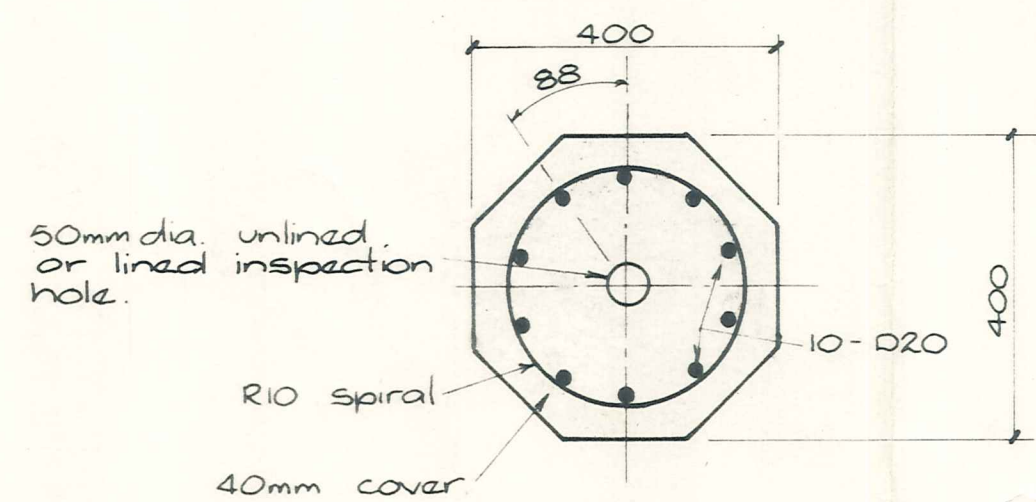


TYPICAL LAP WELD DETAIL 1:2
FOR 10mm DIA. HOOP BARS

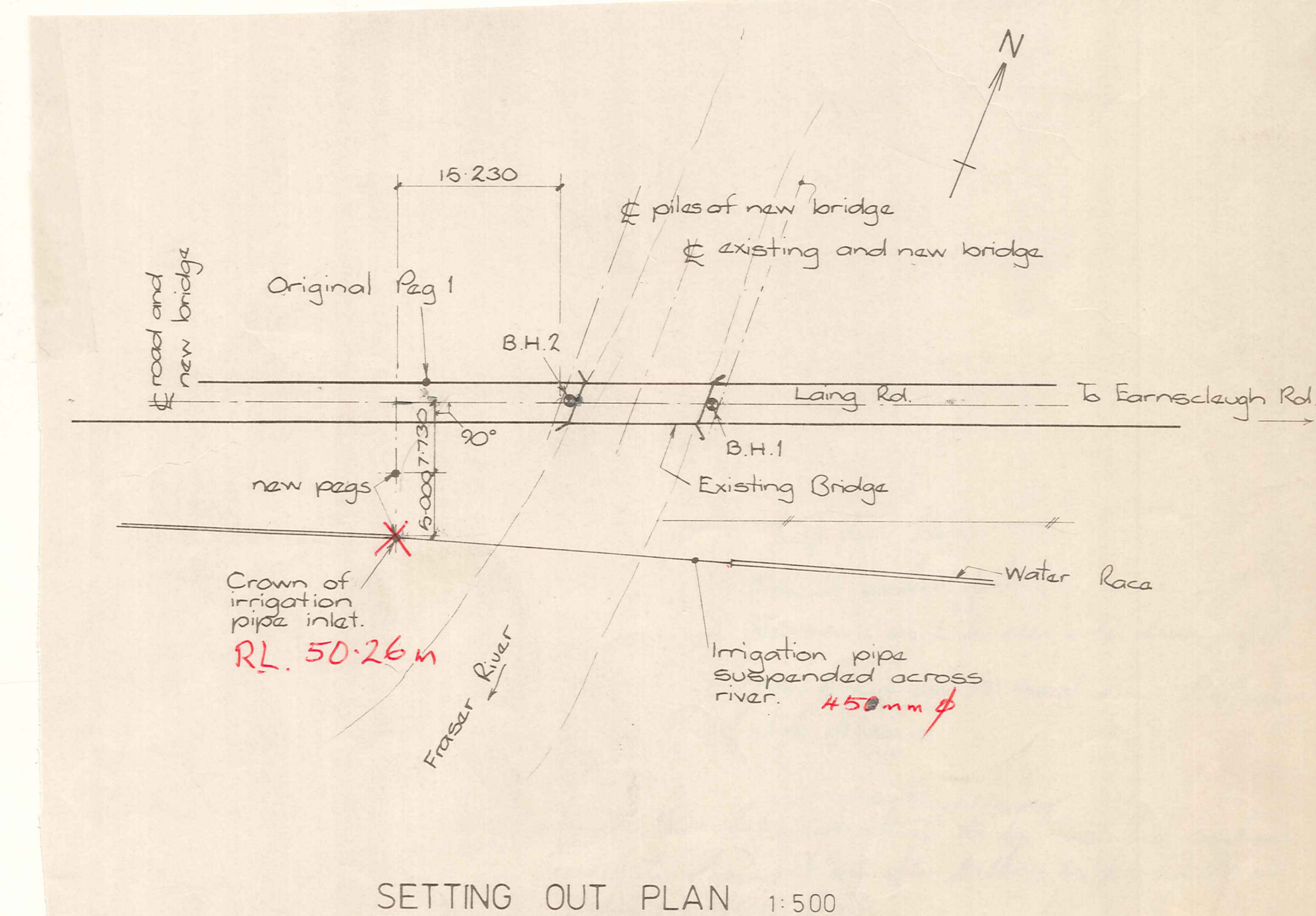
PILE ELEVATION



1-1 1:10

NOTES:

1. This design is based on materials and workmanship being in accordance with spec. C.D. 207.
2. Unlined inspection hole to be formed by rubber tube or former which is to be withdrawn. Hole to be closed at both ends by plug before driving.
3. Distance from pile to tip to be marked at 2000m intervals along its length.
4. Specified concrete compressive strength at 28 days = 30 M.Pa.
5. All reinforcing steel to be grade 275 as drawn but see note 8.
6. If main bars require splicing, they shall be butt welded in accordance with C.D. 303. Splices in spiral steel shall be single flange lap welded in accordance with C.D. 303.
7. As an alternative to stripping the pile top the pile may be cast with main bars protruding a bond length, and driven using a suitable helmet.
8. R10 spiral bar grade 275 may be replaced at the contractor's option by 5.3mm hard drawn wire to N.Z.S. 3421. Pitch to be half R10 pitch. Minimum pitch to be 25mm. R10 hoops at ends to remain R10.



SETTING OUT PLAN 1:500

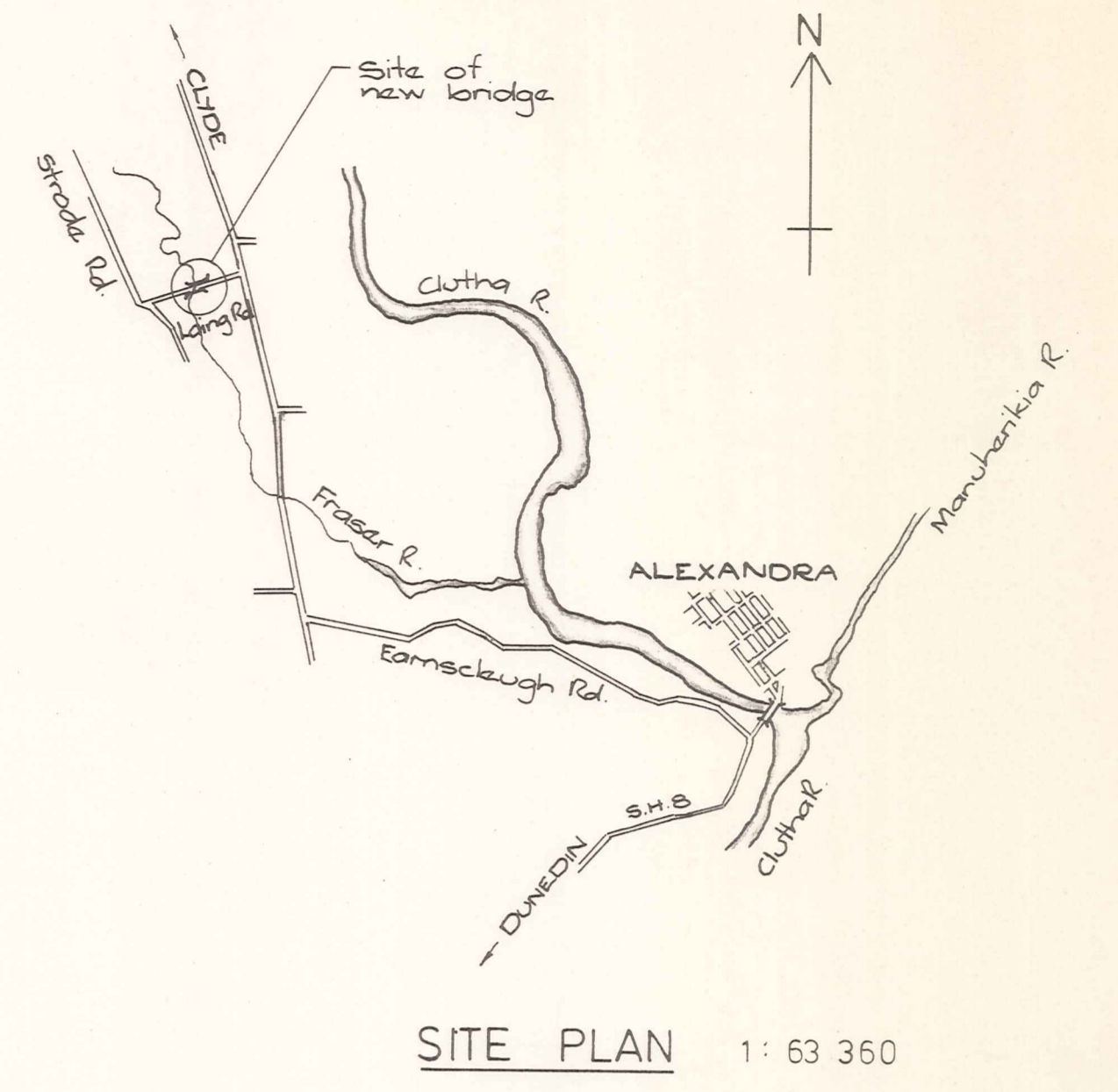
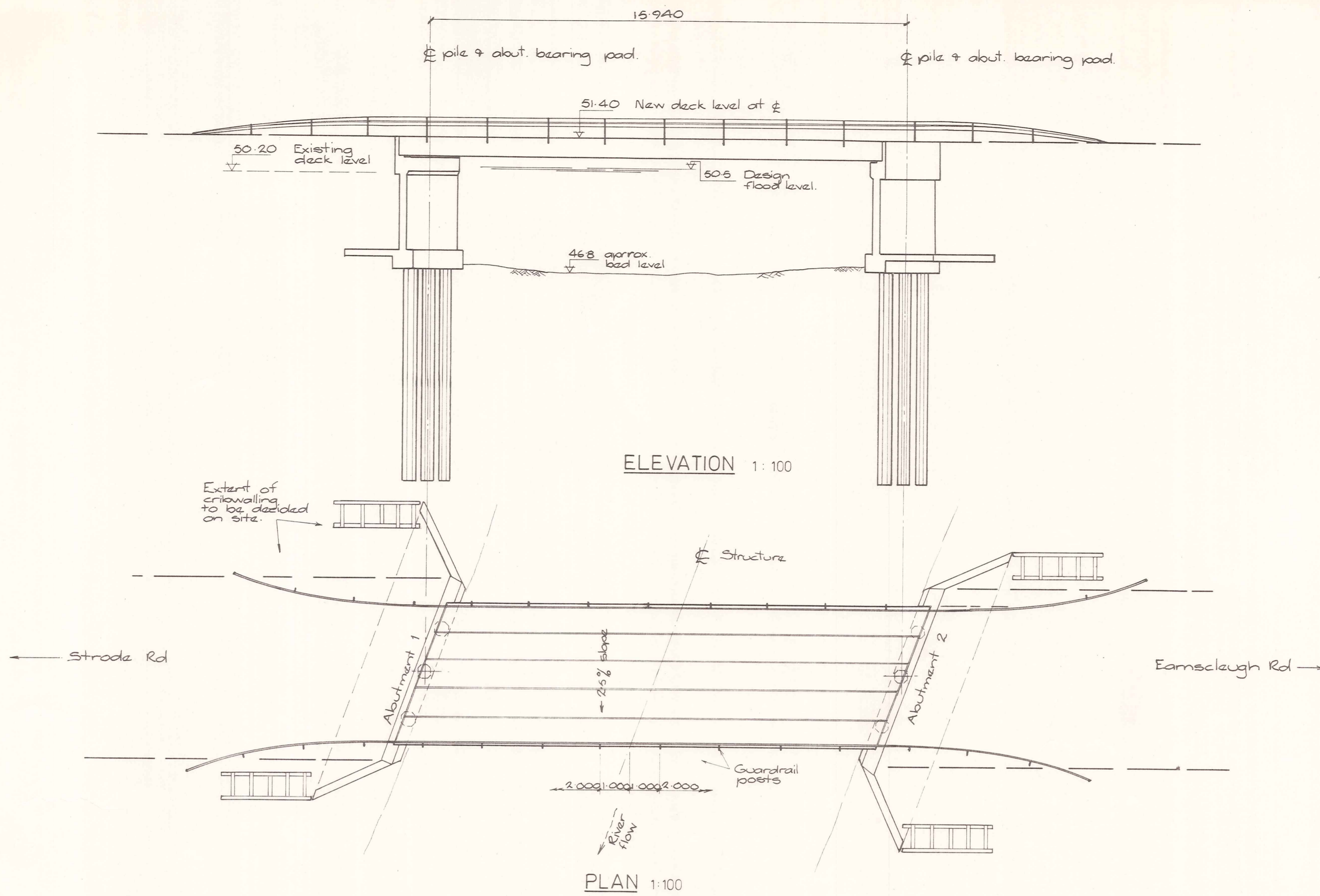
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VINCENT
COUNTY
COUNCIL

LAING ROAD BRIDGE REPLACEMENT
PILE DETAILS

AMENDMENTS			NAME		DATE	JOB NO.	Sheet No
NO.	BY	DATE	Appvd.	Surveyed			
				Drawn	K. Crawford	8/79	7876
				Calculations	J. Beckwith	8/79	1
				Traced	K. Crawford	8/79	of 5 sheets
				Checked			
				Approved		11/79	

File 156/7876 L.B. 100/1 F.B.



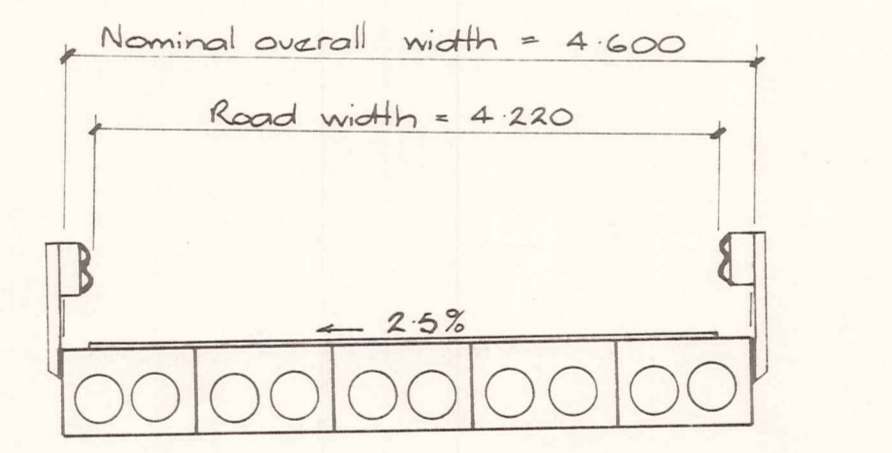
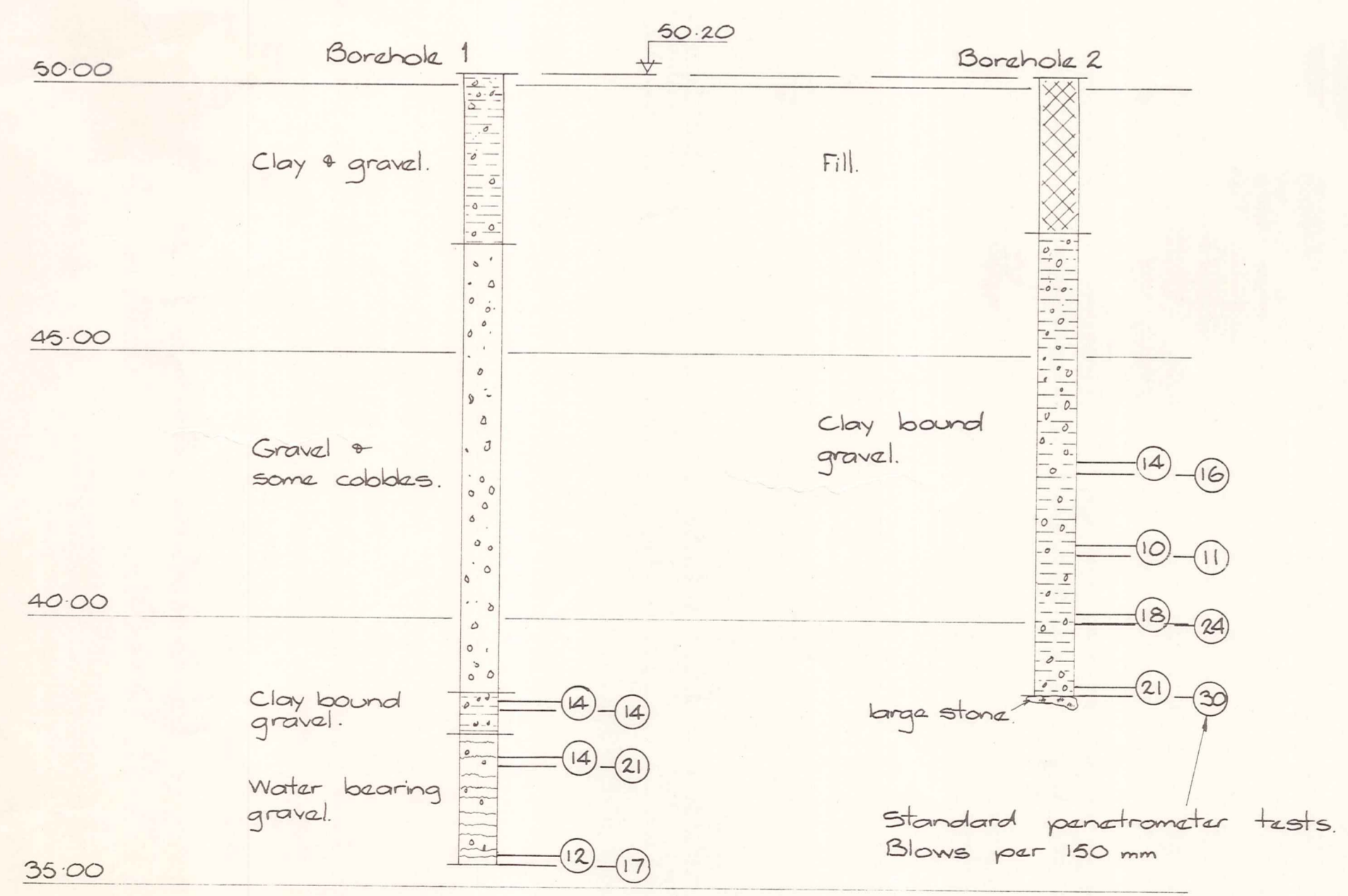
Concrete: The 28 day compressive strength and grading of concrete as defined in N.Z.S. 1900 ch. 9.3A shall be 25 MPa high grade except for precast deck units.

Surface finish: Concrete surface finish as described in the specification shall be F1 on all surfaces exposed to view except for the following locations:
deck surface - U2
concealed surfaces on abutments - F2

Cover: Clear cover to reinforcing shall be 50mm, unless otherwise stated.

Chamfers and fillets: Unless otherwise stated, all corners shall be chamfered 25mm and all reentrant angles shall be filleted 25mm.

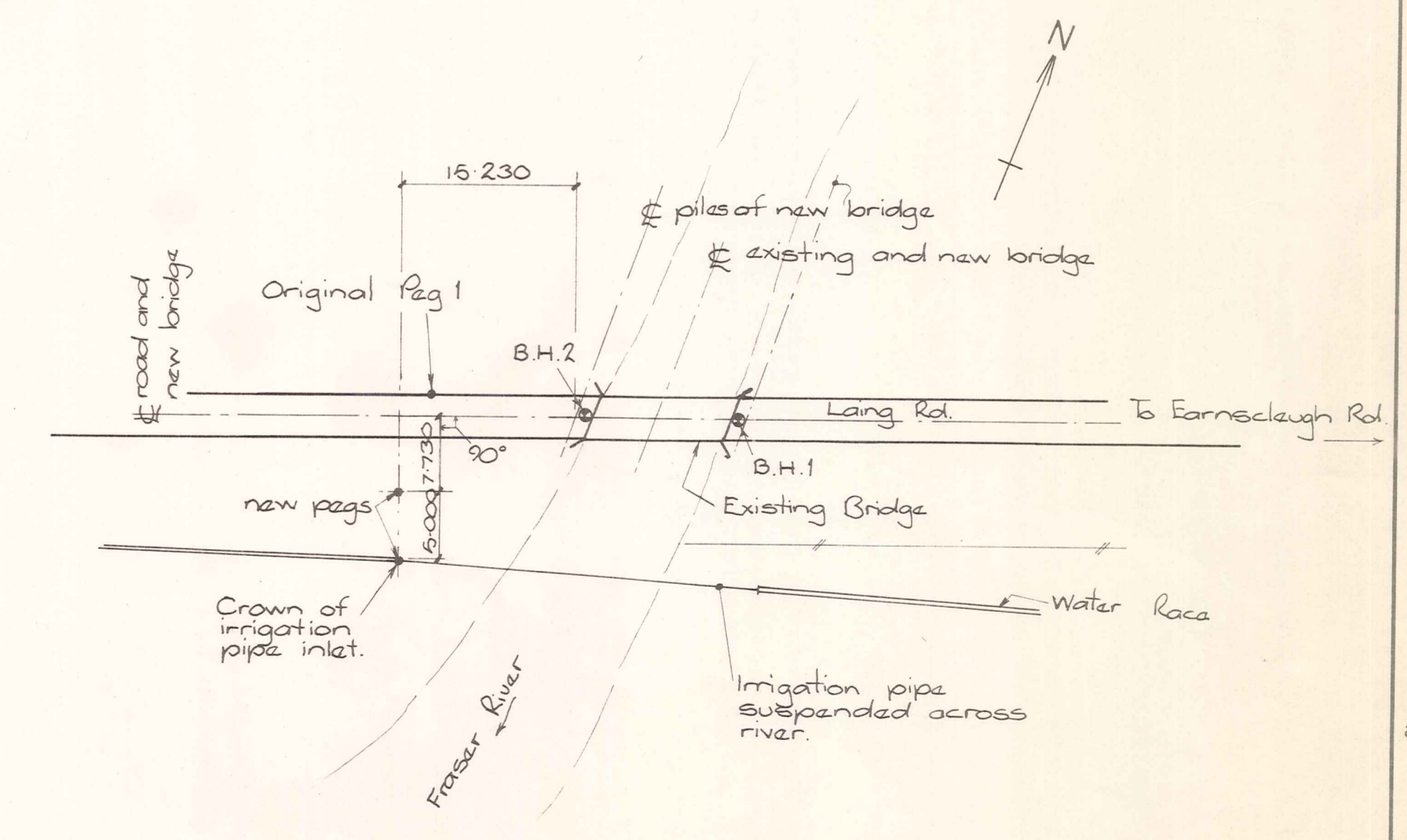
GENERAL NOTES



TYPICAL DECK SECTION 1:50

1. General arrangement.
2. Abutment details.
3. Pile details.
4. Precast, pretensioned, double core deck unit details.
5. Guardrail and cribwall details.

SHEET INDEX

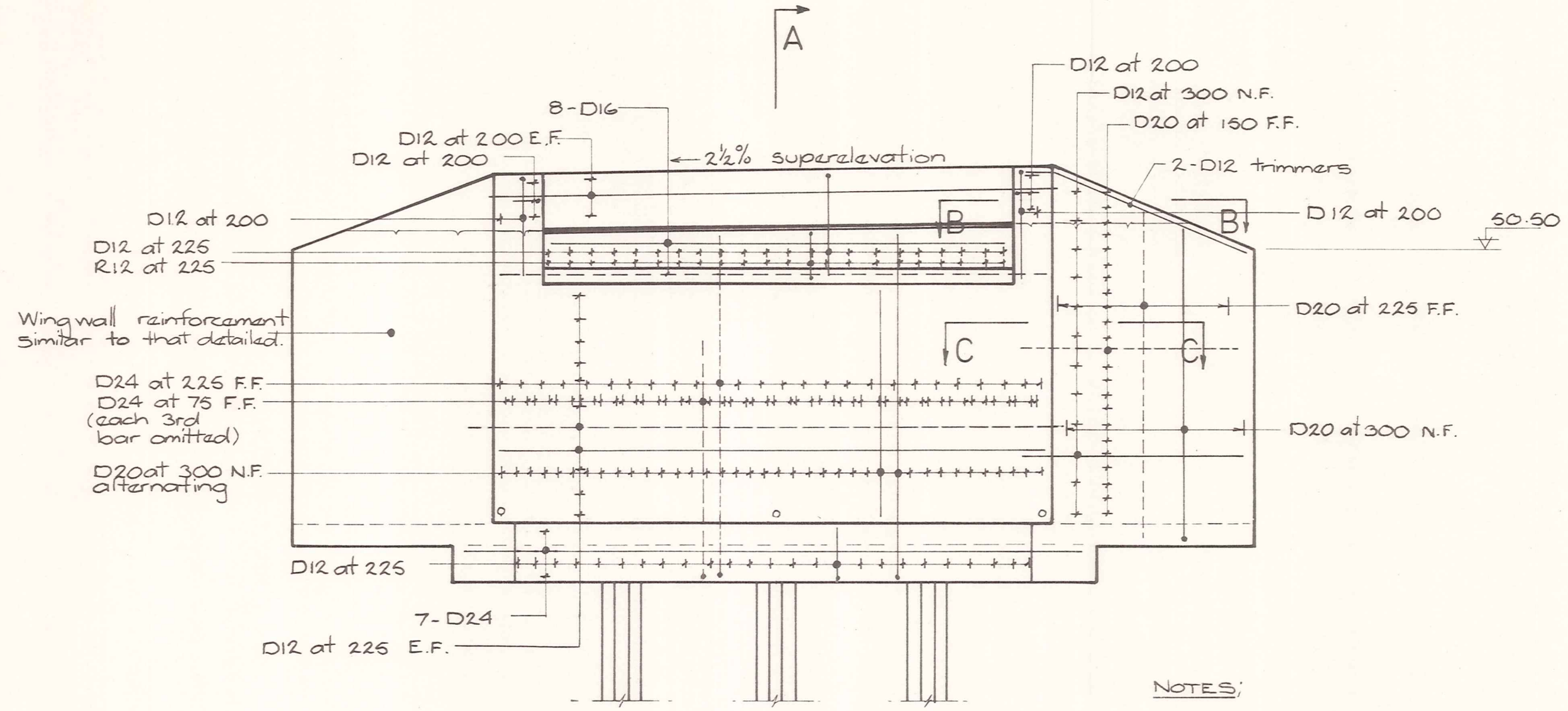


SETTING OUT PLAN 1:500

ORIGINAL SIZE 1:1mm INCHES

DUFFILL WATTS & KING LTD CONSULTING CIVIL & STRUCTURAL ENGINEERS Dunedin P.O.Box 5289 Ph.777-133 Invercargill P.O.Box 576 Ph.83-049 Balclutha P.O.Box 220 Ph.81-664 Cromwell P.O.Box 82 Ph.50-391	VINCENT COUNTY COUNCIL	LAING ROAD BRIDGE GENERAL ARRANGEMENT	AMENDMENTS		NAME DATE K. Bowler 8/79 J. Beckwith 8/79 K. Crawford 8/79	JOB NO. 7876	Sheet No. 1 of 5 sheets
			NO.	BY			

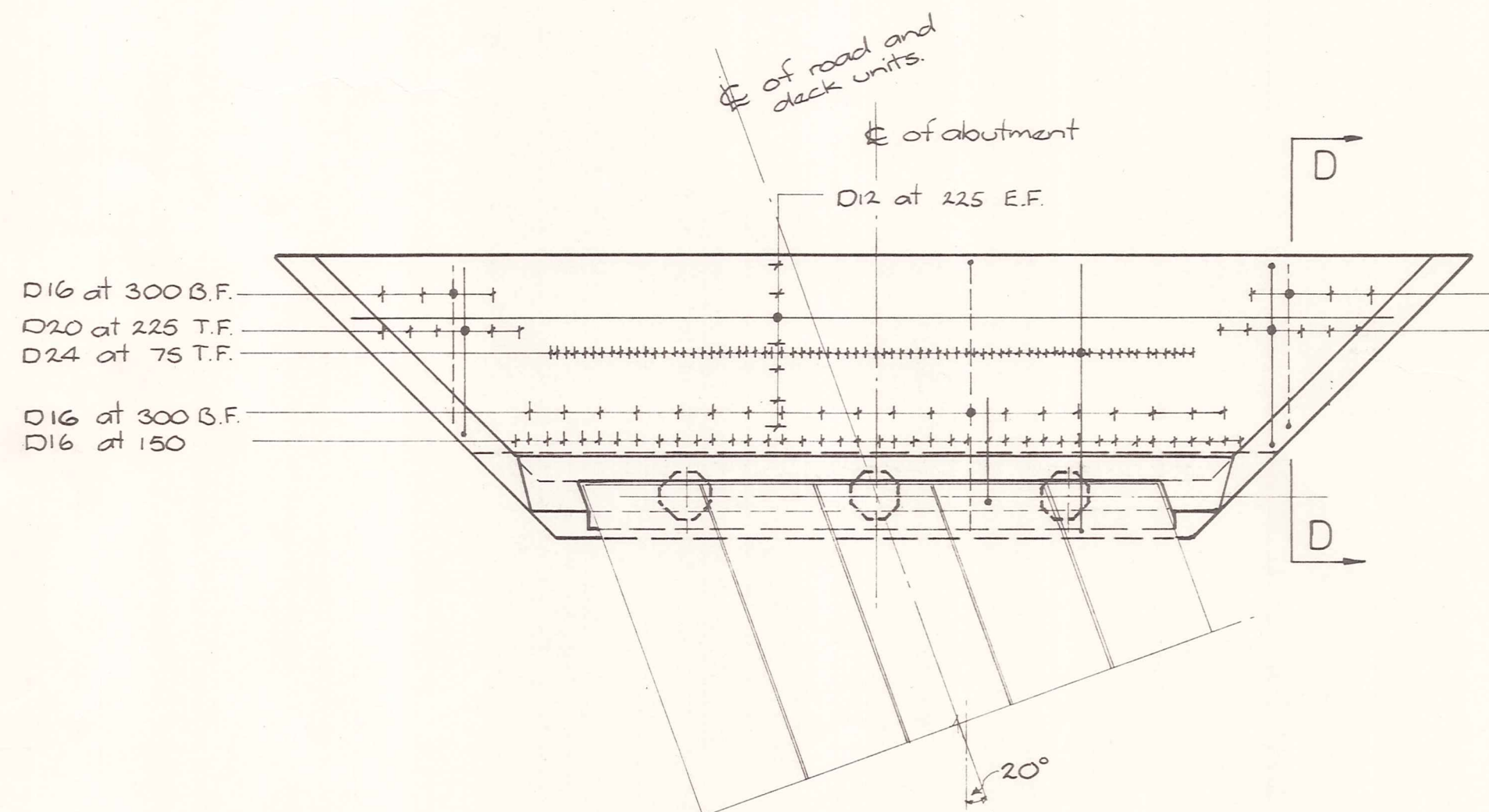
— Denotes reinforcing steel at top face and near face.
 - - - Denotes reinforcing steel at bottom face and far face.



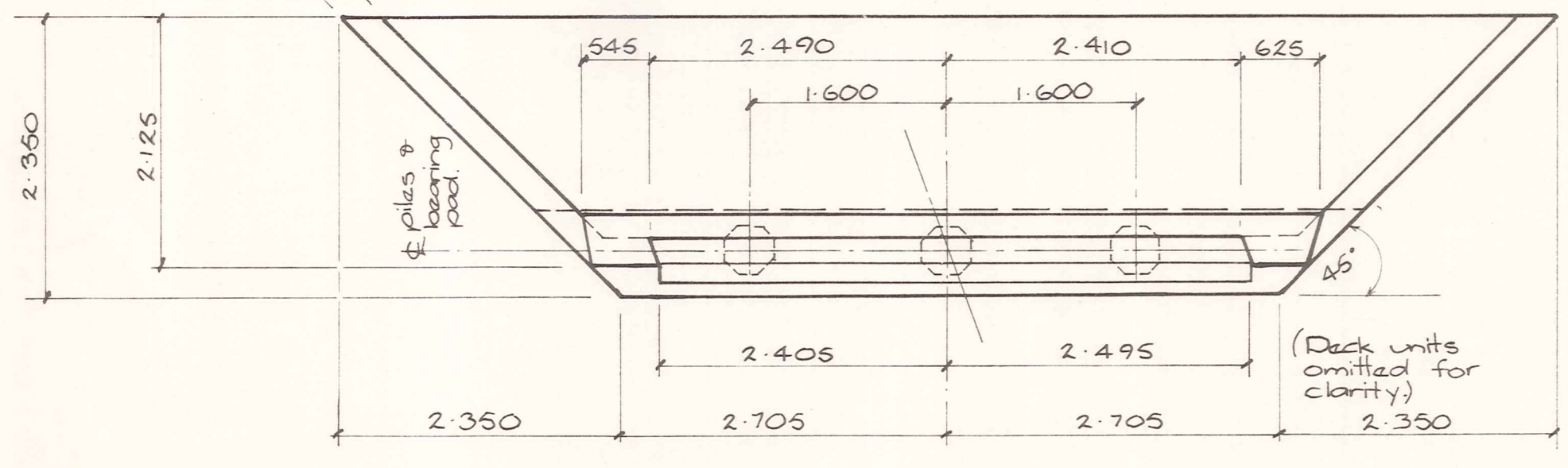
ELEVATION 1:50
(Abutment 1 drawn)

NOTES:

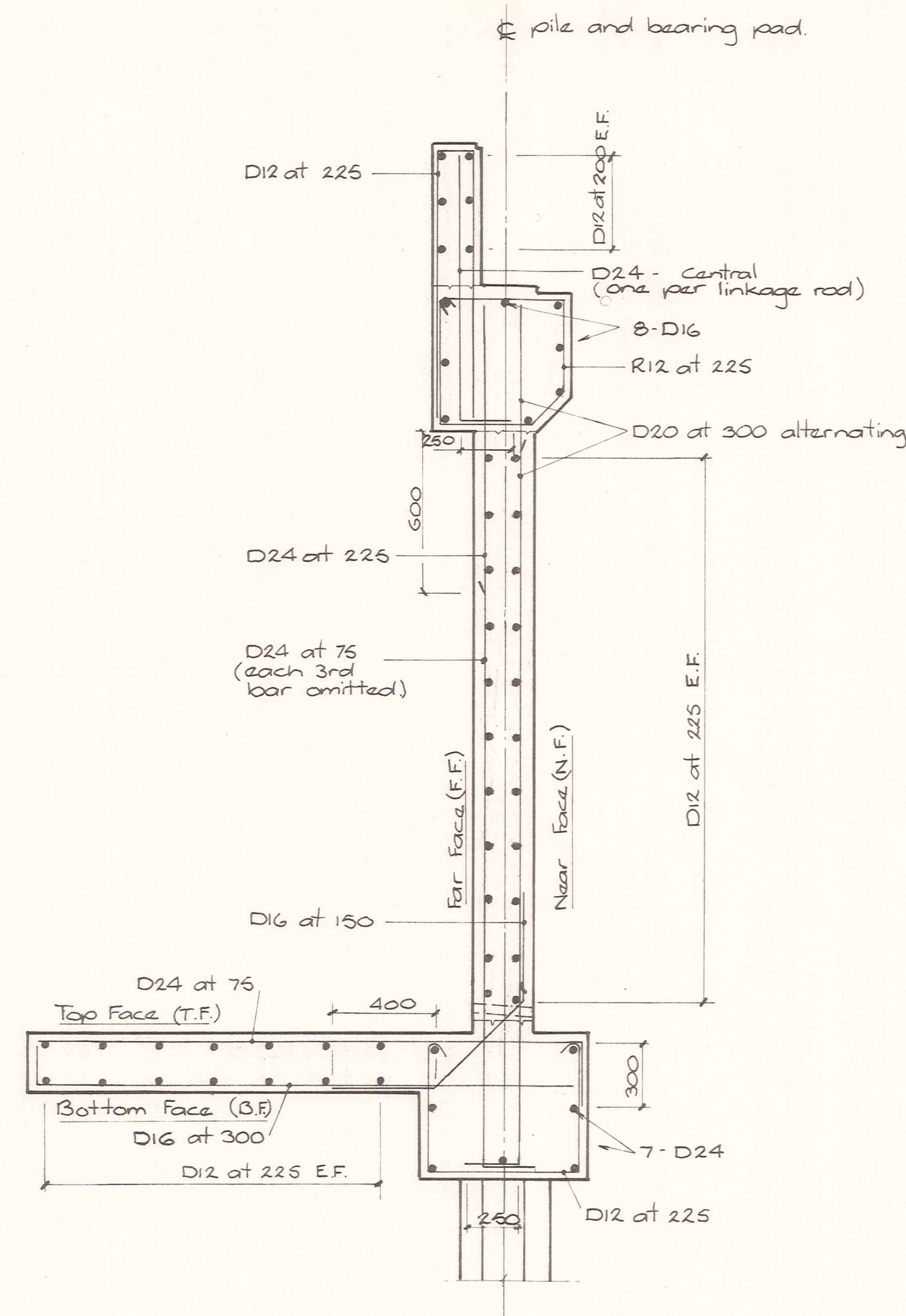
1. Precast deck units to be anchored at both abutments by linkage bars. (refer Detail 2).
2. Cover to reinforcement to be 50mm.
3. Seating surface for strip bearing to be finished with steel trowel. Surface shall not deviate more than 5mm from a 3.00m straight edge.



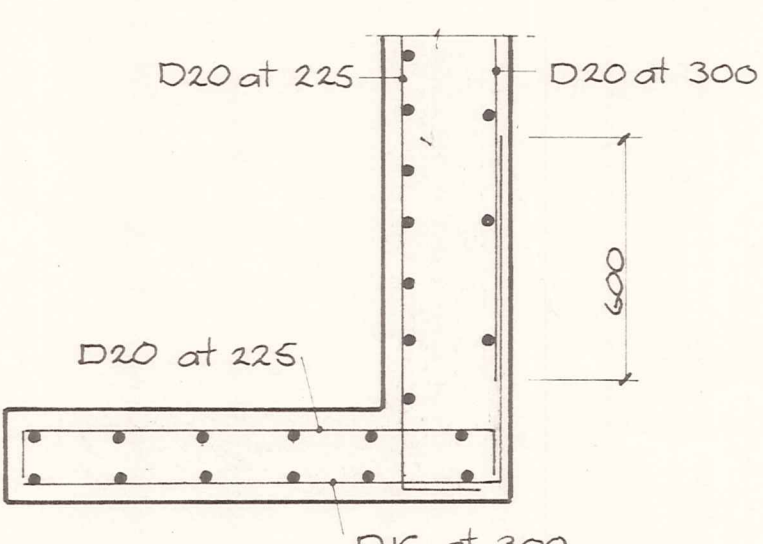
PLAN 1:50



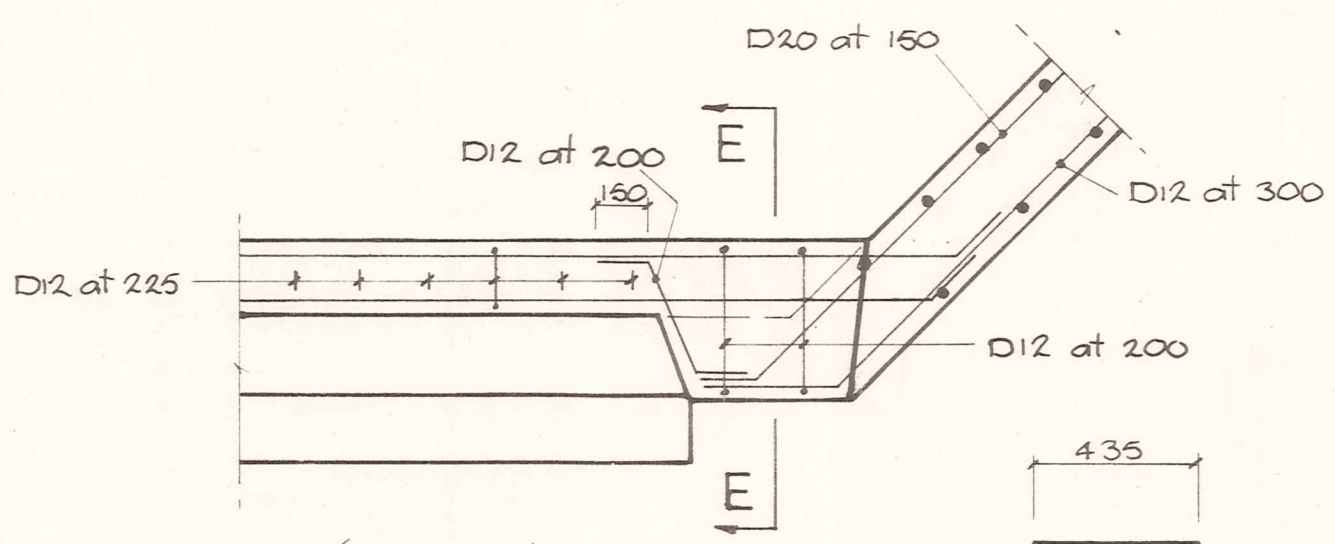
PLAN 1:50



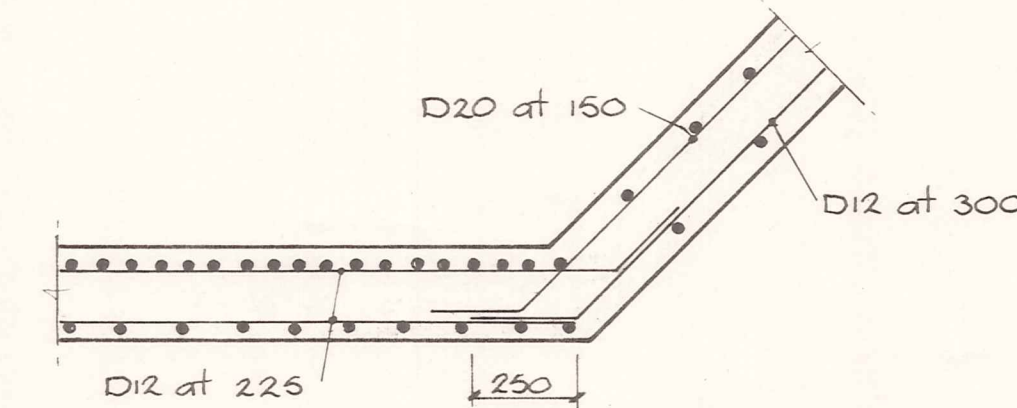
A-A 1:20



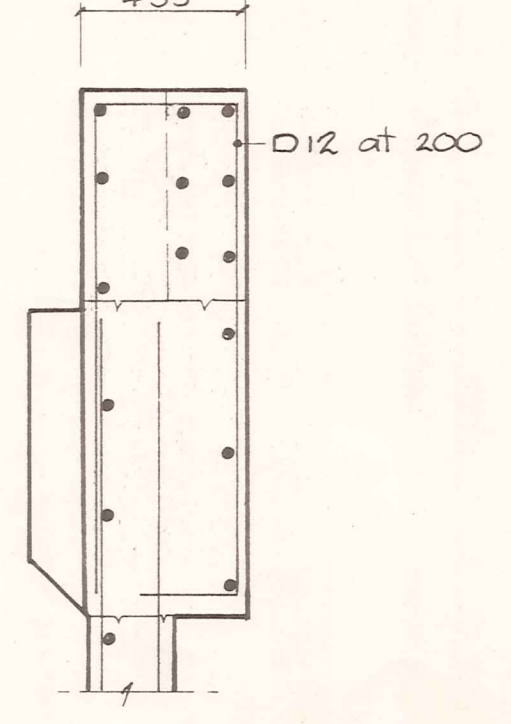
D-D 1:20



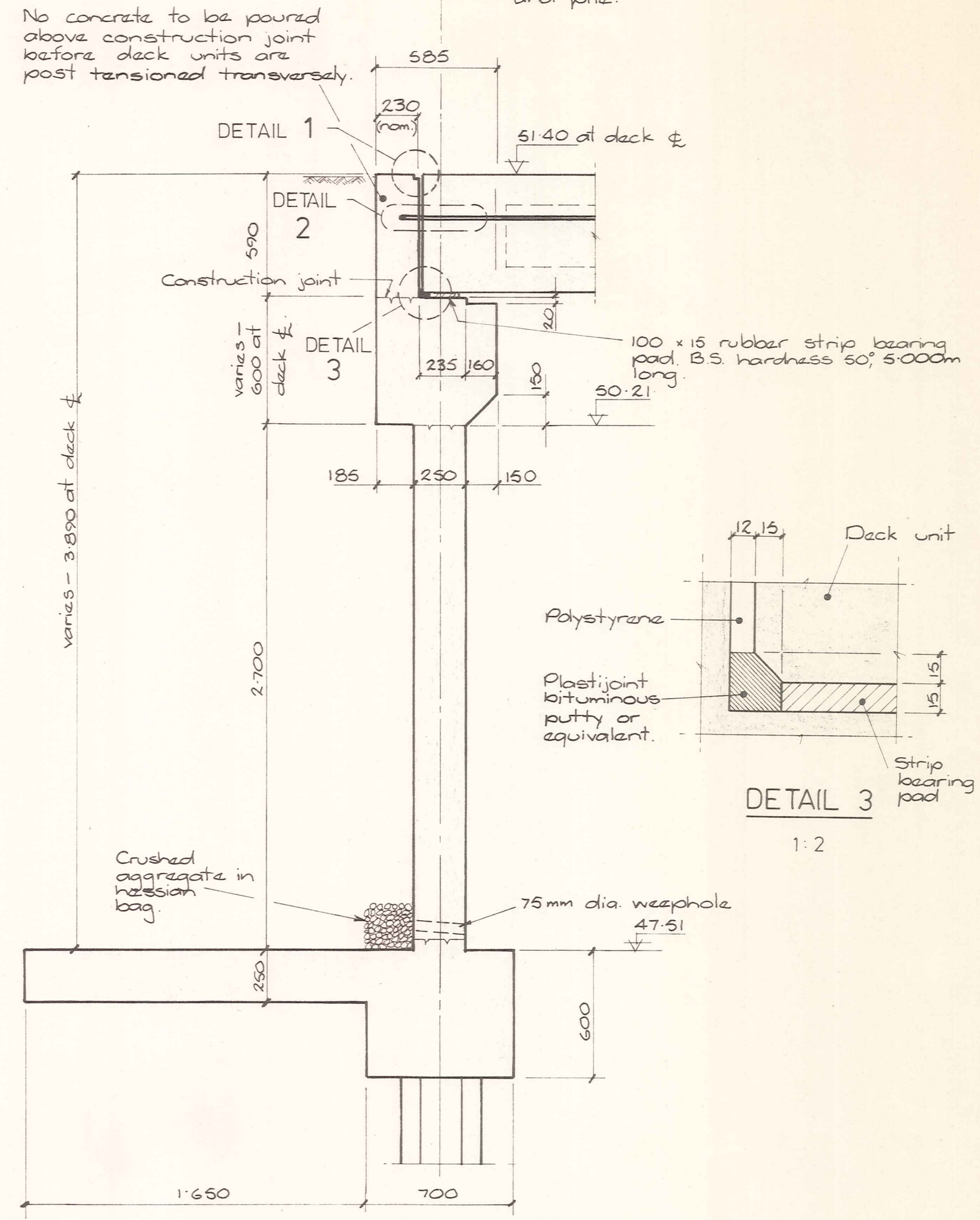
B-B 1:20



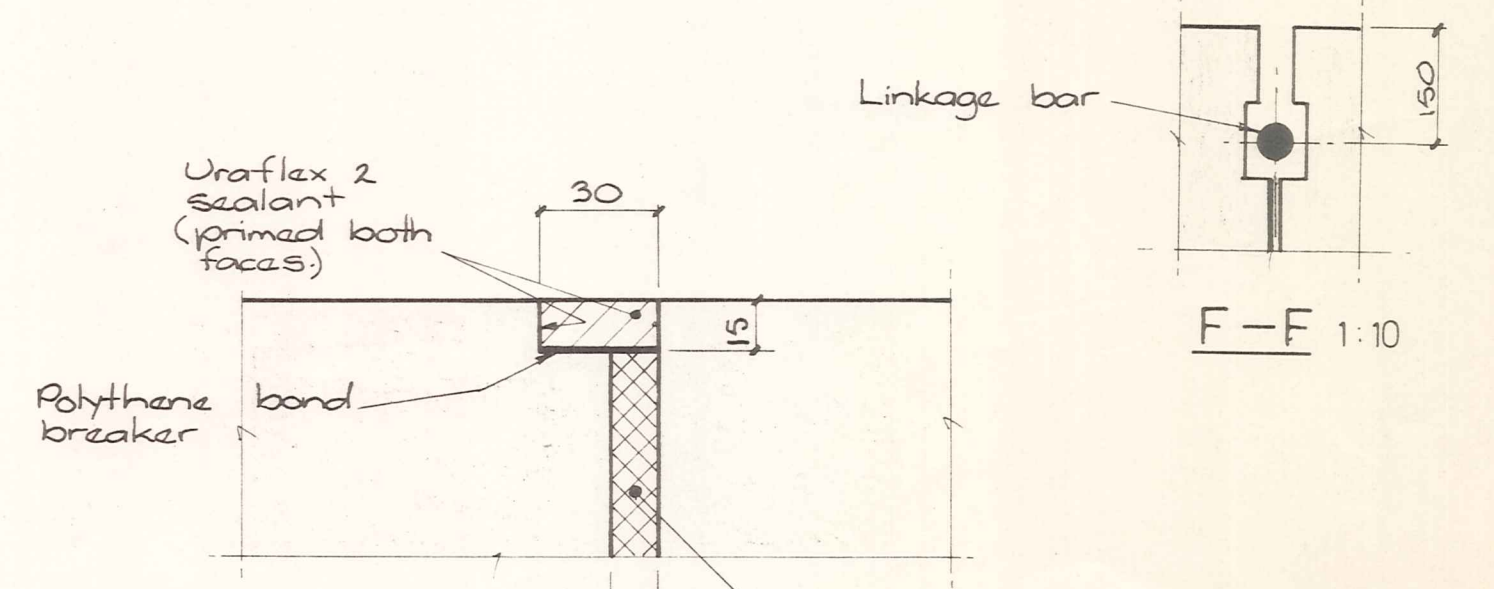
C-C 1:20



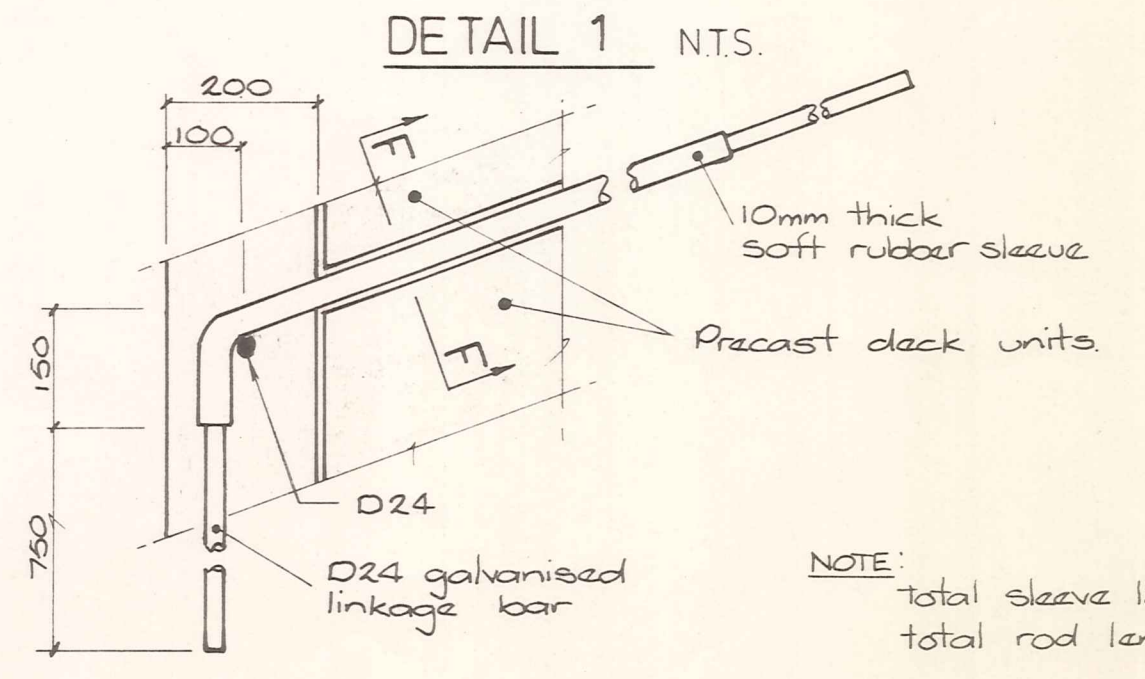
E-E 1:20



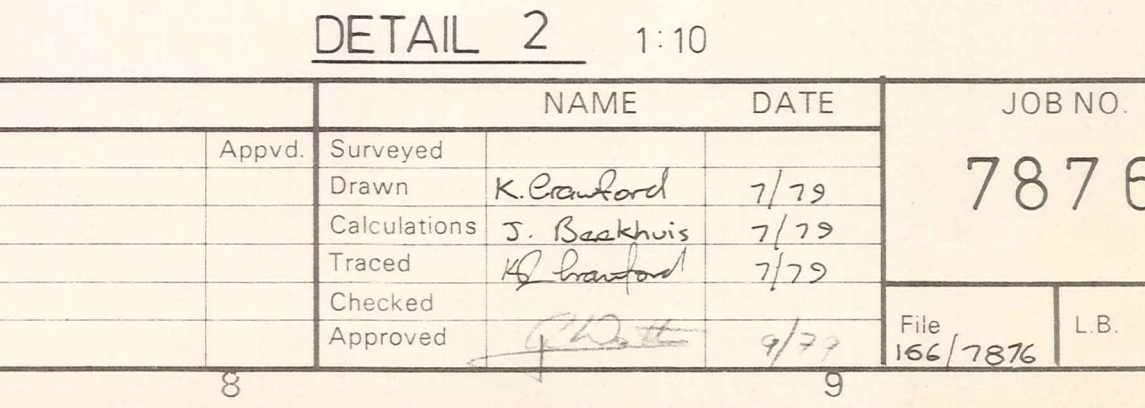
A-A 1:20



F-F 1:10



DETAIL 1 N.T.S.



DETAIL 2 1:10

NOTE: total sleeve length: 2.100m
total rod length: 4.200m

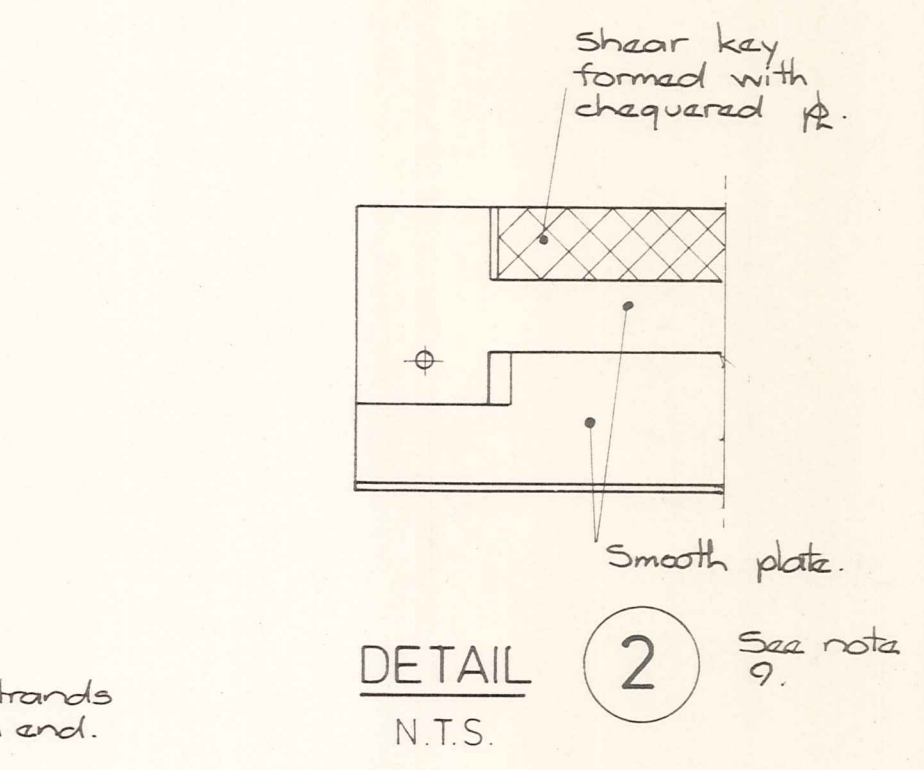
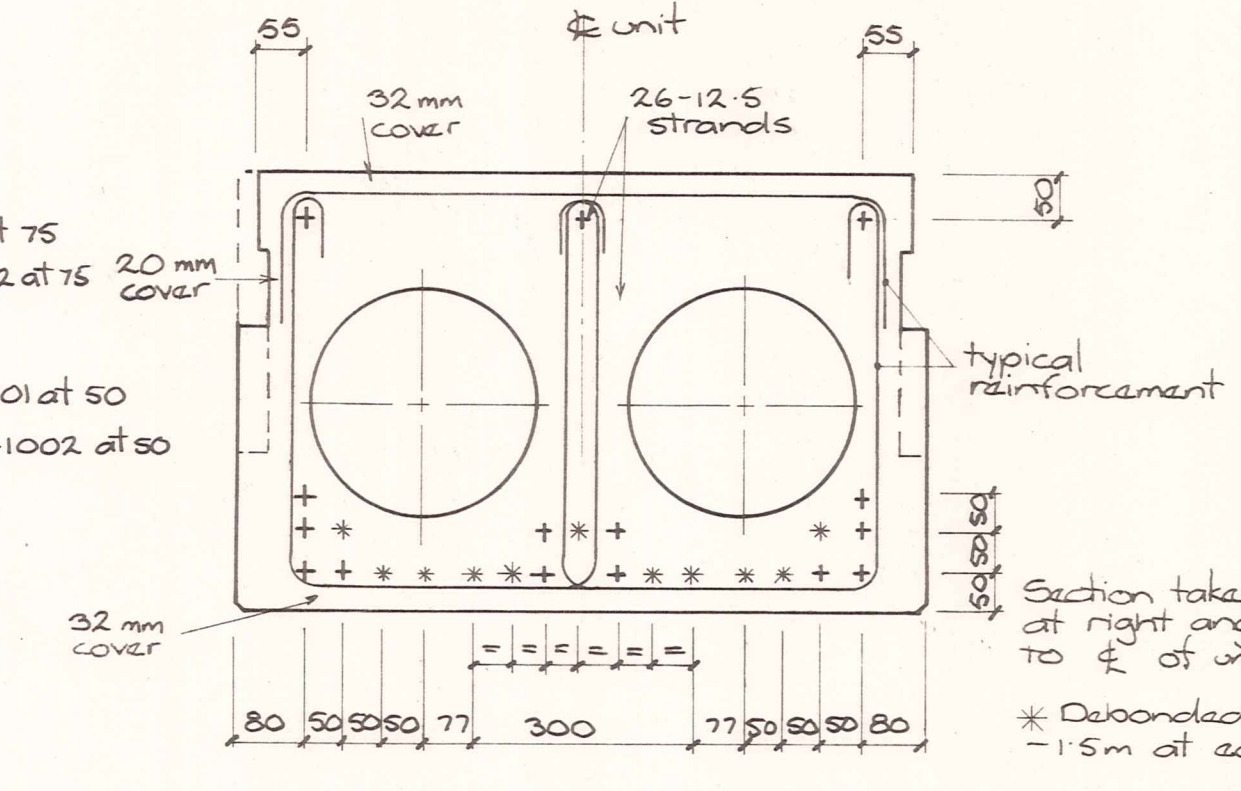
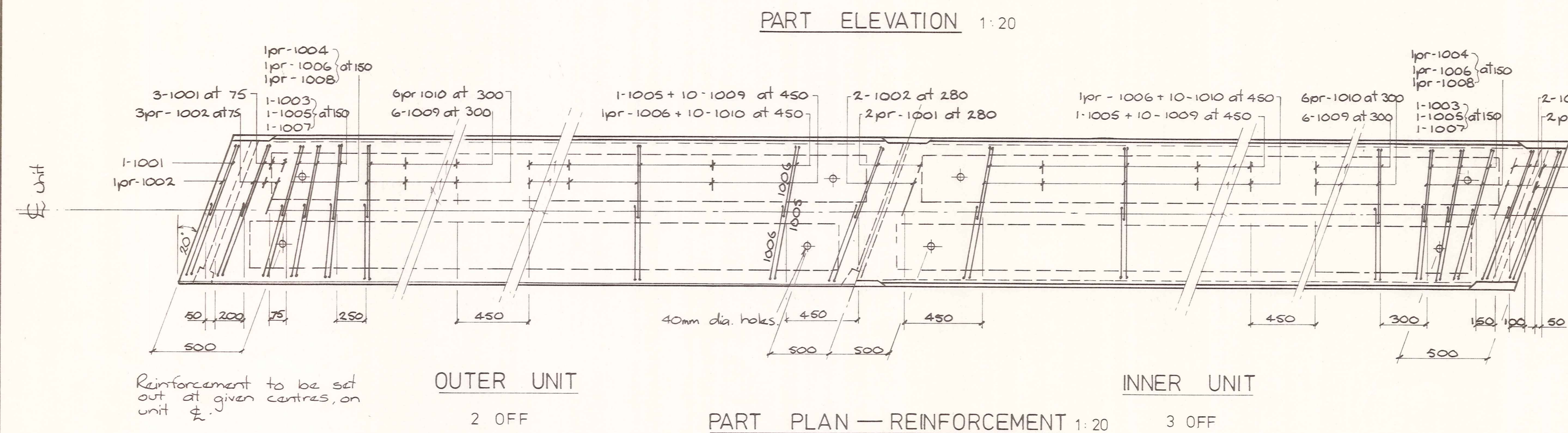
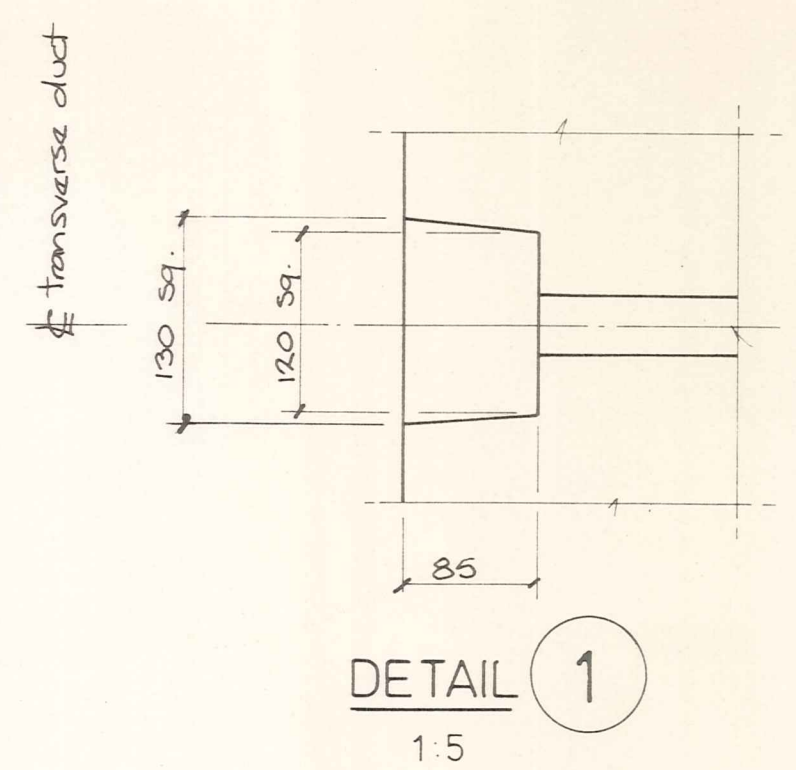
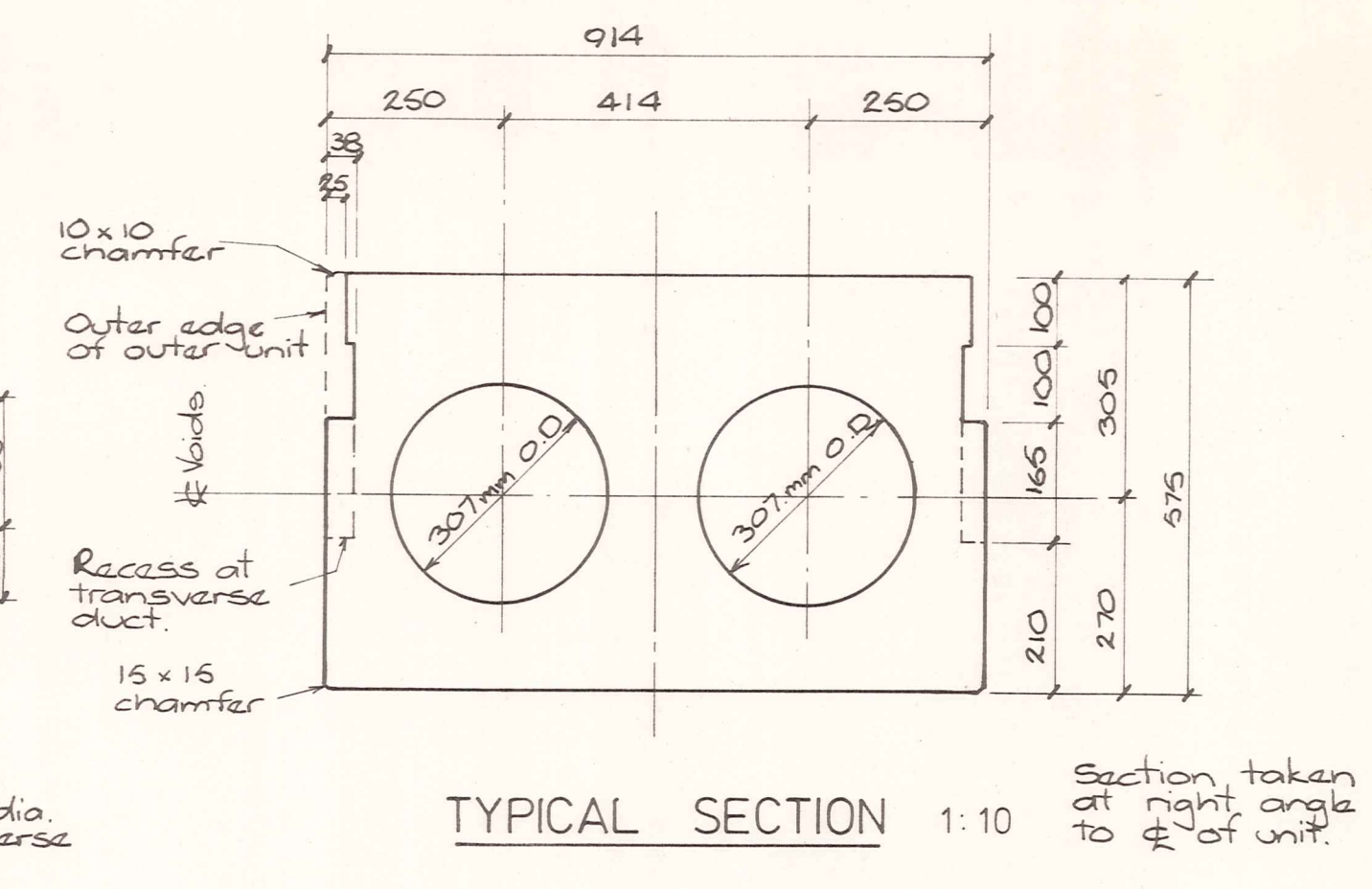
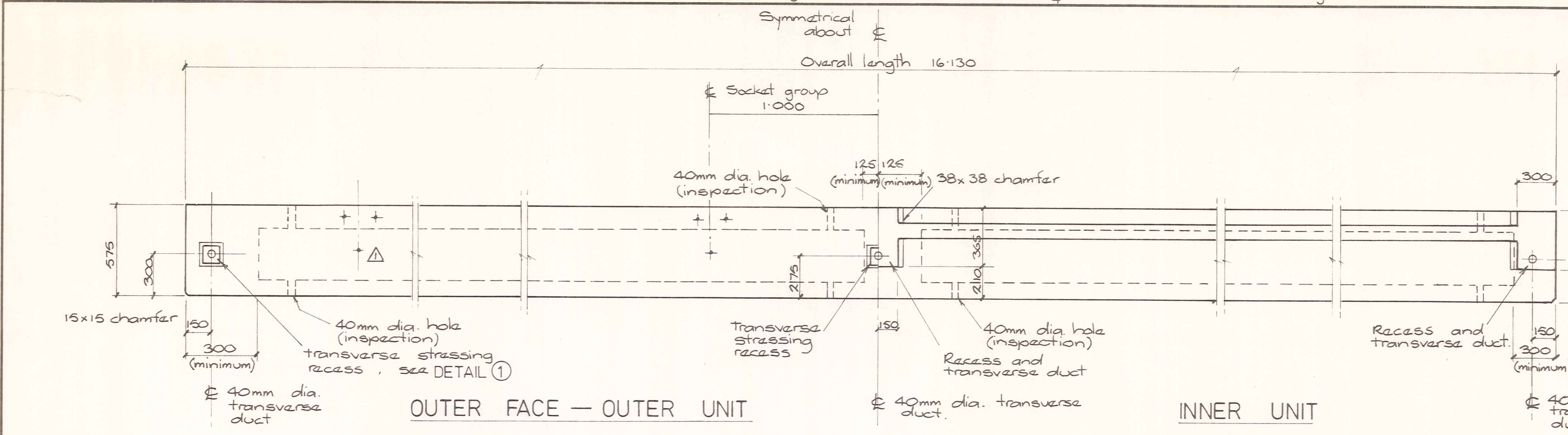
ORIGINAL SIZE INCHES
 12
11
10
9
8
7
6
5
4
3
2
1
0

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VINCENT
 COUNTY
 COUNCIL

LAING ROAD BRIDGE
 ABUTMENT DETAILS

AMENDMENTS			NAME		DATE	JOB NO.	Sheet No
NO.	BY	DATE	Appvd.	Surveyed			
				Drawn	K. Crawford	7/79	7876
				Calculations	J. Beakhuys	7/79	2
				Traced	H. Crawford	7/79	of 5 sheets
				Checked			
				Approved		9/79	



NOTES

- Transverse stressing requirements:
1 cable at midspan and
1 cable at each end.
Each cable to consist of one 12.5mm strand stressed to 116 kN.
- Recess for transverse stressing in outer unit shall be dimensioned to suit the prestressing suppliers recommendations for the system used.
- Pretensioned 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 former only and shall be mortared up after final inspection of the units. Drainage holes shall extend through the void formers and into the void.
- Concrete cover to all prestressing components = 40mm, cover to all reinforcing steel = 30mm or as shown, cover adjacent to core holes = 10mm.
- Design loading: HN-HO-72.
- Specification: this design is based on materials and workmanship in accordance with the current M.W.D. specification C.D.201.
- Handling:
Extremes of vertical lifting points or ground support shown hatched. Keep unit as horizontal as possible.
- Surface finishes:
(a) top surface - broom finish as specified in clause 6.6.6 of C.D.101.
(b) Side and underside surface - smooth finish except shear key. see DETAIL 2

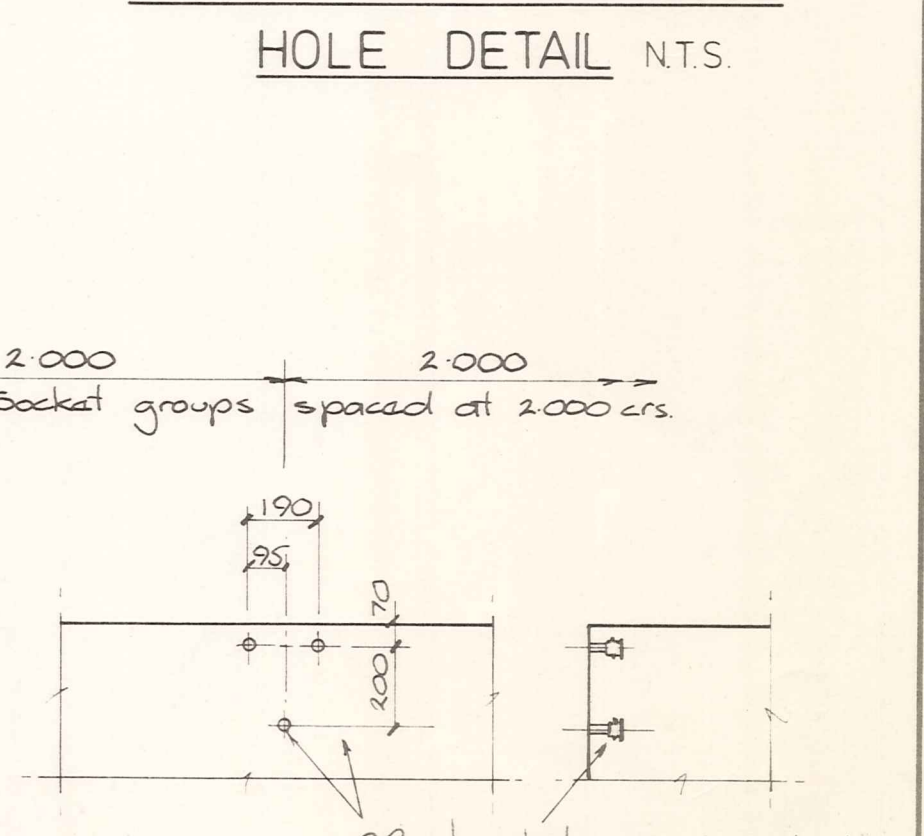
PRESTRESSING FORCES AT INITIAL TENSIONING

Unit span (m)	16.0
Total per unit (kN)	Longitudinal stressing 3175

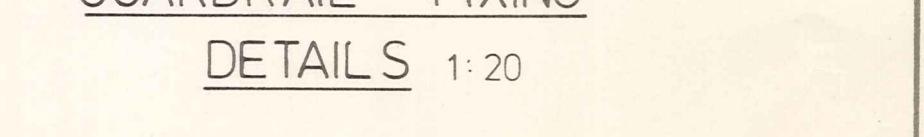
TOLERANCES

- 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
- Overall length - ± 12 mm
Plane surface - deviation from 1500m straight edge - 6mm
All cross sectional dimensions - ± 6 mm
Difference in level of top surface between adjacent units in place - 12mm
Horizontal deviation (see specification) - 6mm
Smallest web thickness - ± 6 mm, ± 4 mm
Smallest flange thickness - ± 6 mm
Diaphragm thickness - ± 12 mm
Lagging variation (see specification) - ± 12 mm
- Location of steel and cast-in system
- Prestressing strands in any direction - ± 3 mm
Location of an item in relation to any other item within its group - ± 10 mm
Transverse duct position - ± 6 mm

INSPECTION & DRAINAGE



GUARDRAIL FIXING



REINFORCEMENT SCHEDULE (for one unit)				
MARK	A	N° OFF	LENGTH	SHAPE (N.T.S.)
1001	849	10	1.181	
1003	826	2	1.158	
1005	810	4	1.142	
1007	801	2	1.133	
1009	798	32	1.130	
1002	446	20	1.622	
1004	434	4	1.610	
1006	426	8	1.602	
1008	421	4	1.597	
1010	419	64	1.595	

NOTES:
(a) Mark designation of bars i.e. 1001
10 = diameter in mm
O = 1st bar mark in unit.
(b) All bands 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.

UNIT DETAILS	
Unit depth (m)	0.575
Unit span (m)	16.0
Overall length (m)	16.13
12.5 strands	Number 26 Total length (m) 429.0
Reinforcement	Total weight (kg) 134
Concrete volume per unit.	Inner unit (m³) 5.99 Outer unit (m³) 6.10
Handling mass	Inner unit (tonnes) 15.6 Outer unit (tonnes) 15.9

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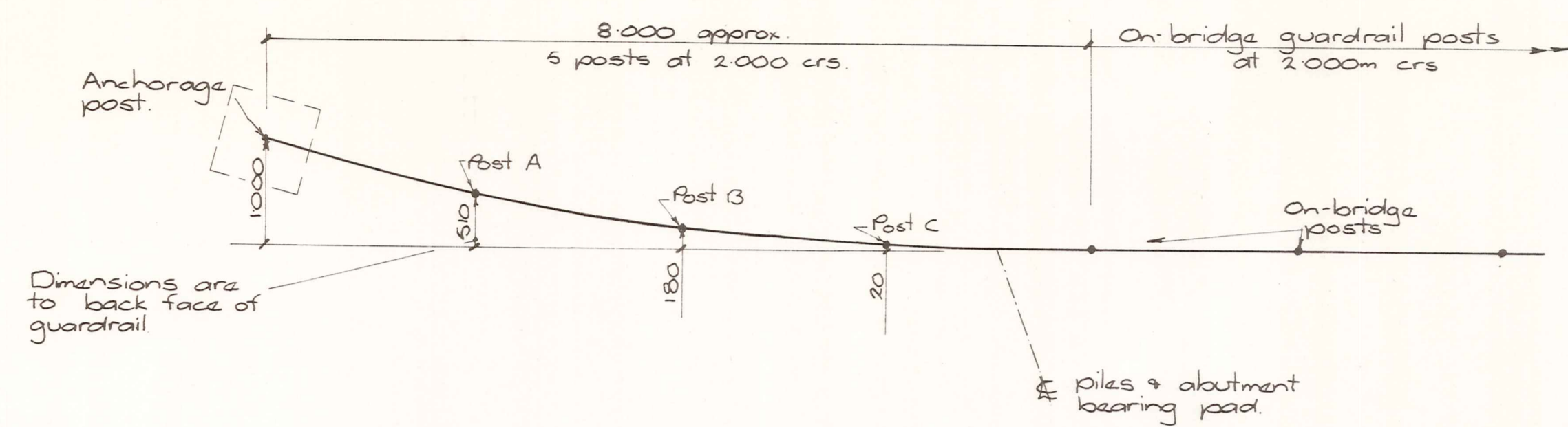
VINCENT COUNTY COUNCIL

LAING ROAD BRIDGE
PRECAST, PRETENSIONED, DOUBLE CORE DECK UNIT DETAILS

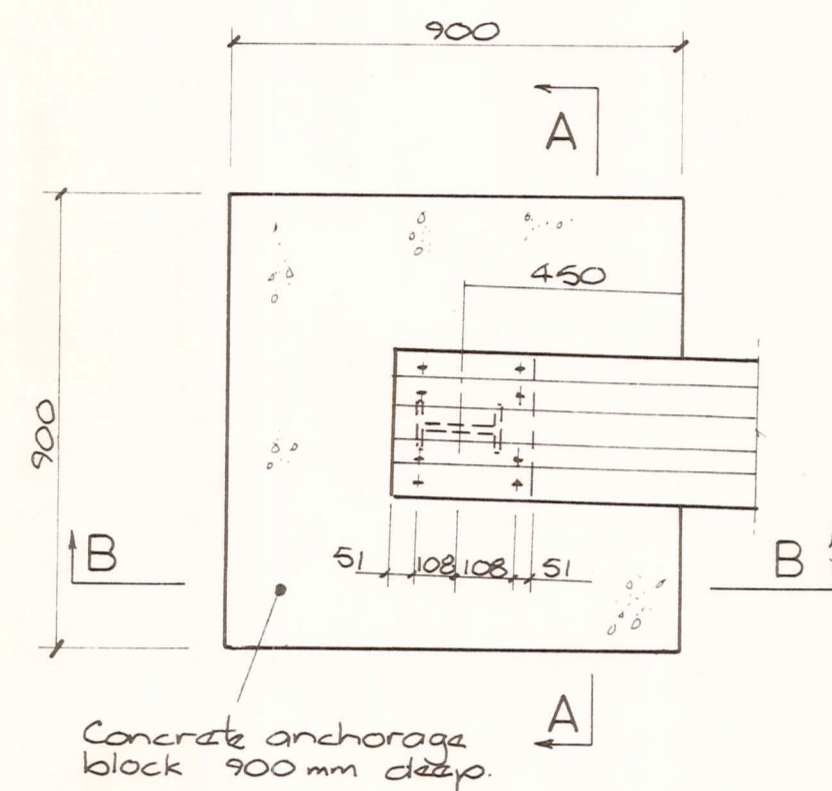
AMENDMENTS			NAME DATE		JOB NO.	Sheet No
NO.	BY	DATE	Appvd.	Surveyed	7876	4
1	K.P.	9.79		Drawn		
				Checked		
				Approved		
				File		

Guardrail fixings on beam direction
Checked by K. Crawford 7/79
Checked by S. Beakhuis 7/79
Approved by [Signature] 9/79
File 156/7876

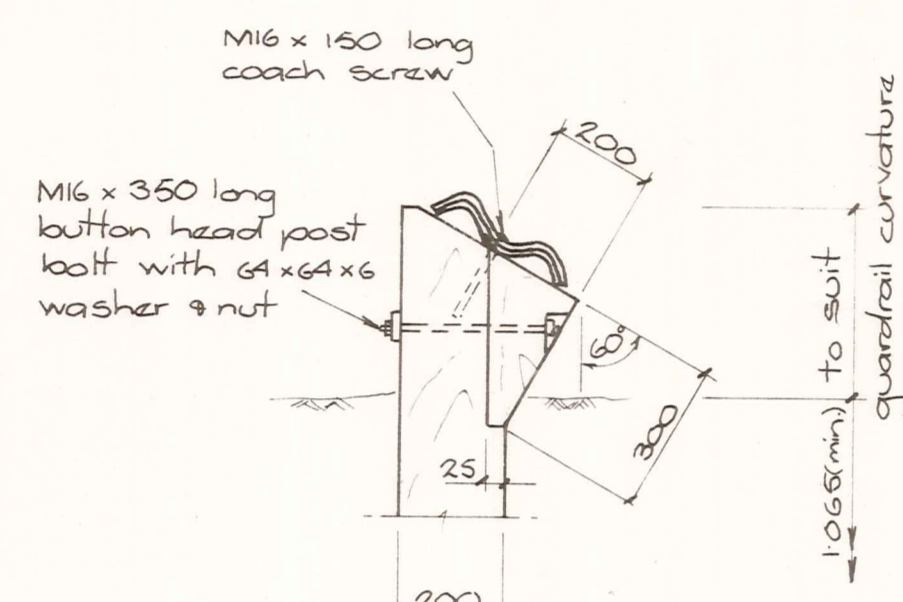
ORIGINAL SIZE INCHES
300
200
100
50
30
10
mm



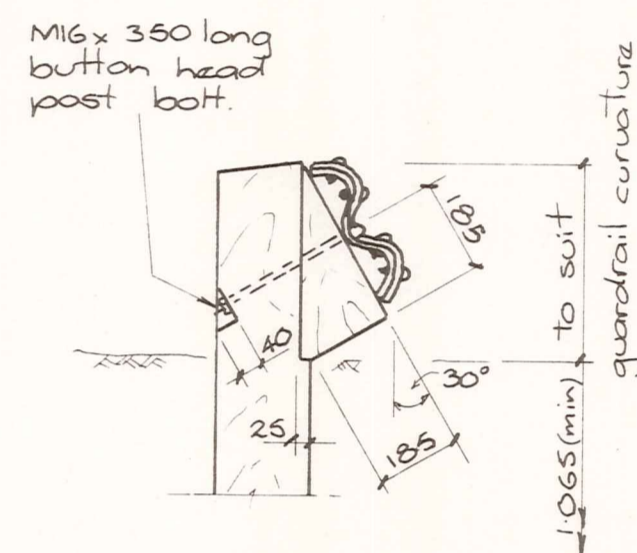
TYPICAL GUARDRAIL LAYOUT PLAN 1:50



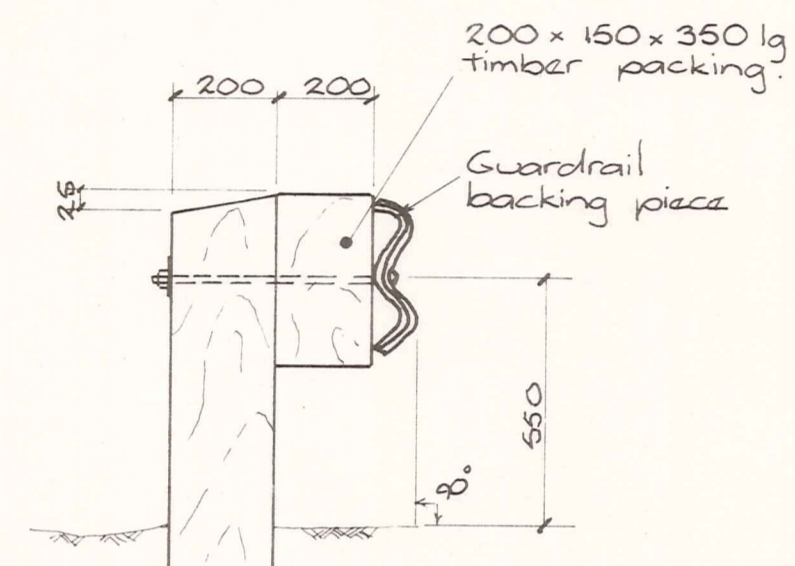
ANCHORAGE POST N.T.S.



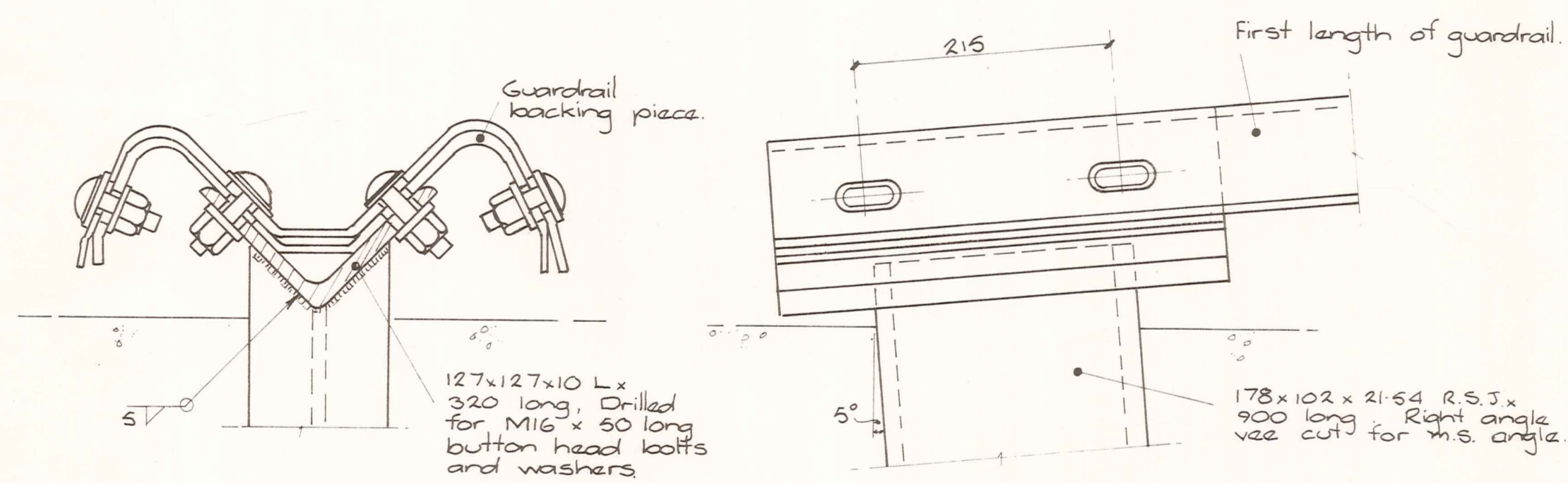
POST A N.T.S.



POST B N.T.S.



POST C N.T.S.

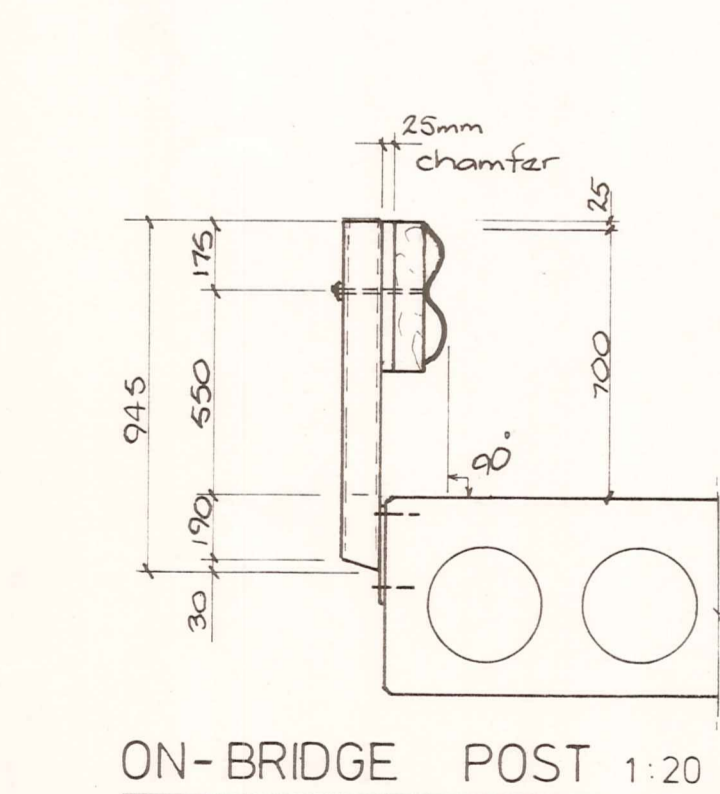


A-A N.T.S.

B-B N.T.S.

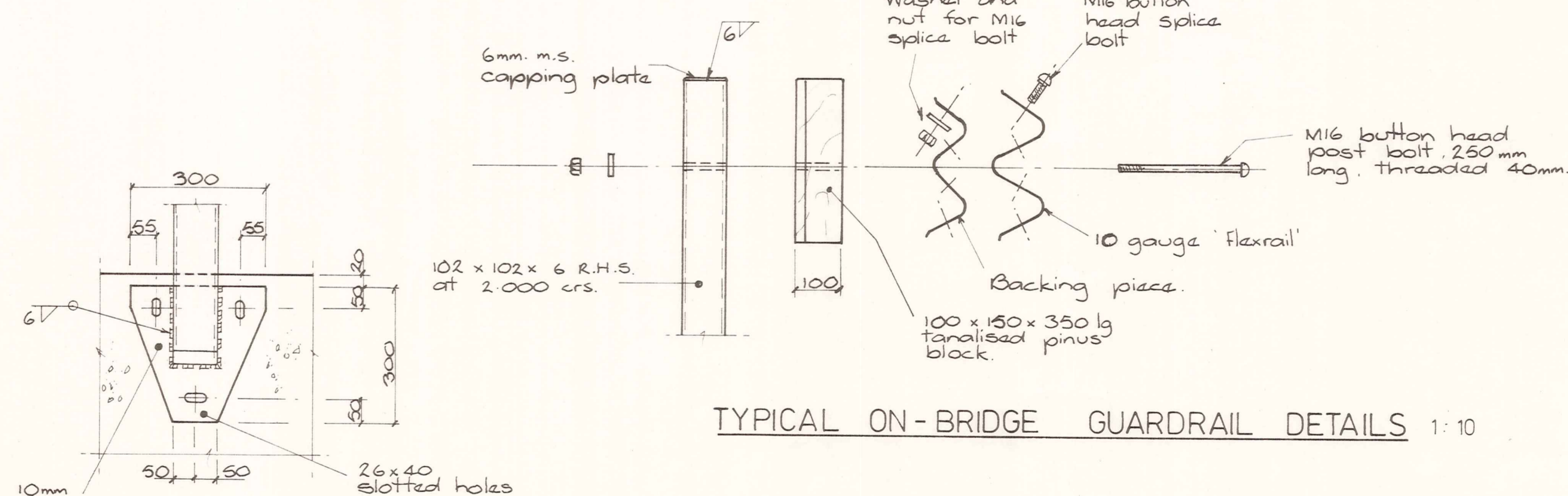
NOTES:

- All steelwork to be hot dipped galvanised after fabrication, including bolts, nuts and washers.
- All timber posts and blocks to be pinus radiata merchantable grade, cut to size, drilled and then preservative treated to the Timber Preservation Authority Specification C3.



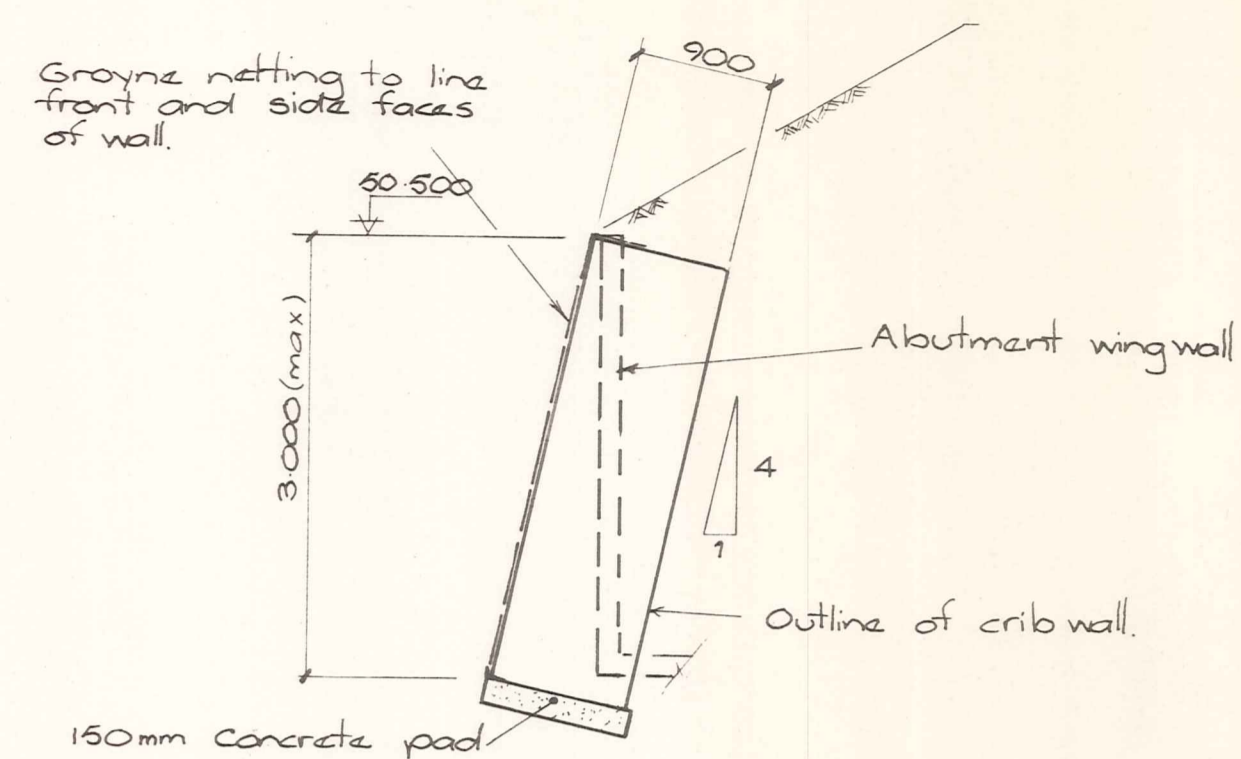
ON-BRIDGE POST 1:20

(See also guardrail fixing details, sheet 4)



GUARDRAIL CONNECTION DETAIL 1:10

TYPICAL ON-BRIDGE GUARDRAIL DETAILS 1:10



TYPICAL SECTION 1:50

CRIBWALL DETAILS

Note: Orientation in plan and extent of cribwall behind abutment to be determined on site. (See sheet 1 also)

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COUNTY
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LAING ROAD BRIDGE
GUARDRAIL AND CRIBWALL DETAILS

AMENDMENTS			NAME DATE		JOB NO.	Sheet No
NO.	BY	DATE	Appvd.	Surveyed		
				Drawn	7876	5
				Calculations		
				Traced		
				Checked		
				Approved		
					File	
					156/7876	L.B.
					9/77	F.B.

ORIGINAL SIZE mm INCHES