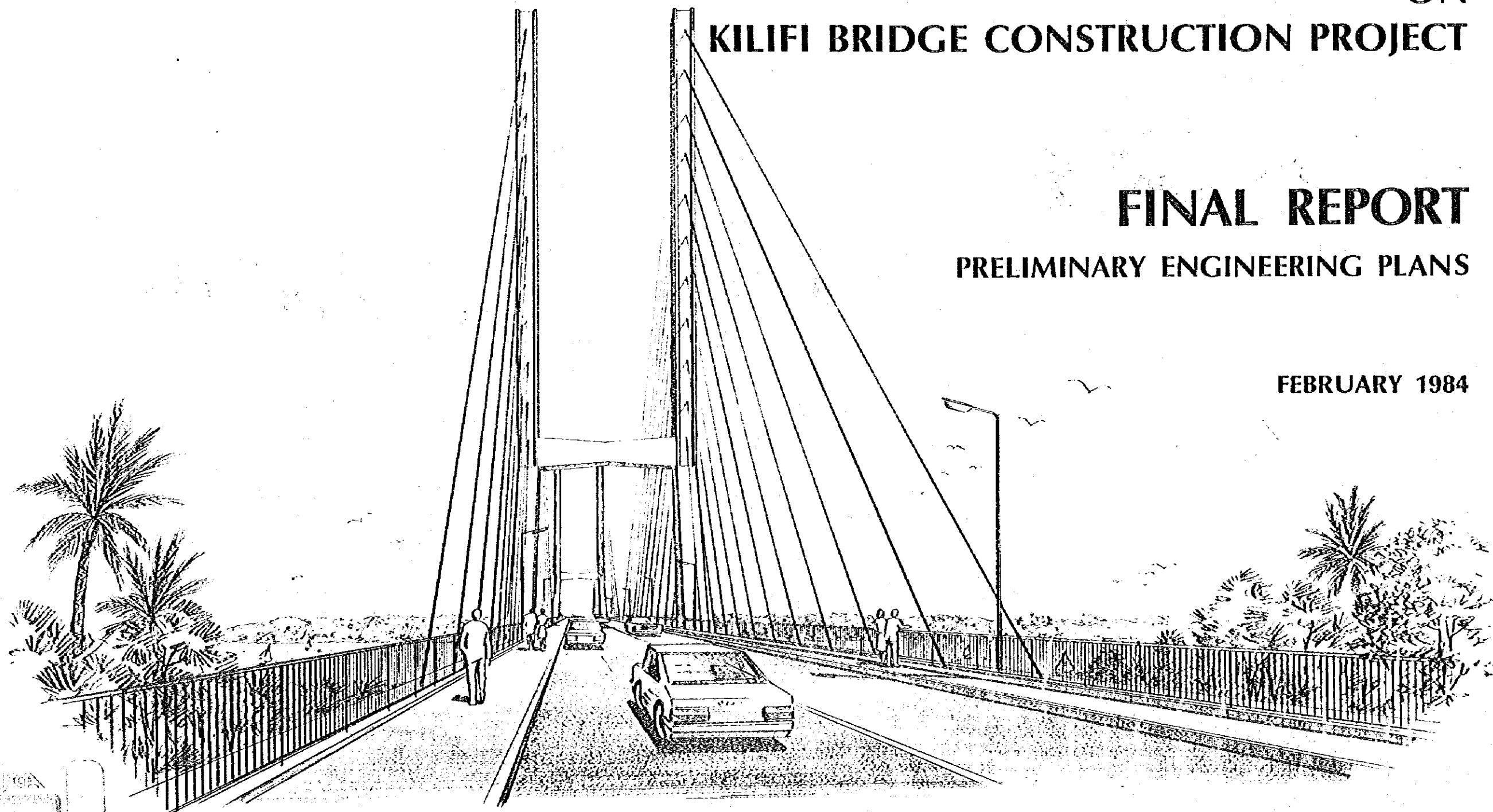


REPUBLIC OF KENYA
FEASIBILITY STUDY
ON
KILIFI BRIDGE CONSTRUCTION PROJECT

FINAL REPORT
PRELIMINARY ENGINEERING PLANS

FEBRUARY 1984



JAPAN INTERNATIONAL COOPERATION AGENCY

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**REPUBLIC OF KENYA
FEASIBILITY STUDY
ON
KILIFI BRIDGE CONSTRUCTION PROJECT**

**FINAL REPORT
PRELIMINARY ENGINEERING PLANS**

FEBRUARY 1984

JAPAN INTERNATIONAL COOPERATION AGENCY

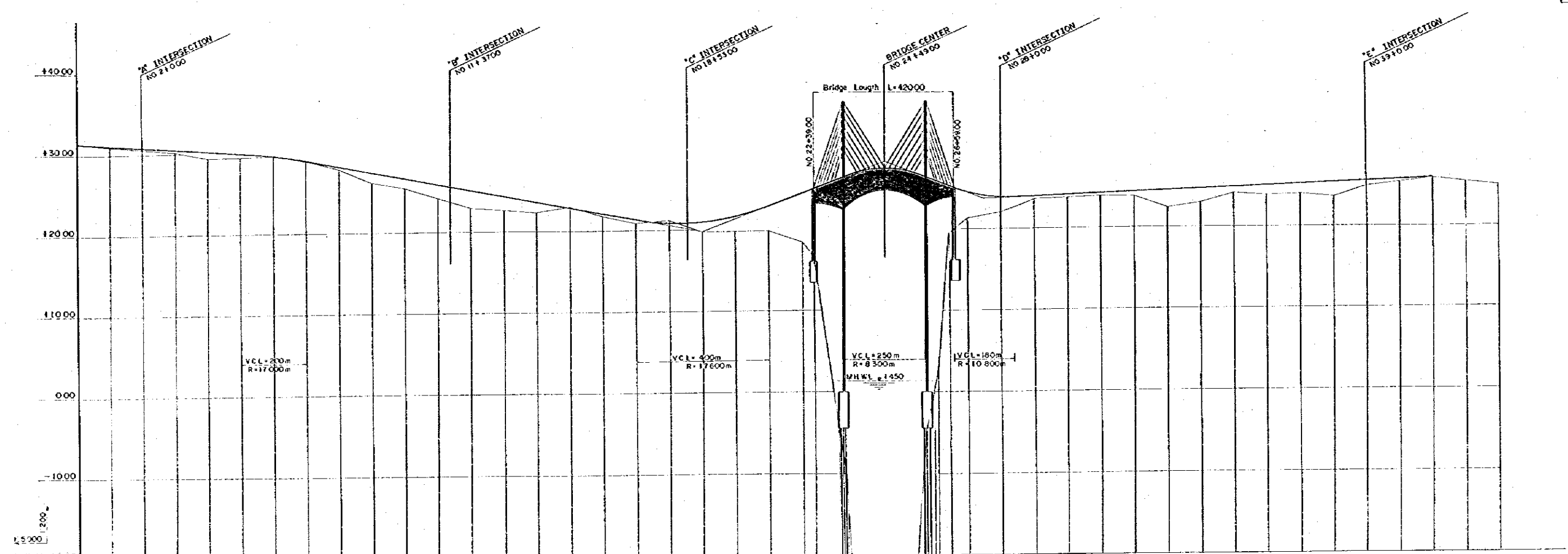
国際協力事業団	
受入 月日 '85. 6. 14	L407
登録No. 11602	615
	SDF

PRELIMINARY ENGINEERING DRAWINGS

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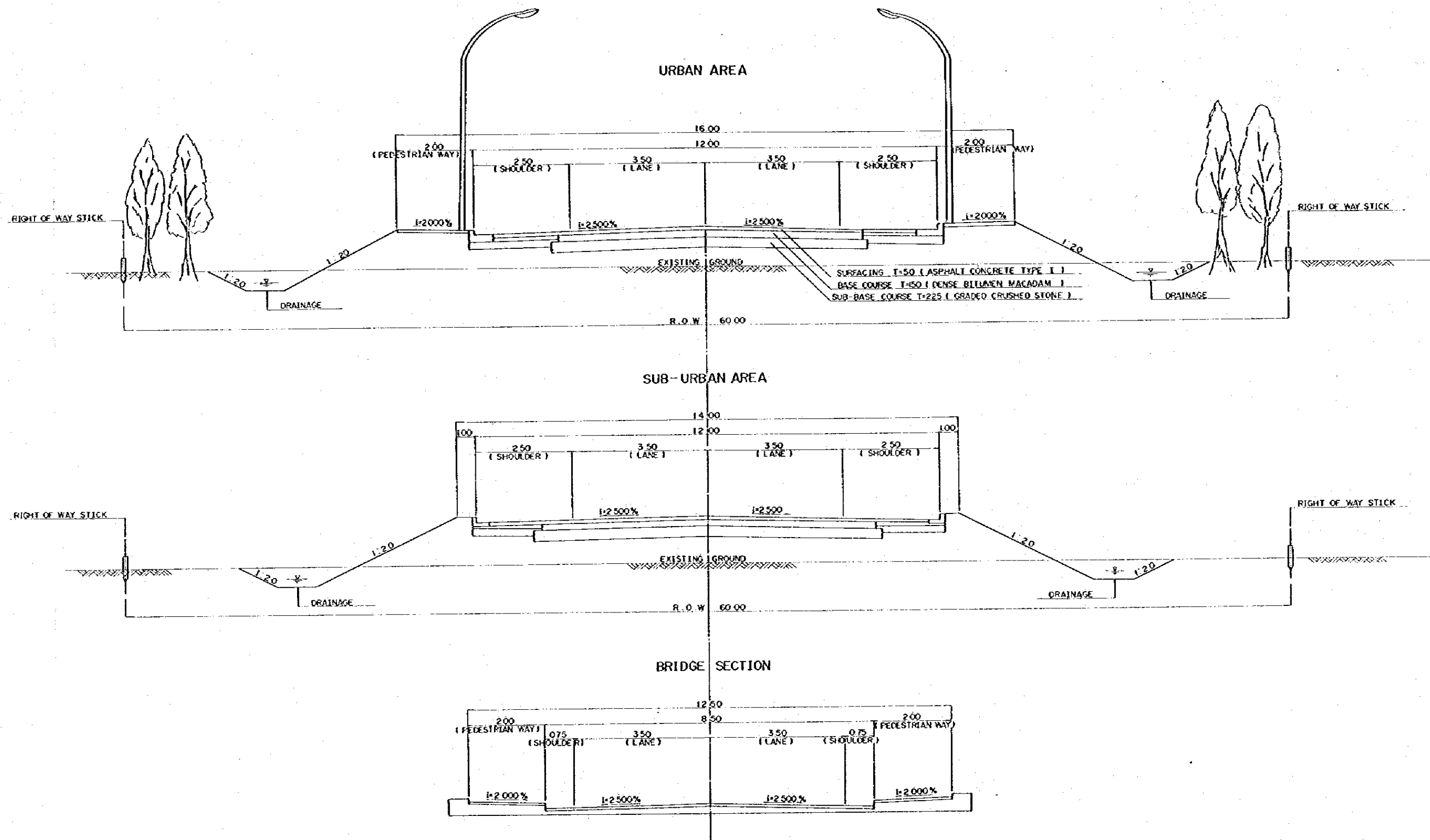
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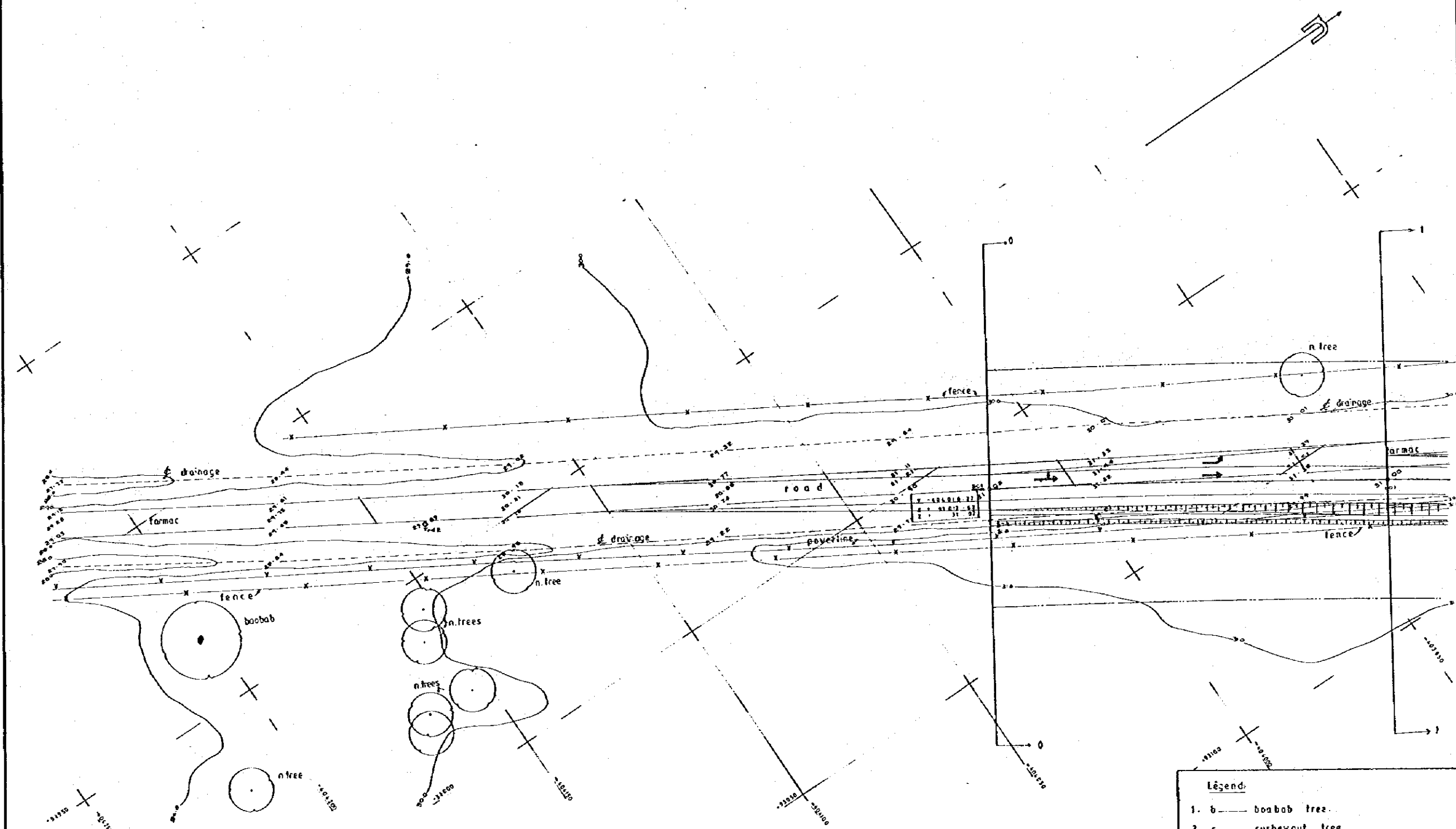
PRELIMINARY ENGINEERING DRAWINGS



GRADE	PROPOSED HEIGHT	EXISTING GROUND HEIGHT	ACCUMULATED DISTANCE	STATION	HORIZONTAL CURVE
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1+0360% L=600	30.62	30.50	100.00	NO 1	
1+0360% L=600	30.32	30.30	200.00	NO 2	
1+0360% L=600	29.96	29.96	300.00	NO 3	
1+0360% L=600	29.60	29.60	400.00	NO 4	
1+0360% L=600	29.60	29.60	500.00	NO 5	
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1+0360% L=600	29.60	29.60	2300.00	NO 23	
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1A=20°-47'-27" R=2000m TL=366903m CL=725701m
 1A=63°-45'-29" R=1000m TL=621937m CL=1112297m
 1A=40°-36'-32" R=1600m TL=532000m CL=1134160m
 EXISTING ROAD





Légend:

1. b — baobab tree.
2. c — cashewnut tree.
3. ga — gumuoh tree
4. m — mango tree.
5. n — neem tree.
6. t — tree.
7. * — coconut tree
8. Ird2 — I.P.C.U. New, BC1 — I.P.C. New.

REPUBLIC OF KENYA
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JAPAN INTERNATIONAL CO-OPERATION AGENCY.

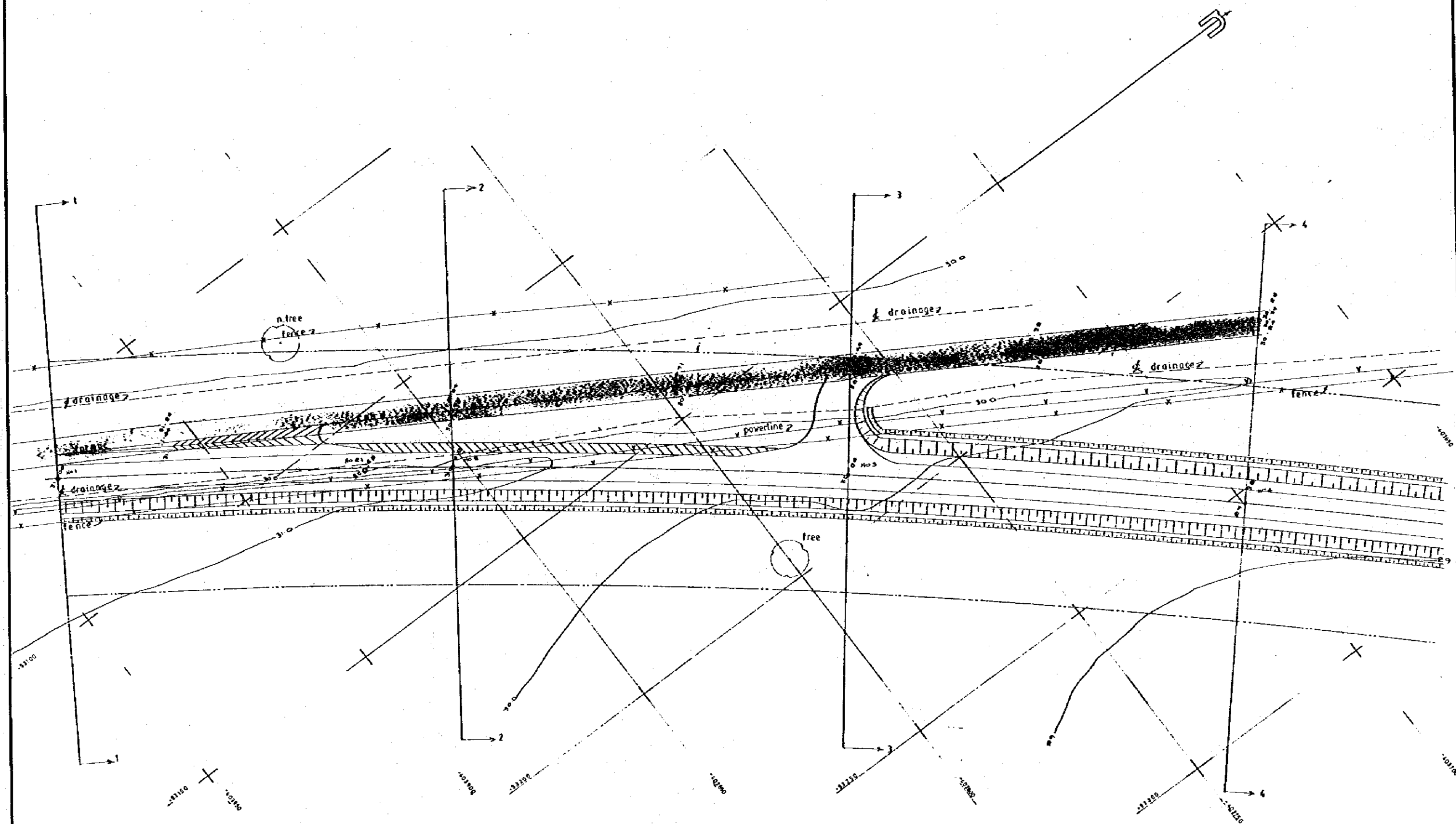
SCALE



TOPOGRAPHICAL PLAN

FORWARDED BY HIME & ZIMMERLIN
Chartered & Licensed Land Surveyors
P. O. BOX 99024 TEL: 313470 MOMBASA

SURVEY DATE
SHEET NO. 18

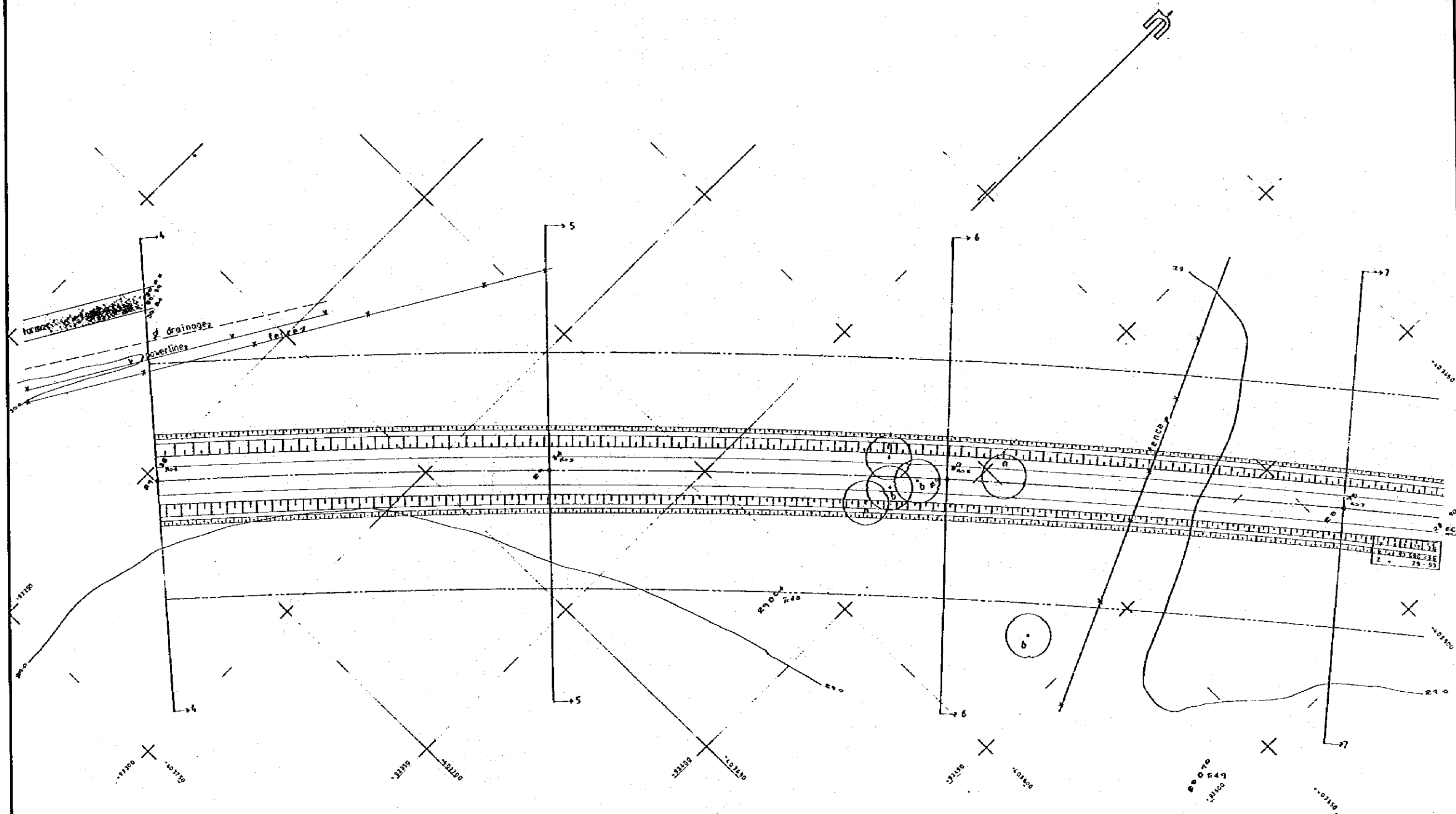


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TOPOGRAPHICAL PLAN

1. No 2x-1 .P.C.U. New
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SURVEY DATE
SHEET NO. 20



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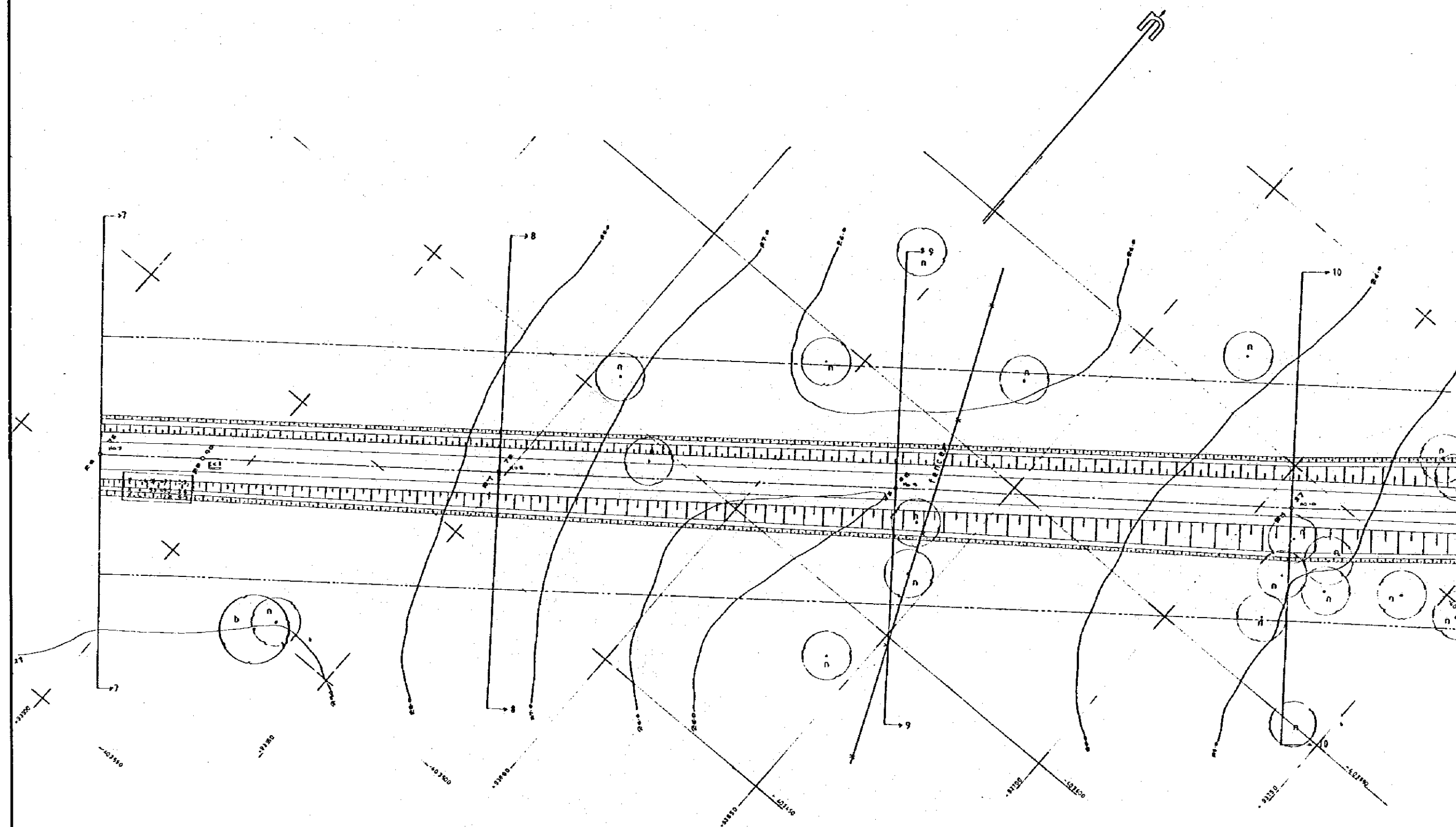


TOPOGRAPHICAL PLAN

- 1 ECI — I. P. C. New
- 2 Trd 8 } I. P. C. U. New
- 3 Trd 9 }

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Chartered & Licensed Land Surveyors
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SURVEY DATE
SHEET NO. 21

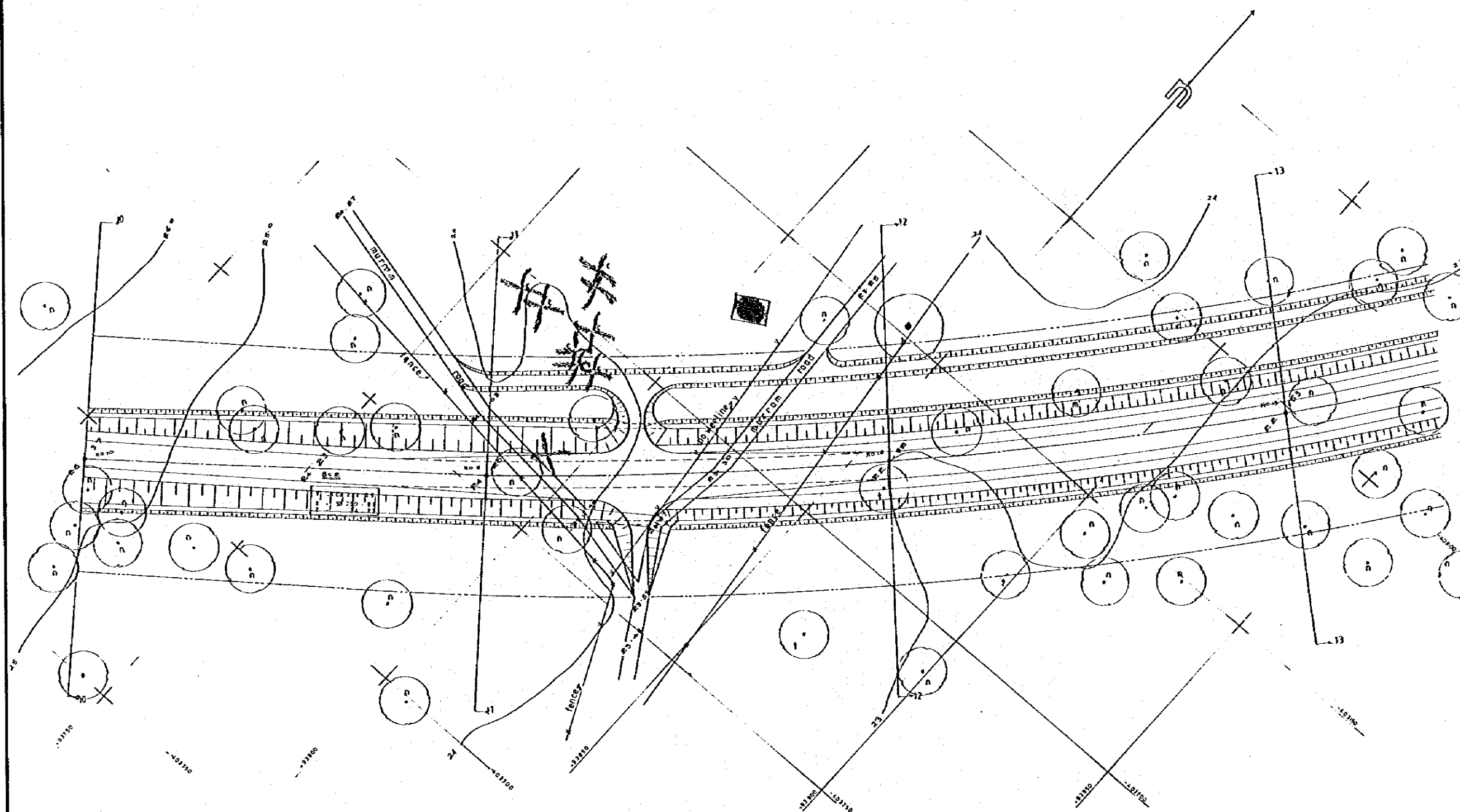


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TOPOGRAPHICAL PLAN

1 ECI—S.P.C. New
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SURVEY DATE
SHEET NO 27



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JAPAN INTERNATIONAL CO OPERATION AGENCY

SCALE

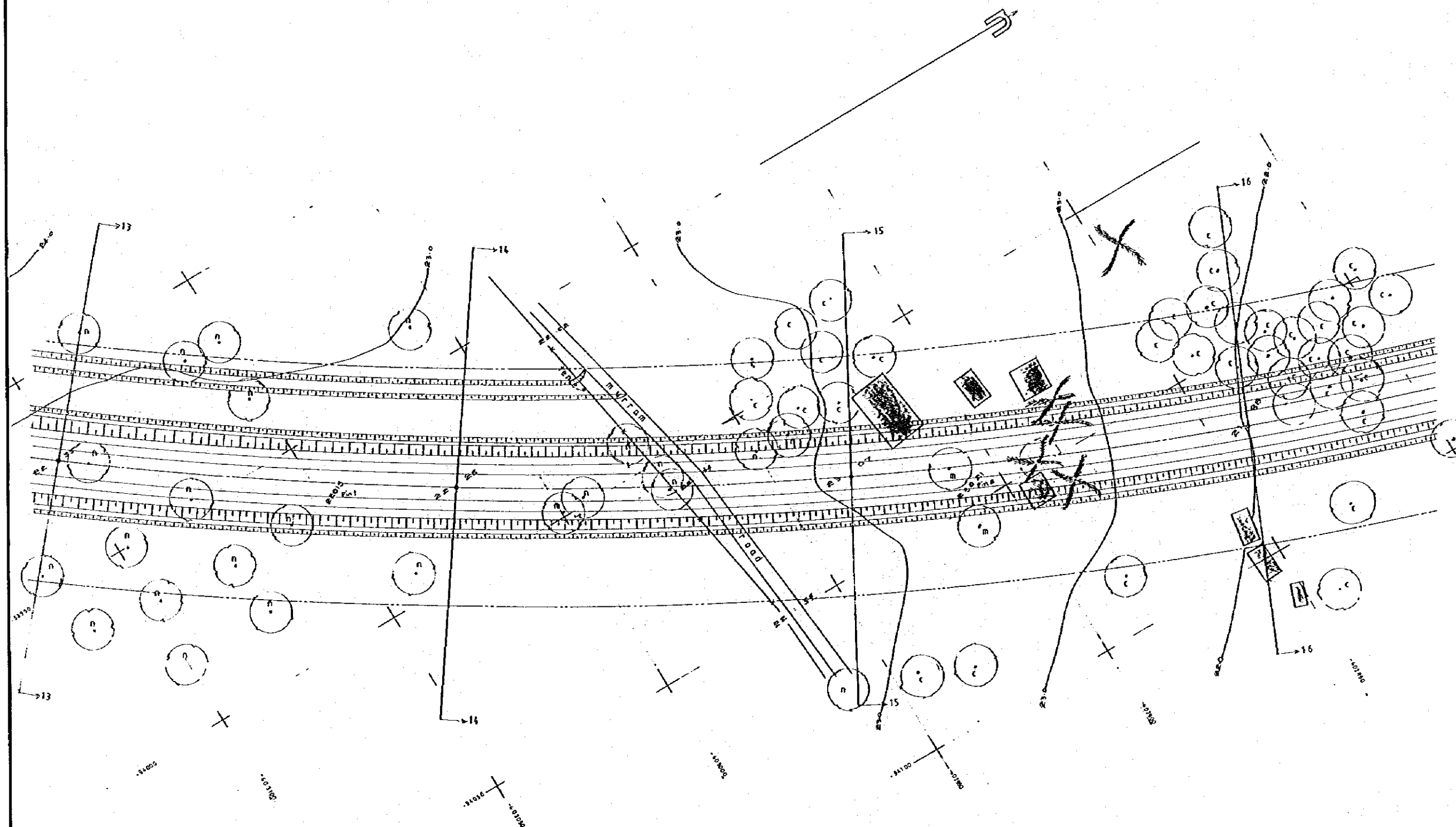


TOPOGRAPHICAL PLAN

I. BC2—I. P. C. New.

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SURVEY DATE
SHEET NO 10



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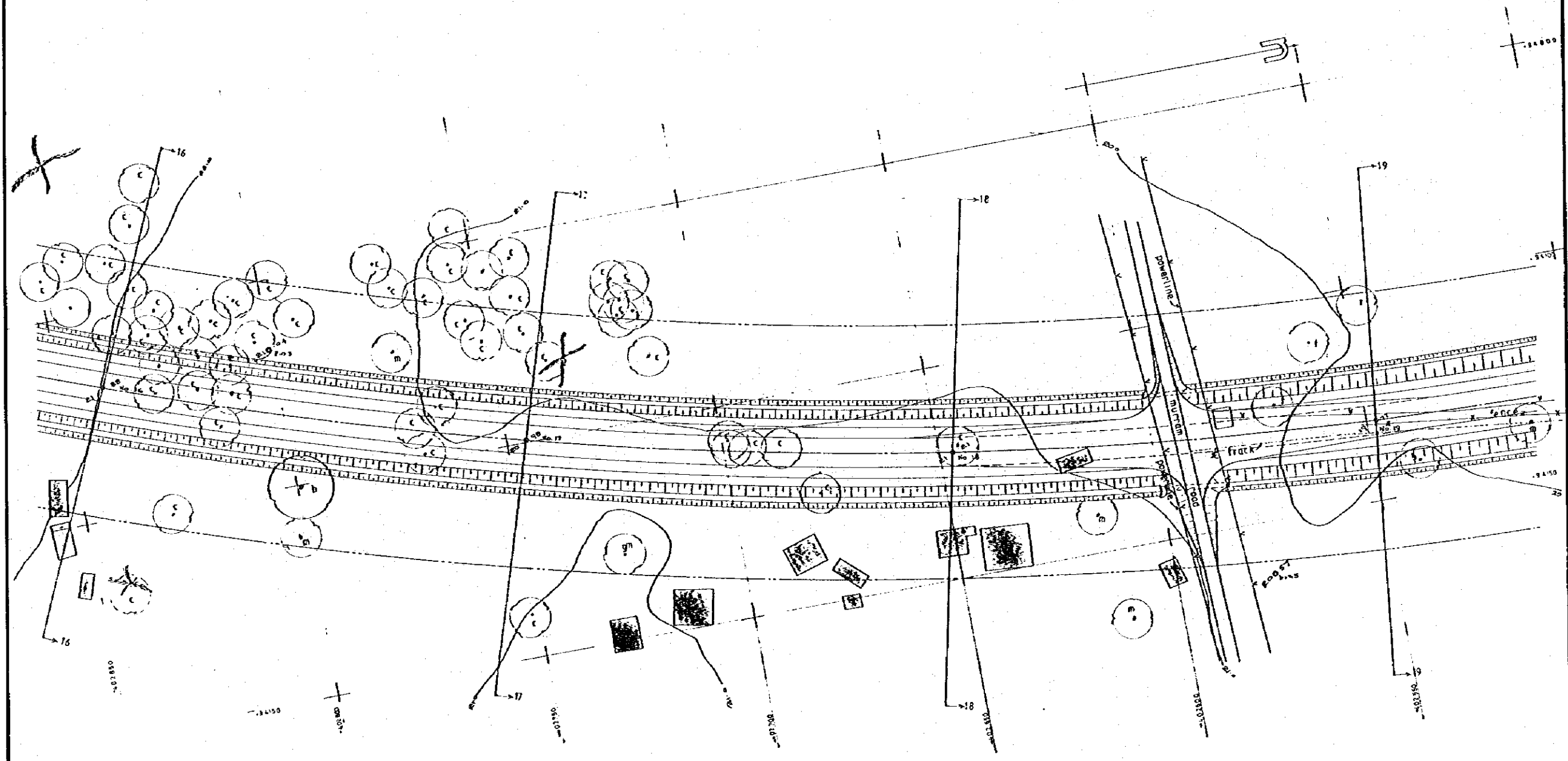
TOPOGRAPHICAL PLAN

1. pin 1 } 1. P.C.U. New
2. pin 2 }

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P. O. BOX 99024 TEL 313670 NOMBASA

SURVEY DATE

SHEET NO 24

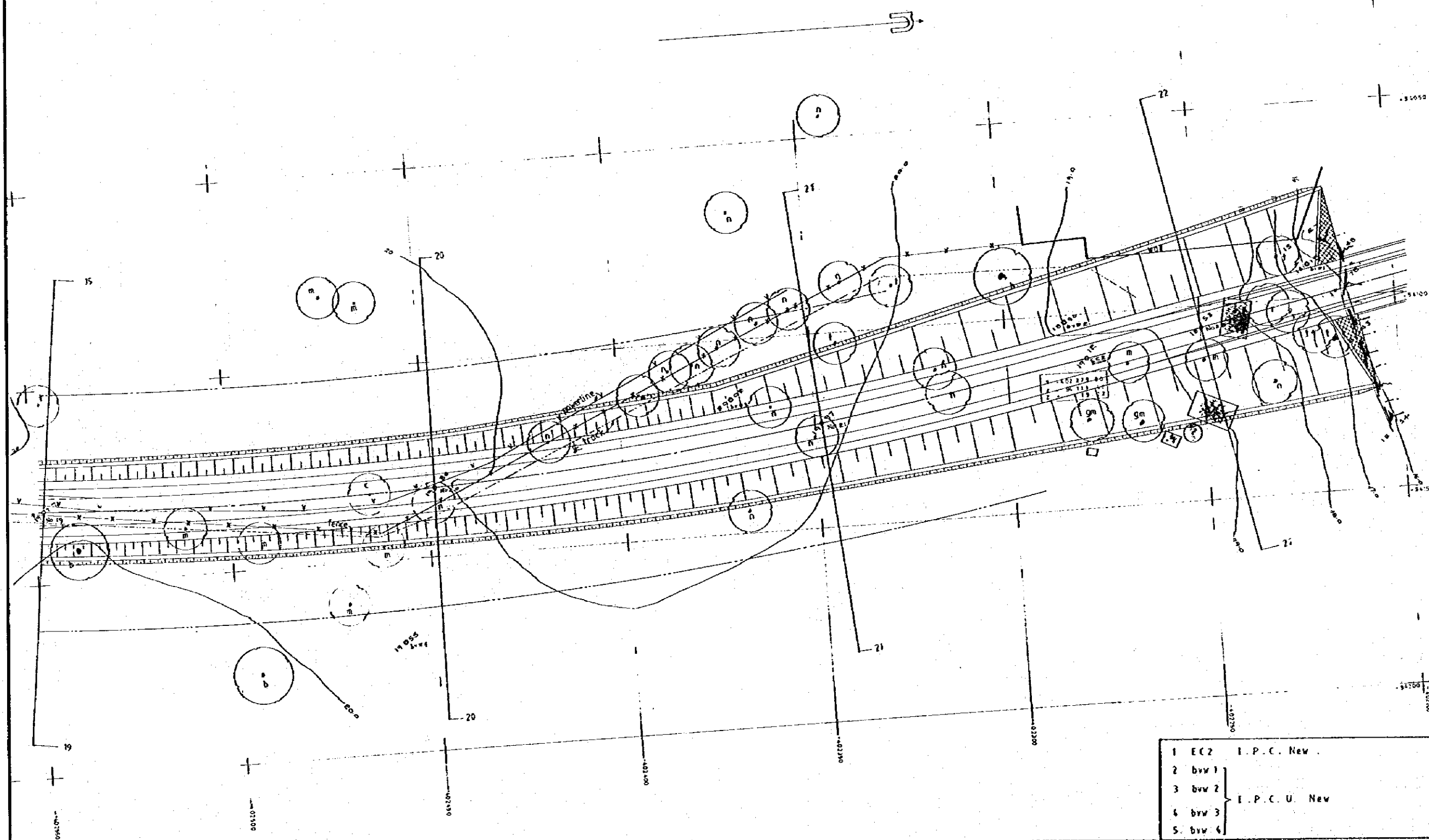


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TOPOGRAPHICAL PLAN

1. bws } I P C U New
2. pin 3 }
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SHEET NO. 15



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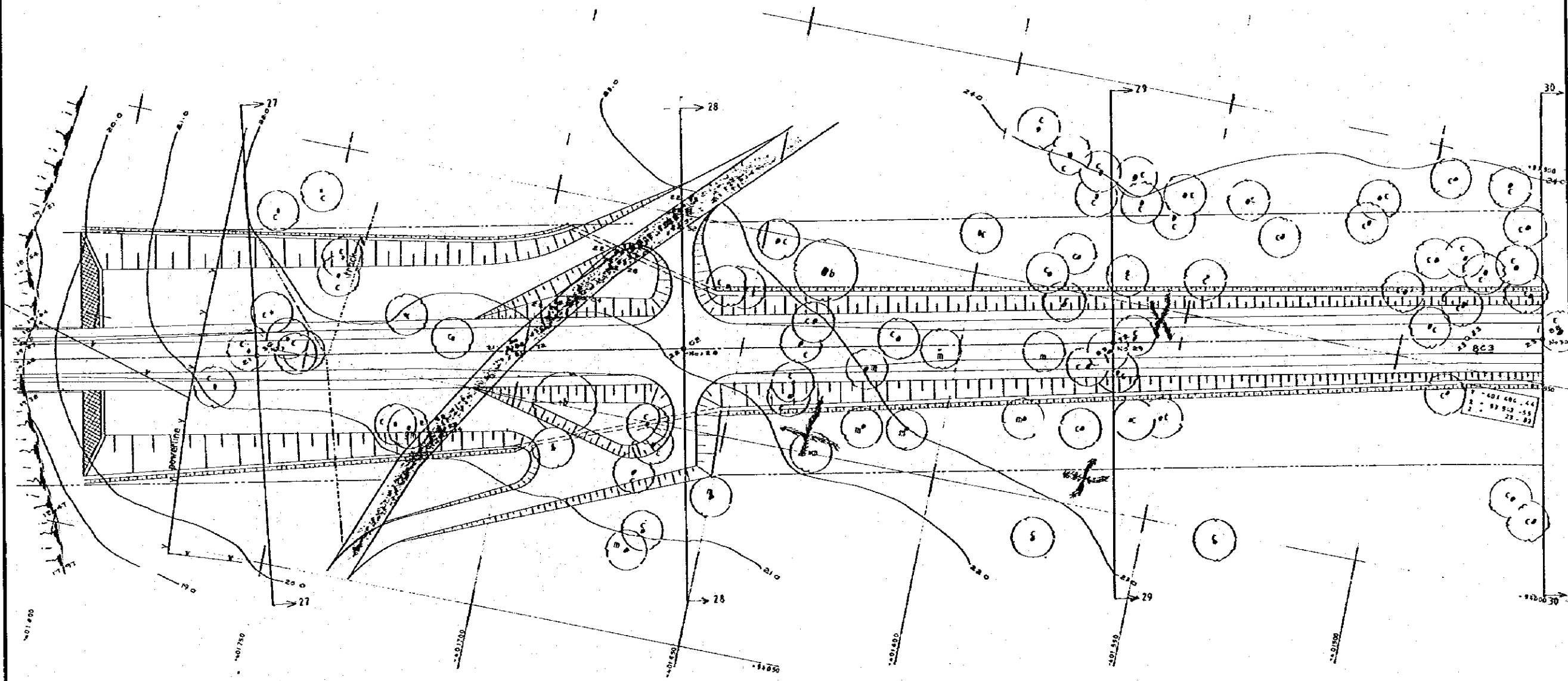
SCALE

TOPOGRAPHICAL PLAN

1	EC 2	I. P. C. New
2	brw 1	I. P. C. U. New
3	brw 2	
4	brw 3	
5	brw 4	

WITNESSED BY HINE & ZIMMERLIN
Chartered & Licensed Land Surveyors.
P. O. BOX 99024 TEL 313470 MOMBASA.

张其平	李山
李其平	李山



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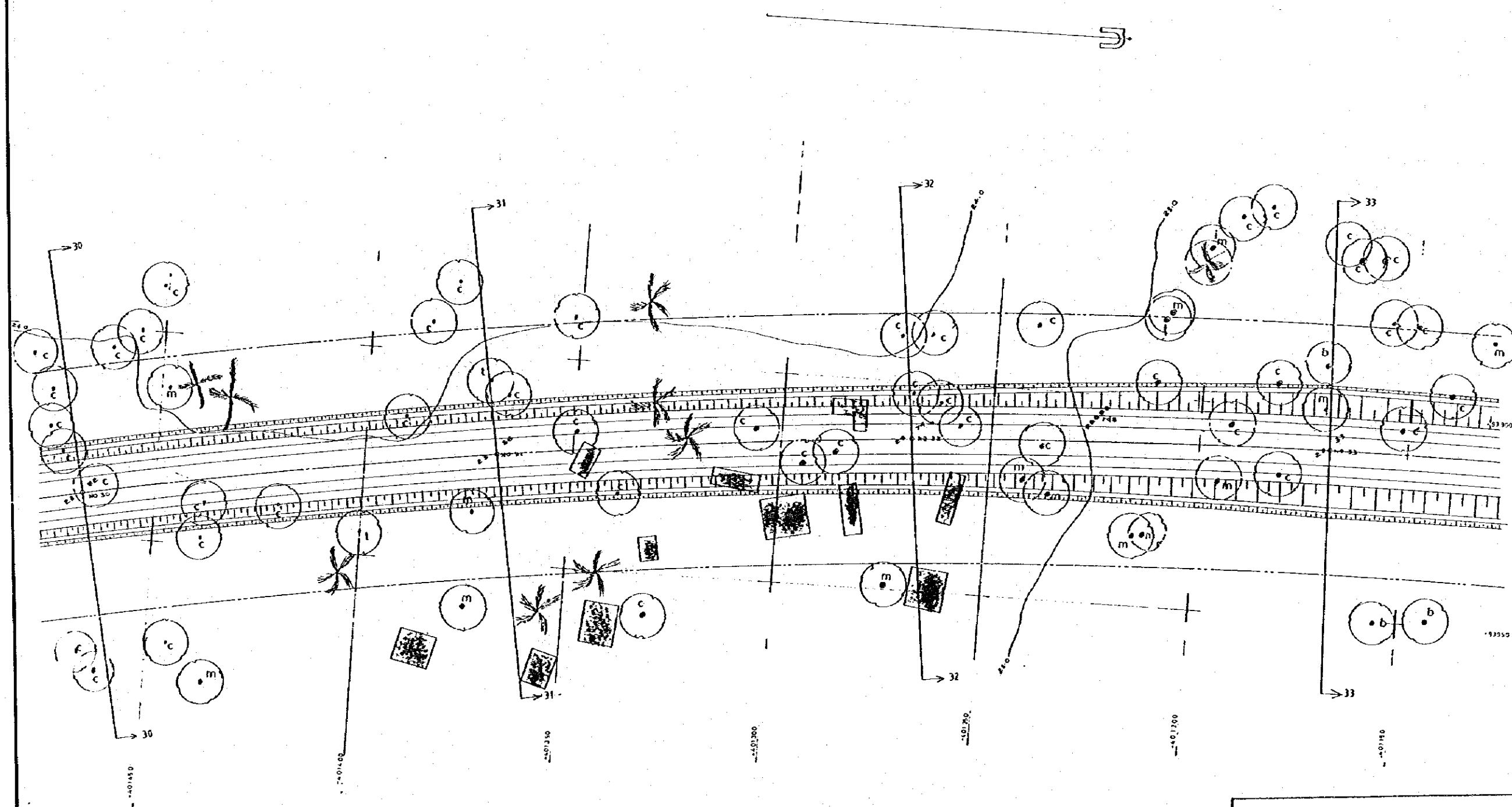


TOPOGRAPHICAL PLAN

1. BC3 — I.P.C. New

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SURVEY DATE
SHEET NO. 27



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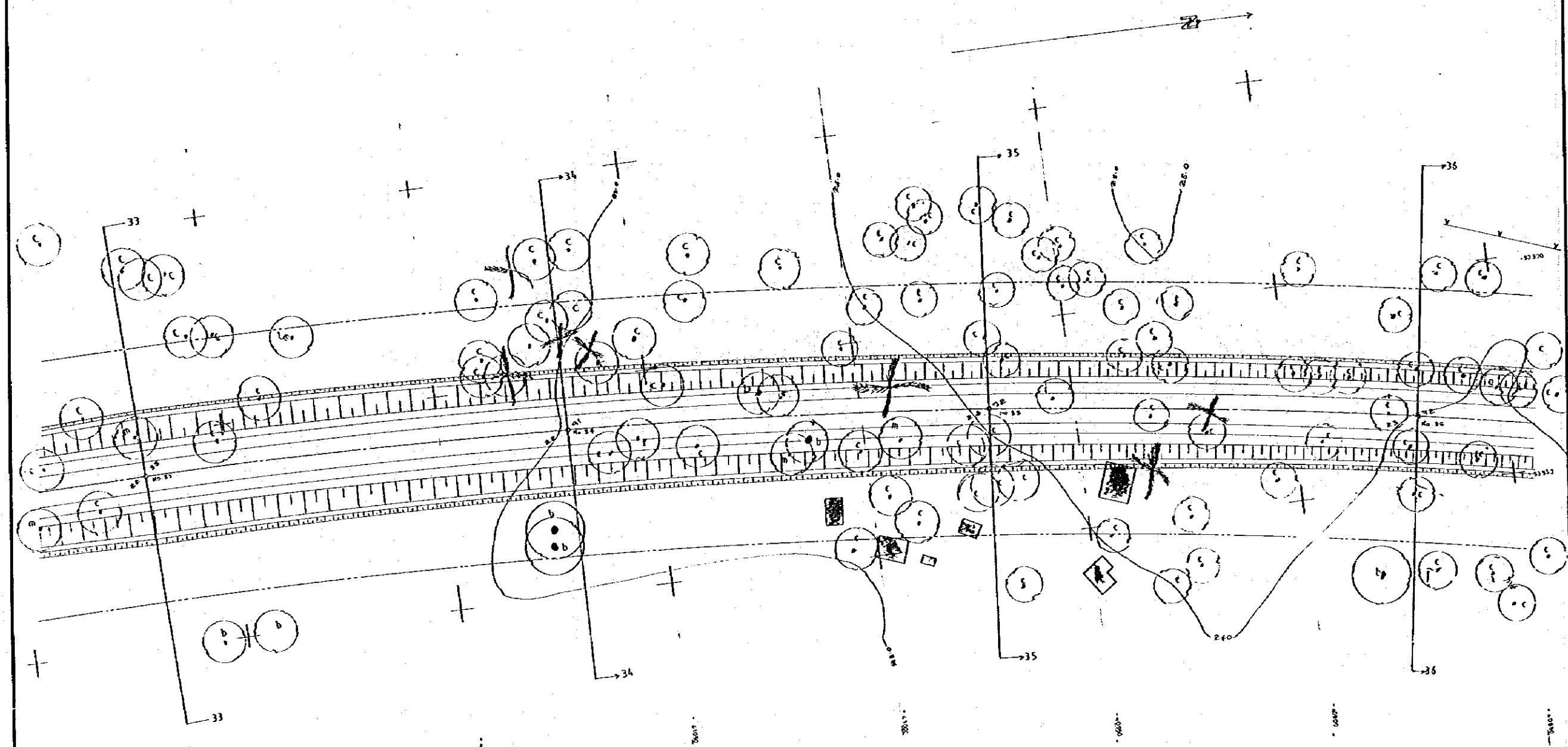
TOPOGRAPHICAL PLAN

1. rd 8 — I. P. C. U. New.

ENGINEERS: HIME & ZIMMERLIN
Chartered & Licensed Land Surveyors
P. O. BOX 99024 TEL 313470 MOMBASA

SURVEY DATE

SHEET NO. 26

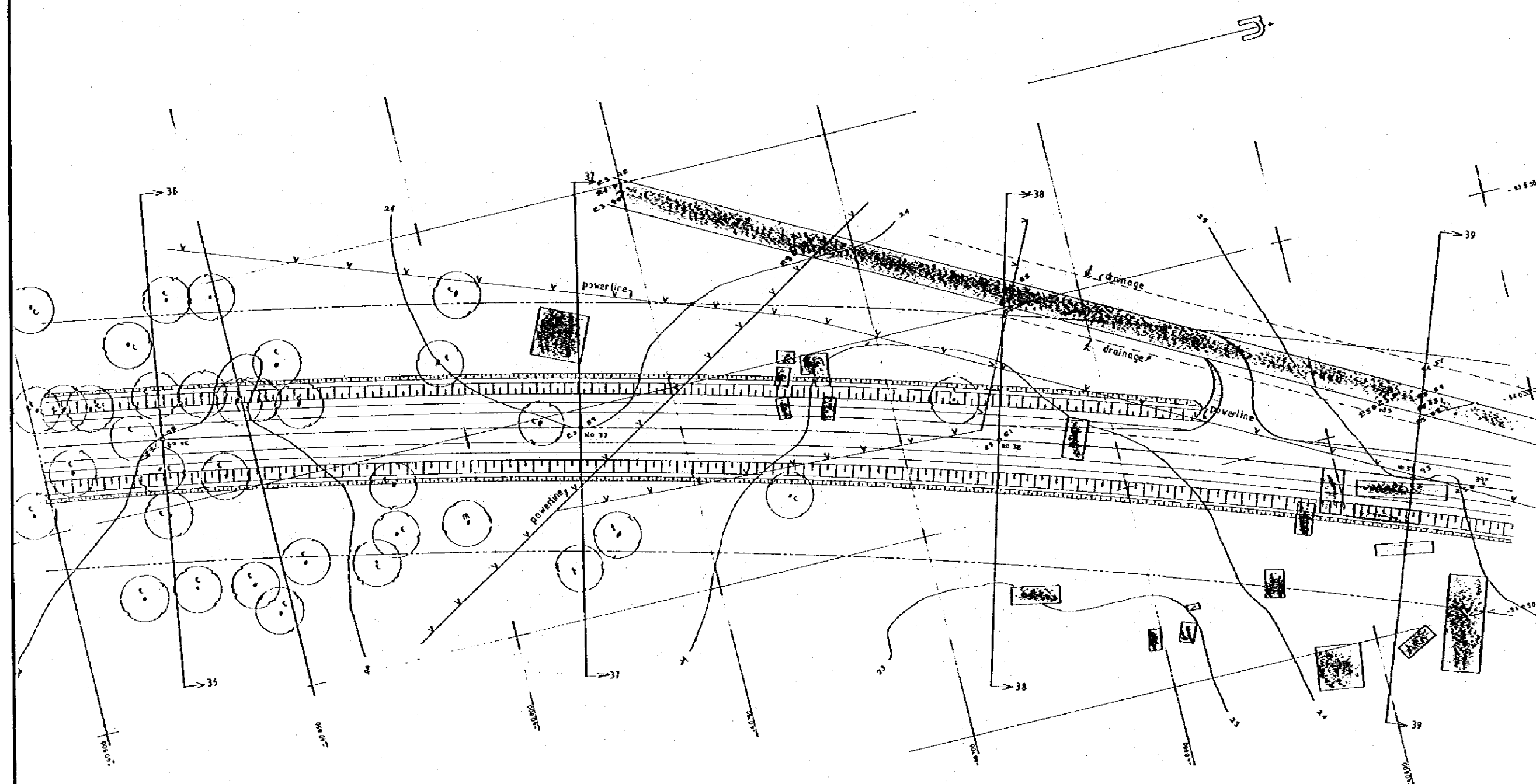


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TOPOGRAPHICAL PLAN

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SURVEY DATE
SHEET NO 25



REPUBLIC OF KENYA
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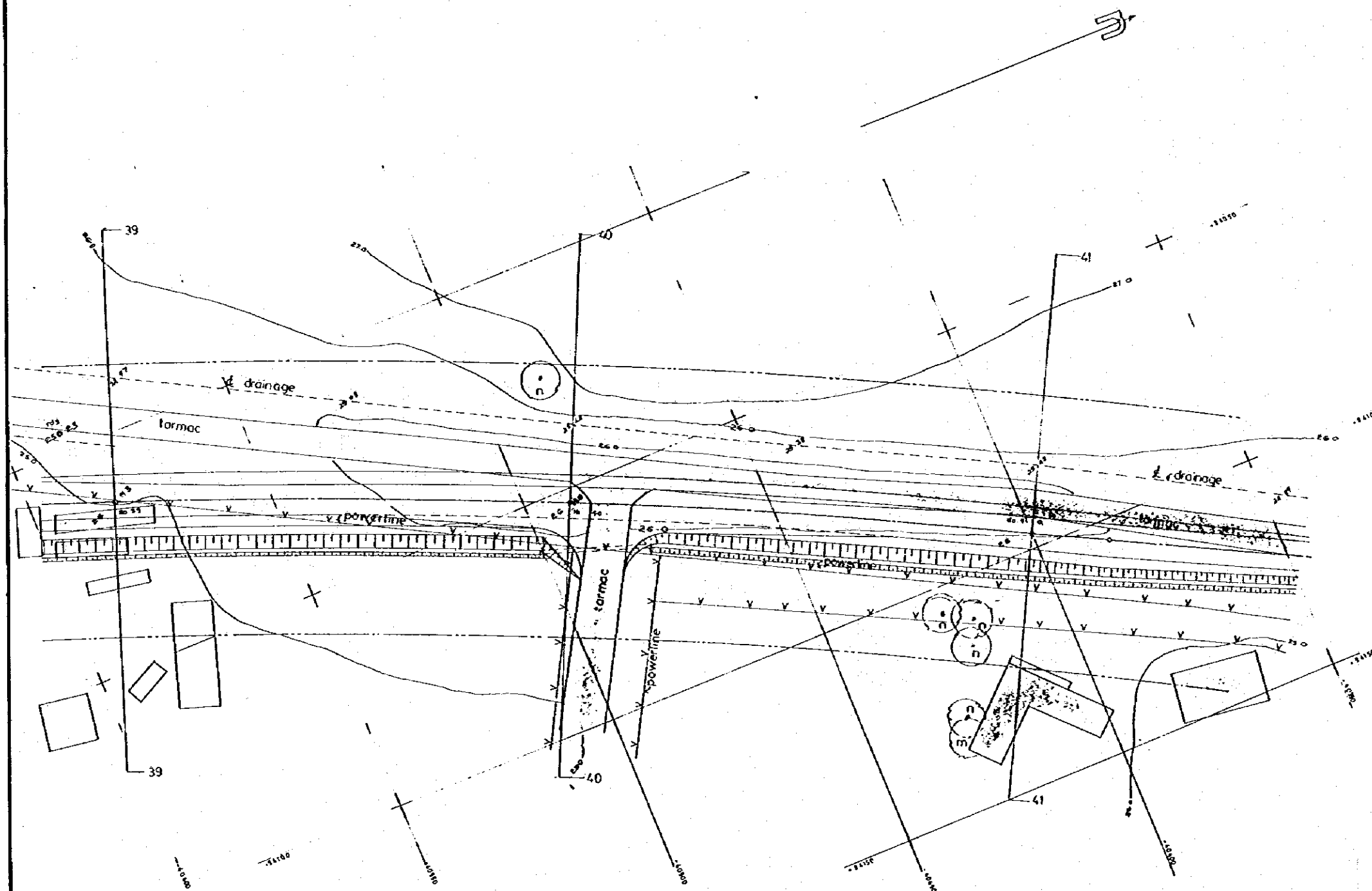


TOPOGRAPHICAL PLAN

- 1. 39x
 - 2. rd3
 - 3. rd4
- I. P. C. U. New.

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SHEET NO 39



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SCALE



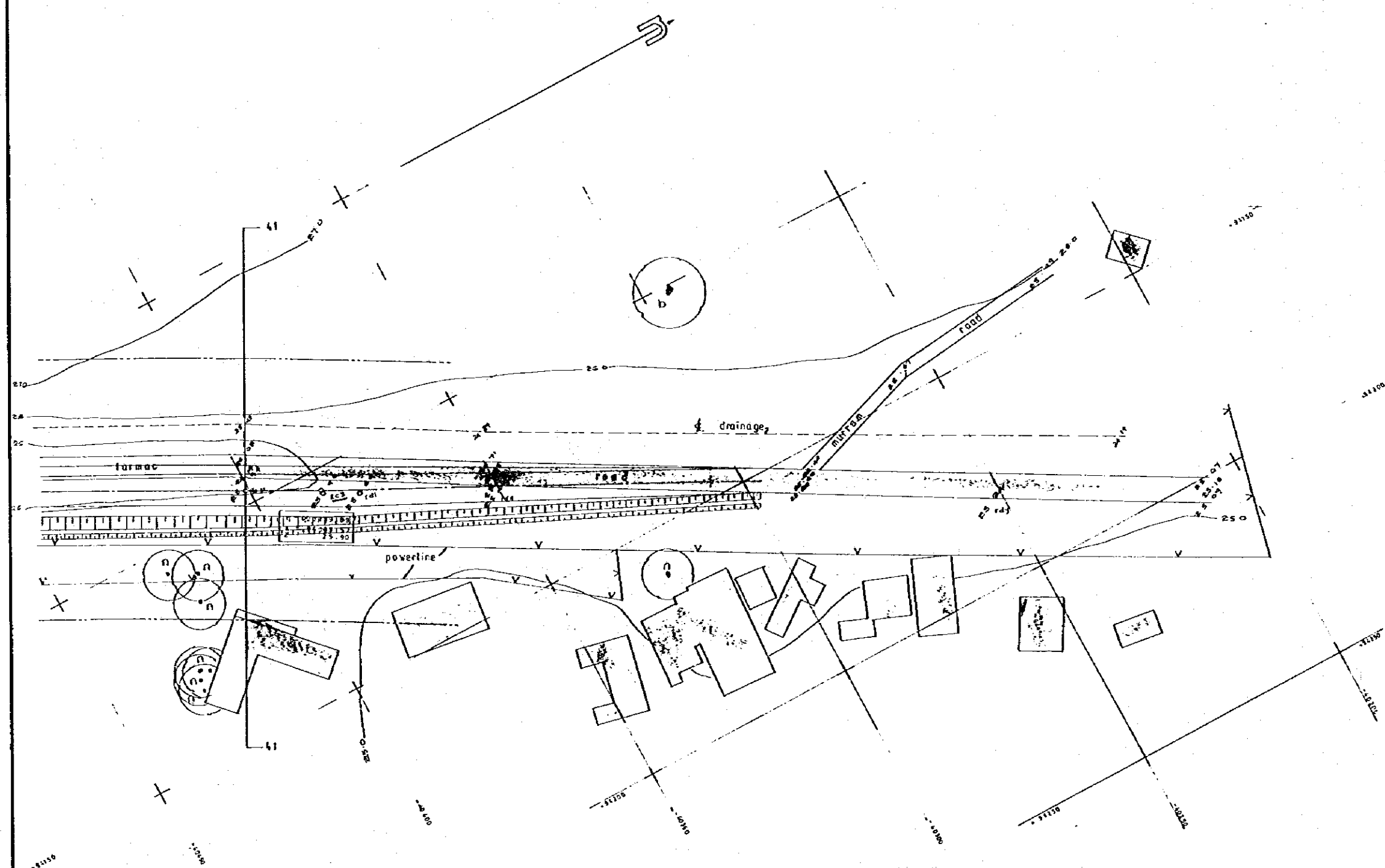
TOPOGRAPHICAL PLAN

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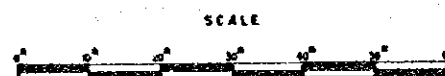
DRAWN BY HIME & ZIMMERLIN
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P. O. BOX 99024 TEL: 313470 MOMBASA.

DATED DATE

SHEET NO. 21



REPUBLIC OF KENYA
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TOPOGRAPHICAL PLAN

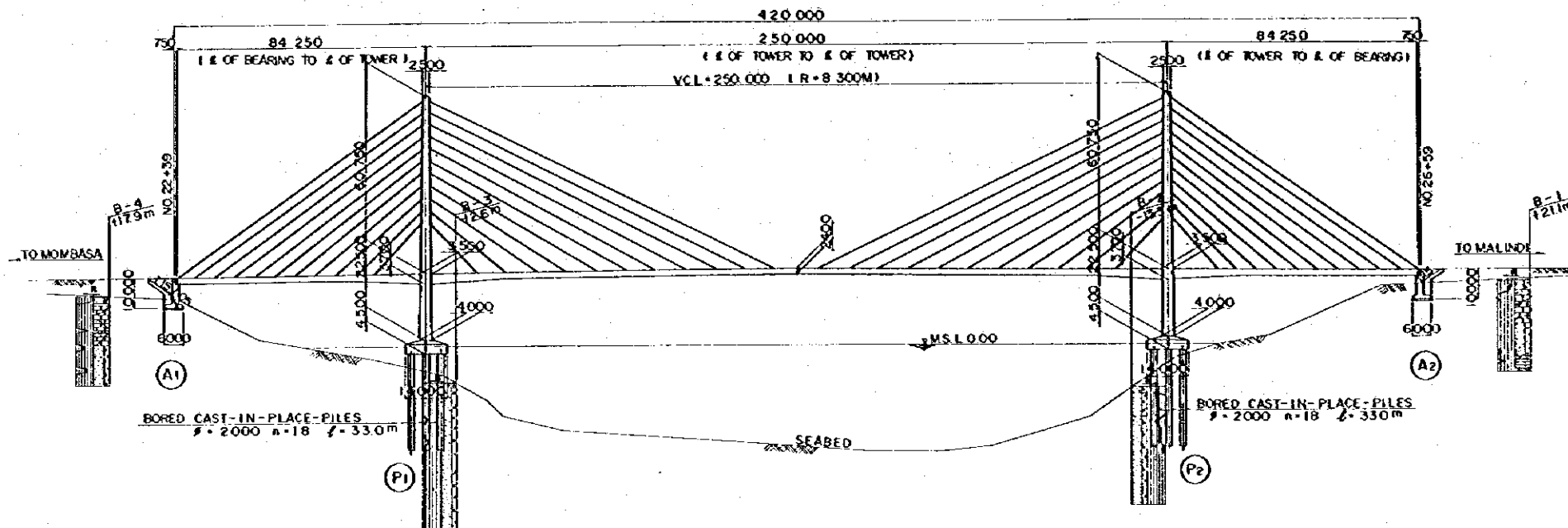
1. EC3 — I. P. C. New
2. rdx
3. rdy
4. rd1

Surveyed by HIME & ZIMMERLIN
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SHEET NO 21

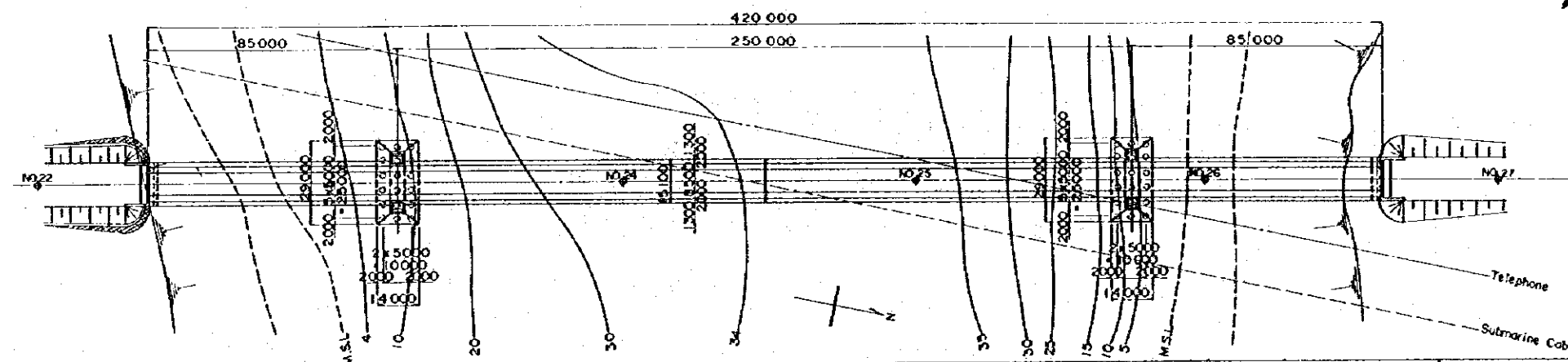
GENERAL VIEW OF KILIFI BRIDGE CABLE STAYED CONCRETE GIRDER BRIDGE

ELEVATION SCALE = 1 : 1000

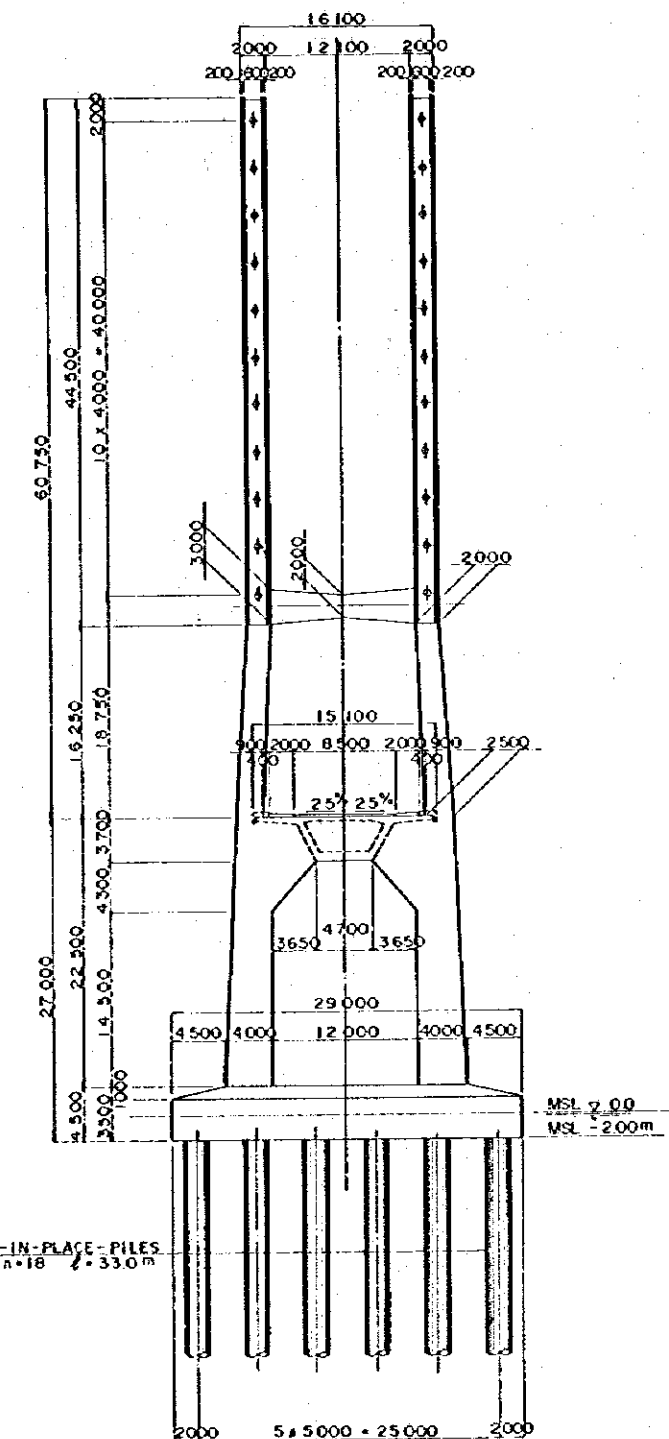


PROPOSED ROAD HEIGHT	25.050	25.470	25.965	26.305	26.399	26.525	26.614	26.674	26.888	27.118	27.257	27.265	27.106	27.009	26.849	26.674	26.588	26.496	26.394	26.325	26.295	25.935	25.809	25.260	25.050	24.596
EXISTING GROUND HEIGHT		+2.50	-5.00	-10.00	-15.00	-20.00	-25.00	-30.00	-35.00	-40.00	-45.00	-50.00	-55.00	-60.00	-65.00	-70.00	-75.00	-80.00	-85.00	-90.00	-95.00	-100.00	-105.00	-110.00	-115.00	-120.00
ACCUMULATE DISTANCE		67	2367.0	2300.0	2358.0	2394.0	2399.0	2350.0	2350.0	2400.0	2439.0	2448.0	2500.0	2514.0	2532.0	2548.0	2553.0	2562.0	2570.0	2578.0	2576.0	2600.0	2608.4	2645.0	2699.0	2700.0
STATION	N02239		N0223							N024												N026				N027
GRAIDENCE																										
HORIZONTAL CURVE																										

PLAN SCALE = 1 : 1000



CROSS SECTION SCALE = 1 : 300



NOTE 1 : UNIT = mm

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GENERAL VIEW OF KILIFI BRIDGE
(CABLE STAYED PRESTRESSED CONCRETE GIRDER BRIDGE)

SIDE ELEVATION SCALE = 1:100

CROSS SECTION SCALE = 1:100

SECTION A-A

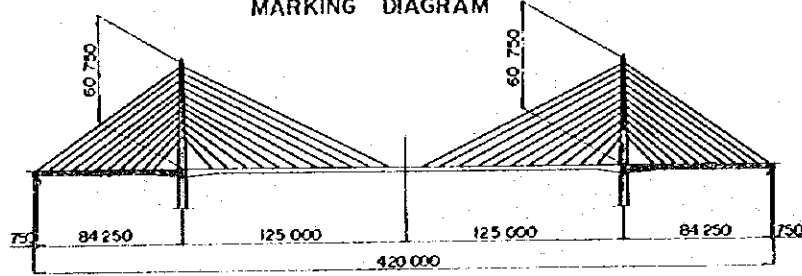
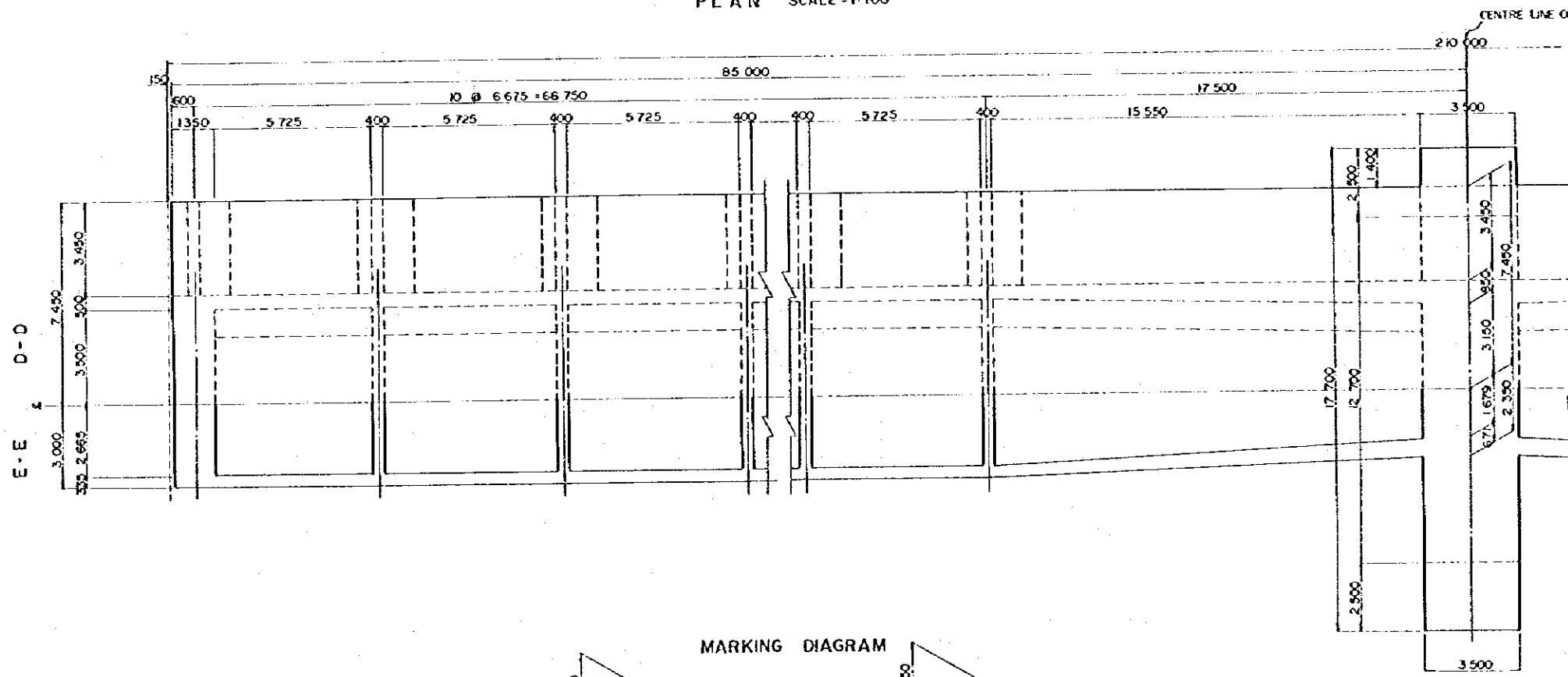
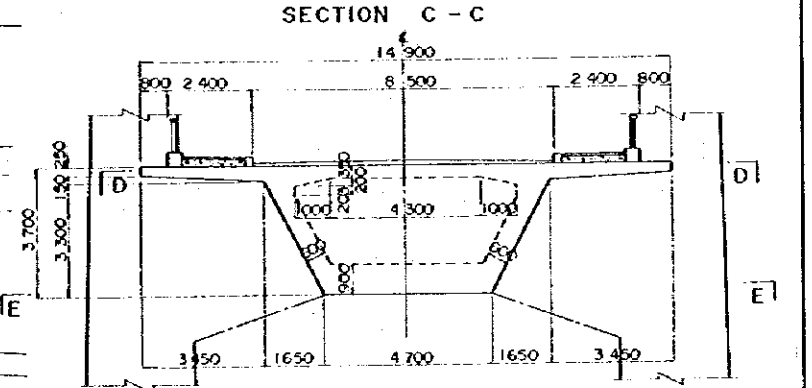
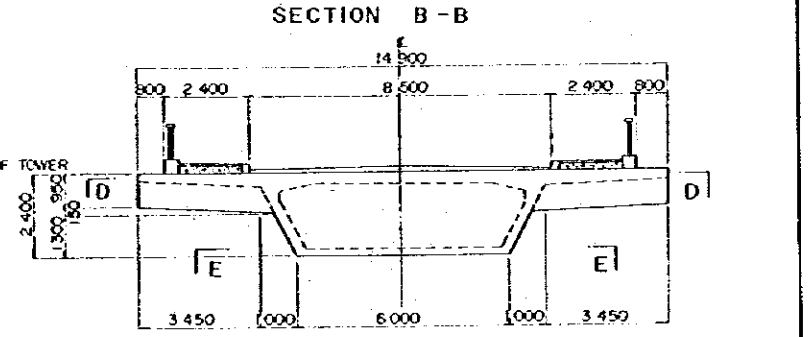
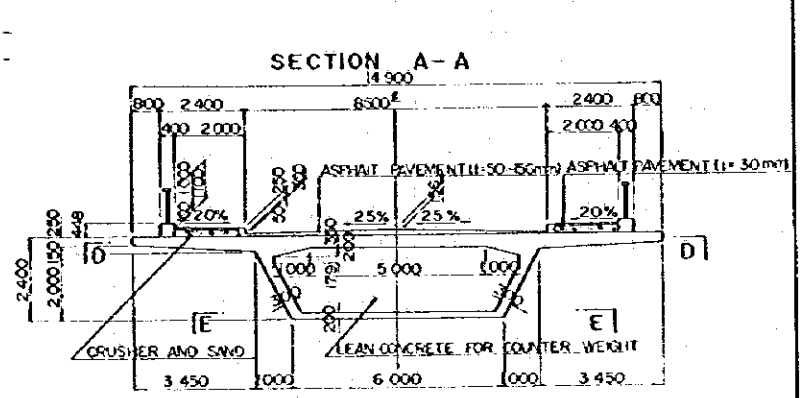
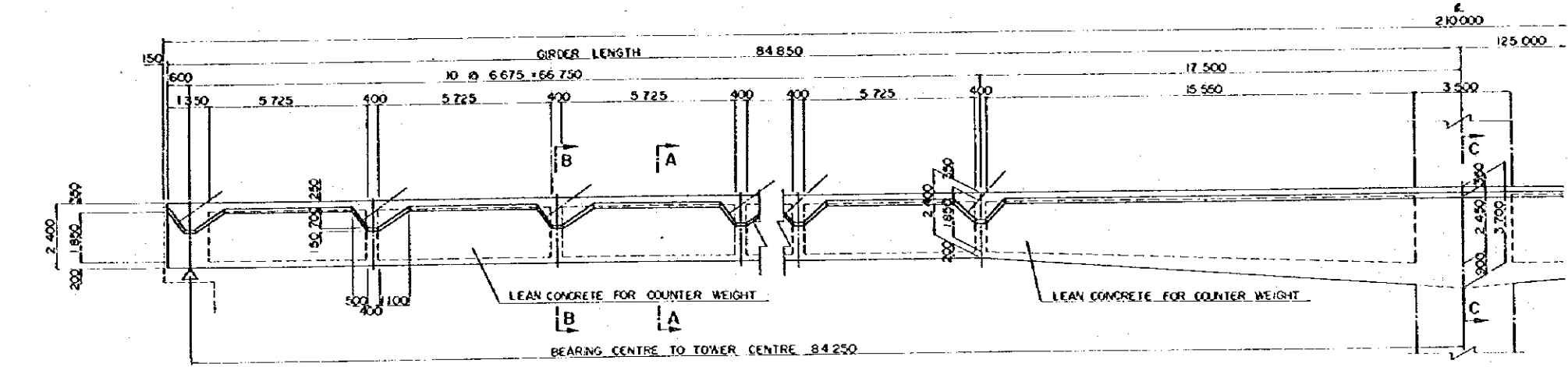
SECTION B-B

SECTION C-C

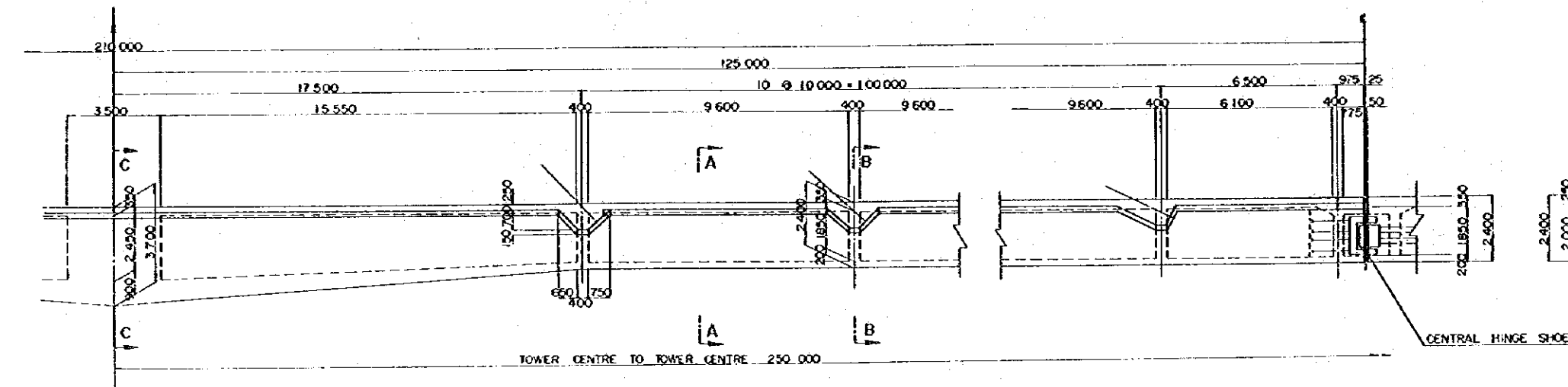
PLAN SCALE = 1:100

MARKING DIAGRAM

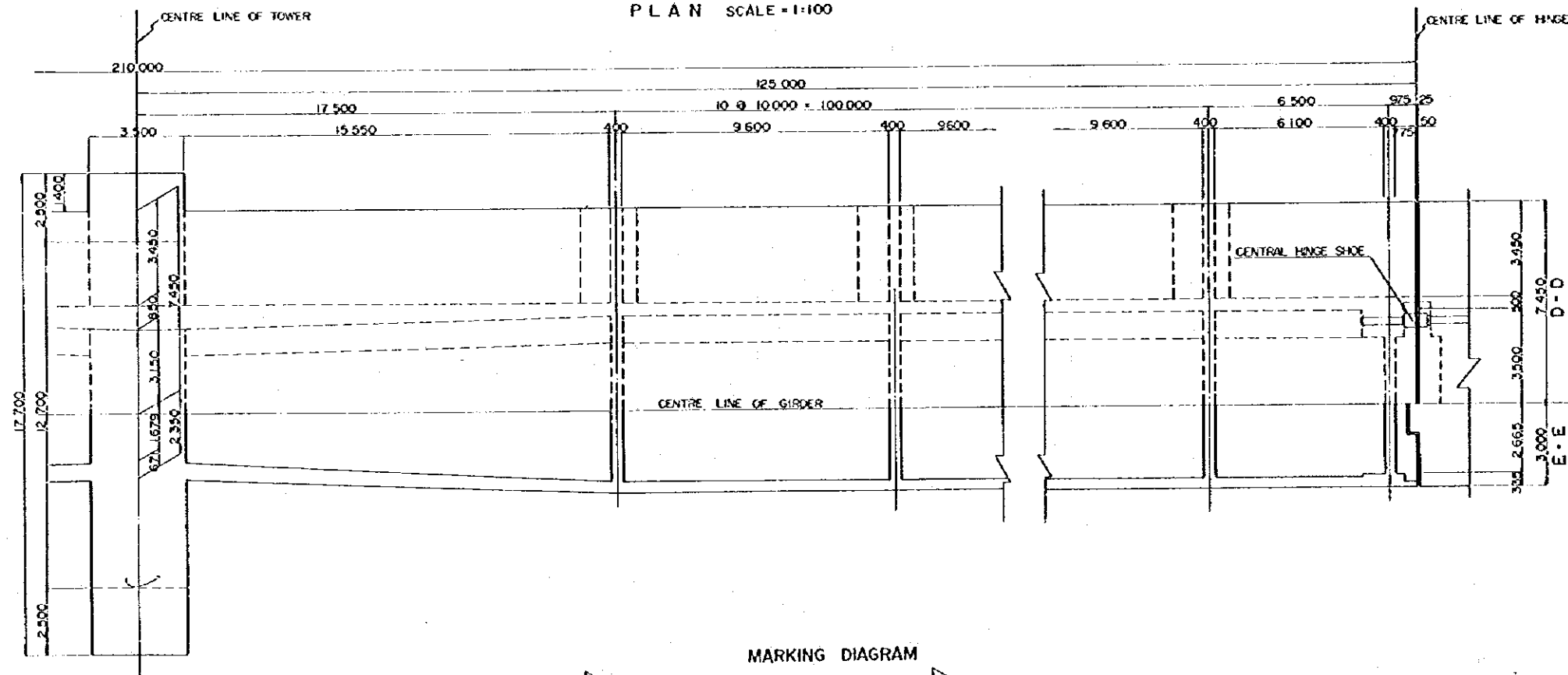
NOTE 1:1 UNIT, mm



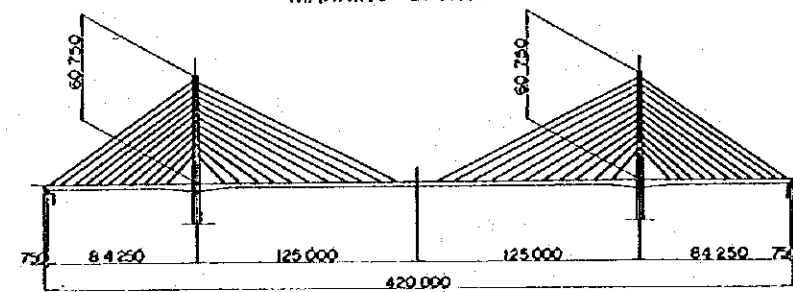
SIDE ELEVATION SCALE = 1:100



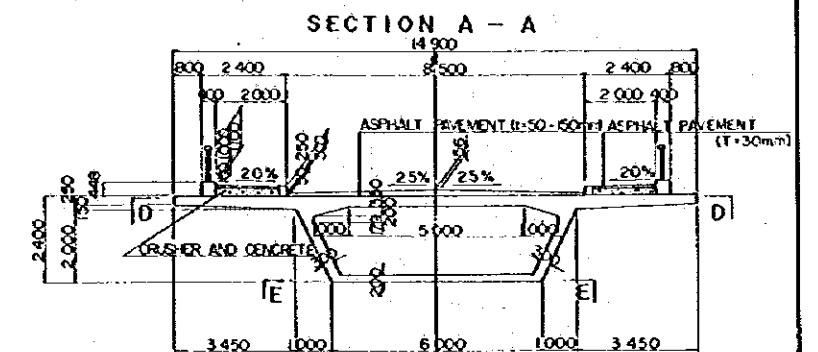
PLAN SCALE = 1:100



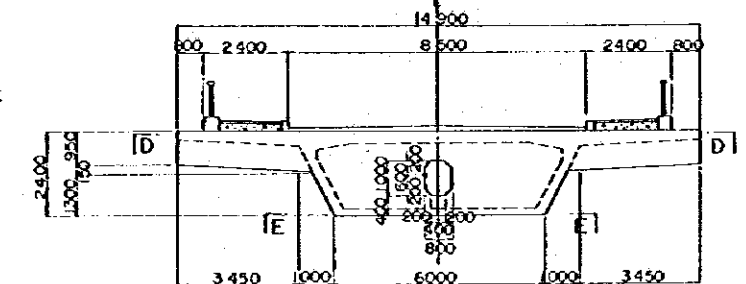
MARKING DIAGRAM



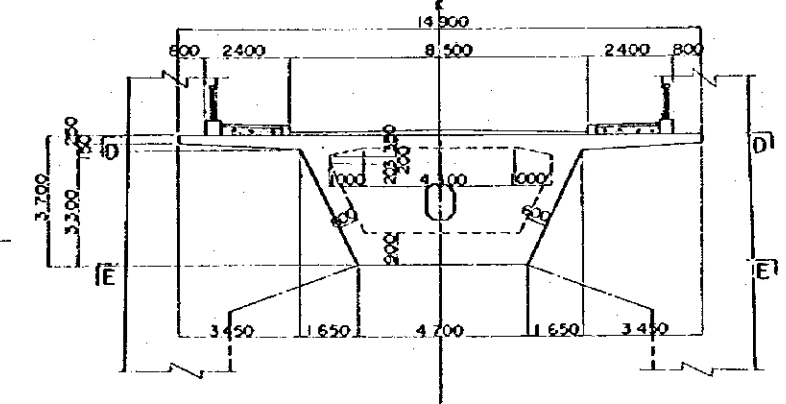
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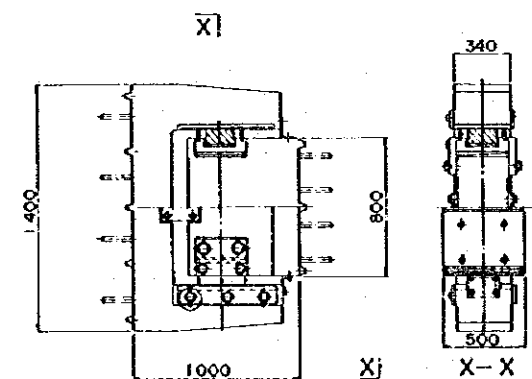
SECTION 8 - 8



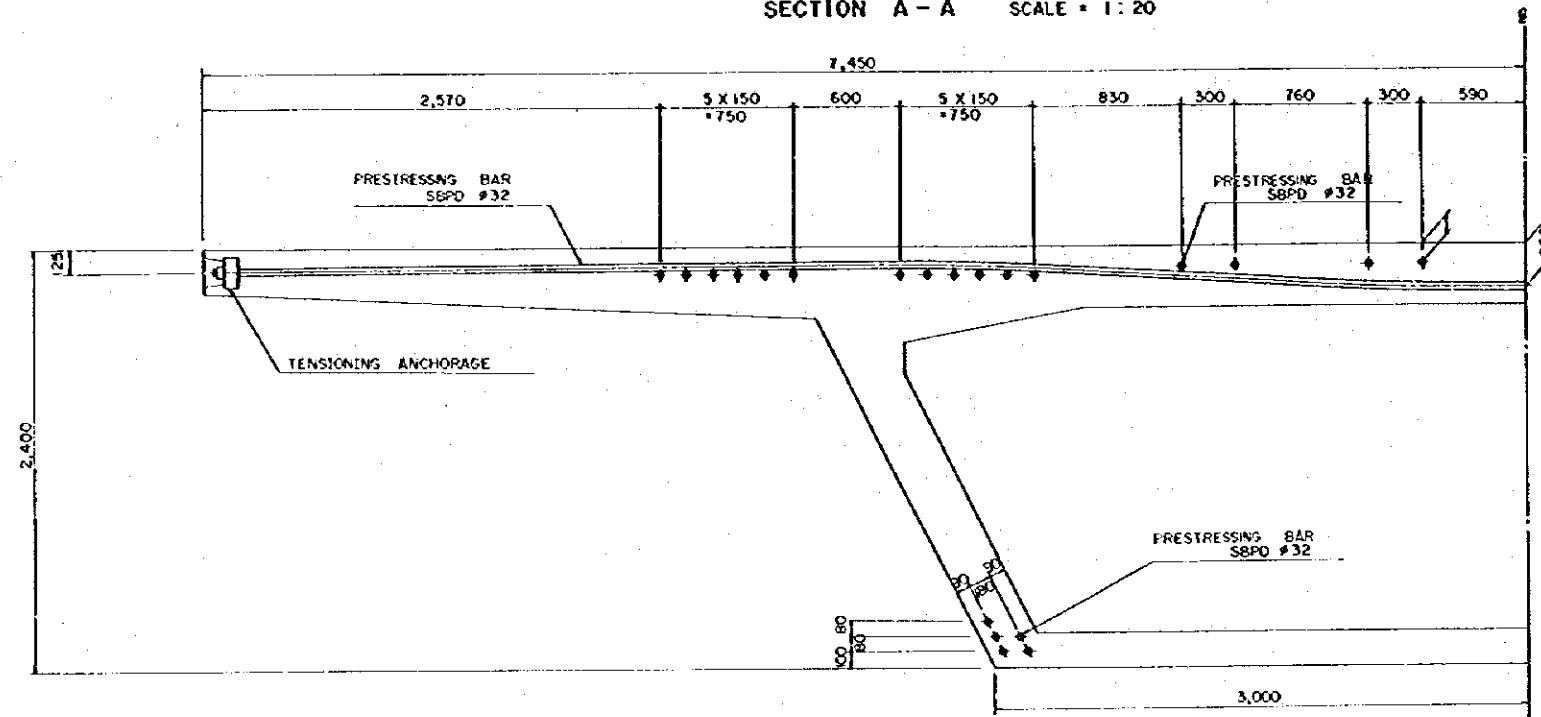
SECTION C - C



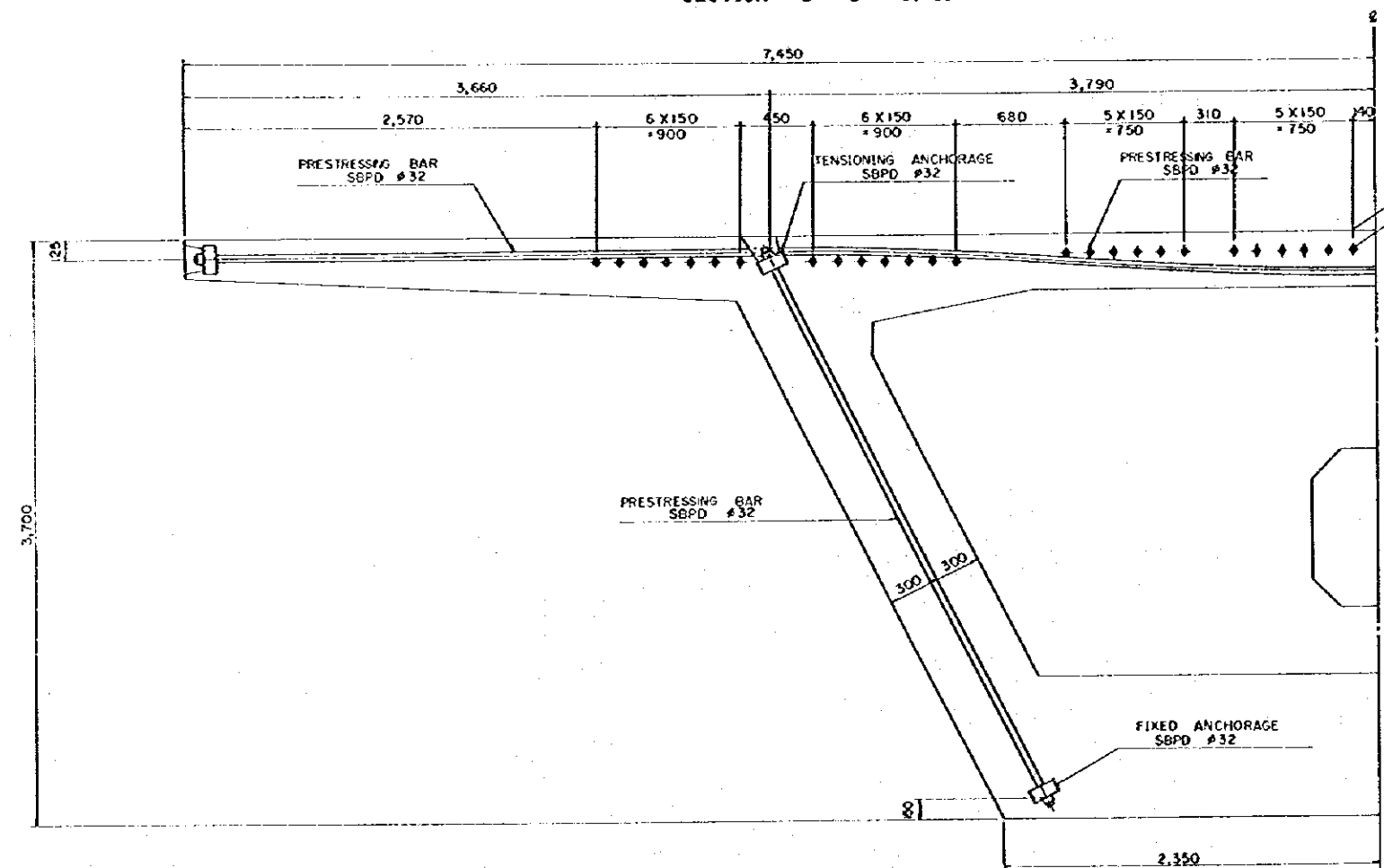
CENTRAL HINGE SHOE SCALE=1:20



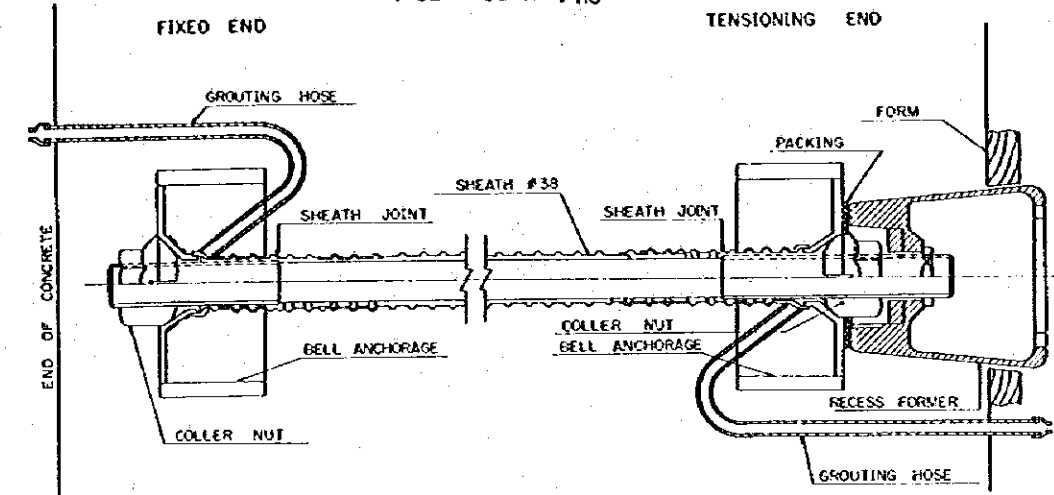
SECTION A - A SCALE = 1 : 20



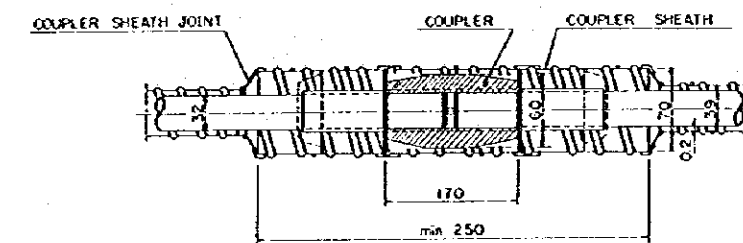
SECTION B - B SCALE = 1:20



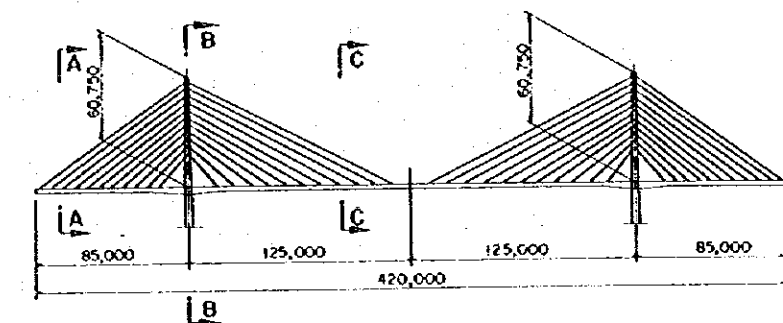
ANCHOR DETAIL
32mm SBPK 95/110

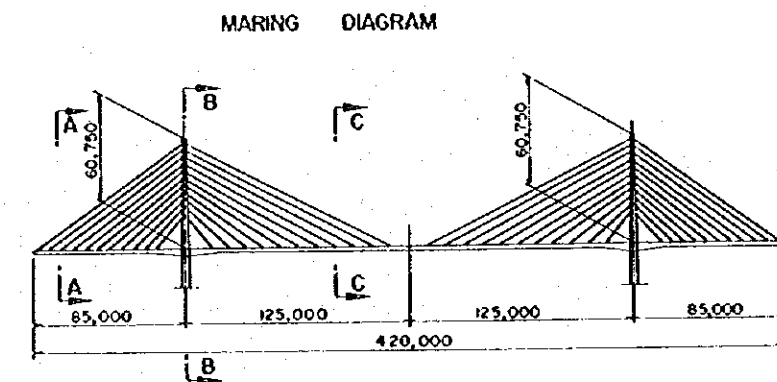
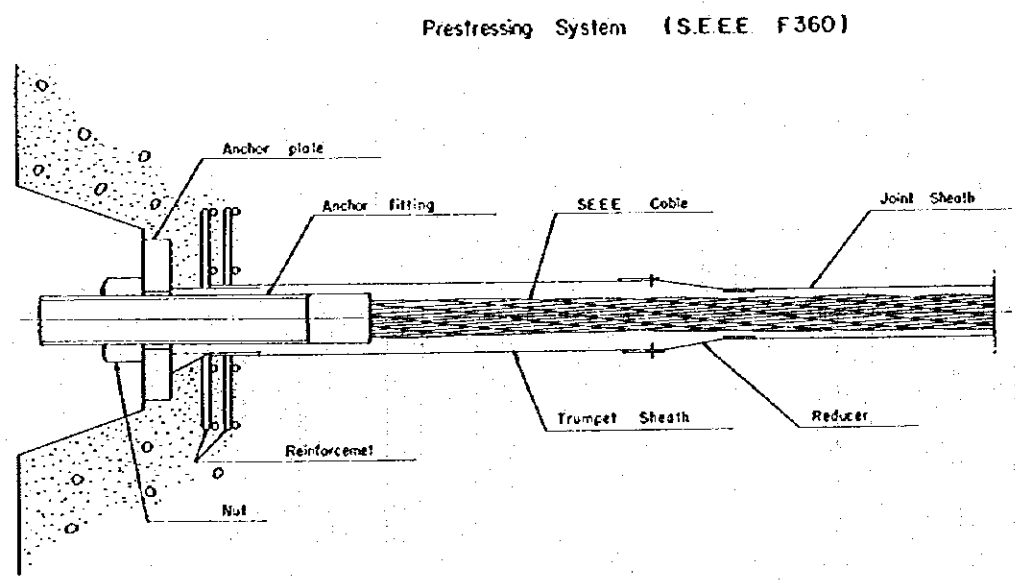
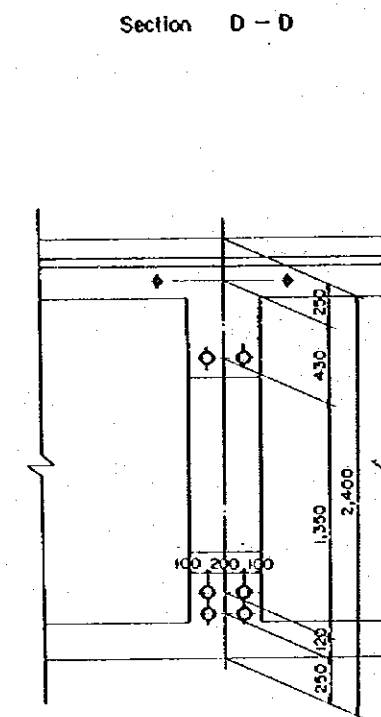
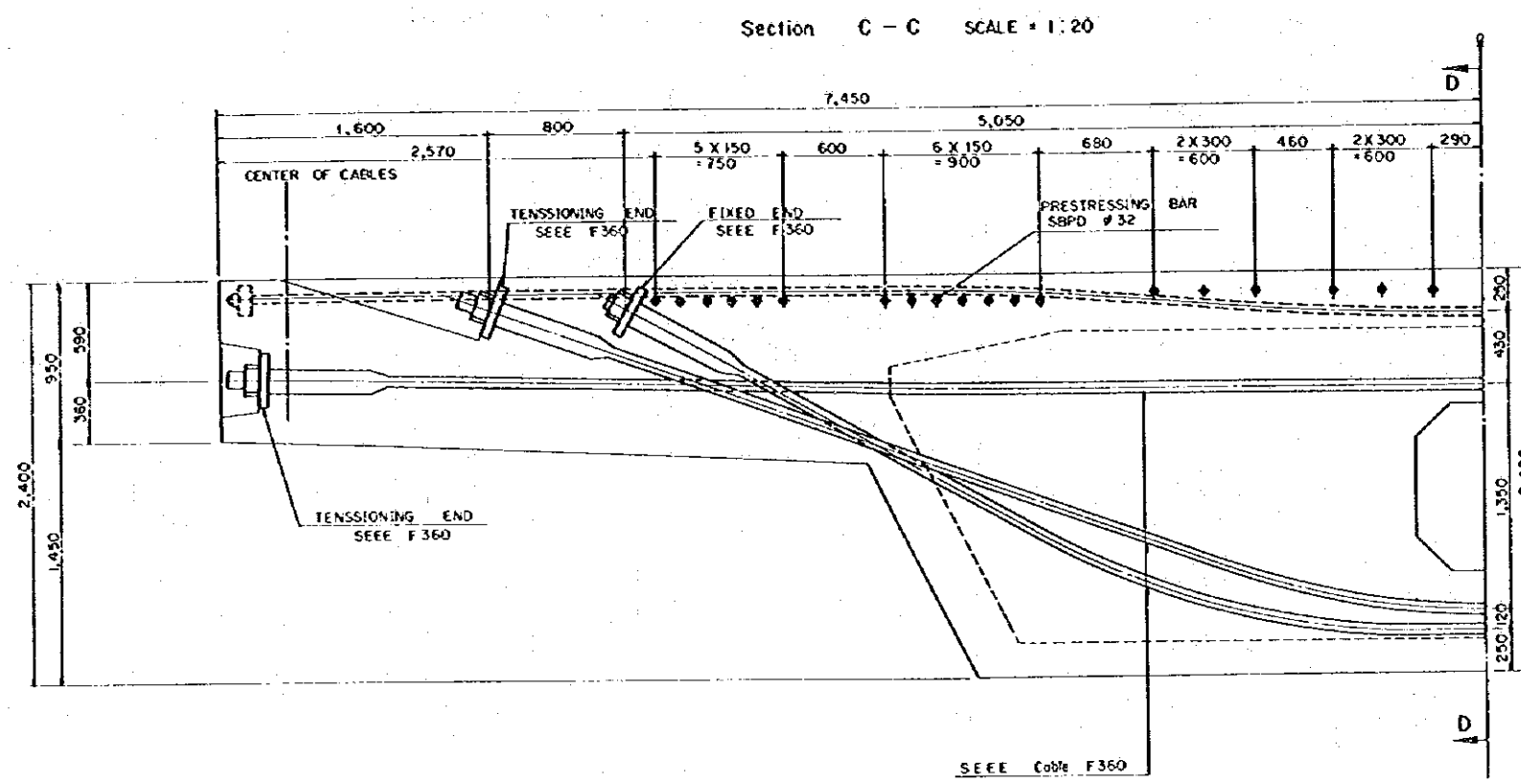


JOINT DETAIL

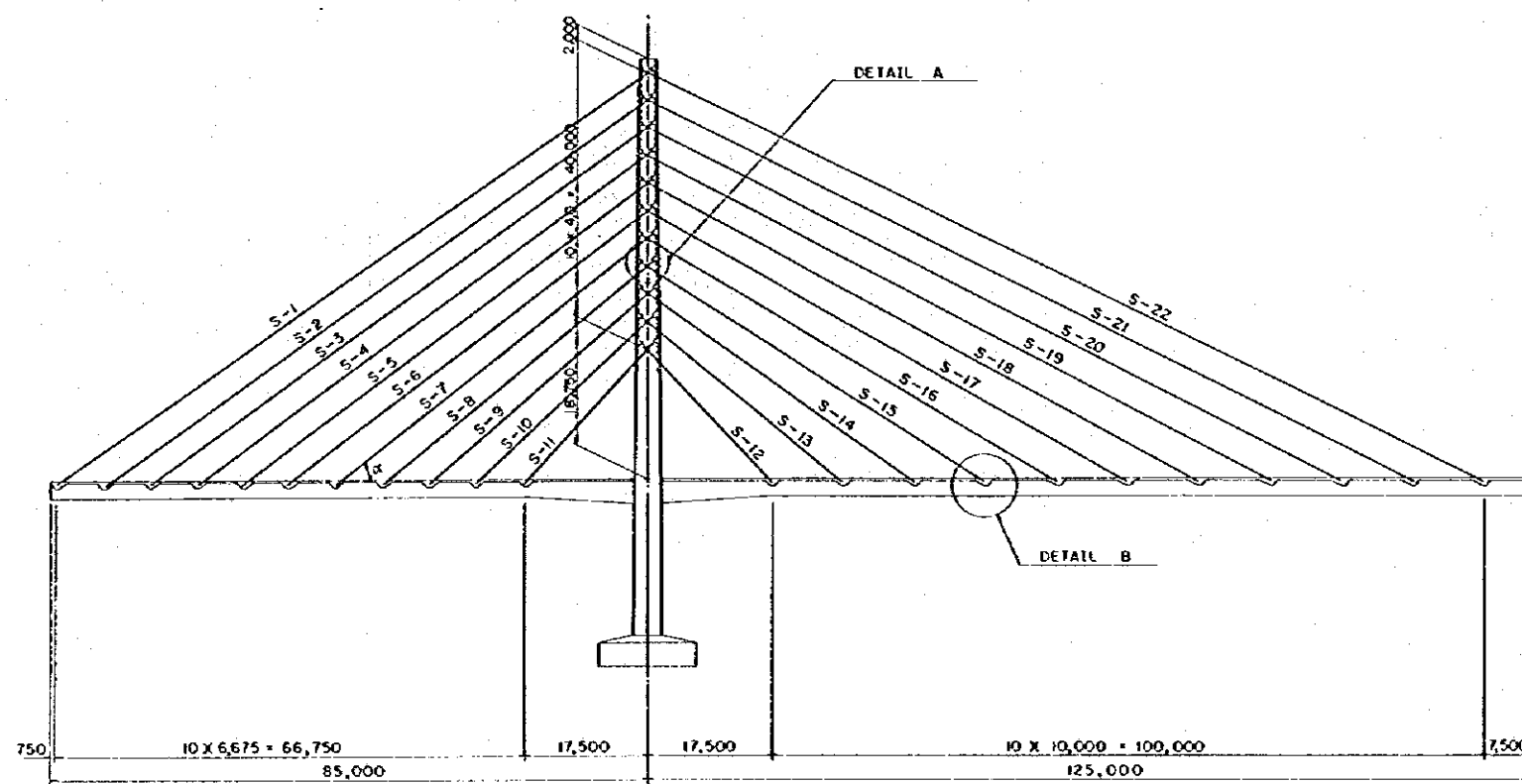


MARKING DIAGRAM

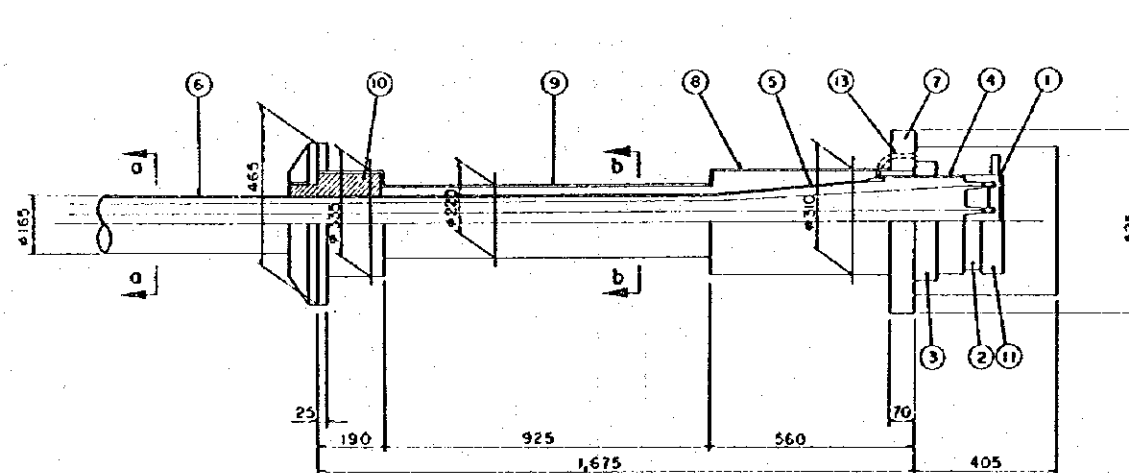




CABLE GEOMETRY SCALE = 1 : 500

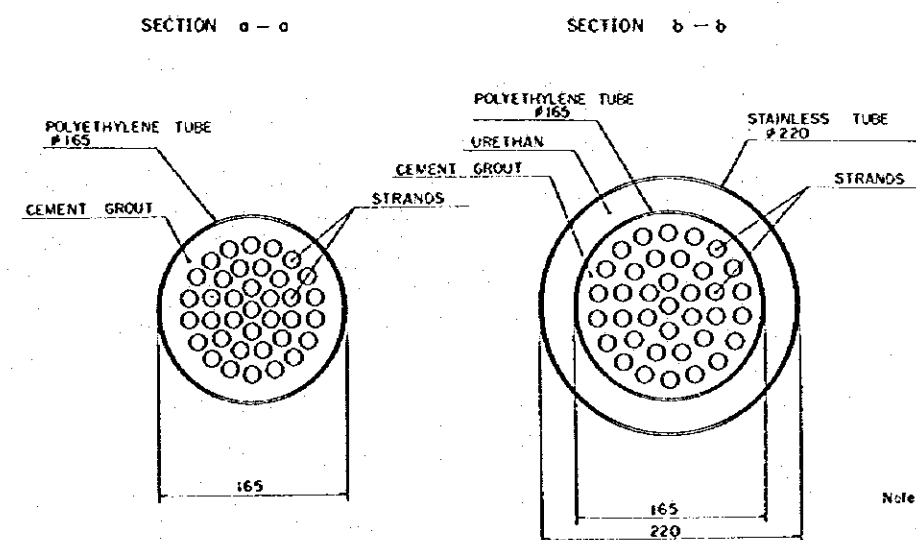


CABLE NO	Freyssinet H System	α
S-1	37 H 15	34° 39' 05"
2	"	34° 58' 47"
3	"	35° 22' 00"
4	"	35° 49' 46"
5	"	36° 28' 34"
6	"	37° 05' 34"
7	"	37° 59' 10"
8	"	39° 09' 55"
9	27 H 15	40° 47' 28"
10	"	43° 10' 19"
11	19 H 15	46° 58' 50"
12	"	46° 58' 50"
13	"	39° 36' 00"
14	27 H 15	35° 30' 06"
15	37 H 15	32° 55' 04"
16	"	31° 08' 48"
17	"	29° 51' 32"
18	"	28° 52' 54"
19	"	28° 06' 54"
20	"	27° 29' 51"
21	"	26° 59' 23"
22	"	26° 33' 54"

ANCHOR PIPE DETAIL SCALE = 1 : 10
(Freyssinet H System 37 H 15)

1	Wedge
2	Block
3	Ring Nut
4	Adjusting Tube
5	Trumpet
6	Polyethylene Tube
7	Bearing Plate
8	Heavy Tube
9	Light Tube
10	Damper
11	Cap
12	Anchor Ring
13	Grouting Hole

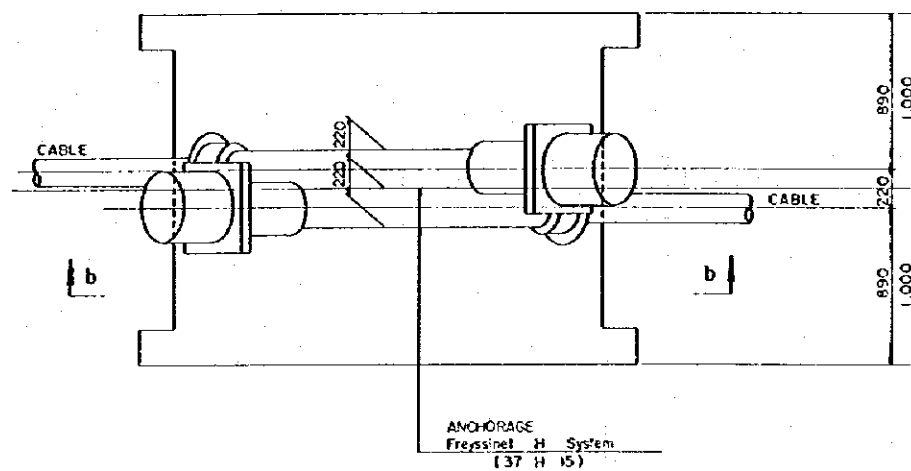
TYPICAL CROSS-SECTION OF CABLE SCALE = 1 : 3



Note 1) UNIT = mm

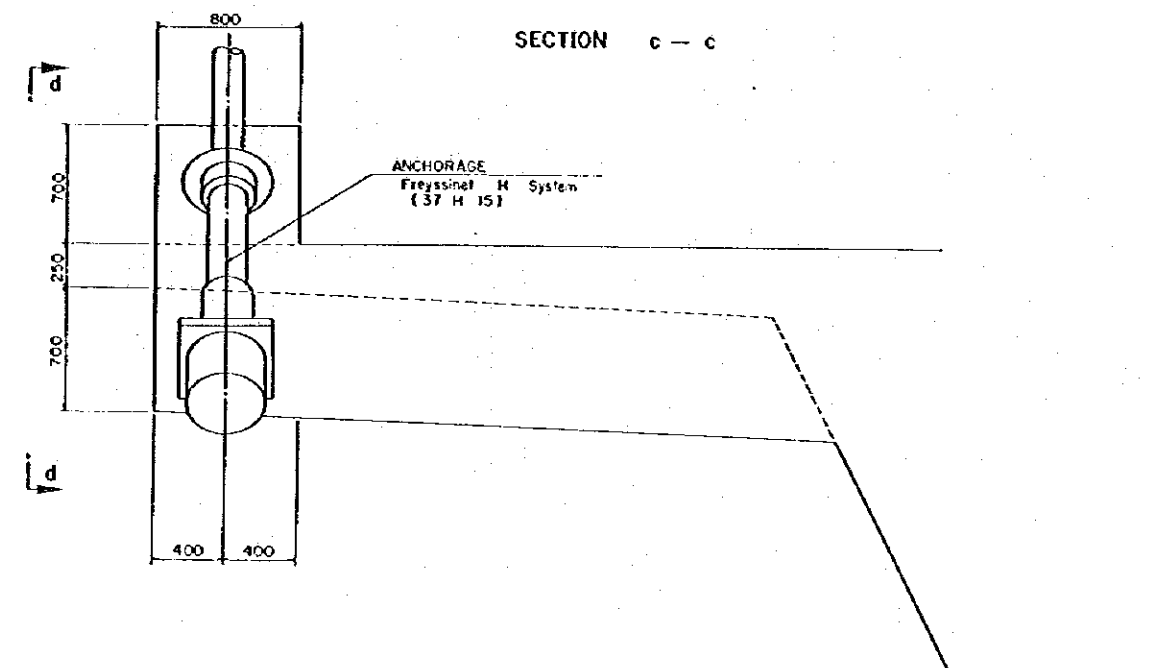
DETAIL A

SECTION a - a

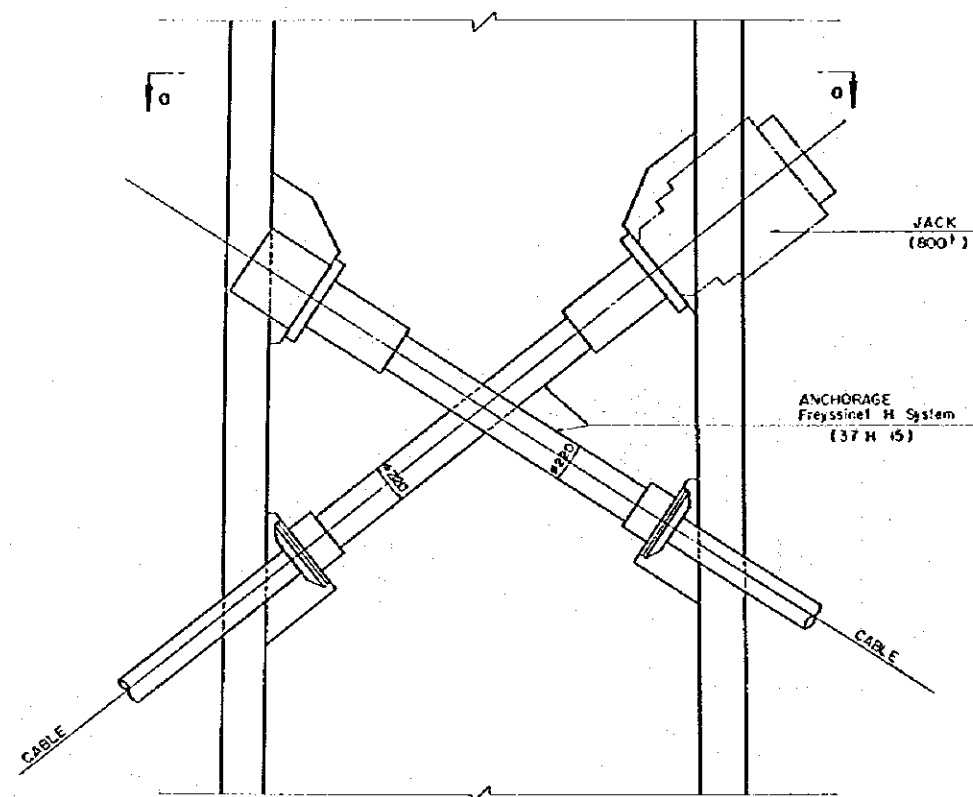


DETAIL B

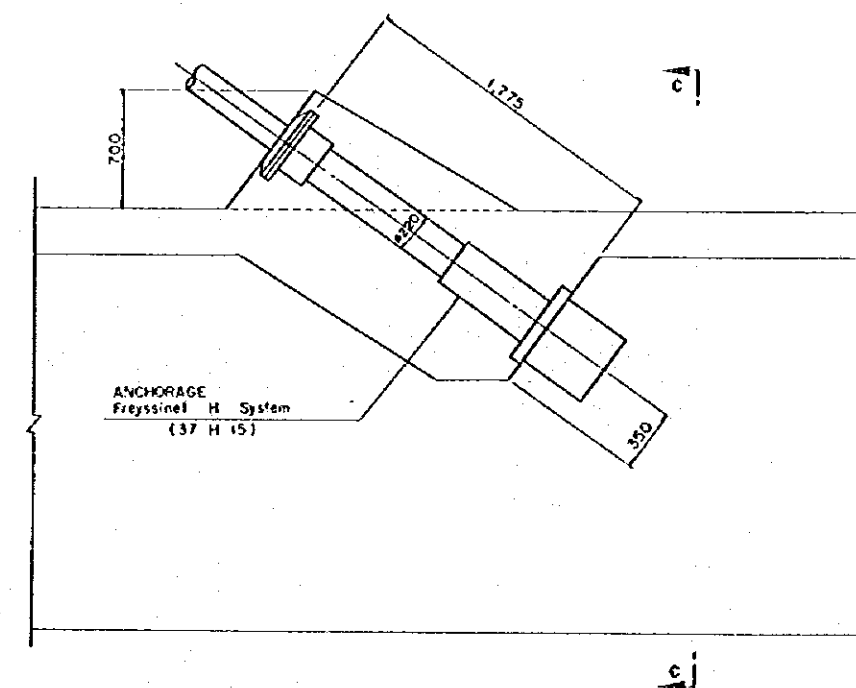
SECTION c - c

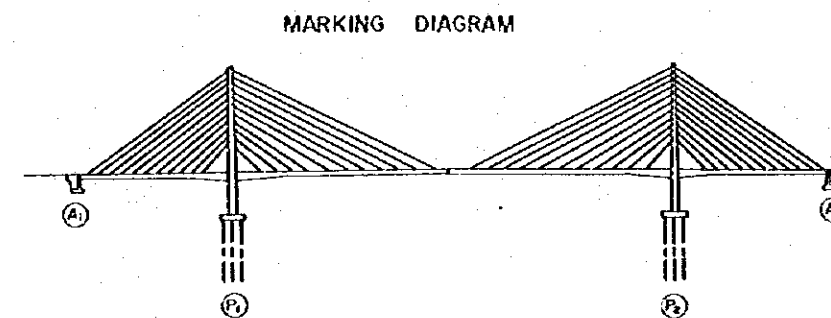
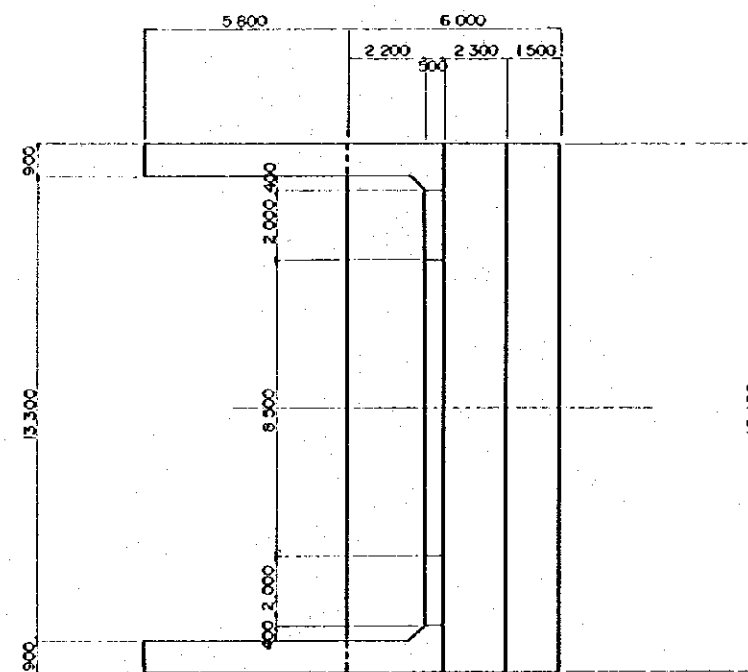
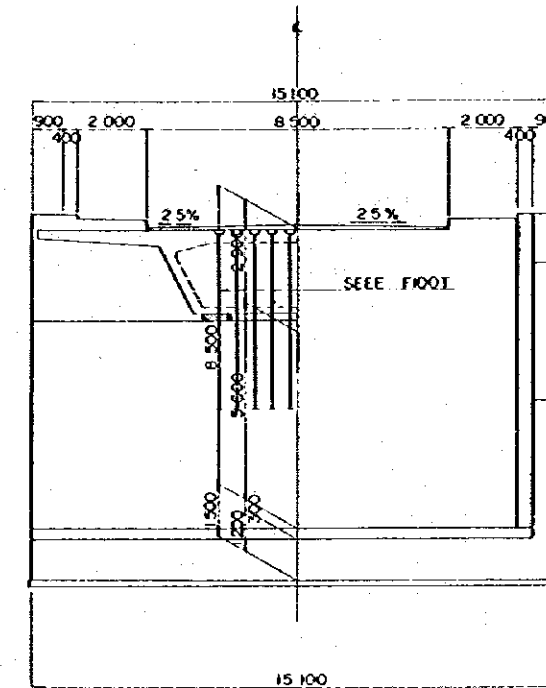
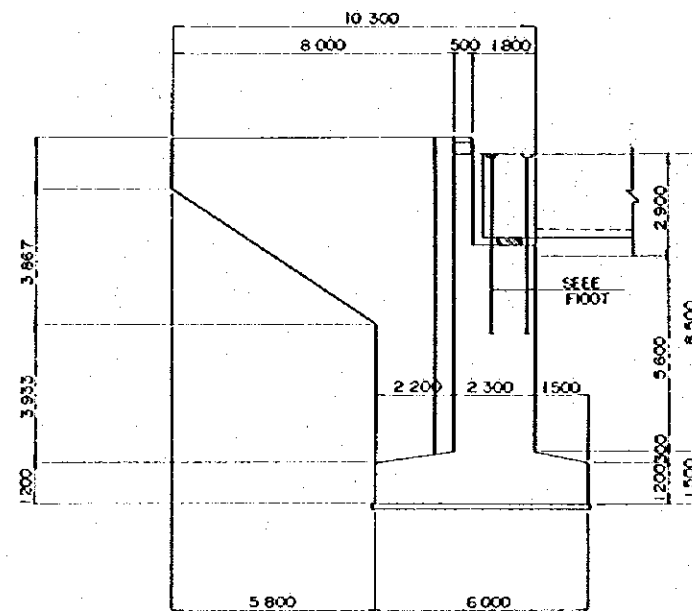


SECTION b - b

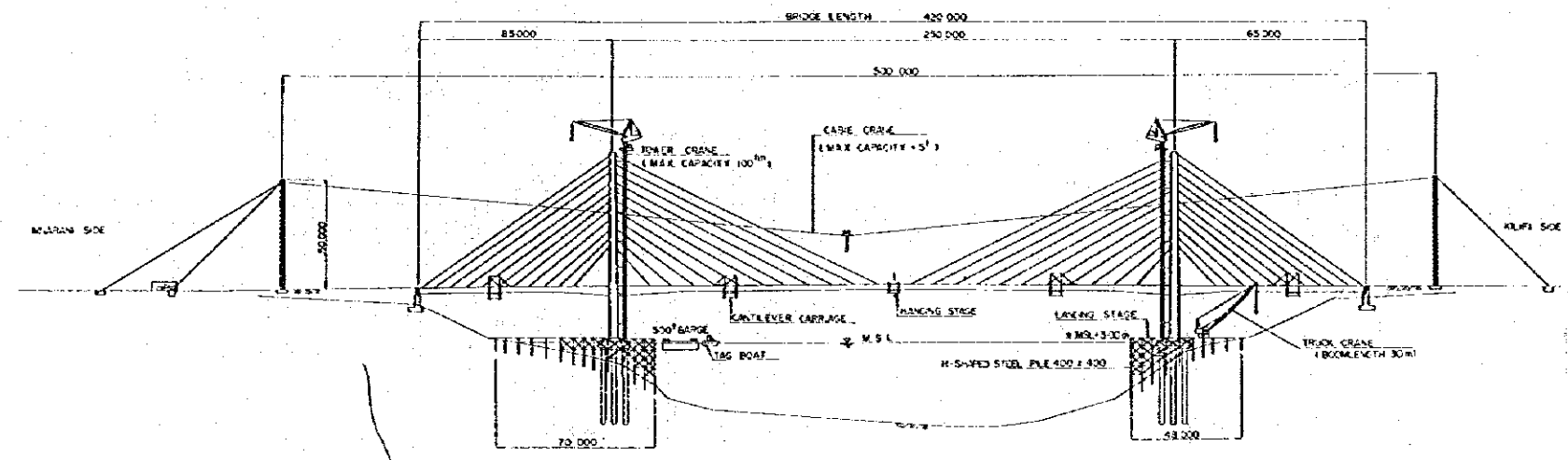


SECTION d - d

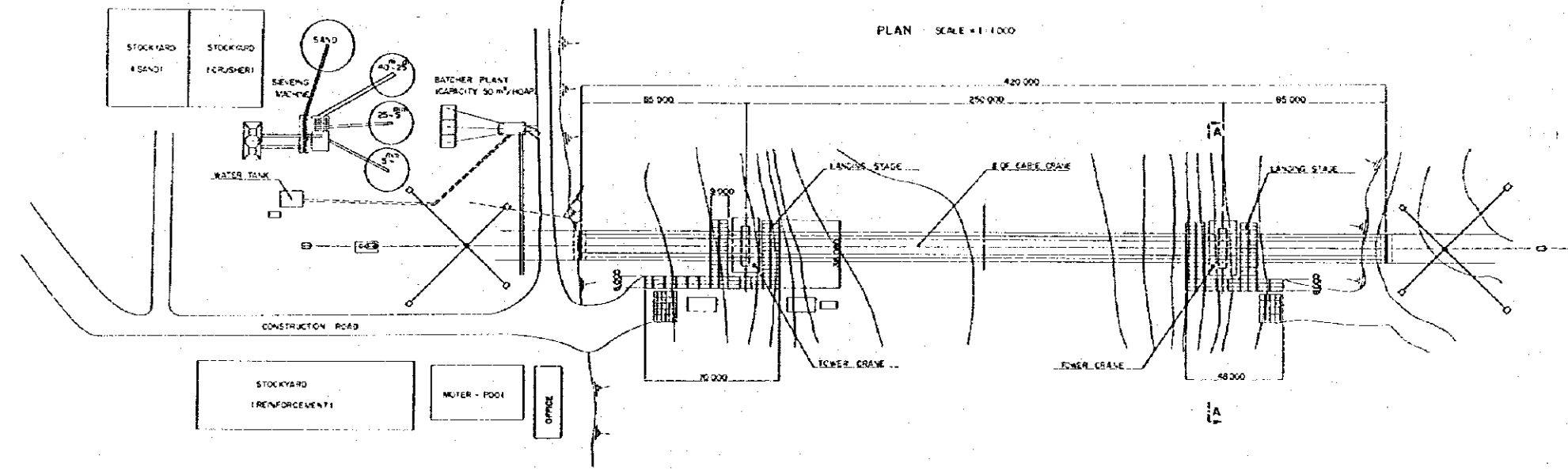




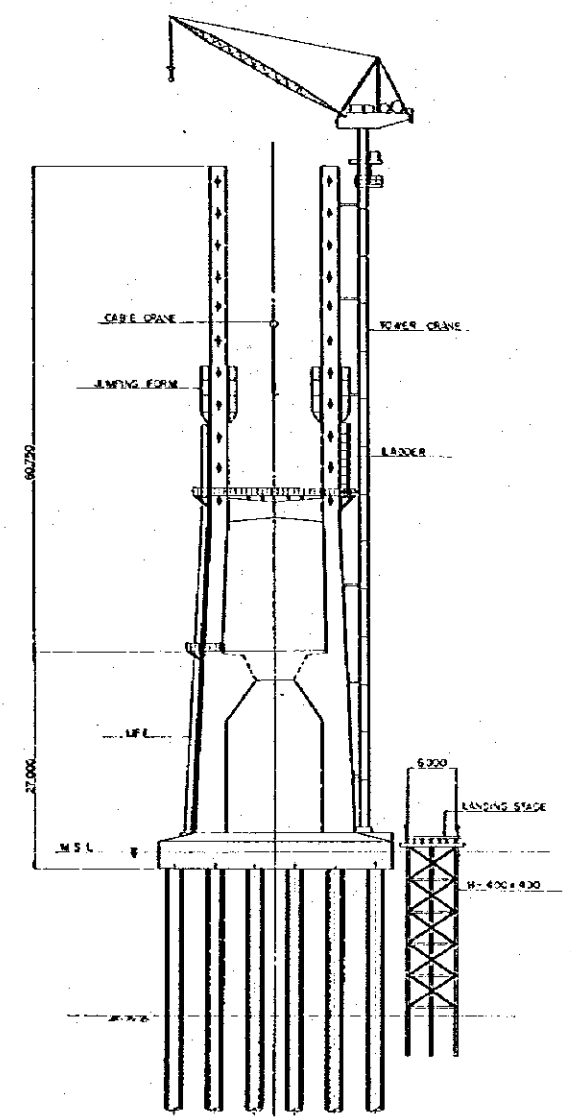
SIDE VIEW SCALE = 1:1000



PLAN SCALE = 1:1000



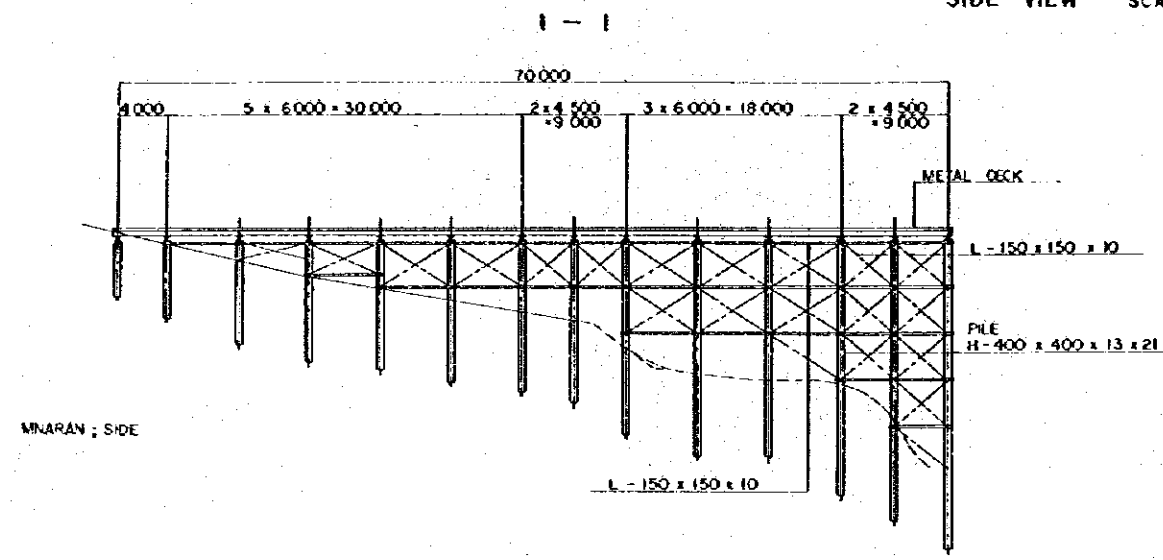
A-A SCALE = 1:300



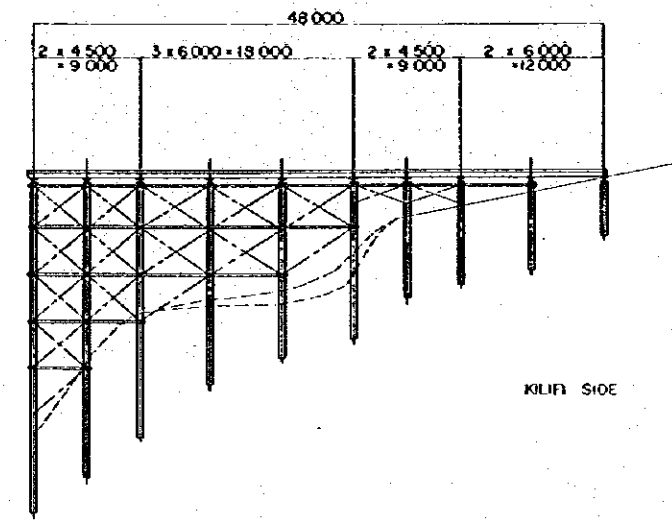
REPUBLIC OF KENYA
FEASIBILITY STUDY ON KILIFI BRIDGE CONSTRUCTION PROJECT
JAPAN INTERNATIONAL COOPERATION AGENCY

ARRANGEMENT OF EQUIPMENTS
SCALE = 1:1000, 1:300

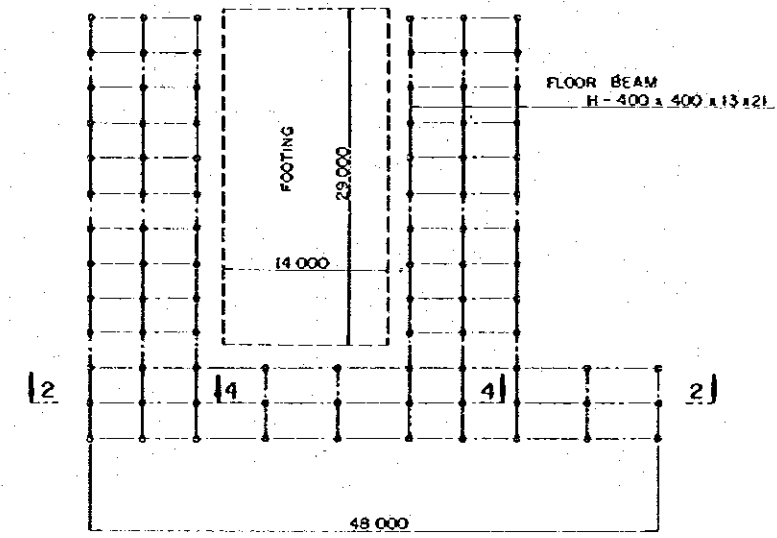
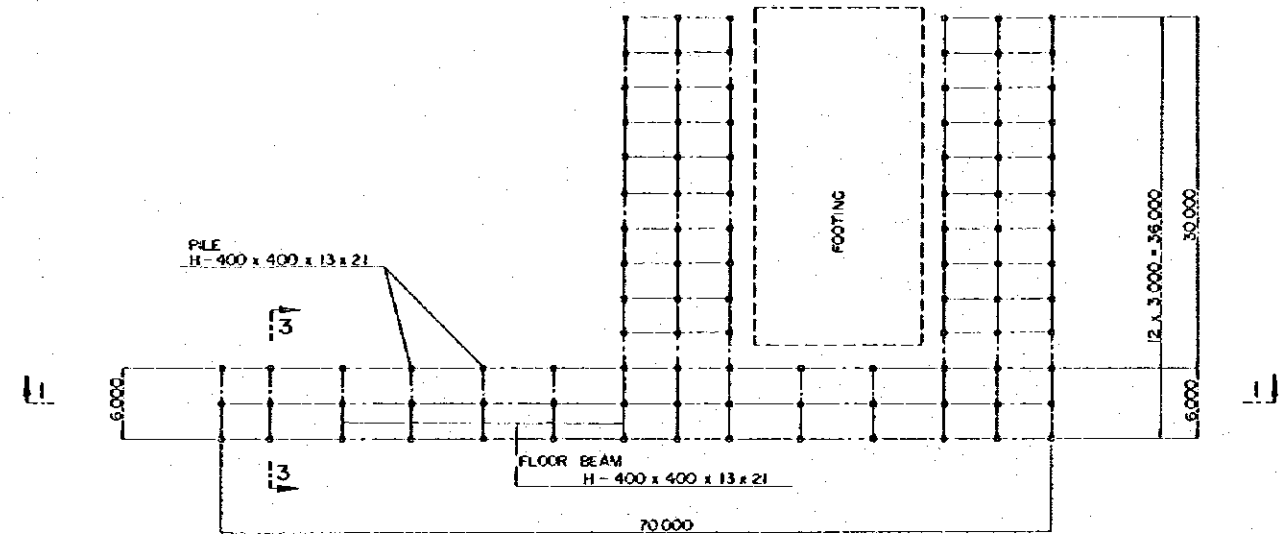
SIDE VIEW SCALE = 1:300



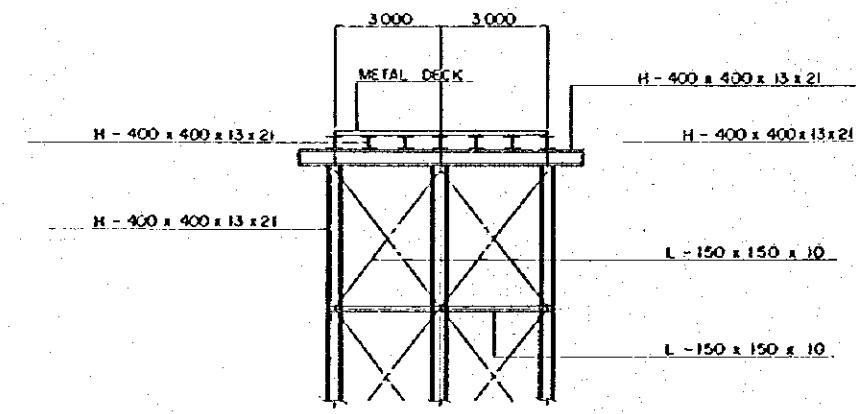
2 - 2



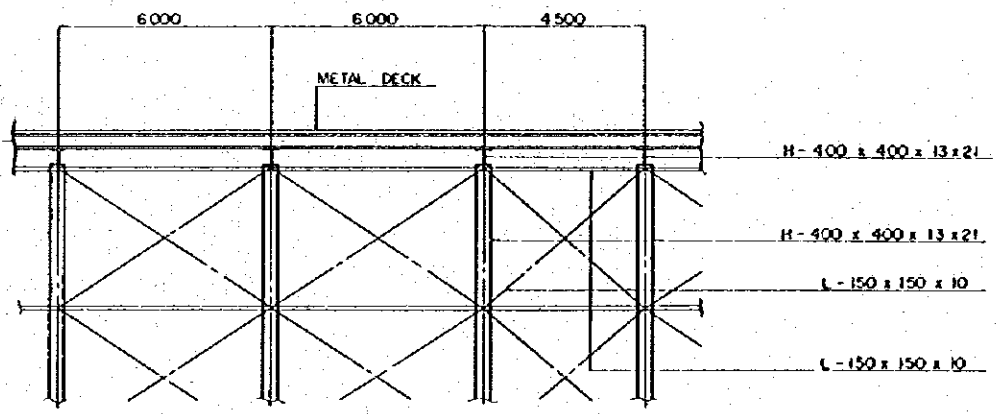
PLAN SCALE = 1:300



3 - 3



4 - 4

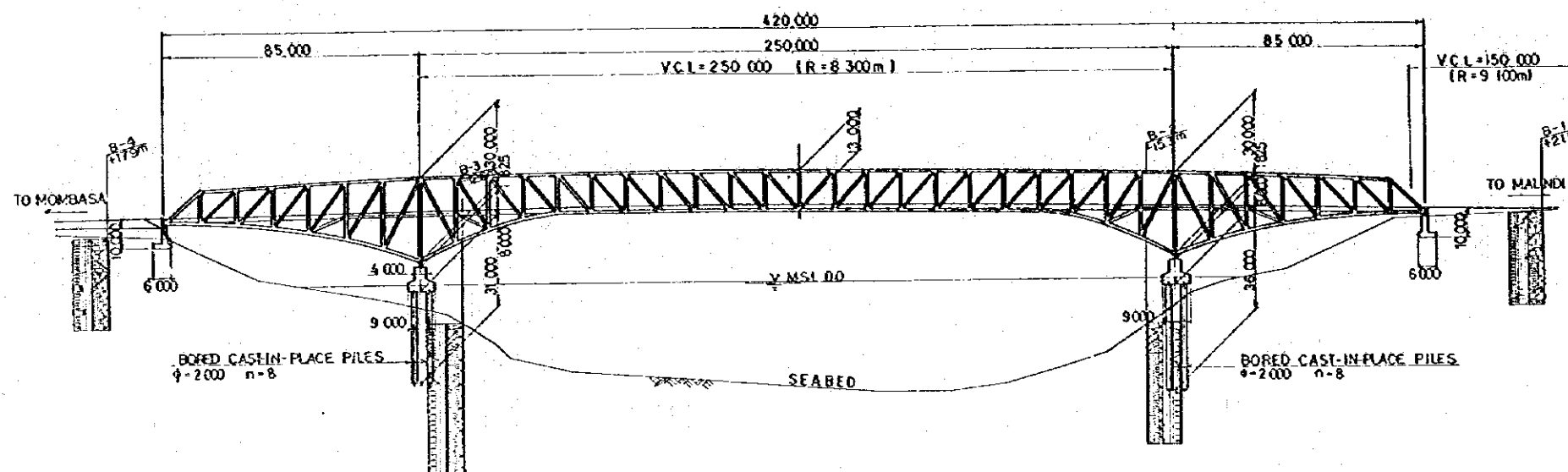


TYPICAL CROSS - SECTION SCALE = 1:100

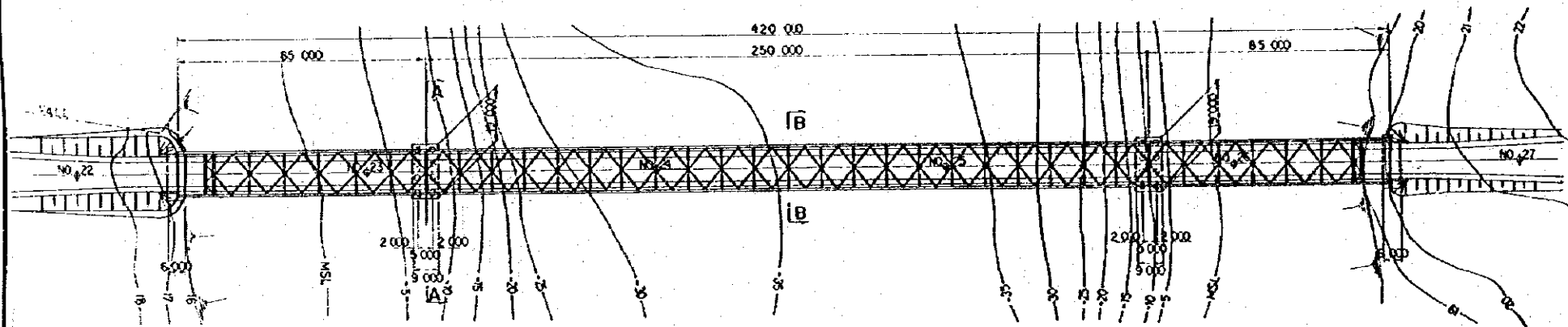
APPENDIX

GENERAL VIEW OF KILIFI BRIDGE
ALTERNATIVE 2: CONTINUOUS STEEL TRUSS

ELEVATION **SCALE - 1 : 1000**

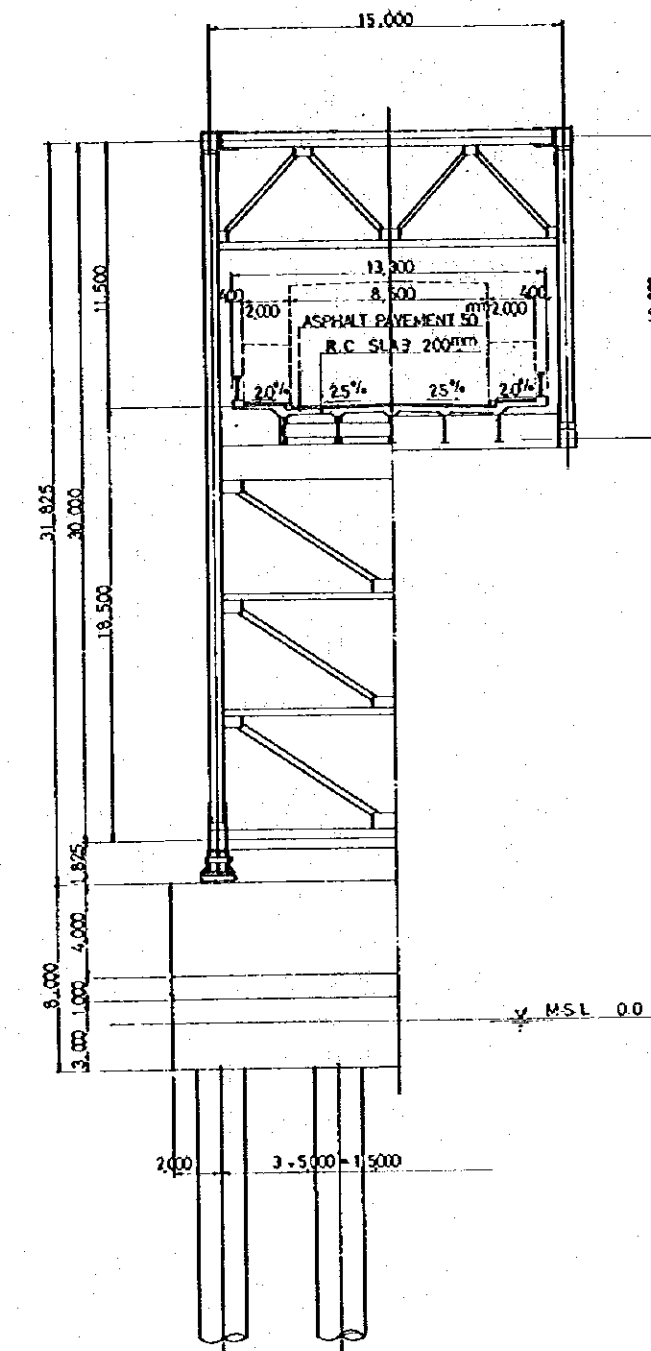
[illegible]

PLAN SCALE = 1:1000



CROSS SECTION SCALE = 1:150

A - A B - B



Technical drawing of the Malindi-Mombasa Bridge, showing a plan view and a cross-section.

Plan View Dimensions:

- Total Length: 420,000
- Span Length: 210,000
- Central Pier Width: 2,500
- Span Length (Right): 105,000
- Span Length (Left): 105,000
- Central Span Length: 210,000 (R = 8,300m)
- Right Span Length: 150,000 (R = 9,100m)
- Left Span Length: 150,000 (R = 9,100m)
- Span Length (Right): 105,000
- Span Length (Left): 105,000

Cross-Section Dimensions:

- Span Length: 210,000
- Span Length (Right): 105,000
- Span Length (Left): 105,000
- Span Length (Right): 150,000 (R = 9,100m)
- Span Length (Left): 150,000 (R = 9,100m)
- Span Length (Right): 105,000
- Span Length (Left): 105,000

Structural Details:

- BORED CAST-IN-PLACE PILES
- Φ = 2,000
- n = 16
- SEA BED
- TO MOMBASA
- TO MALINDI

[illegible][illegible]

[illegible]

Technical drawing of a bridge cross-section and longitudinal section.

Cross-section (Top):

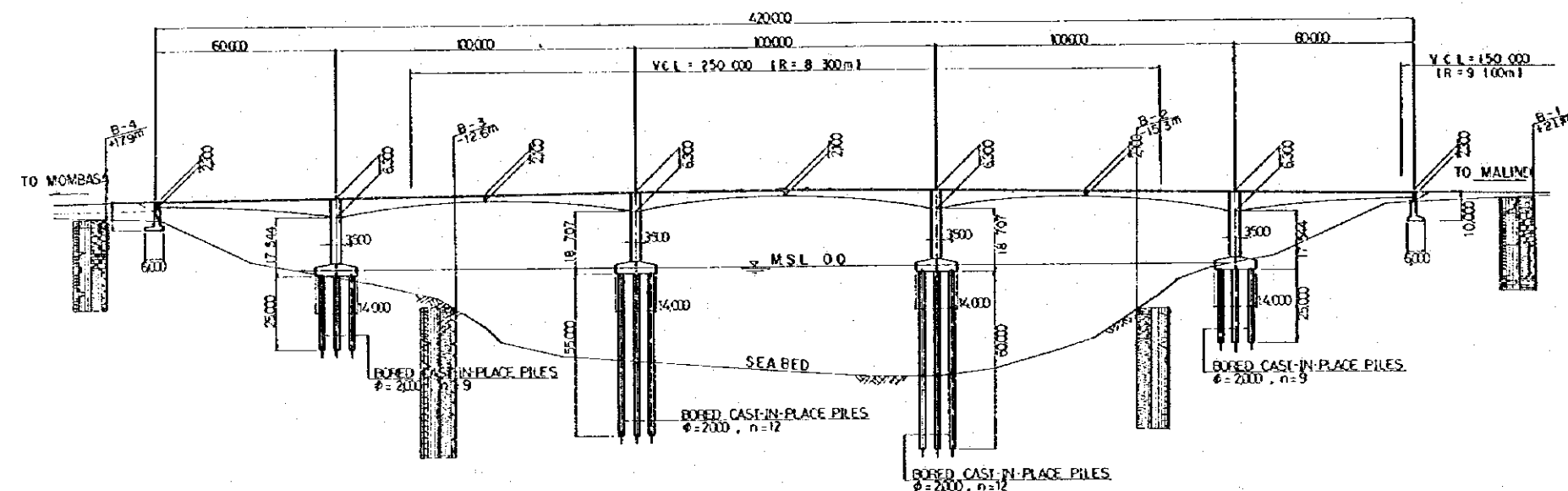
- Total width: 13.30
- roadway width: 8.50
- Side slopes: 20% (left), 25% (center), 25% (right), 20% (far right)
- Abutment width: 4.00
- Abutment height: 2.70
- Abutment base width: 2.00
- Abutment base height: 2.70
- Abutment base width: 2.00
- Abutment base height: 2.70
- Abutment base width: 2.00
- Abutment base height: 2.70
- Abutment base width: 2.00
- Abutment base height: 2.70

Longitudinal section (Bottom):

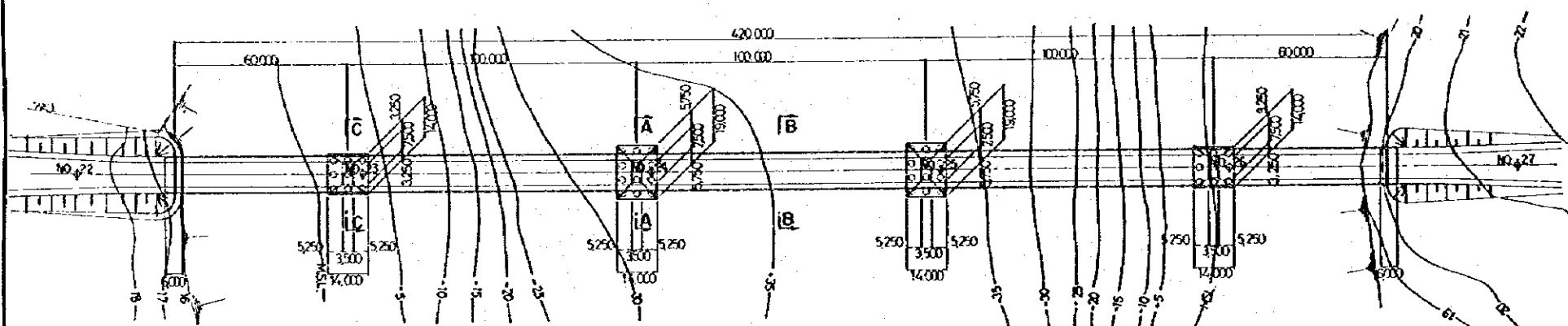
- Span length: 14.17
- Pier width: 15.00
- Pier height: 3.75
- Pier base width: 5.75
- Pier base height: 3.00
- Pier base width: 5.75
- Pier base height: 3.00
- Pier base width: 5.75
- Pier base height: 3.00
- Pier base width: 5.75
- Pier base height: 3.00

GENERAL VIEW OF KILIFI BRIDGE
ALTERNATIVE 5 : CONCRETE GIRDER BRIDGE WITH THREE HINGES BY FREE CANTILEVERING METHOD

ELEVATION SCALE = 1:1000

[illegible]

PLAN SCALE = 1:1000



CROSS - SECTION SCALE = 1 : 150

A - A (C-C) B - 8

