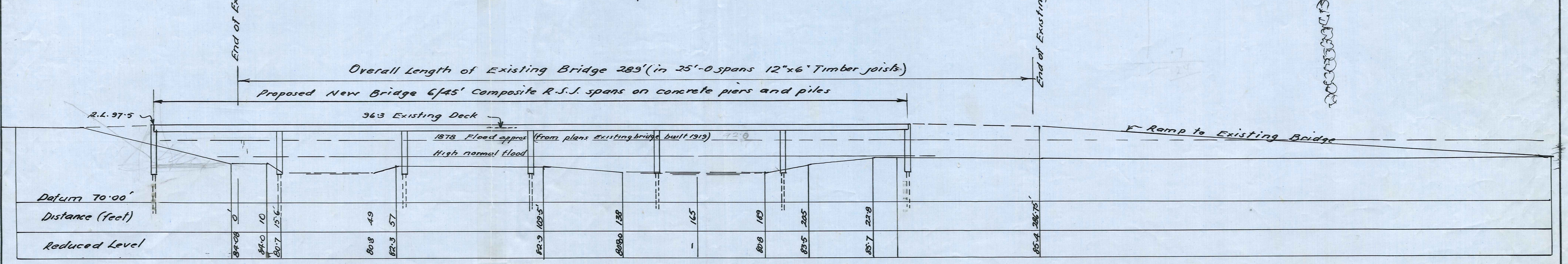
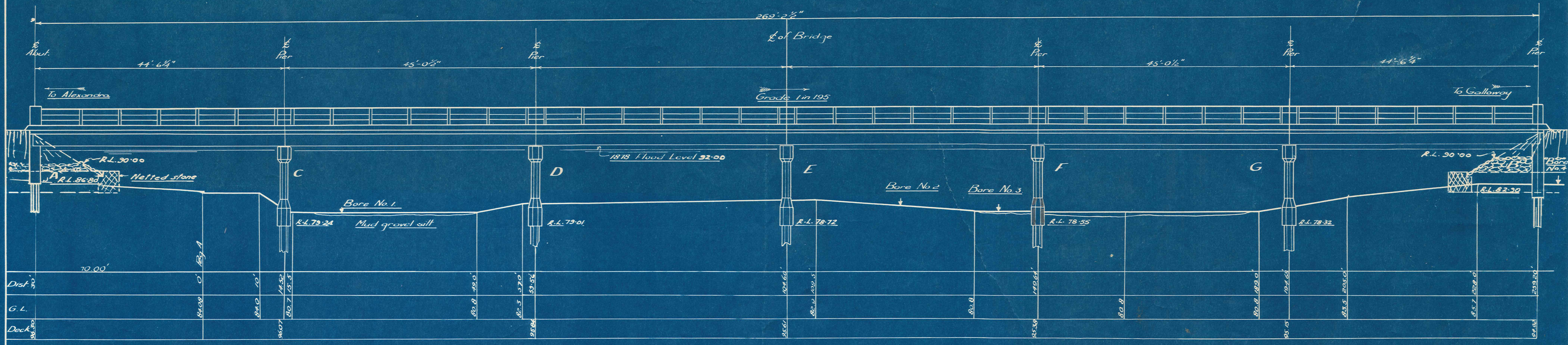


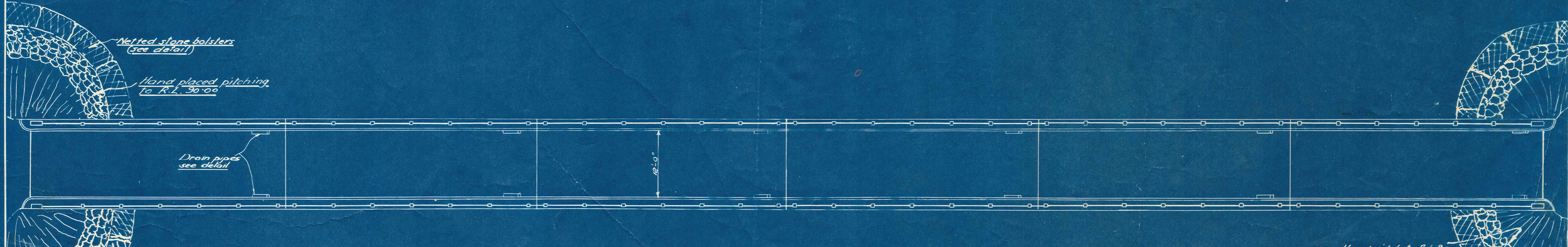
SITE PLAN
Scale 1/4" to 1" inch



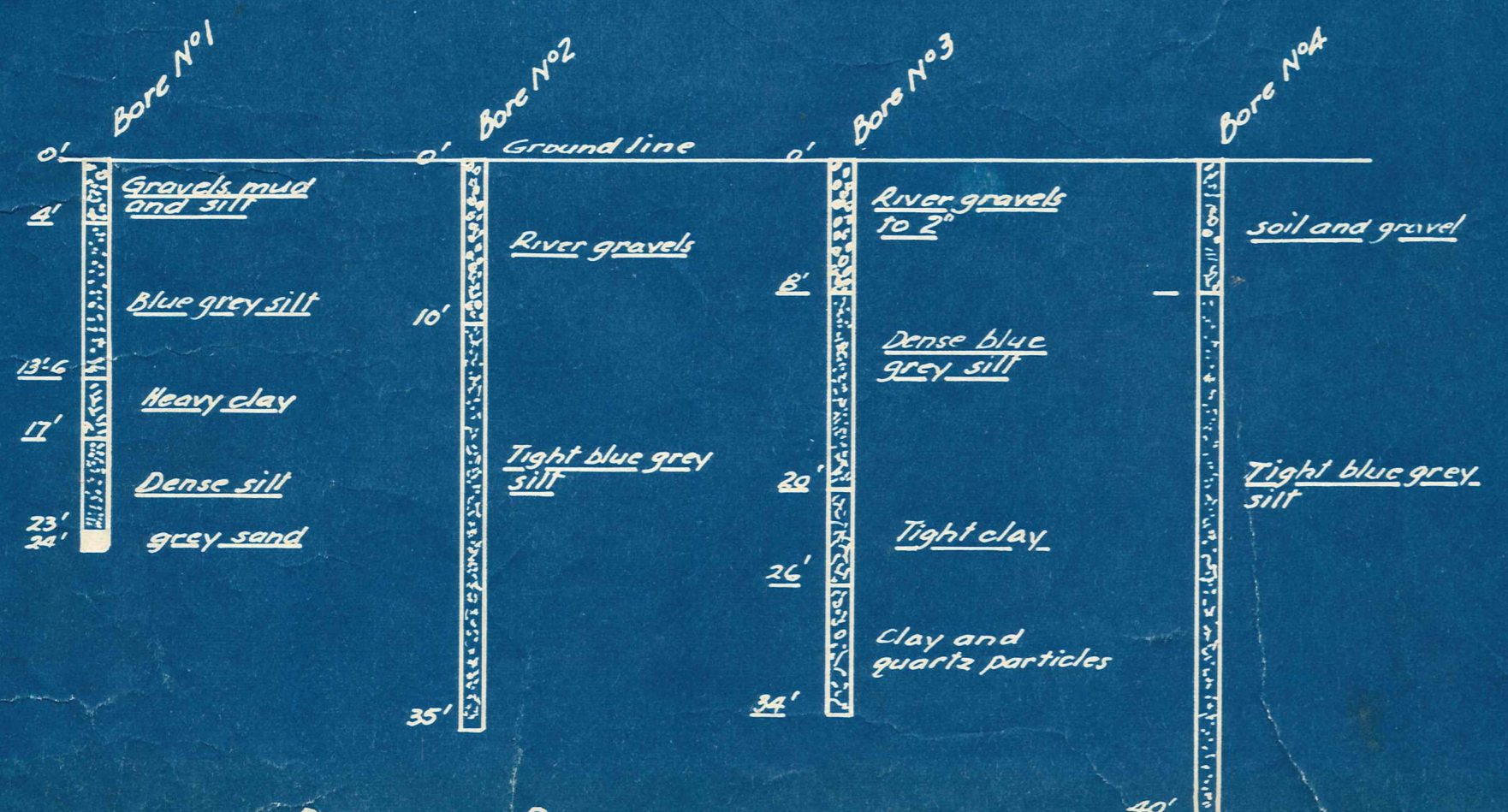
LONGITUDINAL SECTION
Scale 20 feet to 1 inch.



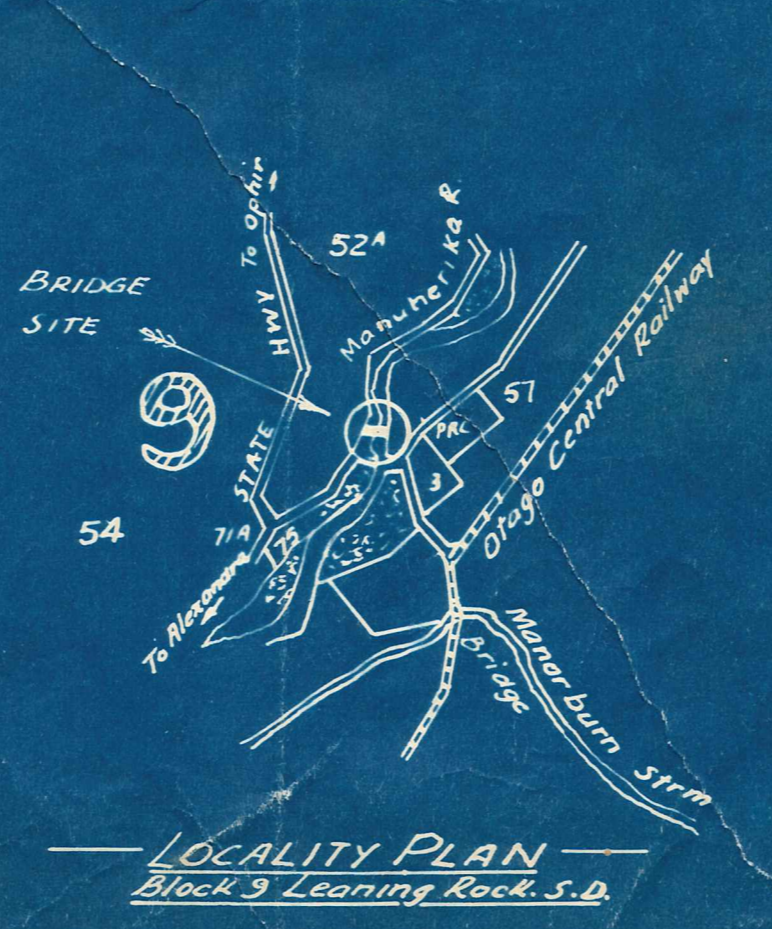
DOWNSTREAM ELEVATION OF BRIDGE
 Scale: 10ft to an inch.



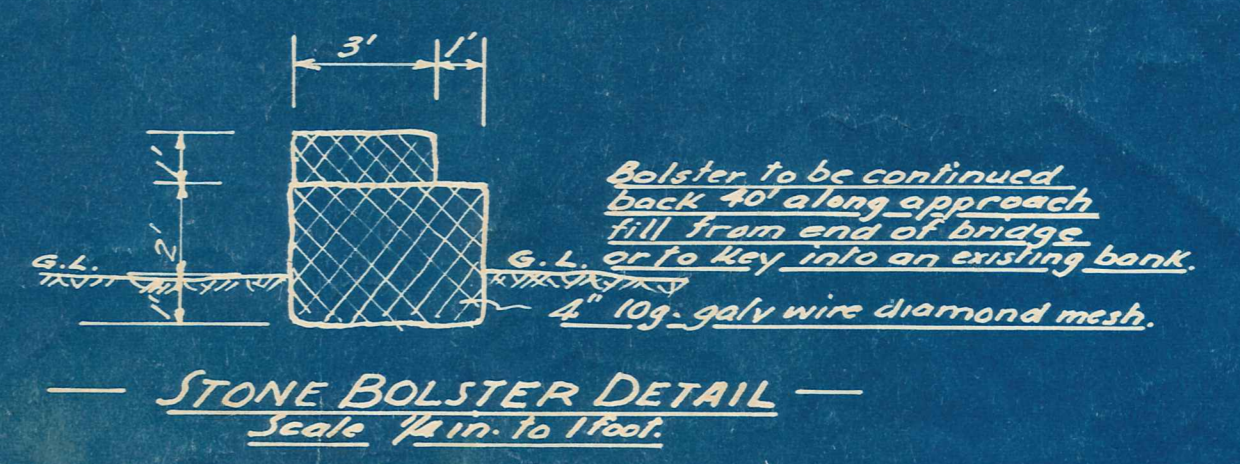
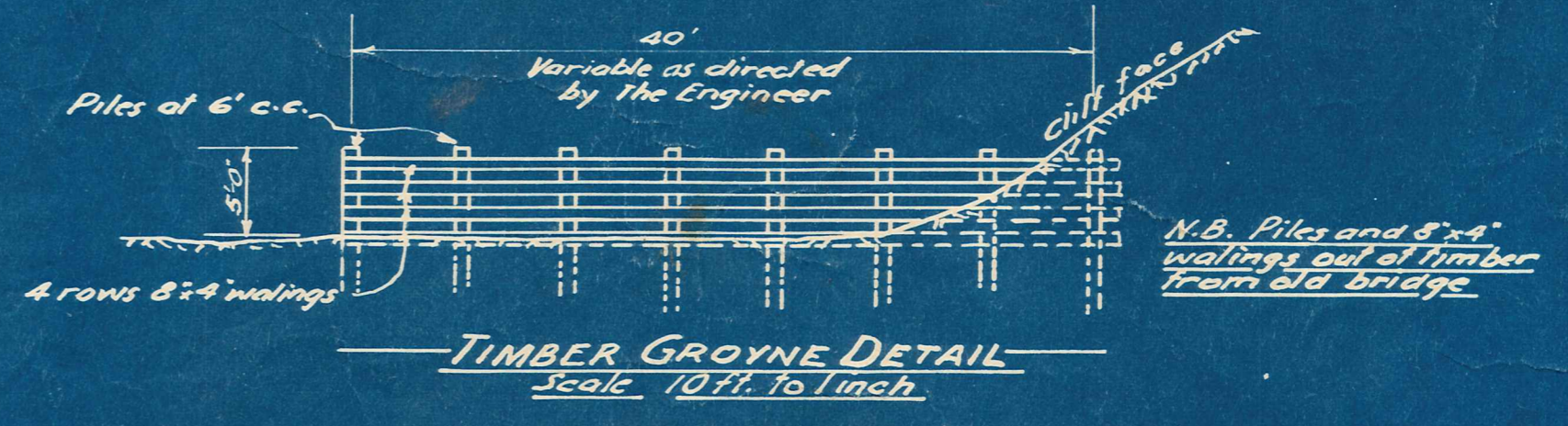
PLAN OF BRIDGE
 Scale: 10 feet to an inch.



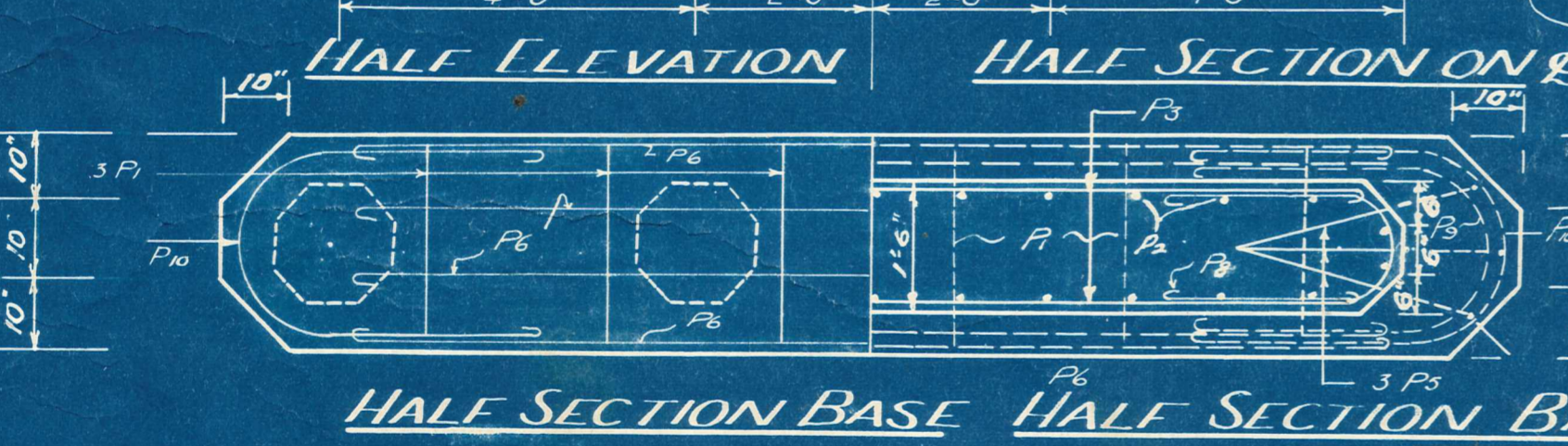
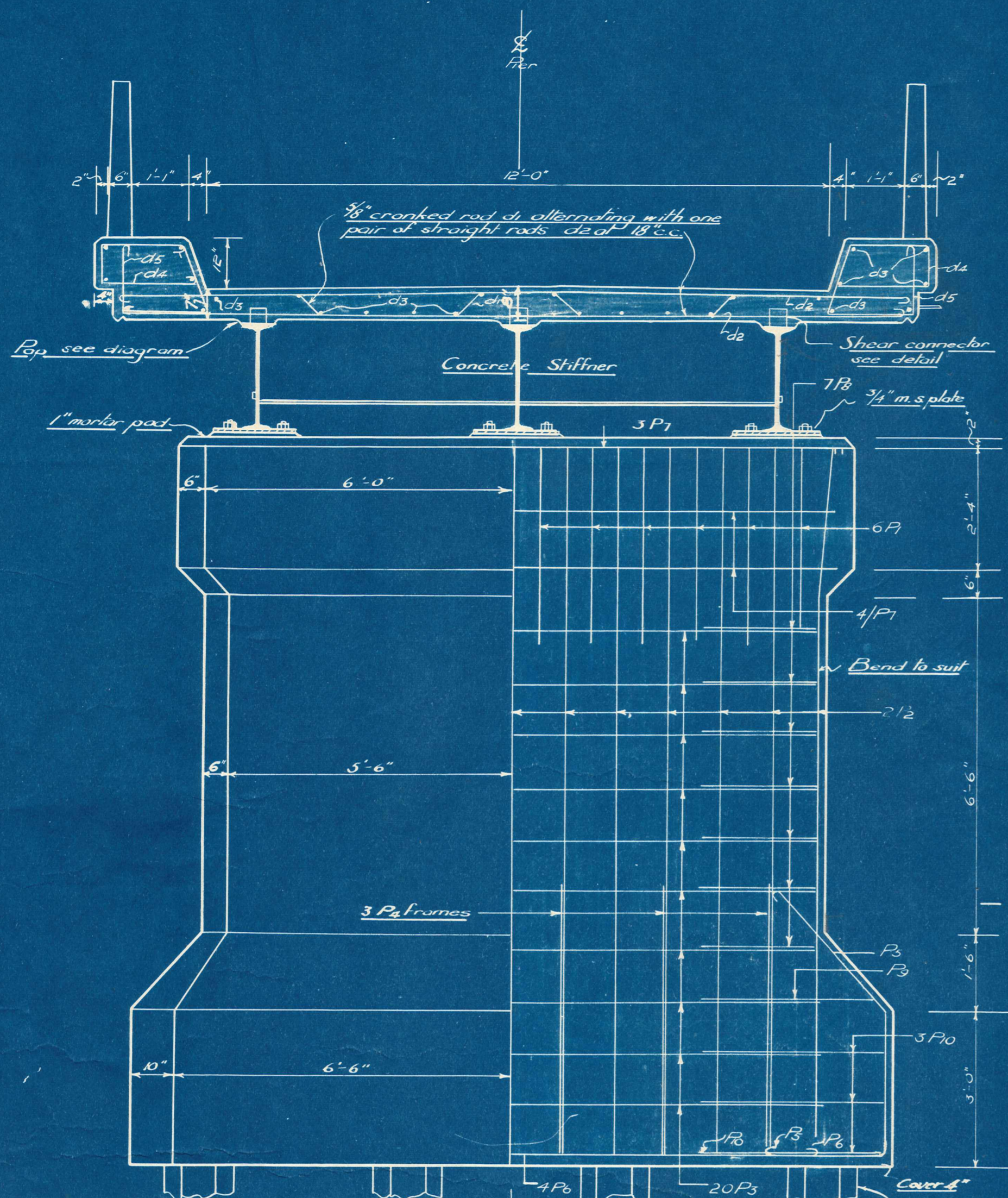
DETAIL OF BORES
 Extracted from report by M.O.W. geologist R. Gordon G.S.



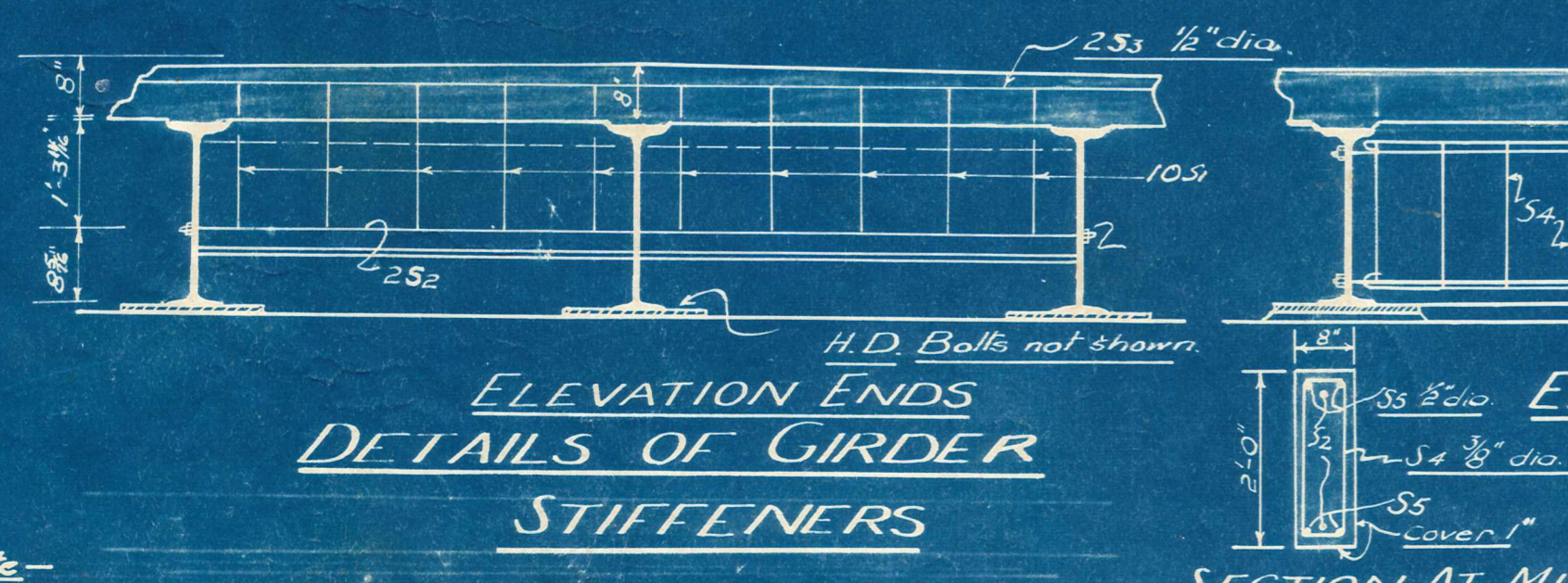
LOCALITY PLAN
 Block 9 Learning Rock, S.D.



Design Loading H20S1644.

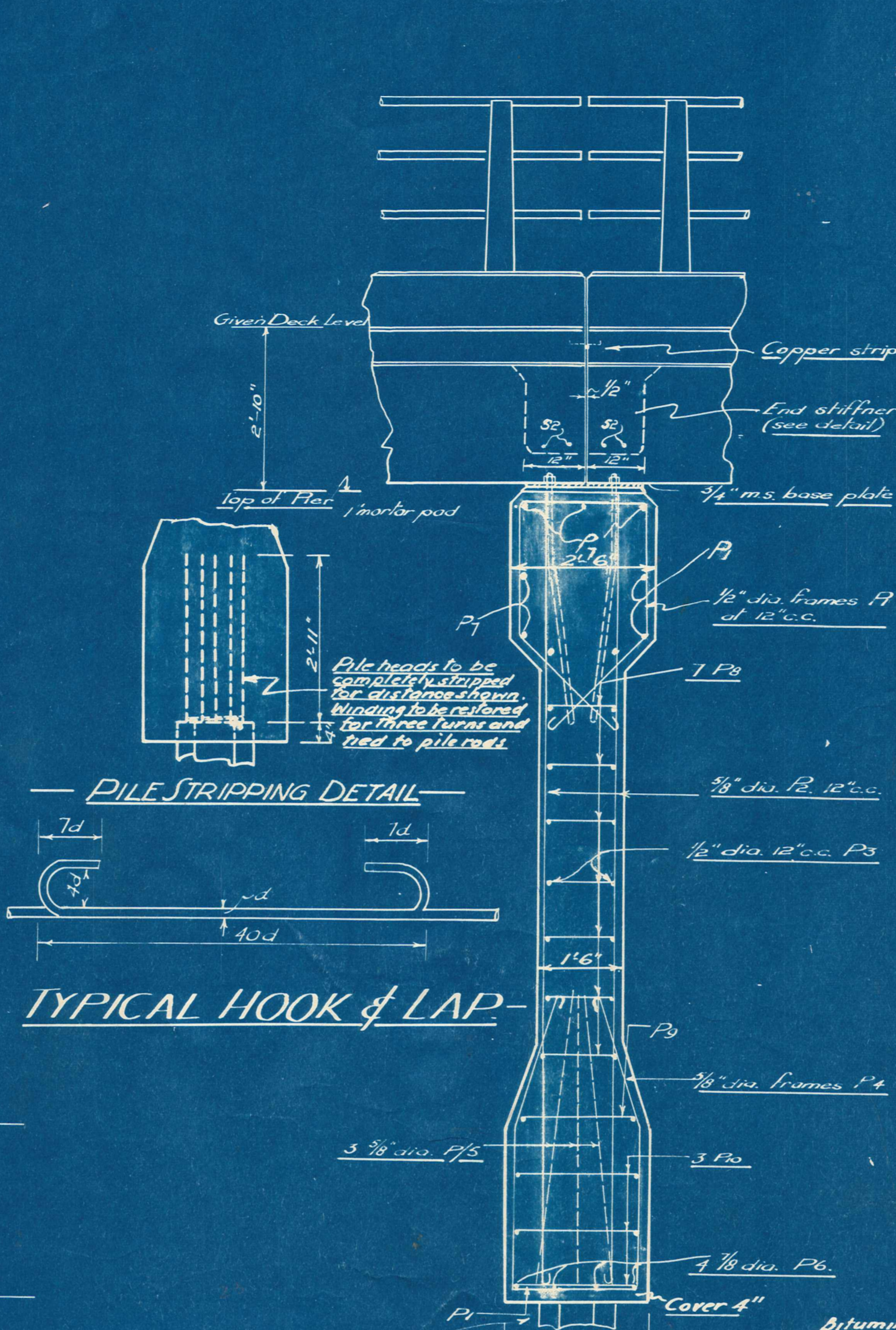


PIER DETAILS
PIERS B, C, D, F & G
Scale 1/2" to 1'-0"

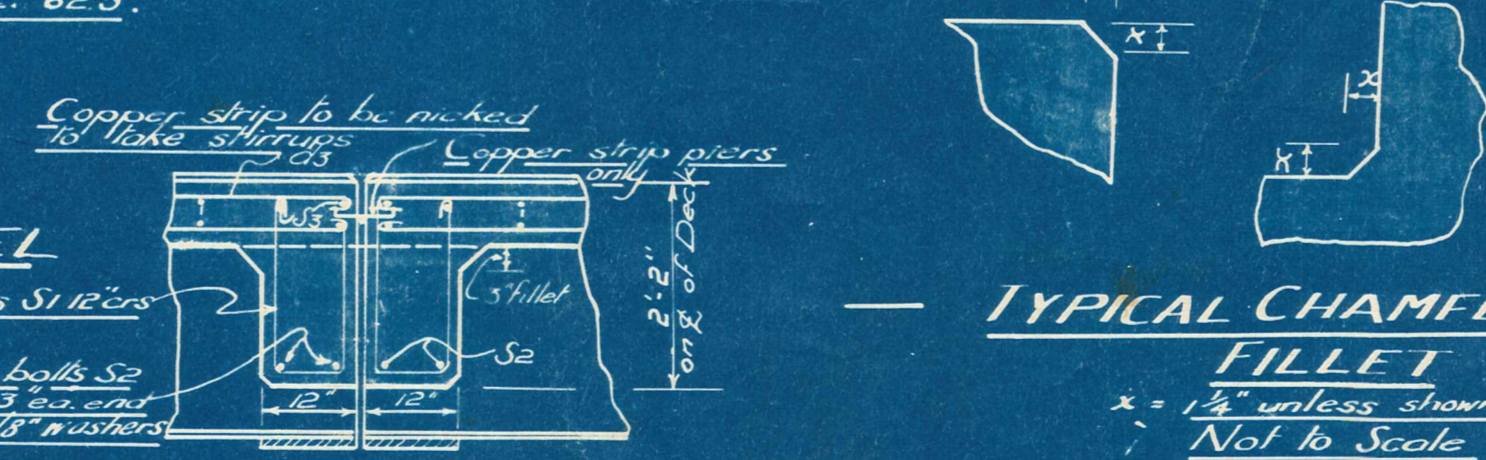


ELEVATION ENDS
DETAILS OF GIRDER
STIFFENERS
SECTION AT MIDSPAN

Note: Unless otherwise shown cover on steel 1 1/2"



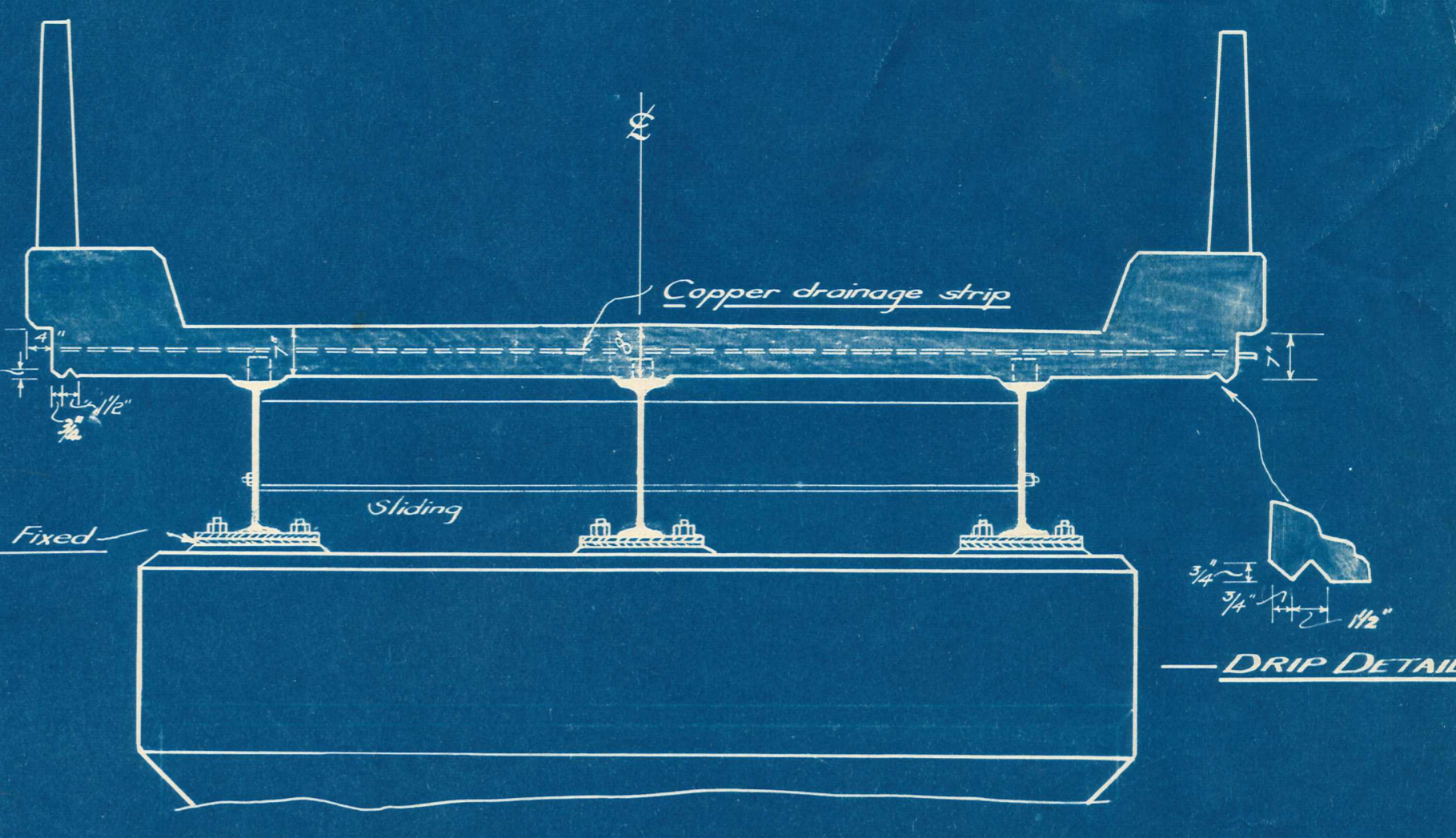
SECTION OF PIER
All piers except Pier E.



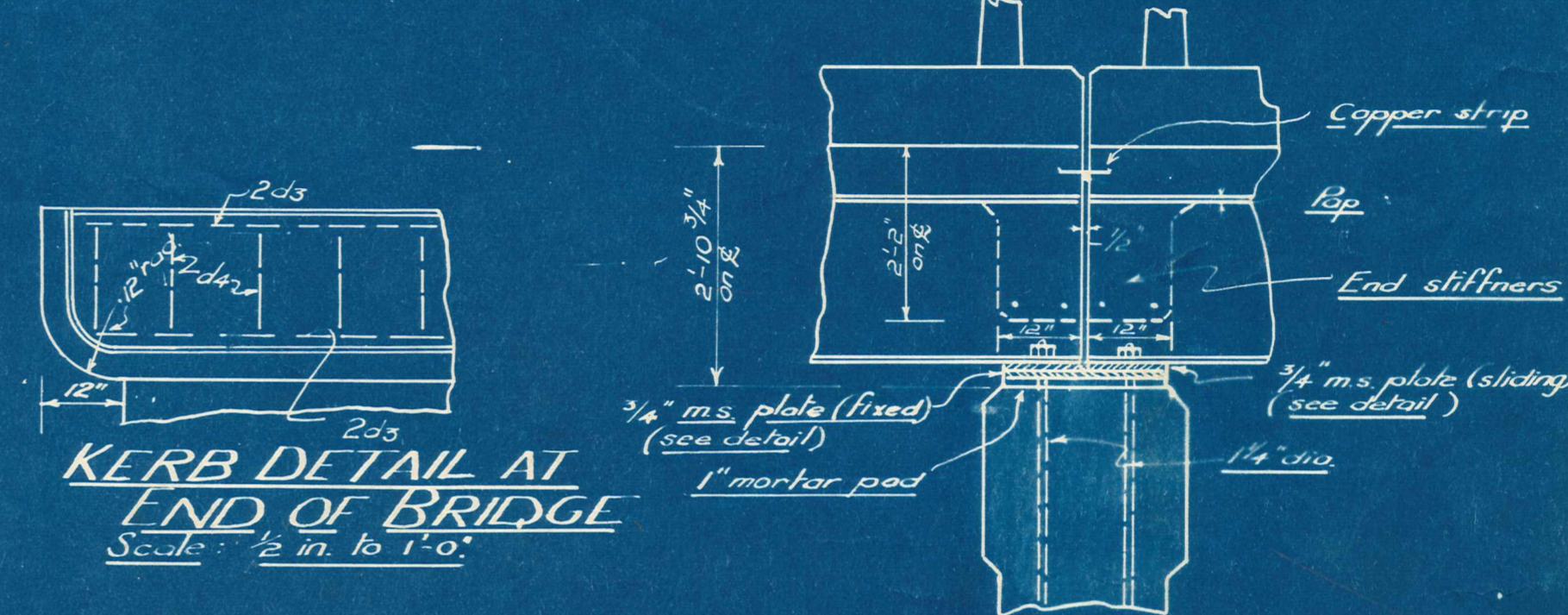
TYPICAL CHAMFER
FILLET
x = 1 1/2" unless shown otherwise
Not to Scale



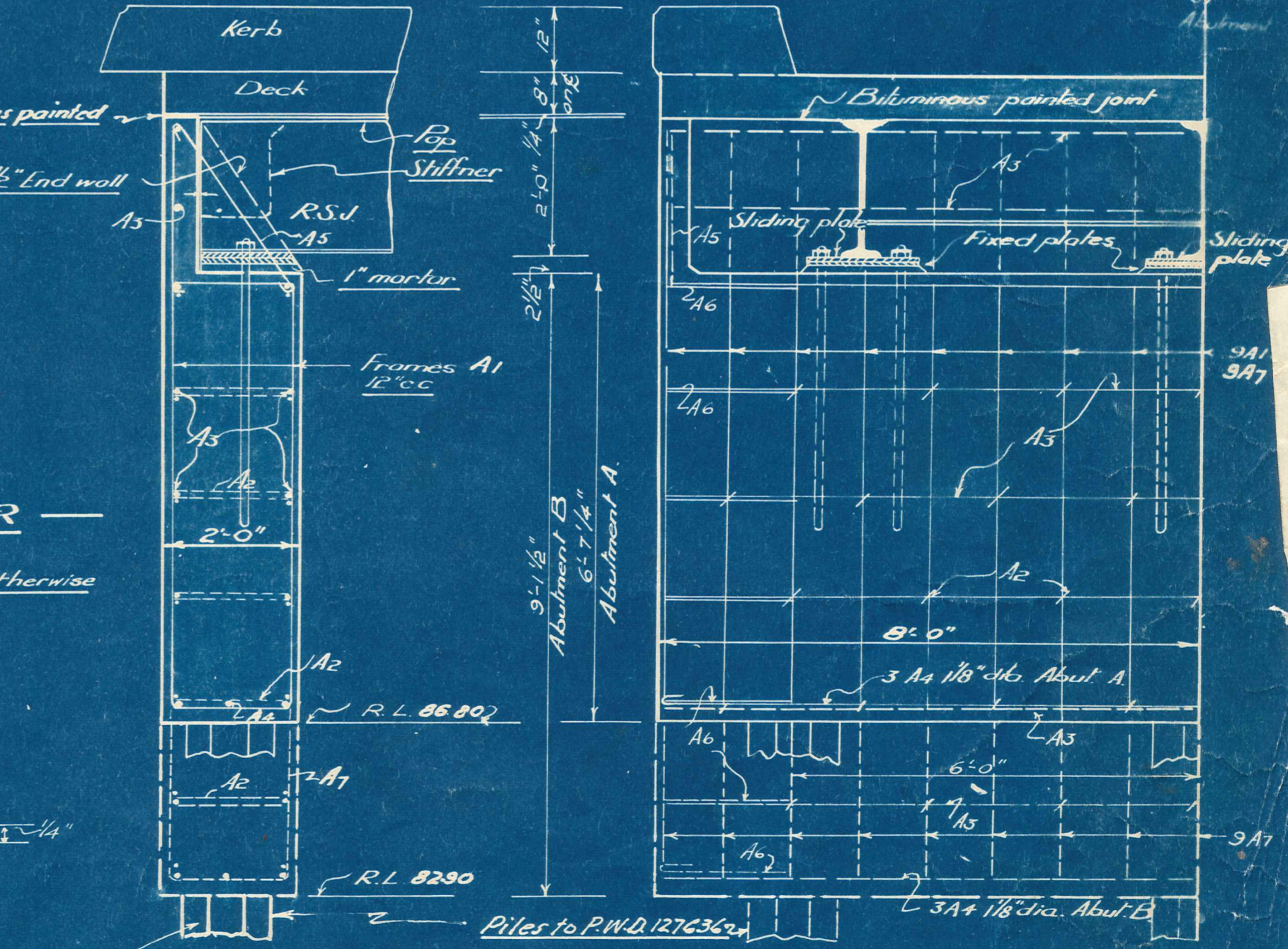
DETAIL OF COPPER
STRIP
Full full size
Strip to extend between outer face of kerbs, 1" mandrel to be greased and inserted during concreting and be withdrawn while concrete is still green - 14 off.



PART ELEVATION

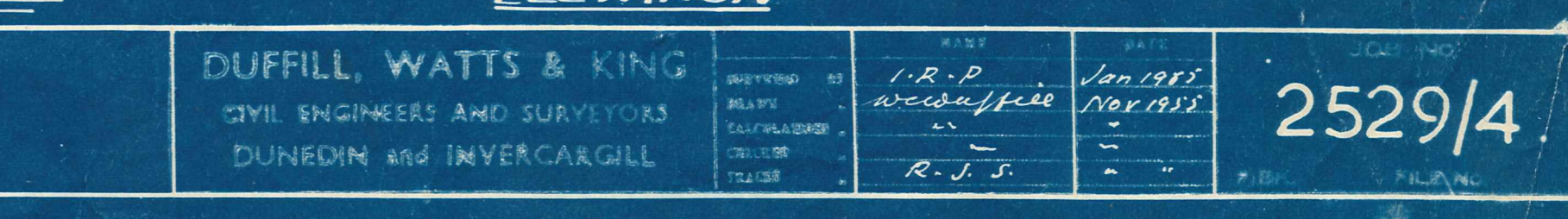
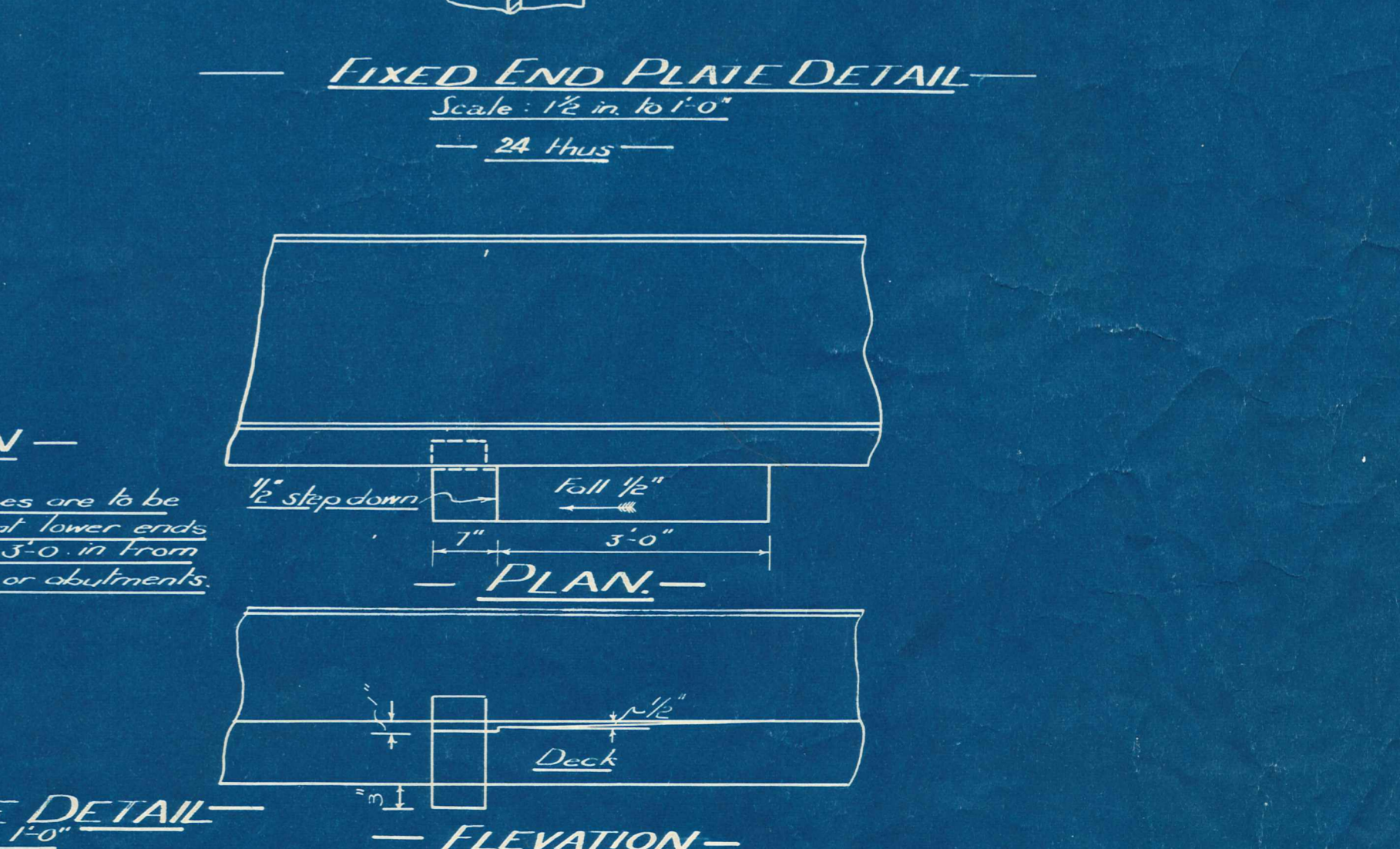
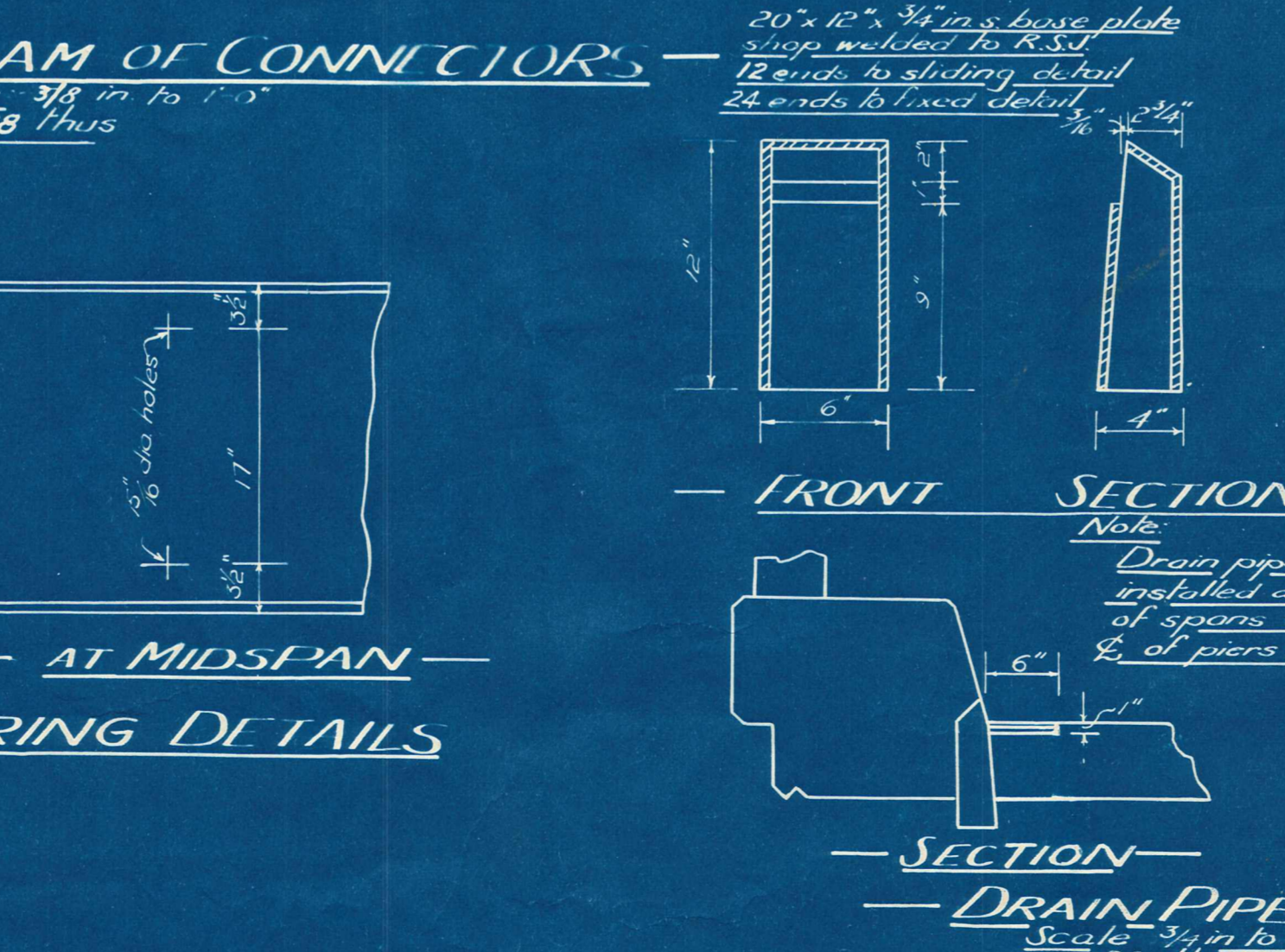
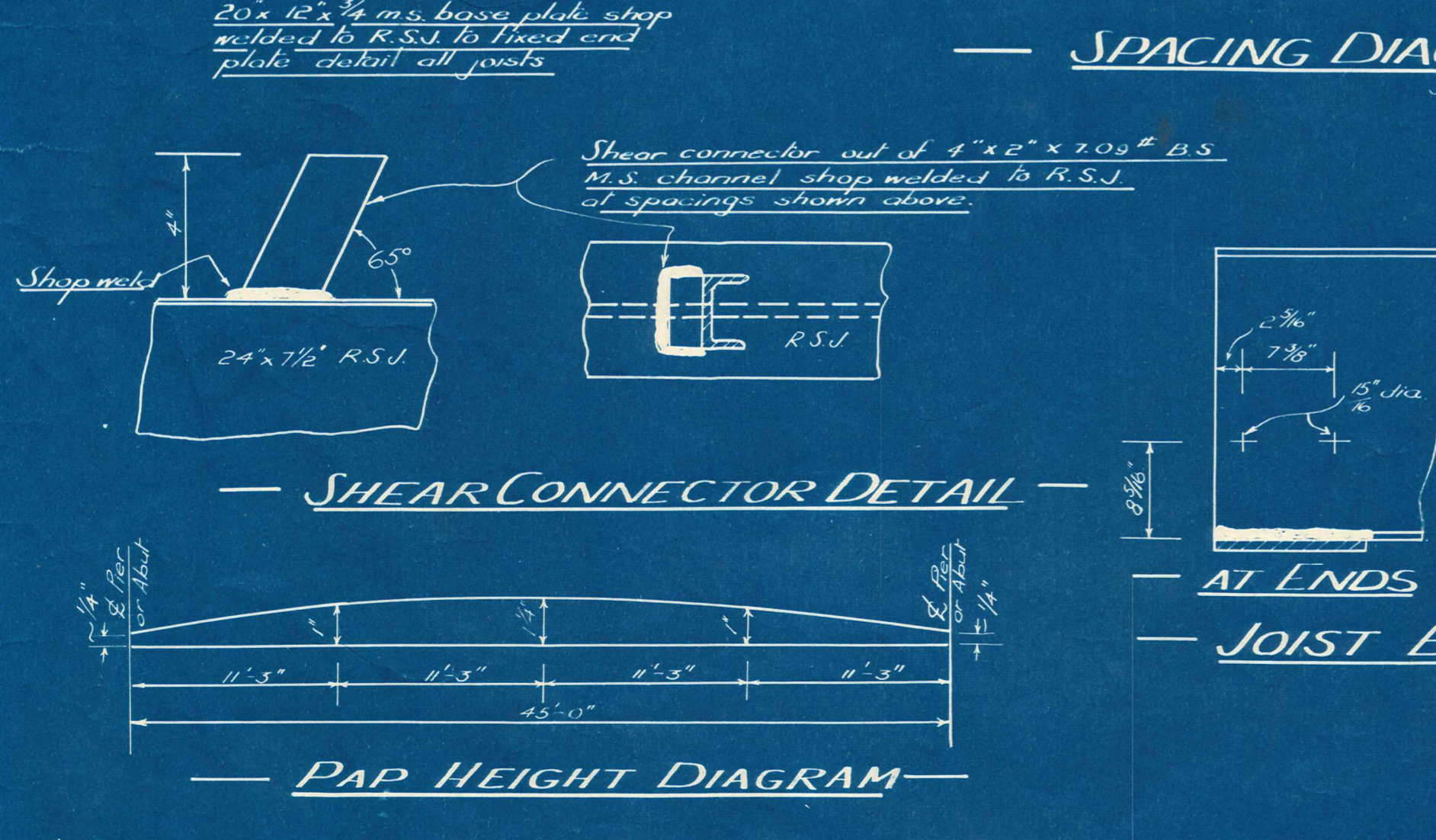
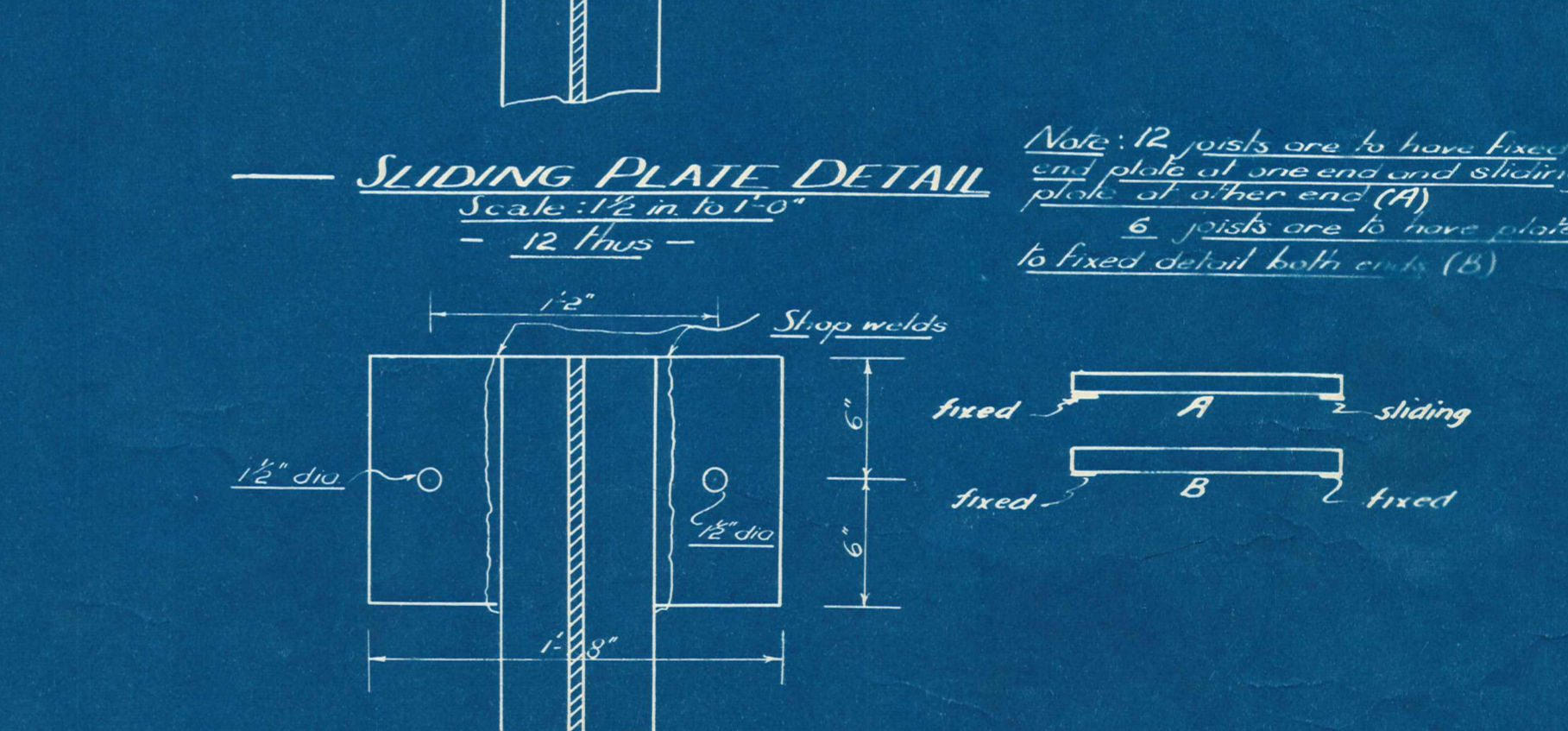
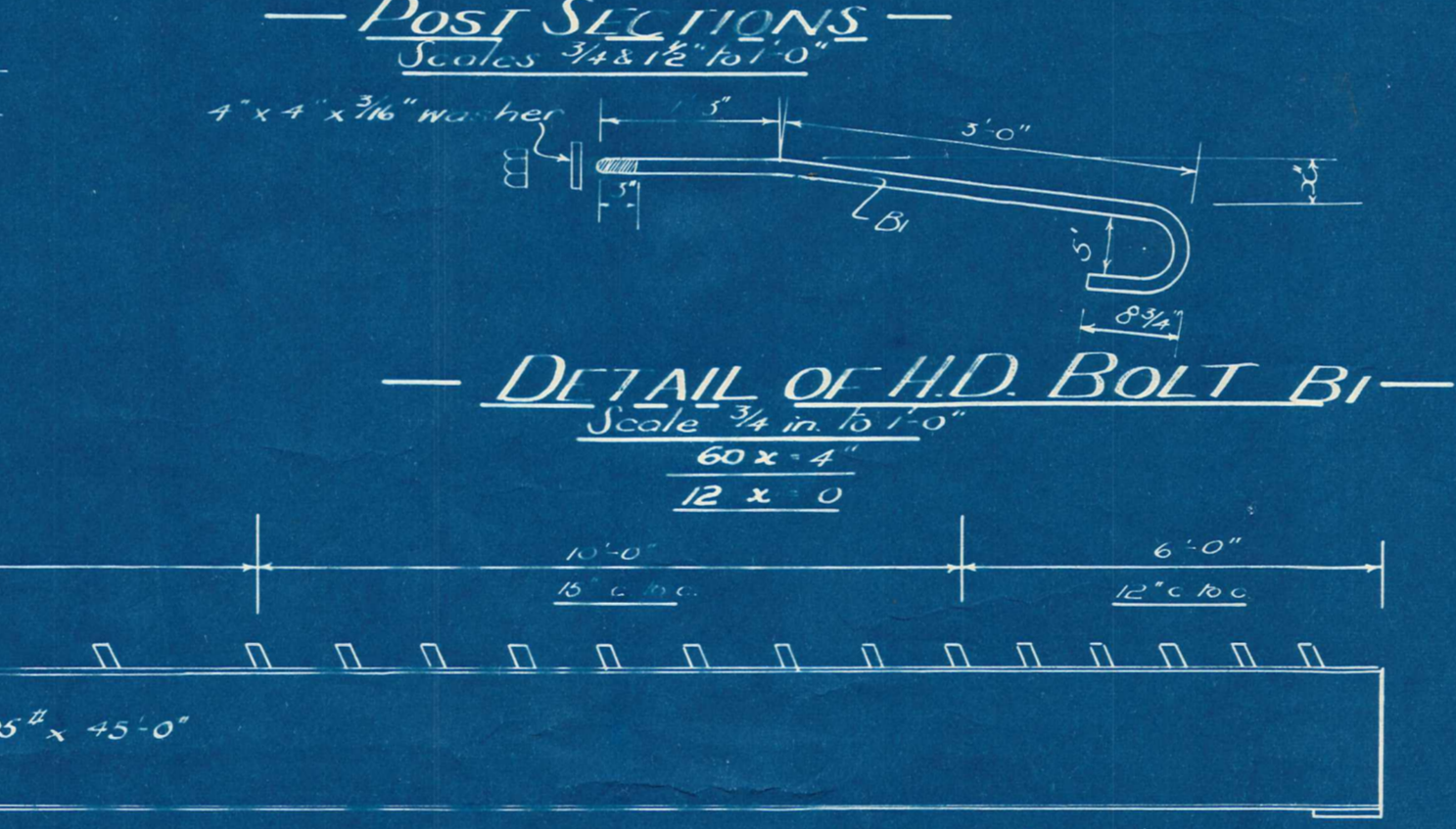
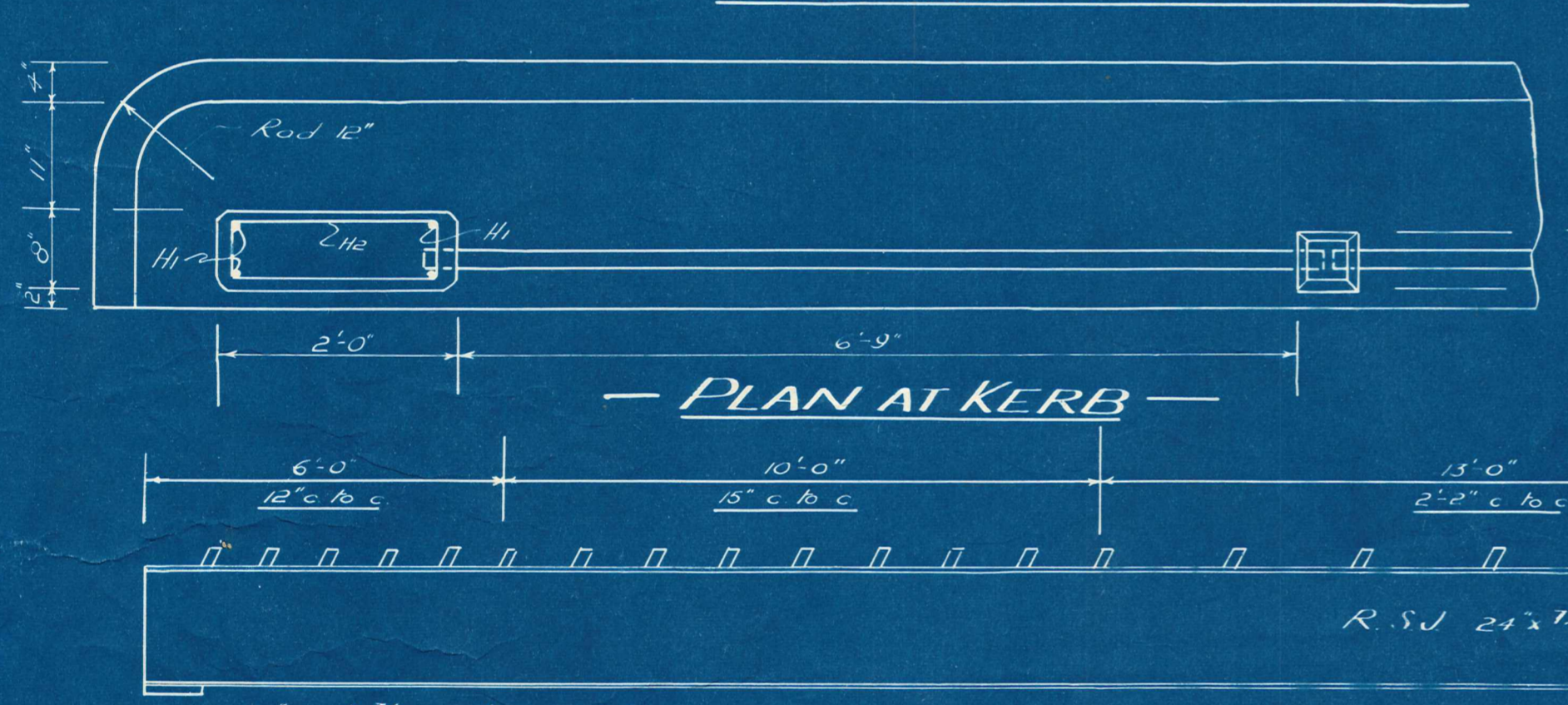
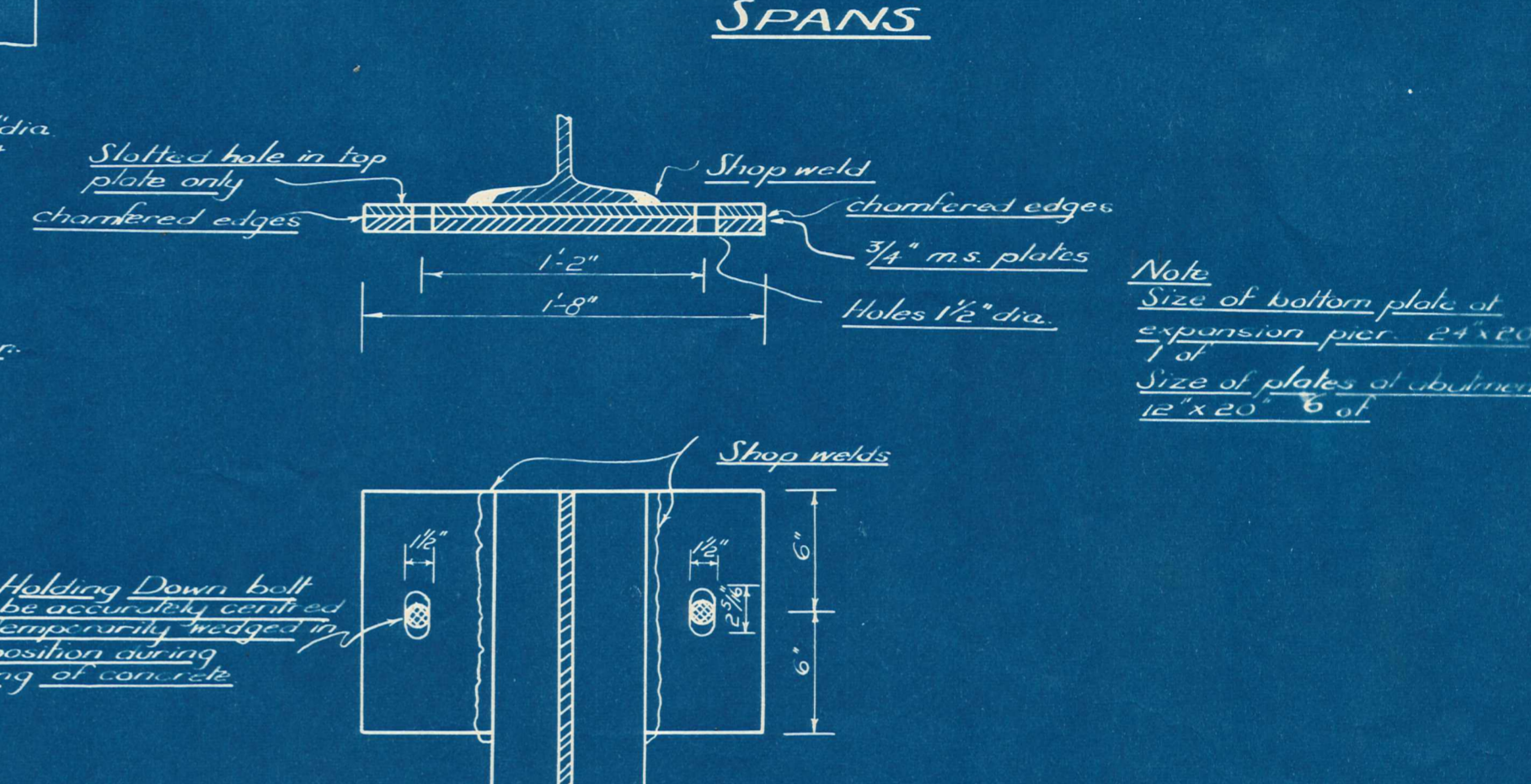
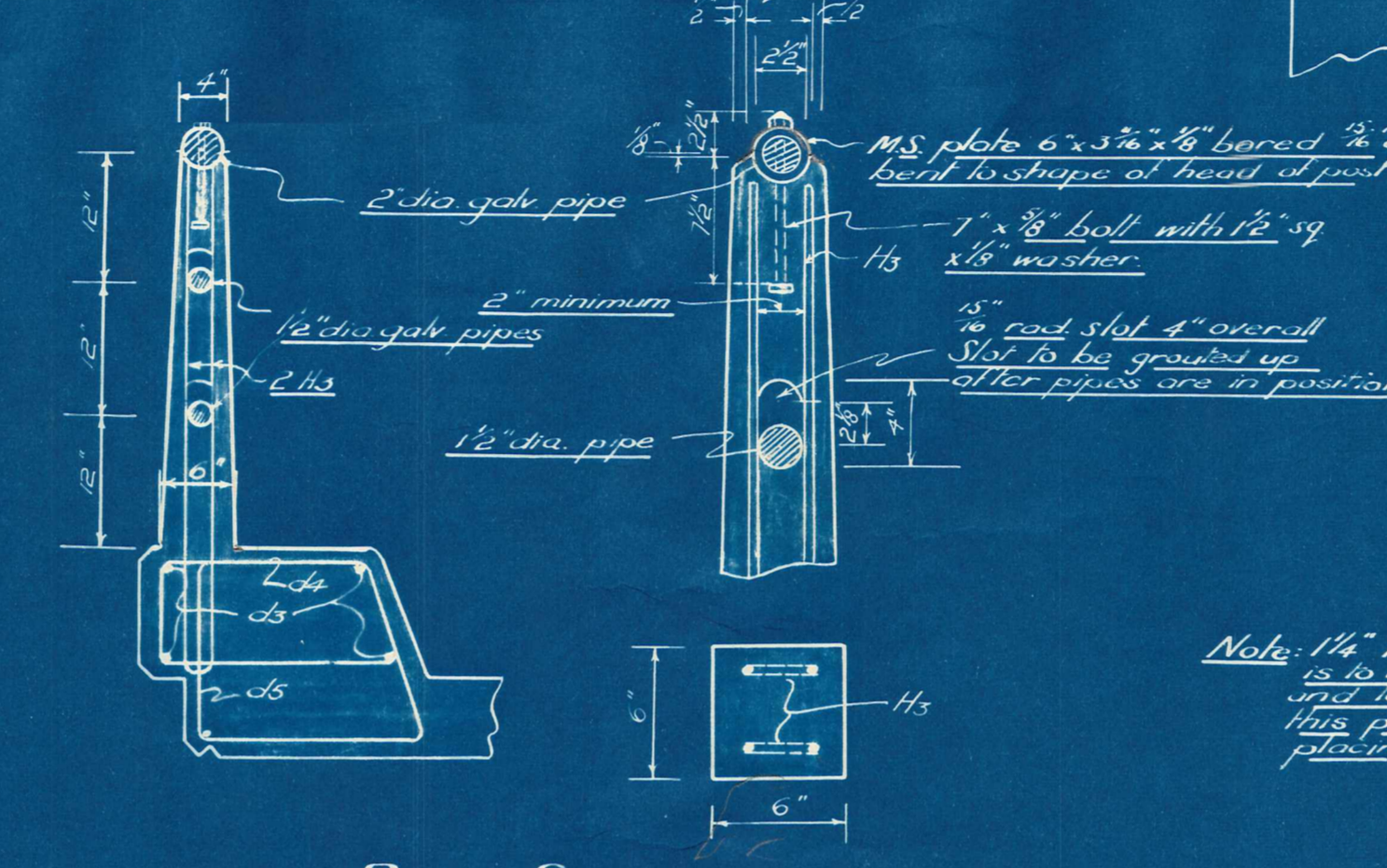
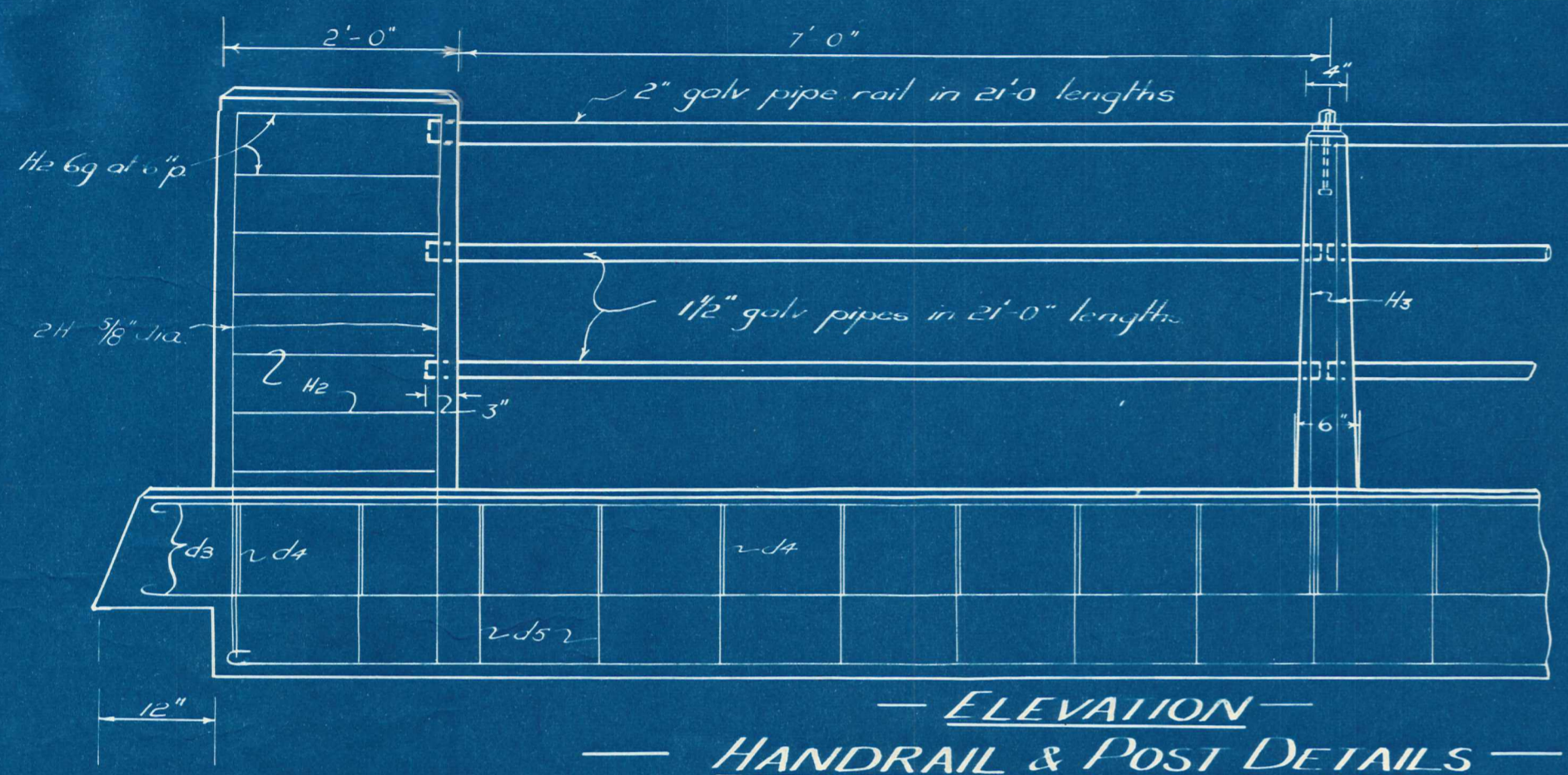
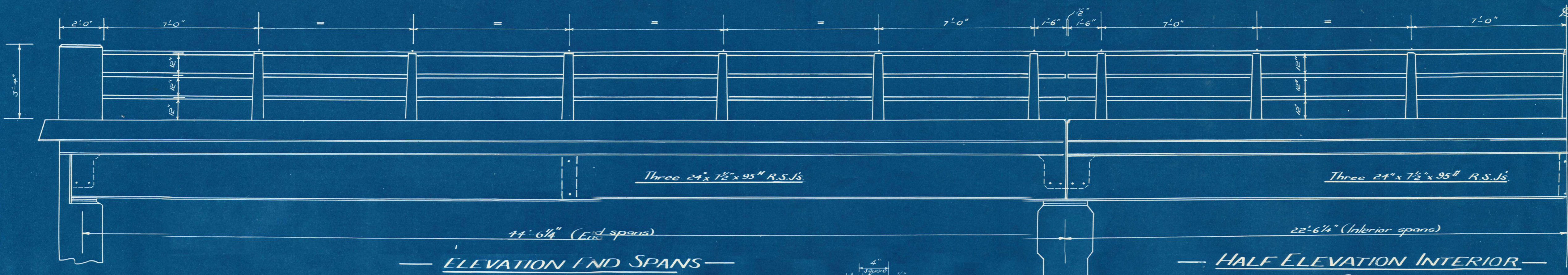


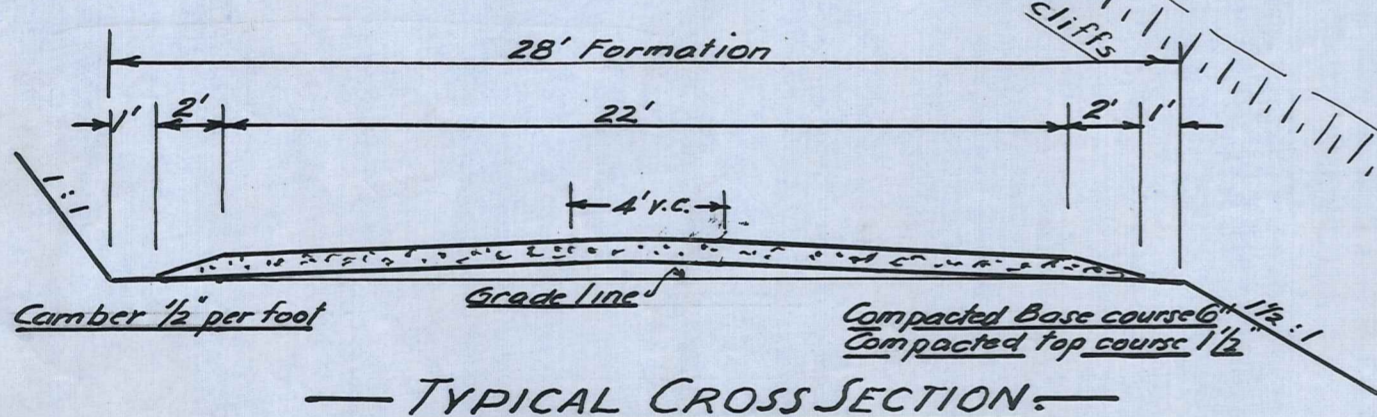
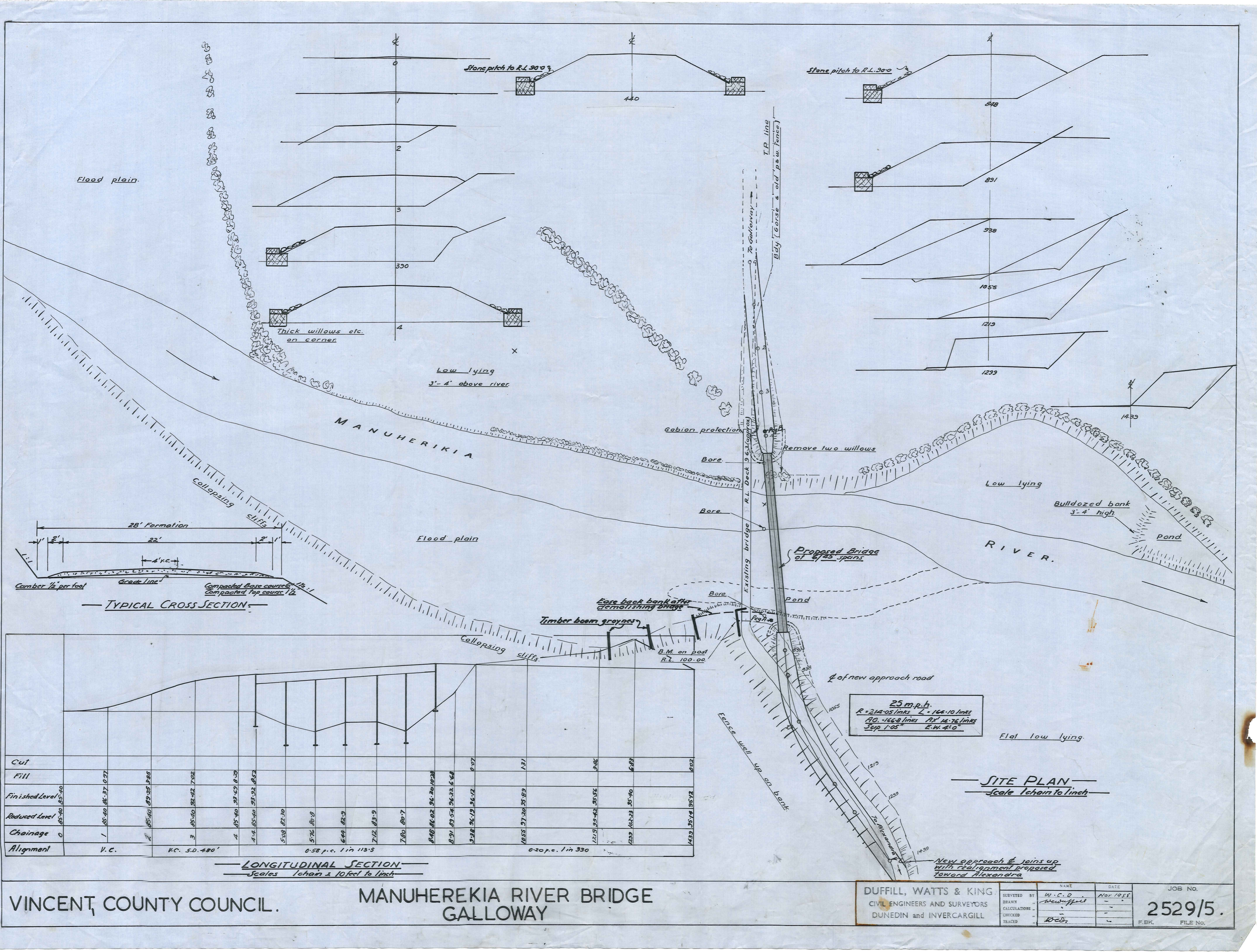
DETAIL AT HEAD OF PIER E
Other than for plates all other details as for fixed piers
Scale: 1/2 in. to 1'-0"



SECTION ON CENTERLINE
HALF ELEVATION INNER FACE
ABUTMENT DETAILS

Abut. piles 3/16" RC octagonal to P.W.D. 20' long. Points to finish not higher than R.L. N.B. 63-80 Safe load not less than 227.28 tons. Abut. A & B respectively.





Station	Chainage	Reduced Level	Finished Level	Fill	Cut
0	0	85.40	85.40		
1	1	85.40	85.37	0.03	
2	2	85.40	85.28	0.12	
3	3	85.40	85.42		
4	4	85.40	85.59		
5	5	85.40	85.92		
6	6	87.30	87.30		
7	7	88.0	88.0		
8	8	88.9	88.9		
9	9	89.9	89.9		
10	10	90.7	90.7		
11	11	91.2	91.2		
12	12	91.5	91.5		
13	13	92.2	92.2		
14	14	92.2	92.2		
15	15	92.2	92.2		
16	16	92.2	92.2		
17	17	92.2	92.2		
18	18	92.2	92.2		
19	19	92.2	92.2		
20	20	92.2	92.2		
21	21	92.2	92.2		
22	22	92.2	92.2		
23	23	92.2	92.2		
24	24	92.2	92.2		
25	25	92.2	92.2		
26	26	92.2	92.2		
27	27	92.2	92.2		
28	28	92.2	92.2		
29	29	92.2	92.2		
30	30	92.2	92.2		
31	31	92.2	92.2		
32	32	92.2	92.2		
33	33	92.2	92.2		
34	34	92.2	92.2		
35	35	92.2	92.2		
36	36	92.2	92.2		
37	37	92.2	92.2		
38	38	92.2	92.2		
39	39	92.2	92.2		
40	40	92.2	92.2		
41	41	92.2	92.2		
42	42	92.2	92.2		
43	43	92.2	92.2		
44	44	92.2	92.2		
45	45	92.2	92.2		
46	46	92.2	92.2		
47	47	92.2	92.2		
48	48	92.2	92.2		
49	49	92.2	92.2		
50	50	92.2	92.2		
51	51	92.2	92.2		
52	52	92.2	92.2		
53	53	92.2	92.2		
54	54	92.2	92.2		
55	55	92.2	92.2		
56	56	92.2	92.2		
57	57	92.2	92.2		
58	58	92.2	92.2		
59	59	92.2	92.2		
60	60	92.2	92.2		
61	61	92.2	92.2		
62	62	92.2	92.2		

LONGITUDINAL SECTION
Scale 1 chain to 10 feet to 1 inch

25 m.p.h.
R = 214.05 links L = 166.10 links
B.O. = 166.0 links A.P. = 16.76 links
Sep 1.05 E.W. 41.0

SITE PLAN
Scale 1 chain to 1 inch

VINCENT, COUNTY COUNCIL.

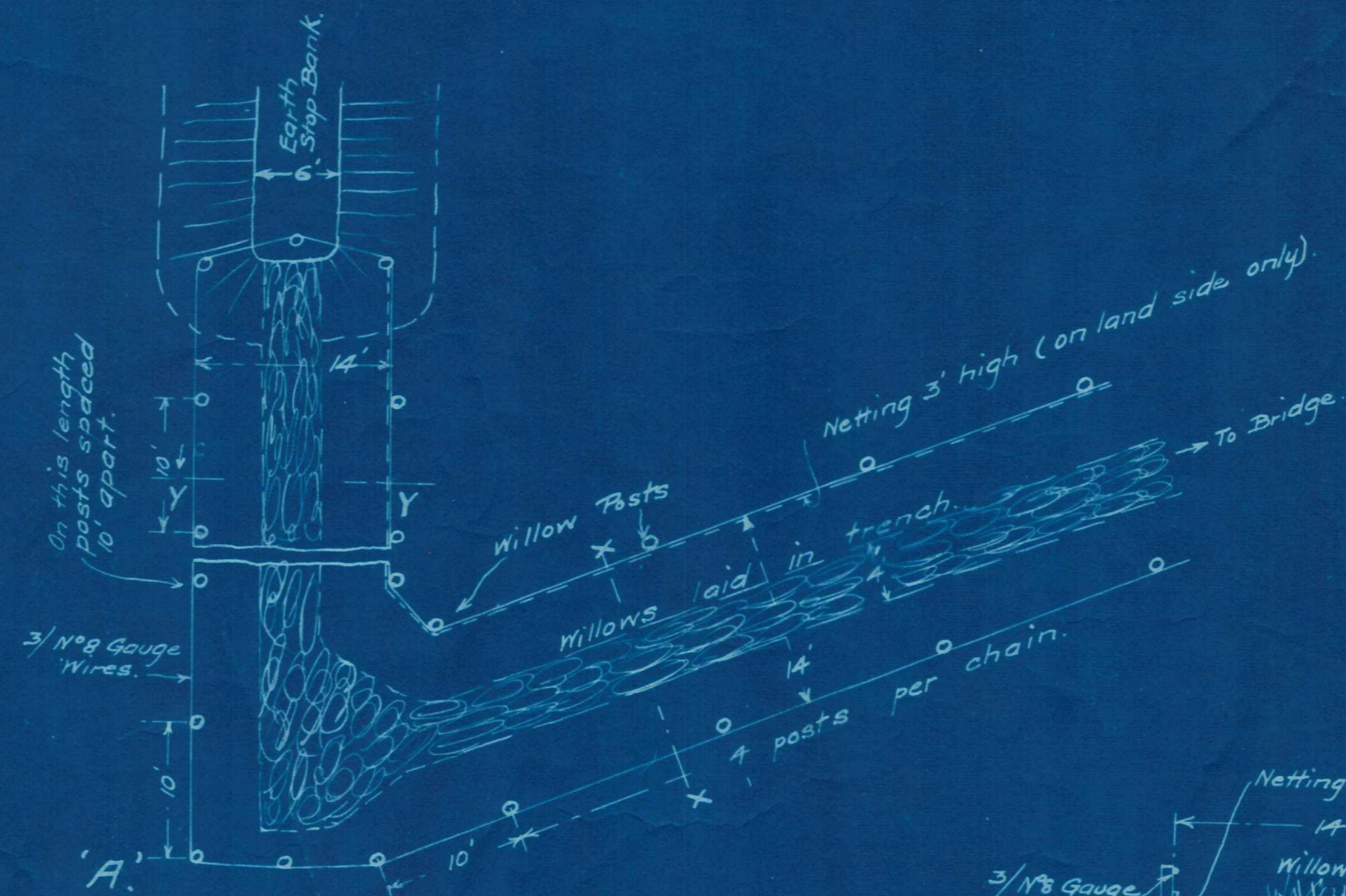
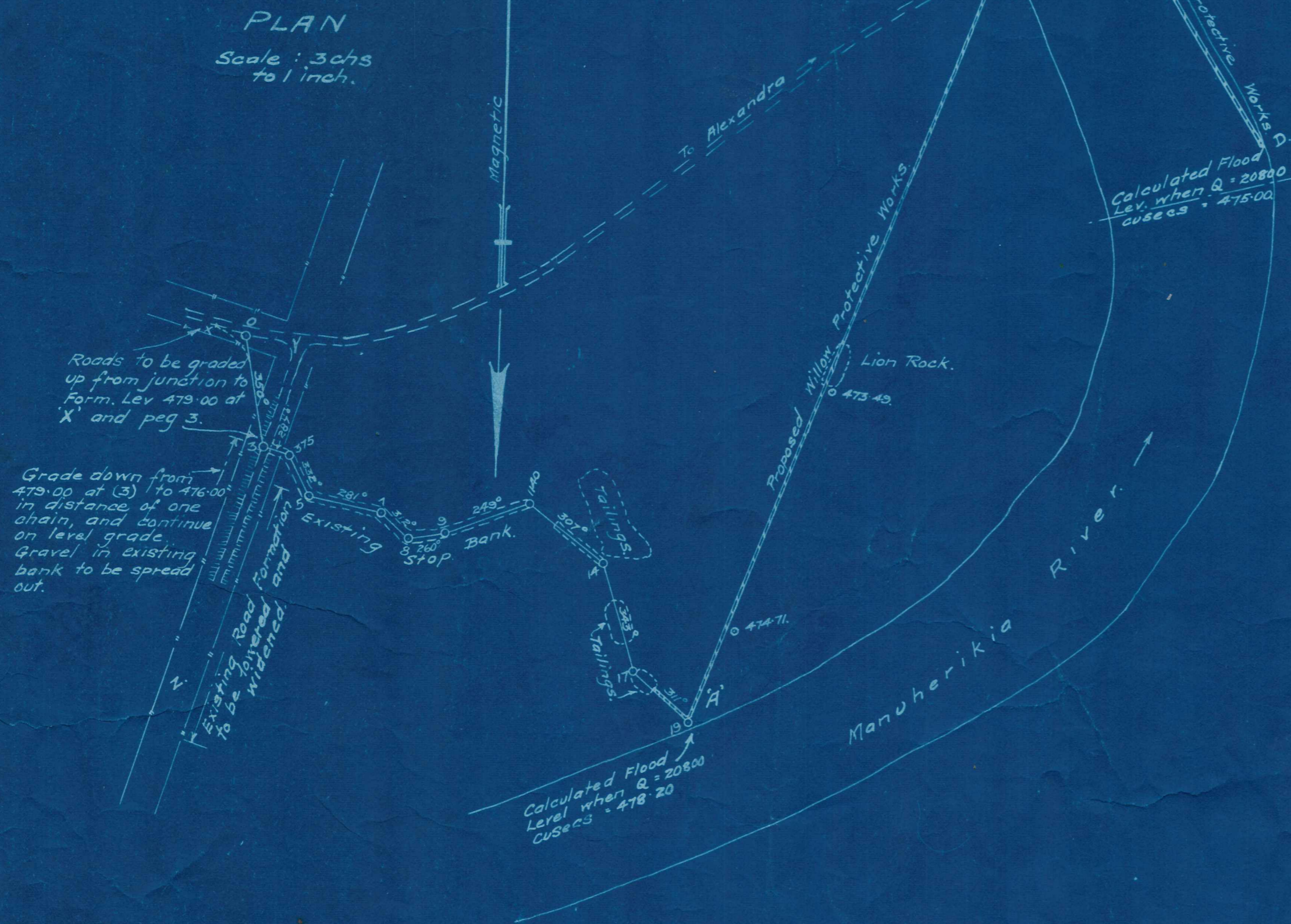
MANUHEREKIA RIVER BRIDGE
GALLOWAY

DUFFILL, WATTS & KING.
CIVIL ENGINEERS AND SURVEYORS
DUNEDIN and INVERCARGILL

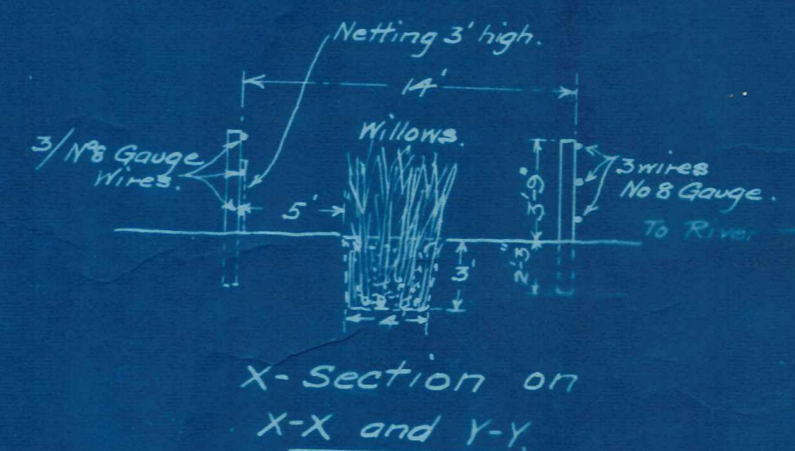
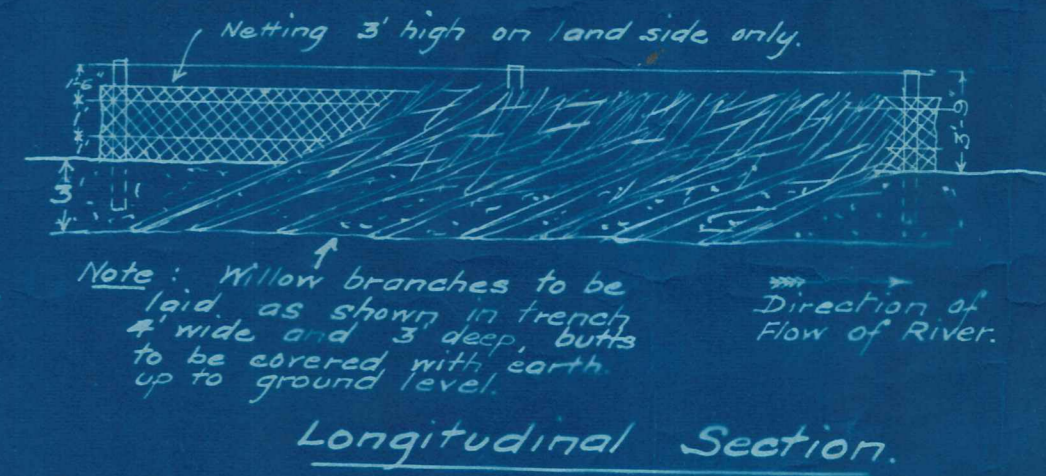
SUBMITTED BY	NAME	DATE	JOB NO.
DRAWN	W. C. D.	Nov 1951	2529/5.
CALCULATIONS			
CHECKED			
TRACED			

F.B.K. FILE No.

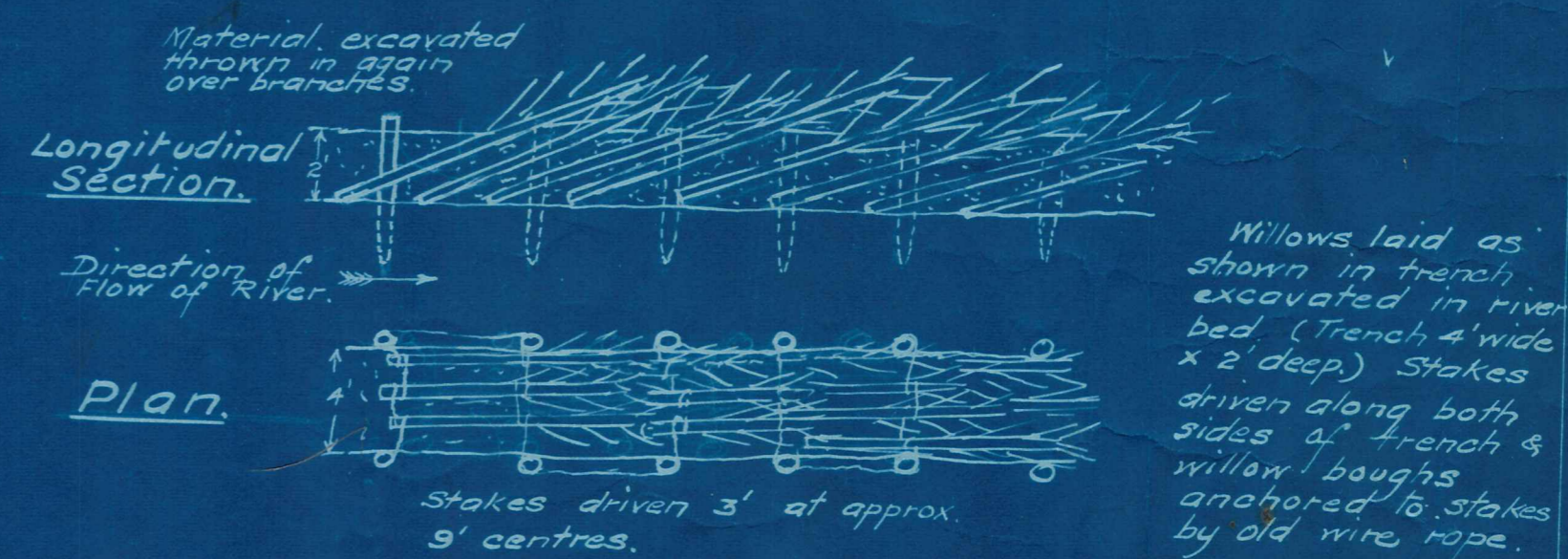
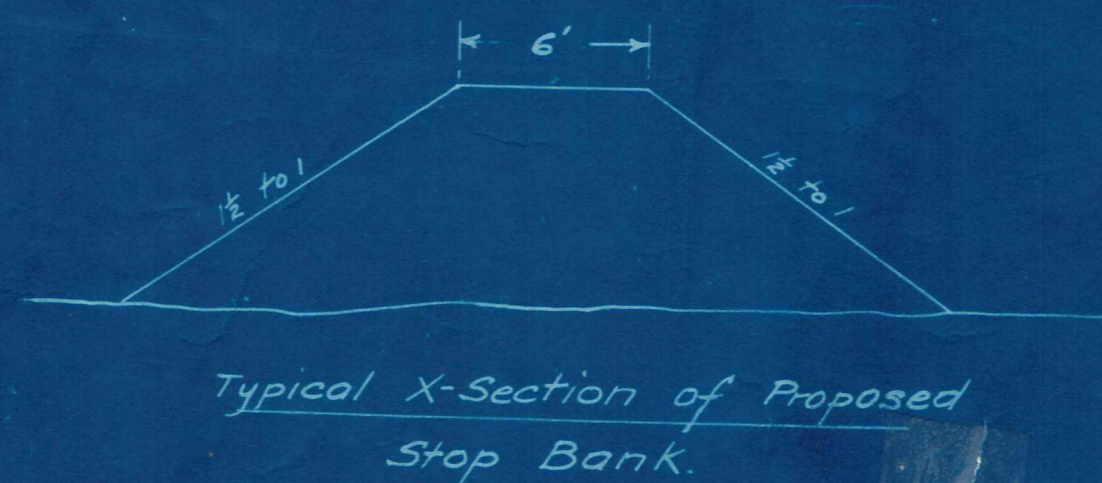
MANUHERIKIA RIVER BRIDGE AT GALLOWAY. PROPOSED PROTECTIVE WORKS.



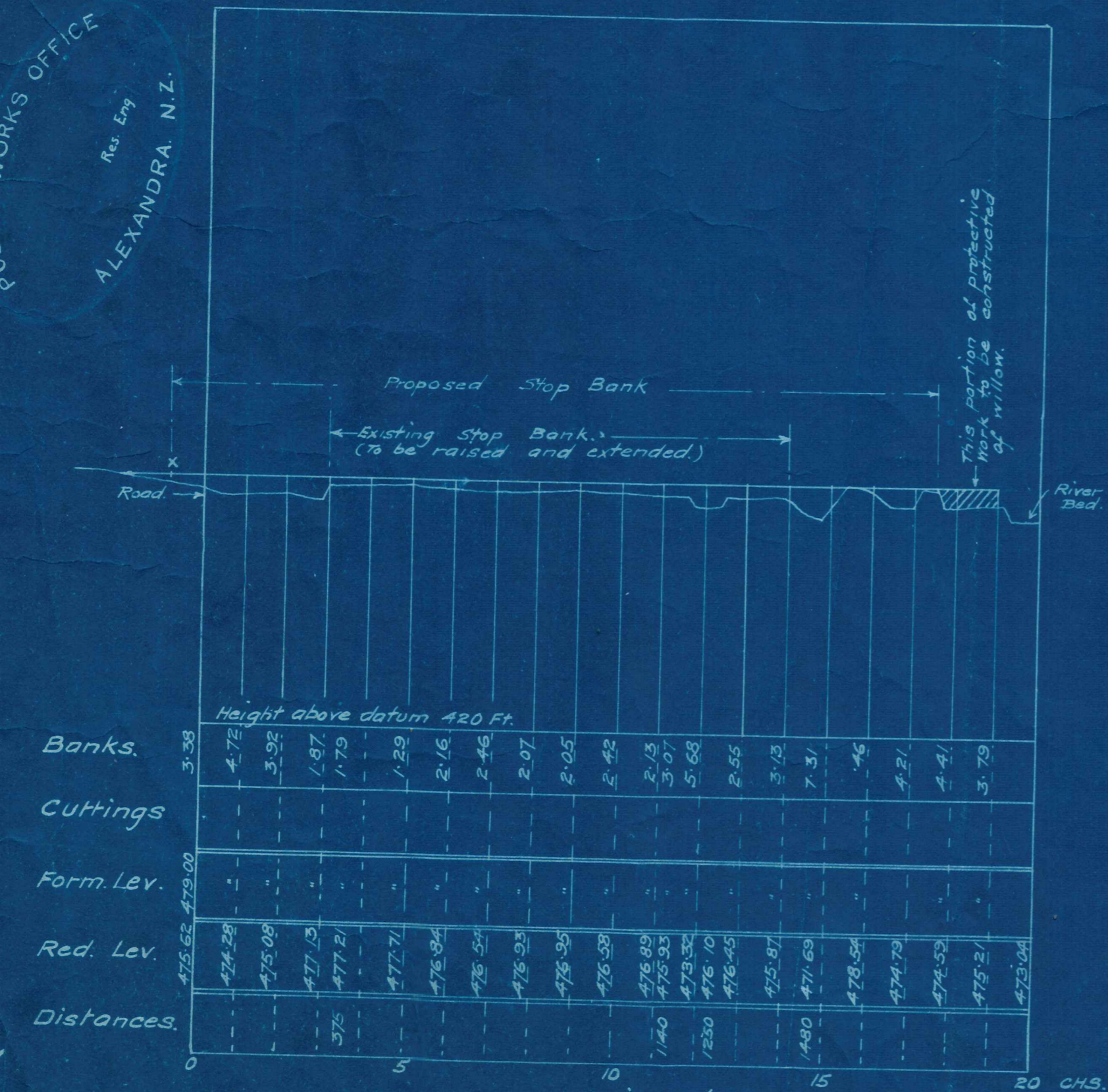
Plan showing Details of Willow Protective Works at 'A' & Junction with earth Stop Bank.



DETAILS OF PROPOSED WILLOW PROTECTIVE WORKS 'A-B'



Sketch showing Details of Proposed Willow Protective Works 'C-D' Not to Scale.



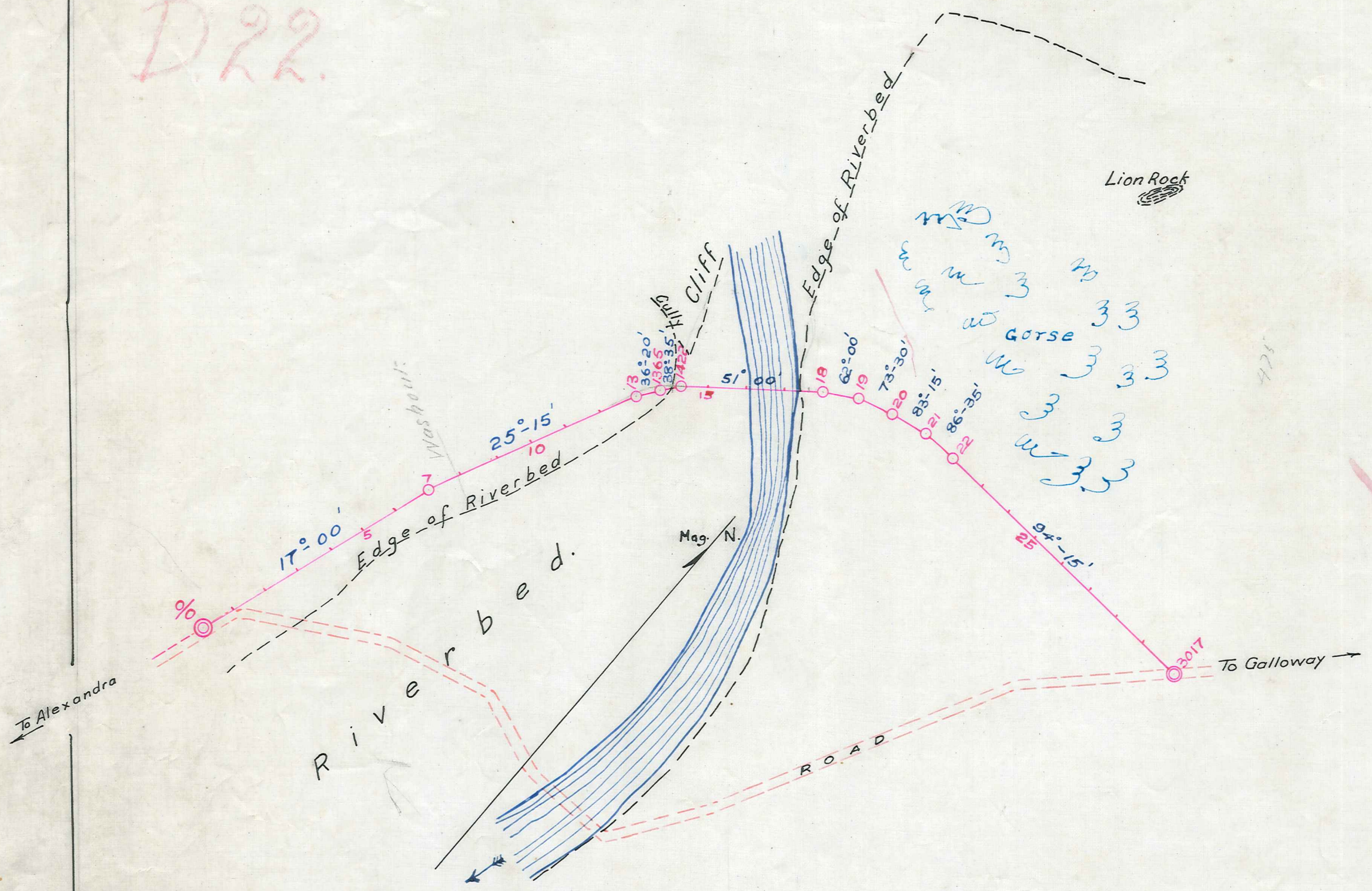
Drawn by J.D. Watt, 4.2.24.
R.W.T.

1923

118/7

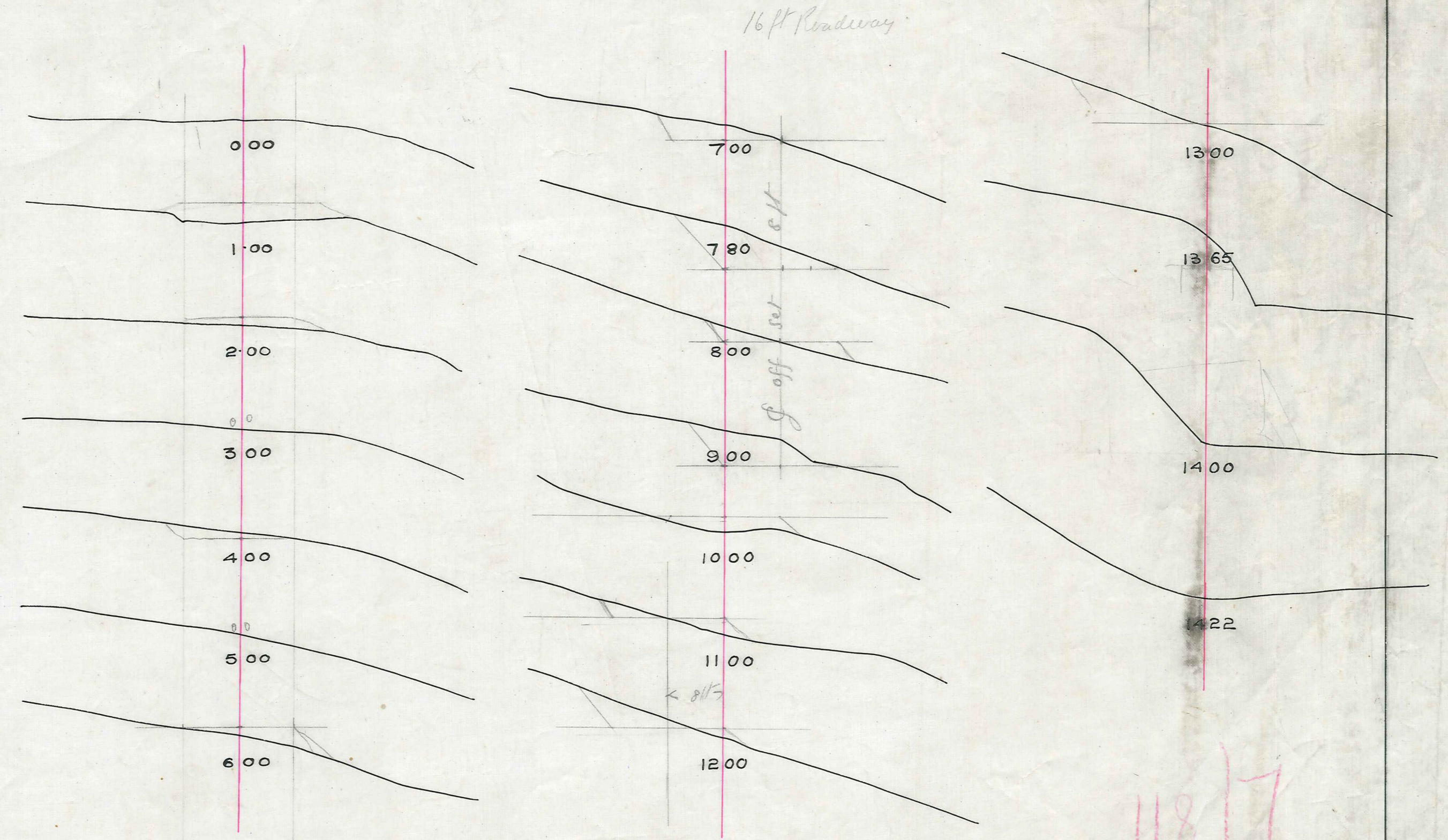
D22

— BRIDGE SITE —
— MANUHERIKIA RIVER —



Middle of Road Washout Manuherikia River Middle of Road

— CROSS SECTIONS —
— SCALE 15 FEET TO AN INCH —



HEIGHT ABOVE DATUM 4.00 FEET	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
BANKS																																
CUTTINGS																																
FOR. LEV.																																
RED. LEV.	476.56	473.91	474.40	475.60	476.70	477.91	477.17	481.55	482.00	482.17	479.33	478.16	472.40	480.74	469.78	467.42	456.75	464.83	468.67	469.06	469.50	472.06	472.01	469.54	469.51	469.64	469.65	468.57	472.77	470.08	470.06	
DISTANCES	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120	125	130	135	140	145	150	

— SCALES: (HORIZONTAL 3 CHAINS) TO 1 INCH —
— (VERTICAL 30 FEET) —

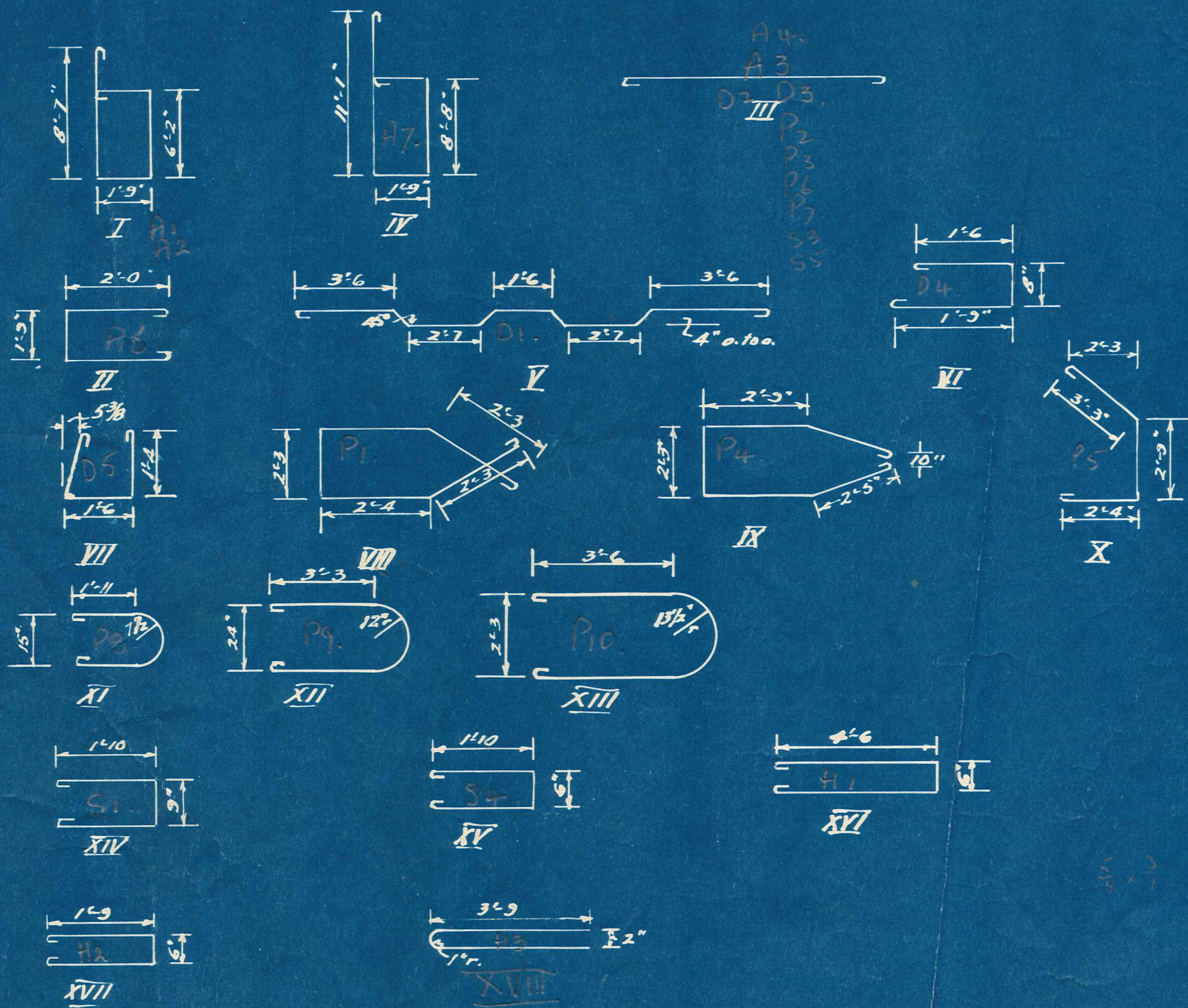
Traced by H.M. Sutherland, 2.6.16

11817
D22

SCHEDULE OF REINFORCEMENT

Rod	Dia	No	Cut Length	Shape	Location
A1	5/8	17	19'-3"	I	Abut. A
A2	6/8	59	4'-6"	-	" no hooks
A3	5/8	24	16'-9"	III	" A & B
A4	1/8	6	17'-7"	III	" "
A5	1/2	4	3'-9"	III	" "
A6	1/2	24	6'-6"	II	" "
A7	5/8	17	24'-3"	IV	B
d1	5/8	180	16'-5"	V	Deck
d2	"	372	16'-3"	III	"
d3	"	312	23'-7"	"	"
da	3/8	540	4'-6"	VI	Kerbs
d5	3/8	540	4'-11"	VII	"
P1	5/8	60	12'-5"	VIII	Piers
P2	"	130	14'-6"	III	"
P3	"	100	12'-8"	III	"
P4	"	30	13'-7"	IX	"
P5	"	30	9'-4"	X	"
P6	7/8	20	13'-3"	III	"
P7	5/8	25	13'-6"	III	"
P8	5/8	70	5'-10"	XI	" no hooks
P9	"	10	9'-7"	XII	"
P10	"	30	10'-7"	XIII	"
S1	1/2	120	5'-2"	XIV	Stiffener Stirrups
S2	7/8	36	10'-6"	-	" screw 3" at ends & hex nuts & 7/8" sp. washers
S3	1/2	24	14'-0"	III	Stiffeners
S4	3/8	84	4'-9"	XV	"
S5	1/2	48	5'-6"	III	"
B1	1 1/4	72	5'-2"	-	H.D. bolts (detail)
H1	5/8	16	10'-5"	XVI	Posts
H2	6/8	28	5'-0"	XVII	"
H3	1/2	160	7'-9"	XVIII	"

Shape Diagram



Note All bends to be to minimum radius of 3'd.
 Dimension given are overall.
 Drawings above are not to scale

— VINCENT COUNTY —
 — MANUHERIKIA RIVER BRIDGE —
 — GALLOWAY —

Duffell Watts and King
 Consulting Engineers