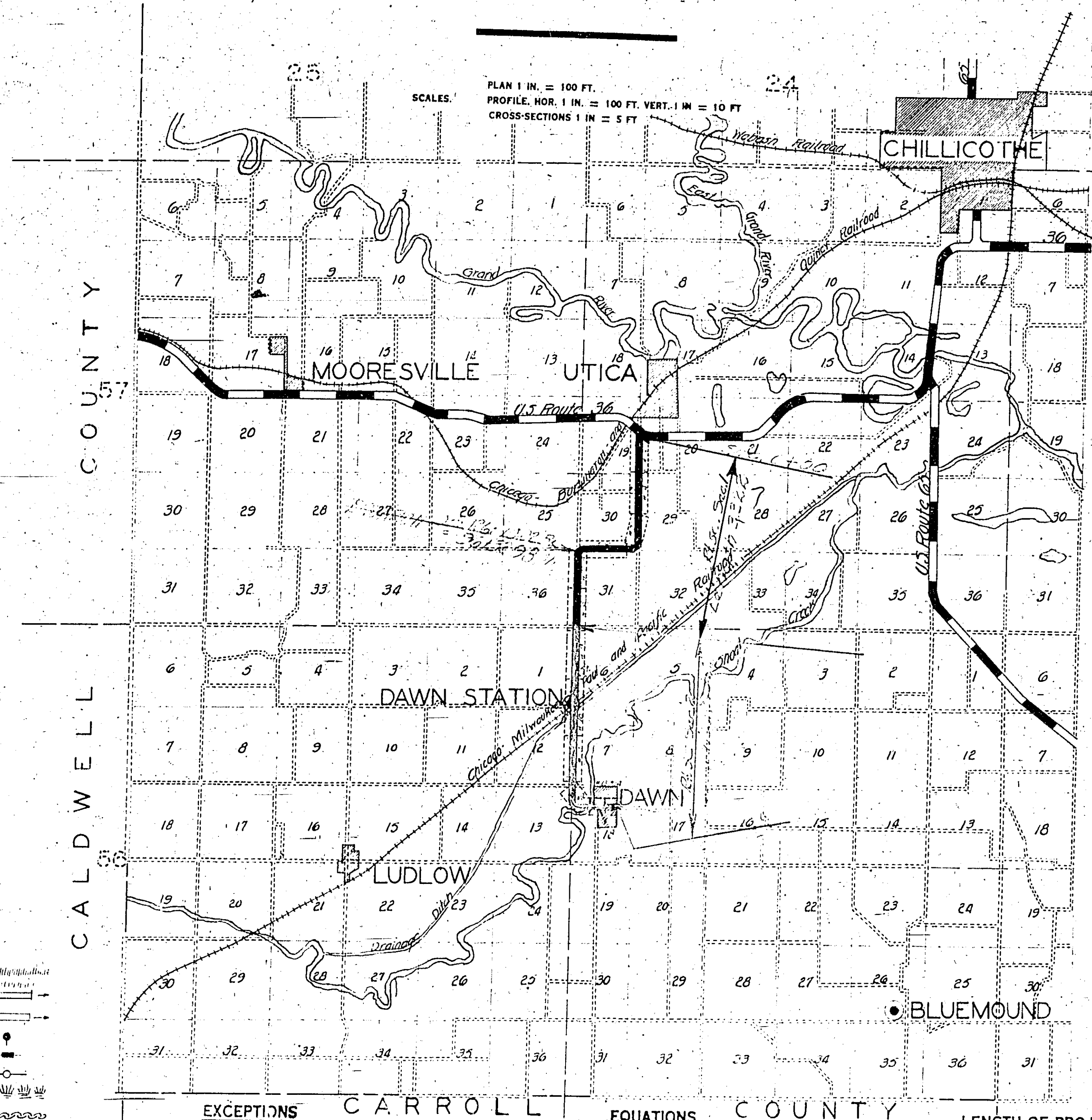


INDEX OF SHEETS

SHEET NO. / TITLE PAGE
 " " 2 TYPICAL CROSS-SECTION OF IMPROVEMENT
 " " 3 PLAN AND PROFILE STA. TO STA. 30

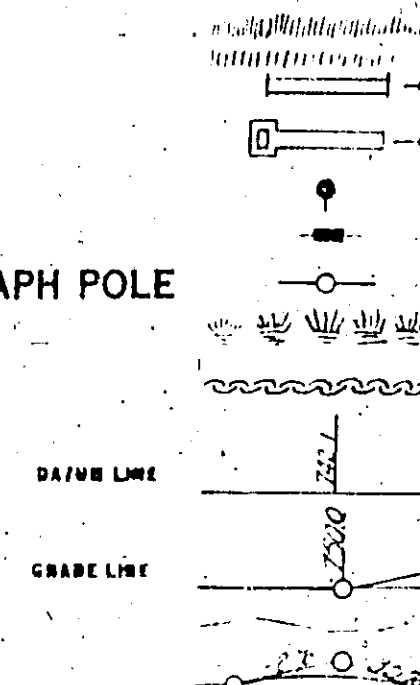
MISSOURI STATE HIGHWAY COMMISSION PLAN AND PROFILE OF PROPOSED SUPPLEMENTARY STATE ROAD LIVINGSTON COUNTY

LIVINGSTON, J.C.



CONVENTIONAL SIGNS

STATE AND NATIONAL LINE	---	LFVEE
COUNTY LINE	---	CULVERTS
CITY, VILLAGE OR BOROUGH	---	DROP INLET
TOWNSHIP LINE	---	TROLLEY POLE
SECTION LINE	---	POWER POLE
GRANT LINE	---	TELEPHONE OR TELEGRAPH POLE
FENCE LINE	---	MARSH
GUARD RAIL	---	HEDGE
UNFENCED PROPERTY	---	
RIGHT OF WAY LINE	---	GROUND ELEVATION
TRAVELED WAY	---	GRADE ELEVATION
RAILROADS	---	SURFACE LINE
RETAINING WALL	---	GRADE LINE
BASE OR SURVEY LINE	---	



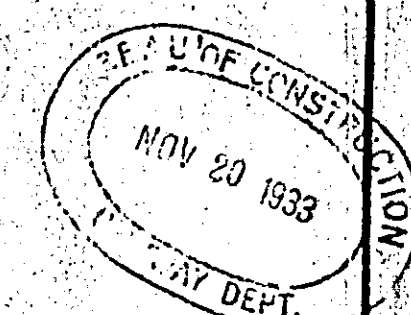
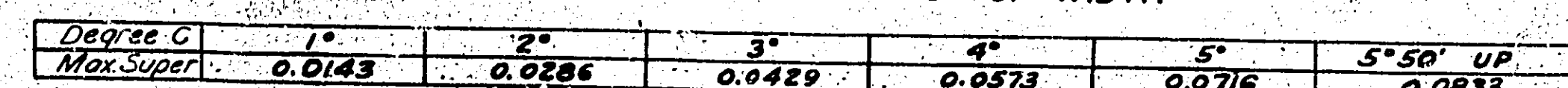
LENGTH OF PROJECT	FT =	MILES
APPARENT LENGTH	11	11
GROSS LENGTH	11	11
NET LENGTH	11	11

SUBMITTED
 CHIEF ENGINEER MO. STATE HIGHWAY COMMISSION
 RECOMMENDED FOR APPROVAL
 DISTRICT ENGINEER - DISTRICT NO. 5
 RECOMMENDED FOR APPROVAL
 CHIEF ENGINEER BUREAU PUBLIC ROADS
 APPROVED
 DIRECTOR BUREAU OF PUBLIC ROADS

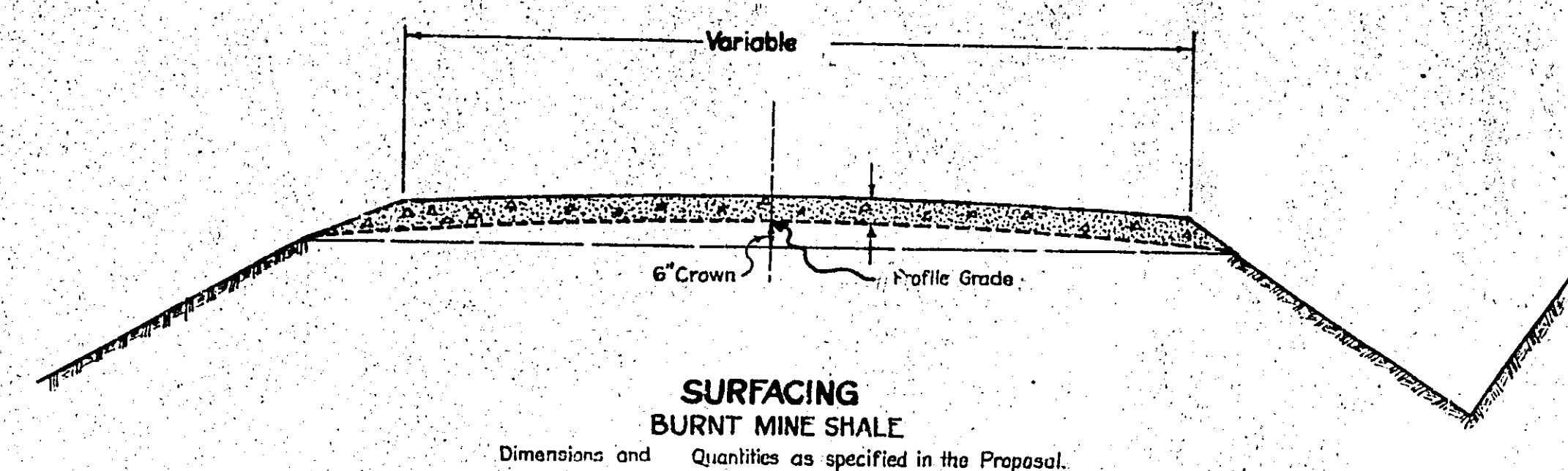
234

S = $0.067 V^2$ V = 35 M.P.H.
R R = Radius

SUPERELEVATION PER FOOT OF WIDTH



MACHINE GRADING



GENERAL NOTES:-

On Curves all gravel shall be dumped and spread from Window on high shoulder. All ditches on curve shall be constructed so as to drain properly. Some of the following are necessary for the Engineer to revise cliff grades during construction in order to provide adequate drainage around curves.

1. Variations in the typical sections as indicated on this sheet See notes on plan and profile sheets and templates as drawn on the Cross-section sheets.

STANDARD SUPPLEMENTARY ROAD
SECTIONS
24 GRADED EARTH SURFACED SECTION
DIV. NO. 2

Name of Road UTICA TO DAWINType of Improvement 24' GRADED EARTH & BRIDGES

MISSOURI STATE HIGHWAY COMMISSION

ESTIMATE SHEET

County of LIVINGSTONLength 2.9139 Miles

FED. ROAD DIST. NO.	STATE PROJECT NO.	FED. AID FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	1933	2-A	69
DIV. NO.	COUNTY	ROUTE	SEC. NO.	
2	LIVINGSTON	S.C.	2	

EXCAVATION

STATION	CLASS	CAST IN	MACHINE GRADING	OVERHAUL
145162			15.38'	
161100				
170100		166.5'		
176100	1734V			
183100		2002'		
185176	1029V			
194161	5139V			810'
202100	4051V			
210100		1463'		
240100		5643'		
270100		6012'		
276100		1163'		
280150	901V			
285100		4.50'		
285100		14.45'		
299145				

Sub TOTALS	12854'	17948'	34.33'	810'
RES. L. & B. CH.	322'			
RES. B. & A. CH.	378'			
Grand TOTALS	13754'	17948'	34.33'	810'

CLEARING & GRUBBING

SHEET #	CLEARING	GRUBBING
3	2	0
4	27	10
5	113	24
6	116	154
7	124	120
8	46	2
9	6	0
TOTAL	434	310
Acres	5.0	3.6

HEDGE PULLING

SHEET #	HEDGE PULLING
4	52.15
7	11.90
8	4.74
TOTAL	68.79

PIPE CULVERTS

STATION	15"	18"	EXCAV.	REMARKS
289141	8	3		Under S. Walk Rt.
289163	8	3		Under S. Walk Lt.
292124	8	3		Under X-Walk Rt.
294110	32	13		
TOTALS	16	40	22	

CULVERT REMOVALS

STATION	SIDE	EXCAV.	REMARKS
145176	4	5	12'x40' CMP
17103	Lt.	3	8'x24' VCP
190140	4	34	11' Conc. span
192130	Rt.	3	12'x20' CMP
253158	4	7	24'x20' CMP
281190	Rt.	23	10'x64' VCP
282107	Lt.	7	10'x23' VCP
294105	4	7	18'x30' CMP
TOTAL		89	

STANDARD T. 20 FE. BRIDGE

STATION	SIDE	PILING	CRED. LUM.	REMARKS
173110	Rt.	60	1870	13'4" SPAN
TOTAL		60	1870	

REINFORCED CONCRETE BOX CULVERTS

STATION	STANDARD	SIZE	LENGTH	CONCRETE	REINF.	EXCAV.	REMARKS
289188	C. 424	6X2	61	2576	2553	98	40' Box Culvert
TOTAL				2576	2553	98	

FARM ENTS. SIDE ROADS, CHANNEL CHANGES, ETC.

STATION	SIDE	STANDARD	SIZE	LENGTH	CONCRETE	REINF.	EXCAV.	REMARKS
146142	Rt.	15"	18"	24	3	3	2	FE. 2' Box Culvert
146147	Lt.				2	3	2	FE.
157106	Lt.	20			13	3	2	FE.
167110	Rt.		22		25	3	2	FE.
168122	Lt.		22		31	3	2	FE.
172151	Rt.			232				CH. CHG.
192108	Rt.		44	8			14	S. Road.
192108	Lt.		44				6	S. Road.
199116	Lt.		24					FE.
235130	Lt.		24		35			FE.
248163	Rt.		24		32			FE.
248163	Lt.		24		34			S. Road.
252194	Rt.		34	5	98			FE.
258113	Rt.		24		37			FE.
268144	Lt.		24		28			FE.
268144	Rt.		24		38			FE.
274173	Lt.		24		31			FE.
275134	Rt.		24		29			FE.
281193	Rt.		50	17	16	4		ST. APPR.
282105	Lt.		24		13			ST. APPR.
289188	Lt.		32	20	22	3		ST. APPR.
293183	Lt.		32	11	15	12		ST. APPR.
296152	Lt.	20		6	61	3		ST. APPR.
297170	Lt.	20		5	5	2		FE.
297170	Rt.	20		13				FE.
298112	Rt.	20		10				FE.
282133	Rt.		8					FE.
TOTALS		80	128	424	322	578	46	

LENGTH OF PROJECT

End of Project	Station	299145
Beginning of Project	Station	145162
Apparent Length	Feet	15383
Equations and Exceptions:		
1911726	2.6	17110
Net Length of Project	Feet	15385.6
	Miles	2.9139

CONTINGENT ITEMS

DESCRIPTION	FEET	FEET
CUTTING OUTLET DITCH LT. STA. 189117	79.68	
HAULING & PLACING STONE 172134	8.71	
HAULING & PLACING STONE 172150	38.01	
GRAVELLED STONE CULV. INLET LT. STA. 189188	50.19	
CLEAN OUT UNDER BRIDGE STA. 188180	4.70	
DROP INLET RT. STA. 289188	8.60	
STONE DITCH CHECK LT. STA. 292140	6.33	
LEFT OVER 15" C.M. PIPE	28	

SUMMARY

ITEM NO.	DESCRIPTION	UNIT	TOTAL UNITS	NO. UNITS
1-A	CLEARING	ACRE	5.0	
1-B	GRUBBING	ACRE	3.6	
1-C	HEDGE PULLING	100 FT.	68.79	
1-D	CLASS 'A' EXCAVATION	CU. YD.	13754	
1-E	CULVERT EXCAVATION	CU. YD.	255	
1-F	OVERHAUL	STA. YD.	810	
1-G	MACHINE GRADING	STATION	3433	
1-H	CAST-IN EXCAVATION	CU. YD.	17948	
1-I	CLASS 'B' CONCRETE MASONRY	CU. YD.	2576	
1-J	15" C.M. PIPE CULVERTS	LINE FT.	96	
1-K	18" C.M. PIPE CULVERTS	LINE FT.	168	
1-L	24" C.M. PIPE CULVERTS	LINE FT.	424	
1-M	RE-INE. FOR CONCRETE STRUCTURES	LBS.	2553	
1-N	CRESOTED PILES IN PLACE	LINE FT.	60	
1-O	CRESOTED TIMBER	F.B.M.	1870	
2-35	BRIDGE AT STA. 185178	DWG. NO.	S-637	
2-36	121' I.B. SPAN ON CRED. PILE BENTS			
1-G	CLASS 'I' BRIDGE EXCAVATION	CU. YD.	48	
1-H	CLASS 'X' CONCRETE MASONRY	CU. YD.	108	
1-I	FABR. STRUCTURAL STEEL	LBS.	5780	
1-J	RE-INE. FOR CONCRETE STRUCTURES	LBS.	2810	
1-K	CRESOTED PILES IN PLACE	LINE FT.	248	
1-L	CRESOTED PILE CUT OFFS	LINE FT.	14	
1-M	CRESOTED TIMBER	F.B.M.	1580	
1-N	REMOVAL OF OLD BRIDGE	LUMP SUM	1	
2-35	BRIDGE AT STA. 193199	DWG. NO.	S-639	
2-36	I.B. & I-100' LOW TRUSS ON CRED. PILE BENTS			
1-G	CLASS 'I' BRIDGE EXCAVATION	CU. YD.	75	
1-H	FABR. STRUCT. STEEL (TRUSS SPAN)	LBS.	9160	
1-I	FABR. STRUCT. STEEL (I.B. SPAN)	LBS.	29540	
1-J	STEEL CASTINGS	LBS.	970	
1-K	TIMBER TEST PILES IN PLACE	LINE FT.	53	
1-L	CRESOTED PILES IN PLACE	LINE FT.	1491	
1-M	CRESOTED PILE CUT OFFS	LINE FT.	201	
1-N	CRESOTED TIMBER	F.B.M.	26860	
1-O	REMOVAL OF OLD BRIDGE	LUMP SUM	1	
2-37	BRIDGE AT STA. 277163	DWG. NO.	Z-295	
2-38	1-49' & 1-47' I.B. SPANS			
1-G	CLASS 'I' BRIDGE EXCAVATION	CU. YD.	92	
1-H	CLASS '2' BRIDGE EXCAVATION	CU. YD.	455	
1-I	CLASS 'B' CONCRETE MASONRY	CU. YD.	443	
1-J	CLASS 'X' CONCRETE MASONRY	CU. YD.	837	
1-K	FABR. STRUCTURAL STEEL	LBS.	67230	
1-L	RE-INE. FOR CONCRETE STRUCTURES	LBS.	27700	
1-M	CRESOTED PILES IN PLACE	LINE FT.	311	
1-N	CRESOTED PILE CUT OFFS	LINE FT.	17	
1-O	CRESOTED TIMBER	F.B.M.	1392	
1-P	REMOVAL OF OLD BRIDGE	LUMP SUM	1	
CO. #2	CUTTING OUTLET DITCH STA. 189117	FEET	79.68	
CO. #2	HAULING AND PLACING STONE - 172134	FEET	8.71	
CO. #2	HAULING AND PLACING STONE - 172150	FEET	38.01	
CO. #4	GRAVELLED STONE CULV. INLET LT. STA. 189188	FEET	50.19	
CO. #5	CLEAN OUT UNDER BRIDGE	FEET	4.70	
CO. #5	DROP INLET RT. STA. 289188	FEET	8.60	
CO. #5	STONE DITCH CHECK	FEET	6.33	
CO. #5	LEFT OVER 15" C.M. PIPE	LINE FT.	28	

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PLAN	DATE
NOTED	BY
NOTE BOOK	DATE
SCALE	BY

DATE	BY
NOTED	DATE
NOTE BOOK	BY
SCALE	DATE

S.W. 1/4 Sec. 31 T57N. R24W.

IRA HEDRICK.

LIVINGSTON S.C.

A.P. HAWKINS.

Sta. 145+00
Cross Section
20' 10" P.C.

CHARLES D. AUSTIN

120 125 130 135 140 145 150

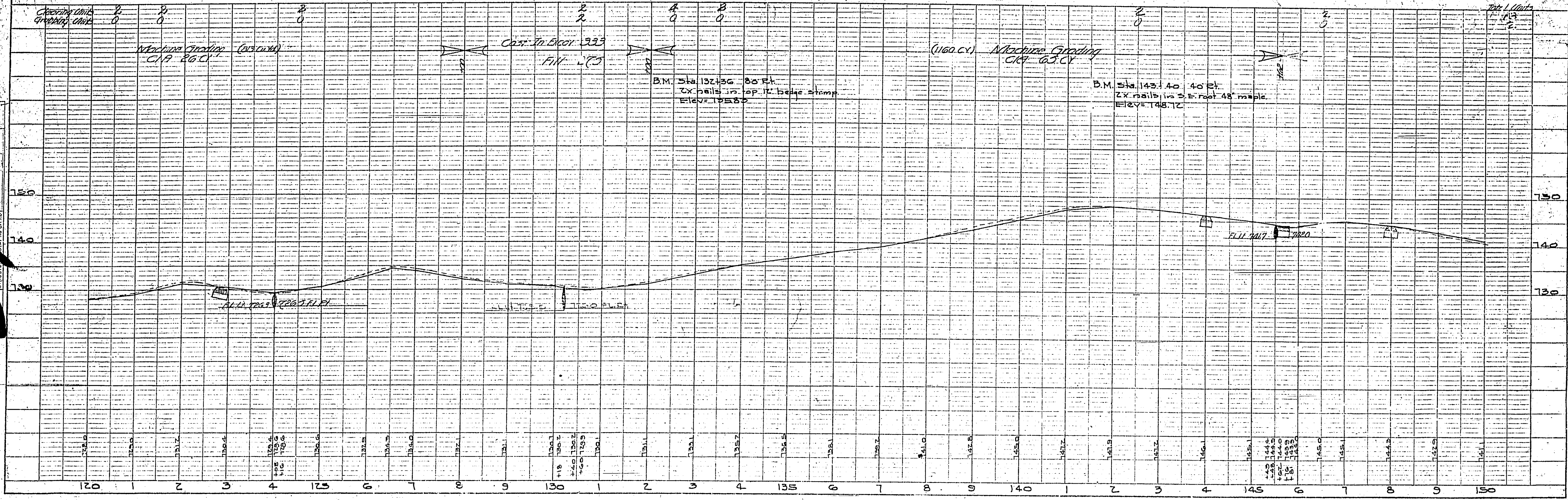
Station	Side	Cut Exc
120+00	E	7
130+10	E	8
145+00	E	8
145+16	E	7

JOHN CRAMER Sta 145+68 End Pt. Sec. 1
Begin Pt. Sec. 2

HEDGE PULLING
Station to Station Side (100 Ft.)
119105 145145 Lt. 26.40

STATION	SIZE	FROM	TO	REMARKS
121+00	18"	34'	15'	Open Outlet
135+00	30"	104'	104'	12'
145+00	18"	145'	145'	Open Outlet

S.E. 1/4 Sec. 36, T57N. R25W.



S. E 1/4 Sec. 6, T56N, R24W

FED. ROAD DIST. NO.	STATE	SEC. NO.	SECTION	NEED
5	MO.			5
OWNER	COUNTY			APR.
2				
LIVINGSTON				S.C. 2

HERBERT CRAMER

PORT BROWN.
(Chillicothe)

Sta 172+34
30 I E Coll. Bridge
Use in Place

Sta 173+10 Const
Form Ent. E.
Const Sta T. 20,
13'-4" Span Wood Bridge
6 Piles 10' Long.

ST. JOSEPH LIFE INSURANCE COMPANY

[illegible]

HEDGE PULLING		
Station	to Station	Side
187+00	171+00	2000
187+30	176+15	515
193+20	167+05	300
171+65	172+30	ET
Total		3255 Lin. Ft.

CHARLES D. AUSTIN

N.Y. Sec. 1, T56N, R25W

Sta 161+50 to 166+00
Special Ditch Rt

Sta. 166+00 to 170+00
Prairie Section Used

Sta 170+00 to 176+00
Special Ditch 2' x 4'

S.W. $\frac{1}{4}$ Sec. 1 T56N. R25W

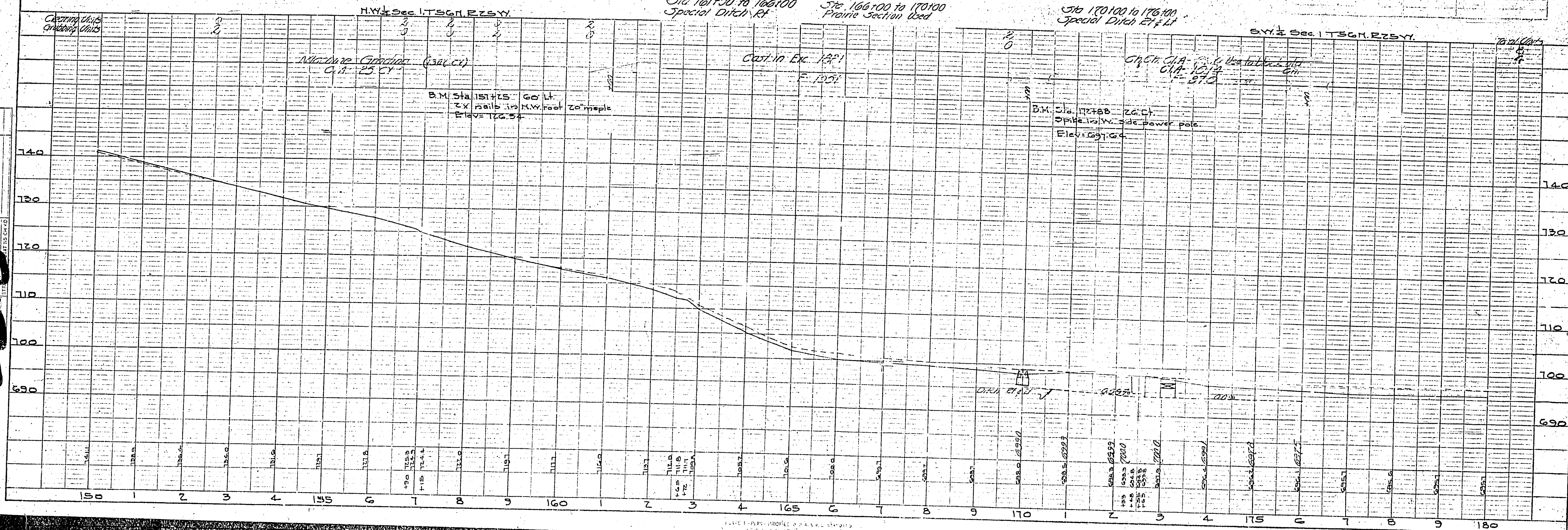
Machine Grading (350 cr)
C.A. 25 CY

Cast in Exc. 132?
F. 1051

Chet. J.A. - the table is old
Chet. J.A. - 10/17
Chet. J.A. - 10/17

B.M.	Sta. 151+25	60' Lt.	
	2x nails in N.W. foot	20" maple	
	Elev = 126.34		

B.M.	3/2. 172788	ZG Ct.
	Spikes in W. side power pole	
	Elev = 6997.66	



SW 1/4 Sec. 6, T56N, R24W

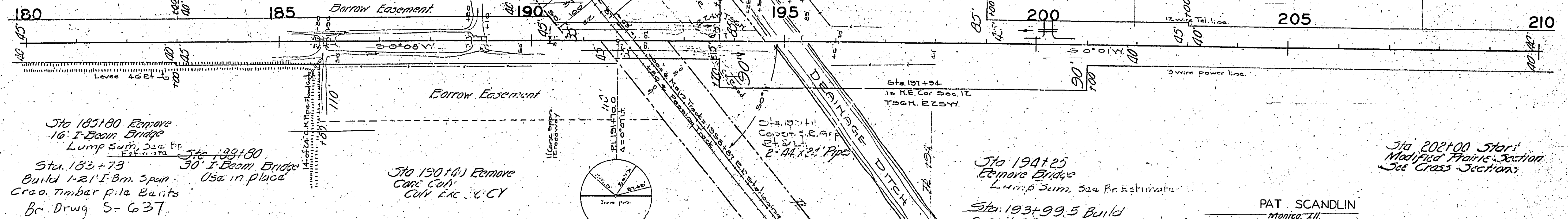
DAWN STATION

NW 1/4 Sec. 7, T56N, R24W

PORT BROWN

S. SHERBECK, Estate.
Bedford, Iowa.

MRS. JAM. SHEETS



ST. JOSEPH LIFE INSURANCE COMPANY

PAT SCANDLIN
Monica, Ill.

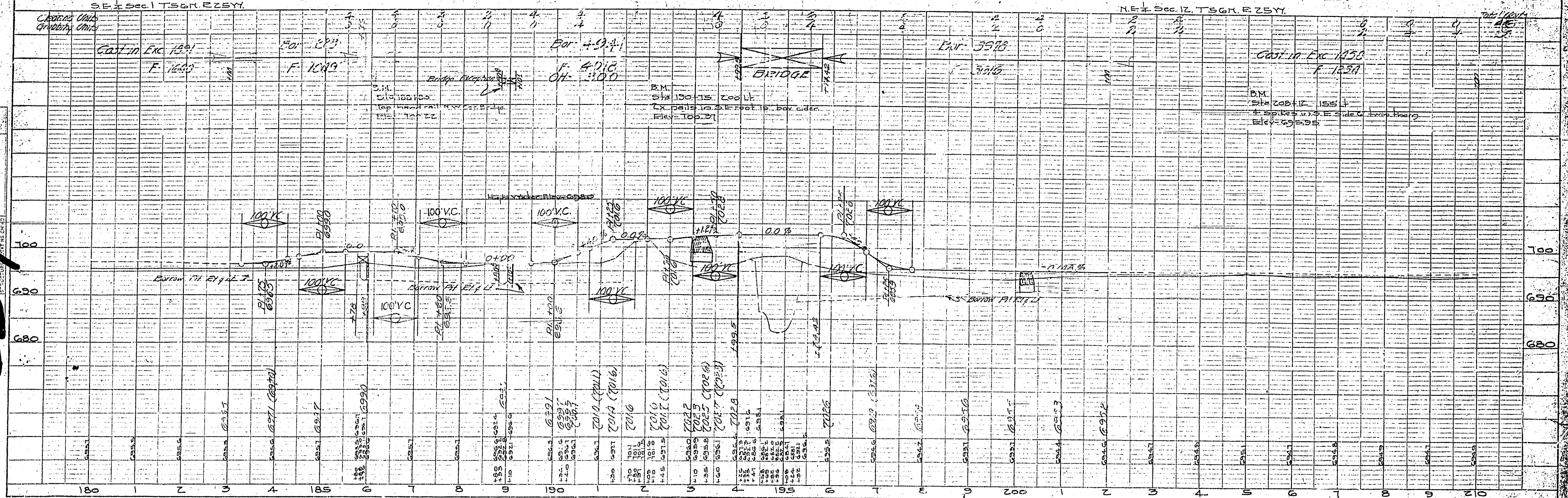
DRAINAGE STRUCTURES					REMARKS
STATION	SPAN	TYPE	WIDTH	LENGTH	
185+80	16	I-Beam			Bridge
190+40	24	I-Beam			Bridge

Sta 176+00 to 183+00
Prairie Section Used

Sta 183+00 to 191+70
Borrow Pit Etc. Lt.

Sta 195+26 to 202+00
Borrow Pit Etc. Lt.

NE 1/4 Sec. 12, T56N, R25W



239

S.W. $\frac{1}{4}$ Sec. 7 T56N, R24W.

LOCAL ROAD DIST. NO.	ROUTE	REG. AND CTR. NO.	LOCAL STAR	SHEET NO.	TOTAL SHEETS
5	MD			11	6
DIVISION 36		ROUTE		ACRE	SUG.
LIVINGSTON				5.0	7

J. A. JENKINS

510 225,00 Const
Form End Lt
24' of 24" Pipe

007822

210

215

220

225

230

235

240

16 wire tel. line

3 Wire power line.

PAT SCANDLIN.

[illegible]

N.E. $\frac{1}{4}$ Sec. 12, T56N, R25W

S. E. 1/4 Sec. 12, T. 56N. R. 25W.

Clearing Unit	
Grubbing Unit	

Tate LUBLEY		
Jill		
James		

Cast In Excavation ²³ 1955 ²³ 1955
Fill ²³ 1955 ²³ 1955

EM.
010.219130 30.21
Spike in power p21
Elev- 632.10

BM Sta. 232 + 00 Port.
Spike in power pole
Elev. 756.38

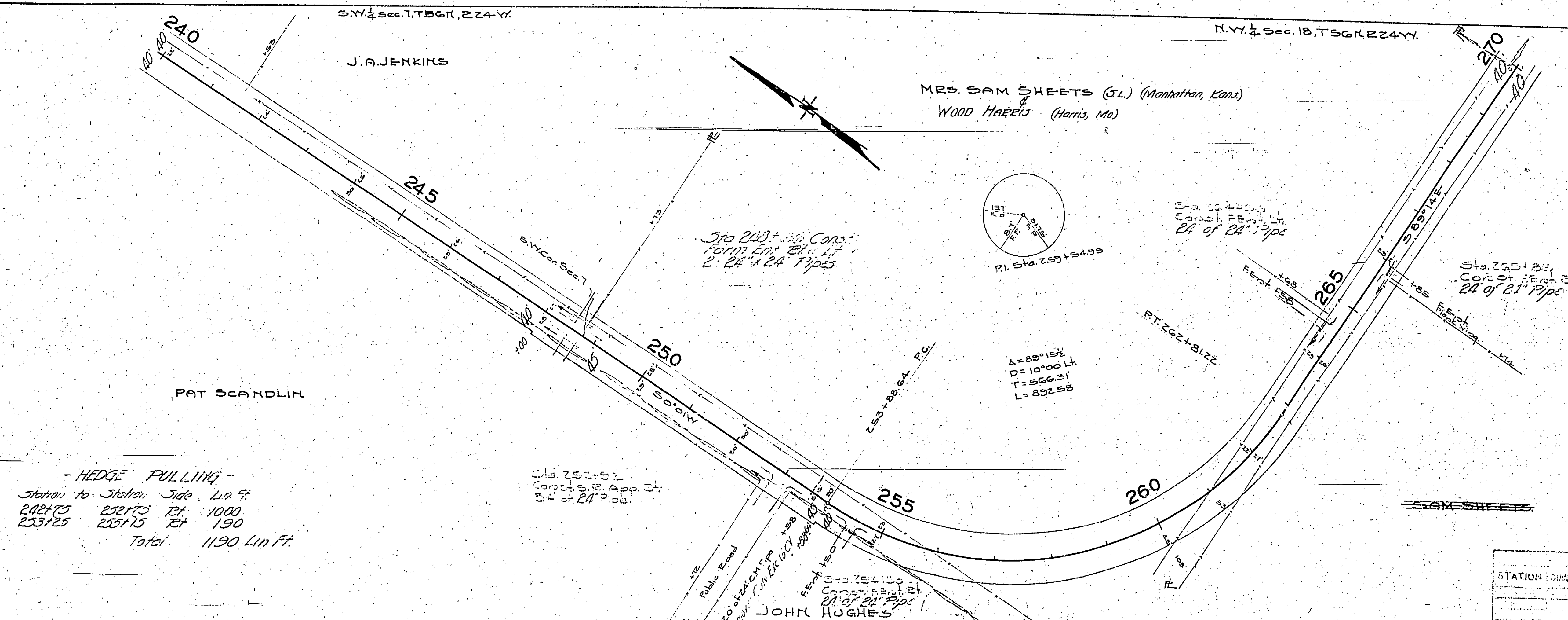
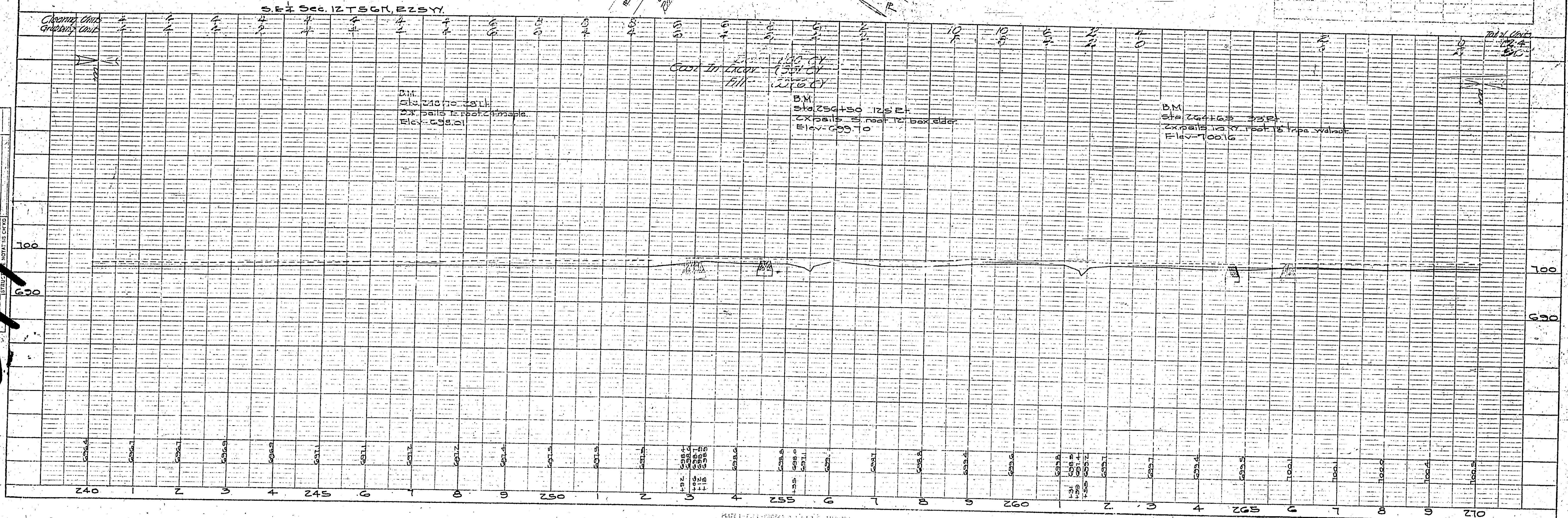
PLAN	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
NO. 4-54-5	ALIGNMENT CHECKED		
	RT. OF WAY CHECKED		

PROCESSED	17	BY	DATE
APPROVED	18		
RECEIVED	19		
RECEIVED	20		
RECEIVED	21		
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RECEIVED	99		
RECEIVED	100		

240

PLATE 1 - PLIN - PROFILE 2.0 1.2 1.1 1.0 0.9 0.8 0.7 0.6 0.5 0.4 0.3 0.2 0.1 0.0

FED. ROAD DIST. NO.	STATE	FED. AID	SECTION	ROUTE	TOTAL
b	MO			12	0161
DIVISION	COUNTY			ROUTE	SEC.
2	LIVINGSTON			50	2

[illegible]

2A1

N.W. 1/4 SEC. 18, T.36N, R.24W

N.E. 1/4 SEC. 18, T.36N, R.24W

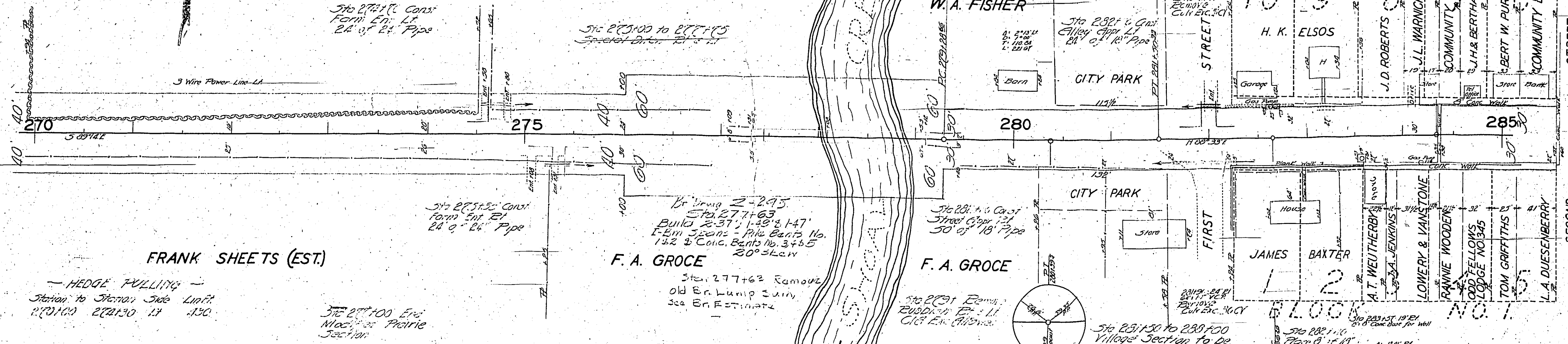
DAWN

CITY LOTS 66' WIDE X 132' LONG

GARFIELD HUGHES

BLOCK NO. 8

DATE	1/22
BY	W. A. FISHER
REVIEWED	W. A. FISHER
APPROVED	W. A. FISHER
NOTED	W. A. FISHER
REMARKS	ALL OF WAY CHECKED

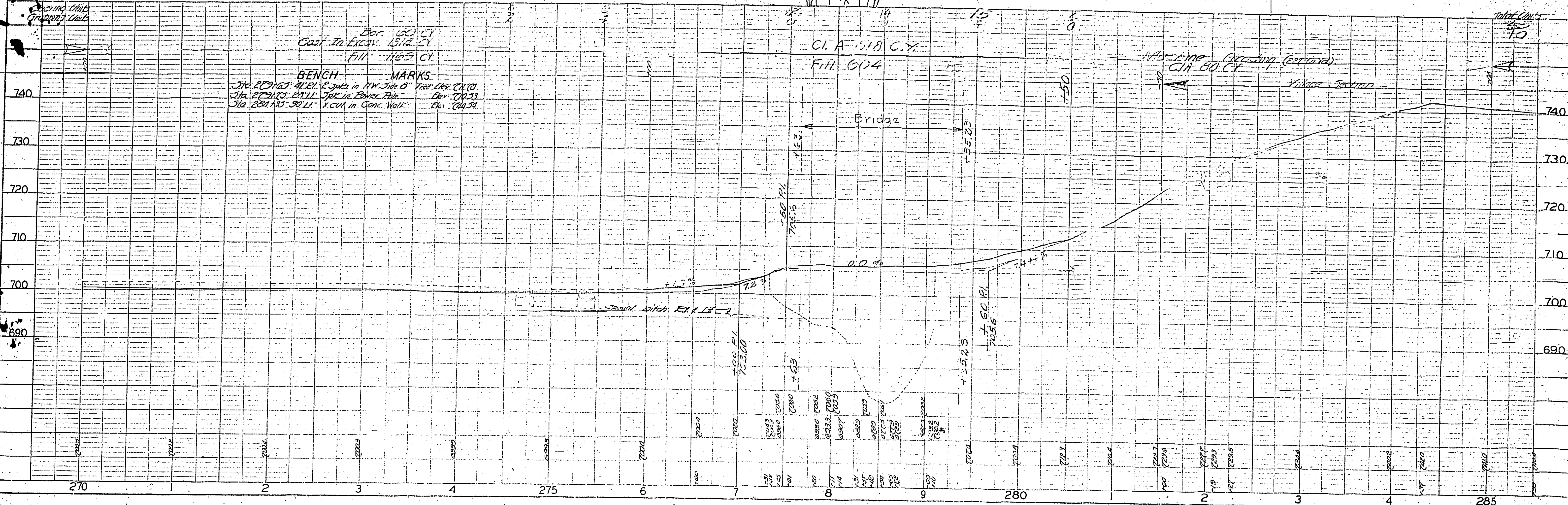


FRANK SHEETS (EST.)

HEDGE PULLING
Station to Station Side Liner
270+00 272+00 17 150

Sta 277+00 En. L. Machine Section

HOR. SCALE 1" = 50'



242

242

CITY LOTS 66' WIDE BY 132' LONG

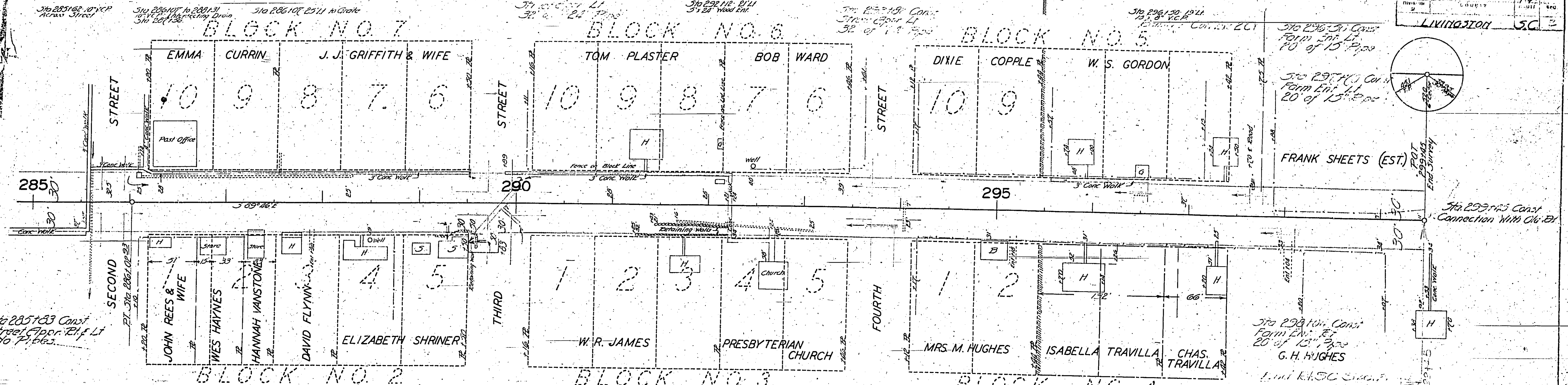
NE 1/4 SEC. 18, T56N, R24W.

DAWN

ORIGINAL TOWN DICE'S ADD.

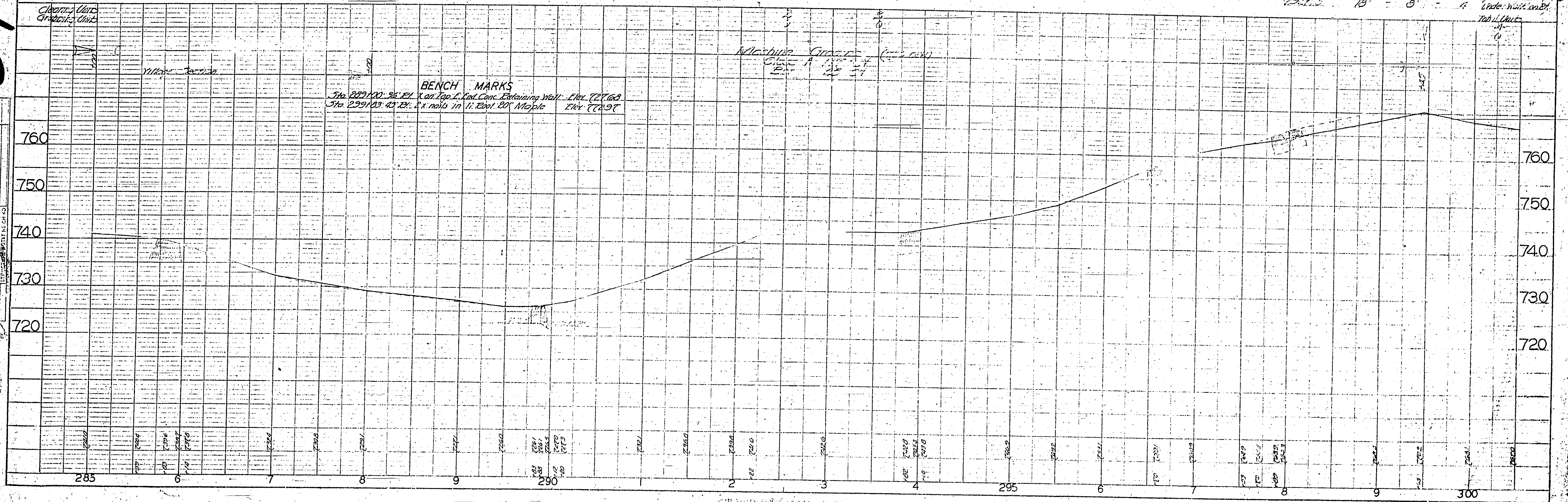
PLAT	DIST.	STATE	FILE NO.	DATE	REMARKS
5	1	MO	14	1914	
5	1	MO	14	1914	

LIVINGSTON 50



HOR. SCALE 1"=50'

BENCH MARKS
Sta 229+10.36 EL. Kan Top of End Conc. Retaining Wall. Elev. 727.68
Sta 229+10.43 EL. 2x nails in 1" Red 20" Maple Elev. 728.97



STATION	15'	30'	45'	60'	75'	90'	105'	120'	135'	150'	165'	180'	195'	210'	225'	240'	255'	270'	285'	300'
ELEVATION	720.00	720.00	720.00	720.00	720.00	720.00	720.00	720.00	720.00	720.00	720.00	720.00	720.00	720.00	720.00	720.00	720.00	720.00	720.00	720.00

243

200

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FINANCIAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		1933	54	6
DIVISION 2	COUNTY			ROUTE	SECTION
Livingston				5C	2

FILE DATA

Date	Age	Sex	Length	Wing	Tail	Cut-off	Bill in	Bill	Tail	Beak
			mm	mm	mm		mm	mm	mm	mm
6-2-33	1	1	20	35	20	10	1	1	12	11
"	2	1	30	35	26	0	1	8	13	14
"	3	1	35	35	26	0	2	34	16	12
"	4	1	35	35	26	0	1	11	14	25
"	5	1	35	35	26	0	1	15	12	21
"	6	1	20	35	22	0	1	10	12	11
6-1-33	1	2	35	35	36	0	2	33	16	14
"	2	2	35	35	36	0	2	33	15	12
"	3	2	35	35	35	11	1	6	34	5
"	4	2	35	34	34	8	0	7	34	11
Grand Total			380	380	328	20	14	211	104	104

FINAL PLANS

[illegible]

PLAN

* - 3.0 for Shaping

Allow 1398

Bent No. 2
No Excavations

Abut. No. 1
No Excavation

About No. 5

683.5 Orig. Ground
681.0

680.1 Eric Emerson

Bent No. 4

CLASS 1 $2(6.0 \times 6.0 \times 0.5) = 13$

CLASS 2 2 (60x60x70) = 18.7

CLASS 1 EXCAVATION

CLASS 2 = 2(10,1x60x60) = 269

EXCAVATION

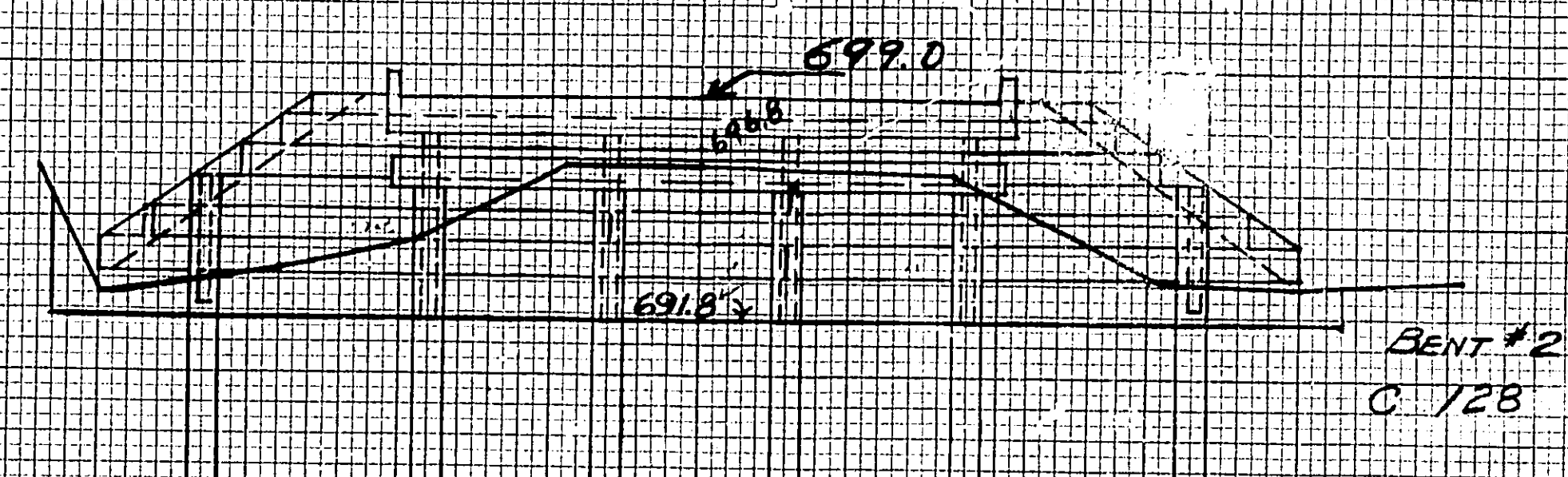
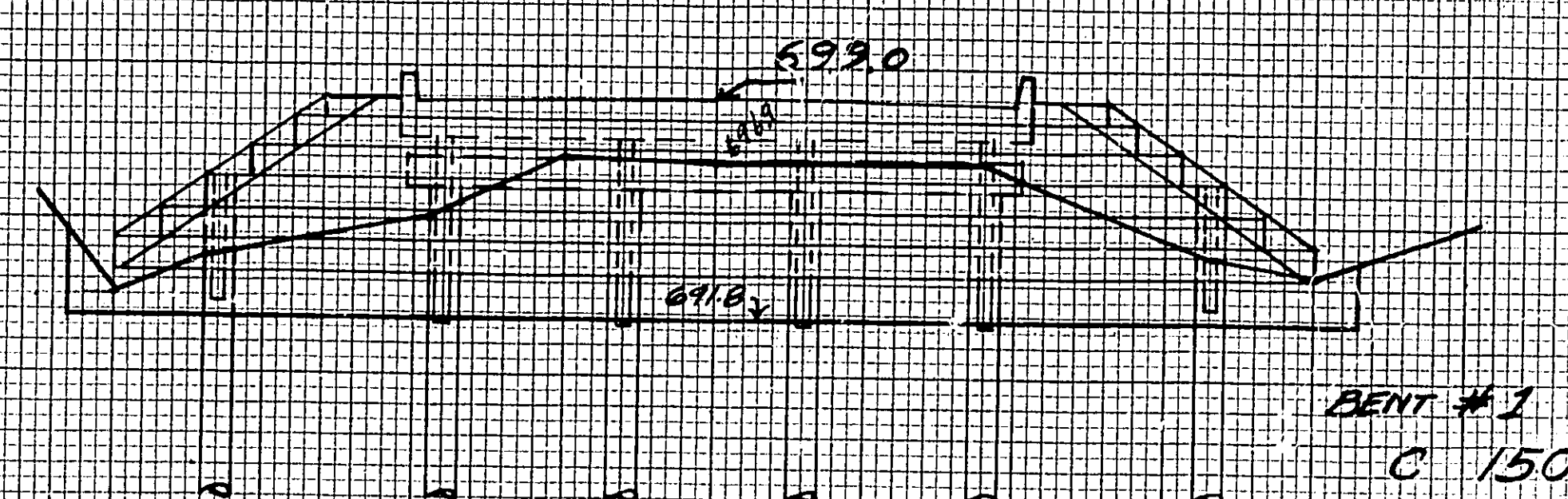
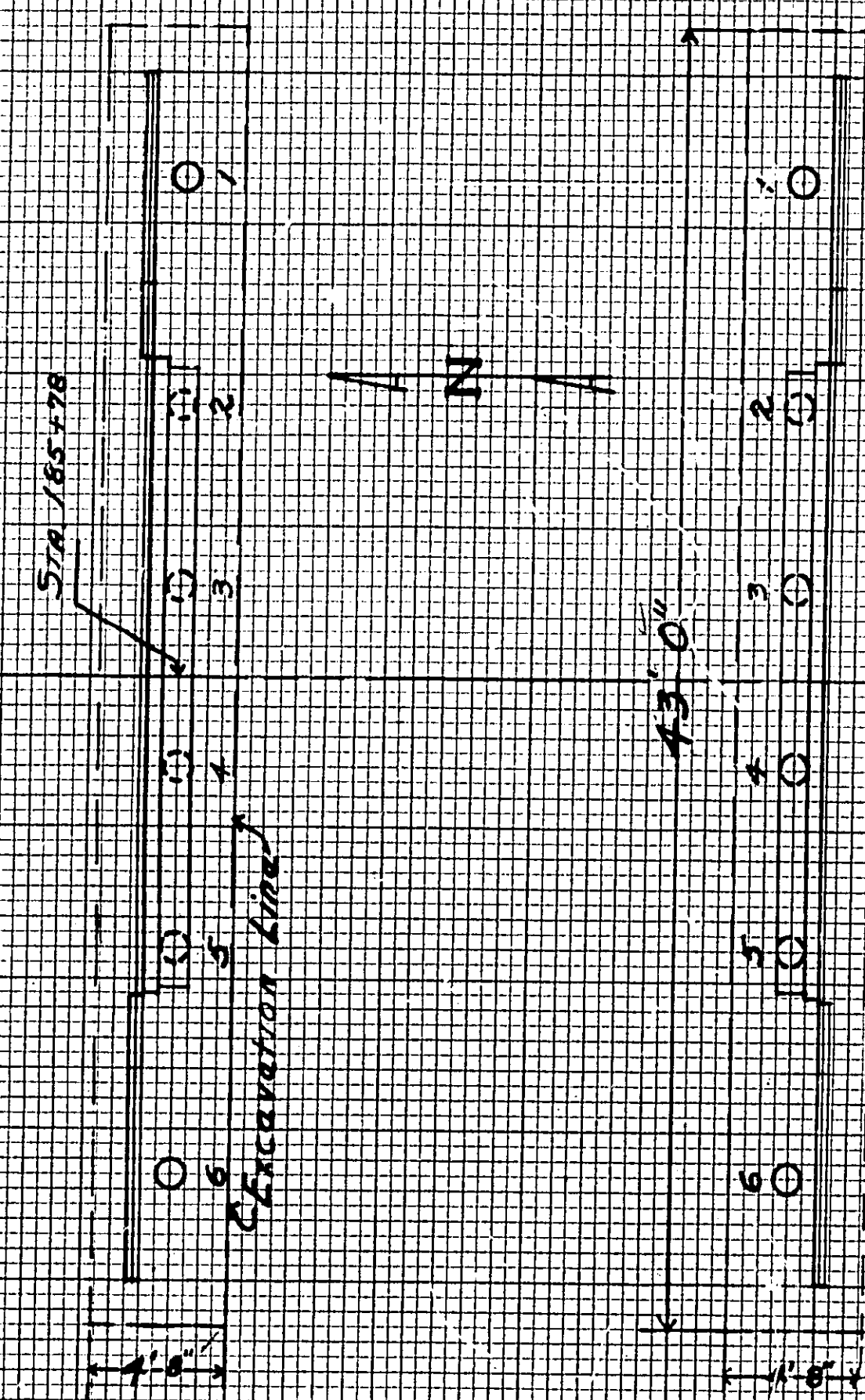
	CUSTOM	QUANTITY
Part No. 1	NONE	CLASS 1 CLASS 2
Part No. 2	NONE	
Part No. 3	SEE	
Part No. 4	APPROVE	0 26.9
Part No. 5	SEE	
Part No. 6	APPROVE	13 18.7
Part No. 7	SEE	
Part No. 8	APPROVE	90.9
Grand Total	98.2	45.6
Allowance	9.2	45.5

BRIDGE EXCAVATION & PILE DATA
BRIDGE OVER SHOAL CREEK
Route 5C Sec. 2 Sta. 277+63
LIVINGSTON COUNTY

To Accompany C.O. No.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		1933	55	69
DIVISION	COUNTY			ROUTE	SECTION
2	LIVINGSTON			SC.	2

FINAL PLANS



PILE DATA										
Date	Pile No.	Pile Type	Length (ft)	Capacity (kips)	Capacity (kips)	Capacity (kips)	Capacity (kips)	Capacity (kips)	Capacity (kips)	Bearing
5-27-33	1	1	18	10	10	10	10	10	10	W/1000
	2	1	18	10	10	10	10	10	10	14
	3	1	18	10	10	10	10	10	10	15
5-26-33	4	1	18	10	10	10	10	10	10	15
	5	1	18	10	10	10	10	10	10	15
	6	1	18	10	10	10	10	10	10	W/1000
5-22-33	7	1	18	10	10	10	10	10	10	15
	8	1	18	10	10	10	10	10	10	15
	9	1	18	10	10	10	10	10	10	15
	10	1	18	10	10	10	10	10	10	15
	11	1	18	10	10	10	10	10	10	15
	12	1	18	10	10	10	10	10	10	15
	13	1	18	10	10	10	10	10	10	15
	14	1	18	10	10	10	10	10	10	15
	15	1	18	10	10	10	10	10	10	15
	16	1	18	10	10	10	10	10	10	15
	17	1	18	10	10	10	10	10	10	15
	18	1	18	10	10	10	10	10	10	15
	19	1	18	10	10	10	10	10	10	15
	20	1	18	10	10	10	10	10	10	15
	21	1	18	10	10	10	10	10	10	15
	22	1	18	10	10	10	10	10	10	15
	23	1	18	10	10	10	10	10	10	15
	24	1	18	10	10	10	10	10	10	15
	25	1	18	10	10	10	10	10	10	15
	26	1	18	10	10	10	10	10	10	15
	27	1	18	10	10	10	10	10	10	15
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	155	1	18	10	10	10	10	10	10	15
	156	1	18	10	10	10	10	10	10	15
	157	1	18	10	10	10	10	10	10	15
	158	1	18	10	10	10	10	10	10	15
	159	1	18							

EXCAVATION		Cu Yds
Bent #1	$\frac{150 \times 4.67}{27} =$	25.9
Bent #2	$\frac{128 \times 4.67}{27} =$	22.1
Grand Total		48.0

TIMBER RILL				
Piece	No. Pcs	Size	Length	F.B.M.
Bracking PANA	2	2" x 11"	23' 0"	95.0
"	2	"	17' 0"	68.0
"	2	"	21' 0"	84.0
"	2	"	15' 6"	62.7
"	2	"	20' 0"	80.0
"	2	"	18' 6"	75.3
"	2	"	12' 6"	51.0
"	2	"	17' 0"	68.0
Shoulders	4	2" x 8"	21' 0"	75.0
ROCK SUPPORT	2	2" x 12"	10' 6"	76.0
BRK PIA	4	6" x 8"	6' 0"	144.0
"	4	6" x 6"	4' 0"	48.0
Pila Cap	2	12" x 14"	20' 6"	99.2
Back Support Cap	2	6" x 8"	21' 0"	76.0
Grand Total				1579.0
		Allow		1580.0

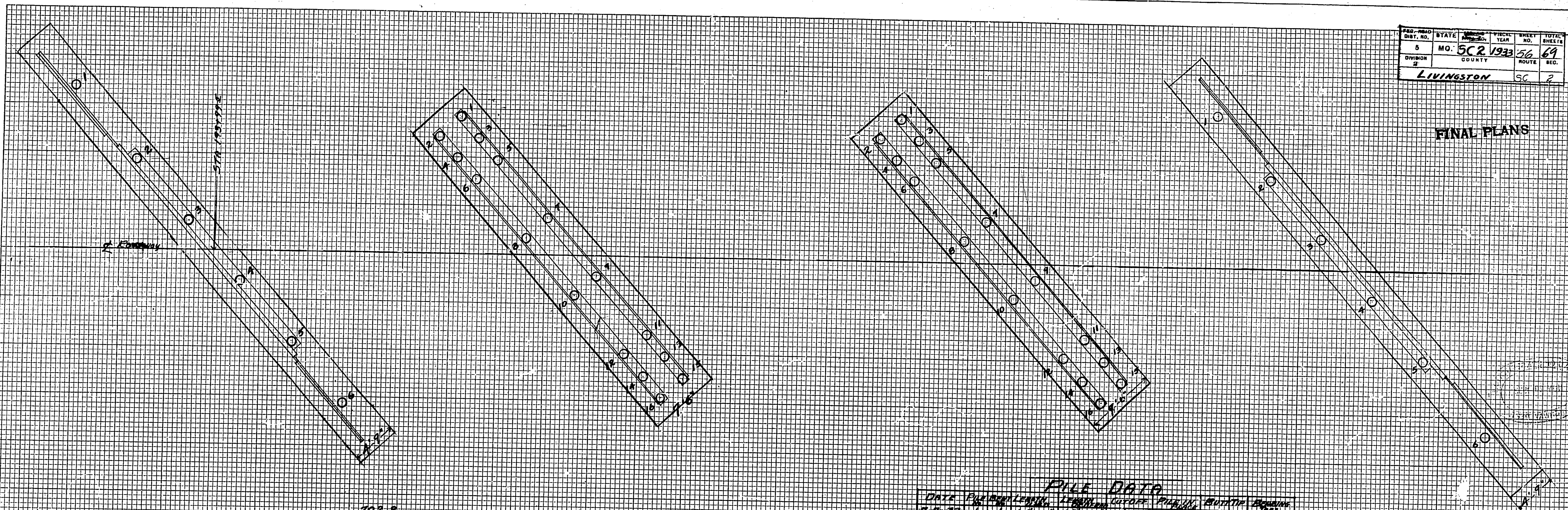
144.0 = 144' board feet
 48.0 = cutting loss = 1/2 shape

SKETCH
SHOWING

EXCAVATION, TIMBER & PILE DATA
For
BRIDGE OVER DRAINAGE DITCH
STA 185+78 ROUTE 5 C. SEC 2
LIVINGSTON COUNTY

PROJ. NO.	STATE	YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	56	56	69
DIVISION	COUNTY	ROUTE	REG.	
2	LIVINGSTON	56	2	

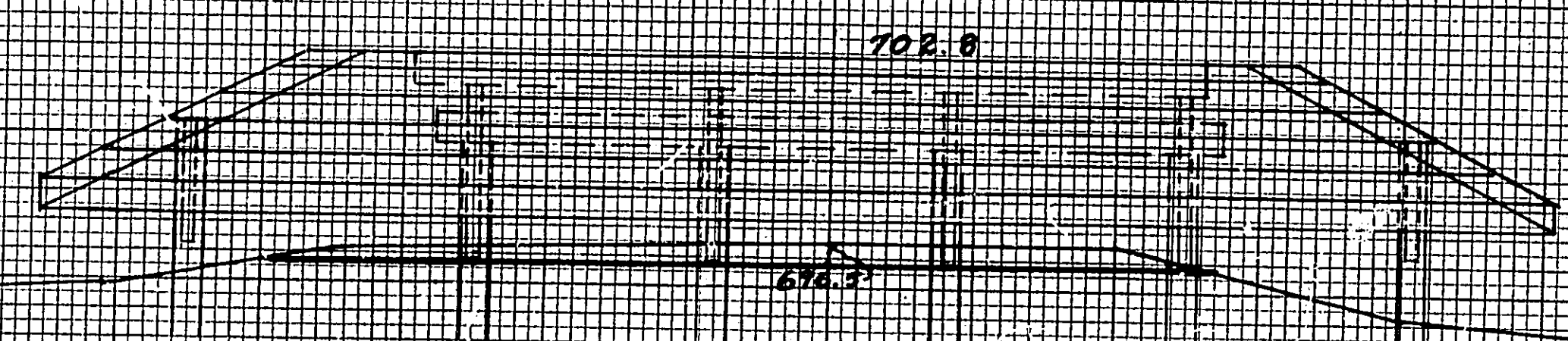
FINAL PLANS



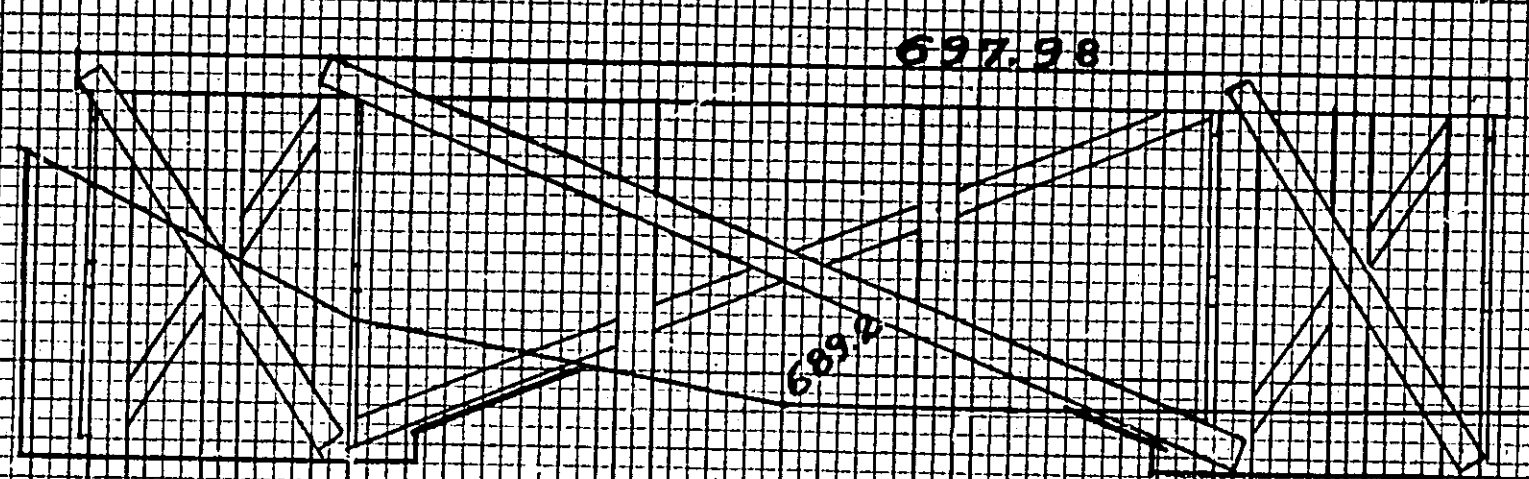
DATE	BY	CHKD.
SURVEY		
NOTE BOOK		
CHECKED		

DATE	BY	CHKD.
SURVEY		
NOTE BOOK		
CHECKED		

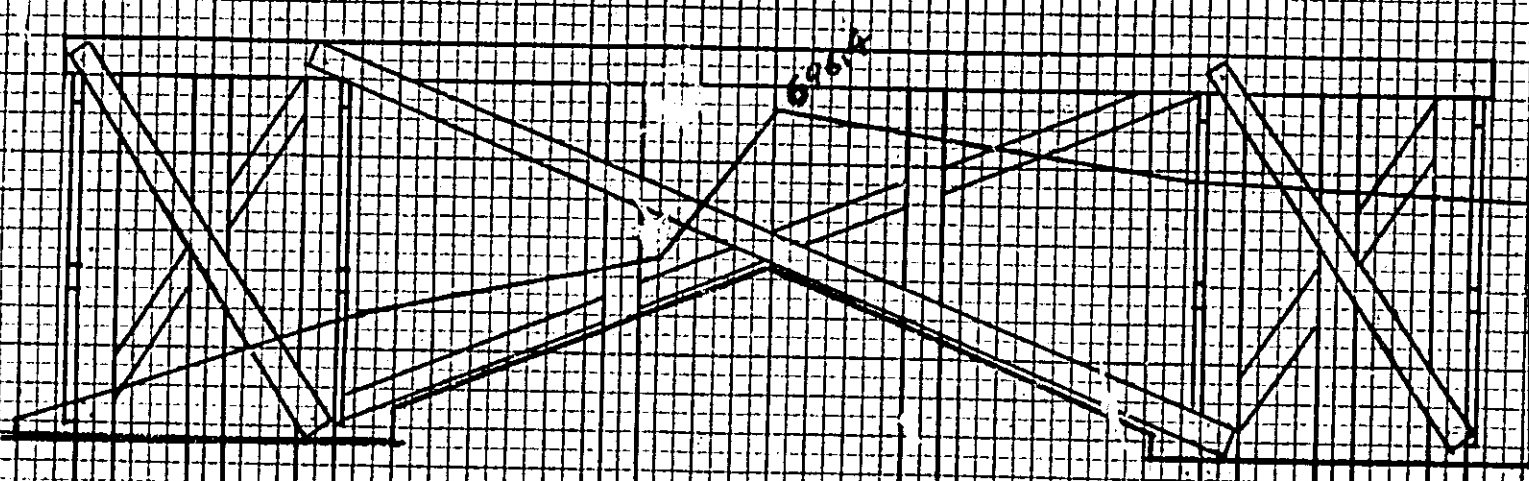
246



BENT-1
C-26



BENT-2
C-62

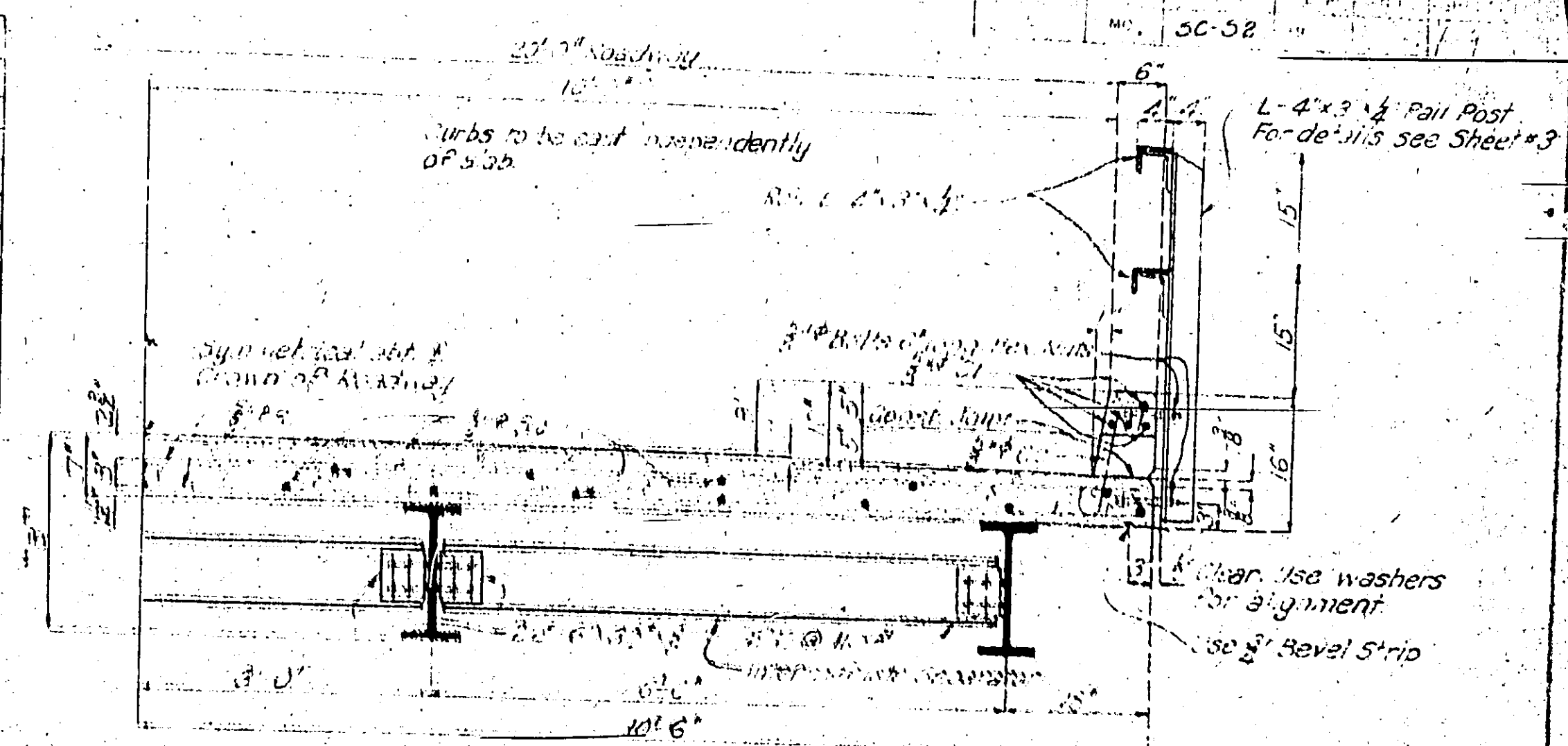
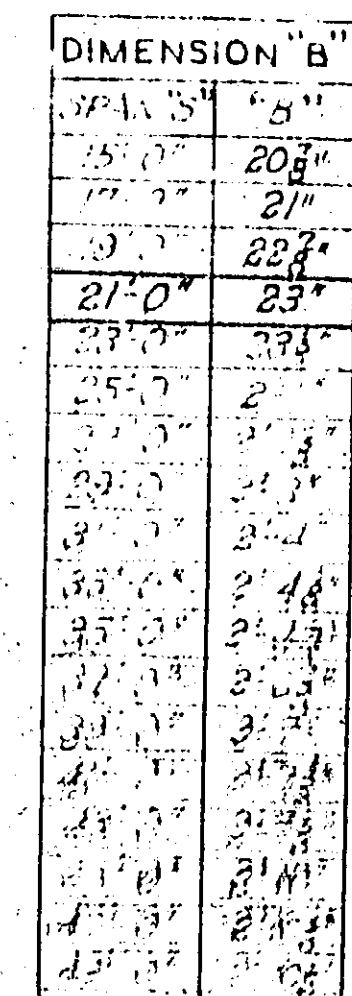


BENT-3
C-169

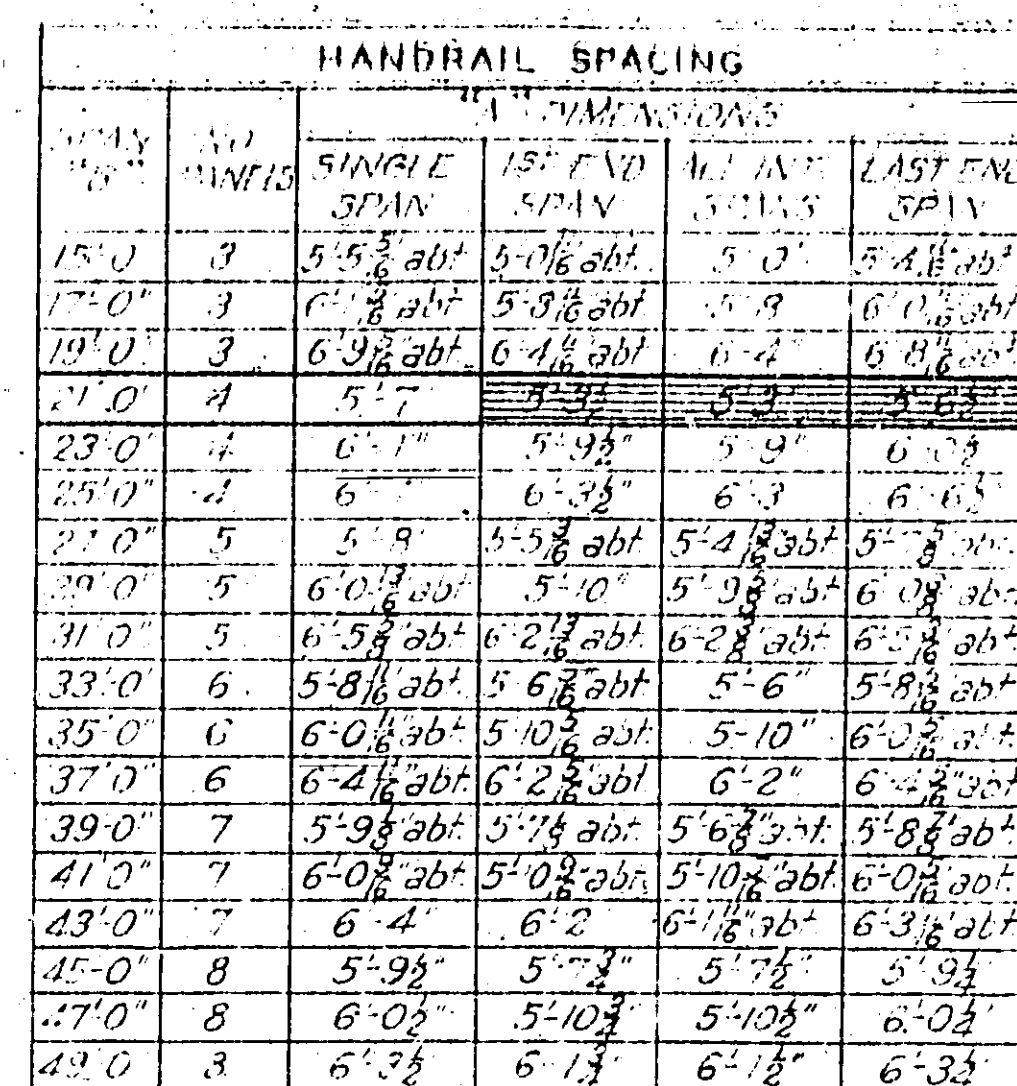
EXCAVATION		
BENT-1	2X26X0.875	60.46
BENT-2	2X85X0.75	23.5
BENT-3	2X169X0.75	46.9
Grand Total		75.0
BENT No. 4 - No Excavation		

PILE DATA									
DATA	PILE	LENGTH	AREA	PERIMETER	WET PERIMETER	WET AREA	WET PERIMETER	WET AREA	WET PERIMETER
7-7-33	1	15	1.5	15	15	15	15	15	15
7-7-33	2	15	1.5	15	15	15	15	15	15
7-7-33	3	15	1.5	15	15	15	15	15	15
7-7-33	4	15	1.5	15	15	15	15	15	15
7-7-33	5	15	1.5	15	15	15	15	15	15
7-7-33	6	15	1.5	15	15	15	15	15	15
7-7-33	7	15	1.5	15	15	15	15	15	15
7-7-33	8	15	1.5	15	15	15	15	15	15
7-7-33	9	15	1.5	15	15	15	15	15	15
7-7-33	10	15	1.5	15	15	15	15	15	15
7-7-33	11	15	1.5	15	15	15	15	15	15
7-7-33	12	15	1.5	15	15	15	15	15	15
7-7-33	13	15	1.5	15	15	15	15	15	15
7-7-33	14	15	1.5	15	15	15	15	15	15
7-7-33	15	15	1.5	15	15	15	15	15	15
7-7-33	16	15	1.5	15	15	15	15	15	15
7-7-33	17	15	1.5	15	15	15	15	15	15
7-7-33	18	15	1.5	15	15	15	15	15	15
7-7-33	19	15	1.5	15	15	15	15	15	15
7-7-33	20	15	1.5	15	15	15	15	15	15
7-7-33	21	15	1.5	15	15	15	15	15	15
7-7-33	22	15	1.5	15	15	15	15	15	15
7-7-33	23	15	1.5	15	15	15	15	15	15
7-7-33	24	15	1.5	15	15	15	15	15	15
7-7-33	25	15	1.5	15	15	15	15	15	15
7-7-33	26	15	1.5	15	15	15	15	15	15
7-7-33	27	15	1.5	15	15	15	15	15	15
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7-7-33	29	15	1.5	15	15	15	15	15	15
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7-7-33	44	15	1.5	15	15	15	15	15	15
7-7-33	45	15	1.5	15	15	15	15	15	15
7-7-33	46	15	1.5	15	15	15	15	15	15
7-7-33	47	15	1.5	15	15	15	15	15	15
7-7-33	48	15	1.5	15	15	15	15	15	15
7-7-33	49	15	1.5	15	15	15	15	15	15
7-7-33	50	15	1.5	15	15	15	15	15	15
7-7-33	51	15	1.5	15	15	15	15	15	15
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7-7-33	53	15	1.5	15	15	15	15	15	15
7-7-33	54	15	1.5	15	15	15	15	15	15
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7-7-33	60	15	1.5	15	15	15	15	15	15
7-7-33	61	15	1.5	15	15	15	15	15	15
7-7-33	62	15	1.5	15	15	15	15	15	15
7-7-33	63	15	1.5	15	15	15	15	15	15
7-7-33	64	15	1.5	15	15	15	15	15	15
7-7-33	65	15	1.5	15	15	15	15	15	15
7-7-33	66	15	1.5	15	15	15	15	15	15
7-7-33	67	15	1.5	15	15	15	15	15	15
7-7-33	68	15	1.5	15	15	15	15	15	15
7-7-33	69	15	1.5	15	15	15	15	15	15
7-7-33	70	15	1.5	15	15	15	15	15	15
7-7-33	71	15	1.5	15	15	15	15	15	15
7-7-33	72	15	1.5	15	15	15	15	15	15
7-7-33	73	15	1.5	15	15	15	15	15	15
7-7-33	74	15	1.5	15	15	15	15	15	15
7-7-33	75	15	1.5	15	15	15	15	15	15
7-7-33	76	15	1.5	15	15	15	15	15	15
7-7-33	77	15	1.5	15	15	15	15	15	15
7-7-33	78	15	1.5	15	15	15	15	15	15
7-7-33	79	15	1.5	15	15	15	15	15	15
7-7-33	80	15	1.5	15	15	15	15	15	15
7-7-33	81	15	1.5	15	15	15	15	15	15
7-7-33	82	15	1.5	15	15	15	15	15	15
7-7-33	83	15	1.5	15	15	15	15	15	15
7-7-33	84	15	1.5	15	15	15	15	15	15
7-7-33	85	15	1.5	15	15	15	15	15	15
7-7-33	86	15	1.5	15	15	15	15	15	15
7-7-33	87	15	1.5	15	15	15	15	15	15
7-7-33	88	15	1.5	15	15	15	15	15	15
7-7-33	89	15	1.5	15	15	15	15	15	15
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7-7-33	91	15	1.5	15	15	15	15	15	15
7-7-33	92	15	1.5	15	15	15	15	15	15
7-7-33	93	15	1.5	15	15	15	15	15	15
7-7-33	94	15	1.5	15	15	15	15	15	15
7-7-33	95	15	1.5	15	15	15	15	15	15
7-7-33	96	15	1.5	15	15	15	15	15	15
7-7-33	97	15	1.5	15	15	15	15	15	15
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7-7-33	105	15	1.5	15	15	15	15	15	15
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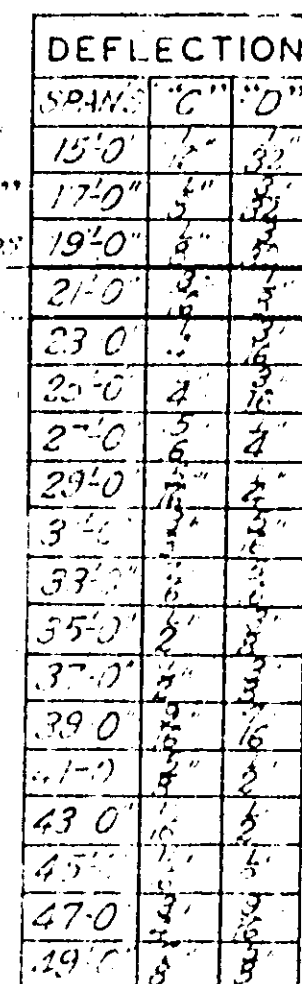
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DEC 10	DEC 10	DEC 10	DEC 10	DEC 10
	MO.	SC-52		



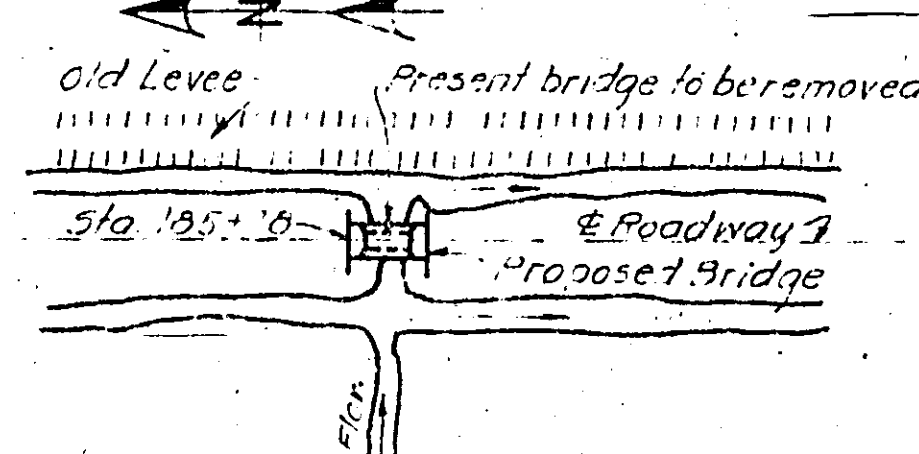
HALF SECTION THRU SPAN



PART ELEVATION AT INT. BENT



DEFLECTION DIAGRAM



LOCATION SKETCH

TABLE OF STRINGERS									
SPAN "S"	PER PLANKS		PERMISSIBLE SUBSTITUTIONS						
	CARNEGIE BEAMS		STANDARD F-BEAMS		R.L. CLEGG F-BEAMS				
	INSIDE	OUTSIDE	INSIDE	OUTSIDE	INSIDE	OUTSIDE	INSIDE	OUTSIDE	
15'-0"	14 @ 30"	14 @ 30"	2 @ 108#	2 @ 35"	14 @ 30"	14 @ 30"	14 @ 30"	14 @ 30"	
17'-0"	14 @ 33"	14 @ 33"	15 @ 42.9#	15 @ 42.9"	14 @ 33"	14 @ 33"	14 @ 33"	14 @ 33"	
19'-0"	16 @ 37"	16 @ 37"	15 @ 42.9#	15 @ 42.9"	16 @ 37"	16 @ 37"	16 @ 37"	16 @ 37"	
21'-0"	16 @ 40"	15 @ 37"	15 @ 50"	15 @ 45"	16 @ 40"	16 @ 40"	16 @ 37"	16 @ 37"	
23'-0"	16 @ 45"	16 @ 40"	18 @ 54.7"	18 @ 54.7"	16 @ 45"	16 @ 45"	16 @ 40"	16 @ 40"	
25'-0"	18 @ 47"	18 @ 47"	18 @ 54.7"	18 @ 54.7"	18 @ 47"	18 @ 47"	18 @ 47"	18 @ 47"	
27'-0"	18 @ 52"	18 @ 47"	18 @ 60"	18 @ 54.7"	18 @ 52"	18 @ 52"	18 @ 47"	18 @ 47"	
29'-0"	20 @ 55"	20 @ 55"	20 @ 75.4"	20 @ 65.4"	21 @ 55"	21 @ 55"	20 @ 55"	20 @ 55"	
31'-0"	21 @ 55"	21 @ 55"	20 @ 70"	20 @ 65.4"	22 @ 58"	22 @ 58"	22 @ 55"	22 @ 55"	
33'-0"	21 @ 63"	21 @ 58"	20 @ 75"	20 @ 70"	22 @ 62"	22 @ 62"	22 @ 58"	22 @ 58"	
35'-0"	21 @ 67"	21 @ 62"	20 @ 81.4"	21 @ 75"	22 @ 67"	22 @ 67"	22 @ 62"	22 @ 62"	
37'-0"	24 @ 70"	24 @ 70"	24 @ 79.9"	24 @ 79.9"	24 @ 70"	24 @ 70"	24 @ 70"	24 @ 70"	
39'-0"	24 @ 74"	24 @ 70"	24 @ 79.9"	24 @ 79.9"	24 @ 74"	24 @ 74"	24 @ 70"	24 @ 70"	
41'-0"	24 @ 74"	24 @ 74"	24 @ 85"	24 @ 79.9"	24 @ 81"	24 @ 81"	24 @ 74"	24 @ 74"	
43'-0"	24 @ 85"	24 @ 81"	24 @ 110"	24 @ 90"	26 @ 85"	26 @ 85"	24 @ 81"	24 @ 81"	
45'-0"	27 @ 85"	27 @ 85"	24 @ 109.9"	24 @ 109.9"	26 @ 85"	26 @ 85"	26 @ 85"	26 @ 85"	
47'-0"	27 @ 91"	27 @ 85"	24 @ 105.4"	24 @ 105.4"	28 @ 91"	28 @ 91"	26 @ 85"	26 @ 85"	
49'-0"	27 @ 91"	27 @ 91"	24 @ 110"	24 @ 109.9"	28 @ 91"	28 @ 91"	28 @ 91"	28 @ 91"	

ESTIMATED QUANTITIES			
ITEM	SUPERSTR	S.1BSTR	TOTAL
Bridge Excavation Class 1 Cu Yds		15	15
Bridge Excavation Class 2 Cu Yds			
Concrete 12.4 mix "3" Cu Yds			
Concrete 12.33 mix "4" Cu Yds	10.8		10.8
Fabricated Structural Steel	5210		5210
Reinforcing Steel Lbs	2810		2810
Crescated Timber Piles Lin Ft		248	248
Crescated Timber Pile Cutoffs Lin Ft		12	12
Timber (See General Explanation) CBM		1580	1580

GENERAL NOTES:

Loading: One 12 ton Truck, 80% of weight on rear axle, 30% impact.
 12" wheel base, 6" 0' gage, 10' fire.
 All concrete to be 1-2-4 mix.
 Exposed pipes to be covered 3" where no other cover is noted.
 Timber: To be dressed Douglas Fir of the West Coast Reg. on, close-
 grained in texture, clear, crosscut Southern Yellow Pine; Dense
 structure. Splice Sides and Sound Grads on untreated California
 Redwood, Prime Structural Grade. Timber rough full-sawn except as noted
 in timber bill for pine caps. Slight variations in sawing to be in accordance
 with grading rules. All treated timber to be cut to lengths, squared and
 bored as shown on cuttings list. Backing planks are all billed 6' long and
 are to be fitted and cut in the field.
 Field holes for drift pins shall be field bored $\frac{5}{8}$ " ϕ . Unless otherwise
 noted all other field holes in timber shall be field bored $\frac{3}{4}$ " ϕ .
 When bolts with countersunk heads are indicated on plans, cut
 washers shall be used under heads. 0.6 washers shall be used
 under heads of all other bolts and under nuts of all bolts.
 Number of bolts, drift pins, nails and washers given exact; no
 allowance made for excess. Cost of substructure hardware to be
 included in price bid for timber in place.
 I-Beams with fastenings, spacers, handrail, handrail posts with
 fastenings, air angles and cap plate on end bent with fastenings,
 will be paid for as structural steel. Cost of metallic edge moulding
 will be included in unit bid price for concrete.
 Rivets $\frac{3}{4}$ " holes $\frac{11}{16}$ " ϕ , except in handrail where rivets shall be $\frac{5}{8}$ "
 holes $\frac{1}{2}$ " ϕ . Field connections riveted.

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

Where rubber compound is specified on plans for use in gaskets and expansion joints, the pre-moulded joint shall be securely fastened to one face of concrete with copper wire.

Paint: 5.1.1. none of the contact surfaces with bolted field connections are painted. No other paint to be applied.

but, except 4. paint required will be furnished by the Missouri State Highway Department

9.1' Elev. 700.22 - Top of Handrail N.W. Corner of Bridge at Sta. 188+80.

BRIDGE OVER DRAINAGE DITCH

STATE ROAD FROM UTICA TO DAWN

ABC, 0.25 MILE NORTH OF DAWN STATION

7/20/77 F RCH C' 40 SC-S2

STA. 185+78

LIVINGSTON COUNTY

77 H. Jack 12/6/32
J. H. Cutler 12/6/32

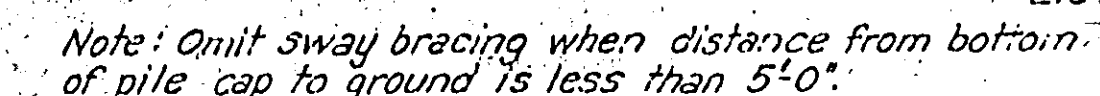
Designed Nov. 1929 By F.W.H.
 Drawn Mar. 1930 By R.J.G.
 Traced Dec. 1931 By R.J.G. Assembled Nov. 1932 By A.G.U.-H.F.U.
 Checked Dec. 1931 By J.J.H. Checked Nov. 1932 By R.J.G.

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

Sheet No. 1 of 3

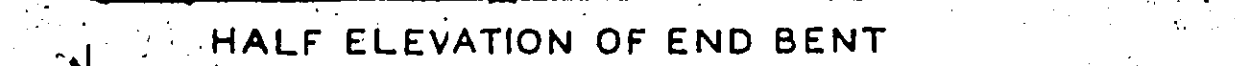
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FED. ROAD DIST NO.	STATE	FED. AID PROJ NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO	5C-52	19		



DETAIL OF INTERIOR BENTS

Note: Any irregularity in alignment of piling in end bents to be corrected by facing one surface of the 6"x6" backing support or by varying the thickness of the backing support such as to place the surface of the backing in a true plane and eliminate any strain on the backing plank.
Splice in backing plank to be made at center of 6"x6" backing support and to be alternated on the two intermediate supports.



HALF ELEVATION OF END BENT



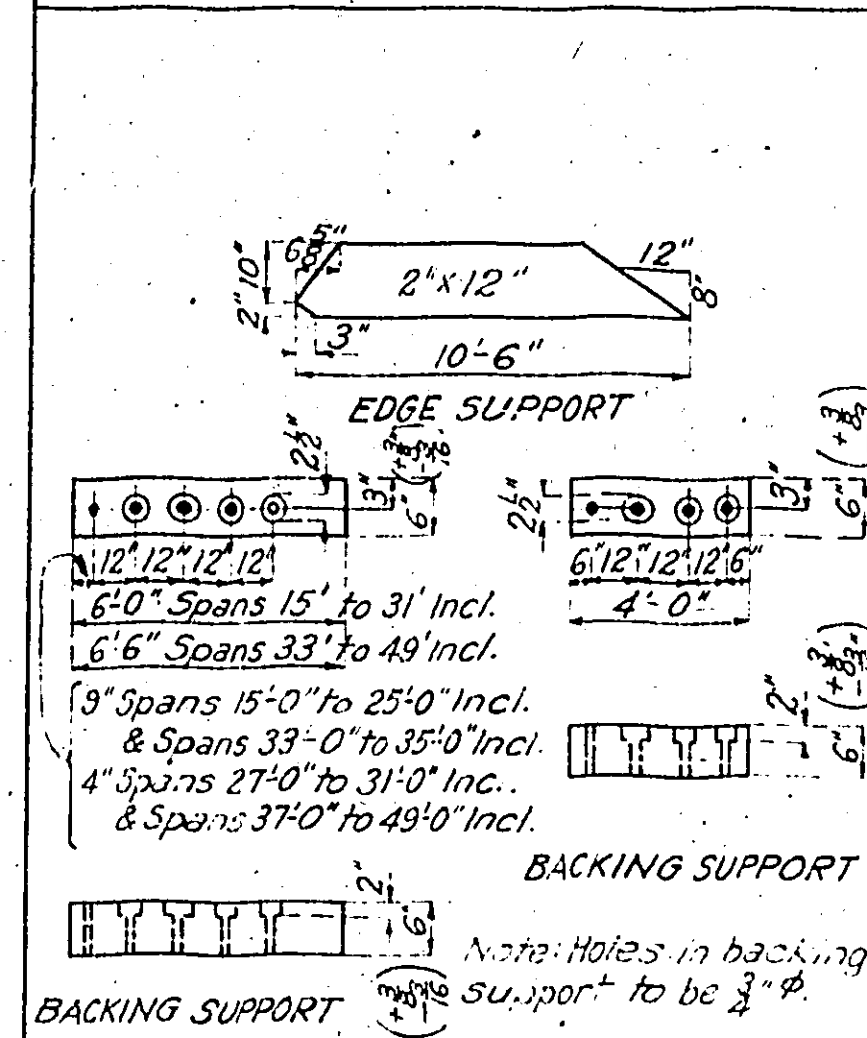
HALF PLAN OF END BENT

DIMENSIONS		
SPAN'S	"6"	"H"
15'-0"	2'1 1/2"	2'1 1/2"
17'-0"	2'3"	2'2"
19'-0"	2'3 1/2"	2'3"
21'-0"	2'3 1/2"	2'3 1/2"
23'-0"	2'4"	2'0 1/2"
25'-0"	2'1 1/2"	2'2"
27'-0"	2'1 1/2"	2'2"
29'-0"	2'3 1/2"	2'4"
31'-0"	2'4 1/2"	2'5 1/2"
33'-0"	2'4 1/2"	2'5 1/2"
35'-0"	2'-5"	2'5 1/2"
37'-0"	2'-7"	2'-8 1/2"
39'-0"	2'-7 1/2"	2'-8 1/2"
41'-0"	2'-7 1/2"	2'-8 1/2"
43'-0"	2'-7 1/2"	2'-8 1/2"
45'-0"	2'-10 1/2"	2'-11 1/2"
47'-0"	2'-11"	2'-12 1/2"
49'-0"	2'-11"	2'-12 1/2"

Note: Omit sway bracing when "E" is less than 5'-0".

ONE END RENT

ONE END BENT



Note: Pile caps to be classified as beams and stringers.
All other timber to be classified as joist and plank.

SUBSTRUCTURE TIMBER BILLS

PIECE	NO. PCS	SIZE	LENGTH	REMARKS
Backing Plank	1	2"x12"	23'-6"	Cut to length.
" "	1	2"x12"	17'-6"	" " "
" "	1	2"x12"	22'-0"	Cut to length.
" "	1	2"x12"	16'-0"	" " "
" "	1	2"x12"	20'-6"	" " "
" "	1	2"x12"	14'-6"	" " "
" "	1	2"x12"	19'-0"	" " "
" "	1	2"x12"	13'-0"	" " "
" "	1	2"x12"	17'-6"	" " "
" "	1	2"x12"	11'-6"	" " "
Shoulder Plank	2	2"x8"	2'-5 1/2"	" " "
Edge Support.	2	2"x12"	10'-6"	Cut to length & shape
Backing Support Spans 15' to 31' Incl.	4	6"x6"	6'-0"	" " " " "
Backing Support Spans 33' to 49' Incl.	4	6"x6"	6'-6"	" " " " "
Backing Support	2	6"x6"	4'-0"	" " " " "
Backing Support Cap	1	6"x6"	21'-0"	Cut to length.
Pile Cap	1	12"x12"	20'-6"	" " " " *
Pile Cap		12"x12"	20'-6"	Cut to length. * *
Bracing		3"x8"		" " "
"		3"x8"		" " "
"		3"x8"		" " "
"		3"x8"		" " "

Note: Pile caps to be classified as beams and stringers.
All other timber to be classified as joist and plank.

SUBSTRUCTURE HARDWARE BILL

ONE END BENT	PIECE	LOCATION	NO. PCS	SIZE	LENGTH	O.G.	
						WASHERS	WASHERS
	Drift Pin	Backing Cap	4	3/4"	12"		
	" "	Pile Cap	4	3/4"	2'-0"		
	Bolts	Backing Support	4	3/4"	22"	4	4
	Nails	Backing	141	300's	4 1/2"		
	Bolt's	Backing Support	24	3/4"	2'-0"	30	18
T. BENTS	Drift Pin	Pile Cap		3/4"	2'-0"		
	Bolts &	Bracing		3/4"	18"		
	Bolts &	Bracing		3/4"	22"		

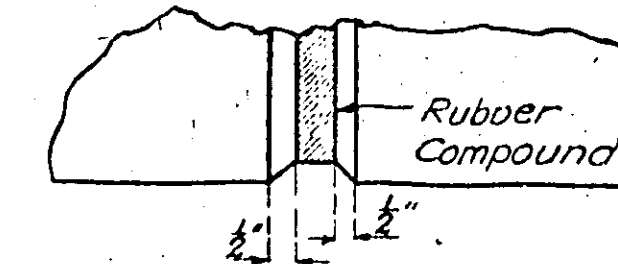
§ Omit when "E" is less than 5'-0".

Note: Bolts to be threaded 8" and sawed off $\frac{1}{4}$ " outside of nut after nut has been tightened.

SUPERSTRUCTURE HARDWARE BILL

	PIECE	LOCATION	NO. PCS.	SIZE	LENGTH	REMARKS
	Cap Plate	Under Slab	2	8"x $\frac{1}{2}$ "	21'-0"	See detail.
	$\frac{3}{4}$ " Lag Screws	Cap Pl.	30	$\frac{3}{4}$ " ϕ	4"	Flat csk. heads.
SINGLE SPAN	Spacer Bolts	Spans 15' to 31' Incl.	48	$\frac{3}{4}$ " ϕ	Varies	Turn bolts, washer for nut
	Spacer Bolts	Spans 33' to 49' Incl.	64	$\frac{3}{4}$ " ϕ	Varies	Turn bolts, washer for nut
	Handrail Bolts	Spans 15' to 19' Incl.	16	$\frac{3}{4}$ " ϕ	6"	Sq. hds., washers, hex. nuts
	" "	" "	32	$\frac{3}{4}$ " ϕ	1 $\frac{1}{2}$ "	Button heads.
	" "	Spans 21' to 25' Incl.	40	$\frac{3}{4}$ " ϕ	6"	Sq. hds., washers, hex. nuts
	" "	" "	20	$\frac{3}{4}$ " ϕ	6"	Sq. hds., washers, hex. nuts
	" "	Spans 27' to 31' Incl.	48	$\frac{3}{4}$ " ϕ	1 $\frac{1}{2}$ "	Button heads.
	" "	Spans 33' to 37' Incl.	28	$\frac{3}{4}$ " ϕ	6"	Sq. hds., washers, hex. nuts
	" "	" "	56	$\frac{3}{4}$ " ϕ	1 $\frac{1}{2}$ "	Button heads.
	" "	Spans 39' to 43' Incl.	32	$\frac{3}{4}$ " ϕ	6"	Sq. hds., washers, hex. nuts
	" "	" "	64	$\frac{3}{4}$ " ϕ	1 $\frac{1}{2}$ "	Button heads.
	" "	Spans 45' to 49' Incl.	72	$\frac{3}{4}$ " ϕ	1 $\frac{1}{2}$ "	Sq. hds., washers, hex. nuts
	Bolts	Bearing Pls.	16	$\frac{3}{4}$ " ϕ	12"	Sq. heads, no threads.
	Flange Clamp	Bearings	16	See Detail		Detailed on this sheet.
EACH ADDITIONAL SPAN	Spacer Bolts	Spans 15' to 31' Incl.	48	$\frac{3}{4}$ " ϕ	Varies	Turn bolts, washer for nut
	Spacer Bolts	Spans 33' to 49' Incl.	64	$\frac{3}{4}$ " ϕ	Varies	Turn bolts, washer for nut
	Handrail Bolts	Spans 15' to 19' Incl.	12	$\frac{3}{4}$ " ϕ	6"	Sq. hds., washers, hex. nuts
	" "	" "	32	$\frac{3}{4}$ " ϕ	1 $\frac{1}{2}$ "	Button heads.
	" "	Spans 21' to 25' Incl.	36	$\frac{3}{4}$ " ϕ	6"	Sq. hds., washers, hex. nuts
	" "	" "	40	$\frac{3}{4}$ " ϕ	1 $\frac{1}{2}$ "	Button heads.
	" "	Spans 27' to 31' Incl.	40	$\frac{3}{4}$ " ϕ	6"	Sq. hds., washers, hex. nuts
	" "	" "	28	$\frac{3}{4}$ " ϕ	1 $\frac{1}{2}$ "	Button heads.
	" "	Spans 33' to 37' Incl.	24	$\frac{3}{4}$ " ϕ	6"	Sq. hds., washers, hex. nuts
	" "	" "	56	$\frac{3}{4}$ " ϕ	1 $\frac{1}{2}$ "	Button heads.
	" "	Spans 39' to 43' Incl.	28	$\frac{3}{4}$ " ϕ	6"	Sq. hds., washers, hex. nuts
	" "	" "	64	$\frac{3}{4}$ " ϕ	1 $\frac{1}{2}$ "	Button heads.
	Bolts	Spans 45' to 49' Incl.	82	$\frac{3}{4}$ " ϕ	6"	Sq. hds., washers, hex. nuts
	" "	" "	72	$\frac{3}{4}$ " ϕ	1 $\frac{1}{2}$ "	Button heads.
	Bolts	Bearing Pls.	16	$\frac{3}{4}$ " ϕ	12"	Sq. heads, no threads.
	Splice Pl. Bolts	Spans 15' to 31' to 49'	40	$\frac{3}{4}$ " ϕ	2"	Turn bolts, washer for nut
	" "	Spans 33' to 49'	48	$\frac{3}{4}$ " ϕ	2"	" " " "
	Flange Clamp	Bearings	16	See Detail		Detailed on this sheet.
	Clip 1 $\frac{1}{2}$ "	At Bent	"	"	"	" " " " Sheet # 3063.
	Bolts	Clip 1 $\frac{1}{2}$ "	"	$\frac{3}{4}$ " ϕ	3"	Plain Bolts

* 2 Washers plus washers for fill. required for alignment of railposts.



Note: Use bevel as shown for exposed faces of all joints consisting of rubber compound except at top surface of roadway slab. Use edging tool with $\frac{1}{4}$ " radius at top surface of roadway slab each side of rubber compound joint.

DETAILS OF BEVEL FOR RUBBER COMPOUND JOINTS

BRIDGE OVER DRAINAGE DITCH

STATE ROAD FROM UTICA TO DAWN

ABOUT 0.25 MILE NORTH OF DAWN STATION

PROJECT NO. SC-52

STA. 185 + 78

LIVINGSTON COUNTY

Designed Nov. 1929 By F.W.H.
Drawn Dec. 1930 By R.J.G. Assembled Nov. 1932 By A.O.U.-H.E.U.

DETAILS OF BEARING ON PILE CAP

Note: Cast iron clamps used on bearing plates to have 1/8" clearance at flange of beam to allow for expansion. All clamps to have 3" ϕ cored holes. Use two clamps only on each I Beam at pile caps on end bents.

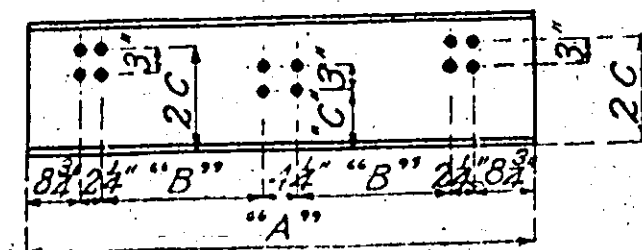
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Follow dimensions.

Sheet No. 2 of 3

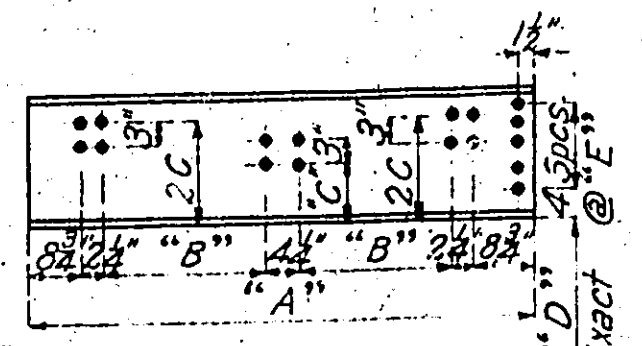
S-637

MISSOURI STATE HIGHWAY DEPARTMENT

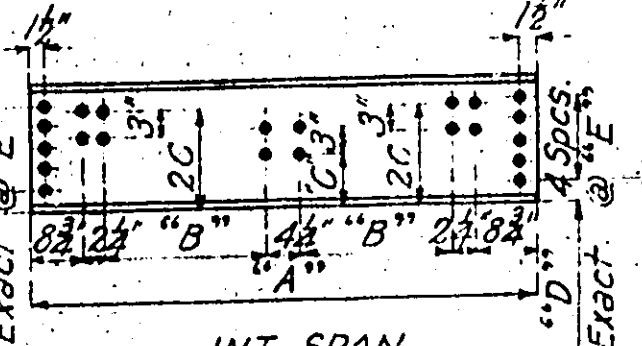
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO	5C-52	19		



SINGLE SPAN

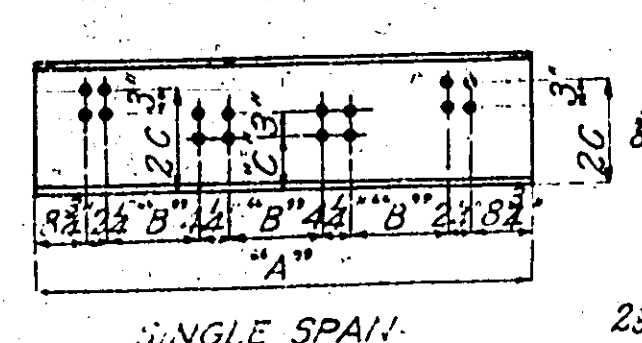


END SPAN

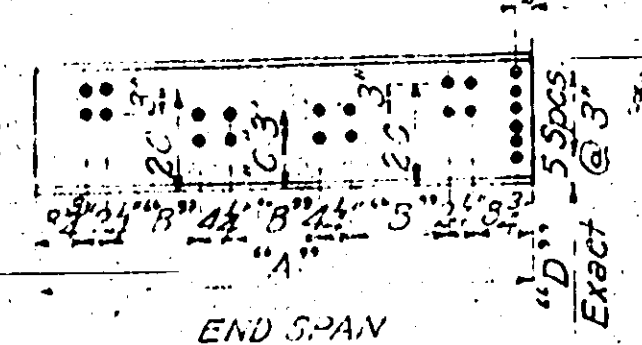


INT. SPAN

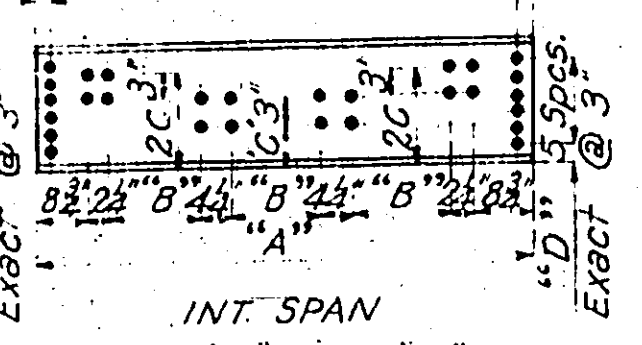
SPANS 15'-0" TO 31'-0" INCL.



SINGLE SPAN

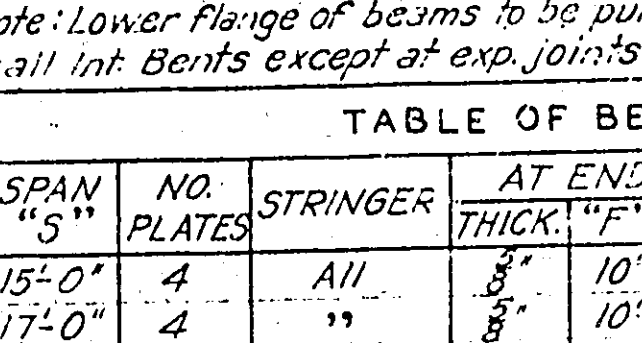


END SPAN

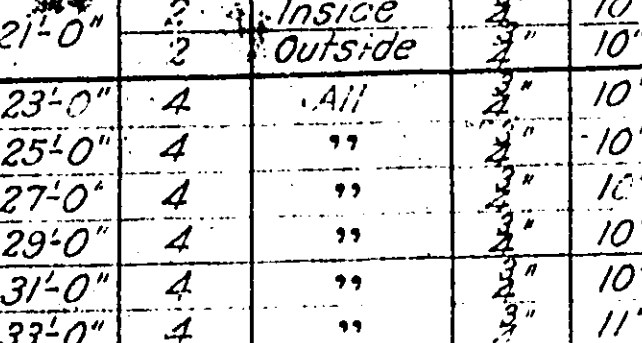


INT. SPAN

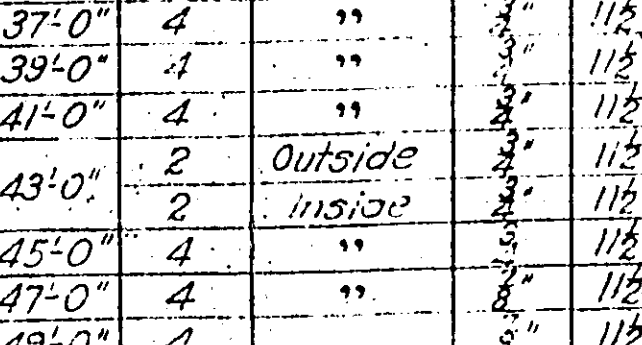
SPANS 33'-0" TO 49'-0" INCL.



SINGLE SPAN



END SPAN

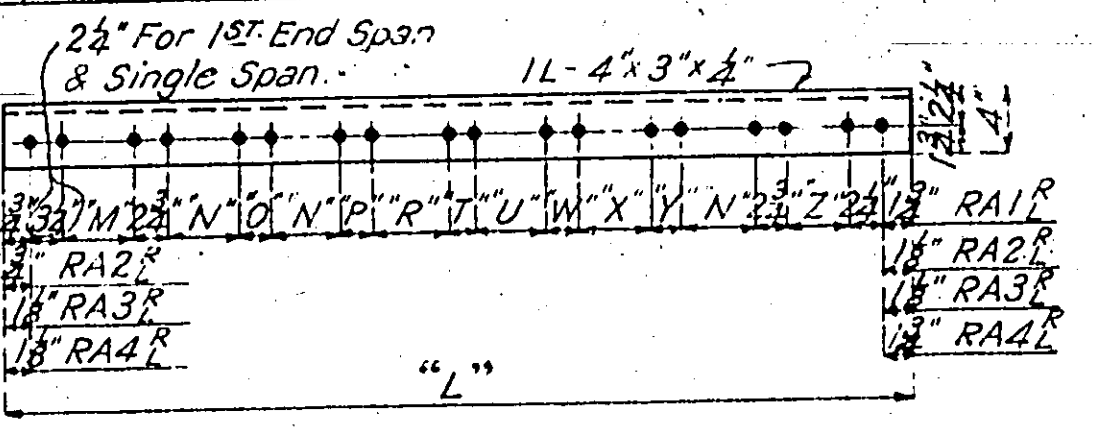


INT. SPAN

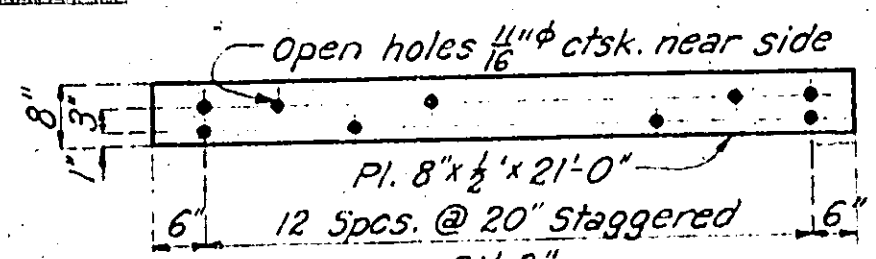
SPANS 15'-0" TO 31'-0" INCL.

SPAN "S"	NO.	END SPACERS		INT. SPACERS	
		"A"	"B"	"A"	"B"
15'-0"	6	5'-11 1/2"	3	5'-11 1/2"	3
17'-0"	6	5'-11 1/2"	3	5'-11 1/2"	3
19'-0"	6	5'-11 1/2"	3	5'-11 1/2"	3
21'-0"	6	5'-11 1/2"	3	5'-11 1/2"	3
23'-0"	6	5'-11 1/2"	3	5'-11 1/2"	3
25'-0"	6	5'-11 1/2"	3	5'-11 1/2"	3
27'-0"	6	5'-11 1/2"	3	5'-11 1/2"	3
29'-0"	6	5'-11 1/2"	3	5'-11 1/2"	3
31'-0"	6	5'-11 1/2"	3	5'-11 1/2"	3
33'-0"	6	5'-11 1/2"	3	5'-11 1/2"	3
35'-0"	6	5'-11 1/2"	3	5'-11 1/2"	3
37'-0"	6	5'-11 1/2"	3	5'-11 1/2"	3
39'-0"	6	5'-11 1/2"	3	5'-11 1/2"	3
41'-0"	6	5'-11 1/2"	3	5'-11 1/2"	3
43'-0"	6	5'-11 1/2"	3	5'-11 1/2"	3
45'-0"	6	5'-11 1/2"	3	5'-11 1/2"	3
47'-0"	6	5'-11 1/2"	3	5'-11 1/2"	3
49'-0"	6	5'-11 1/2"	3	5'-11 1/2"	3

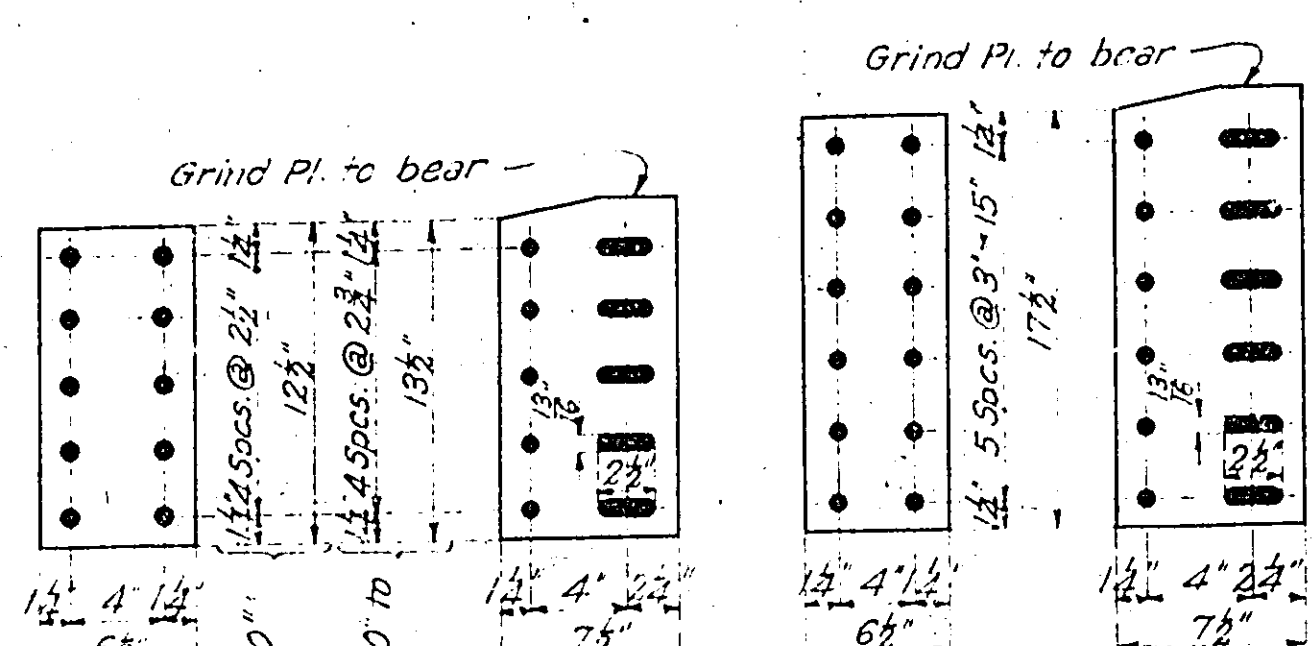
SPAN "S"	NO.	SIZE	SINGLE SPAN		END SPAN		INT. SPAN		"C"	"D"	"E"
			"A"	"B"	"A"	"B"	"A"	"B"			
15'-0"	4	14" C.B. @ 30"	15'-8"	6'-8 1/2"	15'-3 1/2"	6'-6 1/2"	14'-11"	6'-4 1/2"	5'-8"	2'	2 1/2"
17'-0"	4	14" C.B. @ 30"	17'-8"	7'-8 1/2"	17'-3 1/2"	7'-6 1/2"	16'-11"	7'-4 1/2"	5'-8"	2'	2 1/2"
19'-0"	4	16" C.B. @ 37"	19'-8"	8'-8 1/2"	19'-3 1/2"	8'-6 1/2"	18'-11"	8'-4 1/2"	6'-2"	2 1/2"	2 1/2"
21'-0"	2	16" C.B. @ 37"	21'-8"	9'-8 1/2"	21'-3 1/2"	9'-6 1/2"	20'-11"	9'-4 1/2"	6'-2"	2 1/2"	2 1/2"
23'-0"	2	16" C.B. @ 40"	23'-8"	10'-8 1/2"	23'-3 1/2"	10'-6 1/2"	22'-11"	10'-4 1/2"	6'-6"	2 1/2"	2 1/2"
25'-0"	4	18" C.B. @ 47"	25'-8"	11'-8 1/2"	25'-3 1/2"	11'-6 1/2"	24'-11"	11'-4 1/2"	7'-8"	3'	2 1/2"
27'-0"	2	18" C.B. @ 47"	27'-8"	12'-8 1/2"	27'-3 1/2"	12'-6 1/2"	26'-11"	12'-4 1/2"	7'-8"	3'	2 1/2"
29'-0"	4	20" C.B. @ 52"	29'-8"	13'-8 1/2"	29'-3 1/2"	13'-6 1/2"	28'-11"	13'-4 1/2"	8'-2"	3'	2 1/2"
31'-0"	4	20" C.B. @ 52"	31'-8"	14'-8 1/2"	31'-3 1/2"	14'-6 1/2"	30'-11"	14'-4 1/2"	8'-2"	3'	2 1/2"
33'-0"	2	21" C.B. @ 58"	33'-8"	15'-8 1/2"	33'-3 1/2"	15'-6 1/2"	32'-11"	15'-4 1/2"	9'-0"	3'	3"
35'-0"	2	21" C.B. @ 58"	35'-8"	16'-8 1/2"	35'-3 1/2"	16'-6 1/2"	34'-11"	16'-4 1/2"	9'-0"	3'	3"
37'-0"	4	24" C.B. @ 70"	37'-8"	17'-8 1/2"	37'-3 1/2"	17'-6 1/2"	36'-11"	17'-4 1/2"	10'-2"	4'	4 1/2"
39'-0"	2	24" C.B. @ 70"	39'-8"	18'-8 1/2"	39'-3 1/2"	18'-6 1/2"	38'-11"	18'-4 1/2"	10'-2"	4'	4 1/2"
41'-0"	2	24" C.B. @ 74"	41'-8"	19'-8 1/2"	41'-3 1/2"	19'-6 1/2"	40'-11"	19'-4 1/2"	10'-6"	4'	4 1/2"
43'-0"	2	24" C.B. @ 81"	43'-8"	20'-8 1/2"	43'-3 1/2"	20'-6 1/2"	42'-11"	20'-4 1/2"	11'-2"	4'	4 1/2"
45'-0"	4	27" C.B. @ 85"	45'-8"	21'-8 1/2"	45'-3 1/2"	21'-6 1/2"	44'-11"	21'-4 1/2"	12'-0"	6"	6"
47'-0"	4	27" C.B. @ 85"	47'-8"	22'-8 1/2"	47'-3 1/2"	22'-6 1/2"	46'-11"	22'-4 1/2"	12'-0"	6"	6"
49'-0"	4	27" C.B. @ 91"	49'-8"	23'-8 1/2"	49'-3 1/2"	23'-6 1/2"	48'-11"	23'-4 1/2"	12'-0"	6"	6"



DETAIL OF RAIL ANGLES RA1 TO RA4 INCL.



END BENT CAP PLATE

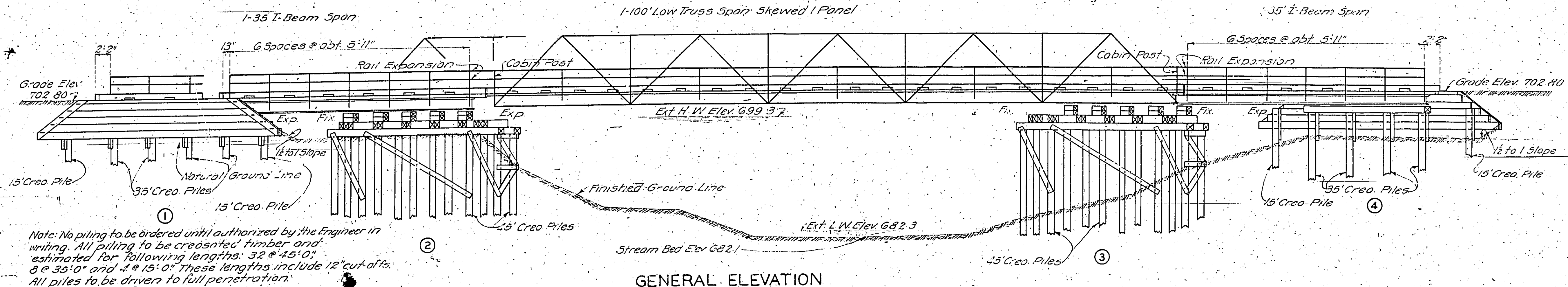


FIXED EXPANSION FIXED EXPANSION
SPANS 15'-0" TO 31'-0" INCL. SPANS 33'-0" TO 49'-0" INCL.
DETAILS OF SPLICE PLATES

TABLE OF RAIL ANGLE DIMENSIONS																	
SPAN	MARK	TABLE OF RAIL ANGLE DIMENSIONS															
		"L"	"M"	"N"	"O"	"P"	"Q"	"R"	"T"	"U"	"V"	"W"	"X"	"Y"	"Z"		
SINGLE SPAN	15'-0"	RA1	16'-7 1/2"	5'-0 1/2"	0	0	0	0	0	0	5'-5 1/2"	0	0	0	5'-0 1/2"	0	0
	17'-0"	"	18'-7 1/2"	5'-0 1/2"	0	0	0	0	0	0	6'-1 1/2"	0	0	0	5'-0 1/2"	0	0
	19'-0"	"	20'-7 1/2"	5'-0 1/2"	0	0	0	0	0	0	6'-1 1/2"	0	0	0	5'-0 1/2"	0	0
	21'-0"	"	22'-7 1/2"	5'-2"	0	0	0	0	5'-4 1/2"	2 3/4"	5'-7"	0	0	0	5'-2"		
	23'-0"	"	24'-7 1/2"	5'-8"	0	0	0	0	5'-10 1/2"	2 3/4"	6'-1"	0	0	0	5'-8"		
	25'-0"	"	26'-7 1/2"	6'-2"	0	0	0	0	6'-4 1/2"	2 3/4"	6'-7"	0	0	0	6'-2"		
	27'-0"	"	28'-7 1/2"	5'-3"	0	0	0	0	5'-5 1/2"	2 3/4"	5'-8"	2 3/4"	5'-5 1/2"	0	5'-3"		
	29'-0"	"	30'-7 1/2"	5'-7 1/2"	0	0	0	0	5'-10 1/2"	2 3/4"	6'-0 1/2"	2 3/4"	5'-10 1/2"	0	5'-7 1/2"		
	31'-0"	"	32'-7 1/2"	6'-0 1/2"	0	0	0	0	6'-2 1/2"	2 3/4"	6'-3 1/2"	2 3/4"	6'-2 1/2"	0	6'-0 1/2"		
	33'-0"	"	34'-7 1/2"	5'-5 1/2"	5'-5 1/2"	2 3/4"	0	0	0	0	0	2 3/4"	5'-5 1/2"	2 3/4"	5'-5 1/2"		
FIRST END SPAN	35'-0"	"	36'-7 1/2"	5'-7 1/2"	5'-9 1/2"	2 3/4"	0	0	0	0	2 3/4"	6'-0 1/2"	2 3/4"	5'-7 1/2"			
	37'-0"	"	38'-7 1/2"	5'-11 1/2"	6'-1 1/2"	2 3/4"	0	0	0	0	2 3/4"	6'-4 1/2"	2 3/4"	5'-11 1/2"			
	39'-0"	"	40'-7 1/2"	5'-4 1/2"	5'-6 1/2"	2 3/4"	0	0	2 3/4"	5'-9 1/2"	2 3/4"	5'-6 1/2"	2 3/4"	5'-4 1/2"			
	41'-0"	"	42'-7 1/2"	5'-7 1/2"	5'-9 1/2"	2 3/4"	0	0	2 3/4"	6'-0 1/2"	2 3/4"	5'-9 1/2"	2 3/4"	5'-7 1/2"			
	43'-0"	"	44'-7 1/2"	5'-11"	6'-1 1/2"	2 3/4"	0	0	2 3/4"	6'-4"	2 3/4"	6'-1 1/2"	2 3/4"	5'-11"			
	45'-0"	"	46'-7 1/2"	5'-4 1/2"	5'-6 1/2"	2 3/4"	2 3/4"	5'-6 1/2"	2 3/4"	5'-6 1/2"	2 3/4"	5'-6 1/2"	2 3/4"	5'-4 1/2"			
	47'-0"	"	48'-7 1/2"	5'-7 1/2"	5'-9 1/2"	2 3/4"	2 3/4"	5'-9 1/2"	2 3/4"	6'-0 1/2"	2 3/4"	5'-9 1/2"	2 3/4"	5'-7 1/2"			
	49'-0"	"	50'-7 1/2"	6'-0 1/2"	6'-0 1/2"	2 3/4"	2 3/4"	6'-0 1/2"	2 3/4"	6'-3 1/2"	2 3/4"	6'-0 1/2"	2 3/4"	6'-0 1/2"			
	15'-0"	RA2	15'-4 1/2"	4'-7 1/2"	0	0	0	0	0	0	5'-0 1/2"	0	0	0	4'-7 1/2"	0	0
	17'-0"	"	17'-4 1/2"	5'-3 1/2"	0	0	0	0	0	0	5'-3 1/2"	0	0	0	5'-3 1/2"	0	0
19'-0"	"	19'-4 1/2"	5'-11 1/2"	0	0	0	0	0	0	6'-4 1/2"	0	0	0	6'-11 1/2"	0	0	
21'-0"	"	21'-4 1/2"	4'-10 1/2"	0	0	0	0	0	5'-0 1/2"	2 3/4"	5'-3 1/2"	0	0	4'-10 1/2"	0	0	
23'-0"	"	23'-4 1/2"	5'-4 1/2"	0	0	0	0	0	5'-6 1/2"	2 3/4"	5'-9 1/2"	0	0	5'-4 1/2"	0	0	
25'-0"	"	25'-4 1/2"	5'-10 1/2"	0	0	0	0	0	6'-0 1/2"	2 3/4"	6'-3 1/2"	0	0	5'-10 1/2"	0	0	
27'-0"	"	27'-4 1/2"	5'-0 1/2"	0	0	0	0	0	5'-2 1/2"	2 3/4"	5'-5 1/2"	2 3/4"	5'-2 1/2"	0	5'-0 1/2"	0	
29'-0"	"	29'-4 1/2"	5'-5"	0	0	0	0	0	5'-7 1/2"	2 3/4"	5'-10 1/2"	2 3/4"	5'-5"	0	5'-5"	0	
31'-0"	"	31'-4 1/2"	5'-9 1/2"	0	0	0	0	0	6'-0 1/2"	2 3/4"	6'-3 1/2"	2 3/4"	6'-0 1/2"	0	5'-9 1/2"	0	
33'-0"	"	33'-4 1/2"	5'-1 1/2"	5'-3 1/2"	2 3/4"	0	0	0	0	0	2 3/4"	5'-1 1/2"	2 3/4"	5'-1 1/2"	0	0	
35'-0"	"	35'-4 1/2"	5'-5 1/2"	5'-7 1/2"	2 3/4"	0	0	0	0	0	2 3/4"	5'-5 1/2"	2 3/4"	5'-5 1/2"	0	0	
37'-0"	"	37'-4 1/2"	5'-9 1/2"	5'-11 1/2"	2 3/4"	0	0	0	0	0	2 3/4"	6'-2 1/2"	2 3/4"	5'-9 1/2"	0	0	
39'-0"	"	39'-4 1/2"	5'-2 1/2"	5'-4 1/2"	2 3/4"	0	0	2 3/4"	5'-7 1/2"	2 3/4"	5'-10 1/2"	2 3/4"	5'-2 1/2"	0	5'-2 1/2"	0	
41'-0"	"	41'-4 1/2"	5'-7 1/2"	5'-9 1/2"	2 3/4"	0	0	2 3/4"	5'-10 1/2"	2 3/4"	5'-11 1/2"	2 3/4"	5'-7 1/2"	0	5'-7 1/2"	0	
43'-0"	"	43'-4 1/2"	5'-9"	5'-11 1/2"	2 3/4"	0	0	2 3/4"	6'-2"	2 3/4"	5'-11 1/2"	2 3/4"	5'-9"	0	5'-9"	0	
45'-0"	"	45'-4 1/2"	5'-2 1/2"	5'-5"	2 3/4"	2 3/4"	5'-5"	2 3/4"	5'-5"	2 3/4"	5'-5"	2 3/4"	5'-2 1/2"	2 3/4"	5'-2 1/2"	2 3/4"	
47'-0"	"	47'-4 1/2"	5'-5 1/2"	5'-8"	2 3/4"	2 3/4"	5'-8"	2 3/4"	5'-10 1/2"	2 3/4"	5'-11 1/2"	2 3/4"	5'-5 1/2"	2 3/4"	5'-5 1/2"	2 3/4"	
49'-0"	"	49'-4 1/2"	5'-9 1/2"	5'-11"	2 3/4"	2 3/4"	5'-11"	2 3/4"	5'-11 1/2"	2 3/4"	5'-11 1/2"	2 3/4"	5'-9 1/2"	2 3/4"	5'-9 1/2"	2 3/4"	
ALL INT SPANS	15'-0"	RA3	14'-11"	4'-5 1/2"	0	0	0	0	0	0	4'-9 1/2"	0	0	0	4'-11"	0	0
	17'-0"	"	16'-11"	5'-1 1/2"	0	0	0	0	0	0	5'-5 1/2"	0	0	0	5'-1 1/2"	0	0
	19'-0"	"	18'-11"	5'-9 1/2"	0	0	0	0	0	0	6'-1 1/2"	0	0	0	5'-11"	0	0
	21'-0"	"	20'-11"	4'-1 1/2"	0	0	0	0	0	5'-0 1/2"	2 3/4"	5'-3 1/2"	0	0	4'-1 1/2"	0	0
	23'-0"	"	22'-11"	5'-2 1/2"	0	0	0	0	5'-6 1/2"	2 3/4"	5'-9 1/2"	0	0	5'-2 1/2"	0	0	
	25'-0"	"	24'-11"	5'-8"	0	0	0	0	6'-0 1/2"	2 3/4"	6'-0 1/2"	0	0	5'-8"	0	0	
	27'-0"	"	26'-11"	4'-10 1/2"	0	0	0	0	5'-2 1/2"	2 3/4"	5'-5 1/2"	2 3/4"	5'-2 1/2"	0	4'-10 1/2"	0	
	29'-0"	"	28'-11"	5'-3 1/2"	0	0	0	0	5'-6 1/2"	2 3/4"	5'-9 1/2"	2 3/4"	5'-6 1/2"	0	5'-3 1/2"	0	
	31'-0"	"	30'-11"	5'-7 1/2"	0	0	0	0	5'-11 1/2"	2 3/4"	5'-11 1/2"	2 3/4"	5'-11 1/2"	0	5'-7 1/2"	0	
	33'-0"	"	32'-11"	4'-11 1/2"	5'-3 1/2"	2 3/4"	0	0	0	0	0	2 3/4"	5'-3 1/2"	2 3/4"	4'-11 1/2"	0	
35'-0"	"	34'-11"	5'-3 1/2"	5'-7 1/2"	2 3/4"	0	0	0	0	0	2 3/4"	5'-7 1/2"	2 3/4"	5'-3 1/2"	0		
37'-0"	"	36'-11"	5'-7 1/2"	5'-11 1/2"	2 3/4"	0	0	0	0	0	2 3/4"	5'-11 1/2"	2 3/4"	5'-7 1/2"	0		
39'-0"	"	38'-11"	5'-0 1/2"	5'-4 1/2"	2 3/4"	0	0	0	2 3/4"	5'-4 1/2"	2 3/4"	5'-4 1/2"	2 3/4"	5'-0 1/2"	0		
41'-0"	"	40'-11"	5'-3 1/2"	5'-7 1/2"	2 3/4"	0	0	0	2 3/4"	5'-7 1/2"	2 3/4"	5'-7 1/2"	2 3/4"	5'-3 1/2"	0		
43'-0"	"	42'-11"	5'-7 1/2"	5'-11"	2 3/4"	0	0	0	2 3/4"	5'-10 1/2"	2 3/4"	5'-10 1/2"	2 3/4"	5'-7 1/2"	0		
45'-0"	"	44'-11"	5'-1"	5'-3 1/2"	2 3/4"	2 3/4"	5'-4 1/2"	2 3/4"	5'-4 1/2"	2 3/4"	5'-4 1/2"	2 3/4"	5'-1"	2 3/4"	5'-1"	2 3/4"	
47'-0"	"	46'-11"	5'-4"	5'-7 1/2"	2 3/4"	2 3/4"	5'-7 1/2"	2 3/4"	5'-7 1/2"	2 3/4"	5'-7 1/2"	2 3/4"	5'-4"	2 3/4"	5'-4"	2 3/4"	
49'-0"	"	48'-11"	5'-7"	5'-10 1/2"	2 3/4"	2 3/4"	5'-10 1/2"	2 3/4"	5'-10 1/2"	2 3/4"	5'-10 1/2"	2 3/4"	5'-7"	2 3/4"	5'-7"	2 3/4"	
LAST END SPAN	15'-0"	RA4	16'-11"	4'-7 1/2"	0	0	0	0	0	0	5'-4 1/2"	0	0	0	4'-11"	0	0
	17'-0"	"	18'-11"	5'-3 1/2"	0	0	0	0	0	0	6'-0 1/2"	0	0	0	5'-3 1/2"	0	0
	19'-0"	"	20'-11"	5'-1 1/2"	0	0	0	0	0	0	6'-0 1/2"	0	0	0	5'-1 1/2"	0	0
	21'-0"	"	22'-11"	4'-9 1/2"	0	0	0	0	5'-3 1/2"	2 3/4"	5'-6 1/2"	0	0	0	4'-9 1/2"	0	0
	23'-0"	"	24'-11"	5'-1 1/2"	0	0	0	0	5'-9 1/2"	2 3/4"	6'-0 1/2"	0	0	0	5'-1 1/2"	0	0
	25'-0"	"	26'-11"	5'-0 1/2"	0	0	0	0	6'-3 1/2"	2 3/4"	6'-6 1/2"	0	0	0	5'-0 1/2"	0	0
	27'-0"	"	28'-11"	4'-10 1/2"	0	0	0	0	5'-4 1/2"	2 3/4"	5'-7 1/2"	2 3/4"	5'-4 1/2"	0	4'-10 1/2"	0	
	29'-0"	"	30'-11"	5'-3 1/2"	0	0	0	0	5'-9 1/2"	2 3/4"	6'-0 1/2"	2 3/4"	5'-9 1/2"	0	5'-3 1/2"	0	
	31'-0"	"	32'-11"	5'-7 1/2"	0	0	0	0	6'-2 1/2"	2 3/4"	6'-5 1/2"	2 3/4"	6'-2 1/2"	0	6'-0 1/2"	0	
	33'-0"	"	34'-11"	4'-11 1/2"	5'-3 1/2"	2 3/4"	0	0	0	0	0	2 3/4"	5'-3 1/2"	2 3/4"	4'-11 1/2"	0	
35'-0"	"	36'-11"	5'-3 1/2"	5'-7 1/2"	2 3/4"	0	0	0	0	0	2 3/4"	6'-2 1/2"	2 3/4"	5'-3 1/2"	0		
37'-0"	"	38'-11"	5'-7 1/2"	6'-1 1/2"	2 3/4"	0	0	0	0	0	2 3/4"	6'-4 1/2"	2 3/4"	5'-7 1/2"	0		
39'-0"	"	40'-11"	4'-11 1/2"	5'-6 1/2"	2 3/4"	0	0	0	2 3/4"	5'-8 1/2"	2 3/4"	5'-6 1/2"	2 3/4"	4'-11 1/2"	0		
41'-0"	"	42'-11"	5'-3 1/2"	5'-9 1/2"	2 3/4"	0	0	0	2 3/4"	6'-0 1/2"	2 3/4"	5'-9 1/2"	2 3/4"	5'-3 1/2"	0		
43'-0"	"	44'-11"	5'-6 1/2"	6'-1"	2 3/4"	0	0	0	2 3/4"	6'-3 1/2"	2 3/4"	6'-0 1/2"	2 3/4"	5'-6 1/2"	0		
45'-0"	"	46'-11"	5'-0"	5'-6 1/2"	2 3/4"	2 3/4"	5'-6 1/2"	2 3/4"	5'-9 1/2"	2 3/4"	5'-9 1/2"	2 3/4"	5'-0"	2 3/4"	5'-0"	2 3/4"	
47'-0"	"	48'-11"	5'-3"	5'-9 1/2"	2 3/4"	2 3/4"	5'-9 1/2"	2 3/4"	6'-0 1/2"	2 3/4"	6'-0 1/2"	2 3/4"	5'-3"	2 3/4"	5'-3"	2 3/4"	
49'-0"	"	50'-11"	5'-6"	6'-0 1/2"	2 3/4"	2 3/4"	6'-0 1/2"	2 3/4"	6'-3 1/2"	2 3/4"	6'-0 1/2"	2 3/4"	5'-6"	2 3/4"	5'-6"	2 3/4"	

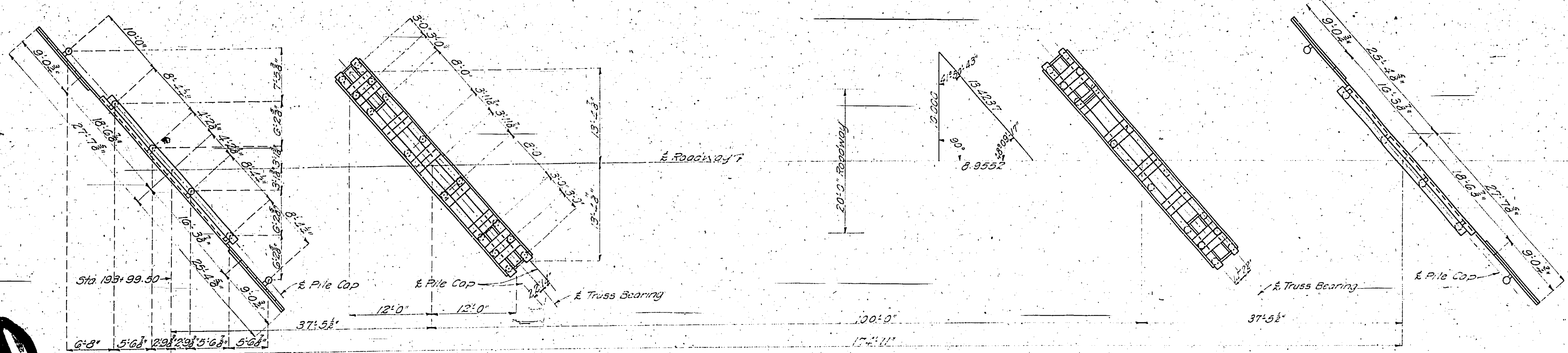
MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	5C-52	19		10



Note: No piling to be ordered until authorized by the Engineer in writing. All piling to be creosoted timber and estimated for following lengths: 32 @ 45' 0", 8 @ 35' 0" and 4 @ 15' 0". These lengths include 12" cut-offs. All piles to be driven to full penetration.

GENERAL ELEVATION



PLAN

GENERAL NOTES:

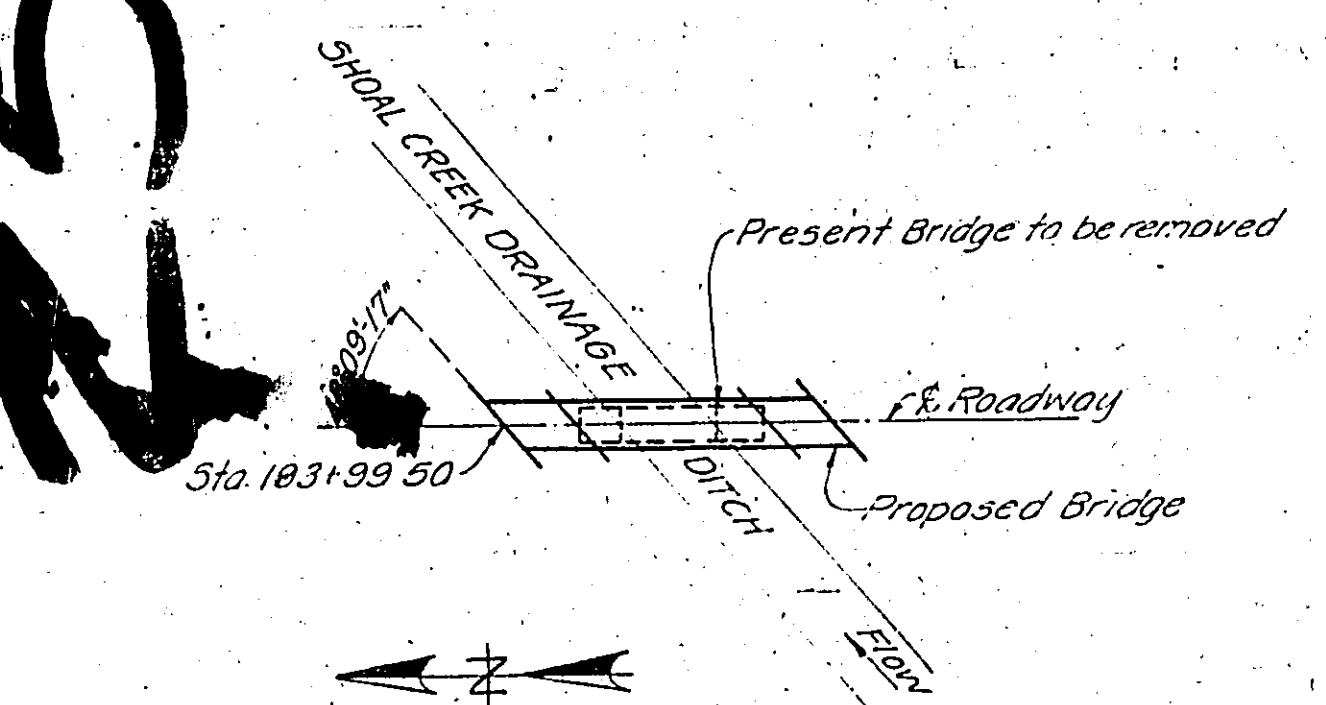
All piling to be driven to full penetration.
 All timber to be creosoted Douglas Fir Structural Grade, creosoted Southern Yellow Pine Structural Square Edge and Sound Grade or untreated Redwood Prime Structural Grade. All timber rough full sawn except as noted in timber bill. Slight variations in sawing to be in accordance with grading rules. All treated timber to be cut to lengths, shaped and bored as shown before treating. Sacking plank are all billed 6' long and are to be fitted and cut in the field.
 Field holes for drift pins shall be bored 3/8". Field holes for bolts shall be bored same size as bolts.
 When bolts with countersunk heads in wood are indicated on plans, cut washers shall be used under heads. 0.6 washers shall be used under heads of all other bolts and under nuts of all bolts bearing on wood.
 Timber floor to be protected by a bituminous mastic wearing surface to be applied by the Missouri State Highway Department.
 Rivets 1" holes 3/8" except in handrail where rivets shall be 3/4" holes 3/4". Field connections riveted, except as noted.
 Detail shop drawings for all structural steel shall be submitted to the Missouri State Highway Department in duplicate and shall be approved before steel is fabricated.
 For details of shoes and rockers see Std. S600. Details of trusses to be similar to Std. S8100.
 See Special Provisions in regard to permissible substitutions of beams.
 Paint: Shop Vane.
 Field Surfaces inaccessible after erect on three coats of red lead. No other paint to be applied by contractor. A paint required will be furnished by the Missouri State Highway Department.
 Bridge excavation in accordance with Section I of Standard Specifications issued April 1, 1930.
 For connection of End Floor Beam to truss and stringer to End Floor Beam see Std. S812 R. Holes for turned bolts to be subpunched andreamed to a driving fit.
 Cost of substructure hardware to be included in price bid for timber in place.

ESTIMATED QUANTITIES			
Item	Substr.	Superstr.	Total
Excavation	Cu Yds	100	100
Fabricated Struct. Steel (Truss Span)	Lbs	2,300.00	2,300.00
Fabricated Struct. Steel (I-Beam Spans)	Lbs	2,100.00	2,100.00
Steel Castings	Lbs	970	970
Creosoted Timber Piles	Lin Ft	1,730	1,730
Creosoted Timber Pile Cut-offs	Lin Ft	1.1	1.1
Timber	F.B.M.	7411	19449
			16860

Note: Bridge excavation will be allowed for bents within horizontal limits shown and noted on details.
 This excavation will be allowed to bottom of 6' x 6' backing supports on end bents and to Elev. 688.0 for interior bents.

PERMISSIBLE BEAM SUBSTITUTIONS			
Member	C.S.	Std. B	Std. I
Outside Stringer - I.B. Span	18" x 41"	18" x 41"	18" x 54"
Inside Stringer - I.B. Span	18" x 49"	18" x 49"	18" x 50"
End Spacer - I.B. Span	10" x 21"	10" x 21"	10" x 21"
End Floor Beam - Truss Span	21" x 63"	22" x 63"	20" x 81"
Int. Floor Beam - Truss Span	24" x 85"	24" x 85"	24" x 105"
Stringer - Truss Span	12" x 28"	12" x 28"	12" x 31"

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



LOCATION SKETCH

BRIDGE OVER SHOAL CREEK DRAINAGE DITCH

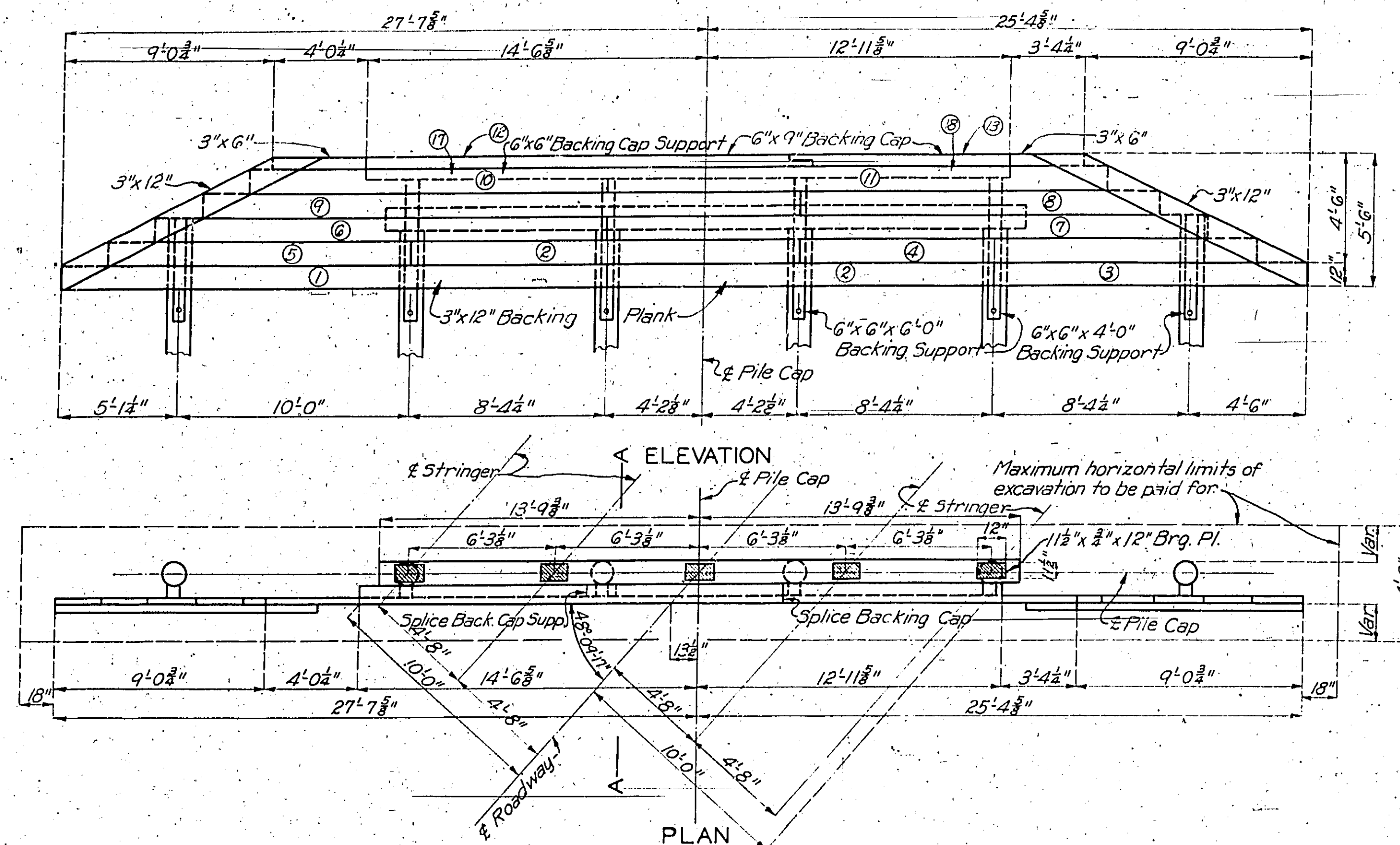
STATE ROAD FROM UTICA TO DAWN
 ABOUT 0.1 MILE SOUTH OF DAWN STATION
 PROJECT NO. SC-52 STA. 193+99.50
 LIVINGSTON COUNTY

SUBMITTED BY: *N.R. Lark* DATE: 12/8/32
 APPROVED BY: *TH. Cutler* DATE: 10/8/32
 BRIDGE ENGINEER
 CHIEF ENGINEER

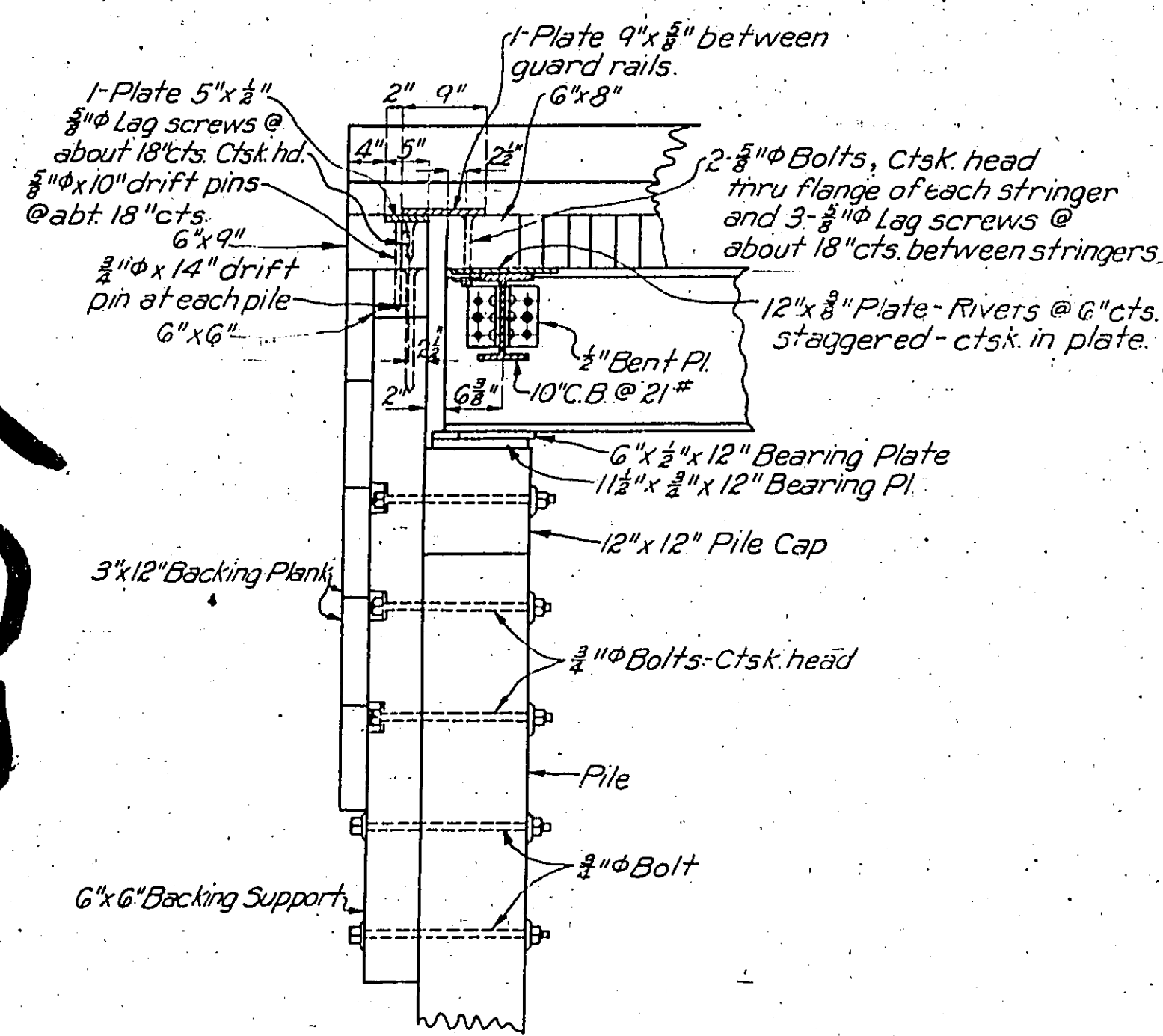
Drawn Nov. 1932 by H.D.
 Traced Nov. 1932 by G.W.
 Checked Nov. 1932 by L.H.

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	5C-52	19		7



DETAILS OF END BENTS NO. 1 & 4



SECTION A-A

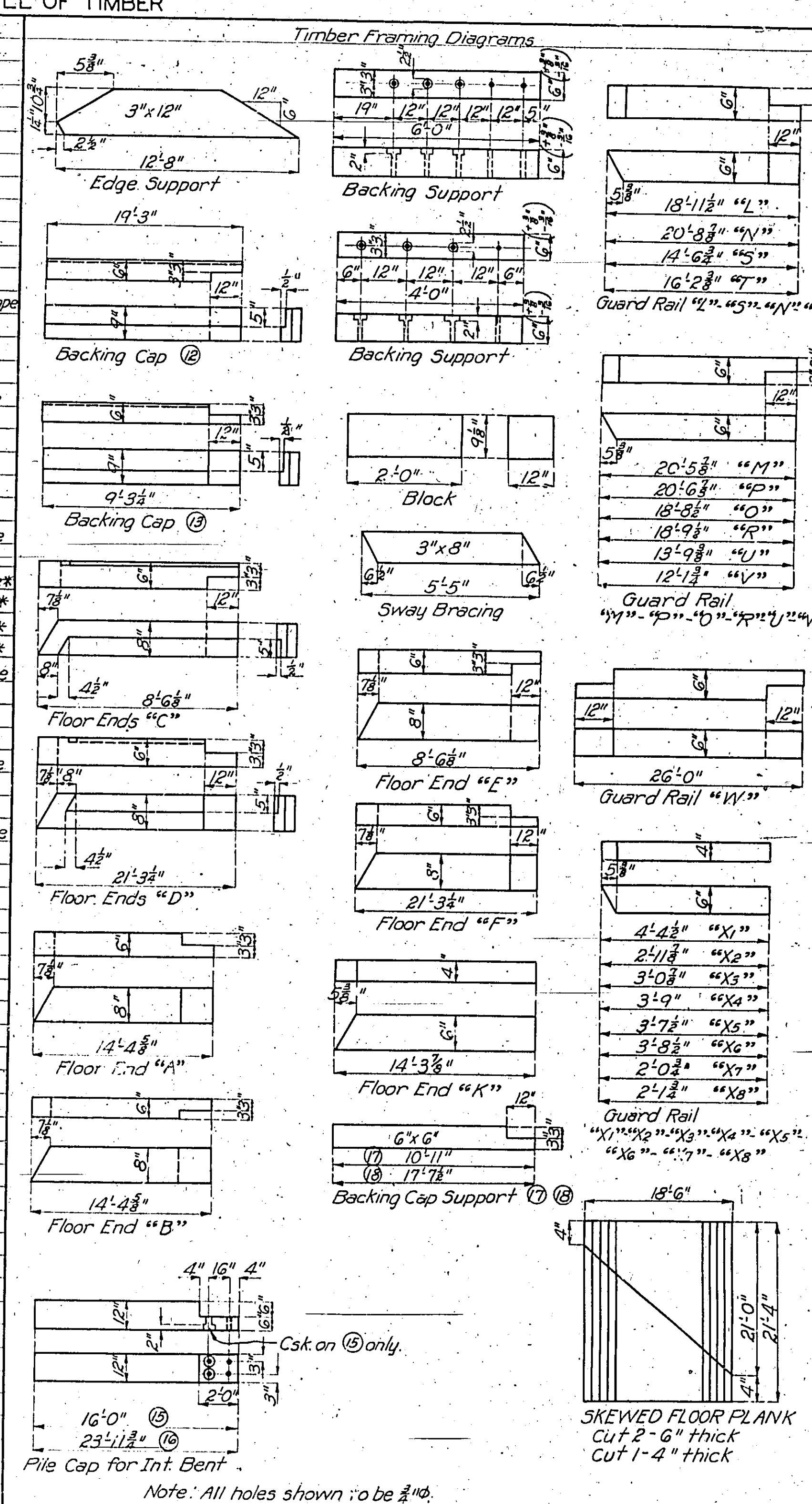
NAILING SCHEDULE:
Backing planks to supports; 3-50d at each support at splices; 3-50d each side of splice.
Pieces at ends of backwall to backing plank; 4-50d to each backing plank.

Note: Any irregularity in alignment of piling in end bents to be corrected by facing one surface of the piling or by varying the thickness of the backing support such as to place the surface of the backing in a true plane and eliminate any strain on the backing plank.
Splice in backing plank to be made at center of 6\"/>

Note: This drawing is not to scale.
Follow dimensions

BILL OF TIMBER

Piece	No	Size	Length	Remarks
End Bents				
Backing Plank ①	2	3"x12"	24'-0"	Cut to length
" " ②	4	3"x12"	17'-3"	" " "
" " ③	2	3"x12"	13'-4"	" " "
" " ④	2	3"x12"	19'-8"	" " "
" " ⑤	2	3"x12"	13'-7"	" " "
" " ⑥	2	3"x12"	19'-11"	" " "
" " ⑦	2	3"x12"	26'-0"	" " "
" " ⑧	2	3"x12"	15'-8"	" " "
" " ⑨	2	3"x12"	26'-4"	" " "
" " ⑩	2	3"x12"	15'-11"	" " "
" " ⑪	2	3"x12"	22'-0"	" " " & She
Backing Cap Supp ⑪	2	6"x6"	10'-11"	" " "
Shoulder Plank	2	3"x6"	3'-4"	" " "
" "	2	3"x6"	4'-0"	" " "
Edge Support	4	3"x12"	12'-8"	Cut to length & shape
Backing Support	8	6"x6"	6'-0"	" " "
" "	4	6"x6"	4'-0"	" " "
Backing Cap ⑫	2	6"x9"	19'-3"	" " "
" " ⑬	2	6"x9"	9'-3"	" " "
Pile Cap	2	12"x12"	27'-6"	Cut to length *
Backing Cap Support ⑬	2	6"x6"	17'-7"	Cut to length & shape
Intermediate Benis				
Pile Cap ⑭	4	12"x12"	23'-11"	Cut to length & shape
" " ⑮	4	12"x12"	16'-0"	" " "
Block	28	12"x12"	4'-6"	Cut to length *
" "	10	12"x12"	2'-0"	" " "
" "	10	9"x12"	2'-0"	Cut to length & shape
Bracing	4	3"x8"	26'-6"	Cut to length
" "	16	3"x8"	12'-0"	" " "
" "	16	3"x8"	4'-0"	" " "
" "	16	3"x8"	5'-5"	Cut to length & shape
Superstructure				
Floor End "A"	2	6"x8"	8'-6"	Cut to length & shape
" " "B"	2	6"x8"	21'-3"	" " "
" " "C"	1	6"x8"	8'-6"	" " "
" " "D"	1	6"x8"	21'-3"	" " "
" " "E"	1	6"x8"	8'-6"	" " "
" " "F"	1	6"x8"	21'-3"	" " "
" " "G"	4	4"x8"	14'-3"	" " "
Guard Rail "H"	2	6"x6"	18'-11"	" " "
" " "I"	1	6"x6"	20'-5"	" " "
" " "J"	2	6"x6"	20'-8"	" " "
" " "K"	1	6"x6"	18'-8"	" " "
" " "L"	1	6"x6"	20'-6"	" " "
" " "M"	1	6"x6"	18'-9"	" " "
" " "N"	1	6"x6"	14'-6"	" " "
" " "O"	1	6"x6"	16'-2"	" " "
" " "P"	1	6"x6"	13'-9"	" " "
" " "Q"	1	6"x6"	12'-1"	" " "
" " "R"	6	6"x6"	26'-0"	" " "
" " "S"	2	4"x6"	4'-4"	" " "
" " "T"	1	4"x6"	2'-11"	" " "
" " "U"	1	4"x6"	3'-0"	" " "
" " "V"	3	4"x6"	3'-9"	" " "
" " "W"	3	4"x6"	3'-7"	" " "
" " "X"	2	4"x6"	3'-8"	" " "
" " "Y"	1	4"x6"	2'-0"	" " "
" " "Z"	1	4"x6"	2'-13"	" " "
" " "AA"	20	4"x6"	4'-5"	Cut to length
" " "AB"	38	4"x6"	3'-6"	" " "
Floor Plank	196	2"x6"	21'-0"	" " "
" "	493	2"x4"	21'-0"	" " "
Skewed Floor Plank	2	18'-6"x6"	21'-4"	Cut to length & shape
" "	1	18'-6"x4"	21'-4"	" " "



BRIDGE OVER SHOAL CREEK DRAINAGE DITCH

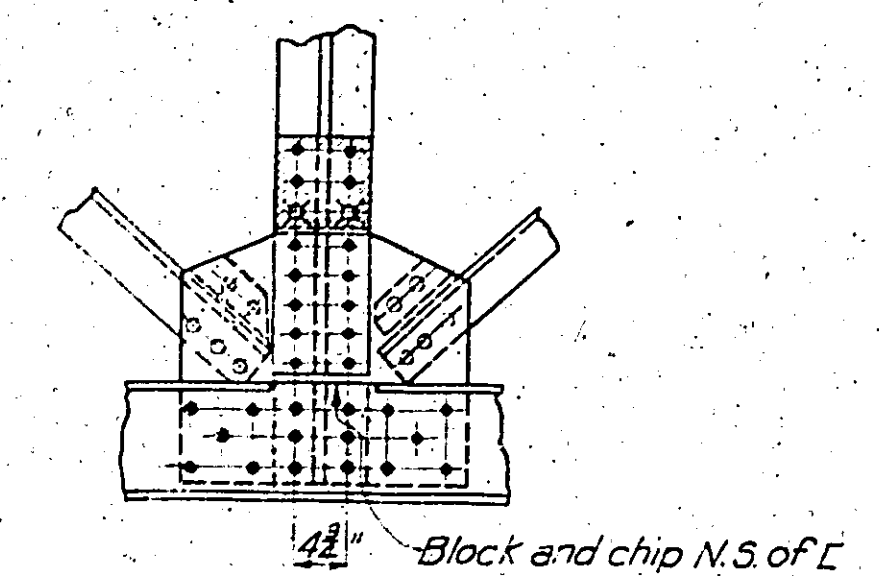
STATE ROAD FROM UTICA TO DAWN
ABOUT 0.1 MILE SOUTH OF DAWN STATION
PROJECT NO. SC-52 STA. 193+99.50
LIVINGSTON COUNTY

* 525 to exact depth of 11 1/2"

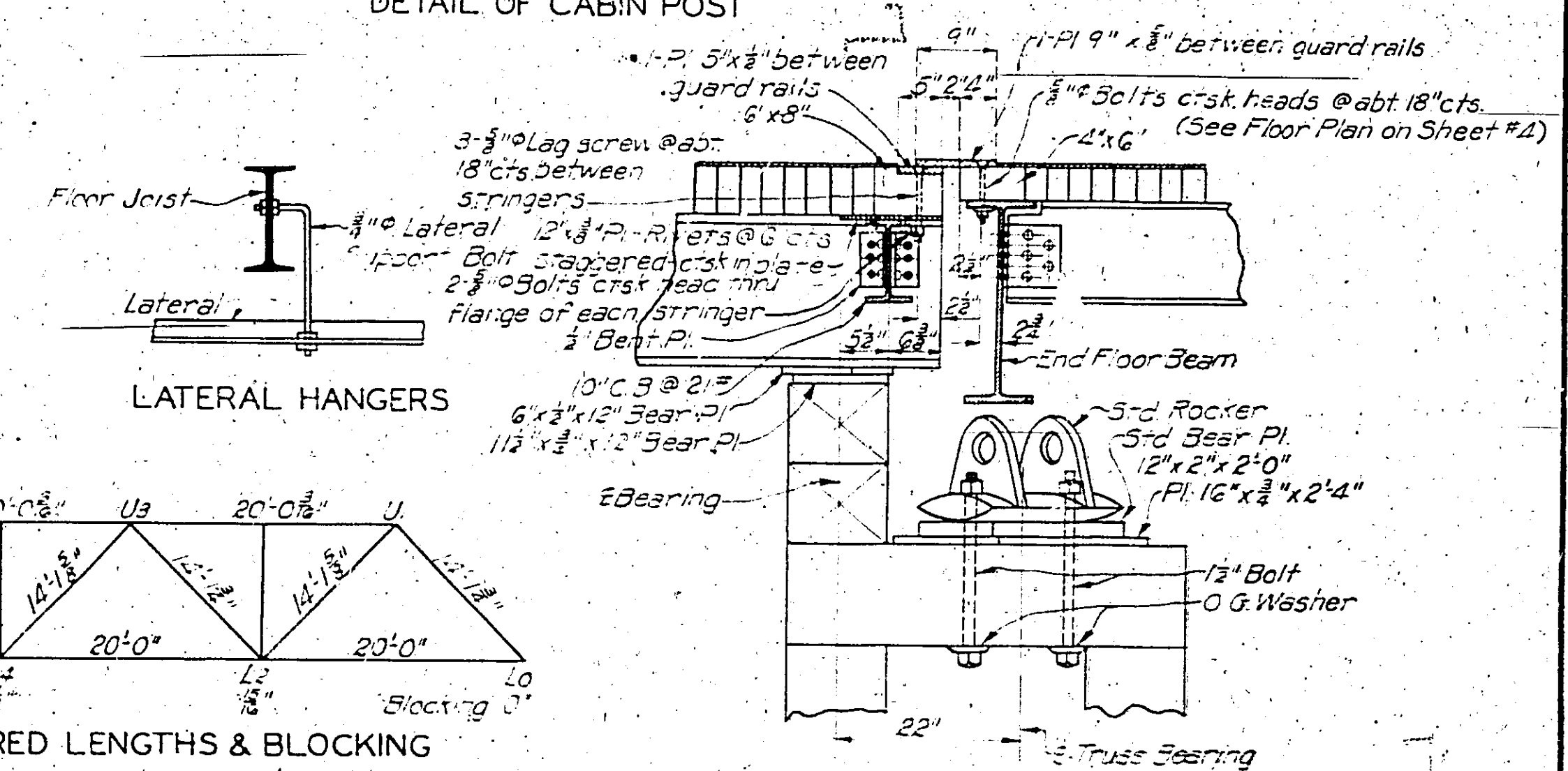
12

16" x 16"

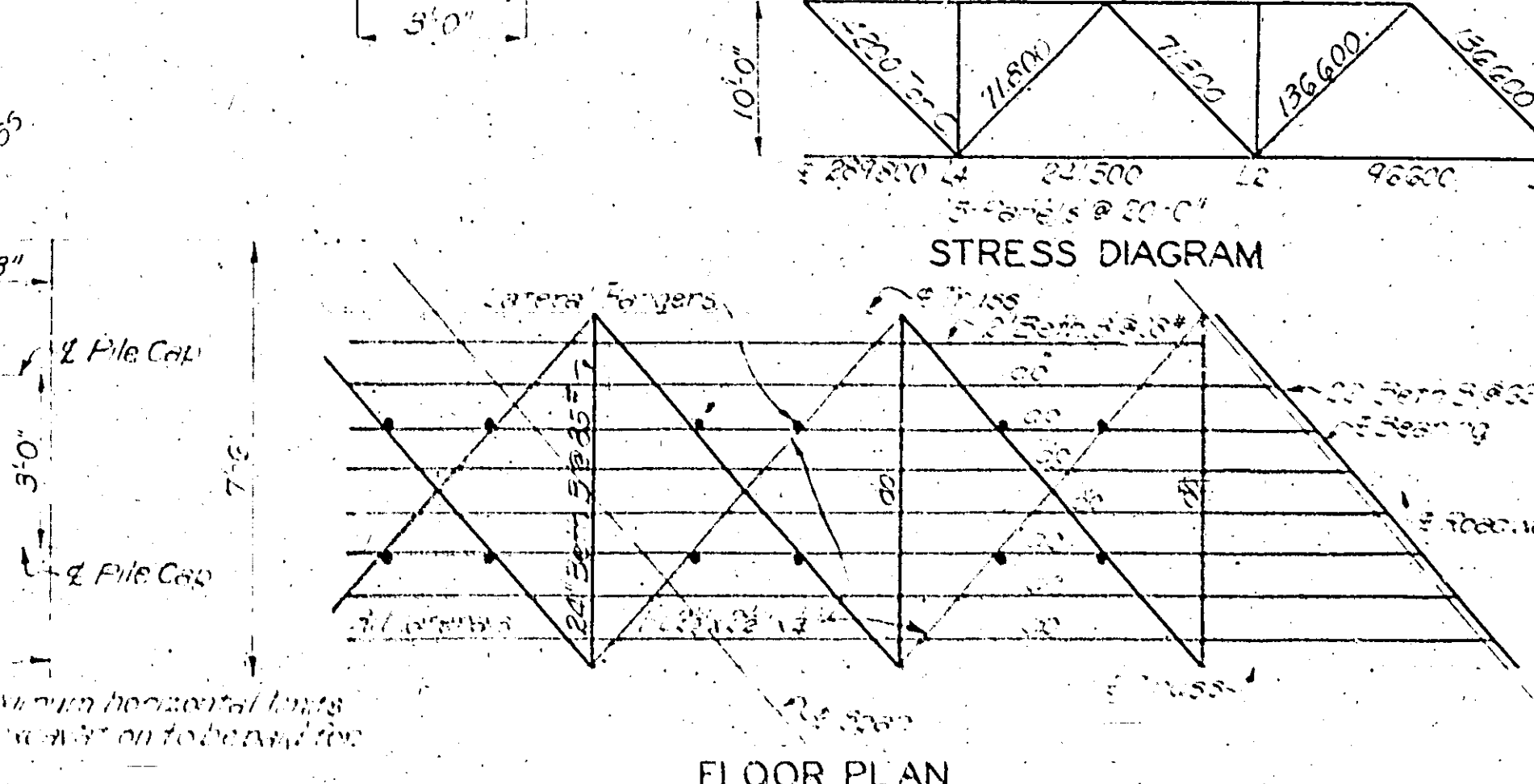
16" Plaster



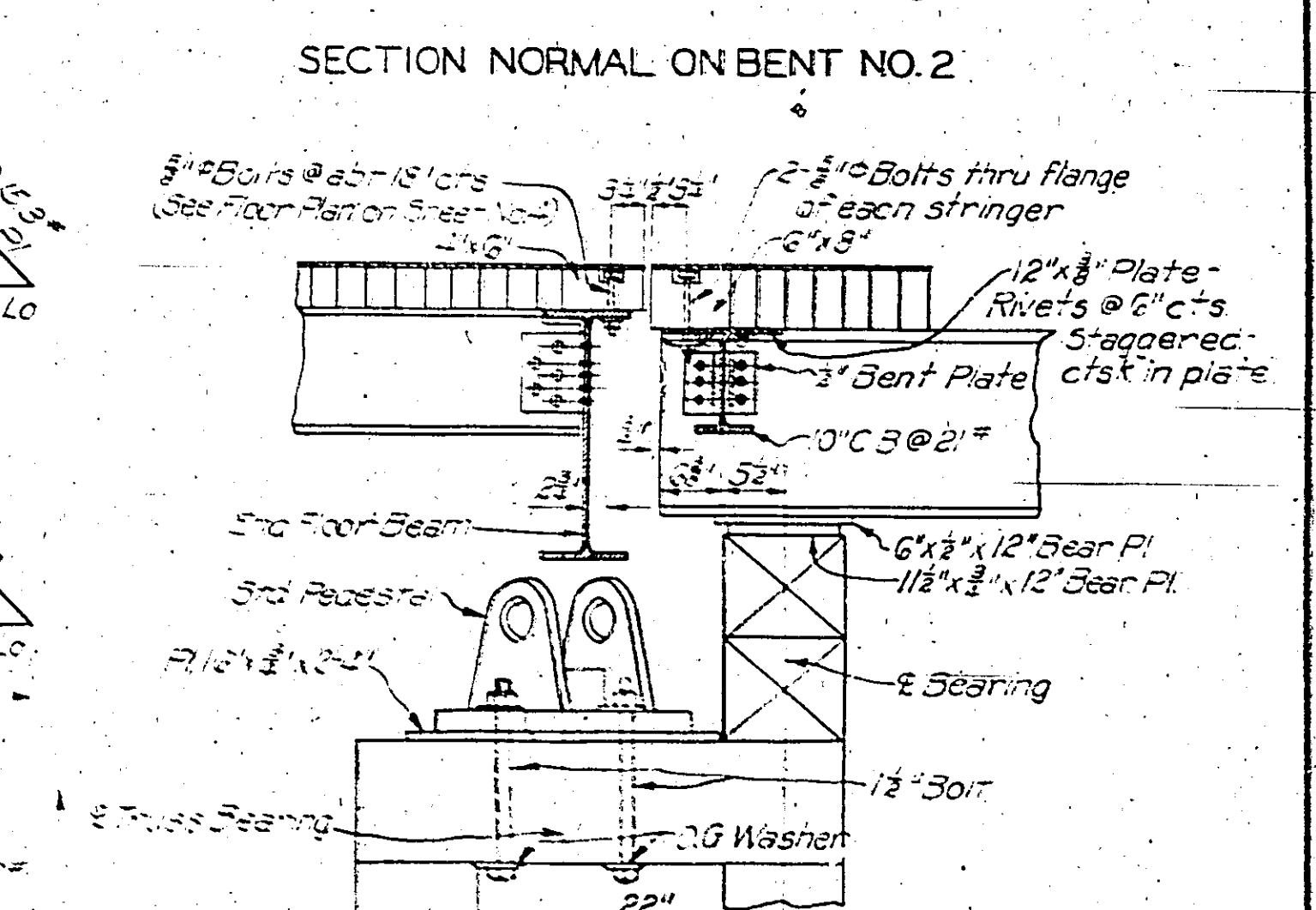
TYPICAL POST DETAIL



SECTION NORMAL ON BENT NO. 2



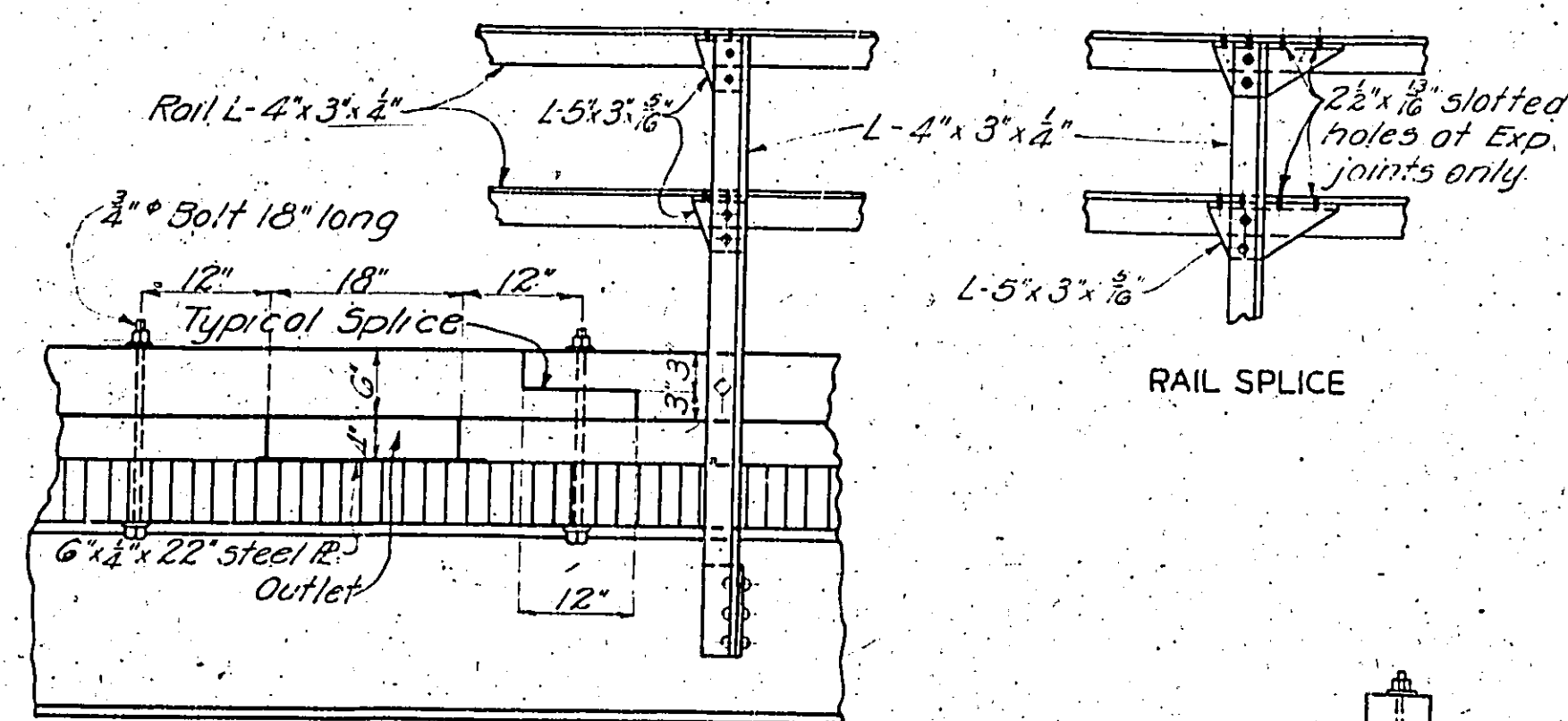
FLOOR PLAN



STATE ROAD FROM UTICA TO DAWN
ABOUT 0.1 MILES SOUTH OF DAWN STATION
PROJECT NO SC-S2 STA. 193 + 99.50
LIVINGSTON COUNTY

Drawn Oct 1932 By H.D.
Traced Nov 1932 By H.W.H.
Checked Nov 1932 By L.H.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	5C-52	19	1	

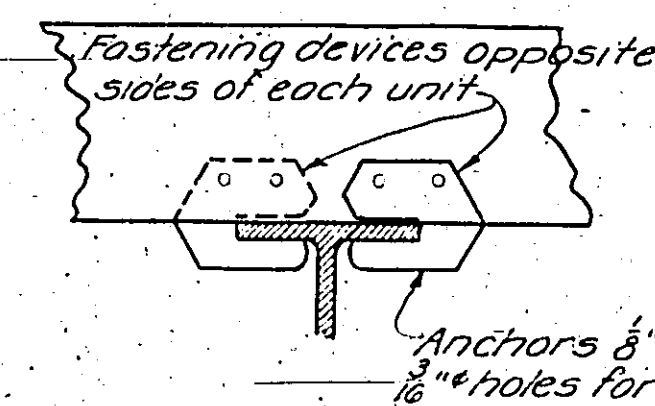


The diagram illustrates a 128-bit bus architecture, divided into a Left Hand Side and a Right Hand Side. Each side is represented by a horizontal bar with multiple connection points labeled X1 through X12. The components are labeled as follows:

- Left Hand Side:**
 - Component 1: Labeled "L" and "M".
 - Component 2: Labeled "S" and "W".
 - Component 3: Labeled "W" and "W".
 - Component 4: Labeled "U" and "R".
 - Component 5: Labeled "N".
- Right Hand Side:**
 - Component 1: Labeled "N" and "O".
 - Component 2: Labeled "T" and "W".
 - Component 3: Labeled "W" and "W".
 - Component 4: Labeled "V" and "P".
 - Component 5: Labeled "Z".

Connections are indicated by arrows and labels: X1, X2, X7, X8, X9, X10, X11, X12, X3, X4, X5, X6, X1, X2, X3, X4, X5, X6, X7, X8, X9, X10, X11, X12. The diagram is divided into four sections labeled 1, 2, 3, and 4.

Note: Laminated flooring shall be constructed of full length pieces surfaced on one edge for bearing on stringer. Six pieces shall be fastened together in place forming a unit. The six pieces forming the unit shall be nailed together with 40d nails spaced at 18" cts. alternating about 1 1/2" from top and bottom edges. Each unit shall be fastened to the stringers with clamps as shown. One clamp on each alternate side of each unit of each stringer requiring 10 clamps per unit. Units not to be nailed together.



SECTION A-A

111'-2" x 6" planks

Toe Nail 20 Plank to Guard Rail

5" Plote for 10d nails

Floor End "A"

Splice

Floor End "B"

10'0.00'

8.9352'

13.2232'

43°

20°

43°

10" CB

1" Bear E

1" Stringer

SECTION THRU STRINGER OVER BEARING

Technical drawing of a bridge deck section, showing the arrangement of planks, stringers, and floor beams. The drawing includes labels for various components and dimensions:

- Planks:** 11'-2 1/2" x 4" planks (top), 11'-2 1/2" x 5'-0" (bottom).
- Floor Beams:** 10" C.B. & 21" L.
- Stringers:** 10" C.B. & 21" L.
- Floor End "D" at Bent #2** and **Floor End "K"**.
- End Floor Beam** and **Stringer**.
- Dimensions:** 4", 1'-2 1/2" x 2 1/2" x 5'-0", 10" C.B. & 21" L., 11'-2 1/2" x 5'-0", 4".
- Other labels:** 2' of Bt #2, 2' of Bt #3, 1'-2 1/2" x 2 1/2" x 5'-0", 11'-2 1/2" x 5'-0", 4".

The image contains two technical drawings of flange clamps. The left drawing is labeled 'FOR STD. & BETH. BEAMS' and shows a cross-section of a beam with a flange clamp. The clamp has a width of 2 1/8 inches and a height of 2 1/8 inches. The beam has a flange thickness of 1/2 inch and a web thickness of 1/2 inch. The clamp is secured with a bolt and nut. A note indicates 'Not less than 8" Clearance' from the bottom flange. The right drawing is labeled 'FOR CARNEGIE BEAMS' and shows a similar cross-section. The clamp has a width of 2 1/8 inches and a height of 2 1/8 inches. The beam has a flange thickness of 1/2 inch and a web thickness of 1/2 inch. The clamp is secured with a bolt and nut. A note indicates 'Not less than 8" Clearance' from the bottom flange.

DETAILS OF FLANGE CLAMPS

Note: Cast iron clamps used on bearing plates to have 1/2" clearance at "range of beam to allow for expansion. All clamps to have 3" core holes. Use two clamps only on each T-Beam at pile caps on end bents.

Note: This drawing is not to scale.
Follow dimensions

Sheet No 4 of 4

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	5C-52	19		1

BILL OF REINFORCING STEEL					
No.	Size	Length	Mark	Location	Bending Sketch and Cutting Diagrams
16	3/4"	20'3"	C1	Curb	
228	3/4"	2'0"	C2	"	
16	3/4"	19'9"	C3	"	
32	3/4"	25'6"	C4	"	
630	3/4"	20'9"	S1	Slab	
52	3/4"	20'0"	S2	"	
120	3/4"	21'6"	S3	"	
16	3/4"	22'0"	S4	"	
52	3/4"	19'6"	S5	"	
104	3/4"	25'6"	S6	"	

Note: Dimensions given are along center line of bars and are for computed lengths.

Note: Above bill of reinforcing steel is for superstructure only. For reinforcing steel in substructure see Sheet No. 4 of 4.

GENERAL NOTES:

Loading: One 10 Ton Truck, 80% of weight on rear axle, 30% impact, 14'-0" wheel base, 6'-0" gage, 10' high.

Concrete: Slab and curbs to be 1:2:3 1/2 mix, Class "A". All other concrete to be 1:2:3 1/2 mix, Class "B".

Timber: To be creosoted Douglas Fir of the West Coast Region, close grained Structural Grade, creosoted Southern Yellow Pine, Dense Structural Square Edge and Sound Grade, or untreated California Redwood, Prime Structural Grade. All timber rough full-sawn except as noted in timber bill for pile caps. Slight variations in sawing to be in accordance with grading rules. All treated timber to be cut to lengths, shaped and bored as shown before treating. Backing planks are all billed 6' long and are to be fitted and cut in the field.

Field holes for drift pins shall be field bored 3/4". Unless otherwise noted all other field holes in timber shall be field bored 3/4". When bolts with countersunk heads are indicated on plans, cut washers shall be used under heads. O.G. washers shall be used under heads of all other bolts and under nuts of all bolts.

I-Beams with fastenings, spacers, handrail, handrail posts with fastenings, clip angles and cap plate on end bent with fastenings will be paid for as structural steel. Cast of substructure hardware to be included in price bid for timber in place.

Rivets 3/4" holes 1/2", except in handrail where rivets shall be 3/4" holes 1/2". Field connections riveted except as noted in plan.

Cast of metallic edge moulding will be included in unit price bid for concrete.

Detail Shop drawings shall be submitted to the State Highway Department in duplicate and shall be approved before steel is fabricated.

Where rubber compound is specified on plans for use in partition and expansion joints, the pre-mould joint shall be securely stitched to one face of concrete with copper wire. See Special Provisions in regard to permissible substitutions of beams.

Bridge excavation for concrete substructure in accordance with Section I of Standard Specifications issued April 1, 1930, except that quantities paid for will be computed from extreme low water Elev. 679.5, where existing ground line is below this elevation.

Paint: Shop, none; Field, contact surfaces with bolted field connections one coat red lead. No other paint to be applied by contractor. All paint required will be furnished by the Missouri State Highway Department.

Exposed edges to be beveled 1/4" where no other bevel is noted.

BRIDGE OVER SHOAL CREEK

STATE ROAD FROM UTICA TO DAWN - ABOUT 1.5 MILE SOUTH OF DAWN STATION

PROJECT NO. SC-52 STA. 277+63

LIVINGSTON COUNTY

SUBMITTED BY: *M.R. Day* DATE: 12/6/32
 APPROVED BY: *T.H. Cutler* DATE: 12/6/32
 BRIDGE ENGINEER CHIEF ENGINEER

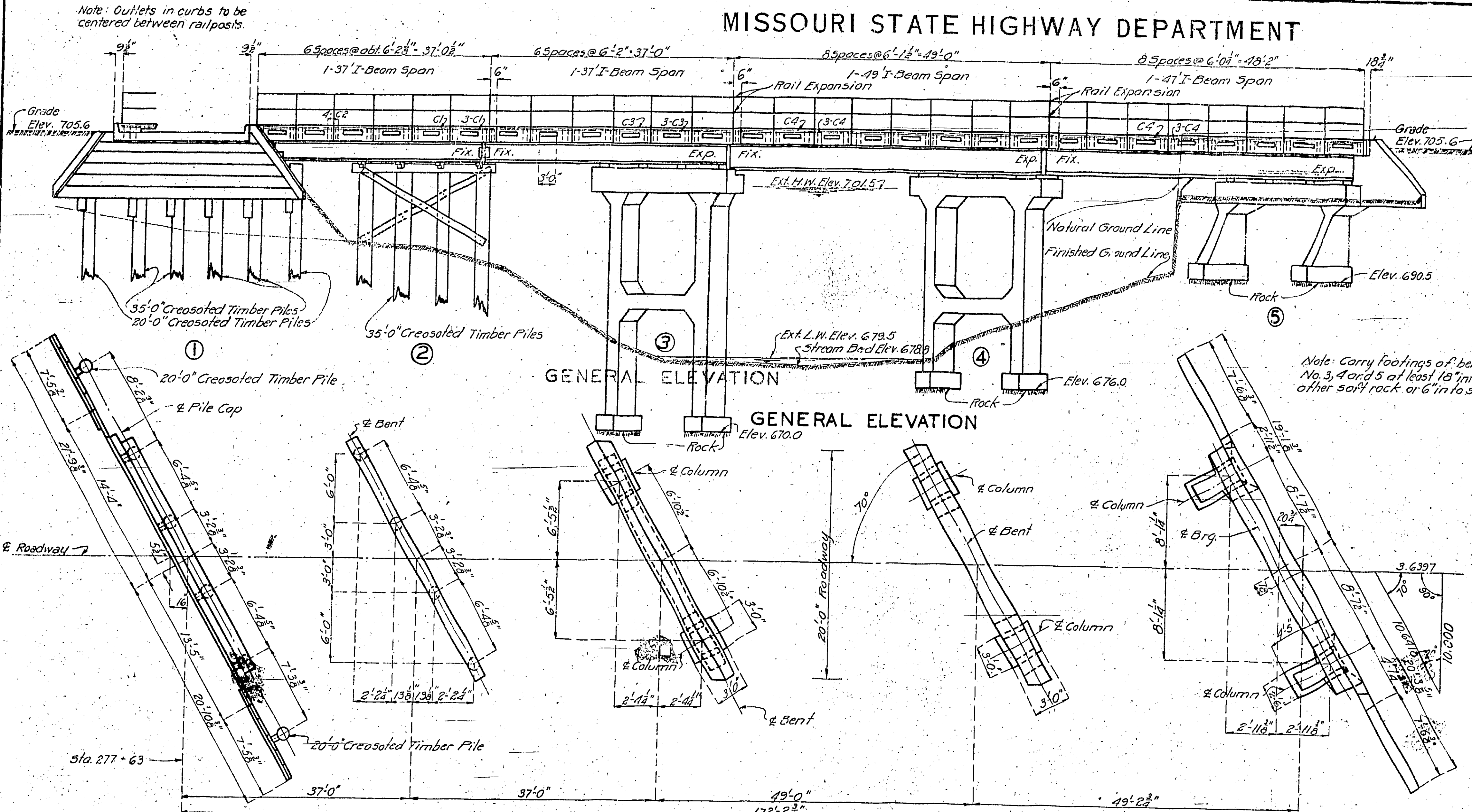
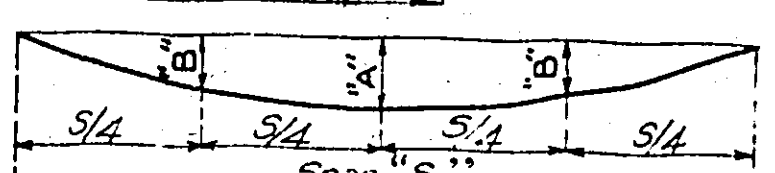


TABLE OF DEFLECTIONS			
	37' spans	47' spans	49' spans
A	1/4"	3/8"	1/2"
B	1/4"	1/2"	3/4"



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

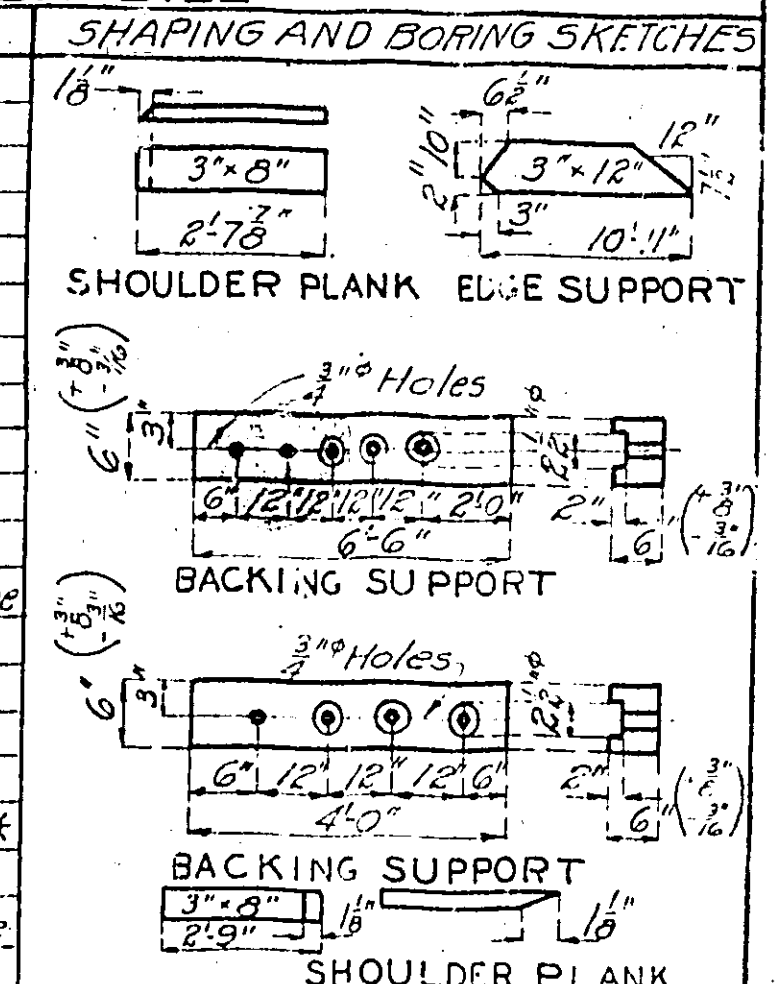
DEAD LOAD DEFLECTION DIAGRAM

ITEM	SUPERSTR.	SUBSTR.	TOTAL
Excavation Class I	Cu. Yds.	100	100
Excavation Class II	Cu. Yds.	45	45
Concrete 1:2:3 1/2 mix, "A"	Cu. Yds.	83.7	83.7
Concrete 1:2:4 mix, "B"	Cu. Yds.	44.3	44.3
Fabricated Structural Steel I-beams	Lbs.	67,000	67,000
Reinforcing Steel	Lbs.	26,700	26,700
Creosoted Timber Piling	Lin. Ft.	310	310
Creos. Timber Pile Cut-offs	Lin. Ft.	5	5
Timber (See Special Prov.) F.B.M.		1392	1392

Note: Bridge Excavation above Elev. 683.0 will be paid for as class I Bridge Excavation. Bridge Excavation below Elev. 683.0 will be paid for as class II Bridge Excavation.

Stream bank at East end of bridge shall be excavated 2'-0" below bottom of beams and 4'-0" outside of curb lines and will be paid for at unit price bid for roadway excavation.

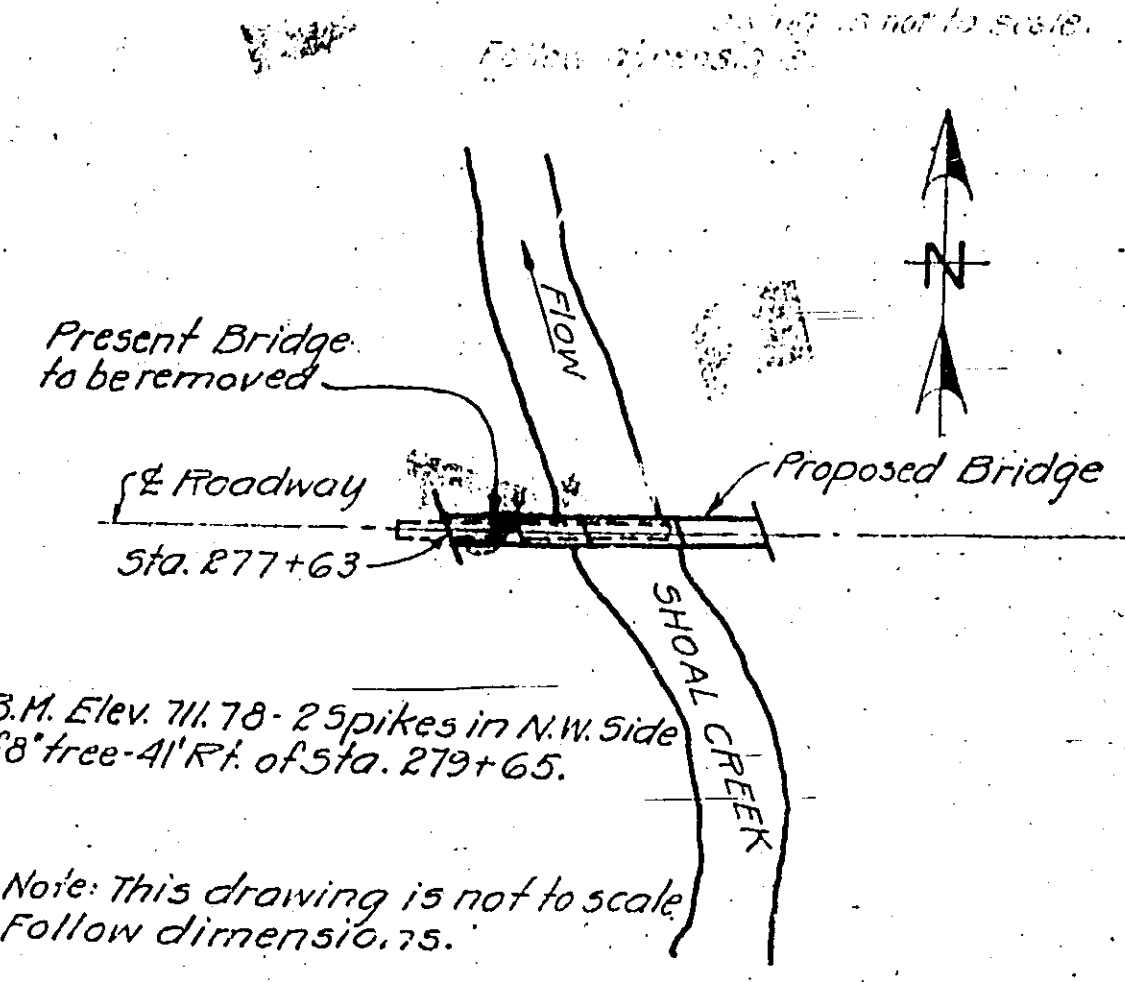
SUBSTRUCTURE TIMBER BILL			
PIECE	NO.	SIZE	REMARKS
Backing Plank	1	3"x12"	Cut to length
"	1	3"x12"	" " " "
"	1	3"x12"	" " " "
"	1	3"x12"	" " " "
"	1	3"x12"	" " " "
"	1	3"x12"	" " " "
"	1	3"x12"	" " " "
"	1	3"x12"	" " " "
"	1	3"x12"	" " " "
"	1	3"x12"	" " " "
Edge Support	2	3"x12"	Cut to length & shape
Shoulder Plank	1	3"x8"	" " " "
Backing Support	4	6"x6"	" " " "
"	2	6"x6"	" " " "
Locking Supp. Cap	1	6"x6"	" " " "
Pile Cap	2	12"x12"	" " " "
Sway Bracing	2	3"x8"	" " " "
Shoulder Plank	1	3"x8"	Cut to length & shape



* 325 to exactly 11 1/2" depth.

Note: Pile caps to be classified as "Beams and Stringers." All other timber to be classified as "Joists and Plank."

Note: See Special Provisions in regard to ordering piles. All piling to be creosoted timber and ordered in the following lengths: 2@20'-0" and 8@35'-0". These lengths include 1/2" for cut-offs. All piles to be driven to full penetration.



LOCATION SKETCH

B.M. Elev. 711.70 - 25 pikes in N.W. Side of 8' tree - 41' Rt. of Sta. 279+65.

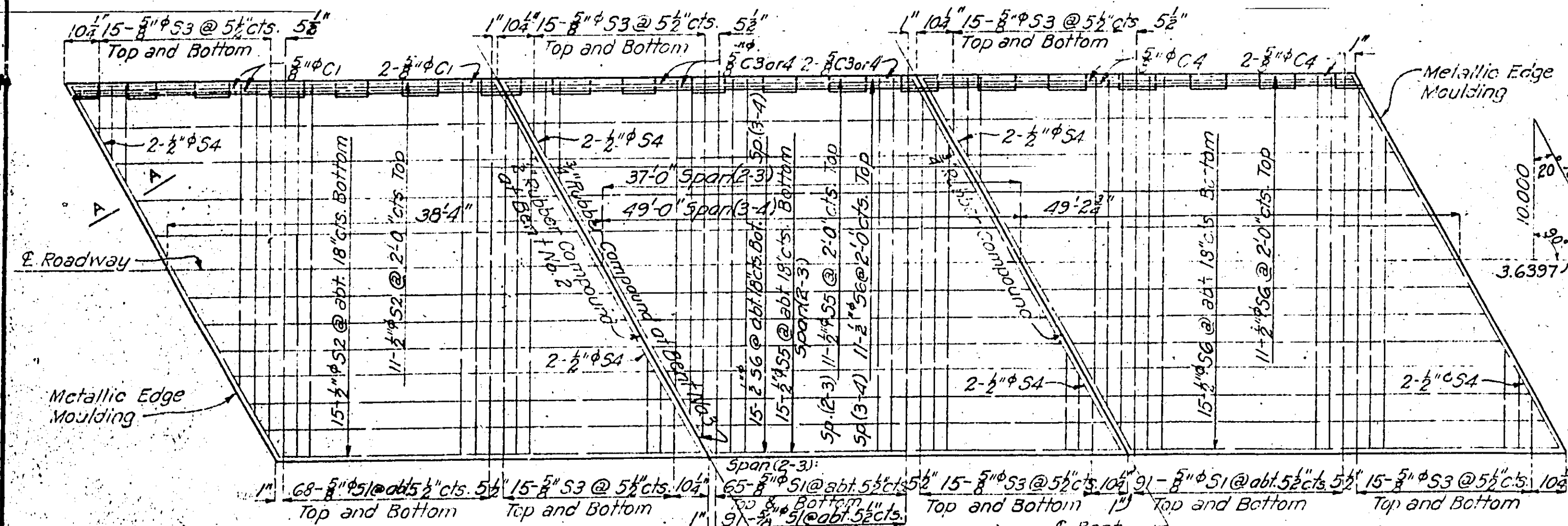
Note: This drawing is not to scale. Follow dimensions.

254

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	DATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO	SC-52	19		

Note: Space dowel bars "C2" at approximately 12" cts. in curbs between outlets and at ends.

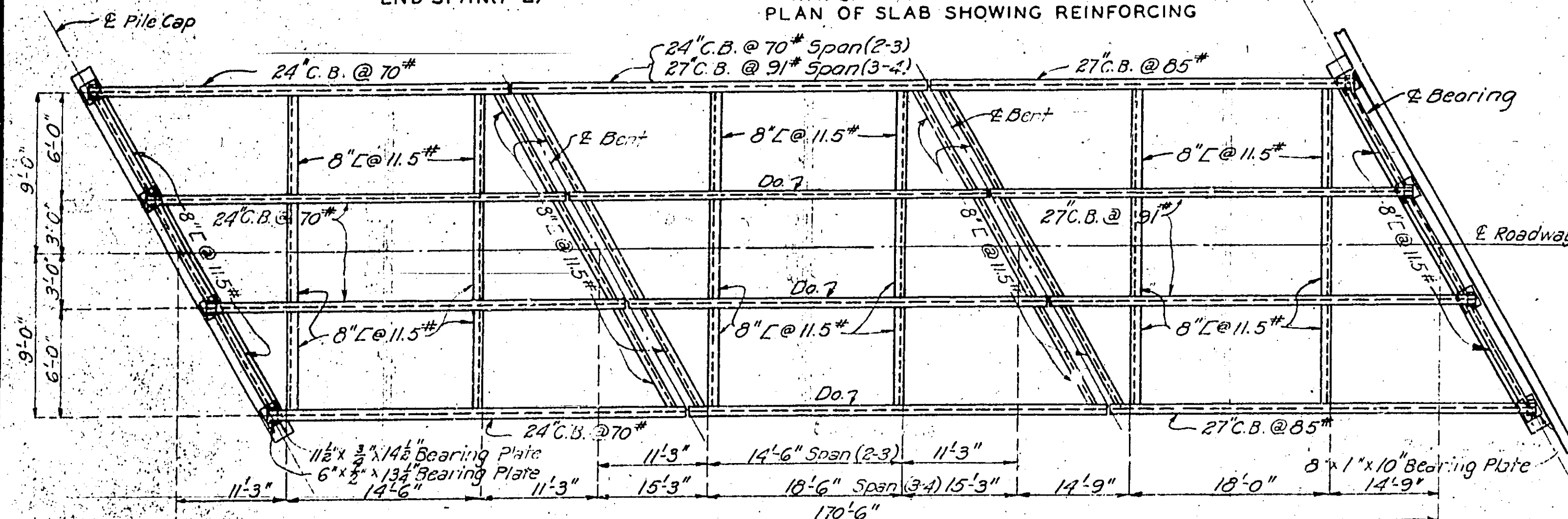


END SPAN (1-2)

INT. SPANS (2-3) & (3-4)

END SPAN (4-5)

PLAN OF SLAB SHOWING REINFORCING

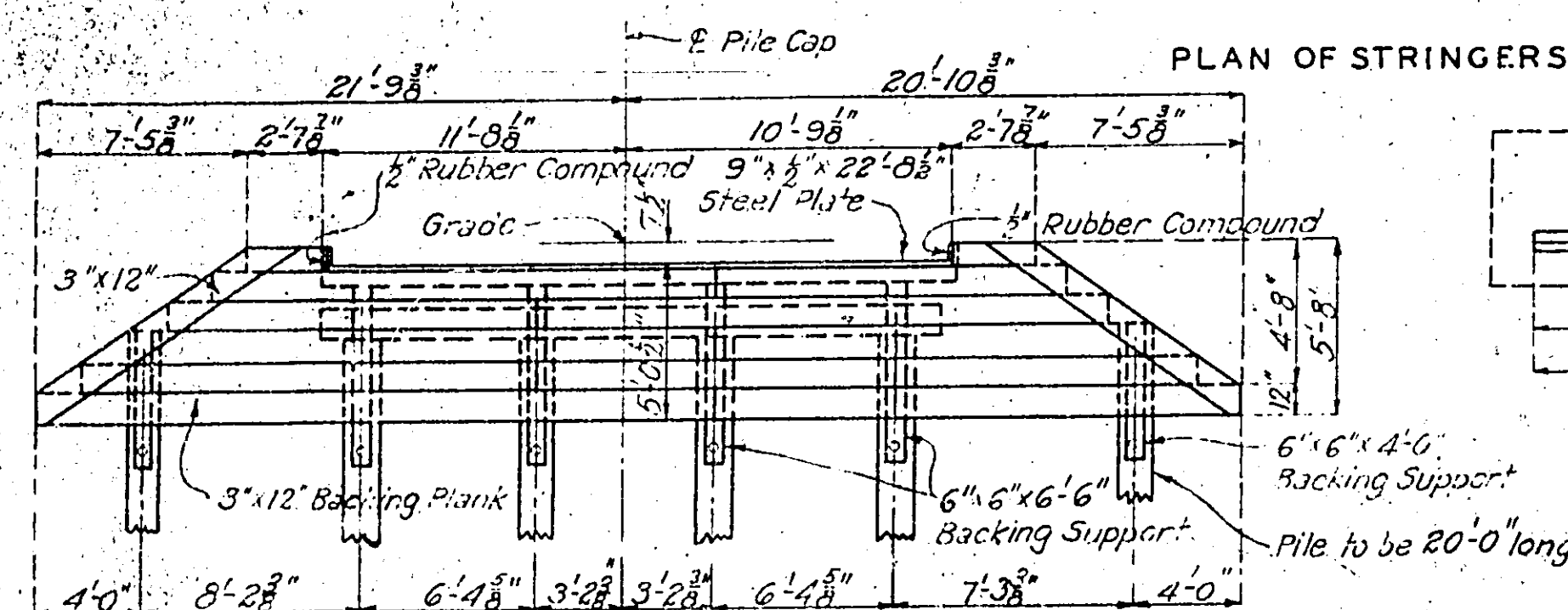


END SPAN (1-2)

INT. SPANS (2-3) & (3-4)

END SPAN (4-5)

PLAN OF STRINGERS

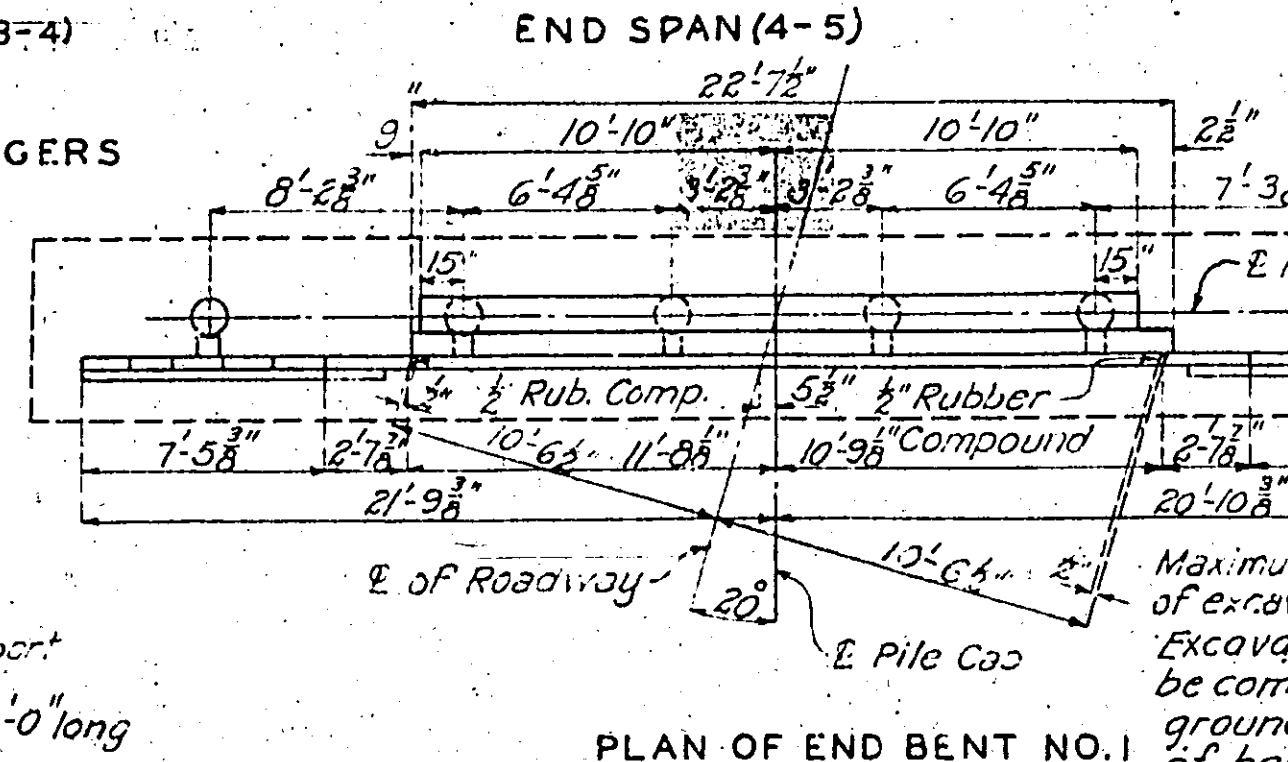


ELEVATION OF END BENT NO. 1

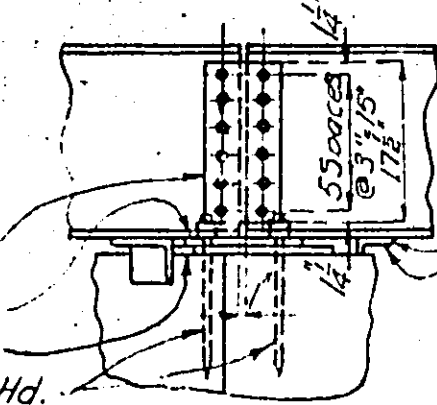
Note: Any irregularity in alignment of piling in end bent to be corrected by facing one surface of the 6"x6" backing support or by varying the thickness of the backing support such as to place the surface of the backing in a true plane and eliminate any strain on the backing plank. Splice in backing plank to be made at center of 6"x6" backing support and to be alternated on the two intermediate supports.

NAILING SCHEDULE:

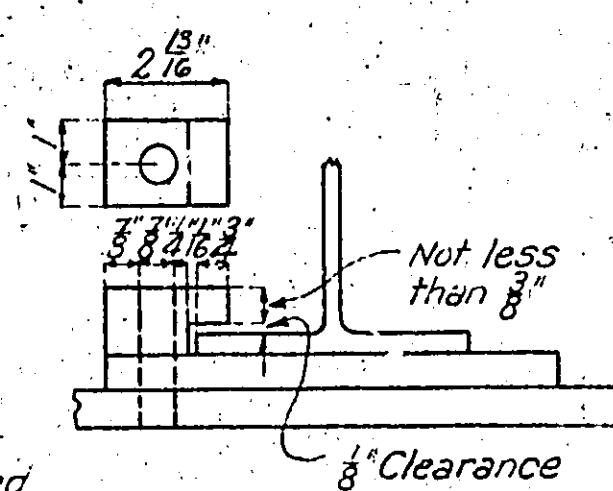
Backing plank to supports, 3-50d at each support; at splices, 3-50d each side of splice. Pieces at ends of backwall to backing plank; 4-50d to each backing plank.



PLAN OF END BENT NO. 1



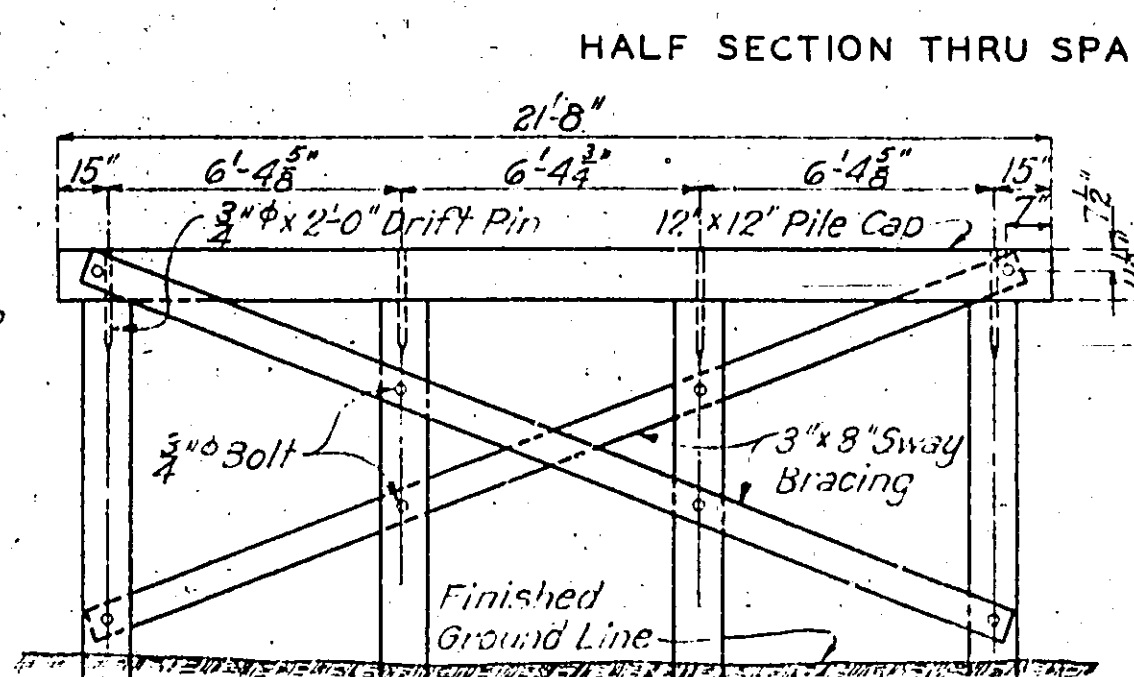
FIXED JOINT OVER INT. BENT NO. 2



DETAILS OF BEARING ON PILE CAP

Note: Top of channel separators at ends of each I-Beam Span to be flush with bottom of floor slab as shown in section thru end bent at E.

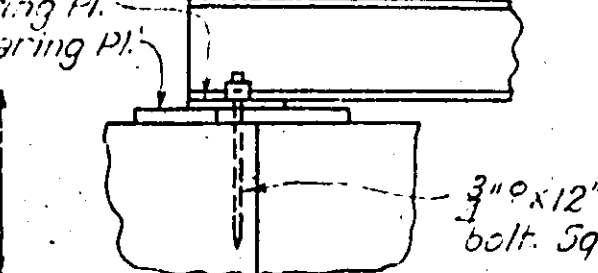
Note: Depth of outside stringers will in some cases be a fraction of an inch less than that of inside stringers and in order to keep bottom of slab horizontal it will be necessary to haunch slab down to top of outside stringers.



HALF SECTION THRU SPAN

Note: Omit sway bracing when distance from bottom of pile cap to ground is less than 5'-0". Carry sway bracing down to approximately Elev. 693.0. Excavation will be allowed for interior bents within the maximum horizontal limits of 4'-8" in width and 21'-8" in length and will be computed from existing ground line to bottom end of sway bracing.

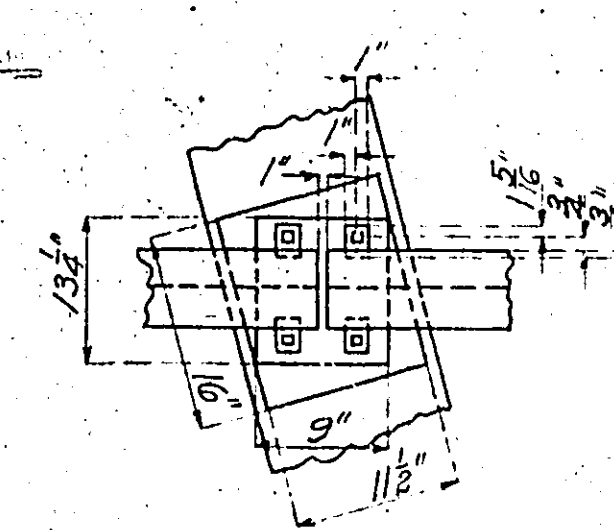
DETAIL OF INT. BENT NO. 2



BEARING OVER END BENT NO. 1

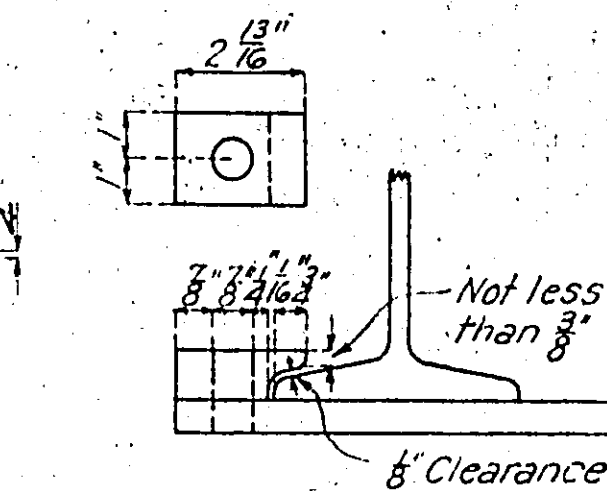
DETAILS OF BEARING ON PILE CAP

Note: Cast iron clamps used on bearing plates to have 1/2" clearance at flange of beam to allow for expansion. All clamps to have 3/4" cored holes. Use two clamps only on each I-Beam at pile caps on end bents.



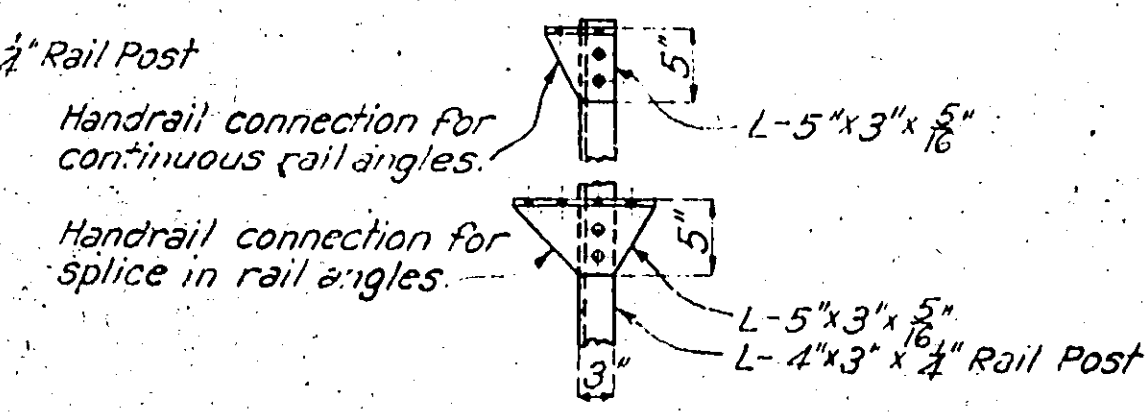
PLAN OF BEARING PLS.

INT. BENT NO. 2

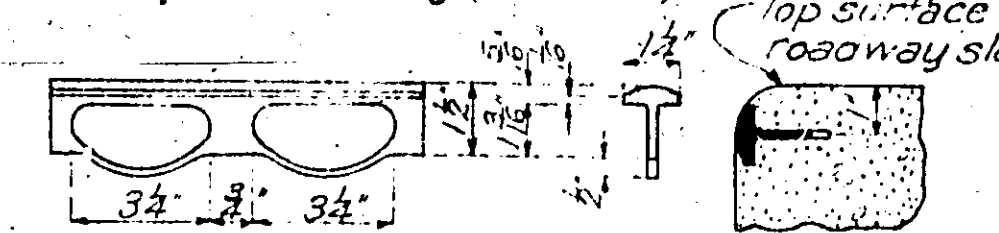


FOR STD. & BETH. BEAMS

DETAILS OF FLANGE CLAMPS

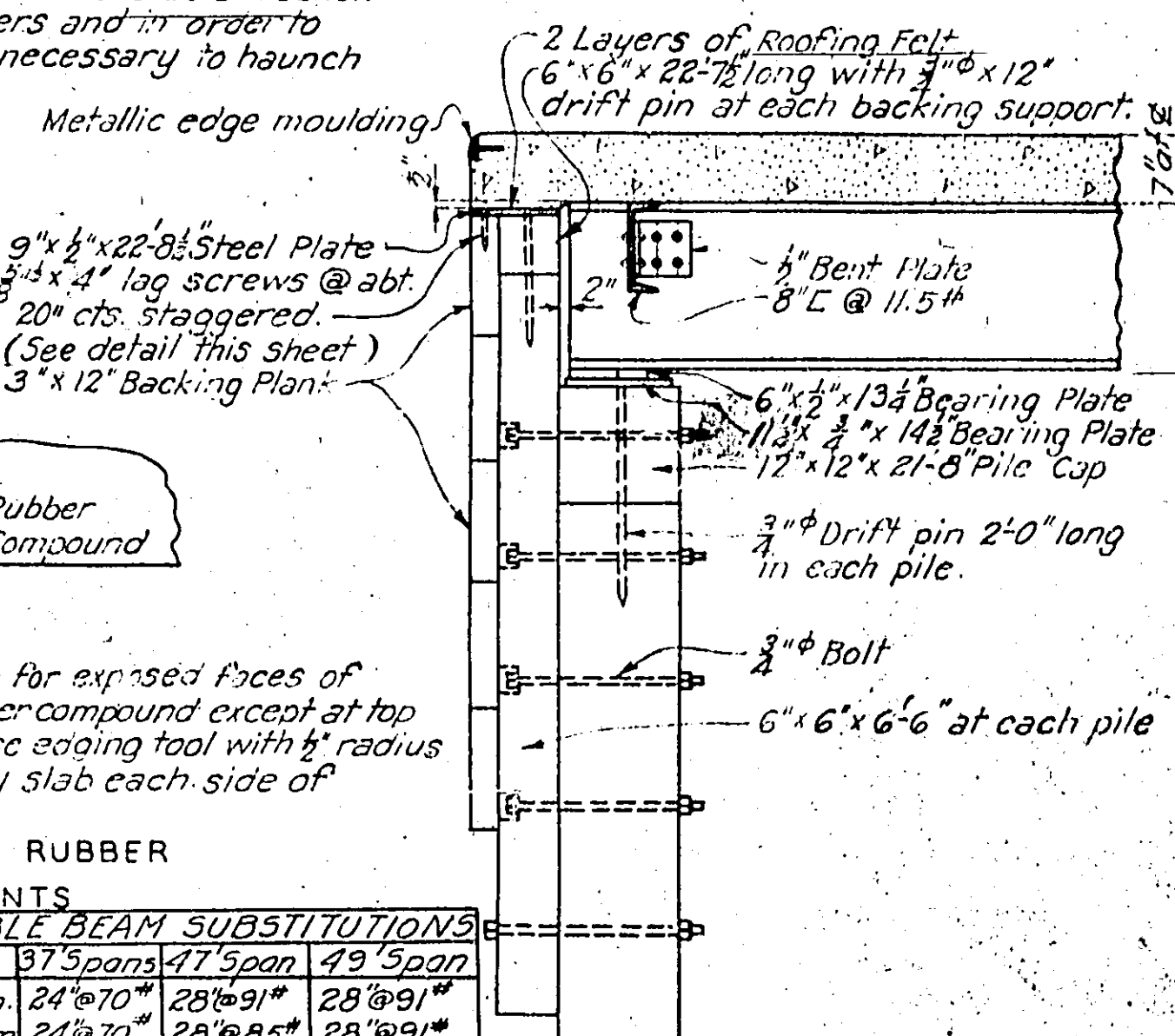


TYPICAL DETAILS FOR HANDRAIL POST (Railing not shown)



Note: An approved equivalent may be substituted for edge moulding shown above.

METALLIC EDGE Moulding



SECTION A-A THRU END BENT

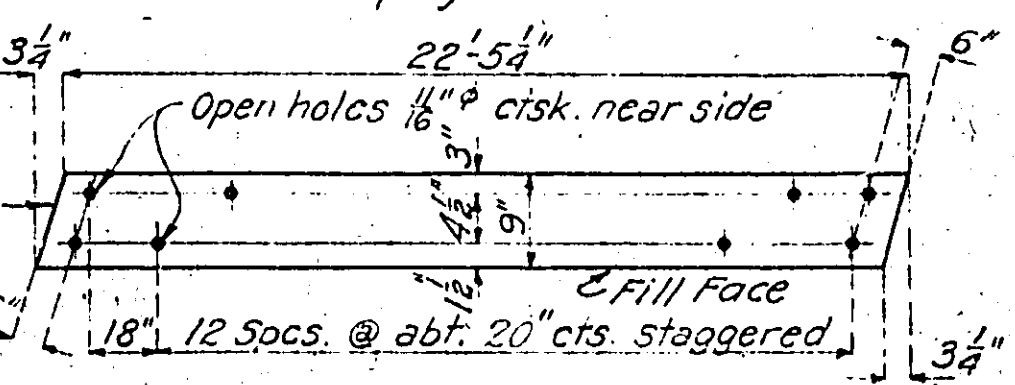
Note: Use bevel as shown for exposed faces of all joints consisting of rubber compound except at top surface of roadway slab. Use edging tool with 1/2" radius at top surface of roadway slab each side of rubber compound joint.

DETAIL OF BEVEL FOR RUBBER

COMPOUND JOINTS

PERMISSIBLE BEAM SUBSTITUTIONS	37' Span	47' Span	49' Span
Ins. Bm.	24" x 70"	28" x 91"	28" x 91"
Beth. Bm.	24" x 70"	28" x 91"	28" x 91"
Ins. Bm.	24" x 79.9"	24" x 105.9"	24" x 105.9"
Std. I-Beam	24" x 79.9"	24" x 105.9"	24" x 105.9"

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



END BENT CAP PLATE

BRIDGE OVER SHOAL CREEK

STATE ROAD FROM UTICA TO DAWN

ABOUT 1.5 MILE SOUTH OF DAWN STATION

PROJECT NO. SC-52

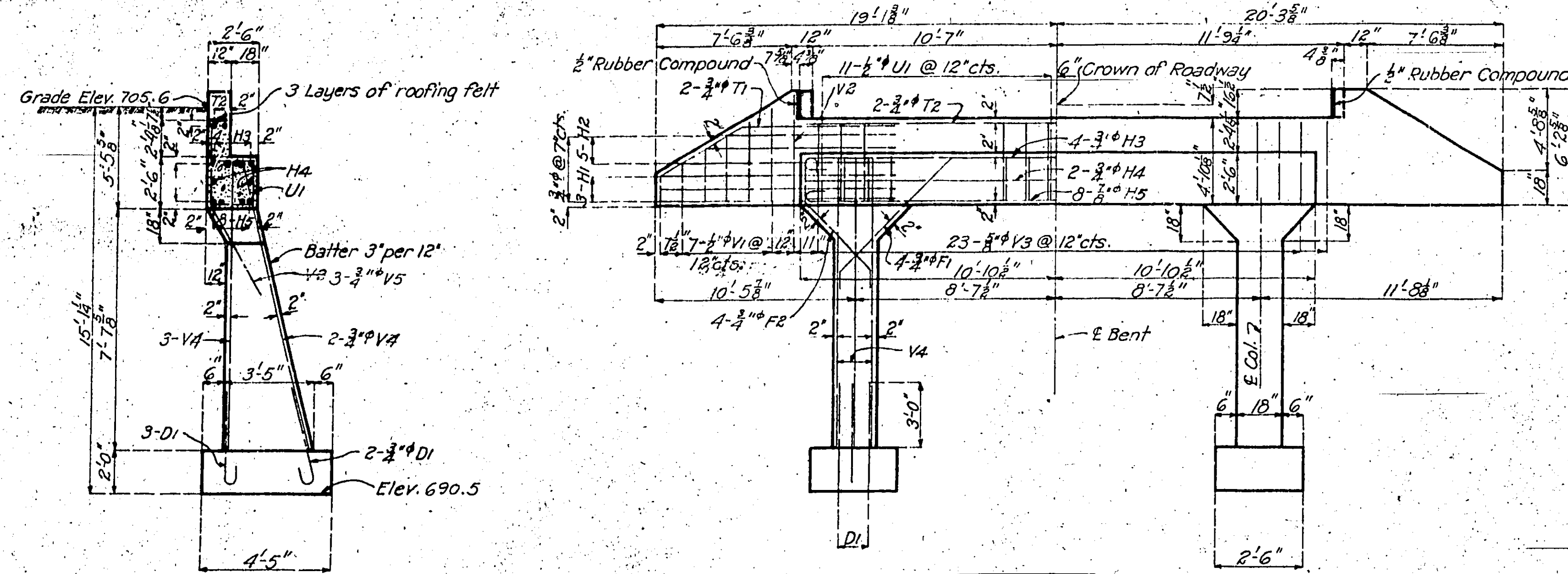
STA. 277 + 63

LIVINGSTON

COUNTY

MISSOURI STATE HIGHWAY DEPARTMENT

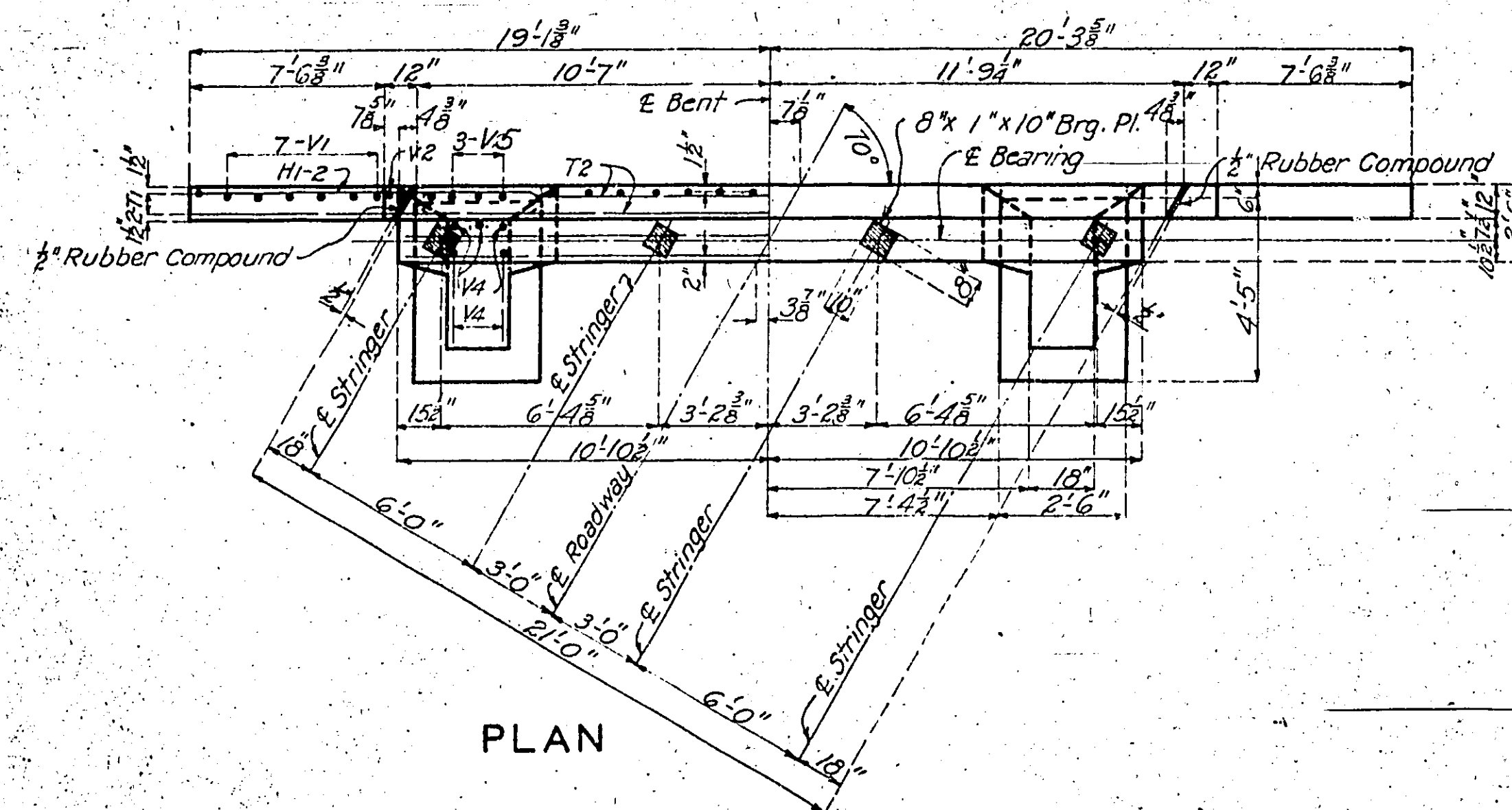
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	5C-52	19		



SECTION AT C

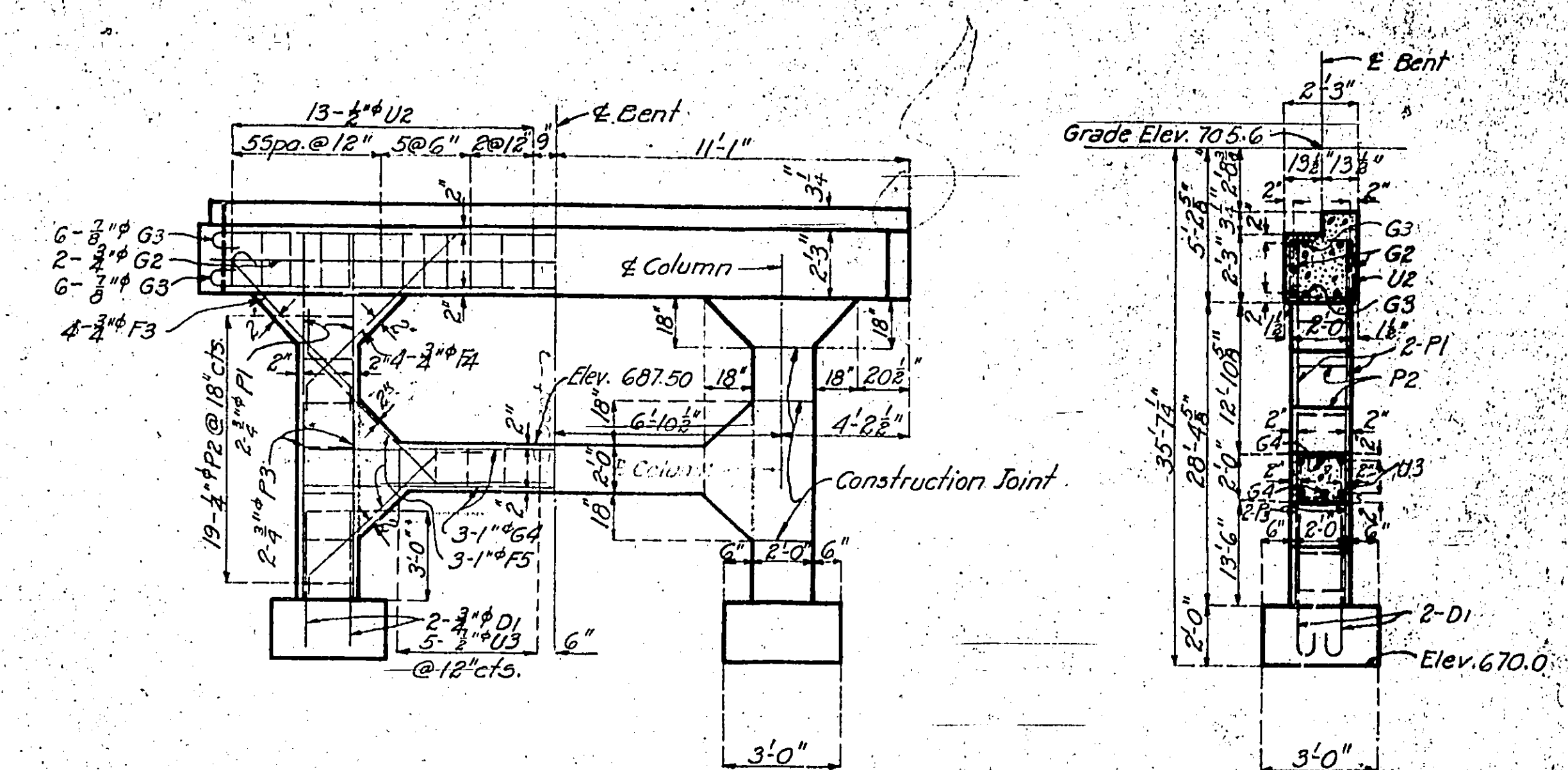
ELEVATION

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



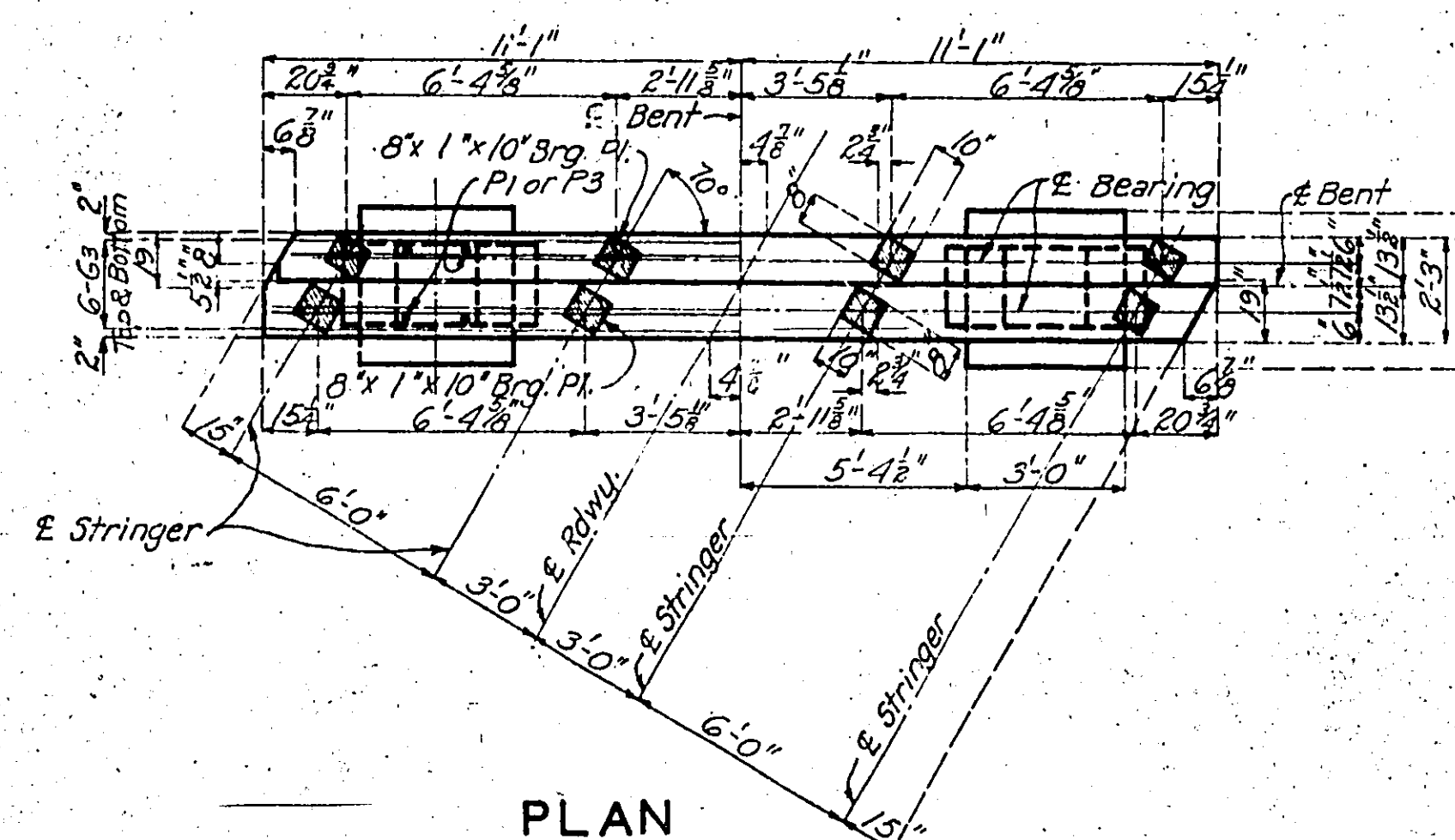
PLAN

DETAILS OF END BENT NO. 5



ELEVATION

SECTION AT C



PLAN

DETAILS OF INT. BENT NO. 3

BRIDGE OVER SHOAL CREEK

STATE ROAD FROM UTICA TO DAWN
ABOUT 1.5 MILE SOUTH OF DAWN STATION

PROJECT NO. SC-52 STA. 277 + 63

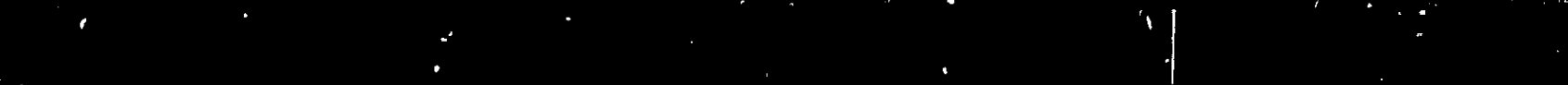
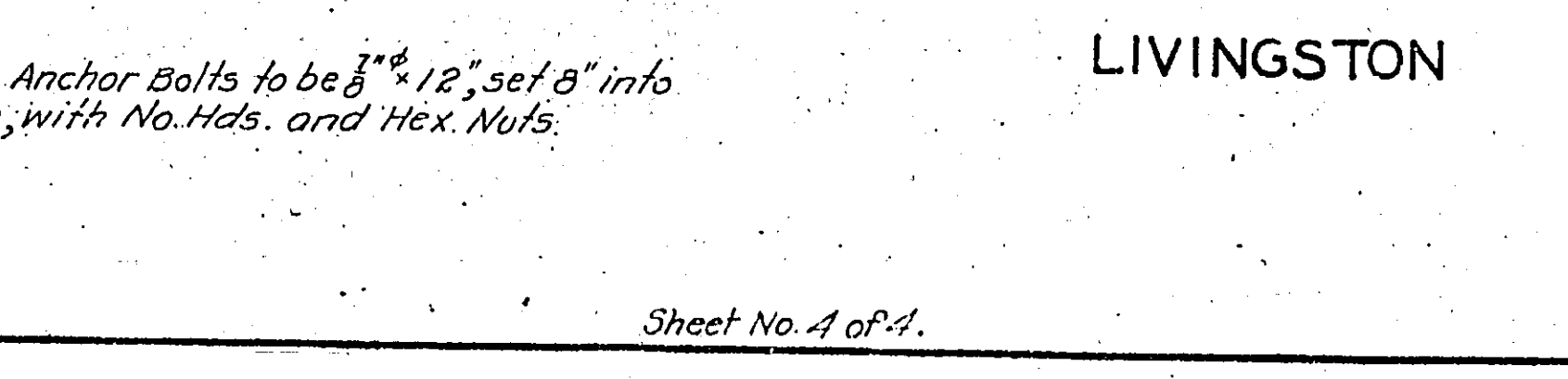
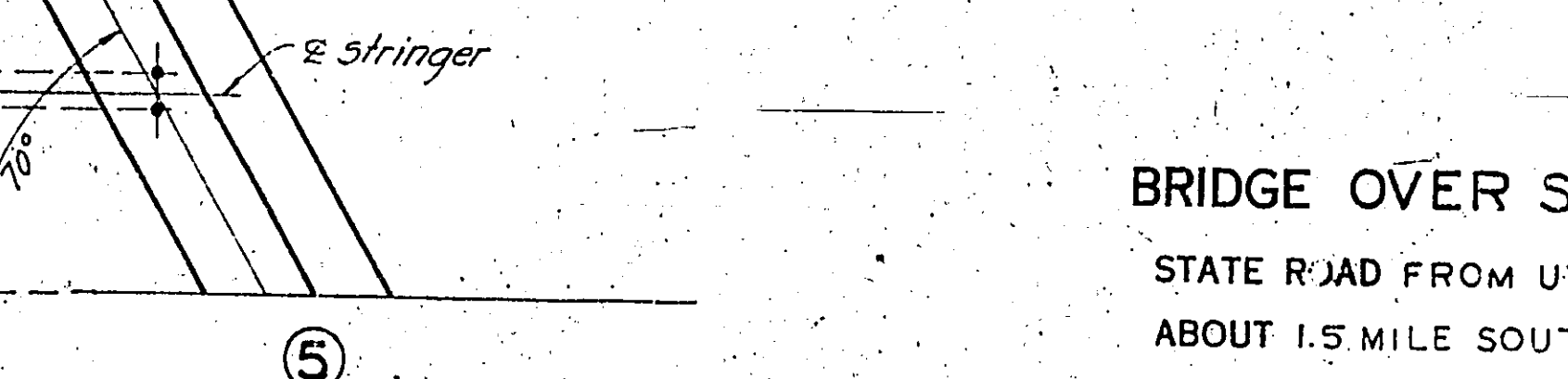
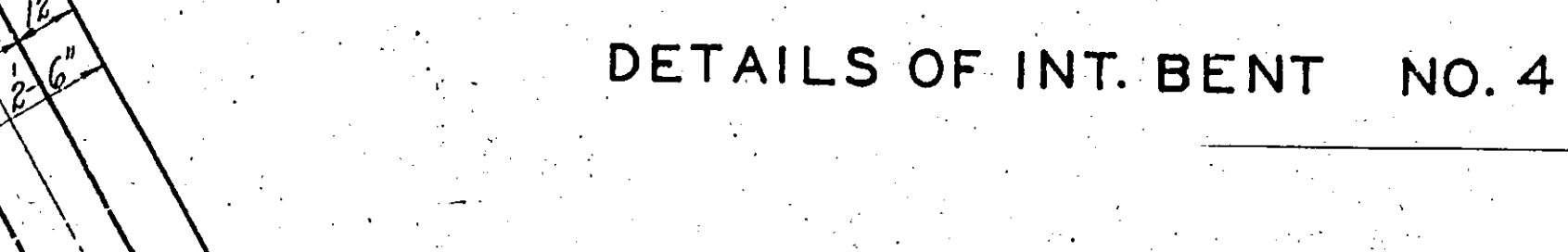
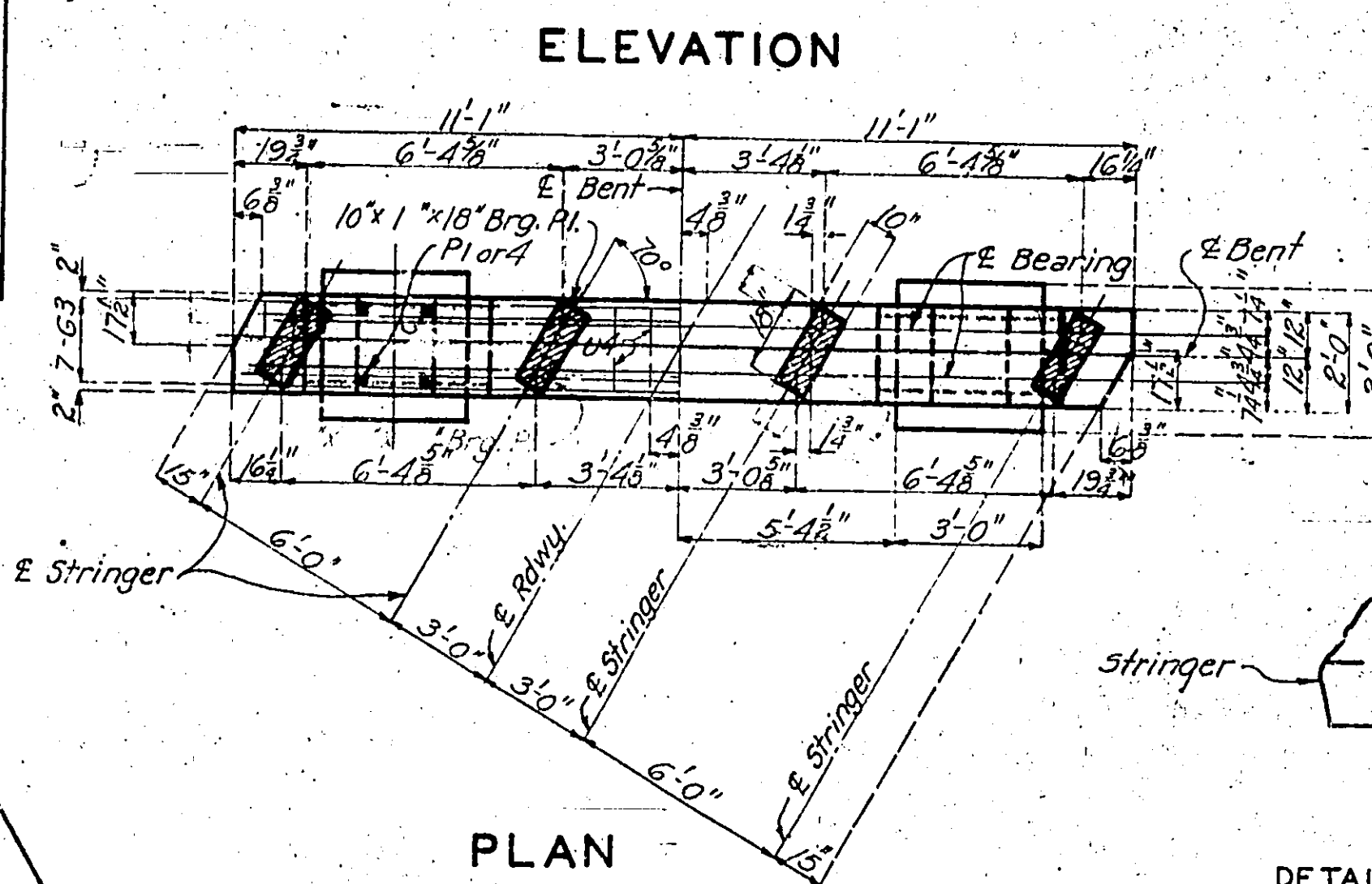
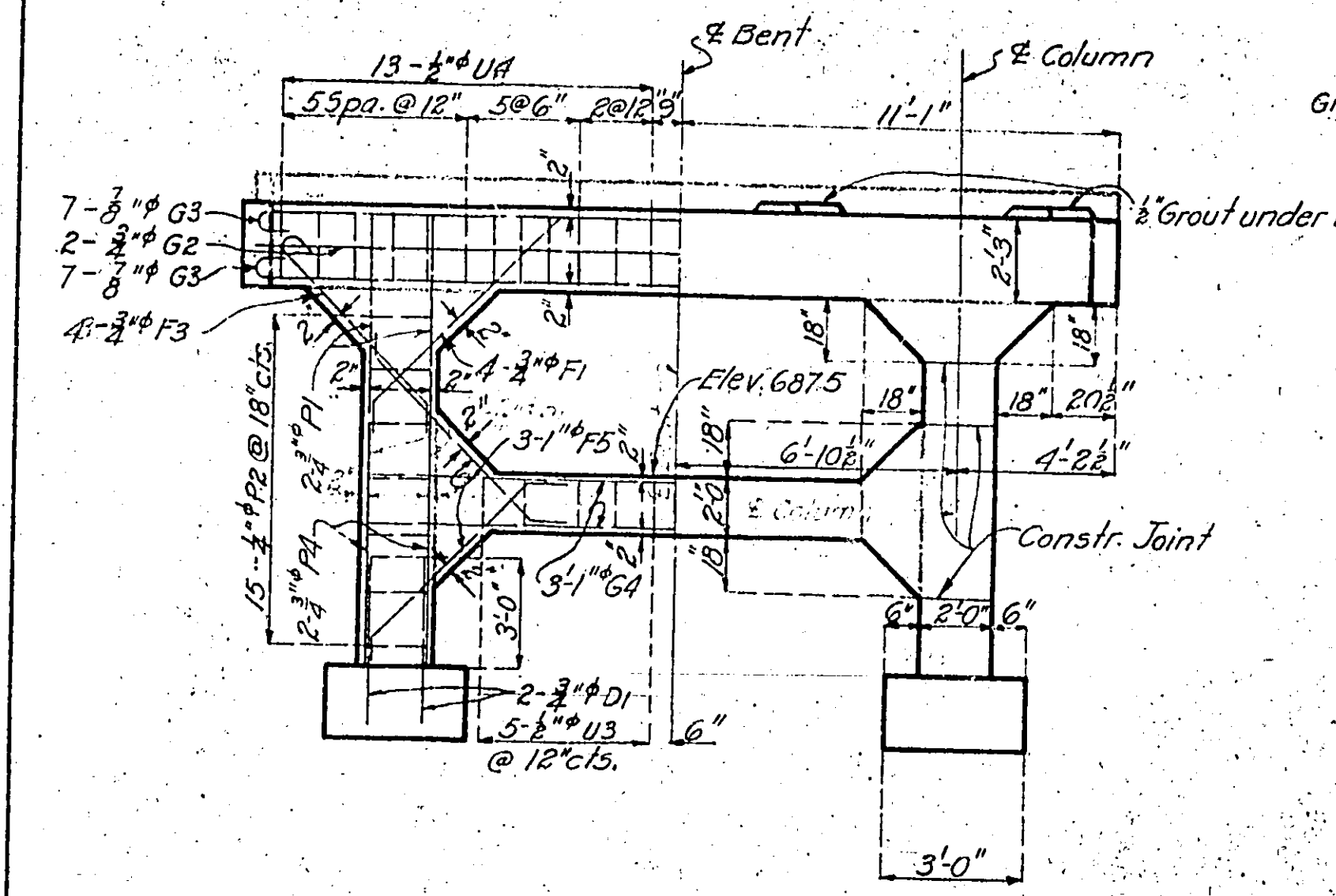
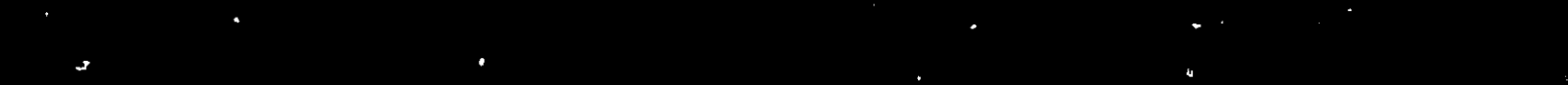
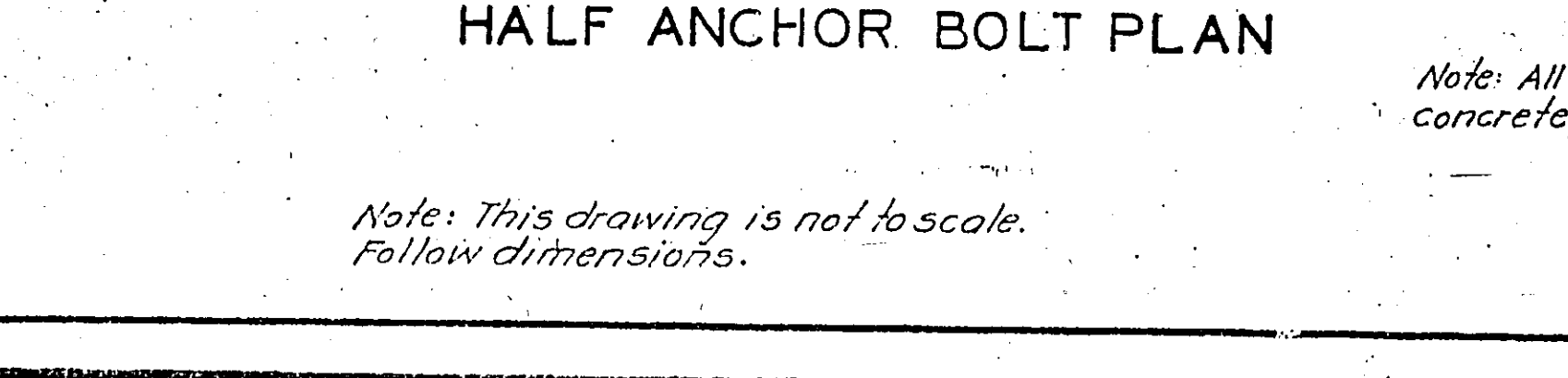
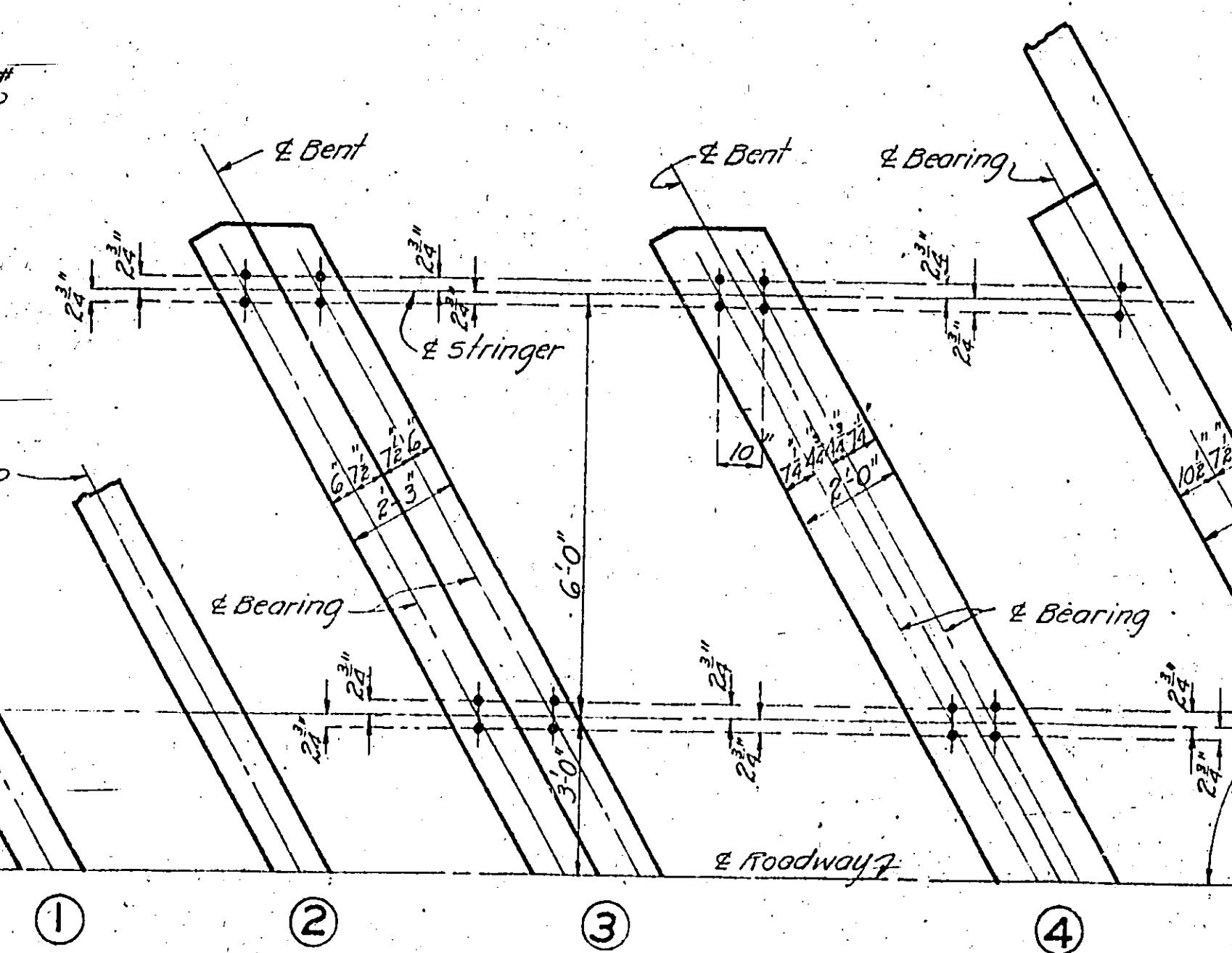
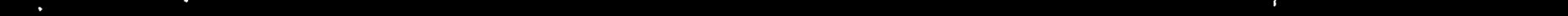
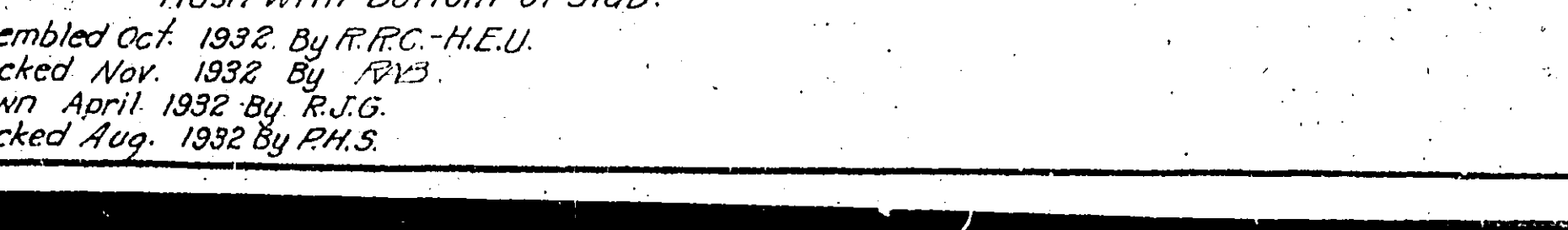
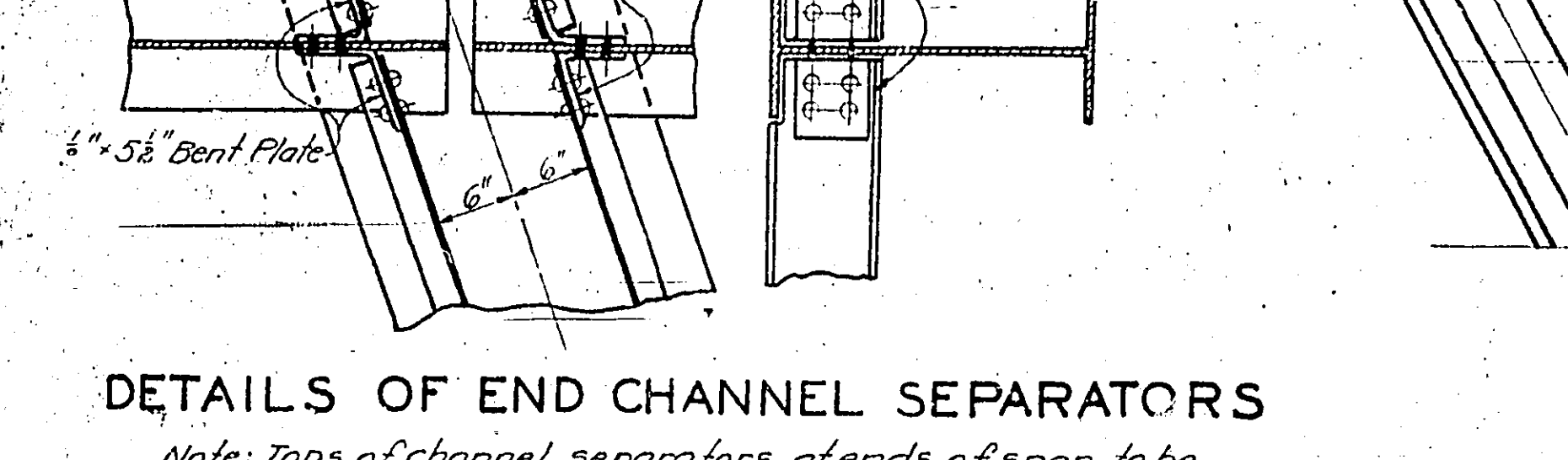
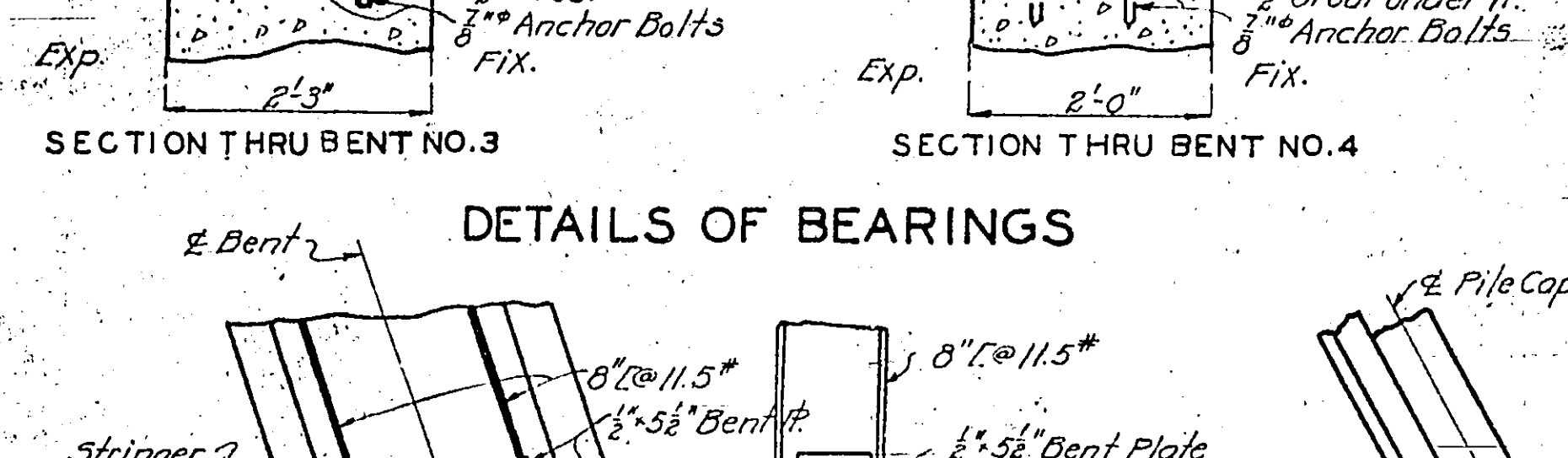
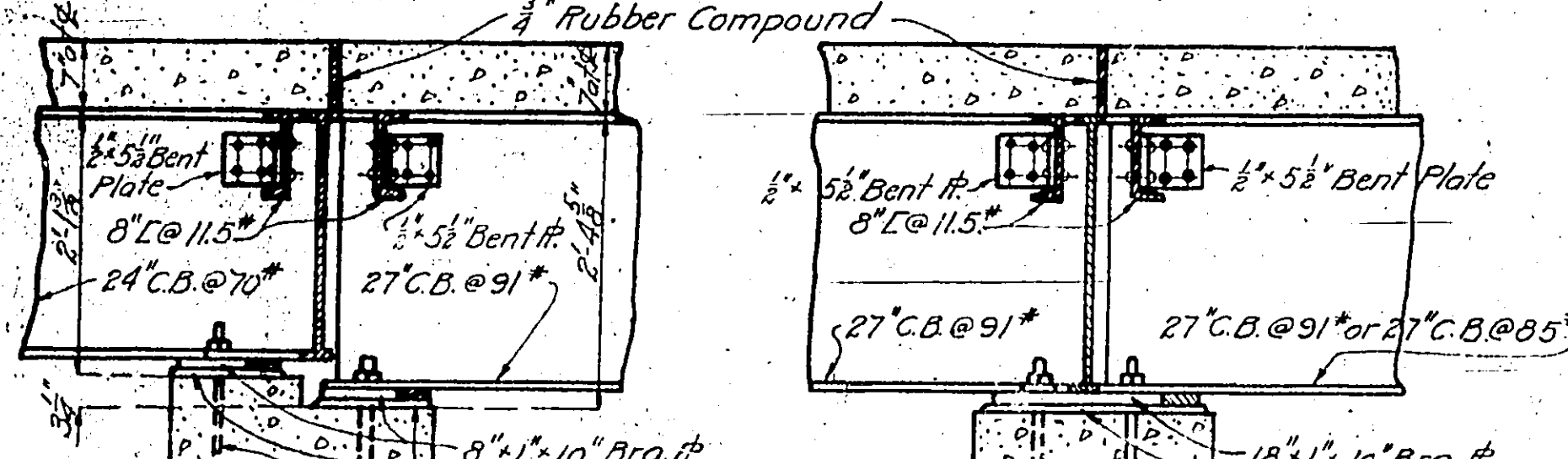
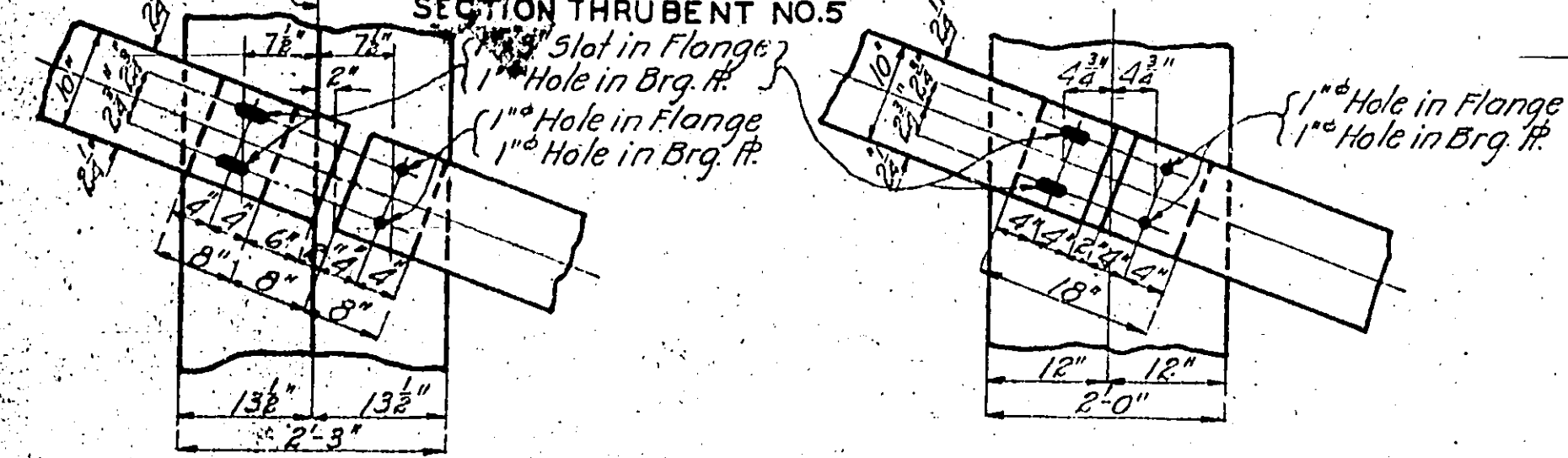
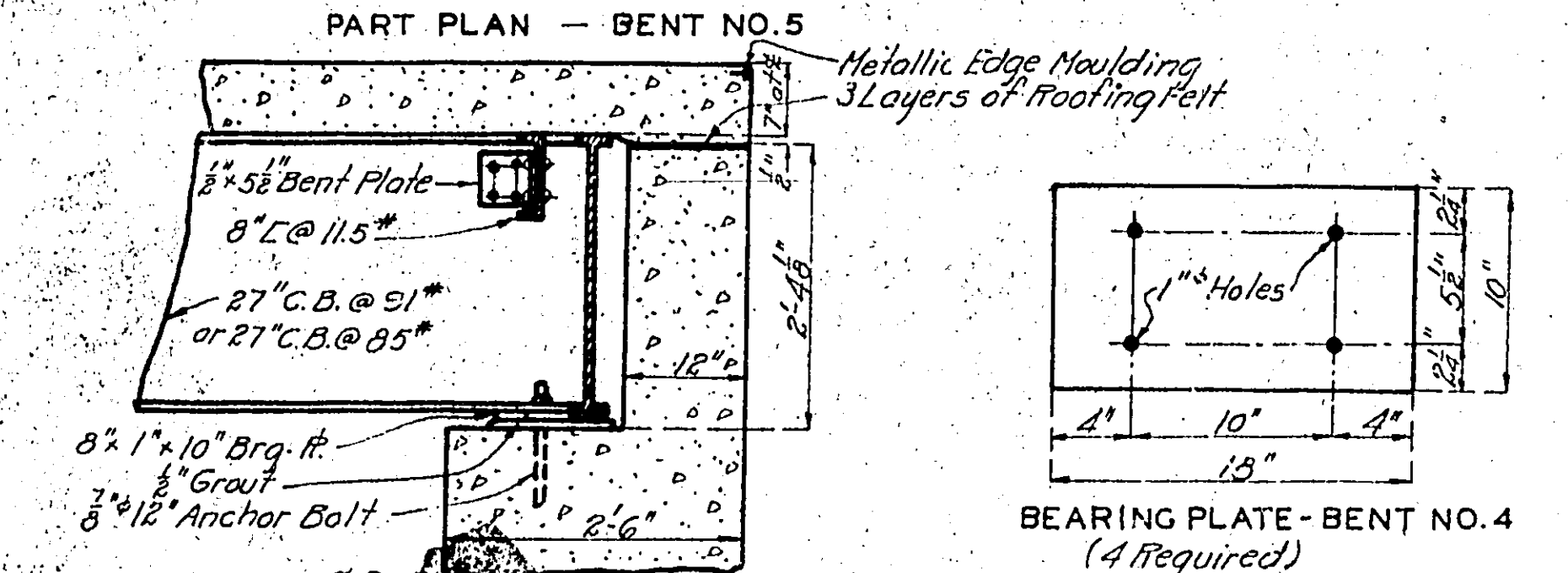
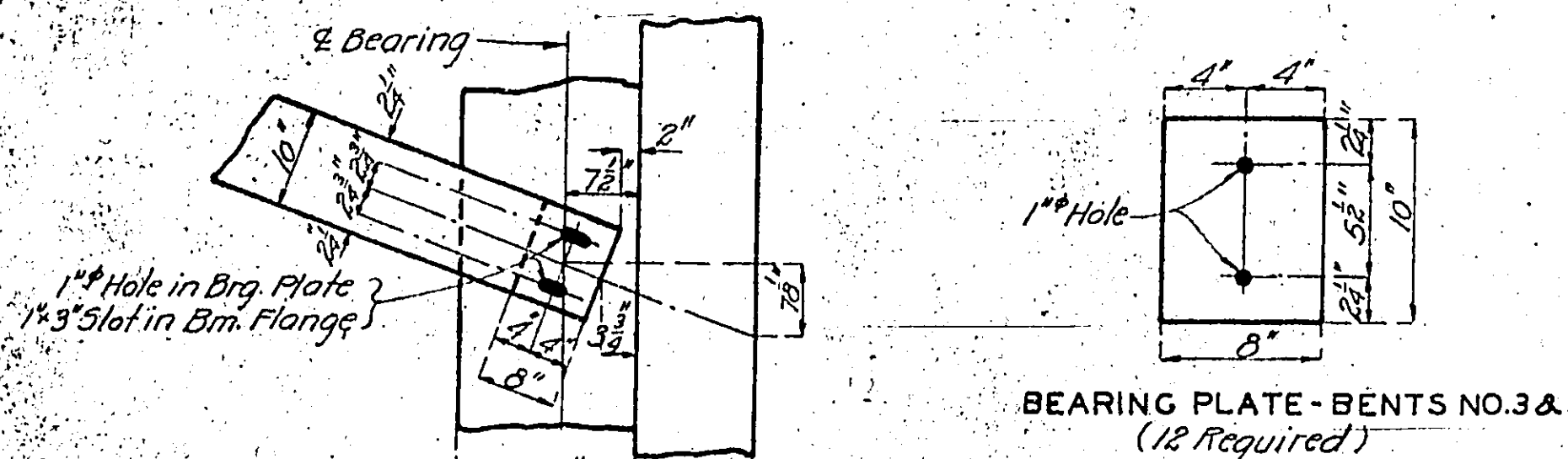
LIVINGSTON COUNTY

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	SC-52	19		

BILL OF REINFORCING STEEL-SUBSTR.					
No.	Size	Length	Mark	Location	Bending Sketches and Cutting Diagrams
End Bent No. 5					
10	3/4"	5'-9"	D1	Footling	

Note: Dimensions are given along ϵ of bars and are for computed lengths. Reinforcing bars 3/4" or over in diameter, which are bent to an angle greater than 90°, shall be of structural grade.



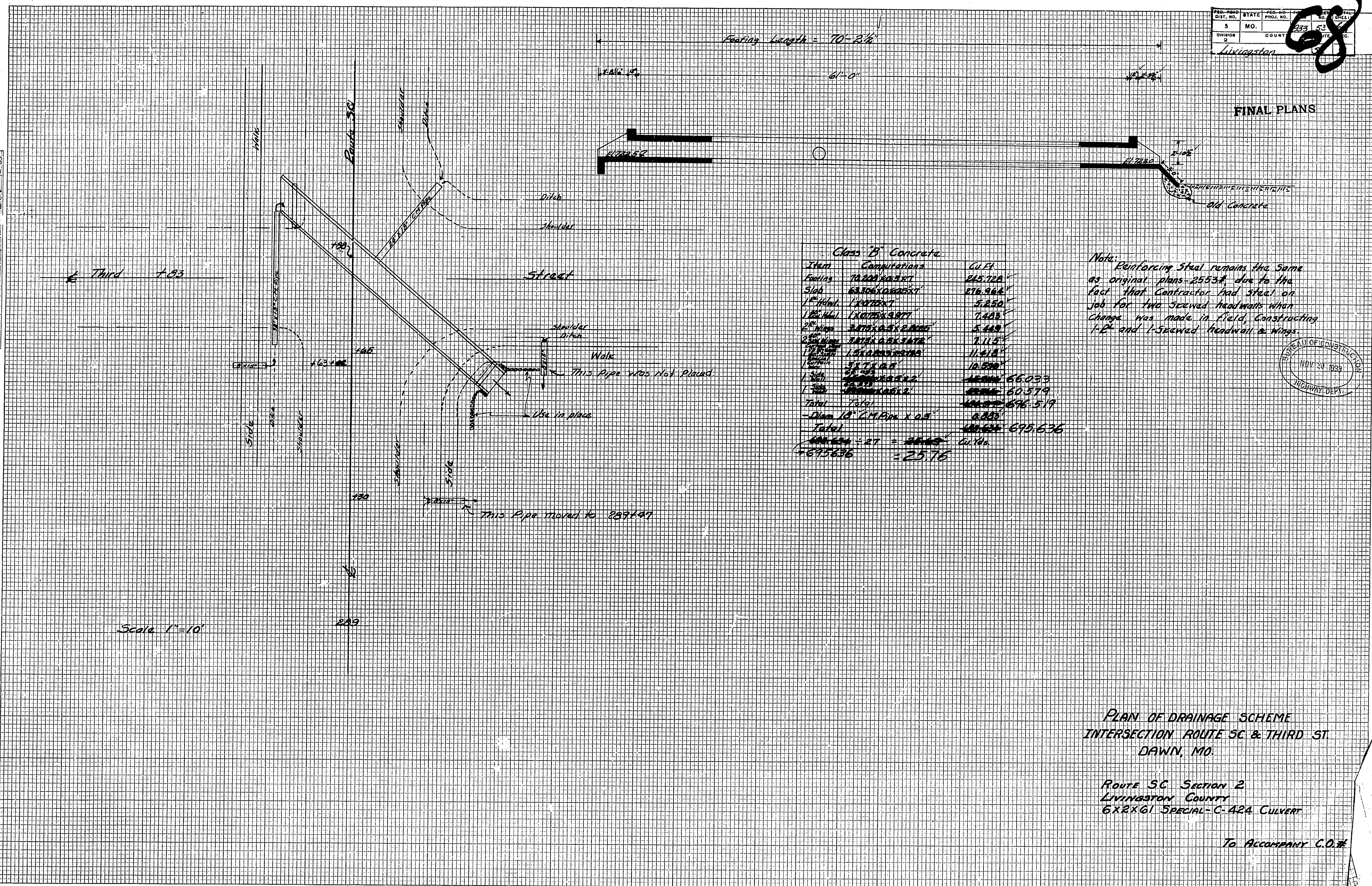
BRIDGE OVER SHOAL CREEK.
STATE ROAD FROM UTICA TO DAWN
ABOUT 1.5 MILE SOUTH OF DAWN STATION
PROJECT NO. SC-S2 STA. 277 + 63
LIVINGSTON COUNTY

Note: All Anchor Bolts to be 3/4" x 12", set 8" into concrete, with No. Hds. and Hex. Nuts.
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 4 of 4.

FINAL SURVEY BY DATE
 NOTE BOOK NO. 6538
 FIELD CHECKED BY DATE
 MAR 1937

ORIGINAL SURVEY BY DATE
 SCALE 1"=10'
 758



Class B Concrete

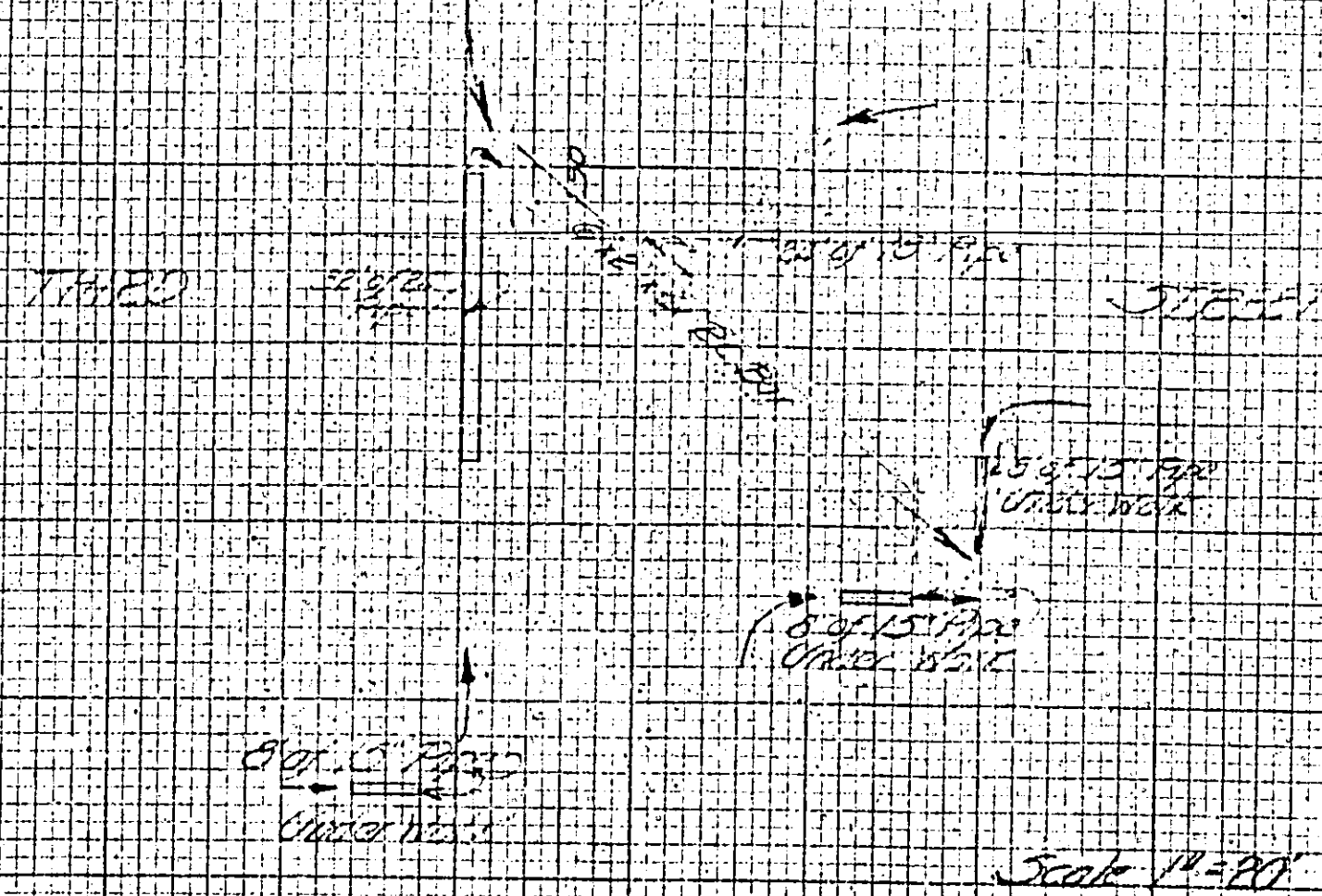
Item	Quantity	Unit Price	Total
Feeling	70.00	\$2.50	\$175.00
Slab	63.00	\$1.50	\$94.50
1" Wall	1.00	\$5.25	\$5.25
1.5" Wall	1.00	\$7.40	\$7.40
2" Wall	3.00	\$5.40	\$16.20
2.5" Wall	1.00	\$7.15	\$7.15
3" Wall	1.00	\$11.00	\$11.00
4" Wall	1.00	\$10.50	\$10.50
5" Wall	1.00	\$10.50	\$10.50
6" Wall	1.00	\$10.50	\$10.50
7" Wall	1.00	\$10.50	\$10.50
8" Wall	1.00	\$10.50	\$10.50
9" Wall	1.00	\$10.50	\$10.50
10" Wall	1.00	\$10.50	\$10.50
11" Wall	1.00	\$10.50	\$10.50
12" Wall	1.00	\$10.50	\$10.50
13" Wall	1.00	\$10.50	\$10.50
14" Wall	1.00	\$10.50	\$10.50
15" Wall	1.00	\$10.50	\$10.50
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17" Wall	1.00	\$10.50	\$10.50
18" Wall	1.00	\$10.50	\$10.50
19" Wall	1.00	\$10.50	\$10.50
20" Wall	1.00	\$10.50	\$10.50
21" Wall	1.00	\$10.50	\$10.50
22" Wall	1.00	\$10.50	\$10.50
23" Wall	1.00	\$10.50	\$10.50
24" Wall	1.00	\$10.50	\$10.50
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26" Wall	1.00	\$10.50	\$10.50
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28" Wall	1.00	\$10.50	\$10.50
29" Wall	1.00	\$10.50	\$10.50
30" Wall	1.00	\$10.50	\$10.50
31" Wall	1.00	\$10.50	\$10.50
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33" Wall	1.00	\$10.50	\$10.50
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91" Wall	1.00	\$10.50	\$10.50
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96" Wall	1.00	\$10.50	\$10.50
97" Wall	1.00	\$10.50	\$10.50
98" Wall	1.00	\$10.50	\$10.50
99" Wall	1.00	\$10.50	\$10.50
100" Wall	1.00	\$10.50	\$10.50

Note: Reinforcing steel remains the same as original plans-2553# due to the fact that Contractor had steel on job for two Seawall head walls when change was made in field constructing 1-P and 1-5' Seawall head walls.

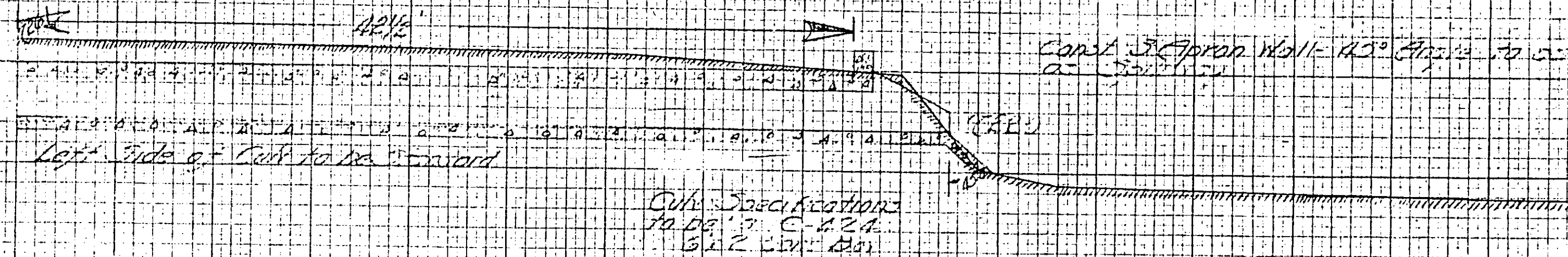
NOV 20 1936

Livingston 69

PLAN OF DRAINAGE SCHEME
INTERSECTION ROUTE 5C & THIRD ST.
DAWSON, MD.



RIGHT SIDE OF ROUTE 5C AT 301 ST. 201+00



FINAL SURVEY	DATE
BY	
REVIEWED	
PLOTTED	
NOTE BOOK	
NO.	
AREAS CHECKED	

ORIGINAL SURVEY	DATE
BY	
REVIEWED	
PLOTTED	
NOTE BOOK	
NO.	
AREAS CHECKED	

257 2.59

TYP SEC. - Earthwork

STANDARDS

Route C
Sec. 2
County LIVINGSTON
Sheet # 70

SURFACE-CURB+GUTTER
APPROACHES

DRAINAGE

C-424

BRIDGES

T-20

CONC.-REINF, APPURTS,
FINISH ETC.

MISC.

FINAL	SURVEYED	DATE
SURVEY	BY	
NOTE BOOK	NO.	
PLATE	AREAS CHECKED	

ORIGINAL	SURVEYED	DATE
SURVEY	BY	
NOTE BOOK	NO.	
PLATE	AREAS CHECKED	

260
200