

Resident Engineer HOLMES COUNTY
S.H. 147 SEC. B-BRIDGE

The Standard Specification of the State of Ohio, Dept. of Highways in force on date of Contract, together with the "Supplemental Specifications for Winter Bridge Construction for Emergency Relief" will govern this improvement.

I hereby approve these plans and declare that the making of this improvement will require the closing of traffic of the highway and that detours will be provided as shown on the plan and estimates.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
HAYESVILLE NASHVILLE ROAD

I.C.H. NO. 147. BRIDGE NO. HO-179-40 SEC-B-BRIDGE

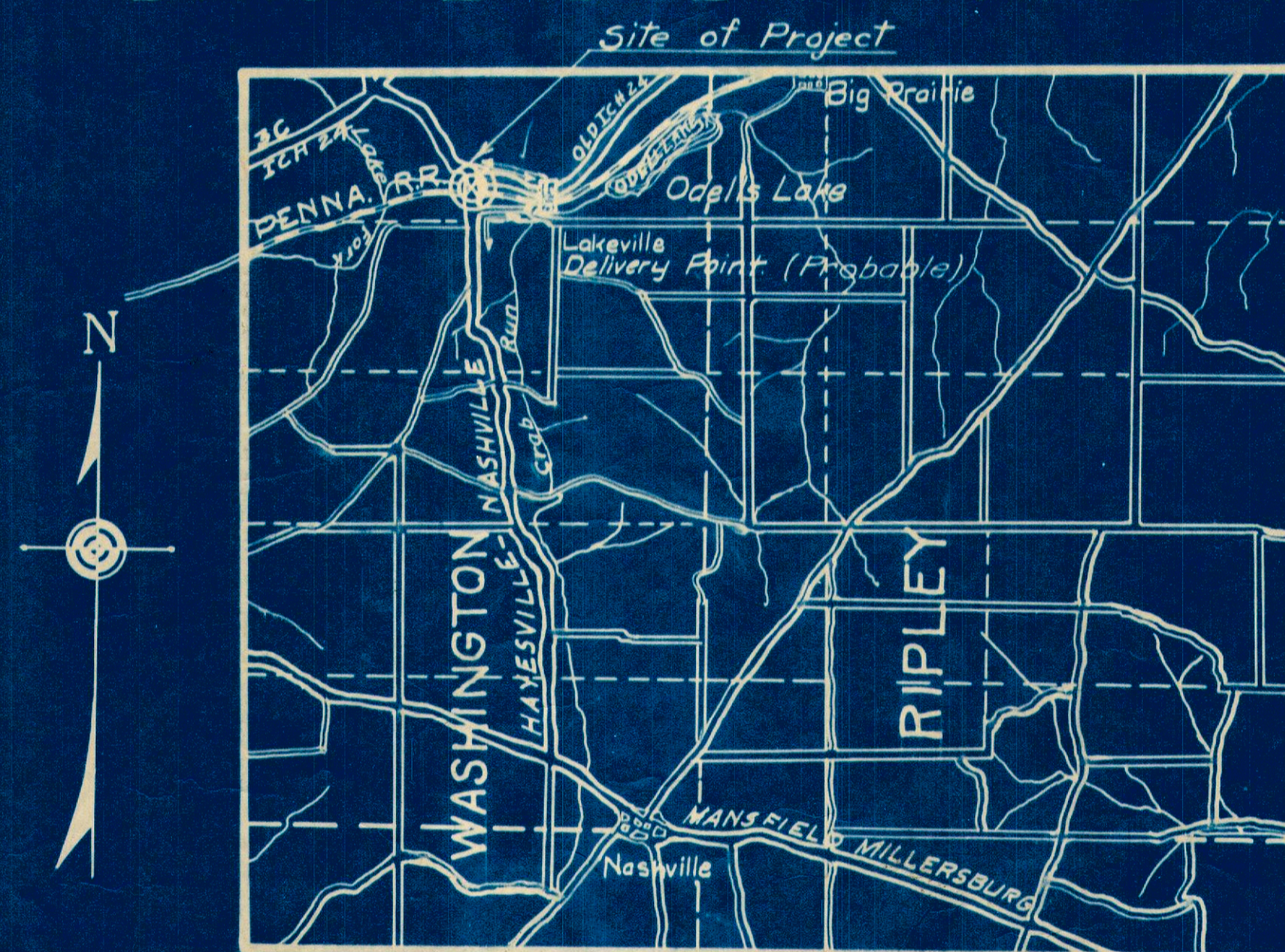
HOLMES COUNTY

WASHINGTON TWP OCTOBER 1931

BRIDGE OVER CRAB RUN



CONVENTIONAL SIGNS

State Line	— — — — —
County Line	— · — · — ·
Township Line	- - - - -
Section Line	- · - · - ·
Property Line not fenced	— — — — —
Center Line	— — — — —
City or Village Line	— · — · — ·
Fence	- - - - -
Telephone or Telegraph	— · — · — ·
Steam Railroad	— + — + — +
Electric Line	— · — · — ·
Guard Rail	— · — · — ·
Drain Pipe - new	— · — · — ·
Drain Pipe - old	- - - - -



LOCATION PLAN

SCALE OF MILES
0 1 2 3

PORTION TO BE IMPROVED 
DETOURS SHOWN THUS. 

SCALES

Plan	1" = 50 ft
Profile (Vertical)	1" = 10 "
Profile (Horizontal)	1" = 50 "
Cross Sections	1" = 5' "

**INDEX OF SHEETS
PROJECT TRACINGS**

Title Page	p. 1
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SUPPLEMENTAL PRINTS OF STRUCTURAL STANDARDS
Drawing Number WSB-31, WAP-31

Approved: *Karl Snyder*
Date, 10/23/31 Resident District Deputy Director

Approved: *Charles Emelio*
Date, 10/28/31 Resident Division Director.

Approved: *Ernest Hilley*
Date, 11/2/31 Chief Engineer
Bureau of Construction.

Approved: _____
Date, _____ Chief Engineer
Bureau of Maintenance.

Approved: *J.P. Buskey*
Date, 11-3-31 Chief Engineer
Bureau of Bridges

Approved: *H.D. Chapman*
Date, 11-6-31 State Highway Engineer.

Approved: *Oliver Merrill*
Date, 11-6-31 Director of Highways.

Recommended for Approval: _____
Date, _____ District Engineer
Bureau of Public Roads.

Recommended for Approval: _____
Date, _____ Chief Engineer
Bureau of Public Roads.

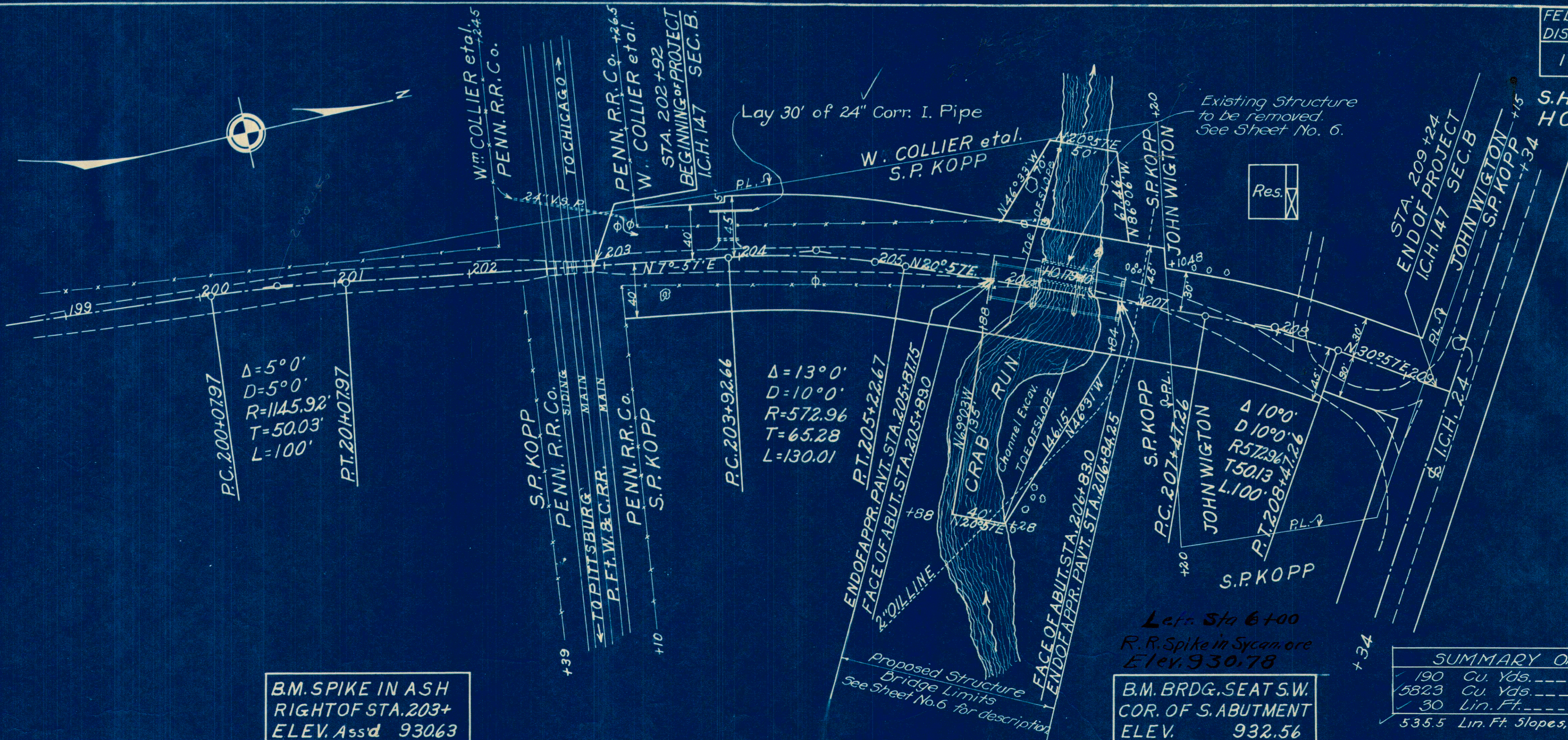
Approved: _____
Date, _____ Chief of Bureau

FED. AID DIST. NO.	STATE	FED. AID PROJECT	FISCAL YEAR	2
10	OHIO		1931	7

S.H. (I.C.H.) 147
HOLMES COUNTY
SEC. B-BR.

PLAN	SURVEYED	DATE
	PLOTTED	
	ALIGNMENT CHECKED	
	RT. OF WAY CHECKED	
	NO.	

PROFILE	SURVEYED	DATE
	GRADES CHECKED	
	BY	
	NO.	

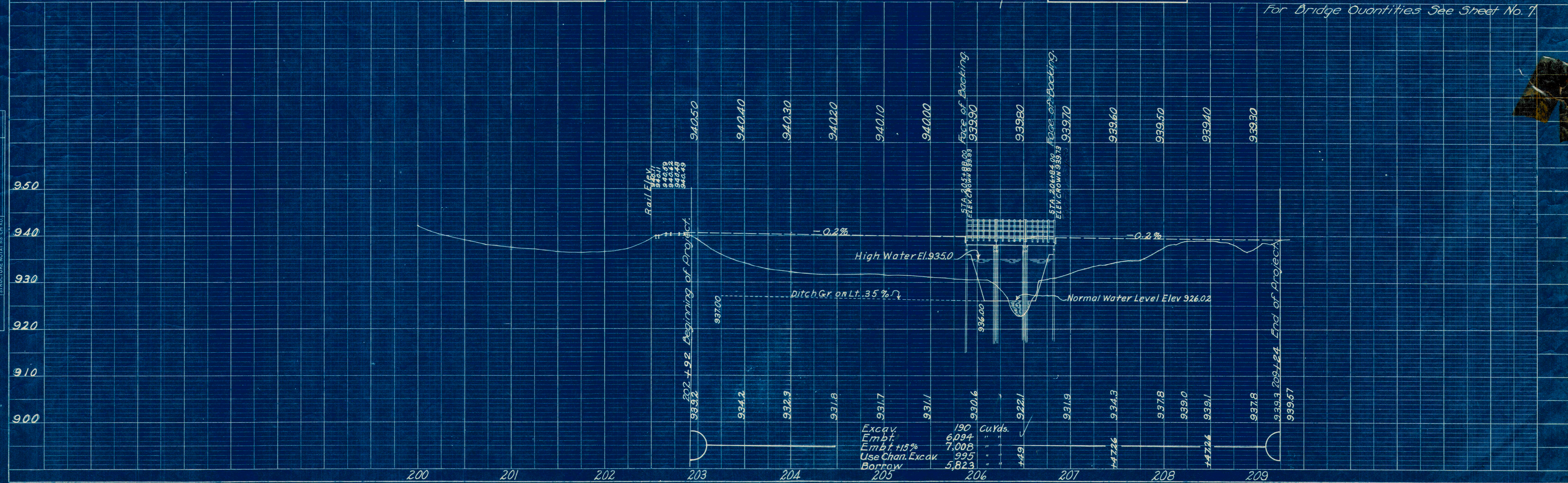


B.M. SPIKE IN ASH
RIGHT OF STA. 203+
ELEV. AS S'd 930.63

Let Sta 6+00
R.R. Spike in Sycamore
Elev. 930.78
B.M. BRDG. SEAT S.W.
COR. OF S. ABUTMENT
ELEV. 932.56

190	Cu. Yds.	(Unclassified) Excavation
5823	Cu. Yds.	Borrow
30	Lin. Ft.	24" Cor. Iron Pipe
535.5	Lin. Ft.	Slopes, Shoulders and Ditches (both sides)

For Bridge Quantities See Sheet No. 7

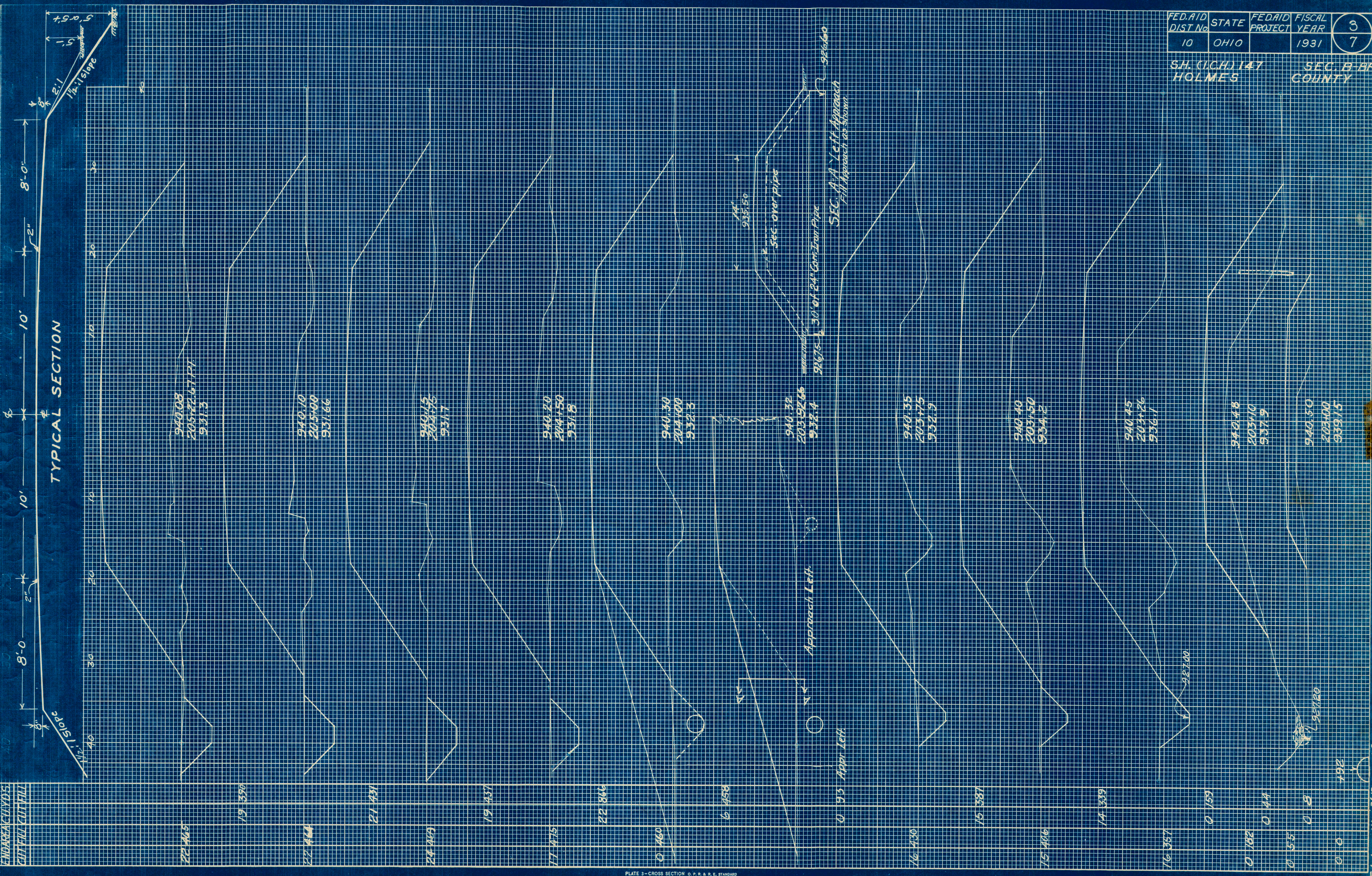


FINAL SURVEY NO. _____
 SURVEYED BY _____
 PLOTTED BY _____
 TEMPLATE NO. _____
 AREAS CHECKED _____

ORIGINAL SURVEY NO. _____
 SURVEYED BY _____
 PLOTTED BY _____
 TEMPLATE NO. _____
 AREAS CHECKED _____

FED. AID DIST No	STATE	FED. AID PROJECT	FISCAL YEAR	3 7
10	OHIO		1931	

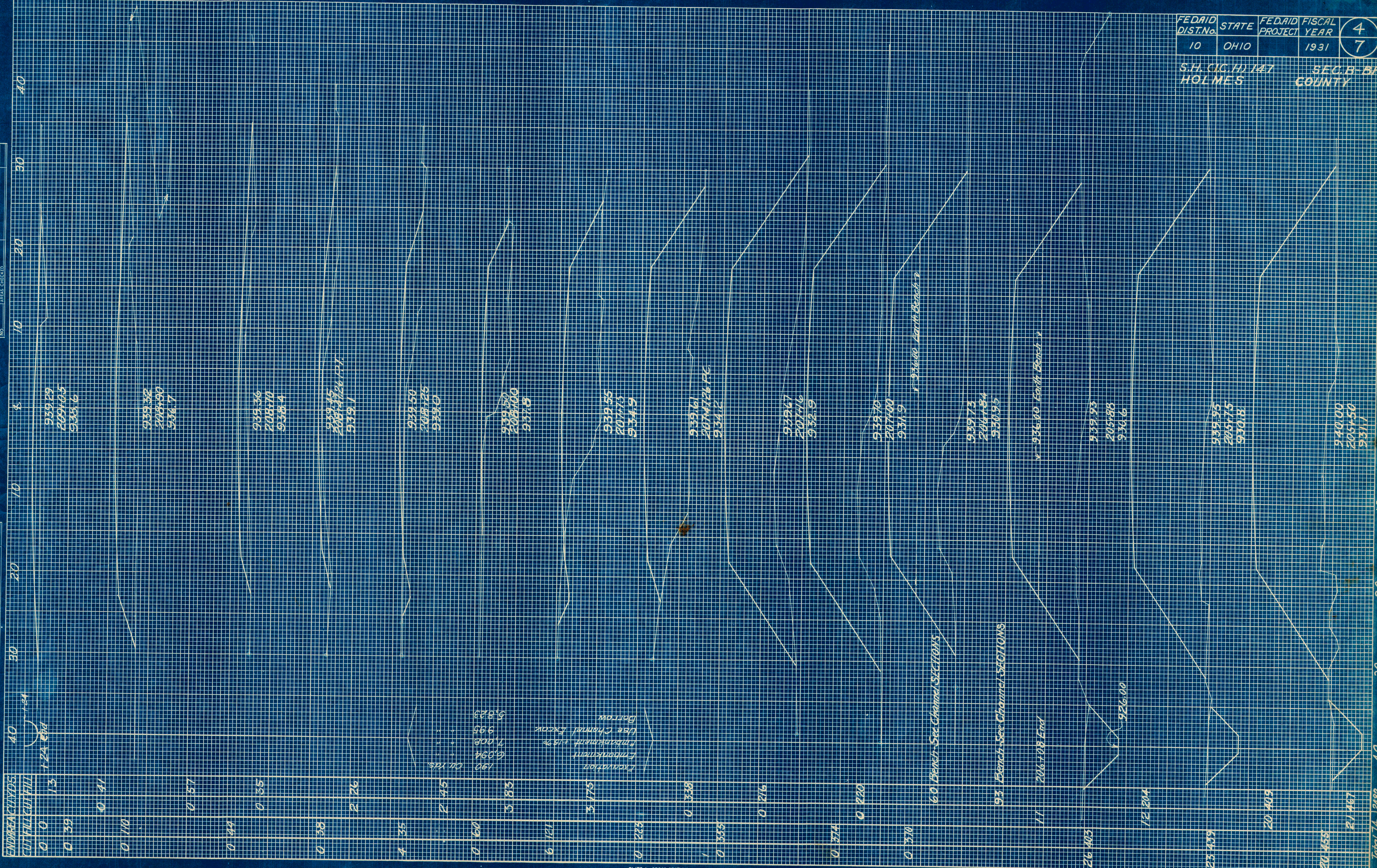
SH. (C.C.H.) 147
 HOLMES COUNTY
 SEC. B BR



22 465	19 350	21 431	19 437	22 846	6 458	15 387	14 339	0 159	0 282	0 44	0 55	0 8	0 0	102
22 464														
22 463														
17 475														
0 460														
16 470														
15 486														
16 357														
Totals	116	3612												

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

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



EMBRANKMENTS	CUT-FILL CUT-FILL
0 40	1.24
0 0	1.3
0 39	
0 41	
0 110	
0 57	
0 49	
0 35	
0 38	
2 26	
4 35	
2 45	
0 60	
5 83	
6 171	
0 222	
0 338	
0 1216	
0 374	
0 220	
0 370	
26 403	
23 459	
20 403	
20 453	
24 467	

Excavation
 Embankment
 Use Channel Factor
 Borrow

FED AID DIST. No.	STATE	FED AID PROJECT	FISCAL YEAR	4 7
10	OHIO		1931	

S.H. (C.C.H.) 147
 HOLMES
 SEC. B - BR
 COUNTY

Total 74 2382

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

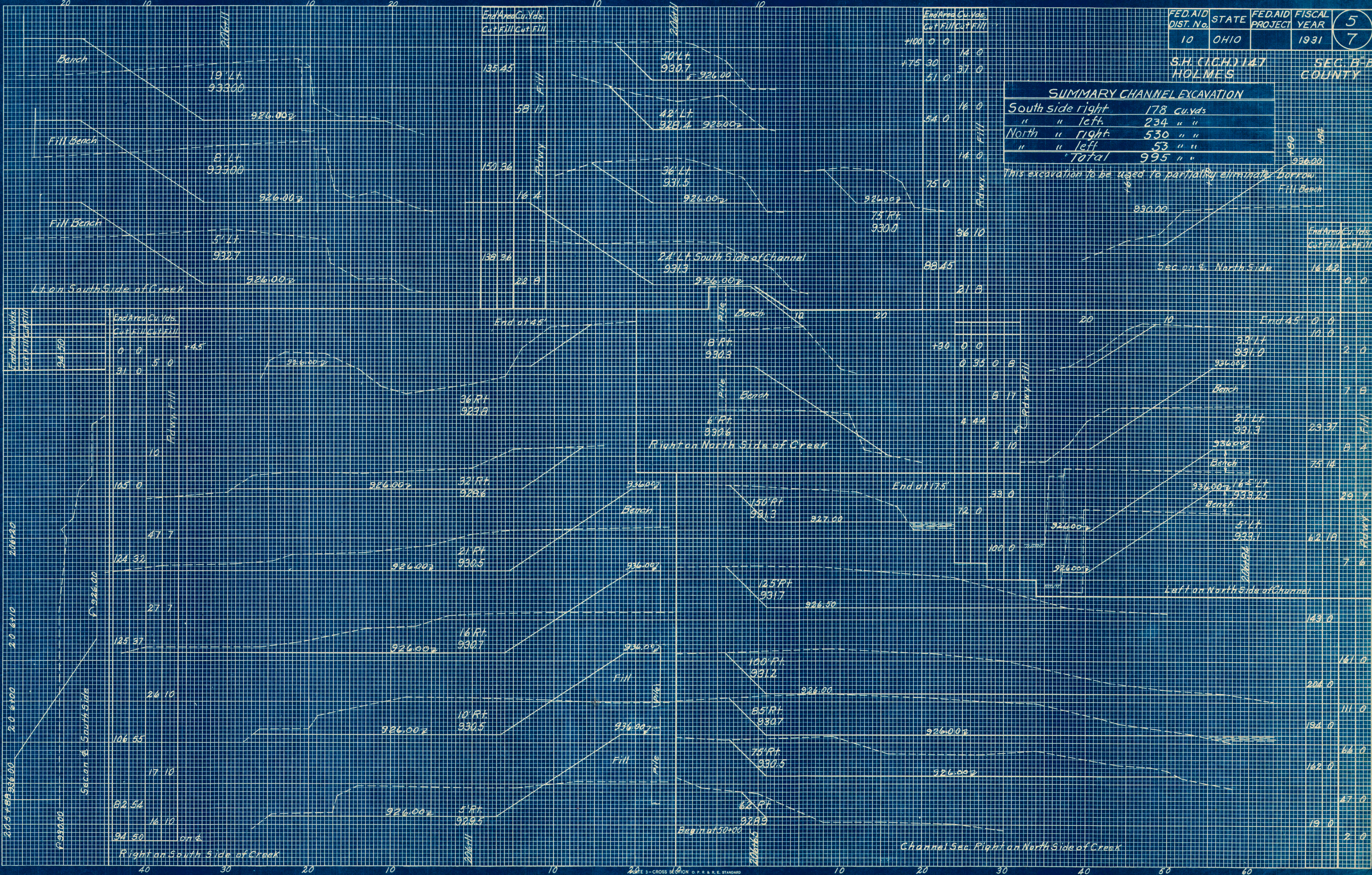
ORIGINAL SURVEY BY DATE
 SURVEYED BY DATE
 NOTE BOOK NO. TEMPLATE NO.
 AREAS CHECKED

FED. AID DIST. No.	STATE	FED. AID PROJECT	FISCAL YEAR	5
10	OHIO		1931	7

S.H. (C.H.) 147
 HOLMES COUNTY

SUMMARY CHANNEL EXCAVATION	
South side right	178 cu. yds
" " left	234 " "
North " right	530 " "
" " left	53 " "
Total	995 " "

This excavation to be used to partially eliminate borrow



End Area Cu. Yds.	Cut	Fill	Cut	Fill
0 0				
31 0		5 0		

End Area Cu. Yds.	Cut	Fill	Cut	Fill
400 0 0				
475 30		14 0		
51 0		37 0		
		16 0		
		14 0		
		75 0		
		36 10		
		21 8		

End Area Cu. Yds.	Cut	Fill	Cut	Fill
0 0				
10 0				
2 0				
7 9				
23 37				
8 4				
75 14				
29 7				
62 19				
7 6				
143 0				
161 0				
206 0				
111 0				
194 0				
66 0				
162 0				
47 0				
19 0				
2 0				

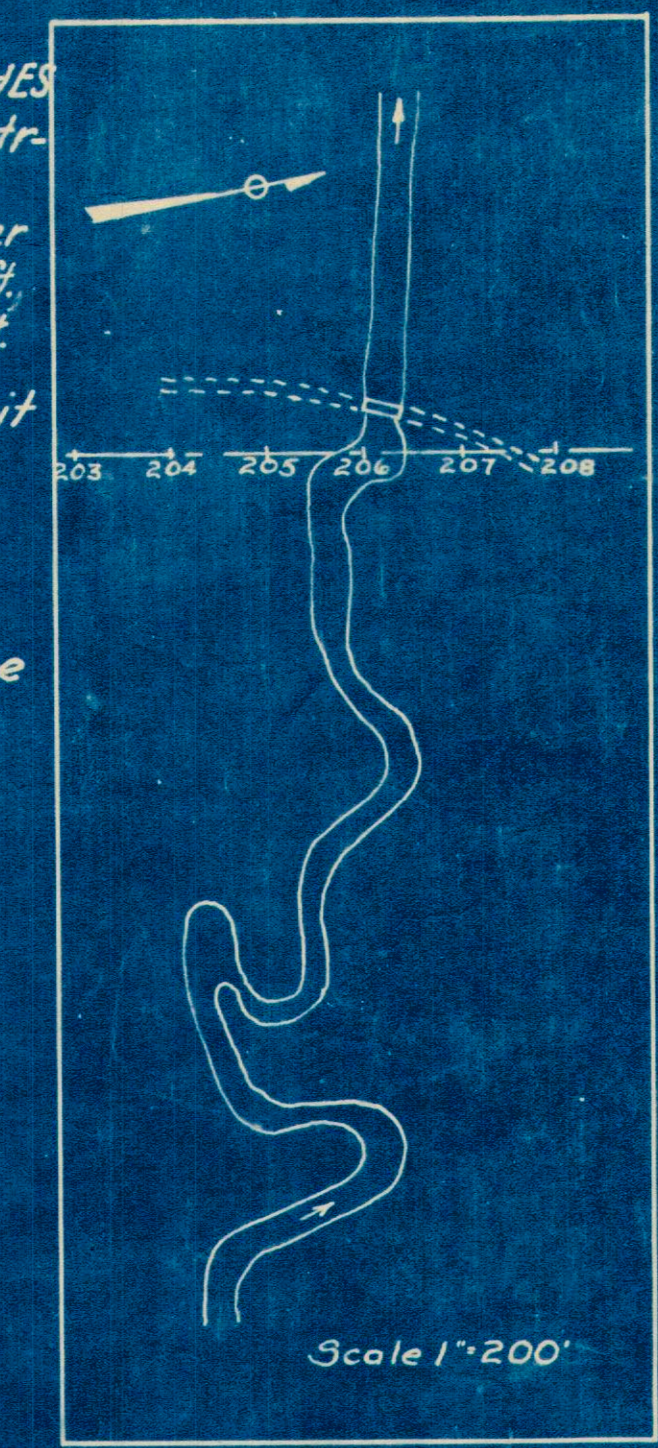
Present Bridge
35' Clear span ; 37.75' ±
to ± of pins. Pratt Pony
Truss. Masonry Abts.
13 Ft. Roadway
To be removed
See Note, Sheet 7.



PROPOSED STRUCTURE
Creosoted Timber Bridge with
Steel Stringers. Three 32 ft.
Spans 24 ft. Roadway.

TEMPORARY DETOUR BRIDGE & APPROACHES shall be according to Item I-14 of the construction specifications. Bridge roadway width not less than 18 ft. Floor elevation not lower than Elev. 932'. Width of approaches, 22 ft. out to out, with a surfaced width of 19 ft.

THE EXISTING BRIDGE may be used if it is made to conform with the foregoing, except roadway width of 13 ft. will be permitted, and on condition that the road be closed to traffic for not more than 48 hours, in the event of which the Division Engineer shall be informed at least 2 days in advance.

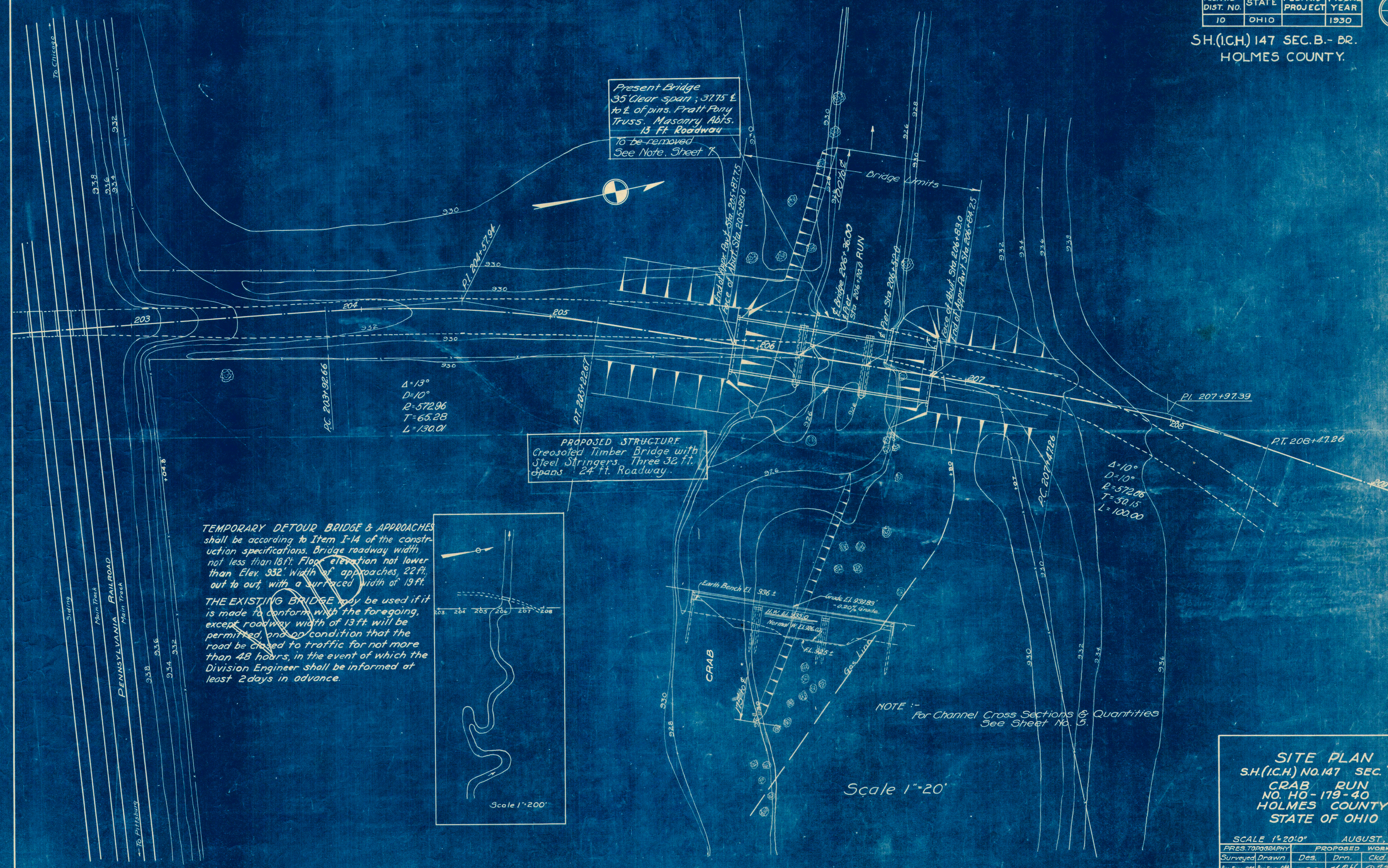


NOTE :-
For Channel Cross Sections & Quantities
See Sheet No. 5.

Scale 1"=20'

SITE PLAN
SH.(I.C.H.) NO.147 SEC. B.-BR.
CRAB RUN
NO. HO - 179 - 40
HOLMES COUNTY
STATE OF OHIO

PRES. TOPOGRAPHY		PROPOSED WORK			
Surveyed	Drawn	Des.	Drn.	Ckd.	Rev.
Res. Engr. Off.	Res. Engr. Off.	C.P.S.	J.P.H.	R.J.G.	J.T.S.



FED. RD. DIST. NO.	STATE	FED. AID PROJECT	FISCAL YEAR	7
10	OHIO		1931	7

HOLMES COUNTY
S.H. 147 SEC. B - Dr.

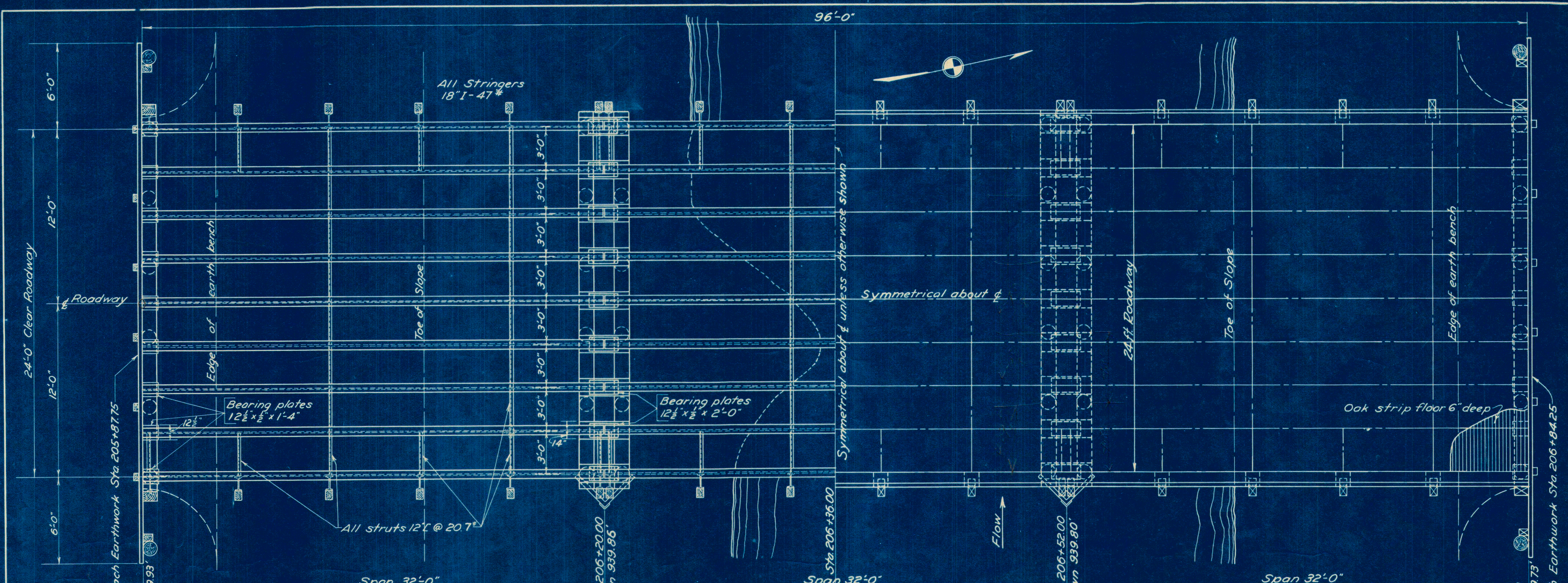
GENERAL NOTES

DETAILS - See Standard Drawings No. WSB-31 and No. WAP-31 for all details not shown on this drawing.

DISPOSAL OF OLD BRIDGE - Old Superstructure to become the property of the contractor in part payment for its removal and to be removed from the site by him. Existing abutments included with Channel Excavation for payment and disposed of as riprap as directed by Engineer.

ESTIMATED QUANTITIES

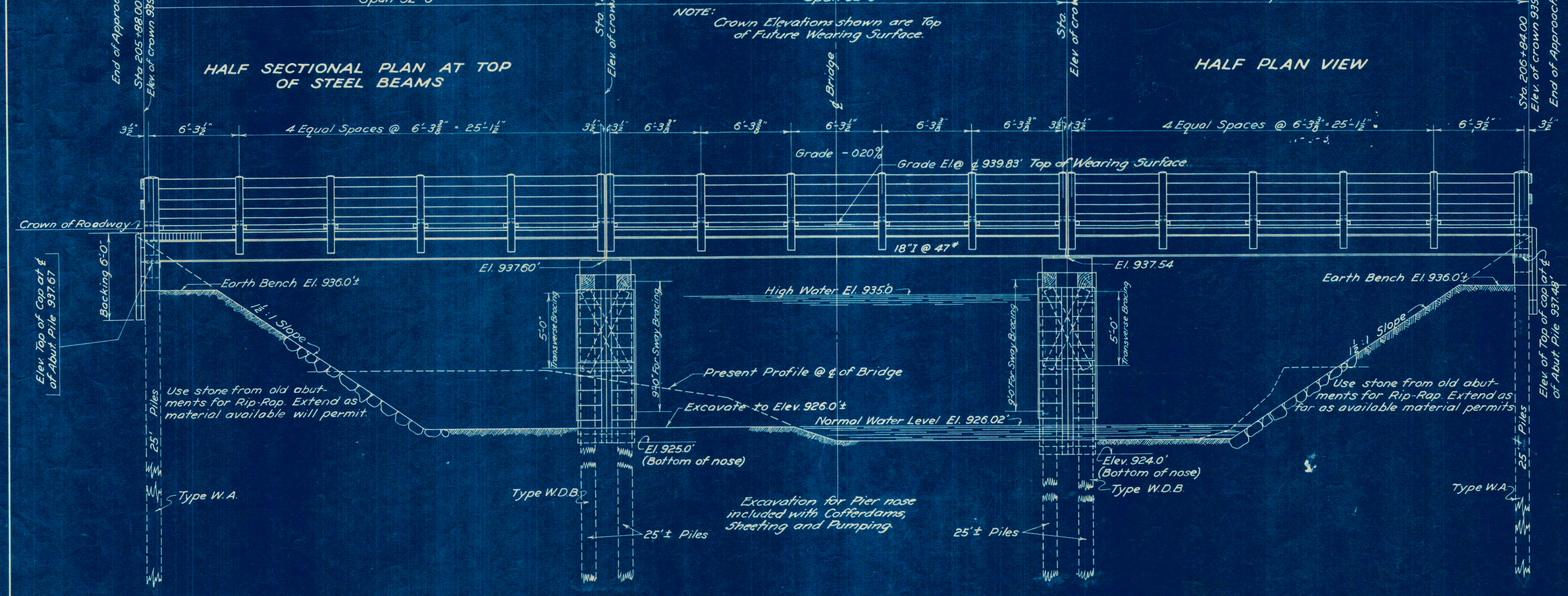
- Creosoted Timber Piling, 25' Lg. (except furnishing piles F.O.B. Delivery Point) 1000 Lin.ft.
- Creosoted Oak lumber (not including strip floor or rail posts) (except furnishing creosoted lumber F.O.B. Delivery Point) 6850 Bd.ft.
- Creosoted Oak lumber for Strip floor (except furnishing creosoted lumber F.O.B. Delivery Point) 2496 Sq.ft.
- Timber Railing (except furnishing creosoted Oak posts F.O.B. Delivery Pt.) 208 Lin.ft.
- (The foregoing items include the furnishing of all hardware)
- Structural Steel (except field painting) 51,000 lbs.
- Field painting of Structural Steel Lump Sum
- Removal of Existing Superstructure Lump Sum
- Channel Excavation 995.0 Cu. yds.
- Cofferdams, Sheet piling & Pumping Lump Sum
- Rip-Rap (Use stone from old Abutments) 120 Sq. yds.



HALF SECTIONAL PLAN AT TOP OF STEEL BEAMS

HALF PLAN VIEW

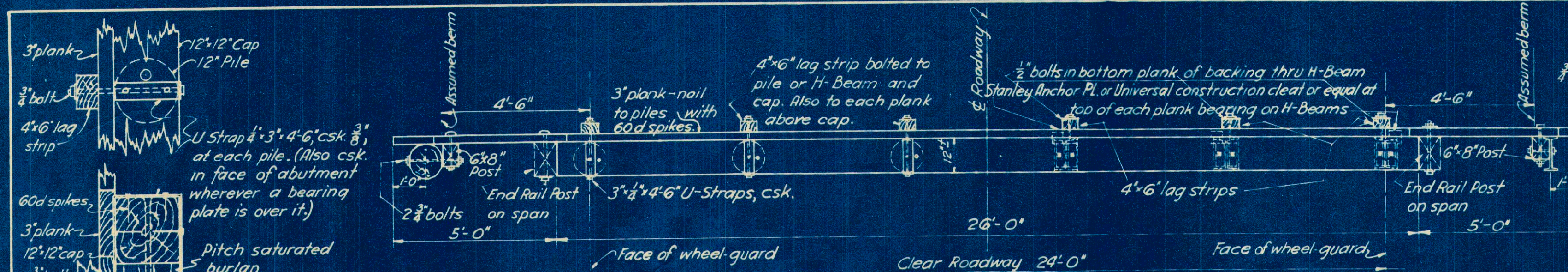
NOTE: Crown Elevations shown are Top of Future Wearing Surface.



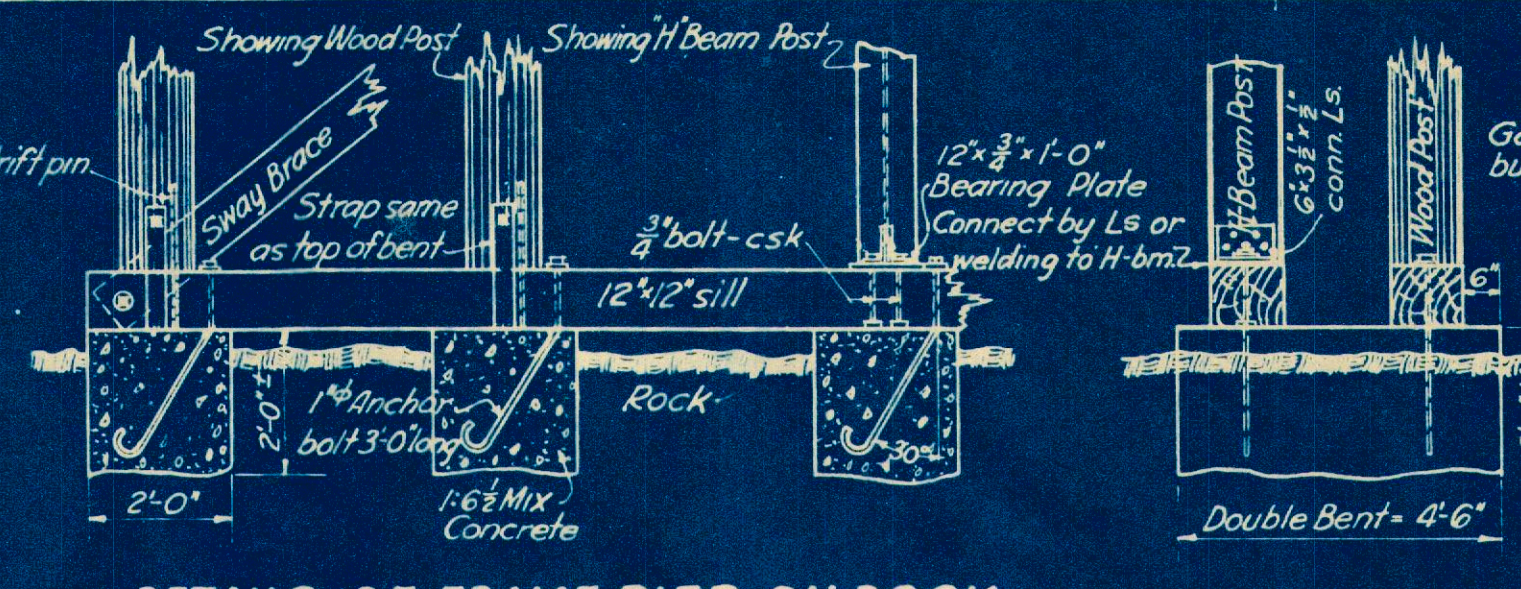
EAST ELEVATION

BRIDGE NO. HO-179-40

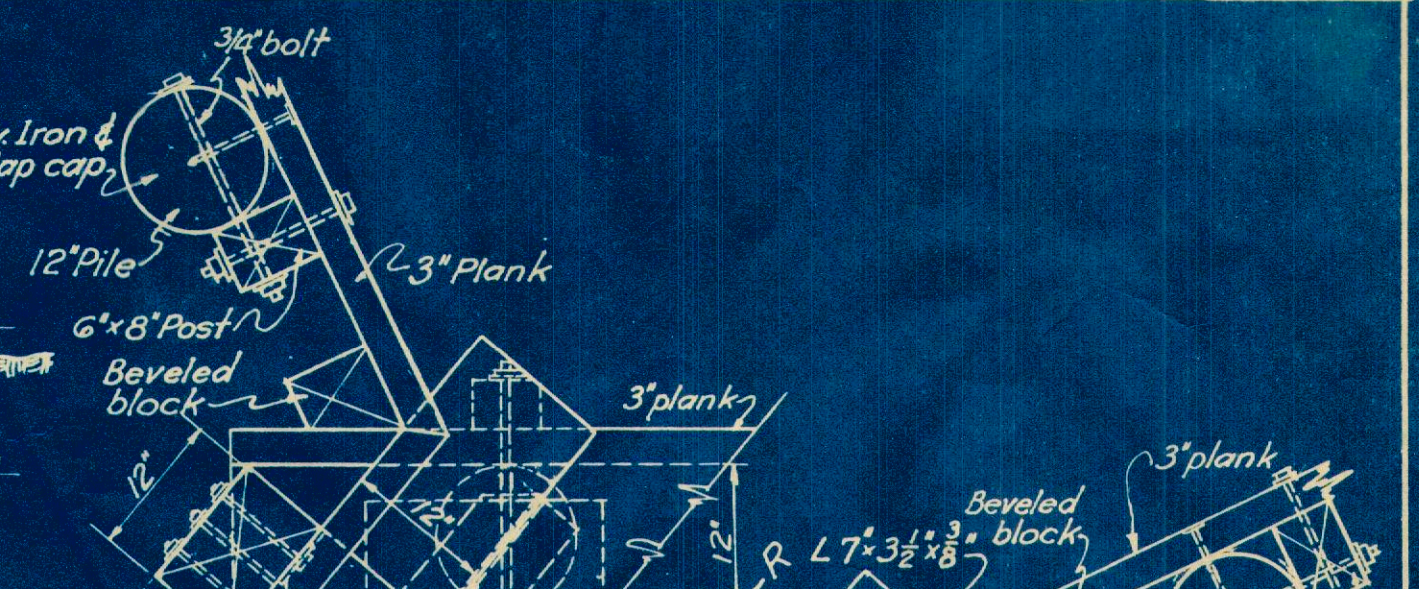
STATE OF OHIO DEPARTMENT OF HIGHWAYS BUREAU OF BRIDGES					
GENERAL PLAN, ELEVATION AND NOTES					
BRIDGE OVER CRAB RUN					
S. H. SECTION		147 B - Dr.		HOLMES COUNTY STA. 206+36	
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
HSE	HSE	SJP	J.B.	J.P.C.	10/14/31
					REVISOR
					11/27/31



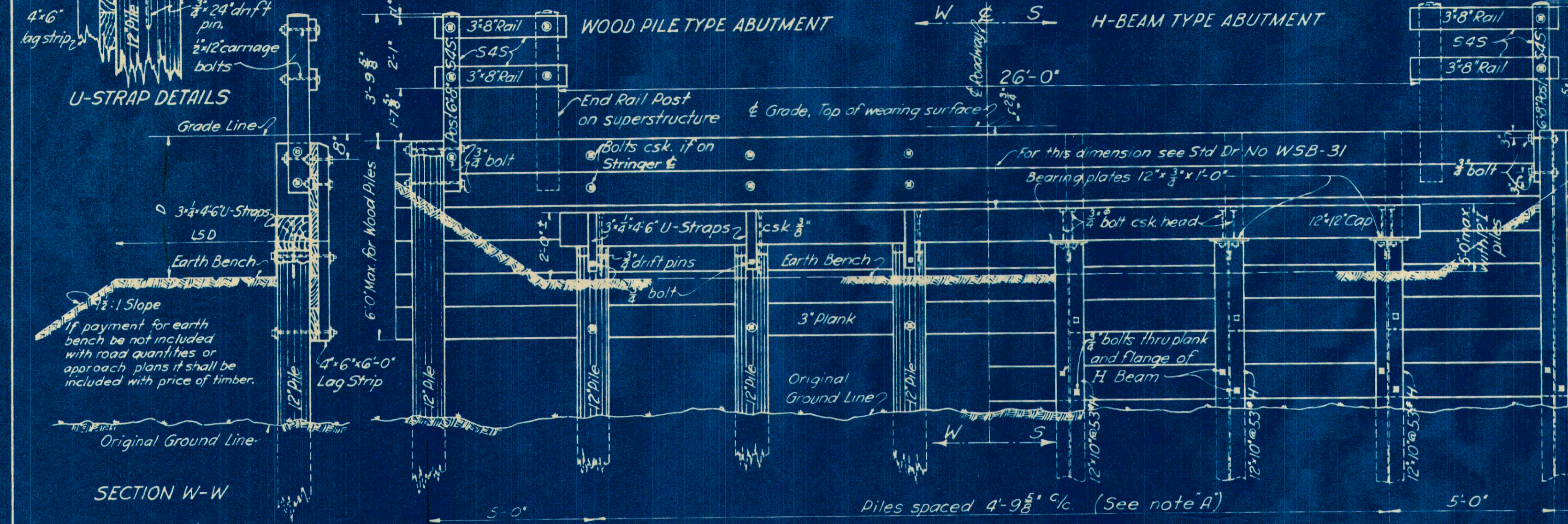
TYPICAL HALF PLANS



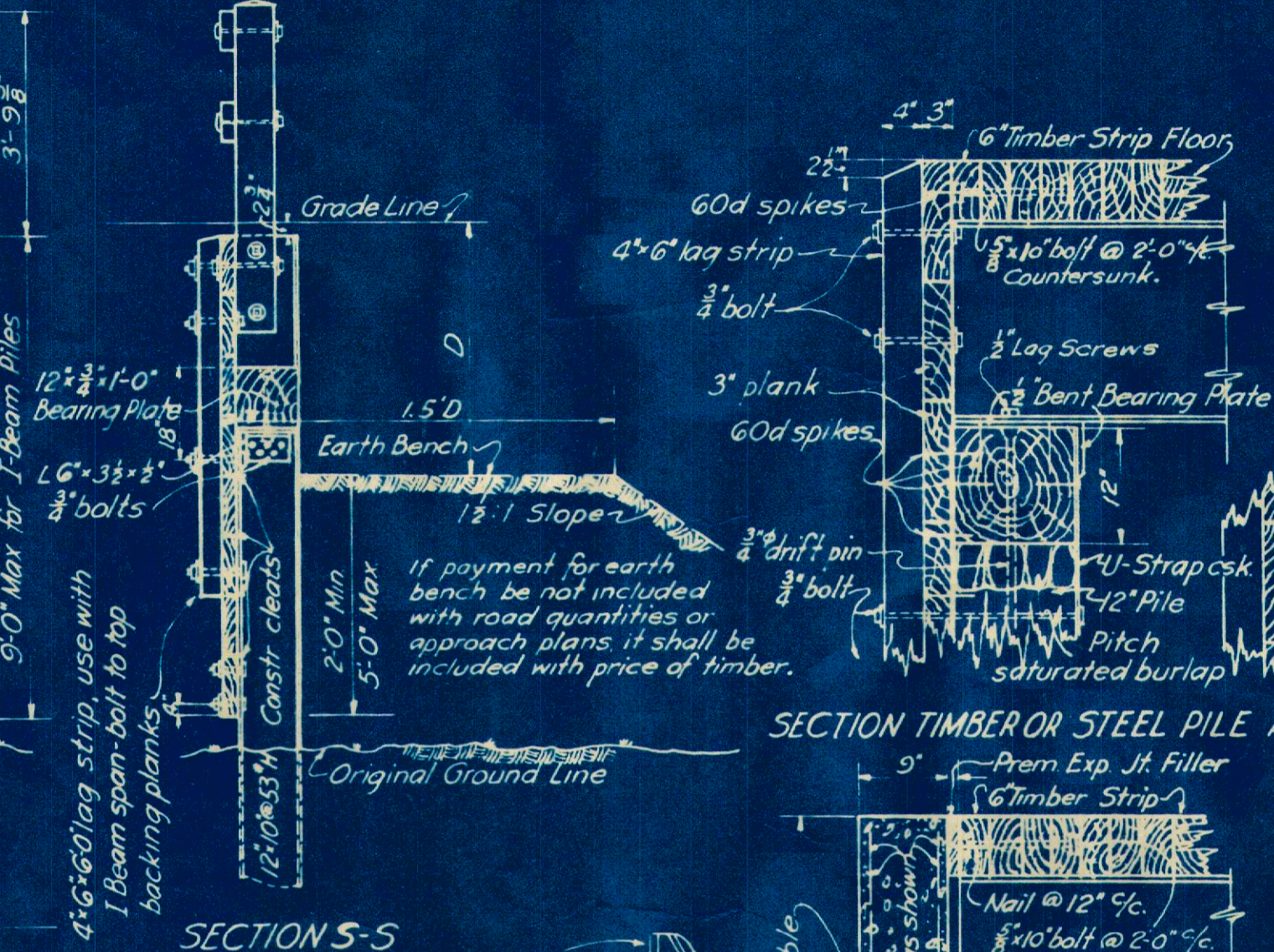
DETAILS OF FRAME PIER ON ROCK



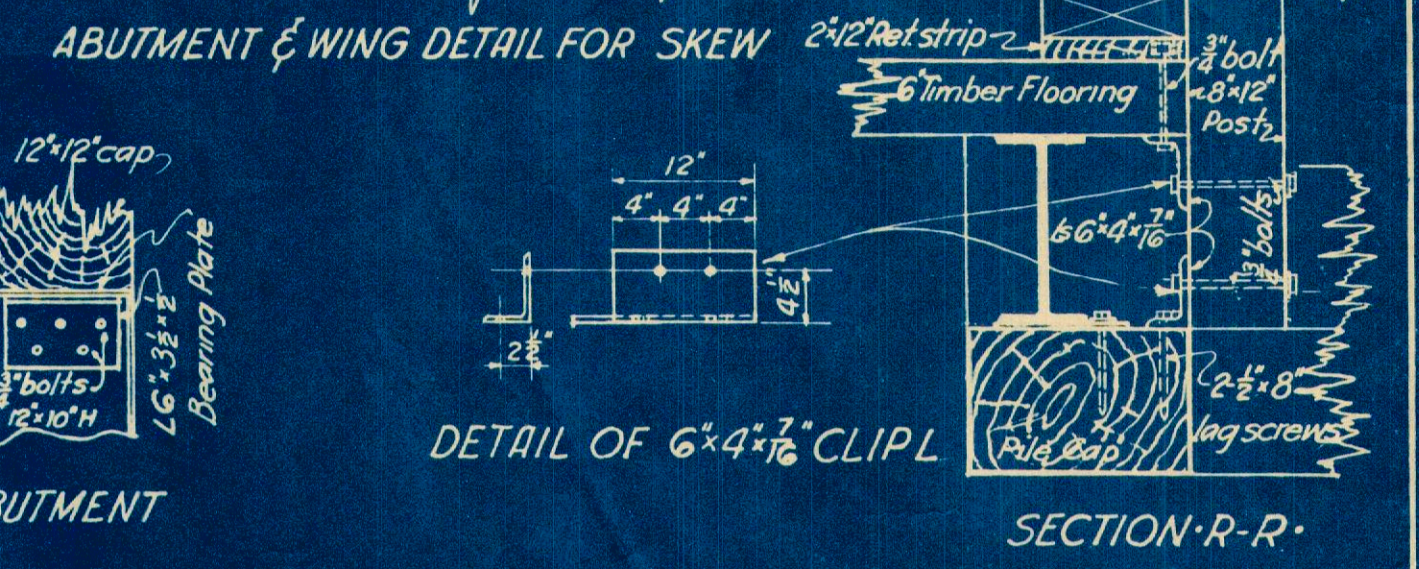
ABUTMENT & WING DETAIL FOR SKEW



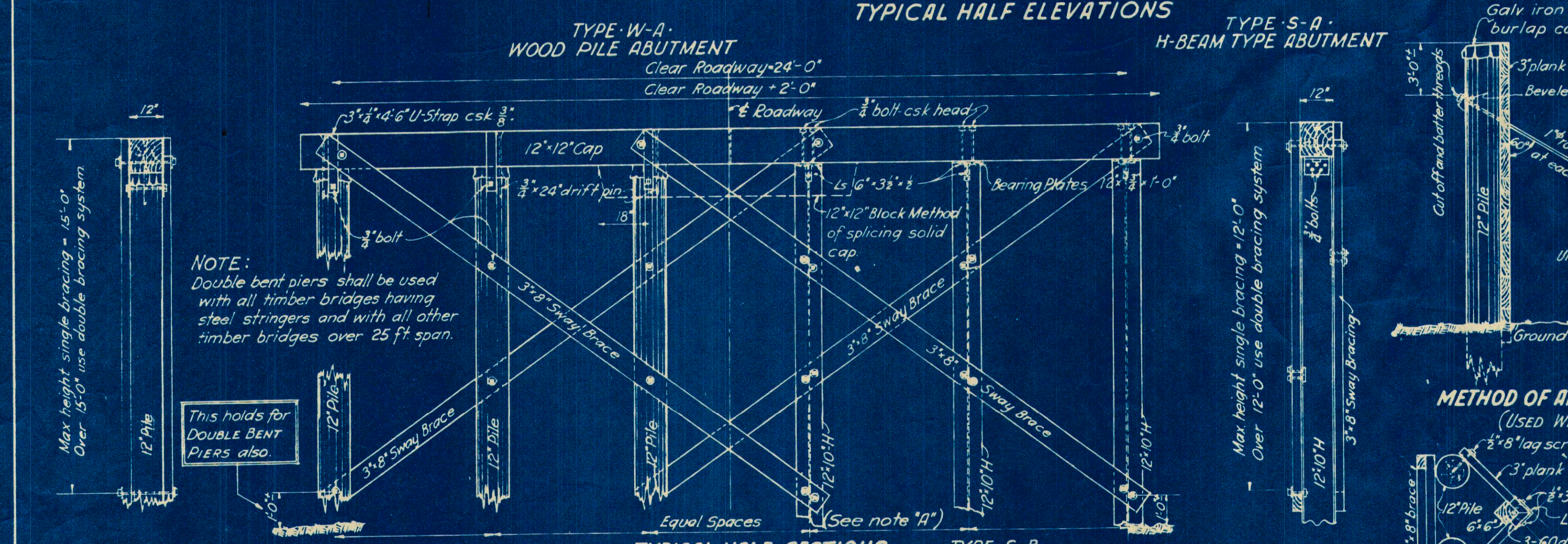
TYPICAL HALF ELEVATIONS



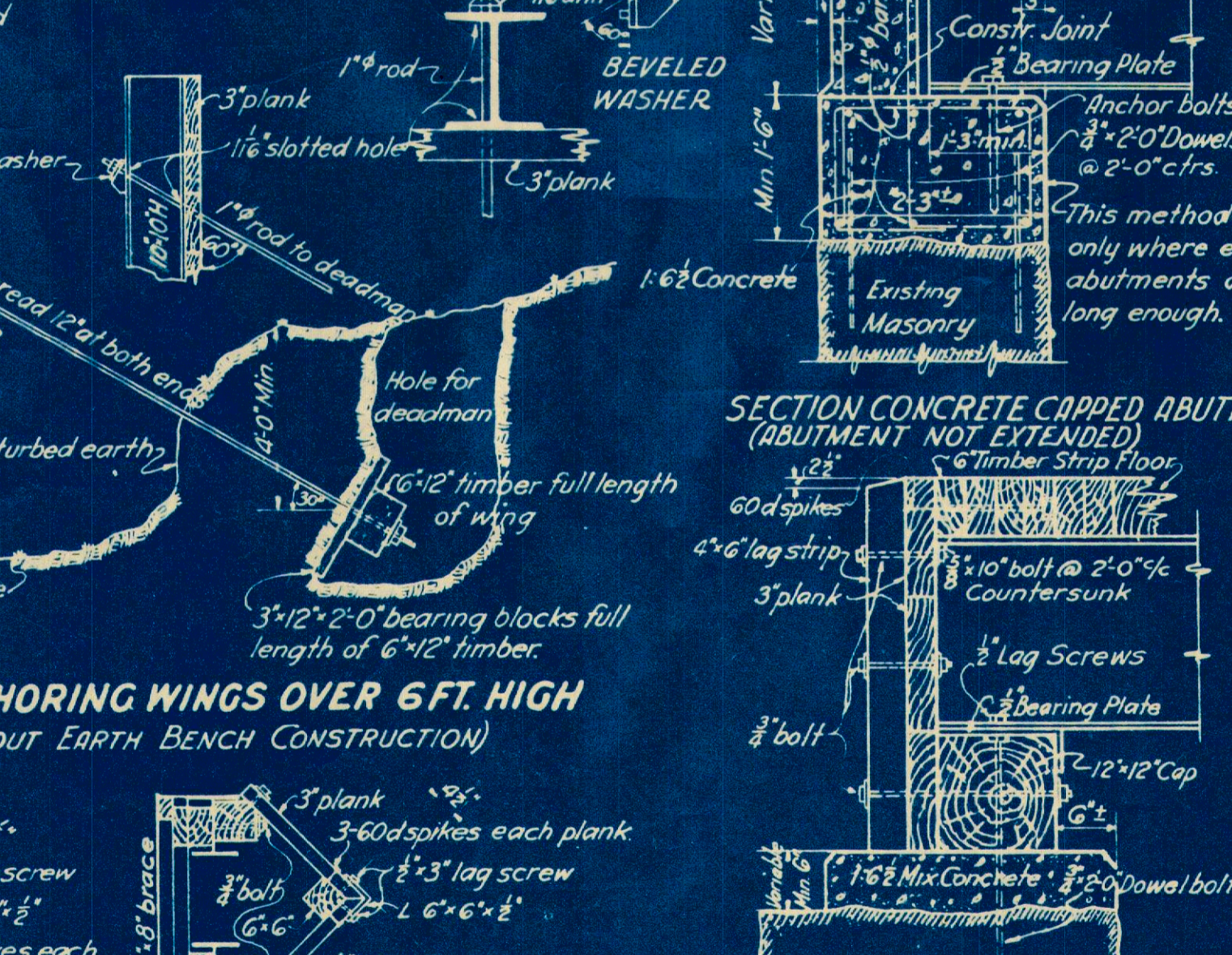
SECTION TIMBER OR STEEL PILE ABUTMENT



SECTION R-R



TYPICAL HALF SECTIONS



METHOD OF ANCHORING WINGS OVER 6 FT. HIGH

NOTES

IMPORTANT NOTE "A"
 MAX PILE SPACING IS:
 5'-0" for spans under 50'-0"
 4'-0" for spans 50'-0" and over
 See SUPPLEMENTAL DESIGN INSTRUCTIONS for spacing due to variation in Height "V".

SINGLE SWAY BRACING ARRANGEMENT
 Use for Timber bracing for "V" up to 15 ft. inclusive.
 Use for Steel bracing for "V" up to 12 ft.

DOUBLE SWAY BRACING ARRANGEMENT
 Use for Timber bracing for "V" 15 ft. to 24 ft. inclusive.
 Use for Steel bracing for "V" 12 ft. to 24 ft. inclusive.
SPECIAL DESIGN when "V" is over 24 ft.

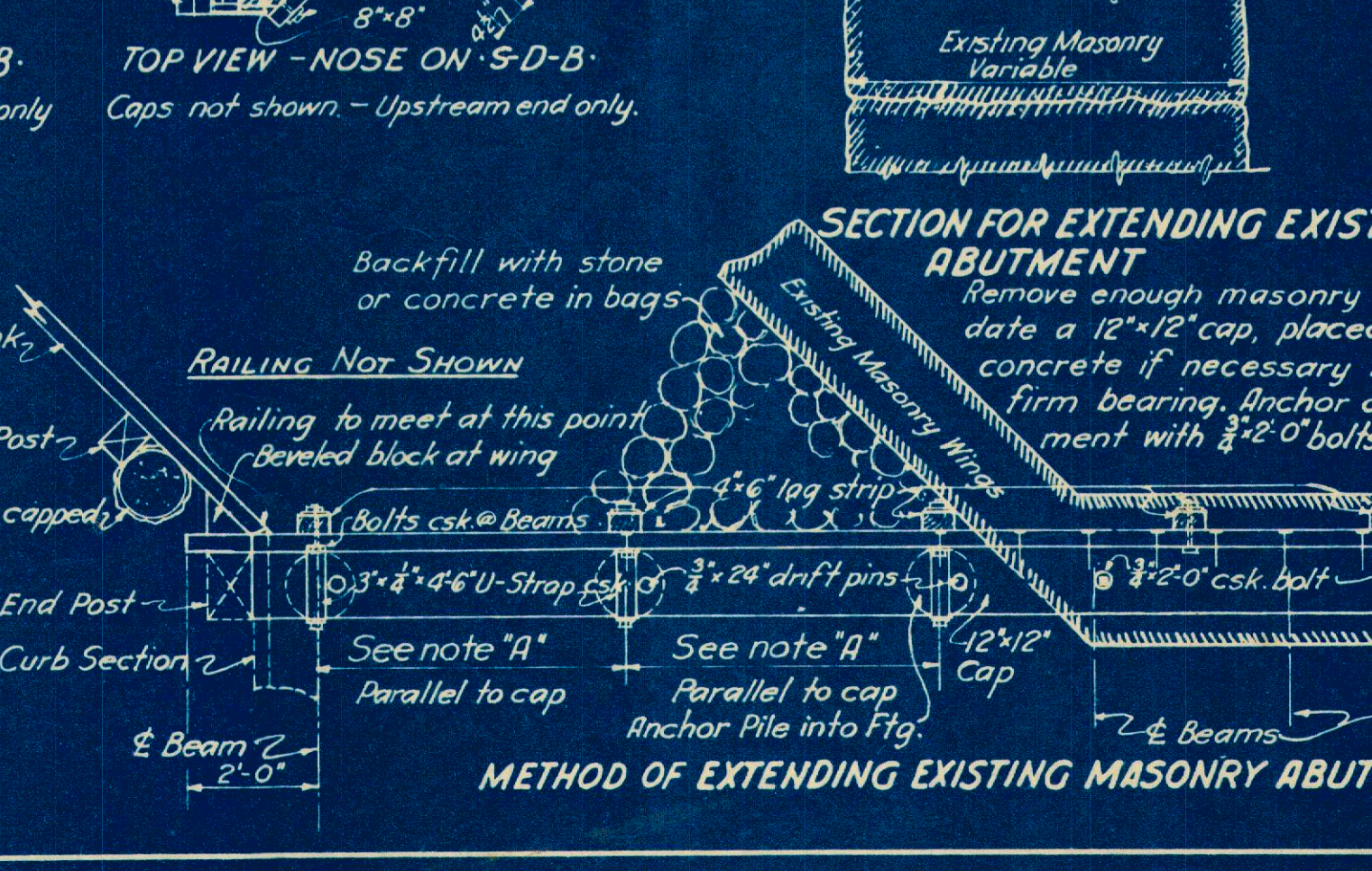
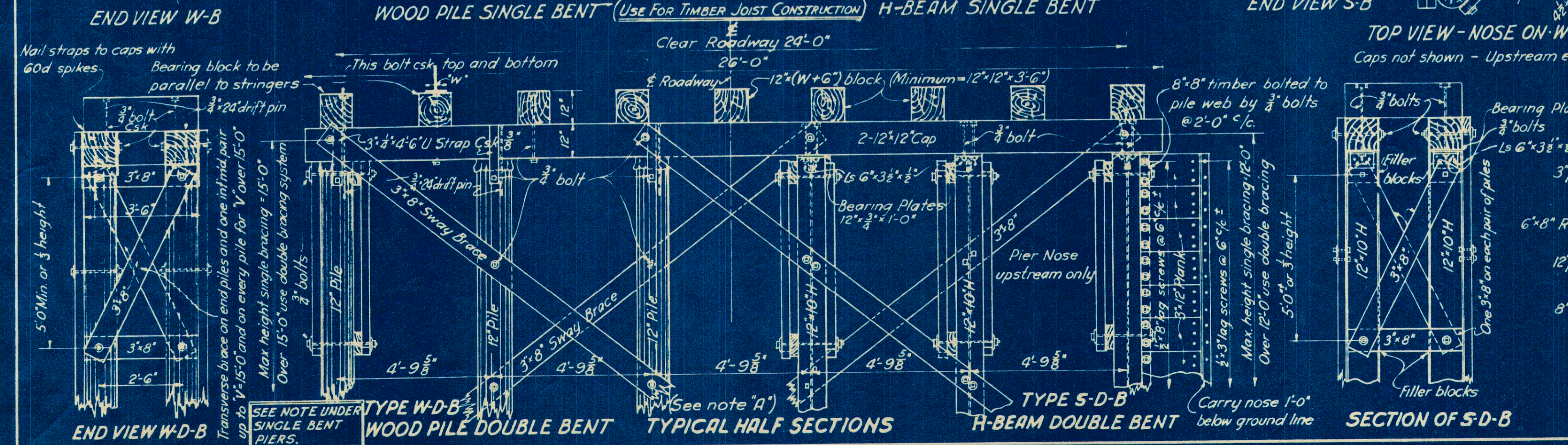
ALL TIMBER except Railing Rails to be Creosoted.
 PILING under piers and abutments shall be driven to a min. bearing of 10 tons.

GENERAL: This drawing is to serve both as a guide to the designer in preparing individual bridge plans and as a construction drawing to show details of connections, etc. not set forth on the project plans.

REFERENCE MUST BE MADE by the Designer to a special set of mimeographed sheets, entitled "SUPPLEMENTAL DESIGN INSTRUCTIONS FOR CREOSOTED TIMBER-AND-STEEL BRIDGES," dated Oct. 1, 1931.

SUPERSTRUCTURE DETAILS are shown on STD. DR. NO. WSB-31.

DETAIL DRAWINGS to be prepared for each bridge, in accordance with DR. NO. WAP-31, DR. NO. WSB-31, "Supplemental Design Instructions," and Sample Plans furnished by the Bureau of Bridges.

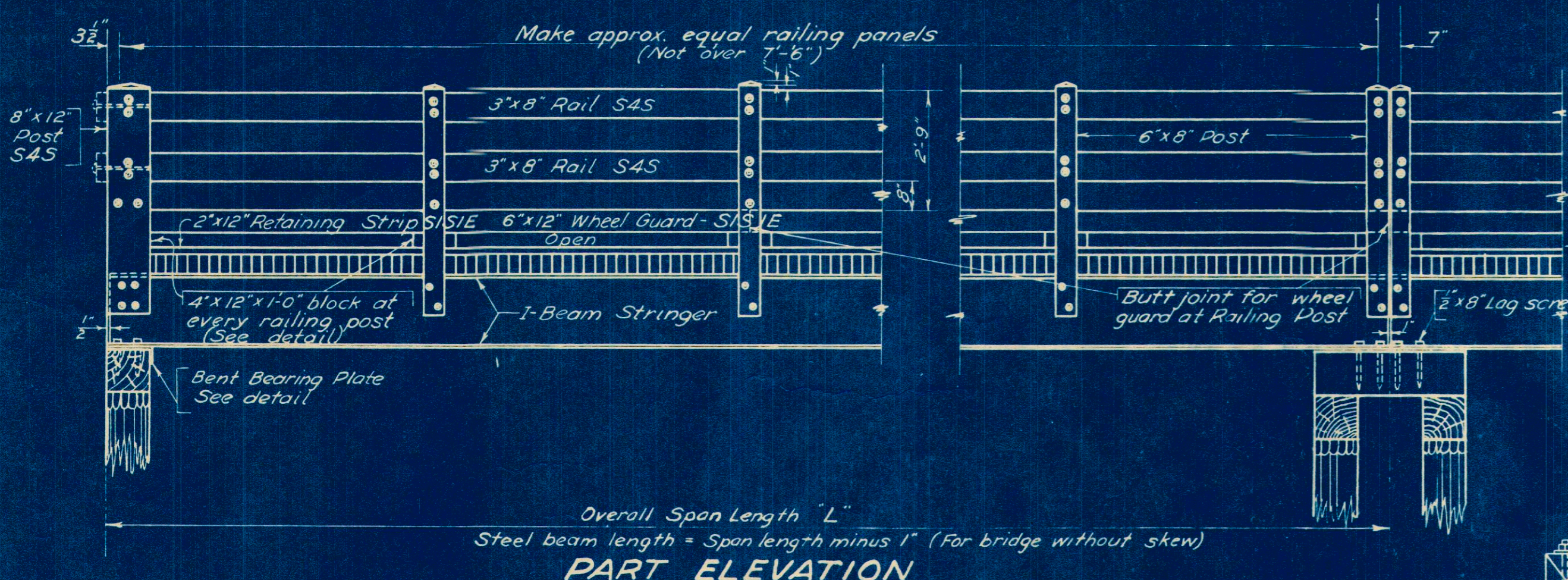


SECTION OF S-D-B

SECTION FOR EXTENDING EXISTING ABUTMENT

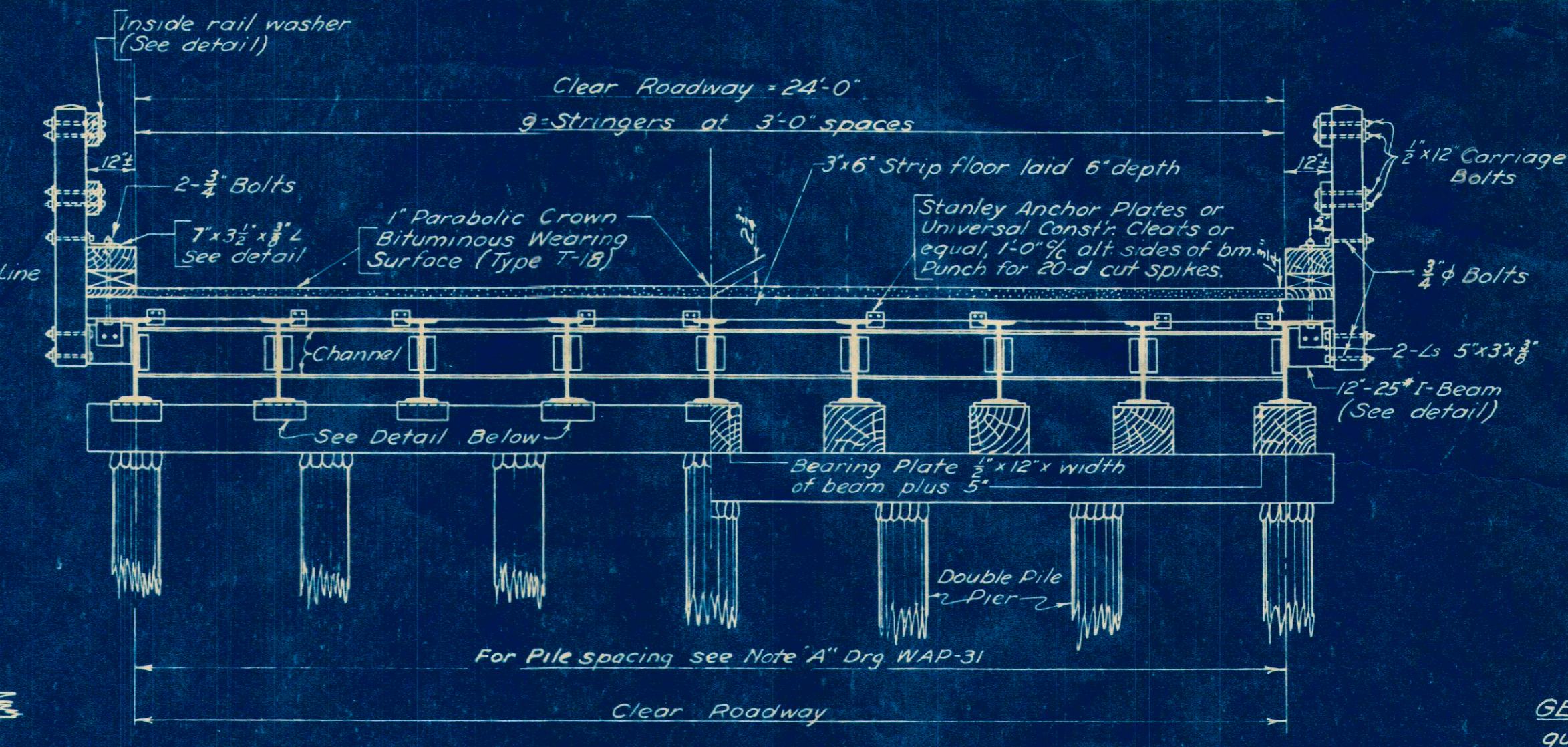
REVISIONS

10-19-31			
<p>STANDARD CREOSOTED TIMBER OR TIMBER-AND-STEEL ABUTMENTS AND PIERS H-15 LOADING</p> <p>STATE OF OHIO DEPARTMENT OF HIGHWAYS BUREAU OF BRIDGES</p> <p>OCTOBER 1931</p> <p>APPROVED BY <i>W.P. Bricker</i> DATE 10-13-31 DESIGNED BY <i>H.T.W.</i> DRAWN BY <i>H.T.W.</i> CHECKED BY <i>H.T.W.</i> REVIEWED BY <i>H.T.W.</i></p>			
DRAWING NUMBER			WAP-31



Overall Span Length "L"
Steel beam length = Span length minus 1" (For bridge without skew)

PART ELEVATION



TYPICAL SECTION
Showing part of Abutment Showing part of Pier (Double bent)

TABLE OF STRINGERS				
Length L Feet	I-Beam Stringers For 6" Floor		Channel Cross Struts	
	Depth Inches	Weight Lbs/ft	Depth Inches	Weight Lbs/ft
15	12	32	12	20.7
20	15	35	12	20.7
25	16	40	12	20.7
30	18	47	12	20.7
35	20	55	12	20.7
40	21 or 22	58	15	33.9
45	24	70	15	33.9
50	24	70	15	33.9
55	26, 27 or 28	85	15	33.9
60	30	108	15	33.9

NOTES TO DESIGNER

GENERAL: This drawing is intended both as a guide to the designer in the preparation of the plans for an individual bridge and as a construction drawing to show details of connections, etc., not set forth on the project plans.

DUPLICATION OF DETAILS shown on this drawing is to be avoided as much as possible. In case of skew or other special superstructure conditions, all details that cannot conveniently be determined in the field from this standard drawing, are to be completely drawn and described. In order to save time and minimize errors, no copying of details shall be done.

Also, there should be no notes placed on the plans covering features that are amply described in the Standard Construction Specifications (or Supplementary Winter Specifications).

REFERENCE MUST BE MADE by the Designer to the special set of mimeographed sheets entitled "SUPPLEMENTAL DESIGN INSTRUCTIONS FOR CREOSOTED TIMBER-AND-STEEL BRIDGES," dated Oct 1, 1931.

ABUTMENT AND PIER DETAILS are shown on Std. Dr. NO. WAP-31.

DETAIL DRAWINGS to be prepared for each bridge, in accordance with DR NO. WSB-31, DR NO. WAP-31, Supplemental Design Instructions, dated Oct 1, 1931, and sample plans furnished by the Bureau of Bridges.

GENERAL NOTES

STRUTS & RAIL BRACKETS to be fastened with 3/4" machine bolts & lock washers.

CREOSOTE all timber except railing rails.

DRAINAGE to be provided by a 4" slot in retaining strip in middle of each railing panel.

STRIP FLOOR to be laid parallel with ends of bridge up to 20° skew. Beyond 20° skew, strip floor to be laid perpendicular to stringers.

RIVETS: 3/8"

HOLES in structural steel 1/8" unless noted.

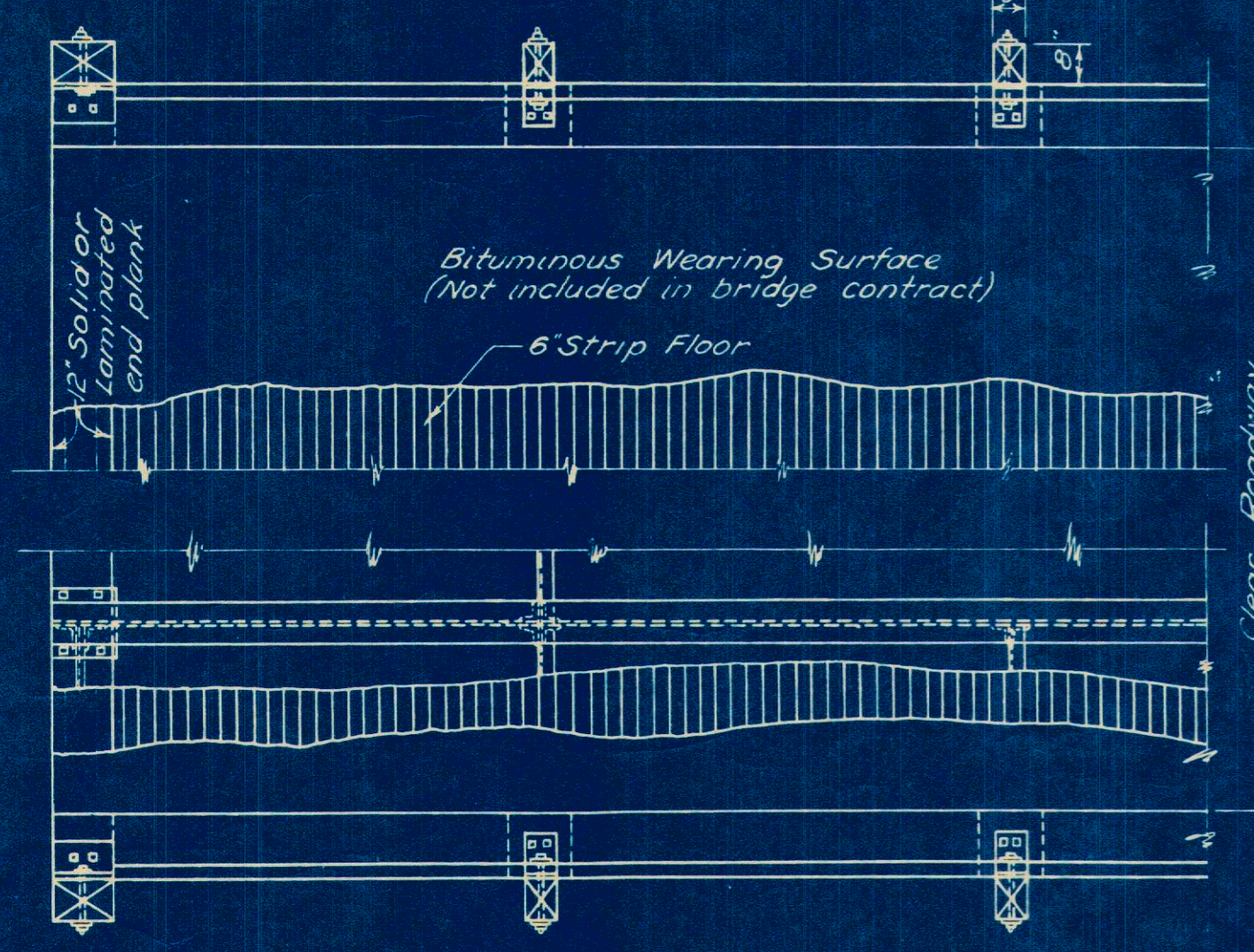
WELDING: All stringers shall be field welded to bearing plates.

REVISIONS
OCT. 19, 1931
NOV. 5, 1931

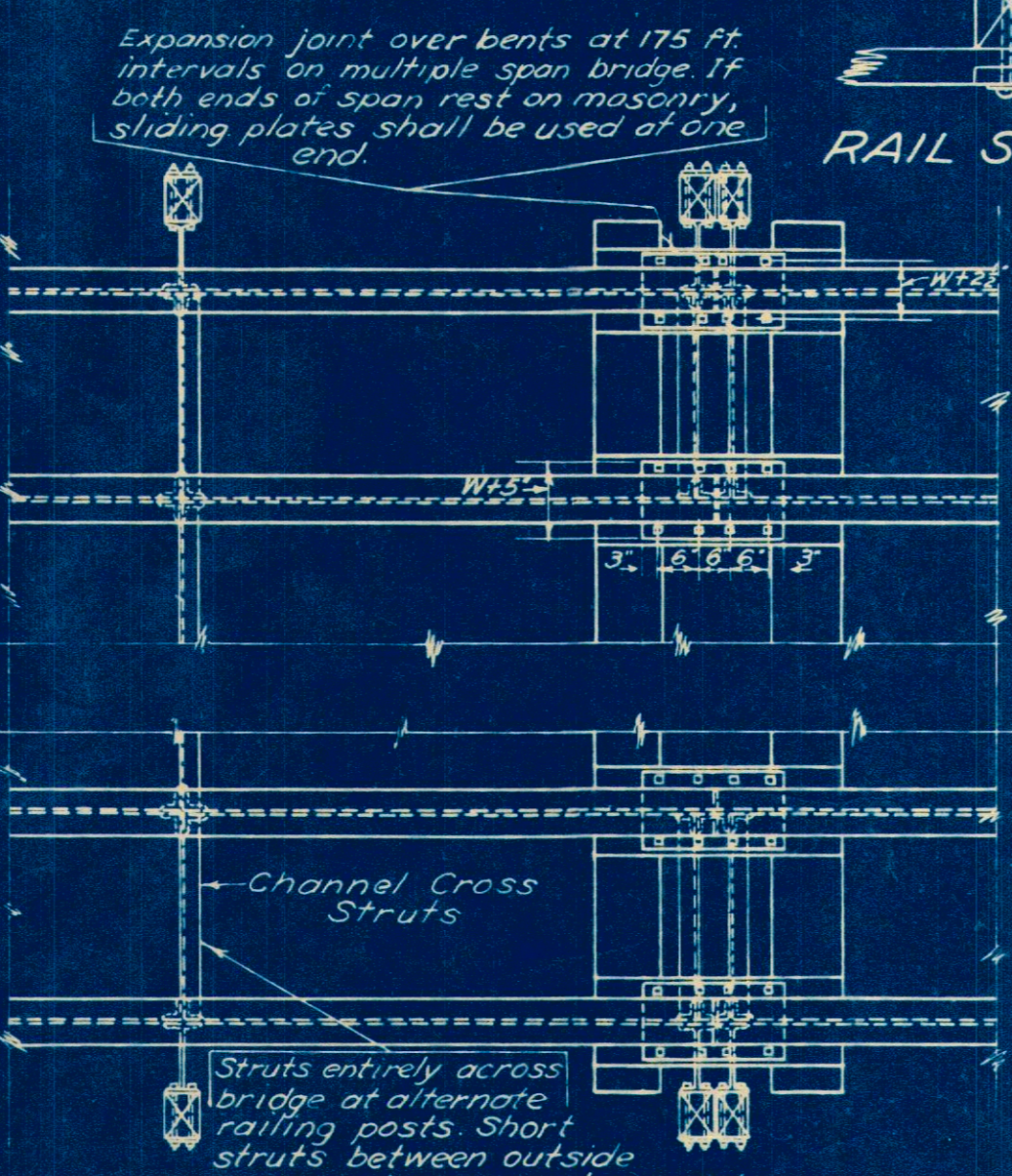
STANDARD
CREOSOTED TIMBER SUPERSTRUCTURE
ON STEEL STRINGERS
H-15 LOADING

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

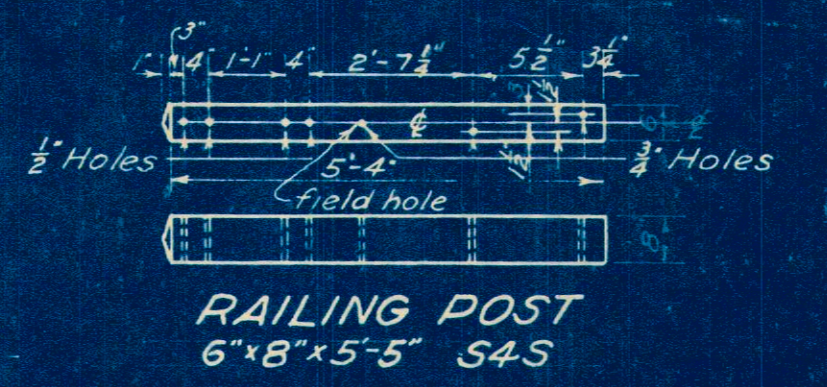
APPROVED BY: [Signature]
DATE 10-13-31
DESIGNED BY: [Signature]
DRAWING NUMBER: **WSB-31**



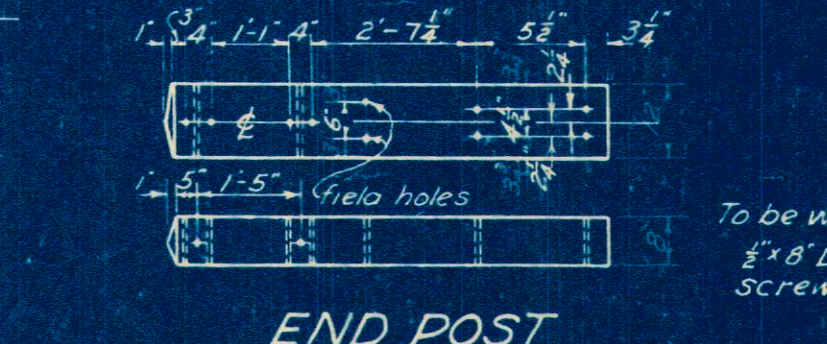
PART PLAN



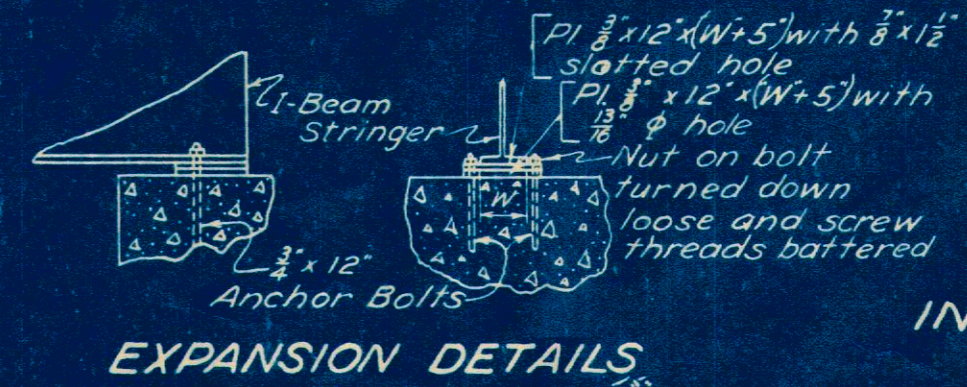
RAIL SPLICE



RAILING POST
6x8x5-5 S4S



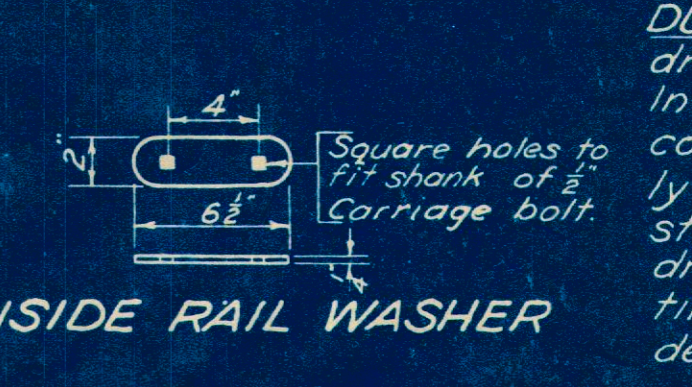
END POST
FOR SQUARE BRIDGES
8x12x5-5 S4S



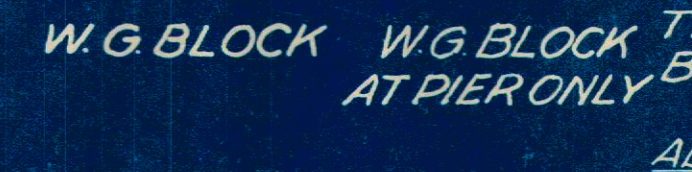
EXPANSION DETAILS



BEARING PLATES
AT ABUTMENTS

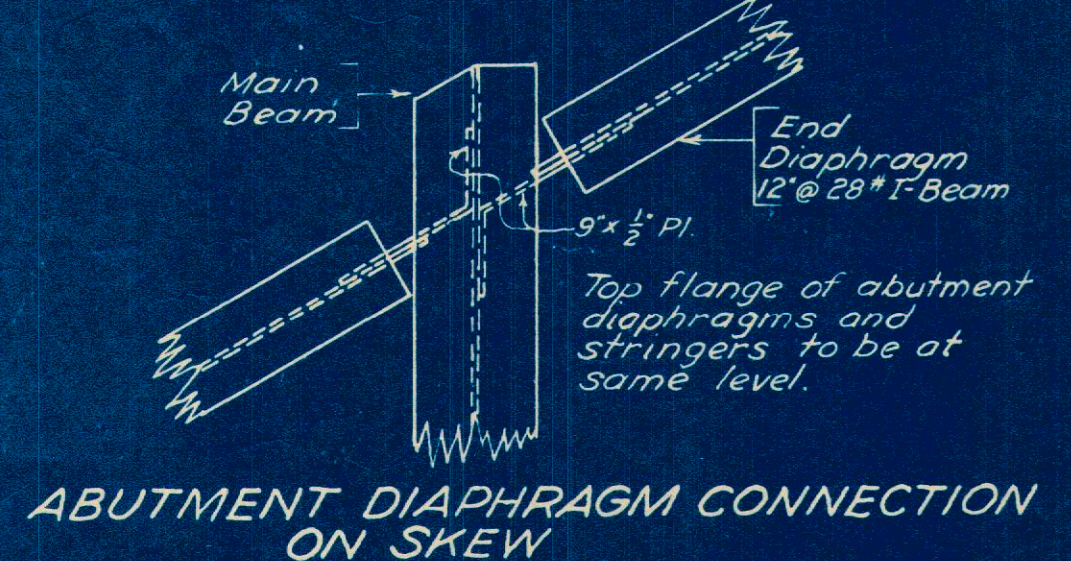


INSIDE RAIL WASHER

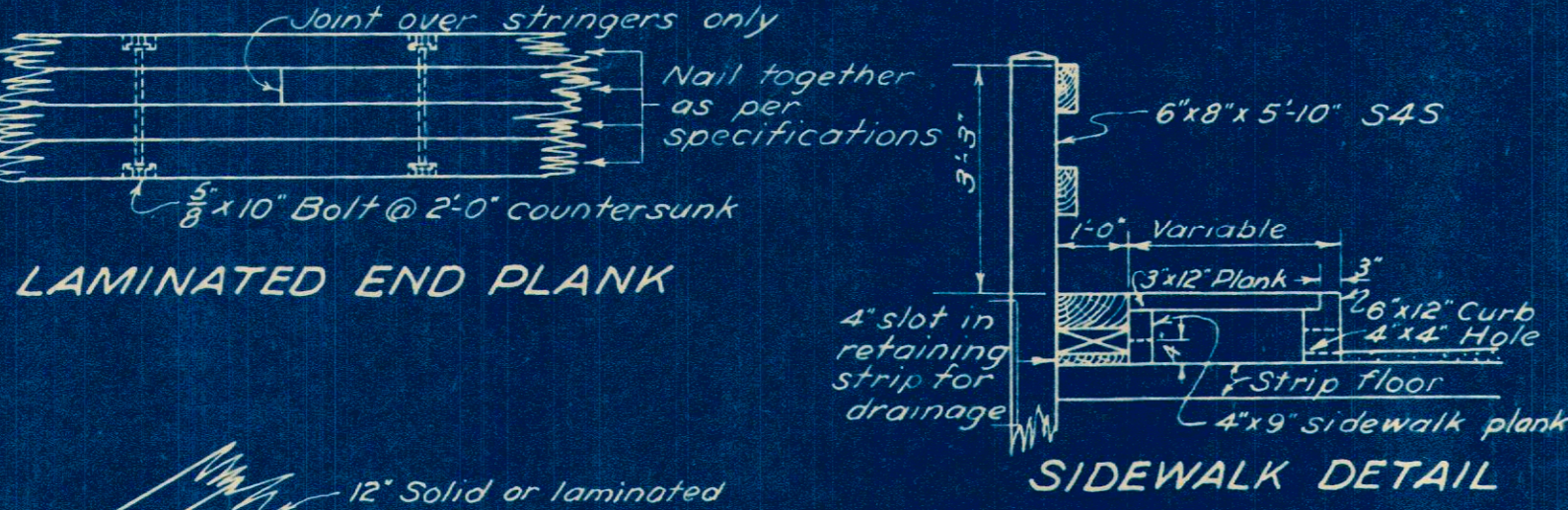


W.G. BLOCK
AT PIER ONLY

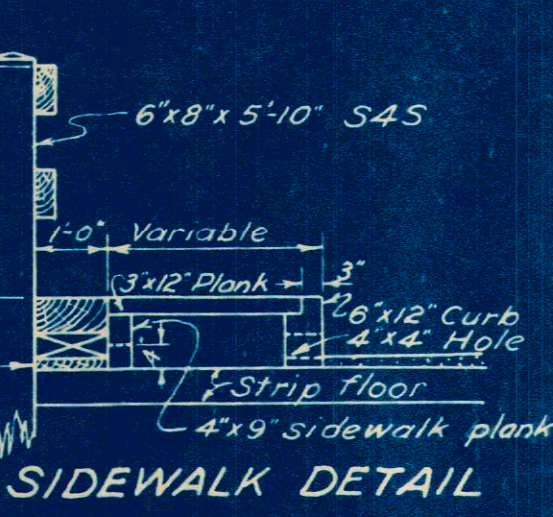
NOTE:
The tops of stringers shall be painted four coats of red lead or sublimed blue lead paint under shop conditions. Instead of the two coats of red lead and one coat of graphite as per specifications. On all other surfaces sublimed blue lead paint may be substituted for the red lead paint specified in Item F.10.



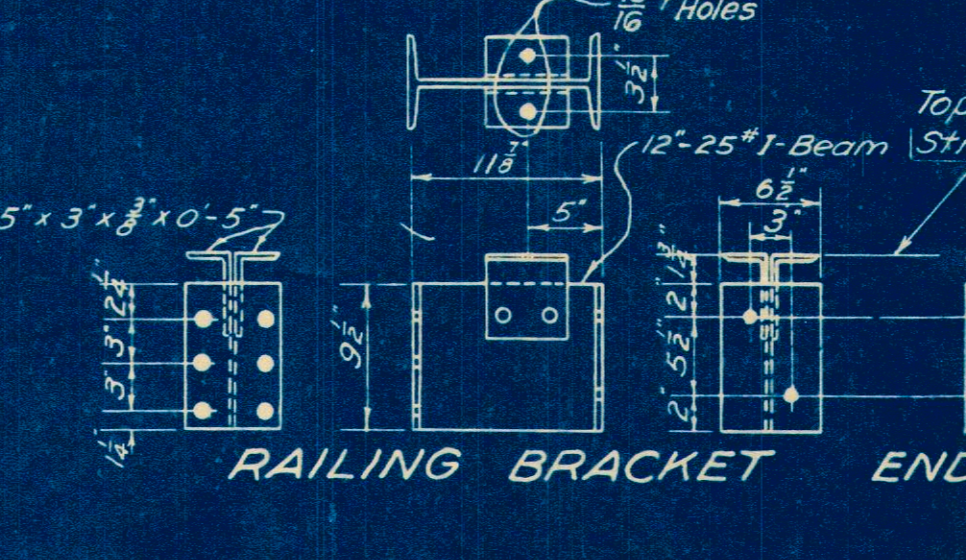
ABUTMENT DIAPHRAGM CONNECTION
ON SKEW



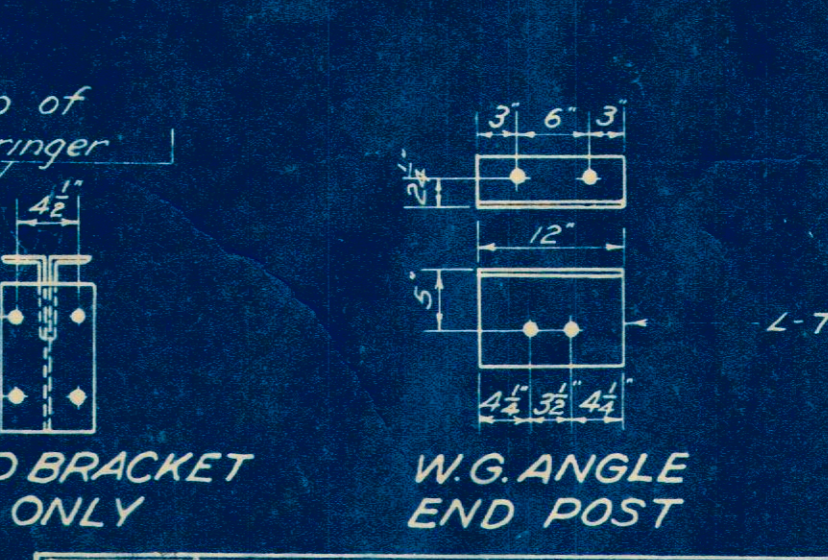
LAMINATED END PLANK



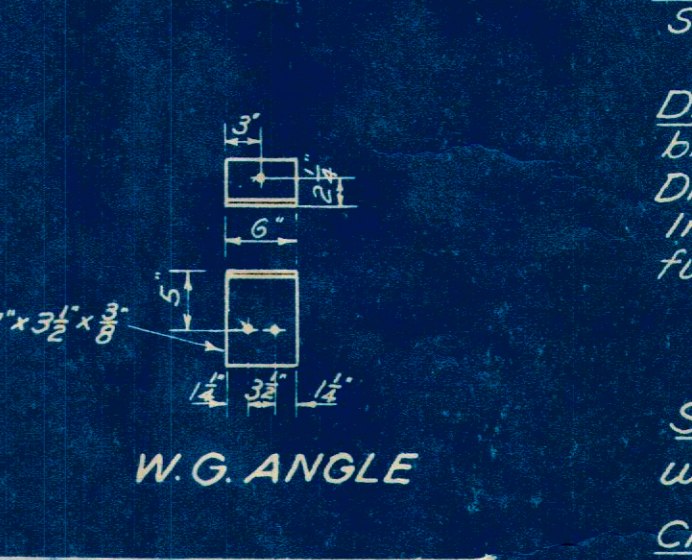
SIDEWALK DETAIL



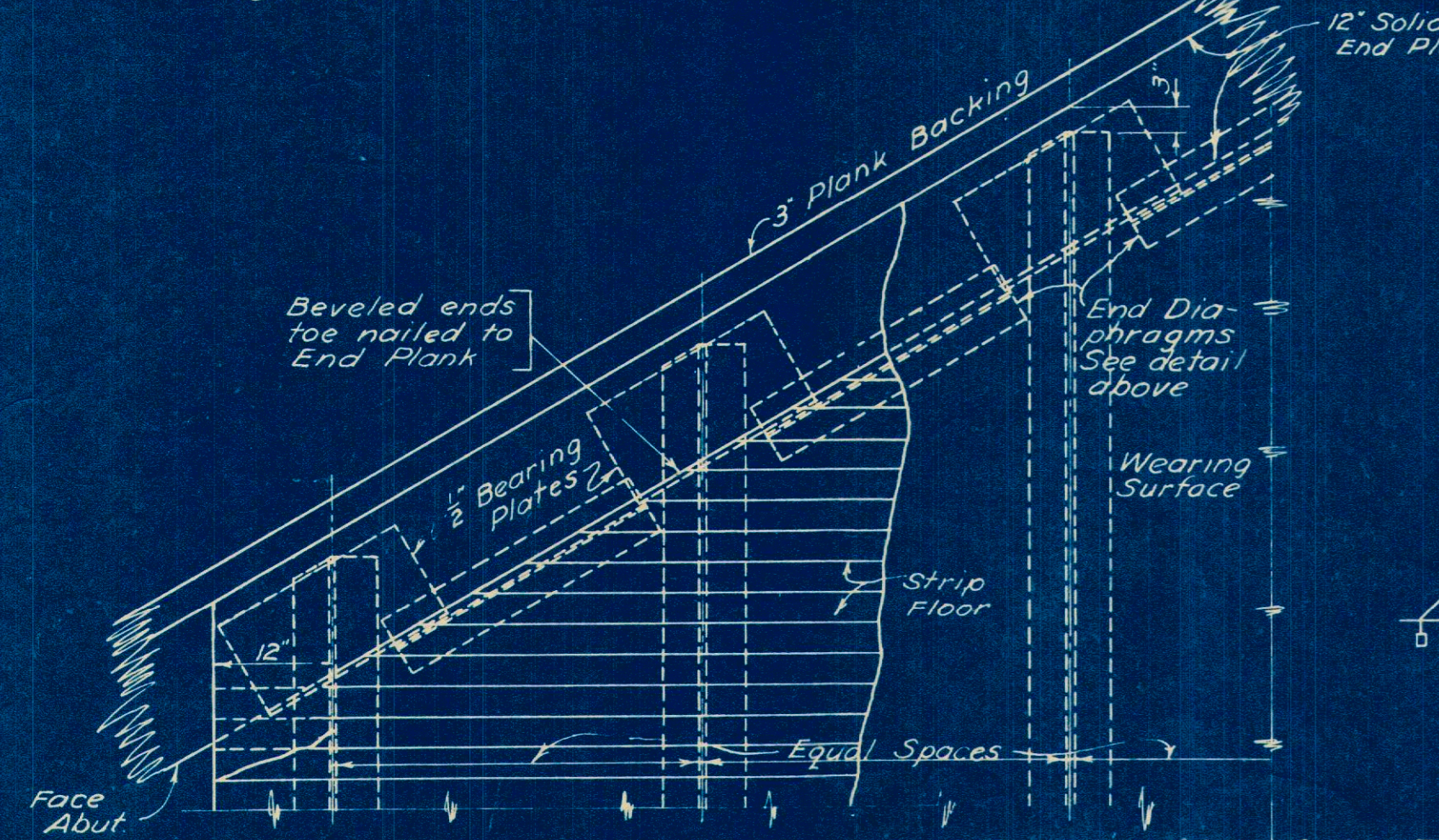
RAILING BRACKET
END BRACKET ONLY



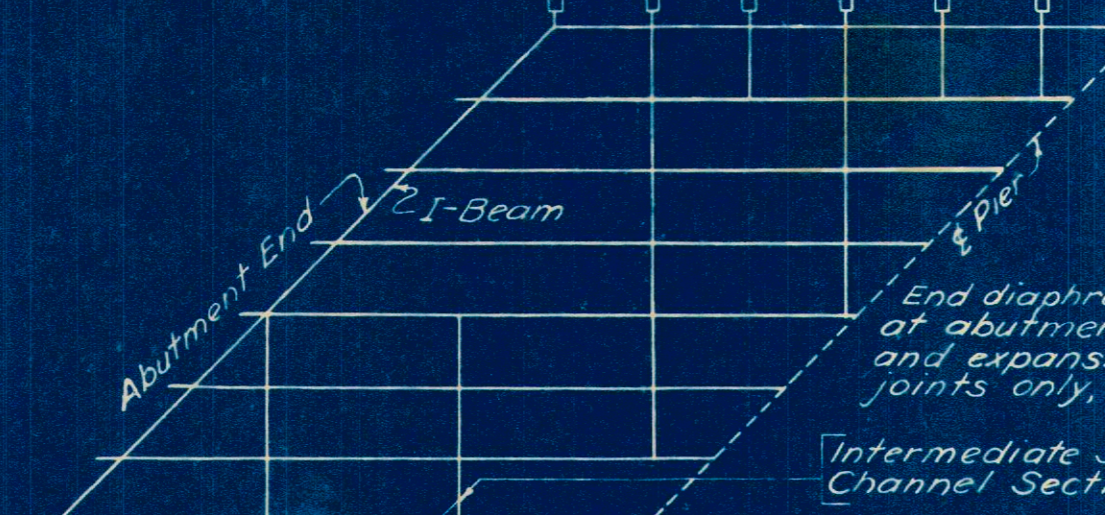
W.G. ANGLE
END POST



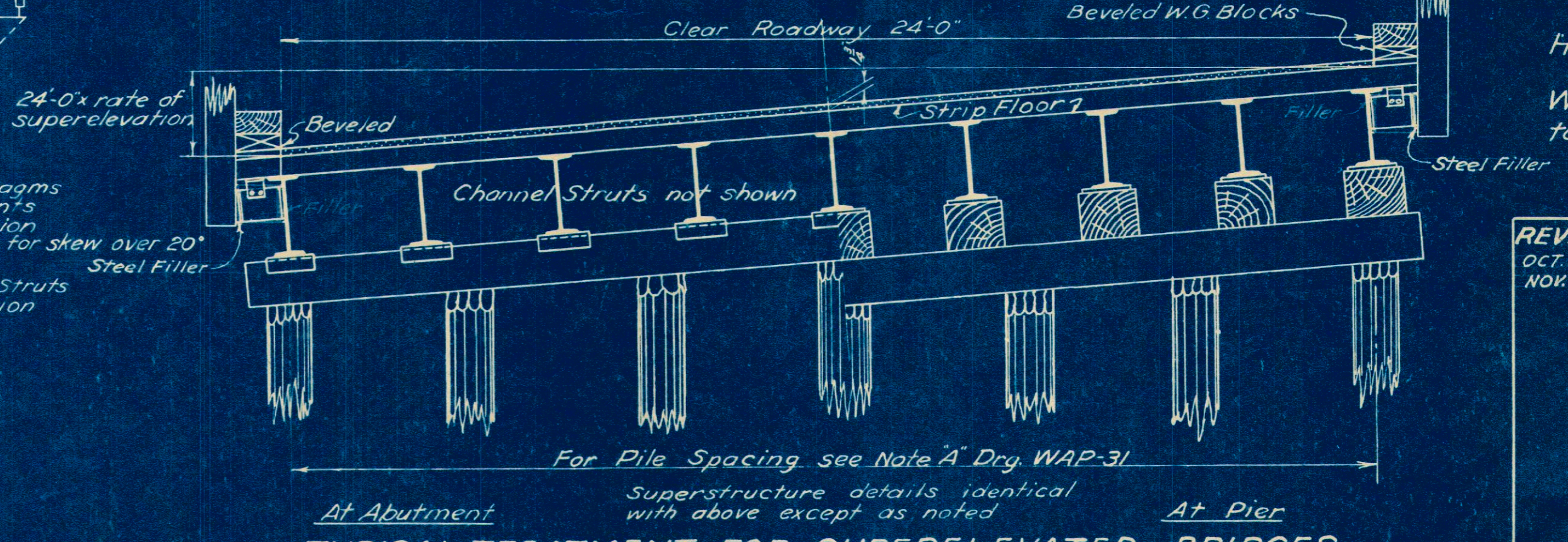
W.G. ANGLE



TYPICAL END PLAN FOR ABUTS. OVER 20° SKEW



TYPICAL BEAM & STRUT LAYOUT
FOR SKEWED BRIDGES



TYPICAL TREATMENT FOR SUPERELEVATED BRIDGES