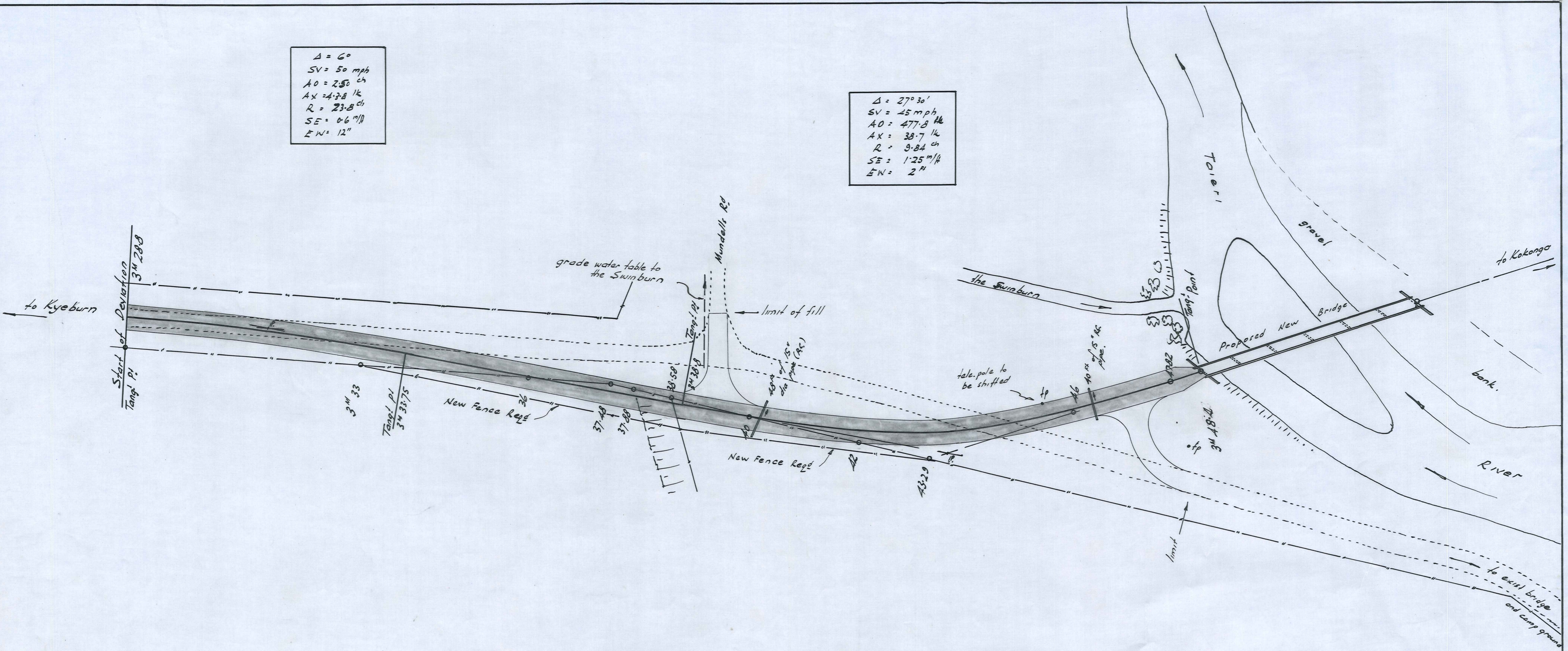


$\Delta = 6^\circ$
 SV = 50 mph
 AO = 280 ch
 AX = 4.38 1/2
 R = 23.8 ch
 SE = 0.6 m/ft
 EW = 12"

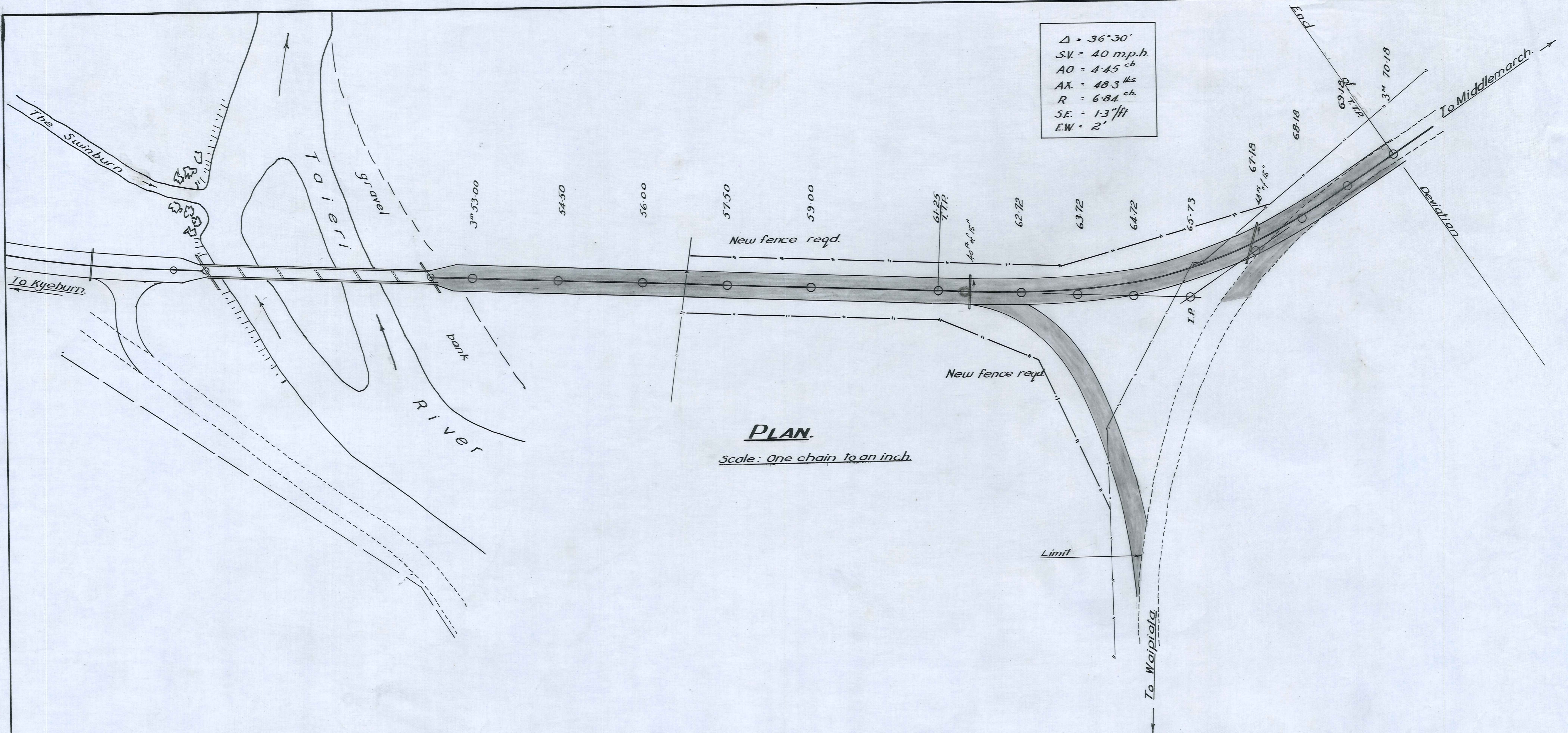
$\Delta = 27^\circ 30'$
 SV = 25 mph
 AO = 477.8 ch
 AX = 38.7 1/2
 R = 9.84 ch
 SE = 1.25 m/ft
 EW = 2"



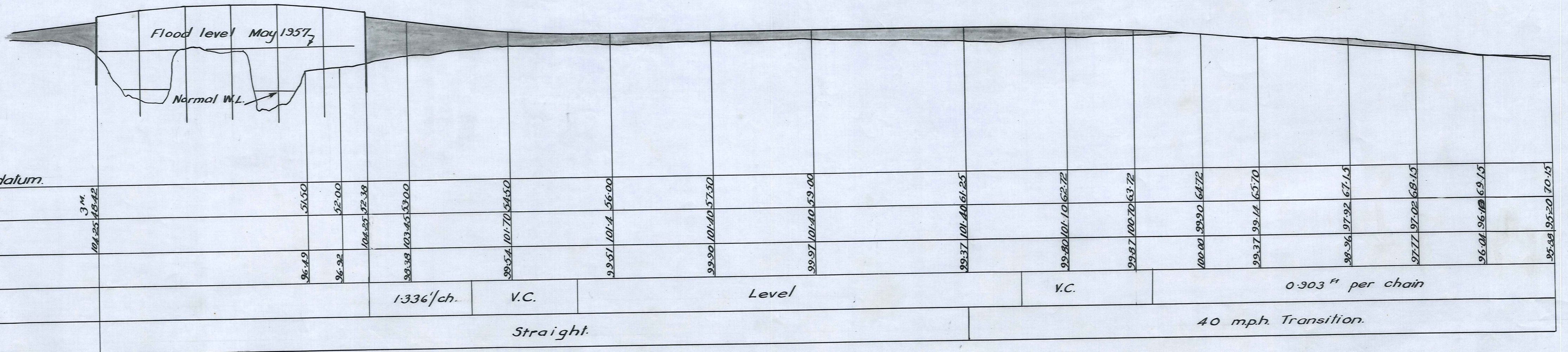
80 FT above datum																										
Distance	34+28.8																	34+116								
Formation Level																		104.25								
Peg Level (G.L.)		126.44	126.0	33.0	33.75		119.68	117.75	36		118.4	113.63	37.48	118.16	112.60	37.88	104.15	110.66	38.58				104.25	103.54	116.2	
Grade		Existing Grade		2.75 FT per chain						Vert. curve		0.15 FT per chain		Vert Curve		Straight on Bridge										
Alignment		50 mph transition		Straight						45 m.p.h. transition		Vert Curve		Straight on Bridge												

48" of 18" R.C. pipe
 36" of 18" R.C. pipe

Scales: Horiz 1ch to 1" , Vert 10ft to 1"



PLAN.
Scale: One chain to an inch.



— LONGITUDINAL SECTION. —
Scale: Horizontal: One chain to an inch.
Vertical: Ten feet to an inch.

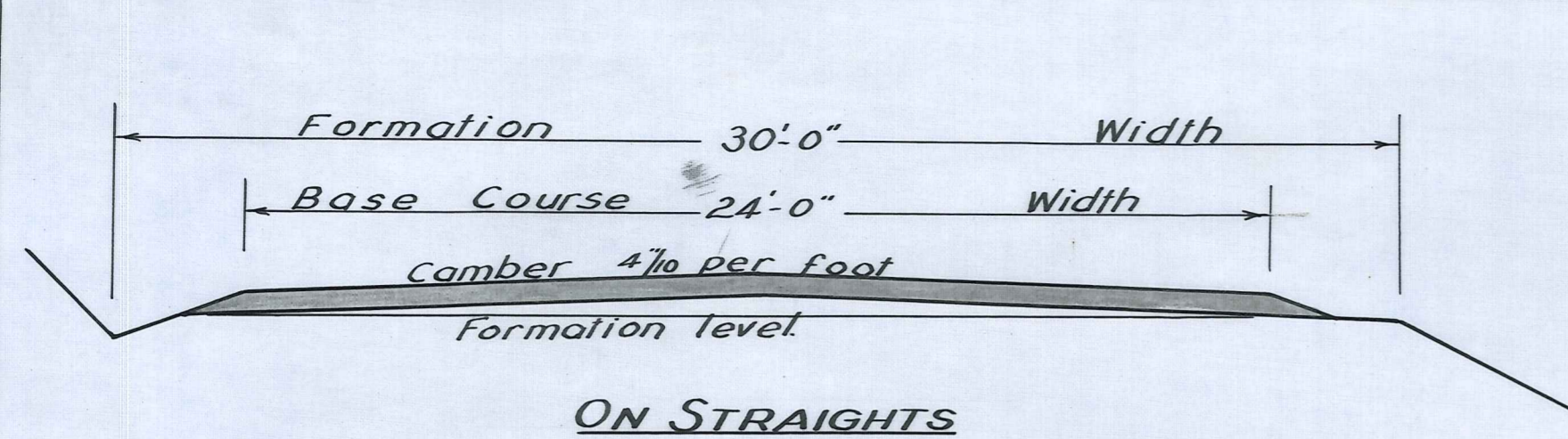
MANIOTOTO COUNTY COUNCIL.

TAIERI RIVER BRIDGE
KYEBURN — MIDDLEMARCH M.H. No 614.

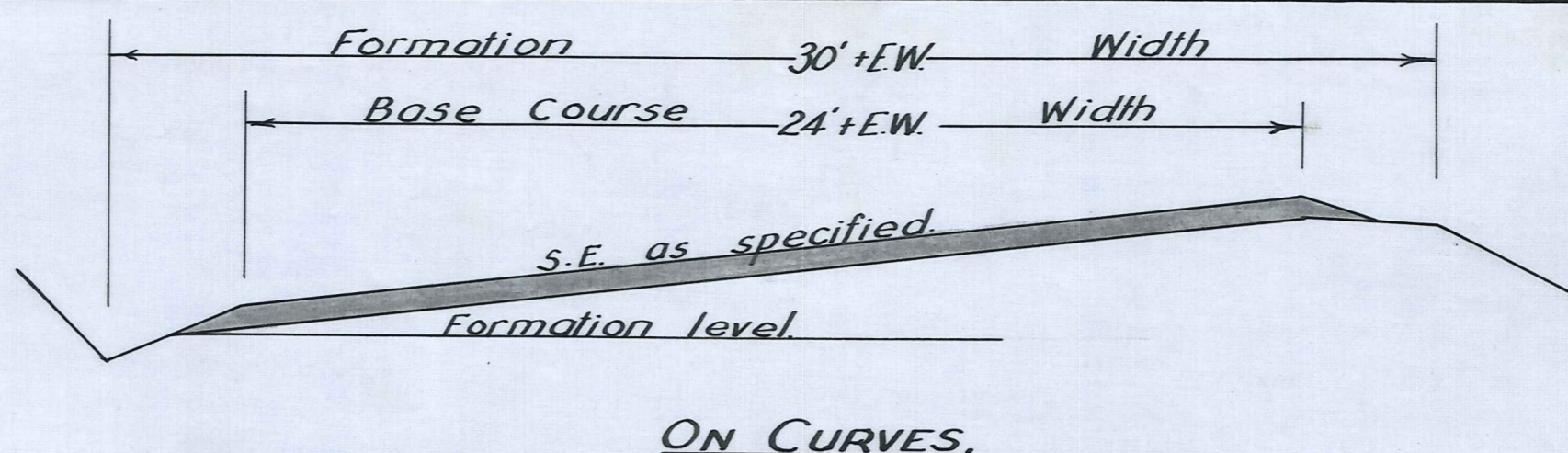
DUFFILL, WATTS & KING
CIVIL ENGINEERS AND SURVEYORS
DUNEDIN and INVERCARGILL

SURVEYED BY: JLF ABC
DRAWN BY: ABC
CHECKED BY: ABC
TRACED BY: A.B. Cochran
DATE: Nov 57

JOB NO.
2788/2
P. No. 143, 149 FILE NO. 56/20



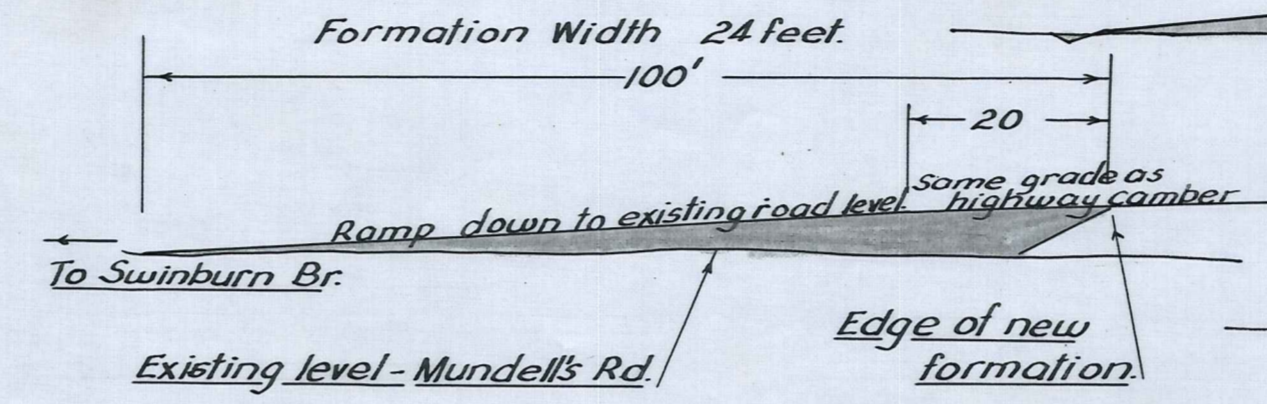
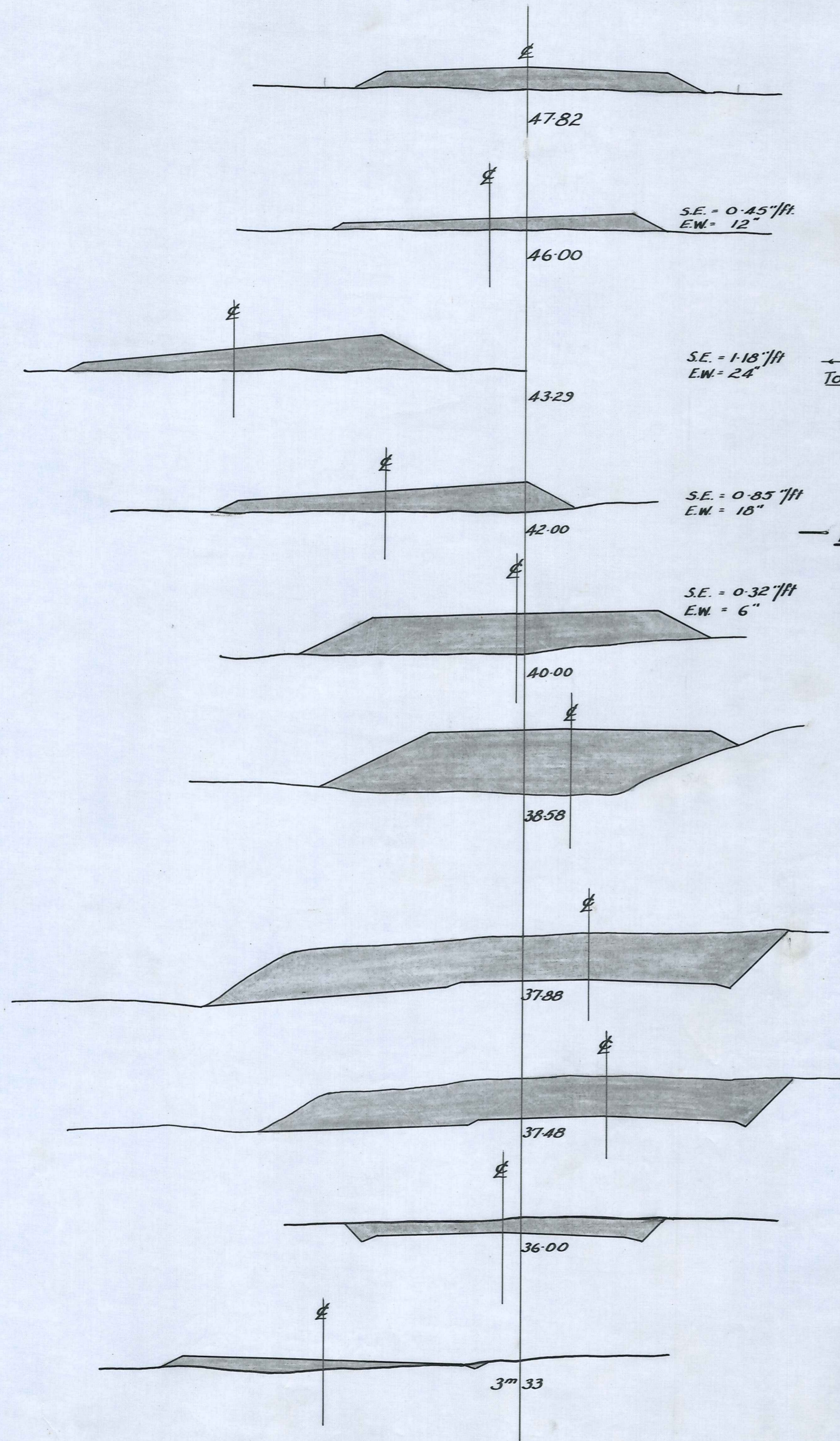
ON STRAIGHTS



ON CURVES.

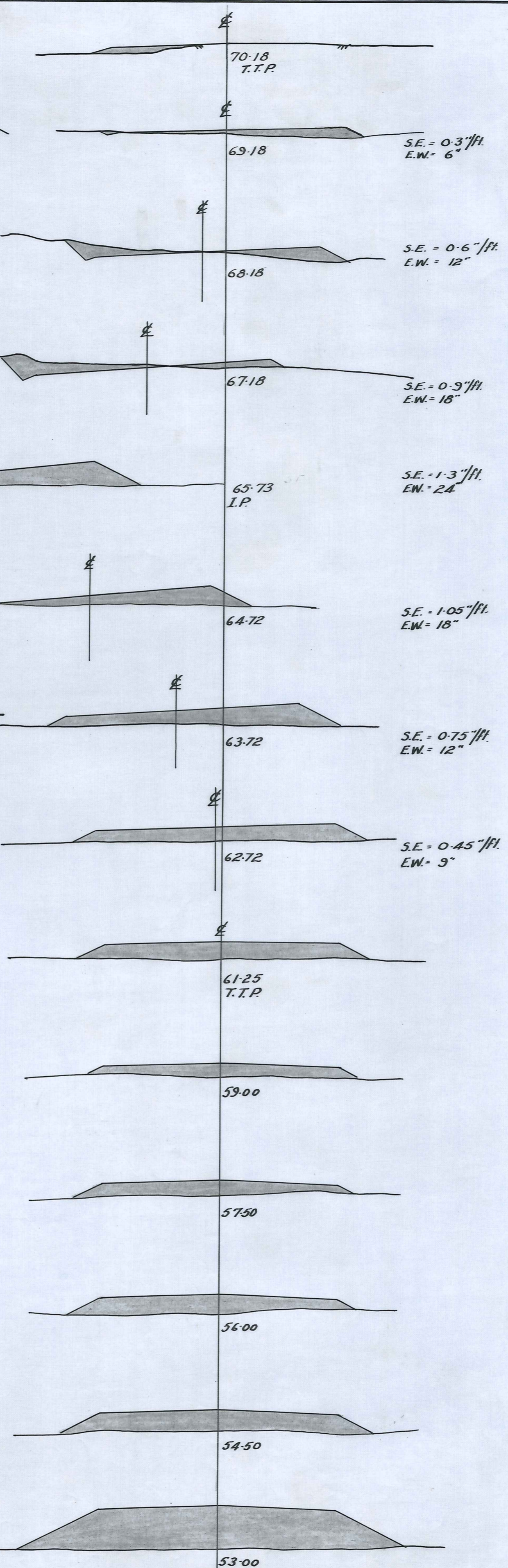
- TYPICAL CROSS SECTIONS. -

Scale: 4 ft. to an inch.



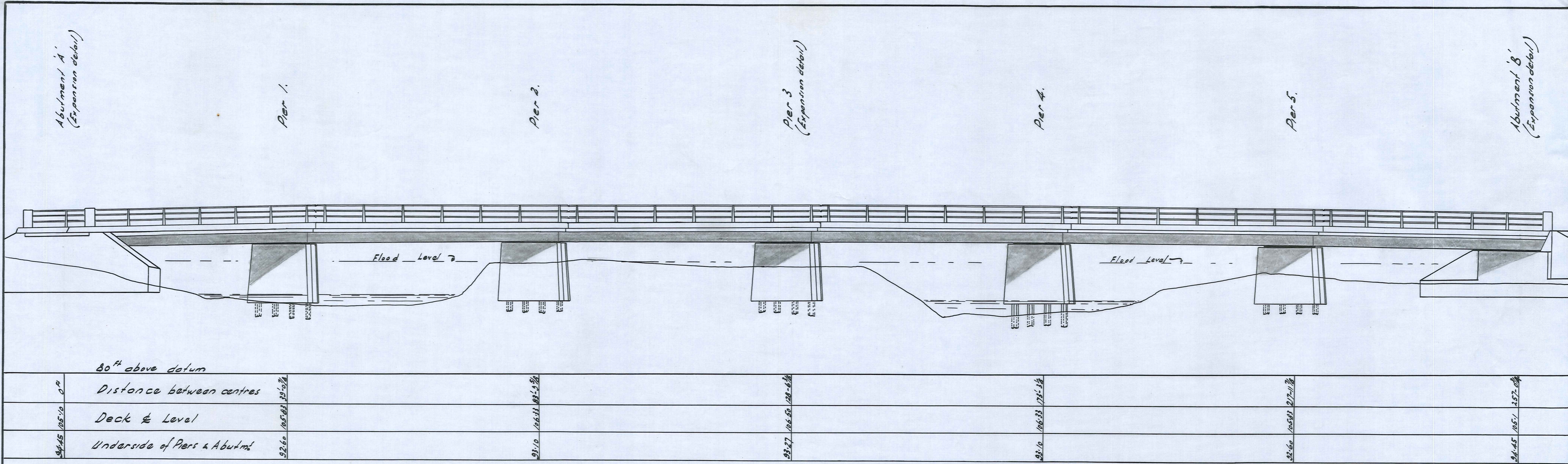
- INTERSECTION DETAILS-MUNDELL'S RD. -

Construct other intersections similarly.

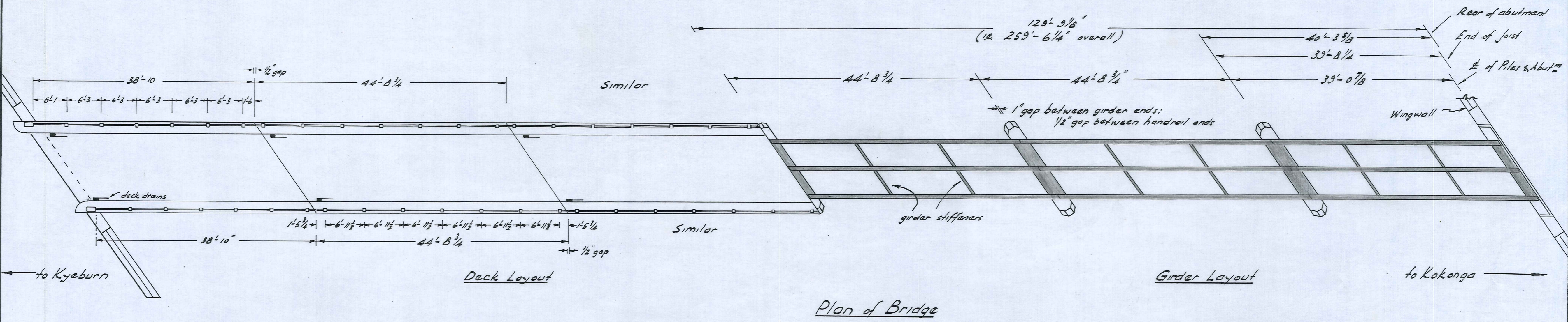


- CROSS SECTIONS. -

Scale: 10 feet to an inch.



Elevation from Upstream



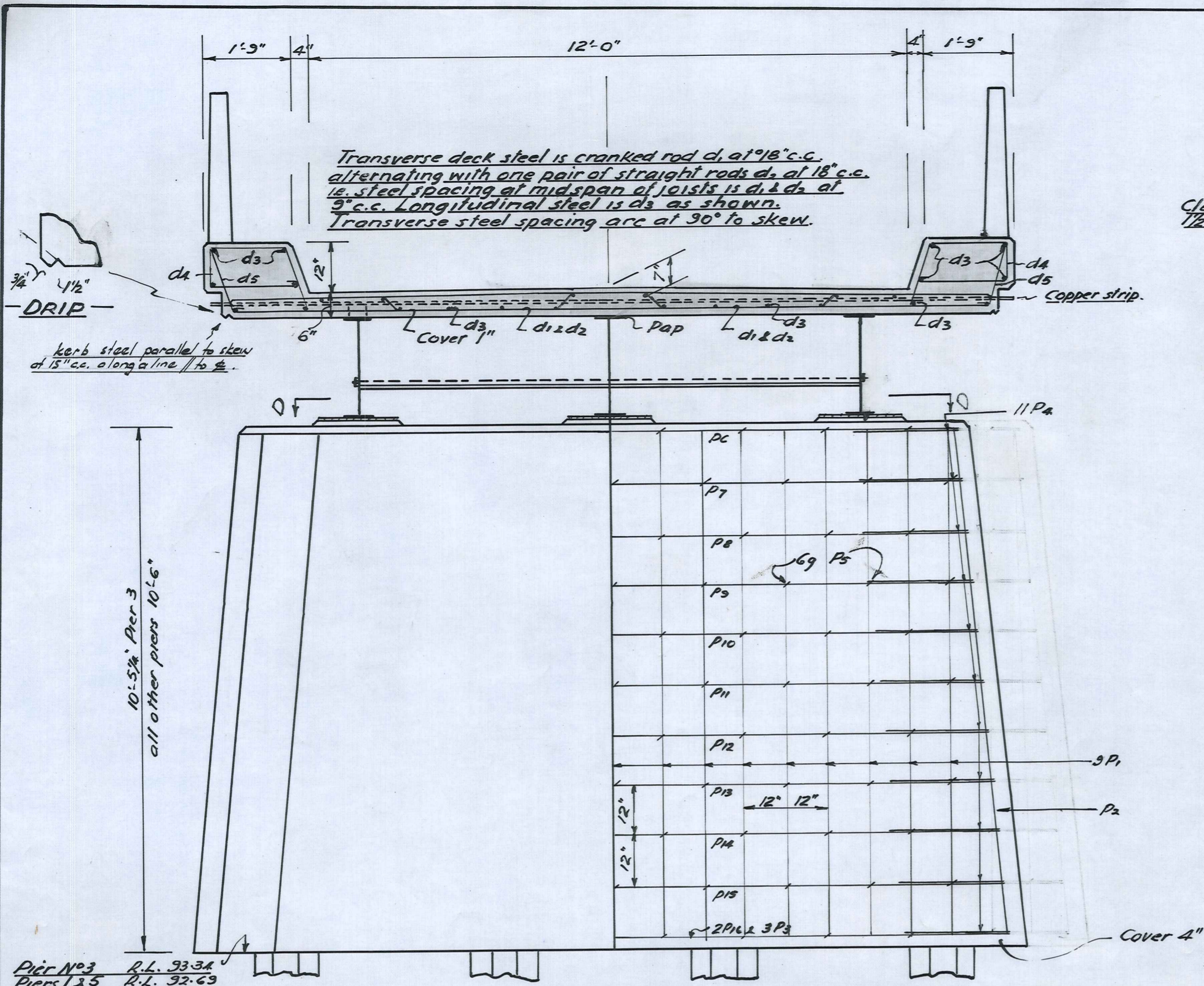
Scale: 10^{ft} to 1ⁱⁿ

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TAIERI RIVER BRIDGE
 KYEBURN - MIDDLEMARCH. M.H.614.

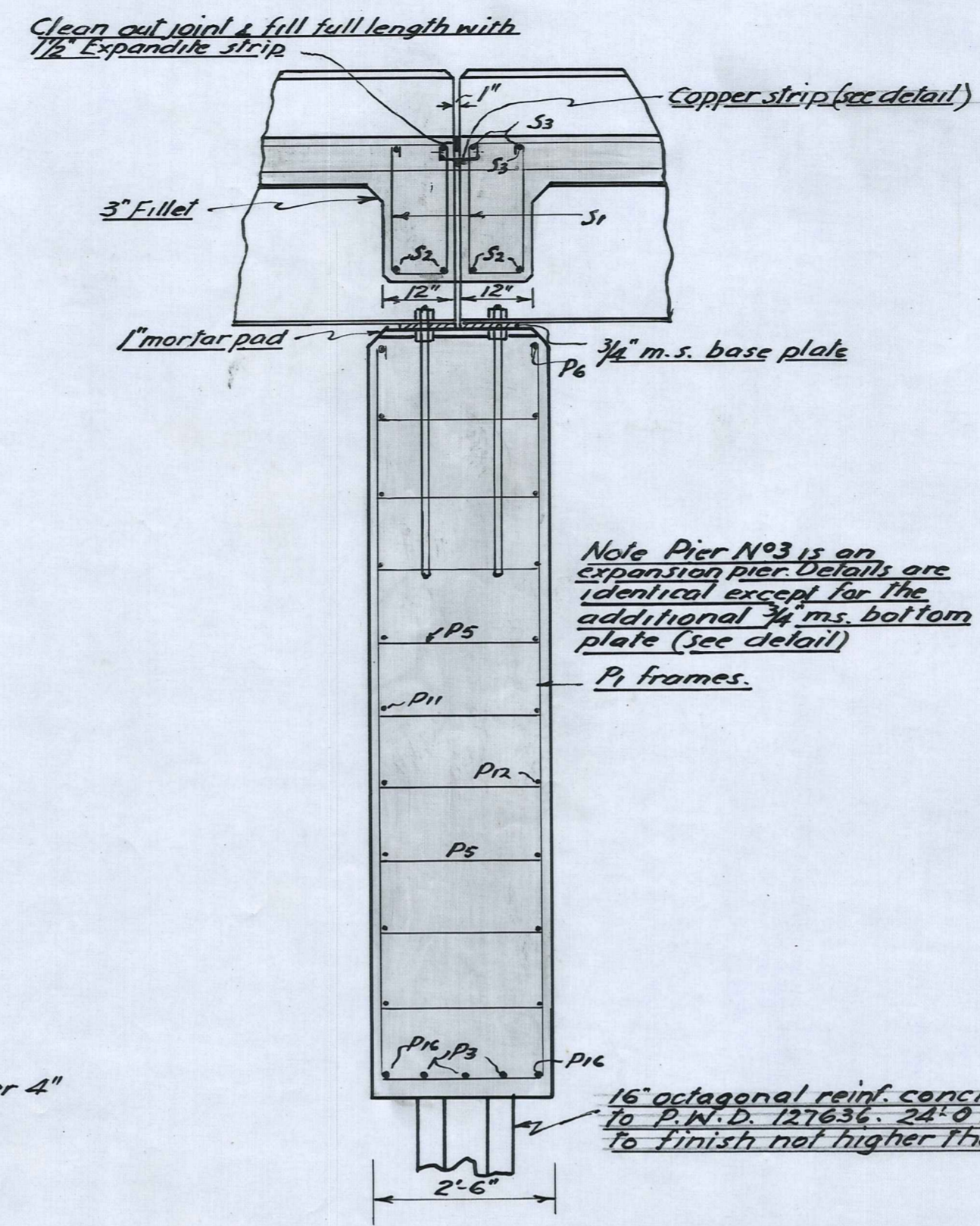
DUFFILL, WATTS & KING
 CIVIL ENGINEERS AND SURVEYORS
 DUNEDIN and INVERCARGILL

SUPERVISED BY	DATE	JOB NO.
ABC JLF.	Nov 57	2788/4
DRAWN BY		
CHECKED BY		
TRACED BY		



ELEVATION OF PIER ON CL OF BRIDGE

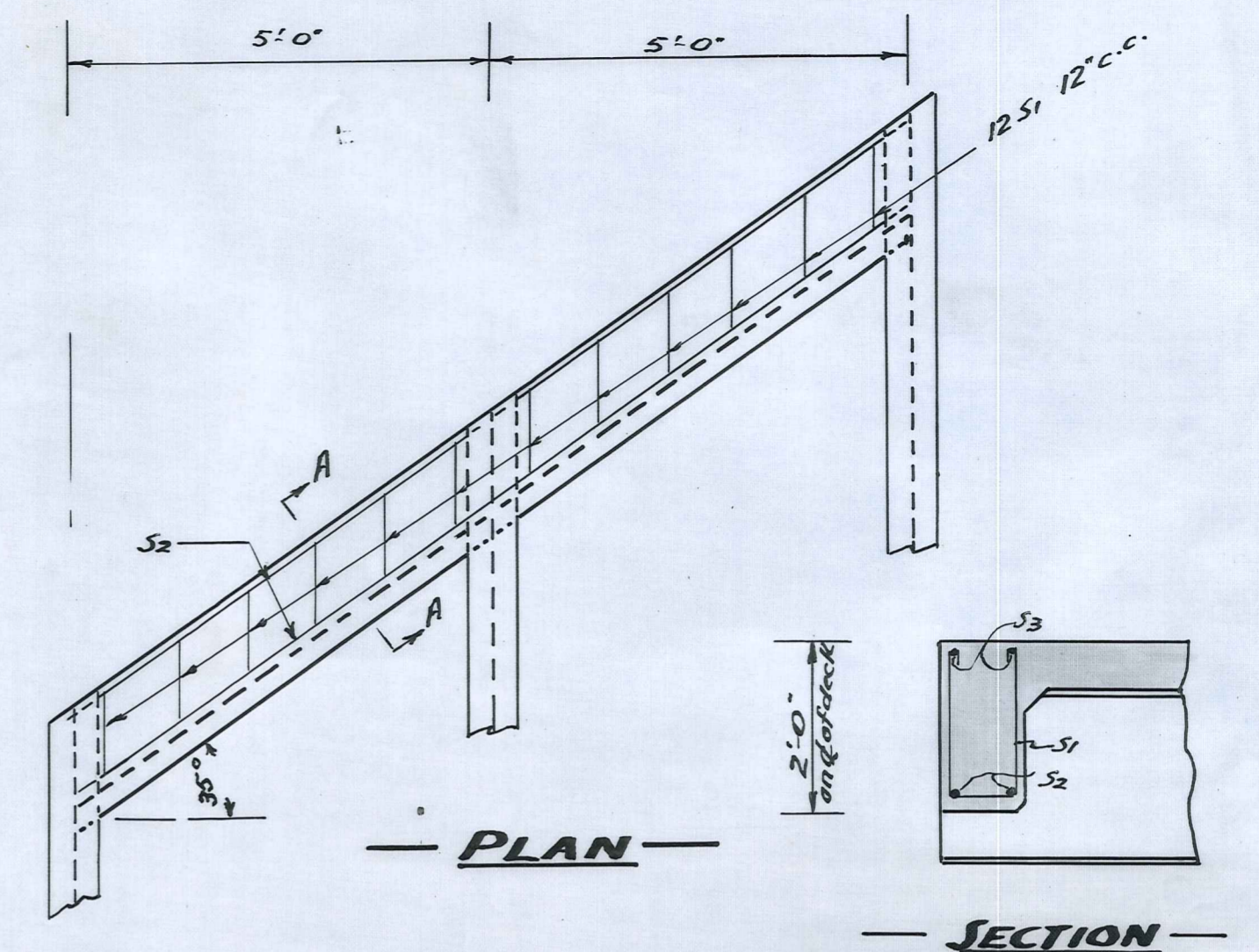
Pier No 3 R.L. 33.34
 Piers 1 & 2 R.L. 32.63
 Piers 2 & 4 R.L. 33.17



SECTION ON AA.

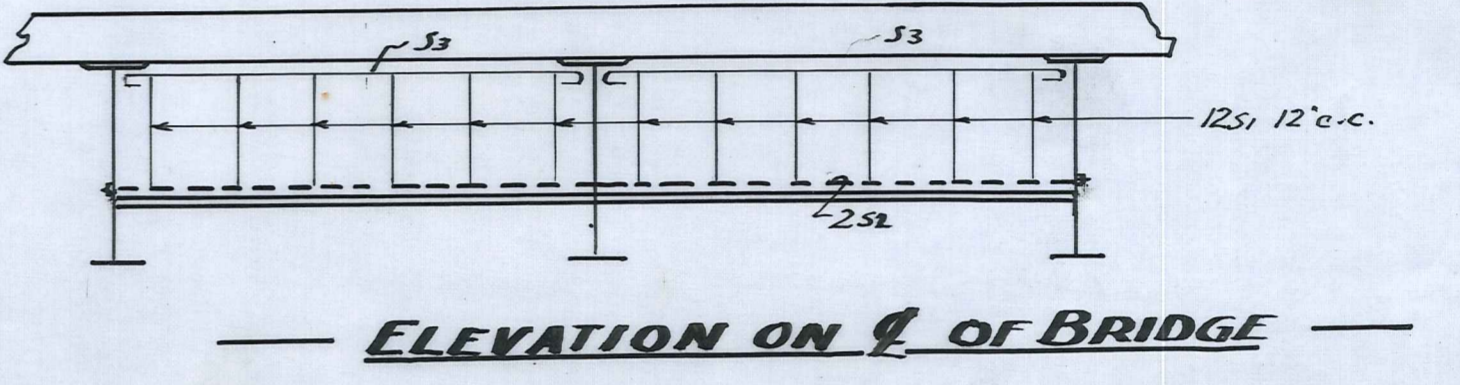
Note Pier No 3 is an expansion pier. Details are identical except for the additional 3/4" m.s. bottom plate (see detail)

16" octagonal reinf. concrete piles to P.W.D. 127636. 24'-0" long. Points to finish not higher than R.L. 72.60



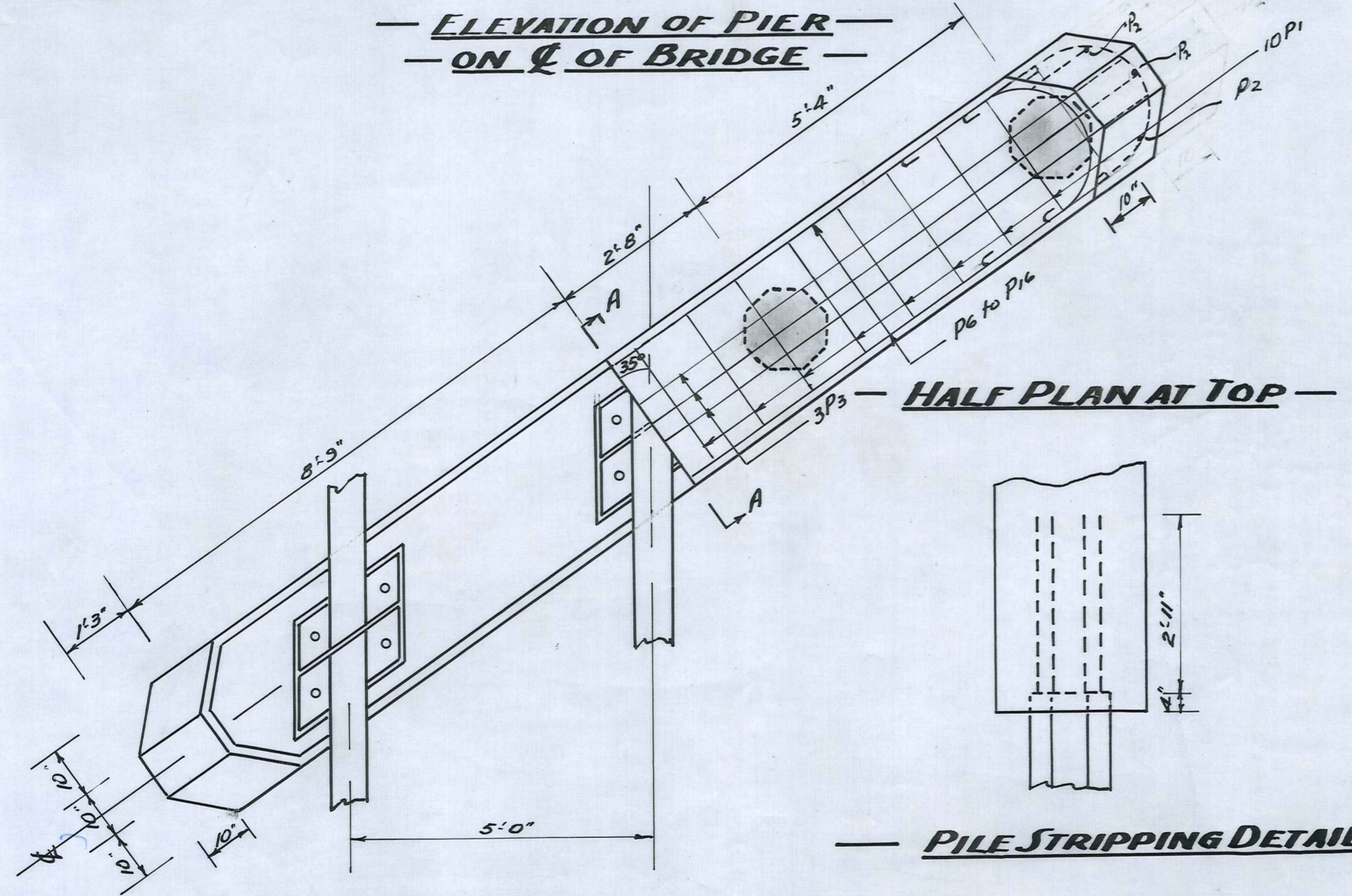
PLAN

SECTION



ELEVATION ON CL OF BRIDGE

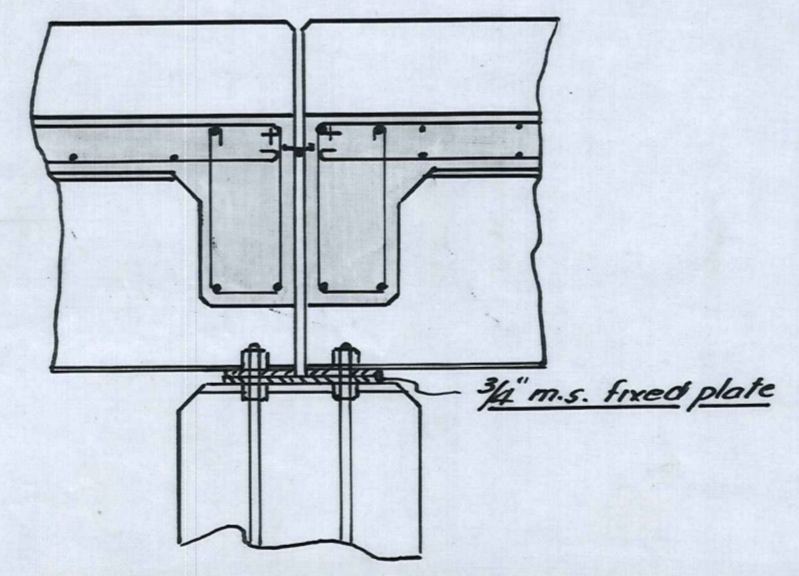
END STIFFNER DETAILS



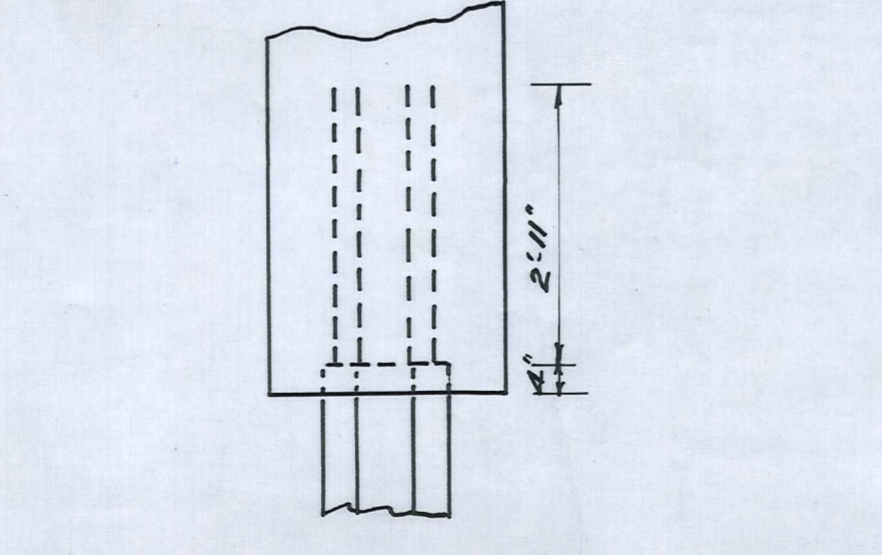
HALF PLAN AT TOP

HALF PLAN ON DD.

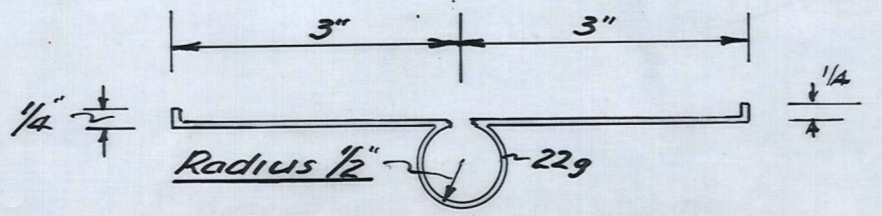
PIER DETAILS



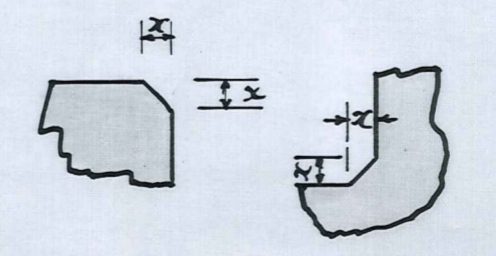
PART SECTION PIER 3.



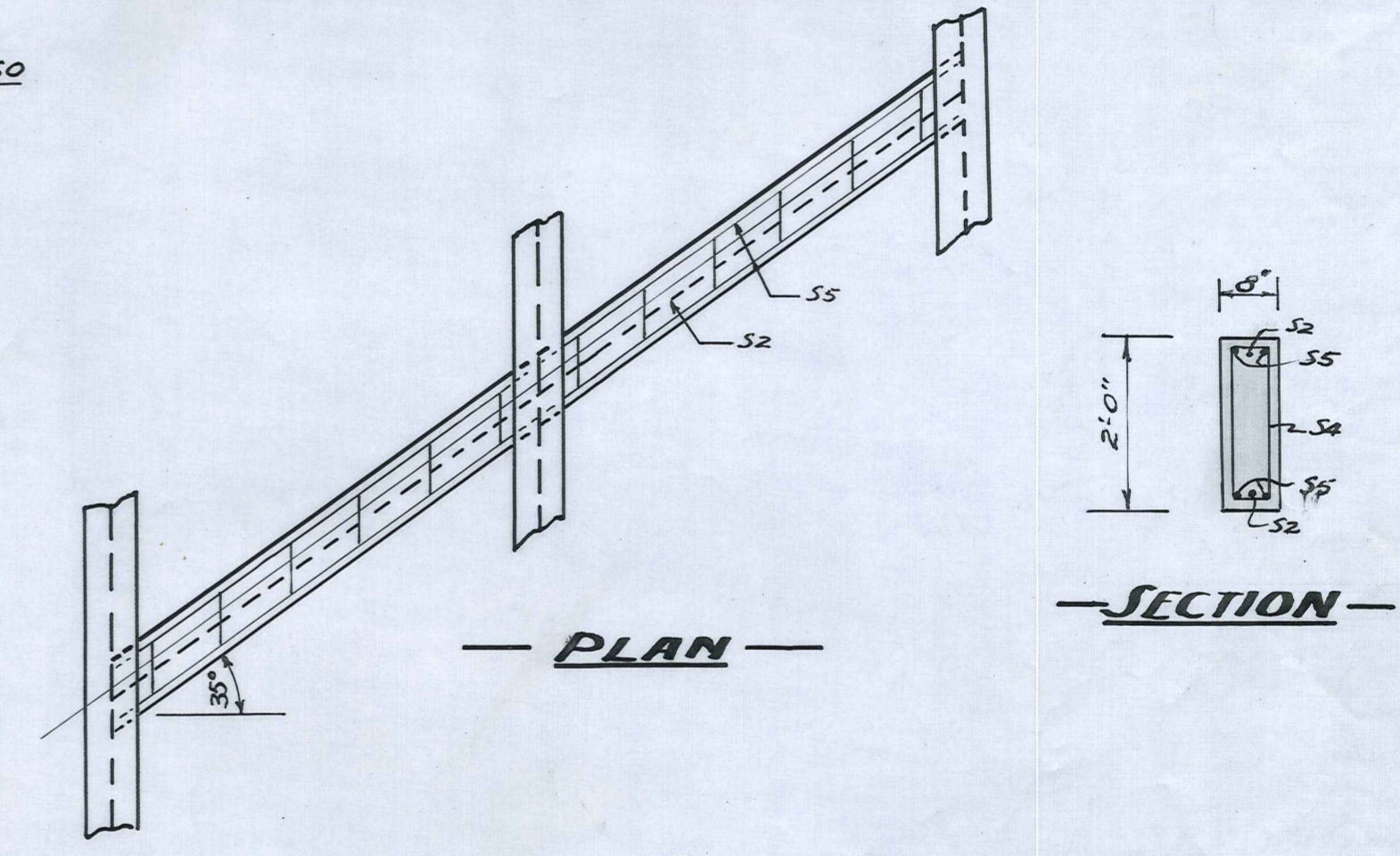
PILE STRIPPING DETAIL



COPPER STRIP DETAIL

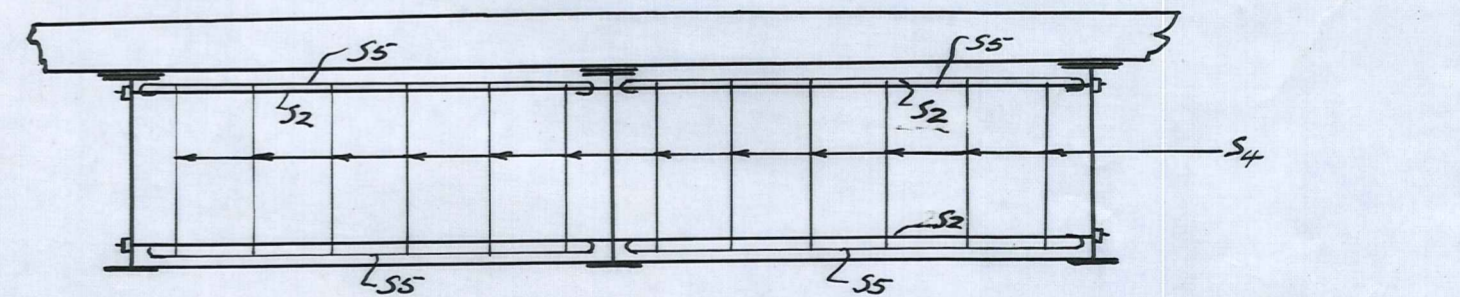


CHAMFER DETAIL



PLAN

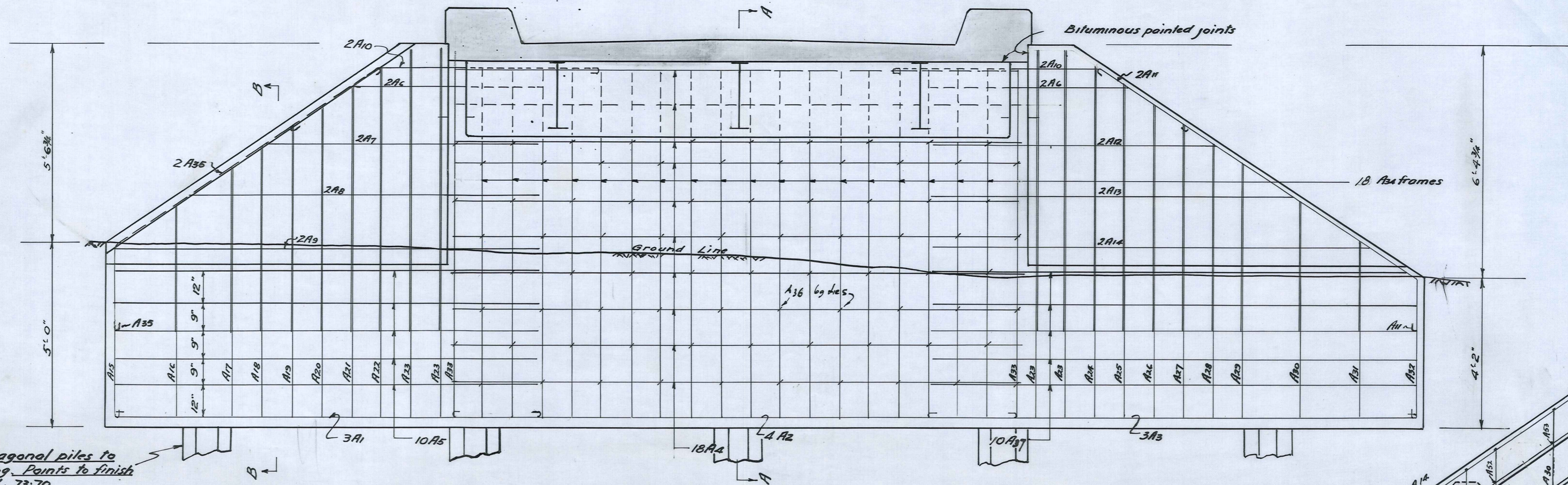
SECTION



ELEVATION ON CL OF BRIDGE

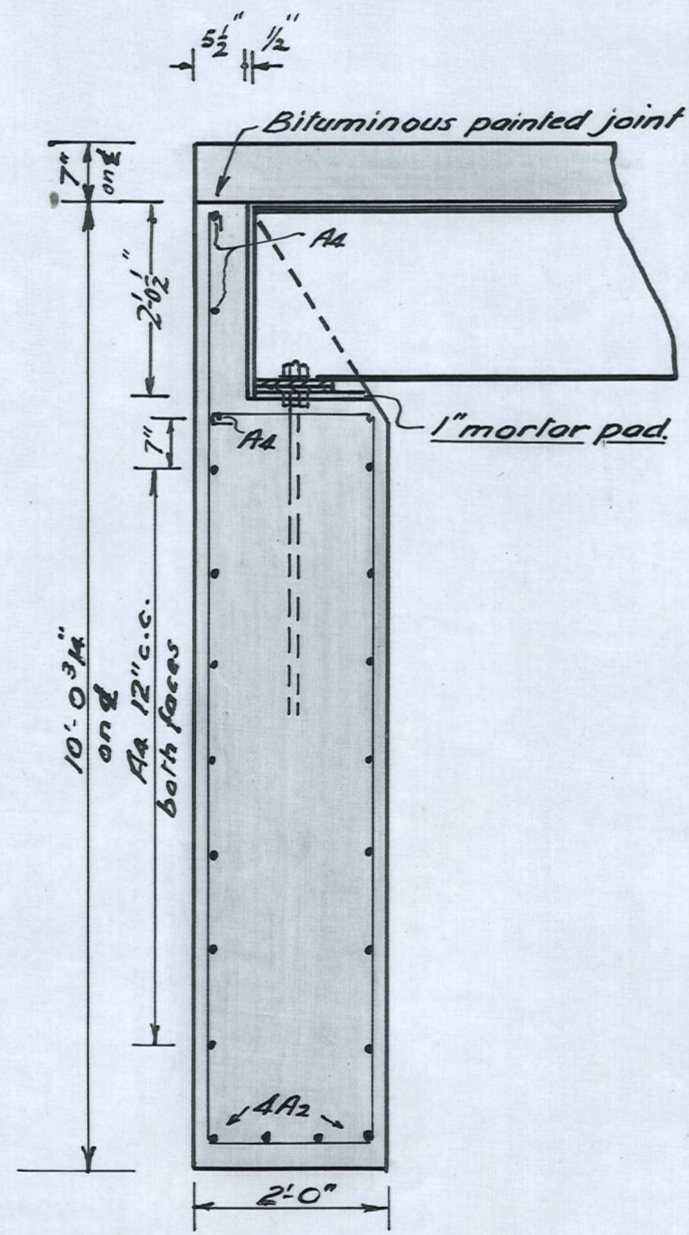
INTERMEDIATE STIFFNER DETAILS

Scale 1/2" to 1'-0"

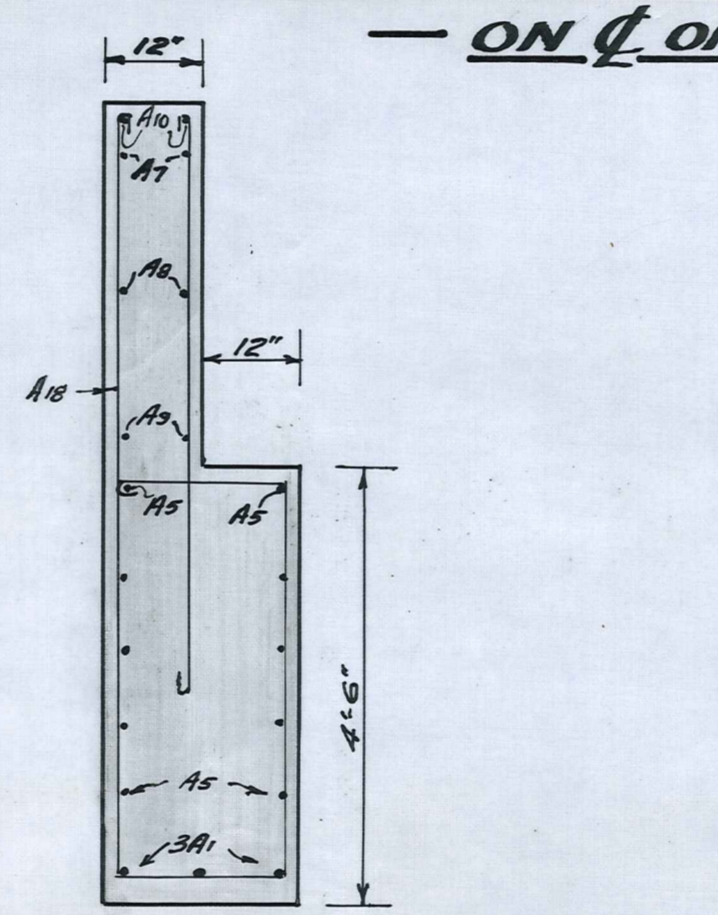


16" reinf. concrete octagonal piles to P.W.D. 127636 24'-0" long. Points to finish not higher than R.L. 73.70.

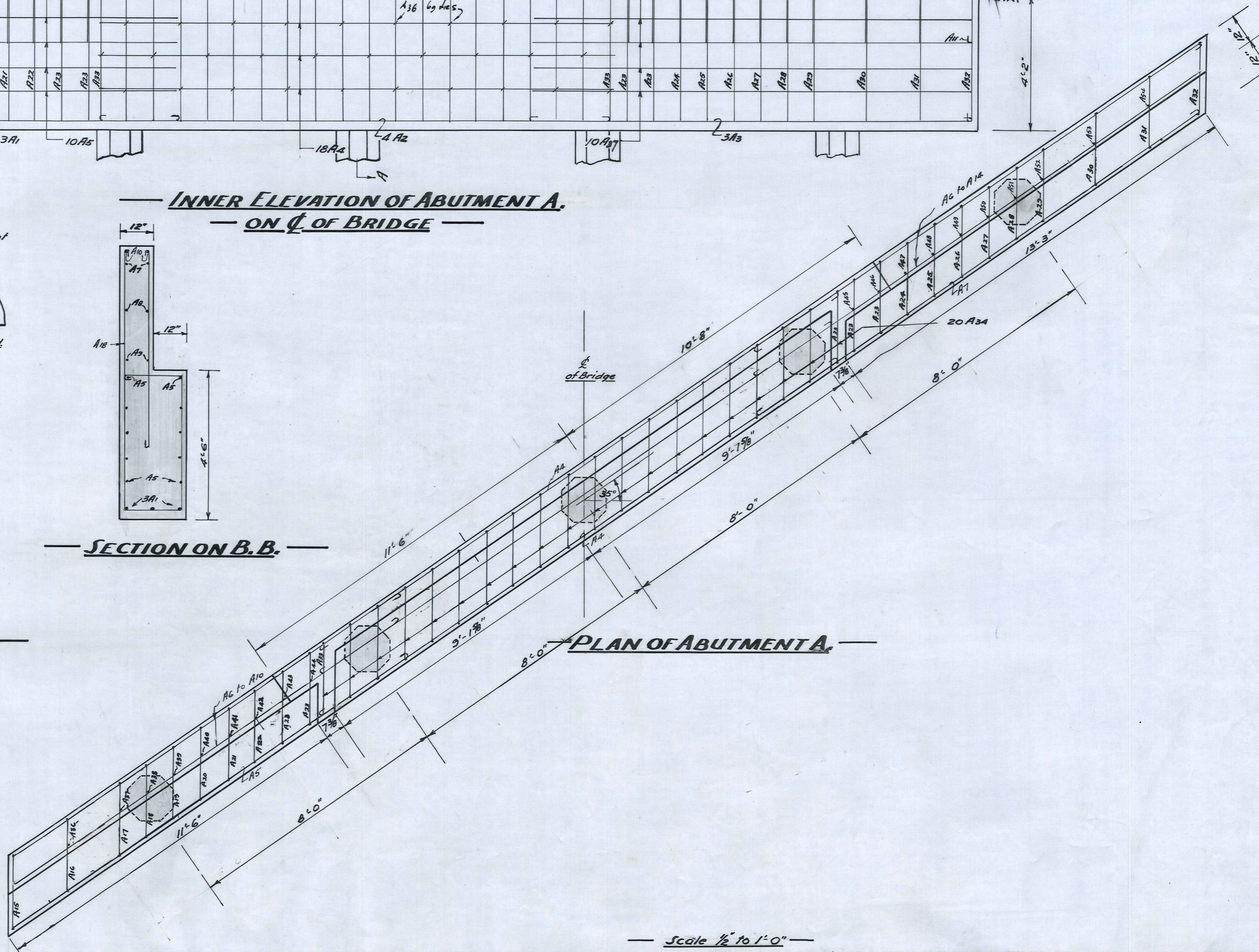
INNER ELEVATION OF ABUTMENT A.
ON ϕ OF BRIDGE



SECTION ON AA.

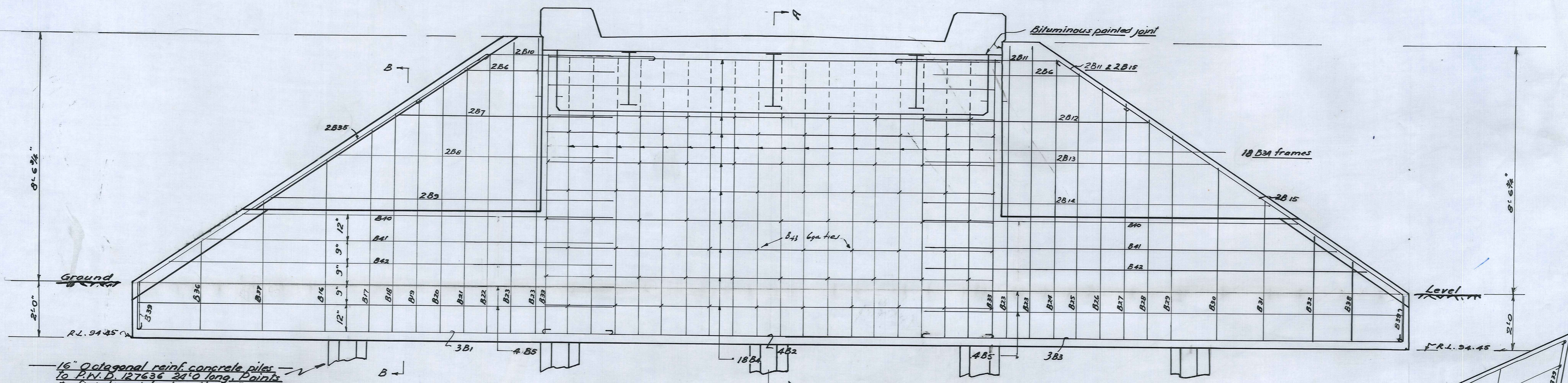


SECTION ON B.B.



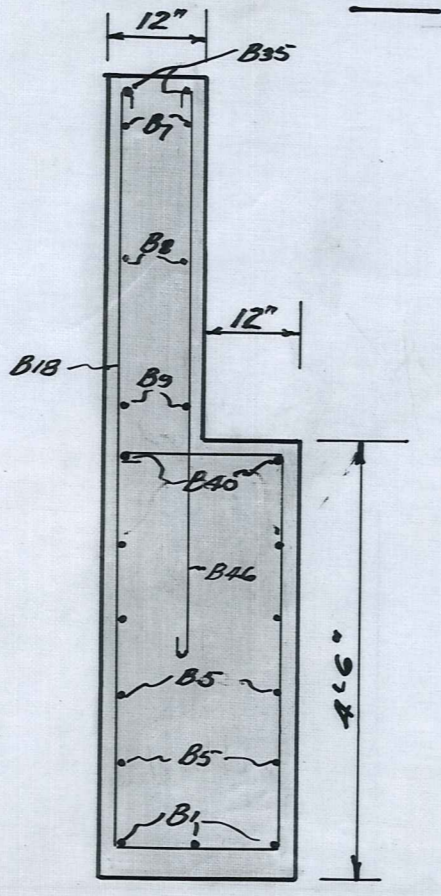
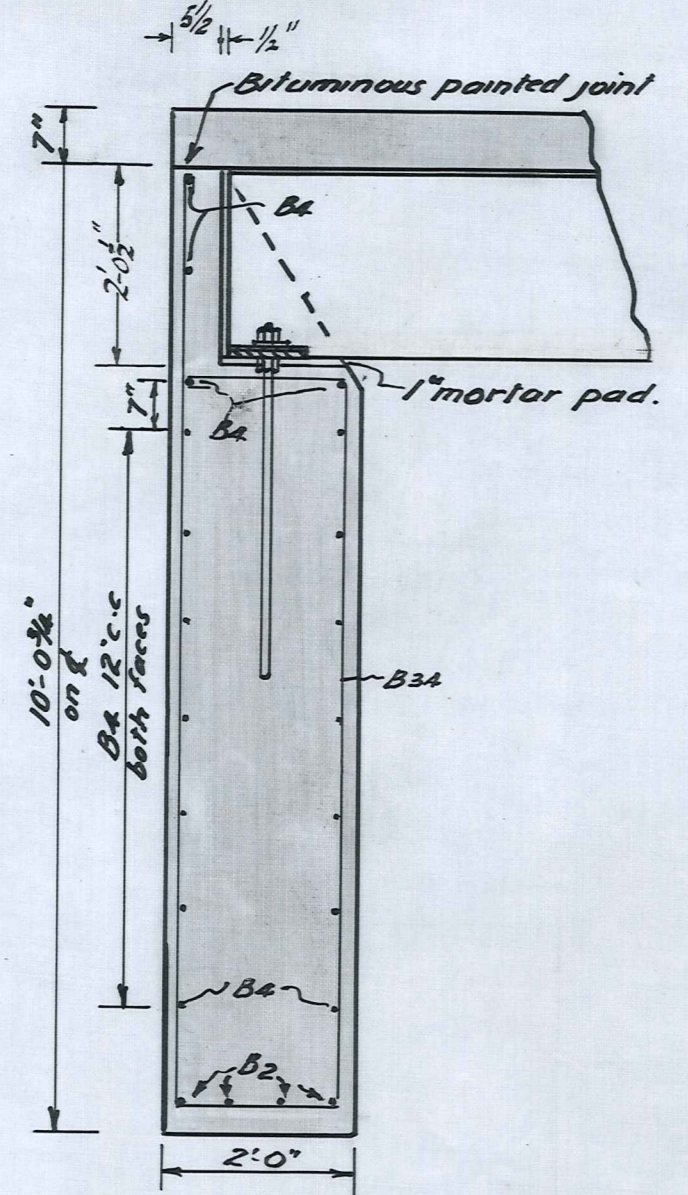
PLAN OF ABUTMENT A.

Scale 1/2" to 1'-0"



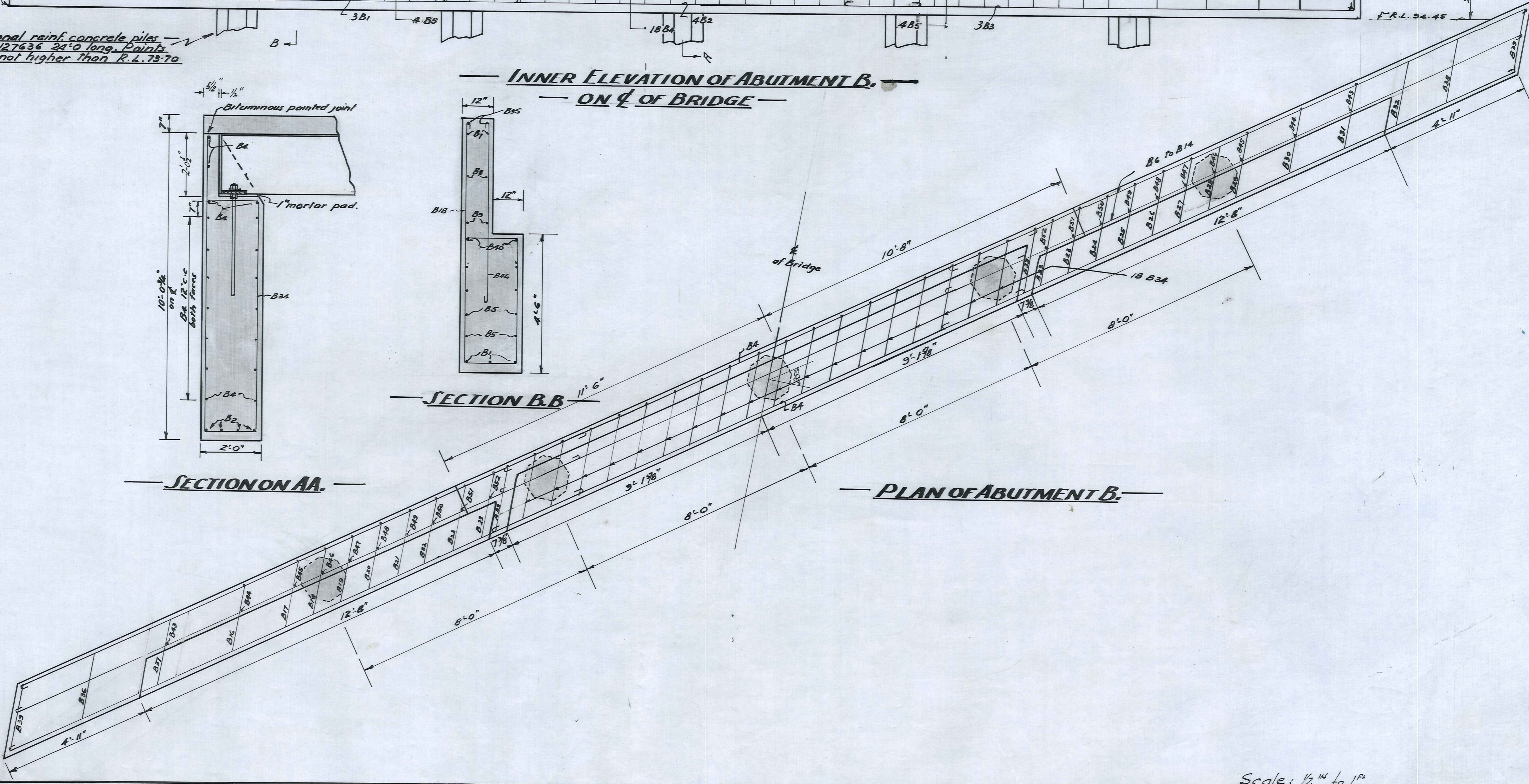
16" Octagonal reinf. concrete piles
 To P.N.D. 127636 24'0" long, Paints
 To finish not higher than R.L. 73.70

INNER ELEVATION OF ABUTMENT B.
ON ϕ OF BRIDGE



SECTION ON AA.

SECTION B.B.



PLAN OF ABUTMENT B.

Scale: 1/2" = 1'

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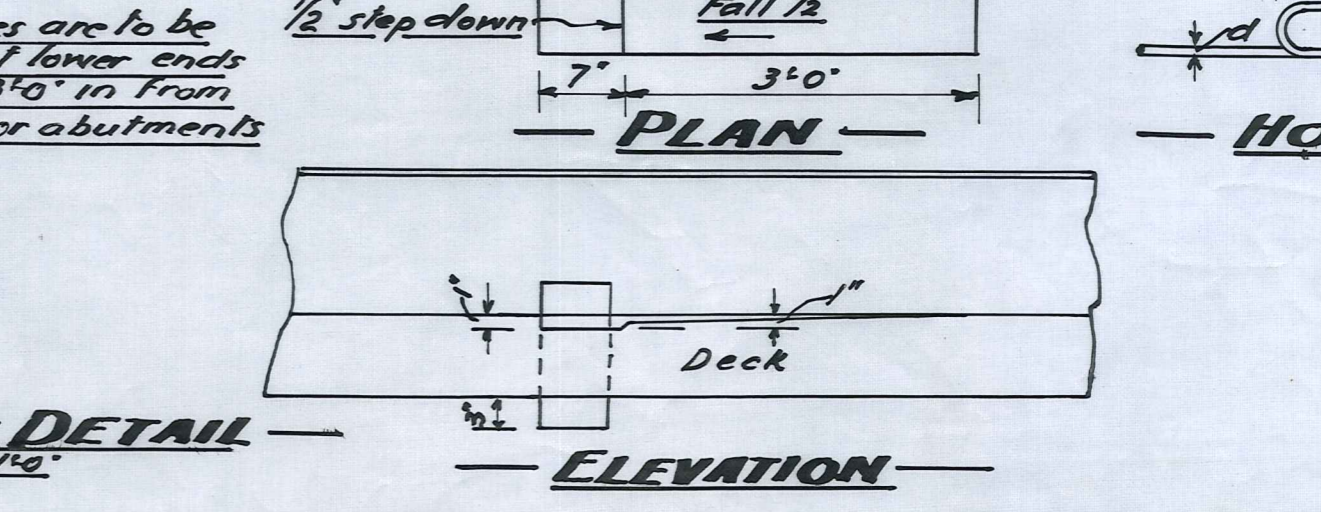
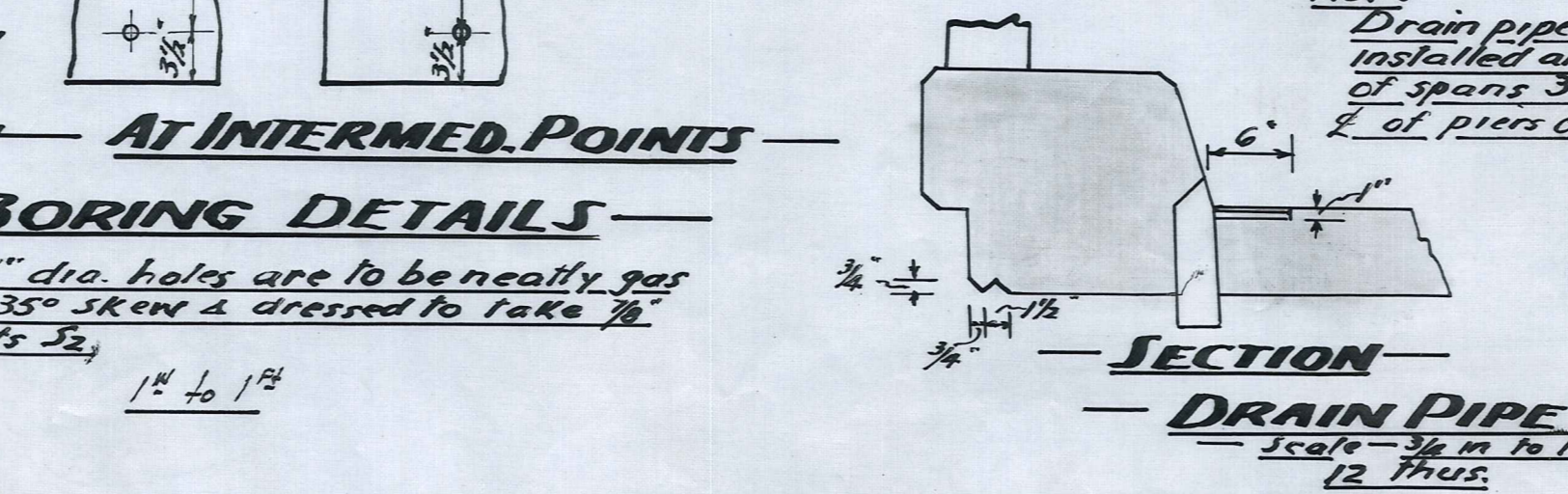
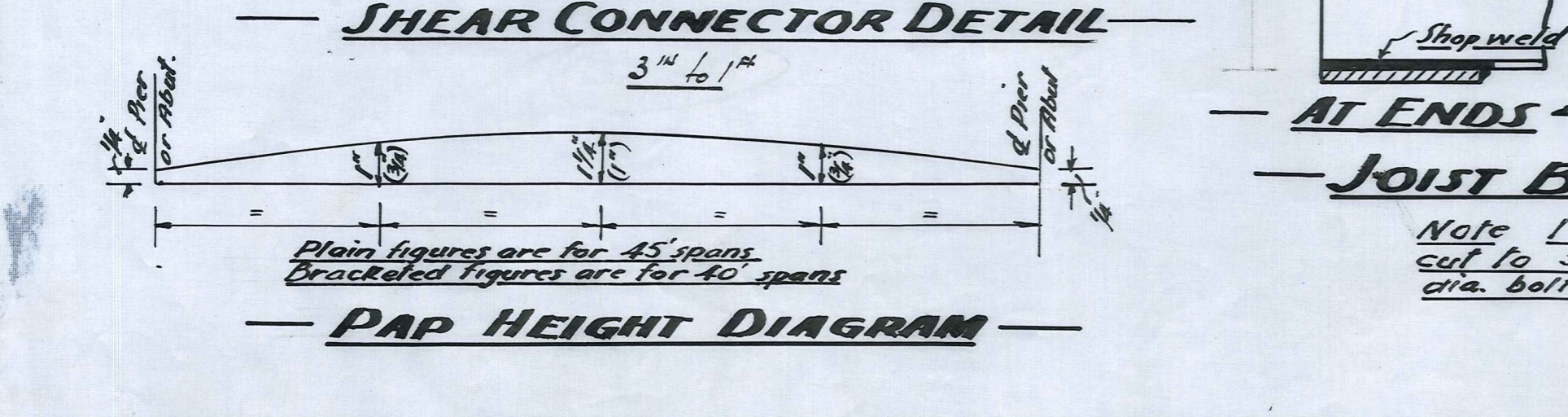
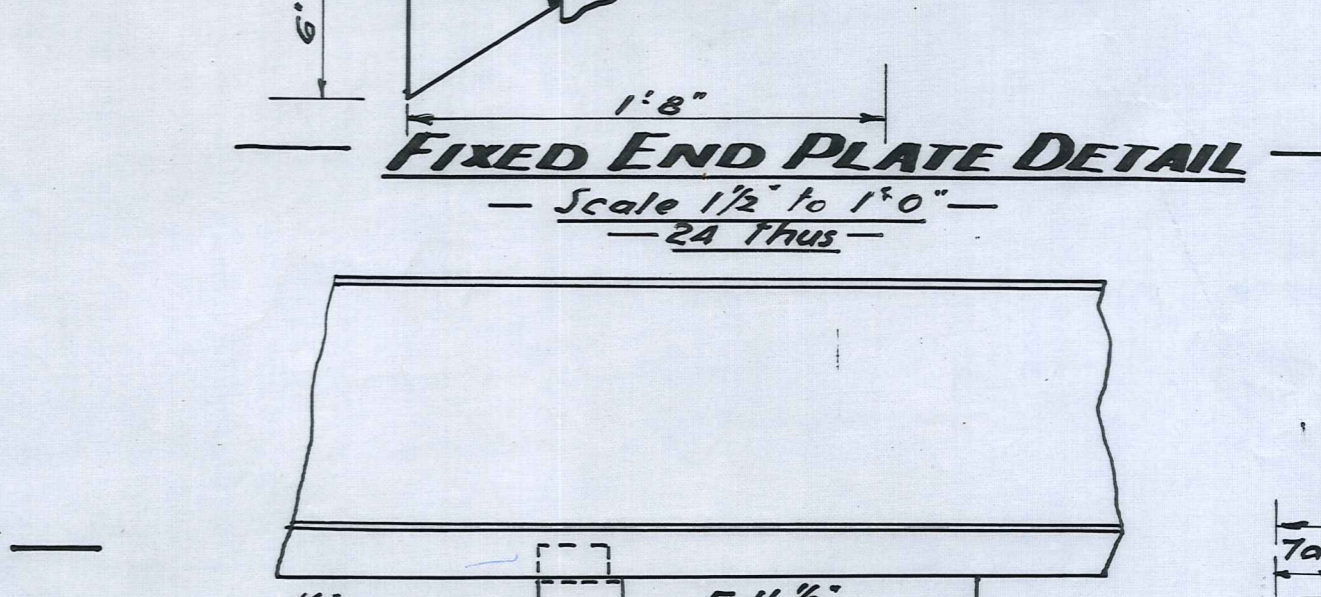
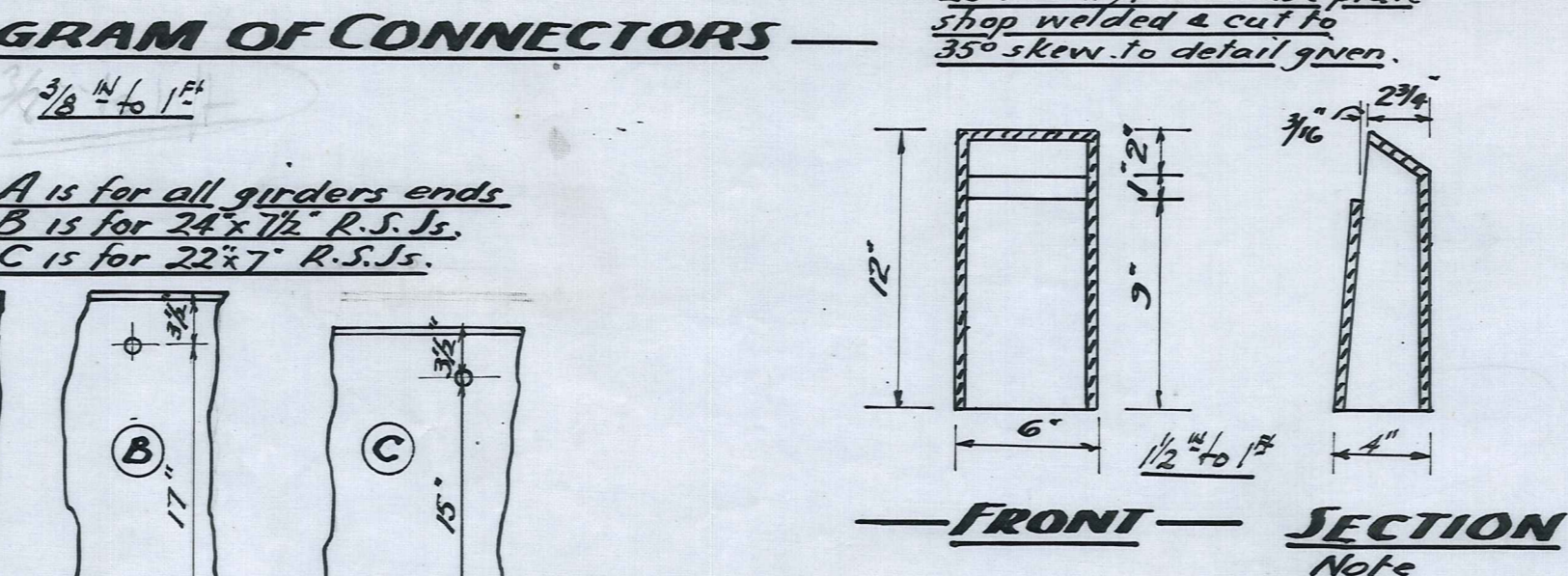
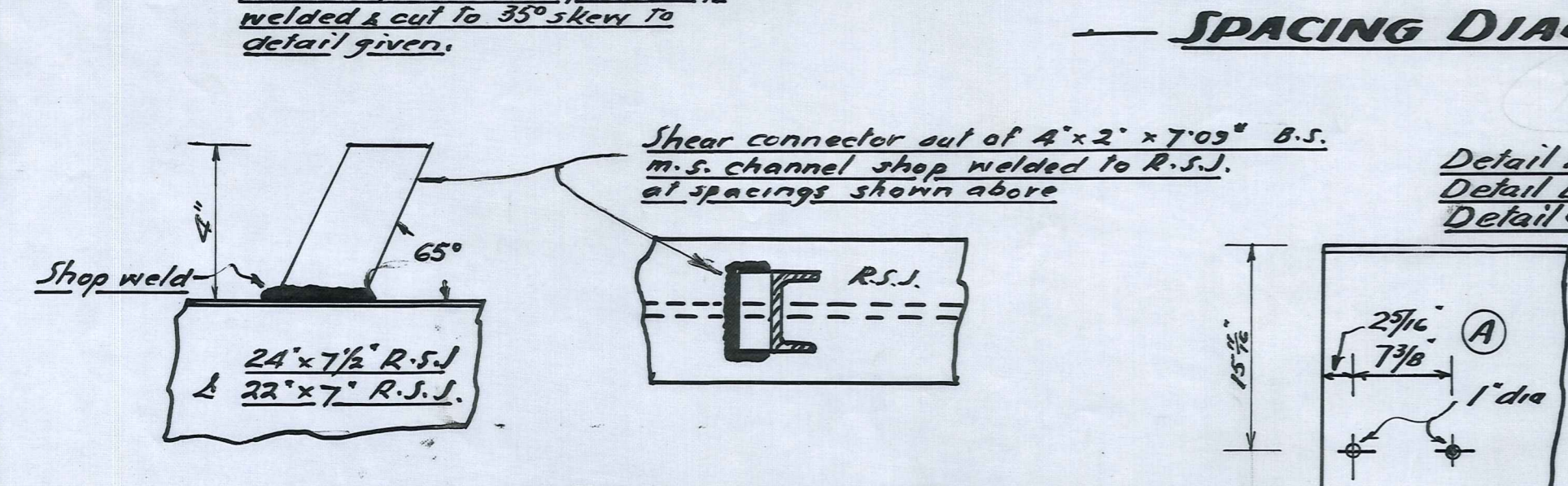
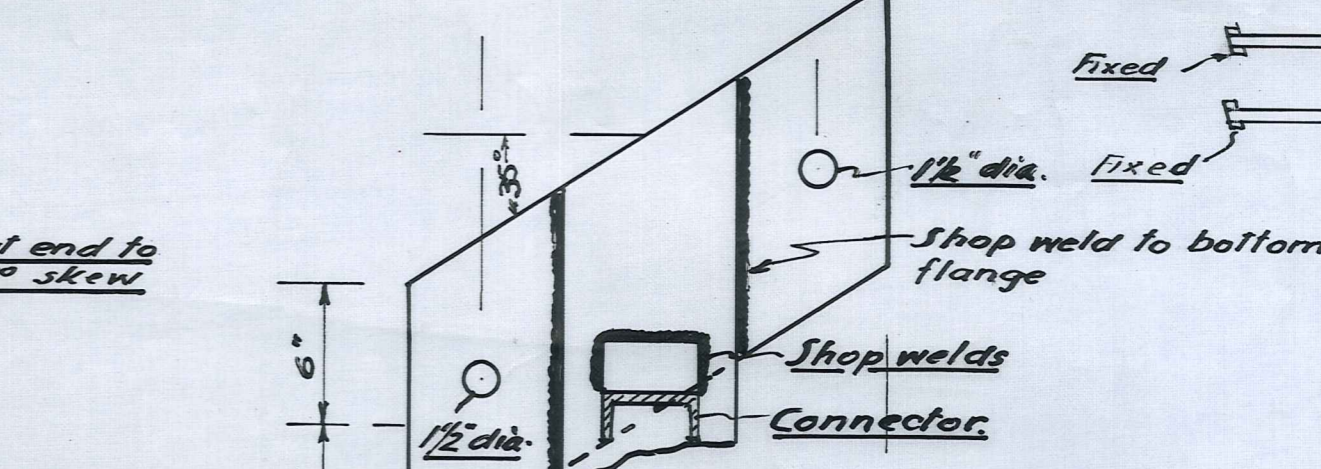
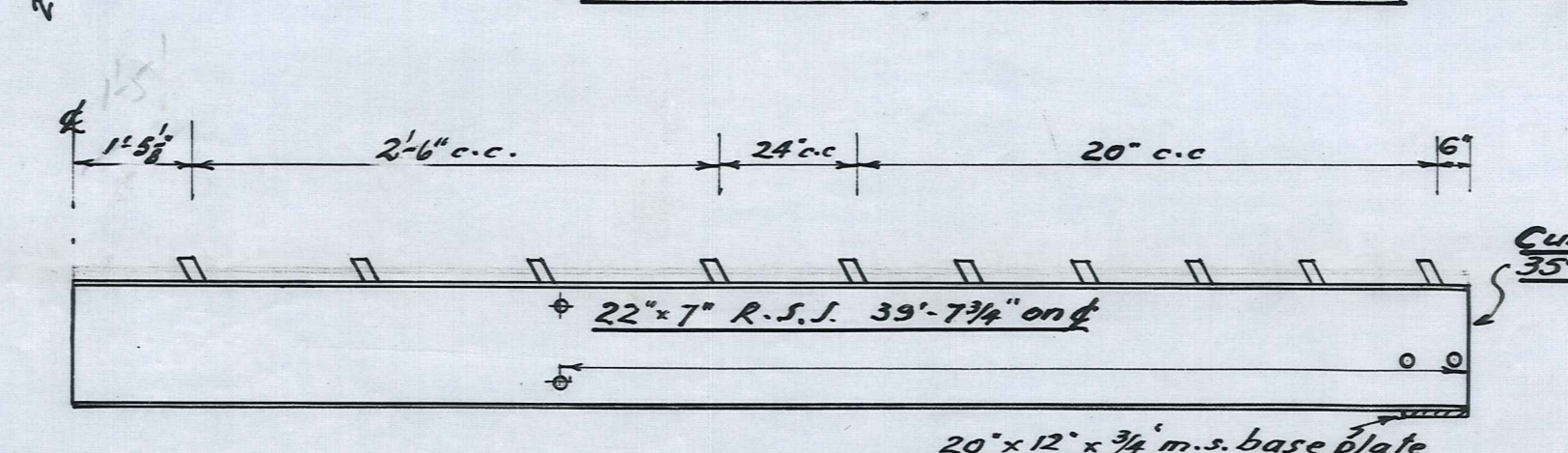
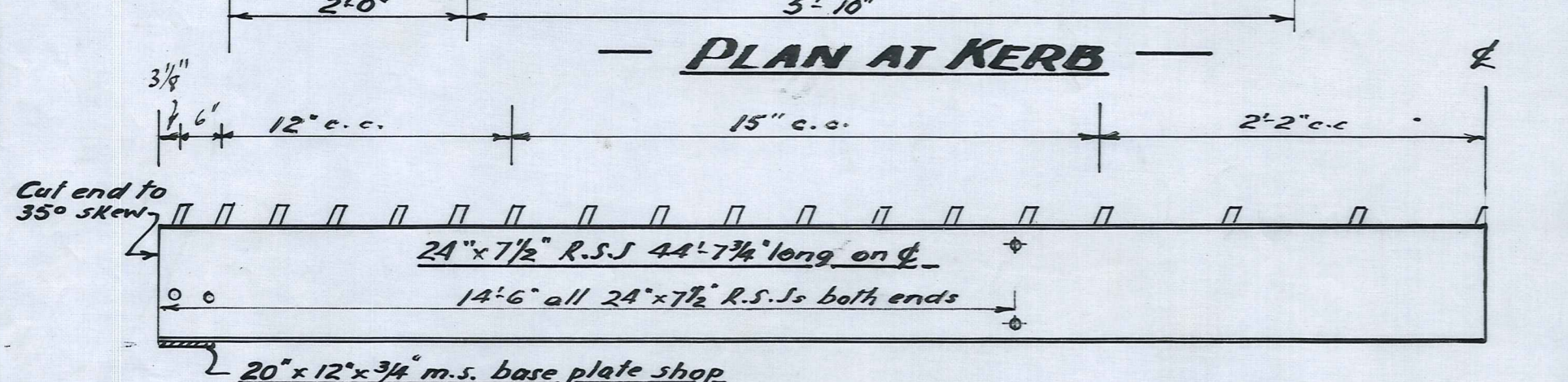
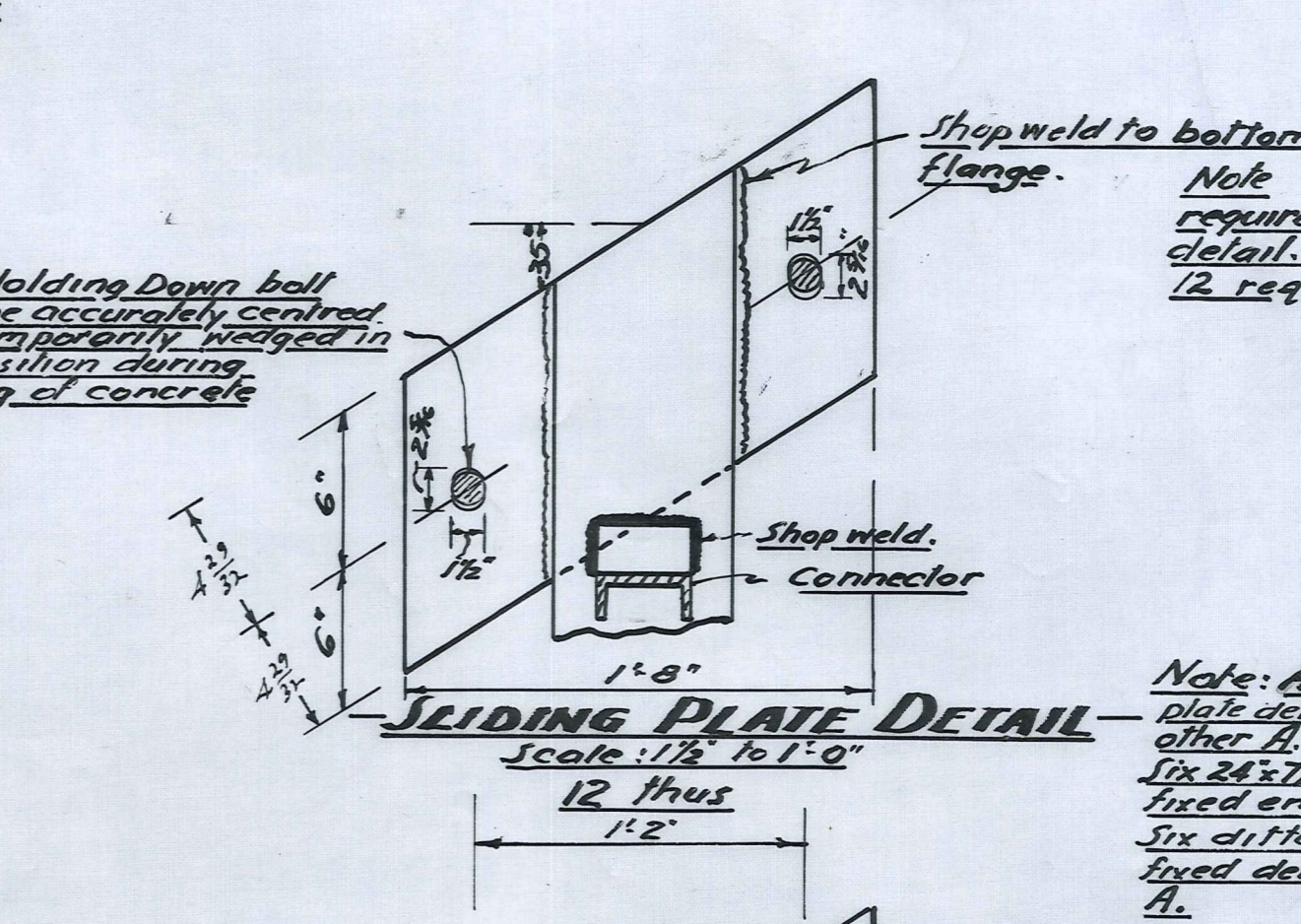
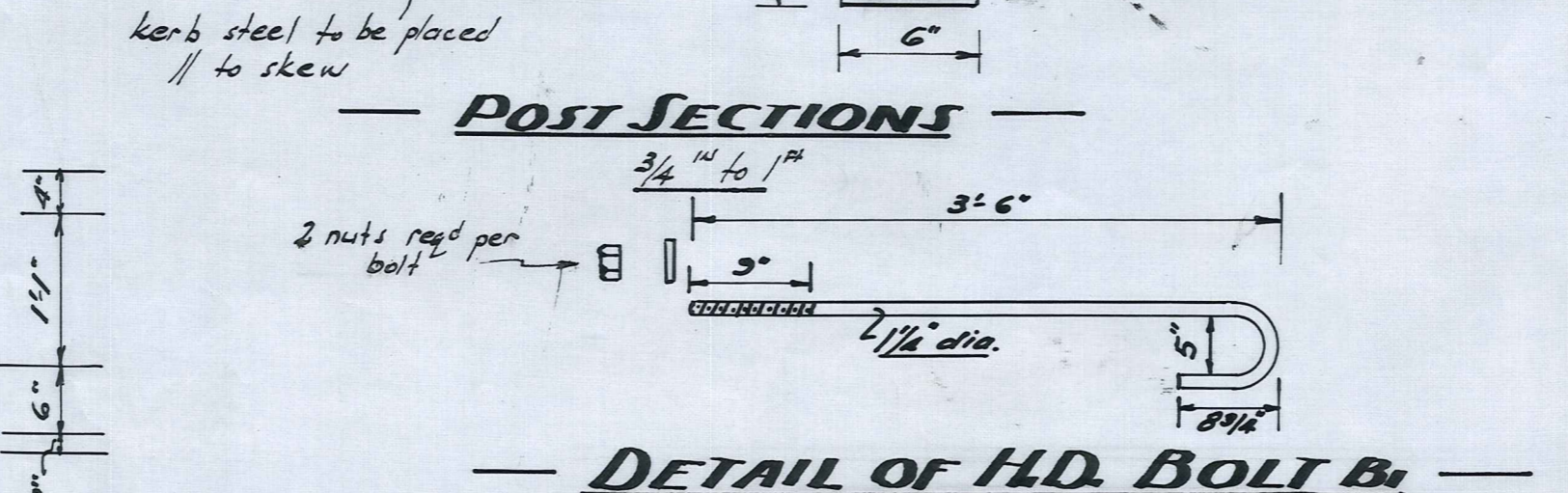
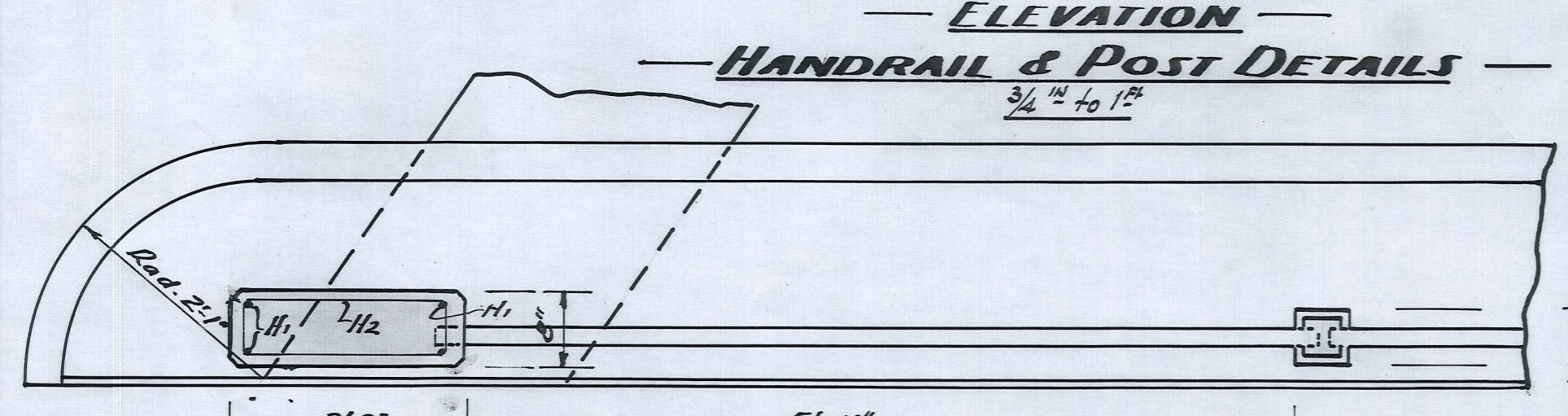
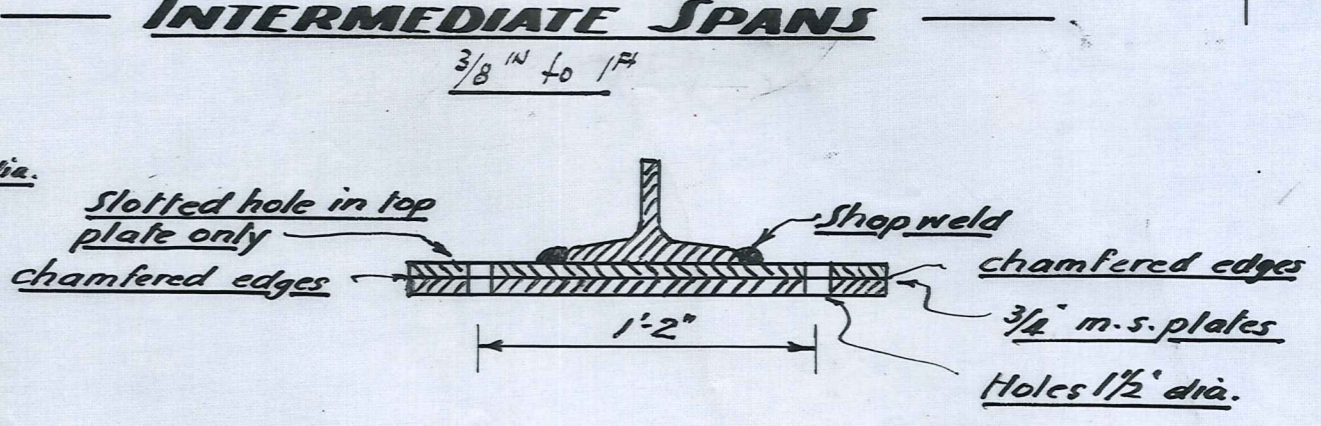
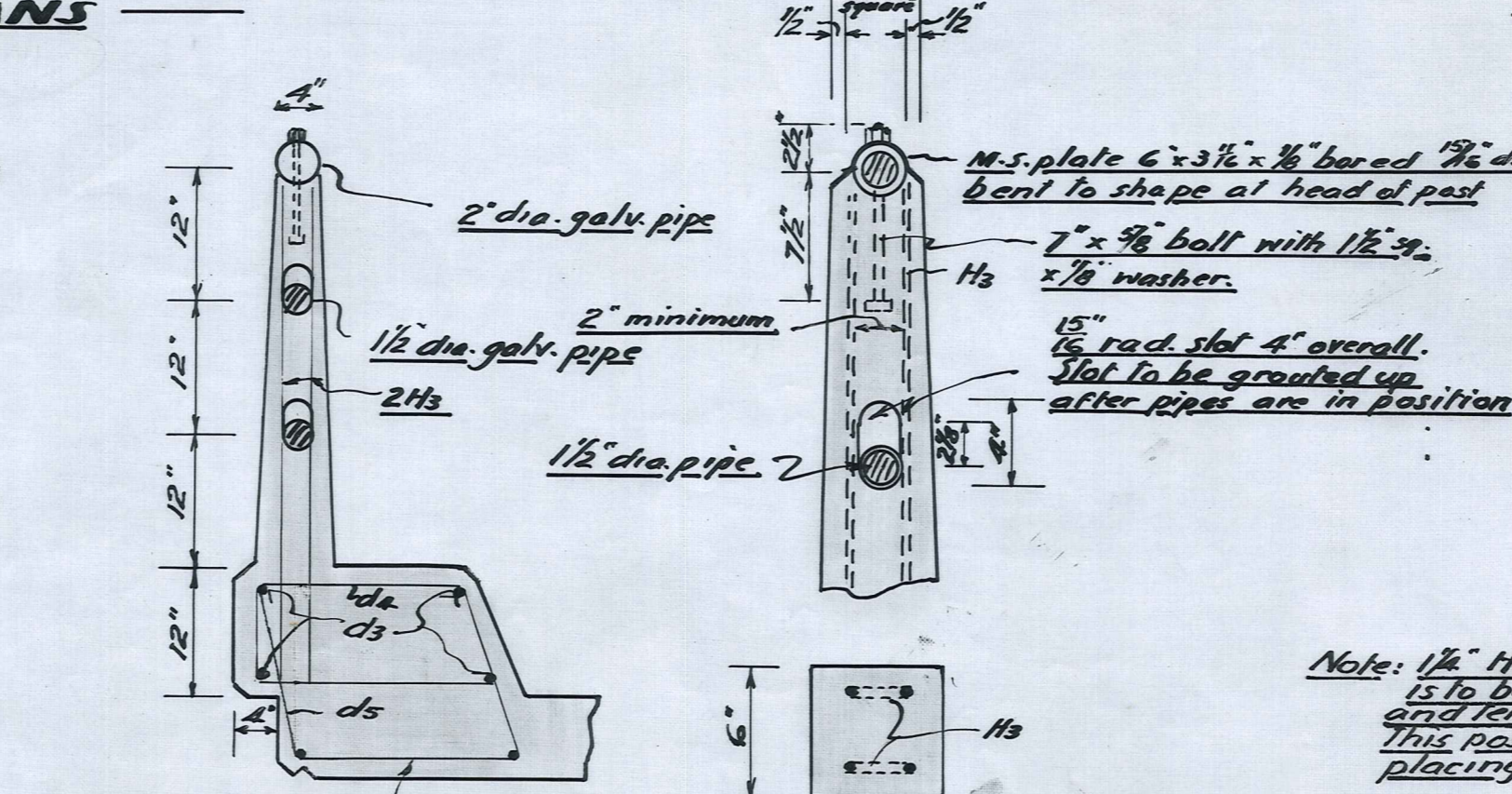
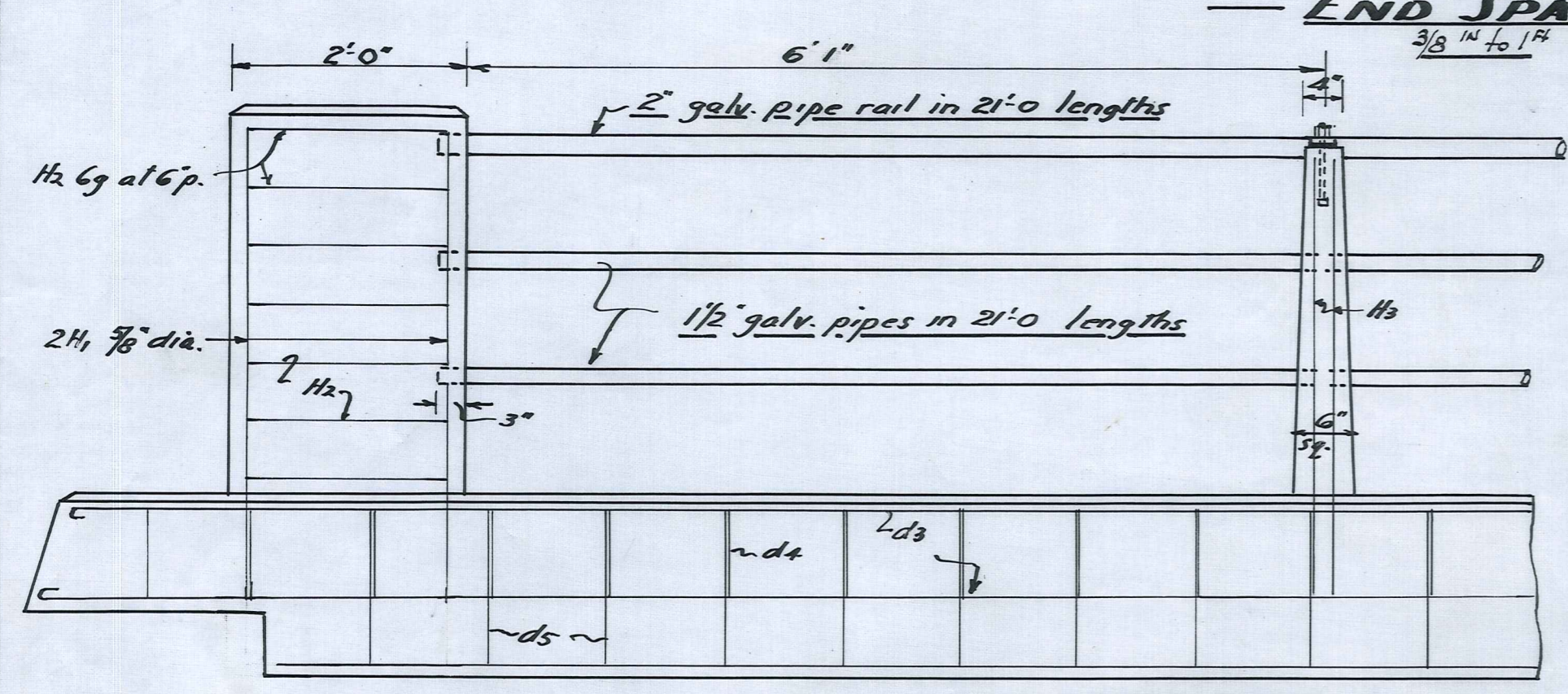
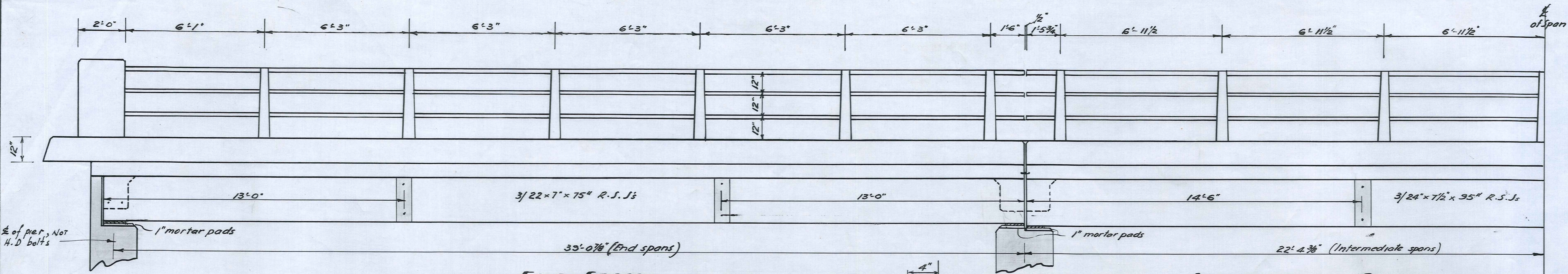
TAIERI RIVER BRIDGE
 KYEBURN - MIDDLEMARCH. M.H.614.

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

SUBMITTED BY	R. ABC. JLF	DATE	Nov 17 1928
DRAWN	...	CHECKED	...
CALCULATIONS	...	TRACED	...

JOB No.
2788/7

F.B.K. 148-149 FILE No. 5/6/26



Steel Schedule							Steel Schedule					Diagram			
Mark	Dia.	Shape	No. off	a	b	Cut length	Diagram	Mark	Dia.	Shape	No. off	a	b	Cut Length	Diagram
A1	1"	I	3	14'-6"		16'-0"		B39	5/8	IV	2	1'-6"	1'-6"	7'-4"	
A2	1"	I	4	13'-0"		20'-6"		B40	1/2	II	4	15'-6"		15'-6"	
A3	1"	I	3	16'-3"		17'-9"	B41	"	"	"	17'-6"		17'-6"		
A4	1/2"	II	18	13'-0"		13'-0"	B42	"	"	"	18'-9"		18'-9"		
A5	1/2"	II	10	14'-0"		14'-0"	B43	6 ga	II	80	bend on site			4'-0"	
A6	1/2"	II	4	6'-3"		6'-3"	P1	5/8	VI	85	10'-0"	2'-2"	23'-2"		
A7	1/2"	II	2	9'-0"		9'-0"	P2	5/8	II	30	10'-0"		10'-0"		
A8	"	"	"	11'-9"		11'-9"	P3	3/4	II	15	13'-6"		13'-6"		
A9	"	"	"	14'-3"		14'-3"	P4	5/8	VII	110			7'-5"		
A10	5/8	III	4	7'-3"	3'-6"	11'-9"	P5	6 ga	I	430	bend on site				5'-3"
A11	5/8	II	1	12'-9"	1'-6"	15'-3"	P6	1/2	I	10	14'-6"				15'-3"
A12	1/2"	II	2	9'-6"		9'-6"	P7	"	"	"	14'-9"				15'-6"
A13	"	"	"	12'-3"		12'-3"	P8	"	"	"	15'-0"				15'-9"
A14	"	"	"	14'-6"		14'-6"	P9	"	"	"	15'-3"				16'-0"
A15	5/8	IV	1	4'-8"	4'-0"	13'-0"	P10	"	"	"	15'-6"				16'-3"
A16	"	"	"	5'-10"		14'-2"	P11	"	"	"	15'-9"				16'-6"
A17	"	"	"	6'-10"		15'-2"	P12	"	"	"	16'-0"				16'-9"
A18	"	"	"	7'-5"		15'-9"	P13	"	"	"	16'-3"				17'-0"
A19	"	"	"	8'-0"		16'-4"	P14	"	"	"	16'-6"				17'-3"
A20	"	"	"	8'-7"		16'-11"	P15	"	"	"	16'-9"				17'-6"
A21	"	"	"	9'-2"		17'-6"	P16	"	"	"	17'-0"			17'-9"	
A22	"	"	"	9'-8"		18'-0"	d1	5/8	VIII	146				20'-0"	
A23	"	"	"	10'-2"		18'-6"	d2	5/8	I	280	18'-6"			19'-6"	
A24	"	"	"	9'-8"		18'-0"	d3(w)	5/8	II	208	24'-3"			24'-3"	
A25	"	"	"	9'-2"		17'-6"	d3(b)	5/8	II	104	21'-2"			21'-2"	
A26	"	"	"	8'-8"		17'-0"	d4	3/8	IX	432				5'-1"	
A27	"	"	"	8'-2"		16'-6"	d5	3/8	IX	432				4'-11"	
A28	"	"	"	7'-7"		15'-11"	S1	3/8	VI	144	1'-8"	10"		4'-9"	
A29	"	"	"	7'-1"		15'-5"	S2	7/8	XIII	48				12'-7"	
A30	"	"	"	6'-0"		14'-4"	S3	1/2	I	48	6'-0"			6'-9"	
A31	"	"	"	4'-10"		13'-2"	S4(w)	3/8	XI	96	1'-9"	5"		4'-11"	
A32	"	"	"	3'-9"	3'-9"	12'-10"	S4(b)	3/8	XI	48	1'-7"	5"		4'-7"	
A33	5/8	IV	2	9'-7"	9'-7"	23'-6"	S5	1/2	I	96	6'-0"			6'-9"	
A34	"	"	18	9'-7"	7'-7"	21'-6"	H1	5/8	III	8	4'-0"	4 1/2"		8'-4"	
A35	5/8	V	1	10'-9"	2'-3"	14'-0"	H2	6 ga	XI	28	1'-9"	5 1/2"		4'-6"	
A36	6 ga	II	80	bend on site		4'-0"	H3	1/2	XIII	160	3'-8"	3"		7'-7"	
A37	1/2	II	10	16'-3"		16'-3"									
B1	1"	I	3	20'-6"		22'-0"									
B2	1"	I	4	19'-0"		20'-6"									
B3	1"	I	3	20'-6"		22'-0"									
B4	1/2"	II	18	13'-0"		13'-0"									
B5	1/2"	II	8	20'-6"		20'-6"									
B6	1/2"	II	4	6'-3"		6'-3"									
B7	1/2"	II	2	9'-0"		9'-0"									
B8	"	"	"	11'-6"		11'-6"									
B9	"	"	"	14'-6"		14'-6"									
B10	5/8	III	2	7'-0"	3'-0"	11'-0"									
B11	"	"	"	"	"	11'-0"									
B12	1/2"	II	2	9'-0"		9'-0"									
B13	"	"	"	11'-6"		11'-6"									
B14	"	"	"	14'-6"		14'-6"									
B15	5/8	V	2	17'-9"	1'-6"	20'-3"									
B16	5/8	IV	1	5'-11"	4'-0"	14'-3"									
B17	"	"	"	7'-0"		15'-4"									
B18	"	"	"	7'-6"		15'-10"									
B19	"	"	"	8'-0"		16'-4"									
B20	"	"	"	8'-7"		16'-11"									
B21	"	"	"	9'-1"		17'-5"									
B22	"	"	"	9'-7"		17'-11"									
B23	5/8	IV	4	10'-0"		18'-4"									
B24	5/8	IV	1	9'-7"		17'-11"									
B25	"	"	"	9'-1"		17'-5"									
B26	"	"	"	8'-7"		16'-11"									
B27	"	"	"	8'-0"		16'-4"									
B28	"	"	"	7'-7"		15'-11"									
B29	"	"	"	7'-0"		15'-4"									
B30	"	"	"	5'-11"		14'-3"									
B31	"	"	"	4'-10"		13'-2"									
B32	"	"	"	3'-8"		11'-8"									
B33	5/8	IV	2	9'-7"	9'-7"	23'-6"									
B34	5/8	IV	18	9'-7"	7'-7"	21'-6"									
B35	5/8	V	2	17'-9"	1'-6"	20'-3"									
B36	5/8	IV	1	3'-0"	3'-0"	10'-4"									
B37	"	"	"	4'-6"	4'-0"	12'-10"									
B38	"	"	"	2'-9"	2'-9"	9'-10"									

Note: Dimensions are centre to centre of rods.

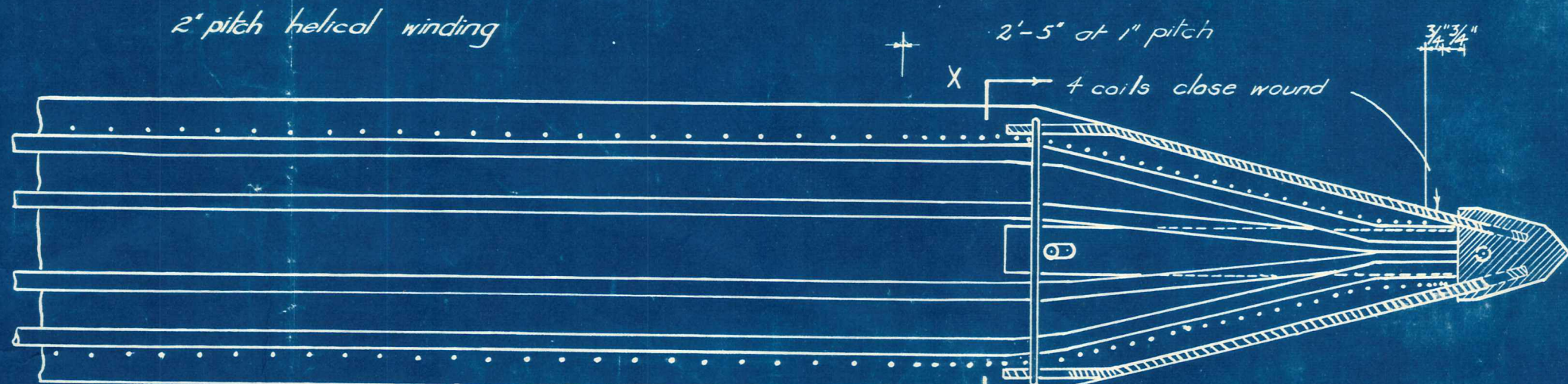
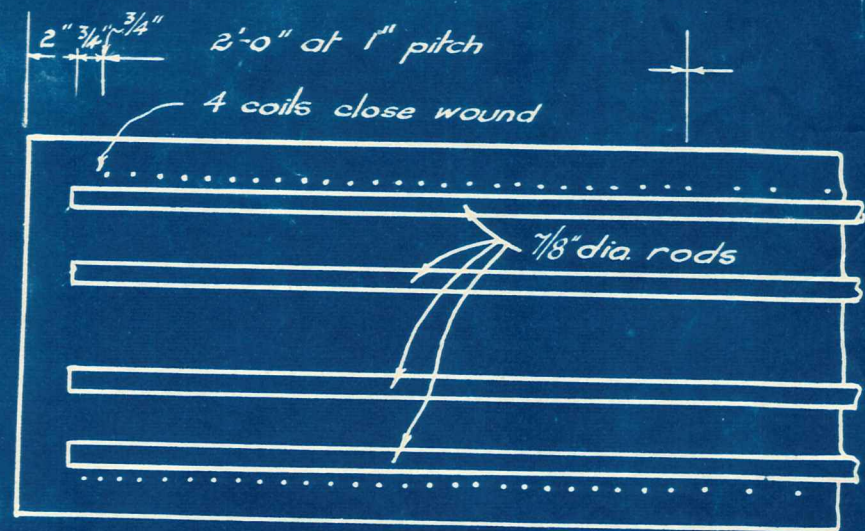
MANIOTOTO COUNTY COUNCIL

TAIERI RIVER BRIDGE
 KYEBURN - MIDDLEMARCH M.H. NO.614.

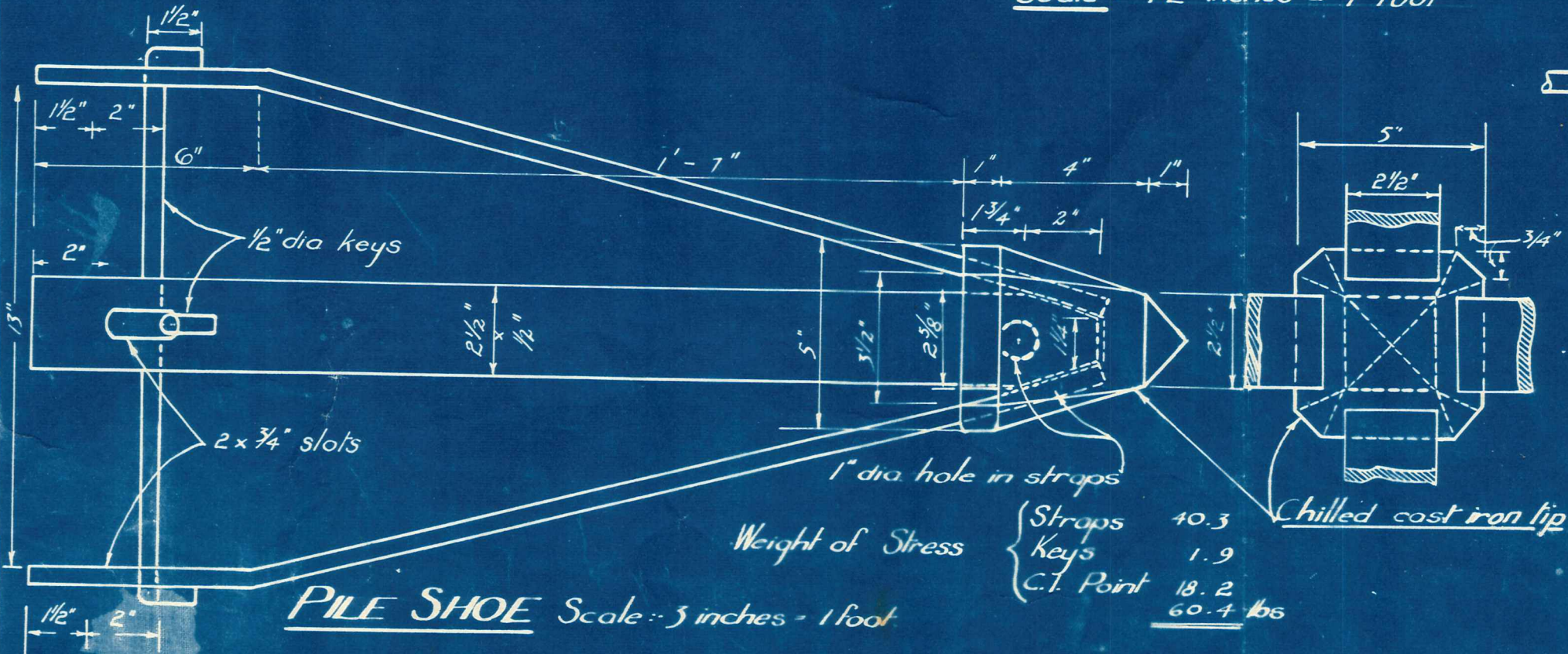
DUFFILL, WATTS & KING
 CIVIL ENGINEERS AND SURVEYORS
 DUNEDIN and INVERCARGILL

DESIGNED BY	NAME	DATE	JOB NO.
CHECKED BY	DATE		
DRAWN BY			

2788/9



Scale: 1 1/2 inches = 1 foot



WEIGHTS OF PILES OF VARIOUS LENGTHS

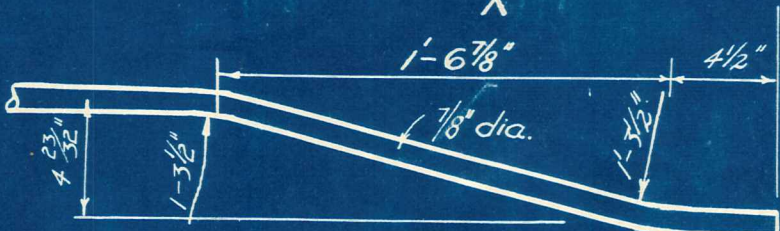
Scale: 1/2" = 1'-0"

Nominal length in feet	10	15	20	25	30	35	40	45	50	55	60
Weight in tons	.87	1.97	1.86	2.36	2.84	3.34	3.83	4.32	4.82	5.31	5.80

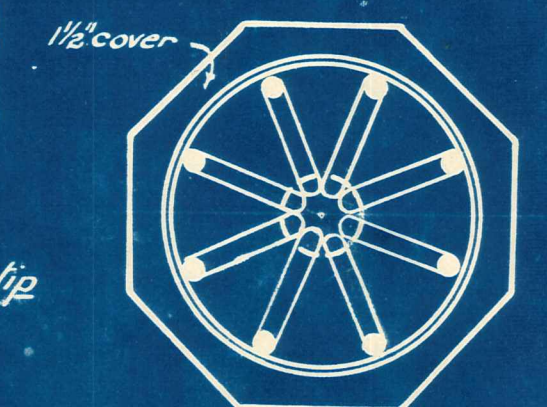
NOTE

Minimum weight of monkey for piles under 30 ft long is 3 tons provided specified bearing does not exceed 25 tons. If bearing exceeds 25 tons a 4 ton monkey must be used, irrespective of the pile length.

DUFFILL, WATTS & KING
CONSULTING ENGINEERS
DUNEDIN



CRANKED END OF PILE ROD



SECTION X-X

QUANTITIES

16" Oct. Pile	Concrete (cub. ft.)	7/8" dia. Rods (lin. ft.)	No. 6g. Wire (lin. ft.)
Top Section 2'-3 1/2" long	3.375	17	94
Middle Section per ft. run	1.473	8	20.25
Point Section 2'-6 1/2" long	2.229	20.66	75.

Nominal length of Pile and Length of Reinforcing Steel

STD 16" OCTAGONAL R.C. PILE

(FOR FRESH WATER)

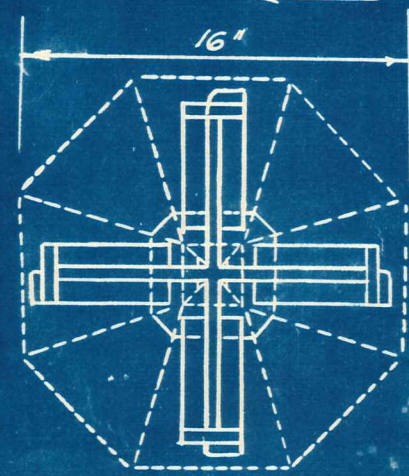
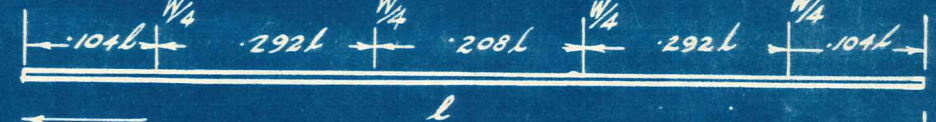
Piles wound helically with No. 6g. wire (swg)

METHODS OF LIFTING AND HANDLING PILES

1. Piles under 20ft. long may be slung from a single point located anywhere along the pile
2. Piles from 20ft. to 31 ft. long may be slung from a single point located a distance of 0.293 L from the pile head
3. Piles over 31 ft. and up to 45 ft. shall be slung from two points located a distance of 0.207 L from each end.
4. Piles over 45 ft. and up to 66 ft. long, shall be slung from three points as indicated below



5. Piles over 66 ft. and up to 88 ft. long shall be slung from four points as indicated below.



PLAN OF SHOE

For arrangements involving more than two points of pick up, a suitable system of pulleys and/or beam must be used to give equal vertical reactions at each point.

NOTE

The above is based on a limiting stress of 12,000 lbs/sq. in. in the steel, assuming 100% impact during lifting.

P.W.D. 127636

D.W.K. 5/102.

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