

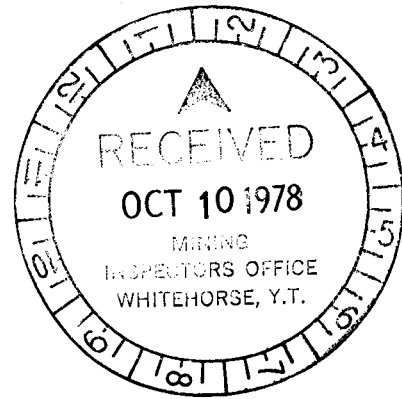
Assessment Report                      Otis 11-20 c/s.

Mayo Mining District

NTS 106E/1

A.R. Archer, P. Eng.

July 15, 1978



This report has been examined by the Geological Evaluation Unit and is recommended to the Commissioner to be considered as representation work in the amount of \$1000.00

*[Signature]*  
 Resident Geologist or  
 Resident Mining Engineer

Considered as representation work under Section 53 (4) Yukon Quartz Mining Act.

*[Signature]*  
 Commissioner of Yukon Territory

**ARCHER, CATHRO**  
AND ASSOCIATES LTD.  
CONSULTING GEOLOGICAL ENGINEERS

Whitehorse, Yukon (403) 667-4415

1016 - 510 West Hastings Street Vancouver, B.C. V6B 1L8 (604) 688-2568

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Post Office Box 4127  
Whitehorse, Yukon  
Y1A 3S9

Report on  
Airborne Radiometric Survey  
Otis 11-20 Claims

Mayo Mining District  
Claim Sheet 106E/1  
Latitude 65°02'N Longitude 134°<sup>24</sup>~~08~~'W

July 15, 1978

Alan R. Archer, P. Eng.

Consulting Engineer

090373

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## OTIS PROPERTY

### INTRODUCTION

The Otis claims were staked to cover a uranium occurrence found by Wernecke Joint Venture (Standard Oil Company of B.C. Limited, Aquitaine Company of Canada Ltd., and Messrs. L. and H. Clay) in June 1975. Minor quantities of radioactive float were located along a strong north trending fault. Further prospecting located more mineralization along an intersecting west trending fault and both structures were staked in June of 1975. Reconnaissance prospecting and a grid soil sampling and radiometric survey were carried out along most of the west trending structure. In 1976, this property was optioned to Eldorado Nuclear Limited and further prospecting plus a radiometric grid over the north trending structure were carried out and a hand trench dug at the point with the highest surface radioactivity.

In early 1978, an orthophoto map was prepared to provide better control for airborne surveys. The airborne survey was conducted on June 5 and 15 by geologist C.A. Main. The program was supervised by geologist U. Schmidt and managed by Archer, Cathro & Associates Ltd.

### PROPERTY, LOCATION AND ACCESS

The property consists of 10 contiguous mineral claims recorded in the Mayo Mining District as follows:

<u>Claim Name</u>	<u>Grant Numbers</u>	<u>Expiry Date</u>
Otis 11-20	Y97436-Y97445	17 March, 1979

The property is located at latitude 65°02'N and longitude 134°24'W on NTS claim



sheet 106E/1. Access is by helicopter from Kiwi Lake, 14 miles to the northwest, which can be reached by float equipped aircraft from a charter base at Mayo, 120 miles to the southwest.

## AIRBORNE RADIOMETRIC SURVEY

### Instrumentation

The claims were surveyed by an airborne differential spectrometer, an instrument capable of separately distinguishing uranium, thorium and potassium rich areas. The airborne system consisted of a Gould (Brush) 222 two-channel and a Hewlett-Packard 7155A single-channel strip-chart recorder, both driven by signals from a Scintrex GAD-4 spectrometer-analyser using a Scintrex GSA-61 1853 cc thallium-activated, sodium iodide crystal as sensor. The crystal was mounted in a removable plywood box that was tied to the outside cargo rack of the helicopter. The analyser and recorders were placed inside the cabin and were connected to the sensor by cable. An auxiliary power outlet in the helicopter supplied ships' power (28v) to all instruments.

The three graphs recorded continuous, one-second integration counts for total radioactivity, uranium and thorium. The total count and uranium count were recorded simultaneously on the Gould instrument while the thorium count was charted on the Hewlett-Packard recorder. Both instruments produced graphs at a linear speed of 10 cm/min. The charts were usually set for widths of 0 to 2500 counts per second (cps) for total count, 0 to 50 cps for uranium and 0 to 40 cps for thorium.

Each chart was calibrated daily using specimens of thorium and uranium so that the graph value exactly matched the absolute value as shown on the spectrometer dial. The spectrometer was calibrated for maximum sensitivity on the designated thorium peak.

### Flight Procedure

The survey was flown at a nominal height of 50 m but varied from 25 to 75 m depending upon terrain irregularity. Survey lines were flown at constant altitude (contours) in 250 foot contour intervals. Helicopter speed is not considered critical and no attempt was made to correlate chart speed with traverse length. Generally, 50 to 90 km/hour was a practical and safe survey speed. Topographical and geological maps (1:250,000 scale) were used for both detailed and reconnaissance navigation and plotting.

### Data Organization

The operator plotted flight paths on the orthophoto map as the traverse progressed, noting pertinent navigational, geographical and surface exposure data on the strip charts. Correlation between mapped flight lines and the chart was achieved by numbered fiducials and handwritten notes on the charts.

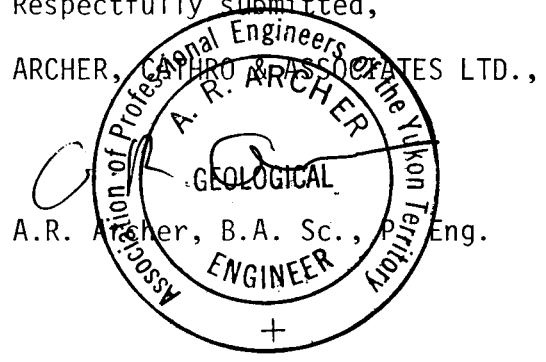
## RESULTS AND CONCLUSION

Appendix I is a complete copy of the strip charts records. Sequential numbers (fiducials) along these charts refer to positions along the flight lines plotted on Figures 0-2 to 0-4.

Chart anomalies are defined as where there are values 20% higher than the local background. These anomalies are shown on the charts in Appendix I and on Figures 0-2 to 0-4. Both the total count and uranium surveys show good correlation to each other and exhibit anomalous response in the area of the known mineralized areas (1976 grid areas). Other areas are also anomalous and need attention.

Thorium has no specific pattern and is not apparently valuable for the uranium search in this area.

Respectfully submitted,  
ARCHER, CANAL ENGINEERS & ASSOCIATES LTD.,



ARA:jm

A.R. Archer, B.A. Sc., P. Eng.

APPENDIX ONE

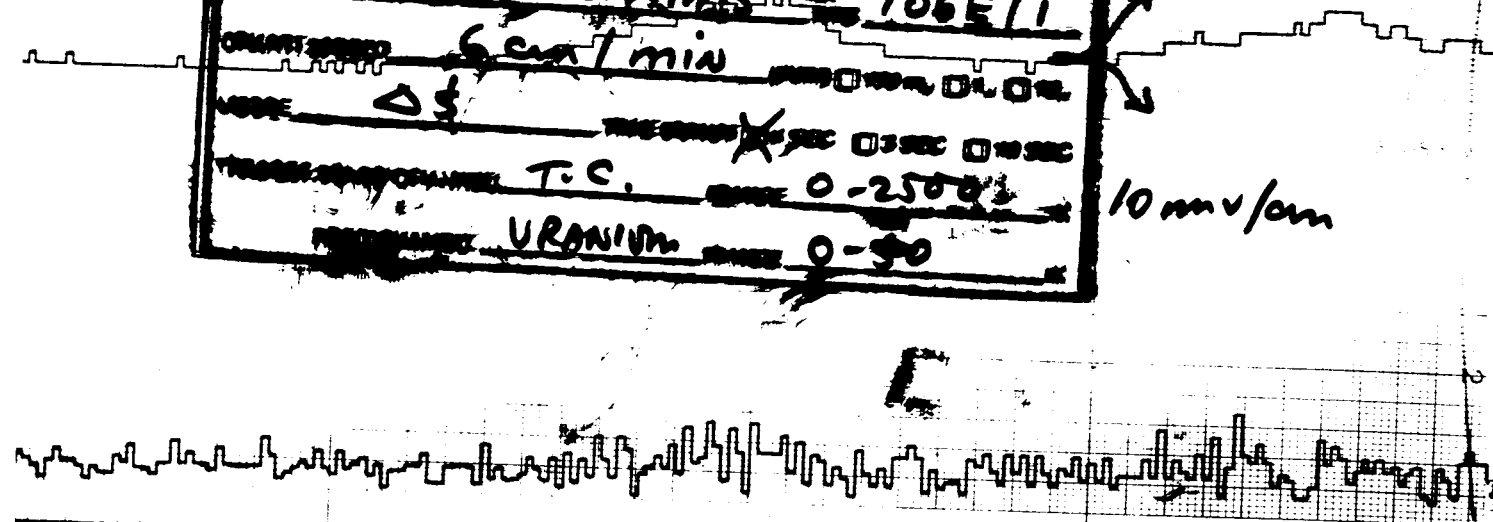
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Tape One	Brush 222	June 5	Total Count Uranium	0-2500 0-50
Tape Two	Hewlett-Packard	June 5	Thorium	0-40
Tape Three	Brush 222	June 15	Total Count Uranium	0-2500 0-50
Tape Four	Hewlett-Packard	June 15	Thorium	0-40

START

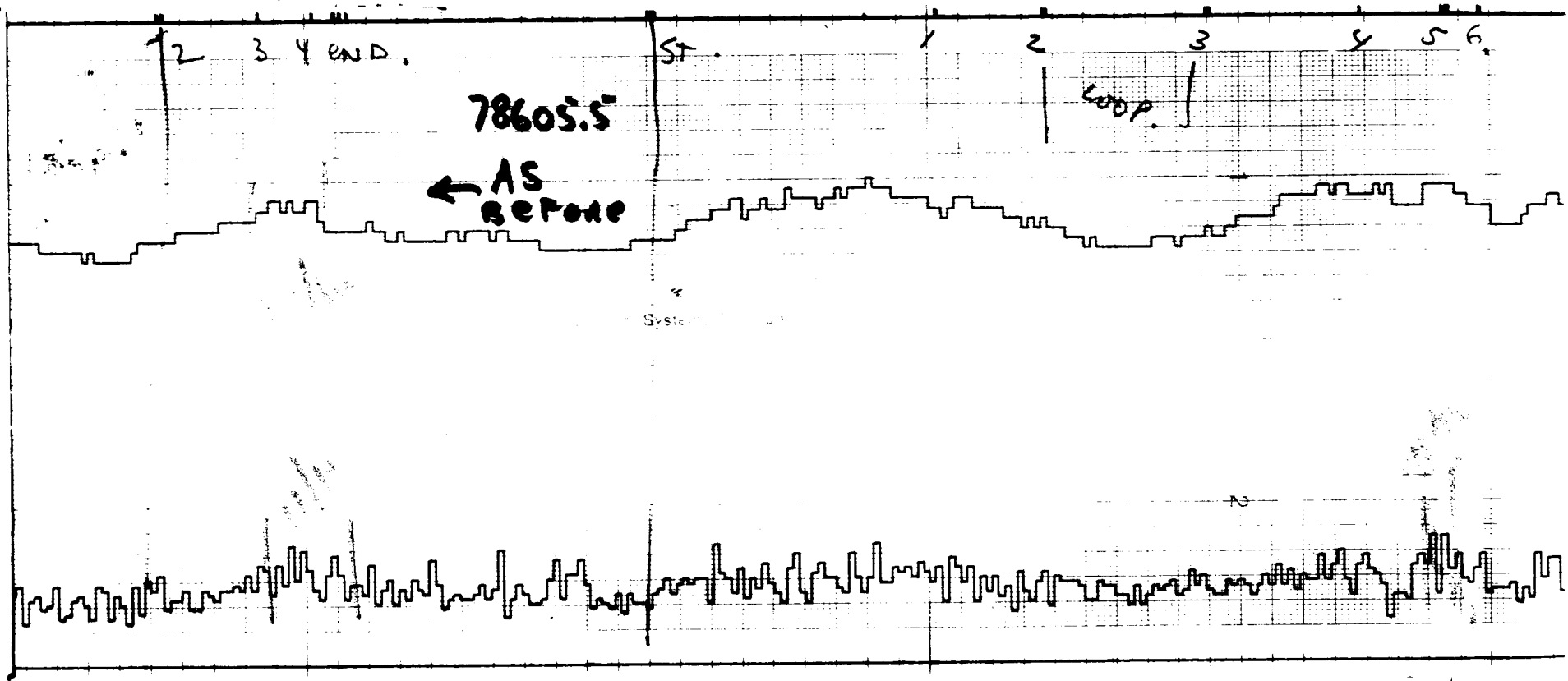
5 mv/cm

OPERATOR	C. MAIN	70605.4
THERMIST	OTIS CLAIMS	106E/1
CORRECT SPEED	6 cm/min	
MODE	ΔS	
THERMIST	<del>SEC</del>	<input type="checkbox"/> SEC <input type="checkbox"/> SEC <input type="checkbox"/> SEC
THERMIST CHANNEL	T.C.	RANGE 0-2500
RESISTANCE	URANIUM	RANGE 0-50

10 mv/cm



TAPE ONE



2 3 4 END.

78605.5

← AS before

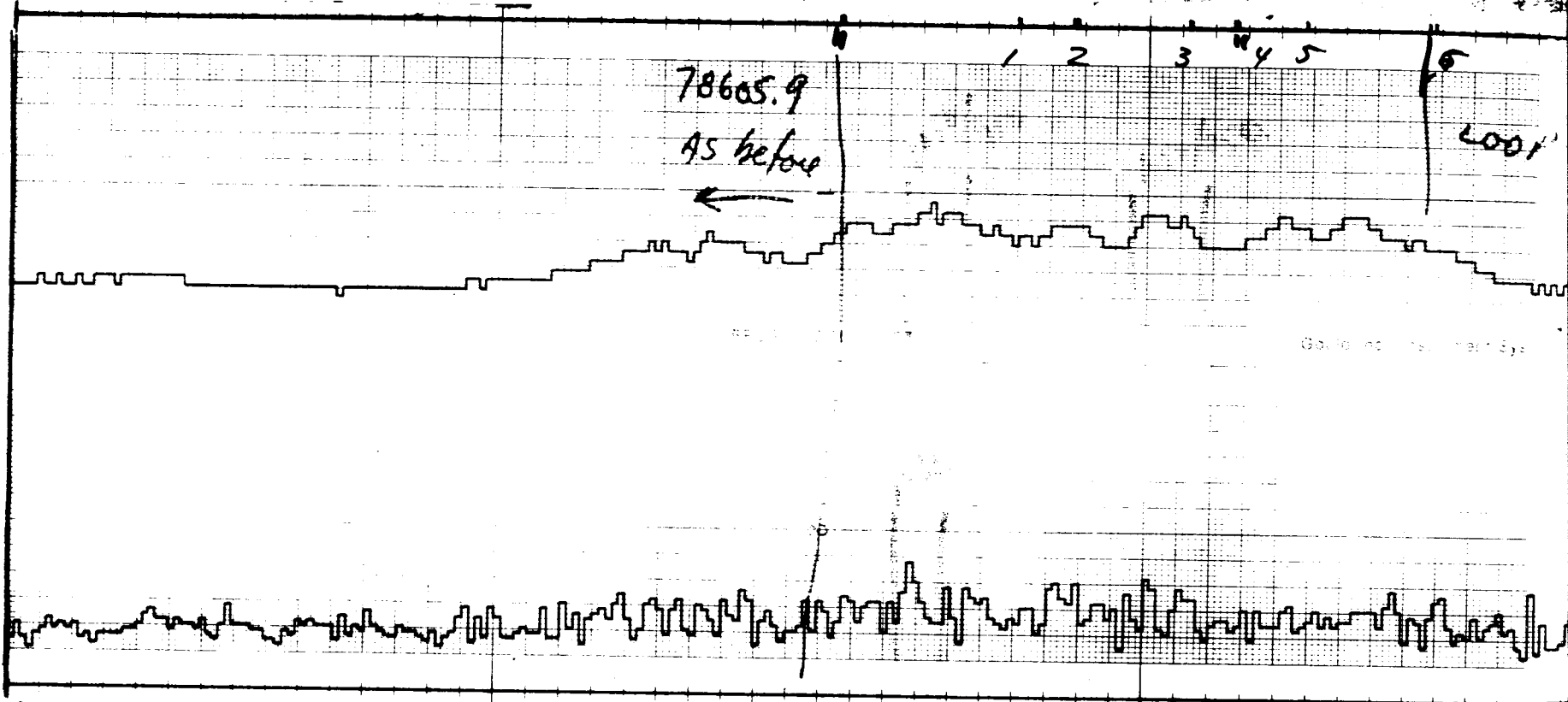
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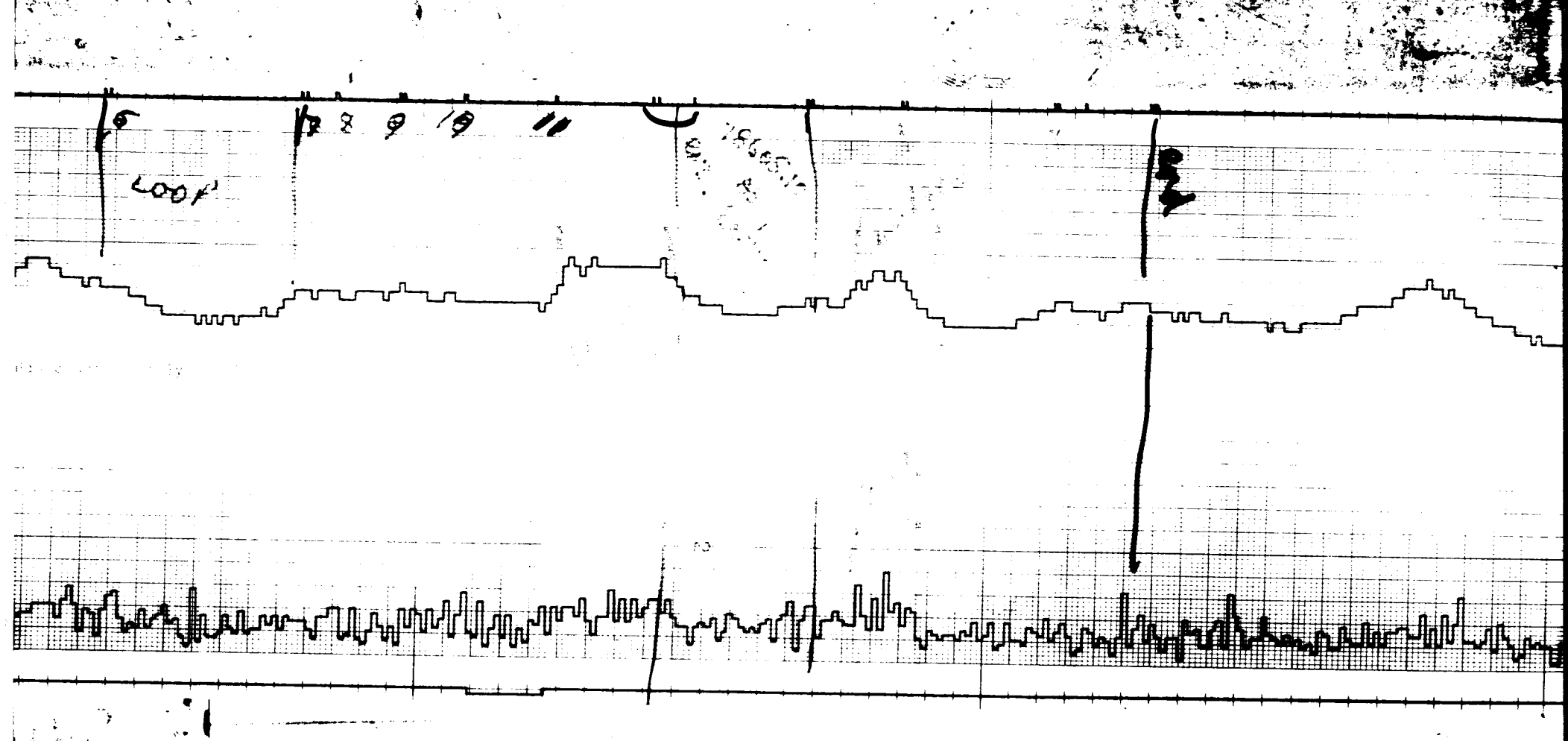
1 2 3 4 5 6

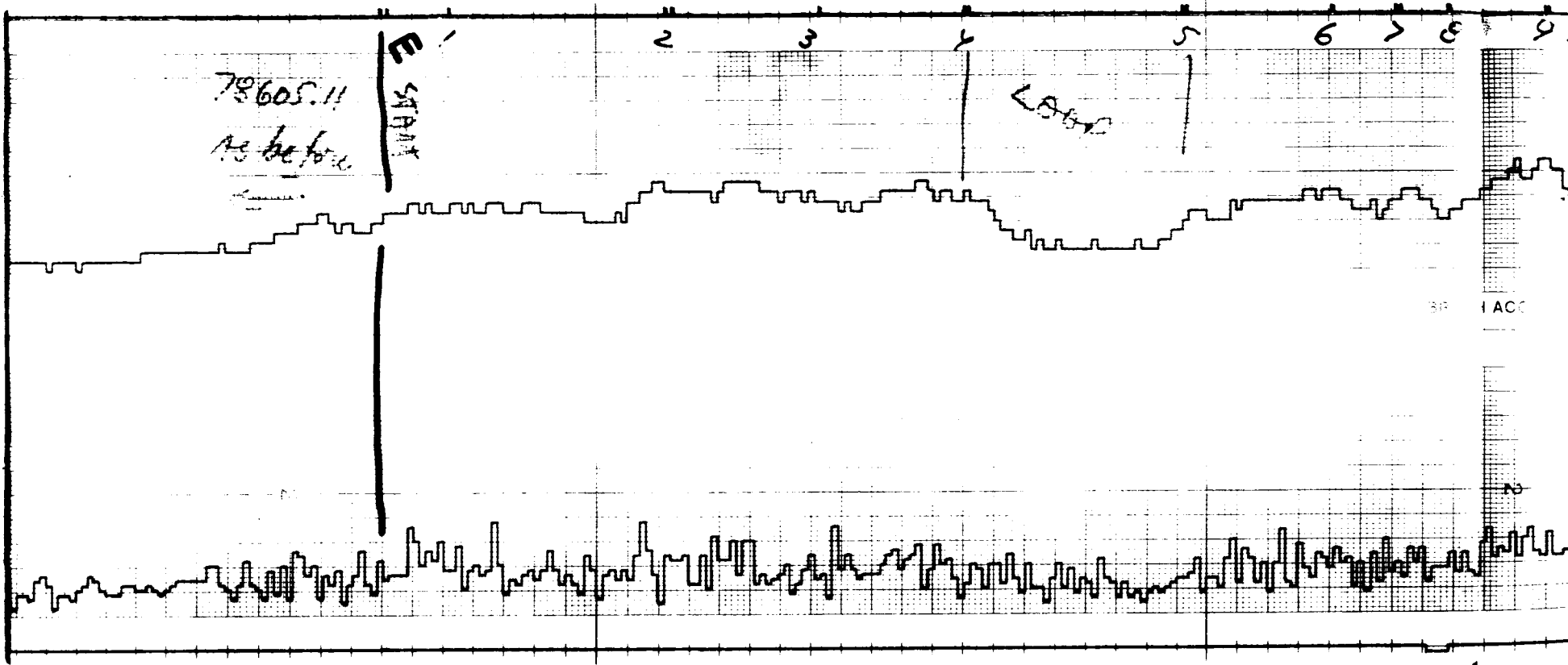
LOOP.

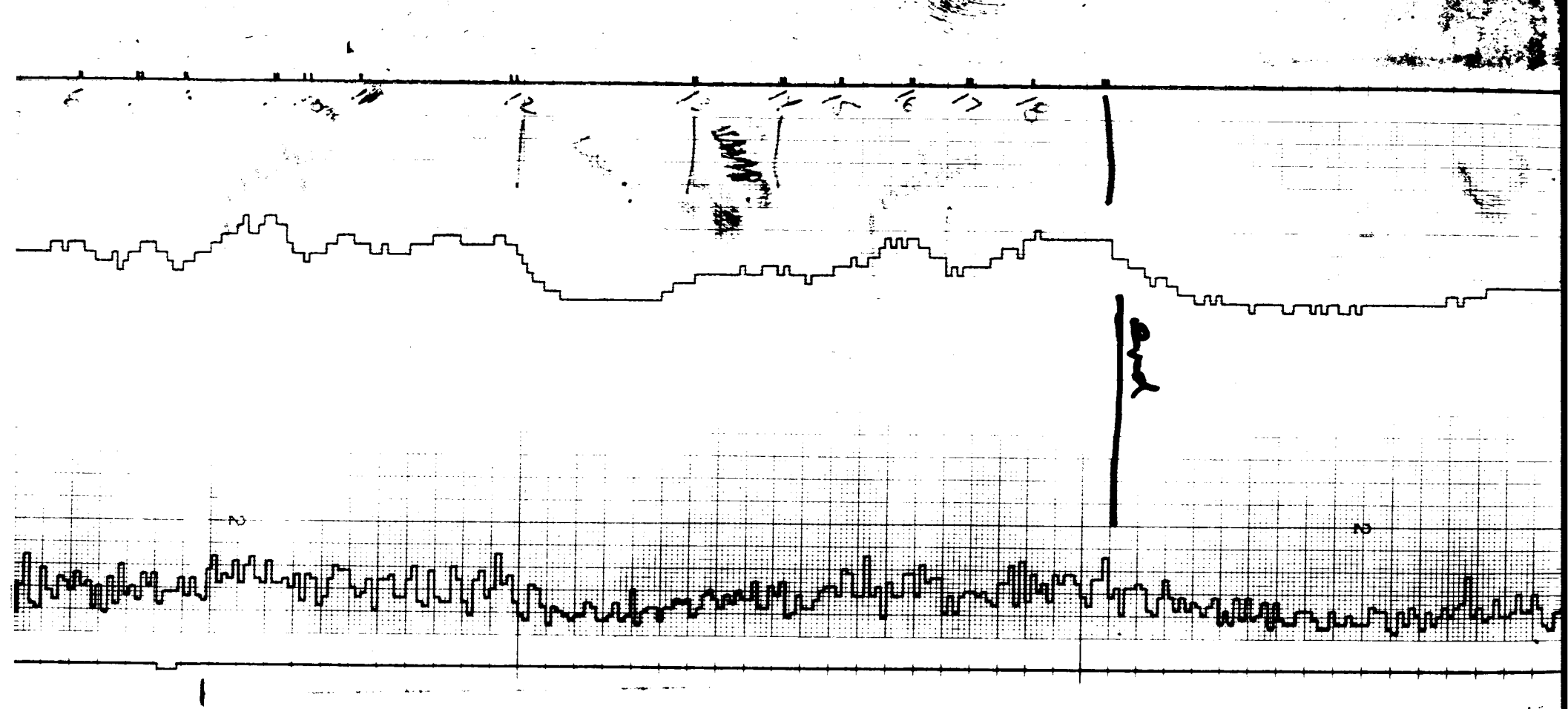
System

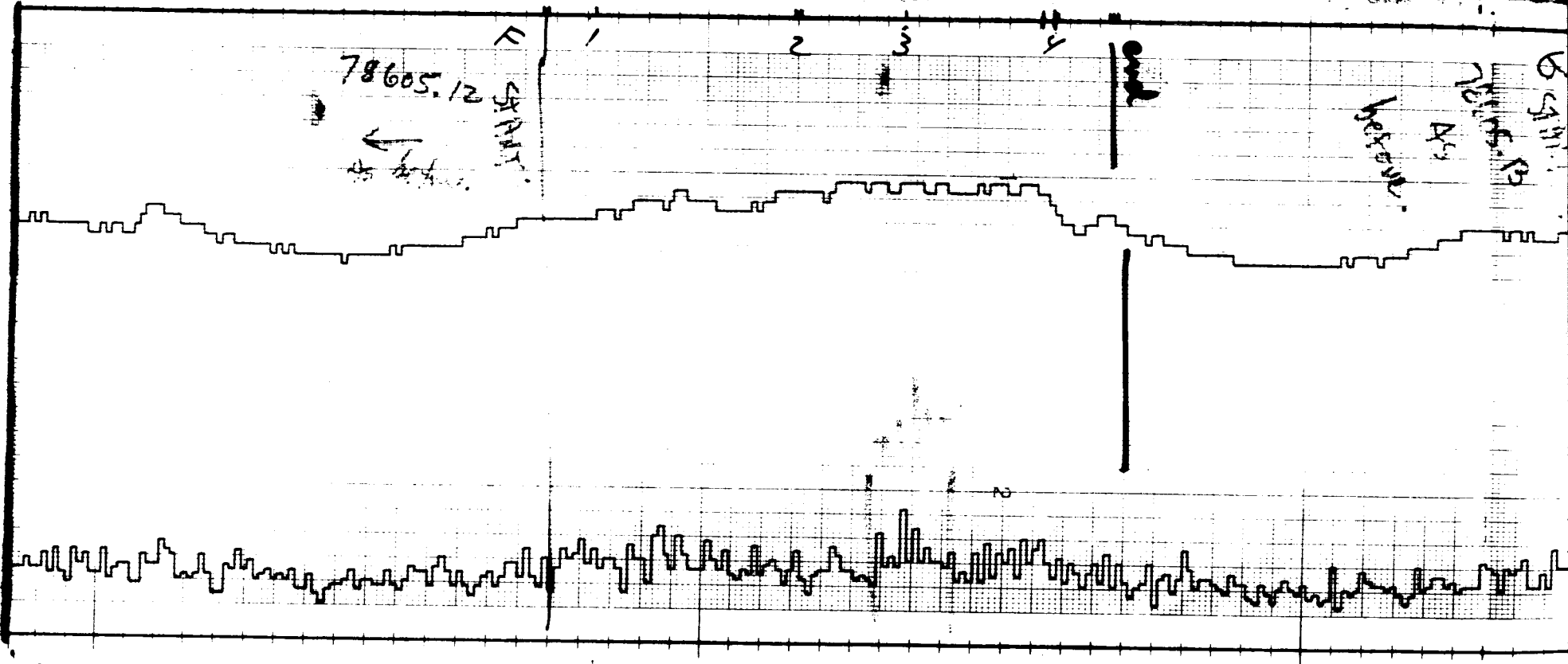


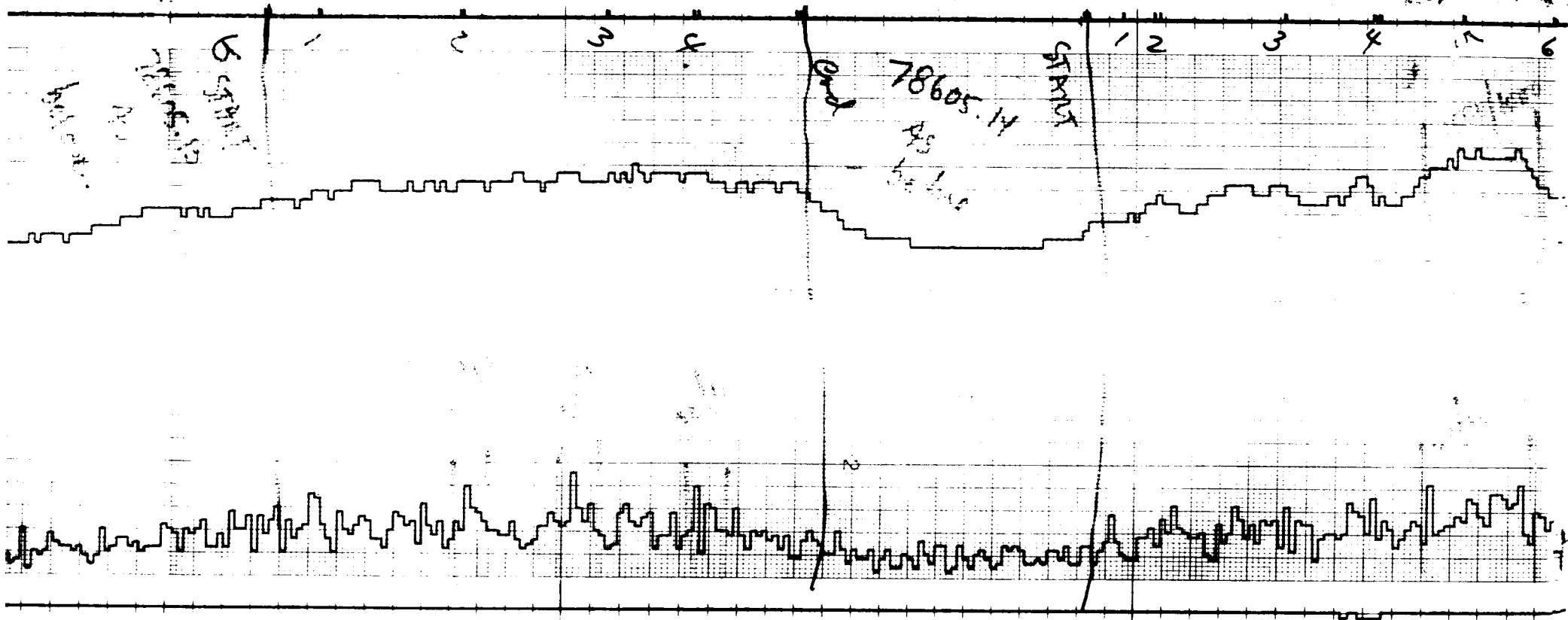












Handwritten notes on the left side of the top graph.

Handwritten note on the left side of the top graph.

Handwritten note on the left side of the top graph.

Handwritten note on the left side of the top graph.

Handwritten note 'AS' above the top graph.

Handwritten note '78605.14' above the top graph.

Handwritten note '65 lbs' above the top graph.

Handwritten note 'STAIN' above the top graph.

1

2

3

4

1

2

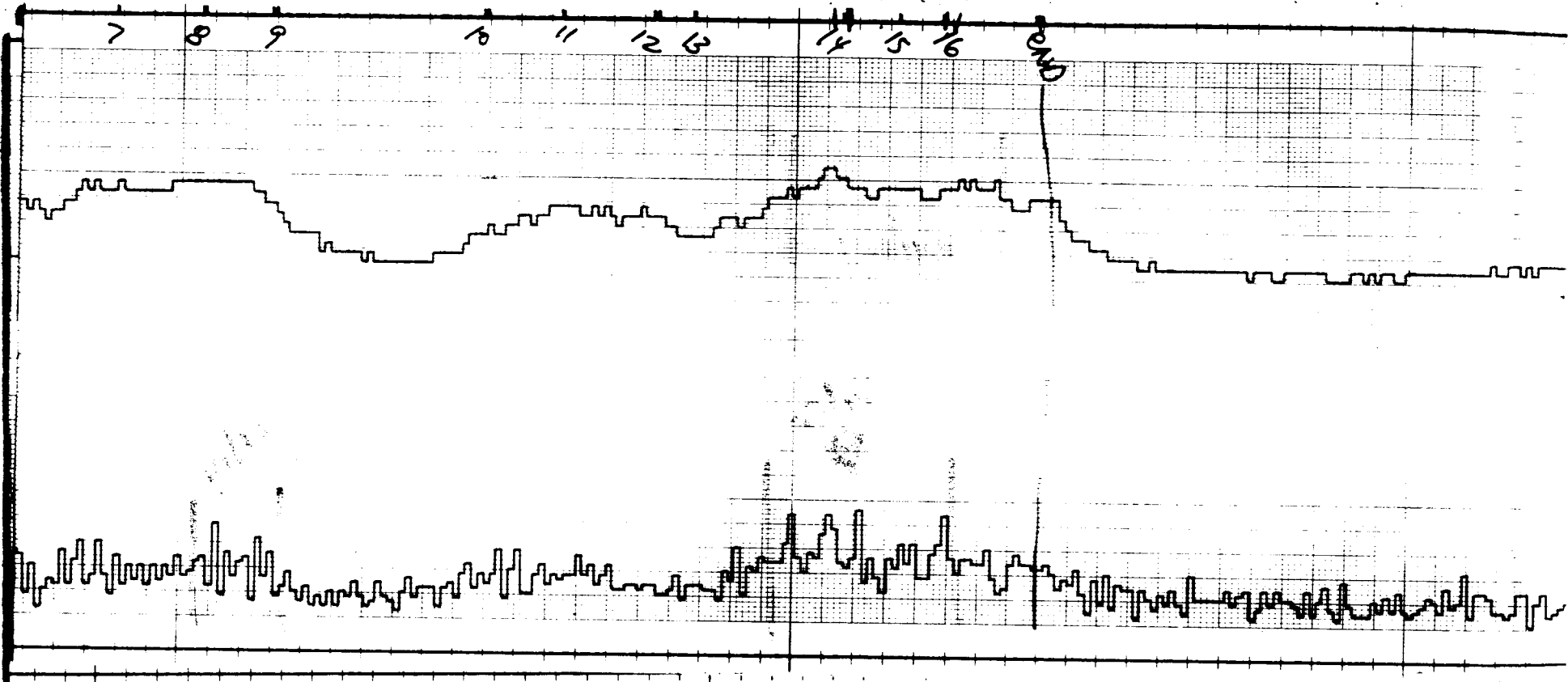
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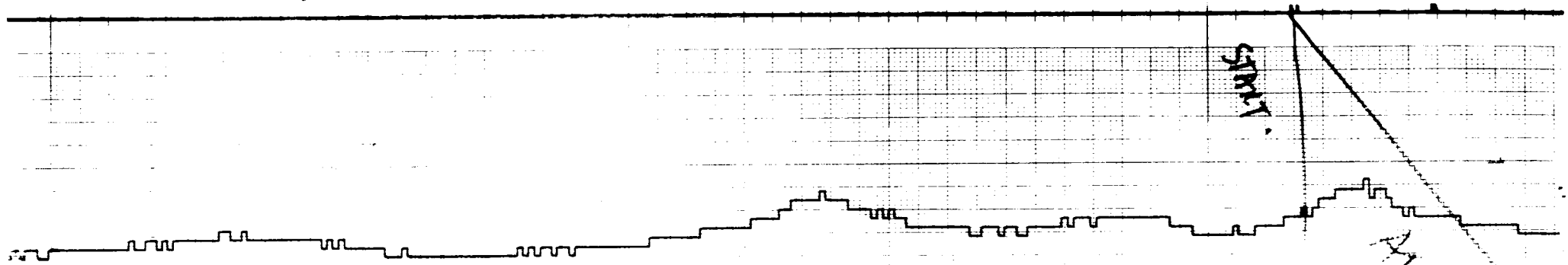
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5

6

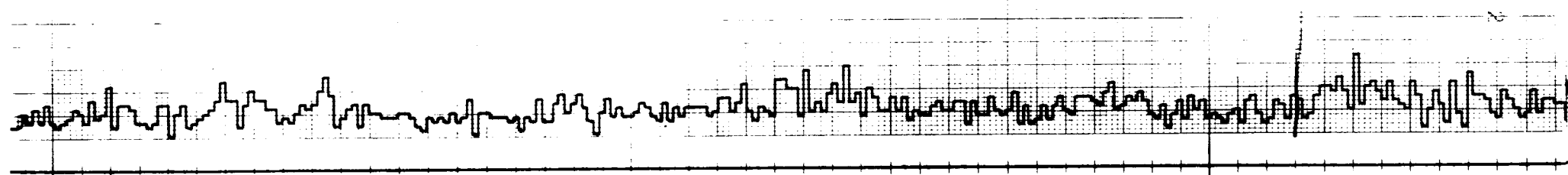
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START

APPROX



7540515

45

1.144

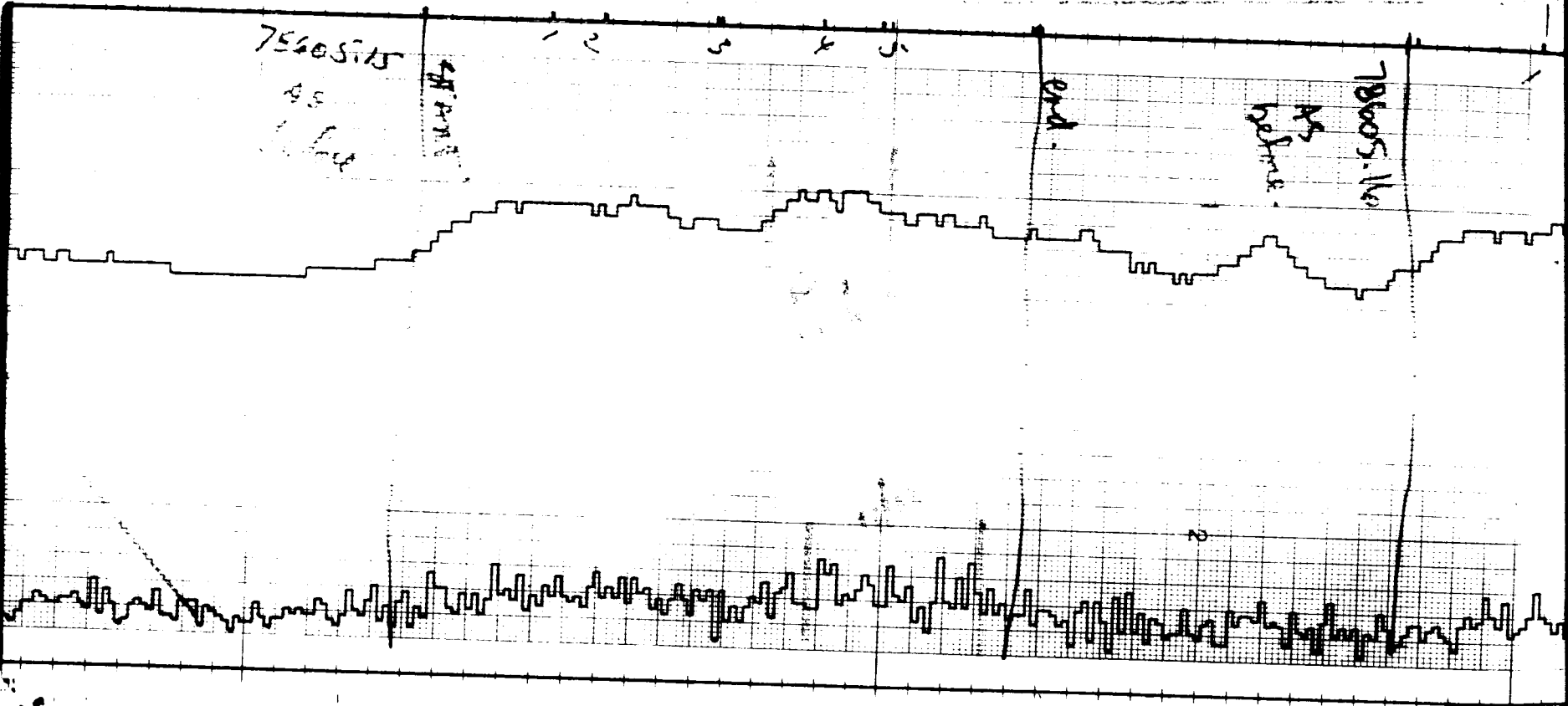
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1 2 3 4 5

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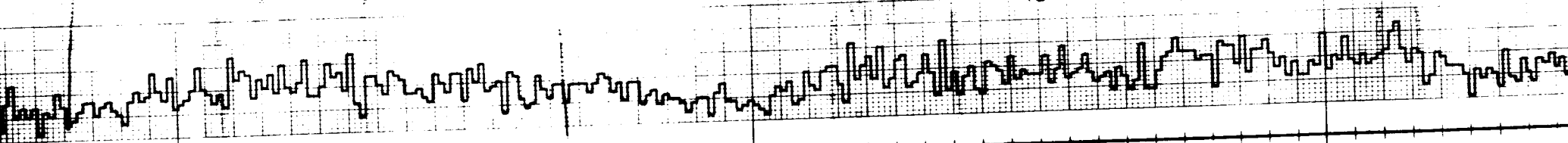
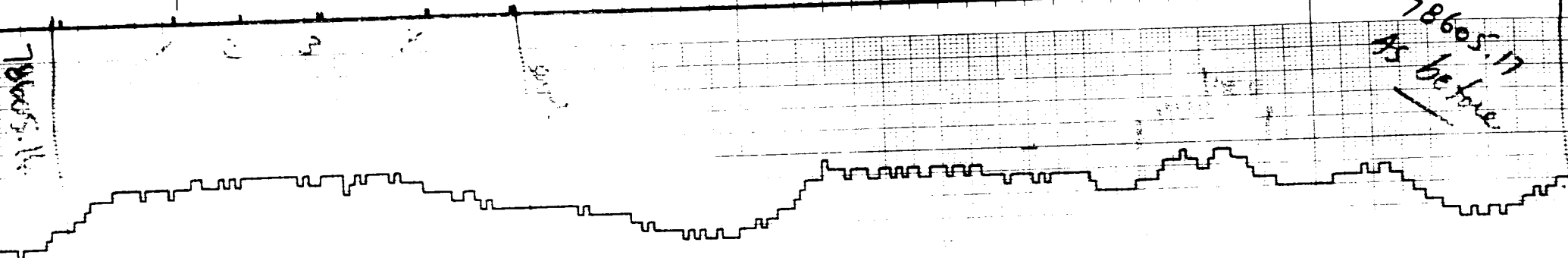
45  
baseline

78005.140



78605.17

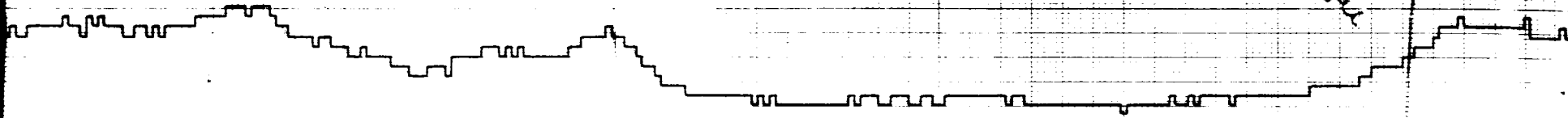
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As before



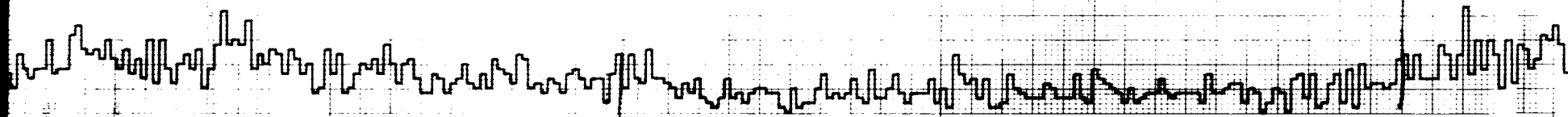
1 2 3 4 5 6 7 8 9 10

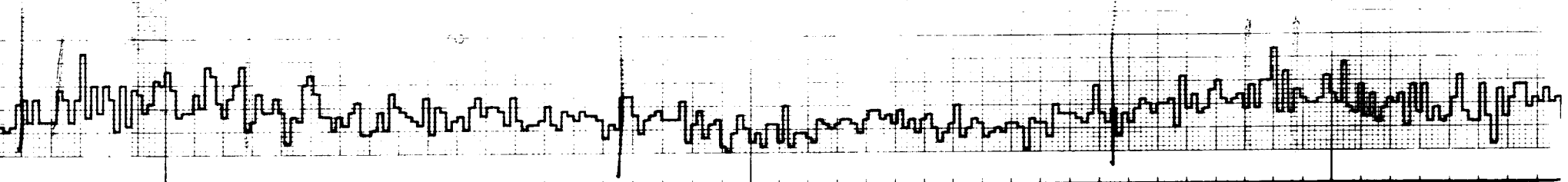
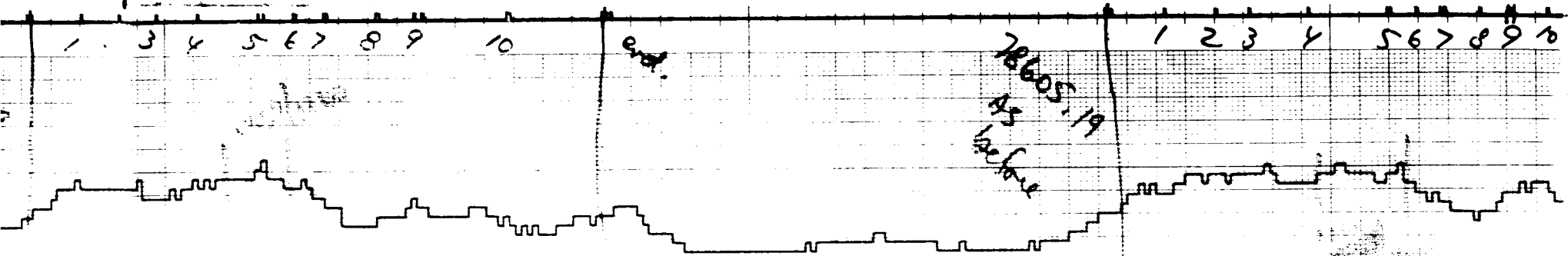
1 2 3

78605-18  
As before



Gould Inc. Instrument Systems Division





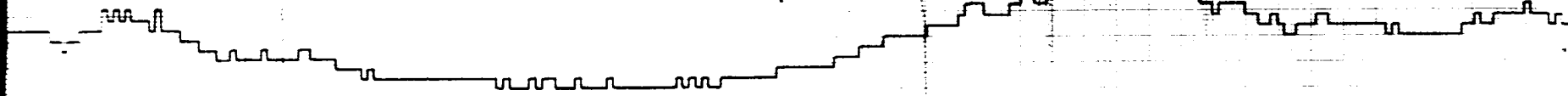
11 12 13

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

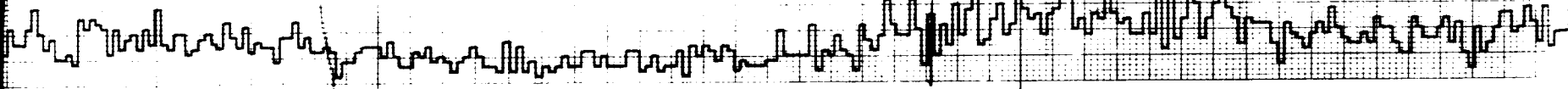
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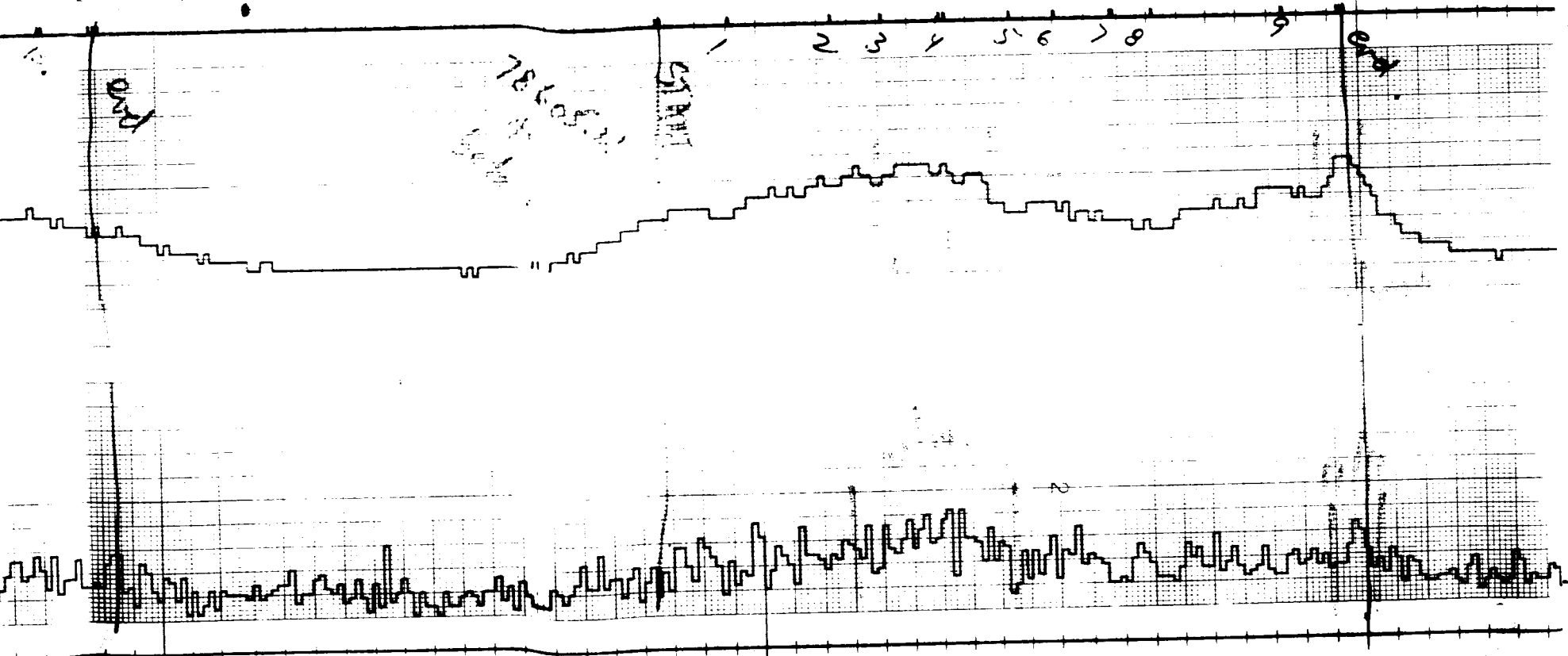
78605.24  
AS  
LINE 1

START



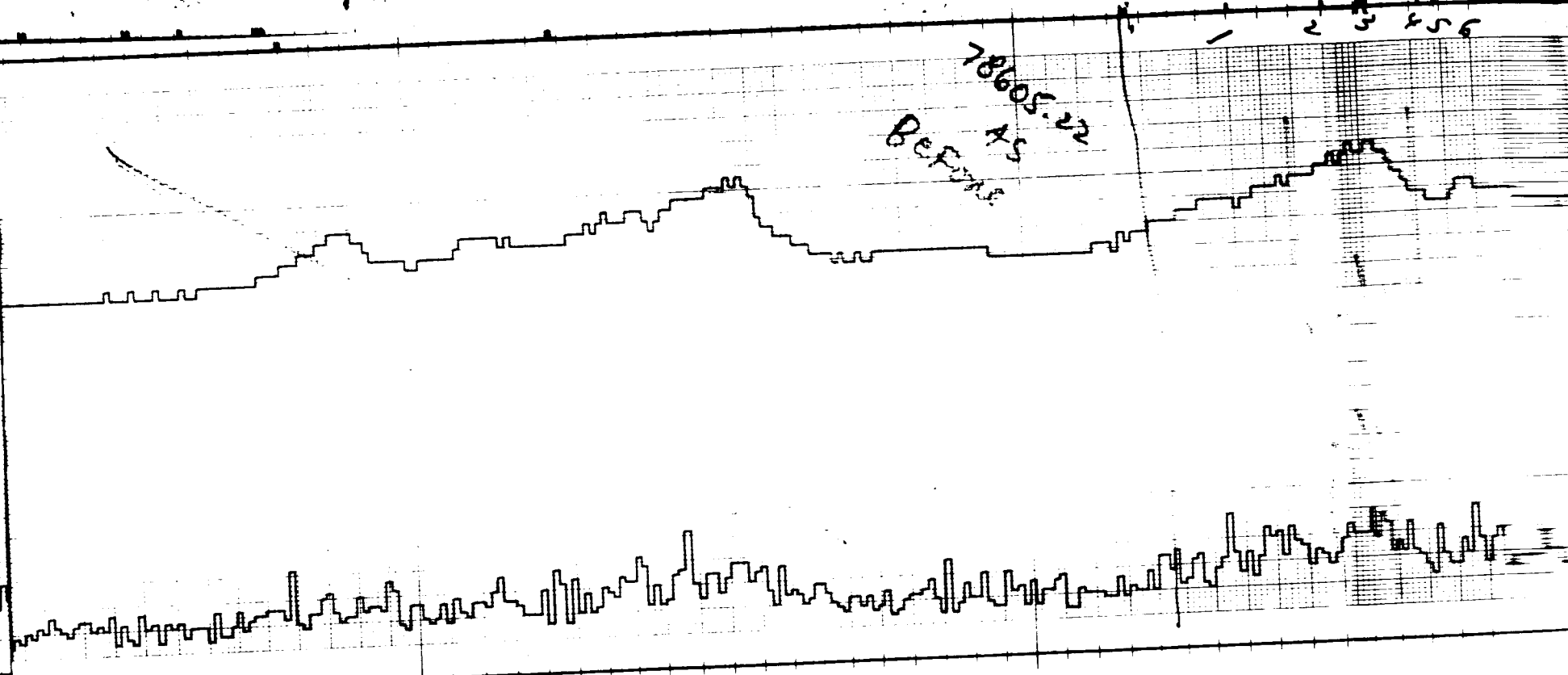
BRUSH ACC





78605.22  
45  
Refine

1 2 3 4 5 6



78605.5

AS  
before

OPERATOR C. MAIN TRIGGER 78605.4

TARGET OTIS CLAIMS NTS 106E/1

CHART SPEED 6 cm/sec 20 mv/cm  
 10  20  30  40

MODE Δ TIME CONST.  1 SEC  2 SEC  10 SEC

TRACES: BACK CHANNEL TA RANGE 0-40

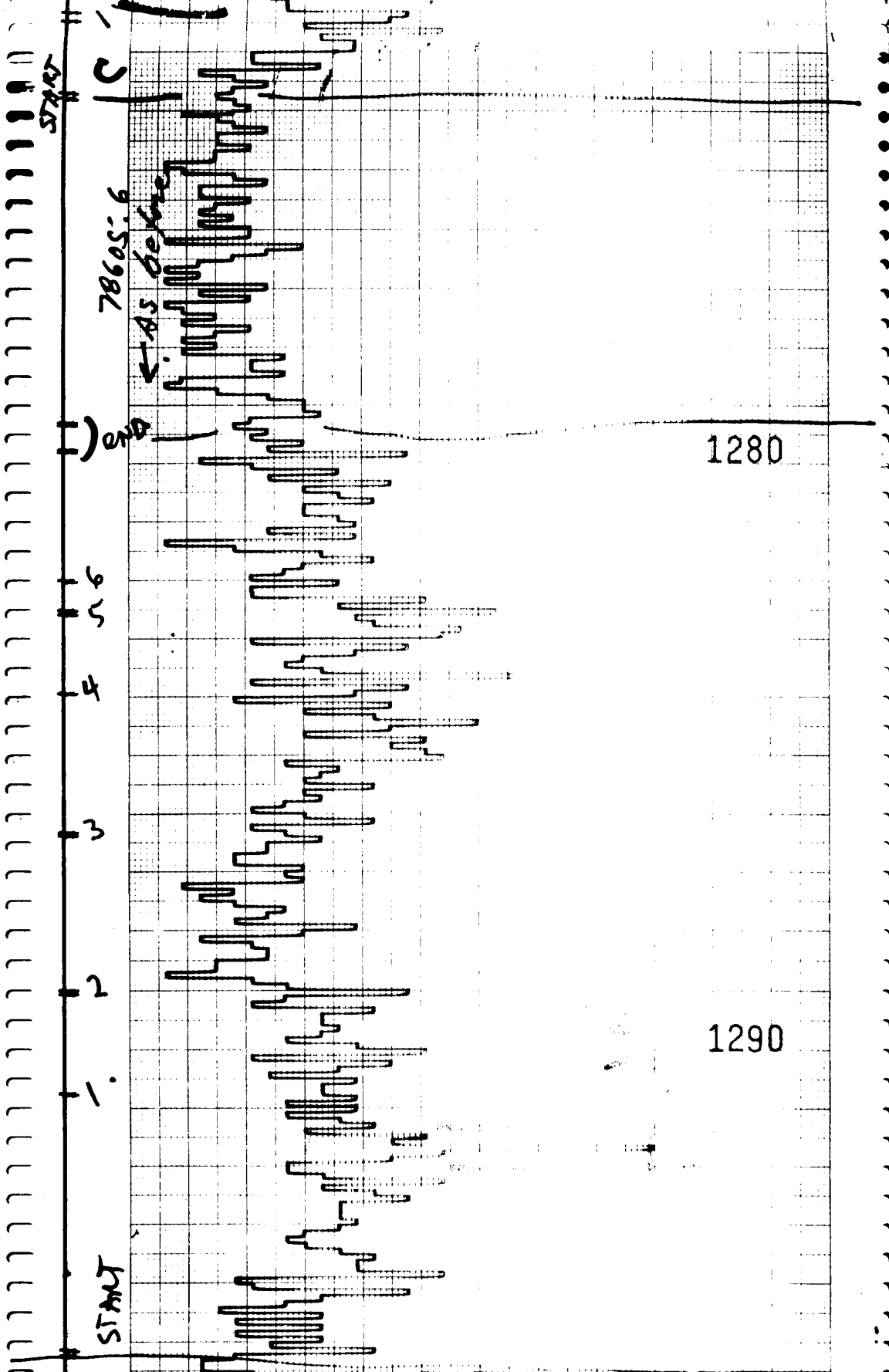
~~TRACES: BACK CHANNEL~~

1310

1300

1250

Tape Two



START

78605.6

AS before

END

1290

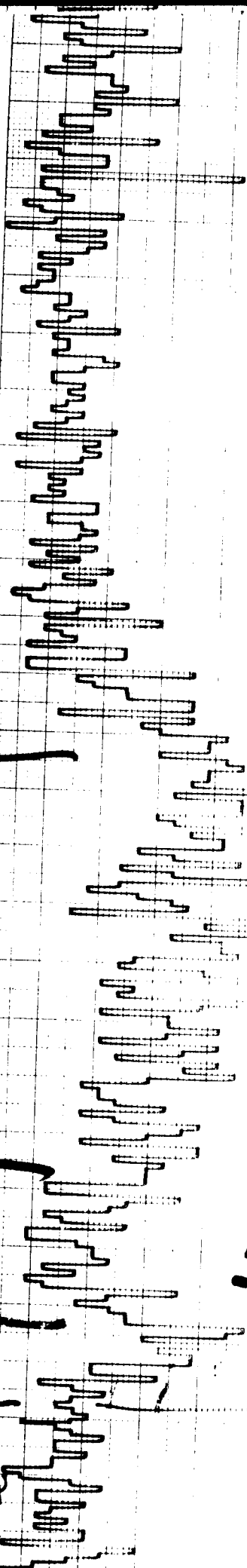
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1  
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3  
4  
5  
6

1250

1260

1270



end

loop

605:6  
before

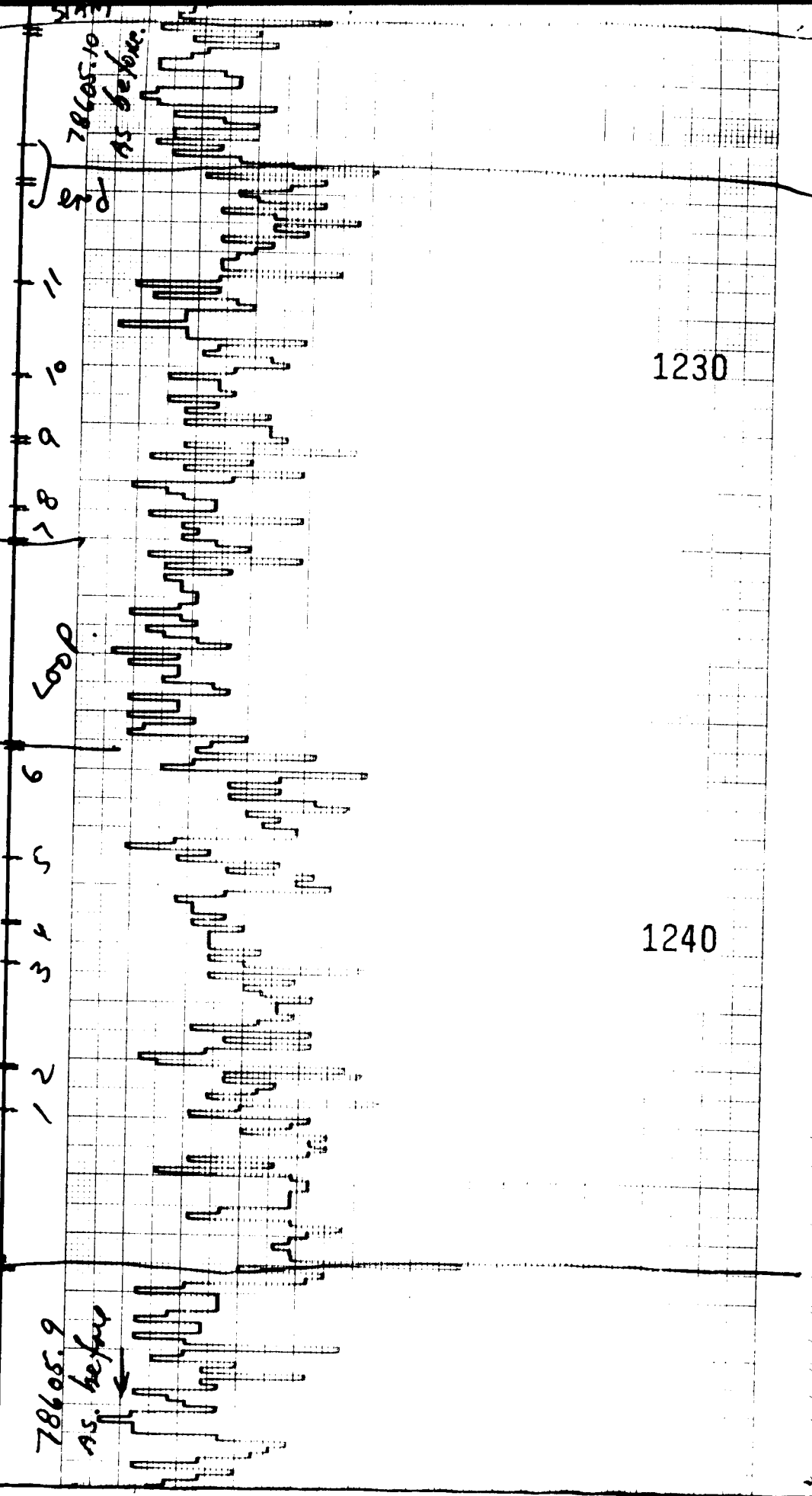
C

2

3

4

ASKS



START

70605.11  
AS before

1210

end.

23

1220

1200

START

70605.10  
AS before

end

11

1180

Loop

12

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Loop

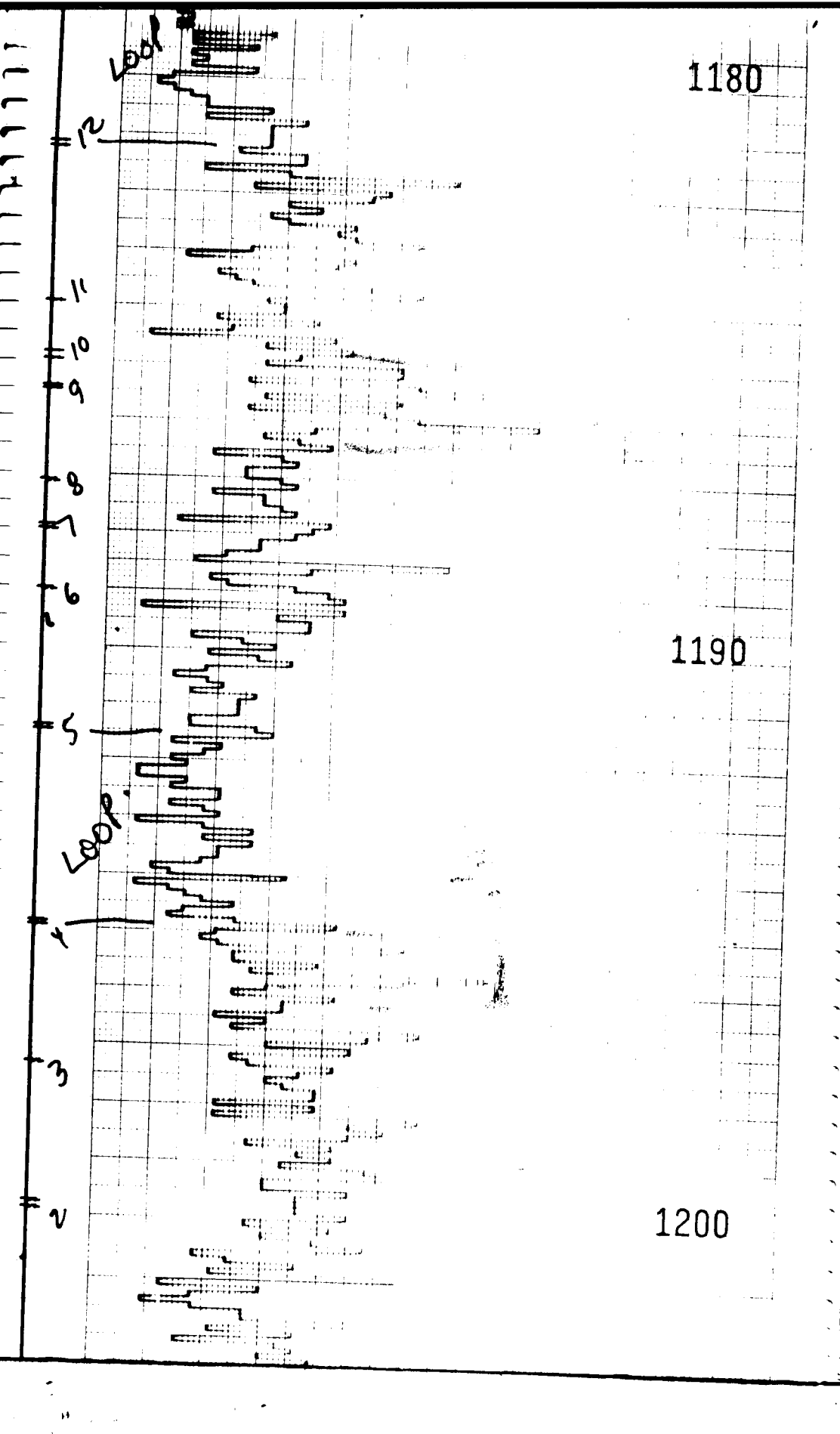
4

3

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1190

1200



78605 -

as before

1160

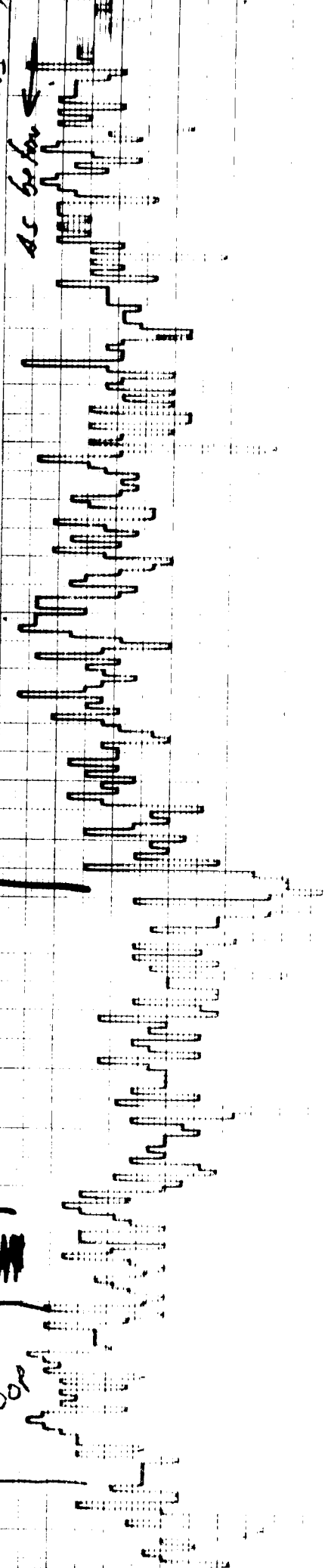
1170

end

18  
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1180

LOOP



2

1

START

78605.13

As before

end

4.

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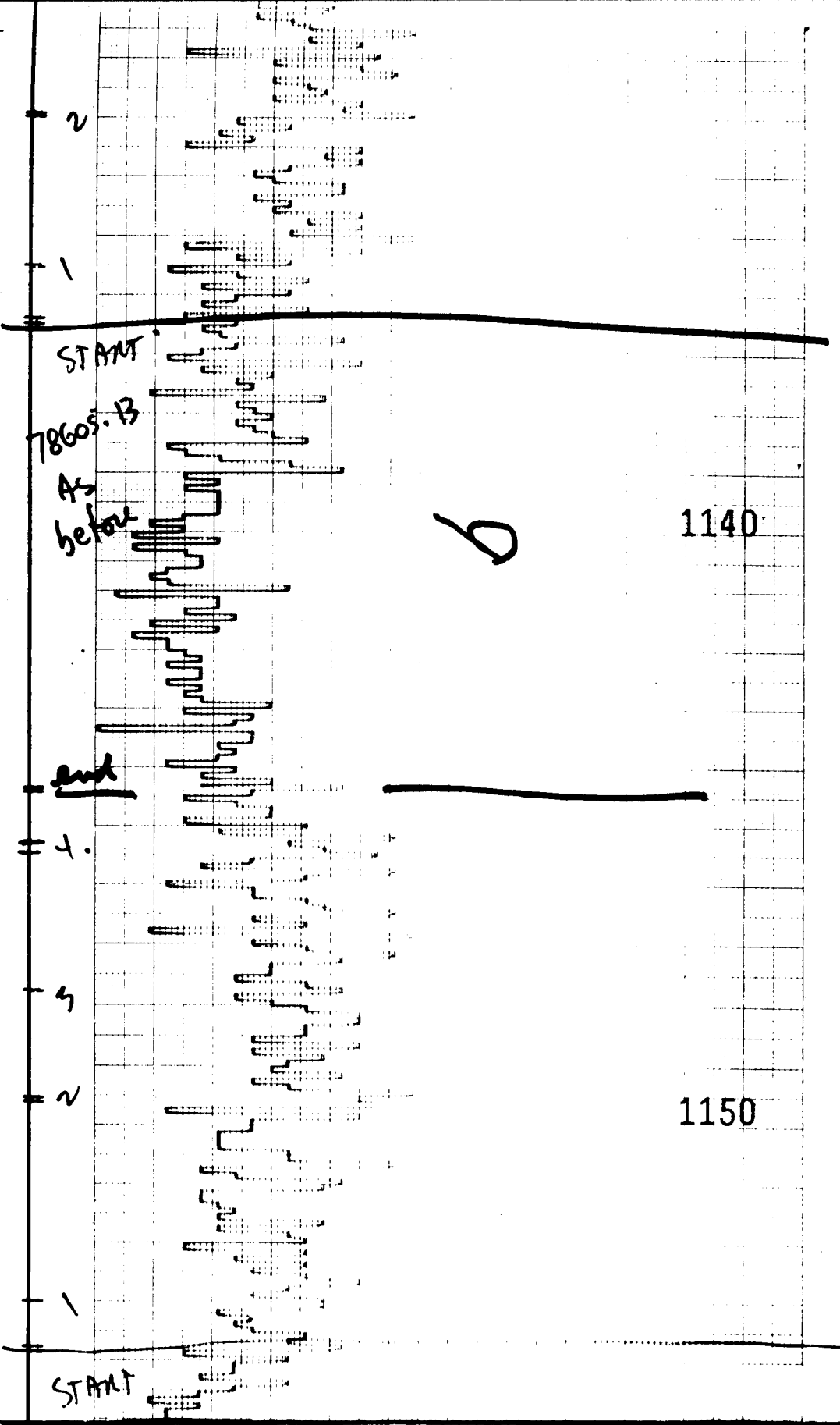
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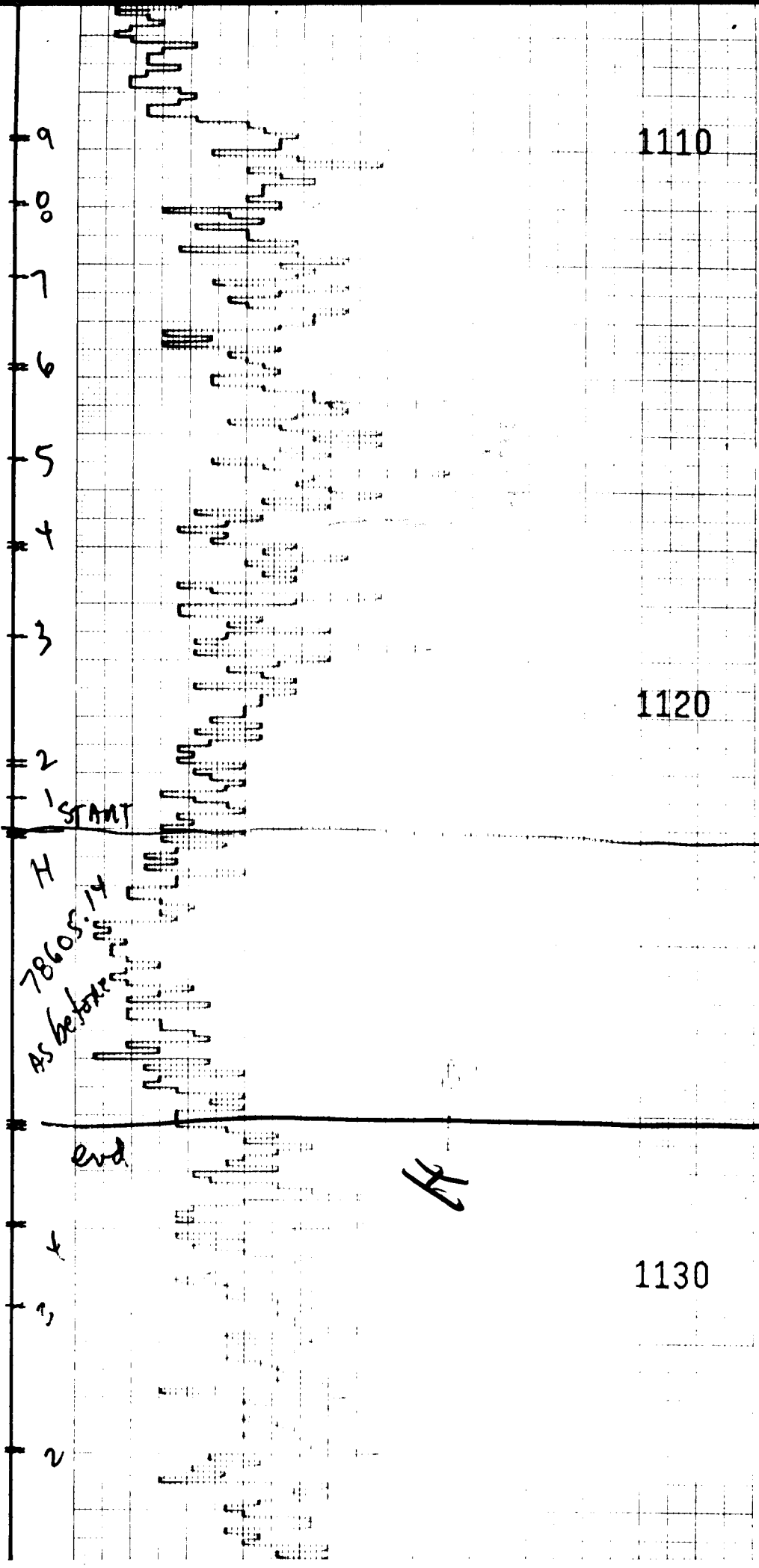
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6

1140

1150





1110

1120

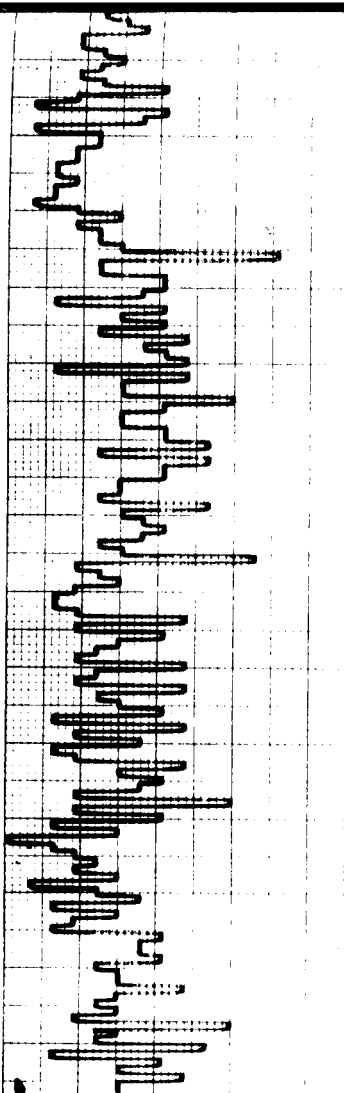
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START

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78605.14  
AS before

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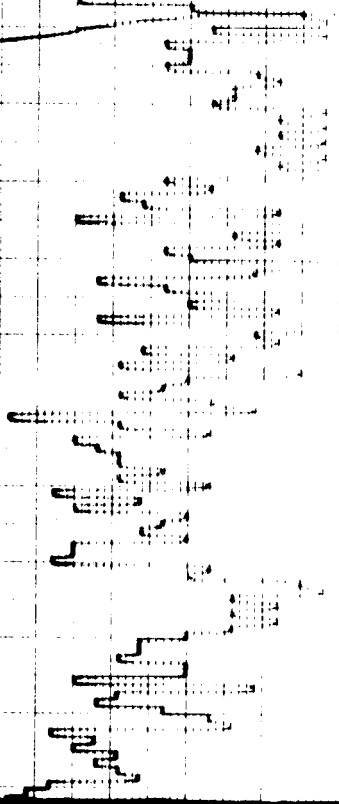


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1090

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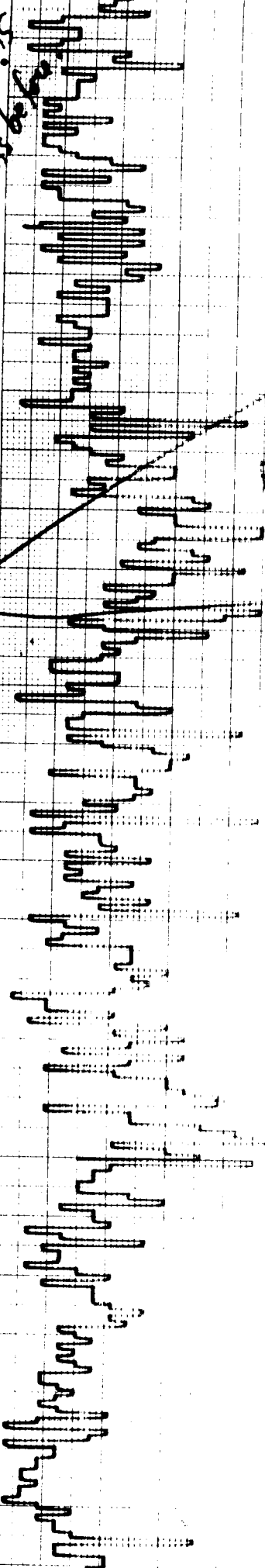
- 16
- 15
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- 13
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- 11
- 10



1100

1060

78605.15  
As of 6/6/60



AS 1060

1070

1070

1080

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1050

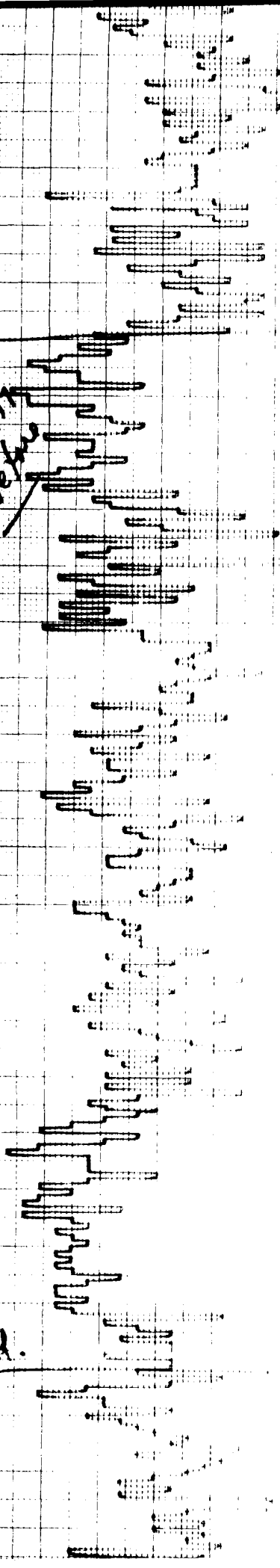
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As  
before

end.

STAM

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78605-11  
As beta



+

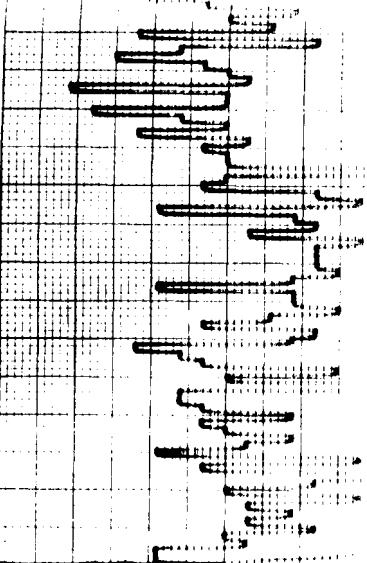
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1030

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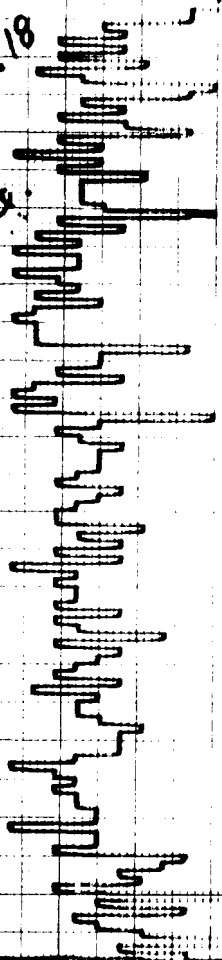
4.

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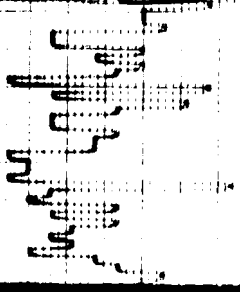
990

7865.18  
before



1000

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✓

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78605-19

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# 6

# 5

990

940

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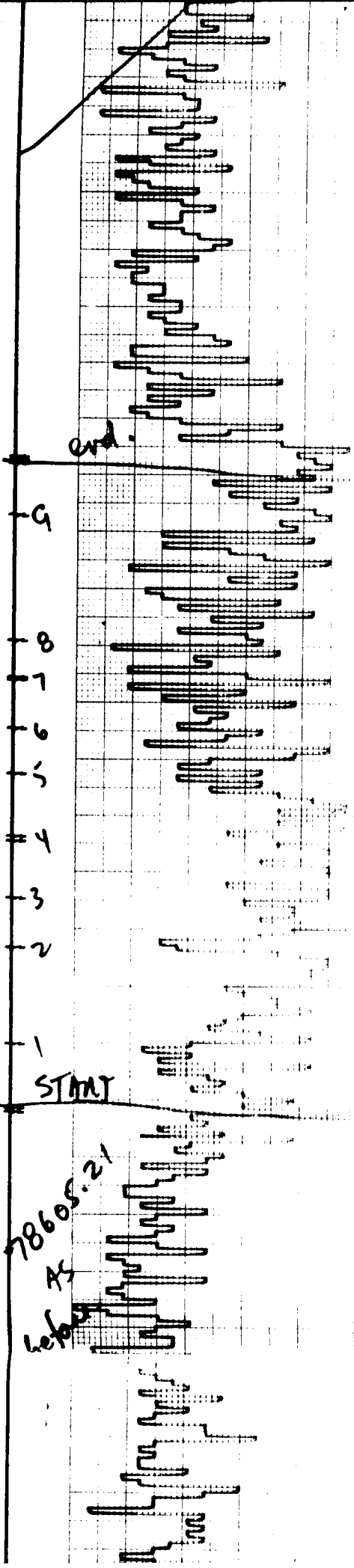


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START

18605.20  
as before

960



920

P.

930

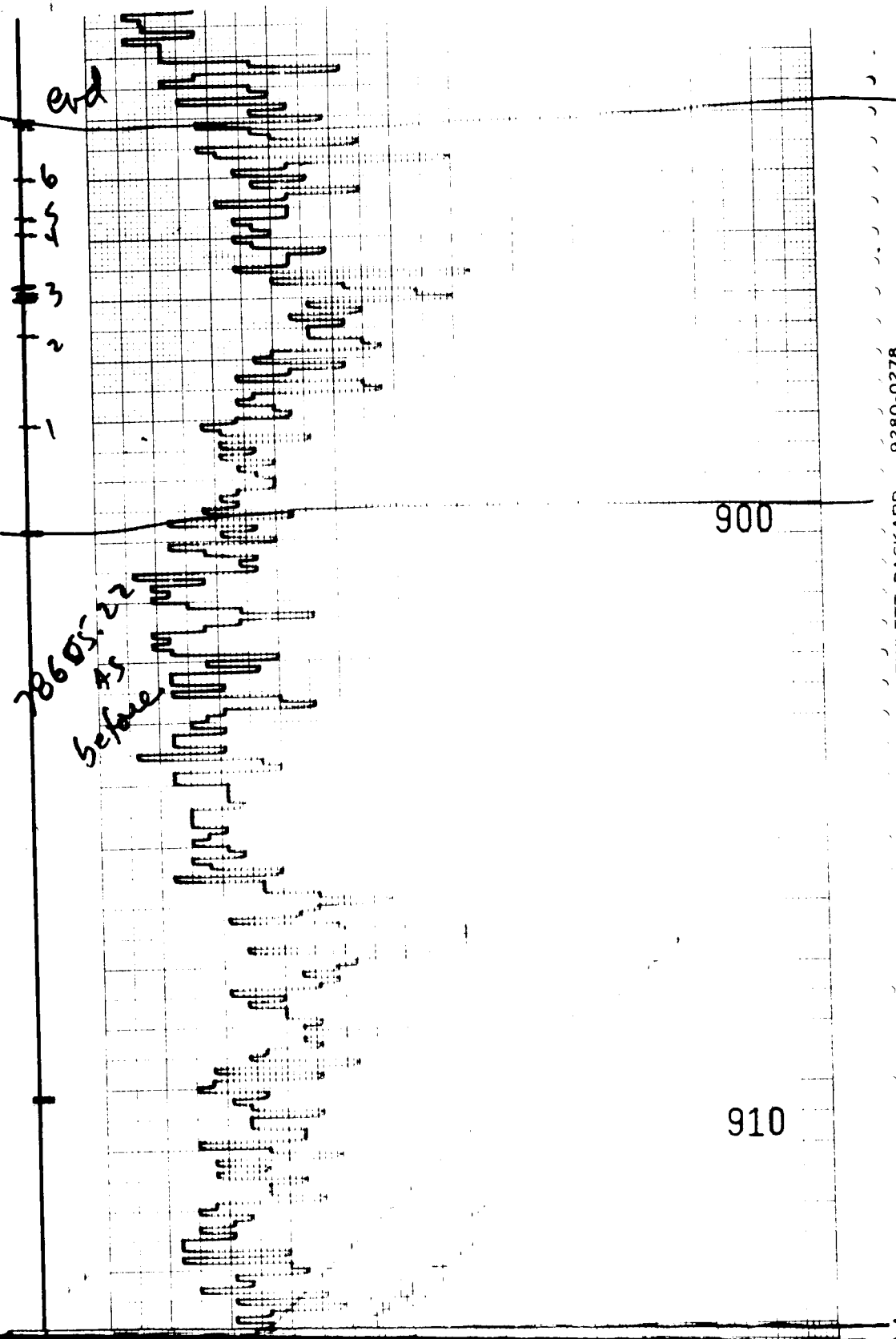
START

END

78605.21  
X  
Feb 69

940

HEWLETT-PACKARD 9280-0278



end

6  
5  
4  
3  
2  
1

900

910

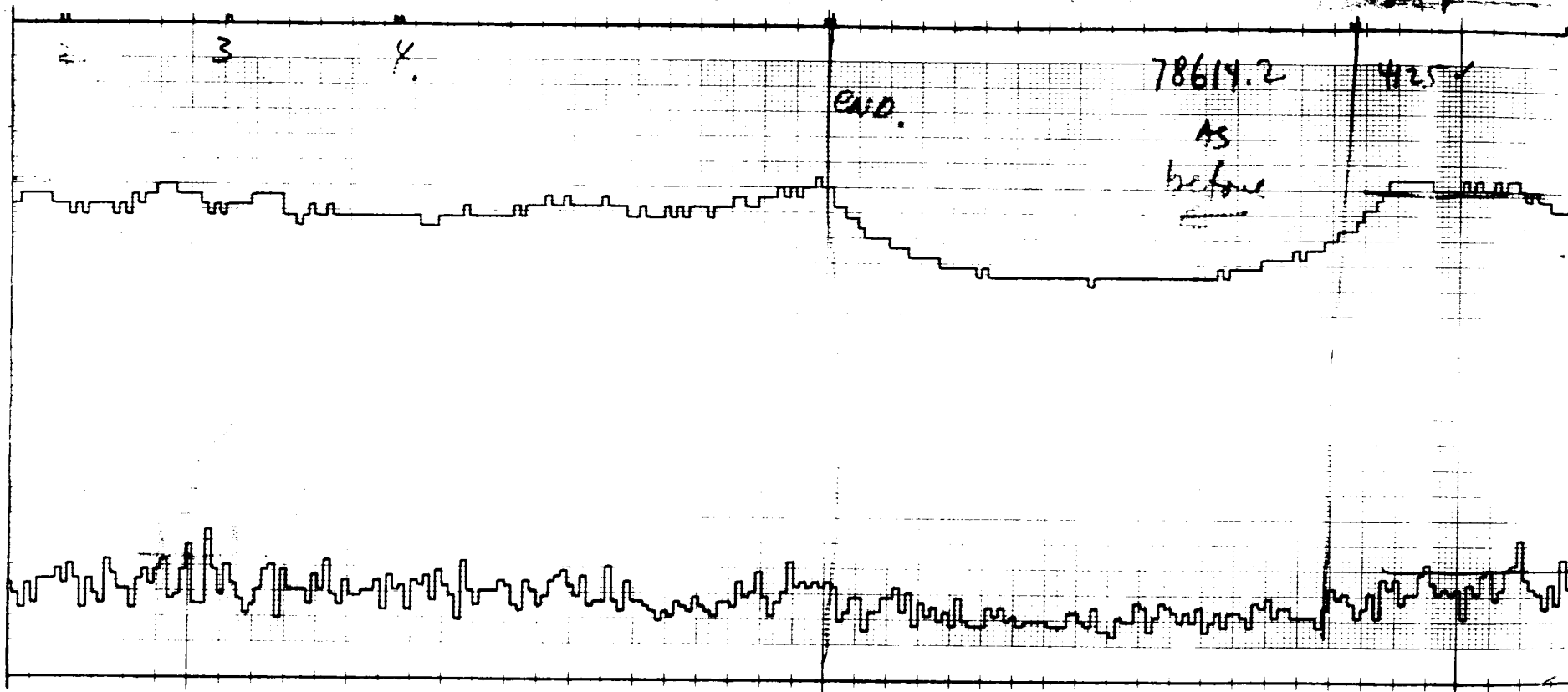
78605-22  
AS  
before

START

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COUNT SPEED	6 cpm/min	<input type="checkbox"/> 100 m. <input type="checkbox"/> 1. <input type="checkbox"/> 10
MODE	$\Delta$	TIME CONST <input checked="" type="checkbox"/> 1 SEC <input type="checkbox"/> 3 SEC <input type="checkbox"/> 10 SEC
TRACES: BACK CHANNEL	T.C.	RANGE 0-2500
FRONT CHANNEL	URANIUM	RANGE 0-50

5 m  
10 m

TAPE THREE



18617.1

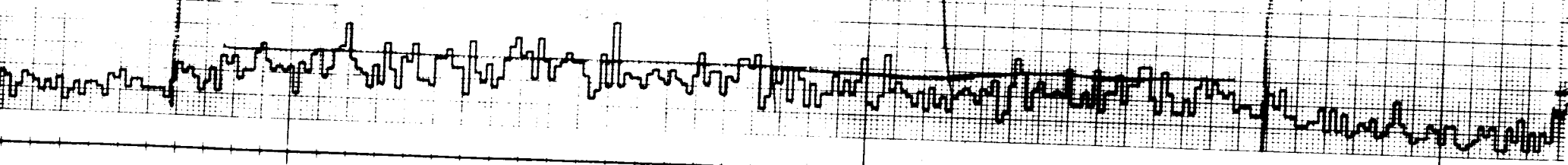
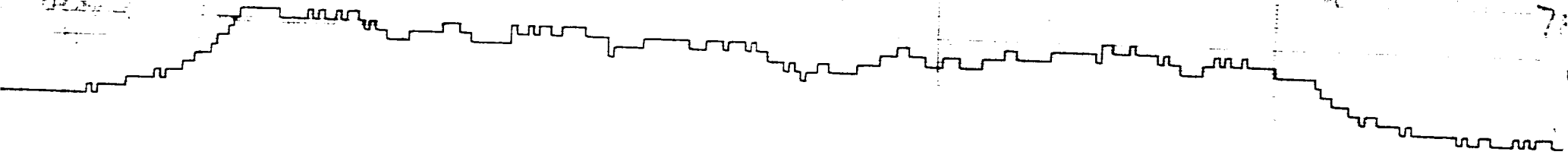
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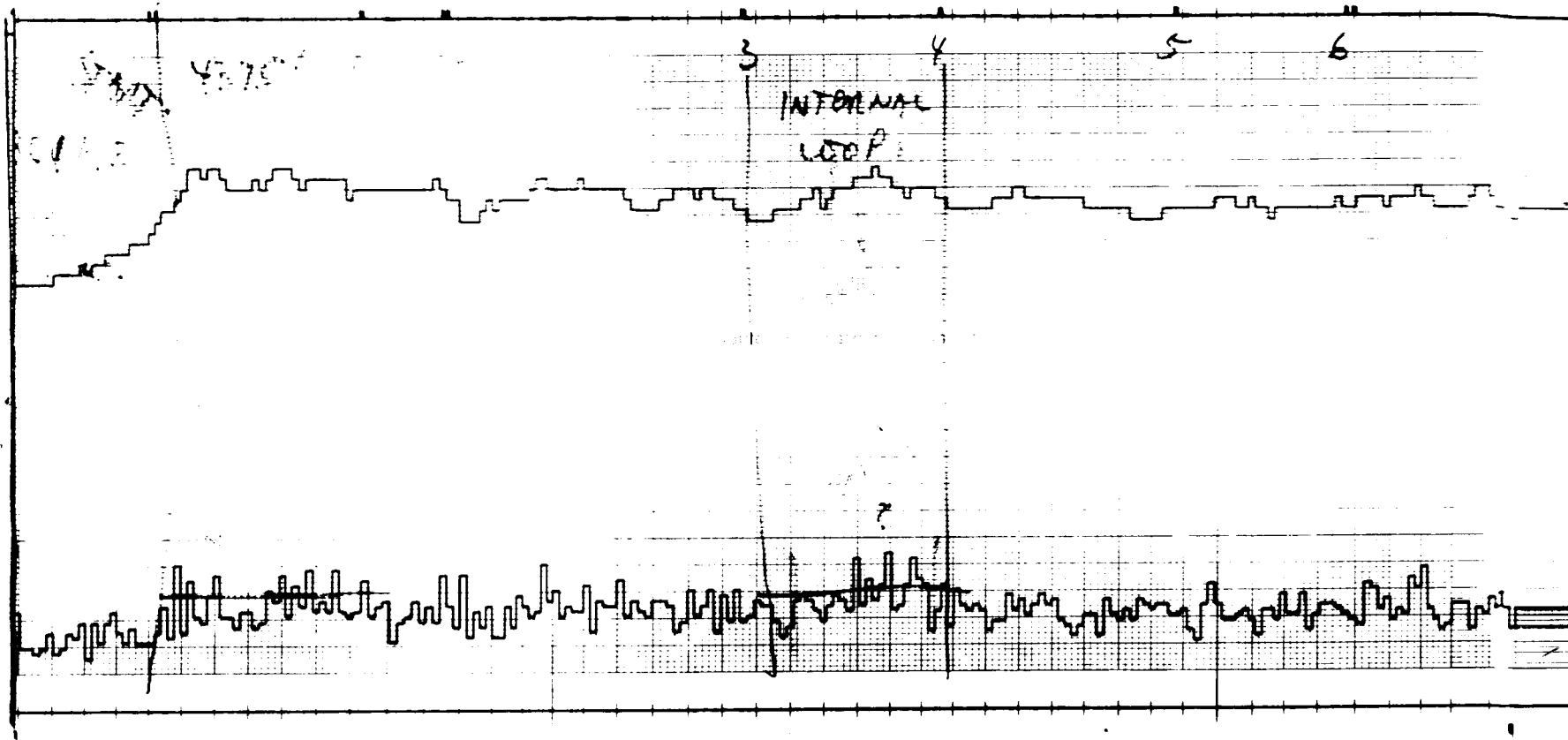
57444  
1310

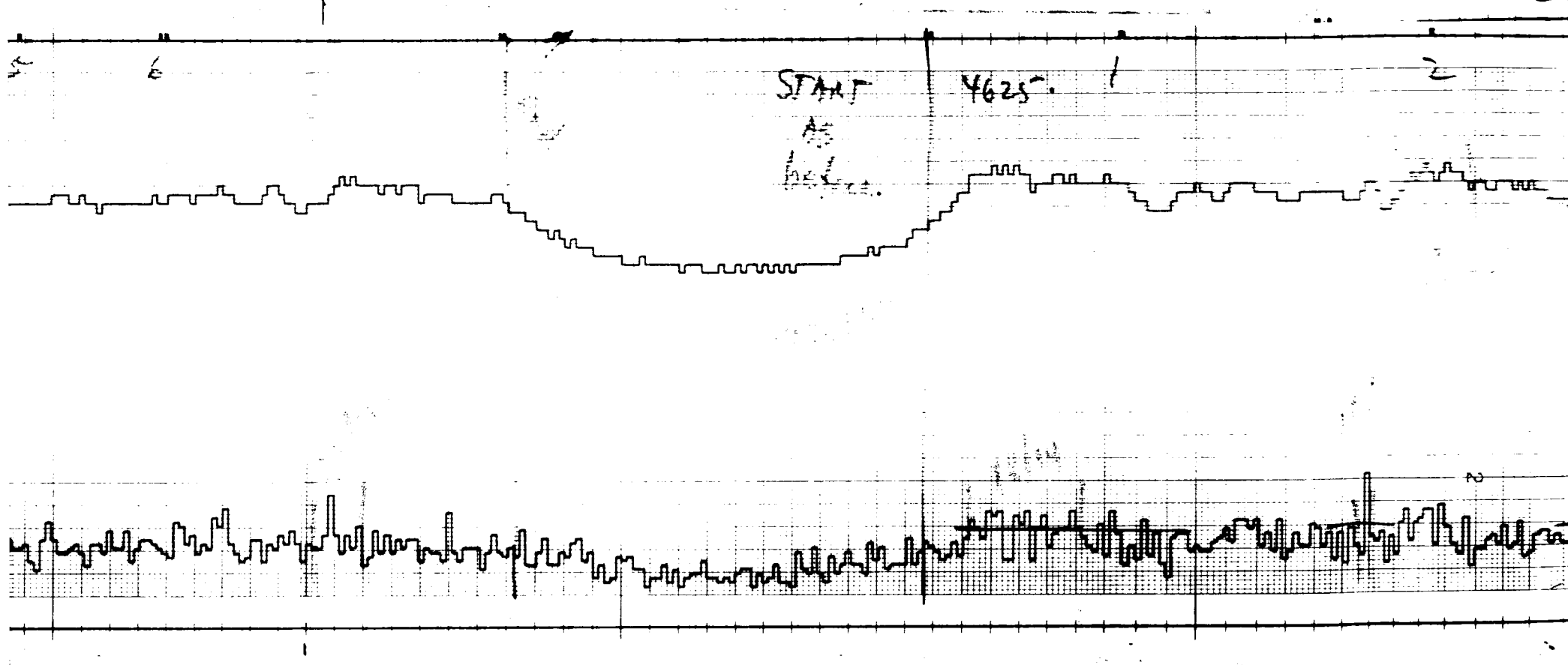
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604

7







START

4625

As  
indicated

200

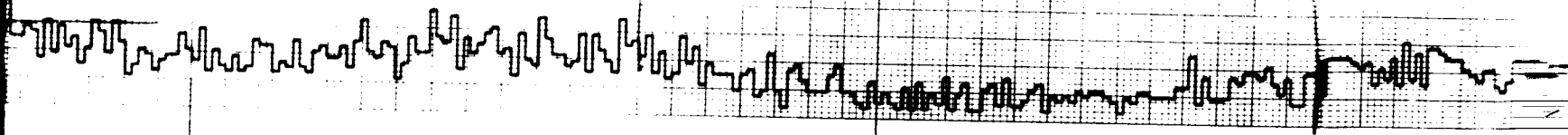
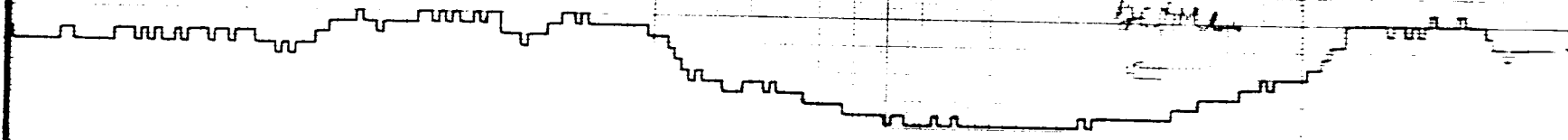
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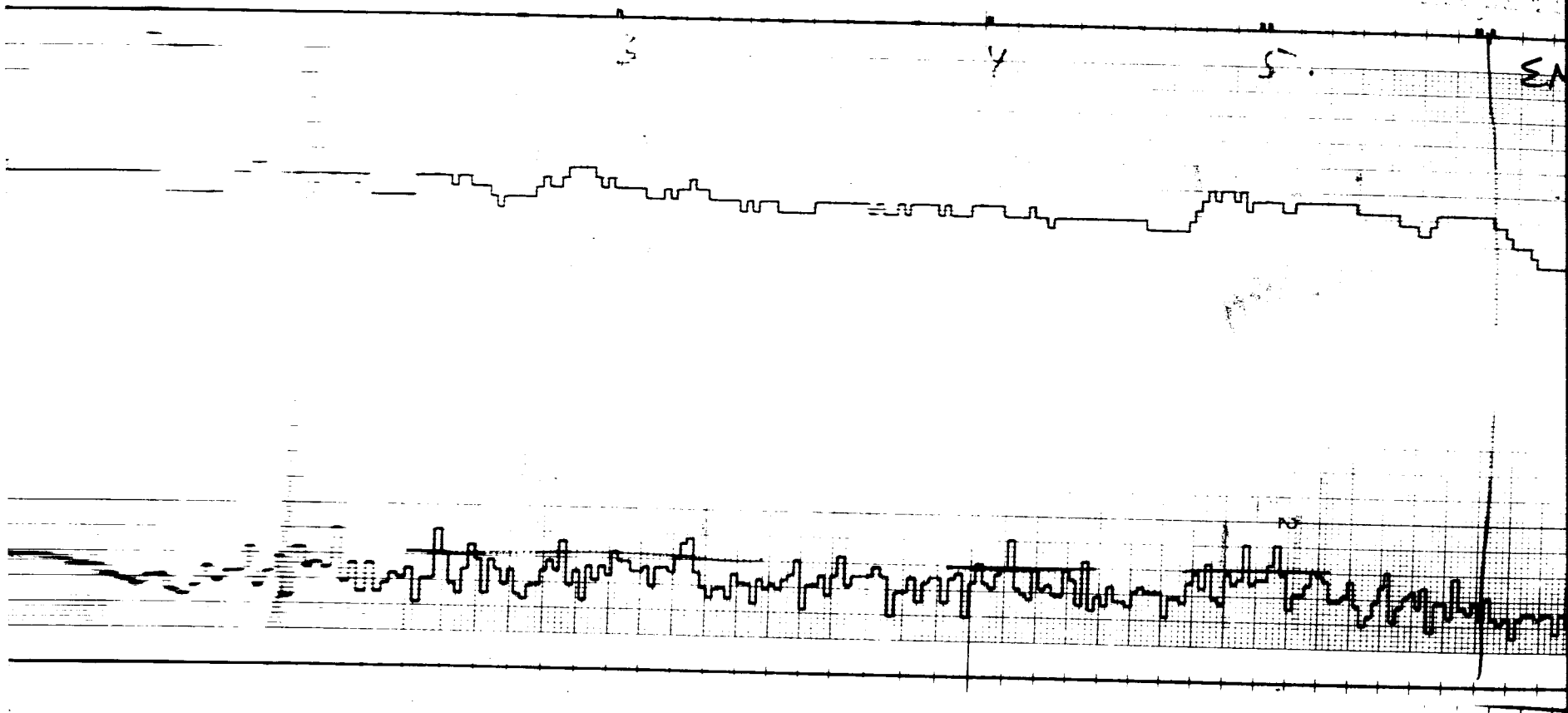
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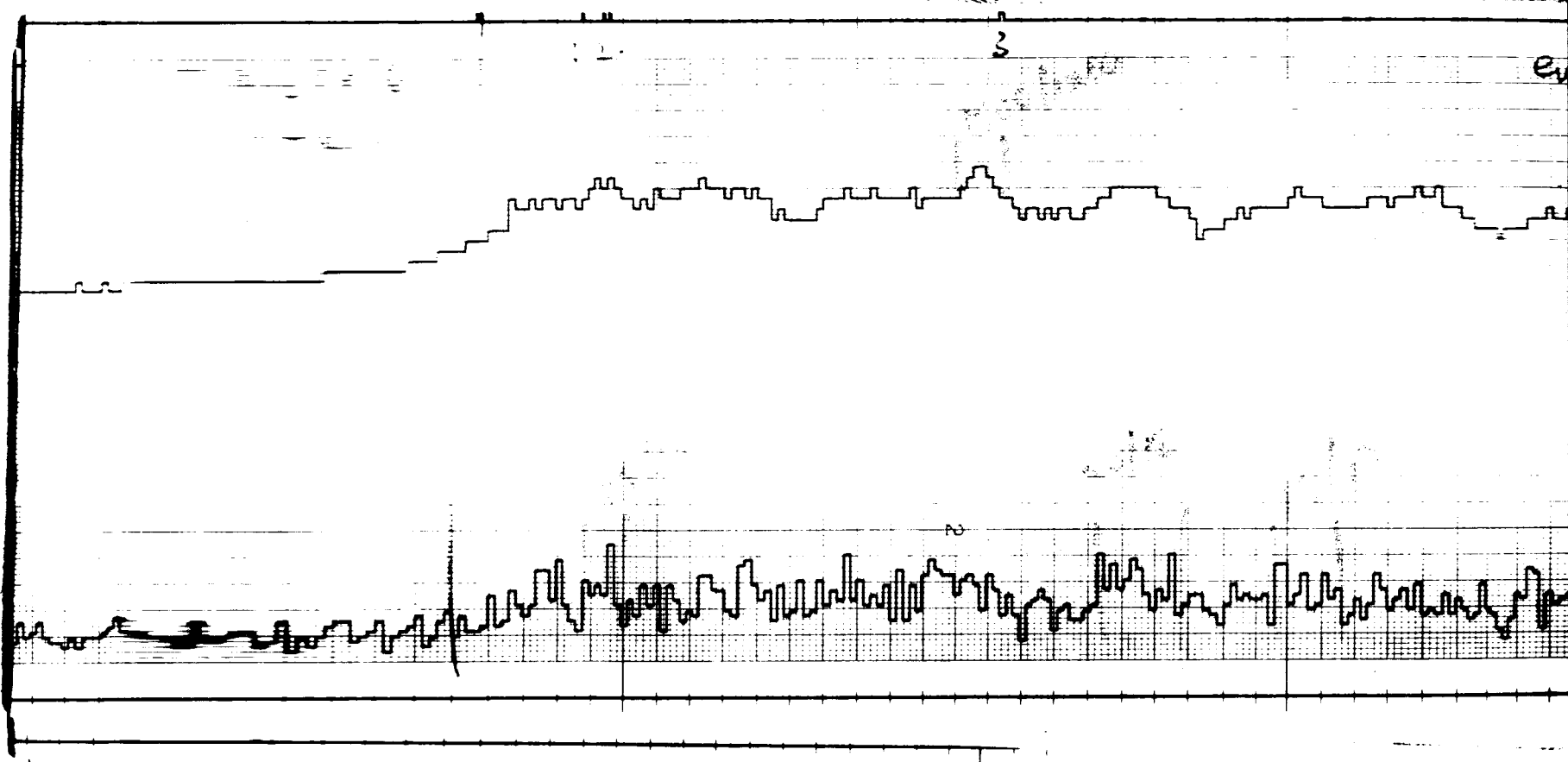
4875

AS

1/2 mile







Lead I

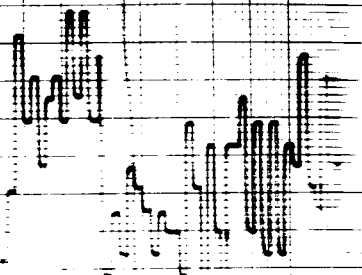


13



START

3875



OPERATOR	C. MAIN	TRAVERSE	7864.1
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CHART SPEED	6 cm / cm	20 mv / cm	
MODE	$\Delta$	TIME CONST	<input checked="" type="checkbox"/> 1 SEC <input type="checkbox"/> 5 SEC <input type="checkbox"/> 10 SEC
TRACES: BLACK CHANNEL	7h.	RANGE	0-40 MK
RED CHANNEL		RANGE	MK

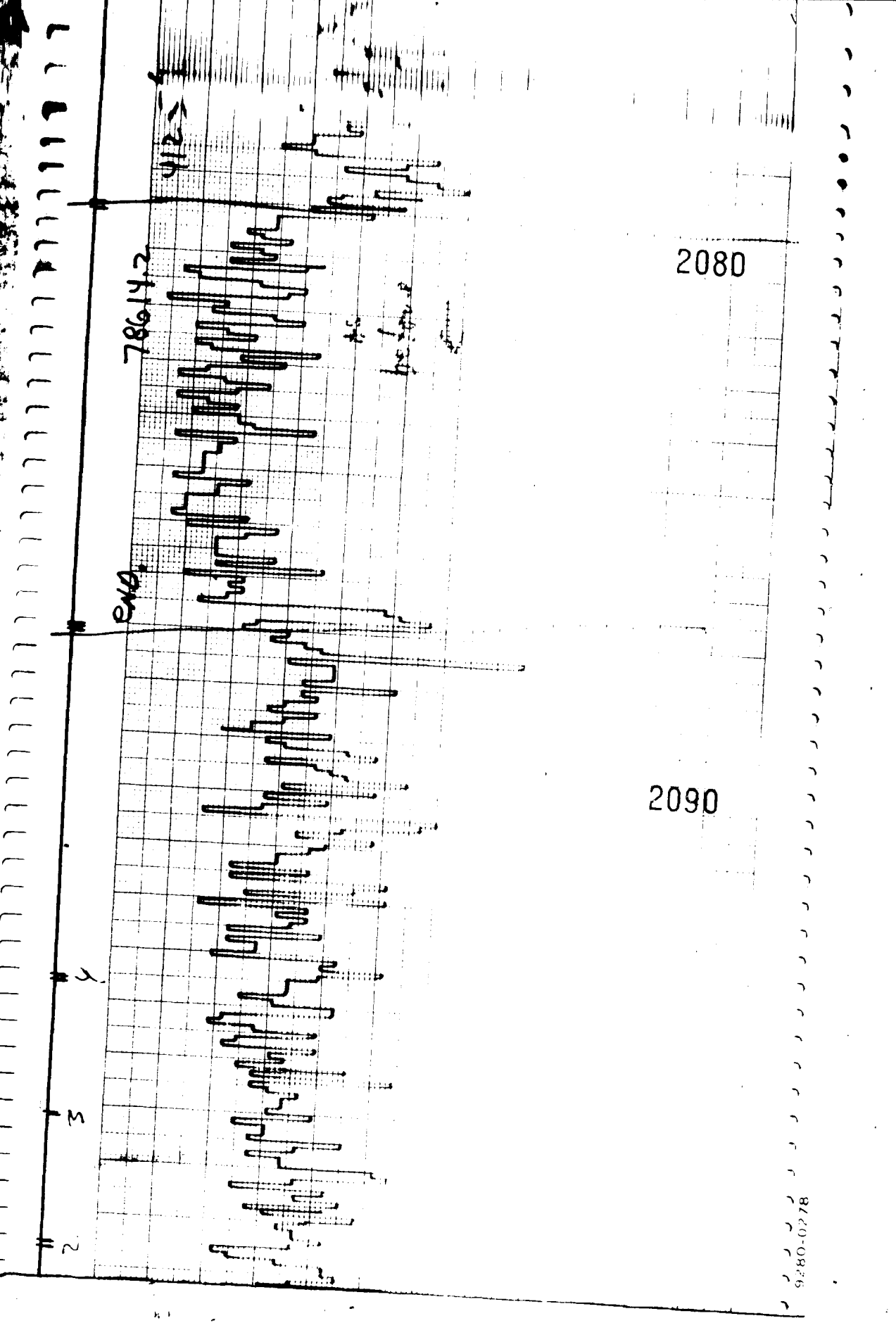
2110

2100

5100 H-102

HEWLETT-PACKARD

# Tape FOUR



786142

4125'

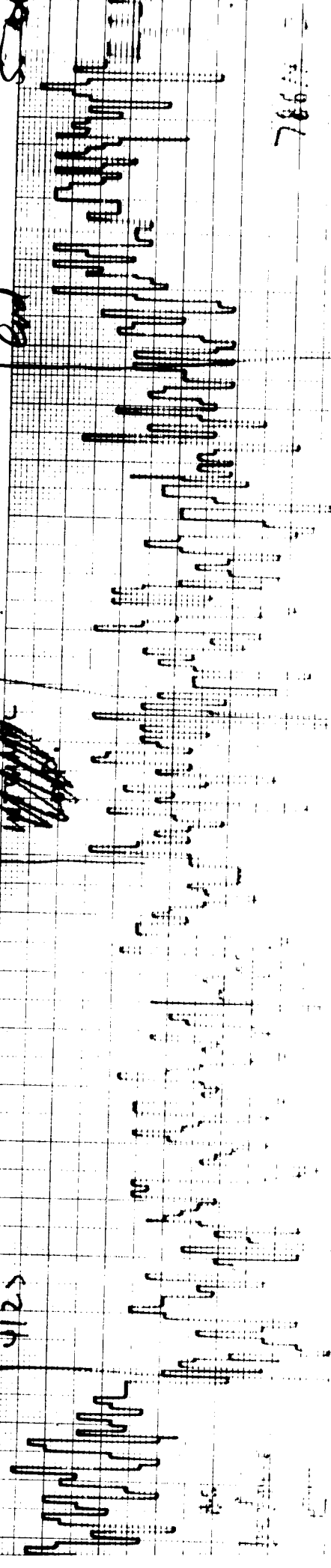
1

2

3

5

End



786142

2080

2070

2060

4375

2

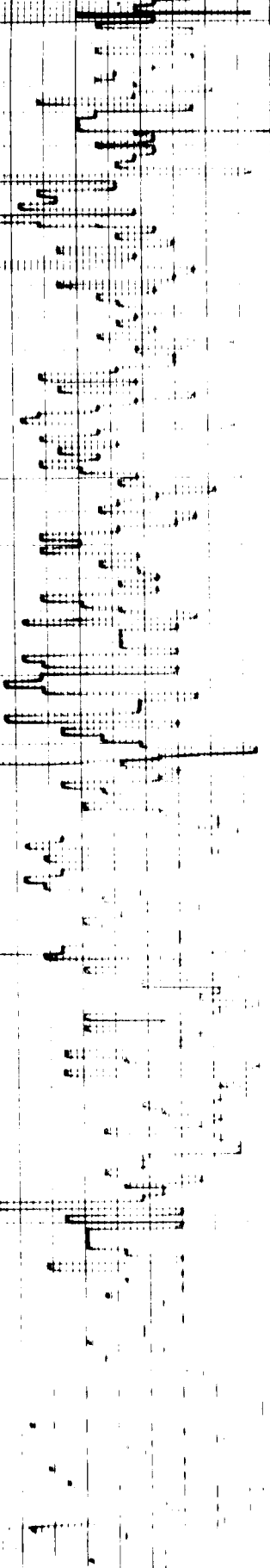
3

INTERNAL  
LOOP.

4

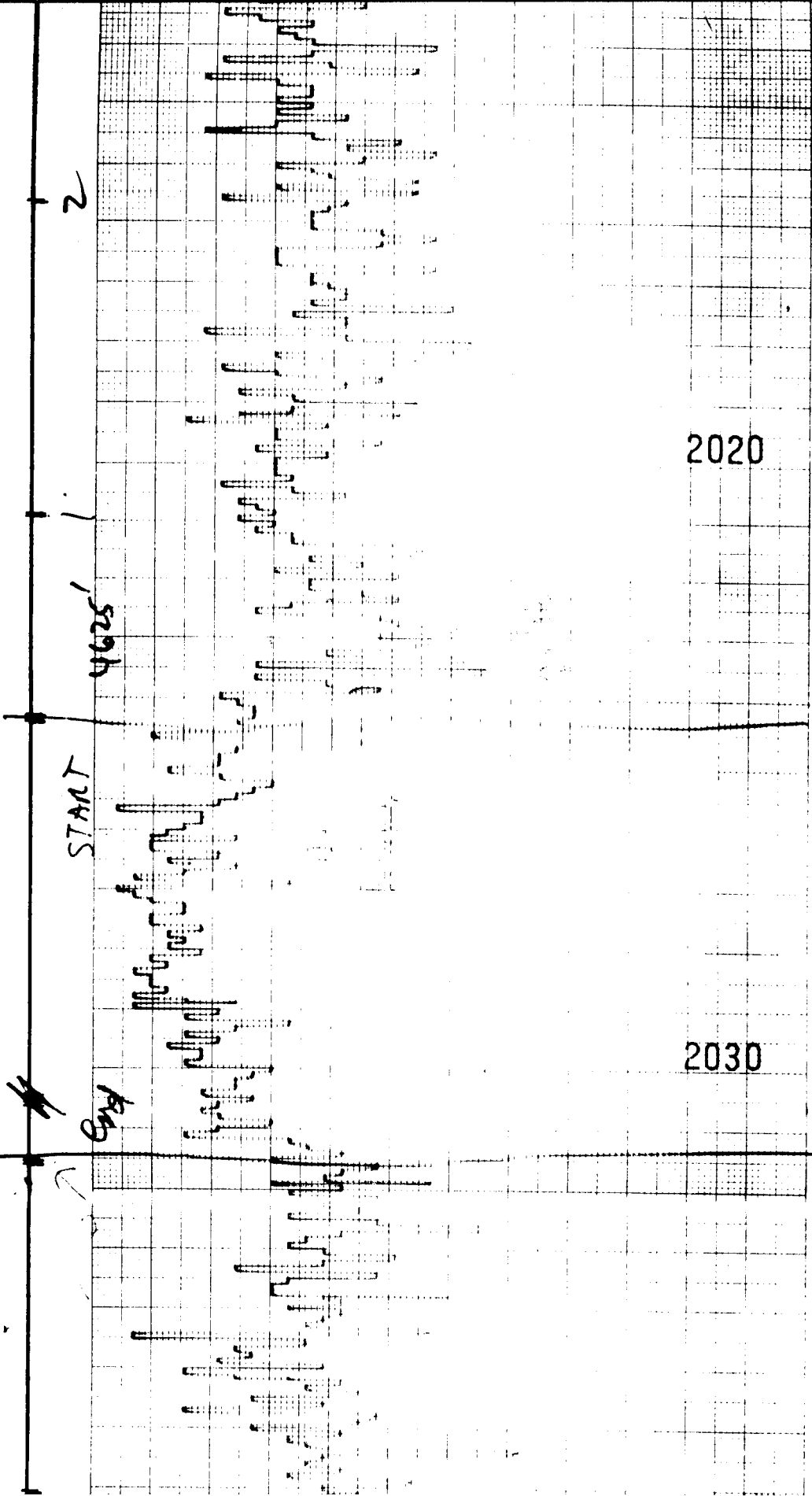
5

6



2040

2050



START

4625

2

2020

2030

END

1990

2000

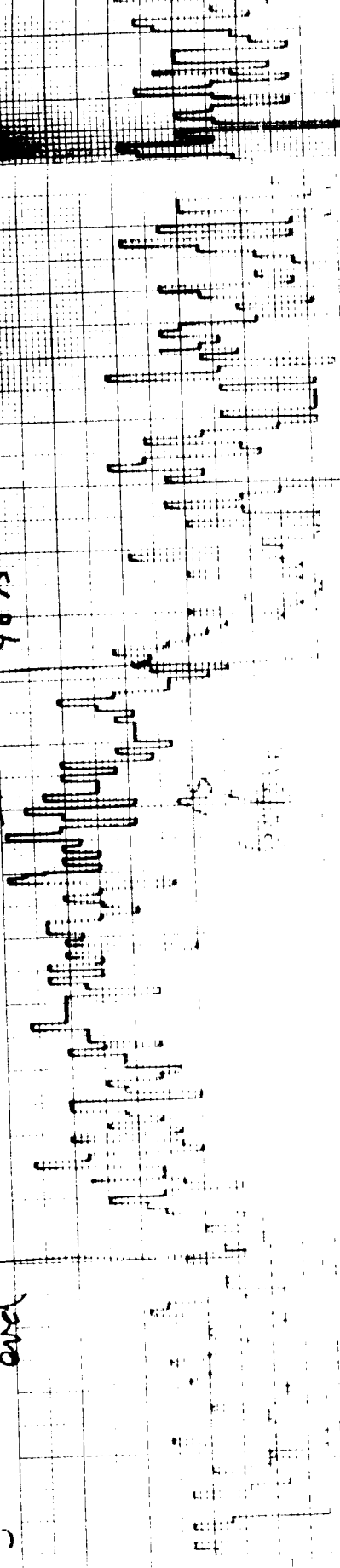
START

4075

end

3

2





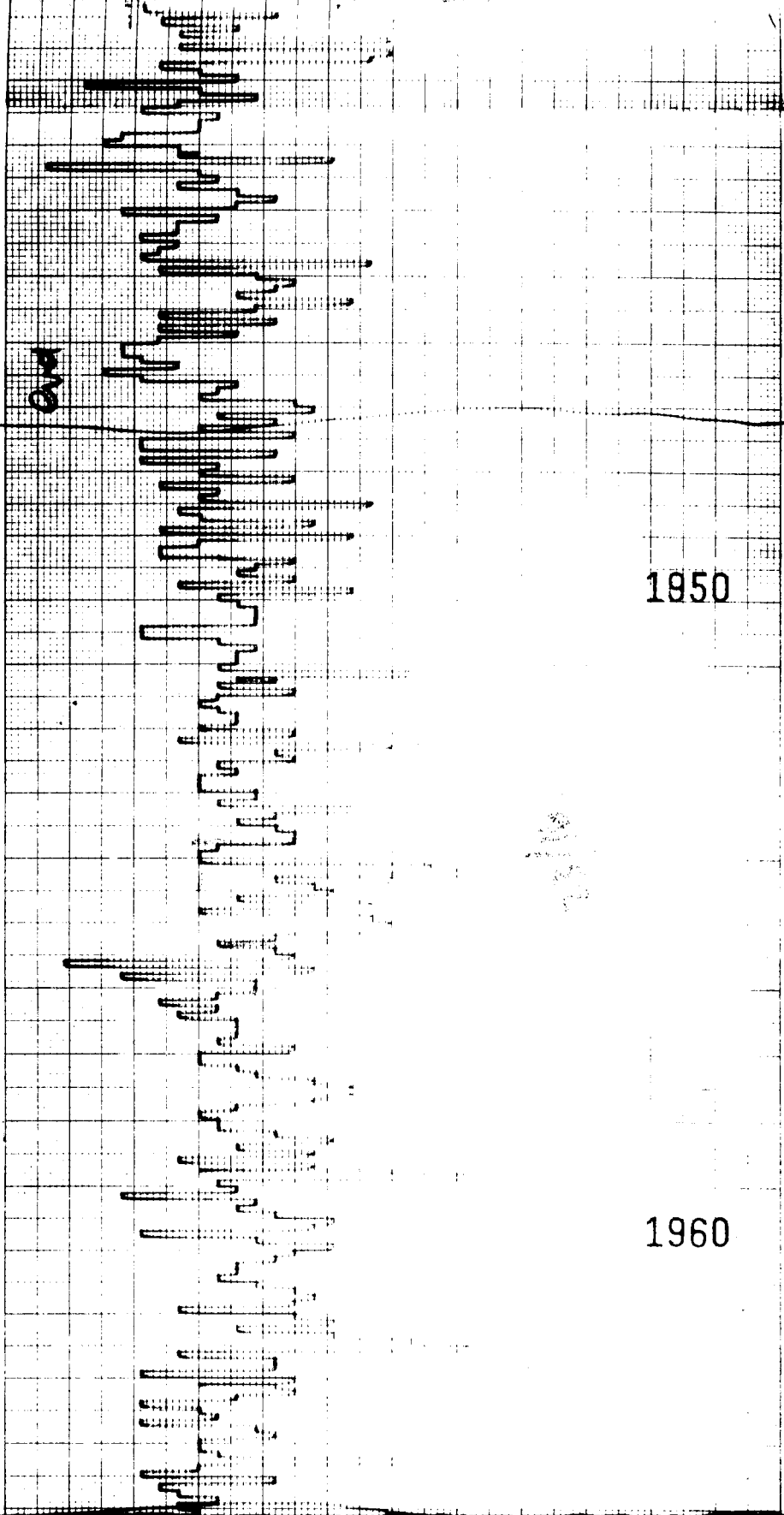
1950

1960

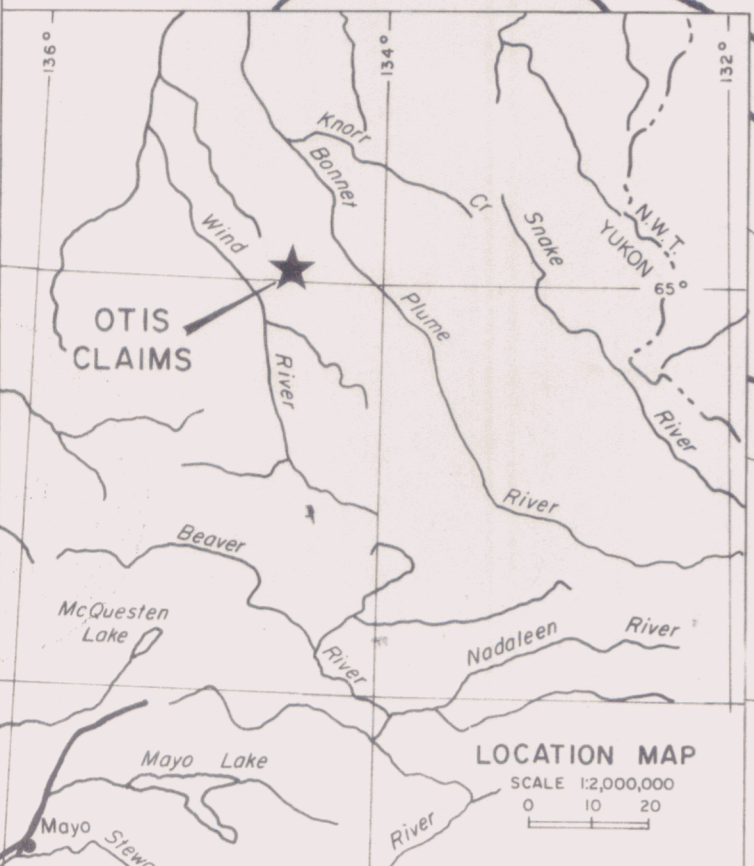
and

3

21







**LEGEND**

- Traverse
- Traverse number and direction
- Anomalous interval
- Local background (cps)
- Maximum anomalous value (cps)

FIG. 03  
 ARCHER, CATHRO & ASSOCIATES LTD

**AIRBORNE RADIOMETRIC SURVEY**  
**URANIUM**  
 OTIS CLAIMS  
 WERNECKE JOINT VENTURE

SCALE 1:5000

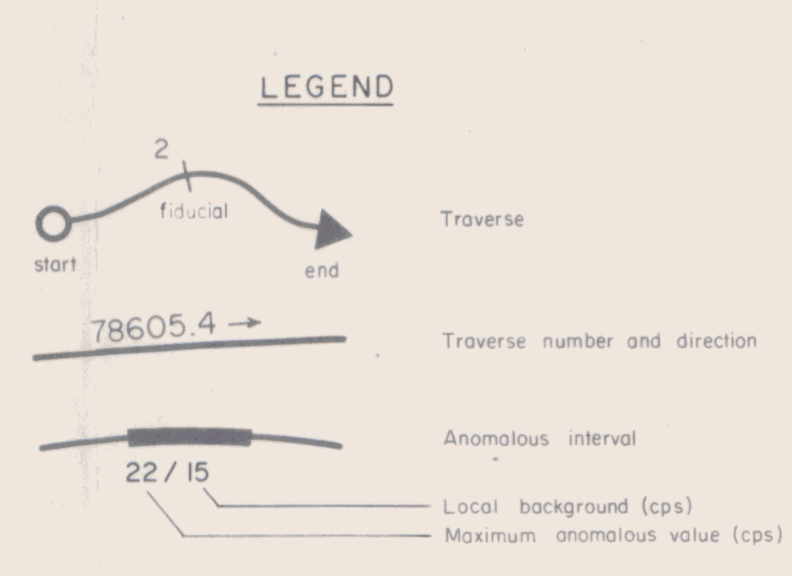
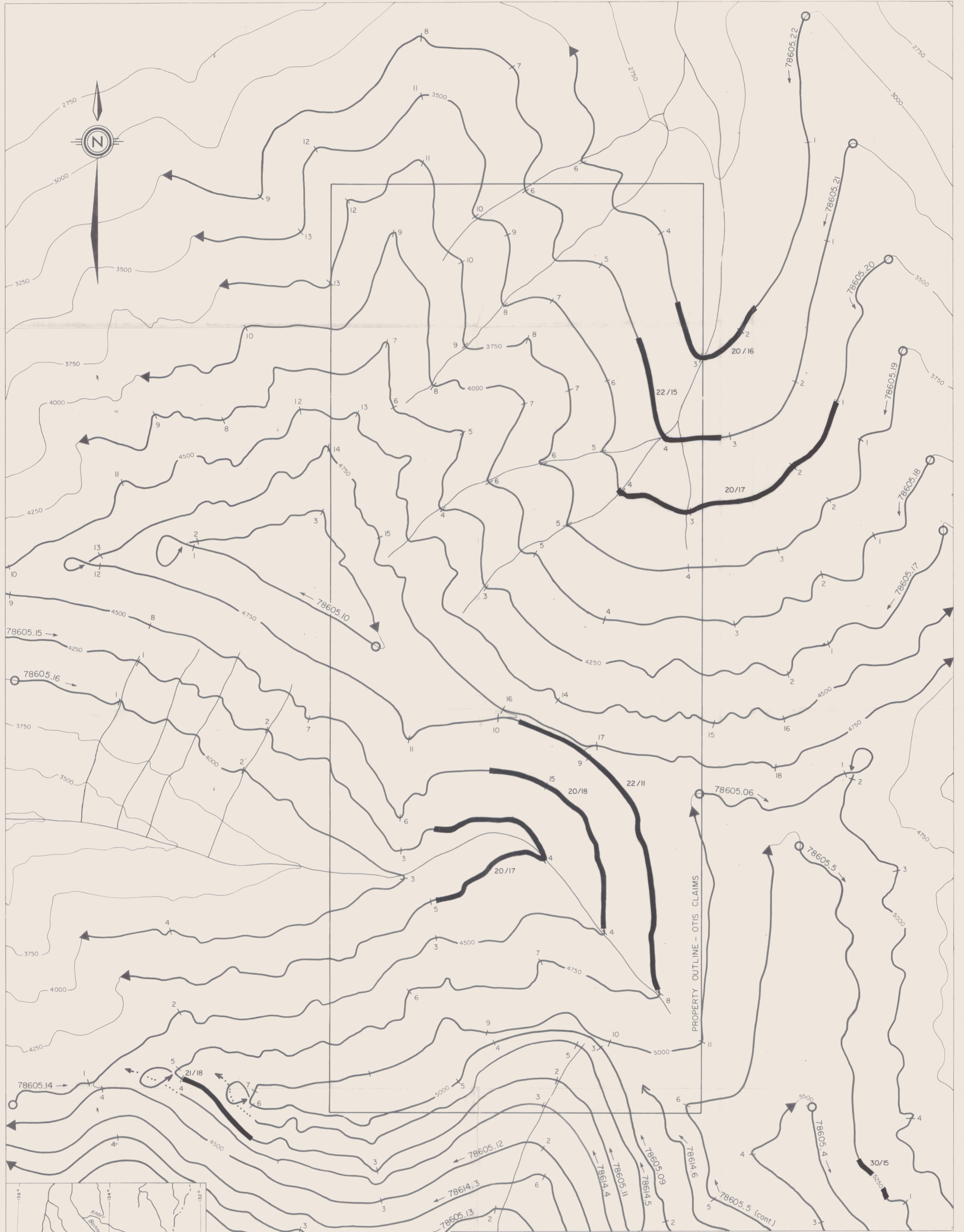


FIG. 04  
 ARCHER, CATHRO & ASSOCIATES LTD

**AIRBORNE RADIOMETRIC SURVEY**  
**THORIUM**  
 OTIS CLAIMS  
 WERNECKE JOINT VENTURE

SCALE 1:5000  
 100 50 0 100 200 300 METRES