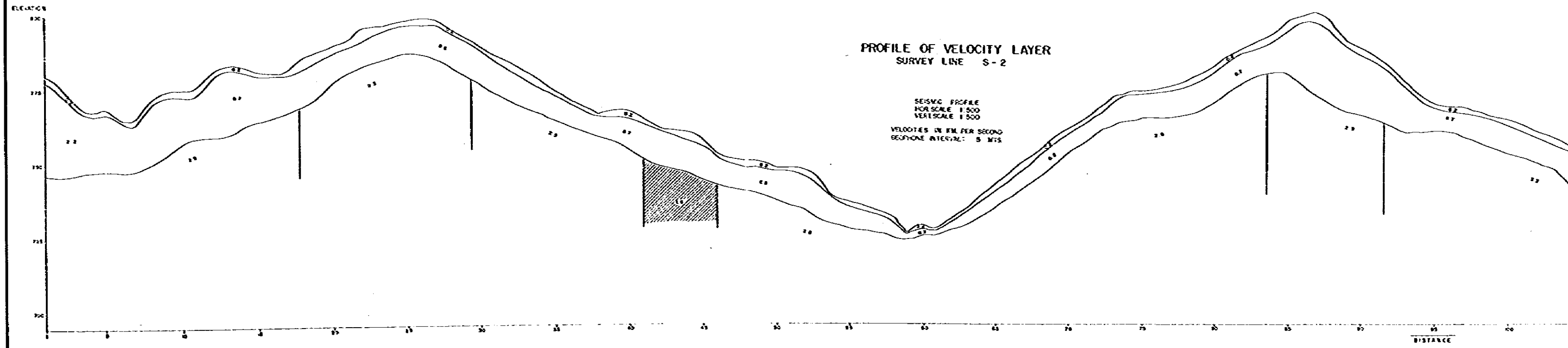
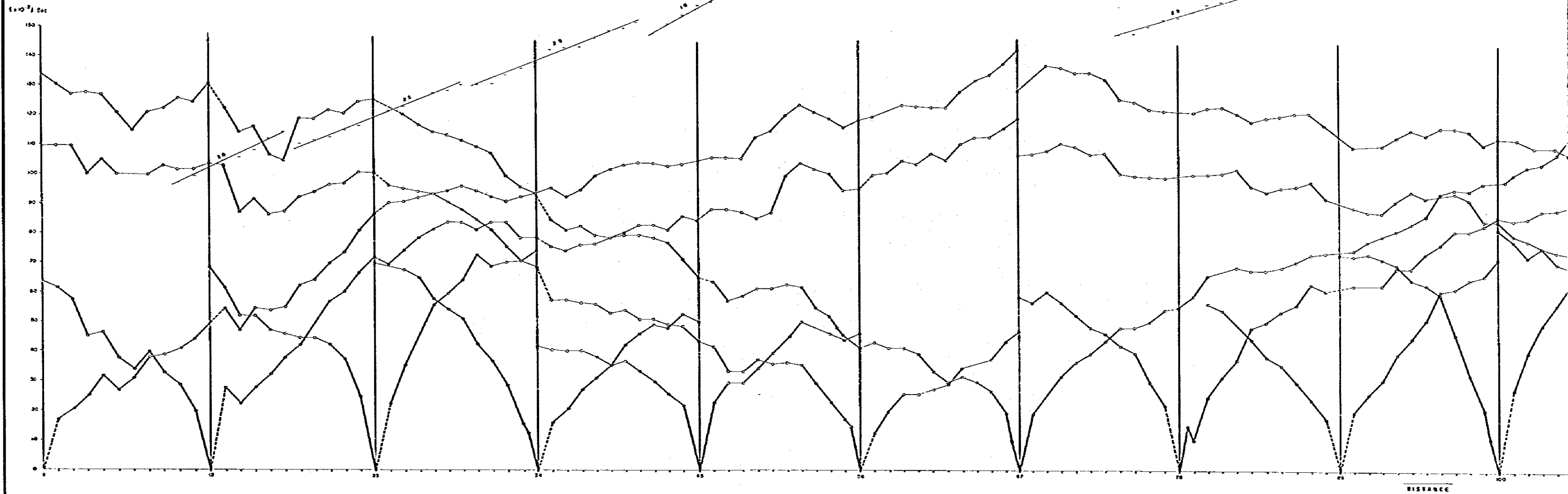


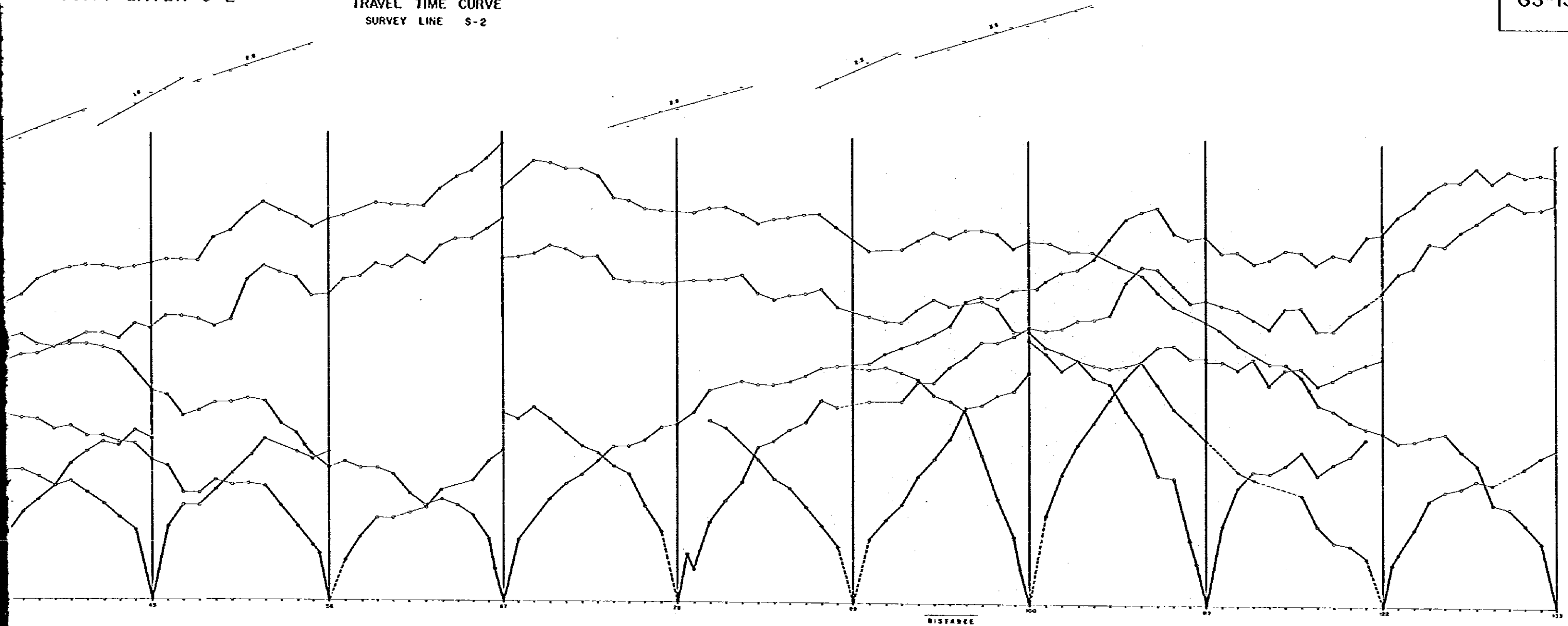
DRAWING NO. GS - 13 TRAVEL TIME CURVE AND PROFILE OF VELOCITY LAYER S-2

TRAVEL TIME CURVE
SURVEY LINE S-2



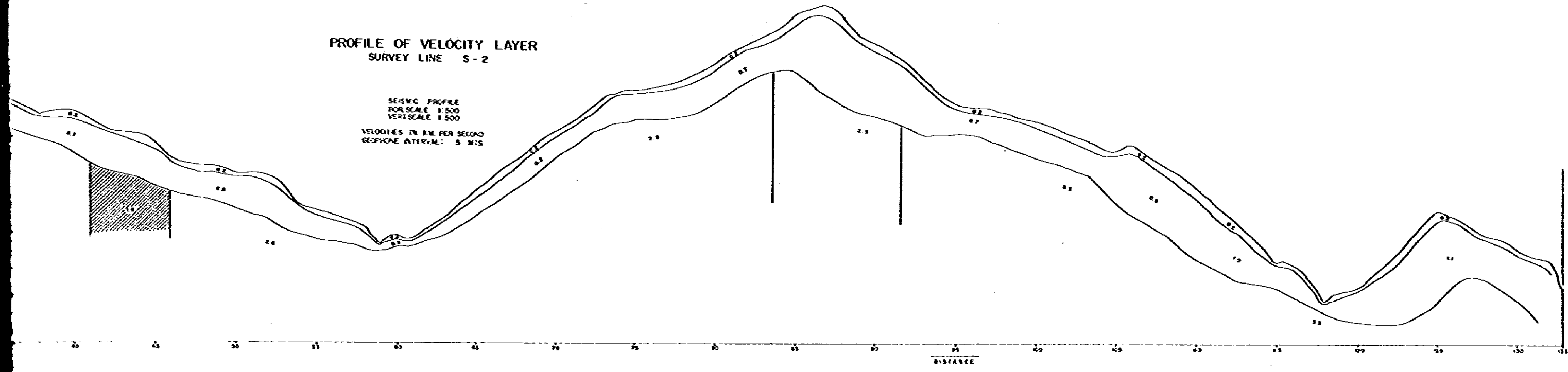
OF VELOCITY LAYER S-2

TRAVEL TIME CURVE
SURVEY LINE S-2

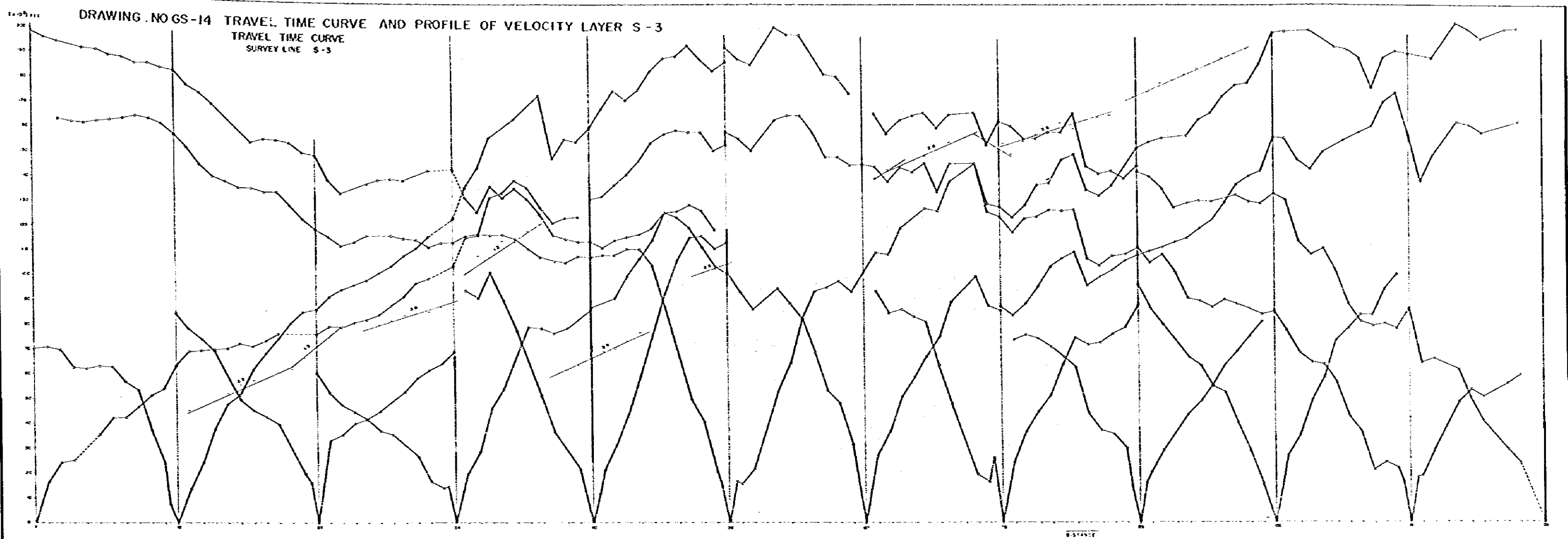


PROFILE OF VELOCITY LAYER
SURVEY LINE S-2

SEISMIC PROFILE
HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:500
VELOCITIES IN KM PER SECOND
GEOPHONE INTERVAL: 5 MTS

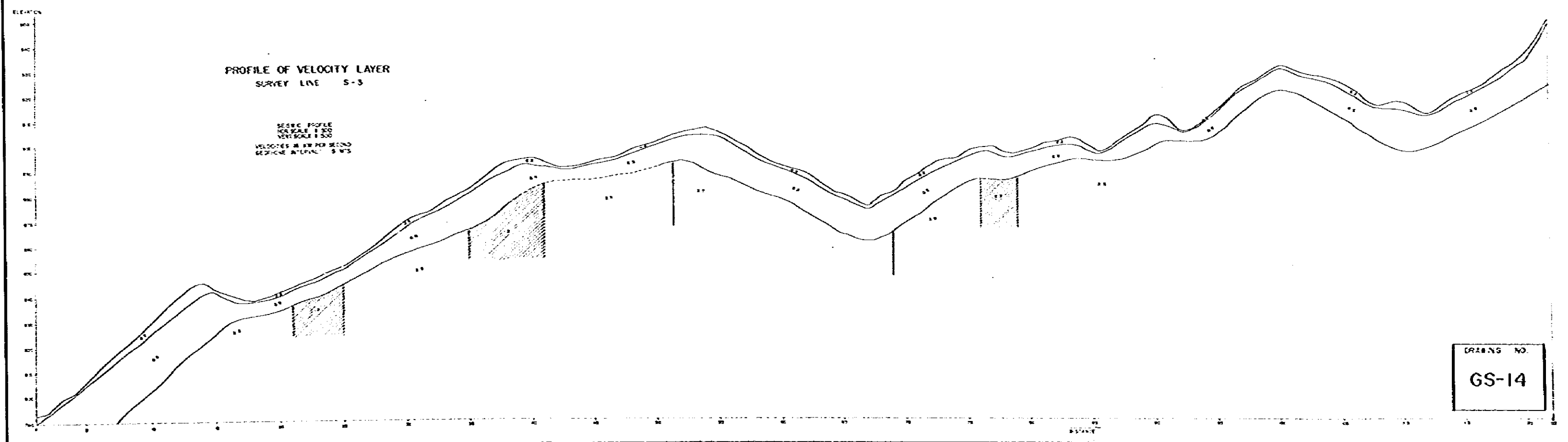


DRAWING NO GS-14 TRAVEL TIME CURVE AND PROFILE OF VELOCITY LAYER S-3
 TRAVEL TIME CURVE
 SURVEY LINE S-3



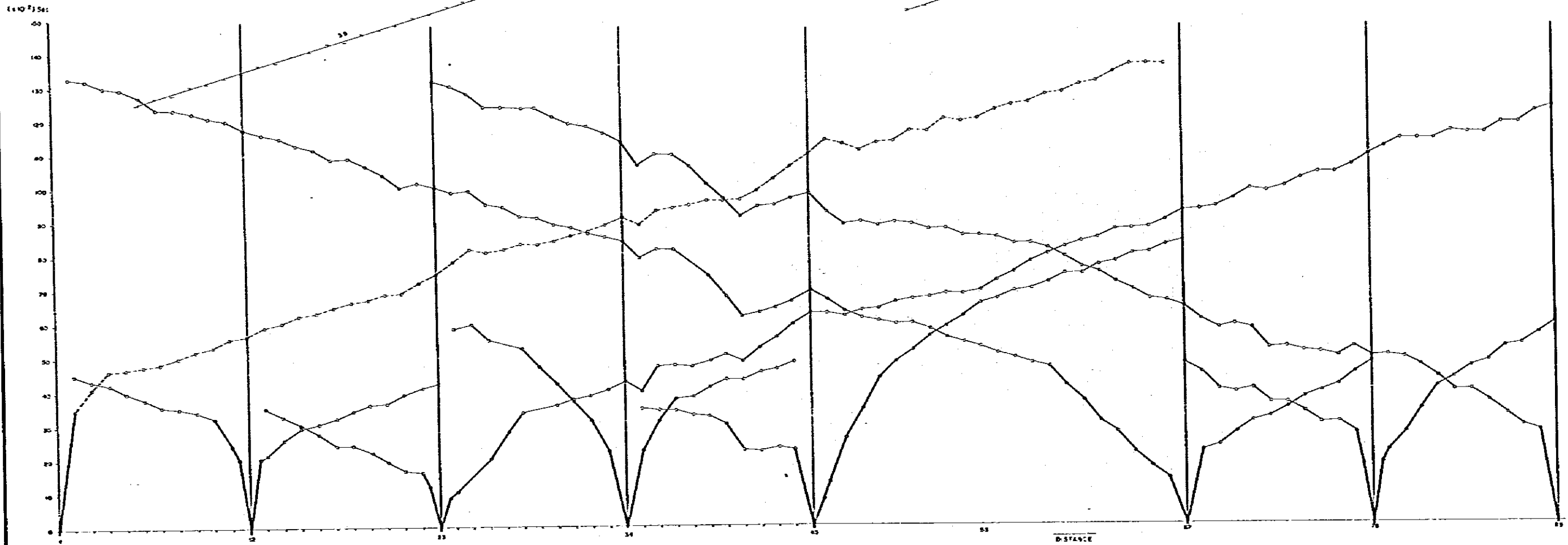
PROFILE OF VELOCITY LAYER
 SURVEY LINE S-3

SEISMIC PROFILE
 HORIZONTAL SCALE 1:500
 VERTICAL SCALE 1:500
 VELOCITIES IN FEET PER SECOND
 SEISMIC INTERVAL 0.005



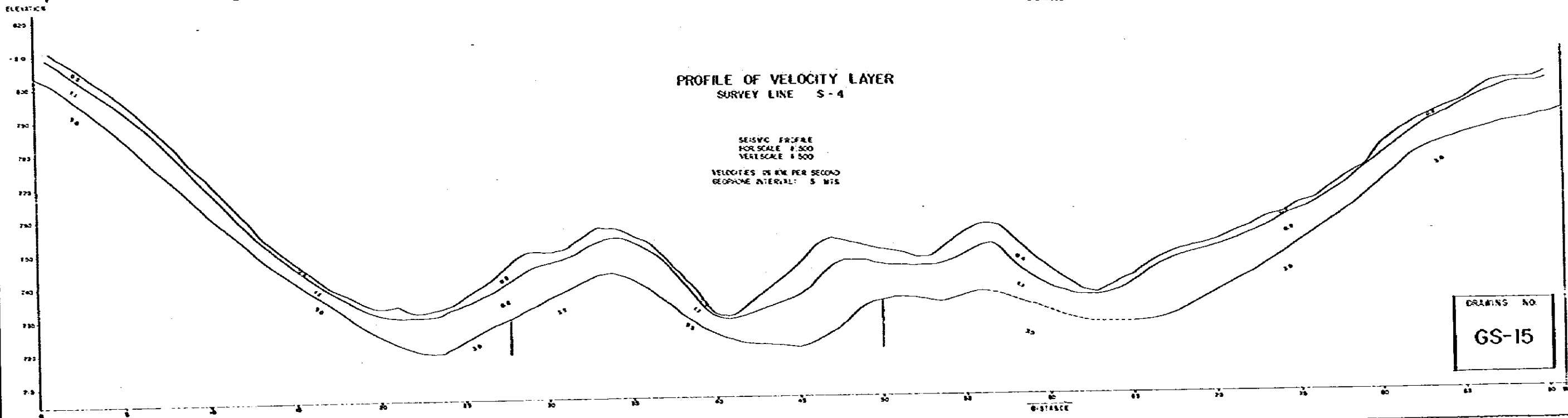
DRAWING NO
 GS-14

DRAWING NO. GS - 15 TRAVEL TIME CURVE AND PROFILE OF VELOCITY LAYER S - 4
 TRAVEL TIME CURVE
 SURVEY LINE S - 4



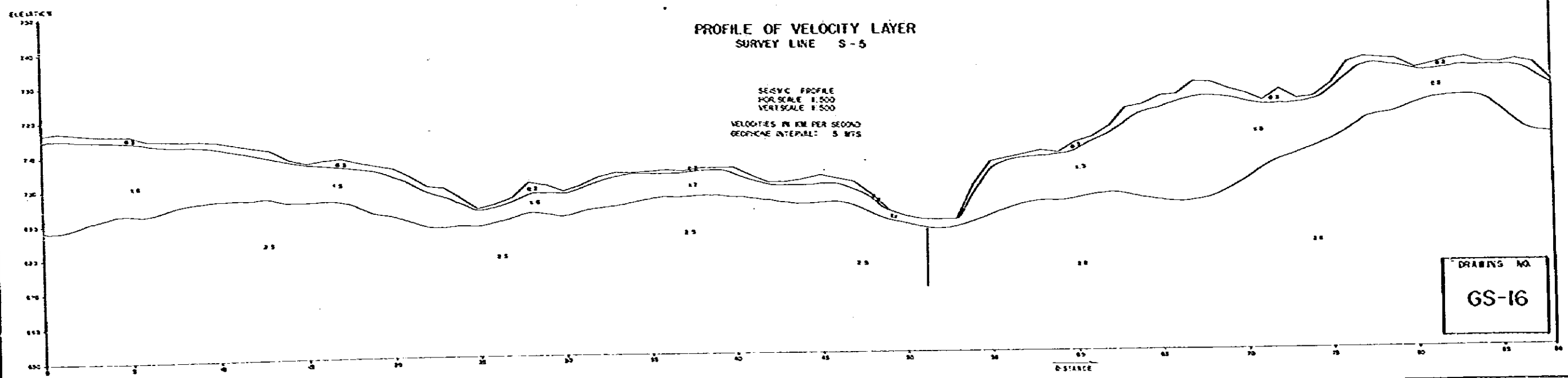
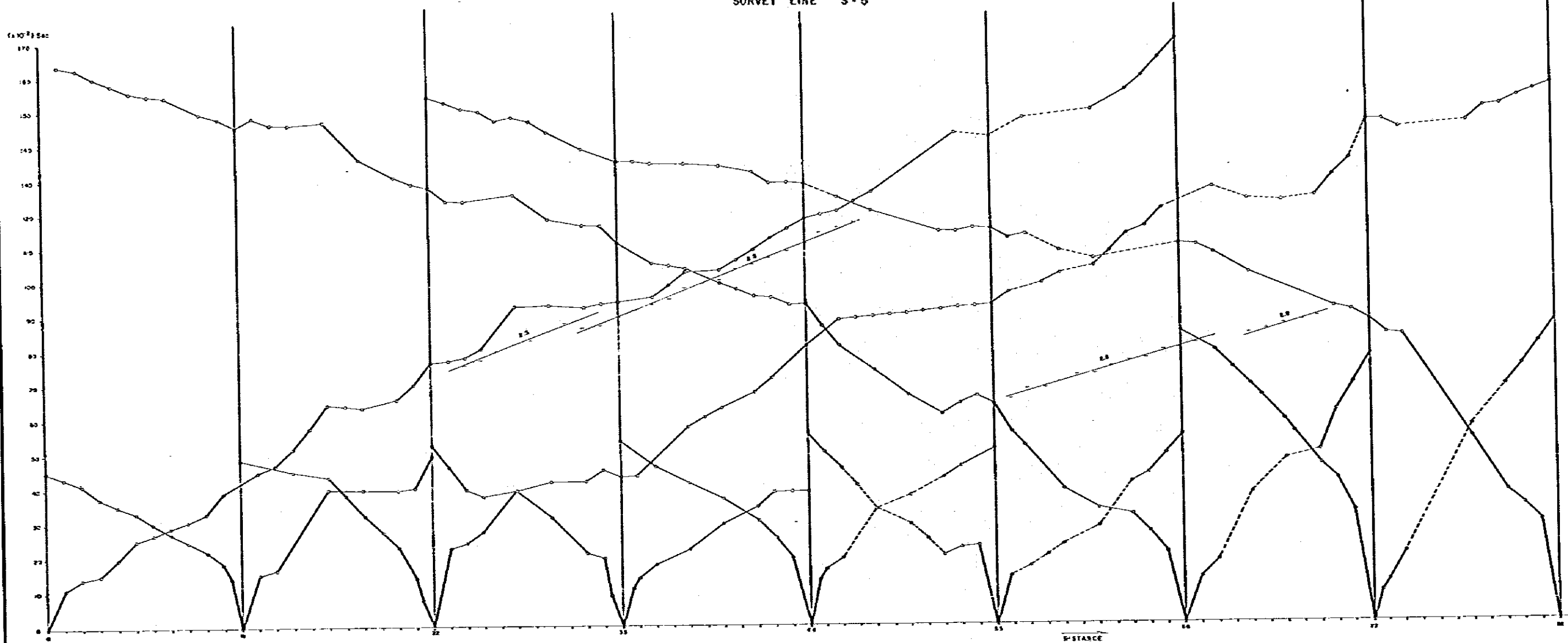
PROFILE OF VELOCITY LAYER
 SURVEY LINE S - 4

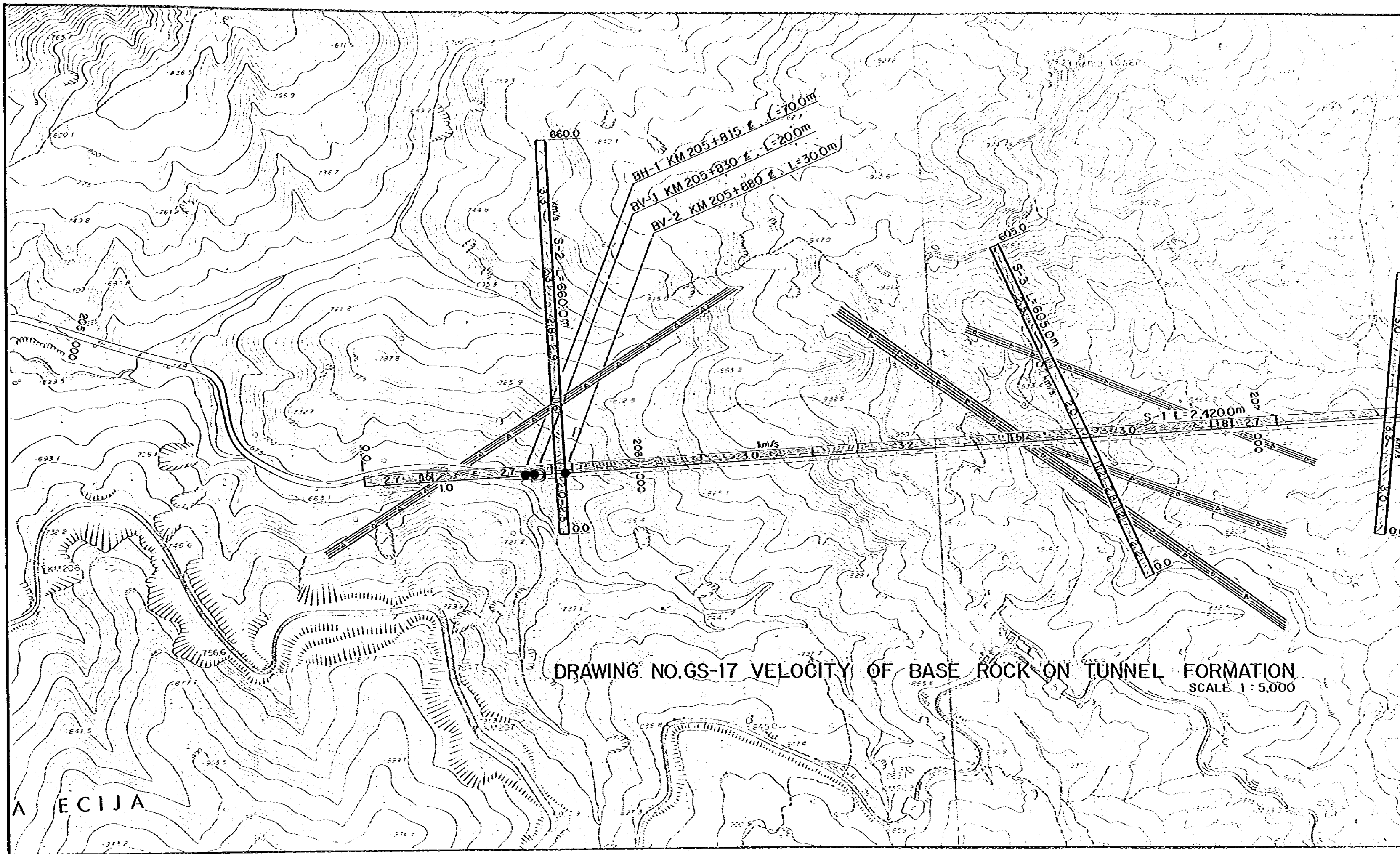
SEISMIC PROFILE
 FOR SCALE 1:500
 VERTSCALE 1:500
 VELOCITIES IN KM PER SECOND
 GEOPHONE INTERVAL: 5 MTS



DRAWING NO.
 GS-15

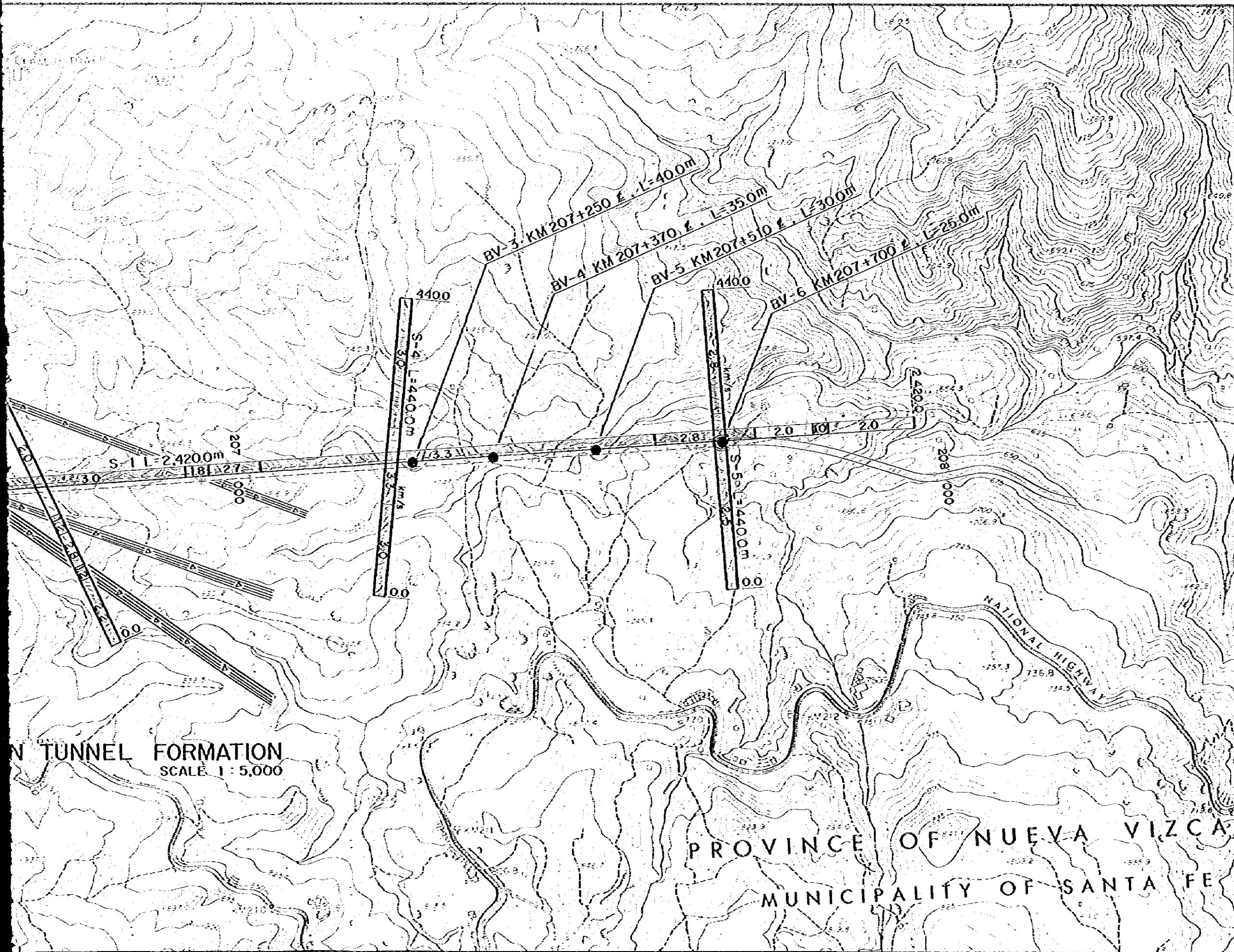
DRAWING NO. GS - 16 TRAVEL TIME CURVE AND PROFILE OF VELOCITY LAYER S - 5
 TRAVEL TIME CURVE
 SURVEY LINE S - 5





DRAWING NO.GS-17 VELOCITY OF BASE ROCK ON TUNNEL FORMATION
 SCALE 1 : 5,000

A ECIJA

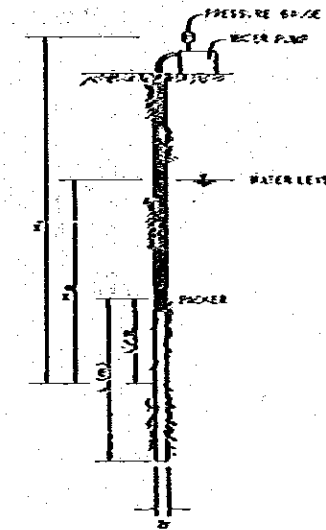


DRAWING NO.
 GS-17

TABLE OF PERMEABILITY TEST

BORING NO.	DEPTH (m)	PRESSURE (kg/cm ²)	TIME (min)	INITIAL (l)	FINAL (l)	DIFFERENTIAL (l)	Q (l)	L (m)	H ₁ (m)	H ₂ (m)	H ₃ (m)	H (m)	r (m)	K (m/d)	AVERAGE	GEOLOGY OF TEST SECTION
BY-1	10-20	5	5	3333.1	4222.3	29.2	5.84	10.0	15.27	6.0	11.55	20.82	0.0378	2.49 x 10 ⁻⁵		
	"	10	10	4022.3	4653.8	37.5	3.75	"	"	"	23.10	32.37	"	1.028 x 10 ⁻⁵		
	"	15	15	4759.8	4100.8	51.0	3.40	"	"	"	34.65	43.92	"	6.87 x 10 ⁻⁶		
	"	10	10	4110.8	4150.3	39.5	3.55	"	"	"	23.10	32.37	"	1.08 x 10 ⁻⁵		
	"	5	5	4150.3	4178.9	28.5	5.72	"	"	"	11.55	20.82	"	2.44 x 10 ⁻⁵	1.54 x 10 ⁻⁵	TUFF BRECCIA
BY-2	20-30	5	5	3817.5	3845.0	27.5	5.50	10.0	25.27	13.0	11.55	23.82	0.0378	2.05 x 10 ⁻⁵		
	"	10	10	3845.0	3880.4	35.4	3.54	"	"	"	23.10	35.37	"	8.83 x 10 ⁻⁶		
	"	15	15	3880.4	3928.9	48.5	3.23	"	"	"	24.65	46.92	"	6.8 x 10 ⁻⁶		
	"	10	10	3928.9	3963.7	34.8	3.48	"	"	"	23.10	35.37	"	8.73 x 10 ⁻⁶		
	"	5	5	3963.7	3969.7	26.0	5.20	"	"	"	11.55	23.82	"	1.94 x 10 ⁻⁵	1.29 x 10 ⁻⁵	TUFF BRECCIA
BY-3	30-40	5	5	3420.5	3426.5	5.8	8.16	10.0	35.27	34.0	11.55	12.87	0.0378	8.03 x 10 ⁻⁶		
	"	10	10	3426.5	3432.7	6.14	8.16	"	"	"	23.10	24.37	"	4.15 x 10 ⁻⁶		
	"	15	15	3432.7	3457.2	24.5	8.30	"	"	"	34.65	35.92	"	3.21 x 10 ⁻⁶		
	"	10	10	3457.2	3459.2	12.0	8.20	"	"	"	23.10	24.37	"	4.37 x 10 ⁻⁶		
	"	5	5	3459.2	3475.7	65	1.30	"	"	"	11.55	12.87	"	9.60 x 10 ⁻⁶	5.75 x 10 ⁻⁶	ANDESITE
BY-4	25-35	5	5	2952.2	2958.8	3.6	0.72	10.0	30.27	28.78	11.55	13.04	0.0378	4.93 x 10 ⁻⁶		
	"	10	10	2958.8	2970.0	11.5	1.35	"	"	"	23.10	25.59	"	4.68 x 10 ⁻⁶		
	"	15	15	2970.0	2963.0	24.0	1.69	"	"	"	34.65	36.14	"	3.93 x 10 ⁻⁶		
	"	10	10	2963.0	2976.8	12.8	1.28	"	"	"	23.10	25.59	"	4.44 x 10 ⁻⁶		
	"	5	5	2976.8	2977.9	39	0.78	"	"	"	11.55	13.04	"	5.51 x 10 ⁻⁶	4.64 x 10 ⁻⁶	ANDESITE
BY-5	20-30	5	5	3179.0	3199.5	20.5	4.10	10.0	25.27	21.75	11.55	15.07	0.0278	4.33 x 10 ⁻⁶		
	"	10	10	3199.5	3230.5	31.0	5.10	"	"	"	23.10	26.62	"	1.09 x 10 ⁻⁵		
	"	15	15	3230.5	3272.5	42.0	2.80	"	"	"	34.65	38.17	"	6.87 x 10 ⁻⁶		
	"	10	10	3272.5	3304.2	31.7	3.17	"	"	"	23.10	26.62	"	1.8 x 10 ⁻⁵		
	"	5	5	3304.2	3322.5	18.3	3.65	"	"	"	11.55	15.07	"	2.22 x 10 ⁻⁵	9.22 x 10 ⁻⁶	ANDESITE
BY-6	15-25	5	5	2968.1	2989.4	21.3	4.26	10.0	20.27	15.83	11.55	16.02	0.0278	2.43 x 10 ⁻⁵		
	"	10	10	2989.4	3009.6	29.5	2.55	"	"	"	23.10	27.57	"	1.00 x 10 ⁻⁵		
	"	15	15	3009.6	3033.7	24.0	2.67	"	"	"	34.65	33.12	"	6.39 x 10 ⁻⁶		
	"	10	10	3033.7	3052.3	32.6	3.26	"	"	"	23.10	27.57	"	1.8 x 10 ⁻⁵		
	"	5	5	3052.3	3123	25.0	5.00	"	"	"	11.55	15.02	"	4.55 x 10 ⁻⁶	1.147 x 10 ⁻⁵	ANDESITE

SKETCH



COMPUTATIONS

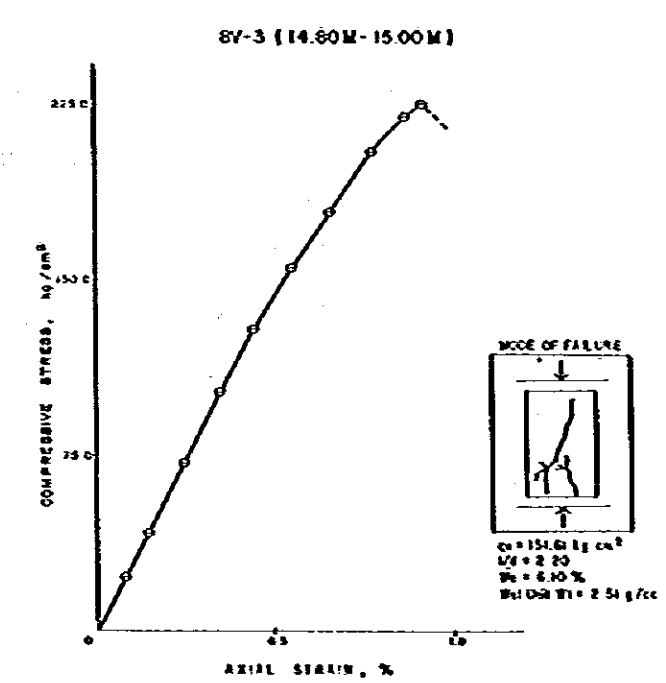
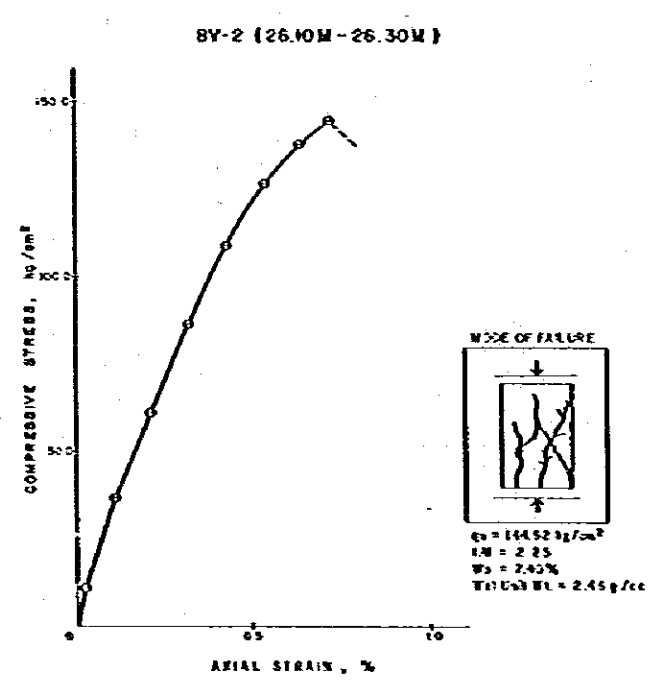
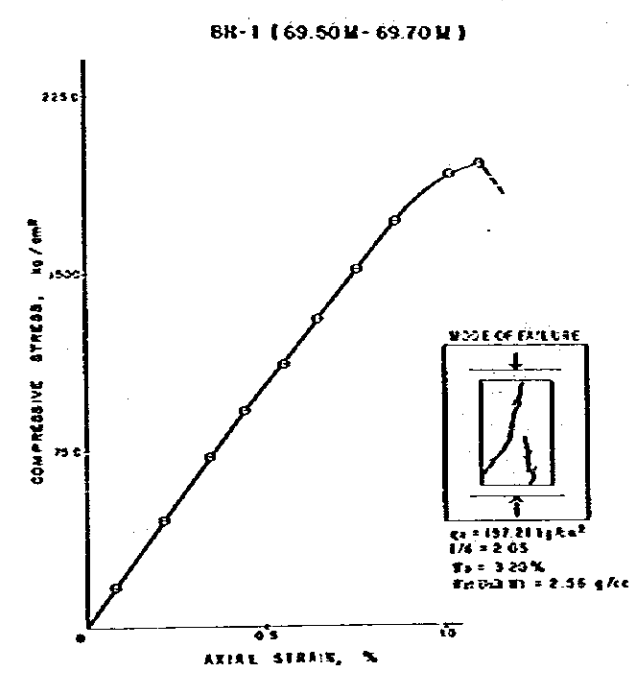
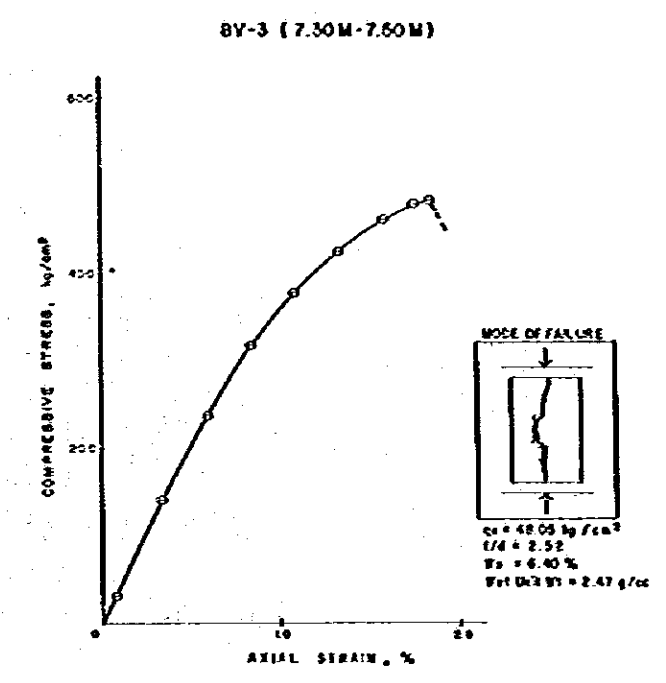
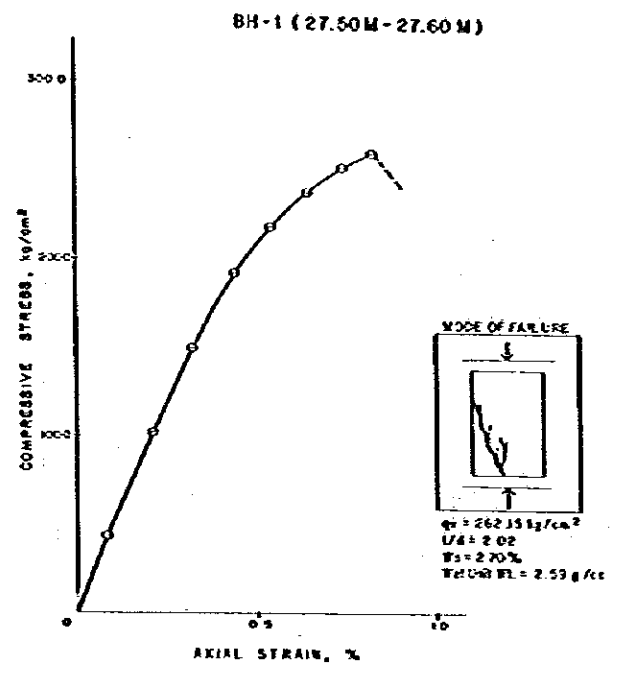
$$K = \frac{Q}{2\pi(L)(H)} \ln \frac{r}{r_0}$$

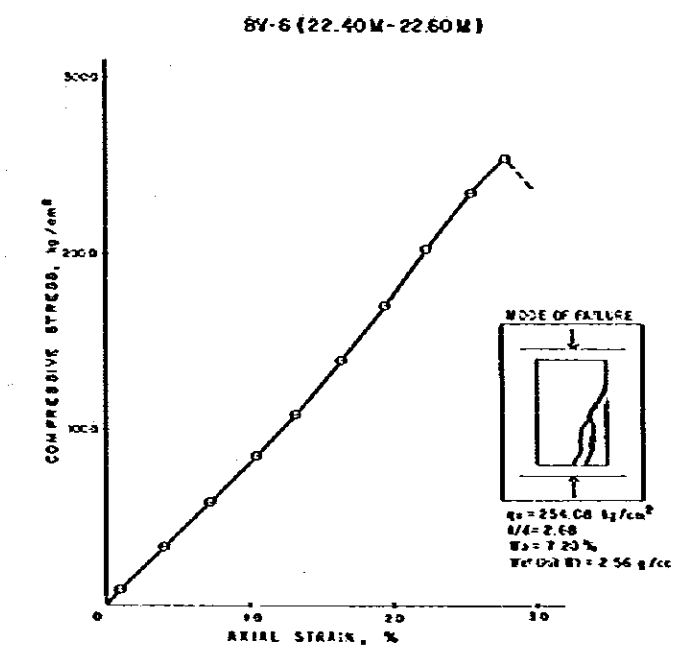
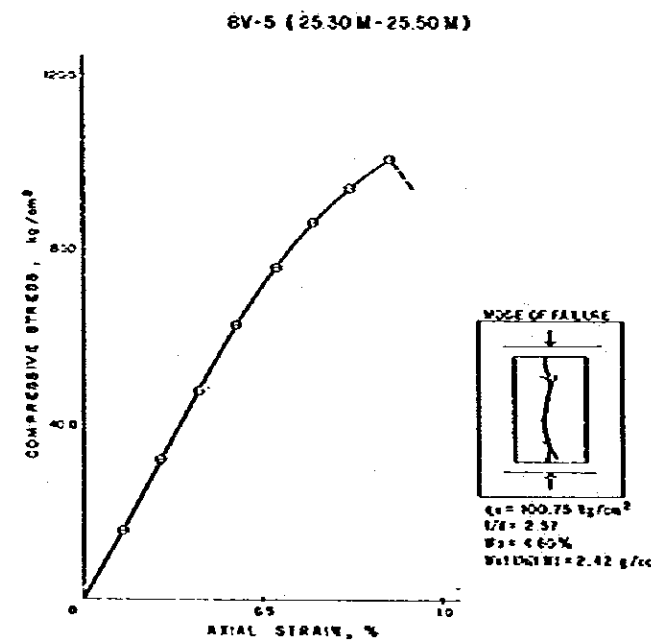
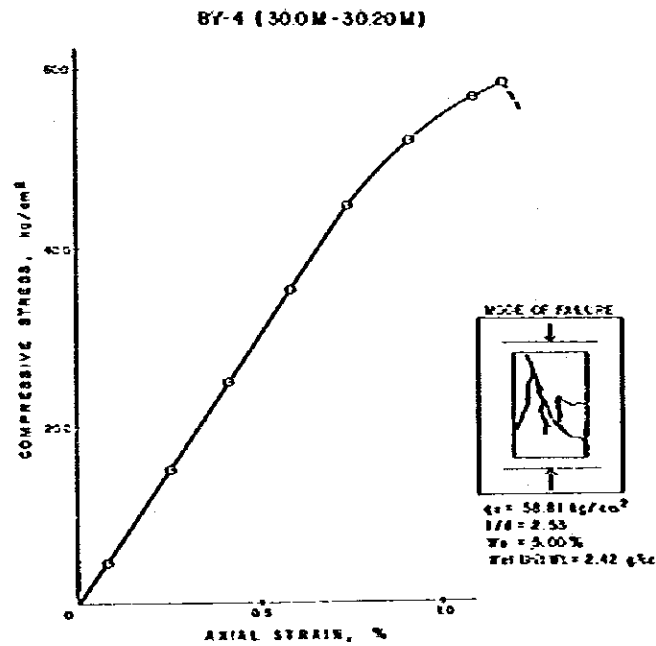
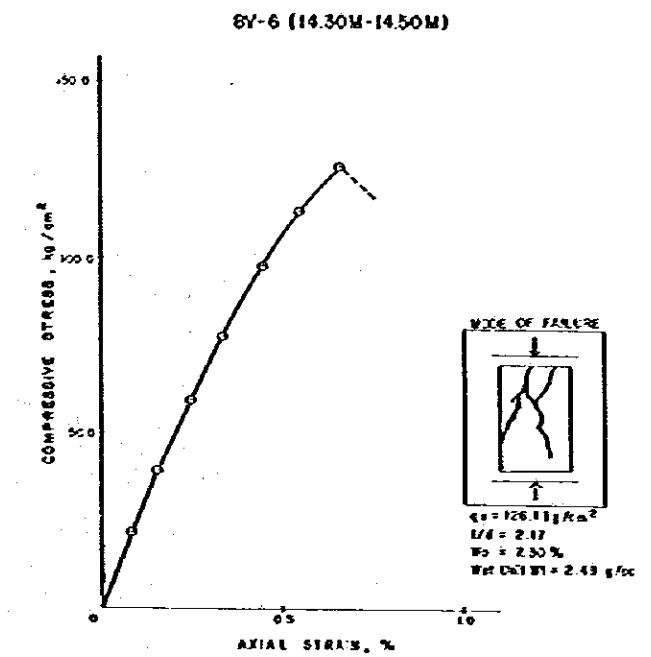
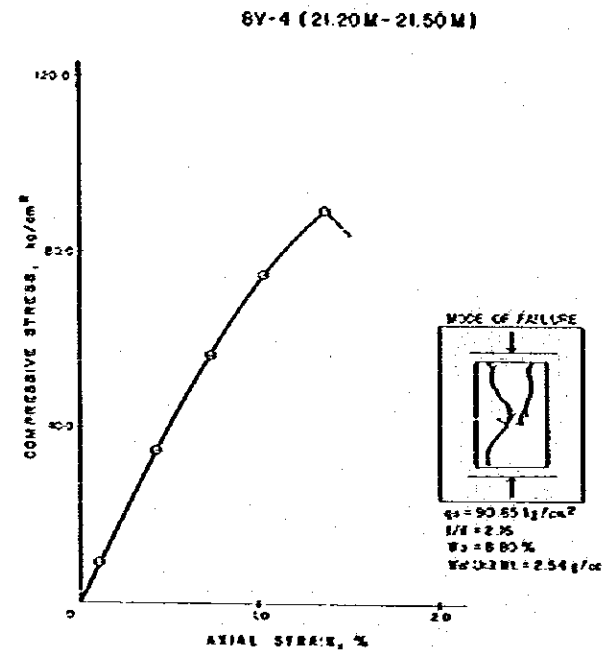
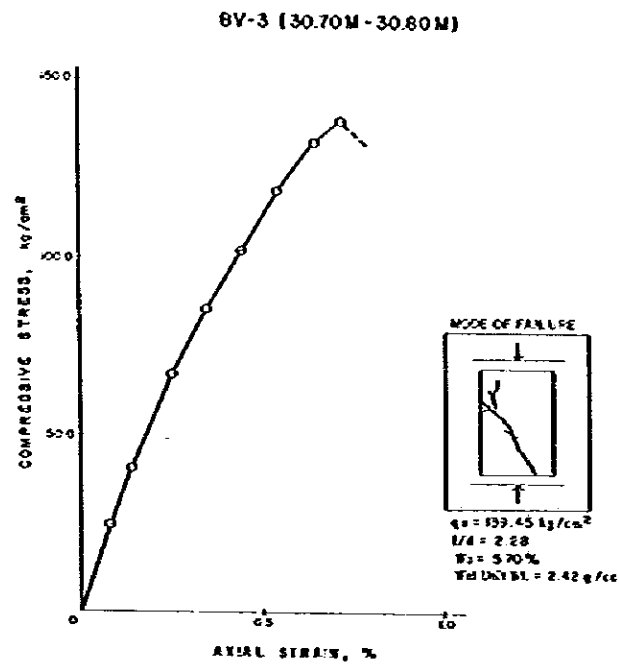
WHERE:

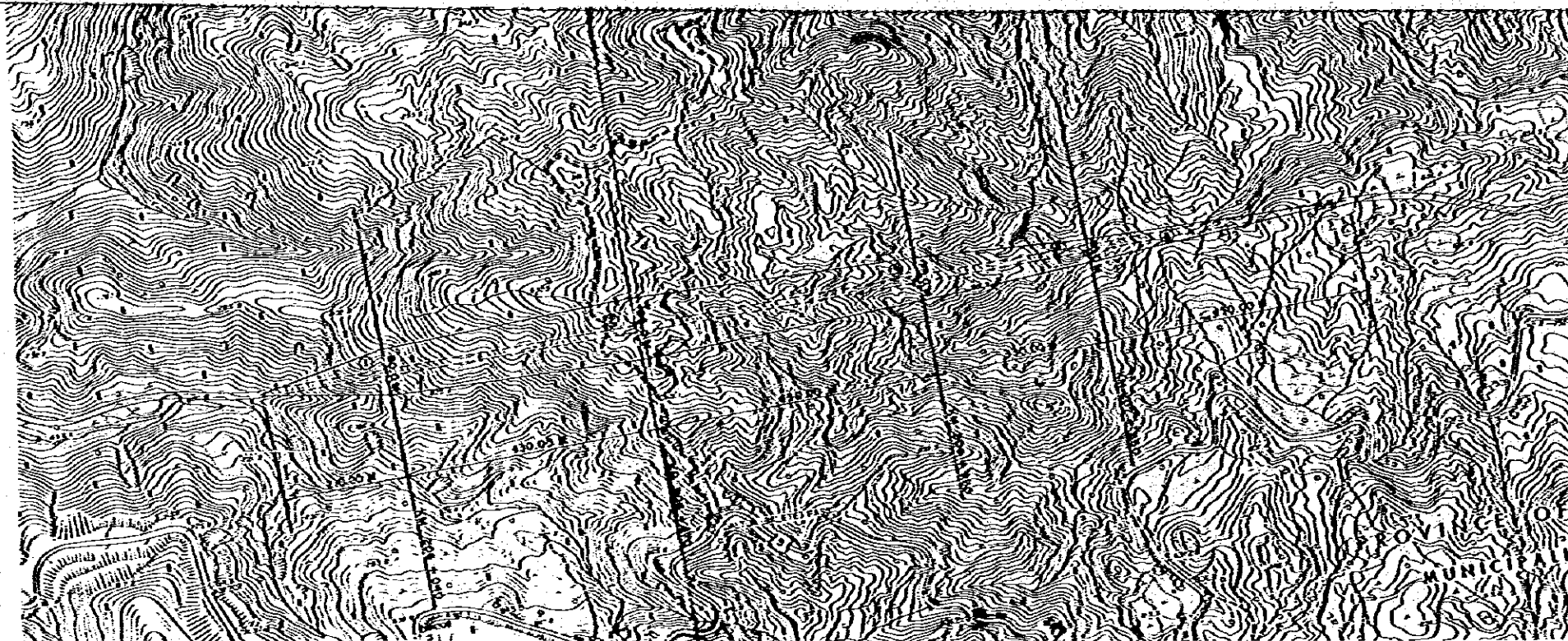
- K = PERMEABILITY CONSTANT, (m/d)
- Q = CONSTANT RATE OF FLOW, (l/m²/d)
- L = LENGTH OF THE TEST SECTION, (m)
- H = DIFFERENTIAL HEAD ON THE TEST SECTION, (m)
- r = RADIUS OF THE BOREHOLE, (m) RADIUS OF OBSIT.

WHERE:

- $K = H_1 - H_2 + H_3$
- H₁ = DEPTH OF L/2 + HEIGHT OF PRESSURE GAUGE
- H₂ = DEPTH OF L/2 - WATER LEVEL
- H₃ = PRESSURE x 2.31



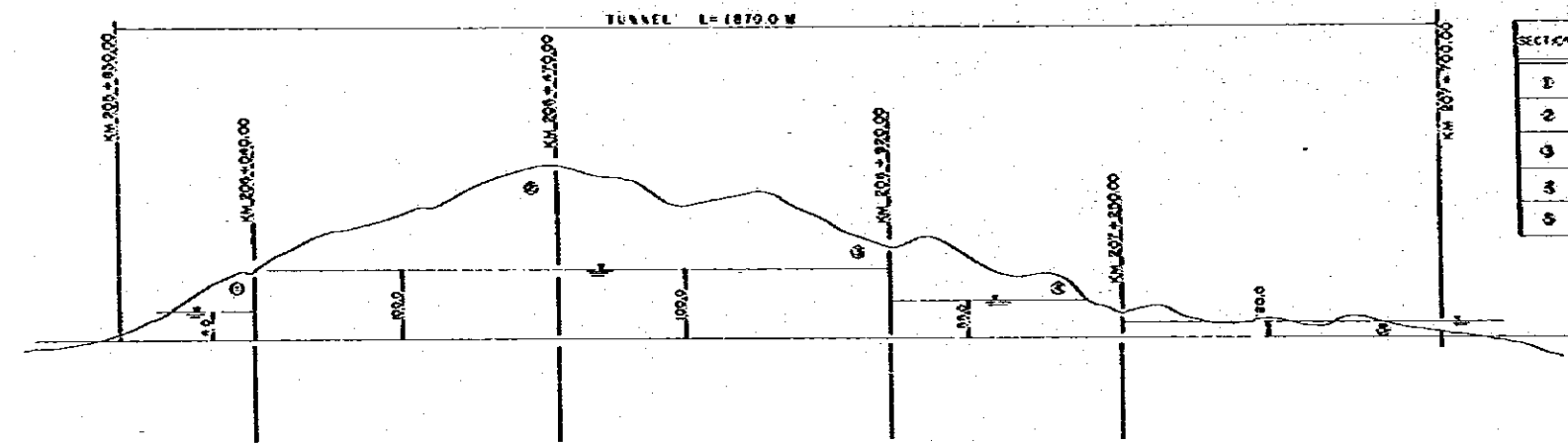
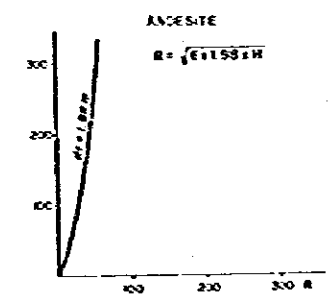
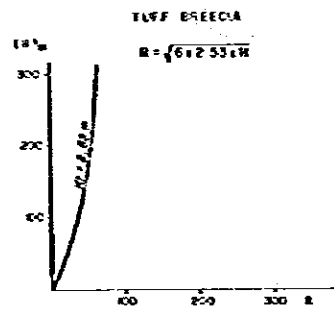




SCALE: 1 : 5000

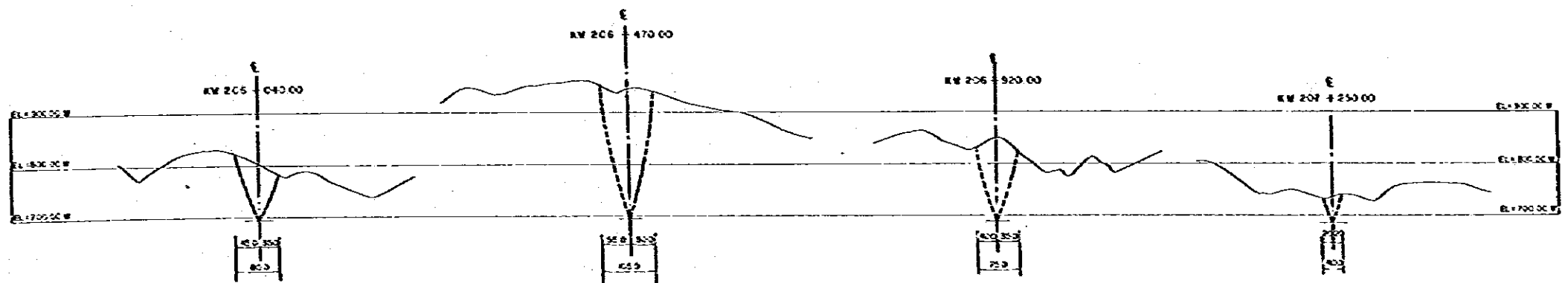
$$Q_s = \frac{K \cdot L \cdot H_w}{R_m}$$

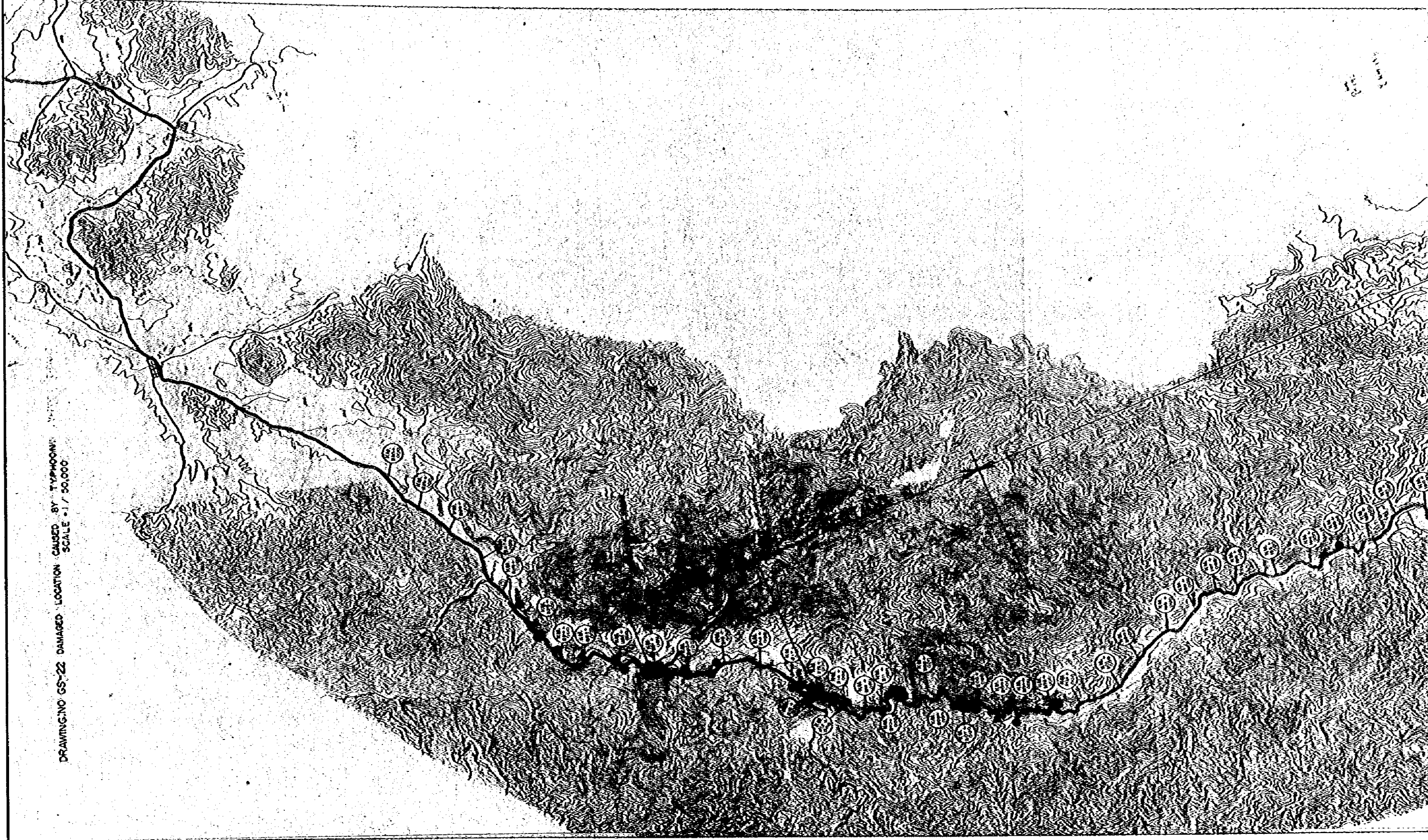
R-H CURVE



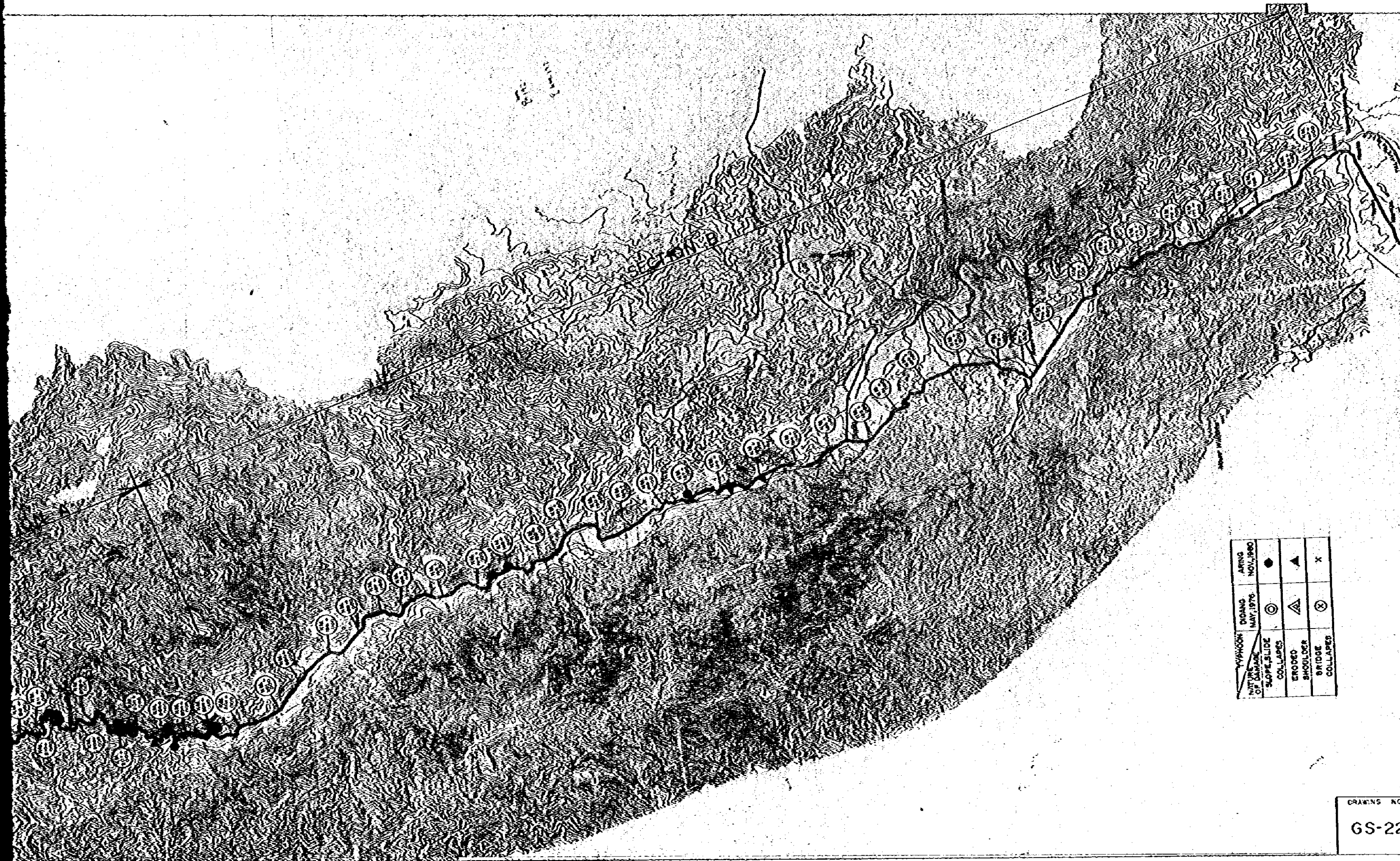
SECTION	H_1 (m)	H_2 (m)	L (m)	AR (m ²)	R_m	H_w (m)	K (m ² /m ³)	C_s (m ² /m ³)
1	0	60	210	8400	40	40	1.4075×10^{-5}	0.012
2	80	105	430	39775	95	100	8.2665×10^{-6}	0.382
3	105	75	450	40500	50	100	-	0.413
4	75	40	330	18375	58	55	-	0.142
5	40	0	450	5000	20	20	-	0.074

Total $C_s = 1.023$





DRAWING NO GS-22 DAMAGED LOCATION CAUSED BY TYPHOON
SCALE 1/50,000

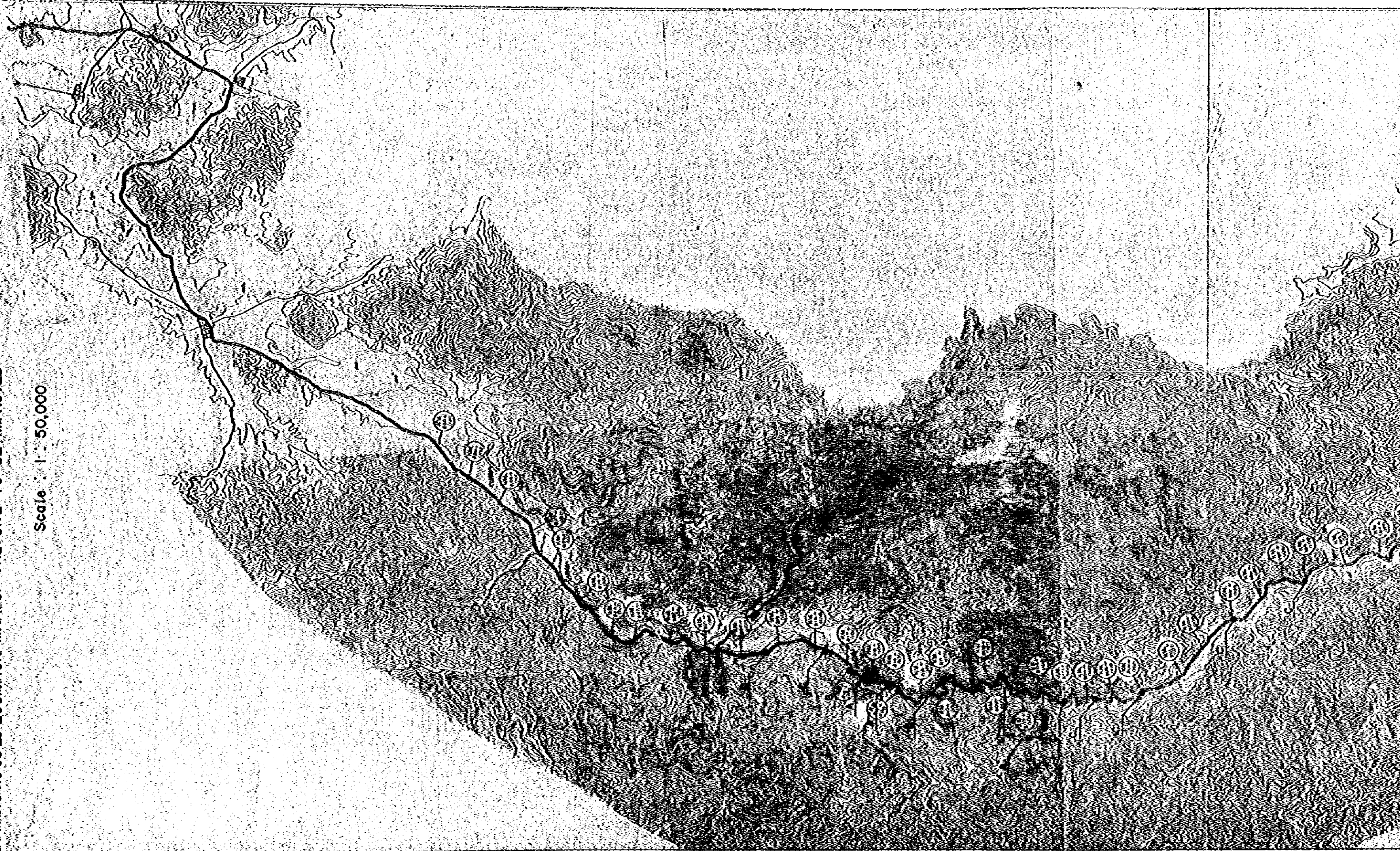


YYPHON	DIANG	ARING
MAY 1976	MAY 1976	NOV 1980
SLOPE SLIDE COLLAPSE ERODED SHOULDER BRIDGE COLLAPSE	● ▲ X	● ▲ X

DRAWING NO.
GS-22

DRAWING NO GS-23 LOCATION MAP OF THE SITE TO BE IMPROVED

Scale : 1 : 50,000





A - URGENT (need immediate improvement)

B - SERIOUS (priority for study and improvement)

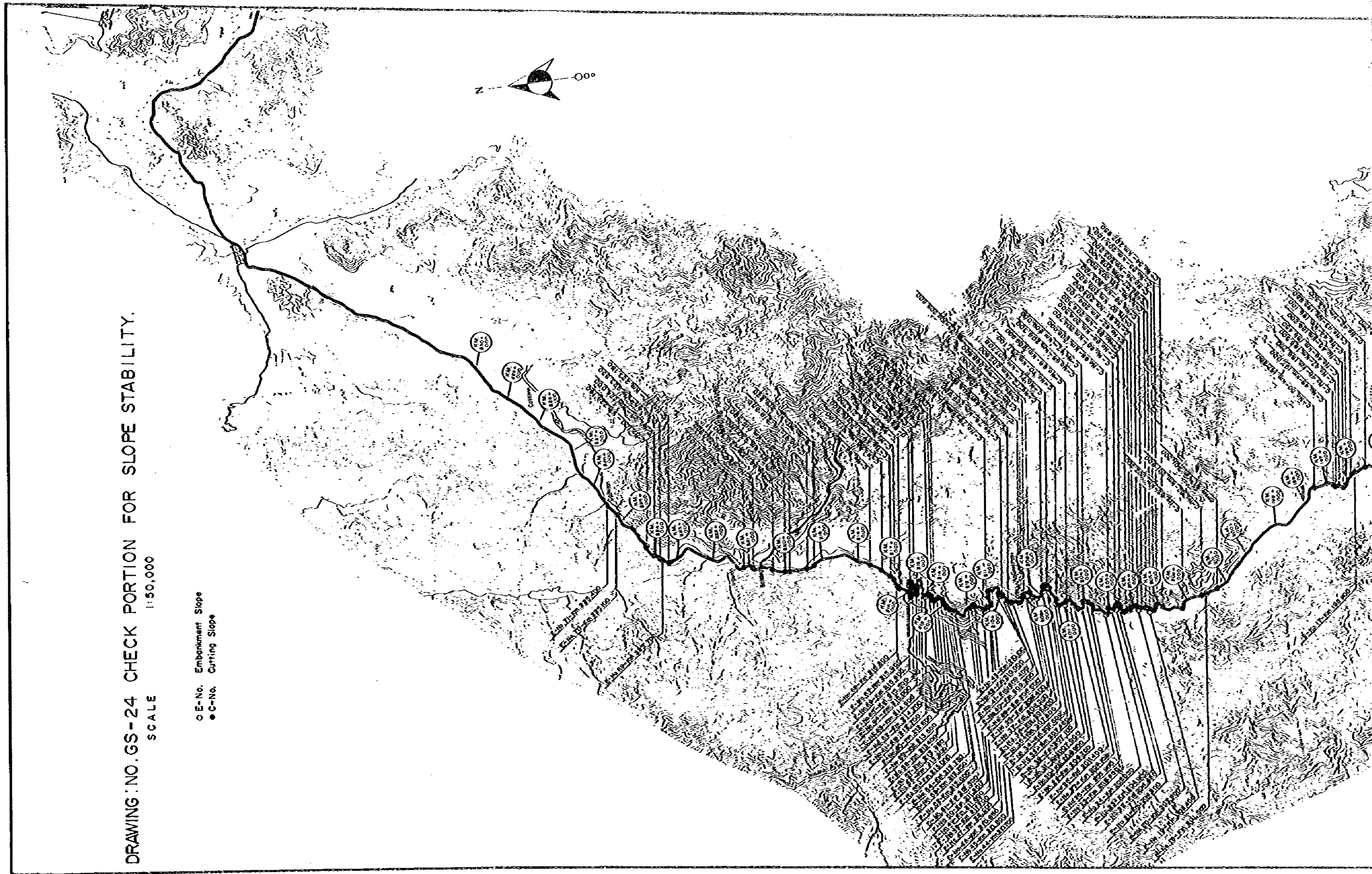
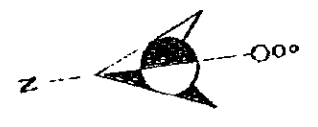
C - IMPORTANT (priority 2 for further study)

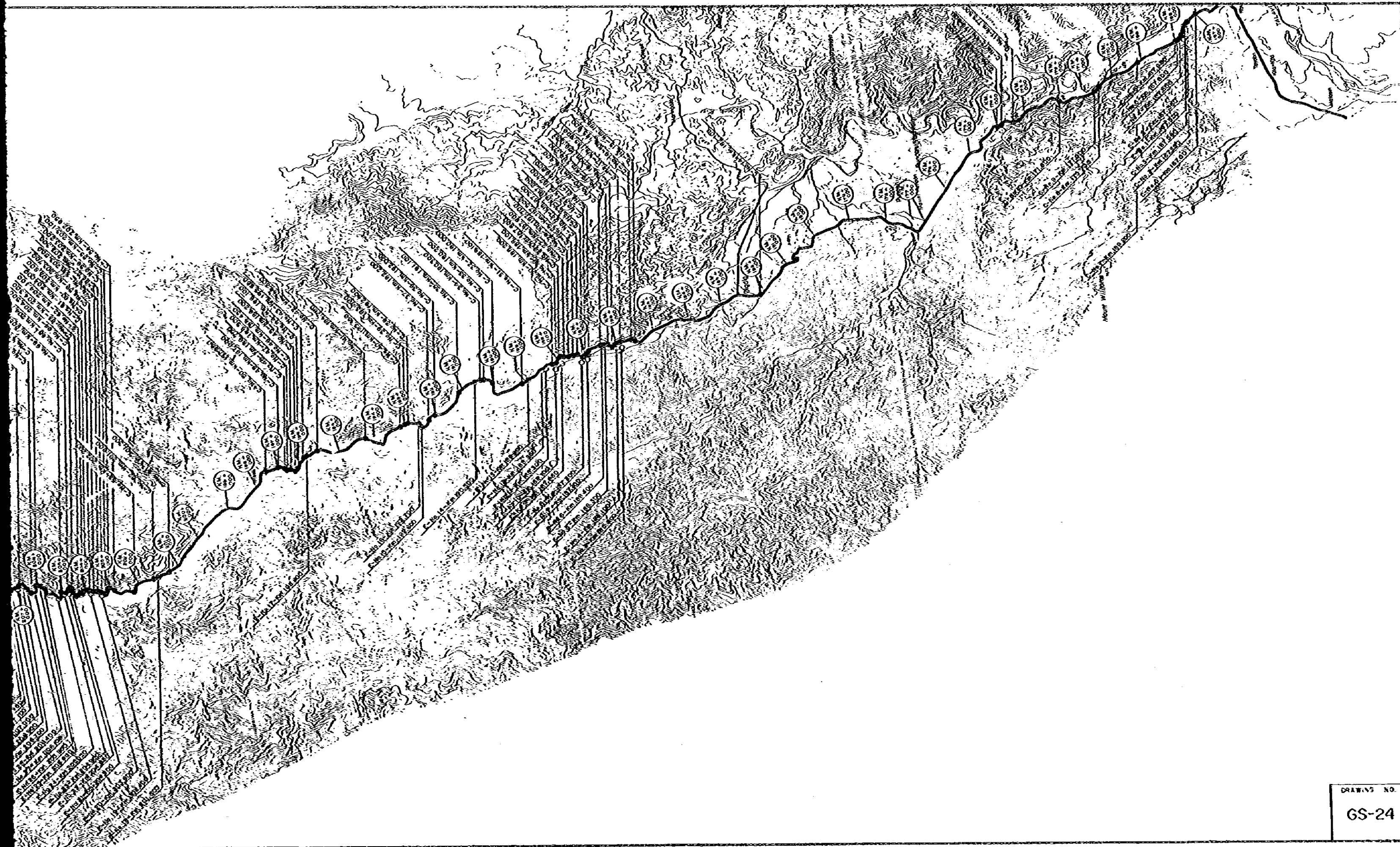
DRAWING NO
GS-23

DRAWING NO. GS-24 CHECK PORTION FOR SLOPE STABILITY.

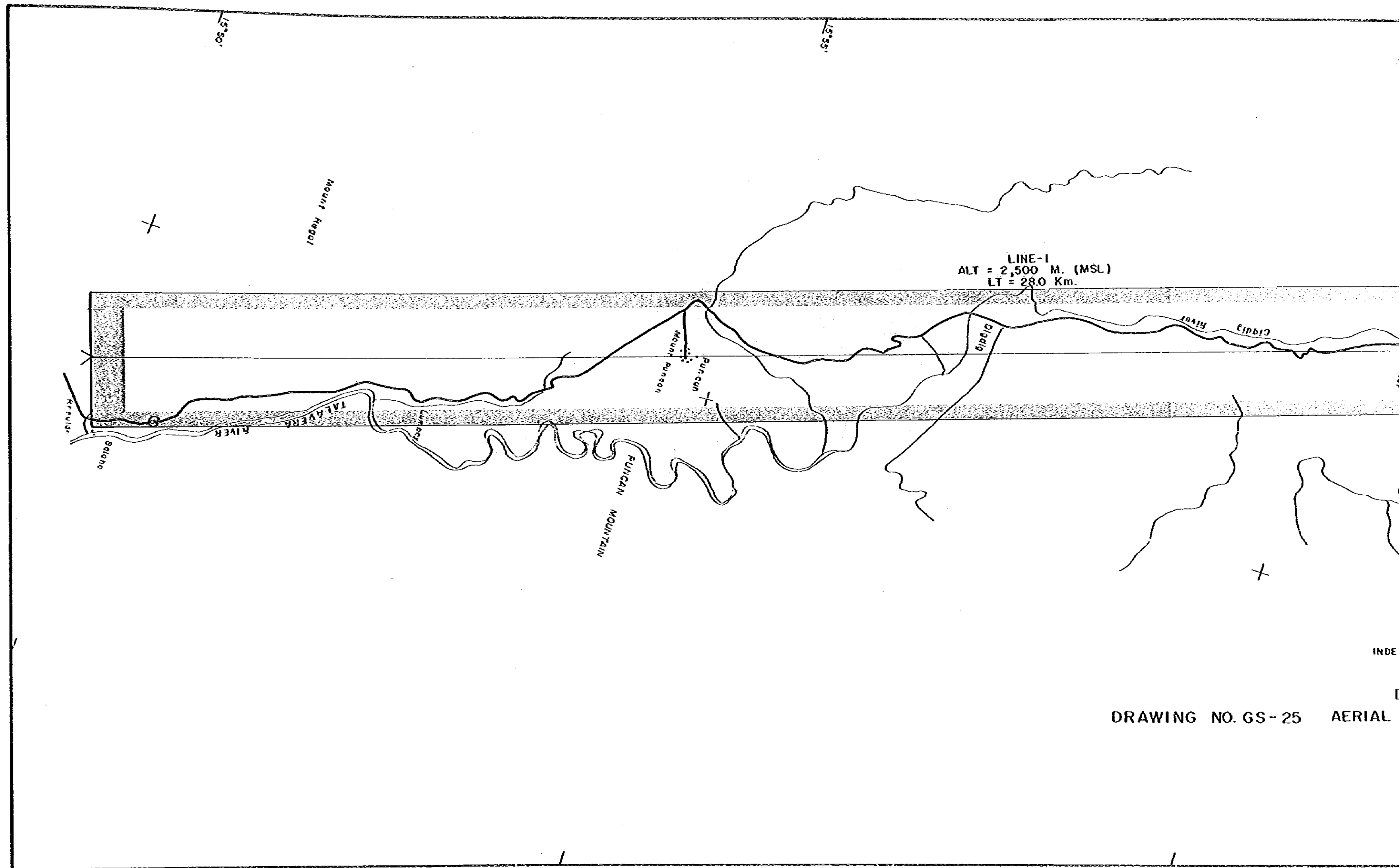
SCALE 1:50,000

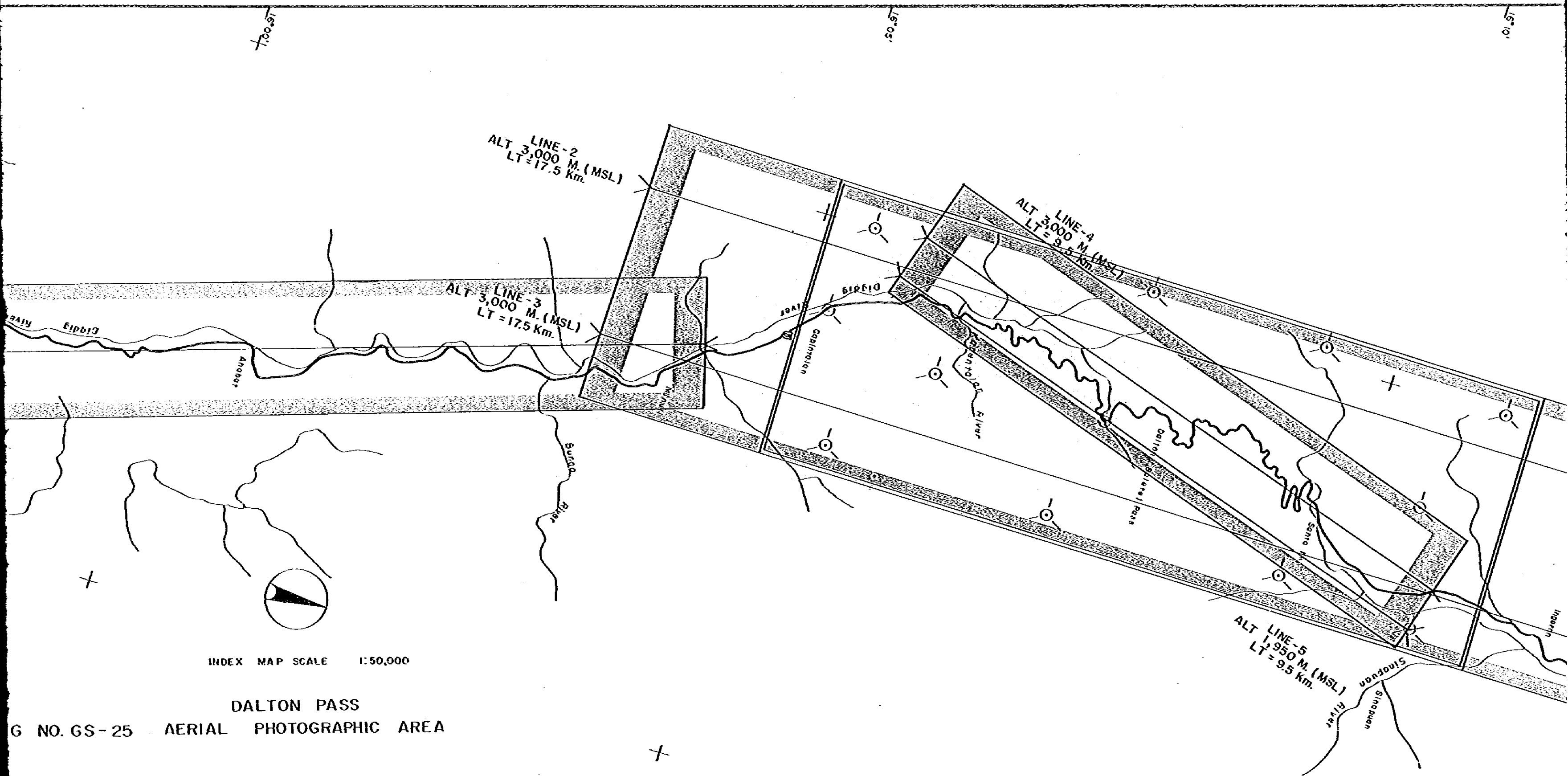
- E-No. Embankment Slope
- C-No. Cutting Slope





DRAWING NO.
GS-24

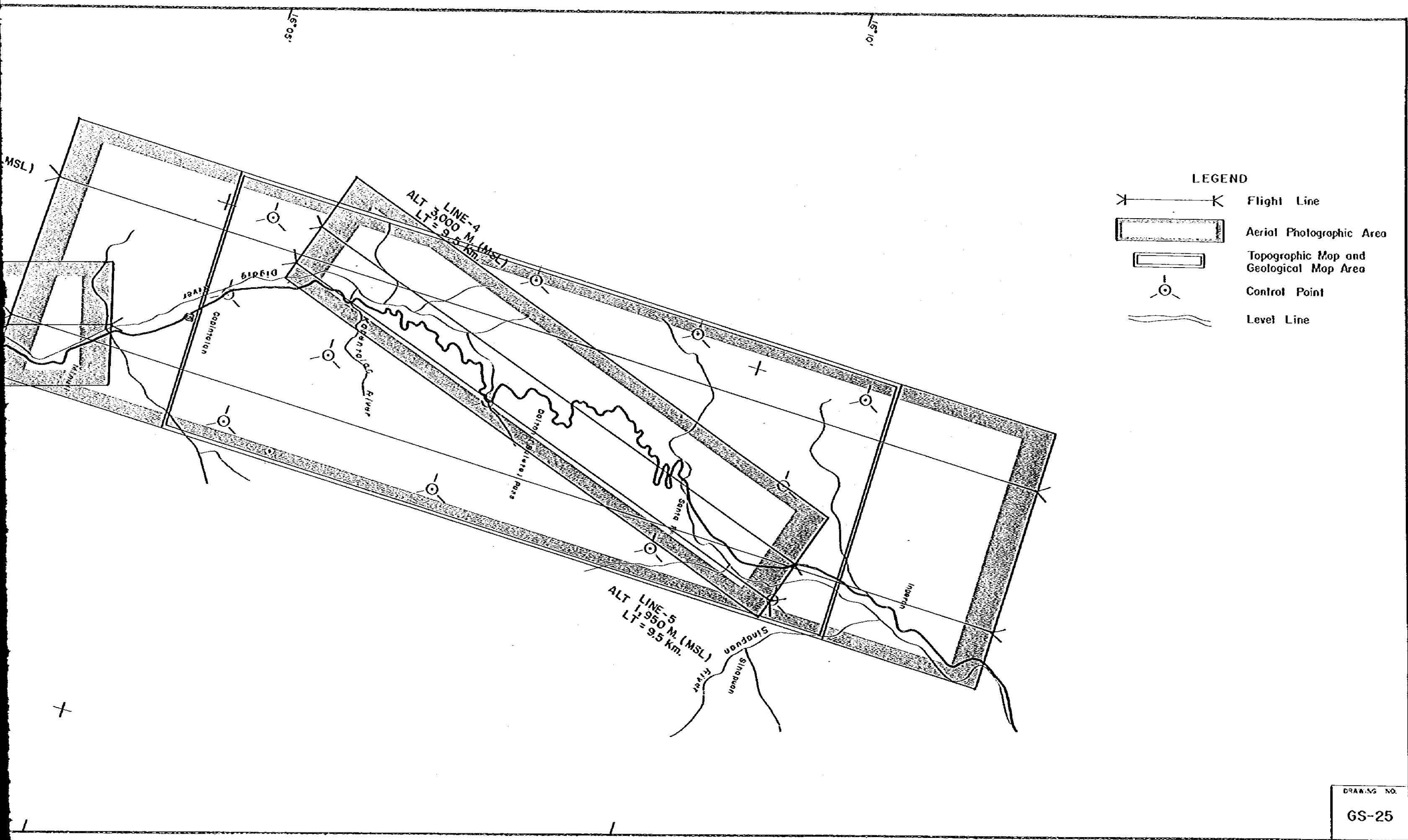




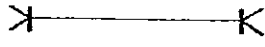
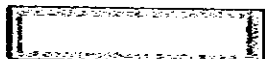
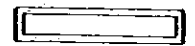

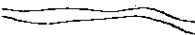
INDEX MAP SCALE 1:50,000

DALTON PASS

G NO. GS-25 AERIAL PHOTOGRAPHIC AREA



LEGEND

-  Flight Line
-  Aerial Photographic Area
-  Topographic Map and Geological Map Area
-  Control Point
-  Level Line

JICA