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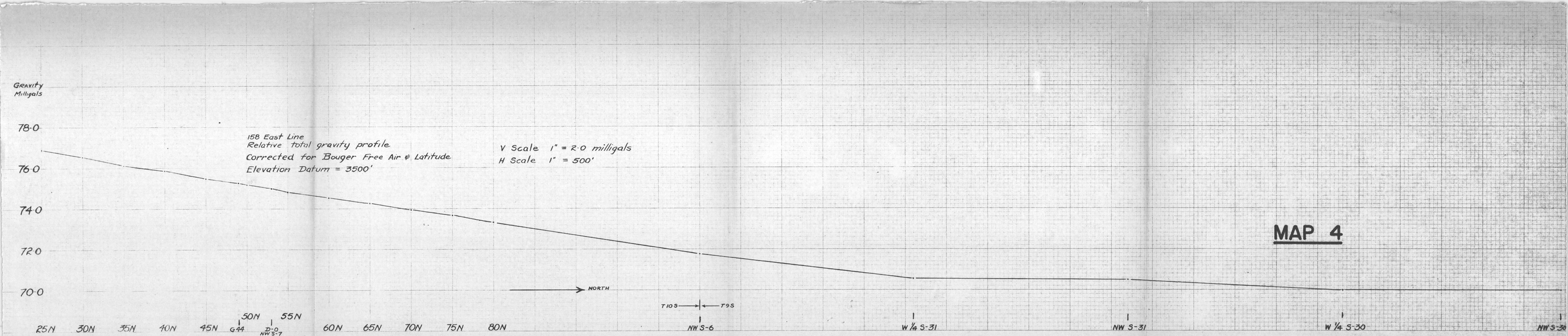


Gravity Milligals
78·0
76·0
74·0
72·0
70·0
158 East Line
Relative total gravity profile
Corrected for Bouger Free Air & Latitude
Elevation Datum = 3500'
V Scale 1" = 2·0 milligals
H Scale 1" = 500'
NORTH
T10S
T9S
25N
30N
35N
40N
45N
50N
55N
60N
65N
70N
75N
80N
G44
D-0
NW S-7
NW S-6
W 1/4 S-31
NW S-31
W 1/4 S-30
NW S-30
MAP 4
K&E STANDARD CROSS SECTION
KEUFFEL & ESSER CO.
MADE IN U.S.A.

Base not reduction.

Scale divisions

C-20	24 420.6	40 420.4	35 420.3						
C-10		31 424.4	424.5	424.5	47 424.6				
G-C-0				37 423.9	423.9	423.8	1200 423.8		
G-10						54 421.9	421.9	421.9	10 421.9
G-20								06 425.4	

C-20 → C-10		C10 → G-C-0		G-0 — G-10	
420.4	420.3	424.5	424.6	423.8	423.8
424.4	424.5	423.9	423.9	421.9	421.9
+4.0	+4.2	−0.6	−0.7	−1.9	−1.9
+4.1		−0.6		−1.9	

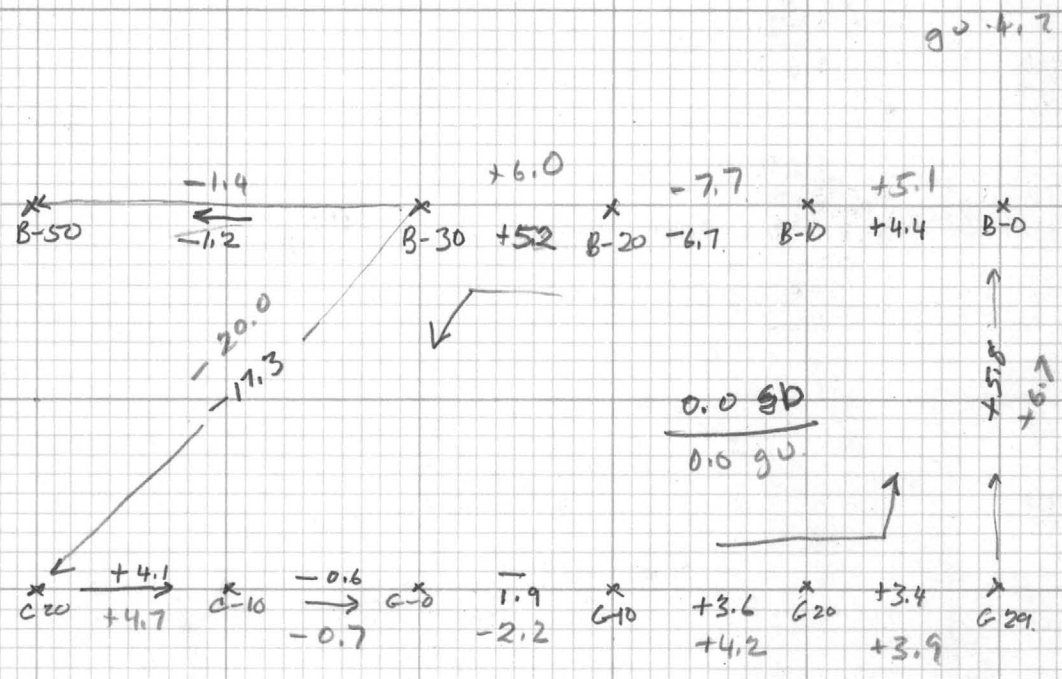
G10	421.9	10 421.9							
G-20	06 425.4	425.5	425.5	22 425.6					
G-29			16 428.9	429.0	429.1	46 429.2			
B-0					34 434.9	435.0	435.1	06 435.2	
B-10							1300 439.6	439.6	439.6	24 439.6
B-20									16 433.0

G10 → G-20		G20 → G-29		G-29 → B-0		B-0 → B-10	
421.9	421.9	425.5	425.6	429.1	429.2	435.1	435.2
425.4	425.5	428.9	429.0	434.9	435.0	439.6	439.6
+3.5	+3.6	+3.4	+3.4	+5.8	+5.8	+4.5	+4.4
+3.6		+3.4		+5.8		+4.4	

B-10	439.6	24 439.6					
B-20	16 433.0	432.8	432.6	46 432.5			
B-30			33 437.8	437.8	49 437.8	437.7	09 437.6
C-20						1406 420.4	420.2	20 420.0

B-10 → B-20		B-20 → B-30		B-30 → C-20	
439.6	439.6	432.6	432.5	437.7	437.6
433.0	432.8	437.8	437.8	420.4	420.2
−6.6	−6.8	+5.2	+5.3	17.3	17.4
−6.7		+5.2		−17.3	

Base net.


B-50
-1.4
-1.2
B-30
+6.0
+5.2
B-20
-7.7
-6.7
B-10
+5.1
+4.4
B-0
20.0
1.3
0.0 SD
0.0 gu.
+5.8
+6.1
C20
+4.1
+4.7
C-10
-0.6
-0.7
C-0
1.9
-2.2
C10
+3.6
+4.2
C20
+3.4
+3.9
C-29.

Base Sta Gravity sheet

Assumed Gravity at C-20 = 500.0 gu.

1.1577. datum = 3500'

Sta	Diff S.D.	Diff G.U.	Sta Grav.	diff elev dist	ecf = .71 ec (σ = 1.8)	Final Grav. σ 1.8
6/Jan/60 C-20			500.0	509.6	361.8	861.8
C-10	+4.1	+4.7	504.7	475.2	337.4	842.1
G-0	+0.6	-0.7	504.0	451.0	320.2	824.2
G-10	-1.9	-2.2	501.8	428.0	303.9	805.7
G-20	+3.6	+4.2	506.0	394.0	279.7	785.7
G-29	+3.4	+3.9	509.9	362.5	257.4	767.3
			66			

B-0	G29 +5.8	+6.7	516.6
B-10	B0 +4.4	+5.1	521.7
B-20	B10 -6.7	-7.7	514.0
B-30	B2 +5.2	+6.0	520.0
C-20 ~~B-30~~	B30 = -17.2	-20.0	500.0 ✓ check
B-50	(B30 -1.4		518.6
(NW 7 D-0 =			521.8

$\frac{37}{47} \times 3$

516.0
-19.9
61

15/Jan B30	1555 425.7	425.8	1642 425.8		20.0
B-50		1632 424.6	424.6	57 424.6	-20.0
		-1.2	-1.2		

-1.2 SD.

-1.4 gu

21/Jan/60. calc 22/Jan

$\frac{60}{64}$

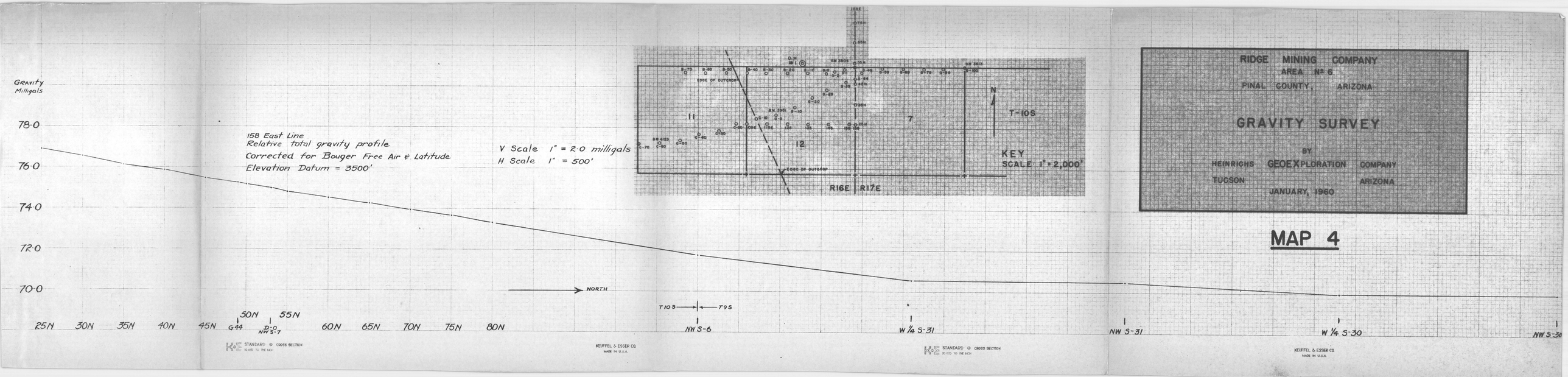
G-29	937 414.4	414.5	956 414.5	415.3	1100 415.3
NW 7 D-0		950 425.0	425.0	1055 425.4	

$\frac{6}{66}$ $\frac{1}{11} \times 4$

G-29 → (NW7) D-0

425.0	425.0	425.4
414.5	414.5	415.3
10.5	10.5	10.1

+10.3
+~~12.2~~ 11.9


Gravity Milligals
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76.0
74.0
72.0
70.0
158 East Line
Relative total gravity profile
Corrected for Bouger Free Air & Latitude
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V Scale 1" = 2.0 milligals
H Scale 1" = 500'
NORTH
T10S
T9S
25N
30N
35N
40N
45N
50N
55N
60N
65N
70N
75N
80N
G44
D-0
NW S-7
NW S-6
W 1/4 S-31
NW S-31
W 1/4 S-30
NW S-30
EDGE OF OUTCROP
11
12
7
T-10S
N
KEY
SCALE: 1" = 2,000'
R16E
R17E
RIDGE MINING COMPANY
AREA No. 6
PINAL COUNTY, ARIZONA
GRAVITY SURVEY
BY
HEINRICHS GEOEXPLORATION COMPANY
TUCSON ARIZONA
JANUARY, 1960
MAP 4
STANDARD @ CROSS SECTION
10 X 10 TO THE INCH
KEUFFEL & ESSER CO.
MADE IN U.S.A.

Transit Traverse
Ridge Mining Co.
Area No 6
1/21/60

&

Plane table traverse
1/22/60

BS	Sta.	[illegible]	[illegible]	[illegible]	R. Cor.
H.I. 5.1					
△ Sta. G-20	[illegible] 25N		-[illegible]° [illegible]'	[illegible]35	+[illegible]
⊙		No Sta.	-1° 56'	480	-12.0
△ No Sta	ON HILL		+0° 20	175	+12.0
		110E	-1° [illegible]'	130	-12.0
⊙		115E	-2° 12'	485	-12.0
△ 115E	NEAR 120E		-1° 30'	505	+4.0
		120E	Level	60 N	[illegible]
⊙		125E	-0° 51'	510	-12.0
△ 125E	ON LINE NO STA.		Level	200	[illegible]
⊙		130E	-1° 12'	[illegible]	[illegible]
△ 130E	ON LINE [illegible]		Level	400	[illegible]
		[illegible]	Level	50 W	[illegible]
		135E	Level	[illegible]	[illegible]
⊙		[illegible]	[illegible]	[illegible]	[illegible]
△	ON LINE NO STA.		-3° 00'	295	[illegible]
		140E	-0° [illegible]'	110 W	-0.5
⊙		145E	Level	395 E	[illegible]
△ 145E	NEAR 150E		[illegible]	550	+[illegible]
		150E	Level	45 W	-[illegible]3
⊙		155E	-1° [illegible]'	400	-12.0
H.I. 5.2 △ 155E	ON LINE [illegible] 158E		[illegible]	305	+0.5
	Turn North				
⊙	[illegible] 25N	158E 30N	Level	490 N	B -10.4
H.I. 5.1 △ 158E 30N	35N		-4° 30'	470	[illegible]

T E.G.H
– J.W.M. 1/21/60

Prod.	Diff.	Elev.	
		4009.6	Traverse commences
-6.27	-1.3	HI 4008.3	@ CC2 0+00 thence
		Gd. 4003.2	easterly to fence N/S
-16.2	-28.2	3980.1	line thence N to
			Sec. Cor + thence
+1.01	+13.0	3993.1	
-3.06	-15.1	3978.0	north to 1/4 cor ?
-18.56	-30.6	3962.5	
-13.2	-9.2	3953.3	
	-6.6	3946.7	
-7.55	-19.55	3933.8	
	+11.0	3944.8	
-6.18	-18.2	3926.6	
	+7.0	3933.6	
	-3.8	3929.8	
	-9.2	3924.4	
-7.42	-21.4	3912.2	
-15.41	-11.4	3901.8 (0.8)	
-.54	-1.04	3900.8 (3899.8)	
	-9.3	3898.5 (1.5)	
+5.6	+5.6	3898.1 (7.1)	
	-5.3	3892.8 (1.8)	
-11.38	-23.4	3874.7 (3.7)	
-6.65	-6.2	3868.5 (7.5) H.I.	
		Gnd 3862.3	
			Traverse turns N. along Fence Line
-13.4	-13.4	3855.1 (4.1)	Near 1/4 Cor. Rock
-36.78	-30.8	3824.3 (3.3)	See pg. H.I
		Gnd. 3818.2	

			FS	[illegible]	[illegible]	[illegible]
⊙		35N	[illegible]	-0° 38'	28[illegible]	-3.0
△	[illegible]	[illegible]		[illegible]	3[illegible]	+2.0
			40N	Level	[illegible]	-19.25
⊙			45N	-0° [illegible]	325	-12.0
△	45N	Grade [illegible] G44+00		Level	375	[illegible]
			G 44+00	Level	12[illegible]	-5.2
			50N	-0° 30'	[illegible]	[illegible]
			Sol. Con +	-0° 36'	43[illegible]	[illegible]
⊙			55N	-0° 5[illegible]'	[illegible]	-2.0
△	55N	[illegible]		-0° [illegible]'	600	[illegible]
			60N	Level	1305	-3.7
⊙			65N	-1° [illegible]'	3[illegible]	[illegible]
△	65N			-0° 55'	575	[illegible]
			[illegible]N	Level	755	[illegible]
⊙				+0° 31'	[illegible]	-3.0
△	on line no [illegible]	[illegible]		-[illegible]	440	+1.0
			75N	[illegible]	2105	-10.7
			80N	-2° [illegible]'	255	[illegible]

1/21/60

Prod	Diff	Elev.		
-3.09	-6.09	3848.2 (17.2)		
	+2.0	3820.2 (19.2)	3826.4	
	-10.3	3809.9 (8.4)	3816.1	
			add 7.2	3804
-1.8	-13.8	3806.4 (5.4)	3812.4	
	+8.9	3815.3 (14.3)	3821.3	3801.2
				3805.0
	-5.2	3800.4 (0.4)	3816.3	
				3821
-1.09	-13.09	3802.2 (1.2)	3808.4	
-4.57	-16.6	3798.7 (7.7)	3804.9	
-10.64	-22.6	3798.7		-3.01
				3797.7
-7.30	-5.3	3793.4		8.3
	-3.7	3789.7		
-7.82	-19.0	3774.4		
-9.12	-7.1	3767.3		
	-9.5	3757.8		
+6.08	+3.1	3760.9 (70.4)		
+4.18	-3.1	3757.8 (67.3)		
	-10.7	3747.1 (56.6)		
-11.04	-23.0	3734.8 (44.8)		

1/4 Con ? pile rock
near shell drilling

Rerun 1/22/60

G.A. 29+00 3862.51
by Plane table

Site	Dist	R.C.	Angle	Prod.	Diff
△	425	-3.1	-4	-19.8	-11.7
G-39+00	430	-10.1	-2	-8.6	-18.7
⊙	560	-10.5	-2	-11.2	-21.7
△	380	+7.1	-4	-15.2	-8.1 -22.3
G-44+00		-4.7			
Sec. Cor.	450	-11.5	-1	-4.5	-16.0
TURN SOUTH ⊙ 45+00	350	6.6.8	—	-8.6	-8.6
	375	12.0	—	-13.8	+3.8
30+00	1080	-3.8	+3	+32.4	+28.6
	Occupied 30+00				
35+00	465	-11.8	-6	-27.9	-39.7
40+00	960	-4.2	-4	-38.4	-42.6
	From G 44 to G-100				
44+00					
△	525	+5.9	-5	-26.3	-20.4
49+00	30	-2.1	—	-2.1	-2.1
⊙	380	-7.5	-3	-11.4	-18.9
△	330	+1.2	-3	-9.9	-8.7
59+00	215	-8.3	—	—	-8.3
⊙	430	-11.8	—	—	-11.8
△	235	+5.0	-5	-11.8	-6.8
	380	-9.1	-2	-7.6	-16.7

1/22/60

Elev.

3862.5

3850.8

3832.1 Check

3829.1

21.0
3808.8

3816.3
3801.1

3805.0

3812.4

3826.2

3854.8

3859.0

3819.3 *

3816.4

3816.3

3795.9

3793.8

3777.0

3768.3

3760.0 ✓ 60.0

3756.5

3749.7

3733.0

4

Sta.	Dist.	[illegible]	[illegible]	Tied	[illegible]
△	315	+3.0	-2	-6.5	-3.5
[illegible]	195	-2.1	+1	+1.95	-0.2
○	460	-6.8	-3	-13.8	-20.6
△	215	+6.1	-5	-10.5	-3.8
79+00	160	-11.5	—	—	-11.5
○	[illegible]	B-2.4 12.5H	-3	-18.6	-32.1
△	185	+2.6	-3	-5.6	-2.0
89+00	330	-2.0	-2	-6.6	-15.0
○	750	-9.9	-3	-22.5	-32.4
△	370	+1.8	-3	-11.1	-9.3
00+00	250	-7.5	-3	-7.5	-15.0

1/22/60

	Elev.	
	3733.0	
3729.5		
	3729.3	29.9
	3708.9	
3705.1		
	3693.6	03.1
	3675.0	
3673.0		
	3657.4	76.2
	3640.6	
3631.3		
	3616.3	35.1

31.8
19.5
.15

Transit Traverse
Area No 6
Ridge Mng. Co.
11/15/60
for
Gravity Survey

		Dist.	Rod Corr.		Prod.	Diff.
		292			-12.35	-12.35
4		680		-	-26.52	-18.12
✓ ⊙	G 44+00	535			-~~19.6~~ 18.6	-32.6 31.6
		430		✓	+ ~~5.48~~ 5.48	- ~~5.52~~ 16.48
⊗		495			-16.96	-27.56
4 ⊿		390			-21.62	-11.62
		415			-1.35	-12.35
⊿		440			-17.38	-12.38
		300			+12.55	+2.55
⊙		650			-16.46	-27.46
⊿		250			-9.66	-1.66
⊙		1.35			-2.27	-13.27
⊿		[illegible]			-24.19	-19.19
		[illegible]			+12.36	+7.36
⊙		[illegible]			-13.20	-29.5
⊿		[illegible]			-21.17	-19.17
		[illegible]			-7.81	-21.91

Bearing	E.G.H. J.W.M., Elev.	F.A.S. 1/15/60
H.I.	3867.56	Traverse from G 29+00
N57E	3855.21	to 6 5 / 7 8 Easterly
N70E	3837.09	3832.09 elev. on grd.
N6[illegible]E	3805.5 ~~3804.49~~	High rod of [illegible]
H.I.	21.4 ~~3809.59~~	
N49E	3804.1 ~~.07~~	To 1 6 / Sec. 12 [illegible] Elev. 3804
N55E	93.8 ~~3782.03~~	
N69E	82.2 H.I. ~~3770.41~~	
N89E	69.8 ~~3758.06~~	
E5[illegible]	3757.4 H.I. ~~3745.68~~	
S82W	60.0 ~~3748.23~~	
E[illegible]S	29.9 ~~3718.22~~	
E[illegible]S	3728.2 H.I ~~3716.56~~	This elev checked by planetable
N[illegible]E	14.9 ~~3703.29~~	
E65S	95.7 H.I 3684.10	
S87N	3703.1 ~~3691.46~~	
E03S	76.2 ~~3654.60~~	[illegible] 5.3
E02S	57.0 3635.43	NG
E03S	35.1 3613.52	[illegible] 3613 6 5 / 7 8

See other book dated 1/22/60

Sta	[illegible]	Rod	[illegible]	Prod.	Diff.
Δ				+8.58	+19.58
⊙				-2.7	-2.7
Δ				+8.36	+19.36
—				-2.04	-14.04
⊙				+7.03	+3.03
	435	+11.0M	+0°53'	+6.74	+17.74
		-3.0M	——	-3.5	-3.5
⊙				+18.44	+11.44
			——		+3.9
	225				-10.1
				+5.12	+3.12
H.I. 5.2 →	185	+11.0M		+11.40	+22.40
				+11.28	+7.28
H.I. 5.3 →				+9.85	+19.85
				+15.08	+11.08
				+8.75	+19.75
			——		-2.9
⊙	525	-7.0M		+13.86	+6.86
				+10.82	+21.82
		-3.7M	——		-3.7

1/15/60

	3804.07		
S75W	3823.65		
N64W	3820.95		
S85W	3840.31		
N76W	3826.27		
S81W	3843.34	Tie GB-O & SAB+66	3844.16 3843.34 — .82

	4009.59	Traverse from GC-20+00 to Mastery	
S73W	H.I. 4027.33		
S56W	4023.83		
S75W	4038.77		
S70W	H.I. 4042.67		
E01°S	Back to 4032.57		
S72°W	4045.79		
S70W	H.I. 4068.19		
S71W	4076.47		
S76W	H.I. 4096.32		
S80W	4107.40		
S73W	H.I 4126.15		
S06W	4123.25	Tie on BM	4123.00 4123.25 + .25
S85W	4132.01		
S79W	4153.83		
S82W	4150.13		

				Prod	Diff
		H.I. 5.2			
				+20.02	+31.02
				+11.53	+4.53
H.I. 5.1		515		+9.78	+20.78
				+15.12	+10.12

Bearing	Elev.	Traverse from
	3984.84	GB 50+00 to
S87W	H.I 4015.86	GB 70+00
S83W	4020.39	
S63W	H.I 4041.17	
S72W	4051.29	End of Traverse

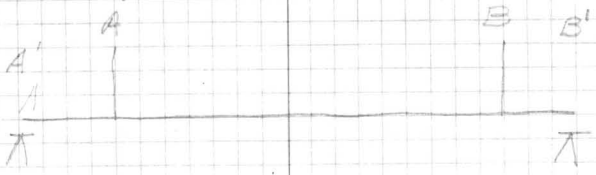
Level Notes

Area #6
Ridge Mining Co.
1/6/60
for
Gravity Survey

Peg Test

12/30/5[illegible]

Observed	[illegible]	to	A
		3.59	
		To	B
		0.95	
[illegible]		[illegible]	B
		4.8	
		[illegible]	A
		6.92	



-3.59

$+4.18$

7.77

-0.85

-6.92

7.77

Ridge Mng. Co.

Area #6 [illegible]/59

[illegible]-Line

Sta.	B.S.	H.I.	F.S.	Elev.	
⊙				3[illegible] ~~35[illegible]~~	
△ 2+00	+1.40	3952.40 ~~[illegible]0~~		3947.5 ~~3587.5~~	-4.1
[illegible]			-3.05	3949.35 ~~3589.35~~	
⊙ 3+00			-7.16	3945.24 ~~3585.24~~	
△	+2.25	3947.49 ~~3587.49~~			
4+00			-5.07	3942.42 ~~3582.42~~	
⊙ 5+00			-9.19	3938.30 ~~3578.30~~	
5+00			-6.79	3940.70 ~~3580.70~~	
△	+2.05	3940.35 ~~3580.35~~			
7+00			-4.05	3935.64 ~~3575.64~~	
⊙ 9+00			-8.[illegible]	3931.66 ~~3571.66~~	
8+00			-7.26	3933.09 ~~3573.09~~	
△	+0.22	3931.88 ~~3571.88~~			
[illegible]			-3.92	3927.96 ~~3567.96~~	
⊙ 12+00			-5.07	3923.21 ~~3563.21~~	
1[illegible]+00			-6.18	3925.70 ~~3565.70~~	
△	+0.72	3923.93 ~~3563.93~~			
[illegible]			-4.57	3919.36 ~~3559.36~~	
⊙ 15+00			-11.74	3912.19 ~~3552.19~~	
14+00			-8.06	3915.87 ~~3555.87~~	
△	+0.25	3912.44 ~~3552.44~~			
16+00			-4.93	3907.51 ~~3547.51~~	
⊙ 18+00			-11.41	3901.03 ~~3541.03~~	

continued

Remarks

T E. G. Heinrichs, J. W. Marlatt, J. Klem

U.S.G.S. U.E. mark - chisled sq. on rock

elev. 3951.00

(note the exact figures as decimals of a foot are unknown therefore an assumption is made.)

← 7½' E. of Claim Cor. NW S12-12

12/30/59

Sta.	B.S.	[illegible]	A.S.	Elev.
		3912.44		3901.03
17+00			-8.12	3514.[illegible]
		3902.12		3904.02
Δ	+[illegible]	3512.12		
				3896.88
18+00			-5.21	3536.88
				3892.44
21+00			-[illegible]	3532.[illegible]
20+00			-8.05	3534.07
		3892.49		3894.07
Δ	+[illegible]	3[illegible]		
				3888.63
22+00			[illegible]	3528.63
				3884.17
23+00			-[illegible]	3524.17
				3878.70
24+00			-[illegible]	3518.70
		3879.12		
Δ	+[illegible]	35[illegible]		
				3873.63
25+00			-5.[illegible]	3513.63
				3867.39
26+00			-[illegible]	3507.39
				3869.91
27+00			-7.21	3509.91
		3868.46		3869.91
Δ	+[illegible]	3[illegible]		
				3864.68
28+00			-3.[illegible]	3504.68
				3862.65
29+27			-5.[illegible]	3502.65
				3862.51
29+00			-6.[illegible]	3502.51
	0.58	3863.23		
Δ	+[illegible]	3[illegible]		
				3858.[illegible]
[illegible] 0+10			-5.22	3498.12
1+10			-12.[illegible]	3490.37
		3852.80		3850.34
Δ	+[illegible]	3412.50		
				3895.40
[illegible] 2+10			7.40	3885.40
				3847.39
[illegible] 3+10			-5.41	[illegible]
		3857.02		
Δ	+[illegible]	3497.02		

continued

Extended rod

← Line turns due North along
claim line
Ga - Line

12/30/59

		3857.02 ~~[illegible]~~			
[illegible]			1.11	3849.61 ~~[illegible]~~	
Ga 4+70			-1.50	3855.52 ~~3495.52~~	
Δ	[illegible]	3850.93 ~~[illegible]~~			
[illegible]			[illegible]	3847.57 ~~3487.57~~	
[illegible]			[illegible]	3844.16 ~~[illegible]~~	
Ga 7+70			[illegible]	3846.35 ~~3486.35~~	
					12/31/59
				3844.16 ~~[illegible]~~	
Δ	[illegible]	3846.98 ~~[illegible]~~			
GB 1+00			[illegible]	3837.50 ~~3477.50~~	
[illegible]			[illegible]	3846.75 ~~[illegible]~~	
[illegible]			[illegible]	3843.11 ~~3433.11~~	
Δ	[illegible]	3859.09 ~~[illegible]~~			
[illegible]			[illegible]	3854.26 ~~3494.26~~	
[illegible]		~~[illegible]~~	-4.28	~~3494.81~~ 3854.81	
[illegible]			[illegible]	3497.31 3857.31	
Δ	[illegible]	1.17 ~~[illegible]~~ 3861.17			
GB 7+00			[illegible]	3854.80 3494.80	
[illegible]			[illegible]	3869.99 ~~3497.[illegible]~~ .99	
[illegible]			[illegible]	3856.51 3496.51	
[illegible]	[illegible]	1.07 ~~[illegible]~~ 3871.07			
[illegible]			[illegible]	3863.17 ~~3503.17~~	
[illegible]			[illegible]	~~3510.[illegible]~~ .79 3870.79	

continued

← NW Cor. Claim 57-15

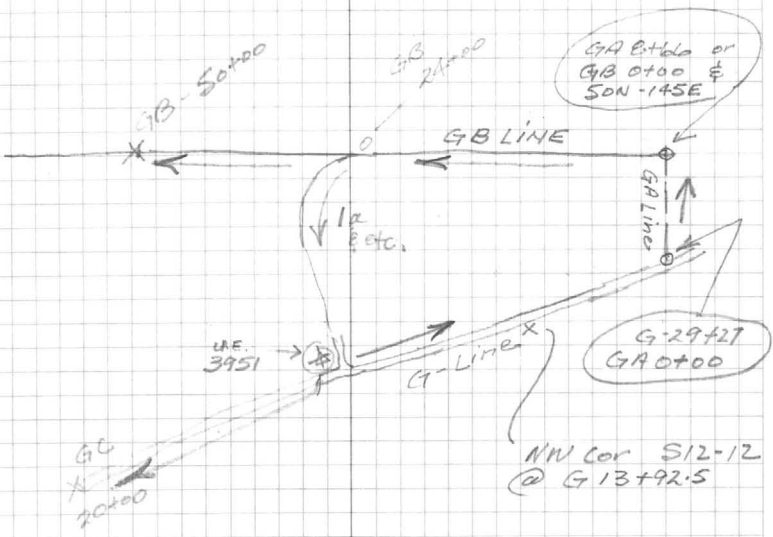
Line South, 145 E

12/31/59

Sta.	[illegible]	[illegible]	[illegible]	[illegible]
				3870.79
				~~[illegible]~~
				3806.32
[illegible]			[illegible]	3506.32
[illegible]	+13.25	~~[illegible]~~ 4.04		
		3884.04		
[illegible]			[illegible]	3875.34
				3515.34
[illegible]			[illegible]	~~3521.18~~ .38
				3881.38
[illegible]	[illegible]	~~3533.[illegible]~~ .89		
		3893.89		
GB 15+00			-8.80	3885.09
				3525.09
[illegible] 6+00				~~3533.[illegible]~~ .49
				3893.49
[illegible]	[illegible]	~~3546.[illegible]~~ .38		3905.45
		3906.38		
[illegible]			-0.93	~~3545.[illegible]~~ .45
[illegible]			-5.54	3540.84
				3900.84
[illegible]	[illegible]	~~3551.[illegible]~~ .57		
		3911.57		
[illegible]			[illegible]	3906.05
				3546.05
GB [illegible]			-8.00	~~3543.[illegible]~~ .57
				3903.57
GB 20+00			-7.31	3544.26
				3904.26
[illegible]	[illegible]	~~[illegible]~~ .68		
		3915.68		
[illegible]			-7.34	3906.34
				3546.~~[illegible]~~ .34
[illegible]			[illegible]	~~3549.[illegible]~~ .99
				3909.99
GB 23+00			[illegible]	3551.79
				3911.79

Computed by [illegible]
Checked by [illegible]

Continued


GB - 50+00
GB 24+00
GA 8+66 or
GB 0+00 &
50N - 145E
GB LINE
GA Line
1a
& etc.
U.E.
3951
G-Line
G-29+27
GA 0+00
NW Cor S12-12
@ G 13+92.5
GC
20+00

1/4/60

Sta.	BS	H.I.	F.S.	Elev.
GB-24+00				3909.44 ~~3544.4~~
Δ	+12.24	3922.23 ~~3562.23~~		
⊙ 1a			-0.90	3921.33 ~~3561.33~~
Δ	[illegible].92	3934.25 ~~3574.25~~		
⊙ 2a			-0.81	3933.44 ~~3573.44~~
Δ	+10.62	3944.06 ~~3584.06~~		
⊙ 3a			-1.18	3942.88 ~~3582.88~~
Δ	+6.67	3949.55 ~~3589.55~~		
⊙ 4a			-8.81	3940.74 ~~3580.74~~
Δ	+3.~~17~~ 09	3943.83 ~~3583.91~~ 83		
⊙ 5a			-2.10	3941.73 ~~3581.73~~
Δ	+12.70	3954.43 ~~3594.43~~		
⊙ 6a			-0.26	3954.17 ~~3594.17~~
Δ	+11.46	3965.63 ~~3605.63~~		
⊙ 7a			2.50	3963.13 ~~3603.13~~
Δ	+5.15	3968.28 ~~3608.28~~		
⊙ 8a			-12.50	3955.78 ~~3595.78~~
	+1.16	3956.94 ~~3596.94~~		
U.E. 3951.00 ~~359.00~~			-5.98	3950.96 ~~3590.96~~
		3951.00 ~~359.00~~		
		3950.96 ~~3590.96~~		

Low .04 Tie

Error

Computed E.G.H.
Check E.G.H.

Traverse from GB-24+00
along the road to U.E. 3591.00

near saddle on rd.

				3909.44	
24+00		3921.00		[illegible]	
Δ	[illegible]	3551.00			
[illegible]			-[illegible]	3909.82	
[illegible]			-[illegible]	3912.86	
				3914.58	
⊙ [illegible]		3924.93	-6.42	54.86	
Δ	+10.35	64.93			
[illegible]			-[illegible]	[illegible]7.15	
				3921.50	
⊙ 29+00		3928.26	-3.42	3561.50	
Δ	+[illegible]	3568.26			
		3570.69			
				3924.55	
30+00			-3.71	3[illegible]	
				66.87	
⊙ [illegible]			-1.39	3569.30	
Δ	+10.28	77.15			
		3[illegible]			
		3937.15			
32+00			-[illegible]	3930.38	
[illegible]			-3.33	3933.82	
				76.72	
⊙ 34+00		3946.79	-[illegible].43	3579.45	
Δ	+10.07	86.79		3936.72	
		3[illegible]			
36+00			-3.77	3943.02	
				3939.41	
35+00			-7.38	3944.95	
				84.95	
⊙ 37+00			-[illegible]	3587.38	
Δ	+[illegible]	94.22			
		3[illegible]		3[illegible]	
		3954.22		92.12	
⊙ [illegible]			-[illegible]	3[illegible]	
38+00			-7.22	3947.00	
Δ	+9.42	01.54			
		3[illegible]			
		3961.54			
40+00			-6.[illegible]	3[illegible].78	

Traverse from GB - 24+00 to
GB - 50+00,
Line 105 N Sta 95 E

		01.54 ~~3603.17~~ ~~3601.54~~		3957.62 ~~3597.62~~ ~~3622.95~~	-
⊙ 41+00		3970.07 ~~3610.07~~	-3.92		
Δ	+12.45	3612.50			
42+00			-8.70	3961.37	-
[illegible]			-6.[illegible]	3963.35	-
⊙ 44+00			-3.28	3966.79 ~~3606.79~~ ~~3607.22~~	-
Δ	+11.29	18.08 ~~3620.51~~ 3978.08			
45+00			-8.15	3969.93	-
46+00			-4.26	3973.82	-
⊙ 47+00			-2.00	16.08 ~~3618.51~~ 3976.08	-
Δ	+10.06	26.14 ~~3628.57~~ 3986.14			
48+00			-1.27	3978.87	-
50+00			-1.30	24.84 ~~3621.27~~ 3984.84	-
49+00			-4.[illegible]	3981.38	
				24.84 ~~3621.27~~	
Δ	+1.24	26.08 ~~3628.51~~			
⊙			-8.44	17.64 ~~3620.07~~	
Δ	+1.76	19.40 ~~3621.33~~			
⊙			-11.03	08.37 ~~3610.80~~	
Δ	[illegible]	10.03 ~~3612.46~~			
⊙			[illegible]	03.26 ~~[illegible]~~	
Δ	+2.74	06.00 ~~3608.43~~			
			-[illegible]		
⊙			-12.93	93.97 ~~3595.50~~	

40' to west to 105 N & 95 E

NW Cor. 12-2

4/60

				95.07 35~~95.50~~
	+1.21	95.15 35~~[illegible]~~		
			-3.17	82.01 35~~83.54~~
	+0.28	82.29 35~~83.82~~		
			-7.27	75.02 35~~76.55~~
	+0.25	74.77 35~~76.80~~		
			-7.0	67.77 35~~69.80~~

Tie to 1 or near rd.

Sta.	B.S.	H.I.	F.S.	Elev.	
	Rerun				
				3909.99	–
Δ	+10.13	3920.12			
27+00			-0.50	3914.62	–
Δ	[illegible]	3922.08			
29+00			[illegible]	3921.51	–
Δ	[illegible]	3930.78			
31+00			[illegible]	3926.96	–
Δ	+10.60	3937.56			
34+00			[illegible]	3936.78	–
Δ	[illegible]	3946.72			
37+00			-1.70	3945.02	–
Δ	[illegible]	3954.12			
39+00			[illegible]	3952.16	–
Δ	[illegible]	3963.12			
44+00			-5.46	3957.66	–
Δ	+10.74	3968.40			
44+00			[illegible]	3966.83	–
Δ	[illegible]	3978.02			
47+00			[illegible]	3976.09	–
Δ	[illegible]	3985.54			
50+00			-0.70	3984.84	–
[illegible]	E.G.H.	3984.84			
[illegible]	E.G.H.	3984.84			
		0.00	Tie		

1/5/60

[illegible]

Trace [illegible] 3751.[illegible]

[illegible]

GC - Line

[illegible]	+6.64	3967.64		
[illegible]			-7.24	3960.40
2+00			[illegible]	[illegible]
3+00			[illegible]8	3957.06
[illegible]	+13.21	3970.~~[illegible]~~ 27		
4+00			[illegible]	[illegible]
5+00			[illegible]	3966.28
				[illegible]8.39
[illegible]			-1.98	~~3968.92~~
7+00			[illegible]	3967.~~27~~ 69
[illegible]	[illegible]	3980.12 ~~3977.72~~		
8+00			-10.34	3969.78
9+00			-5.80	3974.32
10+00			-4.8[illegible]	3975.23
11+00			-1.~~[illegible]~~ 11	~~3977.61~~ 3979.01
[illegible]	[illegible]	3989.~~87~~ 97		
[illegible]			[illegible]	3981.93
[illegible]			[illegible]	3984.23
[illegible]			[illegible]	[illegible].~~19~~ 57
[illegible]	+[illegible]	3993.~~[illegible]~~ 80		
15+00			-4.01	3989.~~39~~ 78
16+00			-1.55	~~3991.85~~ 3992.25

← fit junction piston map [illegible]

				3992.25	–
Δ	[illegible]	4.05 [illegible]	–		
17+00			-9.86	[illegible]4.19	–
18+00			-5.43	3998.62	–
[illegible]			-0.79	3.26 [illegible]	–
Δ	+8.16	42 [illegible]	–		
[illegible]			[illegible]	59 [illegible]	–
		[illegible]	to [illegible]		
				59 [illegible]	–
Δ	[illegible]	10.30 [illegible]	–		
18+00			-11.72	58 [illegible]	–
Δ	+0.02	60 [illegible]			
15+00			-8.84	76 [illegible]	–
Δ	+0.23	99 [illegible]			
[illegible]			-11.00	99 [illegible]	–
Δ	+1.12	80.11 [illegible]	–		
[illegible]			-11.02	49 [illegible]	–
Δ	+0.00	47 [illegible]	–		
[illegible]			-11.33	57.11 [illegible]	–
Δ	[illegible]	50 [illegible]	–		
				1.04 [illegible]	–
		[illegible]			
		[illegible]			
		+ .04	error		

				[illegible]	—
[illegible]	[illegible]	3982.[illegible]	—		
[illegible]			-5.68	3957.05	—
[illegible]	[illegible]	3972.07	—		
[illegible]			-1.65	3966.42	—
[illegible]			-[illegible]	3969.29	—
[illegible]	[illegible]	3979.63	—		
[illegible]			-[illegible]	3967.68	—
GC [illegible]			-[illegible]	[illegible]	—

Gravity Survey Project 1/6/60

Elevations

Ridge Mining Co. Area #6

Computed to nearest hundreth ft.

G-Line

Sta #	Elev.
U.E.	3951.0
1+00	3949.4
2+00	47.5
3+00	45.2
4+00	42.4
5+00	40.7
6+00	38.3
7+00	35.6
8+00	33.1
9+00	31.7
10+00	28.0
11+00	25.7
12+00	23.2
13+00	19.4
14+00	15.9
15+00	12.2
16+00	07.5
17+00	04.0
18+00	01.0
19+00	3896.9
20+00	94.1
21+00	92.4
22+00	88.6
23+00	84.2
24+00	78.7
25+00	73.6
26+00	69.9
27+00	67.4
28+00	64.7
29+00	62.5
29+27	62.7

Ga Line

0+70	3858.1
1+70	50.3
2+70	45.4
3+70	47.4
4+70	55.5
5+70	49.6
6+70	47.6
7+70	46.4
8+66 B-O	44.2

GB Line

1+00	3837.5
2+00	43.1
3+00	46.8
4+00	54.3
5+00	57.3
6+00	54.8
7+00	54.8
8+00	56.5
9+00	70.0
10+00	63.2
11+00	66.3
12+00	70.8
13+00	75.3
14+00	81.4

GB-Line

Sta. #	Elev.
15+00	3885.1
16+00	93.5
17+00	3900.8
18+00	05.5
19+00	06.1
20+00	04.3
21+00	03.6
22+00	06.3
23+00	11.8
24+00	10.0
25+00	09.8
26+00	12.9
27+00	14.6
28+00	17.2
29+00	21.5
30+00	24.6
31+00	26.9
32+00	30.4
33+00	33.8
34+00	36.7
35+00	39.4
36+00	43.0
37+00	45.0
38+00	47.0
39+00	52.1
40+00	54.8
41+00	57.6
42+00	61.4
43+00	63.4
44+00	66.8
45+00	69.9
46+00	73.8
47+00	76.1
48+00	78.9
49+00	81.4
50+00	84.8

A-Line

1	3921.3
2	33.4
3	42.9
4	40.7
5	41.7
6	54.2
7	63.1
8	55.8

GC-Line

Sta #	Elev.
1+00	3950.4
2+00	53.5
3+00	57.1
4+00	61.0
5+00	66.3
6+00	68.4
7+00	67.7
8+00	69.8
9+00	74.3
10+00	75.2
11+00	79.0
12+00	81.9
13+00	84.2
14+00	86.6
15+00	89.8
16+00	92.3
17+00	94.2
18+00	98.6
19+00	4003.3
20+00	4009.6

117 stations

Elevations Corrected

G-Line 1/23/60

G-44	3816.3
49	3793.8
59	3760.0
69	3729.3
79	3693.6
89	3657.4
100	3613

888

Elevations Corrected

Line 25N

105E	4003.2
110E	3978.0
115E	3962.5
120E	3946.7
125E	3933.8
130E	3926.6
135E	3924.4
140E	3899.8
145E	3891.5
150E	3891.8
155E	3873.7
158E	3862.3

5000'
~~5300~~

29 — 44

Line 158E

30N	3854.1	
35N	3818.2	
40N	3816.3*	
G 44N	3816.3	pt. @ GATE
45N	3812.4	
50N	3808.4	
Sec Cor +	3804.9	
55N	3798.7	
60N	3789.7	
65N	3774.4	
70N	3757.8	
75N	3747.1 56.6	
80N	3734.8 44.8	

where is 45N.

* Corrected Elev.

Elevations

Line GD

1+00 — 3820.95

2+00 — 3826.27

NW Sec 7 3804.07

Line GB additional

50+00 — 3984.84

55+00 — 4010.66

60+00 — 4020.39

65+00 — 4036.07

70+00 — 4051.29

Line GC

20 — 4009.59

25 — 4023.83

30 — 4032.57

35 — 4045.79

40 — 4062.99

45 — 4076.47

50 — 4091.02

55 — 4107.40

60 — 4123.25 U.S. B.M

65 — 4132.01

70 — 4150.13

Elevations

G-Line

39	—	3837.09
44	—	3804.49
49	—	3782.03
59	—	3748.23
69	—	3718.22
79	—	3691.46
89	—	3654.60
100	—	3613.52

Theoretical normal fault calc from Δg bouger curve,

$$g_z = 4.05\sigma t \left(1.57 - \tan^{-1}\frac{x}{\frac{t}{2}}\right]$$

For $t = 2860'$ $\sigma = 0.8$

$$\alpha = \tan^{-1}\frac{x}{1.43}$$

$$g_z = 9.27\left[1.57 - \tan^{-1}\frac{x}{1.43}\right] = 14.55 \pm 9.27 \pm \alpha^{-1}$$

Final 65.67
14.55
80.22

x	$\frac{x}{1.43}$	α rad	9.27α	Final $g_z + x$	$g_z + x$
0	0	0	0		
± 0.5	0.3495	0.34	3.15	83.37	77.07
± 1.0	0.6990	0.61	5.65	85.87	74.57
± 1.5	1.0485	0.81	7.51	87.73	72.71
± 2.0	1.3980	0.95	8.81	89.03	71.41
± 2.5	1.7475	1.05	9.73	89.95	70.49
± 3.0	2.0970	1.13	10.48	90.70	69.74
± 3.5	2.4465	1.18	10.94	91.16	69.28
± 4.0	2.7960	1.23	11.40	91.62	68.82
± 4.5	3.1455	1.26	11.68	91.90	68.54
± 5.0	3.4950	1.29	11.96	92.18	68.26
± 6.5	3.8445	1.32	12.24	92.46	67.98
± 6.0	4.1940	1.34	12.42	92.64	67.80
± 6.5	4.5435	1.35	12.51	92.73	67.71
± 7.0	4.8930	1.37	12.70	92.92	67.52
± 7.5	5.2425	1.38	12.79	93.01	67.43
8.0	5.5920	1.39	12.89	93.11	67.33
8.5	5.9415	1.40	13.00	93.22	67.22

Residual – Curve $\Delta g_z = 9.03$ Fault.

$g_z = 4.05\Delta\sigma t \left[1.57 - \tan^{-1}\frac{2x}{t}\right]$ (PG gila = 2

"t" calc = 2630' (2.63 ksft)

$\Delta\sigma = 0.3$

$g_z = 3.20\left[1.57 - \tan^{-1} .7605x\right]$

5.02x + 82.19 = 87.

x	$\tan^{-1}\alpha$ .7605x	α(rad)	3.20α	x−	x+	Total −x	Total +x
0	0	0	0	87.21	8	79.32	—
0.5	.3802	.36	1.15	8 88.36	9 86.06	80.36	77.06
1.0	.7605	.65	2.08	89.29	85.13	81.79	75.63
1.5	1.1407	.85	2.72	9 89.93	10 84.49	82.93	74.49
2.0	1.5210	.99	3.17	90.38	84.04	83.88	73.54
2.5	1.9013	1.09	3.49	6 90.70	11 83.72	84.70	72.72
3.0	2.2815	1.16	3.71	90.92	83.50	85.42	72.00
3.5	2.6618	1.21	3.87	8 91.08	12 83.39	86.08	71.34
4.0	3.0420	1.25	4.00	91.21	83.21	86.71	70.71
4.5	3.4223	1.29	4.13	4 91.34	13 83.08	87.34	70.08
5.0	3.8025	1.31	4.19	91.40	83.02	87.90	69.52
5.5	4.1828	1.34	4.29	3 91.50	14 82.92	88.50	68.92
6.0	4.5630	1.35	4.32	91.53	82.89	89.03	68.39
6.5	4.9433	1.37	4.38	2 91.59	15 82.83	89.59	67.83
7.0	5.3235	1.38	4.42	91.63	82.79	90.13	67.29
7.5	5.7038	1.40	4.48	1 91.69	16 82.73	90.69	66.73
8.0	6.0840	1.41	4.51	91.72	82.70	91.22	66.20
8.5	6.4643	1.42	4.54	91.75	17 82.67	91.75	65.67

82.19

Inclined Slope. $\sigma = 0.3$ $2\gamma\sigma = 1.215$ $D = 2.63$ $\sin i = .2504$ $\cos i = .9682$

Station	i	φ_2	x	r_2	$D\varphi_2$ (A)	$\frac{r_2}{x}$	$\frac{\ln r_2}{x}$	$\sin i \frac{\ln r_2}{x}$ (B)
G-100	14°30'	90°	12×10^3	2.65×10^3	4.13	.2208	-1.510 8.490-10	-.378
G-80	"	136°	10^4	3.4×10^3	6.24	.340	-1.079 8.921-10	-.270
G-60	"	145°	8×10^3	4.9×10^3	6.66	.61255	-.490 9.510-10	-.123
G-40	"	154°	6×10^3	6.65×10^3	7.07	1.1083	.104	.026
G-20	"	159°30'	4×10^3	8.5×10^3	7.31	2.125	.754	.189
G-0	"	163°30'	2×10^3	10.4×10^3	7.50	3.75	1.322	.331
C-10	"	164°30'	1×10^3	11.4×10^3	7.52	7.52	2.018	.505
C-20		166°	0	12.4×10^3	7.60	∞	∞ ?	∞ ?
C-30		166°30'	-1×10^3	13.4×10^3	7.63	-7.52	-2.018	-.505
C-50		168°	-3×10^3	15.35×10^3	7.70	-2.567	-0.944	-.236
C-70		169°	-5×10^3	17.3×10^3	7.76	-1.552	-0.438	-.110

13 / 5 / 3

$g_z = 1.215$ F

φ_2 (rad)	(C) $\varphi_2 \cos i$	(B+C)	(D) $-x\sin i$	(E) D(B+C)	(F) E+A	g_z	F +81.83
1.571	1.521	1.143	-3.005	-3.435	0.69	0.84	82.67
2.374	2.299	2.029	-2.504	-5.081	1.16	1.41	83.24
2.531	2.451	2.328	-2.003	-4.663	2.00	2.43	84.26
2.688	2.603	2.629	-1.502	-3.949	3.12	3.79	85.62
2.783	2.695	2.884	-1.002	-2.890	4.42	5.37	87.20
2.853	2.762	3.093	-.501	-1.550	5.95	7.23	89.06
2.871	2.780	3.285	-.250	-.821	6.70	8.14	89.97
2.897	2.805	∞ ?	0	?	7.60	9.23	91.0 91.46
2.906	~~2.814~~	~~2.309~~	~~+.250~~	~~+.577~~	~~8.21~~	~~9.98~~	~~91.81~~
2.932	~~2.839~~	~~2.603~~	~~+.7512~~	~~+1.955~~	~~9.66~~	~~11.74~~	~~93.57~~
2.950	~~2.856~~	~~2.746~~	~~+1.252~~	~~+3.438~~	~~11.20~~	~~13.6~~	~~95.44~~

	$\varphi_2 - \varphi_1$ F	C' $\varphi_2 + \varphi_1 \cos i$	B+C'	[E] (B+C')(D)	F E+A	g_z	+81.83
C-30	-.236 (Cos i)	-.228	-.733	-.183	7.45	9.05	91.0 90.88
C-50	-.210	-.203	-.439	-.330	7.37	8.95	91.0 90.78
C-70	-.192	-.185	-.295	-.369	7.39	8.97	91.0 90.80

0.8

Inclined Plane
Theoretical Curve
From residual data,
with regional added
back in to fit Bouger curve

-17	65.67	G 100
		80
-15	68.24	
		60
-13	71.26	
		40
-11	74.62	
		20
-9	78.20	
		0 ✓
-7	82.06	
		10
-6	83.97	
		20
-5	86.06	
		30
-4	86.88 ~~87.81~~	
		50
-2	88.78 ~~91.57~~	
		70
-0	90.80 ~~95.44~~	

Tabulation of Data

All data in gravity units 1gu = 0.1 mg.

elev. corr. factor = 0.07109 mg/ft
elev. datum = 3500'
11-19-63 Diff. between sur. el. & elev. datum

Station	Elevation	elev. corr.	Lat corr.	Station Gravity.	Total Gravity	Res. corr	Residual gravity.	x cor. fact. = elev. cor.
25N Line								
25N-105E	4003.2	357.7	+17.9	498.6	874.2	+58.0	932.2	
110E	3978.0	339.8	+17.9	507.4	865.1	+63.0	928.1	
115E	62.5	328.8	+17.9	506.9	853.6	+69.0	922.6	
120E	46.7	317.6	+17.9	509.1	844.6	+74.0	918.6	
125E	33.8	308.4	+17.9	507.8	834.1	+79.0	913.1	
25N-130E	26.6	303.3	+17.9	504.7	825.9	+85.0	910.9	
135E	3924.4	301.7	+17.9	497.2	816.8	+90.0	906.8	
140E	3899.8	284.2	+17.9	504.6	806.7	+95.0	901.7	
145E	91.5	278.3	+17.9	499.5	795.7	+100.0	895.7	
150E	91.8	278.5	+17.9	488.9	785.3	+105.0	890.3	
155E	73.7	265.7	+17.9	491.5	775.1	+110.0	885.1	
158E Line								
25N-158E	62.3	257.6	+17.9	493.6	769.1	+114.0	883.1	
30N	54.1	251.7	+16.8	496.9	765.4			
35N	18.2	226.2	+15.7	519.2	761.1			
40N	16.3	224.9	+14.6	519.1	758.6			
45N	12.4	222.1	+13.5	519.0	754.6			
50N-158E	3808.4	219.2	+12.3	520.1	751.6			
55N	3798.7	212.3	+11.2	524.5	748.0			
60N	89.7	205.9	+10.1	529.3	745.3			
65N	74.4	195.1	+9.0	538.4	742.5			
70N	57.8	183.3	+7.9	548.2	739.4			
75N	56.6	182.4	+6.7	547.5	736.6			
80N 158E	3744.8	174.0	+5.6	553.8	733.4			
NW S-6	3865 @	131.5	0	586.3	717.8			
W ¼ S-31	3635 @	96.0	-5.9	615.2	705.3			
NW-S-31	3582 @	58.3	-11.9	658.5	704.9			
W ¼ S-30	3495 @	-3.6	-17.8	720.6	699.2			
NW S-30	3394 @	-75.3	-23.7	798.3	699.3			

@ denotes approximate elevation

Tabulation of Data.

elev. corr. factor = 0.07109 mg/ft
elev datum = 3500'

All data in gravity units; 1 gu = 0.1 milligals

Station	Elevation	elevation correction	Lat Correction	Station Gravity	Total Gravity	Residual correction	Residual Gravity
C-Line.							
C-1	3950.4	320.2	+17.1	506.1	843.4	69.0	912.4
2	" 53.5	322.9	+17.1	506.0	845.5	68.0	913.5
3	" 57.1	325.0	+17.2	505.7	847.9	67.0	914.9
4	" 61.0	327.7	+17.2	504.7	849.6	66.0	915.6
5	" 66.3	331.5	+17.3	502.7	851.5	65.0	916.5
6	" 68.4	333.0	+17.3	503.1	853.4	64.0	917.4
7	" 67.7	332.5	+17.4	504.6	854.5	63.0	917.5
8	" 69.8	334.0	+17.4	504.9	856.3	62.0	918.3
9	" 74.3	337.2	+17.5	503.7	858.4	61.0	919.4
C-10 *	3975.2	337.8	+17.5	504.7	860.0	60.0	920.0
11	" 79.0	340.5	+17.5	504.2	862.2	59.0	921.2
12	" 81.9	342.6	+17.6	504.2	864.4	58.0	922.4
13	" 84.2	344.2	+17.6	505.0	866.8	57.8	923.8
14	" 86.6	345.9	+17.7	505.0	868.6	56.0	924.6
15	" 89.8	348.2	+17.7	505.0	870.9	55.0	925.9
16	" 92.3	350.0	+17.7	505.3	873.0	54.0	927.0
17	" 94.2	351.3	+17.8	505.6	874.7	53.0	927.7
18	3998.6	354.5	+17.8	505.0	877.3	52.0	929.3
19	4003.3	357.8	+17.9	502.8	878.5	51.0	929.5
C-20 *	4009.6	362.3	+17.9	500.0	880.2	50.0	930.2
30	" 32.6	378.6	+18.8	496.4	893.8	40.0	933.8
40	" 63.0	400.2	+19.2	483.8	902.8	30.0	932.8
50	4091.0	420.1	+19.8	475.6	915.5	20.0	935.5
60	4123.0 (BM)	442.9	+20.3	460.1	923.3	10.0	933.3
C-70	4150.1	462.2	+20.4	444.3	926.9	0	926.9
G-Line							
G-0 *	3951.0	other sheet. 320.6	+17.0	504.0	841.6	70.0	911.6
	39[illegible]	319.5	+16.9	503.2	839.1	71.0	910.1

Tabulation of Data

elev. corr. factor = 0.07109 mg/ft
elev. datum = 3500'

All data in gravity Units 1gu = 0.1 milligals

Station	Elevation	elev. corr.	Lat. corr.	Station Gravity	Total Gravity	Residual corr.	Residual Gravity
G-Line							
G-2	3947.5	318.1	+16.9	502.4	837.4	72.0	909.4
3	" 45.2	316.5	+16.8	503.0	836.3	73.0	909.3
4	" 42.4	314.5	+16.7	502.5	833.7	74.0	907.7
5	" 40.7	313.3	+16.6	501.9	831.8	75.0	906.8
6	" 38.3	311.6	+16.5	502.4	830.5	76.0	906.5
7	" 35.6	309.7	+16.4	501.9	828.0	77.0	905.0
8	" 33.1	307.9	+16.3	501.9	826.1	78.0	904.1
9	" 31.7	306.9	+16.2	501.8	824.9	79.0	903.9
G-10*	3928.0	304.3	+16.1	501.8	822.2	80.0	902.2
11	" 25.7	302.6	+16.0	502.0	820.6	81.0	901.6
12	" 23.2	300.9	+15.9	502.6	819.4	82.0	901.4
13	" 19.4	298.2	+15.8	503.1	817.1	83.0	900.1
14	" 15.9	295.7	+15.6	503.2	814.5	84.0	898.5
15	" 12.2	293.0	+15.5	504.6	813.1	85.0	898.1
16	" 07.5	289.7	+15.4	505.2	810.3	86.0	896.3
17	" 04.0	287.2	+15.3	505.3	807.8	87.0	894.8
18	3901.0	285.1	+15.2	506.0	806.3	88.0	894.3
19	3896.9	282.2	+15.1	506.2	804.5	89.0	893.5
G-20*	3894.1	280.2	+15.0	506.0	801.2	90.0	891.2
29*	3862.5	257.7	+14.1	509.9	781.7	99.0	880.7
39	3832.1	236.1	+13.2	512.6	761.9	109.0	870.9
44	3816.3	224.9	+12.8	514.9	752.6	114.0	866.6
49	3793.8	208.9	+12.3	523.6	744.8	119.0	863.8
59	3760.0	184.8	+11.9	533.9	730.6	129.0	859.6
69	3729.3	163.0	+11.9	538.6	713.5	139.0	852.5
79	3693.6	137.6	+11.9	548.9	698.4	149.0	847.4
89	3657.4	111.9	+11.9	560.1	683.9	159.0	842.9
HW 5-8 G-100	3613.5	80.7	+11.9	576.4	669.0	170.0	839.0

* Denotes gravity Base

Tabulation of data elev. corr. factor = 0.07109 mgl/ft.
elev. datum = 3500'
All data in gravity units 1.0 gu = 0.1 mg.

Station	Elevation	Elev. corr.	Lat corr	Station gravity	Total Gravity	Res. corr.	Residual Gravity	
B(50'N) Line cont.								
~~B-4~~	~~3854.3~~	~~251.9~~	~~+12.3~~	~~516.8~~	~~781.0~~	~~96.0~~	~~877.0~~	← See previous page
B-2	43.1	243.9	+12.3	520.5	776.7	98.0	874.7	
B-0 *	44.2	244.7	+12.3	516.6	773.6	100.0	873.6	
D-Line D-2	26.3	232.0	+12.2	522.2	766.4	104.0	870.4	
D-1	21.0	228.2	+12.1	517.6	757.9	109.0	866.9	
NW S-7 D-0 *	3804.1	216.2	+11.9	521.8	749.9	114.0	863.8	
↓ tied to G-59 ↓ G-100 ↓								
N¼ S-8	3522 @	+15.6	+11.9	612.6	640.1			
NW S-9	3431 @	-49.1		662.9	625.7			
NW S-10	3268 @	-164.9		768.6	615.6			
N¼ S-10	3160 @	-241.7	same	828.4	598.6			
NW S-11	3094 @	-288.6		903.3	626.6			
N¼ S-11	3040 @	-327.0		949.7	634.6			
NW S-12	2977 @	-371.8		982.7	622.8			
N¼ S-12	2920 @	-412.3		1015.8	615.4			
NW S-7	2870 @	-447.9		1027.1	591.1			
△ 2789	2789 @	-505.4	+11.9	1032.9	539.4			

* denotes gravity base station. @ denotes approximate elev.

Tabulation of Data

All data in gravity units 1gu=0.1mg. elev. corr factor = 0.07109 mg/ft
elev. datum = 3500'

Station	Elev.	elev. corr.	Lat corr	Station gravity	Total gravity	Res. corr.	Residual Gravity.
B-Line (50N)							
B-70	4051.3	391.9	+12.3	495.4	899.6	30.0	929.6
B-65	36.1	381.1		501.1	894.5	35.0	929.5
60	20.4	370.0		506.2	888.5	40.0	928.5
55	4010.7	363.1		507.7	883.1	45.0	928.1
B-50*	3984.8	344.6	+12.3	518.6	875.5	50.0	925.5
48	78.9	340.5		520.3	873.1	52.0	925.1
46	73.8	336.8	same	520.3	869.4	54.0	923.4
44	66.8	331.8		523.2	867.3	56.0	923.3
42	61.4	328.0	throughout	523.1	863.4	58.0	921.4
B-40	54.8	323.3		521.5	857.1	60.0	917.1
38	47.0	317.8		522.1	852.2	62.0	914.2
36	43.0	314.9		520.3	847.5	64.0	911.5
34	36.7	310.5		520.6	843.4	66.0	904.4
32	30.4	306.0		520.2	838.5	68.0	906.5
B-30*	24.6	301.8		520.0	834.1	70.0	904.1
28	17.2	296.6		521.0	829.9	72.0	901.9
26	12.9	293.5		518.7	824.5	74.0	898.5
24	10.0	291.5		518.0	821.8	76.0	897.8
22	06.3	288.8		516.6	817.7	78.0	895.7
B-20*	04.3	287.4		514.0	813.7	80.0	893.7
18	3905.5	288.3		509.6	810.2	82.0	892.2
16	3893.5	279.7		513.4	805.4	84.0	889.4
14	81.4	271.1		517.0	800.4	86.0	886.4
12	70.8	263.6		519.9	795.8	88.0	883.8
B-10*	63.2	258.2		521.7	792.2	90.0	882.2
8	56.5	253.4		522.2	787.9	92.0	879.9
6	54.8	252.2		520.2	784.7	94.0	878.7
B-4	3854.3	251.9		516.8	781.0	96.0	877.0 ← repeated next page

* denotes gravity base station

Tabulation of Data

elev. corr. factor = 0.07109 mgal/ft
elev. datum = 3500'

All data in gravity units 1gu = 0.1 mg.

Station	Elevation	elev. corr.	Lat corr.	Station Gravity	Total Gravity	Res. corr	Residual gravity
25N Line							
25N-105E	4003.2	357.7	+17.9	498.6	874.2	+58.0	932.2
110E	3978.0	339.8	+17.9	507.4	865.1	+63.0	928.1
115E	62.5	328.8	+17.9	506.9	853.6	+69.0	922.6
120E	46.7	317.6	+17.9	509.1	844.6	+74.0	918.6
125E	33.8	308.4	+17.9	507.8	834.1	+79.0	913.1
25N-130E	26.6	303.3	+17.9	504.7	825.9	+85.0	910.9
135E	3924.4	301.7	+17.9	497.2	816.8	+90.0	906.8
140E	3899.8	284.2	+17.9	504.6	806.7	+95.0	901.7
145E	91.5	278.3	+17.9	499.5	795.7	+100.0	895.7
150E	91.8	278.5	+17.9	488.9	785.3	+105.0	890.3
155E	73.7	265.7	+17.9	491.5	775.1	+110.0	885.1
158E Line							
25N-158E	62.3	257.6	+17.9	493.6	769.1	+114.0	883.1
30N	54.1	251.7	+16.8	496.9	765.4		
35N	18.2	226.2	+15.7	519.2	761.1		
40N	16.3	224.9	+14.6	519.1	758.6		
45N	12.4	222.1	+13.5	519.0	754.6		
50N-158E	3808.4	219.2	+12.3	520.1	751.6		
55N	3798.7	212.3	+11.2	524.5	748.0		
60N	89.7	205.9	+10.1	529.3	745.3		
65N	74.4	195.1	+9.0	538.4	742.5		
70N	57.8	183.3	+7.9	548.2	739.4		
75N	56.6	182.4	+6.7	547.5	736.6		
80N 158E	3744.8	174.0	+5.6	553.8	733.4		
NW S-6	3865 @	131.5	0	586.3	717.8		
W ¼ S-31	3635 @	96.0	-5.9	615.2	705.3		
NW-S-31	3582 @	58.3	-11.9	658.5	704.9		
W ¼ S-30	3495 @	-3.6	-17.8	720.6	699.2		
NW S-30	3394 @	-75.3	-23.7	798.3	699.3		

@ denotes approximate elevation

Tabulation of Data.

elev. corr. factor = 0.07129
elev datum = 3500'

All data in gravity units; 1 gu = 0.1 milligal

Station	Elevation	elevation correction	Lat correction	Station Gravity	Total Gravity	Residual correction	Residual Gravity
C-Line							
C-1	3950.4	320.2	+17.1	506.1	843.4	69.0	912.4
2	" 53.5	322.9	+17.1	506.0	845.5	68.0	913.5
3	" 57.1	325.0	+17.2	505.7	847.9	67.0	914.9
4	" 61.0	327.7	+17.2	504.7	849.6	66.0	915.6
5	" 66.3	331.5	+17.3	502.7	851.5	65.0	916.5
6	" 68.4	333.0	+17.3	503.1	853.4	64.0	917.4
7	" 67.7	332.5	+17.4	504.6	854.5	63.0	917.5
8	" 69.8	334.0	+17.4	504.9	856.3	62.0	918.3
9	" 74.3	337.2	+17.5	503.7	858.4	61.0	919.4
C-10 *	3975.2	337.8	+17.5	504.7	860.0	60.0	920.0
11	" 79.0	340.5	+17.5	504.2	862.2	59.0	921.2
12	" 81.9	342.6	+17.6	504.2	864.4	58.0	922.4
13	" 84.2	344.2	+17.6	505.0	866.8	57.0	923.8
14	" 86.6	345.9	+17.7	505.0	868.6	56.0	924.6
15	" 89.8	348.2	+17.7	505.0	870.9	55.0	925.9
16	" 92.3	350.0	+17.7	505.3	873.0	54.0	927.0
17	" 94.2	357.3	+17.8	505.6	874.7	53.0	927.7
18	3998.6	354.5	+17.8	505.0	877.3	52.0	929.3
19 *	4003.8	357.8	+17.9	502.8	878.5	51.0	929.5
C-20	4009.6	362.3	+17.9	500.0	880.2	50.0	930.2
30	" 32.6	378.6	+18.8	496.4	893.8	40.0	933.8
40	" 63.0	400.2	+19.2	483.8	902.8	30.0	932.8
50	4091.0	420.1	+19.8	475.6	915.5	20.0	935.5
60	4123.0 (BM)	442.9	+20.3	460.1	923.3	10.0	933.3
C-70	4150.1	462.2	+20.4	444.3	926.9	0	926.9
G-Line							
G-0 *	3951.0	320.6	+17.0	504.0	841.6	70.0	911.6
1	3949.4	319.5	+16.9	503.2	839.6	71.0	910.6

Tabulation of Data

elev. corr. factor = 0.07109 mg/ft
elev. datum = 3500'

All data in gravity units 1gu = 0.1 milligals

Station	Elevation	elev. corr.	Lat. Corr.	Station Gravity	Total Gravity	Residual corr.	Residual Gravity
G-Line							
G-2	3947.5	318.1	+16.9	502.4	837.4	72.0	909.4
3	" 45.2	316.5	+16.8	503.0	836.3	73.0	909.3
4	" 42.4	314.5	+16.7	502.5	833.7	74.0	907.7
5	" 40.7	313.3	+16.6	501.9	831.8	75.0	906.8
6	" 38.3	311.6	+16.5	502.4	830.5	76.0	906.5
7	" 35.6	309.7	+16.4	501.9	828.0	77.0	905.0
8	" 33.1	307.9	+16.3	501.9	826.1	78.0	904.1
9	" 31.7	306.9	+16.2	501.8	824.9	79.0	903.9
G-10*	3928.0	304.3	+16.1	501.8	822.2	80.0	902.2
11	" 25.7	302.0	+16.0	502.0	820.6	81.0	901.6
12	" 23.2	300.9	+15.9	502.6	819.4	82.0	901.4
13	" 19.4	298.2	+15.8	503.1	817.1	83.0	900.1
14	" 15.9	295.7	+15.6	503.2	814.5	84.0	898.5
15	" 12.2	293.0	+15.5	504.6	813.1	85.0	898.1
16	" 07.5	289.7	+15.4	505.2	810.3	86.0	896.3
17	" 04.0	287.2	+15.3	505.3	807.8	87.0	894.8
18	3901.0	285.1	+15.2	506.0	806.3	88.0	894.3
19	3896.9	282.2	+15.1	506.2	804.5	89.0	893.5
G-20*	3894.1	280.2	+15.0	506.0	801.2	90.0	891.2
29*	3862.5	257.7	+14.1	509.9	781.7	99.0	880.7
39	3832.1	236.1	+13.2	512.6	761.9	109.0	870.9
44	3816.3	224.9	+12.8	514.9	752.6	114.0	866.6
49	3793.8	208.9	+12.3	523.6	744.8	119.0	863.8
59	3760.0	184.8	+11.9	533.9	730.6	129.0	859.6
69	3729.3	163.0	+11.9	538.6	713.5	139.0	852.5
79	3693.6	137.6	+11.9	548.9	698.4	149.0	847.4
89	3657.4	111.9	+11.9	560.1	683.9	159.0	842.9
HW 5-8 G-100	3613.5	80.7	+11.9	576.4	669.0	170.0	839.0

* Denotes gravity base

Tabulation of Data

All data in gravity units 1 gu = 0.1 mg

elev. corr factor = 0.07109 mg/ft
elev. datum = 3500'

Station	Elev.	elev. corr	Lat corr	Station gravity	Total gravity	Res. corr.	Residual Gravity
B-Line (cont)							
B-70	4051.3	391.9	+12.3	495.4	899.6	30.0	929.6
B-65	36.1	381.1		501.1	894.5	35.0	929.5
60	20.4	370.0		506.2	888.5	40.0	928.5
55	4010.7	363.1		507.7	883.1	45.0	928.1
B-50 *	3984.8	344.6	+12.3 same throughout	518.6	875.5	50.0	925.5
48	78.9	340.5		520.3	873.1	52.0	925.1
46	73.8	336.8		520.3	869.4	54.0	923.4
44	66.8	331.8		523.2	867.3	56.0	923.3
42	61.4	328.0		523.1	863.4	58.0	921.4
B-40	54.8	323.3		521.5	857.1	60.0	917.1
38	47.0	317.8		522.1	852.2	62.0	914.2
36	43.0	314.9		520.3	847.5	64.0	911.5
34	36.7	310.5		520.6	843.4	66.0	904.4
32	30.4	306.0		520.2	838.5	68.0	906.5
B-30 *	24.6	301.8		520.0	834.1	70.0	904.1
28	17.2	296.6		521.0	829.9	72.0	901.9
26	12.9	293.5		518.7	824.5	74.0	898.5
24	10.0	291.5		518.0	821.8	76.0	897.8
22	06.3	288.8		516.6	817.7	78.0	895.7
B-20 *	04.3	287.4		514.0	813.7	80.0	893.7
18	3905.5	288.3		509.6	810.2	82.0	892.2
16	3893.5	279.7		513.4	805.4	84.0	889.4
14	81.4	271.1		517.0	800.4	86.0	886.4
12	70.8	263.6		519.9	795.8	88.0	883.8
B-10 *	63.2	258.2		521.7	792.2	90.0	882.2
8	56.5	253.4		522.2	787.9	92.0	879.9
6	54.8	252.2		520.2	784.7	94.0	878.7
B-4	3854.3	251.9		516.8	781.0	96.0	877.0

* denotes gravity base station

Tabulation of data elev. corr. factor = 0.07109 mg/ft
elev. datum = 3500'

All data in gravity units 1.0 gu = 0.1 mg.

Station	Elevation	Elev. corr.	Lat corr	Station gravity	Total Gravity	Res. corr.	Residual Gravity	
B (50 N) Line cont								
~~B-4~~	~~3854.3~~	~~257.9~~	~~+12.3~~	~~516.8~~	~~781.0~~	~~0.0~~	~~877.0~~	← See previous page
B-2	43.1	243.9	+12.3	520.5	776.7	98.0	874.7	
B-0 *	44.2	244.7	+12.3	516.6	773.6	100.0	873.6	
D-Line D-2	26.3	232.0	+12.2	522.2	766.4	104.0	870.4	
D-1	21.0	228.2	+12.1	517.6	757.9	109.0	866.9	
NW S-7 D-0 *	3804.1	216.2	+11.9	521.8	749.9	114.0	863.8	
↓ tied to G-59 ↓ G-100 ↓								
N¼ S-8	3522 @	+15.6	+11.9	612.6	640.1			
NW S-9	3431 @	-49.1		662.9	625.7			
NW S-10	3268 @	-164.9		768.6	615.6			
N¼ S-10	3160 @	-241.7	same	828.4	598.6			
NW S-11	3094 @	-288.6		903.3	626.6			
N¼ S-11	3040 @	-327.0		949.7	634.6			
NW S-12	2977 @	-371.8		982.7	622.8			
N¼ S-12	2920 @	-412.3		1015.8	615.4			
NW S-7	2870 @	-447.9		1027.1	591.1			
△ 2789	2789 @	-505.4	+11.9	1032.9	539.4			

* denotes gravity base station. @ denotes approximate elev.

21/Jan/10

Sta	Met	Time			
NW 7 D-0	426.2	1333			
55N 158E	428.5	1337			
60N	432.6	42			
65N	440.4	46			
70N	448.8	50			
75N	448.2	55			
80N	453.5	1402			
~~NW 6~~ ?	~~467.3~~ ?	~~20~~ ?			~~3685 ± 10~~
NW 6	481.2	41			3685
36 1/4 31	506.1	50			
BM	512.7	1500			BM 3623
NW 31	543.3	1515			3582
1/4 30	596.8	1522			3582
NW 30	663.8	1530			3394
NW 7 D-0	424.8	1555			
NW 5.8 G-100	471.8	1605			check
N 1/4 5.8	503.2	13			
NW 9	546.7	20			
NW 10	638.0	35			
N 1/4 10	689.6	45			
NW 11	754.3	53			
N 1/4 11	794.4	1701			
NW 12	822.9	16			
N 1/4 12	851.5	26			
NW 7	861.3	39			R 18E
△	866.3	1755			

ORIGINAL COPR. 1910 BY J. O. PARKER
TR. WK. REG. U.S. PAT. OFF.
MADE IN U.S.A.
LEFAX, PHILADELPHIA, PA.

609
5.79
30

10'

6.64
5.93
.71

7.16
5.31
1.90

6.64
6.26
.38

+.71' 30'
+.38
− .65
− .47

7.29
6.64
.65

7.11
6.64
.47

21 / Jan / 60

Sta	Met	Time		SG.	
G-29	414.4	0937			
G-44	419.1	0945		OK 5.3 +0.4	check sta.
0-0	425.0	50			
G-29	414.5	56			
G-39	416.6	1001	OK	5 OK	check sta
0-0	425.4	1055			
G-39	415.3	1100			
C-20	406.9	1108			
25N-105E	405.8	16			
25N 110E	413.4	22			
25N 115E	413.0	27			
25N 120E	415.0	32			
125E	413.8	36			
130E	411.2	41			
? 133	404.9	45			
135	404.8	48			
140E	411.2	54			
145E	406.8	1200			
150E	397.7	05			
155E	400.0	10			
25N 158E	401.8	15			
30N 158E	404.6	18			
35N "	424.0	24			
40N	423.9	30			
45N	423.8	35			
50N	424.9	38			
0-0*	426.3	43			

15/Jan/60

Sta	Time	Meter			
G-B42	1619	4284			
B-44	22	4285			
B-46	26	4260			
B-48	28	4260			
B-50	32	4245			
B-30	42	425.8			
B-50	57	4246			
B-55	1703	4152			
B-60	08	413.8			
65	14	409.4			
B-70	19	404.5			
B-50	26	434.4			
	35	25			

15 Jan 60

Sta	Time	Meter			
GB-30	1323	426.2			
28	1331	427.1			
26	35	425.1			
24	40	424.4			
22	43	423.2			
GB-20	47	420.9			
18	53	417.2			
16	58	420.5			
14	1409	423.8			
12	16	426.4			
GB-10	20	428.0			
8	25	428.4			
6	29	426.7			
4	34	423.7			
2	37	421.9			
GB-0 AB+GG	44	423.5			
GD-2	50	428.2		± 400' E of from B-10	
D-1	55	424.2		1000' E of from B 0	
D-0 NW Sec 7	59	427.6			
GB-0	1510	423.0			
GB-30	1522	425.9			
GB-30	1555	425.7			
32	59	425.9			
34	1602	426.2			
36	1606	426.0			
38	09	427.5			
GB 40	14	427.0			

Sta.	Time	Meter Reading			
G-11	1659	419.1			
G-12	1703	419.5		-0.4	
G-13	1707	419.9			
G-14	1711	419.9			
G-15	1713	421.0		-0.4	
G-16	1715	421.5			
G-17	1717	421.5			
G-18	1720	422.1		-0.4	
G-19	1722	422.2			
G-20	1724	422.0			

Comp Sta.

7/Jan/60 Level

Dens Profile in general

Calc 7/Jan

Sta		BS	FS	HI	Elev
0		2.03		52.03	50.00
50			5.56		46.47
100			11.72		40.31
150			11.24		40.79
200			4.96		47.07
300			1.25		50.78
100		1.04			40.31
125			4.68		36.67
0	1545	450.9			sta grav 50.0
50	50	453.3			52.9
100	53	457.1			57.3
125	56	459.1			59.6
150	1600	457.1			57.9
200	1603	454.1			53.9
300	1605	452.7			52.3
0	1611	450.6			50.0
G-0	1630	421.5			
G-1	1633	420.7			
G-2	1635	420.0			
G-3	1638	420.4		-0.4	
G-4	1640	420.0			
G-5	1643	419.4			
G-6	1645	419.7		-0.4	
G-7	1647	419.3			
G-8	1649	419.2			
G-9	1652	419.1		-0.4	
G-10	1655	419.0			

Calc 8/Jan

7/Jan/60

CG/c 8/Jan

Sta	Time	Met Read		
~~G-29~~	~~1205~~	~~427.9~~		
G-29	1220	427.5		
G-39	1230	429.8		
G-44	1237	431.8		
NW Sec 7	55	437.6		
G-29	1315	427.6		
G-49	1321	439.5		
G-59	1325	448.4	SW F-6-2 (65' South of)	
G-69	1331	452.5		
G-79	1336	461.3		
G-89	1341	471.2		
G-100	1348	485.3	N.E. Cor. Sec. 7 EL 3613	
G-29	1409	428.1		
GC-20	1419	419.7		
GC-30	1426	416.5		
GC-40	1430	405.3		
GC-50	1434	398.5		
GC-60	1439	385.0	BM 4123 (-0.5')	
GC-70	1446	371.4	40' East of a N-S Line	
GC-20	1455	419.4		

2

6/Jan/60
Gravity Survey

C-16	1518	423.9			
C-15	13	423.6		-0.1	
C-14	17	423.6			
C-13	22	423.5			
C-12	26	422.8			Calc 6/Jan
C-11	31	422.7			
* C-10	34	423.2			
C-9	49	422.3			
C-8	52	423.4			
C-7	55	423.1		-0.4	
C-6	58	421.7			
C-5	1601	421.4			
C-4	1606	423.1			
C-3	09	424.0			
C-2	12	424.2			
C-1	15	424.3			
G-0	18	422.5			

6/Jan/60 fair wind 5 mph.

Gravity Survey

Sta	Time	Read.		elev Diff	
GC 20	1124	420.6		-0.3	
GC 10	1131	424.4			
GC 20	1135	420.3			
G 0	1137	423.9			
GC-10	1147	424.6			
G-10	54	421.9			
G-0	1200	423.8			
G-20	06	425.4			
G-10	10	421.9			
G-29	16	429.9			
G-20	22	425.6			
GB 00	34	434.9		-0.4	computed
G-29	46	429.2			6/Jan
GB-10	1300	439.6			
GB00	06	435.2			
GB-20	16	433.0			
GB-10	24	439.6			
GB-30	33	437.8			
GB-20	40	432.5	53		
GB-30	49	437.8			
GC-20	1400	420.4			
GB-30	09	437.6		6.2	
GC-20	20	420.0			
GC-20	1455	419.5			
C-19	59	421.9			Calc
C-18	1502	423.7		-0.3	8/Jan.
C-17	05	424.2			

Gravity Field Notes
Jan/1960
Ridge Mining Co.
Area 6.

TR. MK. REG. U.S. PAT. OFF.
ORIGINAL COPR. 1910 BY J. C. PARKER
MADE IN U.S.A.
LEFAX, PHILADELPHIA, PA.

Tabulation of data elev. corr. factor = 0.07109 mg/ft
elev. datum = 3500'

All data in gravity units 1.0 gu = 0.1 mg.

Station	Elevation	Elev. corr	Lat corr	Station gravity	Total Gravity	Res corr.	Residual Gravity	
B (50 ft) Line cont								
~~B-4~~	~~3854.3~~	~~251.9~~	~~+12.3~~	~~516.8~~	~~781.0~~	~~96.0~~	~~877.0~~	← See previous page
B-2	43.1	243.9	+12.3	520.5	776.7	98.0	874.7	
B-0 *	44.2	244.7	+12.3	516.6	773.6	100.0	873.6	
D-Line D-2	26.3	232.0	+12.2	522.2	766.4	104.0	870.4	
D-1	21.0	228.2	+12.1	517.6	757.9	109.0	866.9	
NW S-7 D-0 *	3804.1	216.2	+11.9	521.8	749.9	114.0	863.8	
↓ tied to G-59 ↓ G-100 ↓								
N¼ S-8	3522 @	+15.6	+11.9	612.6	640.1			
NW S-9	3431 @	-49.1		662.9	625.7			
NW S-10	3268 @	-164.9		768.6	615.6			
N¼ S-10	3160 @	-241.7	same	828.4	598.6			
NW S-11	3094 @	-288.6		903.3	626.6			
N¼ S-11	3040 @	-327.0		949.7	634.6			
NW S-12	2977 @	-371.8		982.7	622.8			
N¼ S-12	2920 @	-412.3		1015.8	615.4			
NW S-7	2870 @	-447.9		1027.1	591.1			
△ 2789	2789 @	-505.4	+11.9	1032.9	539.4			

Tabulation of Data

elev. corr factor = 0.07109 mg/ft

All data in gravity units 1 gu = 0.1 mg elev. datum = 3500'

Station	Elev.	elev corr	Lat corr	Station gravity	Total gravity	Res. corr	Residual Gravity
B-Line (2010)							
B-70	4051.3	391.9	+12.3	495.4	899.6	30.0	929.6
B-65	36.1	381.1		501.1	894.5	35.0	929.5
60	20.4	370.0		506.2	888.5	40.0	928.5
55	4010.7	363.1		507.7	883.1	45.0	928.1
B-50*	3984.8	344.6	+12.3	518.6	875.5	50.0	925.5
48	78.9	340.5		520.3	873.1	52.0	925.1
46	73.8	336.8	same	520.3	869.4	54.0	923.4
44	66.8	331.8		523.2	867.3	56.0	923.3
42	61.4	328.0	throughout	523.1	863.4	58.0	921.4
40	54.8	323.3		521.5	857.1	60.0	917.1
38	47.0	317.8		522.1	852.2	62.0	914.2
36	43.0	314.9		520.3	847.5	64.0	911.5
34	36.7	310.5		520.6	843.4	66.0	904.4
32	30.4	306.0		520.2	838.5	68.0	906.5
B-30*	24.6	301.8		520.0	834.1	70.0	904.1
28	17.2	296.6		521.0	829.9	72.0	901.9
26	12.9	293.5		518.7	824.5	74.0	898.5
24	10.0	291.5		518.0	821.8	76.0	897.8
22	06.3	288.8		516.6	817.7	78.0	895.7
B-20*	04.3	287.4		514.0	813.7	80.0	893.7
18	3905.5	288.3		509.6	810.2	82.0	892.2
16	3893.5	279.7		513.4	805.4	84.0	889.4
14	81.4	271.1		517.0	800.4	86.0	886.4
12	70.8	263.6		519.9	795.8	88.0	883.8
B-10*	63.2	258.2		521.7	792.2	90.0	882.2
8	56.5	253.4		522.2	787.9	92.0	879.9
6	54.8	252.2		520.2	784.7	94.0	878.7
B-4	3854.3	251.9		516.8	781.0	96.0	877.0

* denotes gravity base station

Tabulation of Data

All data in gravity units 1gu = 0.1 mg.

elev. corr. factor = 0.07109 mgal
elev. datum = 3500'

Station	Elevation	elev. corr.	Lat corr.	Station Gravity	Total Gravity	Res. corr	Residual gravity
25N Line							
25N-105E	4003.2	357.7	+17.9	498.6	874.2	+58.0	932.2
110E	3978.0	339.8	+17.9	507.4	865.1	+63.0	928.1
115E	62.5	328.8	+17.9	506.9	853.6	+69.0	922.6
120E	46.7	317.6	+17.9	509.1	844.6	+74.0	918.6
125E	33.8	308.4	+17.9	507.8	834.1	+79.0	913.1
25N-130E	26.6	303.3	+17.9	504.7	825.9	+85.0	910.9
135E	3924.4	301.7	+17.9	497.2	816.8	+90.0	906.8
140E	3899.8	284.2	+17.9	504.6	806.7	+95.0	901.7
145E	91.5	278.3	+17.9	499.5	795.7	+100.0	895.7
150E	91.8	278.5	+17.9	488.9	785.3	+105.0	890.3
155E	73.7	265.7	+17.9	491.5	775.1	+110.0	885.1
158E Line							
25N-158E	62.3	257.6	+17.9	493.6	769.1	+114.0	883.1
30N	54.1	251.7	+16.8	496.9	765.4		
35N	18.2	226.2	+15.7	519.2	761.1		
40N	16.3	224.9	+14.6	519.1	758.6		
45N	12.4	222.1	+13.5	519.0	754.6		
50N-158E	3808.4	219.2	+12.3	520.1	751.6		
55N	3798.7	212.3	+11.2	524.5	748.0		
60N	89.7	205.9	+10.1	529.3	745.3		
65N	74.4	195.1	+9.0	538.4	742.5		
70N	57.8	183.3	+7.9	548.2	739.4		
75N	56.6	182.4	+6.7	547.5	736.6		
80N 158E	3744.8	174.0	+5.6	553.8	733.4		
NW S-6	3865 @	131.5	0	586.3	717.8		
W ¼ S-31	3635 @	96.0	-5.9	615.2	705.3		
NW-S-31	3582 @	58.3	-11.9	658.5	704.9		
W ¼ S-30	3495 @	-3.6	-17.8	720.6	699.2		
NW S-30	3394 @	-75.3	-23.7	798.3	699.3		

@ denotes approximate elevation

Tabulation of Data.

elev. corr. factor = 0.07109 mg
elev datum = 3500'

All data in gravity units; 1 gu = 0.1 milligal

Station	Elevation	elevation correction	Lat correction	Station Gravity	Total Gravity	Residual correction	Residual Gravity
C-Line							
C-1	3950.4	320.2	+17.1	506.1	843.4	69.0	912.4
2	" 53.5	322.9	+17.1	506.0	845.5	68.0	913.5
3	" 57.1	325.0	+17.2	505.7	847.9	67.0	914.9
4	" 61.0	327.7	+17.2	504.7	849.6	66.0	915.6
5	" 66.3	331.5	+17.3	502.7	851.5	65.0	916.5
6	" 68.9	333.0	+17.3	503.1	853.4	64.0	917.4
7	" 67.7	332.5	+17.4	504.6	854.5	63.0	917.5
8	" 69.8	334.0	+17.4	504.9	856.3	62.0	918.3
9	" 74.3	337.2	+17.5	503.7	858.4	61.0	919.4
C-10 *	3975.2	337.8	+17.5	504.7	860.0	60.0	920.0
11	" 79.0	340.5	+17.5	504.2	862.2	59.0	921.2
12	" 81.9	342.6	+17.6	504.2	864.4	58.0	922.4
13	" 84.2	344.2	+17.6	505.0	866.8	57.0	923.8
14	" 86.6	345.9	+17.7	505.0	868.6	56.0	924.6
15	" 89.8	348.2	+17.7	505.0	870.9	55.0	925.9
16	" 92.3	350.0	+17.7	505.3	873.0	54.0	927.0
17	" 94.2	351.3	+17.8	505.6	874.7	53.0	927.7
18	3998.6	354.5	+17.8	505.0	877.3	52.0	929.3
19 *	4003.3	357.8	+17.9	502.8	878.5	51.0	929.5
C-20	4009.6	362.3	+17.9	500.0	880.2	50.0	930.2
30	" 32.6	378.6	+18.8	496.4	893.8	40.0	933.8
40	" 63.0	400.2	+19.2	483.8	902.8	30.0	932.8
50	4091.0 (BM)	420.1	+19.8	475.6	915.5	20.0	935.5
60	4123.0	442.9	+20.3	460.1	923.3	10.0	933.3
C-70	4150.1	462.2	+20.4	444.3	926.9	0	926.9
G-Line							
G-0 *	3951.0	320.6	+17.0	504.0	841.6	70.0	911.6
1	3949.4	319.5	+16.9	503.2	839.6	71.0	910.6

Tabulation of Data.

elev. corr. factor = 0.07100
elev datum = 3500'

All data in gravity units; 1 gu = 0.1 milligal

Station	Elevation	elevation correction	Lat correction	Station Gravity	Total Gravity	Residual correction	Residual Gravity
C-Line.							
C-1	3950.4	320.2	+17.1	506.1	843.4	69.0	912.4
2	" 53.5	322.9	+17.1	506.0	845.5	68.0	913.5
3	" 57.1	325.0	+17.2	505.7	847.9	67.0	914.9
4	" 61.0	327.7	+17.2	504.7	849.6	66.0	915.6
5	" 66.3	331.5	+17.3	502.7	851.5	65.0	916.5
6	" 68.9	333.0	+17.3	503.1	853.4	64.0	917.4
7	" 67.7	332.5	+17.4	504.6	854.5	63.0	917.5
8	" 69.8	334.0	+17.4	504.9	856.3	62.0	918.3
9	" 74.3	337.2	+17.5	503.7	858.4	61.0	919.4
C-10 *	3915.2	337.8	+17.5	504.7	860.0	60.0	920.0
11	" 79.0	340.5	+17.5	504.2	862.2	59.0	921.2
12	" 81.9	342.6	+17.6	504.2	864.4	58.0	922.4
13	" 84.2	344.2	+17.6	505.0	866.8	57.0	923.8
14	" 86.6	345.9	+17.7	505.0	868.6	56.0	924.6
15	" 89.8	348.2	+17.7	505.0	870.9	55.0	925.9
16	" 92.3	350.0	+17.7	505.3	873.0	54.0	927.0
17	" 94.2	351.3	+17.8	505.6	874.7	53.0	927.7
18	3998.6	354.5	+17.8	505.0	877.3	52.0	929.3
19	4003.3	357.8	+17.9	502.8	878.5	51.0	929.5
C-20 *	4009.6	362.3	+17.9	500.0	880.2	50.0	930.2
30	" 32.6	378.6	+18.8	496.4	893.8	40.0	933.8
40	" 63.0	400.2	+19.2	483.8	902.8	30.0	932.8
50	4091.0 (BM)	420.1	+19.8	475.6	915.5	20.0	935.5
60	4123.0	442.9	+20.3	460.1	923.3	10.0	933.3
C-70	4150.1	462.2	+20.4	444.3	926.9	0	926.9
G-Line							
G-0 *	3951.0	320.6	+17.0	504.0	841.6	70.0	911.6
1	3949.4	319.5	+16.9	503.2	839.6	71.0	910.6

Tabulation of Data.

elev. corr. factor 0.07100 mgl
elev datum 3500'

All data in gravity units; 1 gu = 0.1 milligal

Station	Elevation	elevation correction	Lat correction	Station Gravity	Total Gravity	Residual correction	Residual Gravity
C-Line:							
C-1	3950.4	320.2	+17.1	506.1	843.4	69.0	912.4
2	" 53.5	322.9	+17.1	506.0	845.5	68.0	913.5
3	" 57.1	325.0	+17.2	505.7	847.9	67.0	914.9
4	" 61.0	327.7	+17.2	504.7	849.6	66.0	915.6
5	" 66.3	331.5	+17.3	502.7	851.5	65.0	916.5
6	" 68.9	333.0	+17.3	503.1	853.4	64.0	917.4
7	" 67.7	332.5	+17.4	504.6	854.5	63.0	917.5
8	" 69.8	334.0	+17.4	504.9	856.3	62.0	918.3
9	" 74.3	337.2	+17.5	503.7	858.4	61.0	919.4
C-10 *	3975.2	337.8	+17.5	504.7	860.0	60.0	920.0
11	" 79.0	340.5	+17.5	504.2	862.2	59.0	921.2
12	" 81.9	342.6	+17.6	504.2	864.4	58.0	922.4
13	" 84.2	344.2	+17.6	505.0	866.8	57.0	923.8
14	" 86.6	345.9	+17.7	505.0	868.6	56.0	924.6
15	" 89.8	348.2	+17.7	505.0	870.9	55.0	925.9
16	" 92.3	350.0	+17.7	505.3	873.0	54.0	927.0
17	" 94.2	351.3	+17.8	505.6	874.7	53.0	927.7
18	3998.6	354.5	+17.8	505.0	877.3	52.0	929.3
19	4003.3	357.8	+17.9	502.8	878.5	51.0	929.5
C-20 *	4009.6	362.3	+17.9	500.0	880.2	50.0	930.2
30	" 32.6	378.6	+18.8	496.4	893.8	40.0	933.8
40	" 63.0	400.2	+19.2	483.8	902.8	30.0	932.8
50	4091.0 (BM)	420.1	+19.8	475.6	915.5	20.0	935.5
60	4123.0	442.9	+20.3	460.1	923.3	10.0	933.3
C-70	4150.1	462.2	+20.4	444.3	926.9	0	926.9
G-Line:							
G-0 *	3951.0	320.6	+17.0	504.0	841.6	70.0	911.6
1	3949.4	319.5	+16.9	503.2	839.6	71.0	910.6

Tabulation of Data. elev datum 3500'

All data in gravity units; 1 gu = 0.1 milligal

Station	Elevation	elevation correction	Lat correction	station Gravity	Total Gravity	Residual correction	Residual Gravity
C-Line							
C-1	3950.4	320.2	+17.1	506.1	843.4	69.0	912.4
2	" 53.5	322.9	+17.1	506.0	845.5	68.0	913.5
3	" 57.1	325.0	+17.2	505.7	847.9	67.0	914.9
4	" 61.0	327.7	+17.2	504.7	849.6	66.0	915.6
5	" 66.3	331.5	+17.3	502.7	851.5	65.0	916.5
6	" 68.4	333.0	+17.3	503.1	853.4	64.0	917.4
7	" 67.7	332.5	+17.4	504.6	854.5	63.0	917.5
8	" 69.8	334.0	+17.4	504.9	856.3	62.0	918.3
9	" 74.3	337.2	+17.5	503.7	858.4	61.0	919.4
C-10 *	3975.2	337.8	+17.5	504.7	860.0	60.0	920.0
11	" 79.0	340.5	+17.5	504.2	862.2	59.0	921.2
12	" 81.9	342.6	+17.6	504.2	864.4	58.0	922.4
13	" 84.2	344.2	+17.6	505.0	866.8	57.0	923.8
14	" 86.6	345.9	+17.7	505.0	868.6	56.0	924.4
15	" 89.8	348.2	+17.7	505.0	870.9	55.0	925.9
16	" 92.3	350.0	+17.7	505.3	873.0	54.0	927.0
17	" 94.2	351.3	+17.8	505.6	874.7	53.0	927.7
18	3998.6	354.5	+17.8	505.0	877.3	52.0	929.3
19	4003.3	357.8	+17.9	502.8	878.5	51.0	929.5
C-20 *	4009.6	362.3	+17.9	500.0	880.2	50.0	930.2
30	" 32.6	378.6	+18.8	496.4	893.8	40.0	933.8
40	" 63.0	400.2	+19.2	483.8	902.8	30.0	932.8
50	4091.0 (BM)	420.1	+19.8	475.6	915.5	20.0	935.5
60	4123.0	442.9	+20.3	460.1	923.3	10.0	933.3
C-70	4150.1	462.2	+20.4	444.3	926.9	0	926.9
G-Line							
G-0 *	3951.0	320.6	+17.0	504.0	841.6	70.0	911.6
1	3949.9	319.5	+16.9	503.2	839.6	71.0	910.6

Tabulation of Data.

elev. corr. factor = 0.07109 mg/ft
elev datum = 3500'

All data in gravity units; 1 gu = 0.1 milligals

Station	Elevation	elevation correction	Lat correction	Station Gravity	Total Gravity	Residual correction	Residual Gravity
C-Line							
C-1	3950.4	320.2	+17.1	506.1	843.4	69.0	912.4
2	" 53.5	322.9	+17.1	506.0	845.5	68.0	913.5
3	" 57.1	325.0	+17.2	505.7	847.9	67.0	914.9
4	" 61.0	327.7	+17.2	504.7	849.6	66.0	915.6
5	" 66.3	331.5	+17.3	502.7	851.5	65.0	916.5
6	" 68.4	333.0	+17.3	503.1	853.4	64.0	917.4
7	" 67.7	332.5	+17.4	504.6	854.5	63.0	917.5
8	" 69.8	334.0	+17.4	504.9	856.3	62.0	918.3
9	" 74.3	337.2	+17.5	503.7	858.4	61.0	919.4
C-10 *	3975.2	337.8	+17.5	504.7	860.0	60.0	920.0
11	" 79.0	340.5	+17.5	504.2	862.2	59.0	921.2
12	" 81.9	342.6	+17.6	504.2	864.4	58.0	922.4
13	" 84.2	344.2	+17.6	505.0	866.8	57.0	923.8
14	" 86.6	345.9	+17.7	505.0	868.6	56.0	924.6
15	" 89.8	348.2	+17.7	505.0	870.9	55.0	925.9
16	" 92.3	350.0	+17.7	505.3	873.0	54.0	927.0
17	" 94.2	351.3	+17.8	505.6	874.7	53.0	927.7
18	3998.6	354.5	+17.8	505.0	877.3	52.0	929.3
19	4003.3	357.8	+17.9	502.8	878.5	51.0	929.5
C-20 *	4009.6	362.3	+17.9	500.0	880.2	50.0	930.2
30	" 32.6	378.6	+18.8	496.4	893.8	40.0	933.8
40	" 63.0	400.2	+19.2	483.8	902.8	30.0	932.8
50	4091.0	420.1	+19.8	475.6	915.5	20.0	935.5
60	4123.0 (BM)	442.9	+20.3	460.1	923.3	10.0	933.3
C-70	4150.1	462.2	+20.4	444.3	926.9	0	926.9
G-Line							
G-0 *	3951.0	320.6	+17.0	504.0	841.6	70.0	911.6
1	3949.4	319.5	+16.9	503.2	839.6	71.0	910.6
2	" 47.5	3[illegible]	+16.9	502.4	837.4	72.0	909.4

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Heinrichs Geoexploration Co.

GRAVITY COMPUTATION SHEET

Meter No. WW35 Dial Const. 1.1577 El. Datum 3500'

Area Ridge
Calc ~~Field~~ date 7/Jan/60
Density 1.80
ECF 0.7109 gu/ft.

	Station	Elevation	Elevation correction	~~Latitude correction~~	~~Terrain correction~~	Station gravity	Final Gravity
6/Jan/60	GC-16	492.3 3992.3	350.0	81 108	936.3 963.3	505.3	855.3
"	17	494.2 94.2	351.3	79.5 108	936.4 962.9	505.6	856.9
"	18	498.6 98.6	354.5	78 104	937.5 963.5	505.0	859.5
"	19	503.3 4003.3	357.8	76.5 102	937.1 962.6	502.8	860.6
"	GC-20	509.6 4009.6	362.3	75 100	937.3 962.3	500.0	862.3
7/Jan/60	30	4032.6 ~~4030 (app)~~	378.6 ~~376.8~~	60 80	933.2 953.2	496.4	875.0 ~~873.2~~
"	40	4063.0 ~~560.0~~ ~~4060 (app)~~	400.2 ~~398.1~~	45 60	926.5 941.5	483.4	883.6 ~~881.5~~
"	50	4091.0 ~~590.0~~ 4090 app	420.1 ~~419.4~~	30 40	925.0 935.0	475.6	895.7 ~~895.0~~
"	60	623.0 4123 CBM	442.9	15 20.0	918.0 923.0	460.1	903.0
"	70	4150.1 ~~4165 (approx)~~	462.2 ~~472.7~~	0	917.0 917.0	444.3	906.5 ~~917.0~~
6/Jan/60	~~GB-0~~					~~516.6~~	
"	~~GB-10~~					~~521.7~~	
"	~~-20~~					~~514.0~~	
"	~~GB-30~~					~~520.0~~	
	NW Sec 7	3804	216.1	~~521.5~~		521.7	737.8

Theoretical Curve
X = 0 at G-12.
Z = 2860' Δσ = 0.8 z = t/2

Resid		X	g_z	656.7 + Final Gr	Resid	Lat corr	Final + Lat	Res + Lat
54 909.3				+656.7		+17.7	873.0	927.0
53 909.9		-3.0		"		+17.8	874.7	927.7
52 911.5	C-18	~~-3.0~~		"		+17.8	877.3	929.3
51 911.6				"		+17.9	878.5	929.5
50 912.3				"		+17.9	880.2	930.2
40 ~~913.2~~ 915.0	C-33	~~-3.5~~		"		18.8	893.8	933.8
30 ~~911.5~~ 913.6	38	-				19.2	902.8	932.8
20 ~~915.0~~ 915.7						19.8	915.5	935.5
10 913.0						20.3	923.3	933.3
~~917.0~~ 906.5		~~-8.2~~	~~275.3~~	~~932.0~~		20.4	926.9	926.9
52	C-18	-3.0		907.0	959.0			
47	C-23	-3.5		911.6	958.6			
42	C-28	-4.0		916.2	958.2			
37	C-33	-4.5		919.0	956.0			
32	C-38	-5.0		921.8	953.8			
27	C-43	-5.5		924.6	951.6			
22	C-48	-6.0		926.4	948.4			
17	C-53	-6.5		927.3	944.3			
12	C-58	-7.0		929.2	941.2			
7	C-63	-7.5		930.1	937.1			
	C-70	-8.2	275.3	932.0	932.0			

114 851.6

base Latitude = T9S Line
Lat corr = +11.9 gu/mile south
or .224 gu/100 ft south

Heinrichs Geoexploration Co.

GRAVITY COMPUTATION SHEET

Area Ridge #6
Field date
Density 1.8
ECF .7109

Meter No. WW #35 Dial Const. 1.1577 El. Datum 3500'

	Station	Elevation	Elevation correction	Latitude correction	Terrain correction	Station gravity	Final Gravity
North	NW S-6	185 3685	131.5	0		586.3	717.8
	W¼ S-31	135 3635 Apx	96.0	-5.9		615.2	705.3
	BM 3623	123 3623	87.4	-5.9		~~623.0~~	~~704.5~~
	NW-31	82 3582	58.3	-11.9		658.5	704.9
	W¼-30	-5 3495 apx	- -3.6	-17.8		720.6	699.2
	NW-30	-106 3394	- 75.3	-23.7		798.3	699.3
	N¼ S-8	+22 3522 apx	+15.6	+11.9		612.6	640.1
	NW S-9	-69 3431	-49.1	+11.9		662.9	625.7
	NW S-10	-232 3268	-164.9	+11.9		768.6	615.6
	N¼ S-10	-340 3160 Apx	-241.7	+11.9		828.4	598.6
	NW-11	-406 3094	-288.6	+11.9		903.3	626.6
	N¼ S-11	-460 3040 Apx	-327.0	+11.9		949.7	634.6
	NW S-12	-523 2977	-371.8	+11.9		982.7	622.8
	N¼-12	-580 2920 Apx	-412.3	+11.9		1015.8	615.4
	NW S-7	-630 2870	-447.9	+11.9		1027.1	591.1
	△ 2789	-711 2789	-505.4	+11.9		1032.9	539.4

899.6
900
540
36.0
40"
40"
910
40
91
40
51
90
40
50
91

Heinrichs Geoexploration Co.

Area Ridge.

Calc ~~Plain~~ to 7/Jan/60

GRAVITY COMPUTATION SHEET

Density 1.80

Done.

Meter No. WW#35 Dial Const. 1.1577 El. Datum 3500' EGF 0.07109 mgl/ft.

	Station	Elevation	Elevation correction	Latitude correction	Terrain correction	Station gravity	Final Gravity
	G-27	3867.4	261.2				
	G-28	64.7	259.3				
6/Jan/60	G-29	62.5	257.7			509.9	767.6
7/Jan/60	G-39	3832.1 ~~3835~~ approx	236.1 ~~234~~			515.6	748.2 ~~247.2~~
"	G-44	3816.3 ~~3815~~ approx	224.9 ~~223.9~~			514.9	739.8 ~~738.8~~
"	G-49	3793.8	208.9			523.6	732.5
"	G-59	3760.0	184.8			533.9	718.7
"	G-69	3729.3	163.0			538.6	701.6
"	G-79	3693.6	137.6			548.9	686.5
"	G-89	3657.4	111.9			560.1	672.0
"	NW S-8 G-100	3613.5 ~~3613.5~~ approx	80.7 ~~80.3~~			576.4	657.1 ~~656.7~~
6/Jan/60.	GC-1	3950.4	320.2			506.1	826.3
"	2	39535	322.9			506.0	828.4
"	3	57.1	325.0			505.7	830.7
"	4	61.0	327.7			504.7	832.4
"	5	66.3	331.5			502.7	834.2
"	6	68.4	333.0			503.1	836.1
"	7	67.7	332.5			504.6	837.1
"	8	69.8	334.0			504.9	838.9
"	9	74.3	337.2			503.7	840.9
"	C-10	75.2	337.8			504.7	842.5
"	"	79.0	340.5			504.2	844.7
"	12	81.9	342.6			504.2	846.8
"	13	84.2	344.2			505.0	849.2
"	14	86.6	345.9			505.0	850.9
"	C-15	3989.8	348.2			505.0	853.2

Theoretical Curve.
X=0 @ G=12
t = 2860' σ = 0.8 z = t/2

	97	G-27	1.5		727.1					
					+ Final					
99	866.6	102 G-32	2.0		714.1		+14.1	781.7	880.7
109	857.7 ~~856.2~~	107 G37	2.5		702.9		+12.8	771.9	870.9
114	853.8 ~~852.8~~	112 G42	3.0		697.4		+12.8	752.2	866.6
119	851.5	117 G-47	3.5		692.8		+12.3	744.8	863.8
124	847.7	122 G-52	4.0		688.2		+11.9	730.6	859.6
129	840.6	127 G-57	4.5		685.4		+11.9	713.5	852.5
134	835.5	132 G-62	5.0		682.6		+11.9	698.4	847.4
139	831.0	137 G-67	5.5		679.8		+11.9	683.9	842.9
140	827.1 ~~826.7~~	142 G-100	+8.8	14.8	671.5		+11.9	667.0	839.0
		142 G-72	6.0		678.0				
149	895.3	147 G-77	6.5		677.1		+17.1	843.4	912.4
150	896.4	152 G-82	7.0		675.2	827.2	+17.1	845.5	913.5
151	897.7	157 G-87	7.5		674.3	831.3	+17.2	847.9	914.9
152	898.4	162 G-92	8.0		673.3	835.3	+17.2	849.6	915.6
153	899.2	167 G-97	8.5		672.2	839.2	+17.3	851.5	916.5
154	900.1		-1.5				+17.3	853.4	917.4
155	900.1	67 C-3	-1.5	8	877.3	944.3	+17.4	854.5	917.5
156	900.9	62 C-8	-2.0		890.3	952.3	+17.4	856.3	918.3
157	901.9						+17.5	858.4	919.4
160	902.5						+17.5	860.0	920.0
159	903.7						+17.5	862.2	921.2
158	904.8						+17.6	864.4	922.4
157	906.2	57 C-13	-2.5		899.5	956.5	+17.6	866.8	923.8
	906.9						+17.7	868.6	924.6
155	908.2						+17.7	870.9	925.9

Heinrichs Geoexploration Co.

GRAVITY COMPUTATION SHEET

Area Ridge #6
Cole ~~Field~~ date 16/Jun/60
Meter No. WW #35 Dial Const. 1.1577 Kl. Datum 3500'
Density 1.8
ECF 0.7109 g/cc

Station	Elevation	Elevation correction	~~Latitude correction~~ K-S.	Terrain correction	Station gravity	Final Garvity	Lat. Corr.	Lat Final	
B-4	354.3 3854.3	257.9	96 864.7		516.8	768.7	+12.3	781.0	877.0
2	343.1 43.1	243.9	98 862.4		520.5	764.4	+12.3	776.7	874.7
B-0	344.2 3844.2	244.7	100 861.3		516.6	761.3	+12.3	773.6	873.6
D-2	326.3 3826.3	232.0	104 858.2		522.2	754.2	+12.2	766.4	870.4
D-1	321.0 3821.0	228.2	109 854.8		517.6	745.8	+12.1	757.9	866.9
D-0 NW Sec 7	304.1 3804.1	216.2	114 851.9		521.8	738.0	+11.9	749.9	863.8

74.9

75.0

①

Heinrichs Geoexploration Co.

GRAVITY COMPUTATION SHEET

Area Ridge
Calc ~~Field~~ date 7/Jan/60
Density 1.80
EGF 0.7109 gu/ft

Meter No. WW 35 Dial Const. 1.1577 El. Datum 3500'

Field Date	Station	Elevation	Elevation correction	Latitude correction	Terrain correction	Station gravity	Final Gravity
6/Jan/60	G-0	451.0 3951.0	320.6	105 140	929.6 964.6	504.0	824.6
7/Jan/60	1	449.4 3949.4	319.5	106.5 142	929.2 964.7	503.2	822.7
"	2	447.5 47.5	318.1	108 144	928.5 964.5	502.4	820.5
"	3	445.2 452	316.5	109.5 146	929.0 965.5	503.0	819.5
"	4	442.4 42.4	314.5	111 148	928.0 965.0	502.5	817.0
"	5	440.7 40.7	313.3	112.5 150	927.7 965.2	501.9	815.2
"	6	438.3 38.3	311.6	114 152	928.0 966.0	502.4	814.0
"	7	435.6 35.6	309.7	115.5 154	927.1 965.6	501.9	811.6
"	8	433.1 33.1	307.9	117 156	926.8 965.8	501.9	809.8
"	9	431.7 31.7	306.9	118.5 158	927.2 966.7	501.8	808.7
6/Jan/60	G-10	428.0 28.0	304.3	120 160	926.1 966.1	501.8	806.1
7/Jan	"	425.7 25.7	302.6	121.5 162	926.1 966.6	502.0	804.6
"	12	423.2 23.2	300.9	123 164	926.5 967.5	502.6	803.5
"	13	419.4 19.4	298.2	124.5 166	925.8 967.3	503.1	801.3
"	14	415.9 15.9	295.7	126 168	924.9 966.9	503.2	798.9
"	15	412.2 12.2	293.0	127.5 170	925.1 967.6	504.6	797.6
"	16	407.5 07.5	289.7	129 172	923.9 966.9	505.2	794.9
"	17	404.0 04.0	287.2	130.5 174	923.0 966.5	505.3	792.5
"	18	401.0 3901.0	285.1	132 176	923.1 967.0	506.0	791.1
"	19	396.9 3896.9	282.2	133.5 178	921.9 966.4	506.2	788.4
6/Jan/60	G-20	394.1 94.1	280.2	135 180	921.2 966.2	506.0	786.2
	21	392.4 92.4	279.0	182			
	22	388.6 88.6	276.3	184			
	23	384.2 84.2	273.1	186			
	24	378.7 78.7	269.2	188			
	25	373.6 73.6	265.6	190			
	26	369.9 3869.9	263.0	192			

Theoretical Curve
X = 0 at G-12 for Final
t = 2860' σ = 0.8 z = t/2

	1.0 mg/1000' Resid. Grav.		X Kiloft	gz	+656.7 Final & Lat	Resid.	Lat Corr	Final Lat.	Res + Lat.
70	894.6						+17.0	841.6	911.6
71	893.7						+16.9	839.6	910.6
72	892.5		−1.0		858.7	930.7	+16.9	837.4	909.4
73	892.5						+16.8	836.3	909.3
74	891.0						+16.7	833.7	907.7
75	890.2						+16.6	831.8	906.8
76	890.0						+16.5	830.5	906.5
77	888.6	G-7	−0.5		833.7	910.7	+16.4	828.0	905.0
78	887.8						+16.3	828.1	904.1
79	887.7						+16.2	824.9	903.9
80	886.1					3613	+16.1	822.2	902.2
81	885.6						+16.0	820.6	901.6
82	885.5	G-12	0	145.5	802.2	884.2	+15.9	819.4	901.4
83	884.3						+15.8	817.1	900.1
84	882.9						+15.6	814.5	898.5
85	882.6						+15.5	813.1	898.1
86	880.9						+15.4	810.3	896.3
87	879.5	G-17	0.5		770.7	857.7	+15.3	807.8	894.8
88	879.1						+15.2	806.3	894.3
89	877.4						+15.1	804.5	893.5
90	876.2						+15.0	801.2	891.2
92		G-22	1.00		745.7	837.7			

Heinrichs Geoexploration Co.

GRAVITY COMPUTATION SHEET

Area Ridge #6
Calc ~~Field~~ date 16/Jan/60.
Meter No. WW #35 Dial Const. 1.1577 El. Datum 3500' Density 1.8
EGF 0.7109 gu/ft

Station	Elevation	Elevation correction	~~Latitude correction~~ Res	Terrain correction	Station gravity	Final Garvity	Lat corr	Final Lat	Resid Lat
B-70	4051.3	391.9	30 917.3		495.4	887.3	+12.3	899.6	929.6
B-65	4036.1	381.1	35 917.2		501.1	882.2	+12.3	894.5	929.5
B-60	4020.4	370.0	40 916.2		506.2	876.2	+12.3	888.5	928.5
B-55	4010.7	363.1	45 915.8		507.7	870.8	+12.3	883.1	928.1
B-50	484.8 39 84.8	344.6	+50 913.2		518.6	863.2	+12.3	875.5	925.5
B-48	478.9 78.9	340.5	+52 912.8		520.3	860.8	+12.3	873.1	925.1
46	473.8 73.8	336.8	+54 911.1		520.3	857.1	+12.3	869.4	923.4
44	466.8 66.8	331.8	+56 911.0		523.2	855.0	+12.3	867.3	923.3
42	461.4 61.4	328.0	+58 909.1		523.1	851.1	+12.3	863.4	921.4
B-40	454.8 54.8	323.3	60 904.8		521.5	844.8	+12.3	857.1	917.1
38	447.0 47.0	317.8	62 901.9		522.1	839.9	+12.3	852.2	914.2
36	443.0 43.0	314.9	64 899.2		520.3	835.2	+12.3	847.5	911.5
34	436.7 36.7	310.5	66 897.1		520.6	831.1	+12.3	843.4	904.4
32	430.4 3930.4	306.0	68 894.2		520.2	826.2	+12.3	838.5	906.5
B-30	424.6 3924.6	301.8	70 891.8		520.0	821.8	+12.3	834.1	904.1
28	417.2 3917.2	296.6	72 889.6		521.0	817.6	+12.3	829.9	901.9
26	412.9 3912.9	293.5	74 886.2		518.7	812.2	+12.3	824.5	898.5
24	410.0 3910.0	291.5	76 885.5		518.0	809.5	+12.3	821.8	897.8
22	406.3 3906.3	288.8	78 883.4		516.6	805.4	+12.3	817.7	895.7
B-20	404.3 3904.3	287.4	80 881.4		514.0	801.4	+12.3	813.7	893.7
18	405.5 3905.5	288.3	82 879.9		509.6	797.9	+12.3	810.2	892.2
16	393.5 3893.5	279.7	84 877.1		513.4	793.1	+12.3	805.4	889.4
14	381.4 81.4	271.1	86 874.1		517.0	788.1	+12.3	800.4	886.4
12	370.8 70.8	263.6	88 871.5		519.9	783.5	+12.3	795.8	883.8
B-10	363.2 63.2	258.2	90 869.9		521.7	779.9	+12.3	792.2	882.2
8	356.5 56.5	253.4	92 867.6		522.2	775.6	+12.3	787.9	879.9
B-6	354.8 54.8	252.2	94 866.4		520.2	772.4	+12.3	784.7	878.7

Heinrichs Geoexploration Co.

GRAVITY COMPUTATION SHEET

Meter No. WW #35 Dial Const. 1.1577 El. Datum 3500'

Area Ridge #6
Field date
Density 1.8
ECF .7109

	Station	Elevation	Elevation correction	Latitude correction	Terrain correction	Station gravity	Final Garvity
	25N - 105E	503.2 4003.2	357.7	+17.9		498.6	874.2
	110E	478.0 3978.0	339.8	+17.9		507.4	865.1
	115E	3962.5	328.8	+17.9		506.9	853.6
	120E	3946.7	317.6	+17.9		509.1	844.6
	125E	3933.8	308.4	+17.9		507.8	834.1
	130E	3926.6	303.3	+17.9		504.7	825.9
	133E			~~+17.9~~		~~496.9~~	
	135E	3924.4	301.7	+17.9		497.2	816.8
	140	3899.8	284.2	+17.9		504.6	806.7
	145E	3891.5	278.3	+17.9		499.5	795.7
	150E	3891.8	278.5	+17.9		488.9	785.3
	155E	3873.7	265.7	+17.9		491.5	775.1
27	25N - 158E	3862.3	257.6	+17.9		493.6	769.1
22	30N - 158E	3854.1	251.7	+16.8		496.9	765.4
17	35N	3818.2	226.2	+15.7		519.2	761.1
1200	40N	3816.3	224.9	+14.6		519.1	758.6
700	45N	3812.4	222.1	+13.5		519.0	754.6
210	50N	3808.4	219.2	+12.3		520.1	751.6
-3	55N	3798.7	212.3	+11.2		524.5	748.0
-8	60N	3789.7	205.9	+10.1		529.3	745.3
-13	65N	3774.4	195.1	+ 9.0		538.4	742.5
-19	70N	3757.8	183.3	+ 7.9		548.2	739.4
-23	75N	3756.6	182.4	+6.7		547.5	736.6
-29	80N	3744.8	174.0	+5.6		553.8	733.4

Res	
+58	932.2
+63	928.1
+69	922.6
+74	918.6
+79	913.1
+85	910.9
+90	
90	906.8
+95	901.7
+100	895.7
+105	890.3
110	885.1
114	883.1

874
775
99

10.0 ~~99~~ = 5000'
2.0 mr

850.2
874.2
76.91
10.51

769.
699
70

30
7.1
37.1

26.3
7.1
33.4

Density Profile

		Met Reading	Time	Drift Corr.	Sta Grav.
*	0	450.9	1545	0/0	50.0 *
	50	453.3	50	+0.1	52.9
	100	457.1	53	+0.1	57.3
	125	459.1	56	+0.1	59.6
	150	457.1	1600	+0.2	57.4
	200	454.1	1603	+0.2	53.9
	300	452.7	1605	+0.2	52.3
*	0	450.6	1611	+0.3	50.0 *

Trial 1. $(.9406 - .1276\sigma h) = 9.6$ gu $\quad h = 13.3'$

$12.5382 - 1.7009\sigma = 9.600$ gu; $1.7009\sigma = 2.9382$; $\sigma = 1.7274$

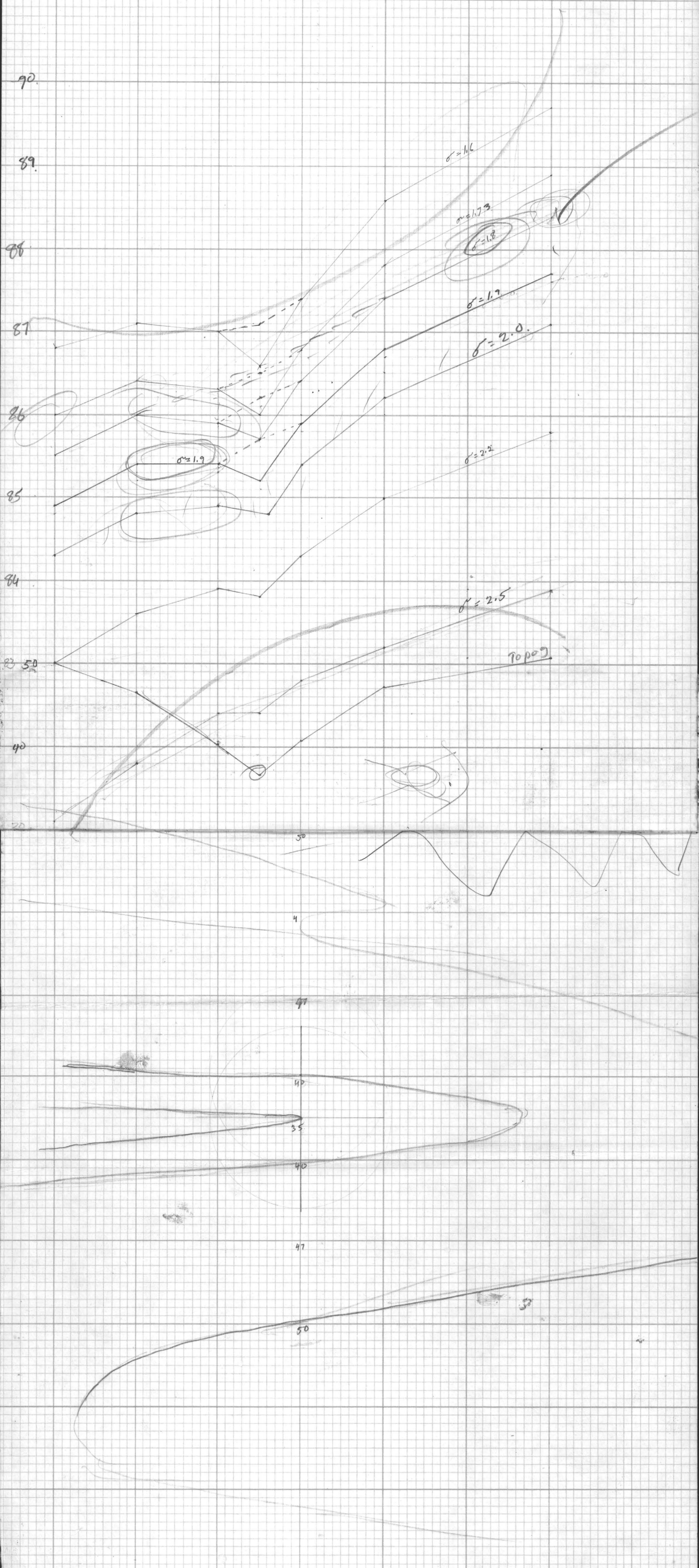
$.9406 - (.1276)(1.7274) = ecf = .9406 - .2204 = .7202$ gu/ft

elev datum = 0

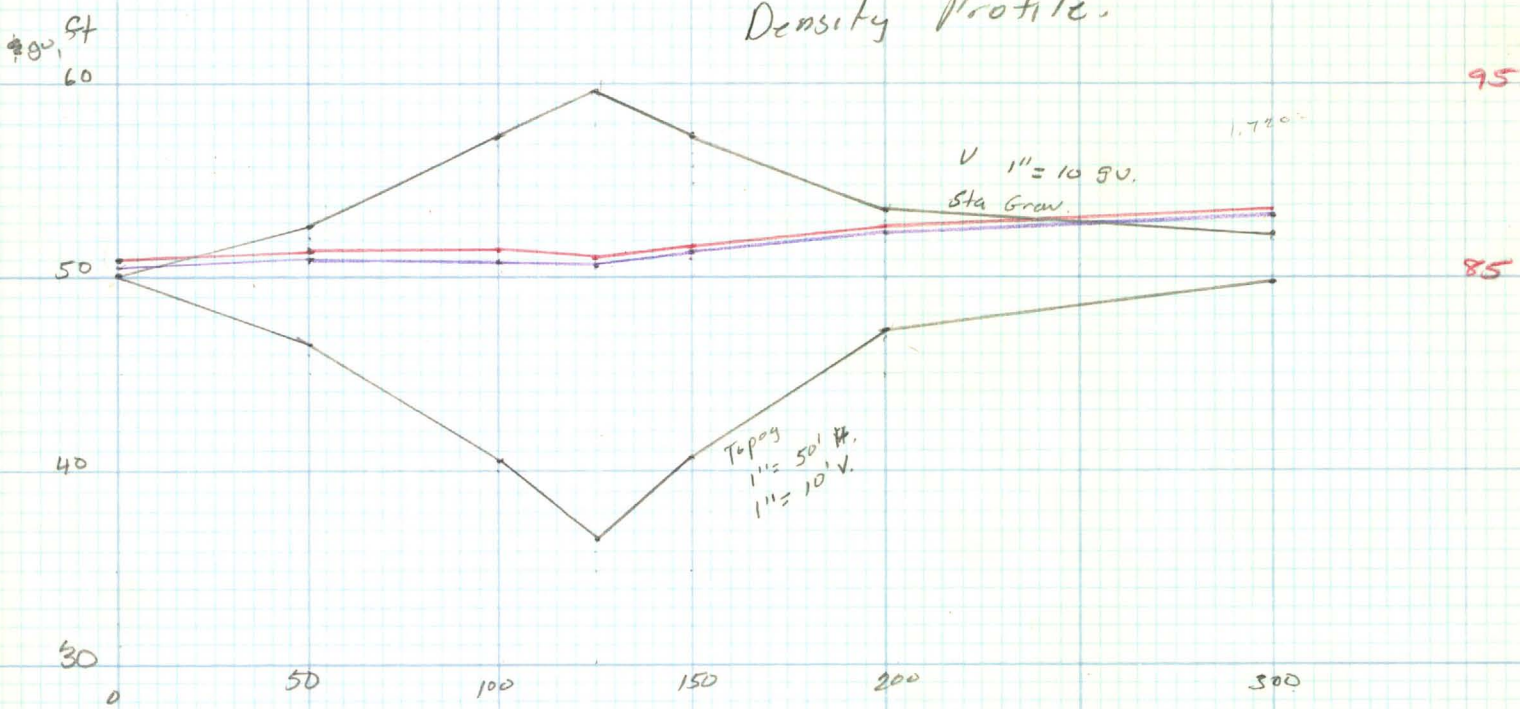
Sta	elev.	e.c.; ecf=.7202 @ σ=1.7274	Sta Grav	σ=1.75 Final Grav.	ec ecf=.7109 σ=1.800	Final grav. σ=1.8	ec ecf=.6599 σ=2.2	Final Grav σ=2.2
0	50.0	36.0	50.0	86.0	35.5	85.5	33.0	83.0
50	46.5	33.5	52.9	86.4	33.1	86.0	30.7	83.6
100	40.3	29.0	57.3	86.3	28.6	85.9	26.4	83.9
125	36.7	26.4	59.6	86.0	26.1	85.7	24.2	83.8
150	40.8	29.4	57.4	86.8	29.0	86.4	26.9	84.3
200	47.1	33.9	53.9	87.8	33.5	87.4	31.1	85.0
300	50.8	36.6	52.3	88.9	36.1	88.4	33.5	85.8

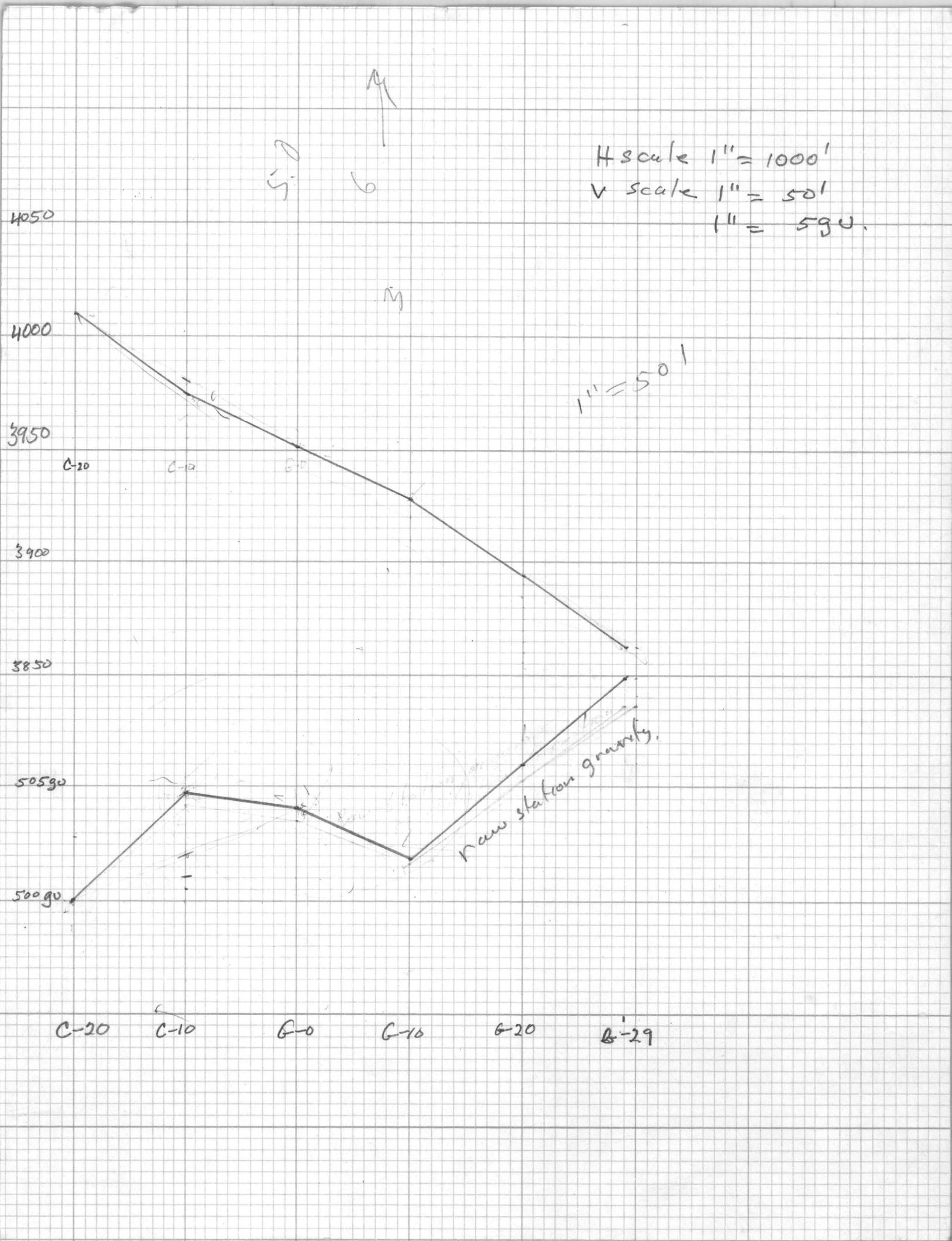
ec ecf=.7364 σ=1.6	Final Grav. σ=1.6	ec ecf=.6216 σ=2.5	Final Grav σ=2.5	ec ecf=.6854 σ=2.0	Final @ σ=2.0	ec ecf=.6982 σ=1.9	Final σ=1.9
36.8	86.8	31.1	81.1	34.3	84.3	34.9	84.9
34.2	87.1	28.9	81.8	31.9	84.8	32.5	85.4
29.7	87.0	25.1	82.4	27.6	84.9	28.1	85.4
27.0	86.6	22.8	82.4	25.2	84.8	25.6	85.2
30.0	87.4	25.4	82.8	28.0	85.4	28.5	85.9
34.7	88.6	29.3	83.2	32.3	86.2	32.9	86.8
37.4	89.7	31.6	83.9	34.8	87.1	35.5	87.8

Density Profile.



Density Profile.




H scale 1" = 1000'
V scale 1" = 50'
1" = 590.
1" = 50'
4050
4000
3950
3900
3850
5059.0
500.90
C-20
C-10
G-0
G-10
G-20
G-29
raw station gravity.

REPORT ON A GRAVITY METER SURVEY

AREA SIX CLAIM GROUP

PINAL COUNTY, ARIZONA

for

RIDGE MINING COMPANY

January 1960

by

HEINRICHS GEOEXPLORATION COMPANY
P. O. BOX 5671 TUCSON, ARIZONA

INTRODUCTION

During the month of January 1960, several gravity profile surveys were made in the Area Six claim group. The purpose of the survey was to attempt to determine the general configuration of and depth to bedrock.

Gravity measurements were made with World-Wide Gravity Meter #35 having a dial constant of .11577 milligals per scale division to an expected accuracy of better than + or - 0.05 milligals.

Elevations were determined by levels on the detail portions of the profiles to an accuracy of + or - 0.10 feet, by transit stadia survey on reconnaissance portions of the profiles to an expected accuracy of + or - 0.50 ft. and by inspection of the topographic map at regional stations to the north and east to an expected accuracy of + or - 5 ft.

All level, stadia and gravity base station surveys were tied in closed loops and adjusted.

A short, north-south density profile was run across a gully near the 158 east line at about the 80 north line and the surface density determined to be approximately 1.8 gms/cm^3 equivalent to an elevation correction factor of 0.07109 milligals/ft.

The first profile surveyed was along the road from C-20 to G-29 with 100 ft. detail stations between C-20 and G-20. This profile was later expanded to C-70 on the west and G-100 on the east. Regional stations on half mile intervals were added to this profile along the section line for some 3 3/4 miles east st. G-100 which is located at the NW cor. Sec. 8 T10S, R17E.

The second profile was along the 50 North line from B-70 on the west to B-0 on the east and then tied to the G-line at G-59 through D-2, D-1

and D-0. D-0 is located at the NW cor. Sec. 7 T10S, R17E. Stations between B-0 and B-50 are on 200 ft. centers and from B-50 to B-70 on 500 ft centers.

The third profile was made with stations on 500 ft. centers along the 25 North line from 105 East to 158 East and connected on the west end to station C-20.

The fourth profile was made with stations on 500 ft. centers in a north direction along the 158 East line from 25 North on the South to 80 North with additional stations located at Section and quarter corners north to the NW cor. Sec. 30 T9S, R17E for regional study.

Included with this report are:

1. Tabulation of data.
2. Map #1. Gravity profiles and interpretation along the G-C lines.
3. Map #2. Gravity profiles and interpretation along the B (50 North), D-G lines.
4. Map #3. Gravity profiles and interpretation along the 25 North line.
5. Map #4. Gravity profile along the 158 East line.
6. Map #5. Plan Gravity contour map.
7. Map #6. Regional gravity profile extending Map #2 to the east.
8. Map #7. Theoretical curves over an inclined slope.
9. Map #8. Theoretical curves over a normal fault.

CALCULATIONS

A station gravity value of 50.00 milligals was arbitrarily assigned to station C-20 and all station gravity values were adjusted relative to this station. All meter readings were adjusted for instrumental drift by tieing to base stations at half hour intervals.

Elevation corrections were made from an arbitrarily assigned elevation

datum of 3500 ft. at a rate of 0.07109 milligals/ft. equivalent to a surface density of 1.8 gms/cm^3. Elevations of stations located over granite outcrop were corrected at the proper density of 2.6 gm/cm^3 for examination of this portion of the curve and found only to smooth the curves and showing no anomalism. These elevations were then uncorrected at the alluvium density of 1.8 gm/cm^3 for purposes of plotting and relative examination of the data in plan and profile as it is not possible to map continuously across a density (lithologic) contact that has an elevation which varies from the datum.

Latitude corrections were made from the T9S - T10S Line at a rate (determined from equation) of 1.19 milligals per mile.

Residual curves were obtained by adding to the total gravity curves at an arbitrary rate of 1.0 milligals/1000 ft. to the east. A minor relative error is introduced here along the G-G lines between G-70 and G-59 due to the fact that this line tends N 65° E between these points. This error tends to flatten the G-G residual curve to a very minor extent relative to the 25 North and B (50 North) lines.

Theoretical curves were calculated from the standard equations for the gravity attraction of an inclined slope and for a normal fault.

INTERPRETATION

The initial interpretation submitted in a preliminary report was based primarily on simple examination of the total and residual gravity curves. The density of the pre-Cambrian granite is expected to be around 2.6 gm/cm^3. The surface density as determined by gravity profile was found to be 1.8 gm/cm^3. Using this density contrast of 0.8 gm/cm^3 a depth of 2850 feet to bedrock at G-100 was calculated from the total gravity curve. Information compiled from various sources indicated that the density of the Gila conglomerate at any moderate depth would more nearly approximately 2.3 to 2.4 gms/cm^3 and that in all probability the granite density at depth would approach

2.7 gms/cm^3 . This would give a density contrast of some 0.3 gm/cm^3. Using this contrast and the total difference in gravity between G-70 and G-100 an unreasonable depth in excess of 11.000 feet is calculated at G-100 and it was found necessary to go to a regional curve.

Trial regional gradients were removed and mapped at rates of 2.0, 1.5 and 1.0 milligals per 1000 ft and the gradient of 1.0 selected as most nearly approximating the actual conditions existing. The primary purpose for removing a regional gradient was in order to examine in detail that portion of the curve of most significant interest. A second reason was to determine the approximate depth to bedrock at station G-100 at the expected density contrast of 0.3 gm/cm^3. It must be remembered that the actual regional gradient and therefore the actual depth to bedrock cannot be finally determined without absolute knowledge of a depth of at least one point on the curve in addition to the surface outcrop and preferably several. It is felt however, that the regional gradient removed and the depth of 2630 ft calculated from the residual difference in gravity between G-70 and G-100 very closely approximates the actual depth.

Theoretical curves were calculated for the case of a simple normal fault located in the vicinity of G-15 and for an inclined slope extending from the point of outcrop at about G-20 to a depth of 2630 ft. at G-100. It was necessary for calculation purposes to assume that this slope leveled off to the east at G-100. This assumption, which is probably incorrect, produces the minor effect of levelling the gravity curve as it approaches G-100.

Comparison of the theoretical curves with the actual gravity profiles indicates that the inclined slope curve very nearly approximates each of the actual east-west gravity curves. Deviations of the actual gravity curves

from the theoretical are tentatively interpreted as faults. A rather tedious development of theoretical curves over a number of more or less minor normal faults stepped to the east would possibly produce a curve which would fit the actual gravity curve even more closely than the inclined slope. This development was not undertaken because of the lack of definite density and depth information. The interpretation of each curve was made independently of any other data and then adjusted to fit the drill hole conditions known to exist.

The profile interpretations are supported to a large extent by mapping the gravity contours in plan. There is a definite steepening of the gradient in the region interpreted as having a fault of more or less major displacement. Of possible interest is the suggestion of a steep positive southwesterly gradient beginning to appear at the west end of the 25 North line observable only in plan. This might be suggestive of a fault trending slightly south (S30°E?) of east with the upthrown block to the south.

Regional profiles were continued for several miles to the north and to the east and it is obvious that the major component of bedrock slope is in an approximate N60°E direction. The north curve indicates a flattening of the bedrock to the north. The east curve indicates a major upthrown fault block in the east half section 10, section 11 and the west half of section 12, T10S, R17E.

These gravity interpretations were made independently of any other data that may exist and are therefore subject to modification on this basis.

Respectfully submitted,

HEINRICHS GEOEXPLORATION COMPANY

Franklin A. Seward Jr.

Franklin A. Seward, Jr., Geophysical Engineer

25 January 1960
P. O. Box 5671
Tucson, Arizona

Tabulation of Data

All data in gravity units 1gu = 0.1 mg.

elev. corr. factor = 0.07109 mgl
elev. datum = 3500'

Station	Elevation	elev. corr.	Lat corr.	Station Gravity	Total Gravity	Res. corr	Residual gravity
25N Line							
25N-105E	4003.2	357.7	+17.9	498.6	874.2	+58.0	932.2
110E	3978.0	339.8	+17.9	507.4	865.1	+63.0	928.1
115E	62.5	328.8	+17.9	506.9	853.6	+69.0	922.6
120E	46.7	317.6	+17.9	509.1	844.6	+74.0	918.6
125E	33.8	308.4	+17.9	507.8	834.1	+79.0	913.1
25N-130E	26.6	303.3	+17.9	504.7	825.9	+85.0	910.9
135E	3924.4	301.7	+17.9	497.2	816.8	+90.0	906.8
140E	3899.8	284.2	+17.9	504.6	806.7	+95.0	901.7
145E	91.5	278.3	+17.9	499.5	795.7	+100.0	895.7
150E	91.8	278.5	+17.9	488.9	785.3	+105.0	890.3
155E	73.7	265.7	+17.9	491.5	775.1	+110.0	885.1
158E Line							
25N-158E	62.3	257.6	+17.9	493.6	769.1	+114.0	883.1
30N	54.1	251.7	+16.8	496.9	765.4		
35N	18.2	226.2	+15.7	519.2	761.1		
40N	16.3	224.9	+14.6	519.1	758.6		
45N	12.4	222.1	+13.5	519.0	754.6		
50N-158E	3808.4	219.2	+12.3	520.1	751.6		
55N	3798.7	212.3	+11.2	524.5	748.0		
60N	89.7	205.9	+10.1	529.3	745.3		
65N	74.4	195.1	+9.0	538.4	742.5		
70N	57.8	183.3	+7.9	548.2	739.4		
75N	56.6	182.4	+6.7	547.5	736.6		
80N 158E	3744.8	174.0	+5.6	553.8	733.4		
NW S-6	3865 @	131.5	0	586.3	717.8		
W ¼ S-31	3635 @	96.0	-5.9	615.2	705.3		
[illegible]-S-31	3582 @	58.3	-11.9	658.5	704.9		
W ¼ S-30	3495 @	-3.6	-17.8	720.6	699.2		
NW S-30	3394 @	-75.3	-23.7	798.3	699.3		

@ denotes approximate elevation

Tabulation of Data.

elev. corr. factor = 0.07124
elev datum = 3000'
All data in gravity units; 1 gu = 0.1 milligal

Station	Elevation	elevation correction	Lat correction	Station Gravity	Total Gravity	Residual correction	Residual Gravity
C-Line							
C - 1	3950.4	320.2	+17.1	506.1	843.4	69.0	912.4
2	" 53.5	322.9	+17.1	506.0	845.5	68.0	913.5
3	" 57.1	325.0	+17.2	505.7	847.9	67.0	914.9
4	" 61.0	327.7	+17.2	504.7	849.6	66.0	915.6
5	" 66.3	331.5	+17.3	502.7	851.5	65.0	916.5
6	" 68.4	333.0	+17.3	503.1	853.4	64.0	917.4
7	" 67.7	332.5	+17.4	504.6	854.5	63.0	917.5
8	" 69.8	334.0	+17.4	504.9	856.3	62.0	918.3
9	" 74.3	337.2	+17.5	503.7	858.4	61.0	919.4
C - 10 *	3975.2	337.8	+17.5	504.7	860.0	60.0	920.0
11	" 79.0	340.5	+17.5	504.2	862.2	59.0	921.2
12	" 81.9	342.6	+17.6	504.2	864.4	58.0	922.4
13	" 84.2	344.2	+17.6	505.0	866.8	57.0	923.8
14	" 86.6	345.9	+17.7	505.0	868.6	56.0	924.6
15	" 89.8	348.2	+17.7	505.0	870.9	55.0	925.9
16	" 92.3	350.0	+17.7	505.3	873.0	54.0	927.0
17	" 94.2	351.3	+17.8	505.6	874.7	53.0	927.7
18	3998.6	354.5	+17.8	505.0	877.3	52.0	929.3
19 *	4003.8	357.8	+17.9	502.8	878.5	51.0	929.5
C - 20	4009.6	362.3	+19.9	500.0	880.2	50.0	930.2
30	" 32.6	378.6	+18.8	496.4	893.8	40.0	933.8
40	" 63.0	400.2	+19.2	483.8	902.8	30.0	932.8
50	4091.0 (BM)	420.1	+19.8	475.6	915.5	20.0	935.5
60	4123.0	442.9	+20.3	460.1	923.3	10.0	933.3
C - 70	4150.1	462.2	+20.4	444.3	926.9	0	926.9
G-Line							
G-0 *	3951.0	320.6	+17.0	504.0	841.6	70.0	911.6
1	3949.9	319.5	+16.9	503.2	839.6	71.0	910.6

Tabulation of Data

elev. corr. factor = 0.07109 mgl/ft
elev. datum = 3500'
All data in gravity Units 1gu = 0.1 milligals

station	Elevation	elev. corr.	Lat. corr.	Station gravity	Total Gravity	Residual corr.	Residual Gravity
G-Line							
G-2	3947.5	318.1	+16.9	502.4	837.4	72.0	909.4
3	" 45.2	316.5	+16.8	503.0	836.3	73.0	909.3
4	" 42.4	314.5	+16.7	502.5	833.7	74.0	907.7
5	" 40.7	313.3	+16.6	501.9	831.8	75.0	906.8
6	" 38.3	311.6	+16.5	502.4	830.5	76.0	906.5
7	" 35.6	309.7	+16.4	501.9	828.0	77.0	905.0
8	" 33.1	307.9	+16.3	501.9	826.1	78.0	904.1
9	" 31.7	306.9	+16.2	501.8	824.9	79.0	903.9
G-10*	3928.0	304.3	+16.1	501.8	822.2	80.0	902.2
11	" 25.7	302.6	+16.0	502.0	820.6	81.0	901.6
12	" 23.2	300.9	+15.9	502.6	819.4	82.0	901.4
13	" 19.4	298.2	+15.8	503.1	817.1	83.0	900.1
14	" 15.9	295.7	+15.6	503.2	814.5	84.0	898.5
15	" 12.2	293.0	+15.5	504.6	813.1	85.0	898.1
16	" 07.5	289.7	+15.4	505.2	810.3	86.0	896.3
17	" 04.0	287.2	+15.3	505.3	807.8	87.0	894.8
18	3901.0	285.1	+15.2	506.0	806.3	88.0	894.3
19	3896.9	282.2	+15.1	506.2	804.5	89.0	893.5
G-20*	3894.1	280.2	+15.0	506.0	801.2	90.0	891.2
29*	3862.5	257.7	+14.1	509.9	781.7	99.0	880.7
39	3832.1	236.1	+13.2	512.6	761.9	109.0	870.9
44	3816.3	224.9	+12.8	514.9	752.6	114.0	866.6
49	3793.8	208.9	+12.3	523.6	744.8	119.0	863.8
59	3760.0	184.8	+11.9	533.9	730.6	129.0	859.6
69	3729.3	163.0	+11.9	538.6	713.5	139.0	852.5
79	3693.6	137.6	+11.9	548.9	698.4	149.0	847.4
89	3657.4	111.9	+11.9	560.1	683.9	159.0	842.9
HWS-B G-100	3613.5	80.7	+11.9	576.4	669.0	170.0	839.0

* Denotes gravity Base

Tabulation of Data

All data in gravity units 1 gu = 0.1 mg

elev. corr factor = 0.07709 mg/ft
elev. datum = 3500'

Station	Elev.	elev. corr	Lat corr	Station gravity	Total gravity	Res. corr.	Residual Gravity
B-Line (cont)							
B-70	4051.9	391.9	+12.3	495.4	899.6	30.0	929.6
B-65	36.1	381.1		501.1	894.5	35.0	929.5
60	20.4	370.0		506.2	888.5	40.0	928.5
55	4010.7	363.1		507.7	883.1	45.0	928.1
B-50*	3984.8	344.6	+ 12.3	518.6	875.5	50.0	925.5
48	78.9	340.5	same	520.3	873.1	52.0	925.1
46	73.8	336.8	throughout	520.3	869.4	54.0	923.4
44	66.8	331.8		523.2	867.3	56.0	923.3
42	61.4	328.0		523.1	863.4	58.0	921.4
B-40	54.8	323.3		521.5	857.1	60.0	917.1
38	47.0	317.8		522.1	852.2	62.0	914.2
36	43.0	314.9		520.3	847.5	64.0	911.5
34	36.7	310.5		520.6	843.4	66.0	904.4
32	30.4	306.0		520.2	838.5	68.0	906.5
B-30*	24.6	301.8		520.0	834.1	70.0	904.1
28	17.2	296.6		521.0	829.9	72.0	901.9
26	12.9	293.5		518.7	824.5	74.0	898.5
24	10.0	291.5		518.0	821.8	76.0	897.8
22	06.3	288.8		516.6	817.7	78.0	895.7
B-20*	04.3	287.4		514.0	813.7	80.0	893.7
18	3905.5	288.3		509.6	810.2	82.0	892.2
16	3893.5	279.7		513.4	805.4	84.0	889.4
14	81.4	271.1		517.0	800.4	86.0	886.4
12	70.8	263.6		519.9	795.8	88.0	883.8
B-10*	63.2	258.2		521.7	792.2	90.0	882.2
8	56.5	253.4		522.2	787.9	92.0	879.9
6	54.8	252.2		520.2	784.7	94.0	878.7
B-4	3854.3	251.9		516.8	781.0	96.0	877.0

* denotes gravity base station

Tabulation of data elev. corr. factor = 0.07109 mg/ft
elev. datum = 3500'

All data in gravity units 1.0 gu = 0.1 mg.

Station	Elevation	Elev. corr	Lat corr	Station gravity	Total Gravity	Res. corr.	Residual Gravity	
(B-4) NJ Line corr								
~~B-4~~	~~3054.3~~	~~251.9~~	~~+12.3~~	~~516.8~~	~~781.0~~	~~96.0~~	~~877.0~~	← See previous page
B-2	43.1	243.9	+12.3	520.5	776.7	98.0	874.7	
B-0*	44.2	244.7	+12.3	516.6	773.6	100.0	873.6	
D-Line D-2	26.3	232.0	+12.2	522.2	766.4	104.0	870.4	
D-1	21.0	228.2	+12.1	517.6	757.9	109.0	866.9	
NW S-7 D-0*	3804.1	216.2	+11.9	521.8	749.9	114.0	863.8	
↓								
tied to G-59								
↓								
G-100								
↓								
N¼ S-8	3522 @	+15.6	+11.9	612.6	640.1			
NW S-9	3431 @	-49.1		662.9	625.7			
NW S-10	3268 @	-164.9		768.6	615.6			
N¼ S-10	3160 @	-241.7		828.4	598.6			
NW S-11	3094 @	-288.6		903.3	626.6			
N¼ S-11	3040 @	-327.0		949.7	634.6			
NW S-12	2977 @	-371.8		982.7	622.8			
N¼ S-12	2920 @	-412.3		1015.8	615.4			
NW S-7	2870 @	-447.9		1027.1	591.1			
△ 2789	2789 @	-505.4	+11.9	1032.9	539.4			

* denotes gravity base station. @ denotes approximate elev.

Station Grav. Comp. Sheet

Station	Mtr Read	Time	Drift corr.	Sta Grav.
*GB 30	426.2	1323	0 / 0	520.0
28	427.1	31	0	521.0
26	425.1	35	0	518.7
24	421.4	40	+0.1	518.0
22	23.2	43	+0.1	516.6
*B 20	20.9	47	+0.1 / 0	514.0
18	17.2	53	-0.1	509.6
16	20.5	58	-0.1	513.4
14	23.8	1409	-0.3	517.0
12	26.4	16	-0.4	519.9
* B-10	428.0	20	-0.4 / 0	521.7
8	28.4	25	0	522.2
6	26.7	29	0	520.2
4	23.7	34	+0.1	516.8
2	26.9	37	+0.1	520.5
* B-0	423.5	44	+0.1 / 0	516.6
D-2	28.2	50	+0.1	522.2
D-1	24.2	55	+0.2	517.6
HW Sec 7	27.1	59	+0.3	521.7
* B-0	423.9	1510	+0.5	516.6
* B-30	425.7	1555	0 / 0	520.0
32	25.9	59	0	520.2
34	26.2	1602	0	520.6
36	26.0	06	0	520.3
38	27.5	09	0	522.1
40	27.0	14	0	521.5
42	428.4	19	0	523.1

Sta.	Meter	Time	Drift cor	Sta Grav.
B-44	428.5	1622	0	523.2
46	26.0	26	0	520.3
48	26.0	29	0	520.3
*B 50	24.5	1632	0 / 0	518.6
*B-50	424.6	1157	0 / 0	518.6
55	15.2	1203	0	507.7
60	13.8	08	+0.1	506.2
65	09.4	14	+0.1	501.1
70	404.5	19	+0.1	495.4
*B-50	424.4	26	+0.2	518.6

Station Grav Camp sheet

Station	Met	Time	Drift corr	Sta Grav.	Sta	Meter	Time	Drift corr	Sta Grav.
* C-20	406.9	1108	0	500.0	W¼ S-31	506.1	1450	+0.8	615.2
25N-105E	405.8	16	-0.1	498.6	BM3623	512.7	1500	+0.9	623.0
" 110E	413.4	22	-0.1	507.4	NW S-31	543.3	1515	+1.0	658.5
" 115E	413.0	27	-0.1	506.9	W¼ S-30	596.8	1522	+1.1	720.6
" 120E	415.0	32	-0.2	509.1	NW S-30	663.8	1530	+1.2	798.3
" 125E	413.8	36	-0.2	507.8	(NW S-7) D-0	424.8	1555	+1.4 / 0	521.8
" 130E	411.2	41	-0.2	504.7	(NW S-8) G-100	471.8	~~1608~~	check ~~Sta.~~	[illegible]
" 133E	404.4	45	-0.2	496.9	N¼ S-8	503.2	13		612.6
" 135E	404.8	48	-0.3	497.2	NW S-9	546.7	20		662.9
" 140E	411.2	54	-0.3	504.6	NW S-10	638.0	35		768.6
" 145E	406.8	1200	-0.3	499.5	N¼ S-10	689.6	45		828.4
" 150E	397.7	05	-0.4	488.9	NW S-11	754.3	53		903.3
" 155E	400.0	10	-0.4	491.5	N¼ S-11	794.4	1701		949.7
25N 158E	401.8	15	-0.4	493.6	NW S-12	822.9	16		982.7
30N "	404.6	18	-0.4	496.9	N¼ S-12	851.5	26		1015.8
35N "	424.0	24	-0.5	519.2	R 18E NW S-7	861.3	39		1027.1
40N "	423.9	30	-0.5	519.1	△ 2789	866.3	1755		1032.9
45N "	423.8	35	-0.5	519.0					
50N 158E	424.9	38	-0.6	520.1					
* NW S-7 D-0	426.3	1243	-0.6	521.8					
* D-0	426.2	1333	0	521.8					
55N-158E	428.5	1337	0	524.5					
60N	432.6	42	+0.1	529.3					
65N	440.4	46	+0.1	538.4					
70N	448.8	50	+0.2	548.2					
75N	448.2	55	+0.2	547.5					
80N	453.5	1402	+0.3	553.8					
NW S-6	481.2	1441	+0.7	586.3					

11-19-63
For future reference:
Sta. grav. calculation are by ratio
Ex. 406.9 / 500 : 405.8 / x
= 498.6
Jane

Station Gravity Computation sheet.

8/Jun/60

sta	Meter reading	Time	Corr Drift	Sta Gravity
* G-29	427.5	1220	0	509.9
39	429.8	30	0	512.6
44	431.8	37	0	514.9
NW Sec 7	437.6	55	-0.1	521.5
* G-29	427.6	1315	-0.1 / 0	509.9
G-49	439.5	1321	-0.1	523.6
59	448.4	1325	-0.1	533.9
69	4525	31	-0.1	538.6
79	461.3	36	-0.2	548.9
89	471.2	41	-0.2	560.1
100	485.3	48	-0.3	576.4
* G-29	428.1	1409	-0.5	509.9
C-20	419.7	1419	0	500.0
C-30	416.5	1426	+0.1	496.4
C 40	405.3	1430	+0.1	483.4
C 50	398.5	1434	+0.1	475.6
C 60	385.0	39	+0.2	460.1
C 70	371.4	46	+0.2	444.3
C-20	419.4	55	+0.3	500.0

.05
9/50

54

Station Gravity Computation Sheet
8 Jun 60

Station	Meter Reading	Time	Drift Corr	Station Gravity
* GC-20	419.5	1455	0	500.0
C-19	421.9	59	0	502.8
18	423.7	1502	+0.1	505.0
17	424.2	05	+0.1	505.6
16	423.9	10	+0.2	505.3
15	423.6	13	+0.2	505.0
14	423.6	17	+0.2	505.0
13	423.5	22	+0.3	505.0
12	422.8	26	+0.3	504.2
11	422.7	31	+0.4	504.2
* GC-10	423.2	34	+0.4 / 0	504.7
9	422.3	49	0	503.7
8	423.4	52	0	504.9
7	423.1	55	0	504.6
6	421.7	58	+0.1	503.1
5	421.4	1601	+0.1	502.7
4	423.1	06	+0.1	504.7
3	424.0	09	+0.1	505.7
2	424.2	12	+0.1	506.0
1	424.3	15	+0.1	506.1
* G-0	422.5	1618	+0.1	504.0

Station Gravity Computation sheet.

8 Jan/60.

Station	Meter Read.	Time	Drift Corr.	Station Gravity
* G-0	421.5	1630	0	504.0
1	420.7	33	+0.1	503.2
2	420.0	35	+0.1	502.4
3	420.4	38	+0.2	503.0
4	420.0	40	+0.2	502.5
5	419.4	43	+0.3	501.9
6	419.7	45	+0.4	502.4
7	419.3	47	+0.4	501.9
8	419.2	49	+0.5	501.9
9	419.1	52	+0.5	501.8
* G-10	419.0	55	+0.6 / 0	501.8
11	419.1	59	+0.1	502.0
12	419.5	1703	+0.2	502.6
13	419.9	07	+0.2	503.1
14	419.9	11	+0.3	503.2
15	421.0	13	+0.4	504.6
16	421.5	15	+0.4	505.2
17	421.5	17	+0.5	505.3
18	422.1	20	+0.5	506.0
19	422.2	22	+0.6	506.2
* G 20	422.0	24	+0.6 / 0	506.0

504.0
2.9
501.1

2.2

.7

1.9

6 x.
25.

505.3

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

UNITED STATES
DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS

CAMPO BONITO QUADRANGLE
ARIZONA
7.5 MINUTE SERIES (TOPOGRAPHIC)

Mapped, edited, and published by the Geological Survey

Control by USGS and USC&GS

Topography from aerial photographs by multiplex methods
Aerial photographs taken 1945. Field check 1948

Polyconic projection. 1927 North American datum
10,000-foot grid based on Arizona coordinate system, central zone

Dashed land lines indicate approximate location

Unchecked elevations are shown in brown

TRUE NORTH
MAGNETIC NORTH
14°
APPROXIMATE MEAN DECLINATION, 1948

SCALE 1:24 000

1 MILE

7000 FEET

1 KILOMETER

CONTOUR INTERVAL 40 FEET
DATUM IS MEAN SEA LEVEL

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, WASHINGTON 25, D. C.

ROAD CLASSIFICATION

HARD-SURFACE ALL WEATHER ROADS		DRY WEATHER ROADS
Heavy-duty	4 LANE 2 LANE	Improved dirt
Medium-duty	4 LANE 2 LANE	Unimproved dirt
Loose-surface, graded, or narrow hard-surface		

U. S. Route — State Route

CAMPO BONITO, ARIZ.
N3230-W11037.5/7.5

EDITION OF 1949

THE TOPOGRAPHIC MAPS OF THE UNITED STATES

The United States Geological Survey is making a series of standard topographic maps to cover the United States. This work has been in progress since 1882, and the published maps cover more than 47 percent of the country, exclusive of outlying possessions.

The maps are published on sheets that measure about 16½ by 20 inches. Under the general plan adopted the country is divided into quadrangles bounded by parallels of latitude and meridians of longitude. These quadrangles are mapped on different scales, the scale selected for each map being that which is best adapted to general use in the development of the country, and consequently, though the standard maps are of nearly uniform size, the areas that they represent are of different sizes. On the lower margin of each map are printed graphic scales showing distances in feet, meters, miles, and kilometers. In addition, the scale of the map is shown by a fraction expressing a fixed ratio between linear measurements on the map and corresponding distances on the ground. For example, the scale $\frac{1}{62,500}$ means that 1 unit on the map (such as 1 inch, 1 foot, or 1 meter) represents 62,500 of the same units on the earth's surface.

Although some areas are surveyed and some maps are compiled and published on special scales for special purposes, the standard topographic surveys and the resulting maps have for many years been of three types, differentiated as follows:

1. Surveys of areas in which there are problems of great public importance—relating, for example, to mineral development, irrigation, or reclamation of swamp areas—are made with sufficient detail to be used in the publication of maps on a scale of $\frac{1}{31,680}$ (1 inch = one-half mile) or $\frac{1}{24,000}$ (1 inch = 2,000 feet), with a contour interval of 1 to 100 feet, according to the relief of the particular area mapped.

2. Surveys of areas in which there are problems of average public importance, such as most of the basin of the Mississippi and its tributaries, are made with sufficient detail to be used in the publication of maps on a scale of $\frac{1}{62,500}$ (1 inch = nearly 1 mile), with a contour interval of 10 to 100 feet.

3. Surveys of areas in which the problems are of minor public importance, such as much of the mountain or desert region of Arizona or New Mexico, and the high mountain area of the northwest, are made with sufficient detail to be used in the publication of maps on a scale of $\frac{1}{125,000}$ (1 inch = nearly 2 miles) or $\frac{1}{250,000}$ (1 inch = nearly 4 miles), with a contour interval of 20 to 250 feet.

The aerial camera is now being used in mapping. From the information recorded on the photographs, planimetric maps, which show only drainage and culture, have been made for some areas in the United States. By the use of stereoscopic plotting apparatus, aerial photographs are utilized also in the making of the regular topographic maps, which show relief as well as drainage and culture.

A topographic survey of Alaska has been in progress since 1898, and nearly 44 percent of its area has now been mapped. About 15 percent of the Territory has been covered by maps on a scale of $\frac{1}{500,000}$ (1 inch = nearly 8 miles). For most of the remainder of the area surveyed the maps published are on a scale of $\frac{1}{250,000}$ (1 inch = nearly 4 miles). For some areas of particular economic importance, covering about 4,300 square miles, the maps published are on a scale of $\frac{1}{62,500}$ (1 inch = nearly 1 mile) or larger. In addition to the area covered by topographic maps, about 11,300 square miles of southeastern Alaska has been covered by planimetric maps on scales of $\frac{1}{125,000}$ and $\frac{1}{250,000}$.

The Hawaiian Islands have been surveyed, and the resulting maps are published on a scale of $\frac{1}{62,500}$.

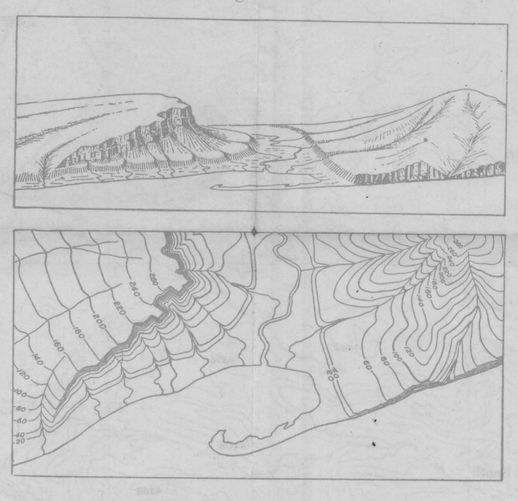
A survey of Puerto Rico is now in progress. The scale of the published maps is $\frac{1}{30,000}$.

The features shown on topographic maps may be arranged in three groups—(1) water, including seas, lakes, rivers, canals, swamps, and other bodies of water; (2) relief, including mountains, hills, valleys, and other features of the land surface; (3) culture (works of man), such as towns, cities, roads, railroads, and boundaries. The symbols used to represent these features are shown and explained below. Variations appear on some earlier maps, and additional features are represented on some special maps.

All the water features are represented in blue, the smaller streams and canals by single blue lines and the larger streams by double lines. The larger streams, lakes, and the sea are accentuated by blue water lining or blue tint. Intermittent streams—those whose beds are dry for a large part of the year—are shown by lines of blue dots and dashes.

Relief is shown by contour lines in brown, which on a few maps are supplemented by shading showing the effect of light thrown from the northwest across the area represented, for the purpose of giving the appearance of relief and thus aiding in the interpretation of the contour lines. A contour line represents an imaginary line on the ground (a contour) every part of which is at the same altitude above sea level. Such a line could be drawn at any altitude, but in practice only the contours at certain regular intervals of altitude are shown. The datum or zero of altitude of the Geological Survey maps is mean sea level. The 20-foot contour would be the shore line if the sea should rise 20 feet above mean sea level. Contour lines show the shape of the hills, mountains, and valleys, as well as their altitude. Successive contour lines that are far apart on the map indicate a gentle slope, lines that are close together indicate a steep slope, and lines that run together indicate a cliff.

The manner in which contour lines express altitude, form, and grade is shown in the figure below.



The sketch represents a river valley that lies between two hills. In the foreground is the sea, with a bay that is partly enclosed by a hooked sand bar. On each side of the valley is a terrace into which small streams have cut narrow gullies. The hill on the right has a rounded summit and gently sloping spurs separated by ravines. The spurs are truncated at their lower ends by a sea cliff. The hill at the left terminates abruptly at the valley in a steep scarp, from which it slopes gradually away and forms an inclined tableland that is traversed by a few shallow gullies. On the map each of these features is represented, directly beneath its position in the sketch, by contour lines.

The contour interval, or the vertical distance in feet between one contour and the next, is stated at the bottom of each map. This interval differs according to the topography of the area mapped: in a flat country it may be as small as 1 foot; in a mountainous region it may be as great as 250 feet. In order that the contours may be read more easily certain contour lines, every fourth or fifth, are made heavier than the others and are accompanied by figures showing altitude. The heights of many points—such as road intersections, summits, surfaces of lakes, and benchmarks—are also given on the map in figures, which show altitudes to the nearest foot only. More precise figures for the altitudes of benchmarks are given in the Geological Survey's bulletins on spirit leveling. The geodetic coordinates of triangulation and transit-traverse stations are also published in bulletins.

Lettering and the works of man are shown in black. Boundaries, such as those of a State, county, city, land grant, township, or reservation, are shown by continuous or broken lines of different kinds and weights. Public roads suitable for motor travel the greater part of the year are shown by solid double lines; poor public roads and private roads by dashed double lines; trails by dashed single lines. Additional public road classification if available is shown by red overprint.

Each quadrangle is designated by the name of a city, town, or prominent natural feature within it, and on the margins of the map are printed the names of adjoining quadrangles of which maps have been published. More than 4,100 quadrangles in the United States have been surveyed, and maps of them similar to the one on the other side of this sheet have been published.

Geologic maps of some of the areas shown on the topographic maps have been published in the form of folios. Each folio includes maps showing the topography, geology, underground structure, and mineral deposits of the area mapped, and several pages of descriptive text. The text explains the maps and describes the topographic and geologic features of the country and its mineral products. Two hundred twenty-five folios have been published.

Index maps of each State and of Alaska and Hawaii showing the areas covered by topographic maps and geologic folios published by the United States Geological Survey may be obtained free. Copies of the standard topographic maps may be obtained for 10 cents each; some special maps are sold at different prices. A discount of 40 percent is allowed on an order amounting to $5 or more at the retail price. The discount is allowed on an order for maps alone, either of one kind or in any assortment, or for maps together with geologic folios. The geologic folios are sold for 25 cents or more each, the price depending on the size of the folio. A circular describing the folios will be sent on request.

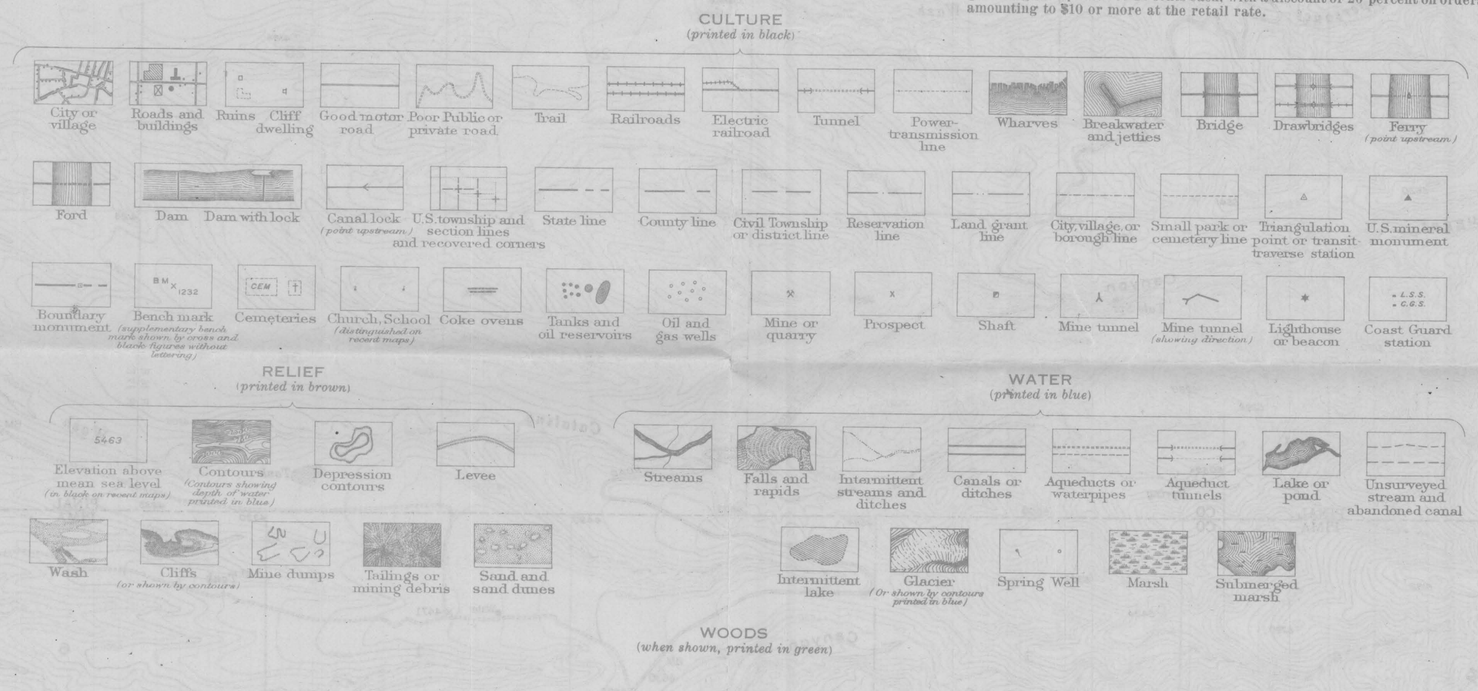
Applications for maps or folios should be accompanied by cash, draft, or money order (not postage stamps) and should be addressed to

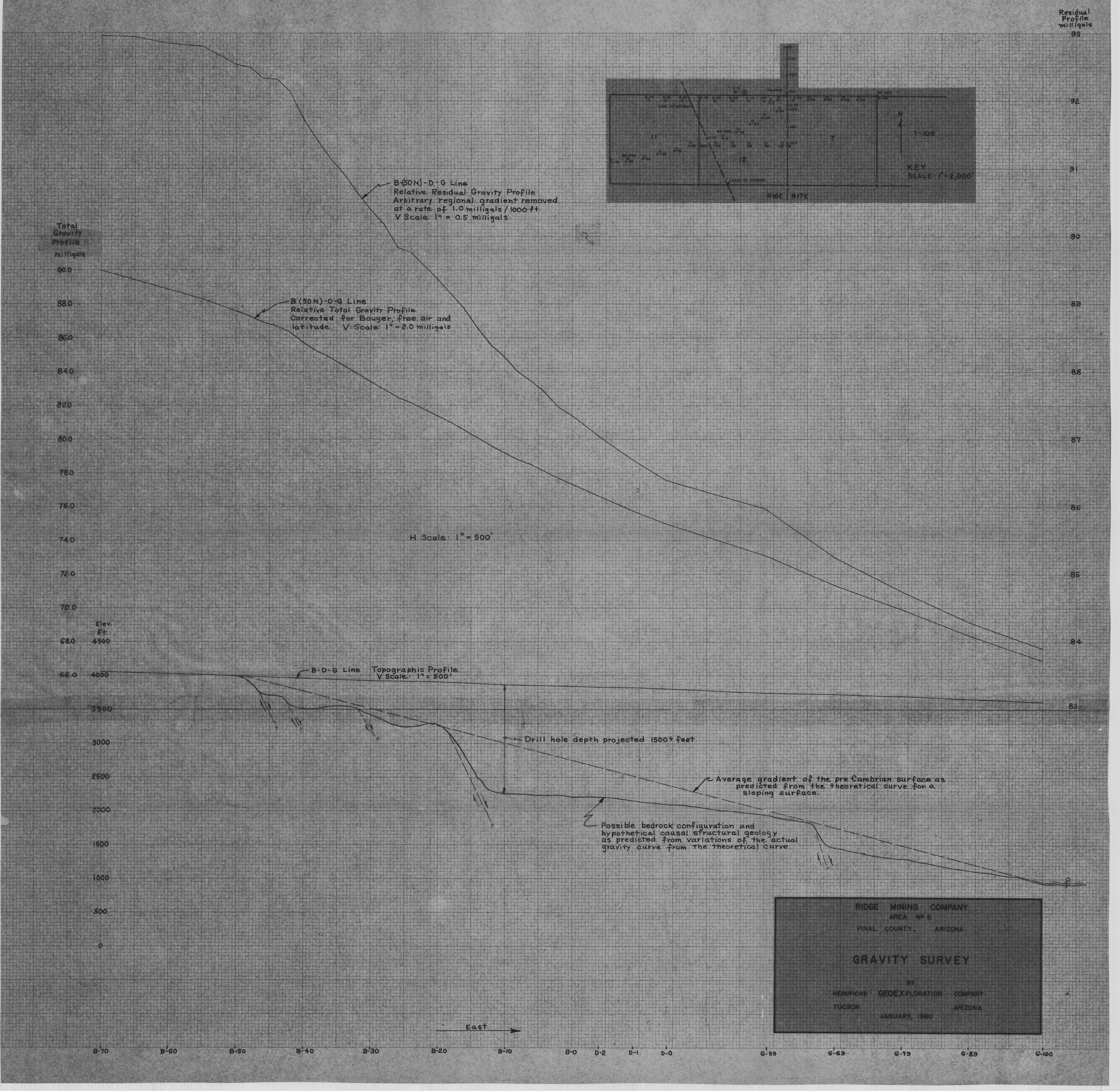
THE DIRECTOR,
United States Geological Survey,
Washington, D. C.

November 1937.

NOTE:—Effective on and after October 1, 1946, the price of standard topographic quadrangle maps will be 20 cents each, with a discount of 20 percent on orders amounting to $10 or more at the retail rate.

STANDARD SYMBOLS

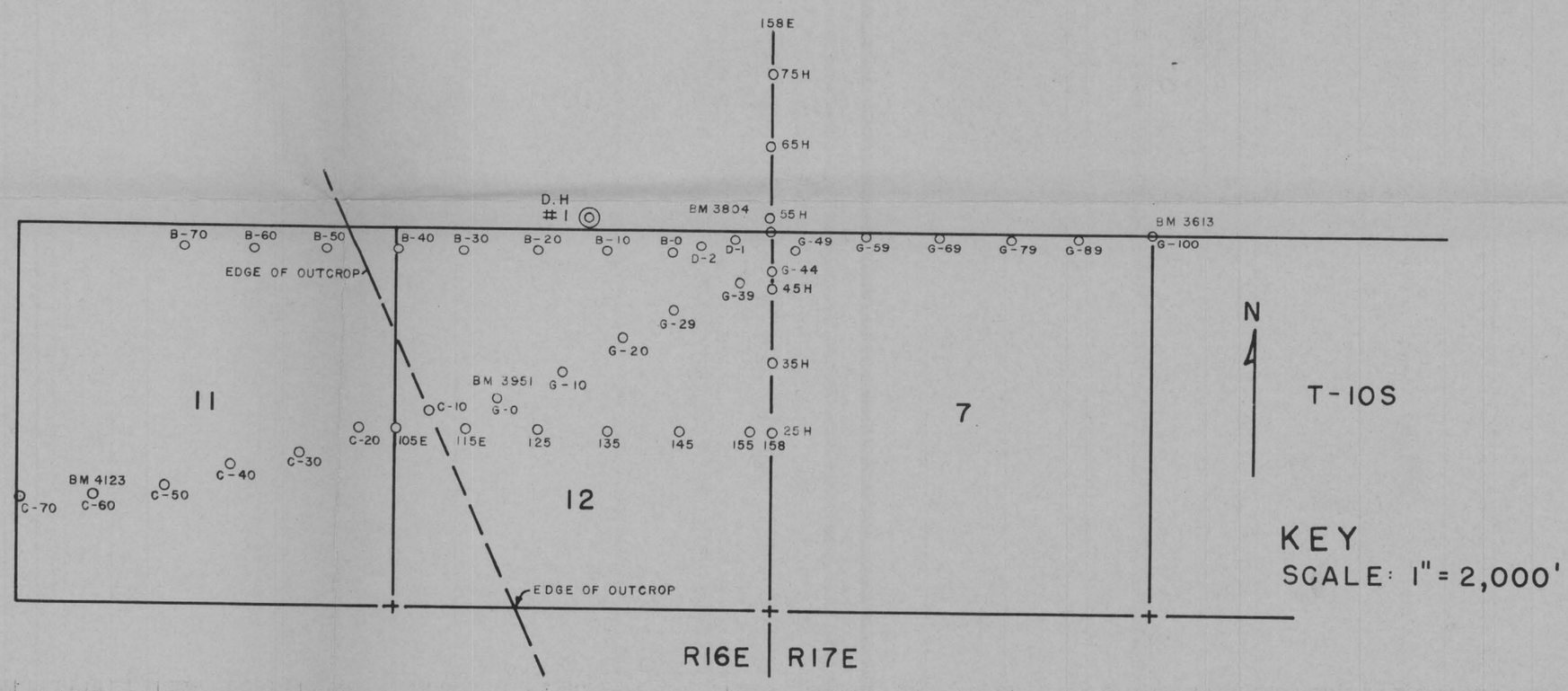


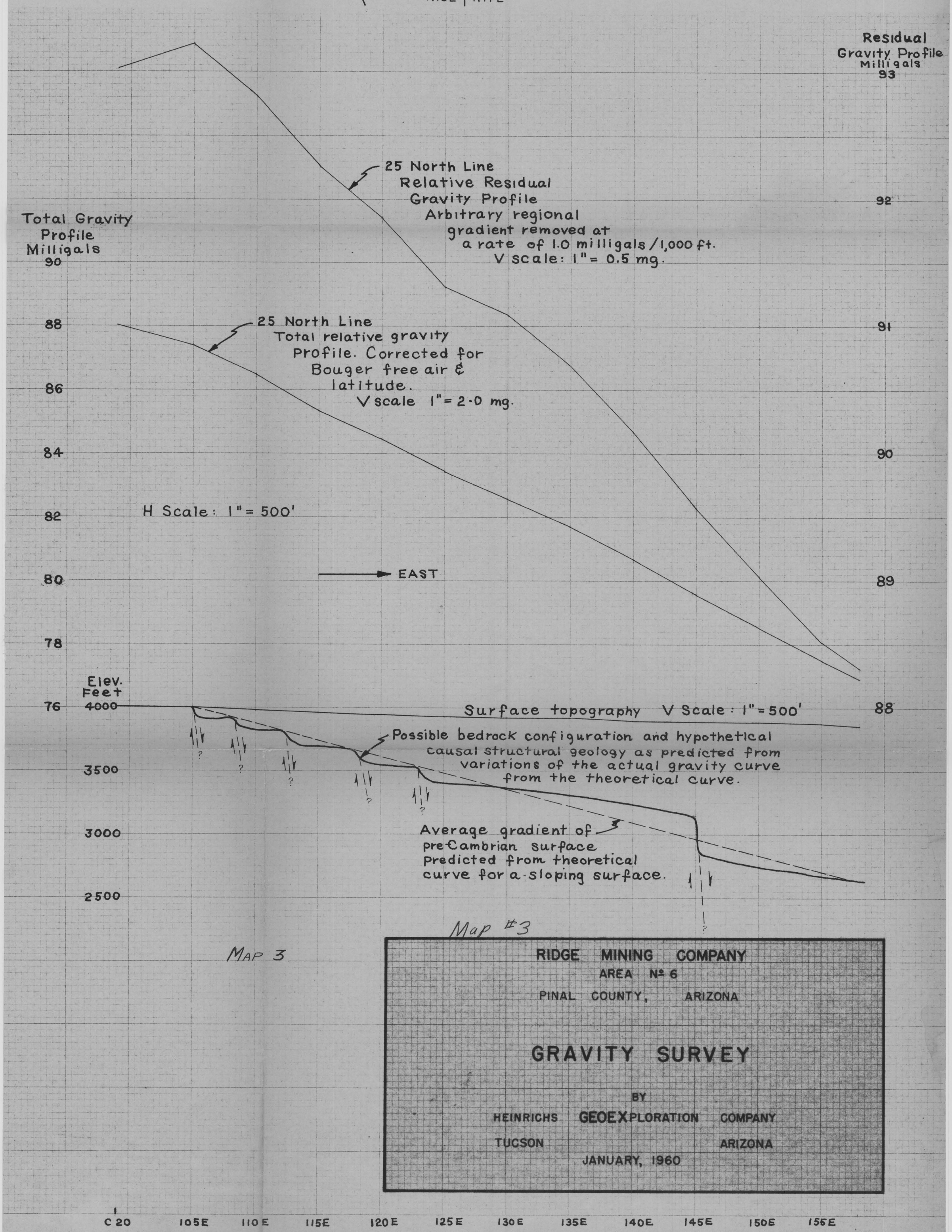


RIDGE MINING COMPANY
AREA Nº 6
PINAL COUNTY, ARIZONA

GRAVITY SURVEY

BY
HEINRICHS GEOEXPLORATION COMPANY
TUCSON ARIZONA
JANUARY, 1960





Map #3

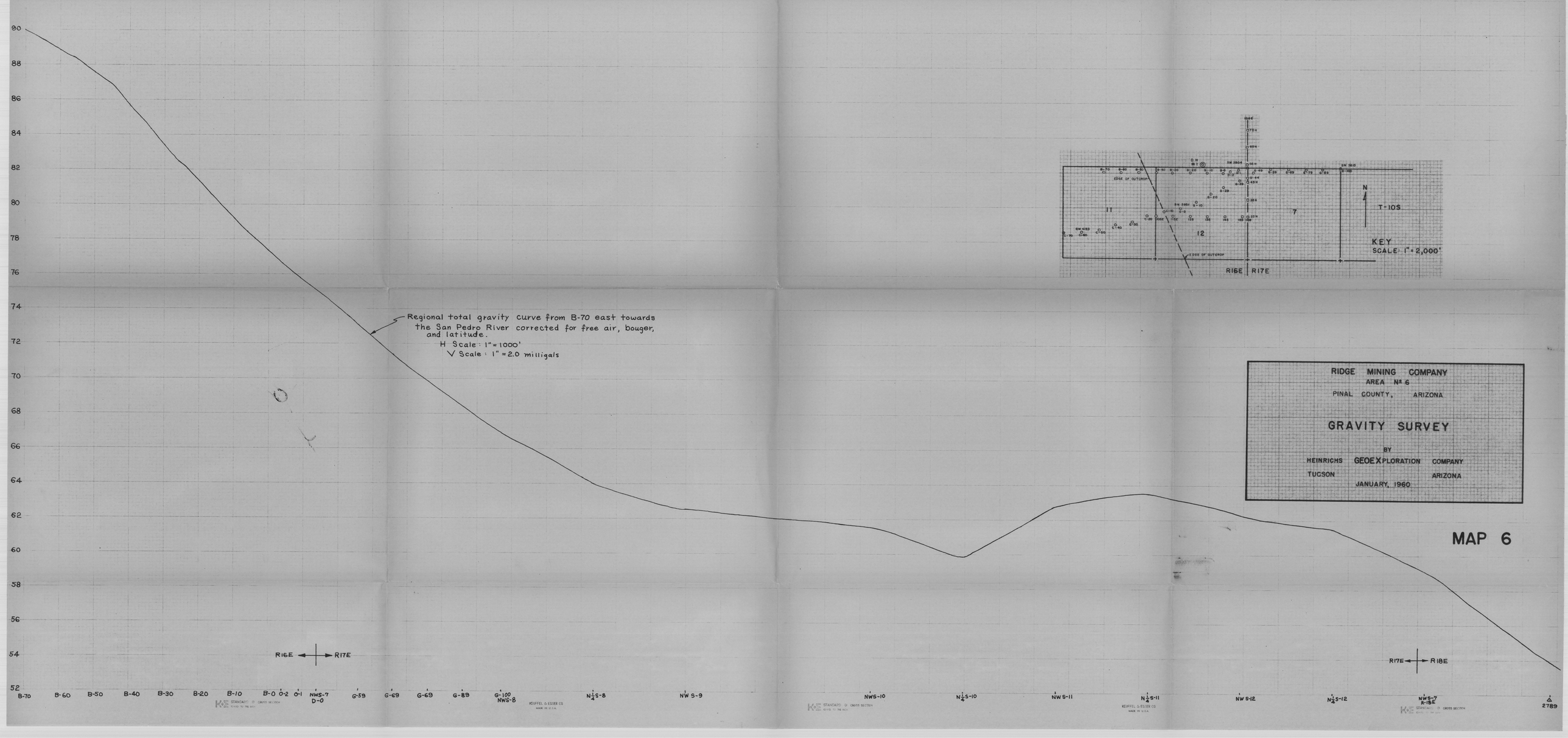
MAP 3

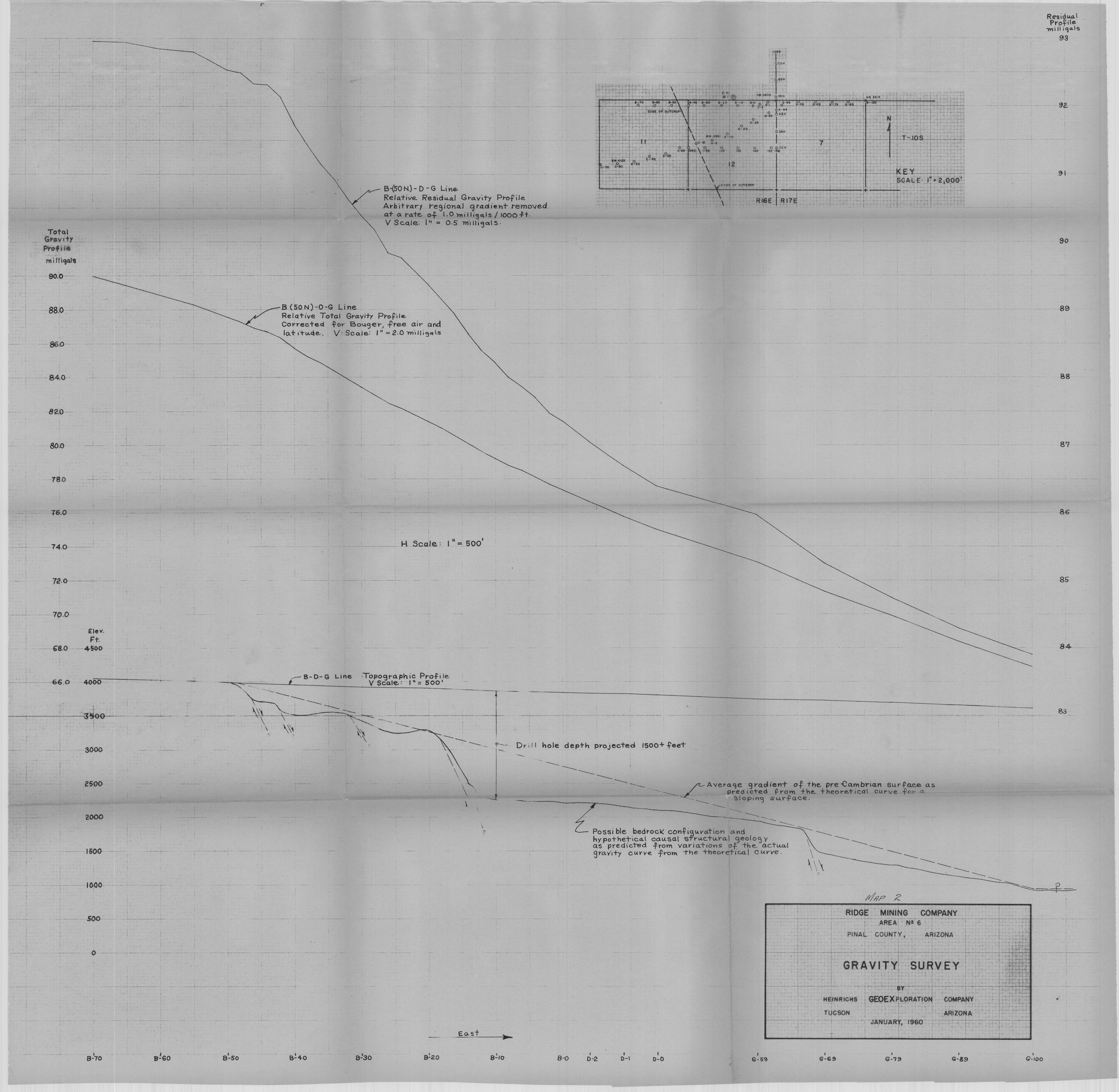
RIDGE MINING COMPANY
AREA Nº 6
PINAL COUNTY, ARIZONA

GRAVITY SURVEY

BY
HEINRICHS GEOEXPLORATION COMPANY
TUCSON ARIZONA
JANUARY, 1960

K+E STANDARD CROSS SECTION 10X10 TO THE INCH
KEUFFEL & ESSER CO. MADE IN U.S.A.


Regional total gravity curve from B-70 east towards the San Pedro River corrected for free air, bouger, and latitude.
H Scale: 1" = 1000'
V Scale: 1" = 2.0 milligals
90
88
86
84
82
80
78
76
74
72
70
68
66
64
62
60
58
56
54
52
B-70
B-60
B-50
B-40
B-30
B-20
B-10
B-0
0-2
0-1
NWS-7
D-0
G-59
G-69
G-69
G-89
G-100
NWS-8
N¼S-8
NW S-9
NWS-10
N¼S-10
NW S-11
N¼S-11
NW S-12
N¼S-12
NWS-7
R-18E
2789
R16E
R17E
R17E
R18E
EDGE OF OUTCROP
11
12
7
N
T-10S
KEY
SCALE: 1" = 2,000'
R16E
R17E
RIDGE MINING COMPANY
AREA Nº 6
PINAL COUNTY, ARIZONA
GRAVITY SURVEY
BY
HEINRICHS GEOEXPLORATION COMPANY
TUCSON ARIZONA
JANUARY, 1960
MAP 6

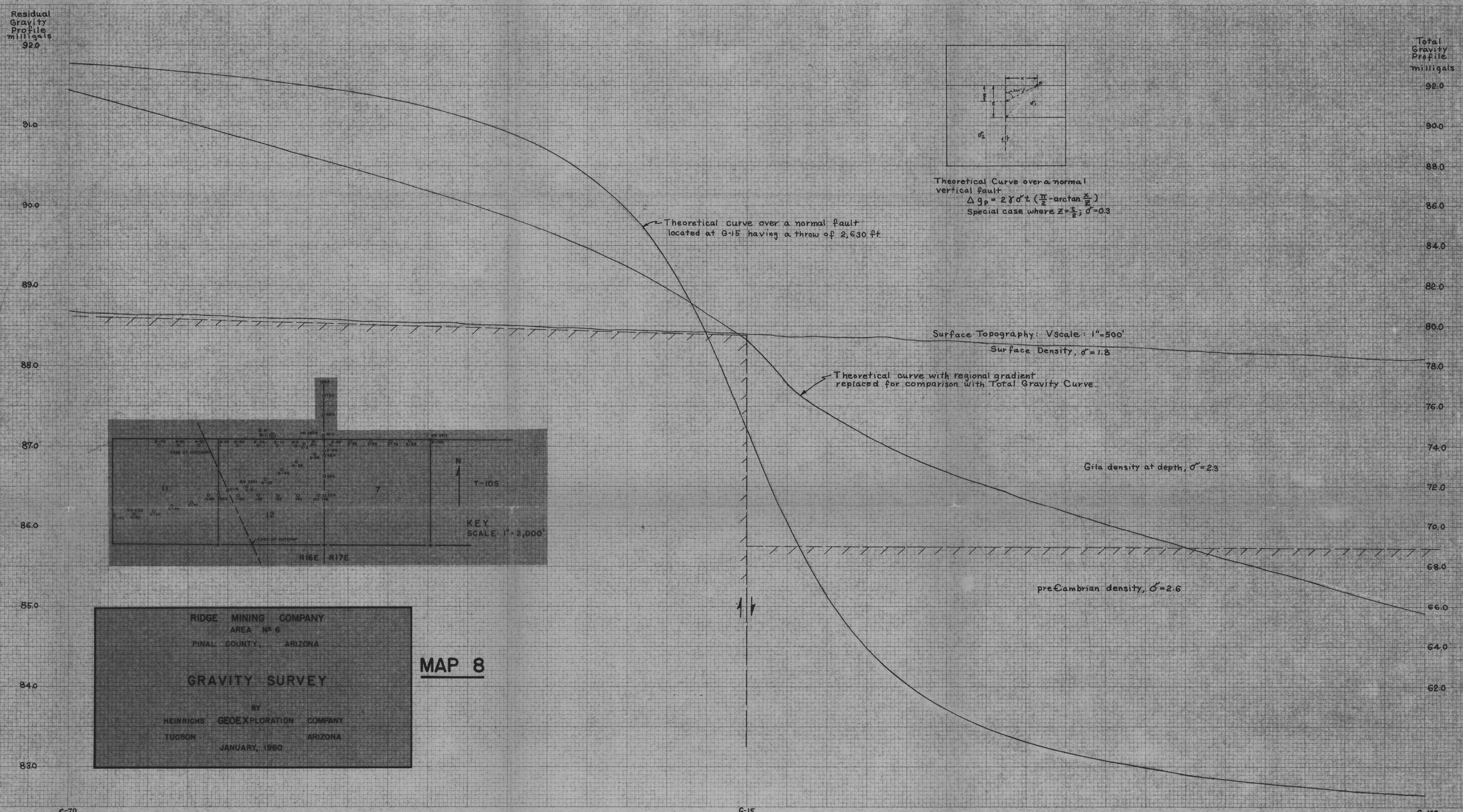


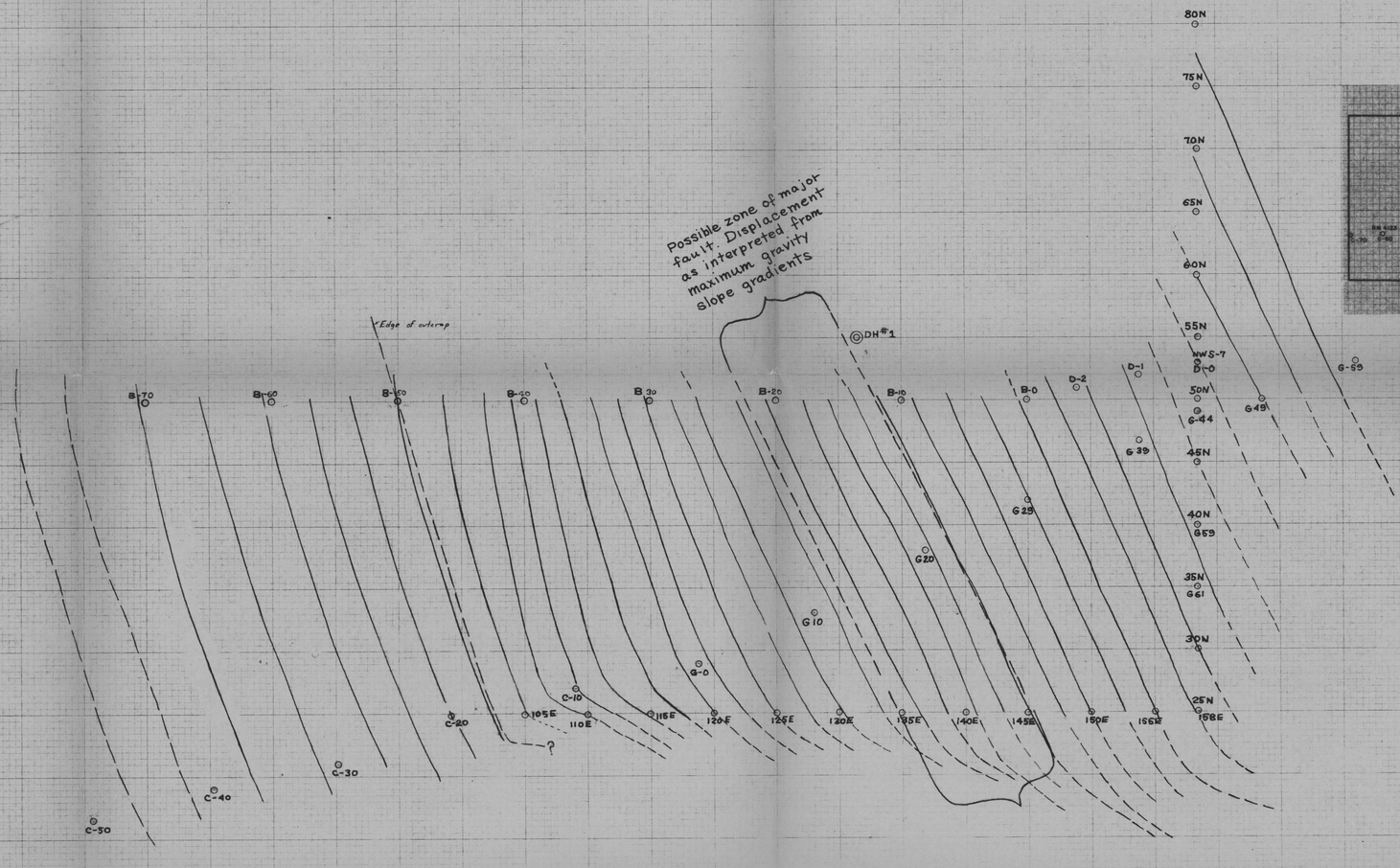
MAP 2

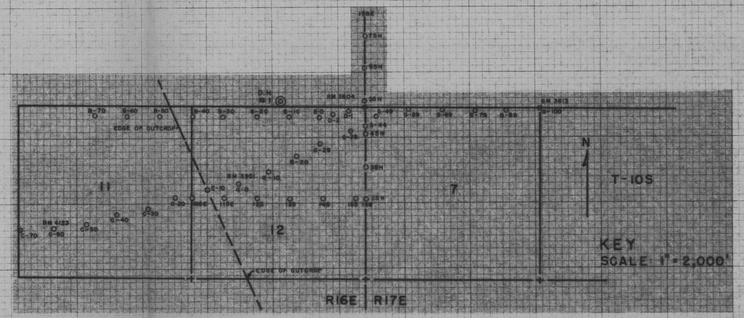
RIDGE MINING COMPANY
AREA Nº 6
PINAL COUNTY, ARIZONA

GRAVITY SURVEY

BY
HEINRICHS GEOEXPLORATION COMPANY
TUCSON ARIZONA
JANUARY, 1960


Residual Gravity Profile milligals
92.0
91.0
90.0
89.0
88.0
87.0
86.0
85.0
84.0
83.0
Total Gravity Profile milligals
92.0
90.0
88.0
86.0
84.0
82.0
80.0
78.0
76.0
74.0
72.0
70.0
68.0
66.0
64.0
62.0
Theoretical Curve over a normal vertical fault
$\Delta g_p = 2\gamma\sigma t\left(\frac{\pi}{2} - \arctan\frac{x}{z}\right)$
Special case where $z = \frac{t}{2}$; $\sigma = 0.3$
Theoretical curve over a normal fault located at G-15 having a throw of 2,630 ft.
Surface Topography: Vscale: 1"=500'
Surface Density, $\sigma = 1.8$
Theoretical curve with regional gradient replaced for comparison with Total Gravity Curve.
Gila density at depth, $\sigma = 2.3$
preCambrian density, $\sigma = 2.6$
T-10S
KEY
SCALE: 1" = 2,000'
R16E
R17E
RIDGE MINING COMPANY
AREA Nº 6
PINAL COUNTY, ARIZONA
GRAVITY SURVEY
BY
HEINRICHS GEOEXPLORATION COMPANY
TUCSON ARIZONA
JANUARY, 1960
MAP 8
C-70
G-15
G-100





Relative Total Gravity Contour Map
Corrected for Bouger, Free air & Latitude
Scale: 1" = 500 ft. Contour Interval = 0.5 milligals
σ = 1.8, e.c.f. = 0.07109 mg/ft. Calc. datum = 3,500 ft.
Lat. corr. = 1.19 mg/mile from T9-10 S Line.

MAP 5

RIDGE MINING COMPANY
AREA Nº 6
PINAL COUNTY, ARIZONA

GRAVITY SURVEY

BY

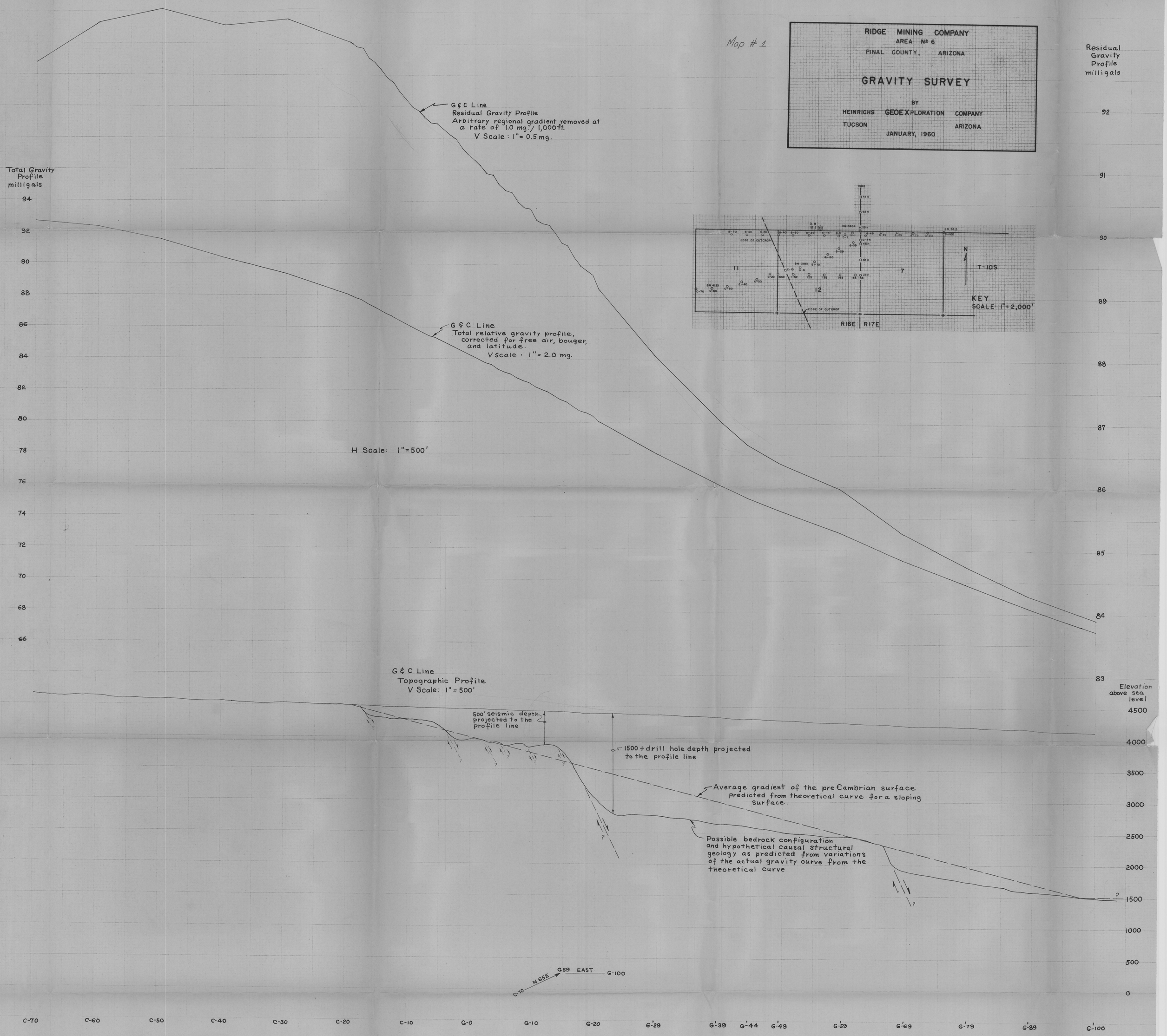
HEINRICHS GEOEXPLORATION COMPANY
TUCSON ARIZONA
JANUARY, 1960

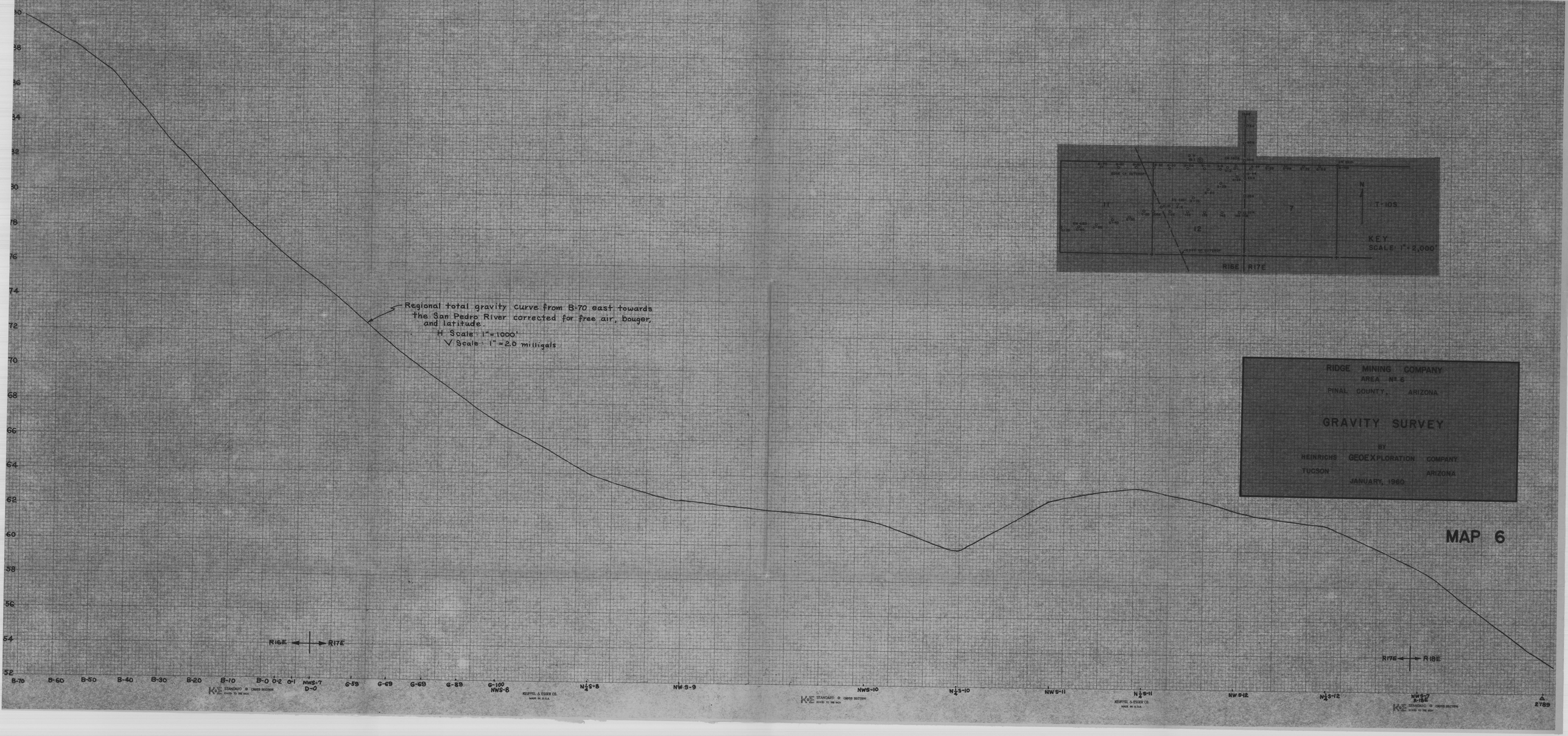
Map #1

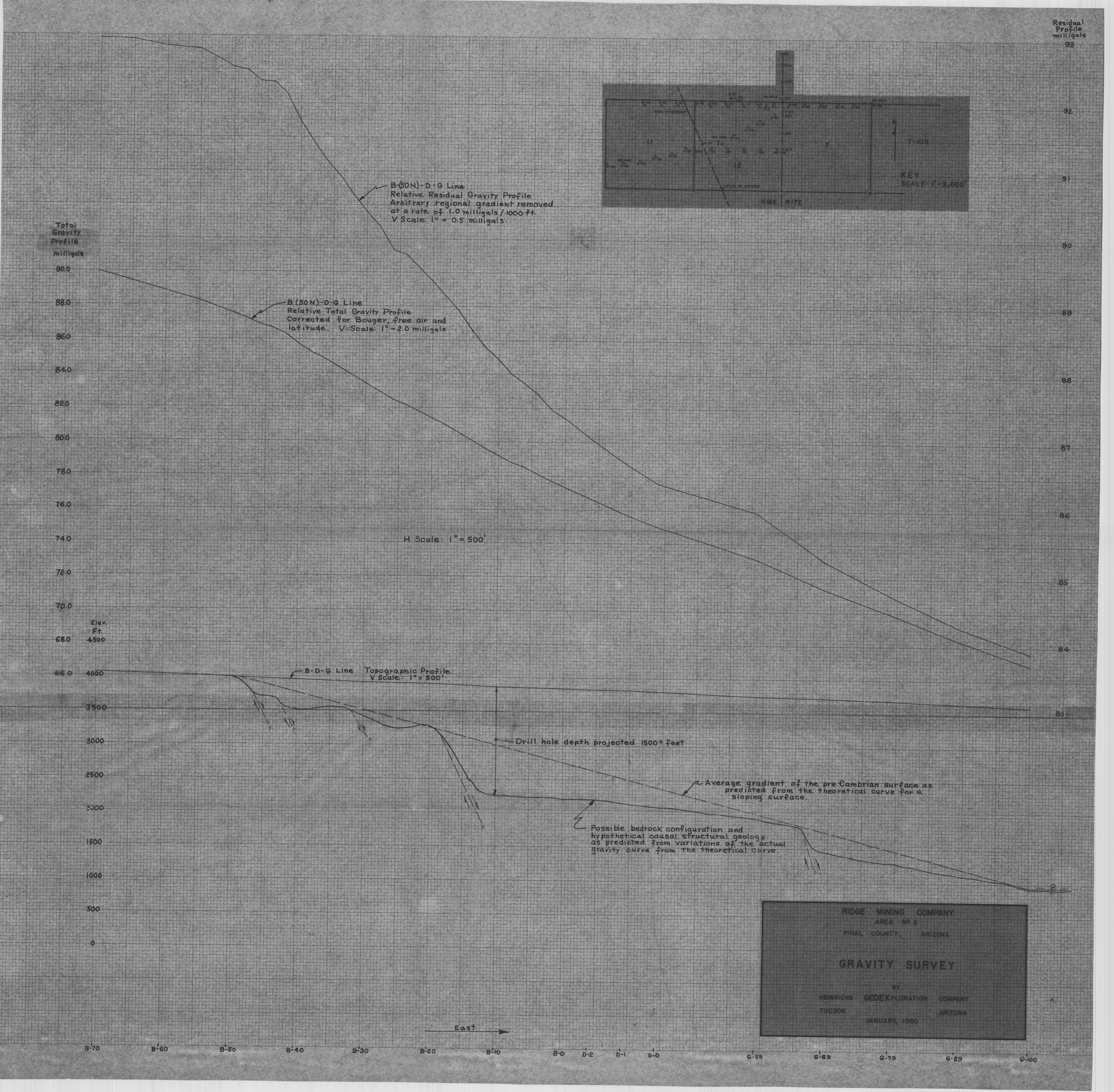
RIDGE MINING COMPANY
AREA Nº 6
PINAL COUNTY, ARIZONA

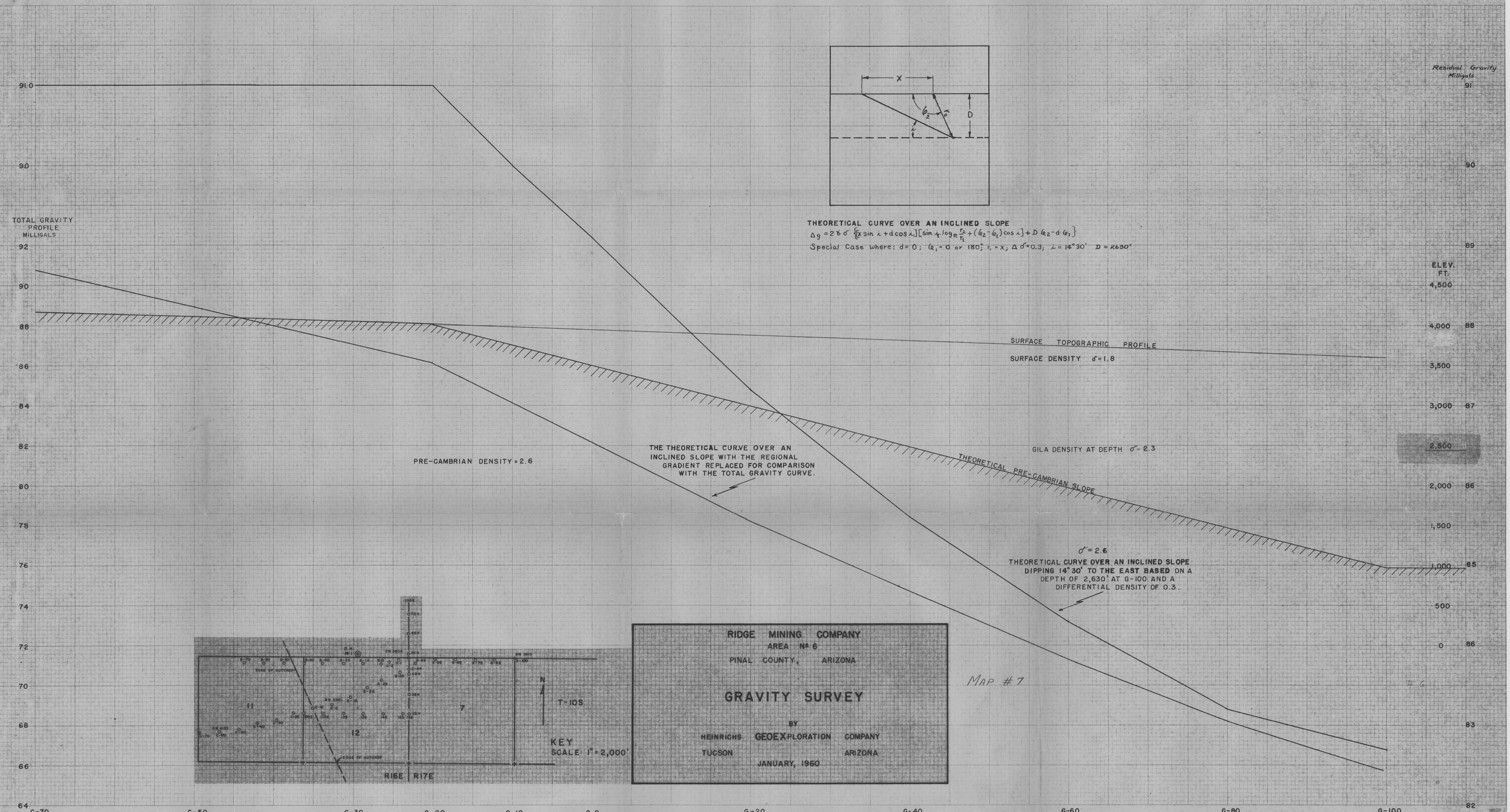
GRAVITY SURVEY

BY
HEINRICHS GEOEXPLORATION COMPANY
TUCSON ARIZONA
JANUARY, 1960



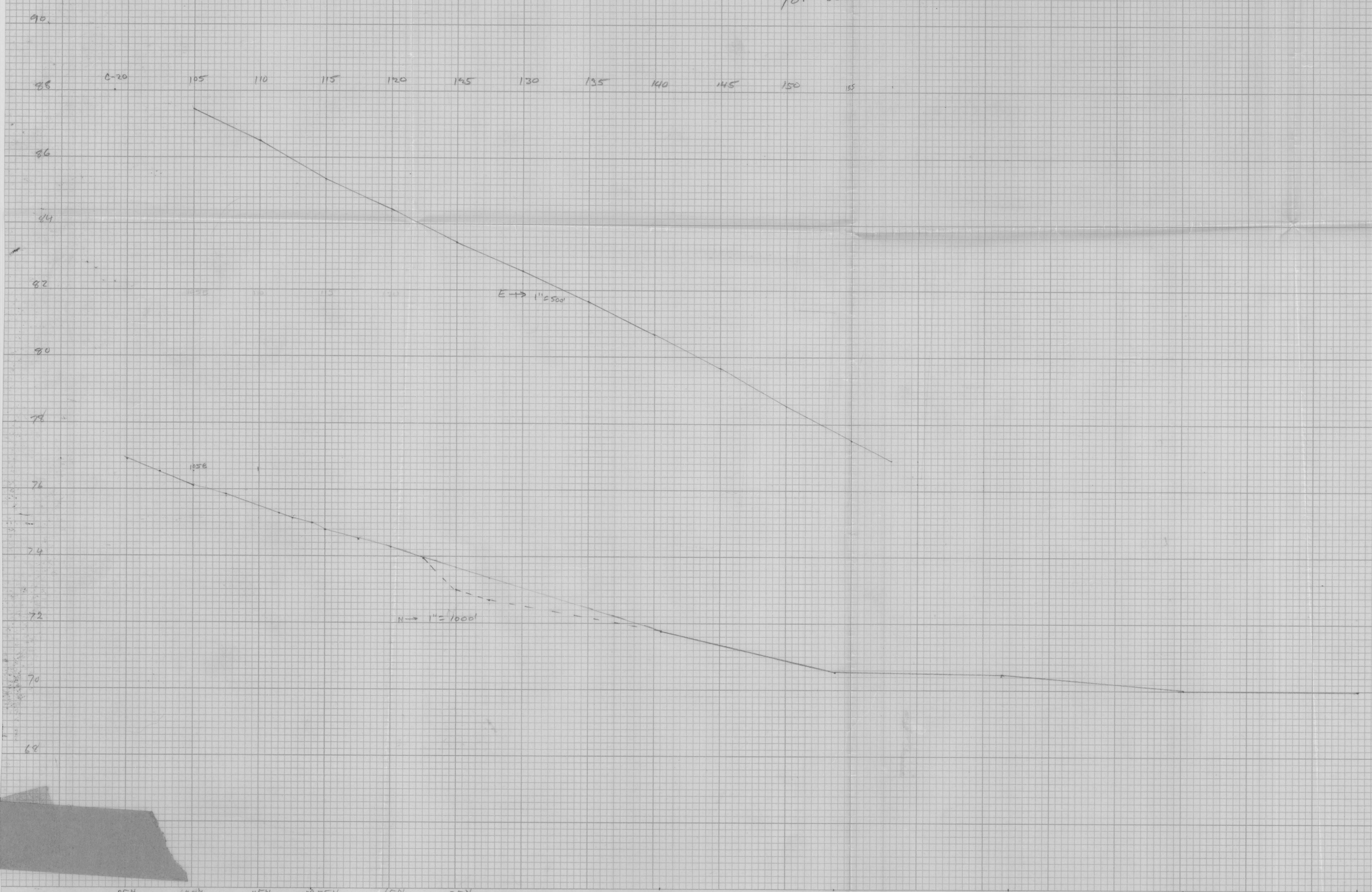

Regional total gravity curve from B-70 east towards the San Pedro River corrected for free air, bouger, and latitude.
H Scale: 1" = 1000'
V Scale: 1" = 2.0 milligals
RIDGE MINING COMPANY
AREA No. 6
PINAL COUNTY, ARIZONA
GRAVITY SURVEY
BY
HEINRICHS GEOEXPLORATION COMPANY
TUCSON ARIZONA
JANUARY, 1960
MAP 6
KEY
SCALE: 1" = 2,000'
T-10S
R16E
R17E
B-70
B-60
B-50
B-40
B-30
B-20
B-10
B-0
0-2
0-1
NWS-7
D-0
G-59
G-69
G-79
G-89
G-100
NWS-8
N½S-8
NW S-9
NWS-10
N½S-10
NW S-11
N½S-11
NW S-12
N½S-12
NW S-7
R-16E
2789


Residual Profile milligals
93
92
91
90
89
88
87
86
85
84
83
B-(50N)-D-G Line
Relative Residual Gravity Profile
Arbitrary regional gradient removed at a rate of 1.0 milligals / 1000 ft.
V Scale: 1" = 0.5 milligals.
Total Gravity Profile milligals
90.0
88.0
86.0
84.0
82.0
80.0
78.0
76.0
74.0
72.0
70.0
68.0
66.0
B (50N)-D-G Line
Relative Total Gravity Profile
Corrected for Bouger, free air and latitude. V-Scale: 1" = 2.0 milligals
H Scale: 1" = 500'
Elev. Ft.
4500
4000
3500
3000
2500
2000
1500
1000
500
0
B-D-G Line Topographic Profile
V Scale: 1" = 500'
Drill hole depth projected 1500+ feet
Average gradient of the pre Cambrian surface as predicted from the theoretical curve for a sloping surface.
Possible bedrock configuration and hypothetical causal structural geology as predicted from variations of the actual gravity curve from the theoretical curve.
East
B-70
B-60
B-50
B-40
B-30
B-20
B-10
B-0
D-2
D-1
D-0
G-59
G-69
G-79
G-89
G-100
11
12
7
T-10S
N
KEY
SCALE 1" = 2,000'
R16E
R17E
RIDGE MINING COMPANY
AREA Nº 6
PINAL COUNTY, ARIZONA
GRAVITY SURVEY
BY
HEINRICHS GEOEXPLORATION COMPANY
TUCSON ARIZONA
JANUARY, 1960


Residual Gravity Milligals
TOTAL GRAVITY PROFILE MILLIGALS
ELEV. FT.
91.0
90.0
92
90
88
86
84
82
80
78
76
74
72
70
68
66
64
91
90
89
88
87
86
85
83
82
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
C-70
C-50
C-30
C-20
C-10
G-0
G-20
G-40
G-60
G-80
G-100
X
D
THEORETICAL CURVE OVER AN INCLINED SLOPE
$\Delta g = 2\gamma\sigma \left\{ [x \sin i + d \cos i][\sin \psi \log_e \frac{r_2}{r_1} + (\theta_2 - \theta_1)\cos i] + D(\theta_2 - d\theta_1) \right\}$
Special Case where: $d = 0$; $\theta_1 = 0$ or $180°$; $r_1 = x$; $\Delta\sigma = 0.3$; $i = 14°30'$ $D = 2630'$
SURFACE TOPOGRAPHIC PROFILE
SURFACE DENSITY $\sigma = 1.8$
PRE-CAMBRIAN DENSITY = 2.6
THE THEORETICAL CURVE OVER AN INCLINED SLOPE WITH THE REGIONAL GRADIENT REPLACED FOR COMPARISON WITH THE TOTAL GRAVITY CURVE.
GILA DENSITY AT DEPTH $\sigma = 2.3$
THEORETICAL PRE-CAMBRIAN SLOPE
$\sigma = 2.6$
THEORETICAL CURVE OVER AN INCLINED SLOPE DIPPING 14°30' TO THE EAST BASED ON A DEPTH OF 2,630' AT G-100 AND A DIFFERENTIAL DENSITY OF 0.3.
EDGE OF OUTCROP
11
12
7
T-10S
N
KEY
SCALE 1" = 2,000'
R16E R17E
RIDGE MINING COMPANY
AREA No 6
PINAL COUNTY, ARIZONA
GRAVITY SURVEY
BY
HEINRICHS GEOEXPLORATION COMPANY
TUCSON ARIZONA
JANUARY, 1960
MAP #7
D-6
KEUFFEL & ESSER CO. MADE IN U.S.A.
K&E STANDARD CROSS SECTION 10 X 10 TO THE INCH

Ridge Gravity

For use w/ Rodgers Graticule. (B.C.)



KEUFFEL & ESSER CO. MADE IN U.S.A.
K+E STANDARD CROSS SECTION 10X10 TO THE INCH
KEUFFEL & ESSER CO. MADE IN U.S.A.