

# RIVER WALL CONDITION SURVEY BRIEF

PROJECT TITLE: RED LION COURT

PROJECT NO. 4018

REV: P01 15.04.2024

DOCUMENT REF: 8816-AKT-XXX-ZZZ-RP-S-000037

## 1.0 INTRODUCTION

This document outlines the requirements for a further detailed condition survey associated with the River wall sheet pile wall located along the North face of the Red Lion Court site located at OS Grid reference TQ 32400 80405. This detailed condition survey is a second phase of condition survey, following a visual survey undertaken by Soil Technics (Report Ref STT5486-RWS01; dated May 2022).

The Contractor shall mean the consultant geotechnical / geo-environmental specialist, fieldwork operatives and specialist testing laboratories

The contractor shall use appropriately qualified staff for each aspect of the investigation.

## 2.0 PROPOSED DEVELOPMENT

The project will consist of the demolition of the existing building at 46-48 Park Street, SE1 9EQ in the London Borough of Southwark and the construction of a ground plus ten storey building (plus roof) approximately 78m long by 45m wide, with two levels of basement.

## 3.0 EXISTING RIVER WALL STRUCTURE

Information regarding the existing flood defence structure is inferred from archive drawings which have been provided by the Environmental Agency (EA). An archive interface section is shown in the Figure below. The rest of the relevant archive drawings can be found in the Appendix 01. Based on the date of the archive drawings, this flood defence was understood to be built early 1981, and is around 40 years old. Based on the archive drawings the flood defence structure consists of:

- The existing sheet pile wall which is a Larsen 4/20 profile in grade 50B (S355 equivalent)
- A capping beam is located on top of the sheet piled wall.
- A set of piles sitting behind the sheet pile wall with a pile cap on top
- The sheet pile wall is propped horizontally with tie anchor bars at +2.5 mod which are anchored inside the pile cap.

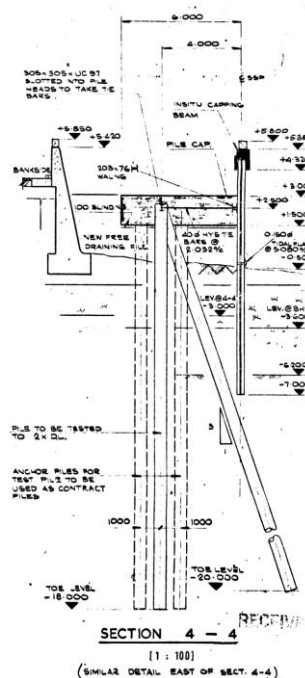


FIGURE 1 - SECTION "4-4" FROM ARCHIVE DRAWING 3329/C/2

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The information from the archive drawing shown above has been also reflected in AKT drawing "8816\_001-AKT-XXX-ZZZ-DR-S-205200" as shown below and can be found in the Appendix 01.

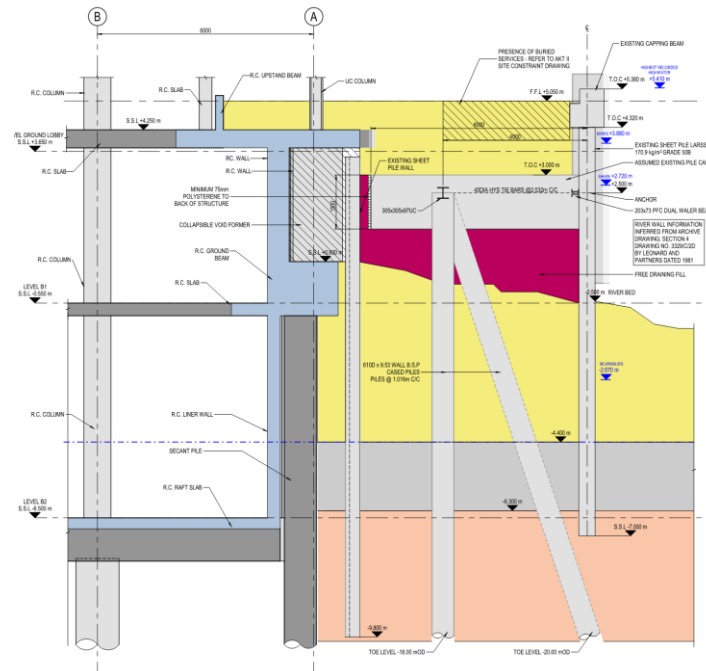


FIGURE 2 AKT II INTERPRETATION OF ARCHIVE DRAWING

It should be noted that the existing gravity retaining wall structure shown in the archive drawing is understood to be the original flood defence structure. Based on the geometry and location of the existing Red Lion Court building with respect the existing sheet pile river wall, it is understood that this original flood defence has been (partially) removed as part of the historic Red Lion Court building formation. Therefore, it is not shown in AKT II relevant cross section as per the own above.

## 4.0 SURVEYS CARRIED TO DATE

A visual survey has been carried to the existing sheet pile wall by Soiltechnics with the report produced on May 2022 with document reference number "STT5486". A copy of the visual survey report can be found on Appendix 3. The scope of this survey was to determine the thickness of the existing sheet pile wall using ultrasonic measurements, undertake visual inspection and produce scan of the wall using LIDAR. The findings of this survey suggested that the sheet piles are generally in good condition with no significant signs of faults, defects buckling or failure.

## 5.0 AIM OF INVESTIGATIONS

The aim of the investigations is to address part of the planning condition No.12 for the Red Lion Court project. Planning condition no.12 is referenced below; text highlighted with bold refers to the requirement for a condition survey and forms the purpose of this condition survey brief.

**"No development, except for demolition and enabling works, shall take place until details of a scheme of condition surveying to establish the condition of the flood defence structures, that are proposed to be retained and a plan to protect the flood defences from damage including through excessive loading have been submitted to, and approved in writing by, the Local Planning Authority, in consultation with the Environment Agency. No above ground construction works shall be commenced within 25 metres of the flood defence structures, before the approved scheme of investigation works has been implemented in full and a report detailing the findings has been submitted to, and approved in writing by, the Local Planning Authority, in consultation with the Environment Agency".**

The existing flood defence structure as described in the sections above, includes structural elements such as the piles and pile cap which are located behind the existing sheet pile wall and below ground level. There is no access to these elements. Following discussion with S.I. contractor from Soiltechnics, it is understood

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that these substructure elements cannot be readily surveyed. Any attempt of exposing these elements for survey reasons would introduce a risk of damaging them and the survey information that could be obtained would be limited. Therefore the scope of the investigations within this survey brief focuses on the visible and accessible elements of the flood defence as outlined in the following section, and the findings from this survey will be used to provide qualitative assessment on the condition of the structure behind based on the archive information.

The river defence structure is around 40 years old and would typically have been designed for a life of 60years+. This detailed condition survey aims to define the condition of the existing river wall and any loss of section from corrosion over the previous 40 years. Steel sheet pile structures are typically designed to accommodate corrosion over time. Understanding how corrosion has occurred over time and the residual section thickness would provide an indication of how the structure is likely to behave over the following time period and can be compared to design literature to understand if the structural condition is better or worse than would be expected from a sheet pile structure of this age.

## 6.0 SCOPE OF INVESTIGATIONS

The scope of investigations is as follows:

- Define condition and thickness of the sheet pile wall by carrying out ultrasound surveys. Ultrasound measurements to be taken at a minimum of:
  - 500mm vertical centres along the visible and exposed sheet pile height i.e from  $\sim -0.5\text{mOD}$  up to crest of river wall.
  - Every third sheet pile horizontally along the length of the sheet pile wall. The minimum length of the sheet pile wall to be investigated is shown in the following Figure with green. Drawing can be also be found in Appendix 02.

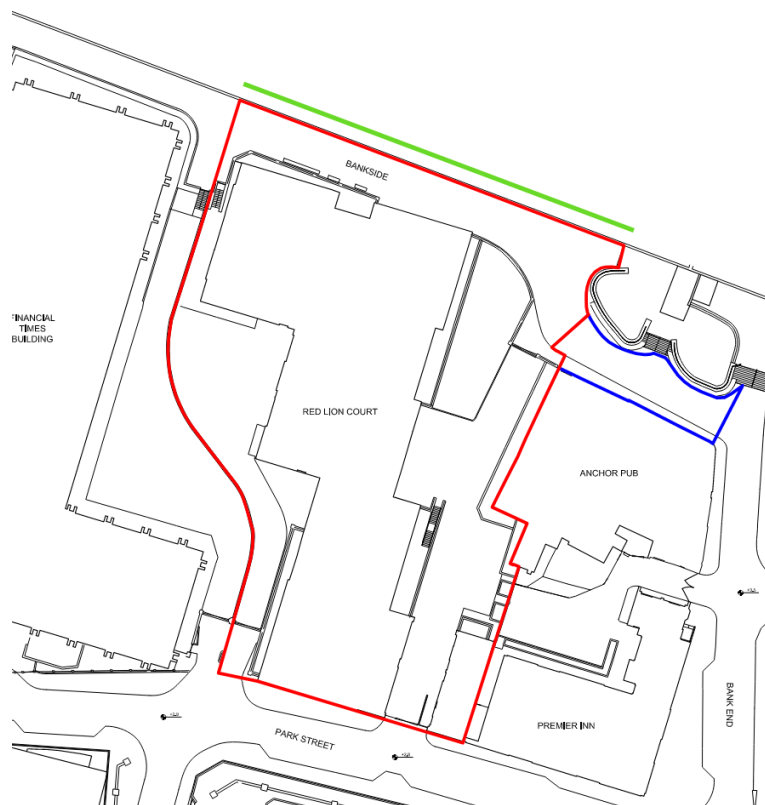


FIGURE 3 LENGTH OF SHEET PILE WALL REQUIRING INVESTIGATIONS (SHOWN WITH GREEN)



# **RIVER WALL CONDITION SURVEY BRIEF**

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- All the tie anchors and their fixings which are visible from the river side to be surveyed for their condition. Each one to be labelled accordingly with an elevation key drawing.
- The visible connection and interface between the sheet piled wall and capping beam to be surveyed for condition. Survey to be undertaken at minimum intervals of every third sheet pile.
- Scale Elevation drawings to be produced showing each of the locations surveyed to be labelled and reference made to the findings with associated photographic evidence. To be provided in pdf and .dwg format. Drawings should be referenced back to the Topographical survey to ensure location of elevation can be established.
- All investigation works should extend a minimum of 2.5m beyond the assumed site boundary line based on Figure 3 above.

## **7.0 INFORMATION REQUIRED AT TENDER STAGE**

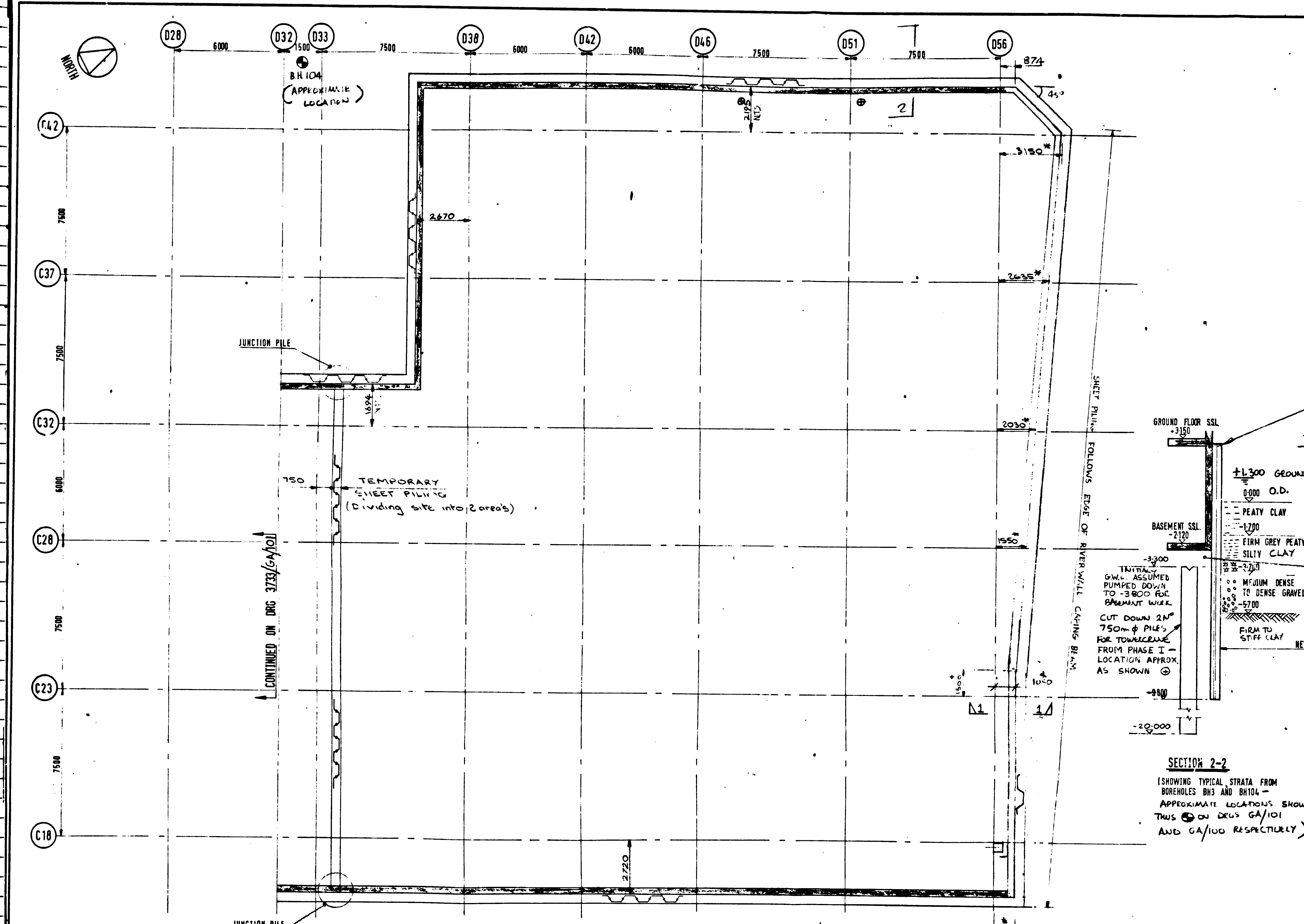
The contractor shall provide the following information with their tender:

1. A detailed scope of fieldwork, sampling and testing proposed.
2. A method statement covering the fieldwork to include equipment, access routes, working hours and protection measures.
3. A detailed pricing schedule for completing the investigation.
4. A programme indicating from the receipt of the instruction to proceed to the provision of the final report.
5. A budget price for the whole of the work, including breakdown for each element.

The scope of the field work and material testing will need to be varied in accordance with the actual site conditions and information revealed. Final costs of these investigations may thus vary but should not exceed the above budget without prior written approval from the contract administrator.

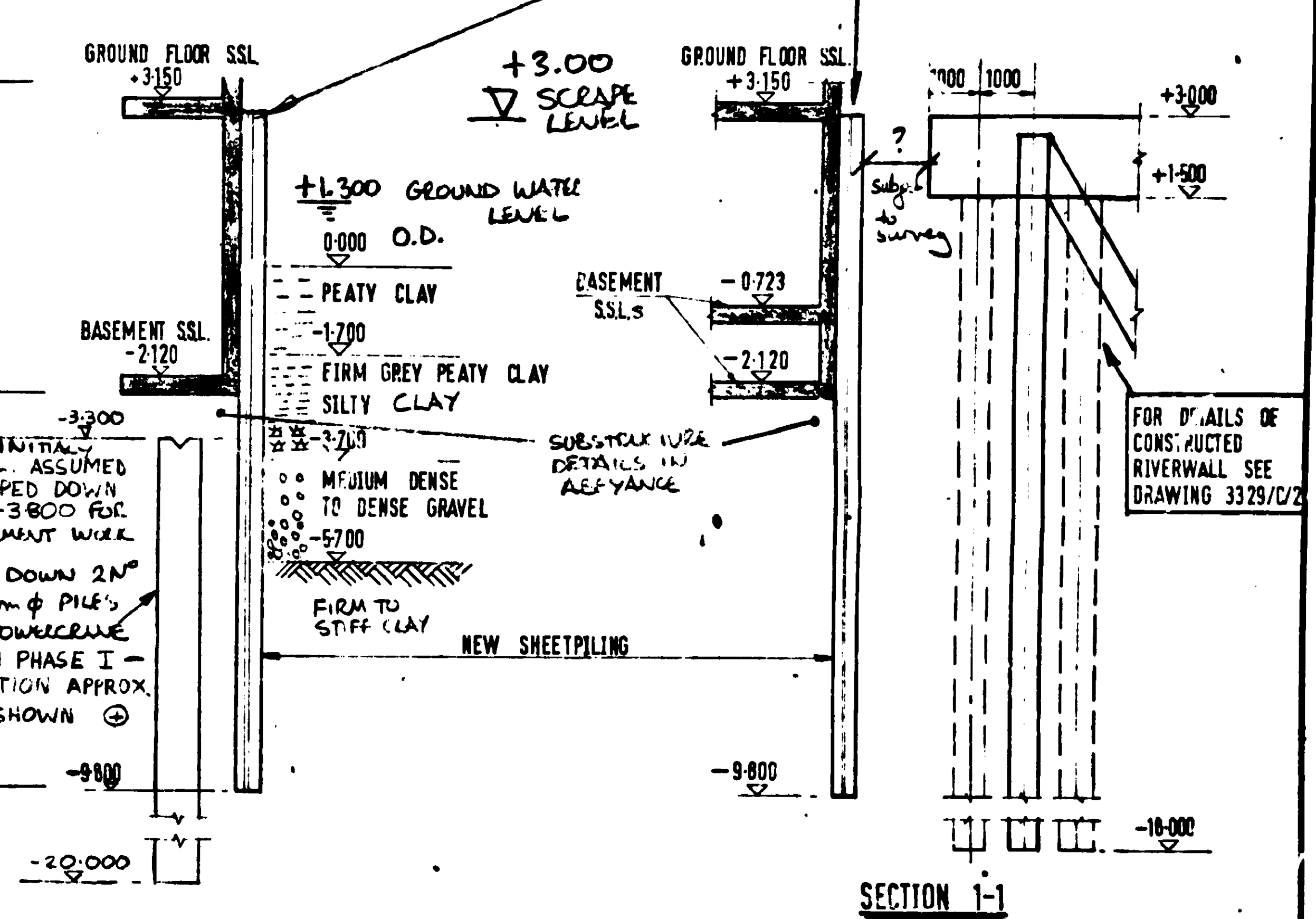


# **APPENDIX 01**



- NOTES**
1. SHEET PILING TO BE LARSEN 32 W. GRADE 50A, 14m LONG FOR PERIMETER AND INTERNAL DIVISION AS SHOWN. SHEET PILING IS PERMANENT UNLESS NOTED.
  2. DIMENSIONS SHOWS THIS ARE CURRENTLY SCALED AND ARE GOVERNED BY FINAL SITUING OUT OF BUILDING.
  3. ORDOL HAS BEEN MEASURED AS FOLLOWS:
 

EXTERNAL PERIMETER	270 M
INTERNAL DIVISIONS	26 M
SPACE	9 M
TOTAL STRAIGHT	305 M
PLUS CORNICES AS SHOWN	15 NO
	1 NO



**SECTION 2-2**  
 (SHOWING TYPICAL STRATA FROM BOREHOLES BH3 AND BH104 - APPROXIMATE LOCATIONS SHOWN THIS ON DRG GA/101 AND GA/100 RESPECTIVELY)

ISSUED FOR TENDER	JT	9/10/03	
ISSUED FOR FABRICATION BY BSC	JC	16-8-03	
REVISION	DESCRIPTION	NAME	DATE
	RED LION COURT BANKSIDE DEVELOPMENT LONDON	DRAWN J.C.	
	GENERAL ARRANGEMENT	CHECKED JT	
	SHEET PILING LAYOUT PHASE I	APPROVED	
	SHEET 1 OF 2	DATE AUG 08	
		SCALE 1:100	
<b>Leonard and Partners</b> consulting engineers LDPN 3388 WETTERN HOUSE, DINGWALL ROAD, CROYDON, CR9 3PE. TELEPHONE: 01886-7061		DRAWING No.	3733/GA/100A
			S199-200

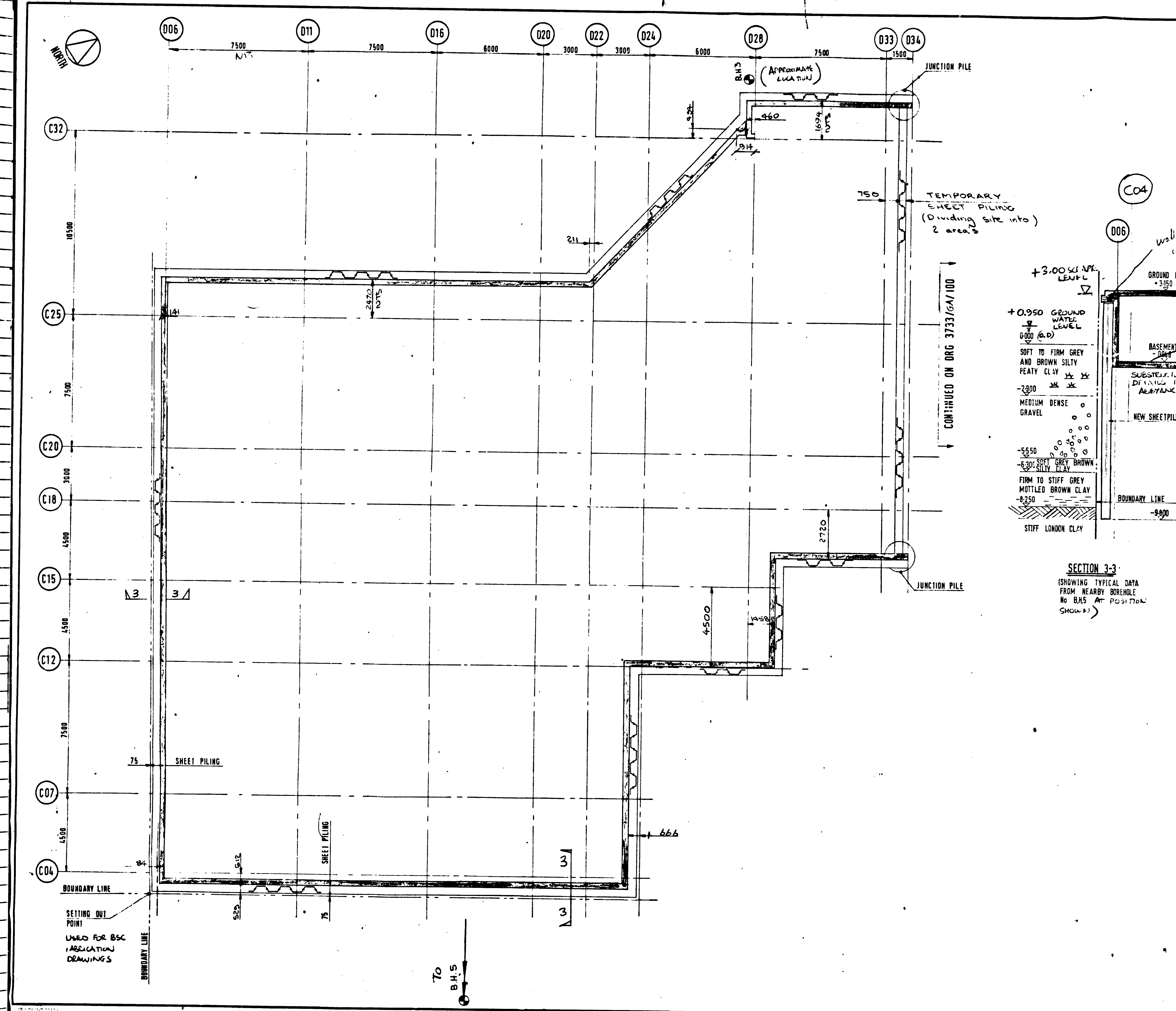
S199-200

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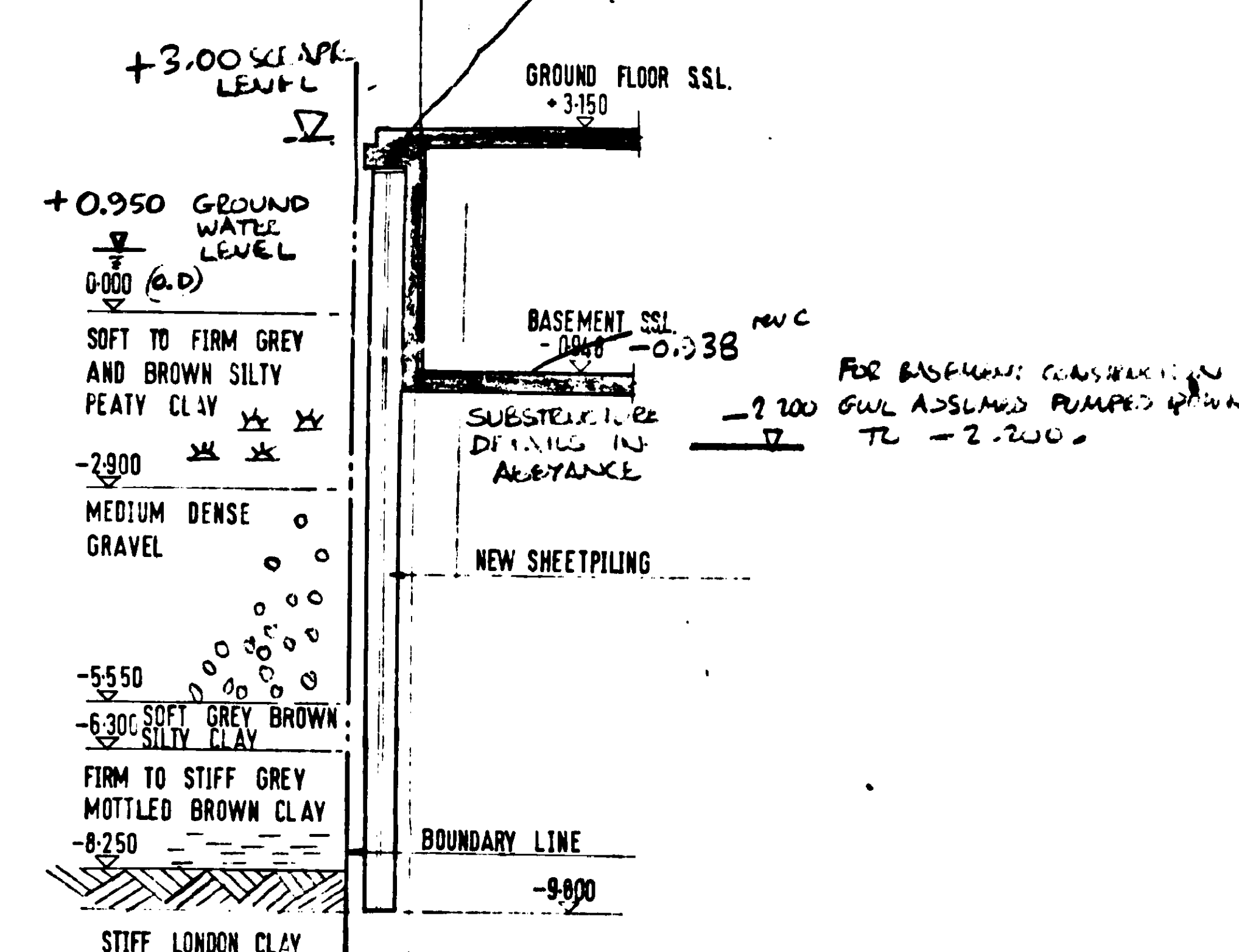


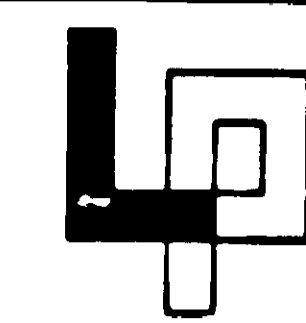
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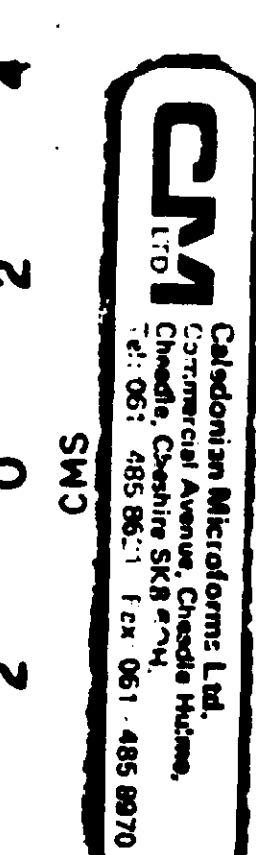
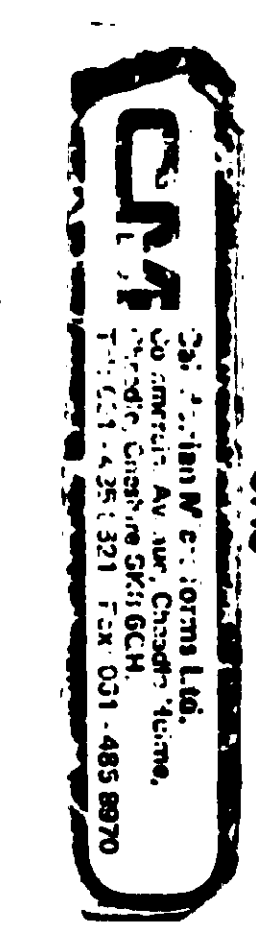
**NOTES**  
1. FOR GENERAL NOTES SEE DRG 3733/GA/100



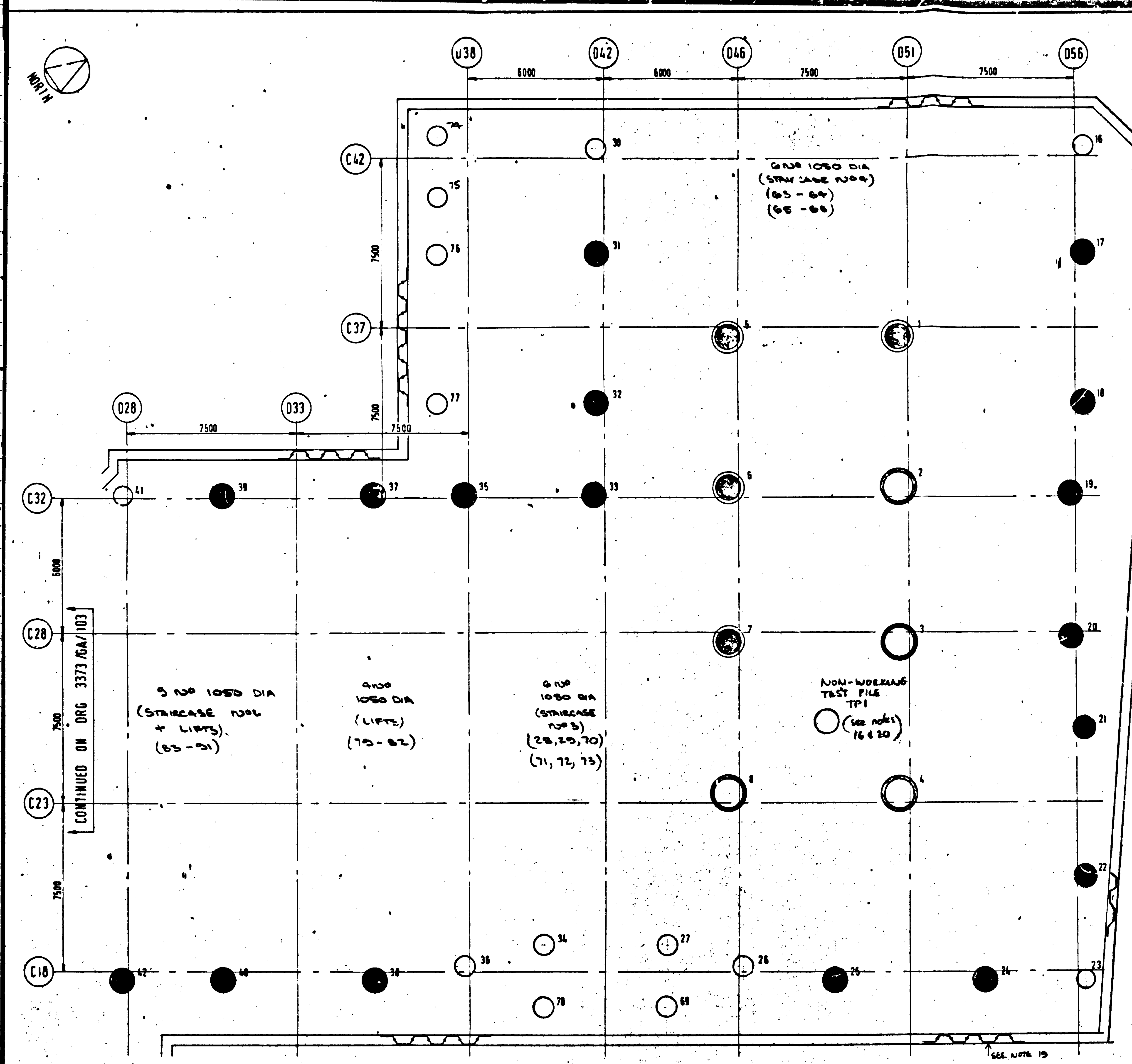
B	ISSUED FOR TENDER	CIT	9/9/88
A	SECTION 3-3 ADDED PARTY WALL ETC	CIT	1/9/89
-	ISSUED FOR FABRICATION BY BSC	JC	16/8/88
REVISION	DESCRIPTION	NAME	DATE
	RED LION COURT	DRAWN	JC
	BANKSIDE DEVELOPMENT LONDON	CHECKED	JC
	GENERAL ARRANGEMENT	APPROVED	
	SHEET PILING LAYOUT PHASE 2	DATE	AUG 88
	SHEET 2 OF 2	SCALE	1:100
	 Leonard and Partners consulting engineers 122, PA 33, 88	DRAWING No.	3733/GA/101
	WESTERN HOUSE, DINGWALL ROAD, CROYDON, CR9 3PE		199-200
	TELEPHONE: 01-885-7061		

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REINFORCEMENT SCHEDULE		
PILE DIA	REINFORCEMENT FOR 7.5m LENGTH	
	MAIN	HELICAL LINK
300	B16	R10 @ 800%
1050	10T16	"
1550	10T20	"
1500	Ø 125	"

17. Reinforcement listed on schedule sheet 10° 102 / 01. (in abeyance - see schedule below)
18. All piles to be tested by T.T.O. or similar approved methods.
19. For details of permanent sheet piling shown thus see drawing 10° 8755/GA/100 and 101.
20. Tests to determine the clay cohesion values in the test shaft (10° T51) and test pile (10° TPI) are to be taken at levels -6, -12, -18, -21, and -25 o.d.

See items in abeyance note 3

- ITEMS IN ABEYANCE**
1. Setting out information
  2. Additional piles for main contractors crane foundations
  3. Profile of sheetpiling adjacent to riverwall (north of grid D56)

- NOTES**
1. For details of piling schedule and typical detail of pile see drawing 10° 3733/GA/100. Both drawings are to be read in conjunction with the specification.
  2. For details of pile caps and ground beams refer to drawing 10° 3733/P/100-107 etc.
  3. All piling is to be carried out from existing ground level unless noted otherwise. Approximate existing ground levels at the pile positions are as shown in the 'Piling Schedule'.
  4. All piles are undersreamed large diameter bored cast in-situ reinforced concrete designed for end bearing and skin friction unless noted otherwise.
  5. Concrete to be Grade 30 (characteristic strength of 30 N/mm<sup>2</sup>) and designed in accordance with BS 5329. Sulphate Resisting Cement is to be used with a minimum content of 230 kg/m<sup>3</sup>, a nominal maximum size of aggregate of 20 mm and a maximum free water/cement ratio of 0.50 by weight.
  6. All reinforcement including links, to be supplied and fixed by the piling contractor.
  7. All reinforcement in piles to project a minimum of 40 x diameter of bar above the designed cut-off level.
  8. The concreting of each individual pile should be completed the same day.
  9. Reference should be made to the site investigation reports by 'Ground Engineering Ltd' document.
  10. No pile should be more than 75 mm from its design position on plan and plumb to a tolerance of 1 in 50.
  11. The piles are designed for a guaranteed factor of safety of 2.5 against failure.
  12. The working load that each pile is required to carry is as shown in the 'Piling Schedule'.
  13. All dimensions shown are metric.
  14.
    - Indicates 300 mm diameter pile
    - " 1050 mm " "
    - " 1550 mm " "
    - " 1500 mm " "
  15. ⊗ It is necessary for the concrete in the pile shafts to be cast to a level 0.50 m above the artesian water level. Consequently the piling contractor is to cast the concrete in the pile shafts up to level 1.600 or to the pile casting height, whichever is the highest.
  16. All test shafts are to be 1350/1050 and taken to a depth of -25.000 o.d., undersreamed to 8700 dia to check clay cohesion values at depth. After all checks have been carried out the shafts to be filled with weak concrete mix 1:20 (all in aggregate and s.e. cement) to level -8.000 o.d. (see note 20)

REVISION	DESCRIPTION	NAME	DATE
	RED LION COURT		DRAWN M.L.S.
	BANKSIDE DEVELOPMENT LONDON		CHECKED
	GENERAL ARRANGEMENT		APPROVED
	PILING PLAN (NORTH)		DATE 16-5-08
	SHEET 1 OF 2		SCALE 1:100
			DRAWING No
			3733/GA/102
			S199-200

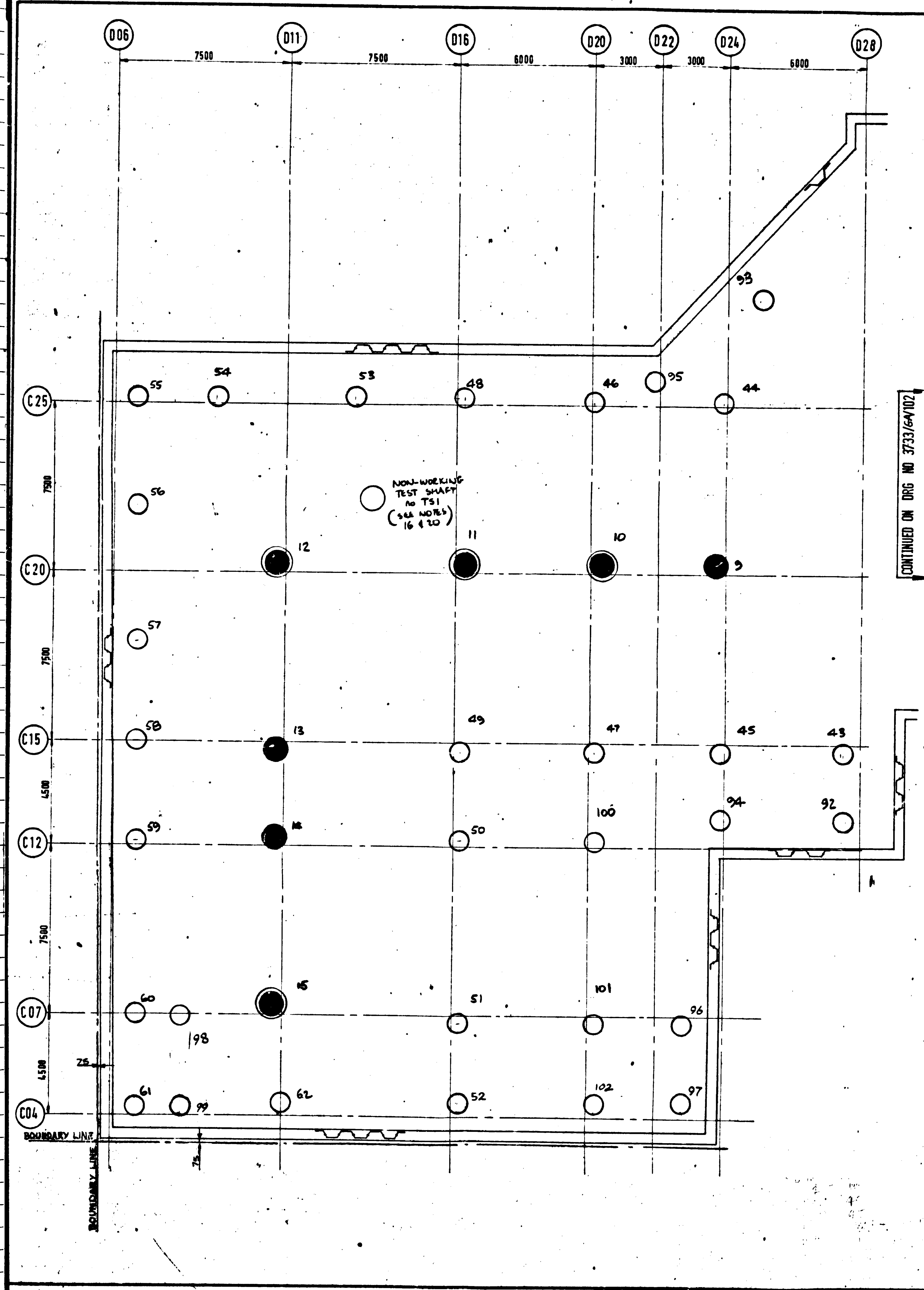
**Leonard and Partners**  
consulting engineers  
L33PN 3355  
WETTERLY HOUSE DINGWALL ROAD CROYDON CR8 3PE  
TELEPHONE 01 884 7081

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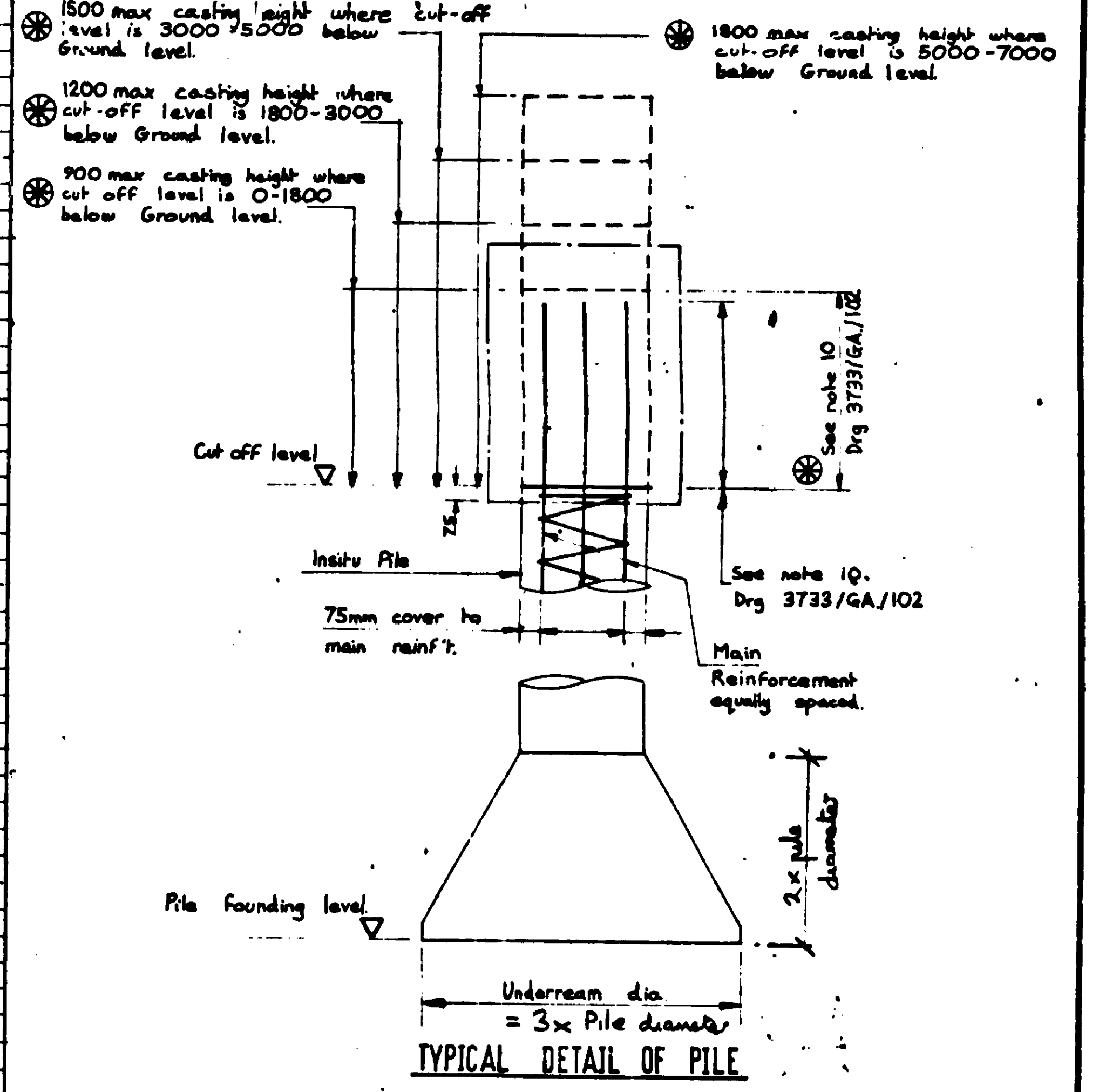
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CONTINUED ON DRG NO 3733/64/107

PILING SCHEDULE									
PILE N°	PILE DIA mm	APPROX GPO LEVEL m A.D.	PILE CUT OFF LEVEL m OD	PILE FOUNDING LEVEL m OD	LENGTH OF OPEN BORE m	LENGTH OF CONCRETE ON PILE m	MAX LOAD ON PILE kN	UNDERREAM DIA mm	REMARK
1	1350	-3.245	-25.00						SEE TYPICAL DETAIL
2	1500	-3.245							
3	1500	-3.245							
4	1500	-3.245							
5	1350	-3.245							
6	1350	-3.245							
7	1350	-3.245							
8	1500	-3.245							
9	1050	-2.063							
10	1350	-2.063							
11	1350	-2.063							
12	1350	-2.063							
13	1050	-2.063							
14	1050	-2.063							
15	1350	-2.063							
16	900	-3.245							
17	1050	-3.245							
18	1050	-3.245							
19	1050	-3.245							
20	1050	-3.245							
21	1050	-3.245							
22	1050	-3.245							
23	900	-3.245							
24	1050	-3.245							
25	1050	-3.245							
26	900	-3.245							
27	900	-3.245							
28	1050	-3.245							
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33	1050	-3.245							
34	900	-3.245							
35	1050	-3.245							
36	900	-3.245							
37	1050	-3.245							
38	1050	-3.245							
39	1050	-3.245							
40	1050	-3.245							
41	900	-3.245							
42	1050	-3.245							
43	900	-2.063							
44	900	-2.063							
45	900	-2.063							
46	900	-2.063							
47	900	-2.063							
48	900	-2.063							
49	1050	-2.063							
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65	1050	-3.245							
66	1050	-3.245							
67	1050	-3.245							
68	1050	-3.245							
69	900	-3.245							
70	1050	-3.245							
71	1050	-4.540							
72	1050	-4.540							
73	900	-4.540							
74	900	-3.245							
75	900	-3.245							
76	900	-3.245							
77	900	-3.245							
78	900	-3.245							
79	1050	-4.540							
80	1050	-4.540							
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82	1050	-4.540							
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91	1050	-4.540							
92	900	-2.063							
93	900	-2.063							
94	900	-2.063							
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96	900	-2.063							
97	900	-2.063							
98	900	-2.063							
99	900	-2.063							
100	900	-2.063							
101	900	-2.063							
102	900	-2.063							
103	1350	-							TEST PILE
104	1350	-							TEST SHAFT

NOTES  
1. REFER TO DRAWING NO 3733/64/102



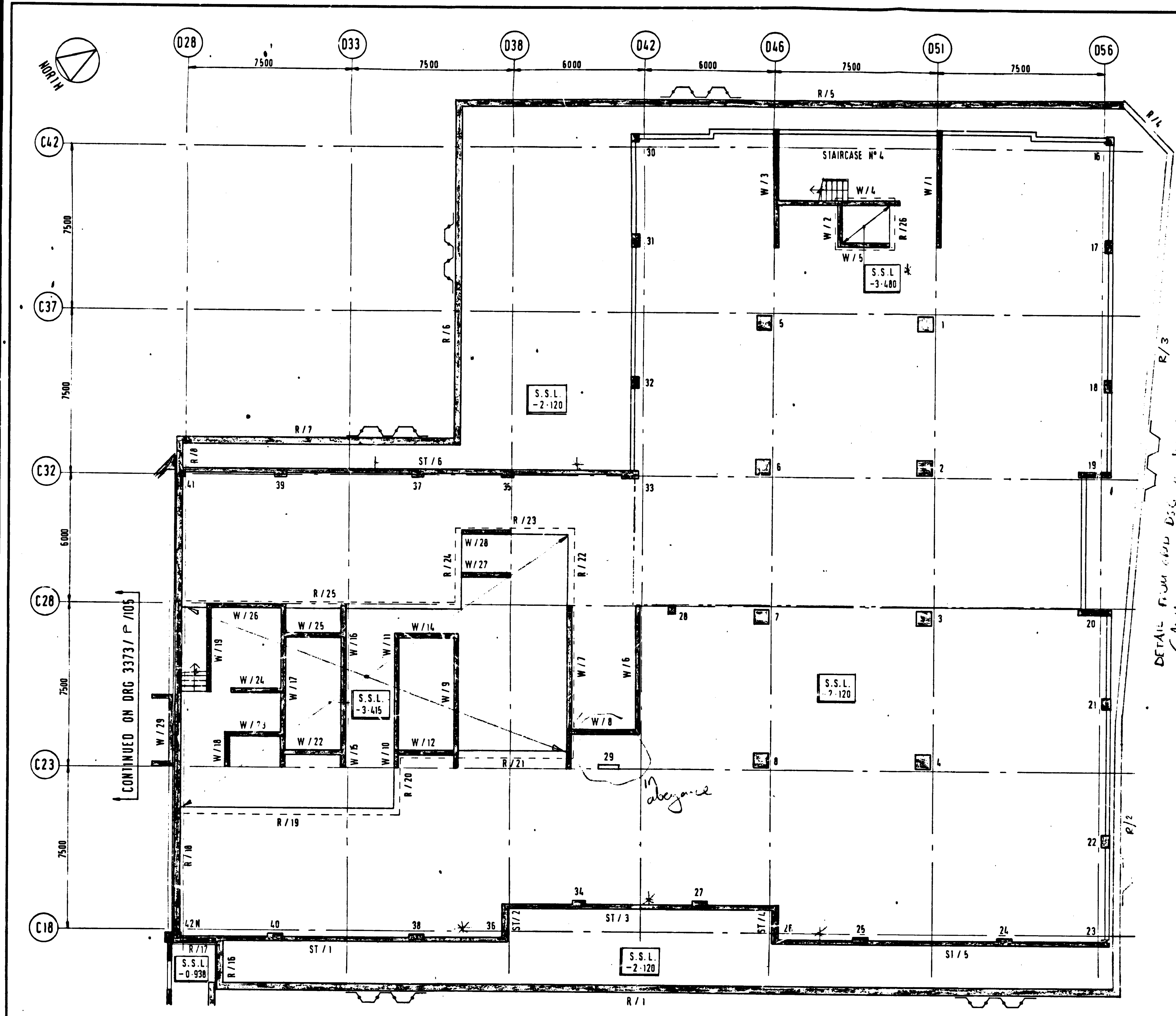
REVISION	DESCRIPTION	NAME	DATE
	RED LION COURT		
	BANKSIDE DEVELOPMENT LONDON		
	GENERAL ARRANGEMENT		
	PILING PLAN (SOUTH)		
	SHEET 2 OF 2		
	Leonard and Partners consulting engineers L33PA 3388		
	WETTERN HOUSE, DINGWALL ROAD, CROYDON, CR9 3PE.		
		DRAWN I.C.	
		CHECKED C.J.I.	
		APPROVED E.J.G.	
		DATE 16/9/88	
		SCALE 1:100	
		DRAWING No.	
		3733/64/103	
		S199-200	

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- NOTES**
1. Internal walls 150mm thick u/c
  2. Slab 300 thick
  3. Retaining walls 300 thick
  4. Concrete grade 40 N/mm<sup>2</sup>
  5. General data live load :- 10 kN/m<sup>2</sup>

For details of sheet piles and piles see drawing nos 3733/4A/100-105

COLUMN NUMBERS	COLUMN SIZE
26, 36	1338 x 250
19, 20	1300 x 250
29	x 175
4	700 x 700
24, 25, 33, 38, 40	700 x 350
1, 2, 3, 5, 6, 7, 8	650 x 650
17, 18, 21, 22, 27, 31, 32, 34, 35, 37, 39	550 x 350
16, 23, 30, 41, 42H	350 x 350
28	400 x 400

**Key to wall reference**  
 W/1-40 internal core walls  
 R/1-15 retaining wall (External)  
 R/16-26 " (Internal)  
 ST/1-6 stub wall support  
 (W/20, 21, 34, 36-39 commence at ground level)

DETAIL FROM DRG DIS 100/106 (AUG. 1984) (SEE DRAWING 3733/4A/100-105)

PLAN OF SLAB AT S.S.L. -2.120 UNLESS NOTED OTHERWISE  
 (FOR PLAN OF SLAB AT S.S.L. -0.715 REFER TO DRG N° 3733/P/106)

\* walls at elevation of S.S.L. -0.715

- IFC ABBEYARCE**
- a) Substructure pile capping beams and pile cap.
  - b) M&E input (preliminary drainage receiver)
  - c) Extent of perimeter upstand
  - d) walls to support slab at -0.715
  - e) dimensions
  - f) sections

**PRELIMINARY**

wall reference, all column sizes, slab levels, etc. Refer to drawing 3733/4A/100-105

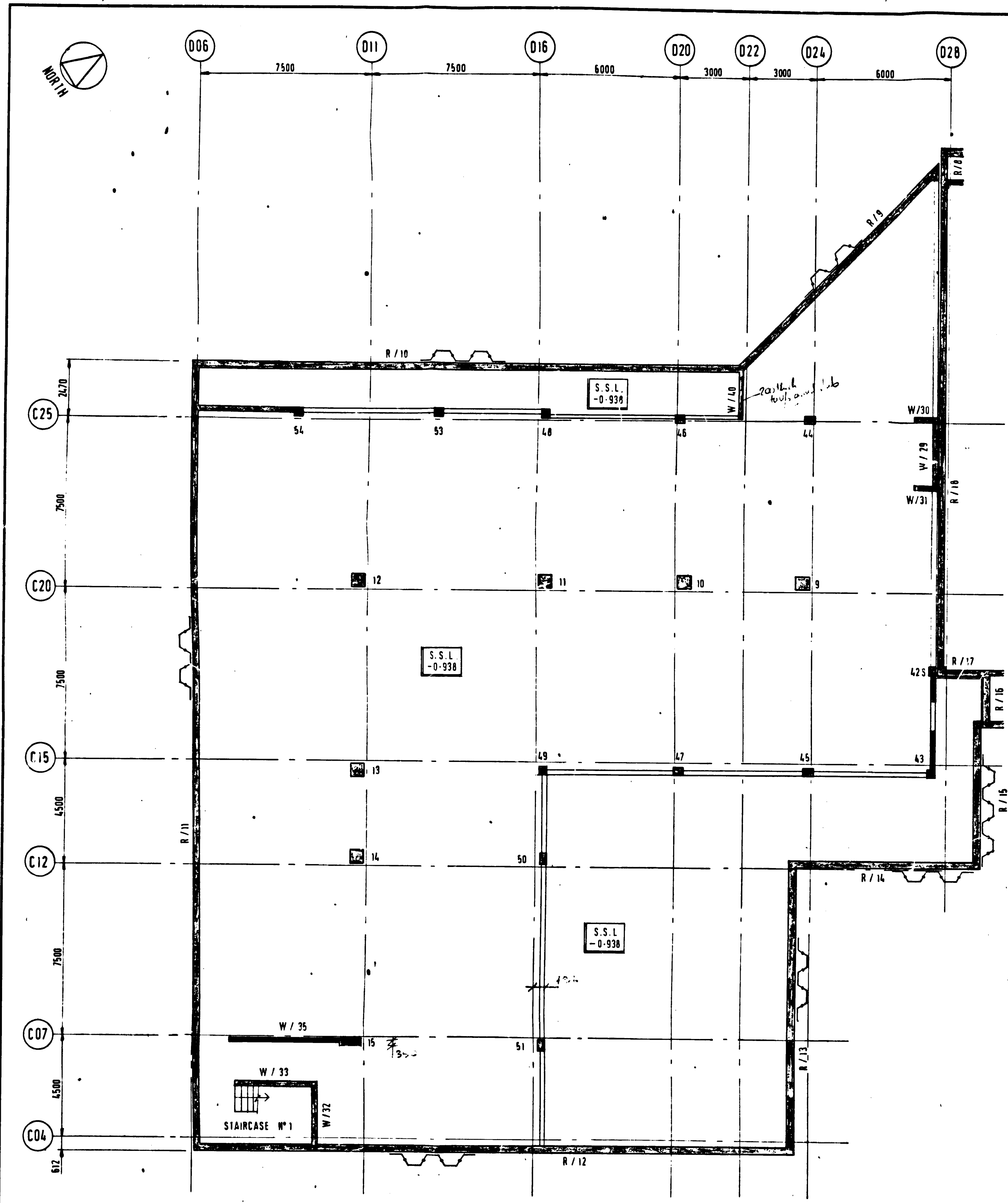
REVISION	DESCRIPTION	NAME	DATE
B	Additional notes to detail at C30/D38 area add'l	M.L.S.	19/3/85
A			

RED LION COURT	DRAWN M.L.S.
BANKSIDE DEVELOPMENT LONDON	CHECKED
GENERAL ARRANGEMENT	APPROVED
BASEMENT SLAB (NORTH)	DATE
SHEET 1 OF 4	SCALE 1:100
<b>Leonard and Partners</b> consulting engineers LDDPN 3388 WETTERN HOUSE DINGWALL ROAD, CROYDON CR9 3PE TELEPHONE 01 885 7081	DRAWING No 3733/P/106 S 199-200

S199-200

1984-227





PLAN OF SLAB AT S.S.L. - 0-938 UNLESS NOTED OTHERWISE

**NOTES**  
 1. FOR GENERAL NOTES SEE DRG 3733/P/104  
 2. FOR COLUMN SIZE, SEE TABLE BELOW

ITEM IN ABEYANCE  
 AS DRG NO 3733/P/104


CONTINUED ON DRG 3733/P/104

COLUMN NO	COLUMN SIZE
9, 10, 11, 12, 13, 14	600x600
50, 51, 52	450x350
42	450x425
42, 44, 45, 46	450x350
47, 53, 54	450x350
43	350x350

15 } IN ABEYANCE  
 43 }

PRELIMINARY

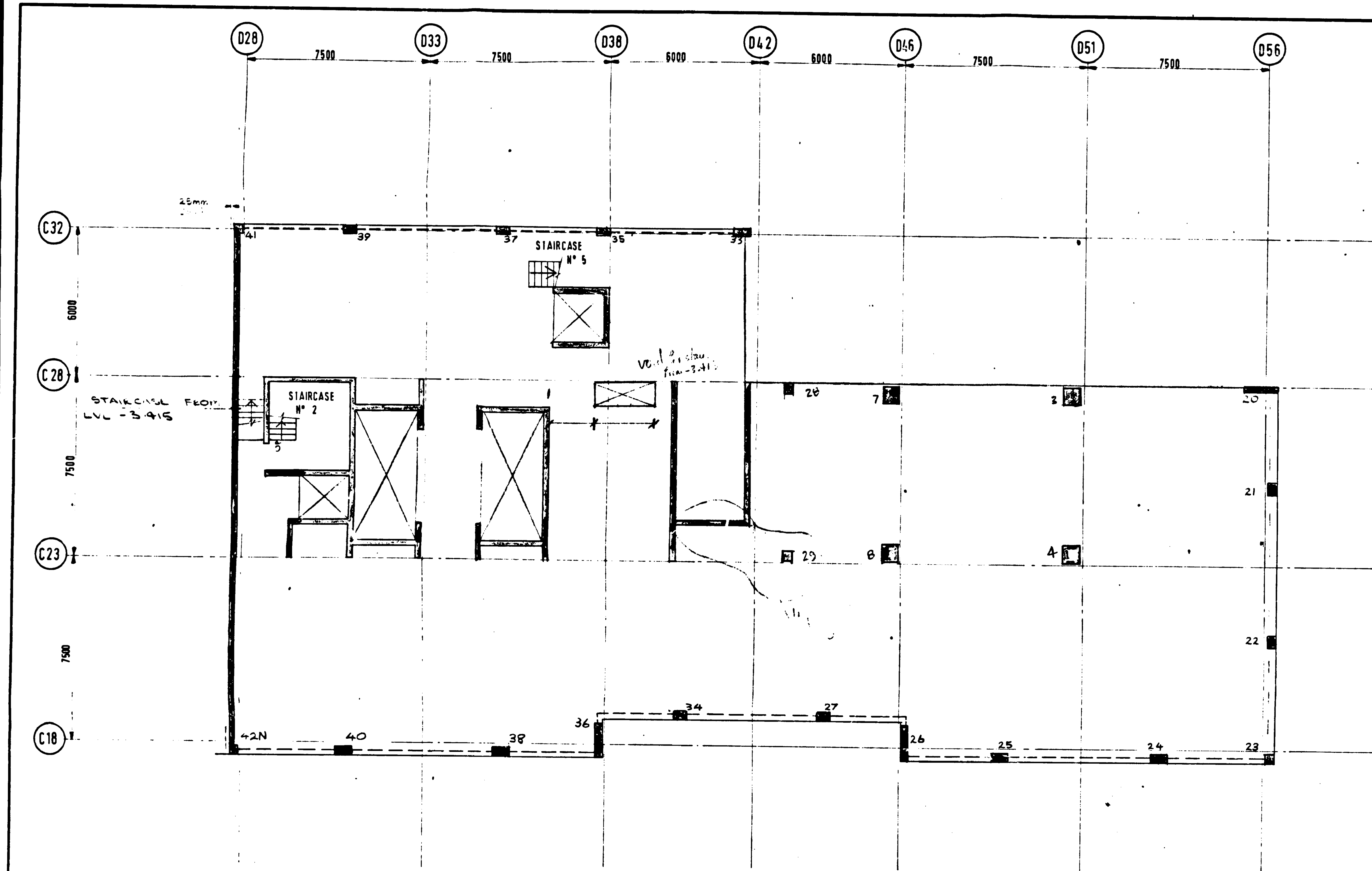
REVISION	DESCRIPTION	NAME	DATE
B	WALL REFERENCE ADDED EX - DETAIL UNITS COLUMN SIZE (AUGMENTED) Additional notes, re position of wall on of DOG & Staircase DOG/D11 - CO/C07	M.L.S.	15/10/84
A		M.L.S.	15/10/84

RED LION COURT	DRAWN M.L.S.
BANKSIDE DEVELOPMENT LONDON	CHECKED
GENERAL ARRANGEMENT	APPROVED
BASEMENT SLAB (SOUTH)	DATE
SHEET 2 OF 4	SCALE 1:100
 Leonard and Partners consulting engineers LBP/PA 3300	DRAWING No. 3733/P/105
WETTERN HOUSE DINGWALL ROAD, CROYDON CR8 3PE TELEPHONE 01 885 7071	S199 200

S199-200

15  
228  
1989





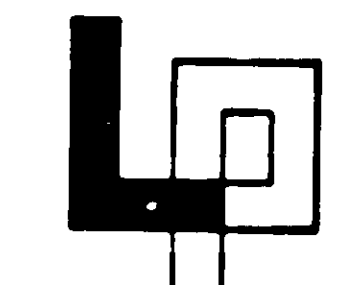
PLAN OF SLAB AT SSL-0-713 (u.n.c.)

**NOTES**  
 1. For general notes and particulars refer to 3733/P/106

Columns TYPE	
Col. No.	Col. Size
20, 36	1350 x 250
21	1300 x 700
4	1100 x 700
24, 25, 33, 38, 40	700 x 350
3, 7, 8	650 x 650
21, 22, 27, 34, 35, 37, 39	550 x 350
28	400 x 400
23, 41	350 x 350

1. Areas to be reinforced
2. walls to be built
3. floor levels (preliminary drawing etc)
4. final structural slab

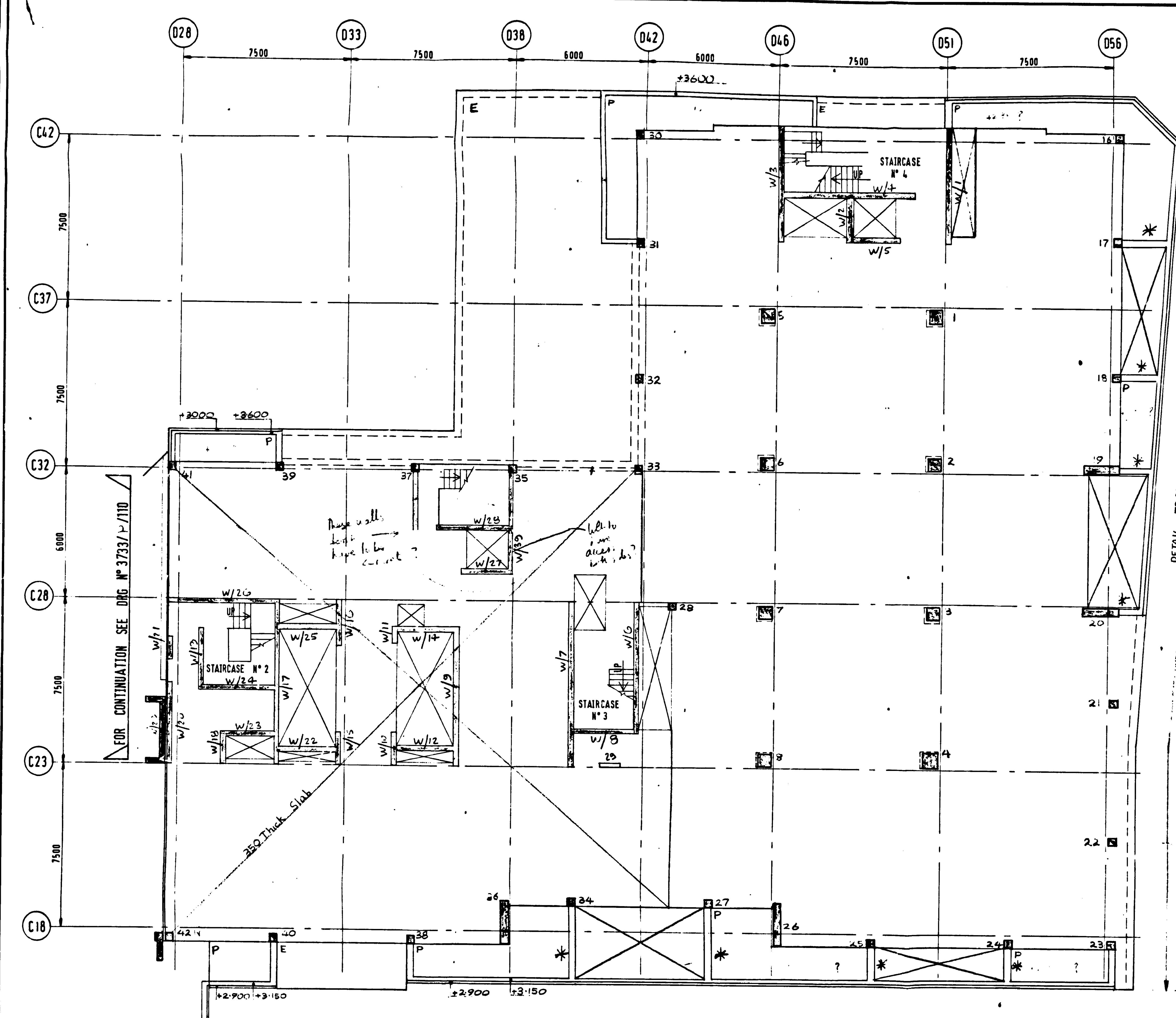
PRELIMINARY

REVISION	DESCRIPTION	NAME	DATE
B	Col Table added PERMANENT DETAILS SLAB		
A	col sizes added to STAIRCASE NUMBERED	MCS	19-8-88
RED LION COURT BANKSIDE DEVELOPMENT LONDON		DRAWN	
GENERAL ARRANGEMENT		CHECKED	
BASEMENT SLAB (NORTH) (LVL-0-713)		APPROVED	
SHEET 3 OF 4		DATE	
		SCALE	
 <b>Leonard and Partners</b> consulting engineers LONDON EC3R 8BB		DRAWING No.	
WETTERN HOUSE, DINGWALL ROAD, CROYDON, CR9 3PE. TELEPHONE: 01-886-7061		3733/P/106	
		S199-200	

S199-200

RF 229  
1989





- NOTES**
- Slab to be 300 thick Except Where Noted. Internally - core area 350 Thick
  - Plinth Slab areas noted P. External over basement E
  - Sheeting not shown for details see drg N 3733/P/109
  - All Internal Walls 175mm Thick
  - Concrete grade 40N/mm<sup>2</sup>

In abeyance  
 a) Edge beam details  
 b) Externally slab Area P

COLUMNS	COL SIZE
20, 36	1338 x 250
19, 20	1300 x 250
24, 25, 33	700 x 350
38, 40	700 x 350
4	650 x 650
1, 2, 3, 5, 6, 7, 8	600 x 600
17, 18, 21, 22, 27, 31, 32, 34, 35, 37, 39	550 x 350
28, 29	400 x 400
16, 23, 30, 41, 42	350 x 350

PRELIMINARY

REVISION	DESCRIPTION	NAME	DATE
A	WALLS 150 REVERSED COLUMN Sizes Tabulated		
	RED LION COURT	DRAWN I.C.	
	BANKSIDE DEVELOPMENT LONDON	CHECKED C.I.I.	
	GENERAL ARRANGEMENT	APPROVED E.I.G.	
	GROUND FLOOR SLAB (NORTH)	DATE	
	SHEET 1 OF 3	SCALE 1:100	
		DRAWING No.	
	Leonard and Partners consulting engineers LDPN 3388	3733/P/109*	
	WETTERN HOUSE DINGWALL ROAD, CROYDON CR9 3PE TELEPHONE 01 885 7081	S199-200	

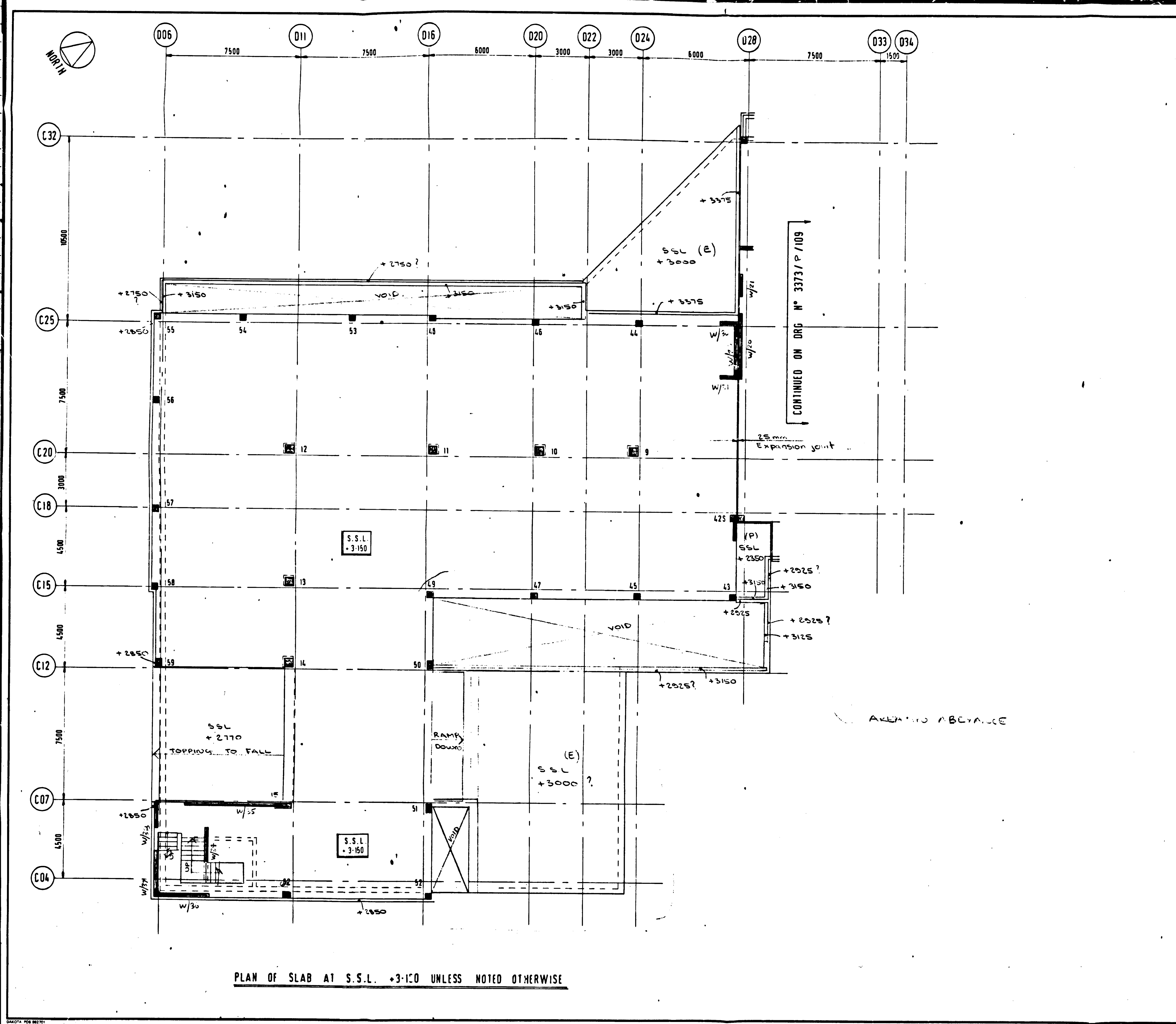
\* buttresses are 300mm wide at base & 150mm wide at top

SSL 3-150 UNLESS NOTED OTHERWISE

S199-200

1989  
230





- NOTES**
1. Slab 300 mm thick.
  2. Internal walls 175mm thick U.P.C.
  3. Concrete grade 40 no/100.
  4. General data (internal loading)  
Dead load = 8 kN/m<sup>2</sup>  
Live load = 5 kN/m<sup>2</sup>
  5. Sheeting not shown. For Detail see drags n° 100 & 101.
  6. Planter Slab areas noted P  
External over kerb not L

**NO ABEYANCE**

- a) Edge beam
- b) M & E input
- c) Expansion joint

COLUMN n°s	COL SIZE
9, 10, 11, 12, 13, 14	500 x 500
15	7 x 350
50, 51, 59	450 x 350
42, 43, 44	
45, 46, 47, 48	350 x 350
52, 53, 54, 55	
56, 57, 58, 62	

**PRELIMINARY**

A Edge detail updated  
Column sizes tabulated.

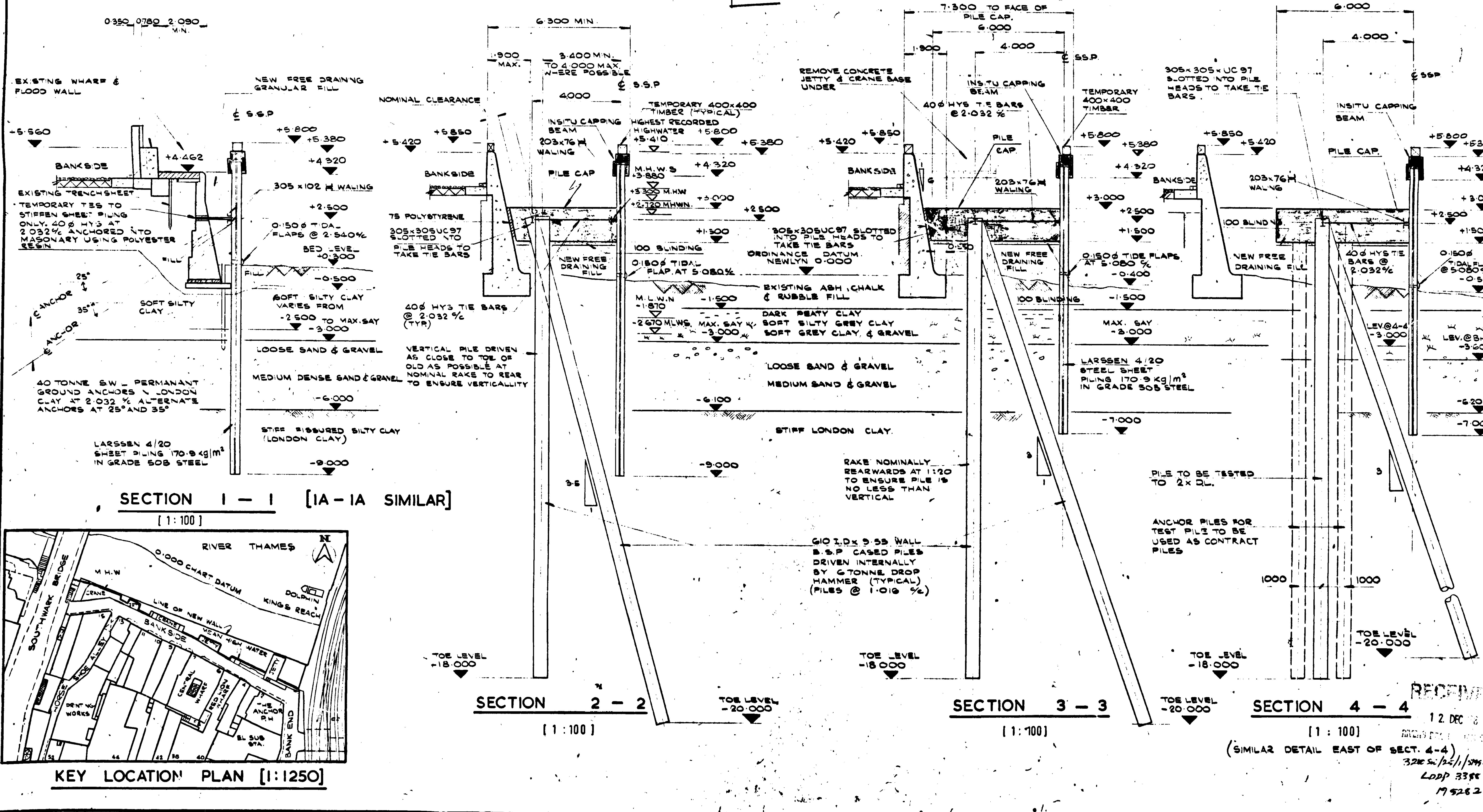
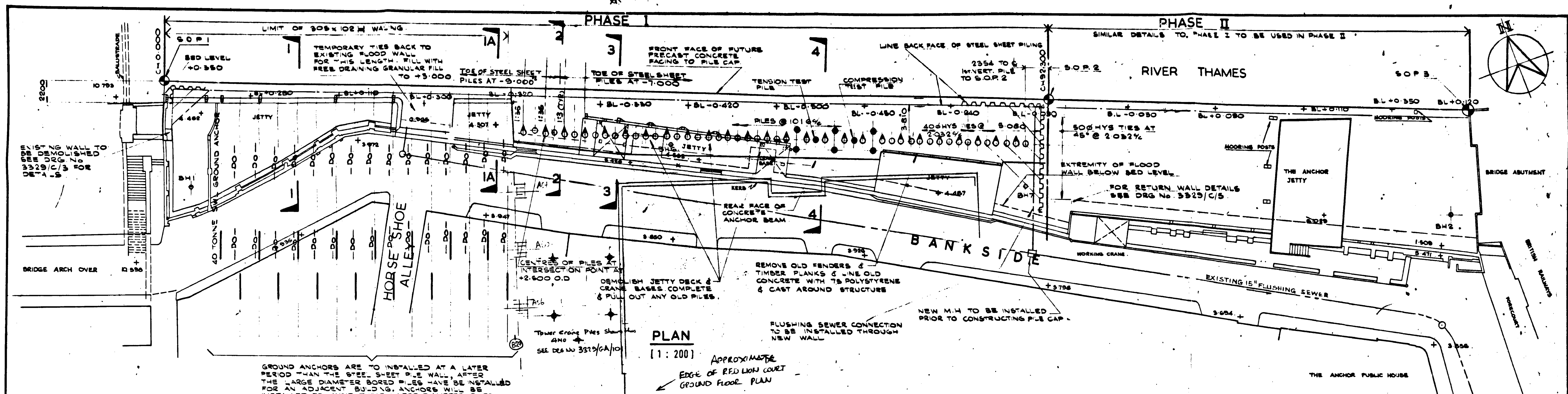
REVISION	DESCRIPTION	NAME	DATE
	RED LION COURT BANKSIDE DEVELOPMENT LONDON		
	GENERAL ARRANGEMENT		
	GROUND FLOOR SLAB (SOUTH)		
	SHEET 2 OF 3		
	Leonard and Partners consulting engineers L22PA 3388		
	WETTERN HOUSE DINGHALL ROAD CROYDON CR9 3PE TELEPHONE 01 885 7061		
		3733/P/110	
		S199-200	

PLAN OF SLAB AT S.S.L. +3.100 UNLESS NOTED OTHERWISE

S199-200

1989  
231





**NOTES**

- TO BE READ IN CONJUNCTION WITH DRAWING No. 3329/C/3 TO 8 INCLUSIVE.
- ALL PILES TO BE FILLED WITH GRADE 20/40 OPC CONCRETE TOP 4.000M OF ALL PILES TO BE REINFORCED.
- 150 NOMINAL DIAMETER CLAYWARE PILES TO BE SET VERTICALLY THROUGH ANCHOR SLAB BY S.S.P. PAN RECESS AT 5.032% WITH C.I. COVER GRATING CEMENTED INTO SOCKET.
- TIMBER BALKS TO BE 400x400 DOUGLAS FIR SECURED AT 600% WITH M24 BOLTS INTO CONCRETE. SET ON 20MM NOMINAL TIMBER 3x1 SAND CEMENT MORTAR BED JOINTS TO BE BUTTED WITH 'KORPKAK' AND 20MM DEEP 'PLASTISEAL' BY EXPANDITE OR SIMILAR SEALANT.
- DEPTH OF CASSED PILES MAY BE VARIED BY THE ARCHITECT TO SUIT GROUND CONDITION & TEST PILE DATA.
- SOIL INFORMATION SHOWN ON THIS DRG. IS BASED UPON THE SITE INVESTIGATION REPORTS BY GROUND ENGINEERING LTD DATED NOVEMBER 1971 AND JUNE 1981. THE INFORMATION IS TAKEN FROM THE PLAC-CHART No. PLA 317 1:2500 SCALE SURVEYED MAR-APRIL 1976.

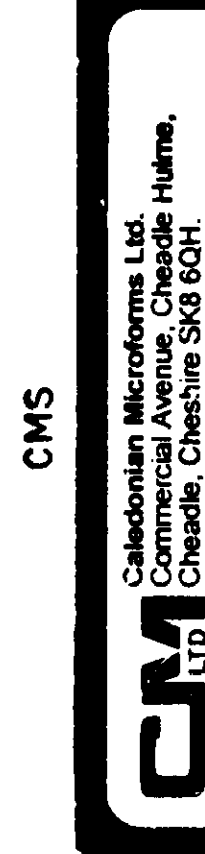
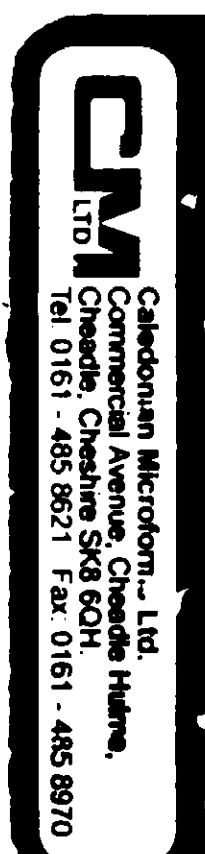
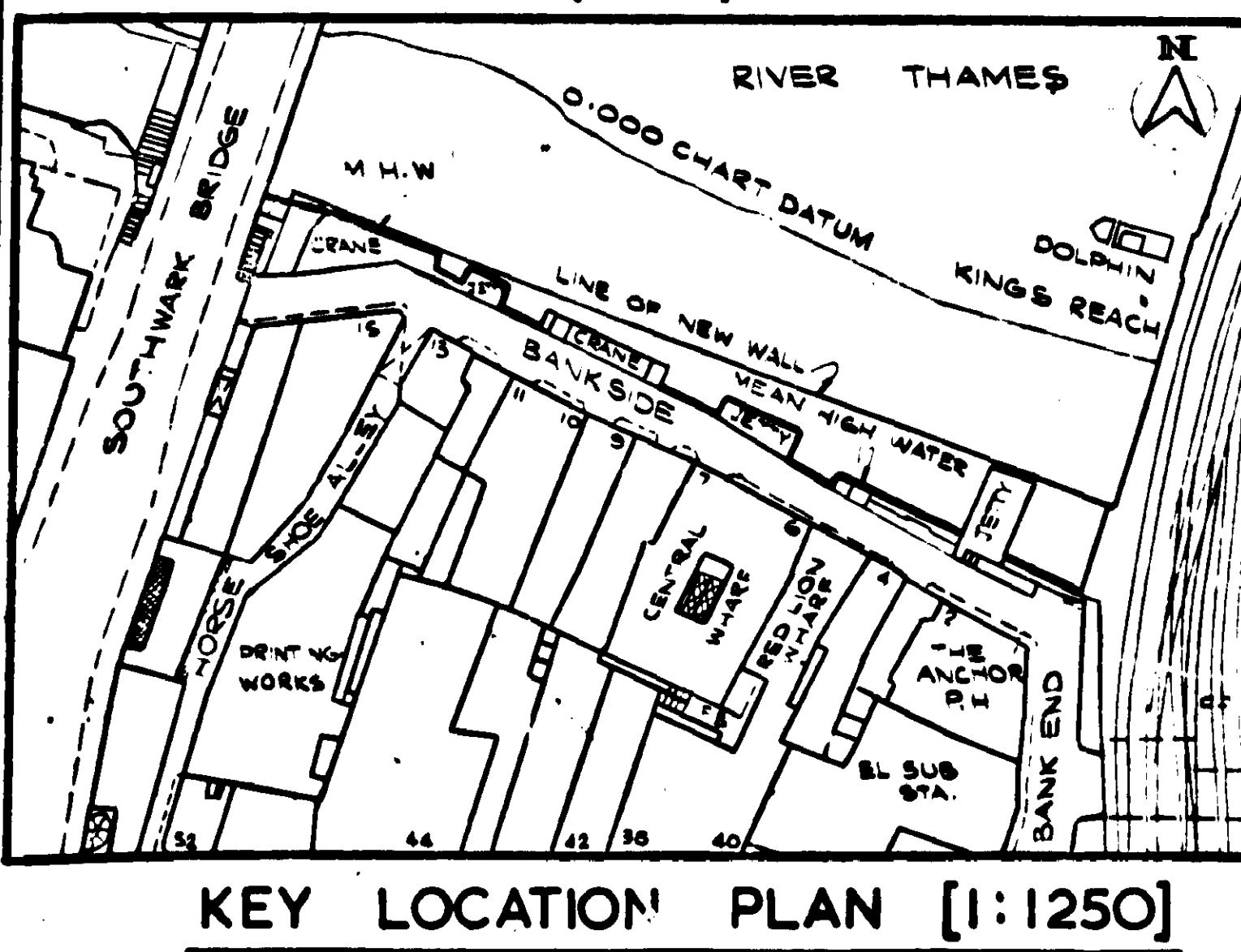
REVISION	DESCRIPTION	NAME	DATE
D	3RD RAKING PILE FROM EASTERN END NOW AT 11.5 RAKE START OF S.S.P. WITH 7.000 TOE NOW 2M FURTHER EAST.	T.A.S.	22-5-81
C	TOE LEVELS SHOWN NOTES 6-1 ADDED FLUSHING SEWER CONNECTION MOVED.	RL	16-6-81
B	REVISED: CAPPING BEAM LEVELS PILE DEPTH INCREASED PILE CENTRES ON PLAN, JETTY & CRANE BASES NOW TO BE COMPLETELY REMOVED. ADDED NOTES 3 & 4 ABOVE FOR GROUND ANCHORS FLUSHING SEWER & CONNECT DELETED: CONC. FILL BETWEEN 1-1&1A.	RL	12-6-81
A	ADDED: FURTHER NOTES TO PLAN, S.O.P. NOTES 1&2 ABOVE. RETURN WALL END OF PH. 1. REVISED: G/ANCHOR % & LEVEL & WALLING ON 1-1&1A. TIE BAR SIZE INCREASED. UB TO UC OVER PILES. EXISTING WALL UPDATED ON H.V. LEV @ 4.4 REVD TO 5.0 & 7.0.	RL	26-5-81

**BANKSIDE DEVELOPMENT LONDON**  
**EUROPEAN FERRIES LIMITED**  
**RIVER WALL**  
**GENERAL ARRANGEMENT**  
**DETAILS**

12 DEC 81  
 (SIMILAR DETAIL EAST OF SECT. 4-4)  
 32nd Dec 1981  
 LDP 3388  
 175282

**Leonard and Partners**  
 consulting engineers  
 WETTERHOUSE, DRAYWALL ROAD CROYDON, CR9 3PE  
 TELEPHONE 01-888-7881

DRAWING No. **3329/C/2**  
**D**



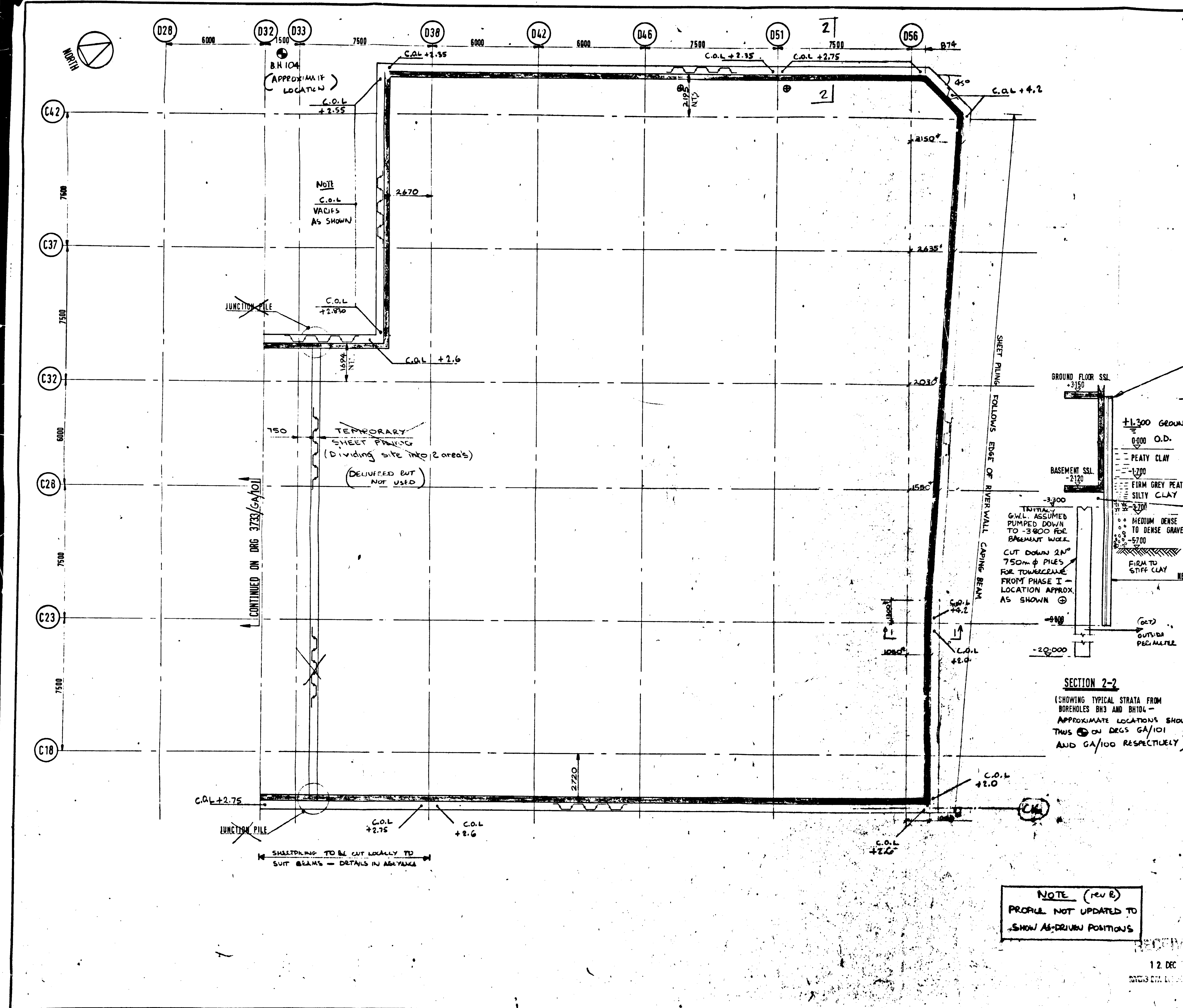
5199-200

TF 421/95

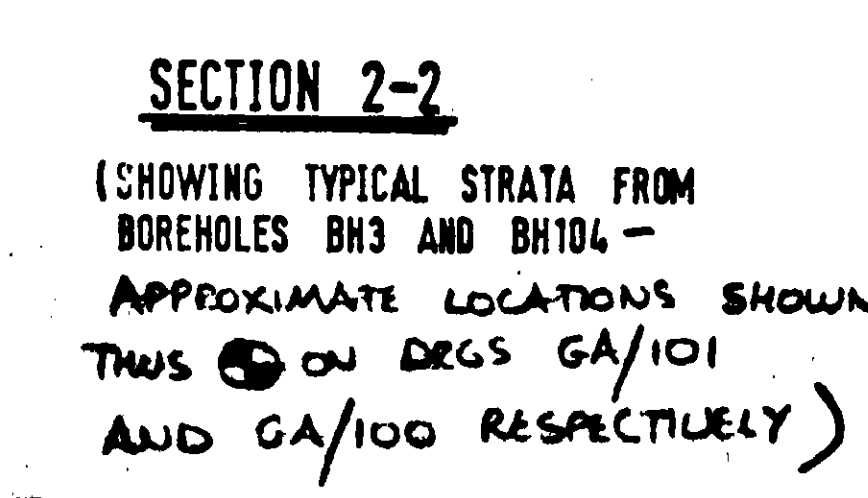
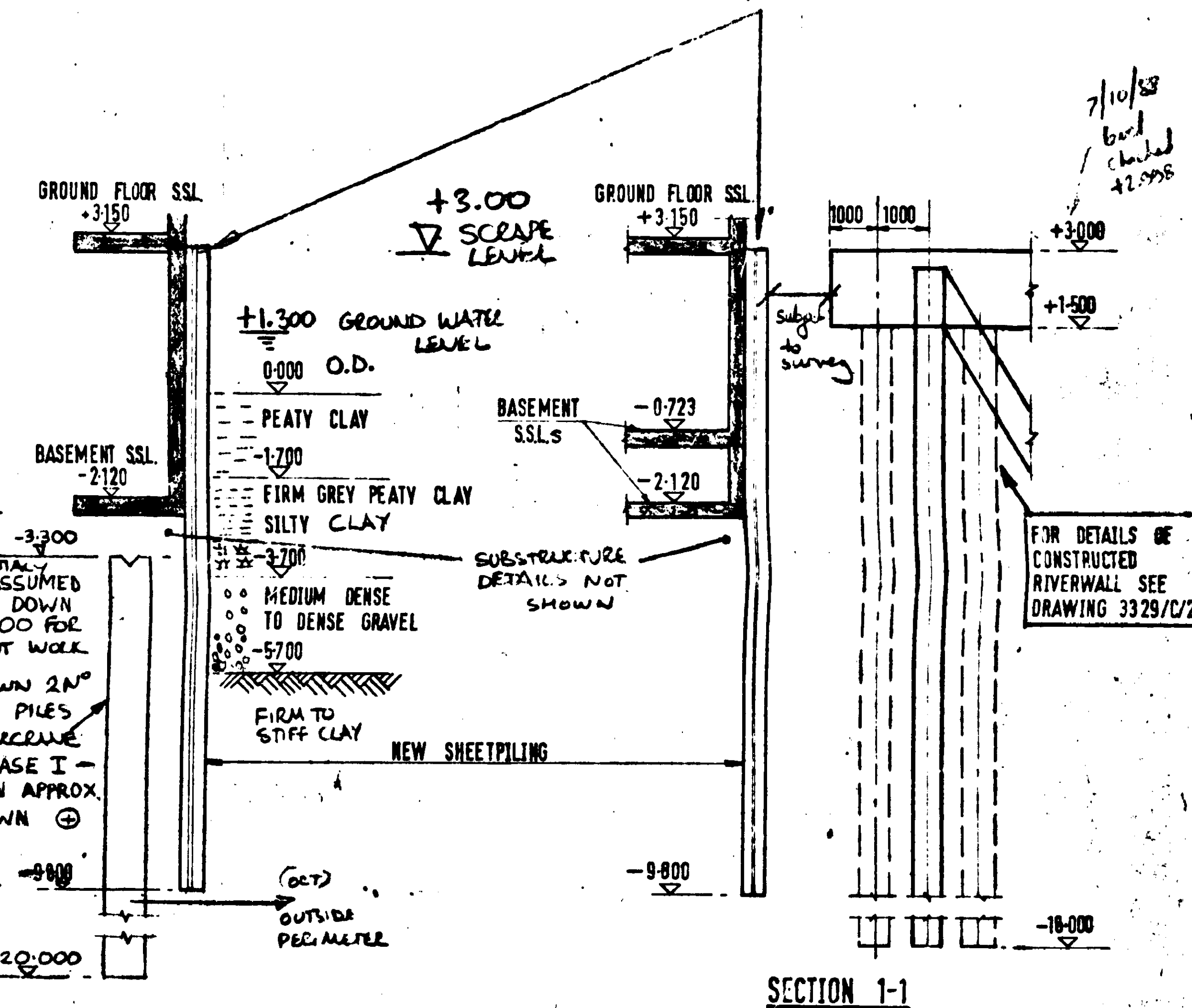


AI - 30  
28  
26  
24  
A2 - 22  
20  
18  
16  
A3 - 14  
12  
10  
8  
6  
4  
2  
0  
2  
4  
6  
8  
10  
12  
14  
A2 - 16  
18  
20  
22  
A3 - 24  
26  
28  
30  
32  
34

AI - 30  
28  
26  
24  
A2 - 22  
20  
18  
16  
A3 - 14  
12  
10  
8  
6  
4  
2  
0  
2  
4  
6  
8  
10  
12  
14  
A3 - 16  
18  
20  
22  
A2 - 24  
26  
28  
30  
32  
34



- NOTES**
- SHEET PILING TO BE LARSEN 32 W, GRADE 50A, 14m LONG FOR PERIMETER AND INTERNAL DIVISION AS SHOWN. SHEET PILING IS PERMANENT UNLESS NOTED.
  - DIMENSIONS SHOWN THUS ARE CURRENTLY SCALED AND ARE GOVERNED BY FINAL SETTING OUT OF BUILDING.
  - ORDER HAS BEEN MEASURED AS FOLLOWS:  
EXTERNAL PERIMETER 270 M  
INTERNAL DIVISIONS 26 M  
SPACE 8 M  
TOTAL STRAIGHT 305 M  
PLUS CORNERS AS SHOWN 15 100  
1 NO
  - C.O.L. = cut-off level



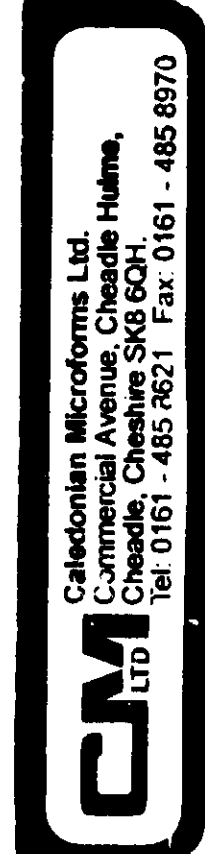
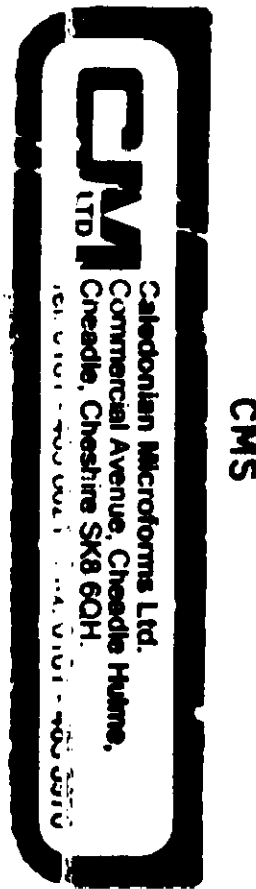
3260 SW/05/1/5199-200  
LNDP 2388  
M 5282

B	CUT-OFF LEVELS (C.O.L.) SHOWN	CJT	9/11/00
A	ISSUED FOR TENDER	CJT	9/9/00
-	ISSUED FOR FABRICATION BY B.S.C.	J.C.	16-8-00
REVISION	DESCRIPTION	NAME	DATE
RED LION COURT BANKSIDE DEVELOPMENT LONDON		DRAWN	L.C.
GENERAL ARRANGEMENT SHEET PILING LAYOUT PHASE 1		CHECKED	CJT
SHEET 1 OF 2		APPROVED	
		DATE	AUG 00
		SCALE	1:100
		DRAWING No.	3733/GA/100 B

12 DEC 2000

**Leonard and Partners**  
consulting engineers

WETTERN HOUSE, DINGWALL ROAD, CROYDON, CR9 3PE.  
TELEF: 01883 571111



S199-200

TF422/95

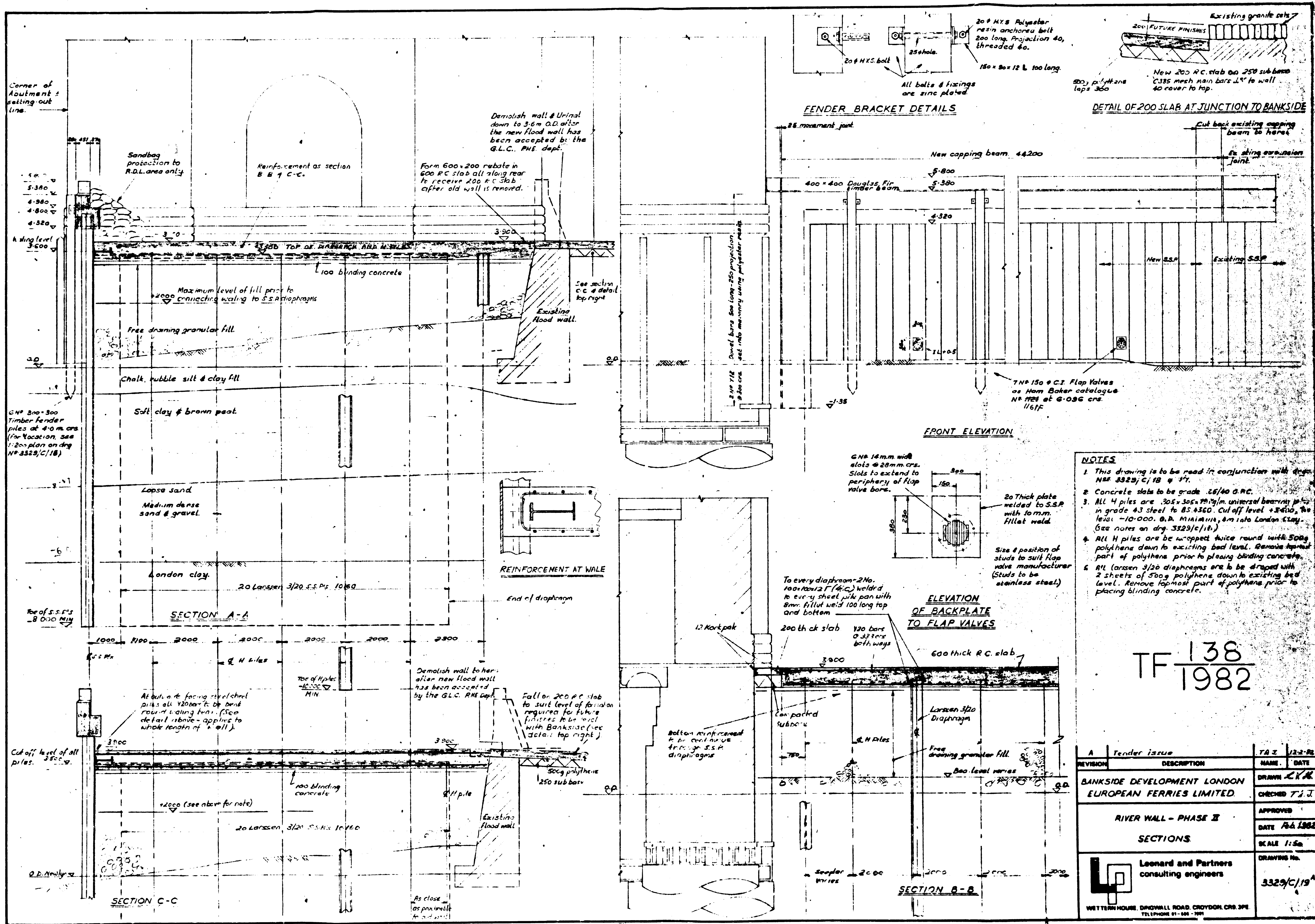












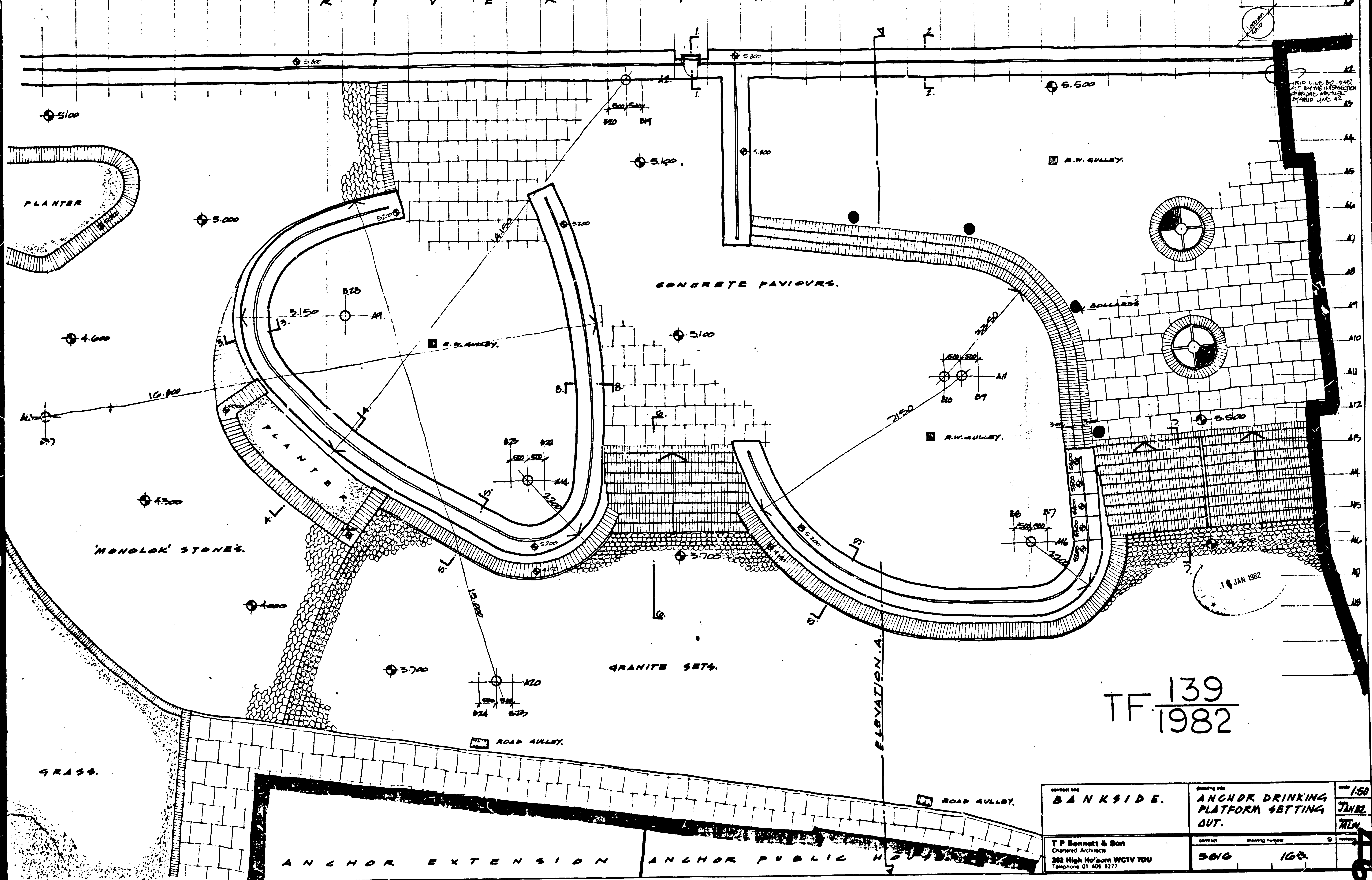
- NOTES**
- This drawing is to be read in conjunction with drawings NBE 3329/C/18 & 17.
  - Concrete slabs to be grade 25/40 G.R.C.
  - All 4 piles are 305 x 305 x 79.7g/m universal bearing piles in grade 43 steel to BS 4360. Cut off level +2410, toe level -10.000. O.D. MINIMUM 4m into London Clay. (See notes on drawing 3329/C/18).
  - All H piles are to be wrapped twice round with 500g polythene down to existing bed level. Remove topmost part of polythene prior to placing blinding concrete.
  - All (arsen 3/20 diaphragms are to be draped with 2 sheets of 500g polythene down to existing bed level. Remove topmost part of polythene prior to placing blinding concrete.

TF 138  
1982

REVISION	DESCRIPTION	NAME	DATE
A	Tender issue	TAZ	12-2-82
	BANKSIDE DEVELOPMENT LONDON EUROPEAN FERRIES LIMITED	DRAWN	L.K.H.
		CHECKED	T.J.J.
	RIVER WALL - PHASE II	APPROVED	
	SECTIONS	DATE	24.1.82
		SCALE	1:50
	Leonard and Partners consulting engineers	DRAWING No.	3329/C/19
WETTERN HOUSE, DUNDWILL ROAD, CROYDON, CR8 3PE. TELEPHONE 01-885-1001			



R I V E R T H A M E S



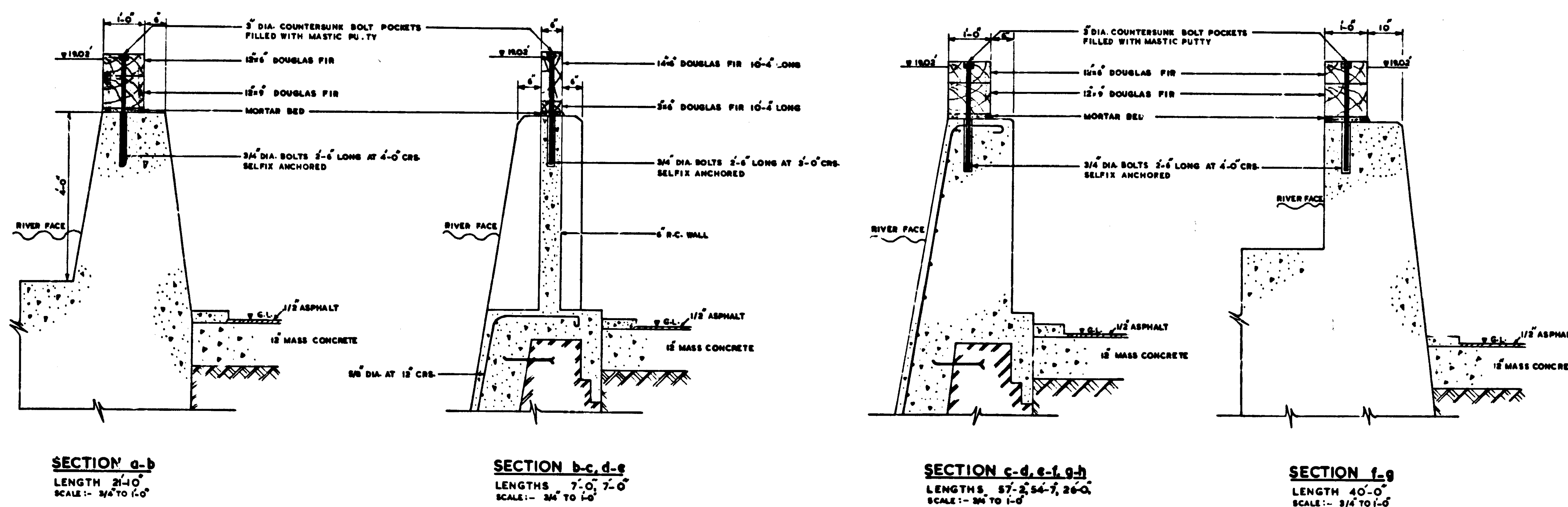
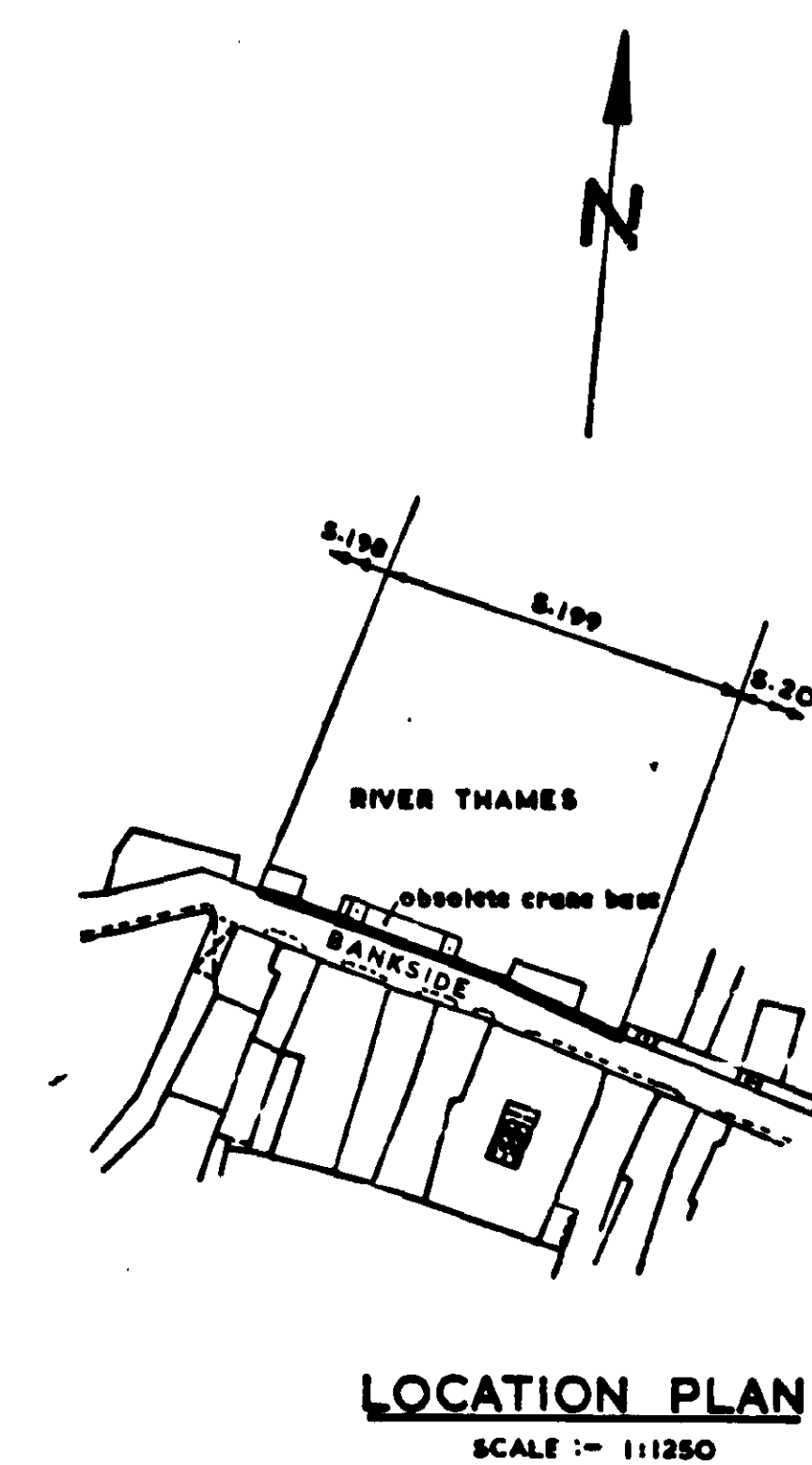
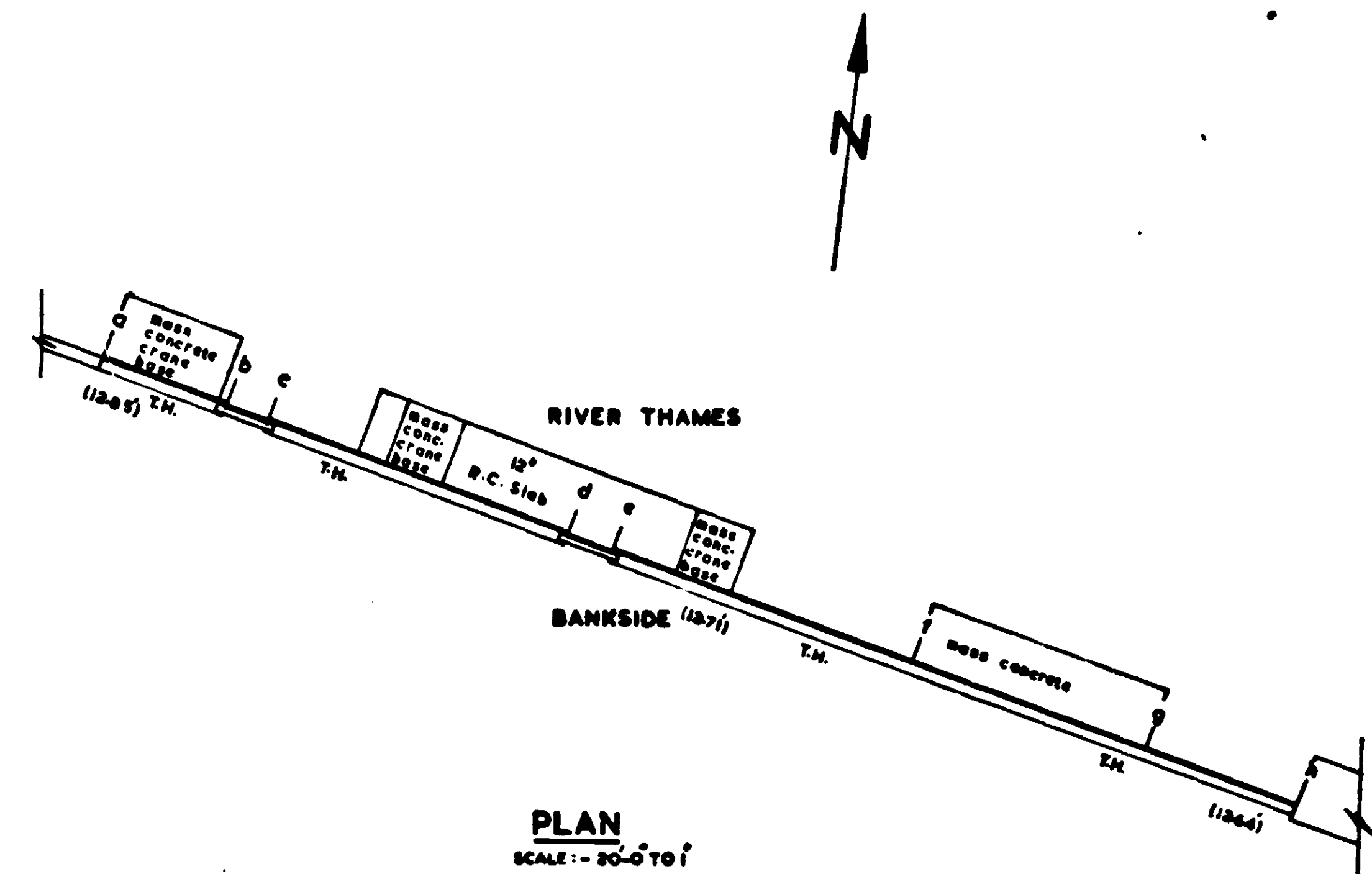
TF. 139  
1982

CONTRACT NO. <b>BANKSIDE.</b>	DRAWING NO. <b>ANCHOR DRINKING PLATFORM SETTING OUT.</b>	SCALE <b>1/50</b>
DATE <b>10 JAN 82</b>	DESIGNER <b>T.P.B.</b>	DRAWN <b>T.P.B.</b>
PROJECT <b>TP Bennett &amp; Son Chartered Architects 282 High Wycombe WC1V 7DU Telephone 01 405 9277</b>	CONTRACT NO. <b>5010</b>	REVISION <b>108</b>



TF 329  
1987

ANGULA  
6615



**LEGEND**  
THE FOLLOWING SYMBOLS HAVE BEEN USED:-  
BOLLARD  
LADDER  
WOODING IRON  
FLAP VALVE  
EXPANSION JOINT  
TRIAL HOLE OR BORING  
GROUND LEVEL  
LINE KEY  
RIVER FRONTAGE  
NEW FLOOD DEFENCE  
OLD FLOOD DEFENCE  
LINE

**NOTES**  
THE FOLLOWING NOTES APPLY UNLESS OTHERWISE STATED:-  
1. CONCRETE: ALL STRUCTURAL CONCRETE 1:2:4 MIX. 12" DIA. H.S. WITH HALF OVERALL LENGTH EMBEDDED IN CONCRETE.  
2. BURNED BARK: 10" PLECELL SEALED WITH 1/2" BITUMINOUS PUTTY.  
3. EXPANSION JOINTS: ALL SURFACES SCABBLED TO RECEIVE NEW CONCRETE.  
4. JOINTS WITH EXISTING WORK: ALL SURFACES SCABBLED TO RECEIVE NEW CONCRETE.  
5. GROUND LEVELS SHOWN ON PLAN ARE TAKEN IMMEDIATELY BEHIND THE BANKING.

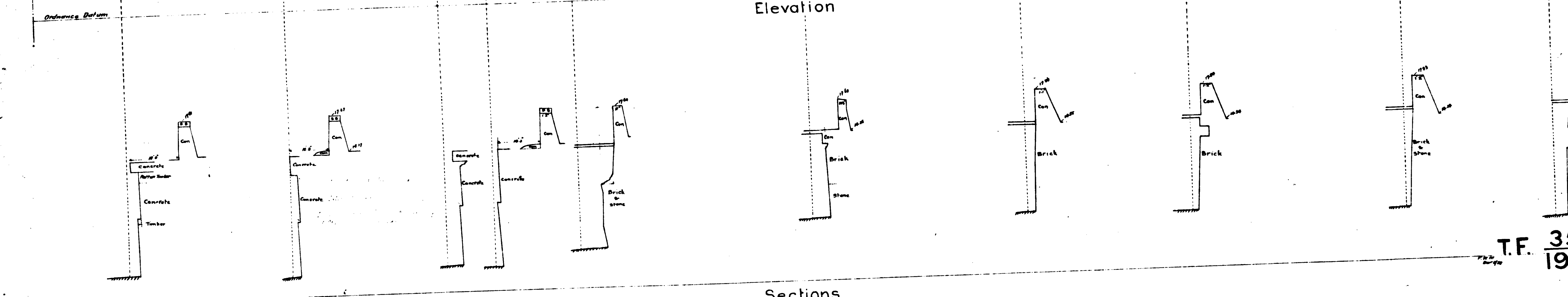
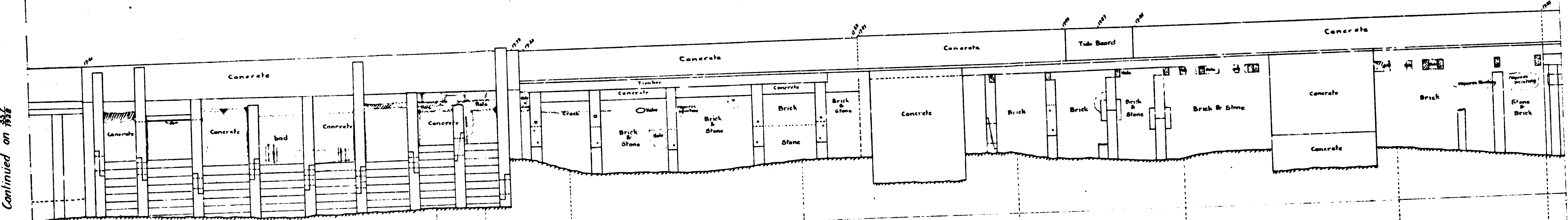
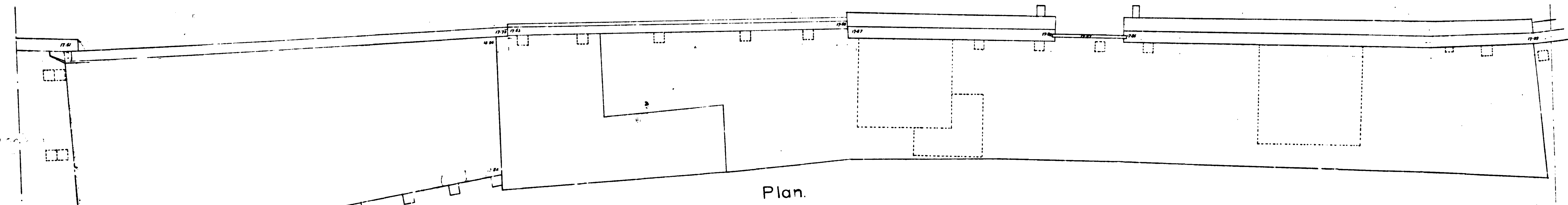
NOTE: Levels shown were taken APRIL 1973 and refer to Newlyn Datum. Bench Mark reference: BM 14.74 BANKSIDE

DEPARTMENT OF PUBLIC HEALTH ENGINEERING.	GREATER LONDON COUNCIL RIVERS BRANCH - THAMES DIVISION	THAMES FLOOD PREVENTION INTERIM BANK RAISING - WORK AS EXECUTED CONTRACT No. 3 PROPERTY No. S.199	AMENDMENTS		CONTRACTOR'S DRAWING No. 3142/S/5-199/1
			Date	Initials	
					Prepared by: [Signature] Date: 7/1/73 Examined by: [Signature] Date: 14/5/73

L. C. C.  
 THAMES FLOODS PREVENTION.  
 Survey of Bankside  
 ST SAVIOUR DISTRICT

092/72

Scale 4 feet to an Inch



Continued on 355

Continued on 356

T.F. 356  
 1928

TF 356  
 1928

29 28 27<sup>Δ</sup> 26 25 24 23 22 21 20 19<sup>Δ</sup> 18 17 16 15 14<sup>Δ</sup> 13 12 11 10<sup>Δ</sup> 9 8 7<sup>Δ</sup> 6<sup>Δ</sup> MICROBOX 6<sup>Δ</sup> 7<sup>Δ</sup> 8 9<sup>Δ</sup> 10 11 12 13<sup>Δ</sup> 14 15 16 17 18 19<sup>Δ</sup> 20 21 22 23 24 25 26<sup>Δ</sup> 27 28

37 36 35 34 33 32 31 30 29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1  
 11100  
 90 89 88 87 86 85 84 83 82 81 80 79 78 77 76 75 74 73 72 71 70 69 68 67 66 65 64 63 62 61 60 59 58 57 56 55 54 53 52 51 50 49 48 47 46 45 44 43 42 41 40 39 38 37 36 35 34 33 32 31 30 29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

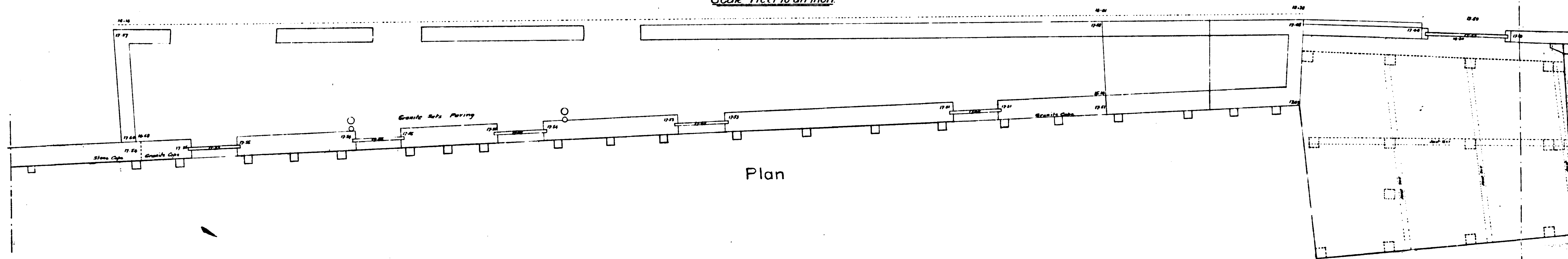


L. C. C.  
 THAMES FLOODS PREVENTION.  
 Survey of Bankside  
 ST SAVIOUR DISTRICT

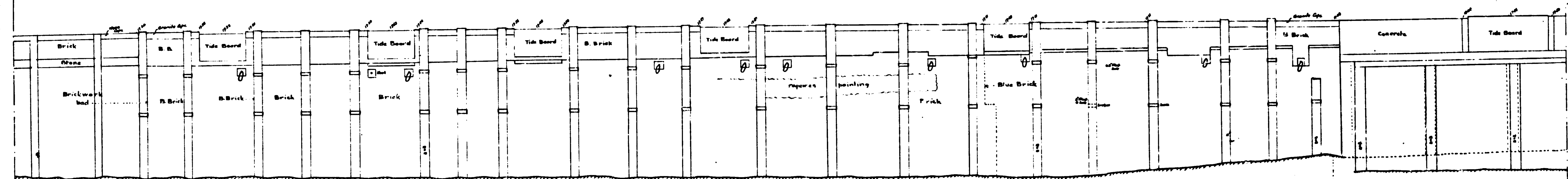
093/72

Pl of 135, 136, 137, 138 + pt of 139<sup>2</sup>

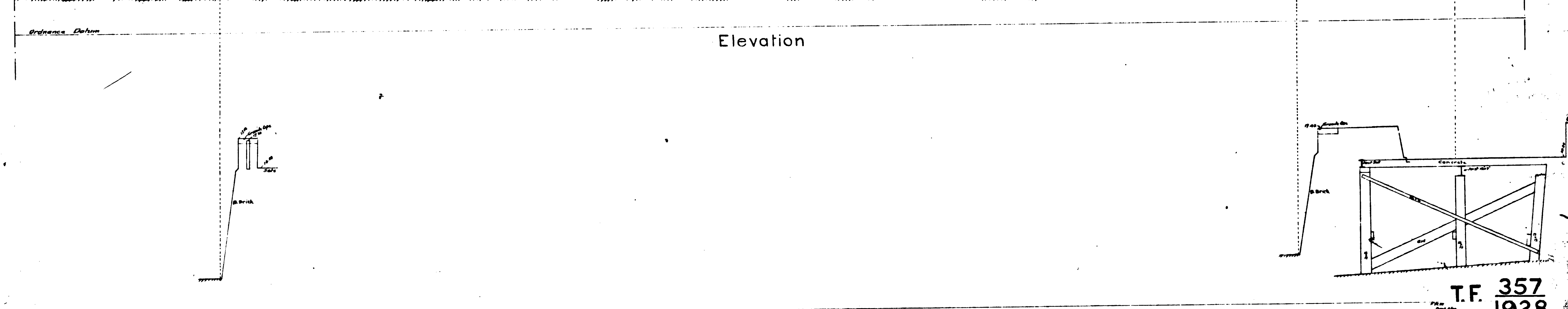
Scale 4 feet to an Inch



Plan



Elevation



Sections

Continued on 357

Continued on 358

T.F. 357  
 1928

ANGULA

TF 357  
 1928

29 28 27<sup>Δ</sup> 26 25 24 23 22 21 20 19<sup>Δ</sup> 18 17 16 15 14 13<sup>Δ</sup> 12 11 10 9<sup>Δ</sup> 8 7<sup>Δ</sup> 6<sup>Δ</sup> MICROBOX 6<sup>Δ</sup> 7<sup>Δ</sup> 8 9<sup>Δ</sup> 10 11 12 13<sup>Δ</sup> 14 15 16 17 18 19<sup>Δ</sup> 20 21 22 23 24 25 26<sup>Δ</sup> 27 28

G.L.C.  
THAMES FLOODS PREVENTION

Southwark District No 5199

*Works as executed 1966 in  
closure of moveable dam at 'F'*

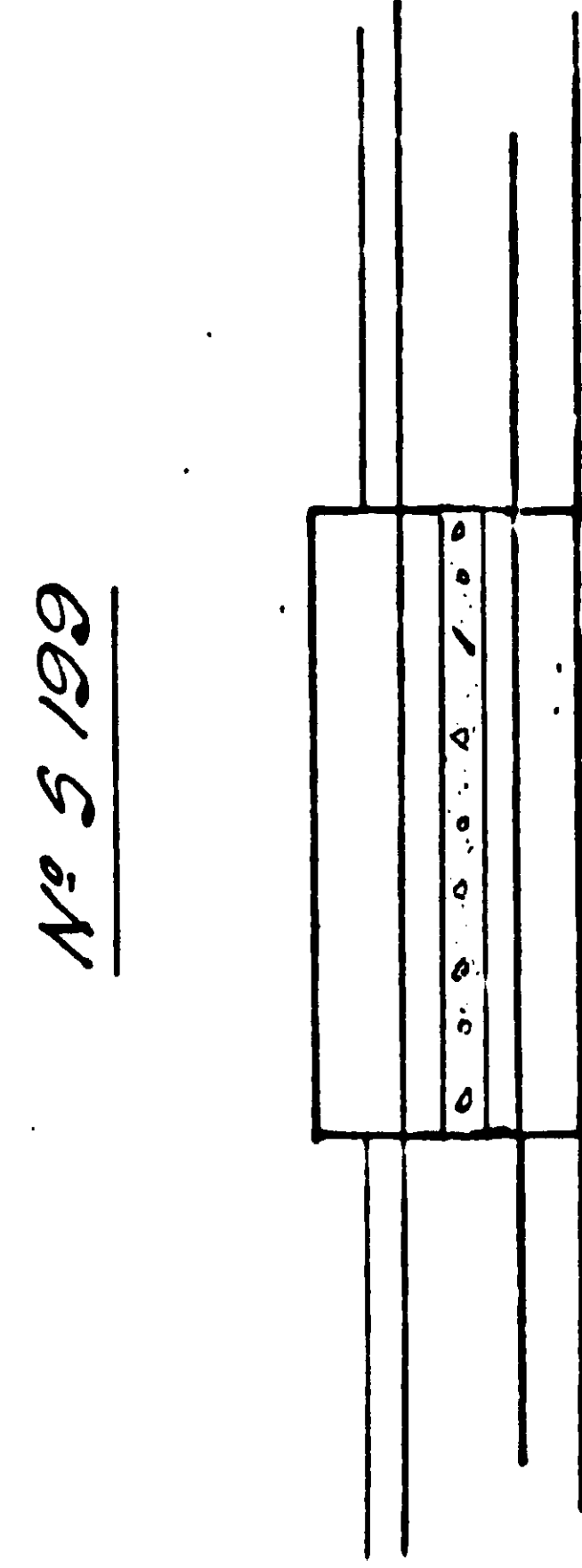
*This drawing taken from T.F. 1042/1958  
T.F. 1042/1958 deleted from records*

REINFORCED CONCRETE ADDITION AT MOVEABLE DAM OPENING 'E'

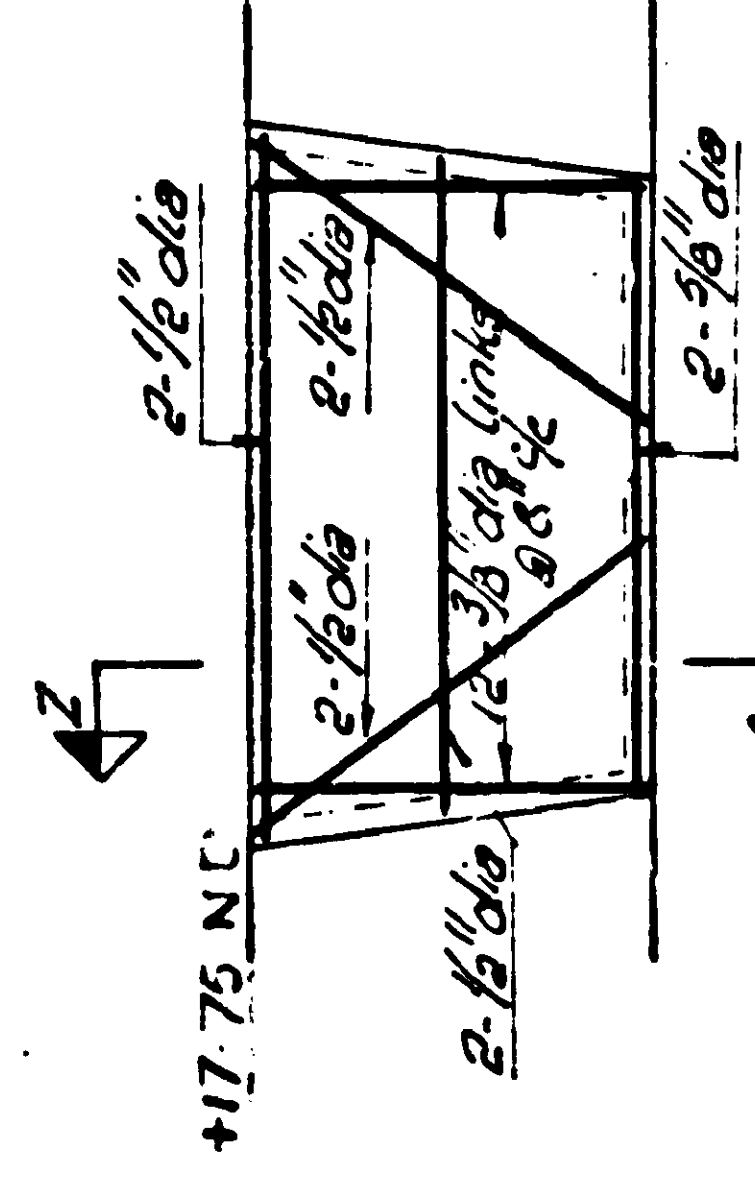
*Taken from  
T.F. 1042/1958*

*Note: All concrete 1:2:4 (¾ aggregate)  
Existing channels wire brushed and cleaned before concreting  
1" cover to reinforcement on landward side of new slabs  
Slabs minimum 6" thick.*

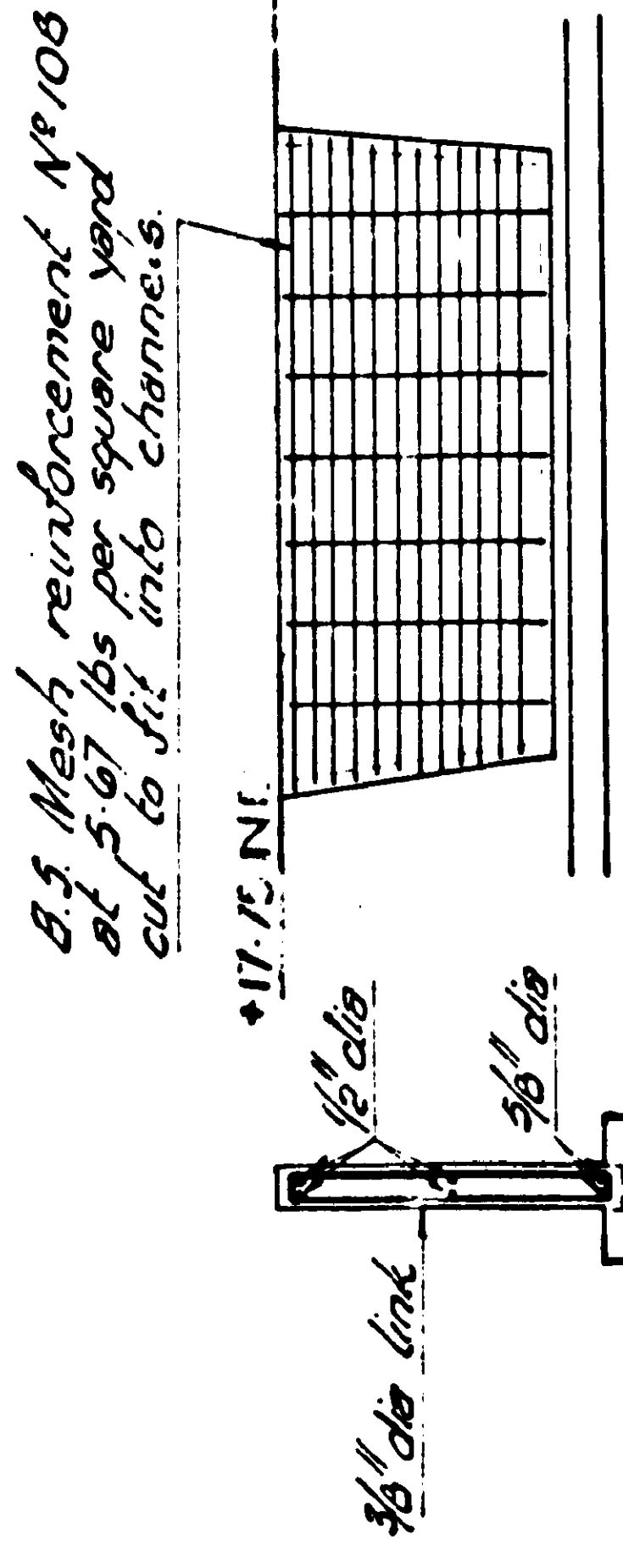
No 5 199



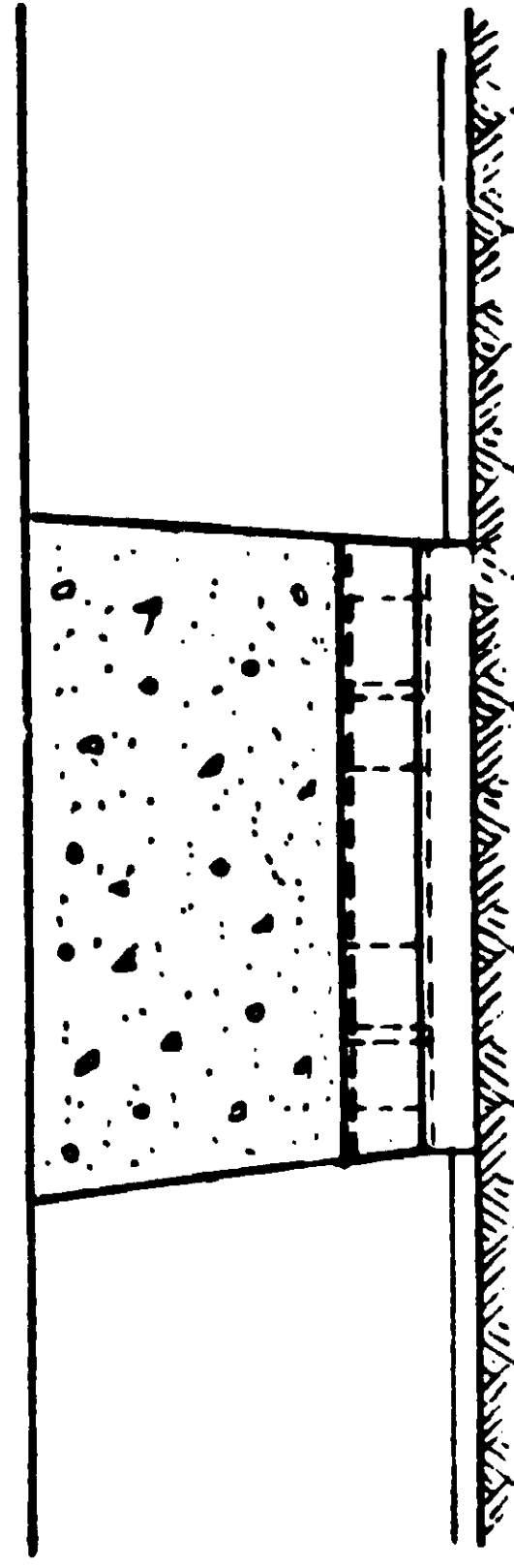
PLAN AT F



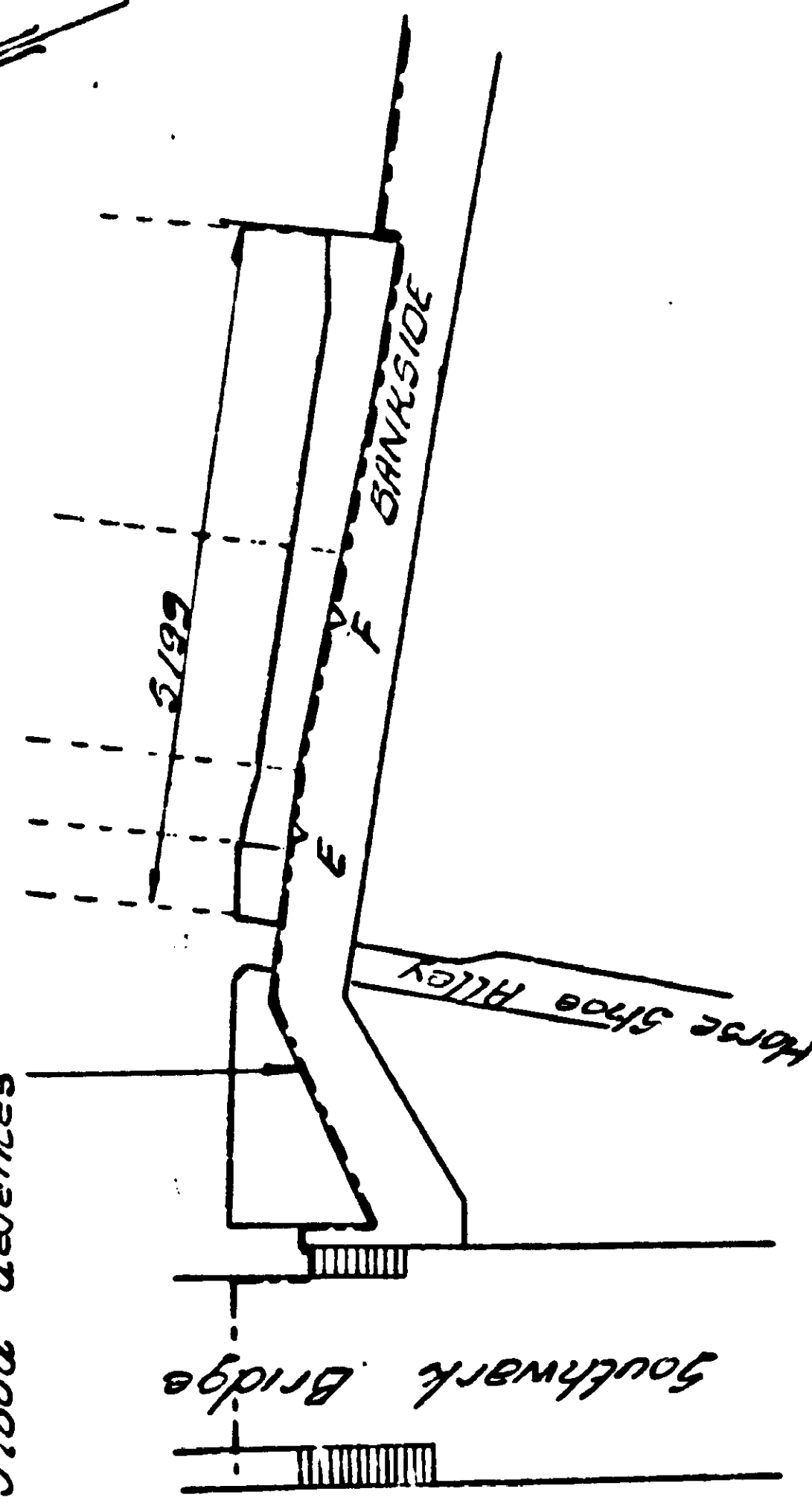
SECTION SHOWING  
REINFORCEMENT AT 'F'



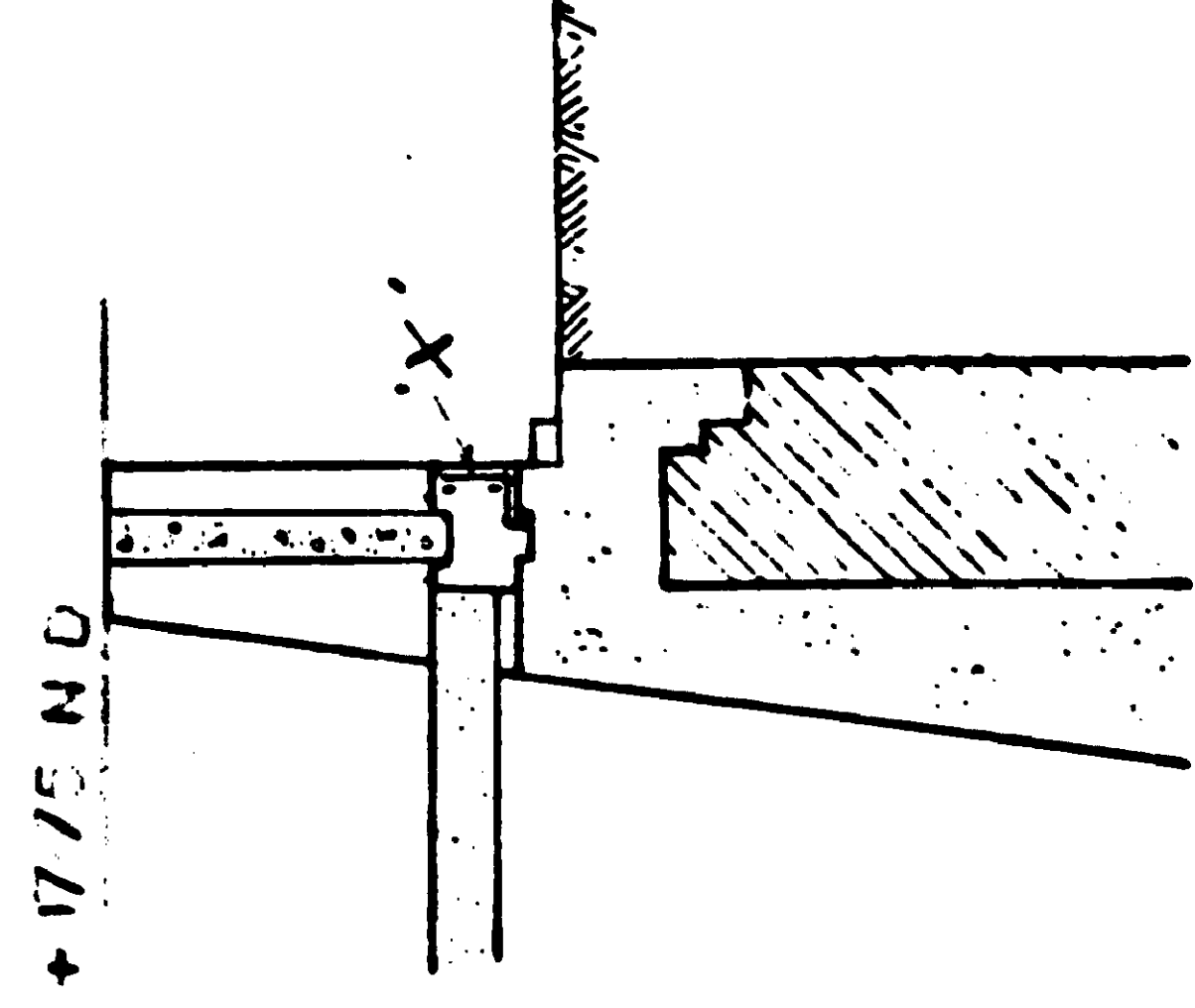
SECTION SHOWING  
REINFORCEMENT AT 'E'



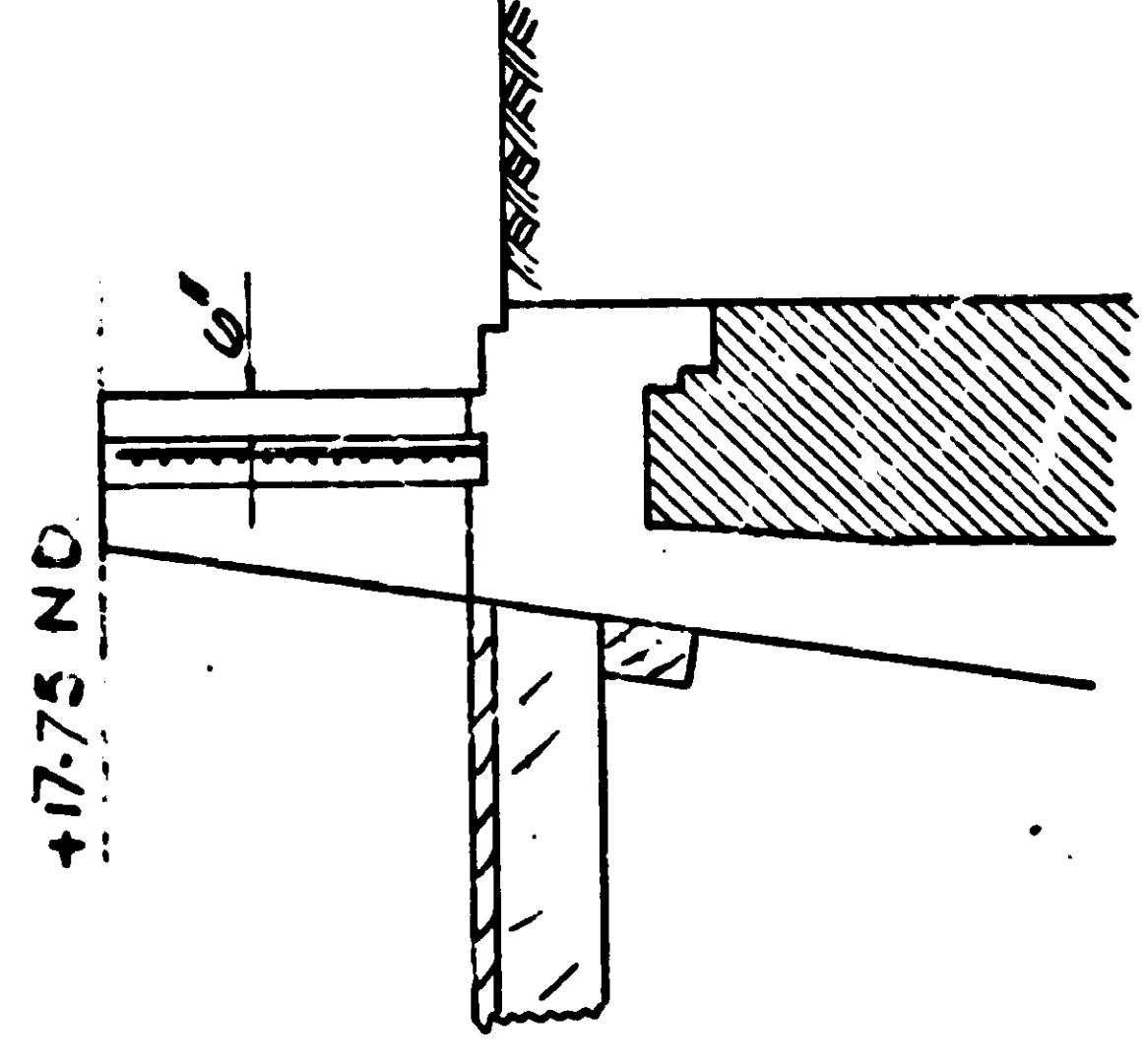
ELEVATION AT F



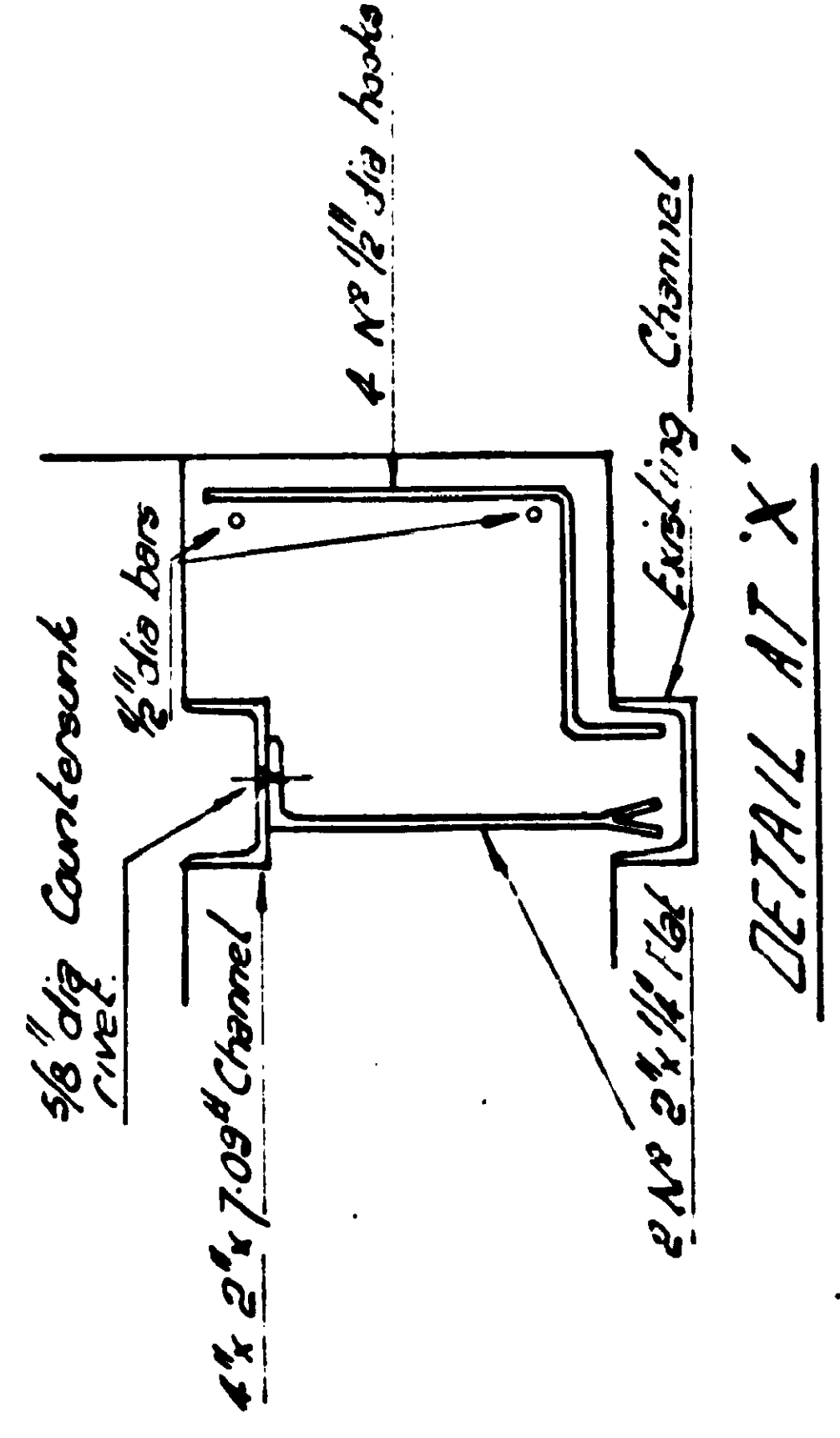
SITE PLAN.  
Scale 1/88 feet to 1 inch.



SECTION AT F



SECTION AT E



DETAIL AT X

OFFICE COPY

1 3  
Copies sent to committee 14.12.66.  
Copies sent to Supt. 20.1.67.

9961 F.I.  
2201

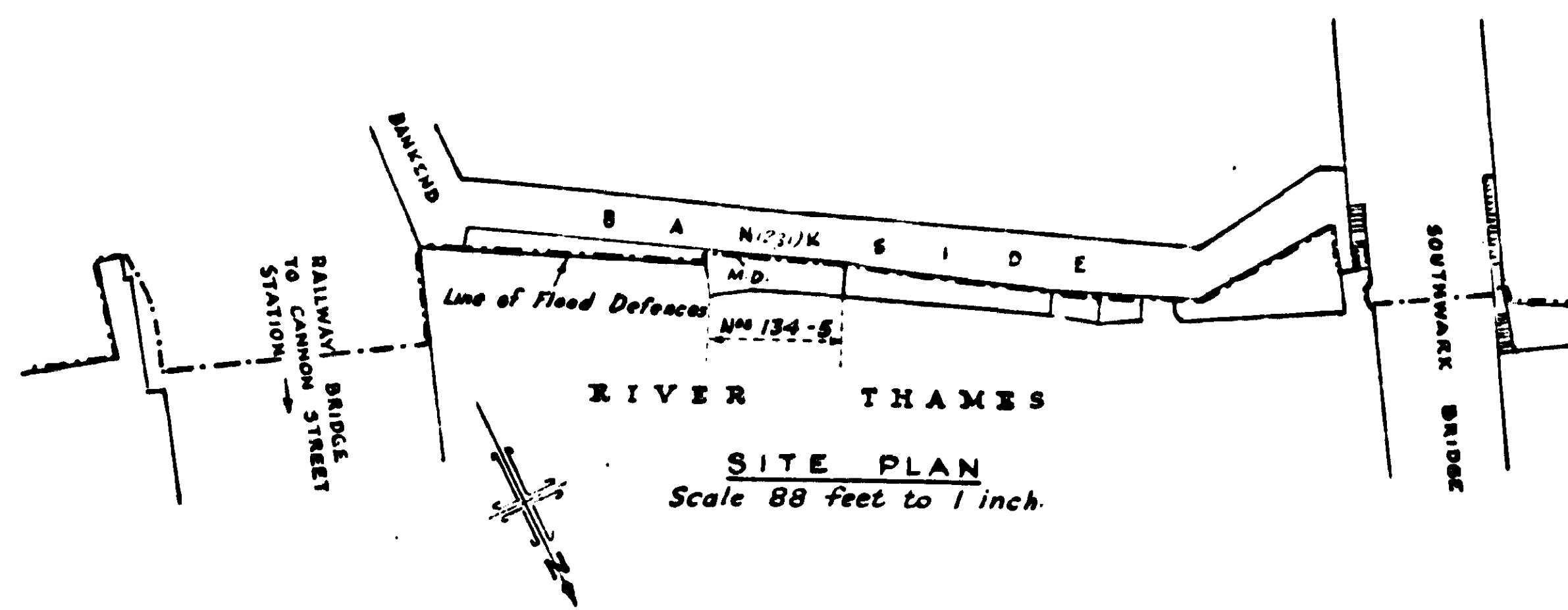
3297

14 13 12 11 10 9 8 7 6 5 4 3 2 1

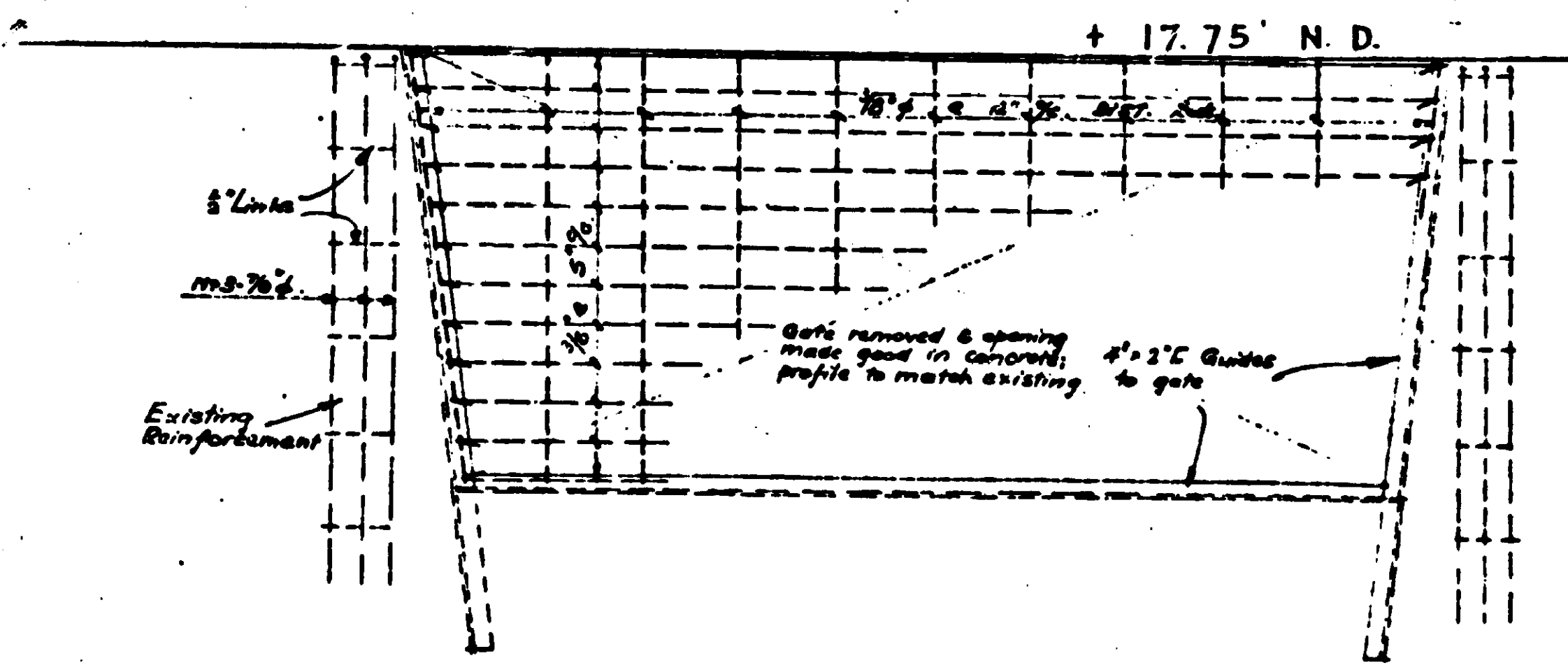
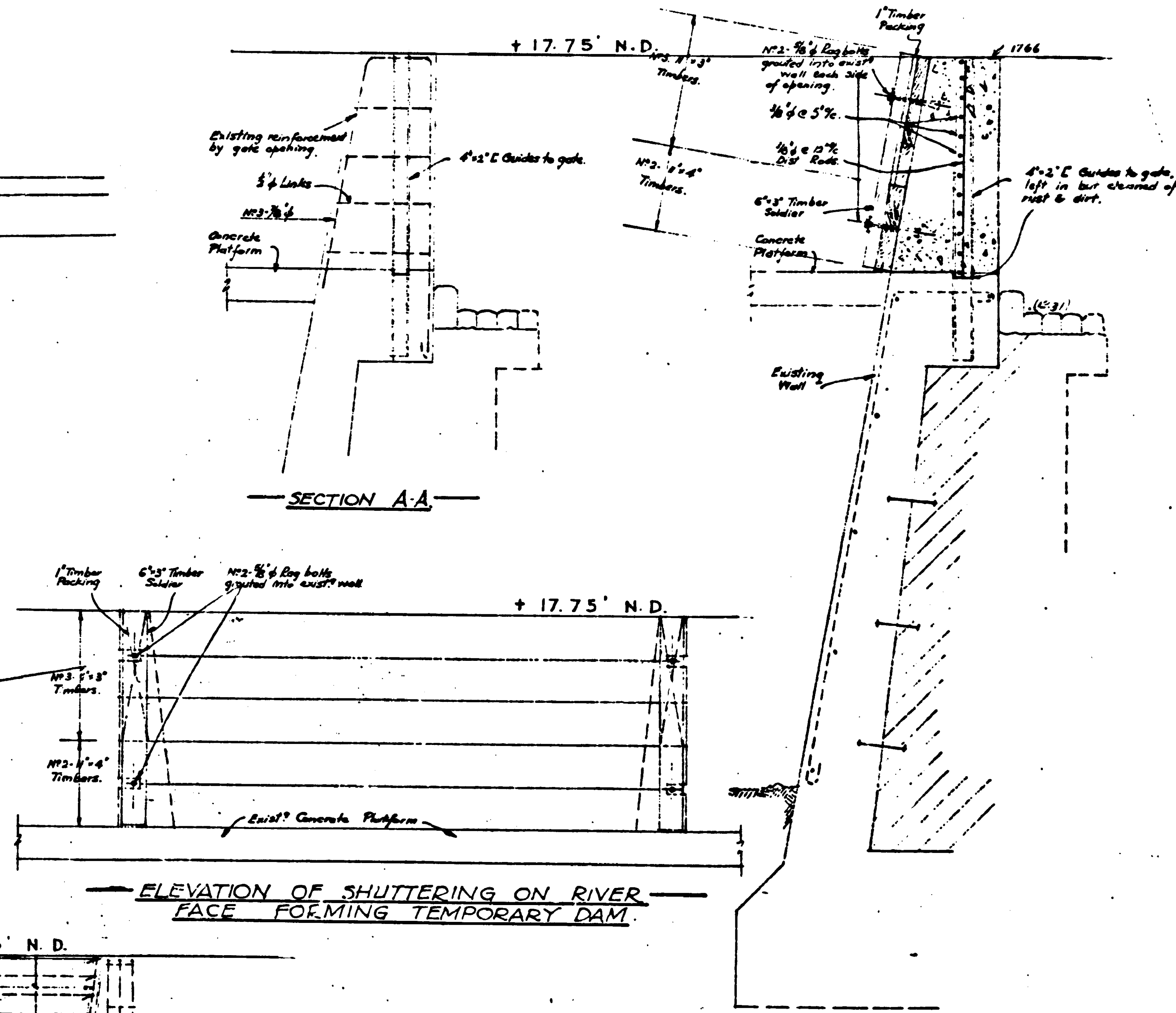
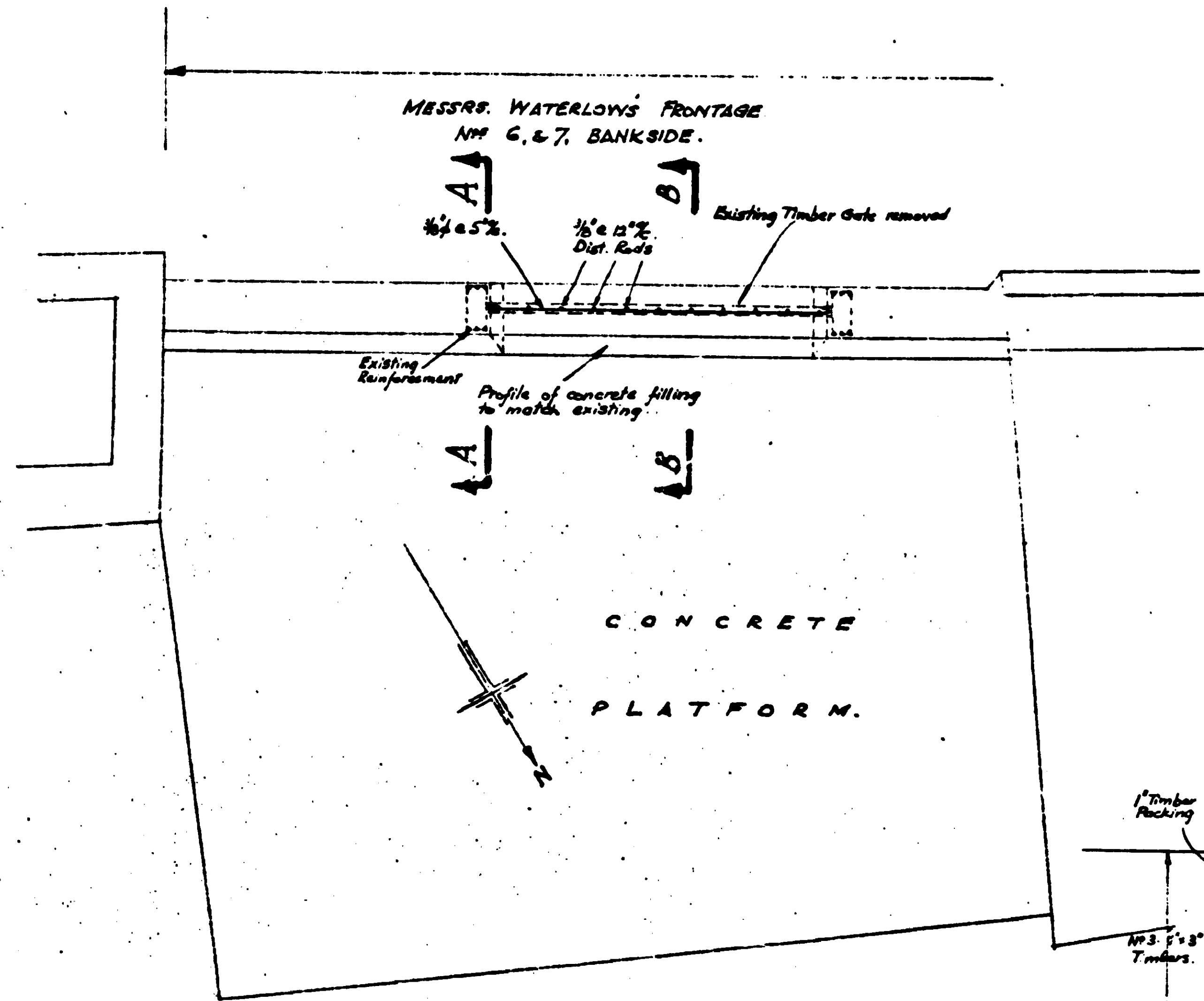
MICROBOX

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L.C.C.  
 THAMES FLOODS PREVENTION.  
 St Saviour's District Nos 134-5  
 CONSTRUCT WORKS IN ACCORDANCE WITH THE  
 DETAILS SHOWN HEREON TO THE SATISFACTION  
 OF THE LONDON COUNTY COUNCIL.



3059

T.F. 1030  
 1953

OFFICE COPY  
 1 Supplied to [Signature] 21. 10. 53.  
 2 Supplied to [Signature] 3. 11. 53.

Revision A. 3/12. Shuttering to floor face added		MESSRS. WATERLOW & SONS. LTD. Nos 6 & 7, BANKSIDE, S.E.1.	
DETAILS OF PERMANENT REPLACEMENT OF MOVABLE DAM IN QUAY WALL			
DATE: 28th MAY 1953	SCALE: 1/4" = 1ft. UNLESS NOTED	MESSRS. L. G. TAPP & PARTNERS, CHARTERED CIVIL ENGINEERS, 14, GOSWELL PARK ROAD, MOTTINGHAM, S.E.3.	
DRG. No 993/1A		2-1956	

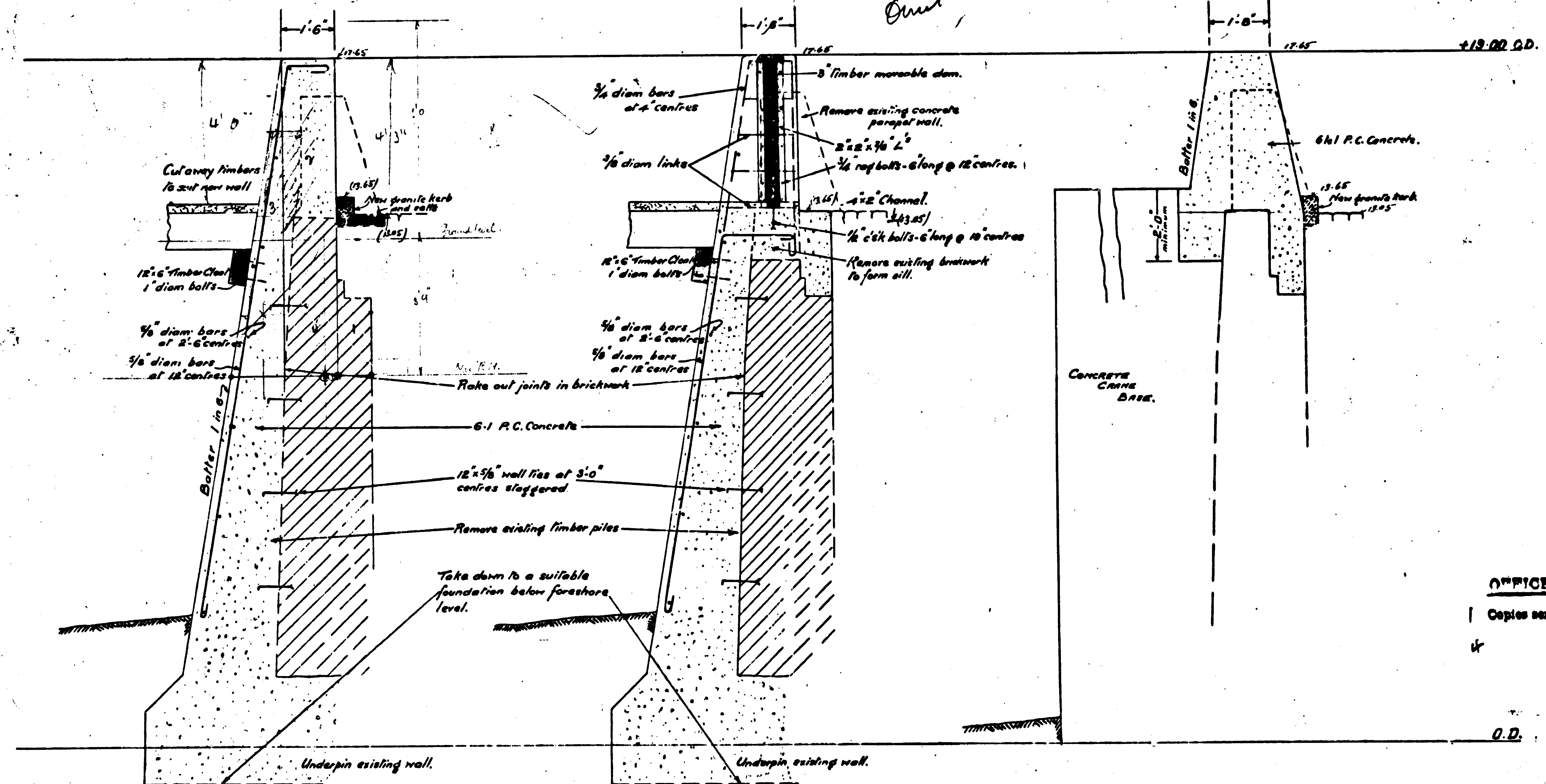
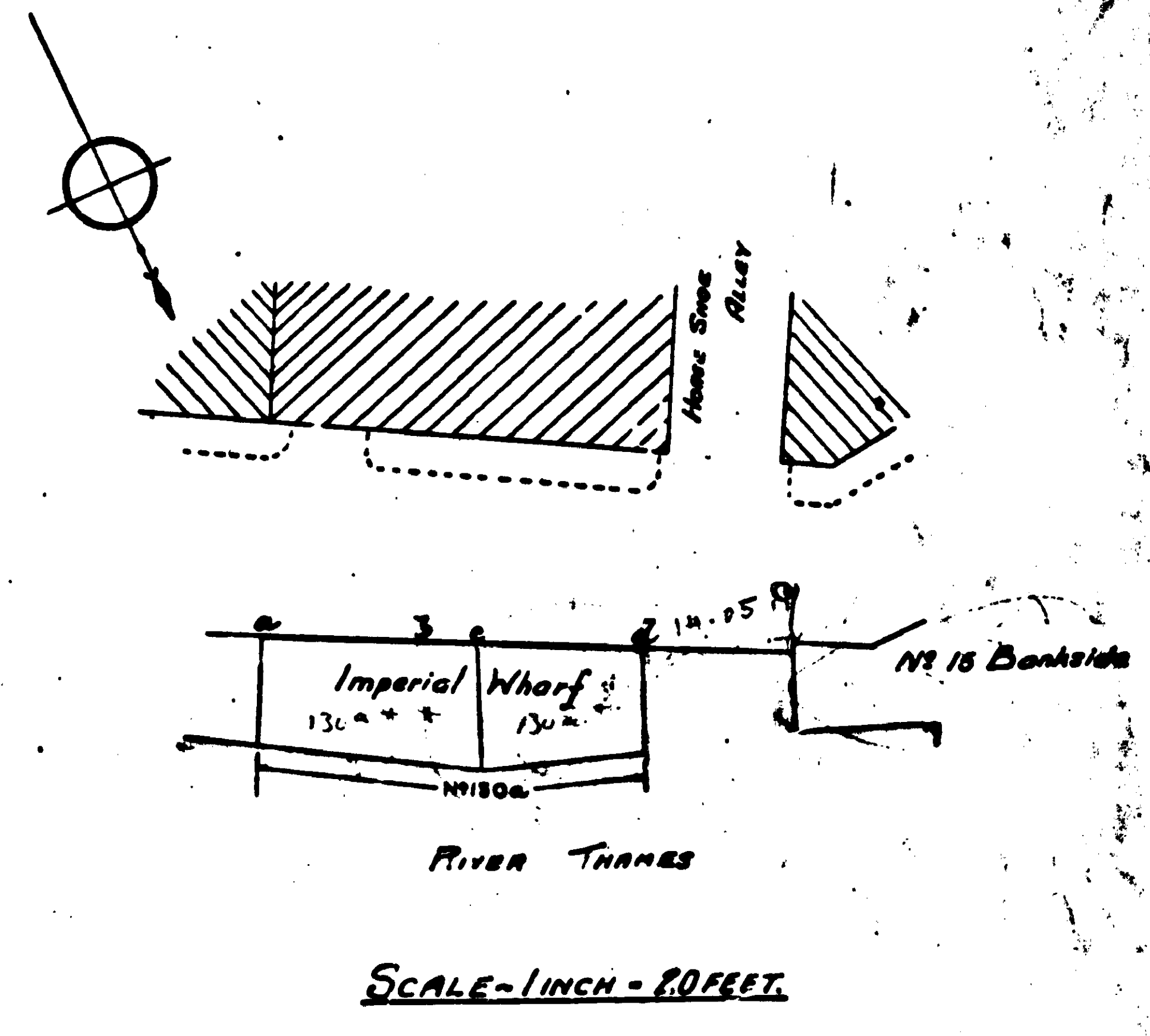
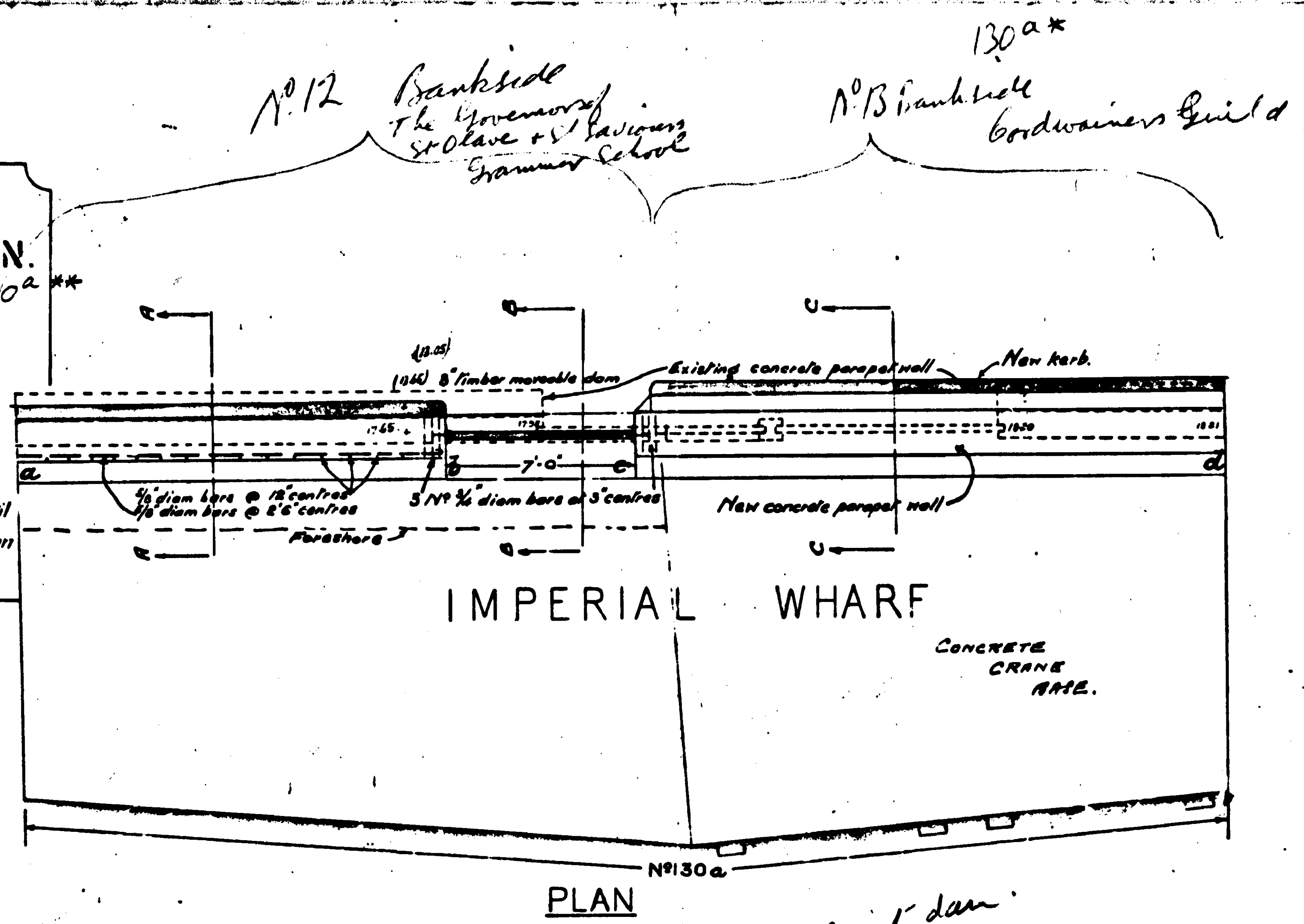
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 A5A4  
 A4A3  
 A3A2  
 A2A1  
 2-1956



**L.C.C.**  
**THAMES FLOODS PREVENTION.**  
 St Saviour's District Nos 150<sup>a</sup>\* & 130<sup>a</sup>\*\*

Construct works from A to C including the movable dam from B to C in accordance with the details shown hereon to the satisfaction of the London County Council.  
 Maintain the movable dam from B to C to the satisfaction of the London County Council.  
 Before commencing the works erect a temporary Dam from A to B to be approved by the Council and maintain such Dam until the completion of the works to the satisfaction of the London County Council.

SCALE - 1/4" = 1 foot.



SECTION A-A

SECTION B-B  
 SCALE - 1/4 inch = 1 foot.

SECTION C-C

OFFICE COPY  
 Copies sent to \_\_\_\_\_ 21 MAY 1931  
 \_\_\_\_\_ 30 MAY 1931

T.F. 1074  
 1931

