

HIGH-PRECISION MULTILEVEL AEROMAGNETIC SURVEY

over

DIXIE VALLEY, NEVADA

Townships 22 North to 24 North  
Ranges 35 East to 37 East  
In Churchill County, Nevada

October 1977

*Submitted & Reviewed 11-1-77  
in Keplinger's offices (Houston)  
in joint session with Millican*

Senturion Sciences, Inc., has performed the field work, analyzed the data, and interpreted the results for this task. All the data and information resulting from this survey are the property of Southland Royalty Company.

SURVEY SPECIFICATIONS

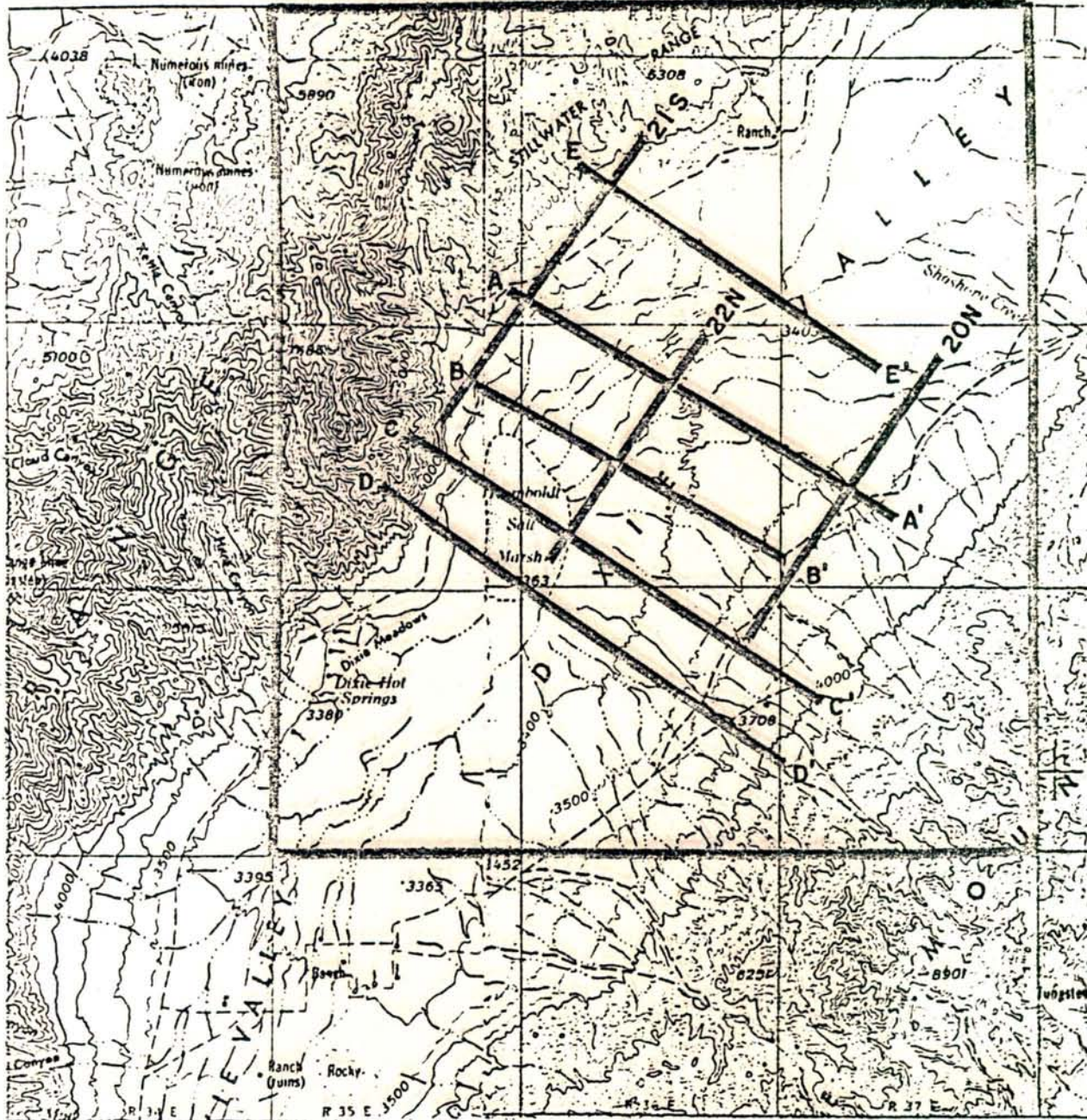
LOCATION:	Dixie Valley, Nevada
AREA COVERED:	Approximately 100 square miles
ACQUISITION DATE:	October, 1977
CREW:	Senturion Sciences #8
CODE:	South Dixie, #233
NUMBER OF PROFILES:	MultiLevel - five Single-Level - three
NUMBER OF CONGRUENT LEVELS PER PROFILE:	Five
MULTILEVEL GROUND MILES:	48
SINGLE-LEVEL GROUND MILES:	21
GEOPHYSICIST:	M. D. Quigley

R 34 E

R 35 E

R 36 E

R 37 E



T 24 N  
T 23 N  
T 22 N  
T 21 N



**SOUTH DIXIE VALLEY, NEV.  
AEROMAGNETIC SURVEY**

— SINGLE LEVEL  
— MULTILEVEL

SCALE: 1/4" = 1 MILE  
FIGURE 1 SENTURION SCIENCES, INC.

SOUTHLAND ROYALTY COMPANY'S

SOUTH DIXIE, NEVADA

MULTILEVEL AEROMAGNETIC SURVEY REPORT

SUMMARY

Five MultiLevel Aeromagnetic (MAM) profiles flown to resolve location, attitude, and vertical extent of faults mapped six normal faults and a major thrust fault (Figure 1). The Old Stillwater Fault (Figure 2 and Plate 1), which is the westernmost fault within the survey, was noted to hade slightly toward the west, and its vertical extent ran from surface to basement. The attitude of the Old Stillwater Fault is surprising when viewed with respect to theses existing prior to this survey; yet from a structural mechanics point of view, it is quite acceptable.

The Stillwater Thrust Fault (Figure 2 and Plate 1) is likewise surprising in that this thrust fault mapped on Profiles A and E (Figure 1) aligns with a fault that was previously known, and in fact, was thought to be an extension of the Old Stillwater Fault.

Extraordinary magnetic gradients were mapped which were indicative of heat.

DATA ACQUISITION

Senturion flew five MultiLevel Aeromagnetic (MAM) profiles, with each profile consisting of five congruent data acquisition flight lines flown at 5000', 5500', 6000', 6500', and 7500' above sea level. Average ground elevation within the survey limits was 3700' above mean sea level. The five MultiLevel profiles shown on Figure 1 and Plate 1 all trended NW-SE, or perpendicular to the axis of Dixie Valley. The MultiLevel profiles were tied by three short, single-level lines (Figure 1 and Plate 1) flown NE-SW at 6000' above mean sea level. The survey area, which is in T22, 23, and 24N; R35, 36, and 37E of Churchill County, Nevada, is within an aircraft restricted zone which overlaps from a target range to the west in Humbolt Valley. Just this one small area of Dixie Valley is restricted, and this restriction did cause delays in data acquisition.

The high-precision survey used Senturion's Aztec N5176Y, which is equipped with Doppler navigation and our optically-pumped helium magnetometer. The data was acquired at the rate of 18 magnetic readings per flight mile with a photograph of the ground position below each sample, and both the magnetic reading and photograph were triggered by the Doppler navigation system. The magnetic readings were recorded digitally on magnetic tape concurrently with clock times and Doppler down-track and off-track information.

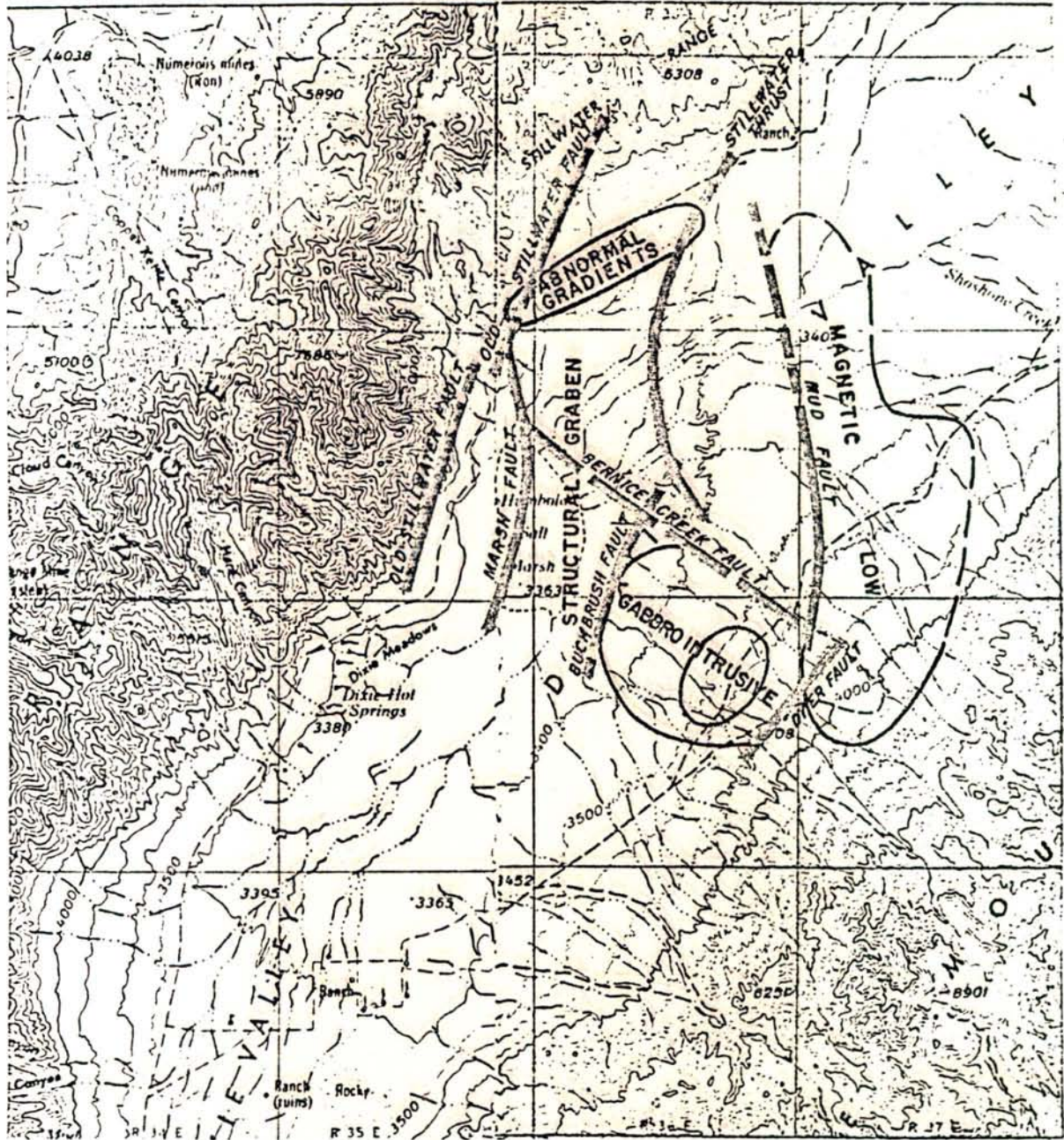
A base line at a constant elevation was reflown after each pass along the profiles to record diurnal variations in the earth's magnetic field.

R 34 E

R 35 E

R 36 E

R 37 E



T 24 N  
T 23 N  
T 22 N  
T 21 N



**SOUTH DIXIE VALLEY, NEV.  
MAGNETIC FEATURES MAP**

**FAULTS**

SCALE: 1/4" = 1 MILE  
FIGURE 2 SENTURION SCIENCES INC

## DATA PROCESSING

After diurnal corrections were applied, each of the five congruent profiles was plotted at 18 data points per mile along with its first and second derivatives. On the multiple-level profiles, the 500-foot gradients were calculated and plotted along with the second vertical difference. Similarly, the 1000-foot gradients were calculated from the higher levels and plotted.

The multiple-level profiles were interpreted in terms of subsurface geology, and this interpretation is presented on the Profiles A-A', B-B', C-C', D-D', and E-E', which are in the pocket of this report. Each profile interpretation is discussed in this text.

The five-level total field readings along each profile have been plotted one above the other to show the field changes graphically. The field differences are plotted as indicated below.

- $5000' - 5500' = 500\text{-foot gradient}$
- $5500' - 6000' = 500\text{-foot gradient}$
- $(5000' - 5500') - (5500' - 6000') = \text{second } 500\text{-foot difference}$
- $5500' - 6500' = 100\text{-foot gradient}$
- $6500' - 7500' = 1000\text{-foot gradient}$
- $(5500' - 6500') - (6500' - 7500') = \text{Second } 1000\text{-foot difference}$

The above field-difference curves permit the plotting of a gradient profile continuously throughout the surveyed lines. One or more gradient profiles are included in the discussion of each profile to show the magnetic field relationships from one level to another. Depth calculations were derived from data contained in the gradient profiles and related to lateral changes in the gradient curves along each flight line to resolve the subsurface geology.

## RESULTS

Profile D-D' (Plate 2), the most southerly profile flown, reveals the shape and depth below the surface of a gabbro intrusive at the south-east end of the profile. The depth to the topmost point of this intrusive is calculated from the magnetic gradient shown in Figure 3 and is shown to be 2875 feet beneath the surface. The shape of the intrusive was determined by model analyses. The depths to the high susceptibility Triassic rocks, or basement, is interpreted from the lateral change in the high-level second gradient difference curve  $[(5500' - 6500') - (6500' - 7500')]$ .

47 0730

10 X 10 TO THE INCHES  
PEPPER & EDGER CO.

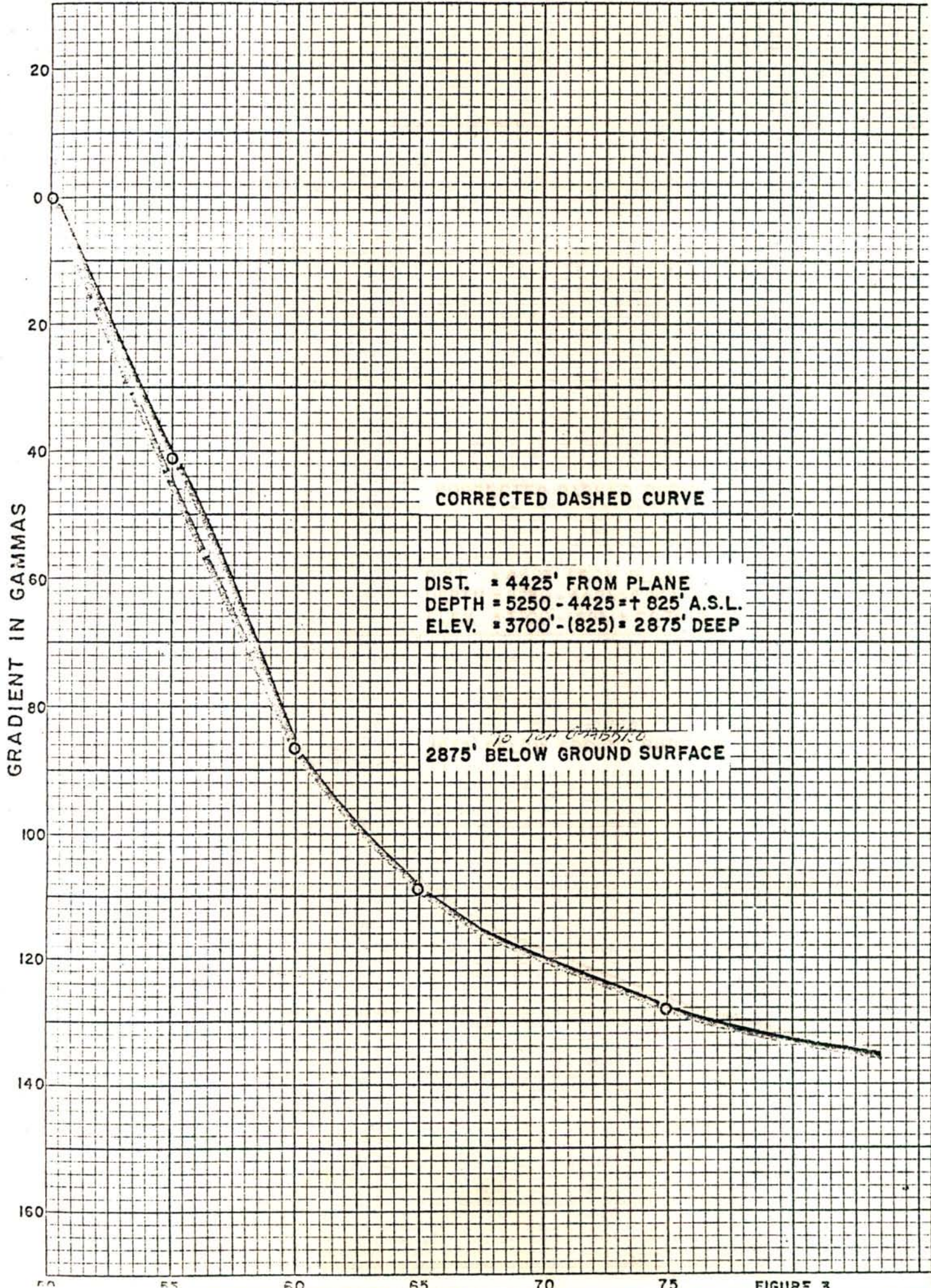


FIGURE 3

The positions and attitudes of the Old Stillwater and Buckbrush faults within Profile D-D' are shown on the cross-section (Plate 2). The attitudes of the faults are determined by the inflection points on the total field plots of each flight level. Since the profiles were flown parallel to the strike of the earth's magnetic field, any shift in either direction of the position of the inflection point is related to the hade of the fault plane. The Old Stillwater fault is a high-angle reverse fault, whereas the Buckbrush fault is a normal fault.

The Marsh fault occurs between the Old Stillwater and Buckbrush faults and is shown on the cross-section as well as in plain view on Figure 2 and Plate 1. This fault is not at all apparent on the total field plots and is weakly discernible on the derivative curves. This more subtle fault does cause a sudden slope change in the gradient curves which usually is very sensitive to structural or stratigraphic discontinuities below the surface. On Profile D-D' the Marsh fault is upthrown on the west and appears to be a normal fault since the hade is to the east. Normal faulting also takes place on the northwest flank of the gabbro intrusive and is labeled the 'Buckbrush fault'. The southeast flank of the gabbro intrusive has the Dyer fault, which is also a normal fault. No unusual gradients are measured along Profile D-D' that would indicate doming of the Curie Isotherm.

Profile C-C' (Plate 3) was flown over the crest of the gabbro intrusive. The gradient profile at Point 2442 is shown in Figure 4. The top of the intrusive is 1400 feet below the surface, and like Profile D-D', the intrusive has an appendage on the northwest flank that extends outward to the Buckbrush fault. Southeast of the intrusive, there is a down-faulted block that has very low total field readings. The field values are increasingly lower on the higher flight levels which is abnormal over a magnetic low, and this is interpreted as evidence of the loss of magnetism at depth, which indicates doming, or rising, of the Curie Isotherm.

The Old Stillwater and Buckbrush faults have the same attitude that they have on profile D-D'. The Marsh fault appears to have the same relative displacement but it gives rise to a very abnormal gradient curve. The gradient profile in Figure 5 computed at Data Point 2552 shows that the gradients are reversed above the 6000-foot flight level. Apparently both sides of the Marsh fault are influencing the gradients; or there is the possibility that the abnormal gradient area between the 5500-foot and 6500-foot flight intervals is due to extraordinary heat in the vicinity of the fault.

Profile B-B' (Plate 4) is almost featureless, showing only two faults along the profile. The easternmost fault shown on this cross-section is a thrust fault where the thrust plate has moved westward. The gradient profile at Point 1687 on Figure 6 shows the magnetic field falling off very rapidly at the highest flight interval (6500'-7500'). Such a falloff rate is unusual over a magnetic maximum and indicates a probable relationship to heat along the thrust plane.

A more normal gradient curve is plotted at Point 1783 on Figure 7. The shallow portion of the gradient curve is reversed, which indicates near-surface volcanic flows or other extrusives in the gabbroic complex that are reversely polarized. The gradient curve analyzed at Flight

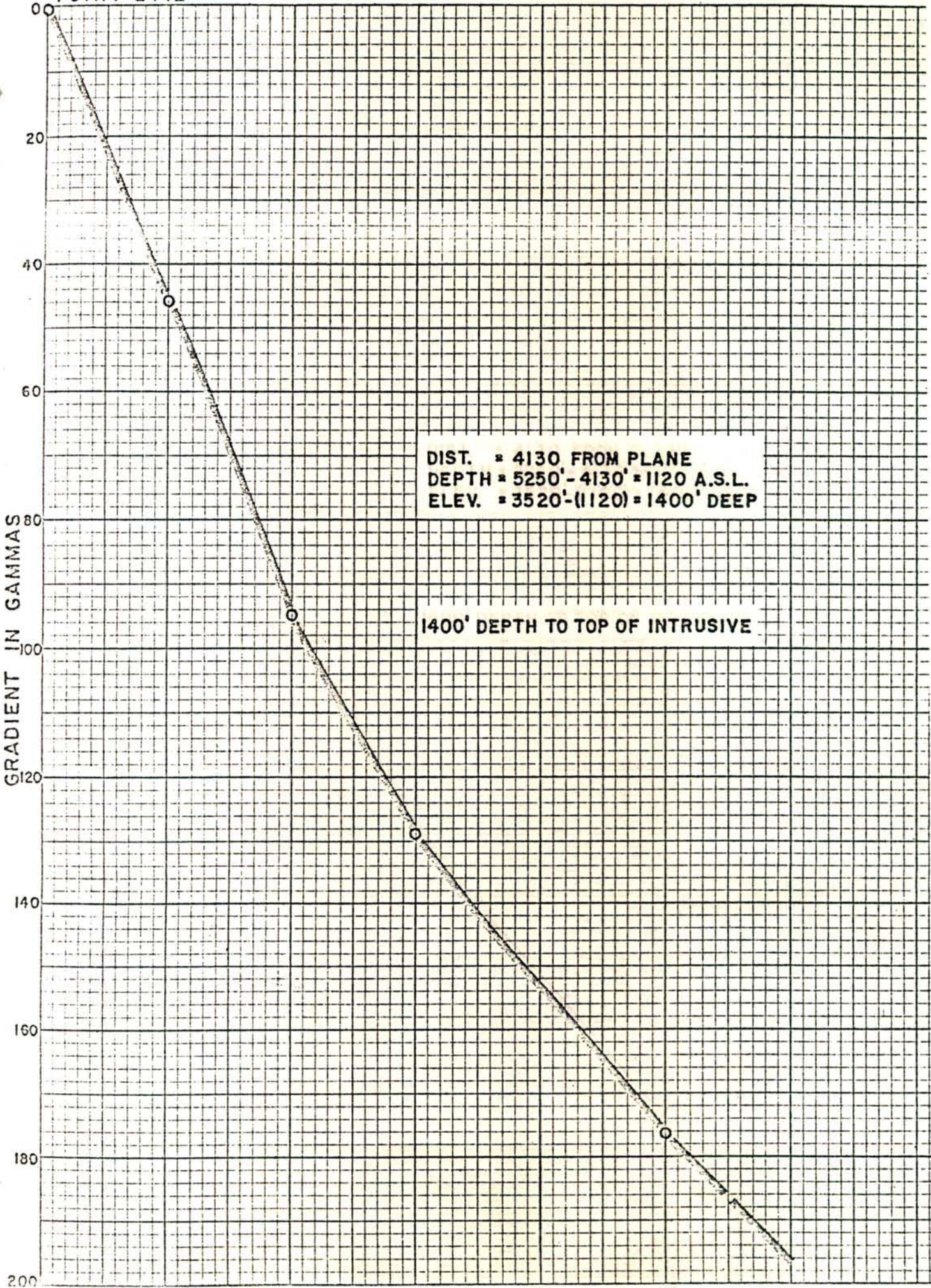


47 0730

GRADIENT IN GAMMAS

DIST. = 4130 FROM PLANE  
DEPTH = 5250' - 4130' = 1120 A.S.L.  
ELEV. = 3520' - (1120) = 1400' DEEP

1400' DEPTH TO TOP OF INTRUSIVE



1400' DEPTH TO TOP OF INTRUSIVE

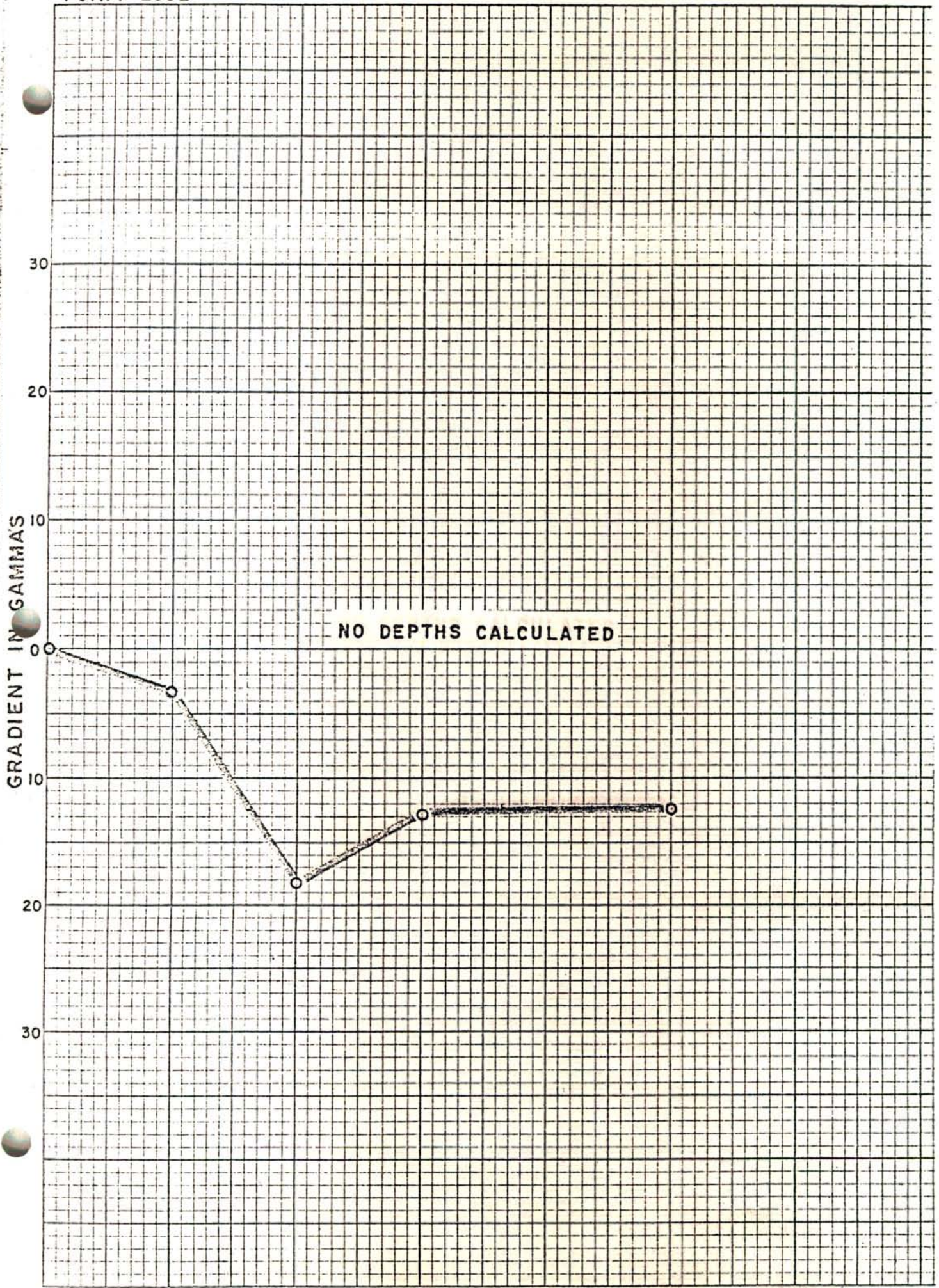
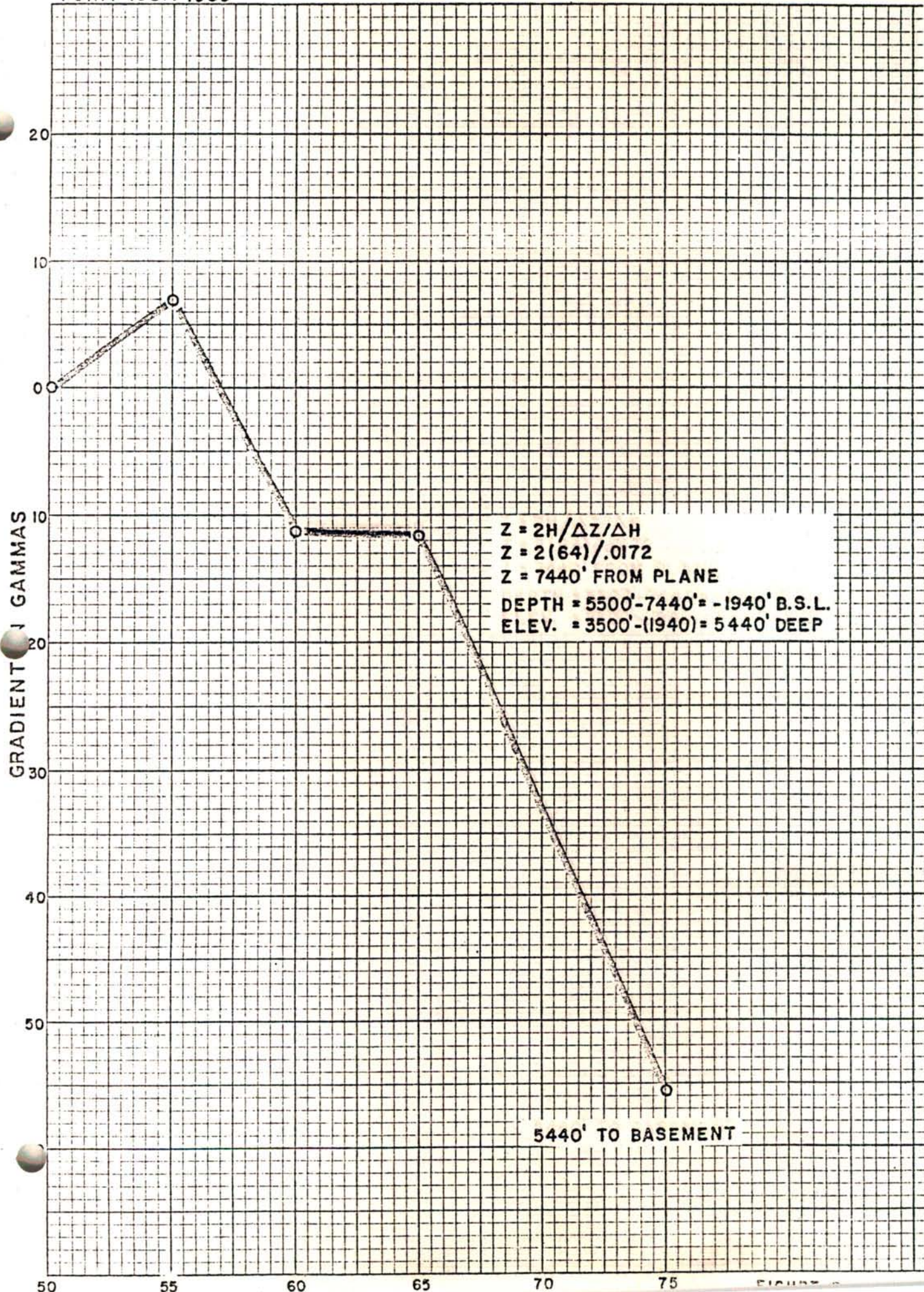
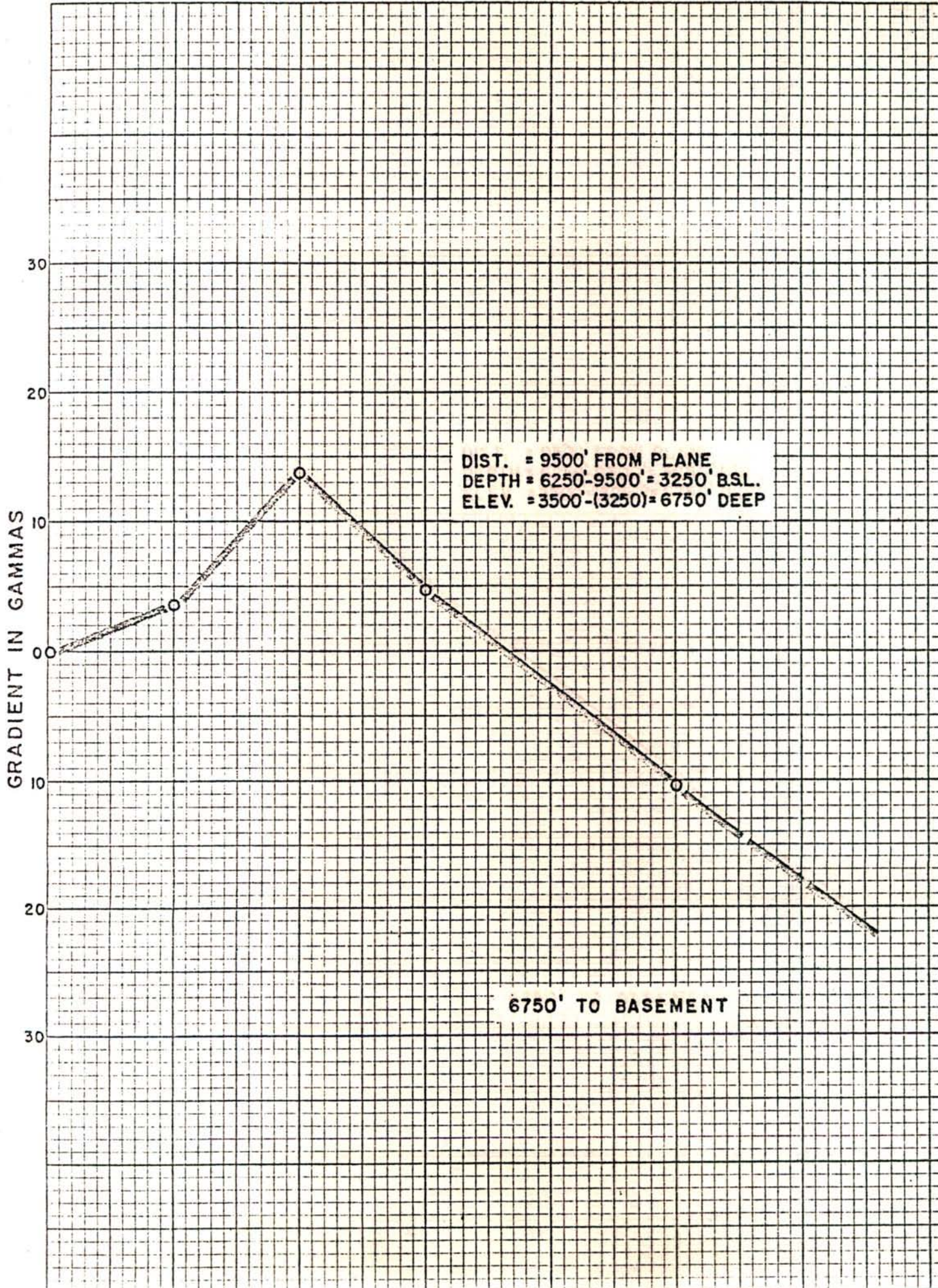


FIGURE 5





47 0720

10 X 10 TO THE INCH • 1:25 SCALE  
K&E RECEIVED & PLOTTED 10/15/64

Point 1687 shows the depth to the top of the Triassic rocks as 5440', while the analyses at Flight Point 1783 reveals the depth to basement as 6750'. The normal fault at the northwest end of the profile is probably the continuation of the Marsh fault shown on Profiles D-D' and C-C'.

Profile A-A' (Plate 5) is flown over an area of interest at the northwest end of the profile. The most rapid decrease in the magnetic field readings occurs between the 5600-foot and 7500-foot flight levels. The decrease occurs on the east side of the Old Stillwater fault. Flight Point 2933 has an abnormal magnetic gradient which is easily seen in Figure 8. By extrapolation, the gradient between the 5600- and 7500-foot flight levels is 43 gammas lower than normal. Quite probably, excessive heat or hot fluids could have affected the magnetic fields at depth.

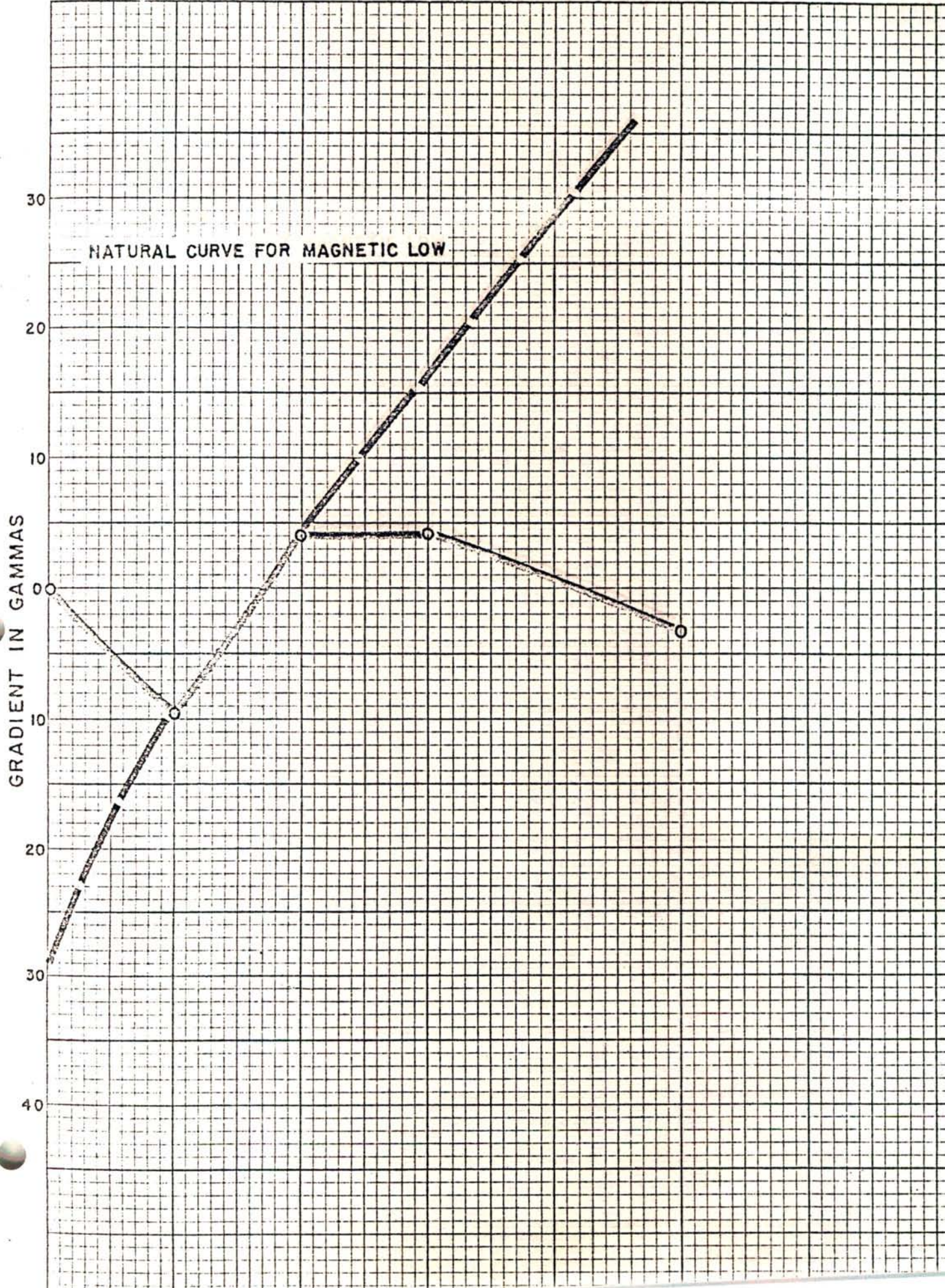
The thrust fault mapped on Profile B-B' is strongly evident on Profile A-A'. The high gradient area east of the thrust plane is reflective of a structural high on the Triassic or basement rocks. The gradient profile at Point 2817 on Mud fault (Figure 9) indicates the high susceptibility interface to be at a depth of 3660 feet below the surface. Southeast of Mud fault, which bounds the basement high, there is a magnetic low that probably is the extension of the low on the southeast end of Profile C-C'. Even so, the gradient relationships are normal except for the near-surface inversions that are present on all the profiles.

Profile E-E' (Plate 6) has high magnetic relief. According to the gradient curve in Figure 10 at Point 4309, the basement rocks come up to within 5975 feet of the surface. The basement high is bounded on the west by the Stillwater Thrust fault and on the east by the vertical Mud fault. Mud fault is a step fault up on to another magnetic high at the extreme southeast end of Profile E-E' (Sections 4 and 5, 23N 37E). This high could have real significance because of the high magnetic relief and the large gradients. The depth to basement rocks is not accurately resolvable because the profile terminates before it reaches the top, or closure, of the high.

The high-angle reverse Old Stillwater fault is shown at the extreme northwest end of the profile. The structural graben between the Old Stillwater fault and the Stillwater Thrust fault has abnormal gradients. The second difference curves inverts between the shallow 500-foot plot and the deep 1000-foot plot. The deep curve [(5000'-5500')-(5500'-6000')] has a positive difference next to the Old Stillwater fault and a negative difference below the thrust. The shallow curve [(5500'-6500')-(6500'-7500')] has a strong positive difference all across the graben. The inversion indicates excessive heat beneath the thrust plane.

#### CONCLUSIONS

The magnetic features map (Figure 2 and Plate 1) is submitted to try to tie the magnetic events along one profile with those on the adjacent profile. Unfortunately, the three tie lines are insufficient to do a credible job of removing possible errors in tying all the profiles together. Even so, the features map is helpful in determining those areas where more detailed information is needed. The features map is made from the profiles at the 6000-foot level so all the events are positioned accurately in relationship to each other and to the ground.



47 0750

W. E. KROPP & SONS CO. SAN FRANCISCO, CALIF.

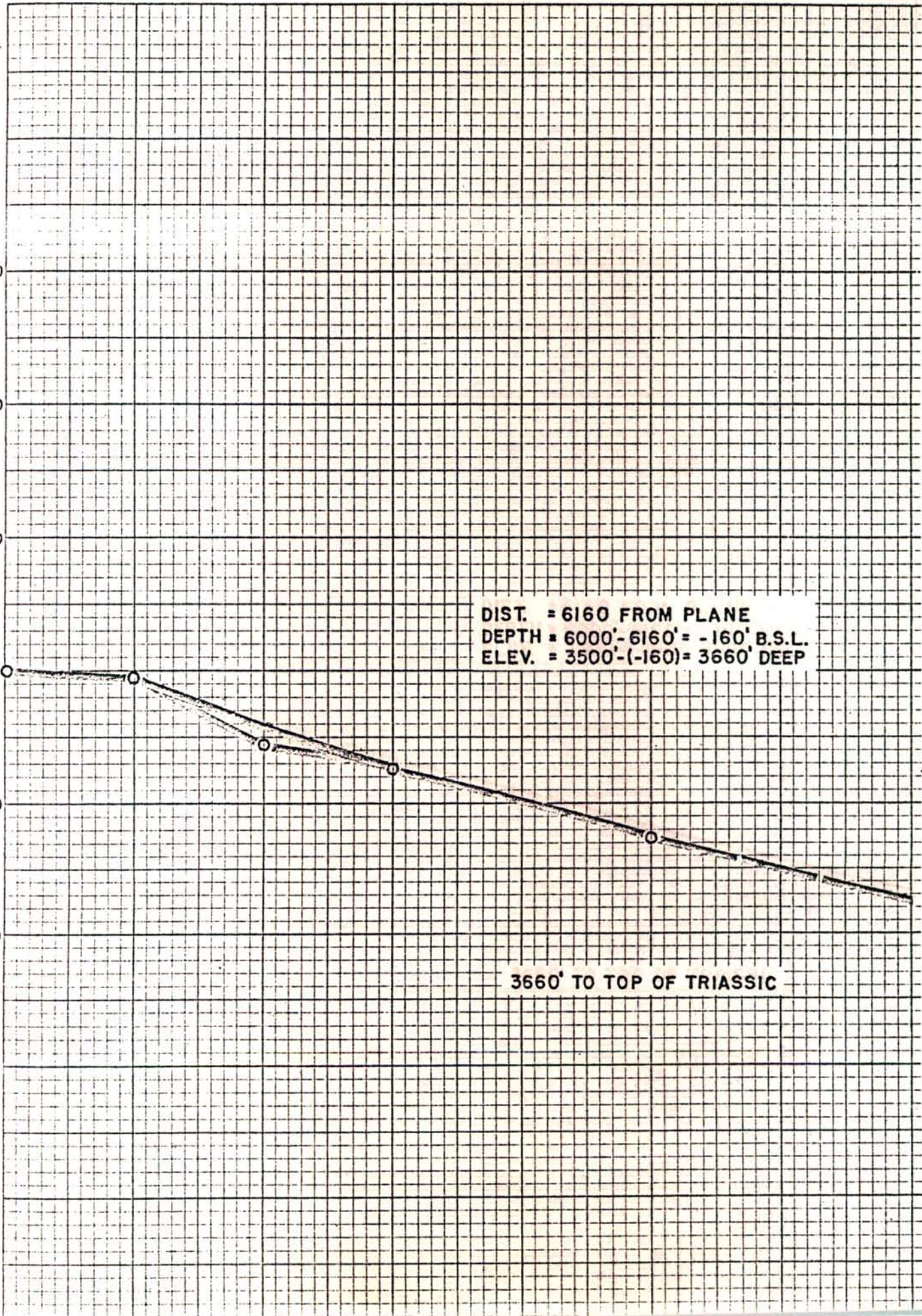
47 0780

GRADIENT IN GAMMAS

DIST. = 6160 FROM PLANE  
DEPTH = 6000' - 6160' = -160' B.S.L.  
ELEV. = 3500' - (-160) = 3660' DEEP

3660' TO TOP OF TRIASSIC

30  
20  
10  
0  
10  
20  
30



47 0780

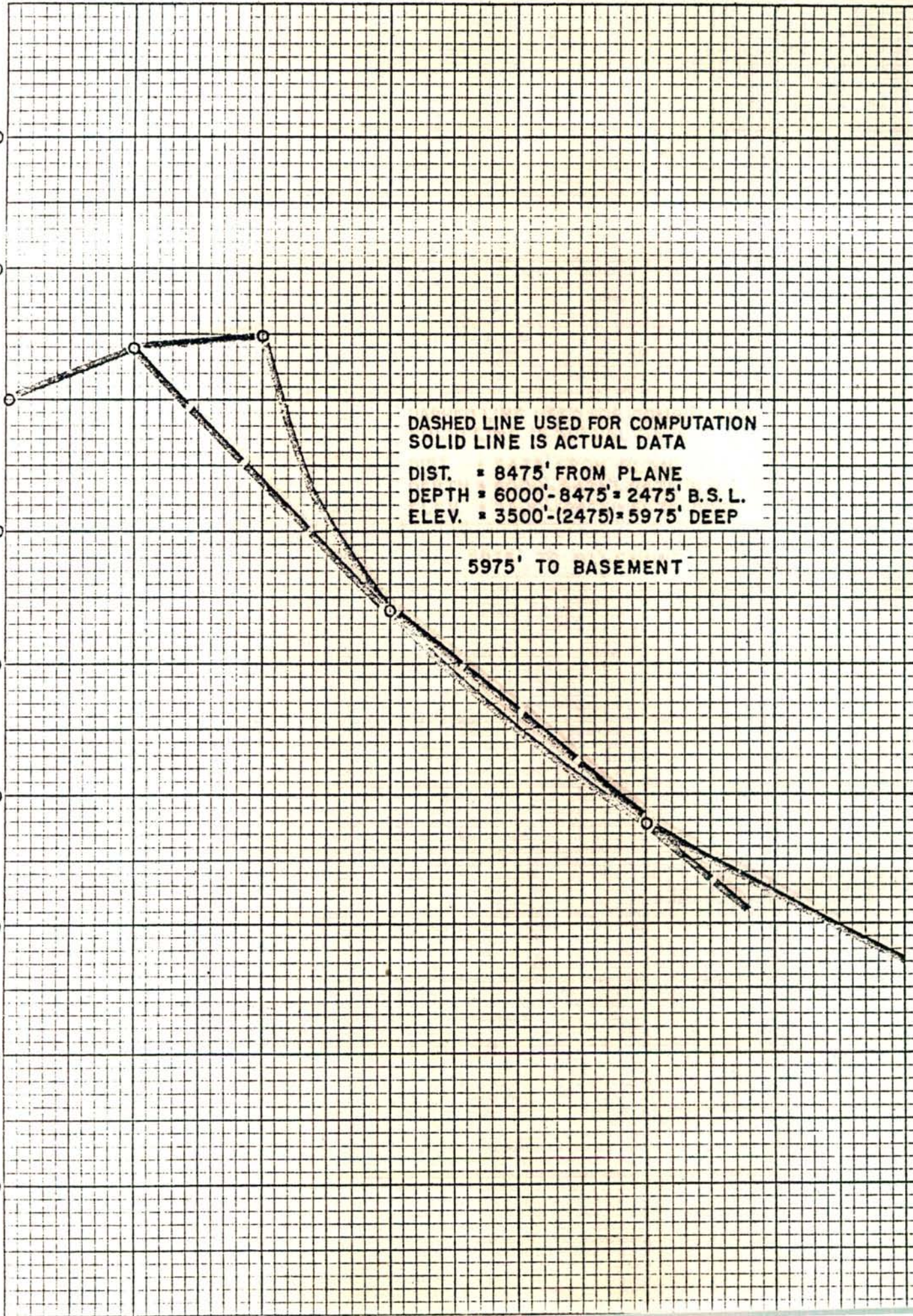
10 X 10 TO THE INCH, 2 1/2 X 1 1/2 INCHES  
NEW FELL & LESSEN CO. MADE IN U.S.A.

GRADIENT IN GAMMAS

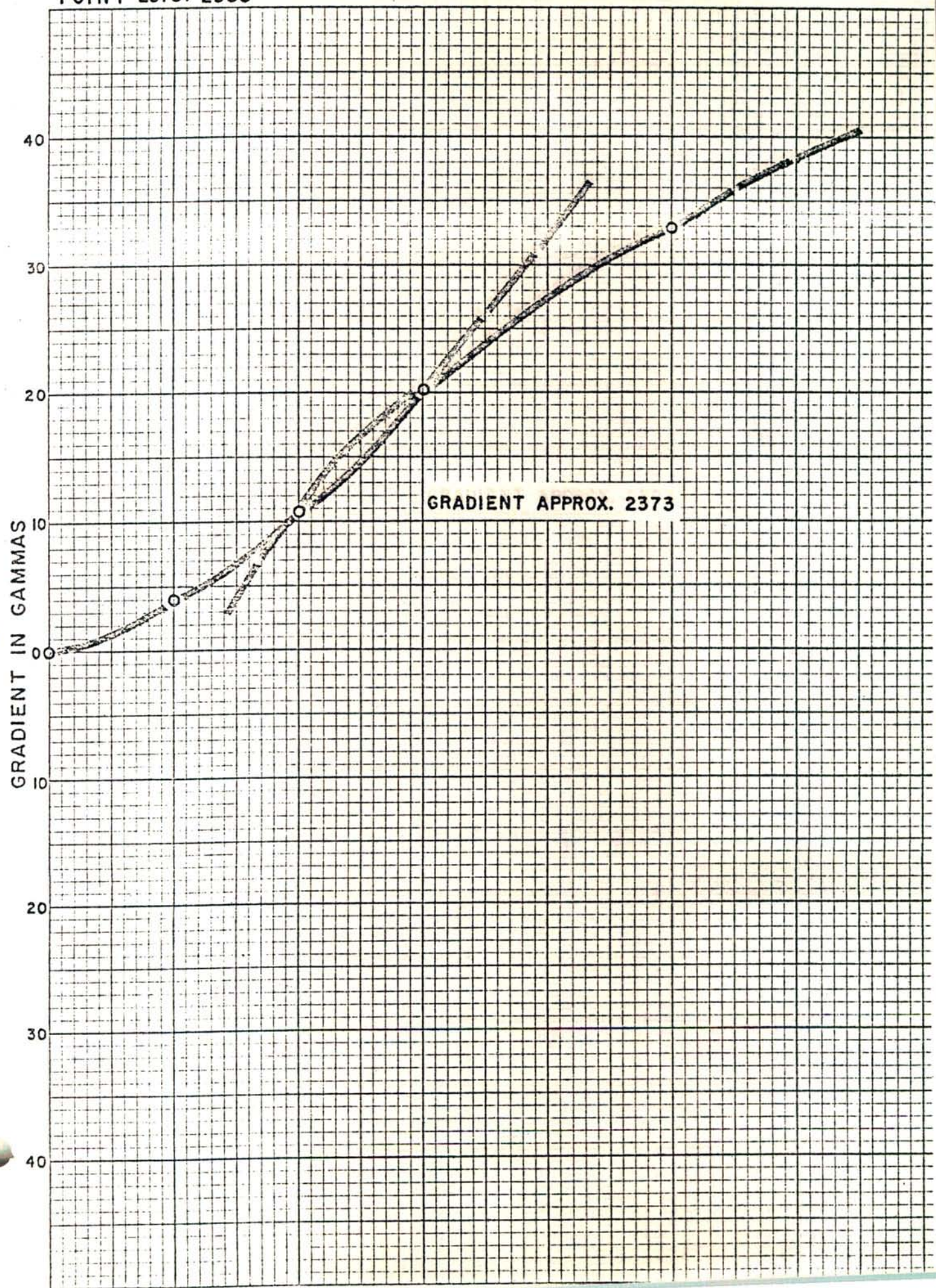
20  
10  
0  
10  
20  
30  
40  
50  
60

DASHED LINE USED FOR COMPUTATION  
SOLID LINE IS ACTUAL DATA  
DIST. = 8475' FROM PLANE  
DEPTH = 6000' - 8475' = 2475' B.S.L.  
ELEV. = 3500' - (2475)' = 5975' DEEP

5975' TO BASEMENT







47 0780

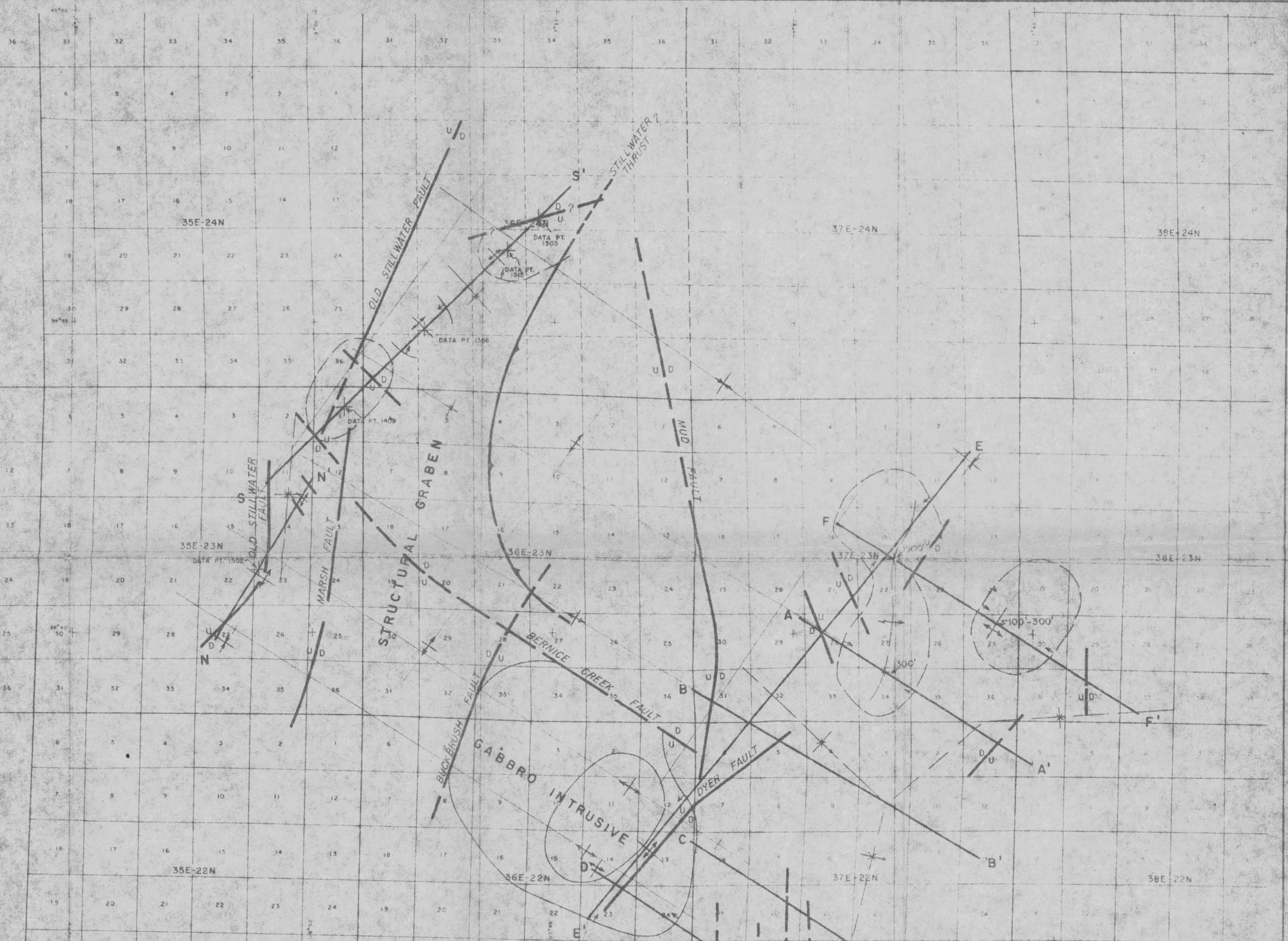
10 X 10 TO THE INCH 2.00 X 1.5 INCHES  
KOE PUFFEL & ESSEN CO. MADE IN U.S.A.

The Old Stillwater fault appears to be a series of *en echelon* faults that may be offset by other intersecting faults. The northeast corner of Township 23N 35E is an area where several faults intersect and could be a focus for migrating fluids from hot magnetic sources. Just northeast of this point in the southwest quarter of T24N 36E is the area of abnormal gradients that was evident on Profiles A-A' and E-E'.

The thrust plate in the east half of T23 and 24N 36E has probable geothermal potential. However, confirmation either from magnetotellurics or calibration by tying to a well or heat flow hole is needed because the gradients over a thrust plate are frequently reversed.

The large magnetic low at the east end of the profiles may be of interest. Only Profile C-C' extended far enough east to give any evaluation of the magnetic features, and that profile may have been near the southern limits of the magnetic low.

The MultiLevel magnetic profiles are informative as to the nature of the subsurface geology along the flight lines. The gradient curves show several abnormalities that may have been caused by high rock temperatures. Not all the structural relationships are correct and the depth determinations may contain errors due to not being able to calibrate to specific temperatures at specific depths or incorporate the magnetotellurics, and most unfortunately because the MultiLevel profiles were not preceded by a tightly-gridded single-level survey.



- LEGEND**
- PROFILES FROM DIXIE 1
  - E-E' SINGLE LEVEL TIE LINE
  - A-A', B-B', C-C', D-D', F-F', N-N', S-S' MULTILEVEL CONGRUENT PROFILES
  - FAULT
  - STRUCTURAL HIGH
  - STRUCTURAL LOW
  - THRUST FAULT
  - ABNORMAL GRADIENTS
  - INFLECTION POINT
  - INDEFINITE BOUNDARY OF MAGNETIC HIGH

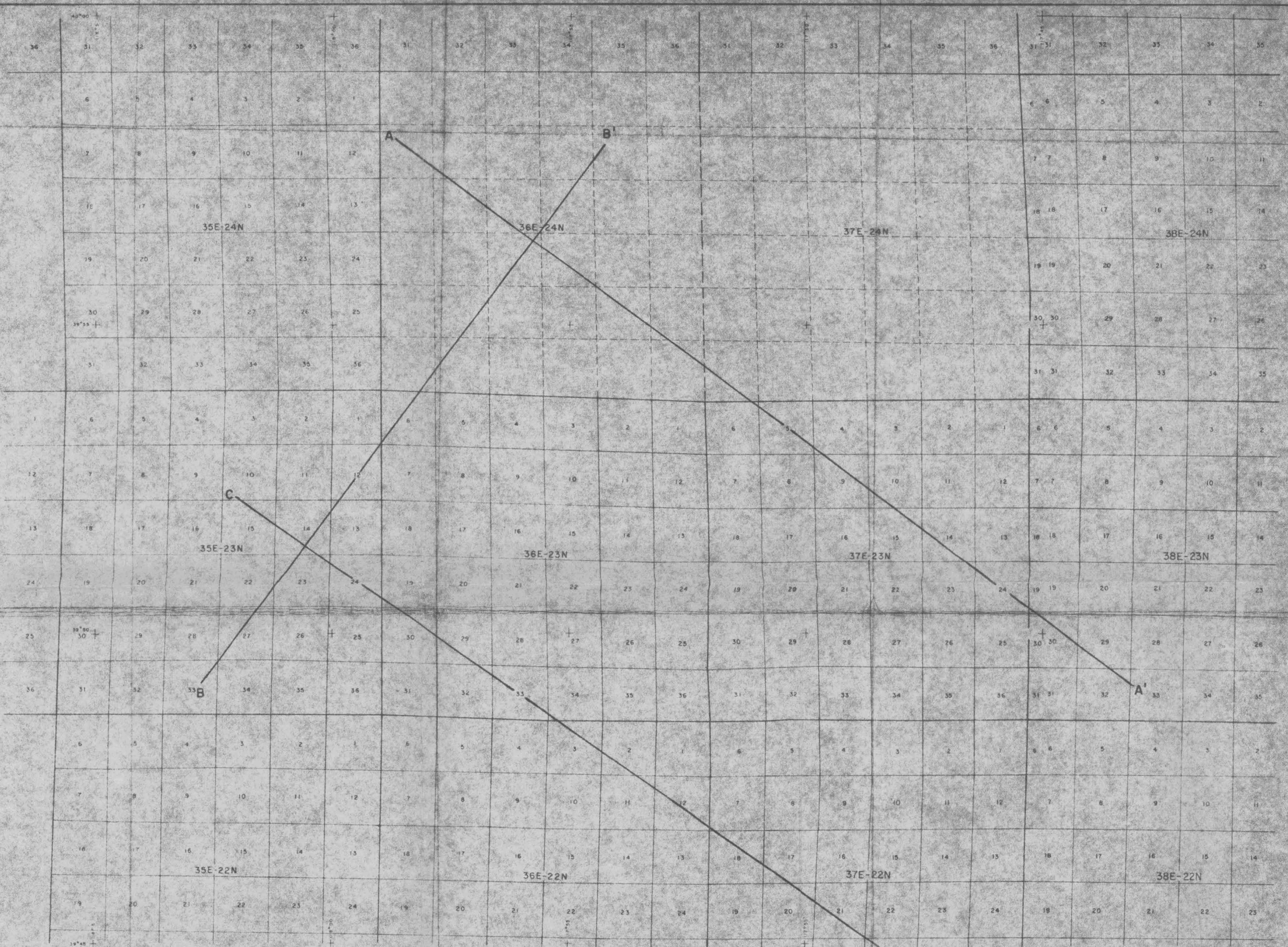
SOUTHLAND ROYALTY CO.  
 AREA: SOUTH DIXIE 2  
 COUNTY: CHURCHILL  
 STATE: NEVADA

MAGNETIC FEATURES MAP

DATE OF ACQUISITION: MAY 1978

1 0 1 2 3  
 MILES

PLATE 1 SENTURION SCIENCES, INC.



SOUTHLAND ROYALTY CO.  
 AREA: SOUTH DIXIE  
 COUNTY: CHURCHILL  
 STATE: NEVADA

IDEALIZED CROSS SECTION LOCATIONS

DATE OF ACQUISITION: MAY 1978

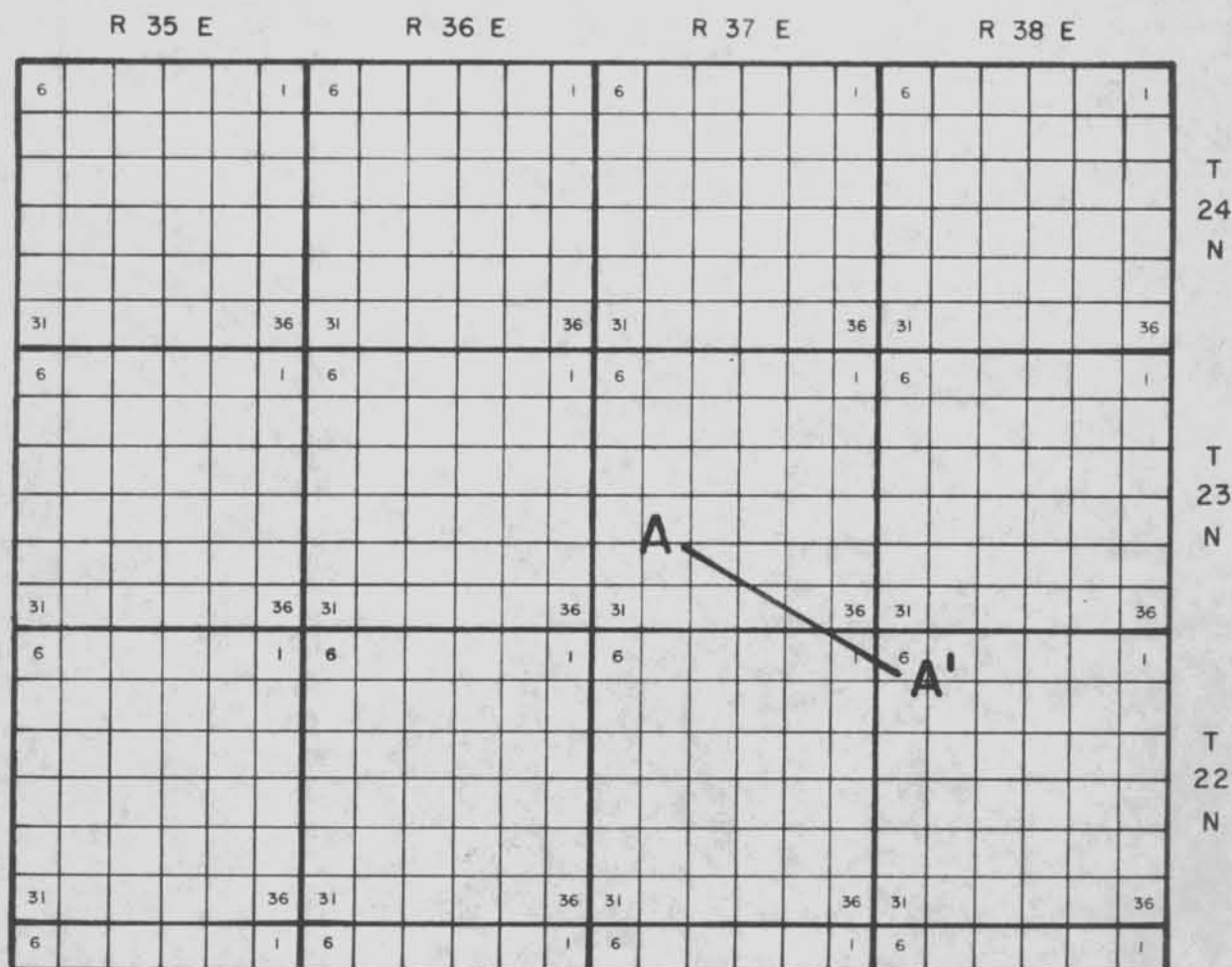
0 1 2 3  
 MILES

PROJECT: DIXIE VALLEY LINE A 1000 FT DERIVATIVES

\*\*\*\*\*  
 \*\*\*\*\*VERTICAL GRADIENT MULTILEVEL AEROMAGNETIC PROFILES\*\*\*\*\*  
 \*\*\*\*\*

COUNTY: CHURCHILL  
 STATE: NEVADA  
 DATE OF ACQUISITION: 06 MAY 1978  
 CROSS SECTION  
 SCALES: HORIZONTAL - ≈ 3 INCH EQUALS 1 MILES  
 VERTICAL - INCH EQUALS FEET  
 GRADIENT IDENTIFICATION  
 6500 MSL MINUS 7500 MSL 11111  
 7500 MSL MINUS 8500 MSL 22222  
 ( 6500 MINUS 7500 ) MINUS ( 7500 MINUS 8500 ) 33333  
 AVERAGE SURFACE ELEVATION BENEATH PROFILE 4000 FT. MSL

SYMBOL  
 11111  
 22222  
 33333

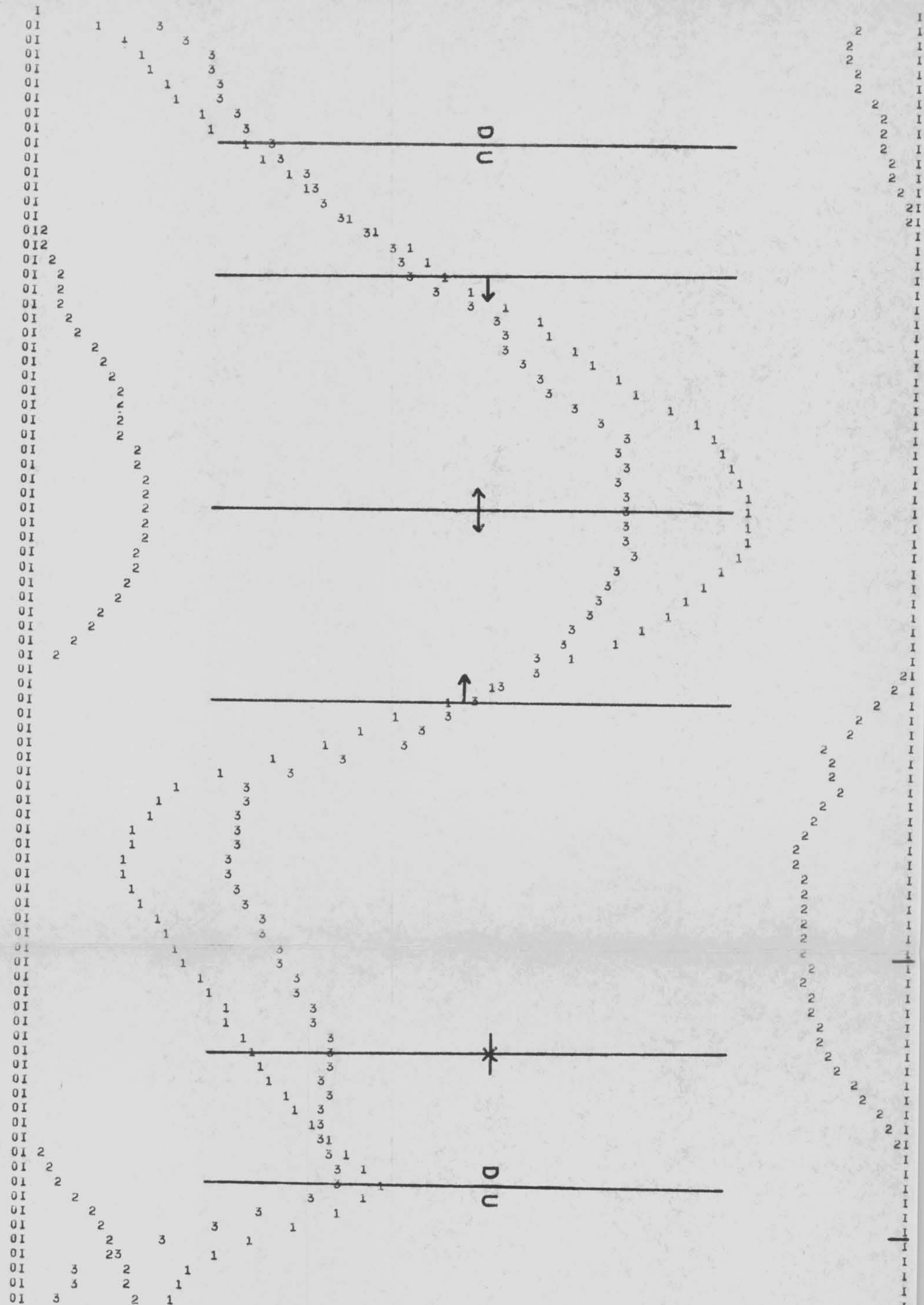


**SOUTHLAND ROYALTY CO.**  
 PLATE 2 SENTURION SCIENCES, INC.

VALUES SHOWN ARE GAMMAS X 10

NORTHWEST  
 A  
 E  
 37E - 23N  
 37E - 22N  
 A  
 SOUTHEAST

SEQ	111	222	333	1
4184	38	-35	71	01
4185	53	-36	89	01
4186	62	-39	101	01
4187	68	-35	103	01
4188	78	-31	109	01
4189	85	-22	107	01
4190	96	-20	116	01
4191	105	-16	121	01
4192	121	-16	137	01
4193	131	-11	142	01
4194	146	-11	157	01
4195	156	-6	162	01
4196	168	2	166	01
4197	183	5	178	01
4198	199	8	191	012
4199	216	8	208	012
4200	227	12	215	01 2
4201	237	18	219	01 2
4202	255	20	235	01 2
4203	273	20	253	01 2
4204	291	21	270	01 2
4205	300	29	271	01 2
4206	311	38	273	01 2
4207	325	41	284	01 2
4208	339	46	293	01 2
4209	350	53	297	01 2
4210	368	53	315	01 2
4211	381	55	326	01 2
4212	395	53	342	01 2
4213	400	61	339	01 2
4214	405	64	341	01 2
4215	408	68	340	01 2
4216	413	68	345	01 2
4217	411	70	341	01 2
4218	412	70	342	01 2
4219	411	68	343	01 2
4220	410	63	347	01 2
4221	399	61	338	01 2
4222	389	56	333	01 2
4223	378	51	327	01 2
4224	368	44	324	01 2
4225	351	38	313	01 2
4226	336	28	308	01 2
4227	313	18	295	01 2
4228	295	3	292	01 2
4229	266	-7	273	01 2
4230	241	-18	259	01 2
4231	215	-26	241	01 2
4232	192	-35	227	01 2
4233	173	-46	219	01 2
4234	141	-44	185	01 2
4235	111	-41	152	01 2
4236	89	-39	128	01 2
4237	80	-48	128	01 2
4238	72	-53	125	01 2
4239	64	-59	123	01 2
4240	61	-61	122	01 2
4241	57	-62	119	01 2
4242	58	-60	118	01 2
4243	65	-60	125	01 2
4244	70	-60	130	01 2
4245	77	-60	137	01 2
4246	83	-56	139	01 2
4247	87	-57	148	01 2
4248	95	-55	150	01 2
4249	102	-57	159	01 2
4250	108	-51	159	01 2
4251	116	-53	169	01 2
4252	120	-50	170	01 2
4253	130	-50	180	01 2
4254	134	-44	178	01 2
4255	140	-38	178	01 2
4256	144	-30	174	01 2
4257	153	-23	176	01 2
4258	160	-15	175	01 2
4259	168	-6	174	01 2
4260	176	3	173	01 2
4261	190	11	179	01 2
4262	200	19	181	01 2
4263	206	25	181	01 2
4264	200	33	167	01 2
4265	185	45	140	01 2
4266	159	48	111	01 2
4267	134	53	81	01 2
4268	114	55	59	01 2
4269	96	64	32	01 2
4270	94	63	31	01 2
4271	88	66	22	01 2



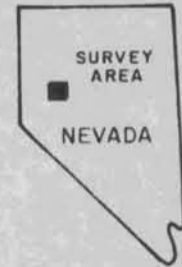
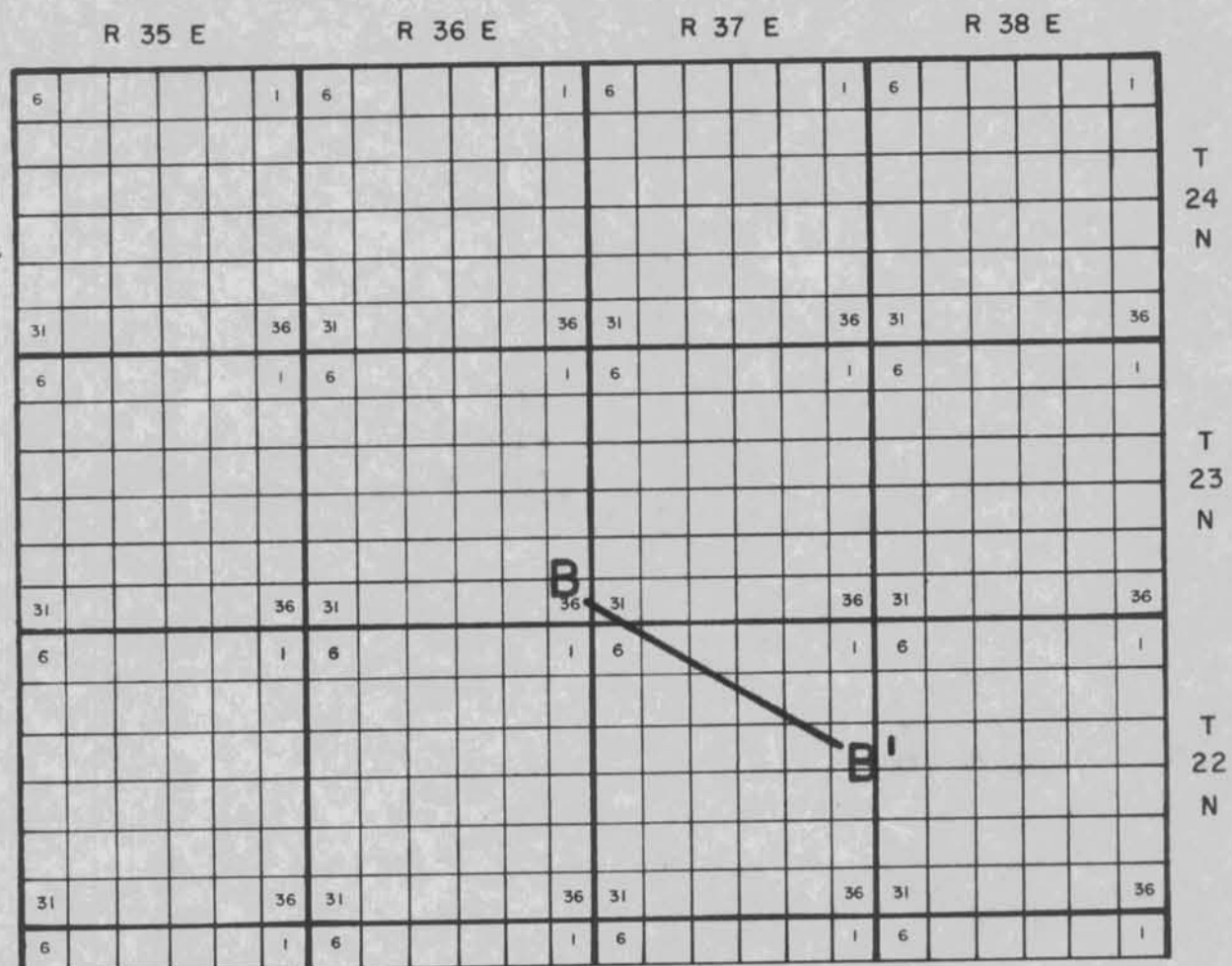
END OF PROFILE

PROJECT: DIXIE VALLEY LINE B 1000 FT DERIVATIVES

\*\*\*\*\*  
 \*\*\*\*\*VERTICAL GRADIENT MULTILEVEL AEROMAGNETIC PROFILES\*\*\*\*\*  
 \*\*\*\*\*

COUNTY: CHURCHILL  
 STATE: NEVADA  
 DATE OF ACQUISITION: 06 MAY 1978  
 CROSS SECTION  
 SCALES: HORIZONTAL - ≈ 3 INCH EQUALS 1 MILES  
 VERTICAL - INCH EQUALS FEET  
 GRADIENT IDENTIFICATION  
 6500 MSL MINUS 7500 MSL 11111  
 7500 MSL MINUS 8500 MSL 22222  
 ( 6500 MINUS 7500 ) MINUS ( 7500 MINUS 8500 ) 33333  
 AVERAGE SURFACE ELEVATION BENEATH PROFILE 4000 FT. MSL

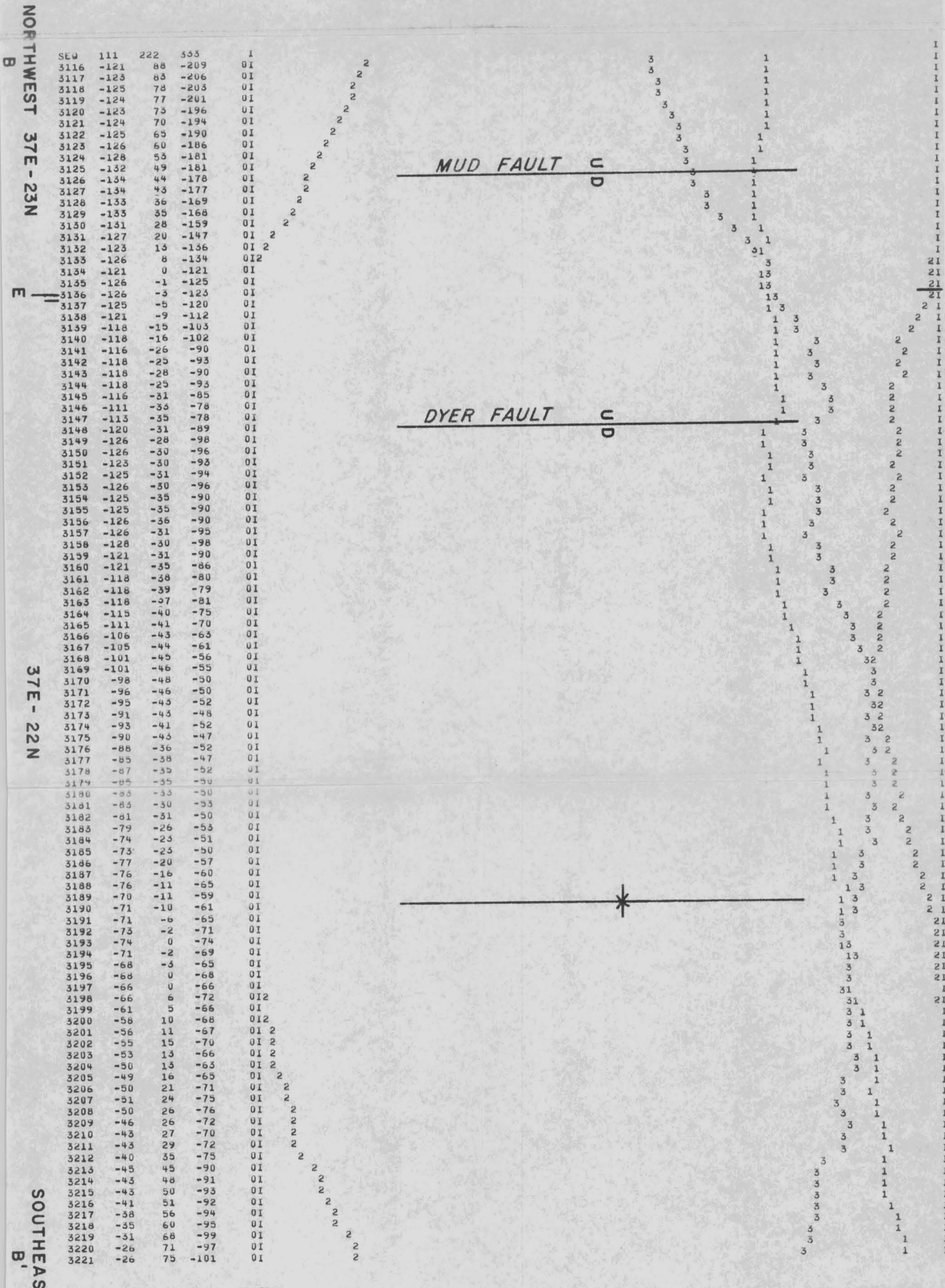
SYMBOL  
 11111  
 22222  
 33333



PROFILE	ELEVATION	NO. OF POINTS	SCALE GAMMAS / PLOT POS.	CORRECTIONS START	CORRECTIONS STOP
17E	6500	106	0.500	4.5	4.1
21E	7500	106	0.500	3.2	2.9
19E	8500	106	0.500	3.3	3.5
0??	0	0	0.000	0.0	0.0

VALUES SHOWN ARE GAMMAS X 10

**SOUTHLAND ROYALTY CO.**  
 PLATE 3 SENTURION SCIENCES, INC.



END OF PROFILE

SENTURION SCIENCES AEROMAGNETIC SERVICES

PROJECT: DIXIE VALLEY LINE C 1000 FT DERIVATIVES

\*\*\*\*\*  
 \*\*\*\*\*VERTICAL GRADIENT MULTILEVEL AEROMAGNETIC PROFILES\*\*\*\*\*  
 \*\*\*\*\*

COUNTY: CHURCHILL

STATE: NEVADA

DATE OF ACQUISITION: 07 MAY 1978

CROSS SECTION  
 SCALES: HORIZONTAL - 3 INCH EQUALS 1 MILES  
 VERTICAL - INCH EQUALS FEET

GRADIENT IDENTIFICATION

6500 MSL MINUS 7500 MSL

7500 MSL MINUS 8500 MSL

( 6500 MINUS 7500 ) MINUS ( 7500 MINUS 8500 )

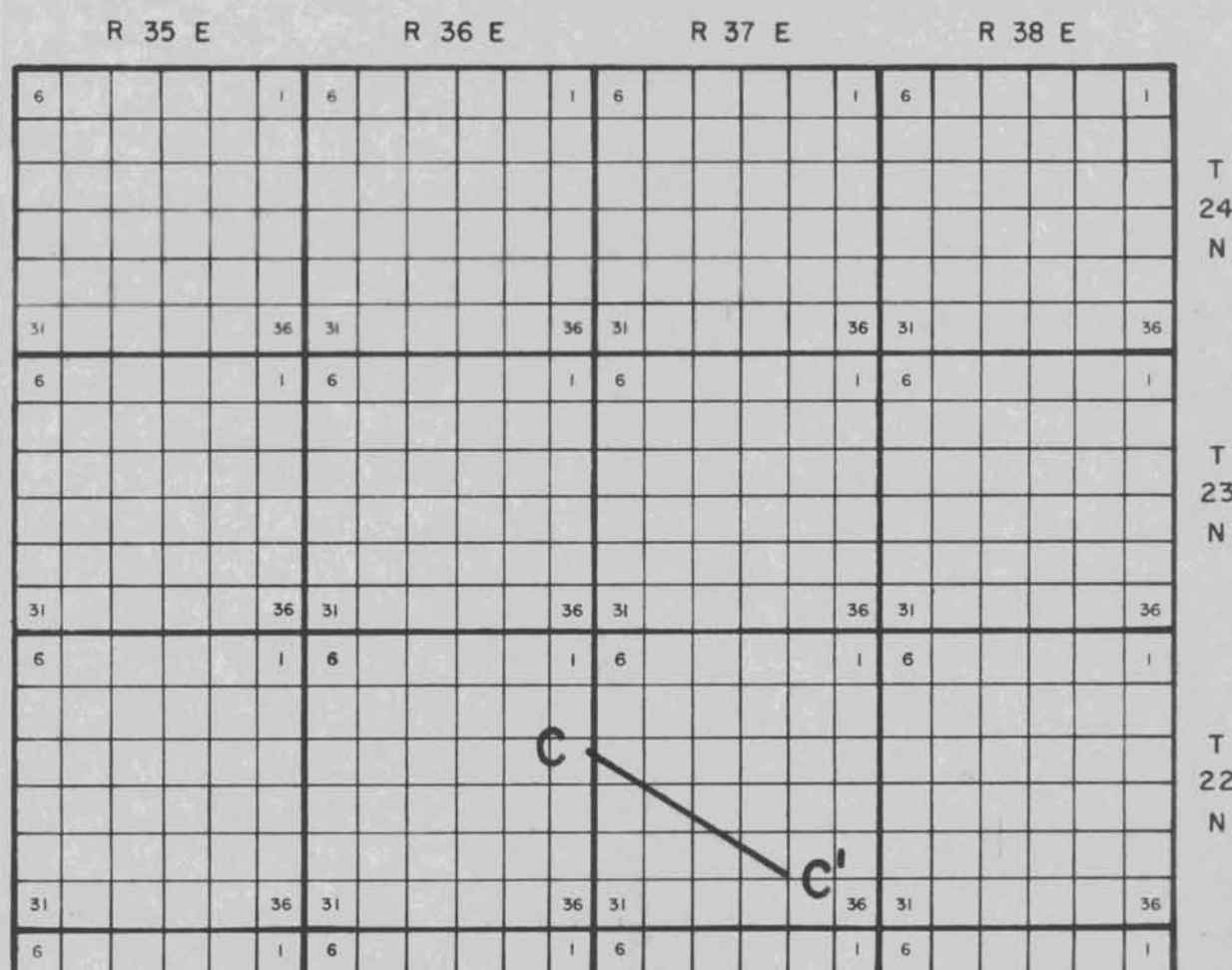
AVERAGE SURFACE ELEVATION BENEATH PROFILE 4500 FT. MSL

SYMBOL

11111

22222

33333



PROFILE	ELEVATION	NO. OF POINTS	SCALE GAMMAS / PLOT POS.	CORRECTIONS START	STOP
57E	6500	86	0.500	8.8	9.4
53E	7500	88	0.500	18.1	17.1
55E	8500	87	0.500	8.5	8.0
0??	0	0	0.000	0.0	0.0

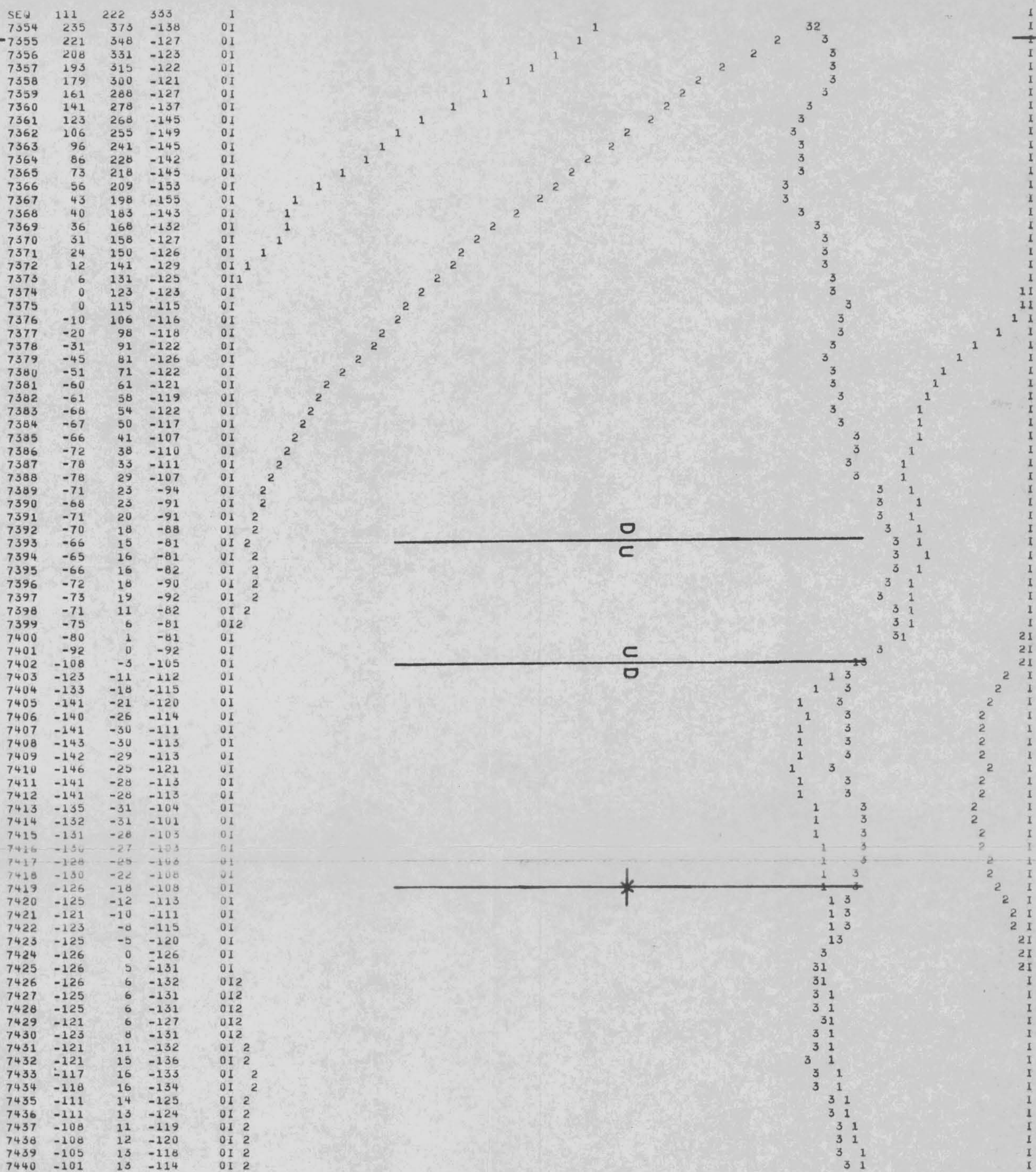
VALUES SHOWN ARE GAMMAS X 10

**SOUTHLAND ROYALTY CO.**  
 PLATE 4 SENTURION SCIENCES, INC.

NORTHWEST  
C

37E - 22N

SOUTHEAST  
C'



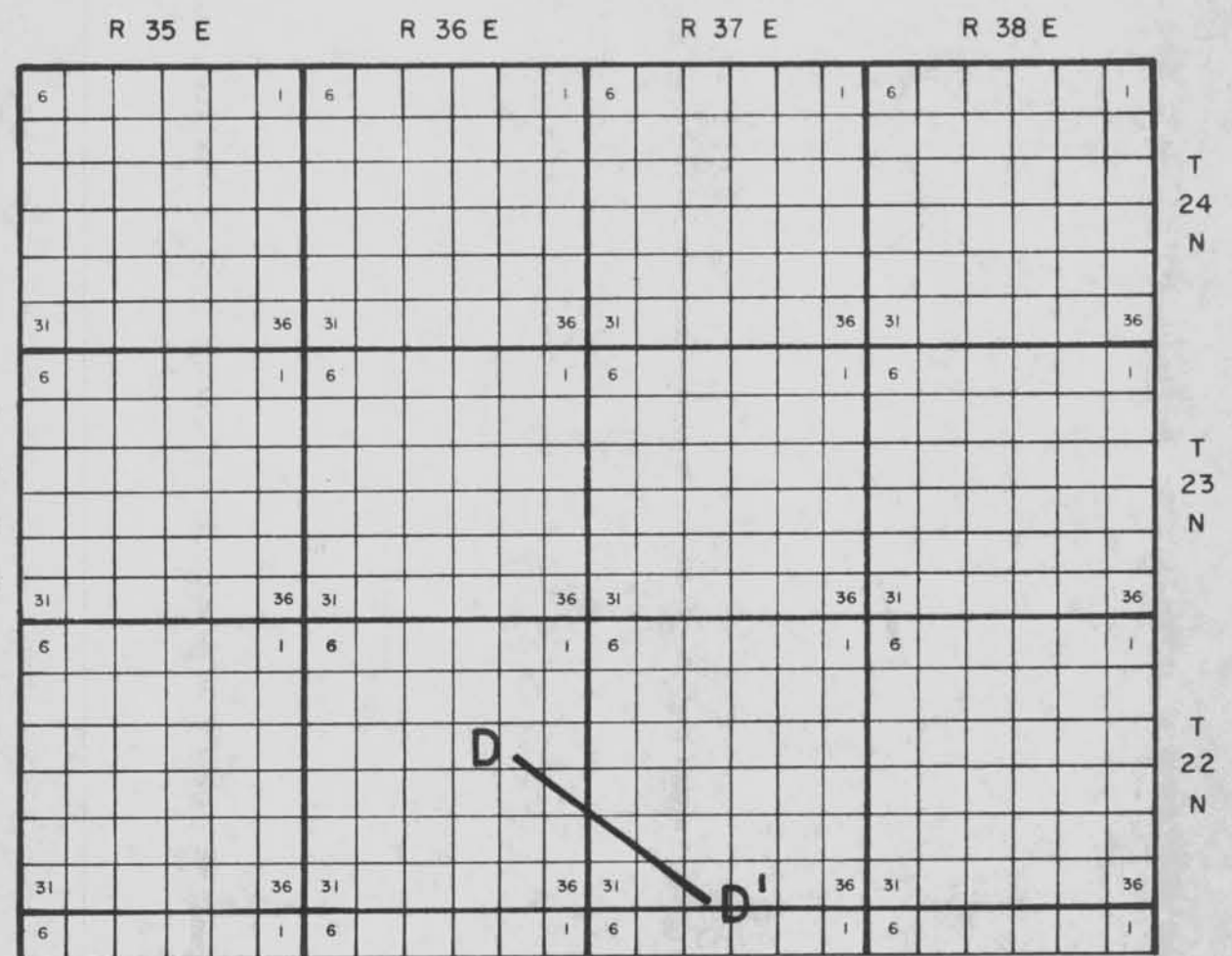
END OF PROFILE

PROJECT: DIXIE VALLEY LINE D 1000 FT DERIVATIVES

\*\*\*\*\*VERTICAL GRADIENT MULTILEVEL AEROMAGNETIC PROFILES\*\*\*\*\*

COUNTY: CHURCHILL  
 STATE: NEVADA  
 DATE OF ACQUISITION: 07 MAY 1978  
 CROSS SECTION  
 SCALES: HORIZONTAL - ≈ 3 INCH EQUALS 1 MILES  
 VERTICAL - INCH EQUALS FEET  
 GRADIENT IDENTIFICATION  
 6500 MSL MINUS 7500 MSL  
 7500 MSL MINUS 8500 MSL  
 ( 6500 MINUS 7500 ) MINUS ( 7500 MINUS 8500 )  
 AVERAGE SURFACE ELEVATION BENEATH PROFILE 4500 FT. MSL

SYMBOL  
 11111  
 22222  
 33333



PROFILE	ELEVATION	NO. OF POINTS	SCALE GAMMA / PLOT POS.	CORRECTIONS START	STOP
46E	6500	96	0.500	2.8	2.4
48E	7500	97	0.500	6.0	8.5
50E	8500	96	0.500	18.0	19.2
077	0	0	0.000	0.0	0.0

VALUES SHOWN ARE GAMMAS X 10

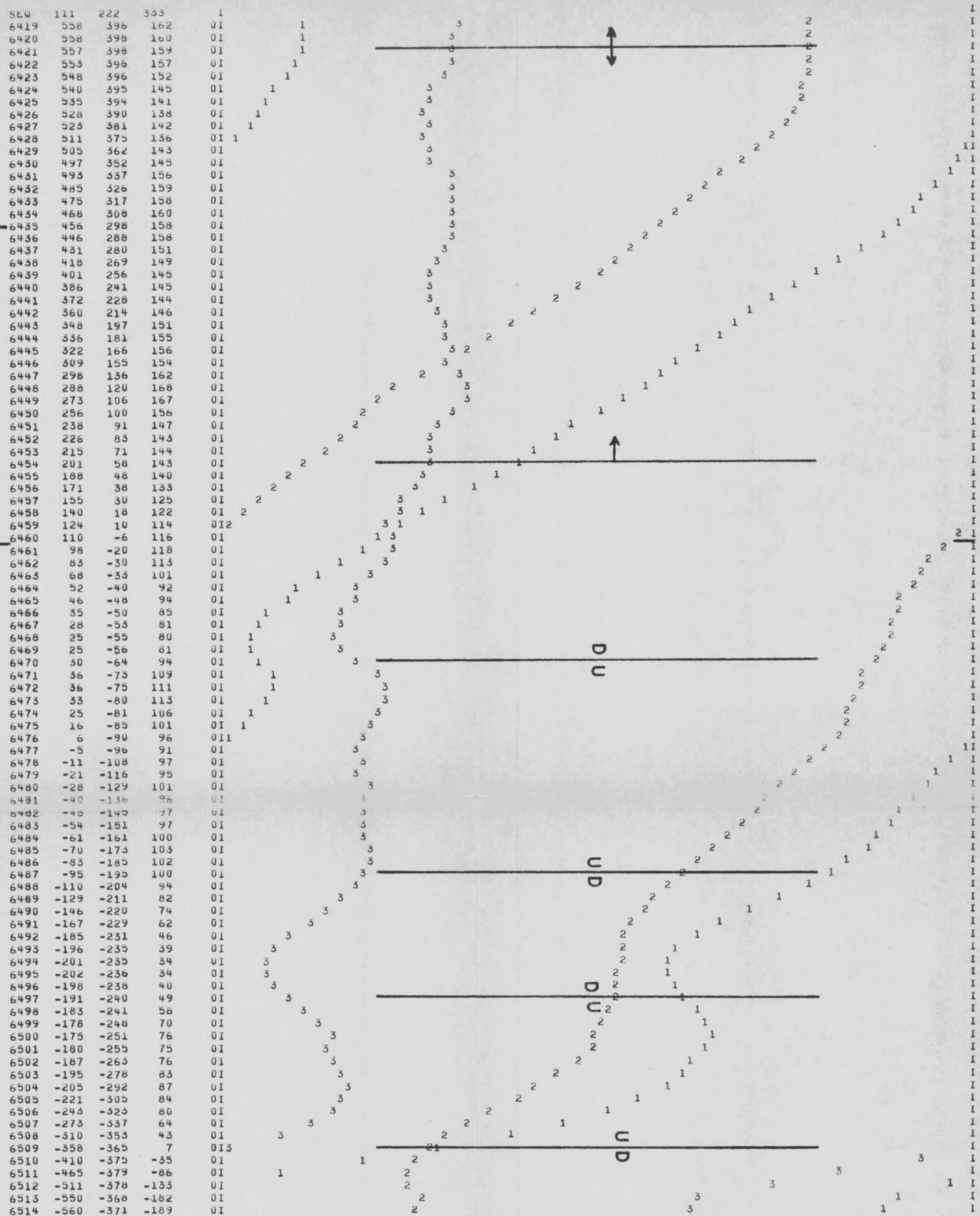
**SOUTHLAND ROYALTY CO.**  
 PLATE 5 SENTURION SCIENCES, INC.

NORTHWEST  
 D

E  
 36E - 22N

37E - 22N

SOUTHEAST  
 D



END OF PROFILE



PROJECT: DIXIE VALLEY LINE F 1000 FT DERIVATIVES

\*\*\*\*\*VERTICAL GRADIENT MULTILEVEL AEROMAGNETIC PROFILES\*\*\*\*\*

COUNTY: CHURCHILL

STATE: NEVADA

DATE OF ACQUISITION: 07 MAY 1978

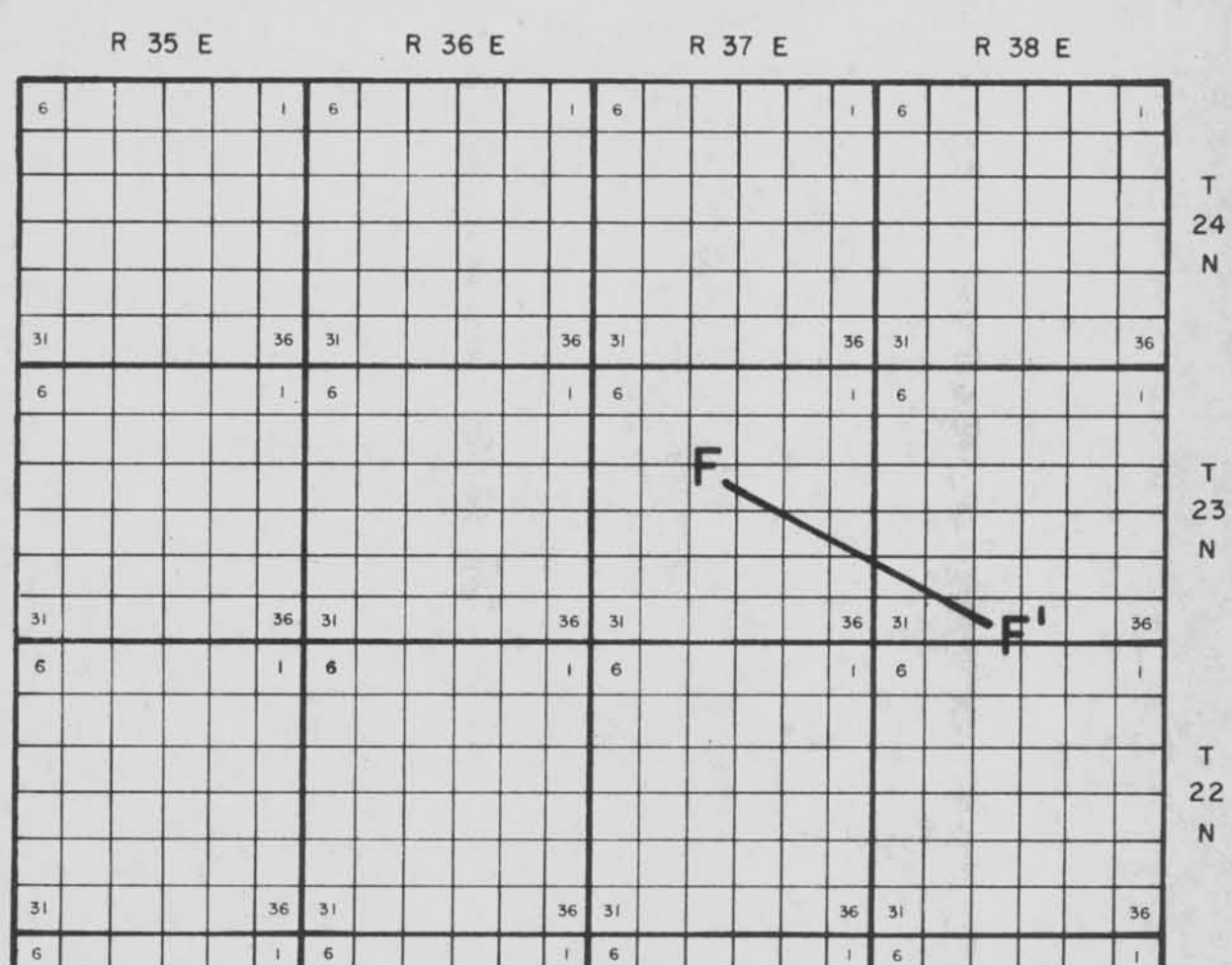
CROSS SECTION  
 SCALES: HORIZONTAL - ≈ 3 INCH EQUALS 1 MILES  
 VERTICAL - INCH EQUALS FEET

GRADIENT IDENTIFICATION

6500 MSL MINUS 7500 MSL  
 7500 MSL MINUS 8500 MSL  
 ( 6500 MINUS 7500 ) MINUS ( 7500 MINUS 8500 )

AVERAGE SURFACE ELEVATION BENEATH PROFILE 4200 FT. MSL

SYMBOL  
 11111  
 22222  
 33333



**ABNORMAL GRADIENT**

PROFILE	ELEVATION	NO. OF POINTS	SCALE GAMMAS / PLUT POS.	CORRECTIONS START	STOP
1039E	6500	133	0.500	14.1	15.4
35E	7500	135	0.500	9.8	7.4
37E	8500	136	0.500	6.9	9.4
077	0	0	0.000	0.0	0.0

VALUES SHOWN ARE GAMMAS X 10

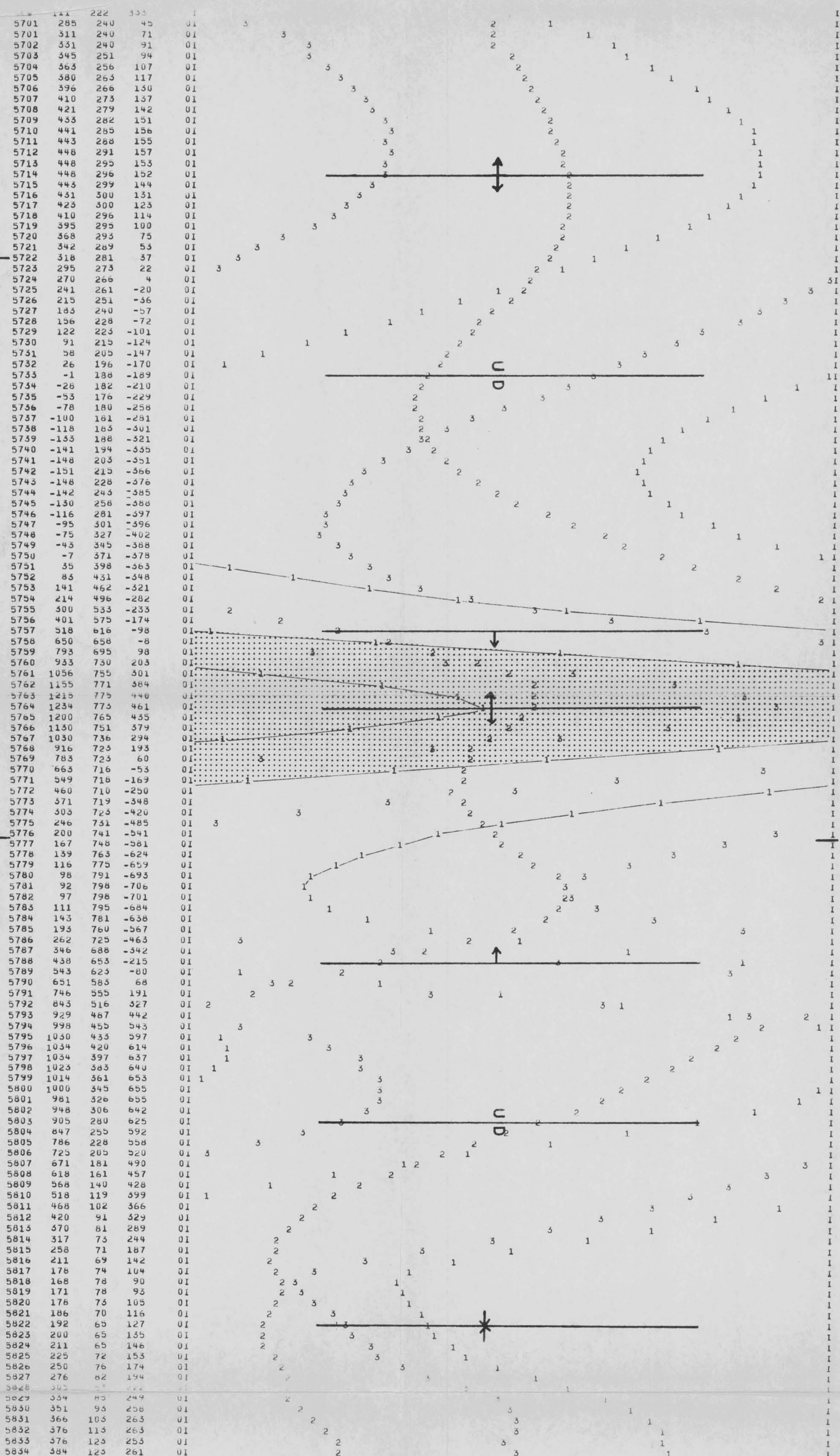
**SOUTHLAND ROYALTY CO.**  
 PLATE 6 SENTURION SCIENCES, INC.

NORTHWEST  
F

E  
37E - 23N

38E - 23N

SOUTHEAST  
F



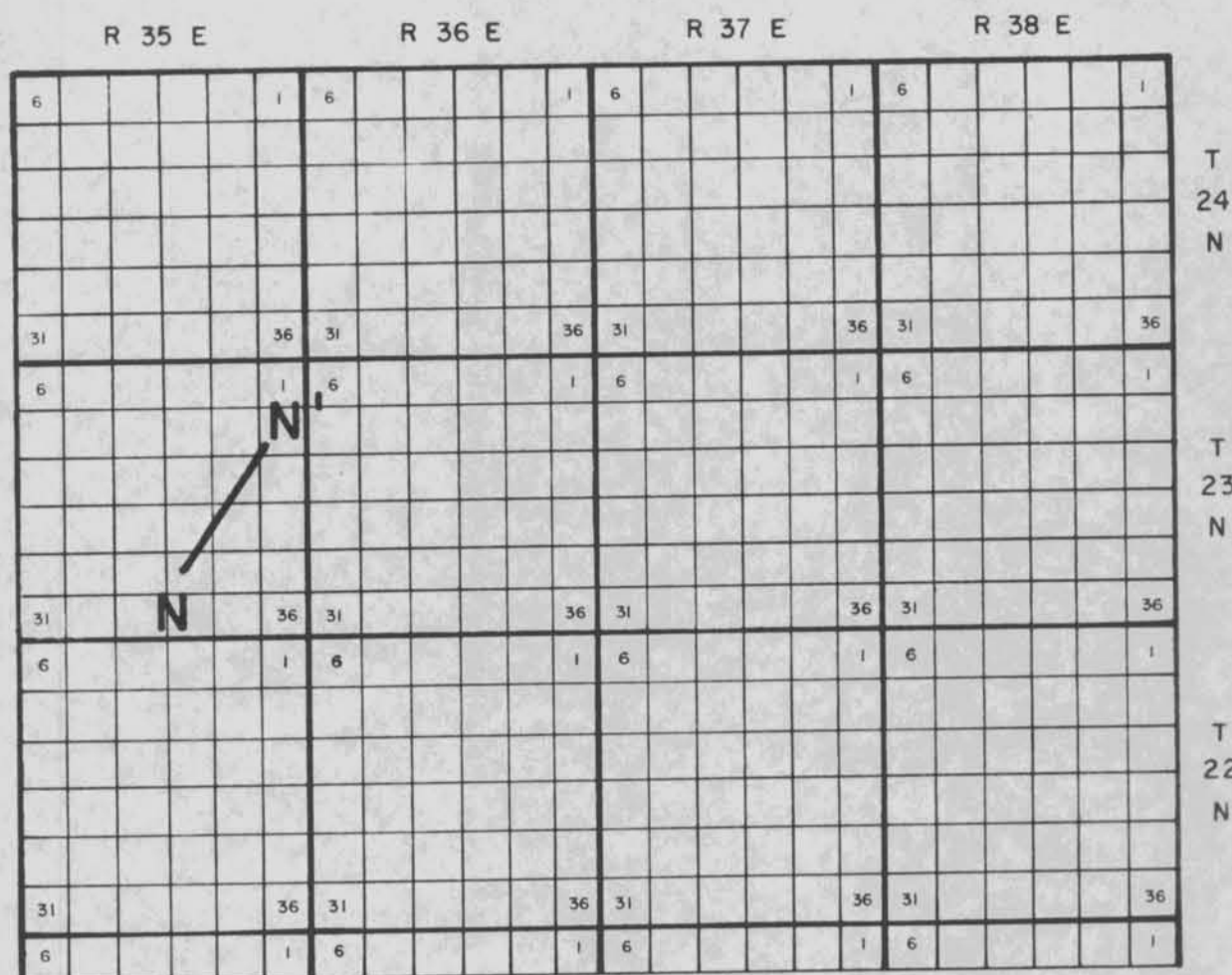
END OF PROFILE

PROJECT: DIXIE VALLEY LINE N 1000 FT DERIVATIVES

\*\*\*\*\*VERTICAL GRADIENT MULTILEVEL AEROMAGNETIC PROFILES\*\*\*\*\*

COUNTY: CHURCHILL  
 STATE: NEVADA  
 DATE OF ACQUISITION: 02 MAY 1978  
 CROSS SECTION  
 SCALES: HORIZONTAL - ≈ 3 INCH EQUALS 1 MILES  
 VERTICAL - INCH EQUALS FEET  
 GRADIENT IDENTIFICATION  
 5500 MSL MINUS 6500 MSL  
 6500 MSL MINUS 7500 MSL  
 ( 5500 MINUS 6500 ) MINUS ( 6500 MINUS 7500 )  
 AVERAGE SURFACE ELEVATION BENEATH PROFILE 3500 FT. MSL

SYMBOL  
 11111  
 22222  
 33333



**SOUTHLAND ROYALTY CO.**  
 PLATE 7 SENTURION SCIENCES, INC.

VALUES SHOWN ARE GAMMAS X 10

SOUTHWEST  
 D  
 SEE FIGURE 7  
 C  
 35E-23N  
 B  
 N  
 NORTHEAST

SEW	111	222	333	I
1477	12	55	-43	01 1
1478	0	52	-52	01
1479	-20	52	-72	01
1480	-53	53	-106	01
1481	-85	58	-143	01
1482	-110	61	-171	01
1483	-118	66	-184	01
1484	-108	70	-178	01
1485	-91	86	-177	01
1486	-65	103	-168	01
1487	-32	120	-152	01
1488	7	130	-123	011
1489	40	143	-103	01
1490	63	155	-92	01
1491	68	173	-105	01
1492	63	186	-123	01
1493	54	198	-144	01
1494	45	208	-163	01
1495	38	213	-175	01
1496	30	218	-188	01
1497	31	221	-190	01
1498	36	225	-189	01
1499	41	231	-190	01
1500	40	241	-201	01
1501	38	247	-209	01
1502	36	253	-217	01
1503	30	251	-221	01
1504	17	245	-228	01
1505	1	225	-224	01
1506	-18	200	-218	01
1507	-45	175	-220	01
1508	-77	148	-225	01
1510	-110	123	-233	01
1511	-130	100	-230	01
1512	-146	73	-219	01
1513	-156	53	-209	01
1514	-166	38	-204	01
1515	-168	28	-196	01
1516	-168	20	-188	01
1517	-163	10	-173	012
1518	-156	5	-161	01
1519	-148	5	-153	01
1520	-136	15	-151	01 2
1521	-118	25	-141	01
1522	-95	31	-126	01
1523	-65	35	-100	01
1524	-35	43	-78	01
1525	-5	45	-50	01
1526	13	51	-38	01 1
1527	24	51	-27	01
1528	24	60	-36	01
1529	23	63	-40	01
1530	15	68	-53	01 1
1531	7	67	-60	011
1532	-8	70	-78	01
1533	-22	63	-85	01
1534	-35	60	-95	01
1535	-42	55	-97	01
1536	-45	55	-100	01
1537	-46	53	-99	01
1538	-43	50	-93	01
1539	-41	46	-87	01
1540	-38	45	-83	01
1542	-38	45	-84	01

OLD STILLWATER FAULT

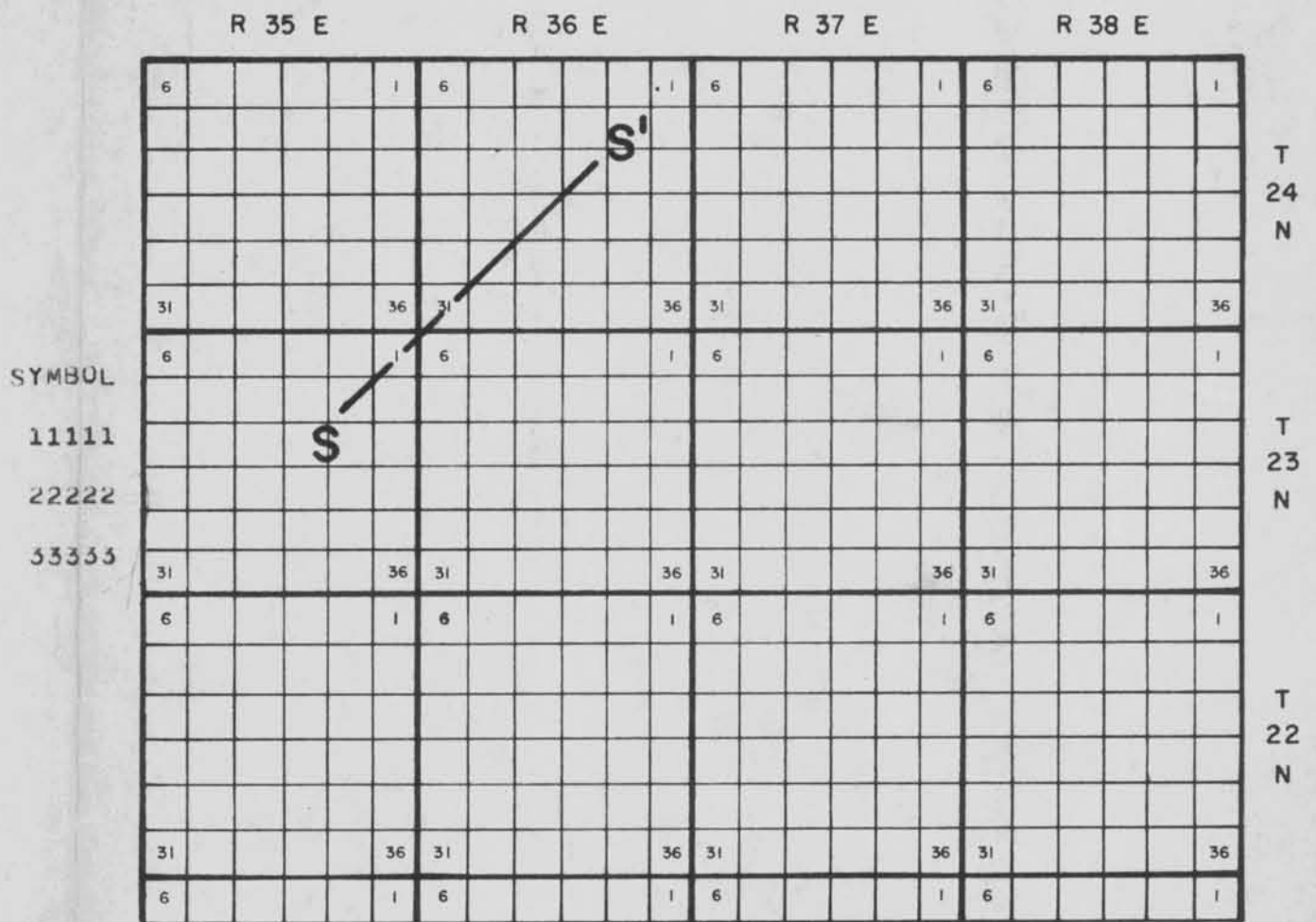
OLD STILLWATER FAULT

END OF PROFILE

PROJECT: DIXIE VALLEY LINE S 1000 FT DERIVATIVES

\*\*\*\*\*VERTICAL GRADIENT MULTILEVEL AEROMAGNETIC PROFILES\*\*\*\*\*

COUNTY: CHURCHILL  
 STATE: NEVADA  
 DATE OF ACQUISITION: 02 MAY 1978  
 CROSS SECTION  
 SCALES: HORIZONTAL - 3 INCH EQUALS 1 MILES  
 VERTICAL - 1 INCH EQUALS FEET  
 GRADIENT IDENTIFICATION  
 5500 MSL MINUS 6500 MSL  
 6500 MSL MINUS 7500 MSL  
 ( 5500 MINUS 6500 ) MINUS ( 6500 MINUS 7500 )  
 AVERAGE SURFACE ELEVATION BENEATH PROFILE 3500 FT. MSL



PROFILE	ELEVATION	NO. OF POINTS	SCALE GAMMAS / PLOT POS.	CORRECTIONS START	STOP
35	5500	168	0.500	0.9	0.9
95	6500	167	0.500	0.8	1.0
125	7500	165	0.500	1.2	1.2
077	0	0	0.000	0.0	0.0

VALUES SHOWN ARE GAMMAS X 10

**SOUTHLAND ROYALTY CO.**  
 PLATE B SENTURION SCIENCES, INC.

SOUTHWEST

B 35E - 23N

SEE FIGURE 6

A

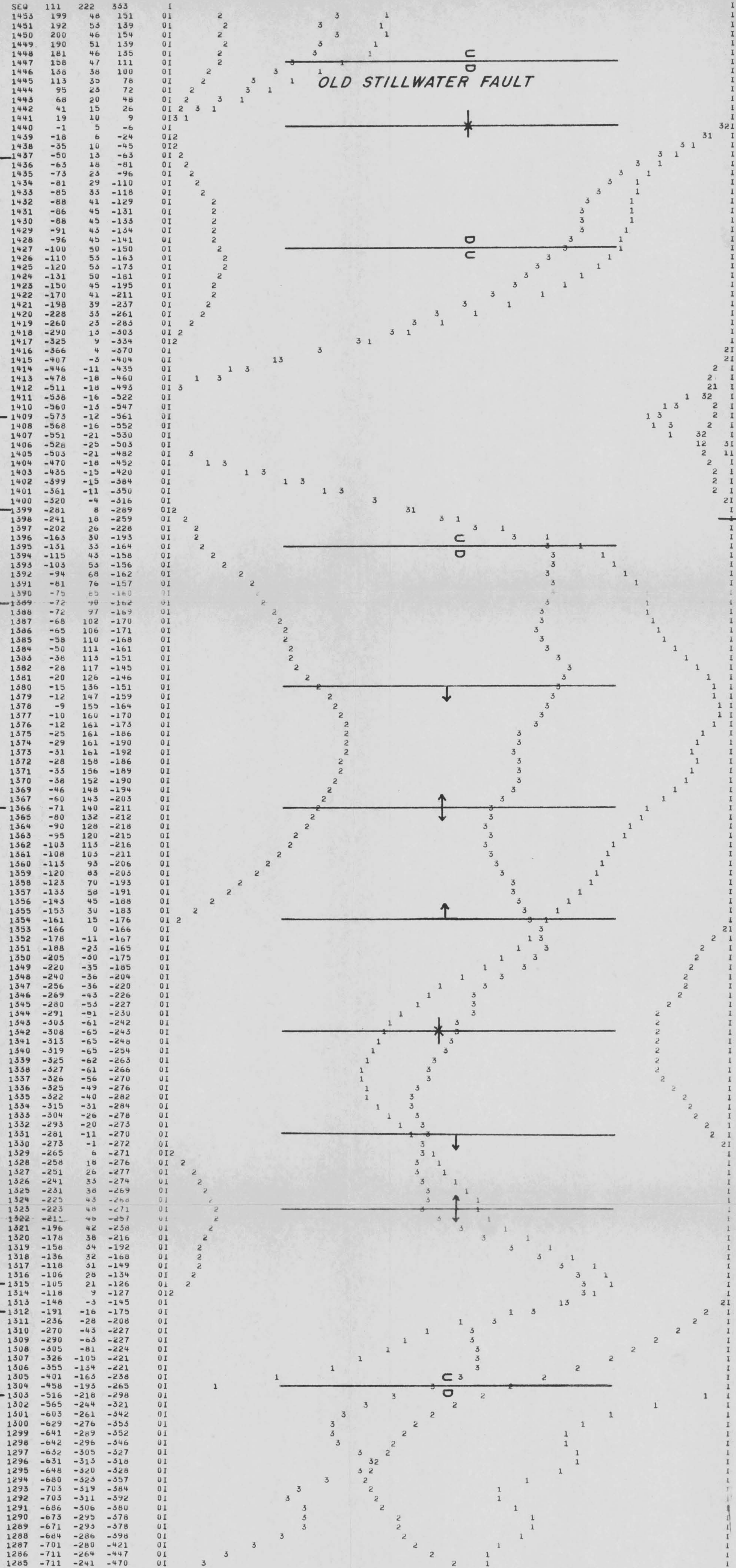
SEE FIGURE 5

36E - 24N

SEE FIGURE 4

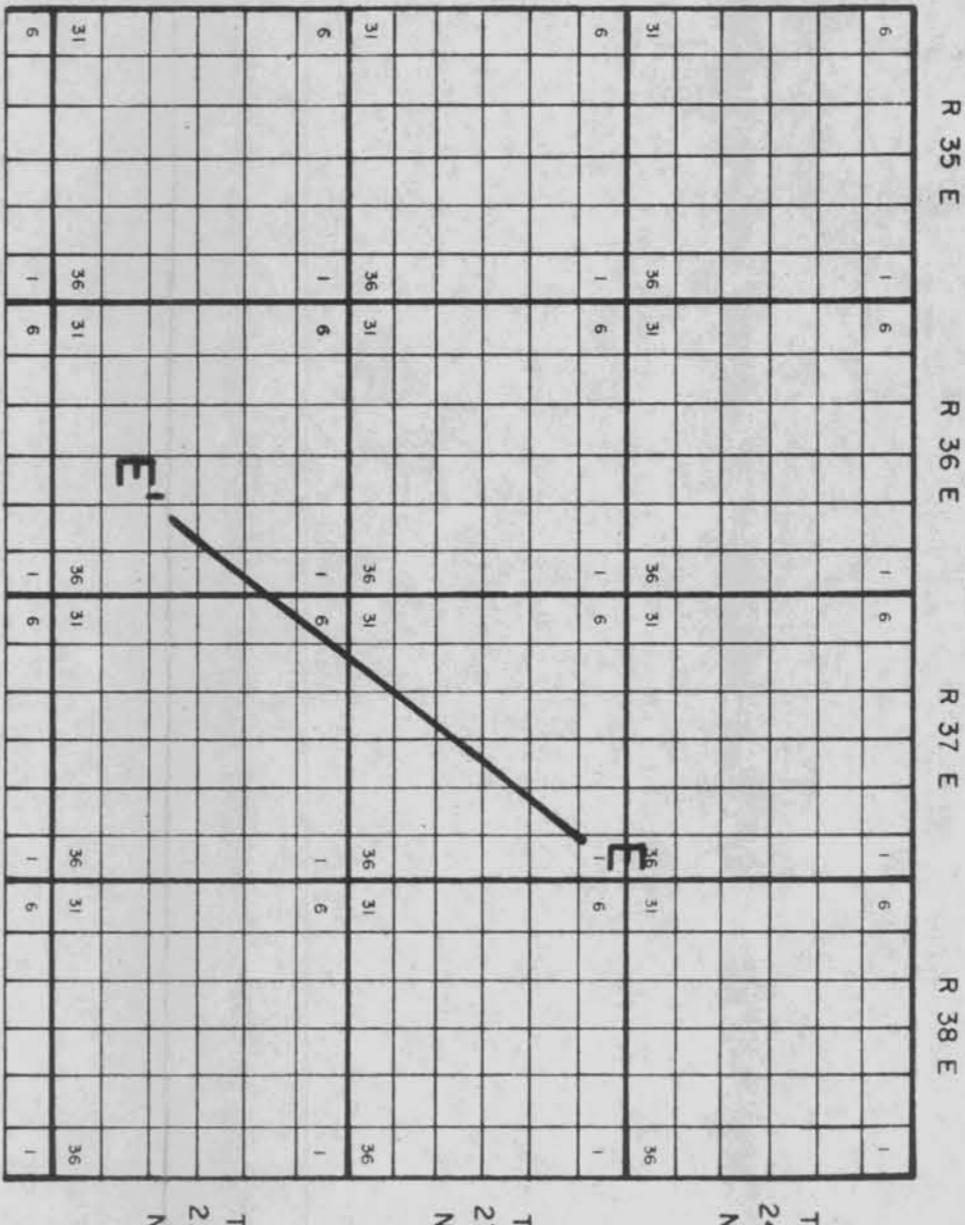
SEE FIGURE 3

NORTHEAST



END OF PROFILE

**SOUTHLAND ROYALTY CO.**  
**PLATE 9**  
**SENTURION SCIENCES, INC.**

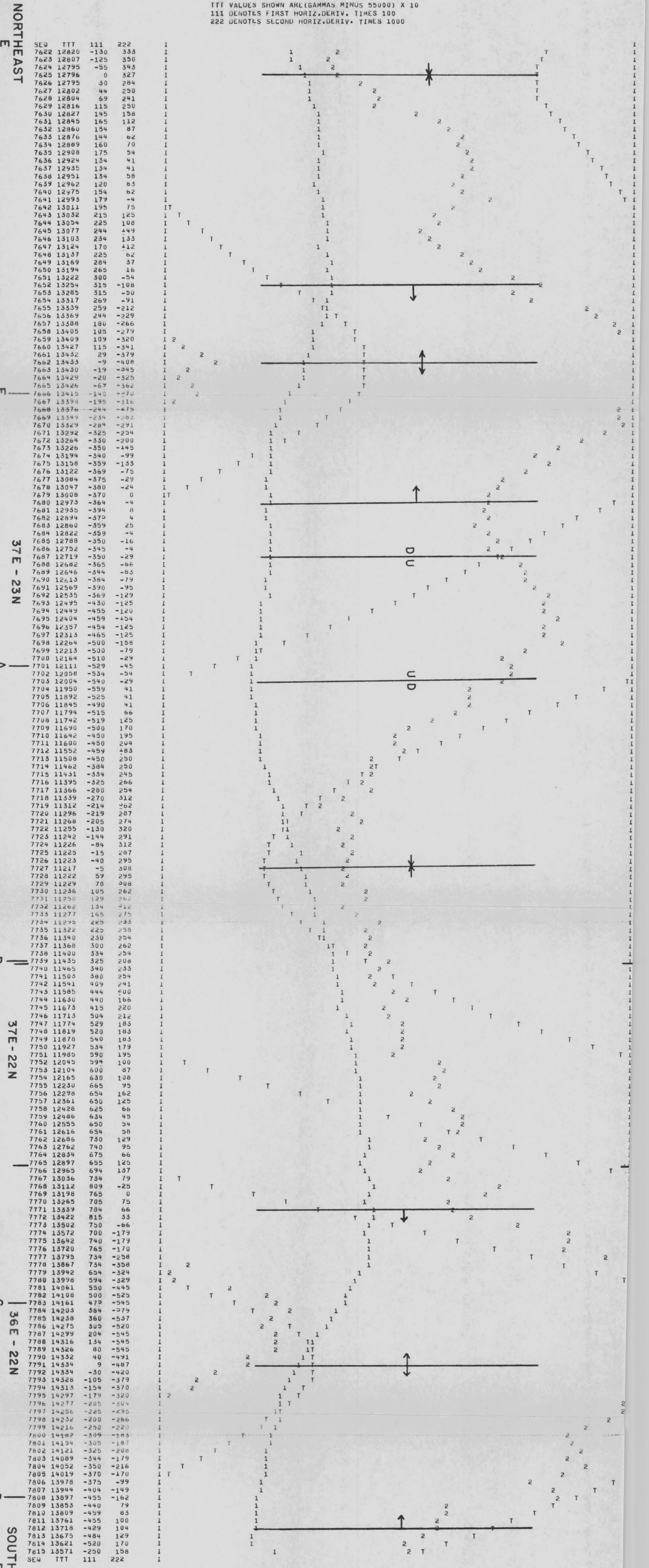


SENTURION SCIENCES AEROMAGNETIC SERVICES  
 DIXIE VALLEY LINE E TIE LINE 7000 ASL PROJECT 1 LINES

**LINE E-E' PLATE 9**  
**SINGLE LEVEL**

LINE NUMBER 61 DATA POINTS 194  
 START-END CORRECT. 0.00 0.00  
 FILTERS 3 15 DIVISOR 1.0 BIAS 0.0  
 GAMMAS/PLOT POS. SCALES 1.000 0.500 0.010

TTT VALUES SHOWN ARE (GAMMAS MINUS 55000) X 10  
 111 DENOTES FIRST HORIZ.DERIV. TIMES 100  
 222 DENOTES SECOND HORIZ.DERIV. TIMES 1000



NORTHEAST  
 37E-23N  
 37E-22N  
 36E-22N  
 SOUTHWEST

SEQ	TTT	111	222
7622	12820	-130	333
7623	12807	-125	330
7624	12795	-85	343
7625	12796	0	287
7626	12795	50	284
7627	12802	44	250
7628	12804	69	241
7629	12816	115	250
7630	12827	145	158
7631	12845	165	112
7632	12860	154	87
7633	12876	144	62
7634	12889	160	70
7635	12908	175	54
7636	12925	134	41
7637	12935	134	41
7638	12951	134	58
7639	12962	120	63
7640	12975	154	62
7641	12993	179	-4
7642	13011	195	75
7643	13032	215	125
7644	13054	225	108
7645	13077	244	449
7646	13103	234	133
7647	13124	170	412
7648	13137	225	62
7649	13169	284	37
7650	13194	265	16
7651	13222	300	-54
7652	13254	315	-108
7653	13285	315	-50
7654	13317	269	-91
7655	13339	259	-212
7656	13369	244	-229
7657	13388	180	-266
7658	13405	105	-279
7659	13409	109	-320
7660	13427	115	-341
7661	13432	29	-379
7662	13433	-9	-408
7663	13430	-19	-345
7664	13429	-20	-325
7665	13426	-67	-362
7666	13415	-140	-370
7667	13394	-195	-316
7668	13376	-244	-475
7669	13349	-234	-263
7670	13329	-284	-291
7671	13292	-325	-254
7672	13264	-330	-200
7673	13226	-350	-145
7674	13194	-340	-99
7675	13158	-359	-133
7676	13122	-369	-75
7677	13084	-375	-29
7678	13047	-380	-24
7679	13008	-370	0
7680	12973	-364	-4
7681	12935	-394	8
7682	12894	-370	4
7683	12860	-359	25
7684	12822	-359	-4
7685	12788	-350	-16
7686	12752	-345	-4
7687	12719	-350	-29
7688	12682	-365	-66
7689	12646	-344	-63
7690	12613	-344	-79
7691	12569	-390	-95
7692	12535	-369	-129
7693	12495	-430	-125
7694	12449	-455	-120
7695	12404	-459	-154
7696	12357	-454	-125
7697	12313	-465	-125
7698	12264	-500	-158
7699	12213	-500	-79
7700	12164	-510	-29
7701	12111	-529	-45
7702	12058	-534	-54
7703	12004	-540	-29
7704	11950	-559	41
7705	11892	-525	41
7706	11844	-490	41
7707	11794	-515	66
7708	11742	-519	125
7709	11690	-500	170
7710	11642	-450	195
7711	11600	-450	204
7712	11552	-459	483
7713	11508	-450	250
7714	11462	-384	250
7715	11431	-354	245
7716	11395	-325	266
7717	11366	-290	294
7718	11339	-270	312
7719	11312	-214	282
7720	11296	-219	287
7721	11268	-205	274
7722	11255	-130	291
7723	11242	-144	320
7724	11226	-84	312
7725	11225	-15	207
7726	11223	-40	295
7727	11217	-5	308
7728	11222	59	295
7729	11229	70	308
7730	11236	105	262
7731	11250	129	262
7732	11262	154	312
7733	11277	165	275
7734	11275	245	235
7735	11322	225	258
7736	11340	230	254
7737	11368	300	262
7738	11400	334	254
7739	11435	325	208
7740	11465	340	233
7741	11503	380	254
7742	11541	409	241
7743	11585	444	500
7744	11630	440	166
7745	11673	415	220
7746	11713	504	242
7747	11774	529	185
7748	11819	520	183
7749	11878	540	183
7750	11927	534	179
7751	11985	590	195
7752	12045	594	100
7753	12104	600	87
7754	12165	630	108
7755	12230	665	95
7756	12291	654	162
7757	12361	650	125
7758	12428	625	66
7759	12486	634	45
7760	12535	590	94
7761	12616	654	58
7762	12686	730	129
7763	12762	740	95
7764	12834	675	66
7765	12897	655	125
7766	12965	694	157
7767	13036	734	79
7768	13112	809	-25
7769	13198	765	0
7770	13265	705	75
7771	13339	784	66
7772	13422	815	53
7773	13502	750	-66
7774	13572	700	-179
7775	13642	740	-179
7776	13720	765	-170
7777	13795	734	-258
7778	13867	734	-358
7779	13942	654	-324
7780	13998	594	-329
7781	14061	550	-445
7782	14108	500	-525
7783	14161	479	-545
7784	14203	384	-379
7785	14238	360	-537
7786	14275	505	-520
7787	14299	204	-545
7788	14316	134	-545
7789	14326	80	-545
7790	14332	40	-491
7791	14334	9	-487
7792	14334	-30	-420
7793	14328	-105	-379
7794	14313	-154	-370
7795	14297	-179	-320
7796	14277	-205	-304
7797	14256	-225	-295
7798	14232	-200	-266
7799	14216	-250	-220
7800	14192	-239	-143
7801	14194	-305	-187
7802	14121	-325	-208
7803	14089	-344	-179
7804	14052	-350	-216
7805	14019	-370	-170
7806	13978	-375	-99
7807	13944	-404	-149
7808	13897	-455	-162
7809	13853	-440	79
7810	13809	-459	83
7811	13761	-455	100
7812	13718	-429	104
7813	13675	-424	129
7814	13621	-530	170
7815	13571	-250	158
SEQ	TTT	111	222

SENTURION SCIENCES AEROMAGNETIC SERVICES

PROJECT: DIXIE VALLEY LINE A 1000 FT TOT FLD

\*\*\*\*\*TOTAL FIELD MULTILEVEL AEROMAGNETIC PROFILES\*\*\*\*\*

COUNTY: CHURCHILL

STATE: NEVADA

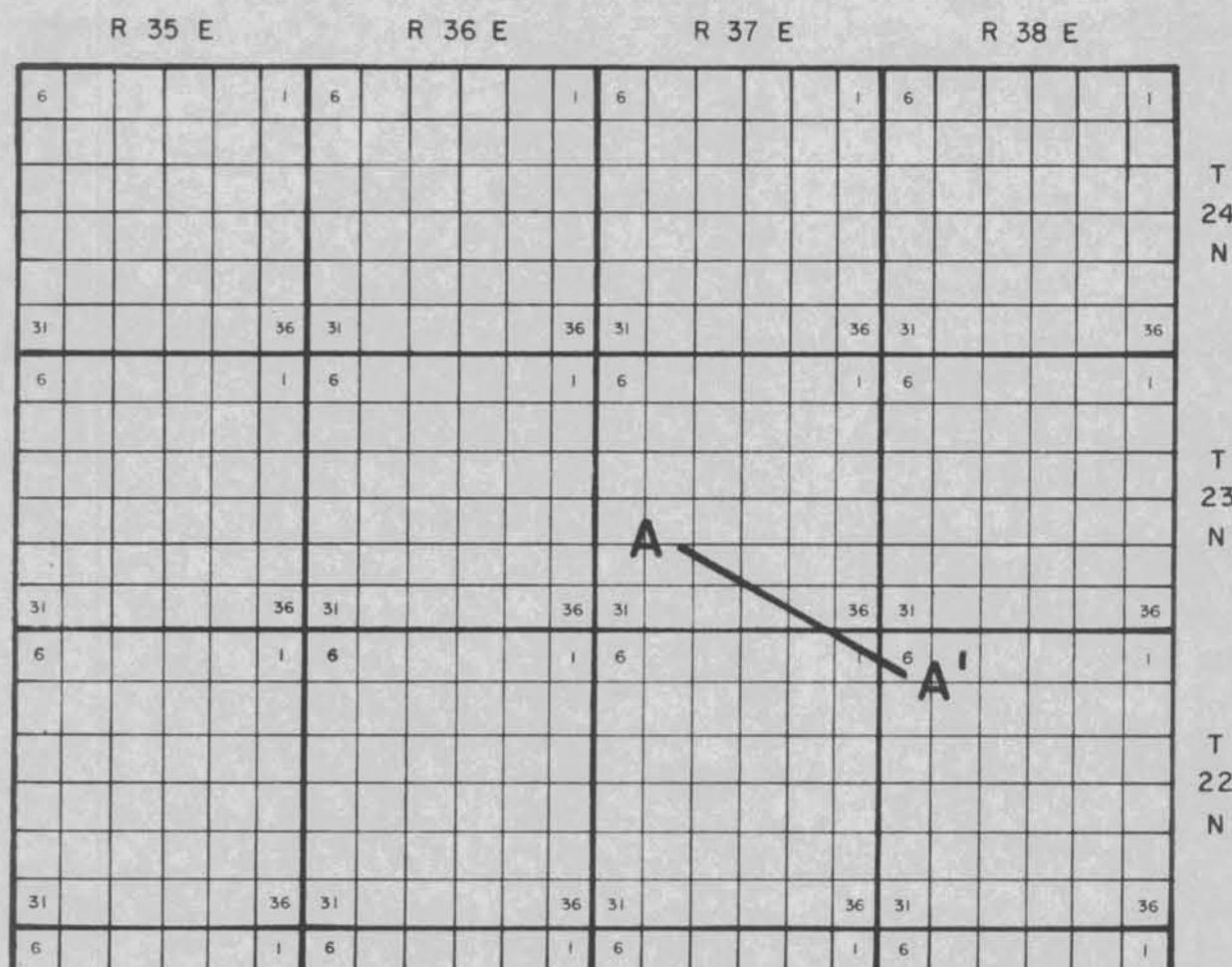
DATE OF ACQUISITION: 06 MAY 1978

CROSS SECTION  
 SCALES: HORIZONTAL - ≈ 3 INCH EQUALS 1 MILES  
 VERTICAL - INCH EQUALS FEET

PROFILE IDENTIFICATION

LEVELS FLOWN	SYMBOL	LINE
6500 MSL	XXXXX	30
7500 MSL	UUUUU	28
8500 MSL	*****	26
0 MSL	+++++	0

AVERAGE SURFACE ELEVATION BENEATH PROFILE 4000 FT. MSL



PROFILE	ELEVATION	NO. OF POINTS	SCALE GAMMAS / PLOT POS.	CORRECTIONS START	STOP
30E	6500	87	1,000	1.4	1.6
28E	7500	88	1,000	3.2	2.6
26E	8500	88	1,000	7.2	6.8
0??	0	0	0,000	0.0	0.0

MAG. VALUES SHOWN = (TOTAL FIELD - BIAS) X 10  
 EXAMPLE: FOR TOTAL FIELD VALUE OF 55379.2 GAMMAS  
 AND BIAS OF 55000.0 GAMMAS  
 MAG. VALUE = (55379.2-55000.0) X 10 = 3792

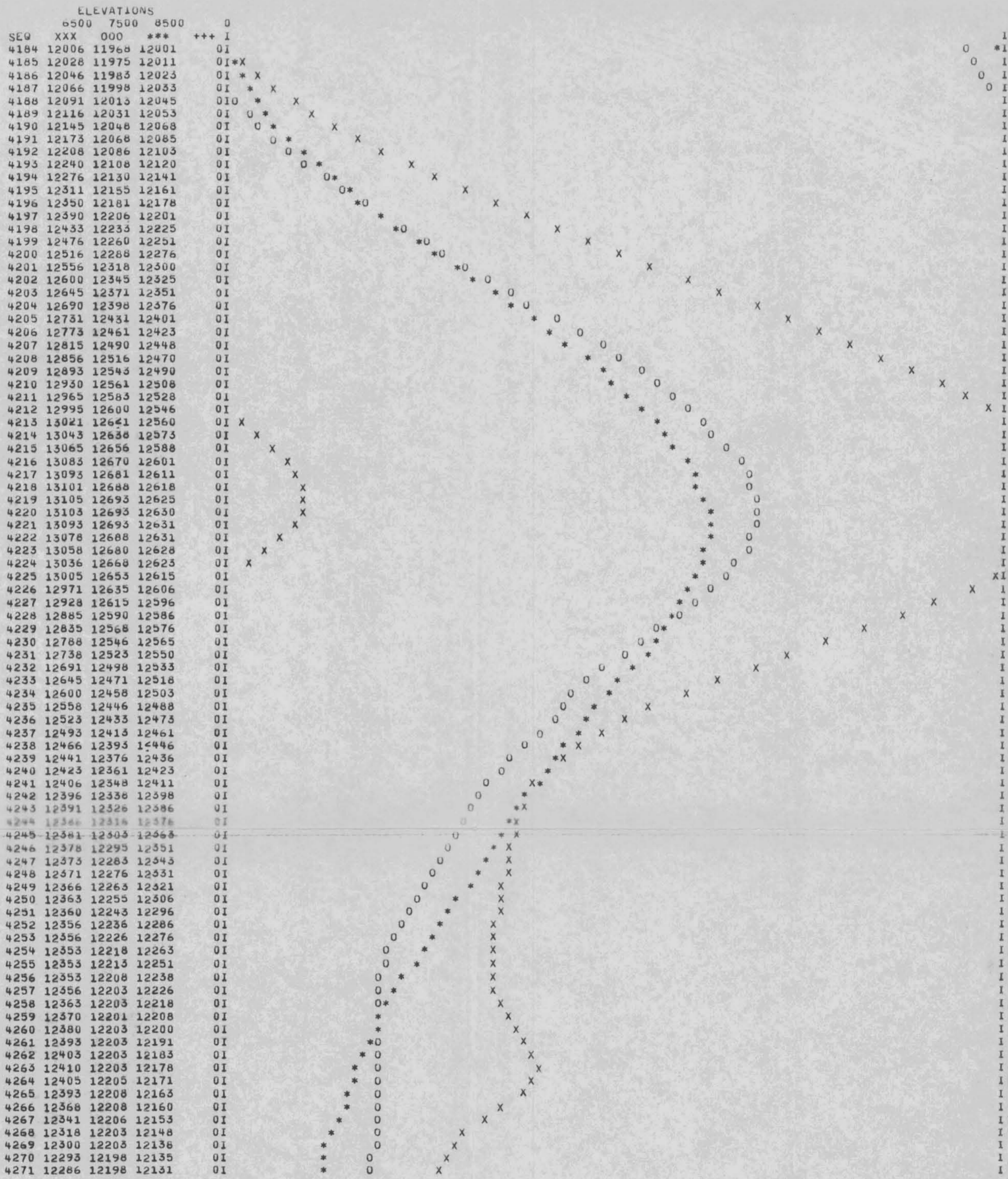
BIAS THIS PROJECT IS: 52000.0 GAMMAS

**SOUTHLAND ROYALTY CO.**

PLATE 10 SENTURION SCIENCES, INC.

NORTHWEST  
A

SOUTHEAST  
A



END OF PROFILE

PROJECT: DIXIE VALLEY LINE B 1000 FT TOT FLD

\*\*\*\*\*  
 \*\*\*\*\*TOTAL FIELD MULTILEVEL AEROMAGNETIC PROFILES\*\*\*\*\*  
 \*\*\*\*\*

COUNTY: CHURCHILL

STATE: NEVADA

DATE OF ACQUISITION: 06 MAY 1978

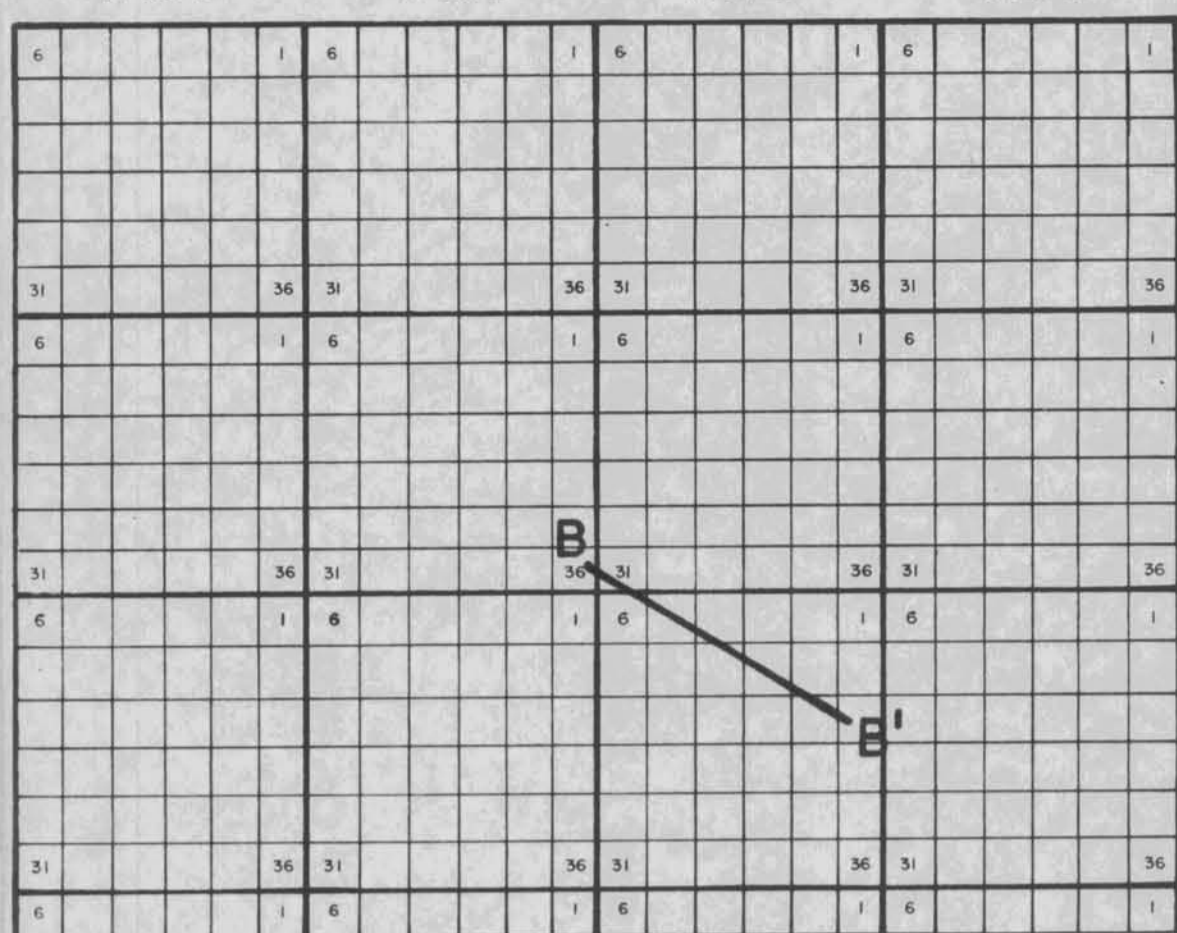
CROSS SECTION  
 SCALES: HORIZONTAL - ≈ 3 INCH EQUALS 1 MILES  
 VERTICAL - INCH EQUALS FEET

PROFILE IDENTIFICATION

LEVELS FLOWN	SYMBOL	LINE
6500 MSL	XXXXX	17
7500 MSL	00000	21
8500 MSL	*****	19
0 MSL	+++++	0

AVERAGE SURFACE ELEVATION BENEATH PROFILE 4000 FT. MSL

R 35 E R 36 E R 37 E R 38 E



**SOUTHLAND ROYALTY CO.**  
 PLATE II SENTURION SCIENCES, INC.

PROFILE	ELEVATION	NO. OF POINTS	SCALE GAMMAS / PLOT POS.	CORRECTIONS START	STOP
17E	6500	106	1.000	4.5	4.1
21E	7500	106	1.000	3.2	2.9
19E	8500	106	1.000	3.3	3.5
0??	0	0	0.000	0.0	0.0

MAG. VALUES SHOWN = (TOTAL FIELD - BIAS) X 10  
 EXAMPLE: FOR TOTAL FIELD VALUE OF 55379.2 GAMMAS  
 AND BIAS OF 55000.0 GAMMAS  
 MAG. VALUE = (55379.2-55000.0) X 10 = 3792  
 BIAS THIS PROJECT IS: 52000.0 GAMMAS

NORTHWEST  
 B

SEQ	ELEVATIONS			+	I	X	*	O
	6500	7500	8500					
3116	12025	12146	12058	01	X	*		O
3117	12013	12136	12053	01	X	*		O
3118	12000	12125	12046	01	*			O
3119	11986	12111	12033	01	*			O
3120	11971	12095	12021	01	*			O
3121	11953	12078	12008	01	*			O
3122	11933	12058	11993	01	*			O
3123	11915	12041	11981	01	*			O
3124	11891	12020	11966	01	*			O
3125	11868	12001	11951	01	*			O
3126	11843	11978	11933	01	*			O
3127	11821	11956	11913	01	*			O
3128	11798	11931	11895	01	*			O
3129	11775	11908	11873	01	*			O
3130	11750	11881	11853	01	*			O
3131	11726	11853	11833	01	*			O
3132	11703	11826	11813	01	*			O
3133	11676	11803	11793	01	*			O
3134	11651	11773	11773	01	*			O
3135	11625	11751	11753	01	*			O
3136	11601	11728	11731	01	*			O
3137	11578	11703	11708	01	*			O
3138	11555	11676	11686	01	*			O
3139	11531	11650	11665	01	*			O
3140	11508	11626	11643	01	*			O
3141	11481	11598	11625	01	*			O
3142	11458	11576	11601	01	*			O
3143	11431	11550	11578	01	*			O
3144	11408	11526	11551	01	*			O
3145	11381	11498	11530	01	*			O
3146	11358	11470	11503	01	*			O
3147	11333	11446	11481	01	*			O
3148	11306	11426	11458	01	*			O
3149	11281	11408	11436	01	*			O
3150	11258	11385	11415	01	*			O
3151	11236	11360	11390	01	*			O
3152	11211	11336	11368	01	*			O
3153	11186	11313	11343	01	*			O
3154	11163	11288	11323	01	*			O
3155	11141	11266	11301	01	*			O
3156	11118	11245	11281	01	*			O
3157	11098	11225	11256	01	*			O
3158	11078	11206	11236	01	*			O
3159	11063	11185	11216	01	*			O
3160	11043	11165	11200	01	*			O
3161	11025	11143	11181	01	*			O
3162	11005	11123	11163	01	*			O
3163	10988	11106	11143	01	*			O
3164	10973	11088	11128	01	*			O
3165	10960	11071	11113	01	*			O
3166	10948	11055	11098	01	*			O
3167	10933	11038	11083	01	*			O
3168	10920	11021	11066	01	*			O
3169	10905	11006	11053	01	*			O
3170	10893	10991	11040	01	*			O
3171	10883	10980	11026	01	*			O
3172	10875	10970	11013	01	*			O
3173	10866	10958	11001	01	*			O
3174	10856	10950	10991	01	*			O
3175	10851	10941	10985	01	*			O
3176	10846	10935	10971	01	*			O
3177	10838	10923	10961	01	*			O
3178	10828	10916	10951	01	*			O
3179	10823	10908	10943	01	*			O
3180	10821	10905	10938	01	*			O
3181	10818	10901	10931	01	*			O
3182	10813	10895	10926	01	*			O
3183	10813	10893	10920	01	*			O
3184	10813	10888	10911	01	*			O
3185	10811	10885	10908	01	*			O
3186	10808	10886	10906	01	*			O
3187	10808	10885	10901	01	*			O
3188	10810	10886	10898	01	*			O
3189	10811	10881	10893	01	*			O
3190	10810	10881	10891	01	*			O
3191	10810	10881	10888	01	*			O
3192	10810	10883	10886	01	*			O
3193	10811	10886	10886	01	*			O
3194	10811	10883	10886	01	*			O
3195	10815	10883	10886	01	*			O
3196	10818	10886	10886	01	*			O
3197	10823	10890	10890	01	*			O
3198	10828	10895	10888	01	*			O
3199	10835	10896	10891	01	*			O
3200	10843	10901	10891	01	*			O
3201	10848	10905	10893	01	*			O
3202	10853	10908	10893	01	*			O
3203	10858	10911	10898	01	*			O
3204	10865	10915	10901	01	*			O
3205	10871	10921	10905	01	*			O
3206	10880	10930	10908	01	*			O
3207	10886	10938	10913	01	*			O
3208	10895	10945	10918	01	*			O
3209	10903	10950	10923	01	*			O
3210	10913	10956	10928	01	*			O
3211	10923	10966	10936	01	*			O
3212	10936	10976	10941	01	*			O
3213	10946	10991	10946	01	*			O
3214	10956	11000	10951	01	*			O
3215	10965	11008	10958	01	*			O
3216	10976	11018	10966	01	*			O
3217	10991	11030	10973	01	*			O
3218	11008	11043	10983	01	*			O
3219	11025	11056	10988	01	*			O
3220	11041	11068	10996	01	*			O
3221	11048	11075	11000	01	*			O

SOUTHEAST  
 B'

END OF PROFILE

PROJECT: DIXIE VALLEY LINE C - 1000 FT TOT FLD

\*\*\*\*\*TOTAL FIELD MULTILEVEL AEROMAGNETIC PROFILES\*\*\*\*\*

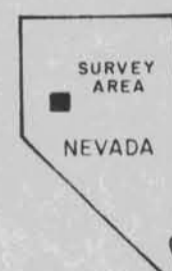
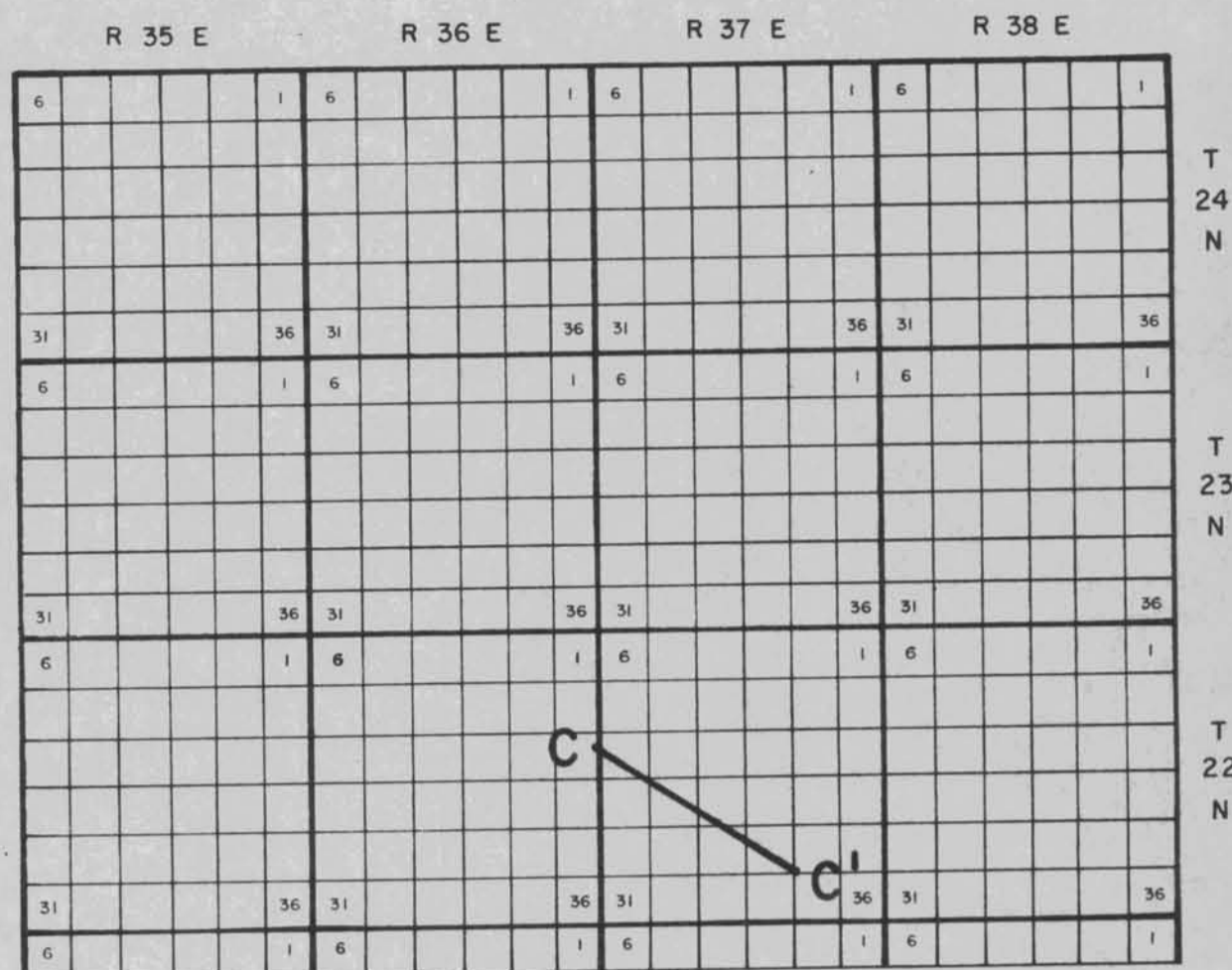
COUNTY: CHURCHILL  
 STATE: NEVADA  
 DATE OF ACQUISITION: 07 MAY 1978

CROSS SECTION  
 SCALES: HORIZONTAL - 3 INCH EQUALS 1 MILES  
 VERTICAL - 1 INCH EQUALS 100 FEET

PROFILE IDENTIFICATION

LEVELS FLOWN	SYMBOL	LINE
6500 MSL	XXXXX	57
7500 MSL	UUUUU	53
8500 MSL	*****	55
0 MSL	+++++	0

AVERAGE SURFACE ELEVATION BENEATH PROFILE 420 FT. MSL



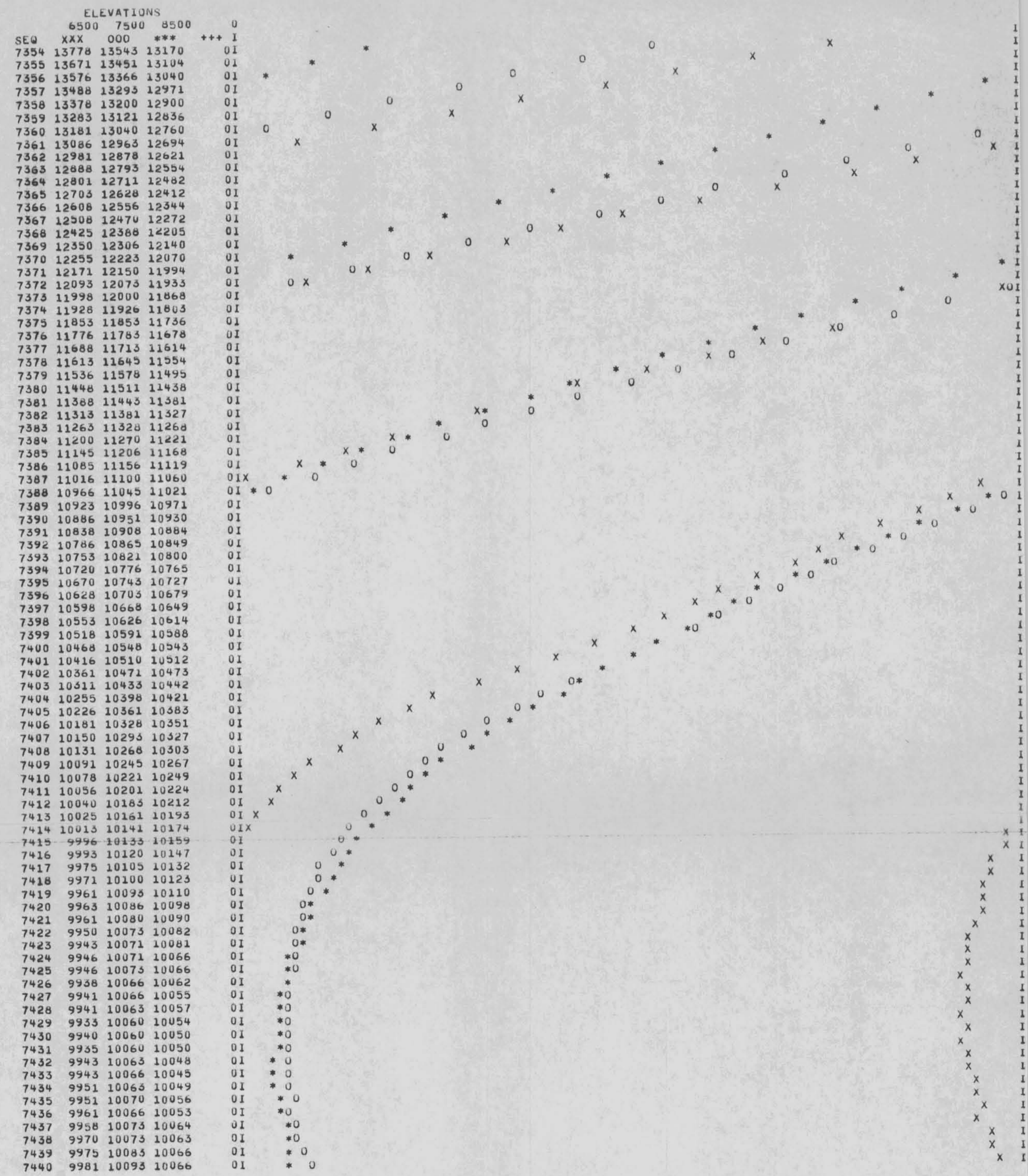
PROFILE	ELEVATION	NO. OF POINTS	SCALE GAMMAS / PLOT POS.	CORRECTIONS START	SIOP
57E	6500	86	1.000	8.8	9.4
53E	7500	88	1.000	18.1	17.1
55E	8500	87	1.000	8.5	8.0
077	0	0	0.000	0.0	0.0

MAG. VALUES SHOWN = (TOTAL FIELD - BIAS) X 10  
 EXAMPLE: FOR TOTAL FIELD VALUE OF 55379.2 GAMMAS  
 AND BIAS OF 55000.0 GAMMAS  
 MAG. VALUE = (55379.2-55000.0) X 10 = 3792  
 BIAS THIS PROJECT IS: 52000.0 GAMMAS

**SOUTHLAND ROYALTY CO.**  
 PLATE 12 SENTURION SCIENCES, INC.

NORTHWEST  
C

SOUTHEAST  
C



END OF PROFILE

PROJECT: DIXIE VALLEY LINE D 1000 FT TOT FLD

\*\*\*\*\*  
 \*\*\*\*\*TOTAL FIELD MULTILEVEL AEROMAGNETIC PROFILES\*\*\*\*\*  
 \*\*\*\*\*

COUNTY: CHURCHILL

STATE: NEVADA

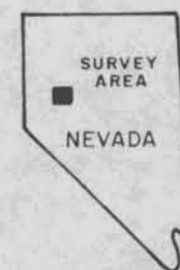
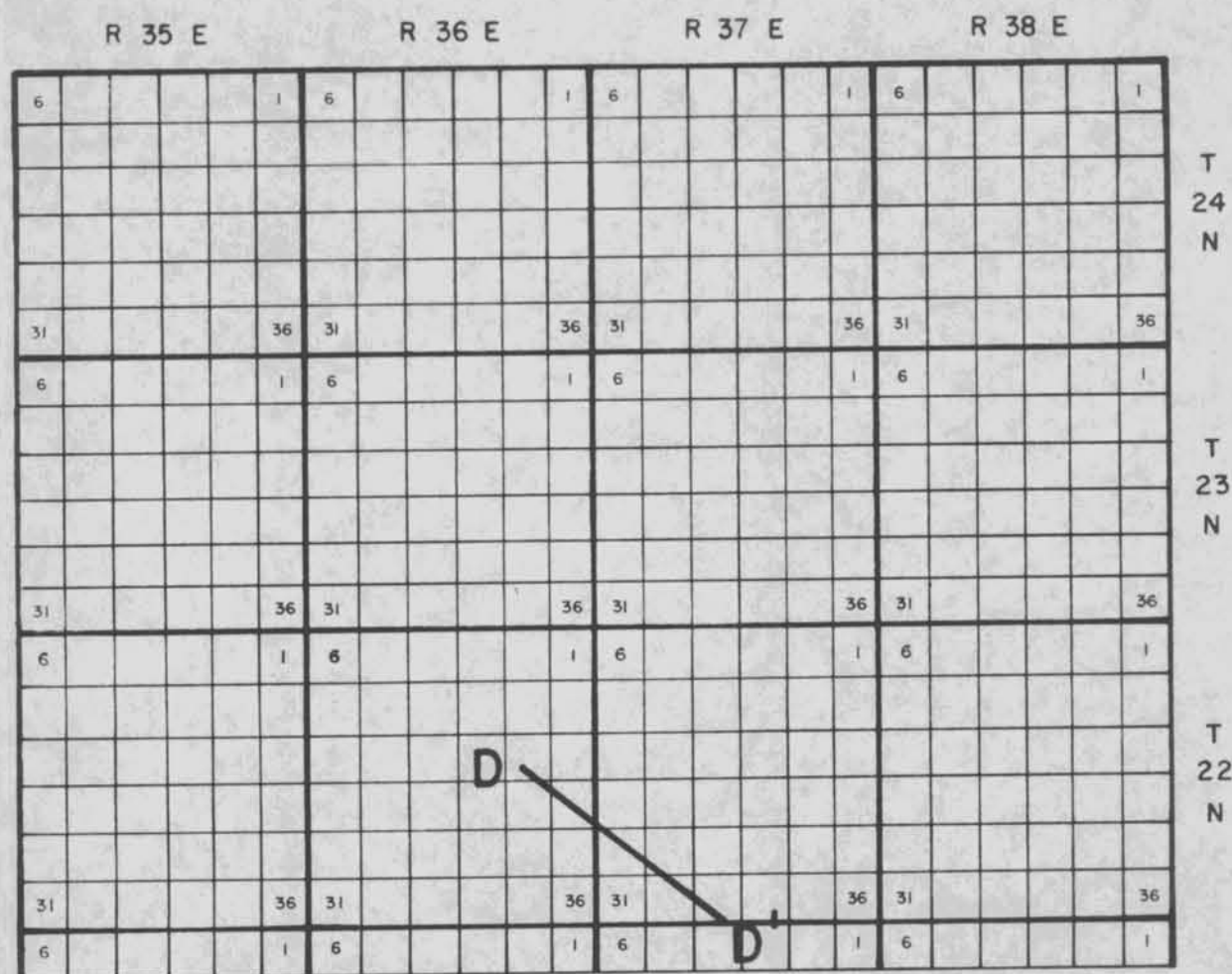
DATE OF ACQUISITION: 07 MAY 1978

CROSS SECTION  
 SCALES: HORIZONTAL - ≈ 3 INCH EQUALS 1 MILES  
 VERTICAL - INCH EQUALS FEET

PROFILE IDENTIFICATION

LEVELS FLOWN	SYMBOL	LINE
6500 MSL	XXXXX	46
7500 MSL	UUUUU	48
8500 MSL	*****	50
0 MSL	+++++	0

AVERAGE SURFACE ELEVATION BENEATH PROFILE 4500 FT. MSL



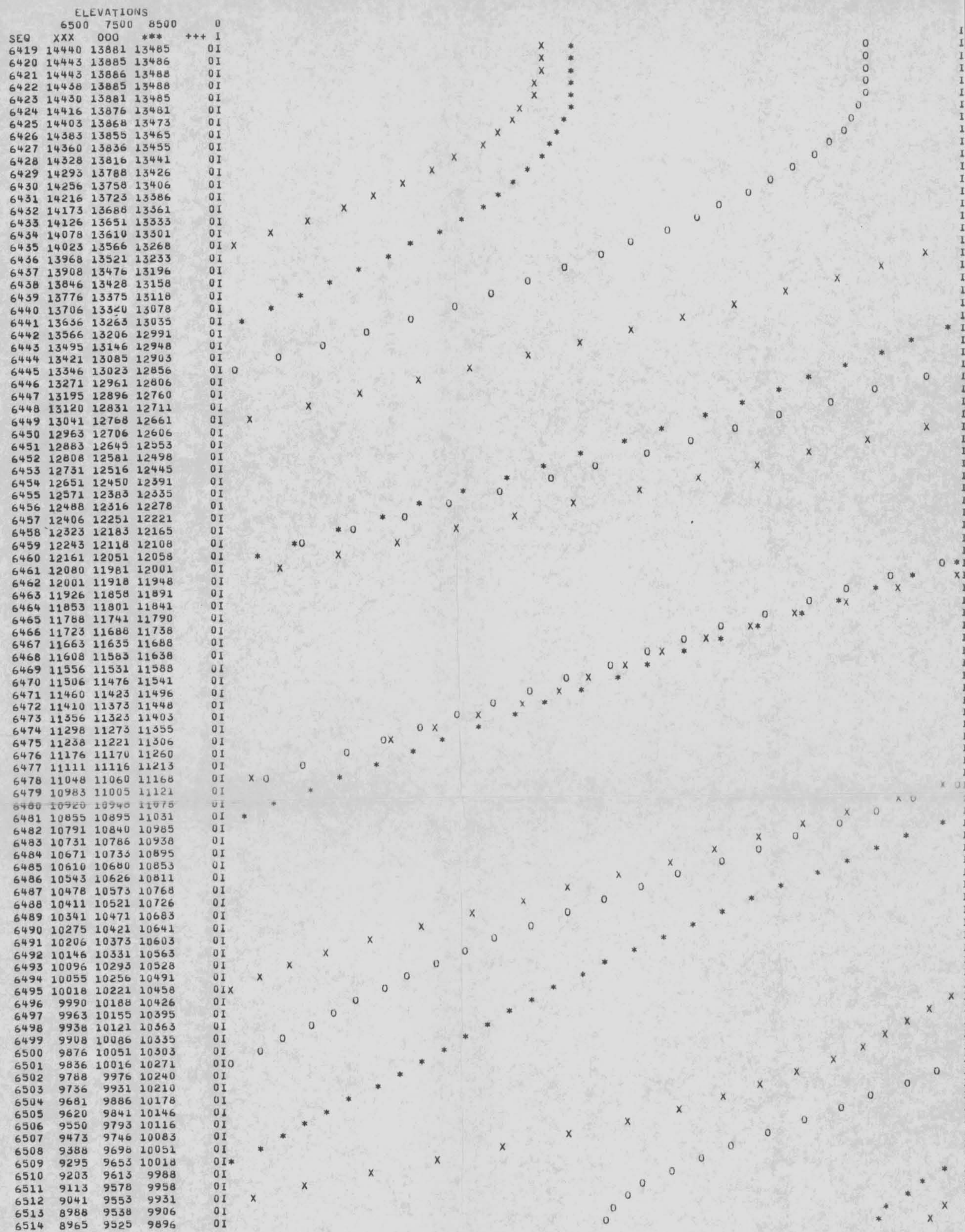
PROFILE	ELEVATION	NO. OF POINTS	SCALE GAMMAS / PLOT POS.	CORRECTIONS START	STOP
46E	6500	96	1.000	2.8	2.4
48E	7500	97	1.000	6.0	8.5
50E	8500	96	1.000	18.0	19.2
077	0	0	0.000	0.0	0.0

MAG. VALUES SHOWN = (TOTAL FIELD - BIAS) X 10  
 EXAMPLE: FOR TOTAL FIELD VALUE OF 55379.2 GAMMAS  
 AND BIAS OF 55000.0 GAMMAS  
 MAG. VALUE = (55379.2-55000.0) X 10 = 3792  
 BIAS THIS PROJECT IS: 52000.0 GAMMAS

**SOUTHLAND ROYALTY CO.**  
 PLATE 13 SENTURION SCIENCES, INC.

NORTHWEST

SOUTHEAST



END OF PROFILE



PROJECT: DIXIE VALLEY LINE F 1000 FT TOT FLD

\*\*\*\*\*TOTAL FIELD MULTILEVEL AEROMAGNETIC PROFILES\*\*\*\*\*

COUNTY: CHURCHILL

STATE: NEVADA

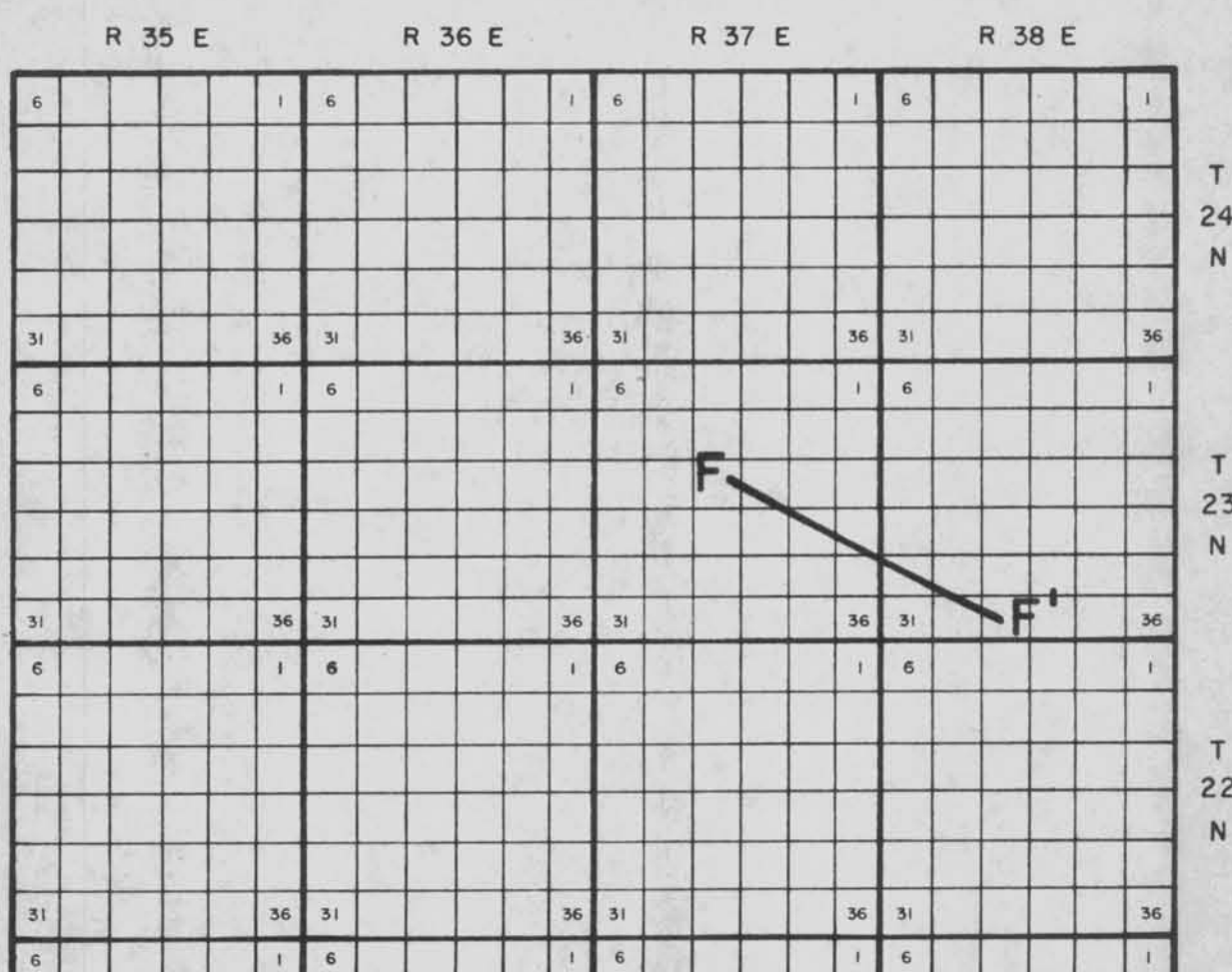
DATE OF ACQUISITION: 07 MAY 1978

CROSS SECTION  
 SCALES: HORIZONTAL - ≈ 3 INCH EQUALS 1 MILES  
 VERTICAL - INCH EQUALS FEET

PROFILE IDENTIFICATION

LEVELS FLOWN	SYMBOL	LINE
6500 MSL	XXXXX	1039
7500 MSL	00000	35
8500 MSL	*****	37
0 MSL	+++++	0

AVERAGE SURFACE ELEVATION BENEATH PROFILE 4200 FT. MSL



PROFILE	ELEVATION	NO. OF POINTS	SCALE GAMMAS / PLOT POS.	CORRECTIONS START	STOP
1039E	6500	133	1.000	14.1	15.4
35E	7500	135	1.000	9.8	7.4
37E	8500	136	1.000	6.9	9.4
0??	0	0	0.000	0.0	0.0

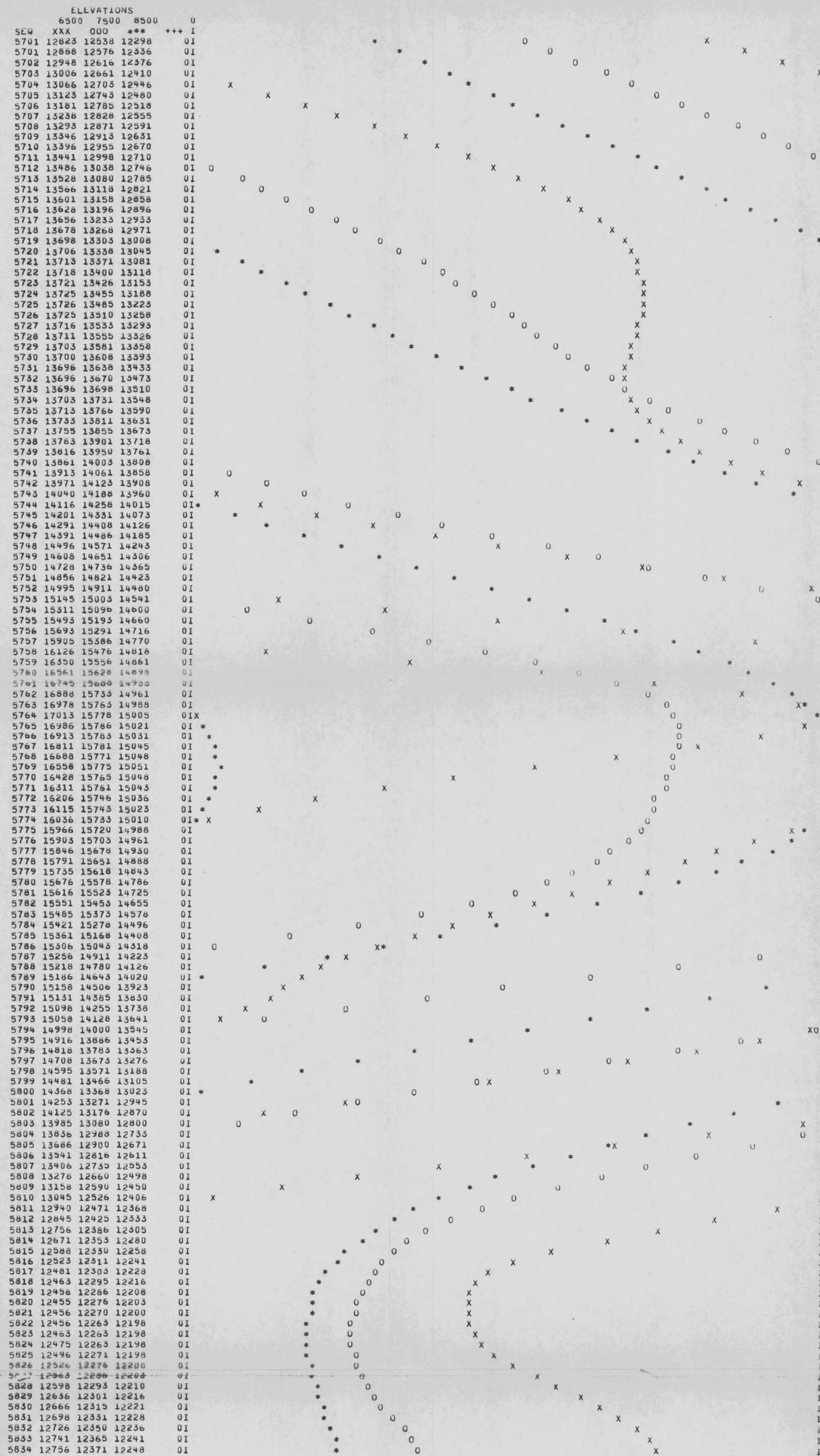
MAG. VALUES SHOWN = (TOTAL FIELD - BIAS) X 10  
 EXAMPLE: FOR TOTAL FIELD VALUE OF 55379.2 GAMMAS  
 AND BIAS OF 55000.0 GAMMAS  
 MAG. VALUE = (55379.2-55000.0) X 10 = 3792

BIAS THIS PROJECT IS: 52000.0 GAMMAS

**SOUTHLAND ROYALTY CO.**  
 PLATE 14 SENTURION SCIENCES, INC.

NORTHWEST

SOUTHEAST



END OF PROFILE

SENTURION SCIENCES AEROMAGNETIC SERVICES

PROJECT: DIXIE VALLEY LINE N 1000 FT TOT FLD

\*\*\*\*\*  
 \*\*\*\*\*TOTAL FIELD MULTILEVEL AEROMAGNETIC PROFILES\*\*\*\*\*  
 \*\*\*\*\*

COUNTY: CHURCHILL

STATE: NEVADA

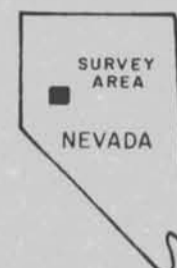
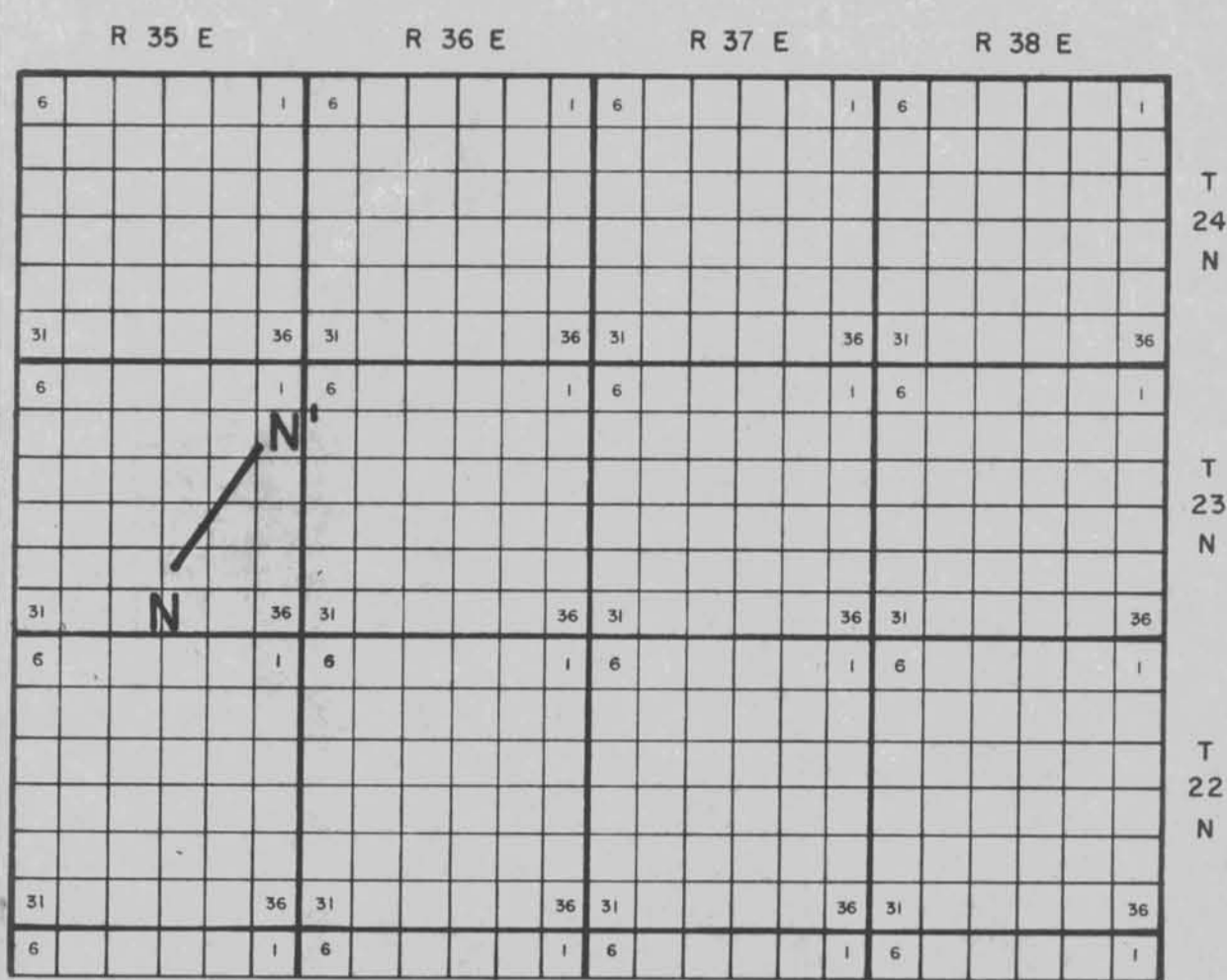
DATE OF ACQUISITION: 02 MAY 1978

CROSS SECTION  
 SCALES: HORIZONTAL - ≈ 3 INCH EQUALS 1 MILES  
 VERTICAL - INCH EQUALS FEET

PROFILE IDENTIFICATION

LEVELS FLOWN	SYMBOL	LINE
5500 MSL	XXXXX	4
6500 MSL	00000	10
7500 MSL	*****	13
0 MSL	+++++	0

AVERAGE SURFACE ELEVATION BENEATH PROFILE 3500 FT. MSL



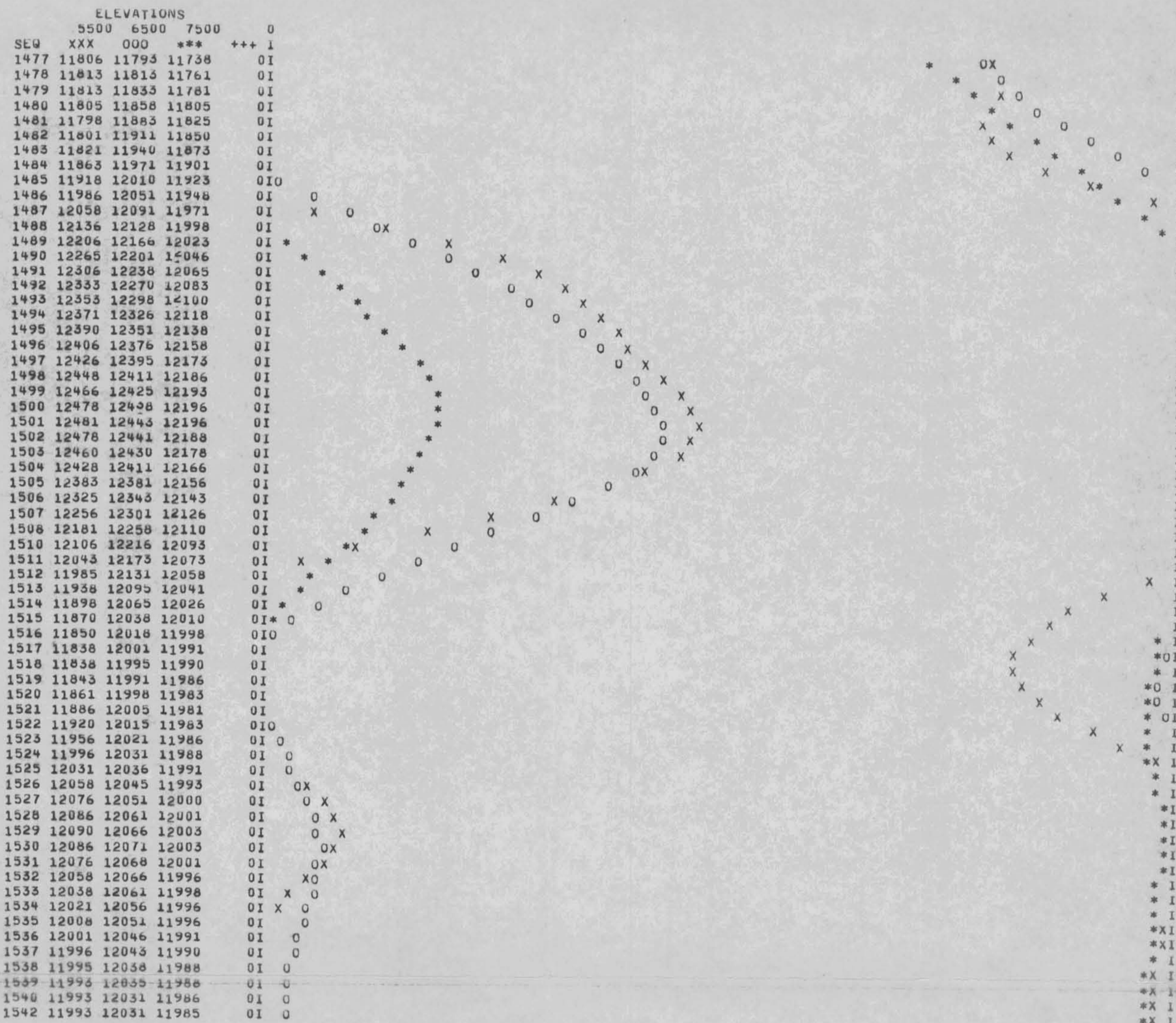
PROFILE	ELEVATION	NO. OF POINTS	SCALE GAMMAS / PLOT POS.	CORRECTIONS START	STOP
4N	5500	65	1.000	1.0	1.0
10N	6500	64	1.000	1.0	1.2
13N	7500	63	1.000	1.2	1.2
077	0	0	0.000	0.0	0.0

MAG. VALUES SHOWN = (TOTAL FIELD - BIAS) X 10  
 EXAMPLE: FOR TOTAL FIELD VALUE OF 55379.2 GAMMAS  
 AND BIAS OF 55000.0 GAMMAS  
 MAG. VALUE = (55379.2-55000.0) X 10 = 3792  
 BIAS THIS PROJECT IS: 52000.0 GAMMAS

**SOUTHLAND ROYALTY CO.**  
 PLATE 15 SENTURION SCIENCES, INC.

SOUTHWEST

NORTHEAST



END OF PROFILE

SENTURION SCIENCES AEROMAGNETIC SERVICES

PROJECT: DIXIE VALLEY LINE S 1000 FT TOT FLD

\*\*\*\*\*TOTAL FIELD MULTILEVEL AEROMAGNETIC PROFILES\*\*\*\*\*

COUNTY: CHURCHILL

STATE: NEVADA

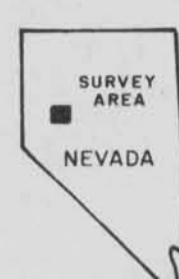
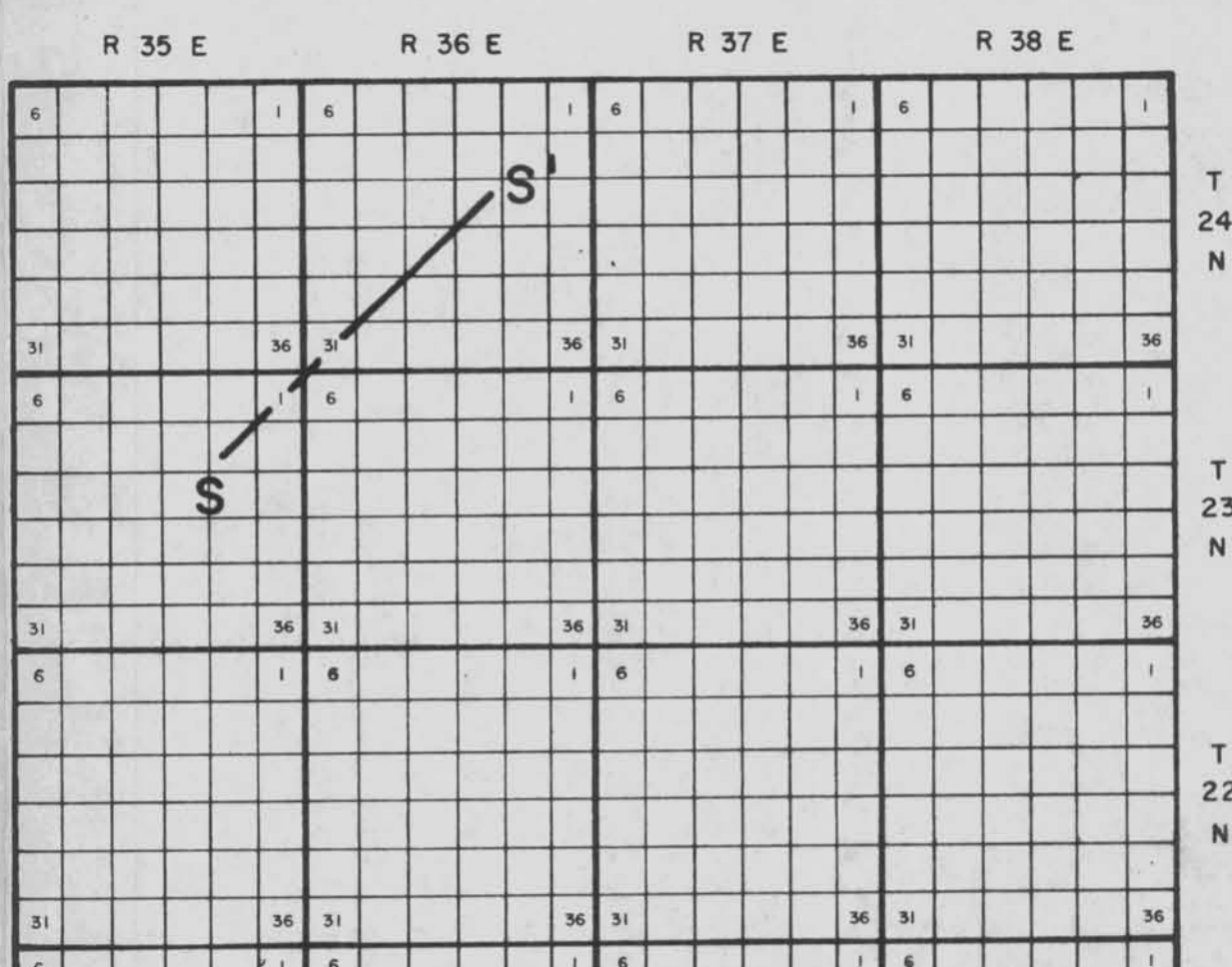
DATE OF ACQUISITION: 02 MAY 1978

CROSS SECTION  
 SCALES: HORIZONTAL - 3 INCH EQUALS 1 MILES  
 VERTICAL - INCH EQUALS FEET

PROFILE IDENTIFICATION

LEVELS FLOWN	SYMBOL	LINE
5500 MSL	XXXXX	5
6500 MSL	00000	9
7500 MSL	*****	12
0 MSL	+++++	0

AVERAGE SURFACE ELEVATION BENEATH PROFILE 3500 FT. MSL



**SOUTHLAND ROYALTY CO.**  
 PLATE 16 SENTURION SCIENCES, INC.

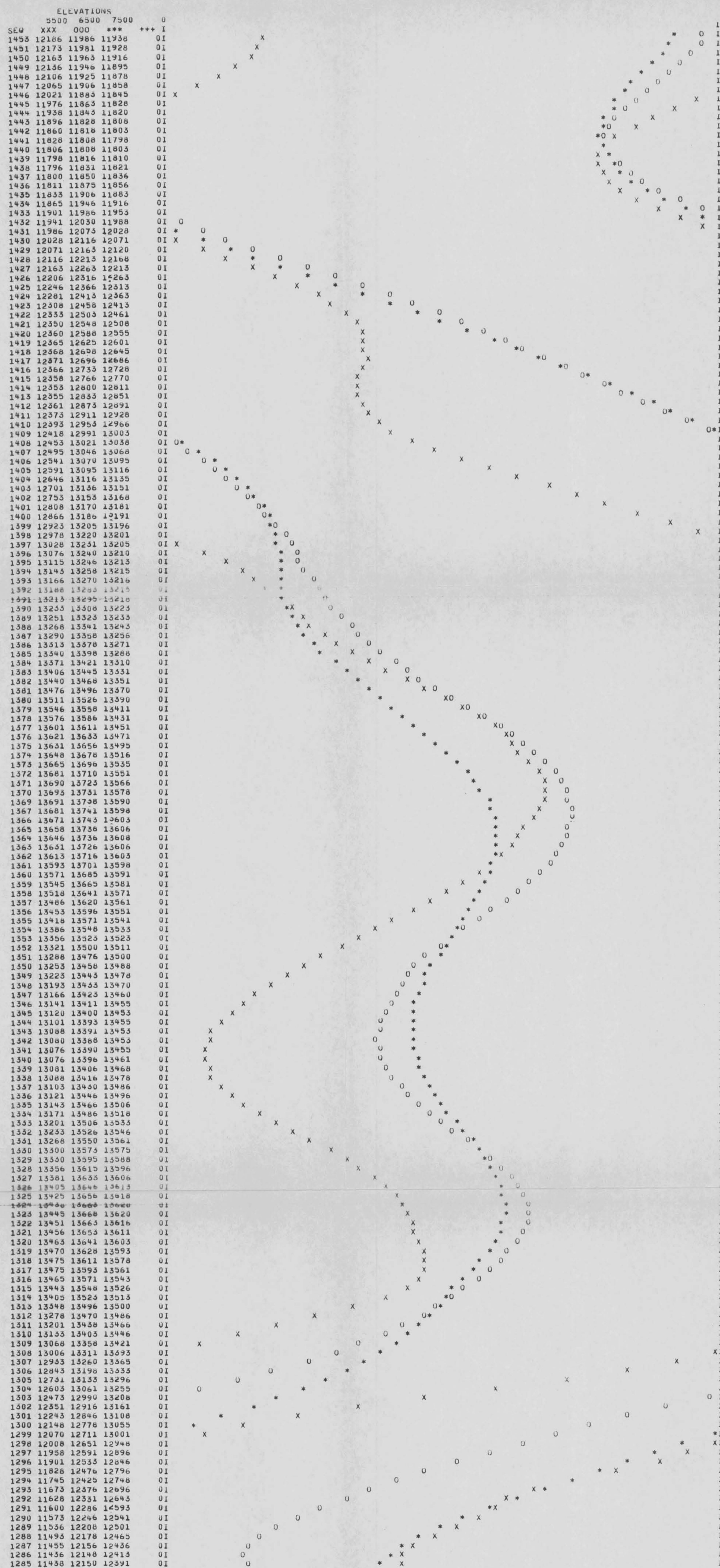
PROFILE	ELEVATION	NO. OF POINTS	SCALE GAMMAS / PLOT POS.	CORRECTIONS START	STOP
3S	5500	168	1.000	0.9	0.9
9S	6500	167	1.000	0.8	1.0
12S	7500	165	1.000	1.2	1.2
0??	0	0	0.000	0.0	0.0

MAG. VALUES SHOWN = (TOTAL FIELD - BIAS) X 10  
 EXAMPLE: FOR TOTAL FIELD VALUE OF 55379.2 GAMMAS  
 AND BIAS OF 55000.0 GAMMAS  
 MAG. VALUE = (55379.2 - 55000.0) X 10 = 3792

BIAS THIS PROJECT IS: 52000.0 GAMMAS

SOUTHWEST

NORTHEAST



END OF PROFILE