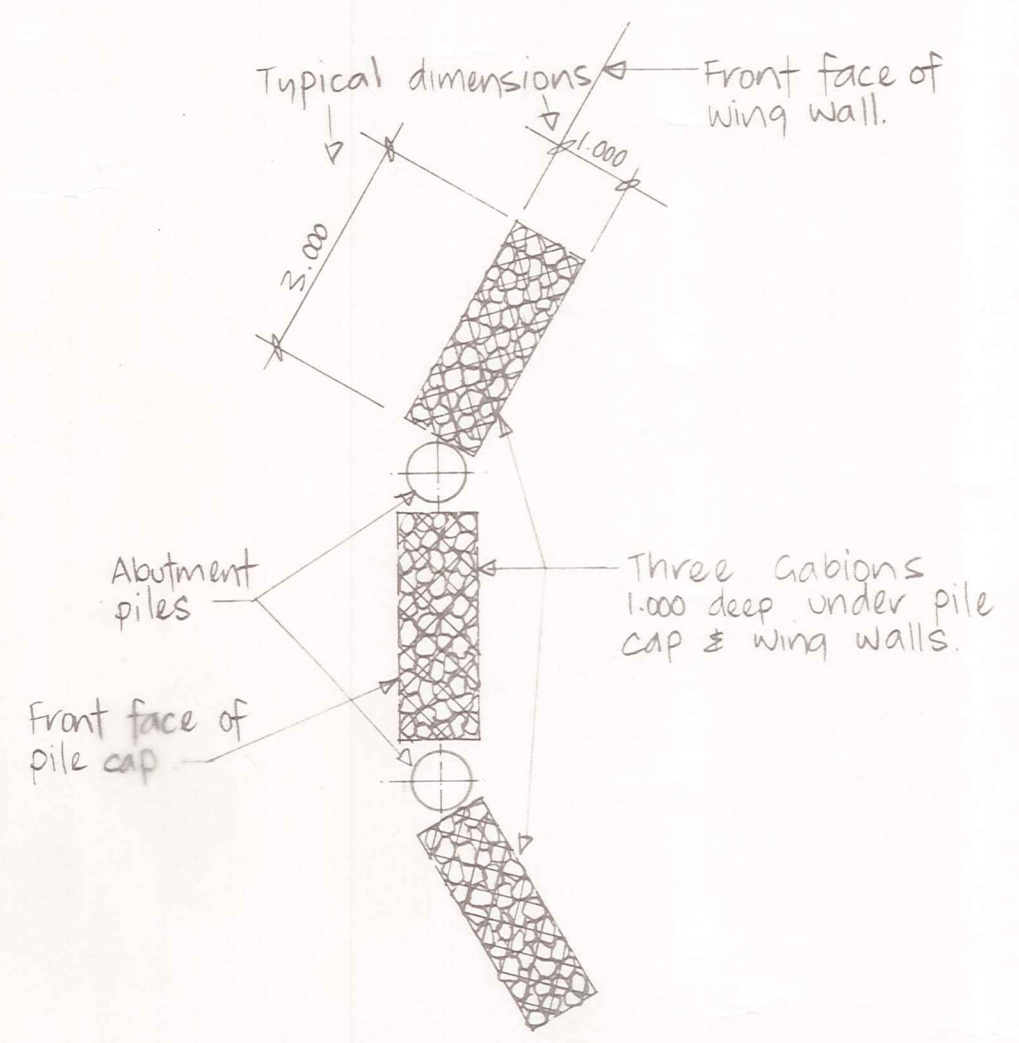
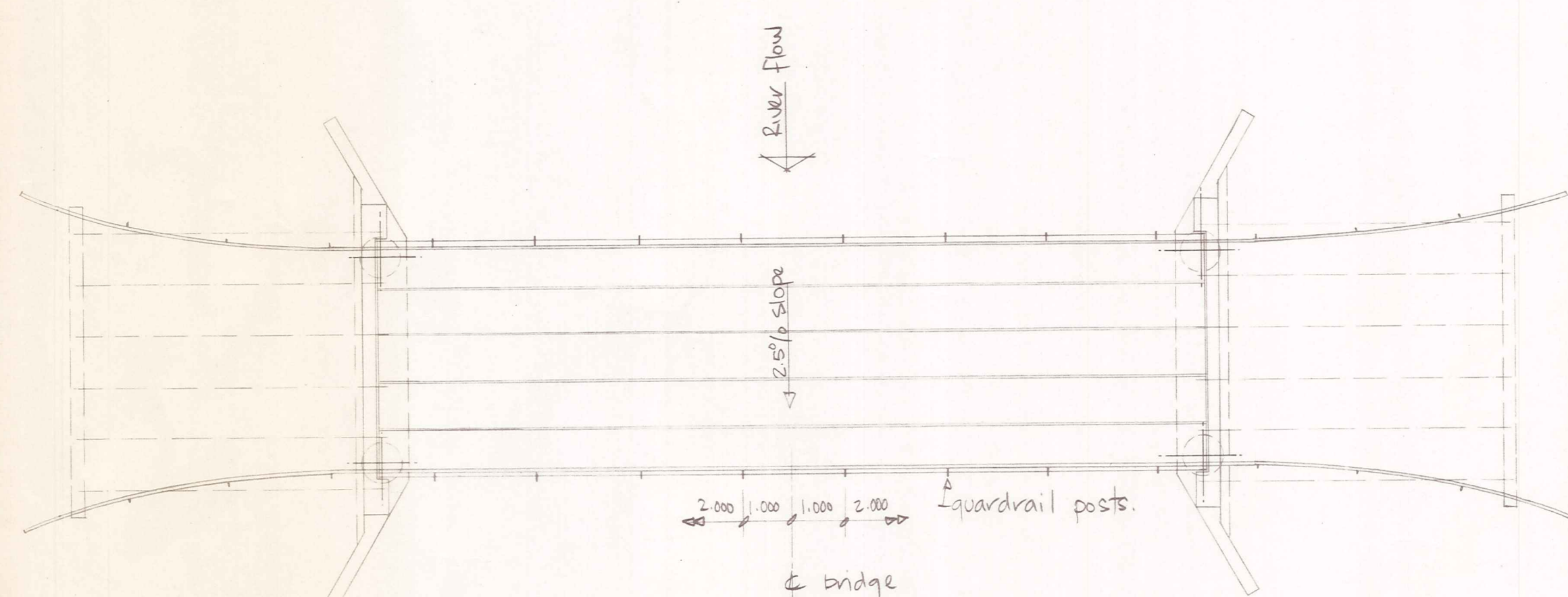
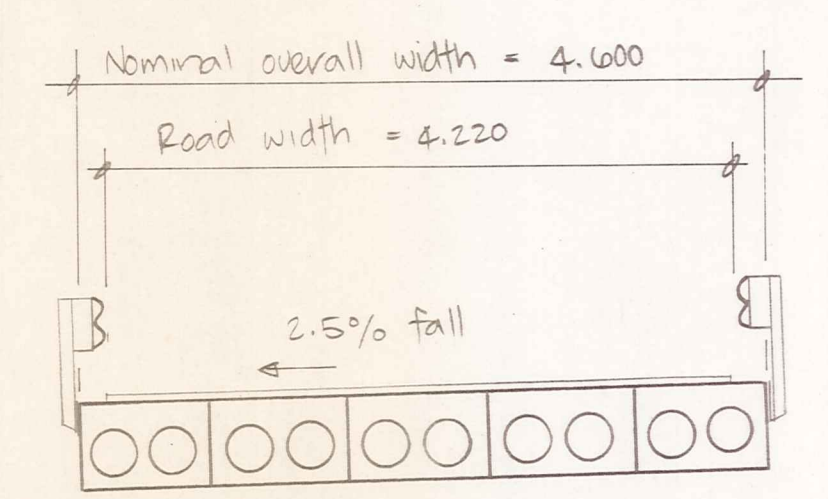


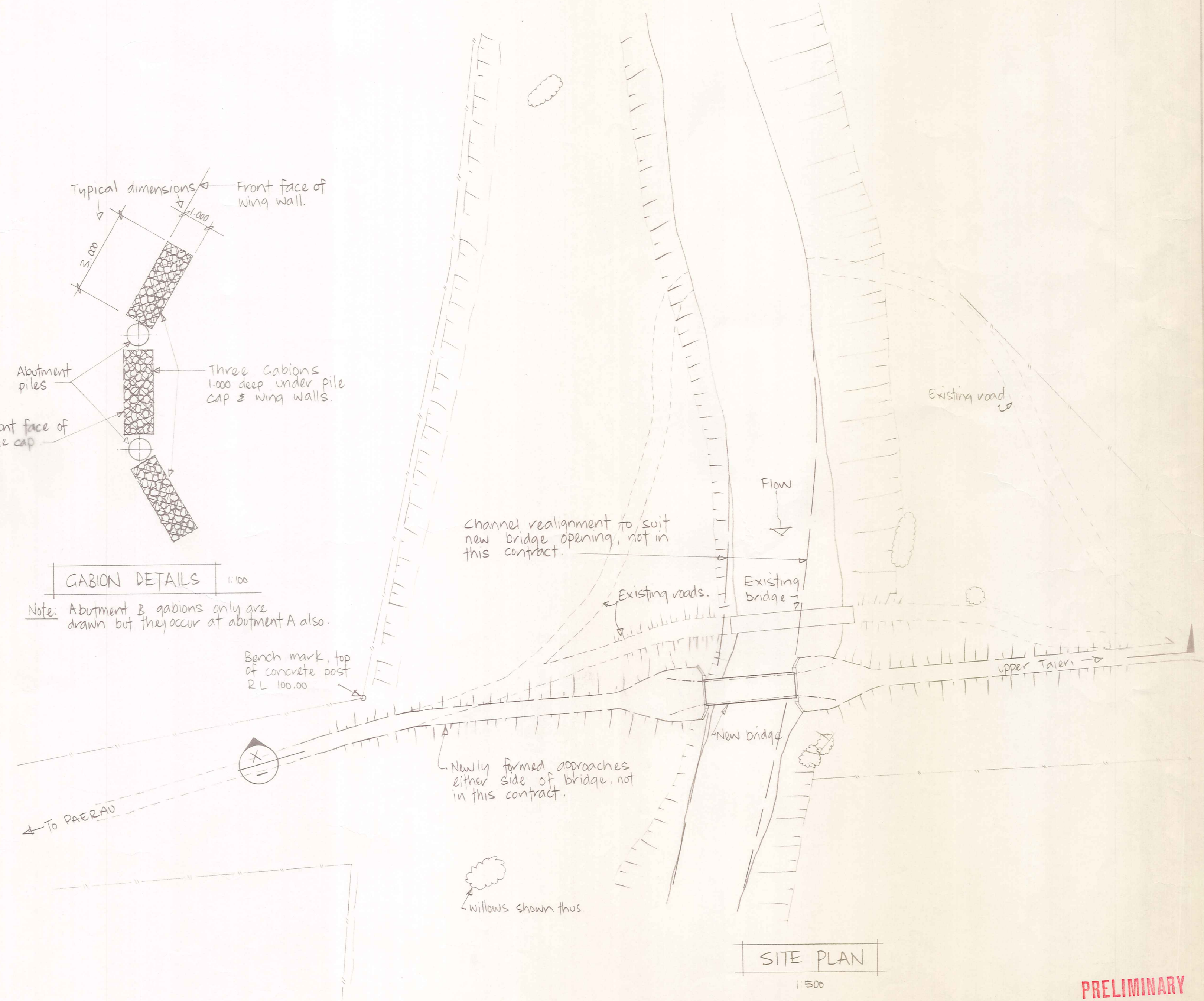
SECTION (X)
Scale: 1:500 Horizontal
1:100 Vertical



CABION DETAILS 1:100
Note: Abutment B gabions only are drawn but they occur at abutment A also.



TYPICAL DECK SECTION 1:50



SITE PLAN 1:500

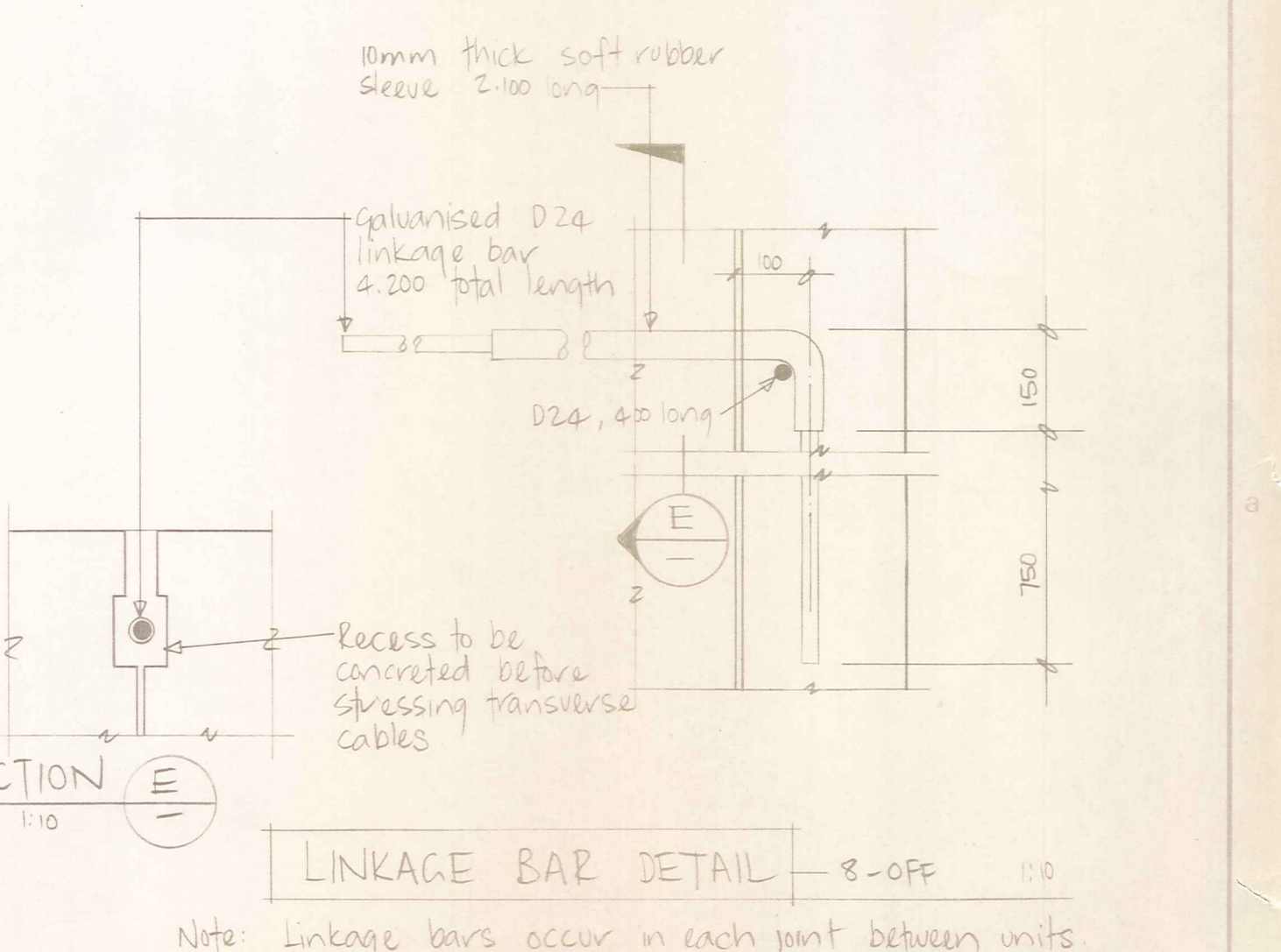
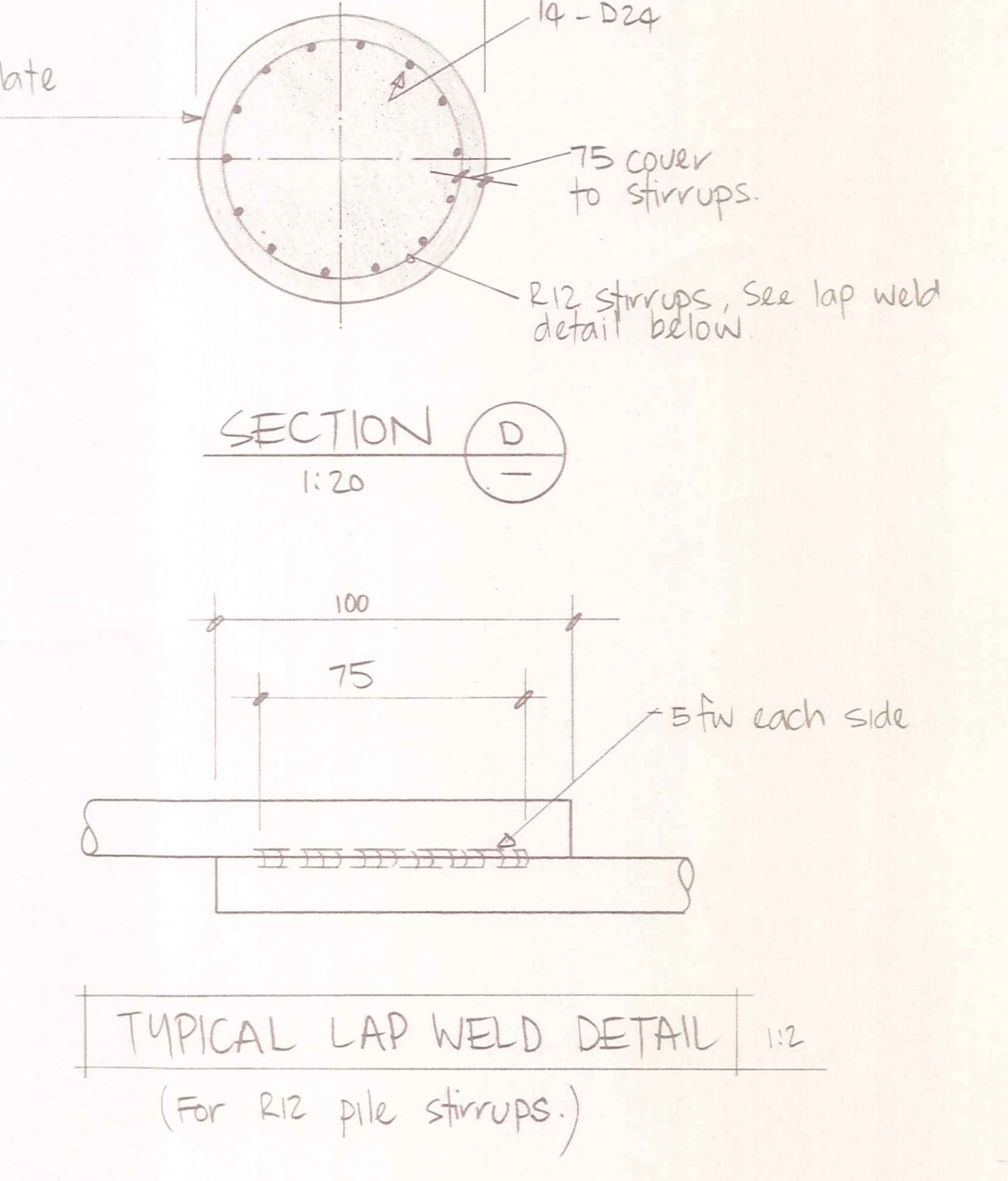
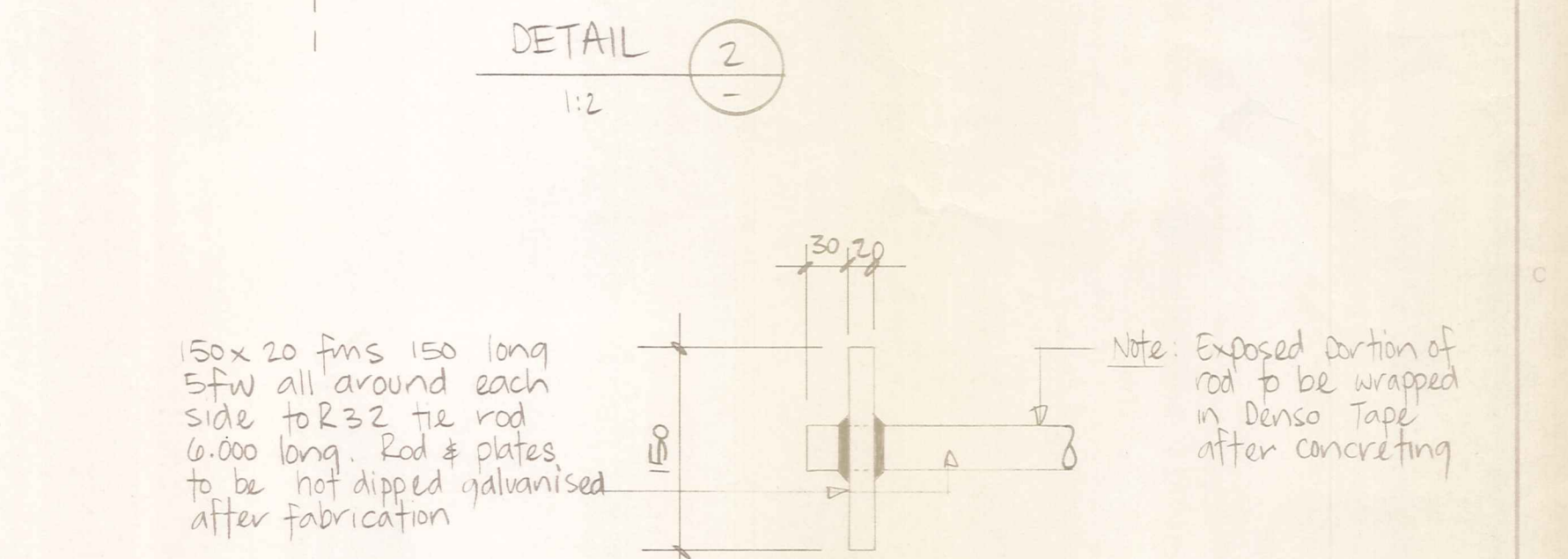
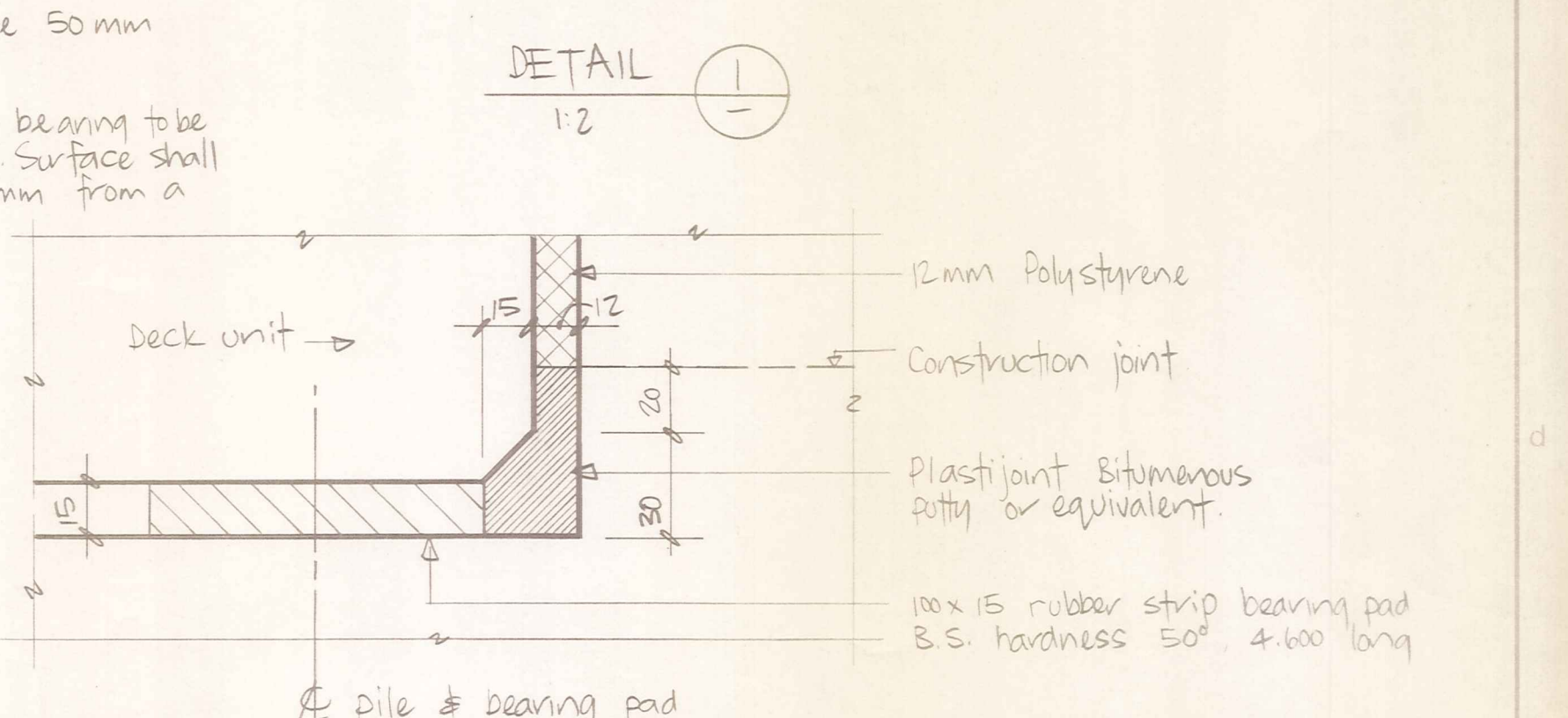
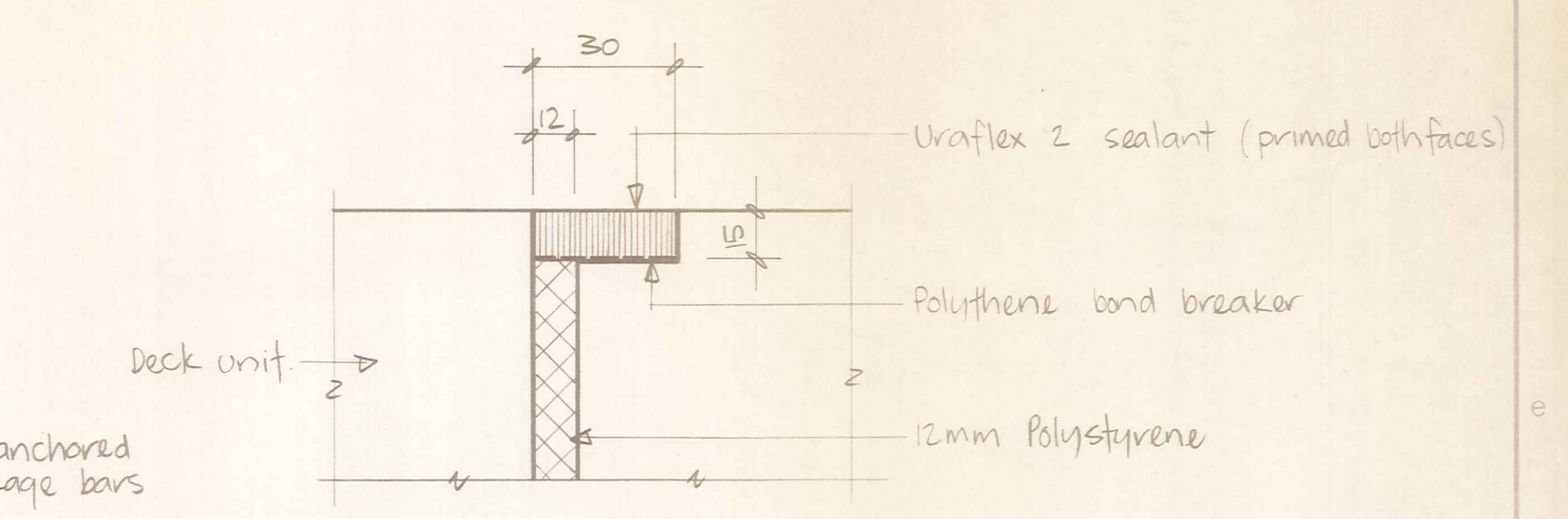
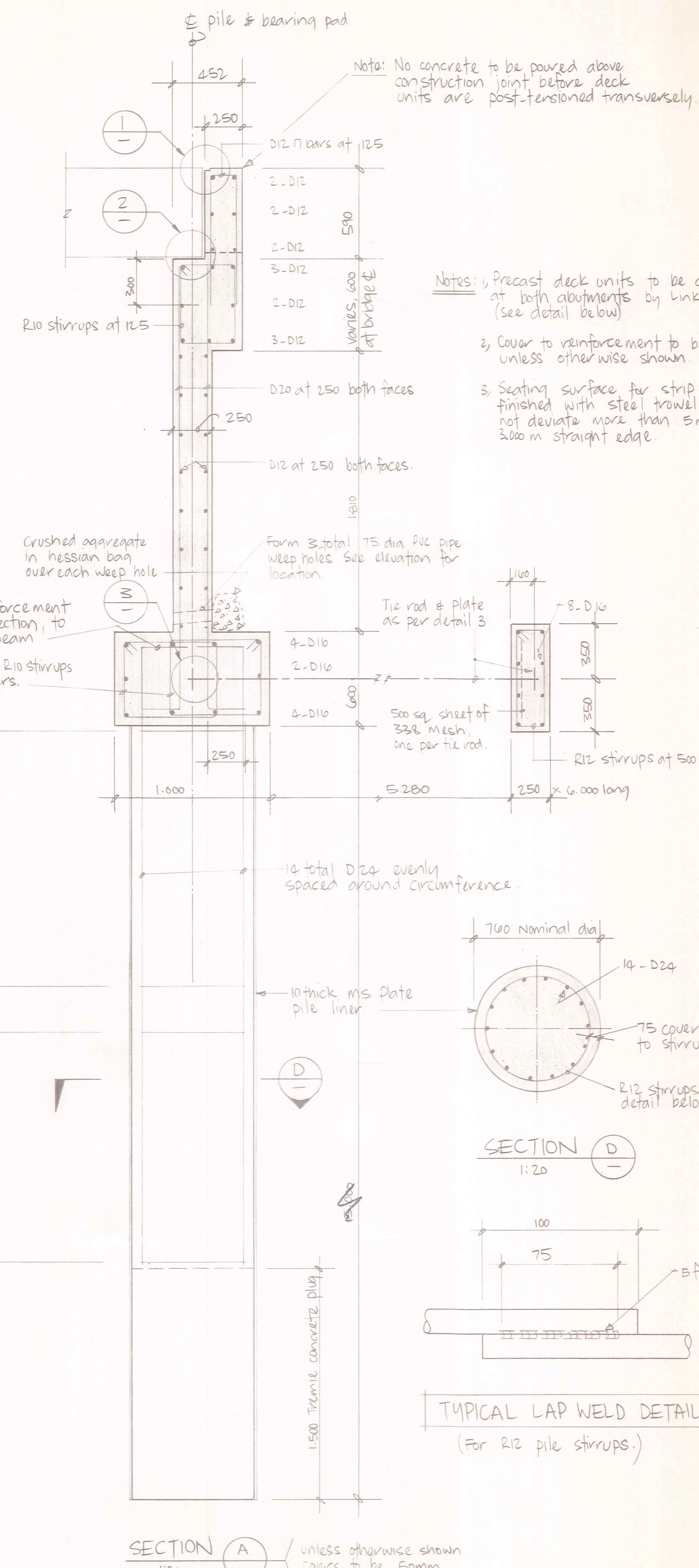
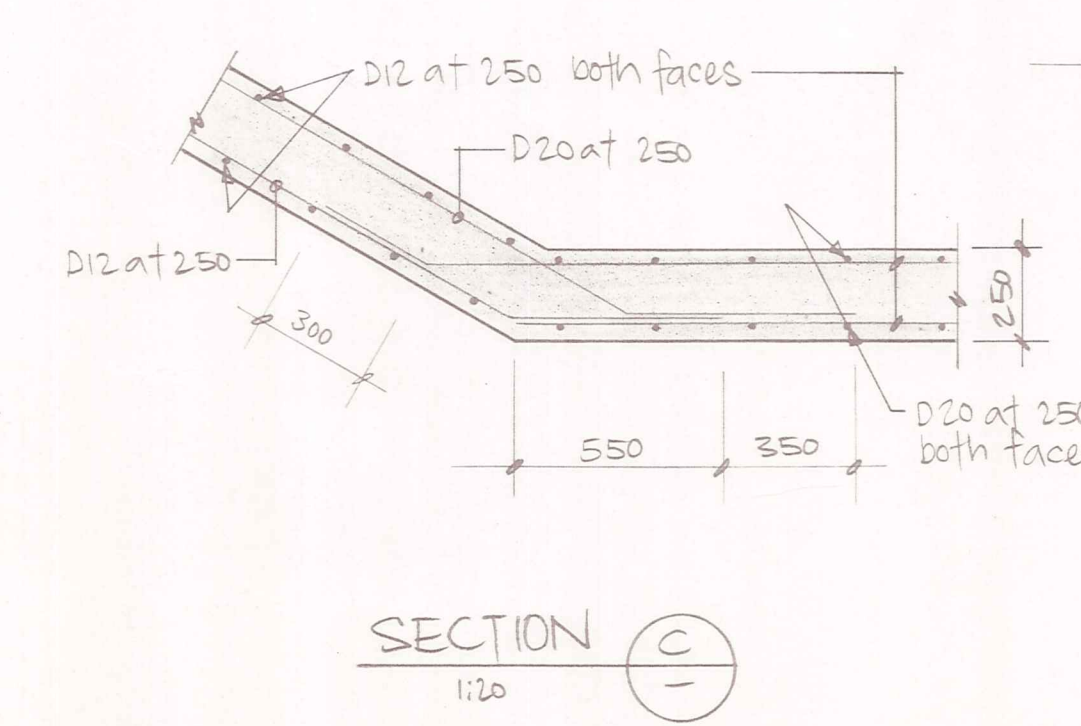
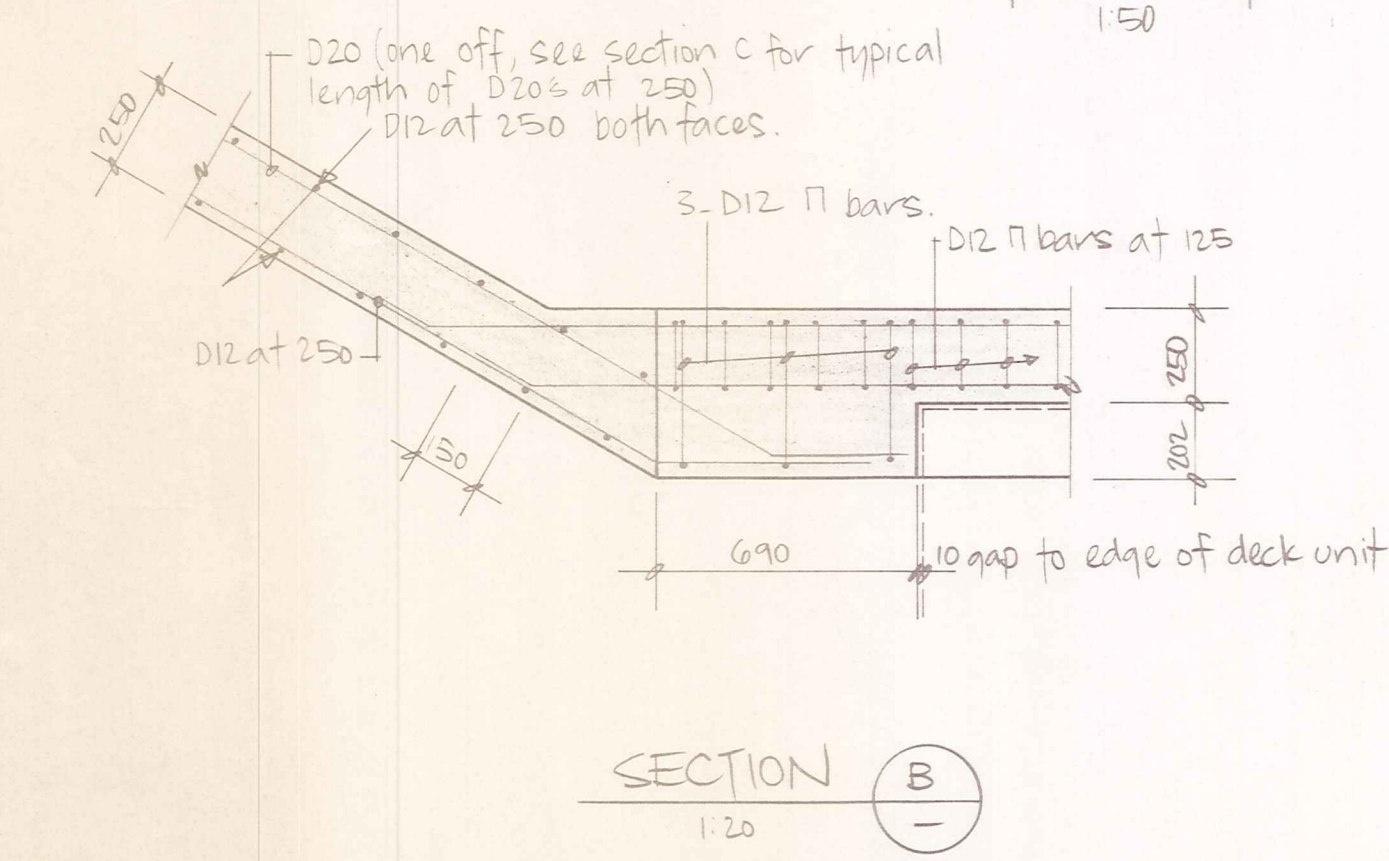
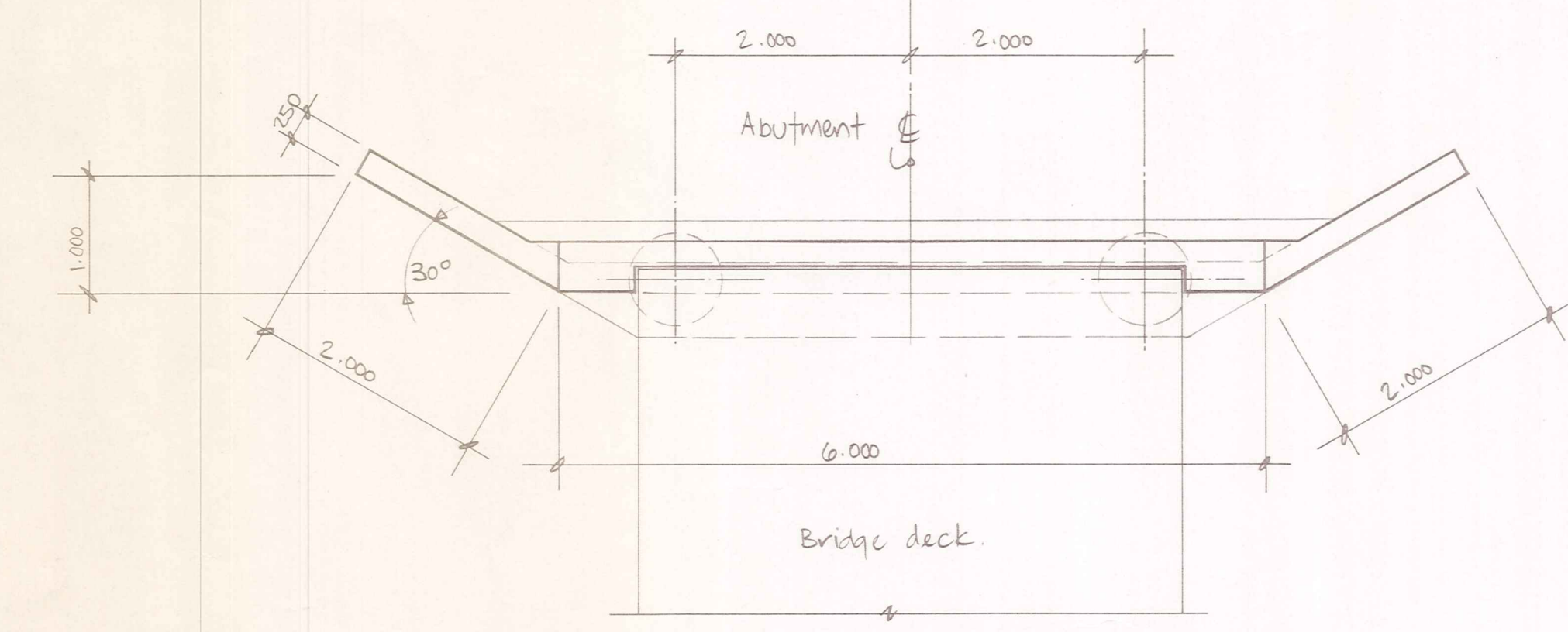
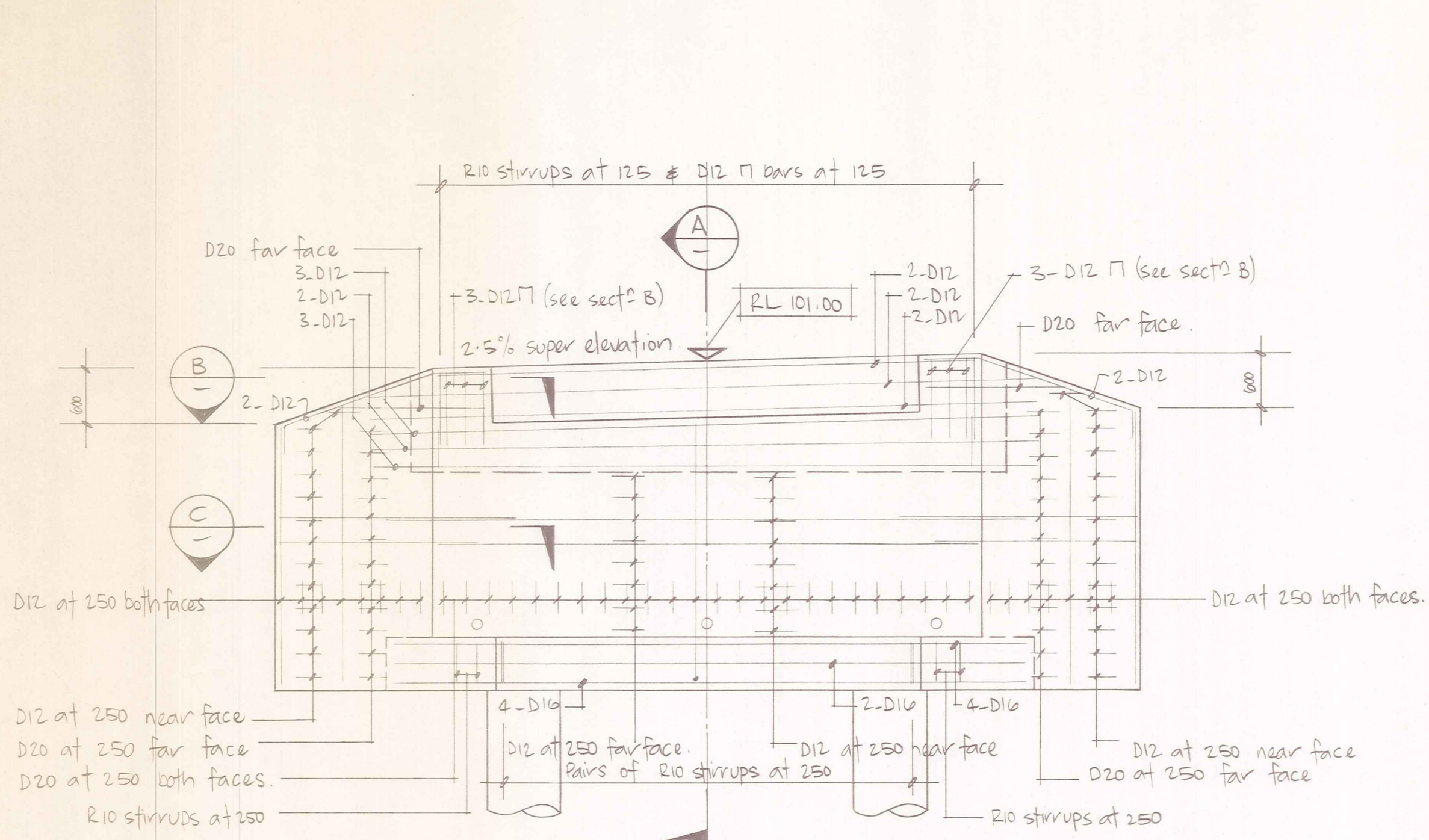
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Dunedin PO Box 5268 Ph 777-133 Invercargill PO Box 576 Ph 83049
Cromwell PO Box 82 Ph 50-391

MANIOTOTO
COUNTY COUNCIL

LOGANBURN BRIDGE
GENERAL ARRANGEMENT

AMENDMENTS			NAME	DATE	JOB NO.	Sheet No.
NO.	BY	DATE	ER Wilson	SEPT '81	9815	1
			WJ Beechey			
			ER Wilson			
					File 6/9/18	L.B.

PRELIMINARY

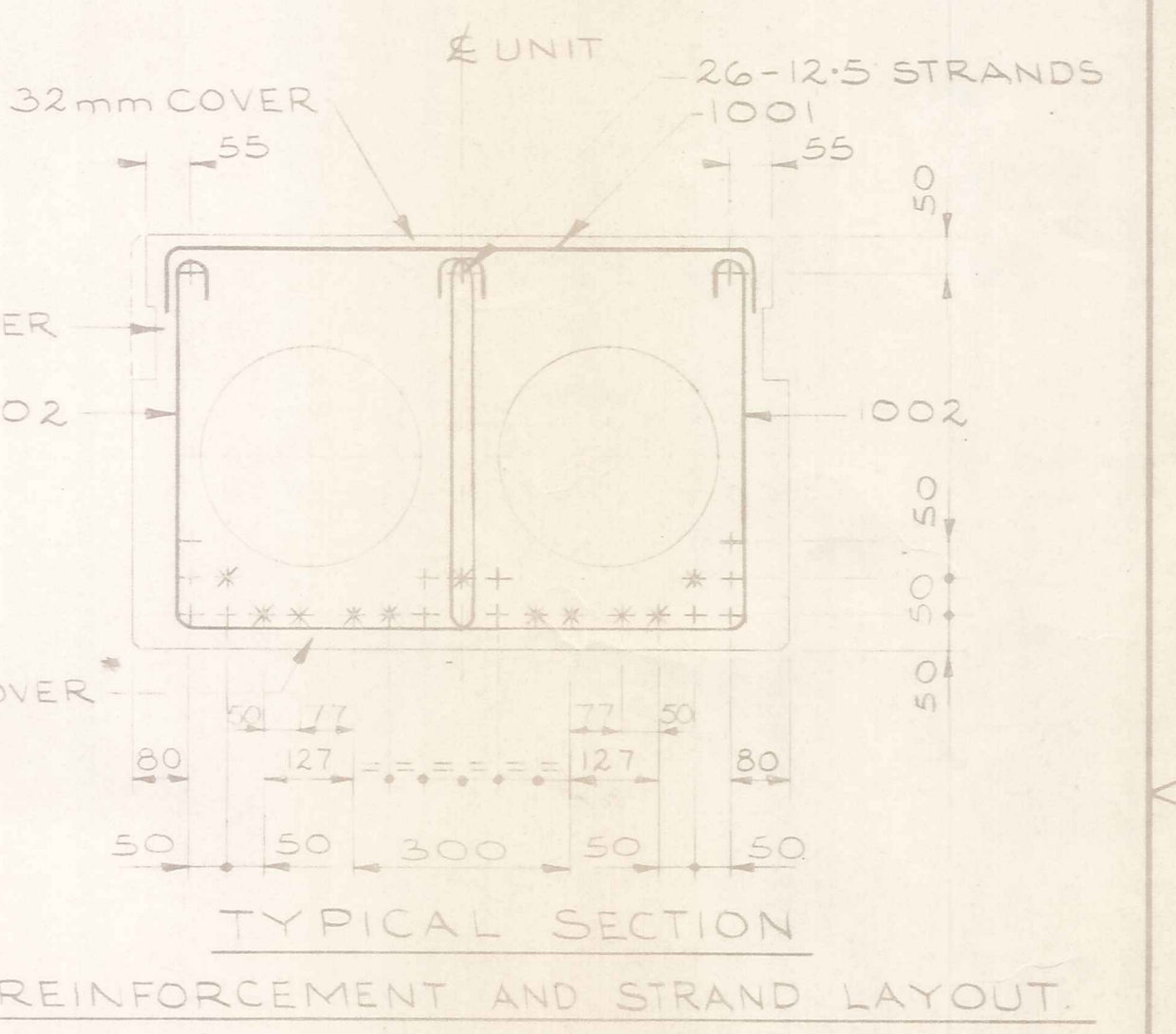
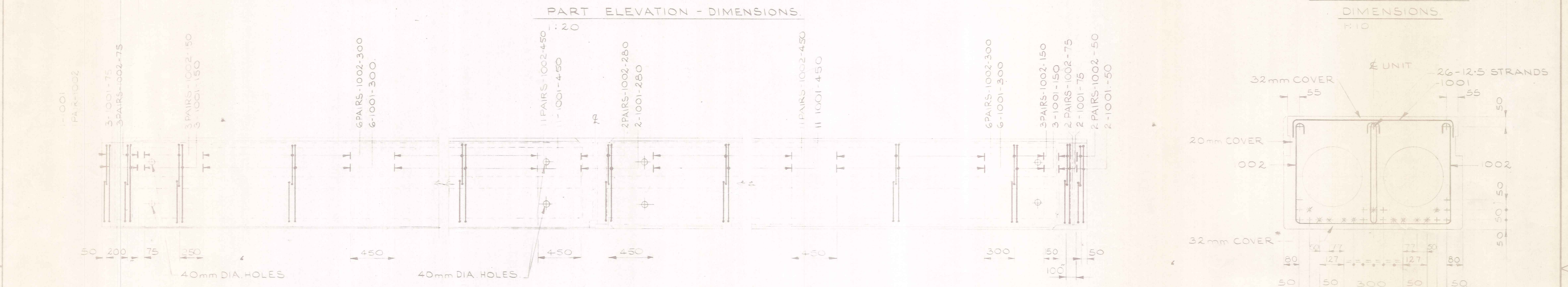
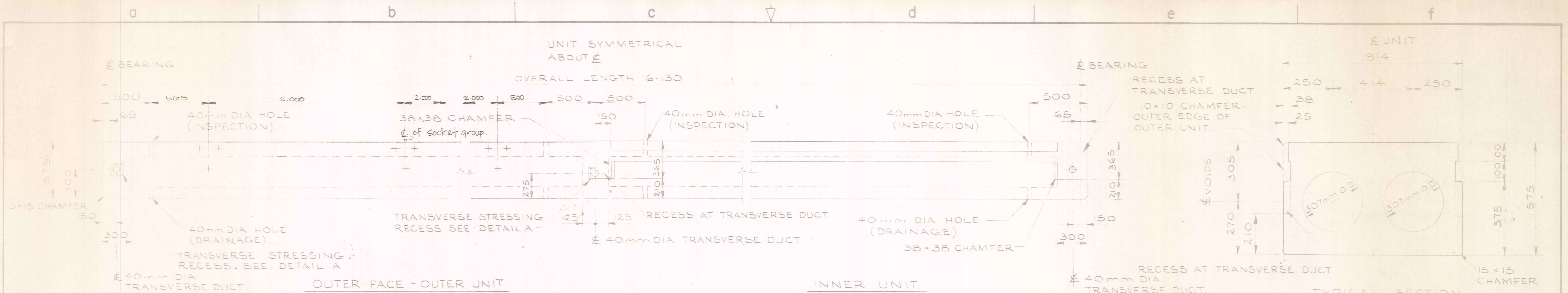


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MANIOTOTO
COUNTY COUNCIL

LOGANBURN BRIDGE
ABUTMENT DETAILS

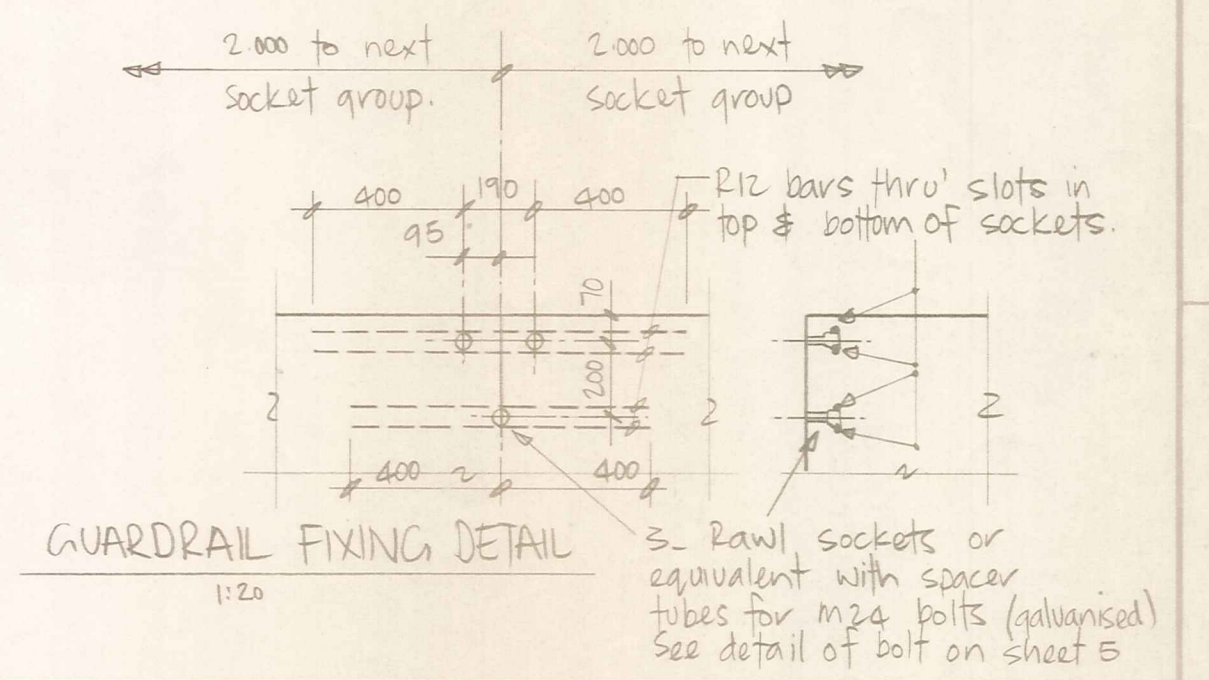
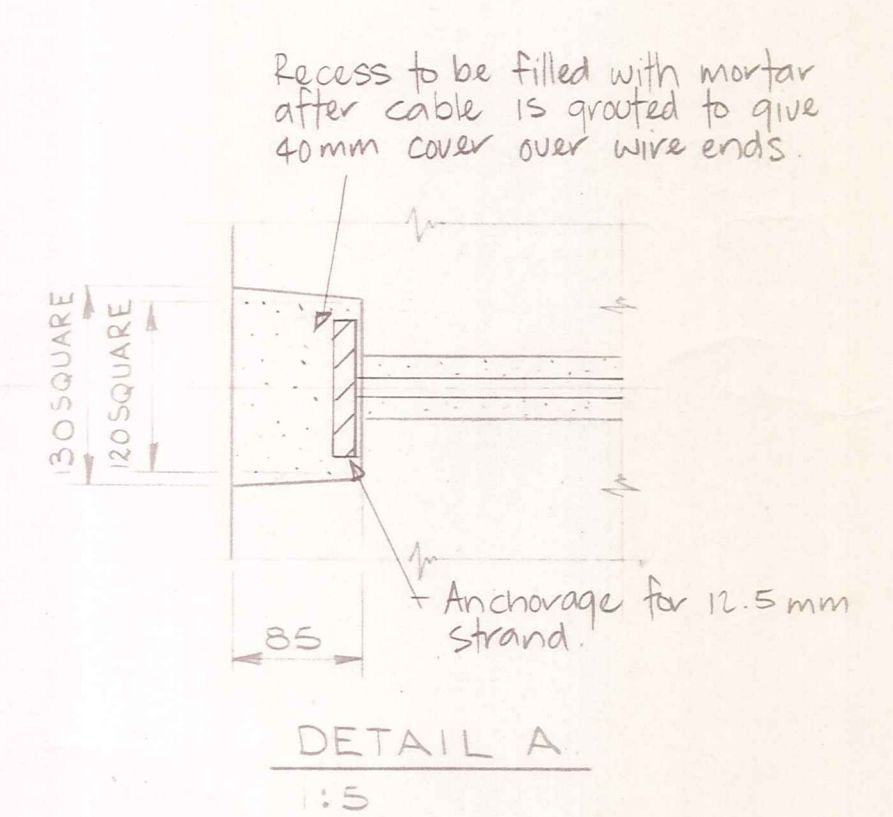
AMENDMENTS			NAME		DATE	JOB NO.	Sheet No.	
NO	BY	DATE	App'd.	Surveyed		9815	2	
				Drawn	FEWISON			of 5 sheets
				Calculations	WJ BEEHUIS			
				Traced	ERWISON			
				Checked				
				Approved		File 6/9/18	L.B.	



REINFORCEMENT SCHEDULE (FOR ONE UNIT.)

MARK NO	OFF LENGTH	SHAPE	N.T.S	NOTES
001	50		1-130	a. MARK DESIGNATION OF BARS. I.E. 1001: 10 = DIAMETER IN mm. 01 = 1ST BAR MARK IN UNIT
002	50		1-595	b. ALL BENDS SHALL COMPLY WITH C.D. 103. c. ALL DIMENSIONS ARE FROM OUTSIDE TO OUTSIDE UNLESS SHOWN OTHERWISE. d. ALL BARS SHALL BE PLAIN ROUND STEEL GRADE 275.

- NOTES
- RECESS FOR TRANSVERSE STRESSING IN OUTER UNIT SHALL BE DIMENSIONED TO SUIT THE PRESTRESSING SUPPLIER'S RECOMMENDATIONS FOR THE SYSTEM USED.
 - STRANDS SHALL BE RELEASED SLOWLY AND AFTER RELEASE SHALL BE CUT AND GROUND OFF FLUSH WITH THE CONCRETE AT THE END OF THE UNIT. A PROTECTIVE COATING OF COAL TAR EPOXY SHALL BE APPLIED AS SPECIFIED BEFORE THE UNIT LEAVES THE CASTING YARD.
 - INSPECTION HOLES SHALL EXTEND TO THE VOID FORMERS ONLY AND SHALL BE MORTARED UP AFTER FINAL INSPECTION OF THE UNITS. DRAINAGE HOLES SHALL EXTEND THROUGH THE VOID FORMERS AND INTO THE VOID.
 - TRANSVERSE STRESSING REQUIREMENTS:
ONE CABLE AT EACH END & ONE CABLE AT MIDSPAN
EACH CABLE TO CONSIST OF 1-12.5mm STRAND STRESSED TO 116 kN



Amendments		DUFFILL WATTS & KING LTD. CONSULTING CIVIL & STRUCTURAL ENGINEERS DUNEDIN, INVERCARGILL, BALCLUTHA, CROMWELL	MANIOTOTO COUNTY COUNCIL	LOGANBURN BRIDGE	Job No	Sheet
No	By				Date	APPROVED
DESIGNED		A. G. STIRRAT CHIEF CIVIL ENGINEER		ORIGINAL SCALES	FILE	DOSSIER
DRAWN		CIVIL ENGINEERING		0/11/11	7004	8
TRACED		HEAD OFFICE		JOB	CODE	SHEET
DRG SUP D		N.C. MCLEOD Commissioner		REVISION		
DES SUP D		STANDARD BRIDGE DESIGNS - PRESTRESSED CONCRETE BEAMS		PRELIMINARY		
RECOMMENDED:		PRECAST PRE-TENSIONED DOUBLE CORE UNITS		DIMENSIONS, REINFORCEMENT, STRESSING DETAILS FOR 16m UNIT		
BY		575mm DEEP - 2m TO 16m SPANS				
CHECKED BY		MINISTRY OF WORKS AND DEVELOPMENT				
DATE		1976				
APPROVED		J.B.S. HUIZING CHIEF DESIGNING ENGINEER				
DATE		22/11/76				

1. UNIT DETAILS

UNIT DEPTH	458 mm								575 mm					
	6m	7m	8m	9m	10m	11m	12m	13m	12m	13m	14m	15m	16m	
OVERALL LENGTH (m)	6.13	7.13	8.13	9.13	10.13	11.13	12.13	13.13	12.13	13.13	14.13	15.13	16.13	
12.5mm STRANDS	NUMBER	8	10	11	13	14	16	20	19	21	22	24	26	
	TOTAL LENGTH (m)	52.0	75.0	93.5	123.5	147.0	184.0	225.0	270.0	237.5	283.5	319.0	372.0	429.0
REINFORCEMENT	TOTAL WEIGHT (kg)	67	76	81	90	95	105	109	119	96	101	107	117	
CONCRETE VOLUME PER UNIT	INNER UNIT (m ³)	1.69	1.95	2.21	2.46	2.73	2.99	3.24	3.50	4.53	4.90	5.26	5.63	5.99
	OUTER UNIT (m ³)	1.73	1.99	2.26	2.52	2.79	3.06	3.32	3.59	4.61	4.98	5.35	5.73	6.10
HANDLING MASS	INNER UNIT (tonnes)	4.4	5.1	5.7	6.4	7.1	7.8	8.4	9.1	11.8	12.7	13.7	14.6	15.6
	OUTER UNIT (tonnes)	4.5	5.2	5.9	6.6	7.3	8.0	8.6	9.3	12.0	12.9	13.9	14.9	15.9
STIRRUPS	N ^o OFF 1001	28	32	34	38	40	44	46	50	40	44	46	48	50
	N ^o OFF 1002	56	64	68	76	80	88	92	100	80	88	92	96	100

NOTES: 1. STRAND LENGTH IS BASED ON NOMINAL LENGTH + 0.5m.
2. ASSUMED CONCRETE DENSITY 2600 kg/m³.

2. PRESTRESSING FORCES AT INITIAL TENSIONING

UNIT SPAN	6m	7m	8m	9m	10m	11m	12m	13m	12m	13m	14m	15m	16m
TOTAL PER UNIT (kN)	977	1221	1343	1587	1709	1954	2198	2442	2320	2564	2686	2931	3175

NOTE: 12.5mm STRAND IS ASSUMED TO HAVE A CHARACTERISTIC STRENGTH OF 165 kN PER STRAND.

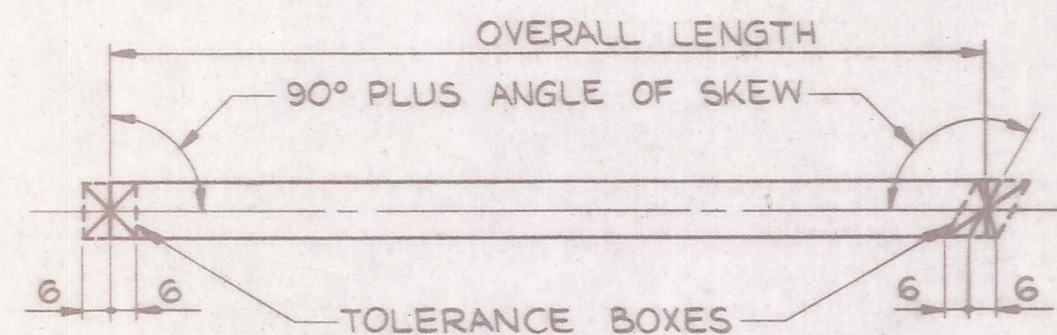
3. TOLERANCES

3.1 DIMENSIONS AT TIME OF ERECTION

ACTUAL OVERALL LENGTH AND SQUARENESS.

THE UNIT END SURFACES SHALL LIE WITHIN THE "TOLERANCE BOXES" SHOWN IN DIAGRAM A.

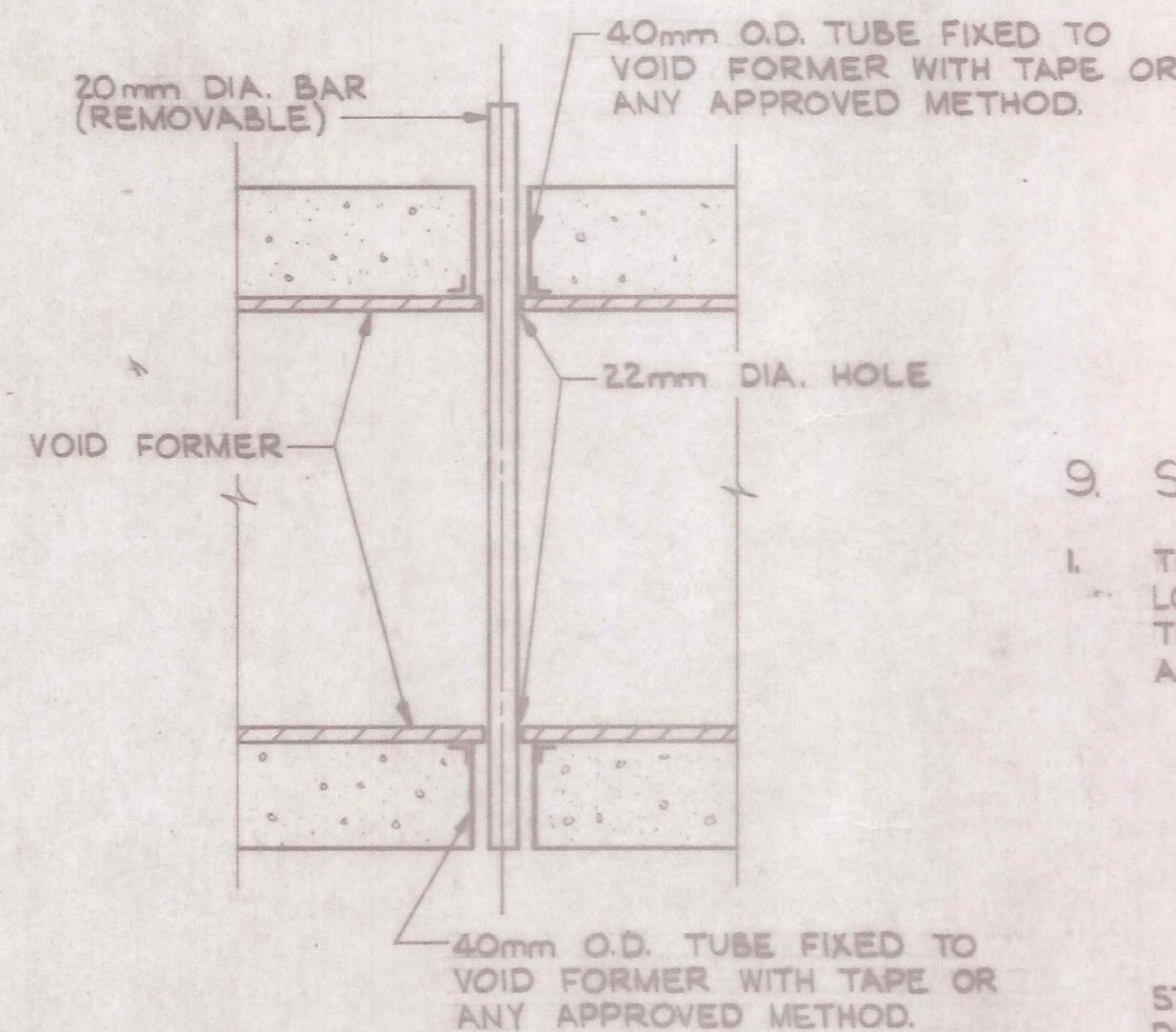
DIAGRAM A



	458mm	575mm
a. OVERALL LENGTH	±12mm	±15mm
b. PLANE SURFACE - DEVIATION FROM 1.5m STRAIGHT EDGE	6mm	6mm
c. ALL CROSS SECTIONAL DIMENSIONS	±6mm	±6mm
d. DIFFERENCE IN LEVEL OF TOP SURFACE BETWEEN ADJACENT UNITS IN PLACE	12mm	15mm
e. HORIZONTAL DEVIATION (SEE SPECIFICATION)	6mm	6mm
f. SMALLEST WEB THICKNESS	+6mm, -4mm	+6mm, -4mm
g. SMALLEST FLANGE THICKNESS	±6mm	±6mm
h. DIAPHRAGM THICKNESS	±12mm	±12mm
i. HOGGING VARIATION (SEE SPECIFICATION)	±12mm	±15mm

3.2 LOCATION OF STEEL AND CAST-IN ITEMS

a. PRESTRESSING STRANDS IN ANY DIRECTION	±3mm
b. LOCATION OF AN ITEM IN RELATION TO ANY OTHER ITEM WITHIN ITS GROUP	±10mm
c. TRANSVERSE DUCT POSITION	±6mm



INSPECTION AND DRAINAGE HOLE DETAILS

4. CONCRETE COVER

COVER TO ALL PRESTRESSING COMPONENTS 40mm
COVER TO ALL REINFORCING STEEL 30mm OR AS SHOWN
COVER ADJACENT TO CORED HOLES 10mm

5. DESIGN LOADING: HN-HO-72

6. SPECIFICATION

THIS DESIGN IS BASED ON MATERIALS AND WORKMANSHIP BEING IN ACCORDANCE WITH THE CURRENT M.W.D. SPECIFICATION CD.201.

7. HANDLING

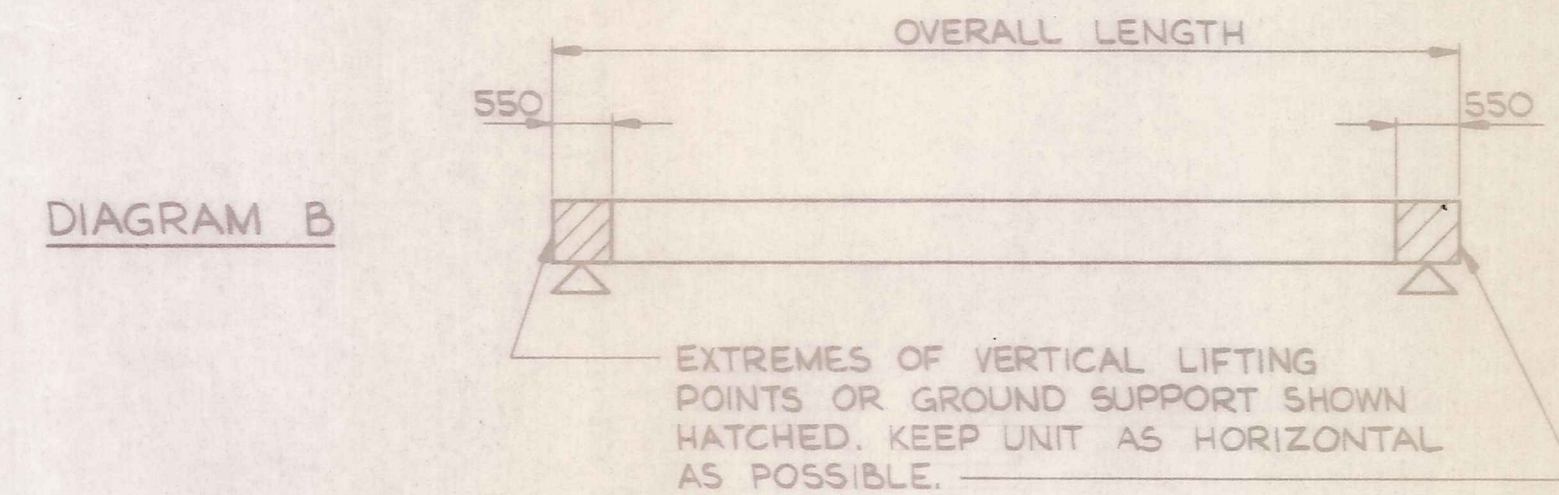
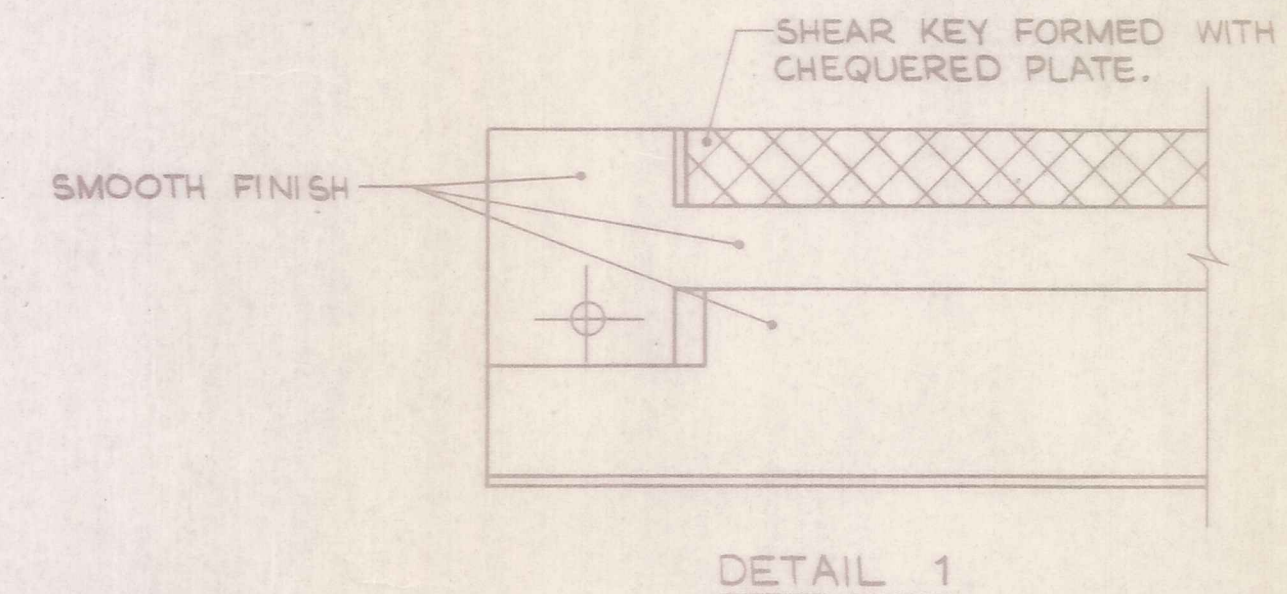


DIAGRAM B

8. SURFACE FINISHES

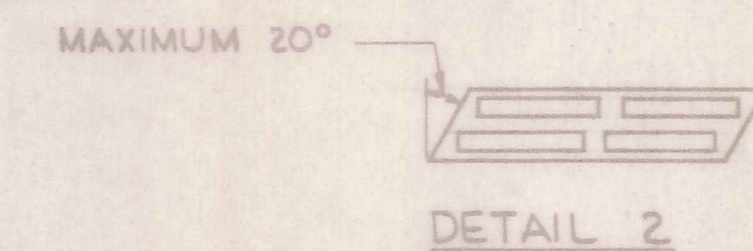
- a. TOP SURFACE - BROOM FINISH AS SPECIFIED IN CLAUSE 6.6.6 OF CD.101.
- b. SIDE AND UNDERSIDE SURFACE - SMOOTH FINISH EXCEPT SHEAR KEY. SEE DETAIL 1.



DETAIL 1

9. SKEW

- 1. THE MAXIMUM PERMISSIBLE SKEW OF THE UNITS SHALL BE 20° UNLESS A SPECIFIC LIVE LOAD ANALYSIS IS MADE. THE CORES SHALL BE STAGGERED TO ALLOW SKEW OF THE TRANSVERSE DUCT. THE END OF THE UNIT SHALL BE SKEWED TO THE REQUIRED ANGLE. SEE DETAIL 2.



DETAIL 2

STIRRUPS SHALL BE RIGHT TO & EXCEPT WITHIN 1.0m OF EACH END AND MIDSPAN DIAPHRAGM WHERE THEY ARE TO FAN SO AS TO BE PARALLEL TO THE LINE OF SKEW.

10. CONCRETE STRENGTH

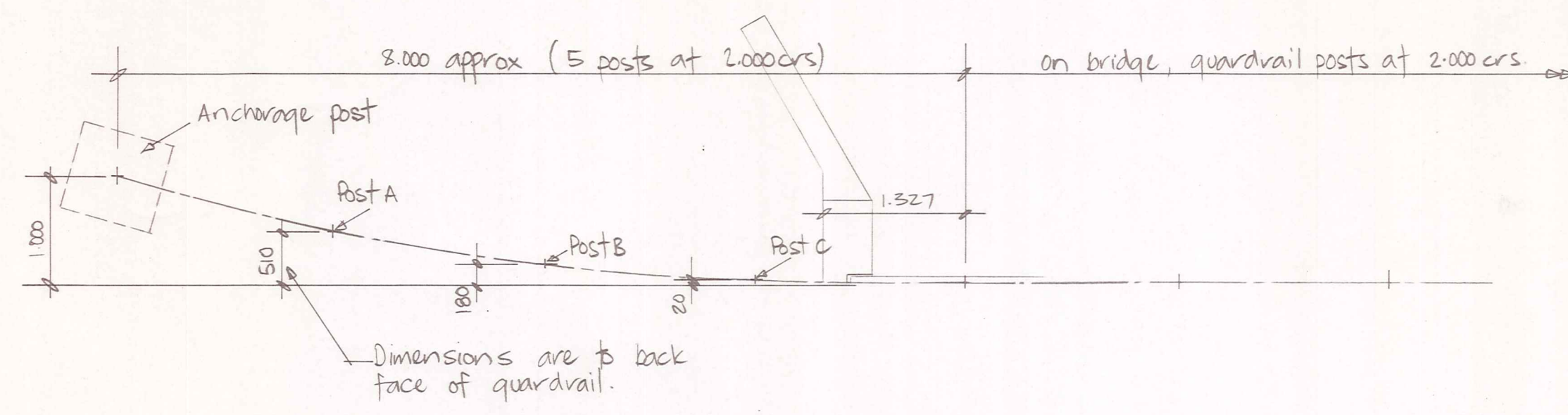
MINIMUM COMPRESSIVE STRENGTH AT TRANSFER = 30 MPa
SPECIFIED COMPRESSIVE STRENGTH AT 28 DAYS = 40 MPa

PRELIMINARY

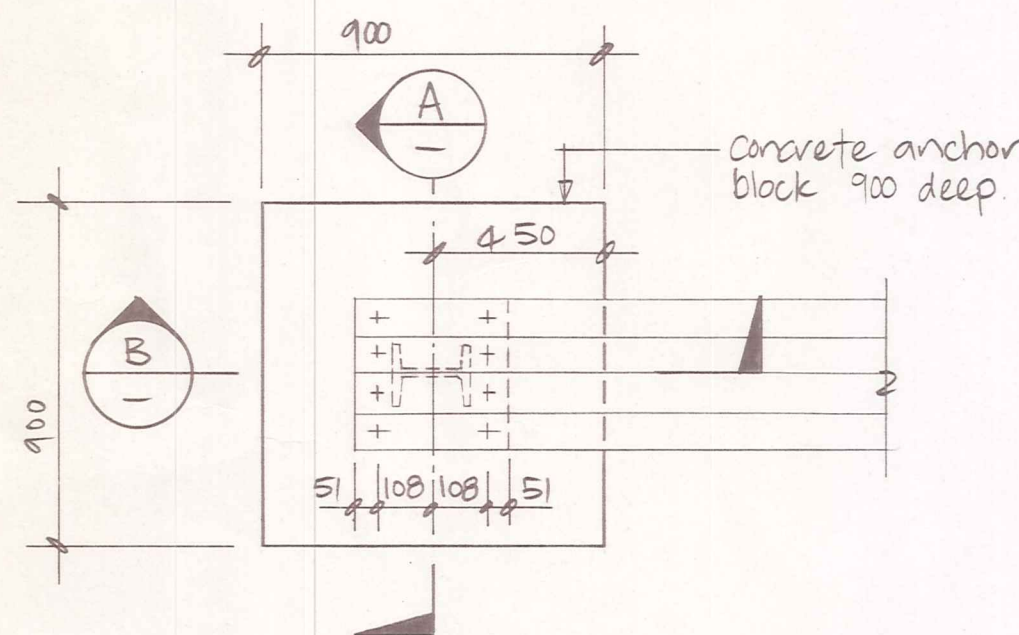
Amendments			DUFFILL WATTS & KING LTD. CONSULTING CIVIL & STRUCTURAL ENGINEERS DUNEDIN, INVERCARGILL, BALCLUTHA, CROMWELL	MANIOTOTO COUNTY COUNCIL	LOGANBURN BRIDGE	Job N ^o 9815	Sheet 4 of 8 sheets
N ^o	BY	DATE					

BY	CHECKED BY	DATE	A. G. STIRRAT CHIEF CIVIL ENGINEER	Ministry of Works and Development	STANDARD BRIDGE DESIGNS - PRESTRESSED CONCRETE BEAMS	ORIGINAL SCALES	NOT TO SCALE	FILE	DOSSIER
DESIGNED	T. Harris	2/10/76							
DRAWN	M.E. McC	9/76							
TRACED	M.E. McC	9/76							
DRG SUPVD		10/76							
DES SUPVD	Z. Wierzbicki	1976	J. B.S. HUIZING CHIEF DESIGNING ENGINEER	CIVIL ENGINEERING HEAD OFFICE N.C. MCLEOD Consultants	PRECAST PRE-TENSIONED DOUBLE CORE UNITS 458mm AND 575mm DEEP - 6m TO 16m SPANS				
RECOMMENDED:		22/11/76							

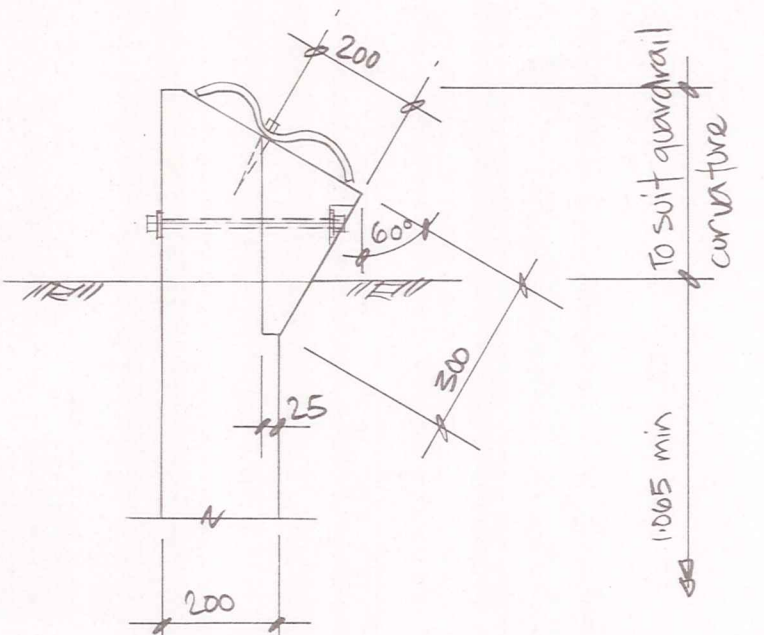
JOB	CODE	SHEET	REVISION
0/111/1	7004	1	R1



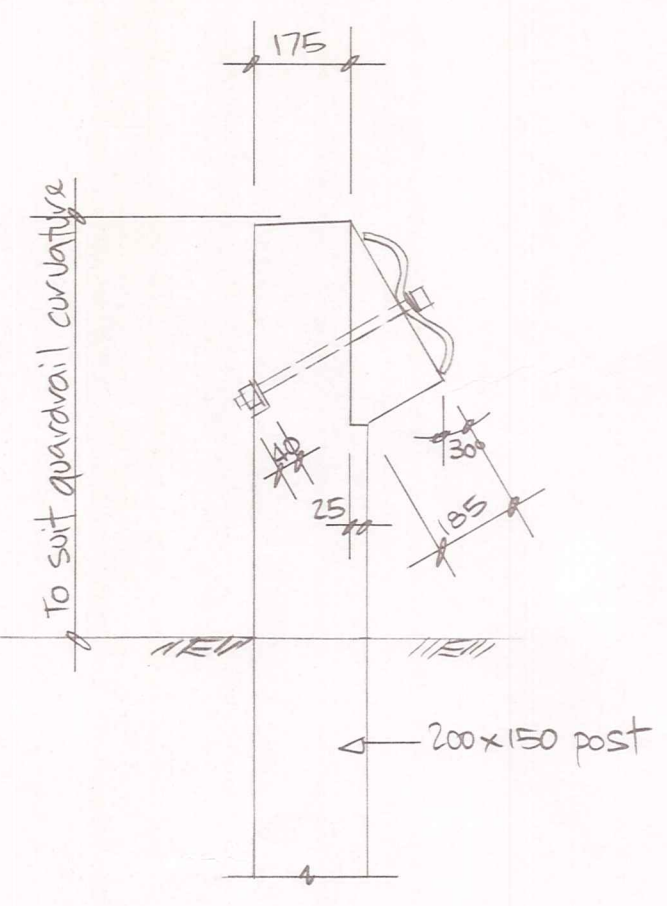
TYPICAL GUARDRAIL LAYOUT PLAN
1:50



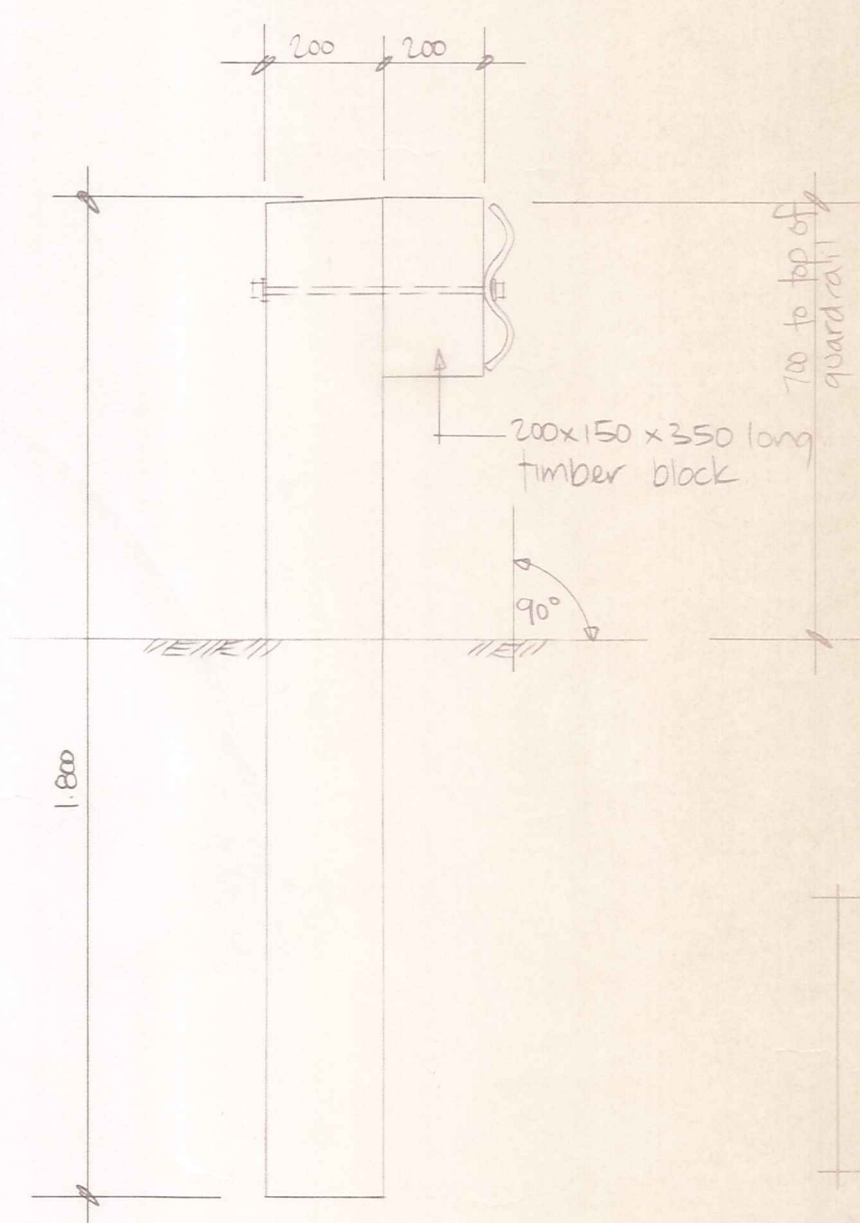
ANCHORAGE POST
1:20



POST A n.t.s.

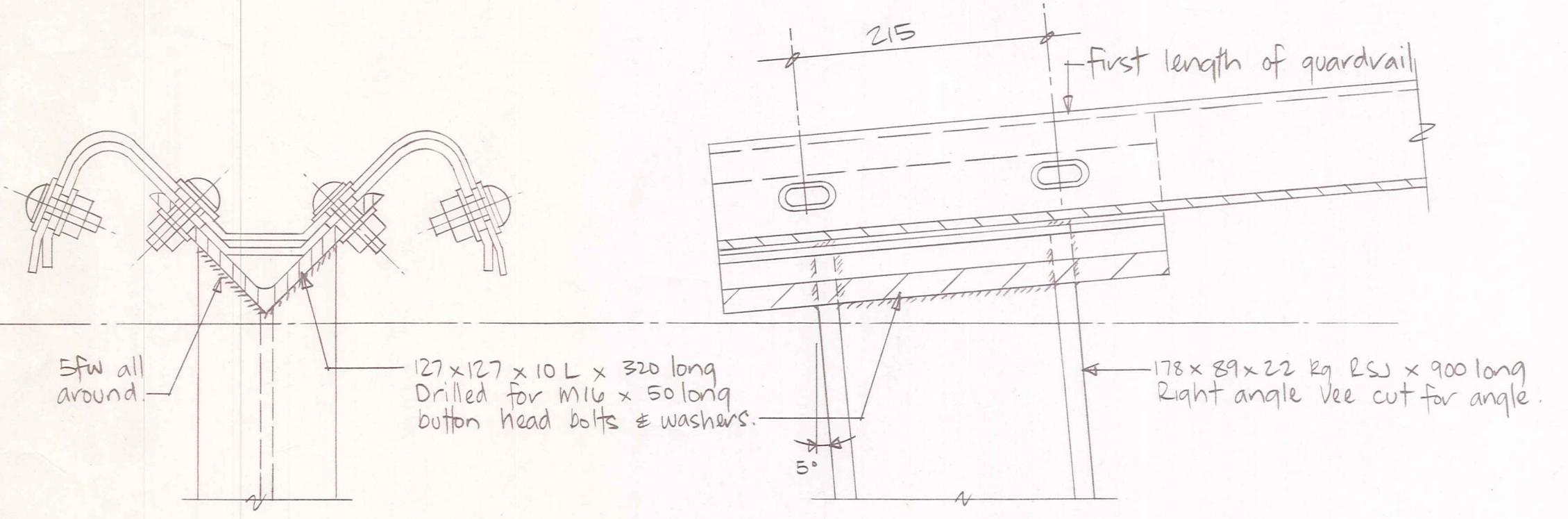


POST B n.t.s.



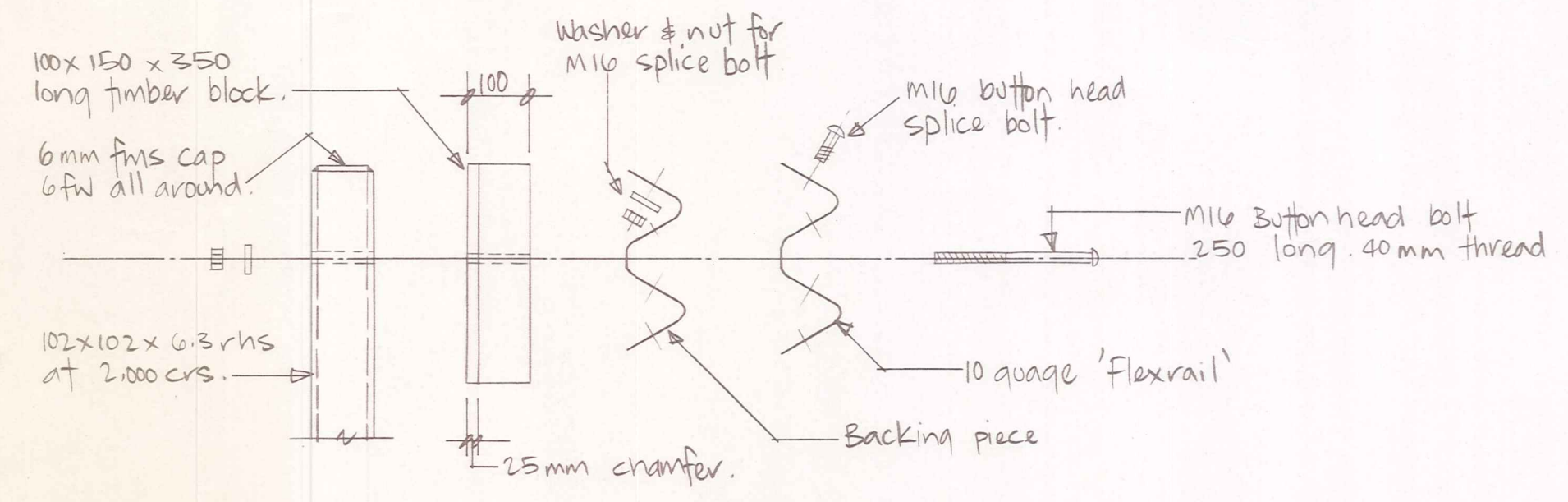
POST C n.t.s.

Notes: All steelwork to be hot dipped galvanized after fabrication including guardrail, bolts, nut & washers.
All timber posts & blocks to be Pinus Radiata merchantable grade cut to size, drilled & the preservative to the Timber Preservation Authority specification C3.

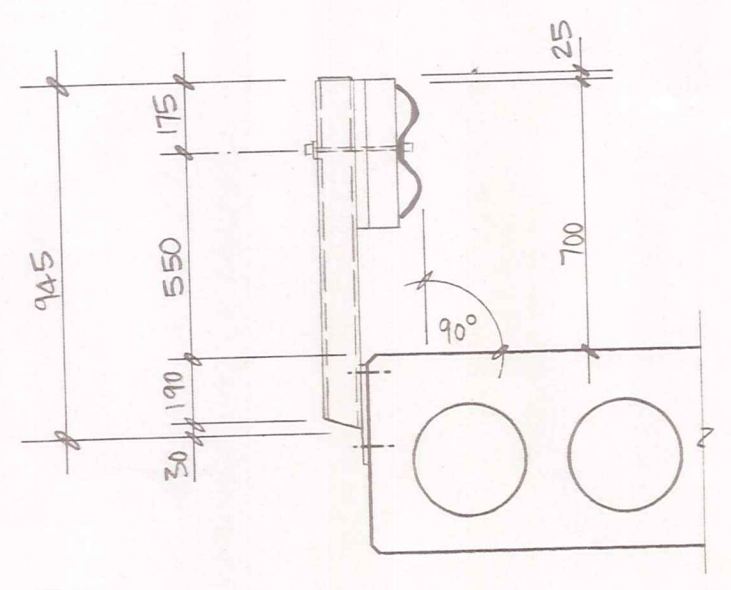


SECTION A n.t.s.

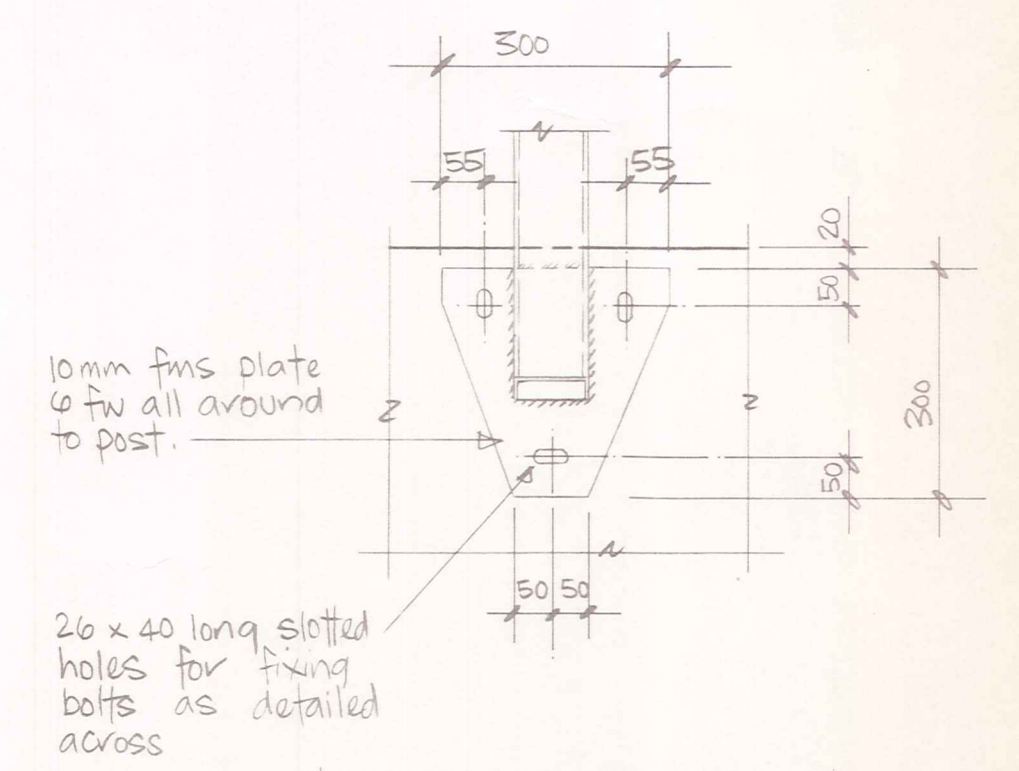
SECTION B n.t.s.



BRIDGE GUARDRAIL DETAILS
1:10

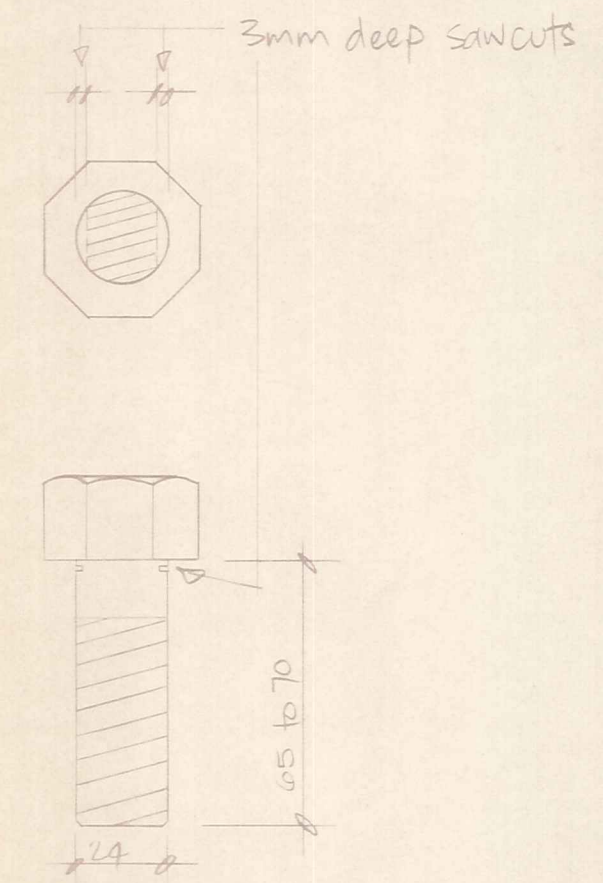


ON-BRIDGE POST
1:20



GUARDRAIL CONNECTION DETAIL
1:10

Note: For detail of sockets into double core deck unit, see sheet 3



DETAIL OF M24 BOLTS FIXING GUARDRAIL POSTS TO DECK UNITS n.t.s.

Note: Bolts to be electroplated black bolts. Saw cuts below bolt head to be made prior to electroplating.

PRELIMINARY

DUFFILL WATTS & KING LTD
CONSULTING CIVIL & STRUCTURAL ENGINEERS
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Cromwell PO Box 82 Ph: 50 391

MANIOTOTO COUNTY COUNCIL

LOGANBURN BRIDGE
GUARDRAIL DETAILS

AMENDMENTS			NAME		DATE	JOB NO	Sheet No
NO.	BY	DATE	Drawn	Checked			
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			Calculations	WJ Begg			
			Traced	EE Wilson			
			Checked				
			Approved				

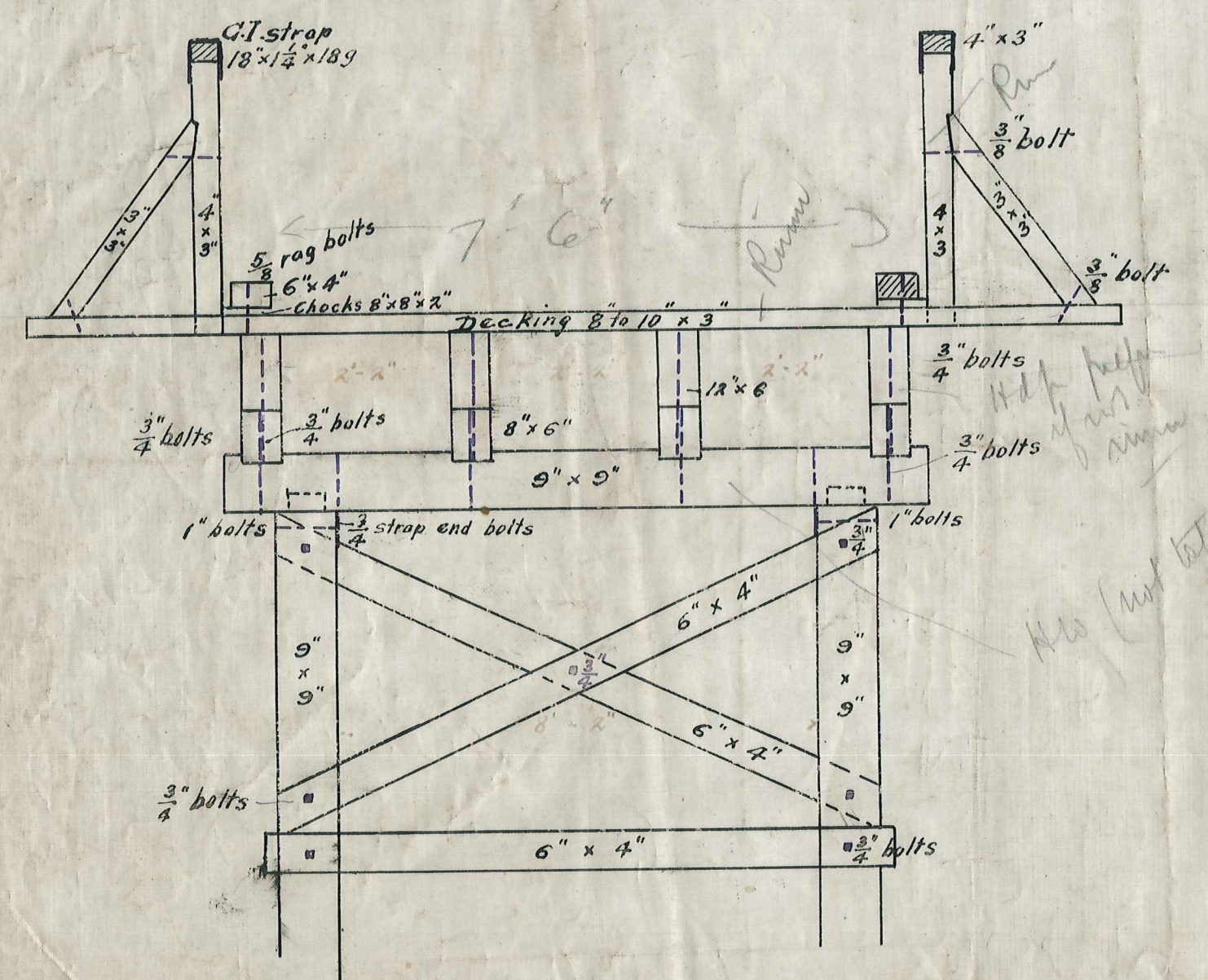
HANCOCK COUNTY

LOGANBURN BRIDGE.

Parson Run Rd.

Piles	810
Caps	243
Bracing	104
Corbels	128
Trussing	576
Beams	648
Deck	1728
Truss	1943
Posts	288
Caprol	144
Substr	7095

SECTION
Scale $\frac{1}{2}$ inch to a foot



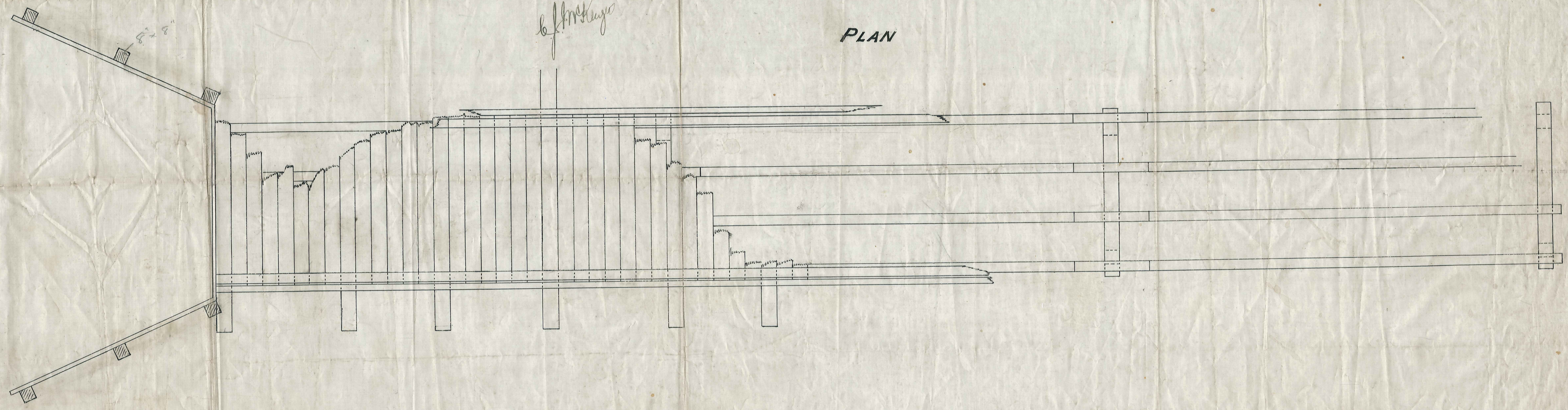
ELEVATION



John W. Schaub
1919
Scale $\frac{3}{8}$ inch to a foot

W. A. Schaub

PLAN



19