

29

~~140~~

KELLNER CANYON FIELD NOTES

MINING
TRANSIT BOOK
363

Kellner Canyon Field Notes

KEUFFEL & ESSER CO.

DRAWING MATERIALS

AND

SURVEYING INSTRUMENTS.

NEW YORK.

CHICAGO. ST. LOUIS. SAN FRANCISCO. MONTREAL.

Tables for Excavations and Embankments.

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.
ROADWAY 18 FEET WIDE. SIDE SLOPES 1 TO 1.
FOR SINGLE TRACK EXCAVATION.

"Copyright, 1895, by Keuffel & Esser Co."

	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	
0	9.0	9.1	9.2	9.3	9.4	9.5	9.6	9.7	9.8	9.9	0
1	10.0	10.1	10.2	10.3	10.4	10.5	10.6	10.7	10.8	10.9	1
2	11.0	11.1	11.2	11.3	11.4	11.5	11.6	11.7	11.8	11.9	2
3	12.0	12.1	12.2	12.3	12.4	12.5	12.6	12.7	12.8	12.9	3
4	13.0	13.1	13.2	13.3	13.4	13.5	13.6	13.7	13.8	13.9	4
5	14.0	14.1	14.2	14.3	14.4	14.5	14.6	14.7	14.8	14.9	5
6	15.0	15.1	15.2	15.3	15.4	15.5	15.6	15.7	15.8	15.9	6
7	16.0	16.1	16.2	16.3	16.4	16.5	16.6	16.7	16.8	16.9	7
8	17.0	17.1	17.2	17.3	17.4	17.5	17.6	17.7	17.8	17.9	8
9	18.0	18.1	18.2	18.3	18.4	18.5	18.6	18.7	18.8	18.9	9
10	19.0	19.1	19.2	19.3	19.4	19.5	19.6	19.7	19.8	19.9	10
11	20.0	20.1	20.2	20.3	20.4	20.5	20.6	20.7	20.8	20.9	11
12	21.0	21.1	21.2	21.3	21.4	21.5	21.6	21.7	21.8	21.9	12
13	22.0	22.1	22.2	22.3	22.4	22.5	22.6	22.7	22.8	22.9	13
14	23.0	23.1	23.2	23.3	23.4	23.5	23.6	23.7	23.8	23.9	14
15	24.0	24.1	24.2	24.3	24.4	24.5	24.6	24.7	24.8	24.9	15
16	25.0	25.1	25.2	25.3	25.4	25.5	25.6	25.7	25.8	25.9	16
17	26.0	26.1	26.2	26.3	26.4	26.5	26.6	26.7	26.8	26.9	17
18	27.0	27.1	27.2	27.3	27.4	27.5	27.6	27.7	27.8	27.9	18
19	28.0	28.1	28.2	28.3	28.4	28.5	28.6	28.7	28.8	28.9	19
20	29.0	29.1	29.2	29.3	29.4	29.5	29.6	29.7	29.8	29.9	20
21	30.0	30.1	30.2	30.3	30.4	30.5	30.6	30.7	30.8	30.9	21
22	31.0	31.1	31.2	31.3	31.4	31.5	31.6	31.7	31.8	31.9	22
23	32.0	32.1	32.2	32.3	32.4	32.5	32.6	32.7	32.8	32.9	23
24	33.0	33.1	33.2	33.3	33.4	33.5	33.6	33.7	33.8	33.9	24
25	34.0	34.1	34.2	34.3	34.4	34.5	34.6	34.7	34.8	34.9	25
26	35.0	35.1	35.2	35.3	35.4	35.5	35.6	35.7	35.8	35.9	26
27	36.0	36.1	36.2	36.3	36.4	36.5	36.6	36.7	36.8	36.9	27
28	37.0	37.1	37.2	37.3	37.4	37.5	37.6	37.7	37.8	37.9	28
29	38.0	38.1	38.2	38.3	38.4	38.5	38.6	38.7	38.8	38.9	29
30	39.0	39.1	39.2	39.3	39.4	39.5	39.6	39.7	39.8	39.9	30
31	40.0	40.1	40.2	40.3	40.4	40.5	40.6	40.7	40.8	40.9	31
32	41.0	41.1	41.2	41.3	41.4	41.5	41.6	41.7	41.8	41.9	32
33	42.0	42.1	42.2	42.3	42.4	42.5	42.6	42.7	42.8	42.9	33
34	43.0	43.1	43.2	43.3	43.4	43.5	43.6	43.7	43.8	43.9	34
35	44.0	44.1	44.2	44.3	44.4	44.5	44.6	44.7	44.8	44.9	35
36	45.0	45.1	45.2	45.3	45.4	45.5	45.6	45.7	45.8	45.9	36

Calculated by Julien A. Hall, M. Am. Soc. C. E.

Book No.

29

Kelner Gulch Rd.

Find P.I.s of 133+40 and 135+70
of Ice House Canyon Rd. Survey.

1+33 R 72°30'

S 37°39' W

0+00

S 22°41' W

— 100° C R.
— A 72° 30'
P.I. 1+33
SIT. 42.00
BC 0+91.00
72.00
EC. 1+63.50
EX. 13.75

May 28 - 19
Jm. - Devore -
Buck - W - Nutlake.

230

133.40
204.1

135+44.1

see page 4

S 22° W

Then to R 14° 45' X = 134+80. P.O.T. of
Ice House Can. Survey.

Kellner Gulch Road

421.4 S.71°49'W

17+70.6 Δ L 11°04'

590.2 S.82°53'W

11+80.4 Δ R 18°26'

474.3 S.64°27'W

7+06.1 Δ L 5°28'

383.2 S.69°55'W

3+22.9 Δ L 6°01'

136.6 S.75°56'W

1+86.3 Δ L 32°45'

+07

1+00

186.3 N.71°19'W

R 85°47' Correction 1° 12' to the left

00 = 135+44.1 ICE HOUSE CAR
S.22°54'W

July 11-19
 Julius Milston → J.M. - Vaughn
 Devore - Thomas
 & family

S.56°20'W

130

30

S.67°W

80

50

S.49°00'

50

60

S.54°29'

40

50

S.60°30'W

120

Bridge beg. 16 Bridge

1467

Ice House

Canyon

100

ON S.32-34W Mag. S.8°W

50 + 11.4 Δ R 26° 50

46 + 18.8 ^L Δ 14° 04

41 + 92.3 Δ L 18° 07

36 + 16.4

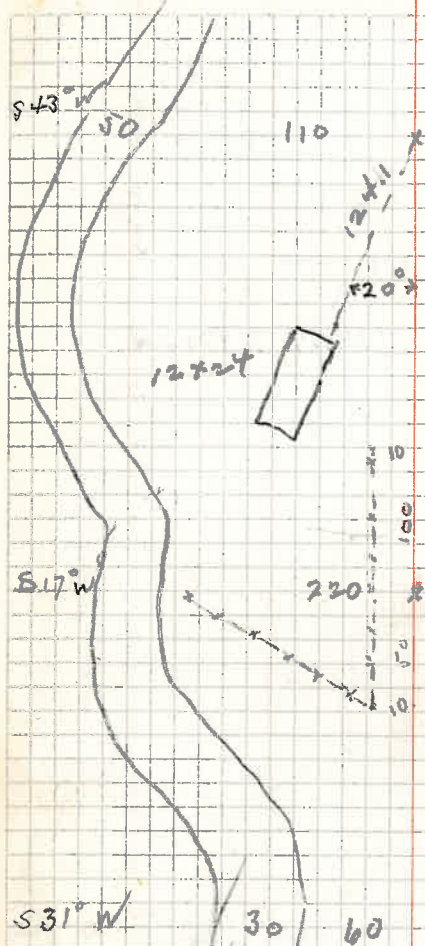
208.6 S. 59° 16' W

352.6 S. 32° 26' W

466.5 S. 46° 30' W

525.8 S. 64° 37' W

36 + 16.5
33 60.5
2 76.0



562° 05' W
66 26
128 31
179 60
N 51° 29' W

66° 26' 270.5
N. 51° 29' W
47° 02' W
X - N 10° 17' E
X - N 10° 17' E

HEB 107

LOT. N 10° 17' E HEB 9

12

66

S 62° 19' W

+70 ΔR 6° 31'

65

S 55° 48' W

+45 ΔR 7° 51'

64

63

+60

+30

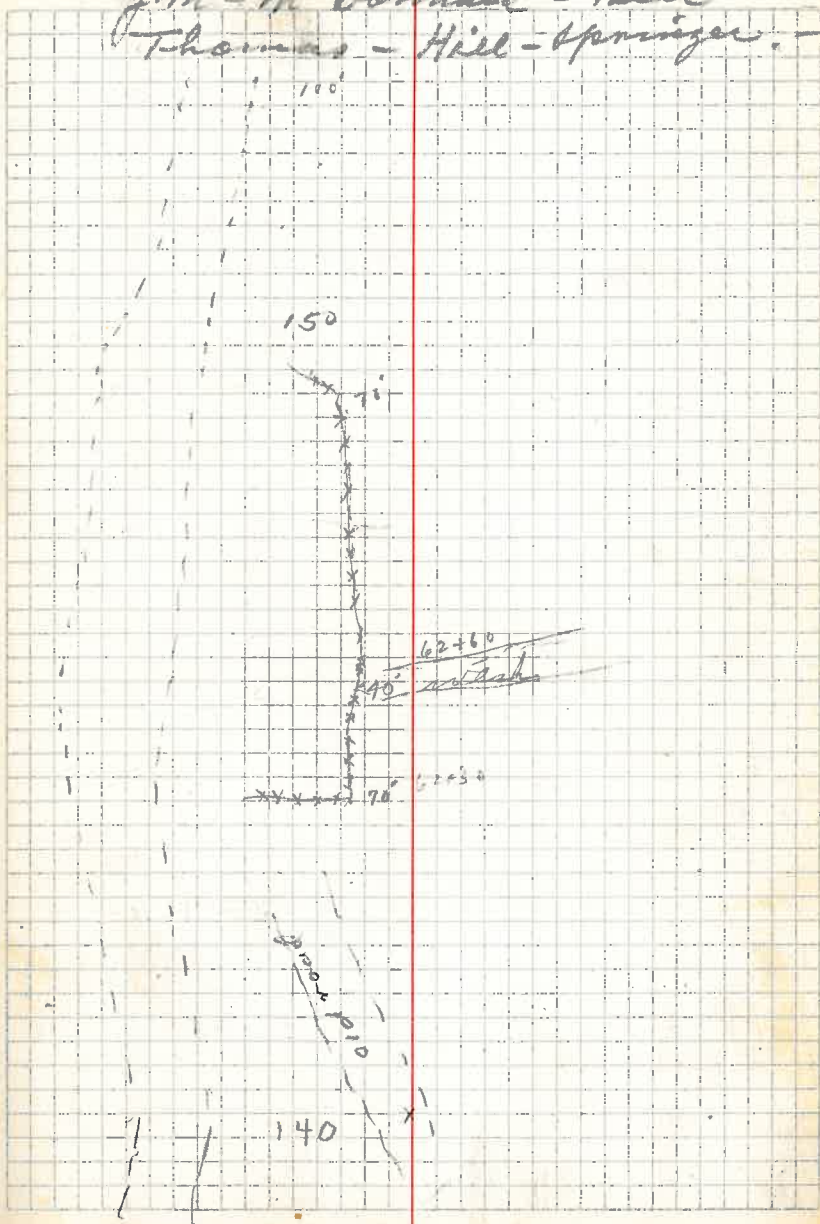
62

S 47° 57' W

61 + 75 ΔR 2° 02'

July 22-19

J. M. - Mc Donnell - Bell -
Thomas - Hill - Springer.



14

71 $\Delta L 0^{\circ}06'$

$543^{\circ}43'W$

70

$543^{\circ}49'W$

69 $\Delta R 16^{\circ}05'$

$527^{\circ}44'W$

+25 $\Delta L 11^{\circ}31'$

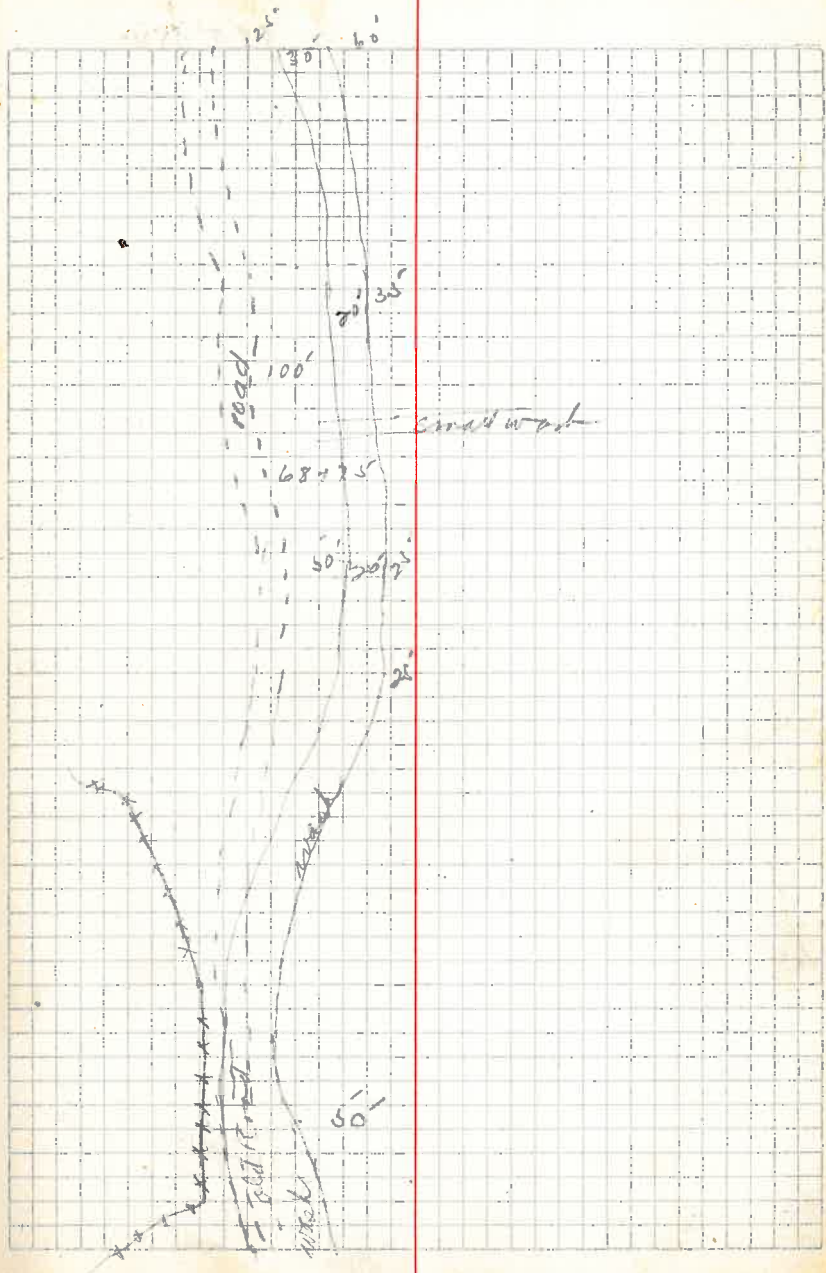
68

$539^{\circ}15'W$

67

+60 $\Delta 23^{\circ}04'$

66



18

81

S53°05'W

+50' ΔR7°20'

80

S45°45'W

79 ΔL9°41'

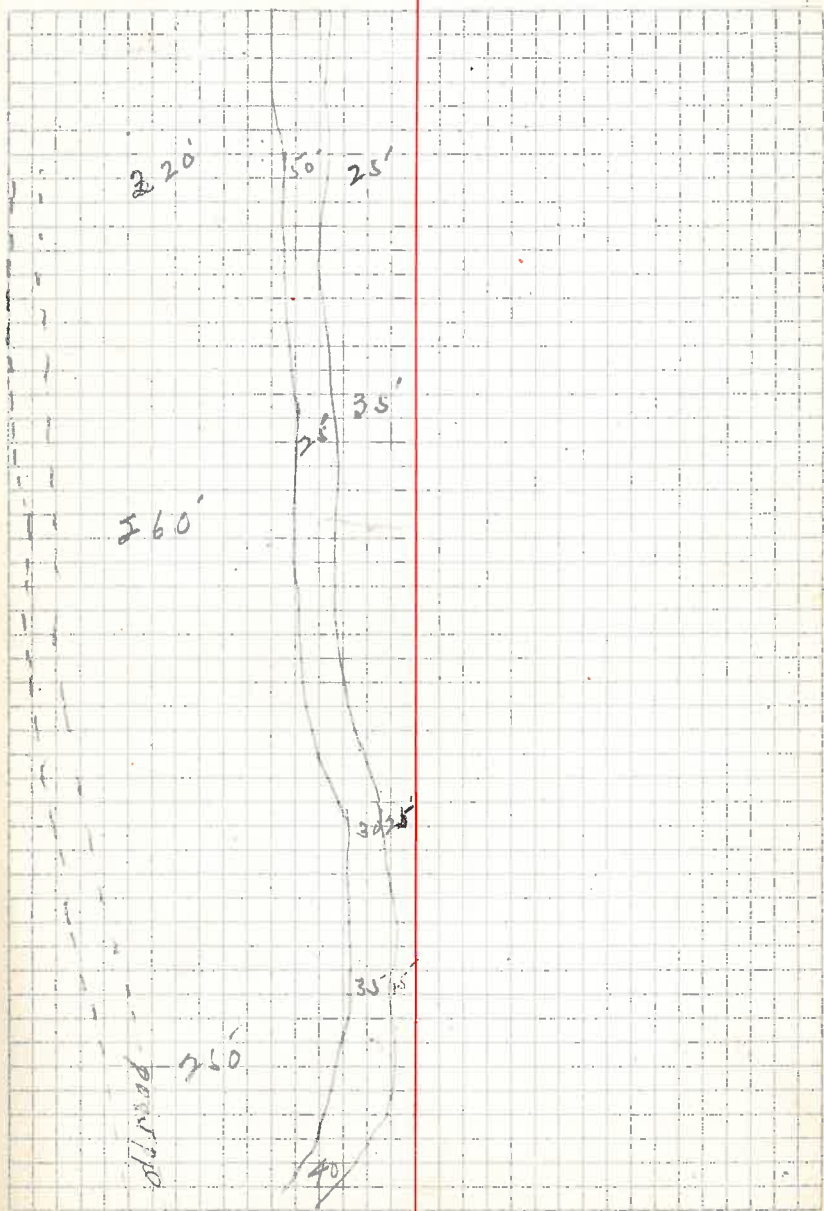
78

S55°26'W

+60 ΔR0°31'

77

76



80

86

81

Solar
(519° 31' N)

S 20° 43' W

+75° Δ 15° 35'

84

S 36° 18' W

+50° Δ R. 4° 16'

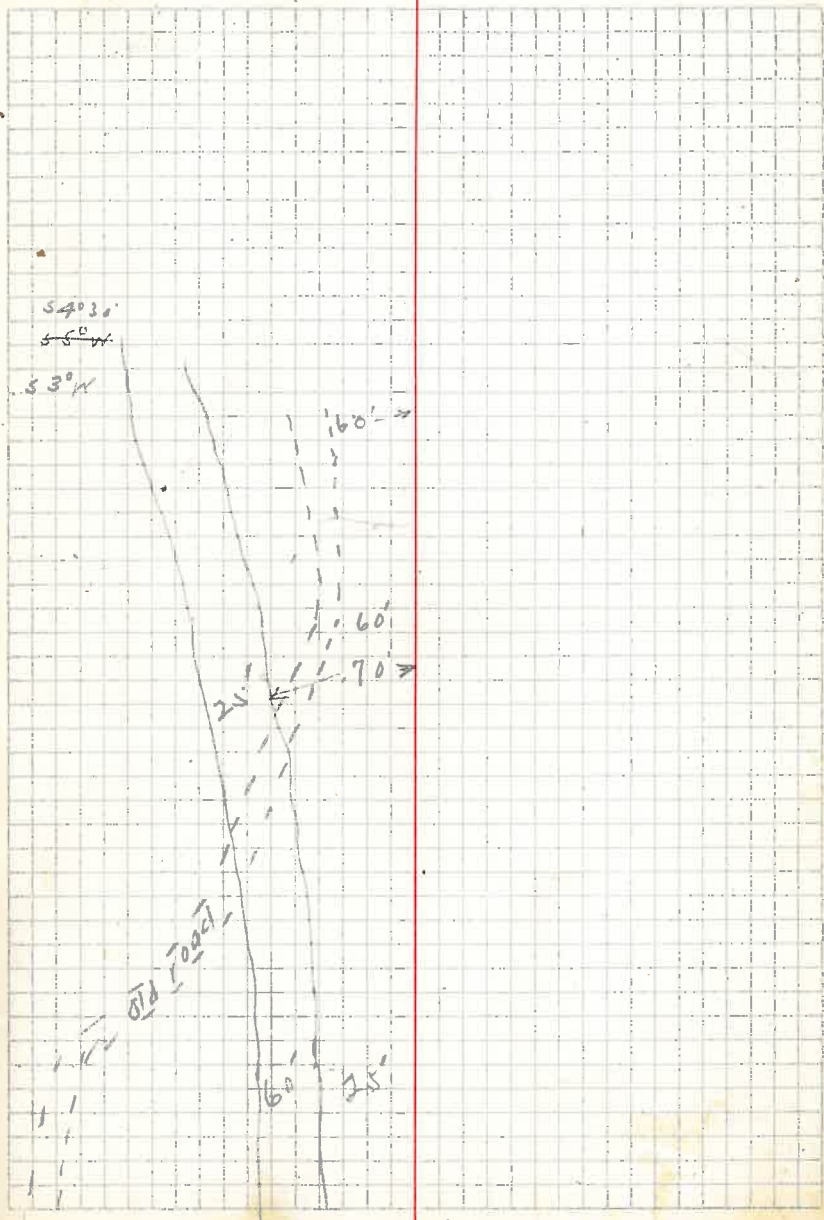
83

S 32° 02' W

82

+40° Δ 21° 03'

81



22

97+53.3 Δ L10°47'

S39°18'W

S30°05'W

167.7

95+85.6 Δ R4°30'

628.5 S45°35'W

89+57.1 Δ L12°09'

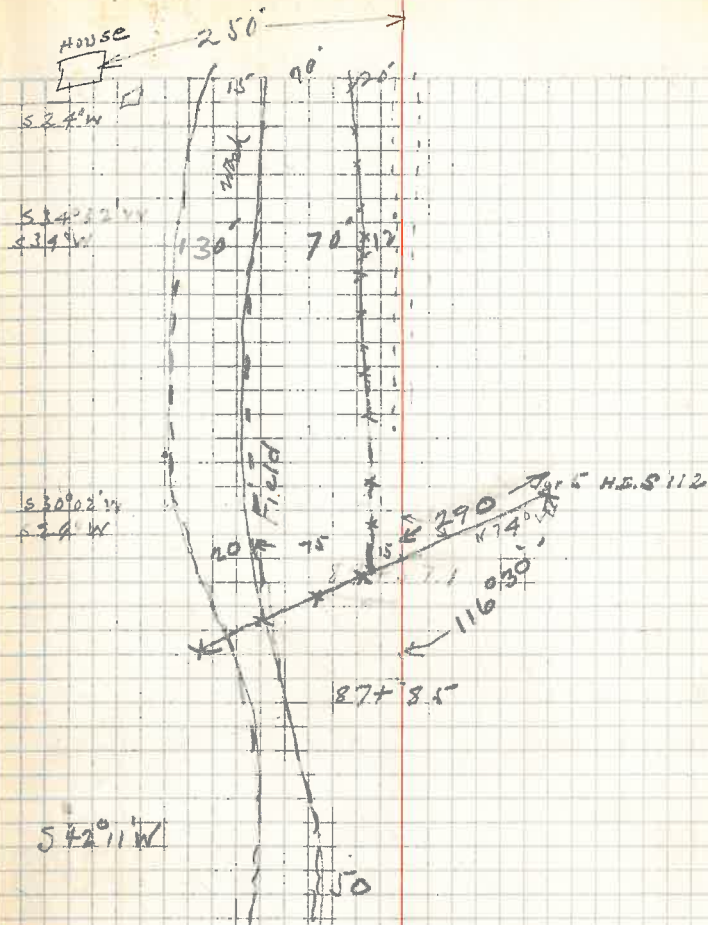
S57°44'W

172.1

87+65 Δ R37°01'
End of new construction

87

86



24

115 + 51.9 Δ L 18° 25'

55° 23' 14" W 556.8

109 + 95.1 Δ R 12° 03'

54° 31' W 415.2

105 + 79.9 Δ L 6° 00'

335'

102 + 44.9 Δ R 7° 13'

→ 54° 31' W 491.6

97 + 53.2

D^{cor} 2 H.E.S. 112

S 24° W

20'

170'

← 102.4

115 + 110.8

#3

H.E.S 112

→ 77° 50'

S 37° W

75'

← 50'

S 24° W

100'

100'

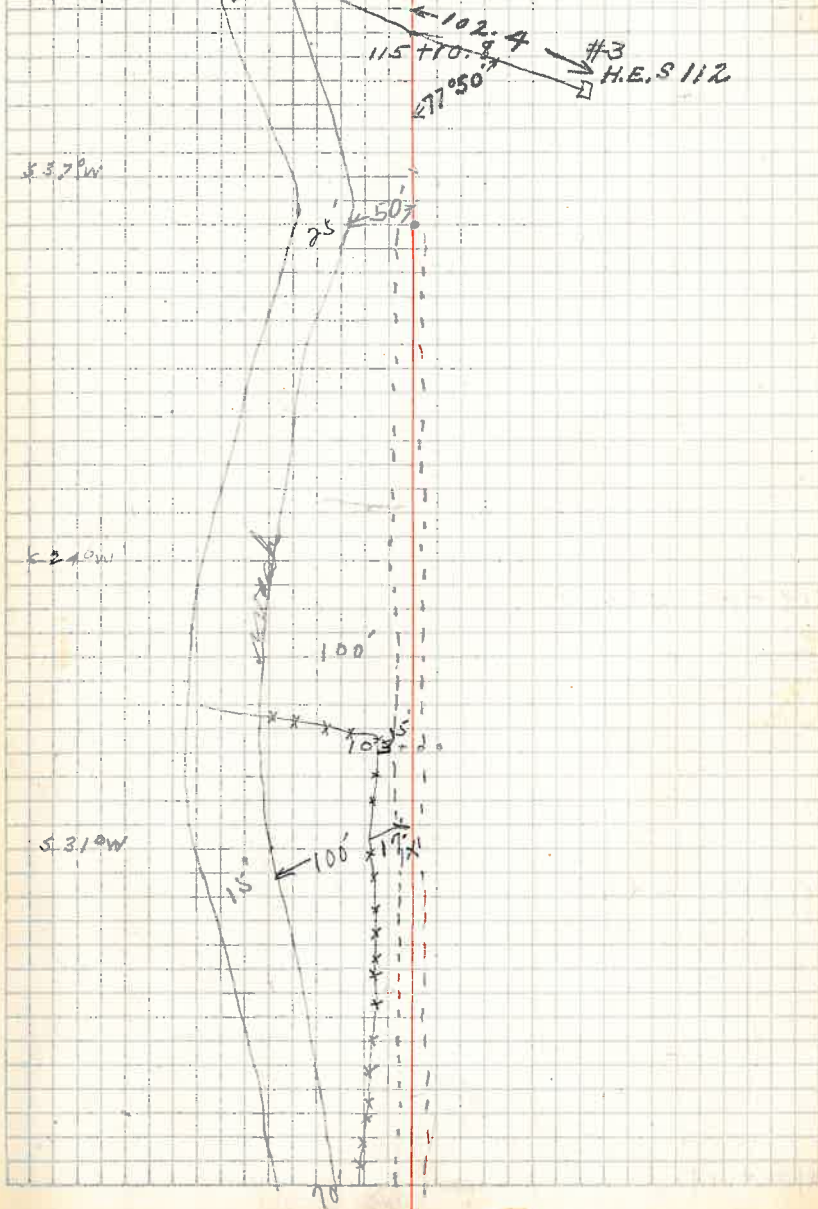
S 31° W

15'

← 100'

170'

10'



26

128+30.7 Δ L 40°59'

S52°29'W

N86°32'W 346.7

124+84 Δ R 6°45'

S82°43'W 534.7

119+49.3 Δ R 26°46'

211.2

S55°57'W

117+38.1 Δ R 20°48'

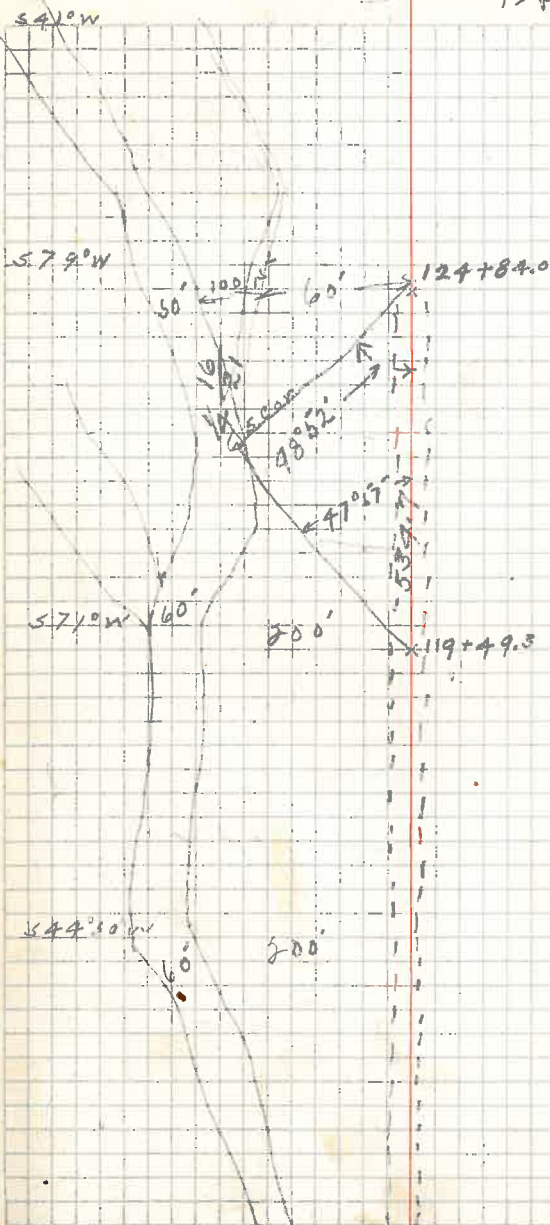
S39°09'W

186.2

115+51.9

128+65

Small drainage
12' pipe



30

158+32.8 ΔL 27°20'

55°24'E

521°56'W 394.6

167+33.3 ΔR 11°58'

59°58'W 112.0

153+26.3 ΔL 52°03'

562°01'W 412.1

149+14.2 ΔL 63°08'

N 67°51'W 322.0

145+92.2 ΔL 28°56'

205.8

143+86.4

521°E

56°W

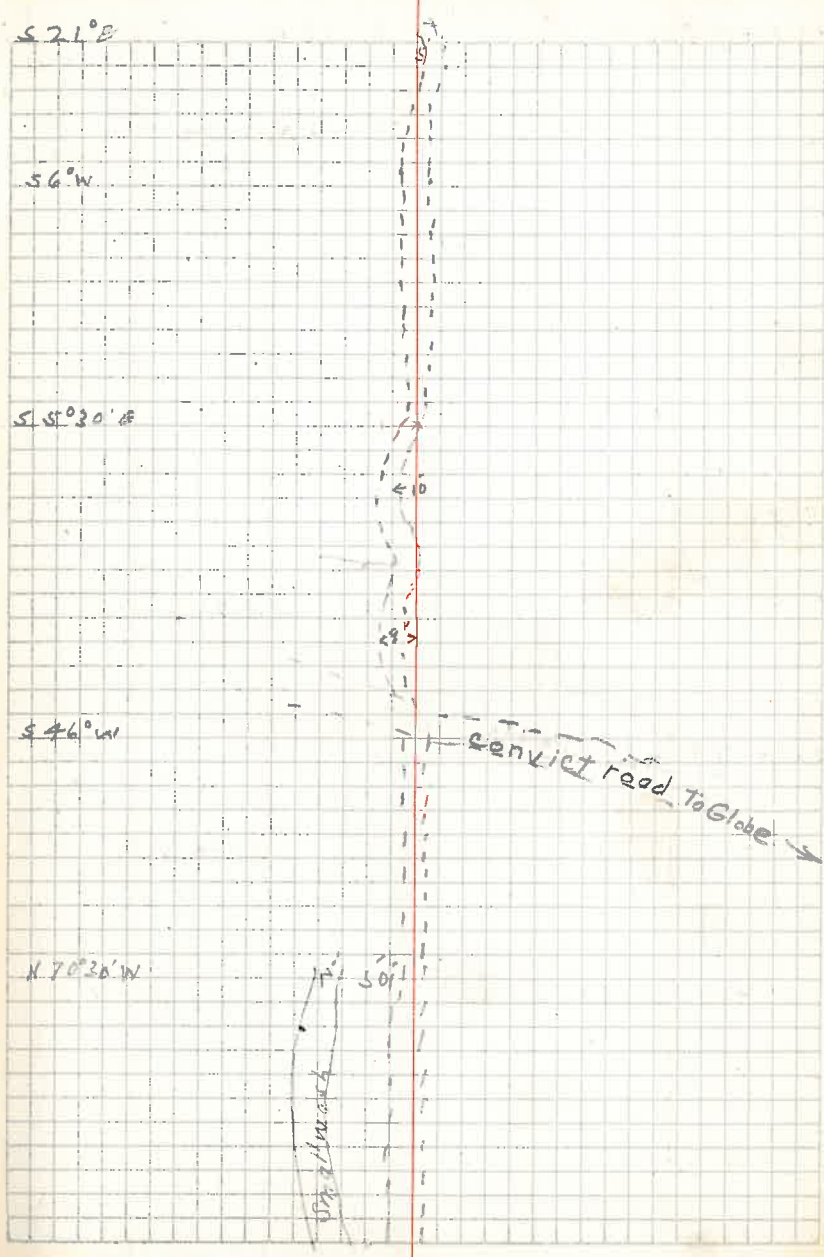
55°30'E

546°W

N 70°30'W

50% of track
50'

Service road to Globe →



32

Continued on Page 38

167 + 69.8 Δ $46^{\circ}39'$ S $17^{\circ}13'W$ S $63^{\circ}52'W$ 252.4165 + 17.4 Δ $31^{\circ}55'$ S $31^{\circ}57'W$ 238.0162 + 79.4 Δ $41^{\circ}35'$ S $46^{\circ}32'W$ 107.6161 + 71.8 Δ $32^{\circ}36'$ S $79^{\circ}08'W$ 153160 + 18.8 Δ $84^{\circ}32'$

186.0

158 + 32.8

S $2^{\circ}30'W$ S $4^{\circ}0'W$ S $26^{\circ}30'W$ S $80^{\circ}0'W$

Sec. Cor

12/1/61

20/2/61

S $62^{\circ}0'W$

160 + 18.8

Grade locⁿ to summit
 Keenee Gulch Rd. with
 Connick Rd. mag.

0 Turn

+50 R 13°

1 R 4°32'

+50 R 2°50'

2 R 3°30'

+50 R 6°35'

3 R 3°10'

+50 R 2°15'

4 0°0'

+50 Δ L 0°22'

S 29° W

5 R 18°

+50 R 16°50'

6 R 16°50'

+50 R 18°30'

7 Δ R 18°57'

S 48° W

+50 R 23°20'

8 R 26°50'

+50 R 21°16'

9 R 22°30'

May 28 - 19 -

9%

36

9 +50 R 27° 20'

10 Δ R 27° 29'

+50 L 18° 00'

+75 Δ L 18° 11'

11 R 15° 00'

+50 R 15°

12 R 15°

+50 Δ R 15°

13 R 15° 40'

+50 R 13°

14 R 11°

+50 R 11° 15'

15 R 8°

+20 Δ R 6° 45'

076 30W

508° W

572° 15' W

579° 45' W

38

Continued from Page 32

176+07.7 Δ L 69°52'

S 77°22' E

S 7°30' E 102.7

175+05 Δ L 77°26'

S 69°56' W 33.9.5

171+65.5 Δ R 30°54'123.5
S 39°02' W 123.8170+41.7 Δ L 18°39'

S 57°41' W 171.9

168+69.8 Δ R 40°28'

100.0

167+69.8 Δ L 46°39'

N 86° E

S 23°30' E

S 54° W

S 25° W

S 41°30' W

40

183+63.9 Δ L 30° 52'

S 62° 09' W

N 86° 52' W 109.7

192+59.2 Δ R 46° 56'

S 46° 05' W 257.1

179+97.1 Δ R 61° 39'

S 15° 34' E 94.2

179+12.9 Δ B 43° 40'

S 39° 14' E 115.2

177+97.7 Δ R 18° 08'

190.0

176+07.7

S 12° W

S 72° W

S 20° W

M. 2x. 10. 10. 10.

S 31° 35' E

S 75° E

42

191+87.9 ΔR 65°47'

N76°33'W

537°40'W 190.3

189+97.6 ΔL 34°11'

S71°51'W 123.8

188+71.8 ΔR 64°48'

S7°03'W 137.8

187+84 ΔL 31°16'

S38°19'W 161.3

185+72.9 ΔL 23°58'

208.8

3
186+63.9

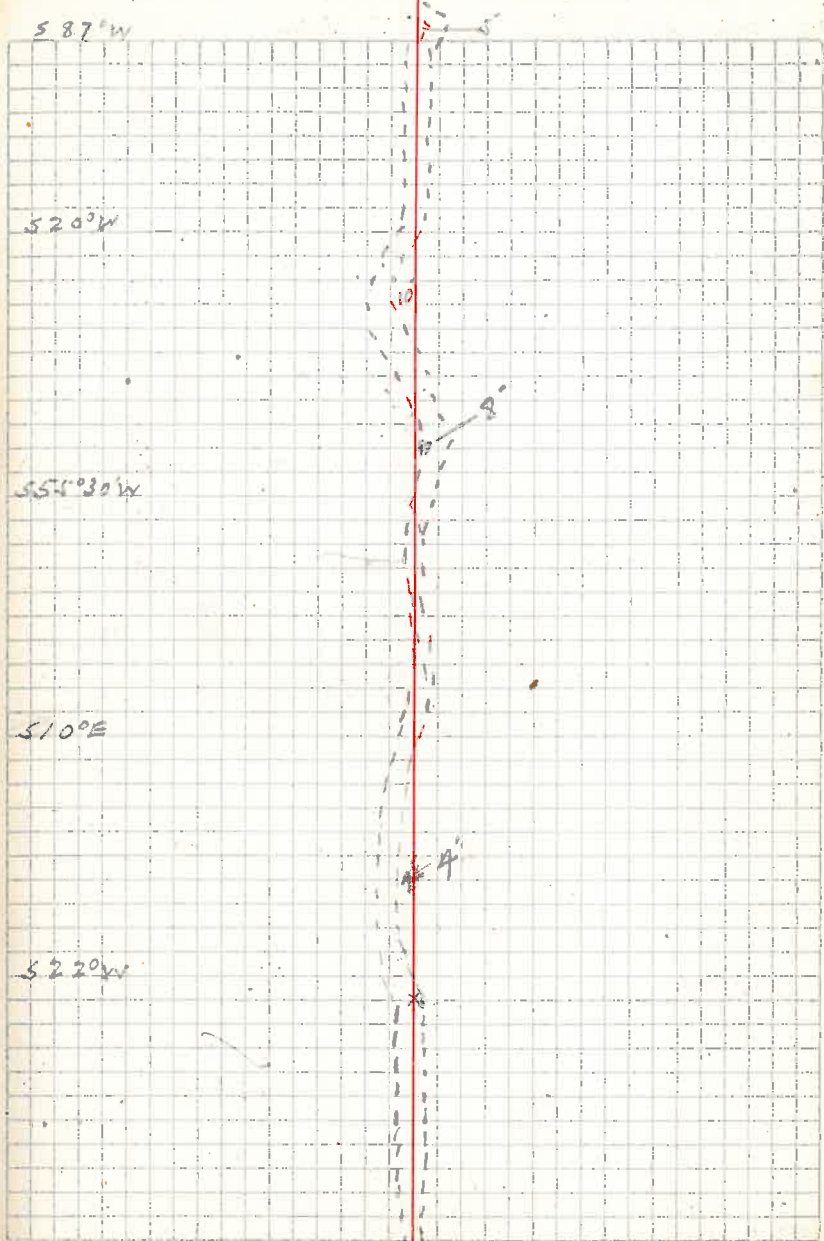
S 87°W

S 20°W

S 54°30'W

S 10°E

S 22°W



44

197+19 $\Delta R 84^{\circ} 57'$

$S 77^{\circ} 39' W$

$S 7^{\circ} 18' E$ 72.8

196+46.3 $\Delta L 27^{\circ} 11'$

$S 19^{\circ} 58' W$ 135.3

195+19.9 $\Delta L 66^{\circ} 21'$

$S 86^{\circ} 14' W$ 87.7

194+23.2 $\Delta R 57^{\circ} 30'$

$S 28^{\circ} 44' W$ 106.4

193+17.8 $\Delta L 74^{\circ} 43'$

129.9

191+87.9

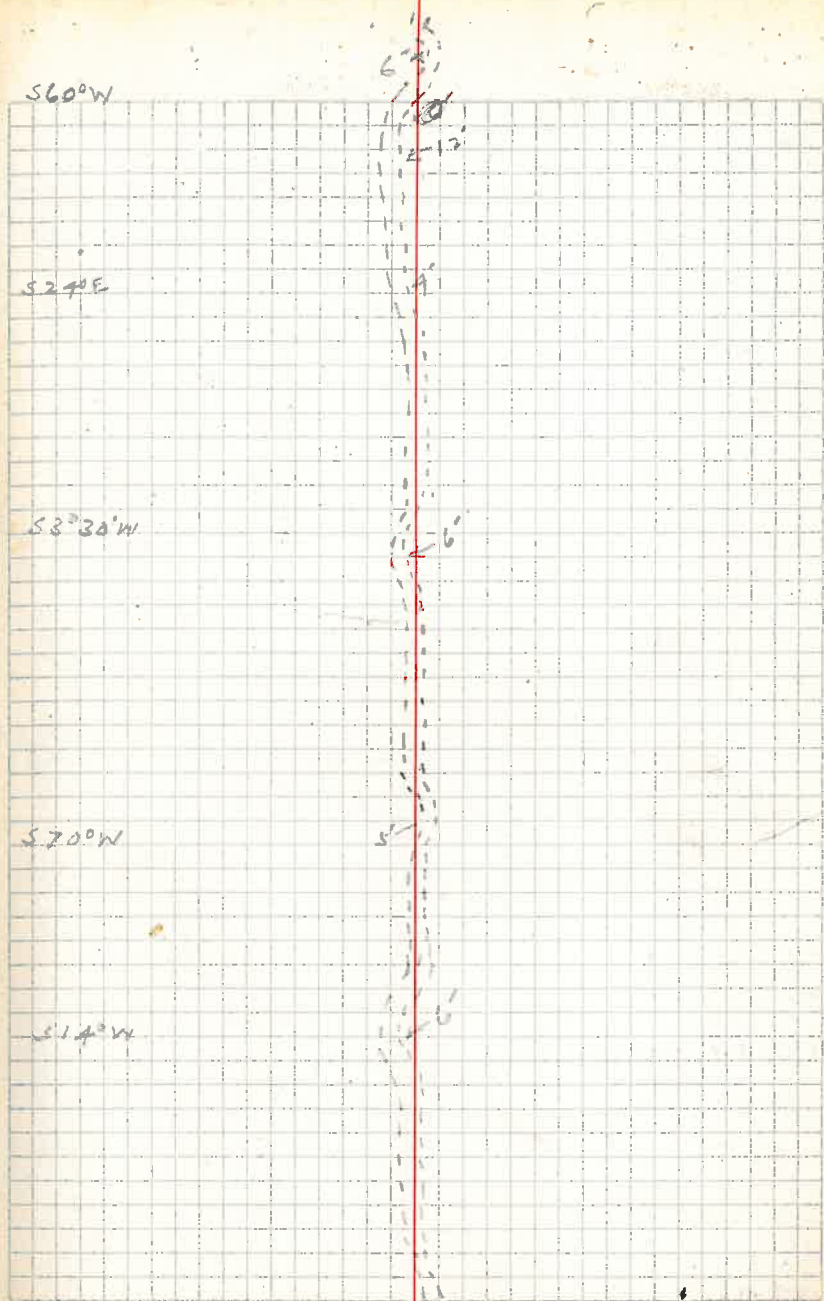
$S 60^{\circ} W$

$S 24^{\circ} E$

$S 8^{\circ} 30' W$

$S 70^{\circ} W$

$S 14^{\circ} W$



46

203+16.2 Δ L 27° 32'

S 57° 23' W

S 78° 55' W 81.3

202+39.9 Δ R 71° 45'

S 37° 10' W 62.0

201+72.9 Δ L 37° 06'

S 74° 16' W 112.9

200+60 Δ L 19° 44'

N 86° 00' W 112.5

199+47.5 Δ R 16° 21'

228.5

197+19

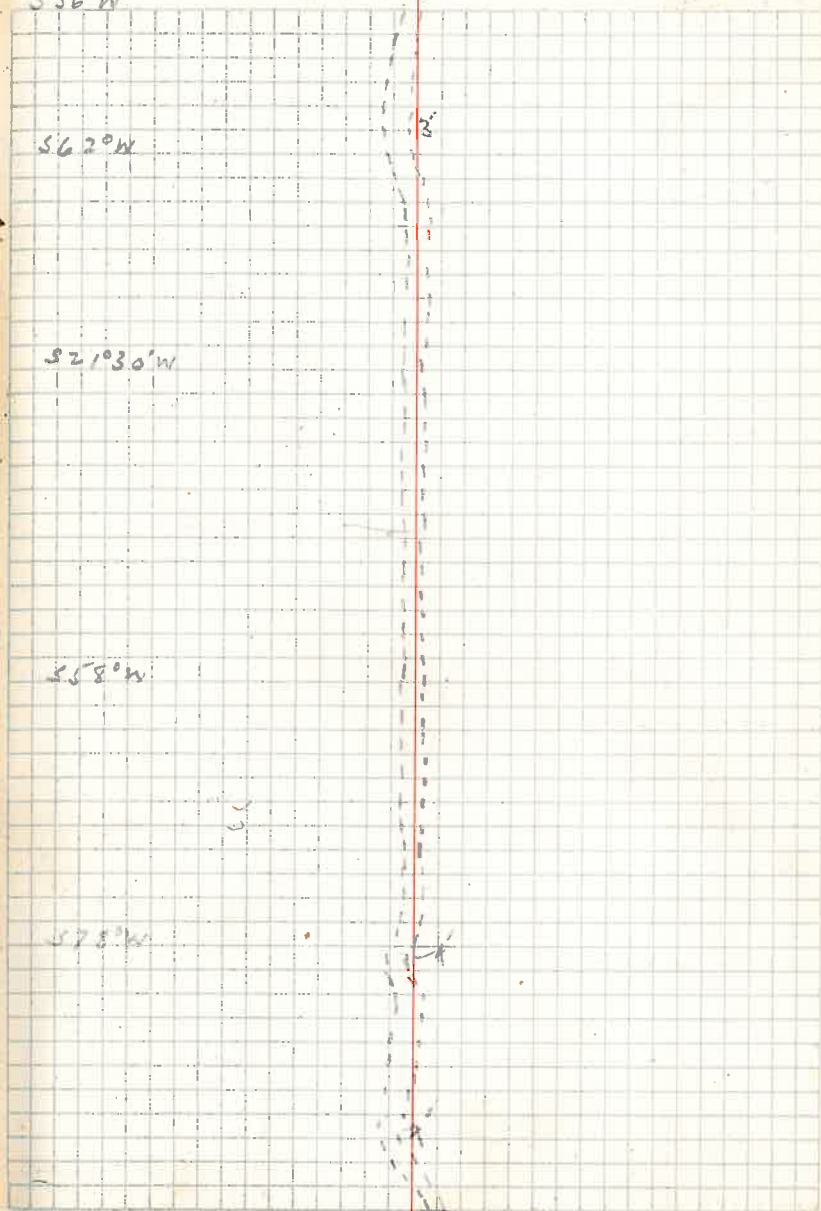
S 36° W

S 62° W

S 21° 30' W

S 58° W

S 75° W



48

209+56.3 Δ L30°57'

N68°37'W

N37°40'W 130.2

208+26.1 Δ R56°25'

S85°55'W 76.2

207+49.9 Δ R17°53'

S67°57'W 303.9

209+46 Δ L30°39'

N81°24'W 70.3

203+75.7 Δ R47°13'

59.5

203+16.2

N85°W

N53°W

S70°W

S52°W

S82°W

50

217+36.9 Δ L26°08'

N75°55'W

N49°42'W / 30

216+06.9 Δ R10°55'

N60°37'W / 20

214+86.9 Δ L11°56'

N48°41'W / 37.8

213+49.1 Δ R47°50'

S53°29'W 94.2

212+54.9 Δ L27°54'

298.6

209+56.3

S 87°W

N65°W

N77°W

N66°W

~~N66°W~~

52

223+61.1 $\Delta R 47^{\circ} 57'$

9.0

223+66.1 $\Delta L 35^{\circ} 55'$

$S 56^{\circ} 48' W$ 256.6

220+49.6 $\Delta L 69^{\circ} 39'$

$N 53^{\circ} 38' W$ 83.2

219+66.4 $\Delta L 40^{\circ} 46'$

$N 12^{\circ} 52' W$ 120

218+46.4 $\Delta R 62^{\circ} 58'$

109.5

217+36.9

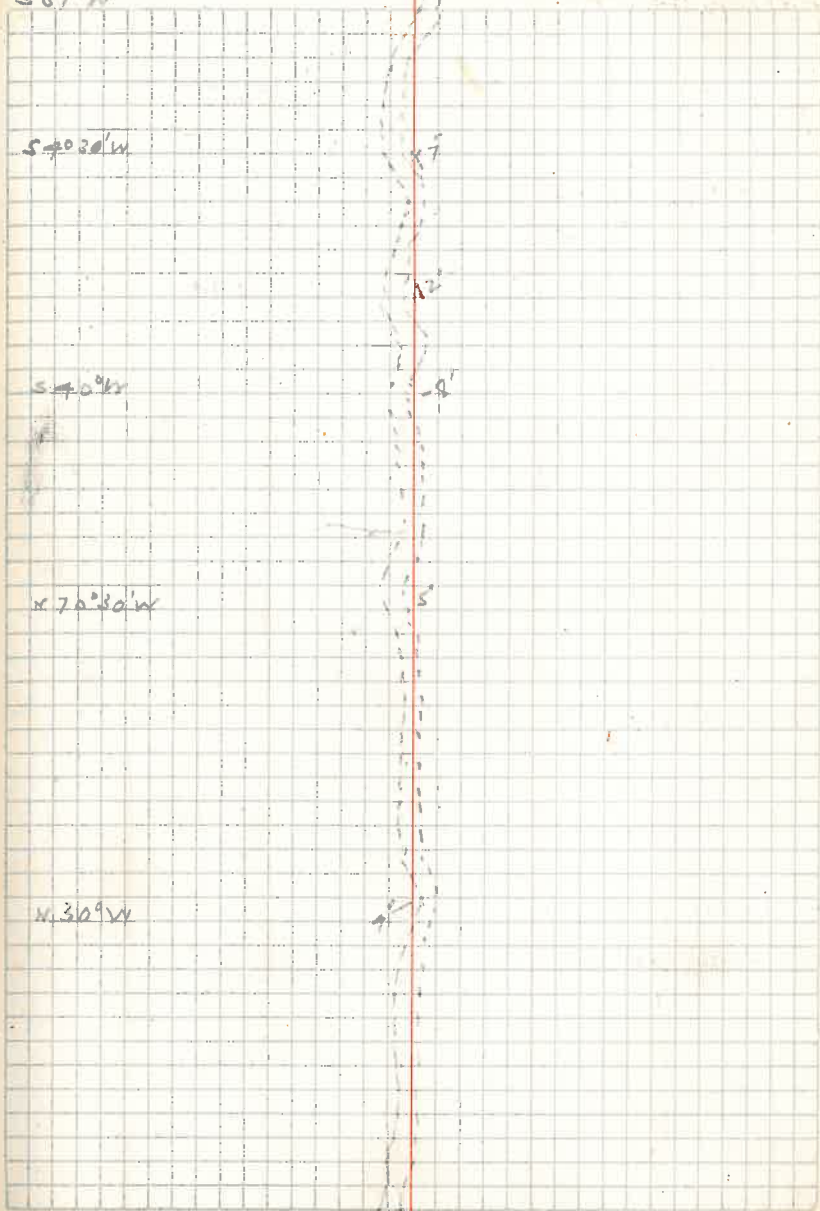
$S 57^{\circ} 0' W$

$S 70^{\circ} 30' W$

$S 70^{\circ} 0' W$

$N 70^{\circ} 30' W$

$N 30^{\circ} 0' W$



56

236+79.7 DR 29°00'

146.1

235+73.6 DR 30°56'

71.7

234+61.9 DR 30°52'

131.2

233+30.7 DR 28°00'

177.0

231+53.7 DR 62°08'

85.5

230+68.2

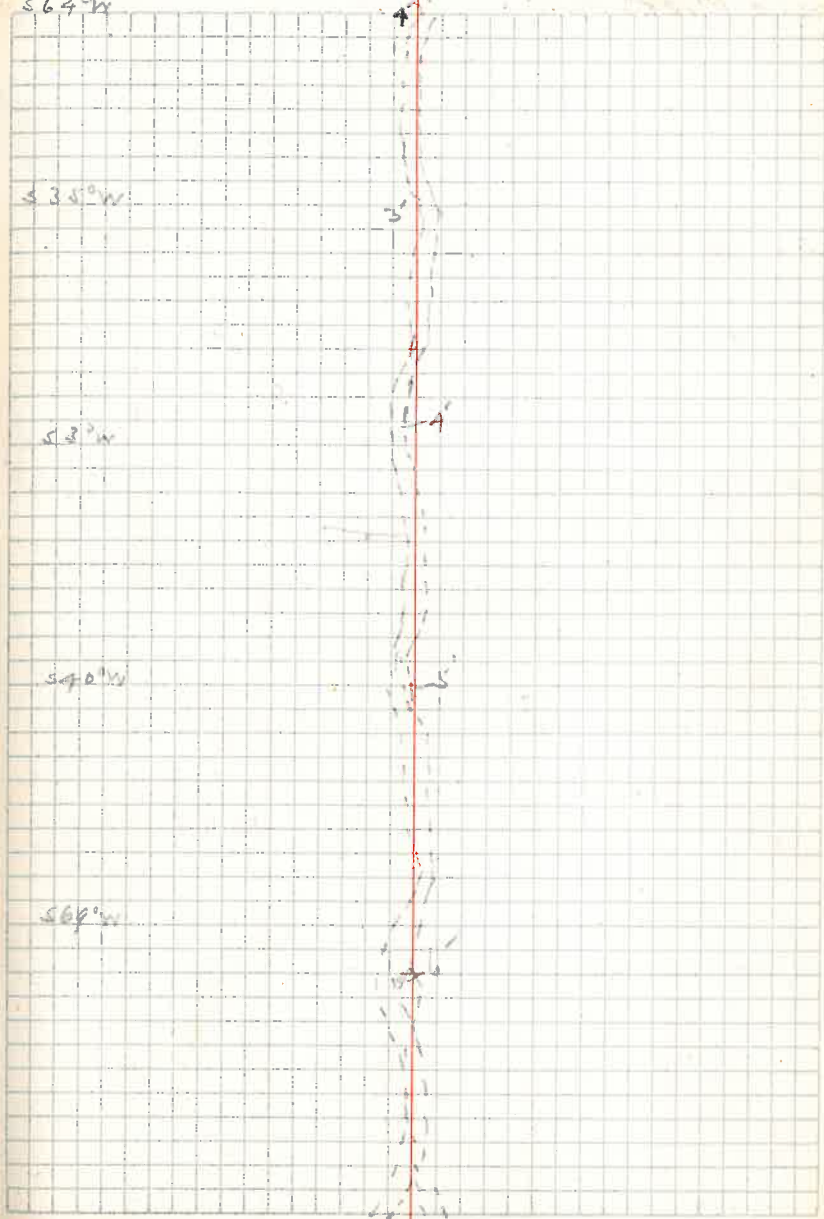
564°W

535°W

523°W

540°W

564°W



58

245 + 87. ΔR 35° 21'

351.1

242 + 35.9 ΔL 22° 38'

157.0

240 + 81.9 ΔL 65° 22'

133.5

238 + 98.4 ΔL 49° 34'

104.3

237 + 94.1 ΔR 41° 17'

114.4

236 + 79.7

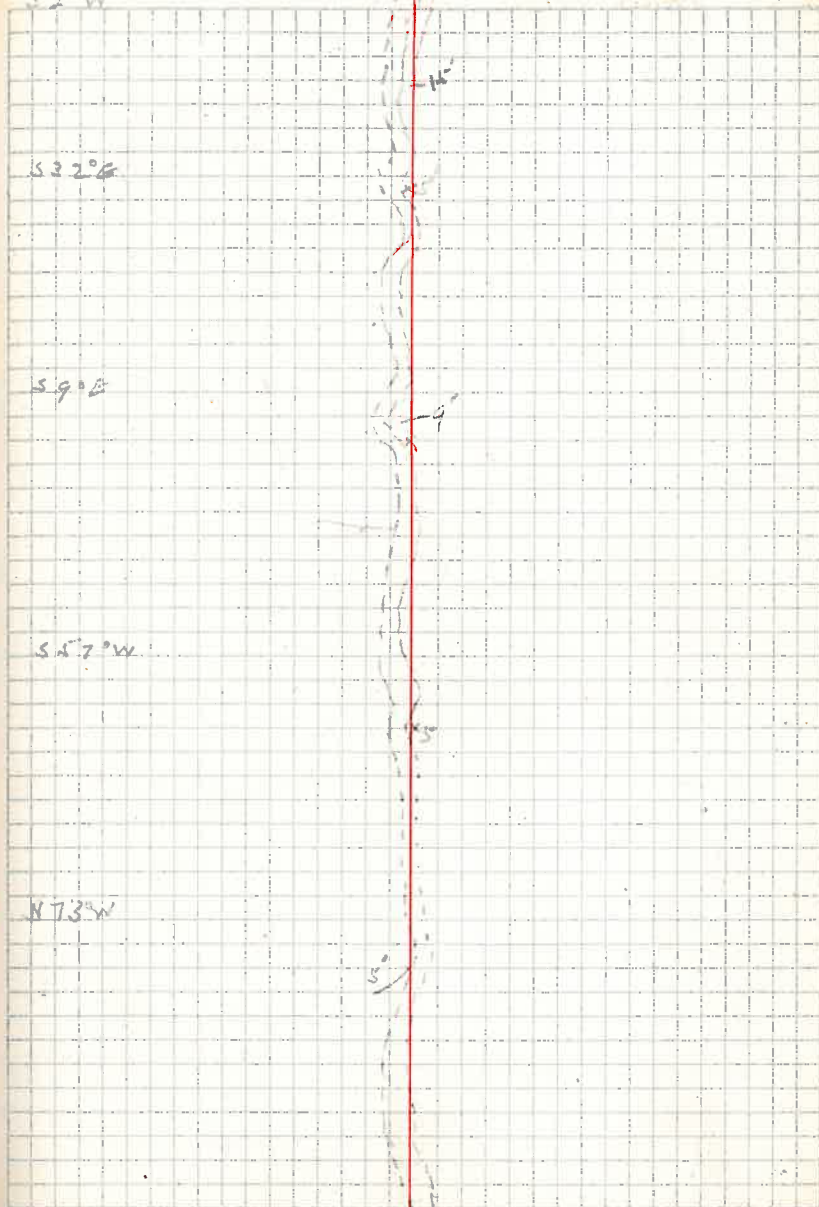
S 2° W

S 32° E

S 9° E

S 57° W

N 73° W



62

264 + 61.8 ΔL 99°24'

460.6

260 + 01.3 ΔL 11°41'

256.5

257 + 14.5 ΔL 43°09'

194.9

255 + 19.9 ΔL 23°46'

96.2

264 + 33.9 ΔL 86°39'

120.0

253 + 13.7

S 89°30' E

S 10° W

S 22° W

S 64° W

S 59° W

CAMP

26100

W. S. E. A. G. H. C. H.

64

S74°28'W

275 + 27.8 Δ R100°16'

397

271 + 30.8 Δ L84°34'

163.6

269 + 67.2 Δ R97°21'

122.1

268 + 45.1 Δ L61°22'

163.9

266 + 81.2 Δ R95°06'

219.4

264 + 61.8

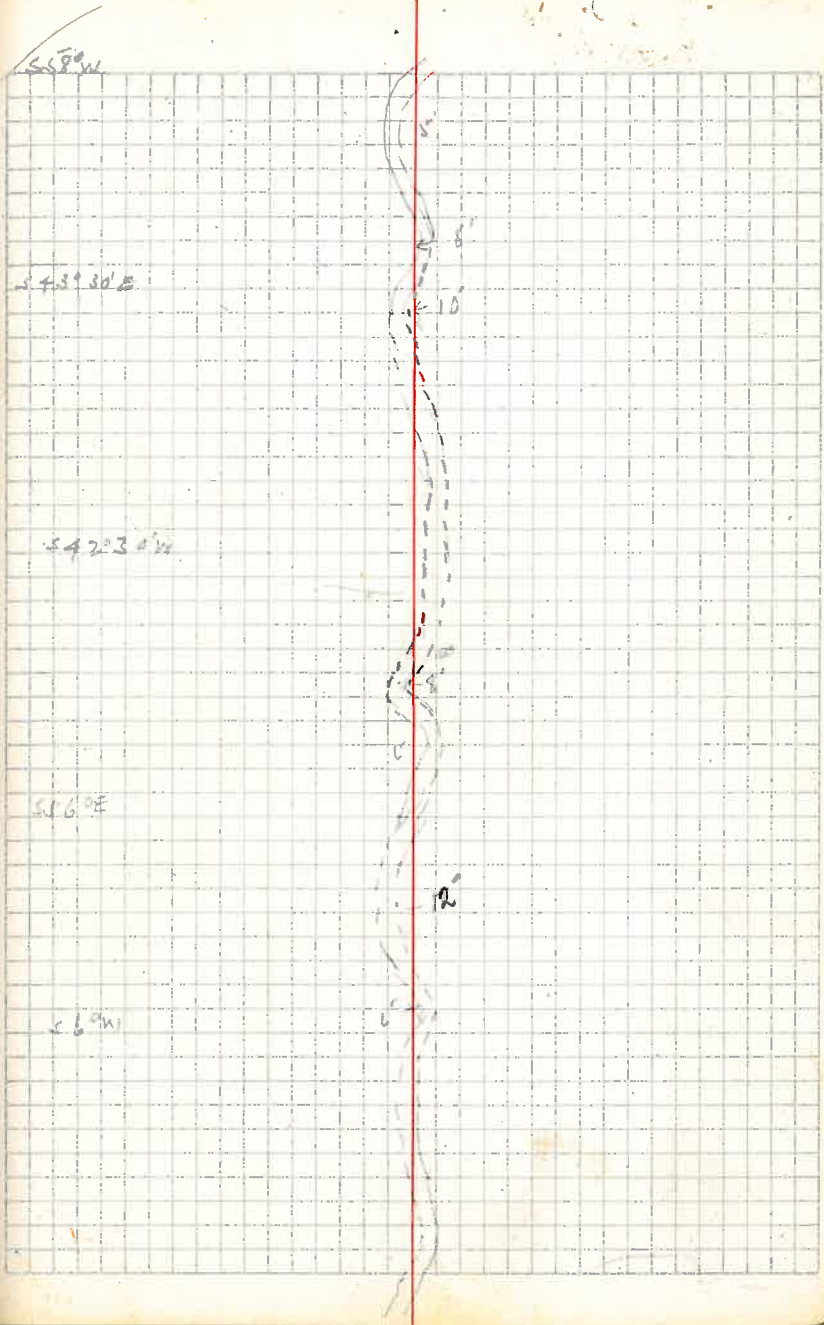
S68°W

S43°30'E

S42°30'W

S66°E

S6°W



66

285+19.1 $\Delta R 112^{\circ} 20'$

265

282+53 $\Delta R 19^{\circ} 37'$

192

280+61.1 $\Delta L 83^{\circ} 57'$

196

278+65.1 $\Delta R 61^{\circ} 57'$

161

277+09.1 $\Delta L 78^{\circ} 49'$

176.3

275+27.5

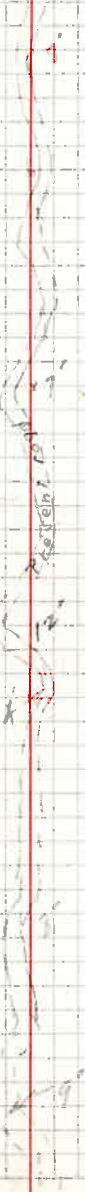
S89°W

← 23° E

S42°W

S45°W

← 21° E



68

295+61.2 $\Delta R 23^{\circ} 38'$

266.3

292+99.9 $\Delta R 24^{\circ} 21'$

227.3

290+87.6 $\Delta R 25^{\circ} 25'$

156.8

289+32.2 $\Delta R 34^{\circ} 06'$

128.9

288+03.2 $\Delta R 70^{\circ} 50'$

285.7

285+18.1

S 20° W

S 55° E

S 30° E

S 17° E

S 19° W

70

301 + 83.8 $\Delta R 69^{\circ} 29'$

49.1

301 + 34.4 $\Delta R 31^{\circ} 26'$

74.5

300 + 59.6 $\Delta R 38^{\circ} 21'$

169.3

298 + 90.3 $\Delta L 43^{\circ} 40'$

123.7

297 + 66.6 $\Delta L 55^{\circ} 18'$

205.4

295 + 61.2

S61°W

87

Small drainage

S10°E

83

S39°E

S79°E

EXISTING ROAD

S36°E

Young Hill Run

Friday July 25

72

308+24.7 Δ L28°05'

120

307+04.7 Δ L42°02'

101.8

306+02.9 Δ R76°03'

182.4

304+20.5 Δ L46°10'

175.0

302+45.5 Δ L25°52'

62.0

301+83.5

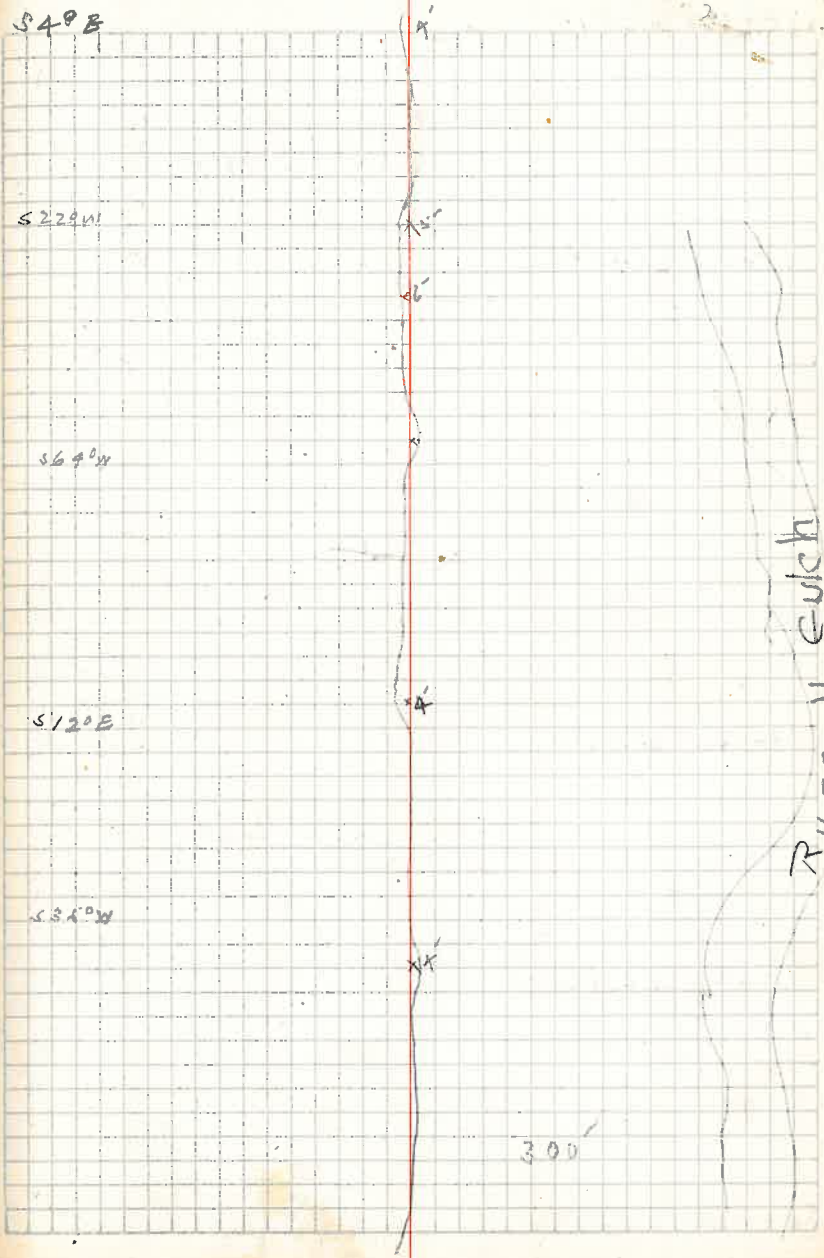
S40E

S22NW

S69W

S120E

S32°W



Russell Creek

300'

74

314+30.1 $\Delta L 3^{\circ} 19'$

87.6

313+42.5 $\Delta R 42^{\circ} 52'$

133.9

312+08.6 $\Delta R 27^{\circ} 49'$

232.5

309+76.1 $\Delta L 63^{\circ} 56'$

48.3

308+77.5 $\Delta R 34^{\circ} 20'$

53.1

308+24.7 ~~309+26~~

S 37° W

S 39° W

S 30° E

S 31° E

S 24° W



Russell Gulch

76

322+27.5 Δ L $74^{\circ}50'$

100.9

321+26.6 Δ R $49^{\circ}01'$

241.5

318+26.1 Δ L $38^{\circ}26'$

154.0

317+31.1 Δ R $55^{\circ}49'$

164.7

315+66.4 Δ L $44^{\circ}30'$

136.3

314+30.1 Δ

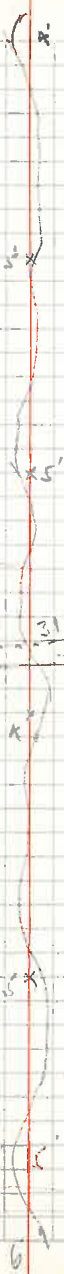
S 8° W

S $53^{\circ}30'$ W

S 14° W

S $48^{\circ}30'$ W

S $8^{\circ}30'$ E



Russell Gulch

78

327+68.7 Δ L 59° 09'

66.5

327+03.2 Δ L 36° 56'

85.5

326+17.4 Δ R 38° 08'

120.5

324+96.9 Δ L 64° 07'

139.5

323+57.4 Δ R 69° 30'

129.9

322+29.5

S 74° E

S 15° W

S 52° W

S 16° W

S 79° W

4'

2'

6'

5'

13'

11'

A

KA

750

500

400

500

24" pipe half filled with sand

80

334+98.0 ΔR 70° 01'

166.4

333+31.6 ΔR 28° 38'

143.3

331+88.3 ΔR 66° 28'

172.2

330+16.1 ΔR 50° 59'

138.3

328+77.9 ΔR 44° 20'

109.1

327+68.7

S 87° W

S 13° W

S 12° E

S 57° W

S 10° E

5'

3

Present road

4'

33'

200'

200'

500'

82

339+99.3 ΔR 64°51'

80.2

339+19.1 ΔL 53°16'

158.8

337+60.3 ΔL 78°31'

84

336+76.3 ΔR 43°07'

94.1

335+82.2 ΔL 52°44'

84.2

334+98

S 8°30' W

5.4'

21" Tip

S 4°1' E

3'

200'

3'

5'

S 4°2' E

4'

Present Road

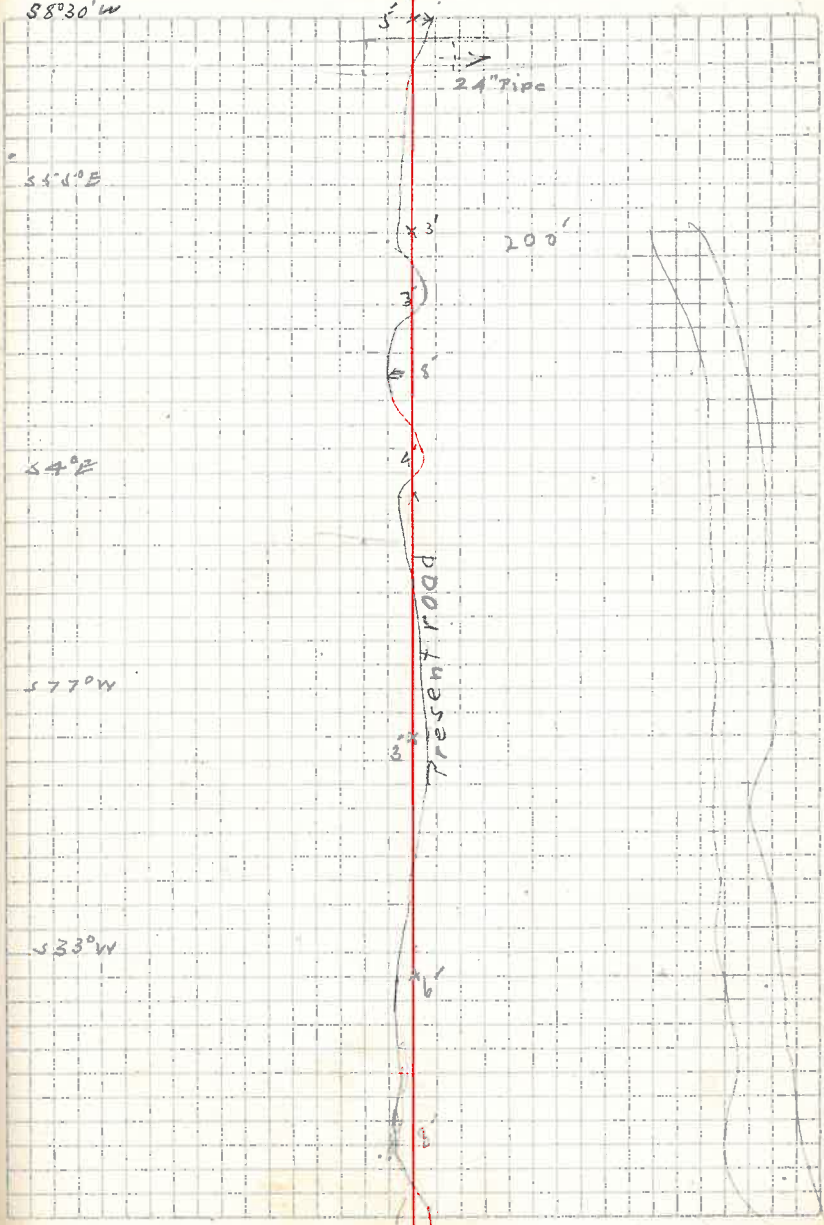
S 77° W

3'

S 33° W

6'

8'



84

346+53.3 Δ L 71°02'

64.2

345+89.1 Δ R 64°33'

153.6

344+35.6 Δ L 19°13'

94.2

343+41.4 Δ R 51°38'

210.3

341+31.1 Δ R 27°17'

131.8

339+99.3

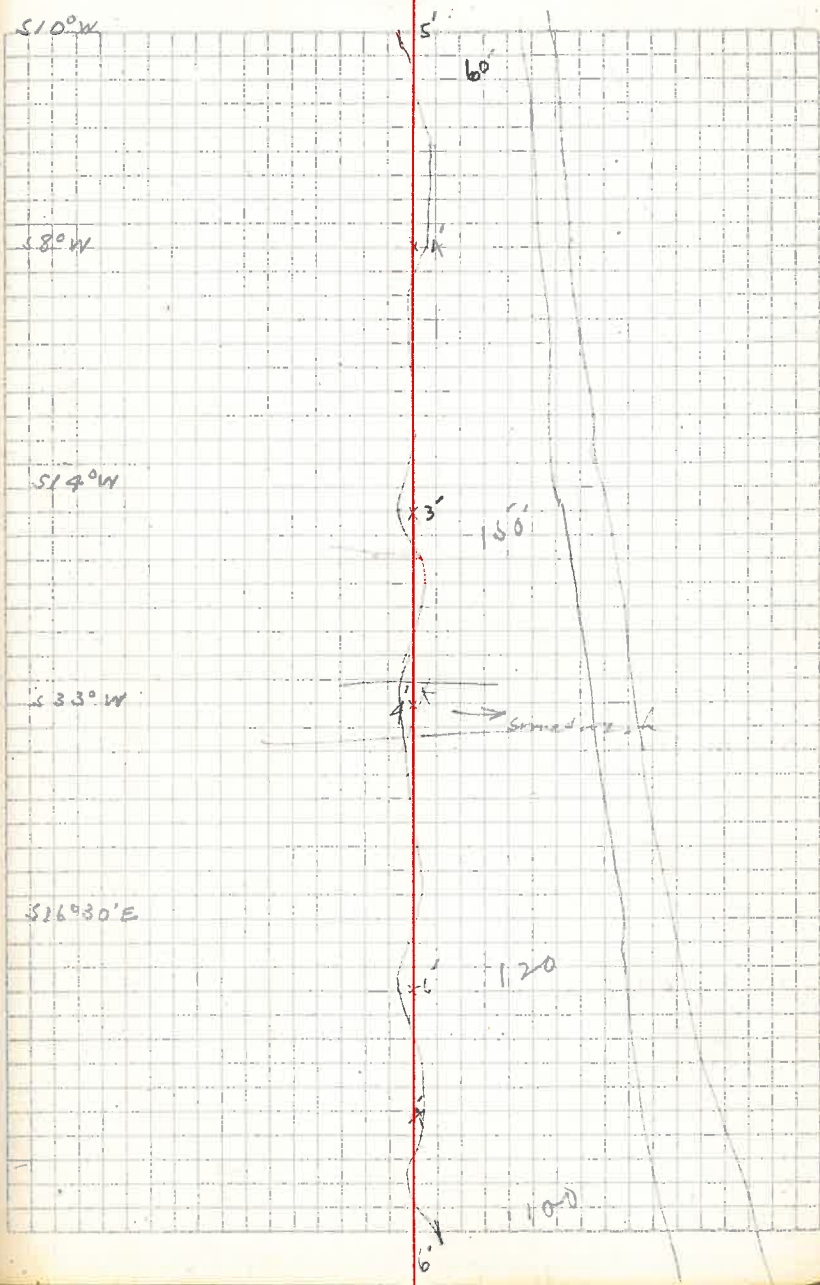
S 10° W

S 8° W

S 14° W

S 33° W

S 16° 30' E



86

353+35.2 ΔR 40°36'

172.2

351+63. ΔR 40°00'

165.3

349+97.7 ΔL 69°12'

103.7

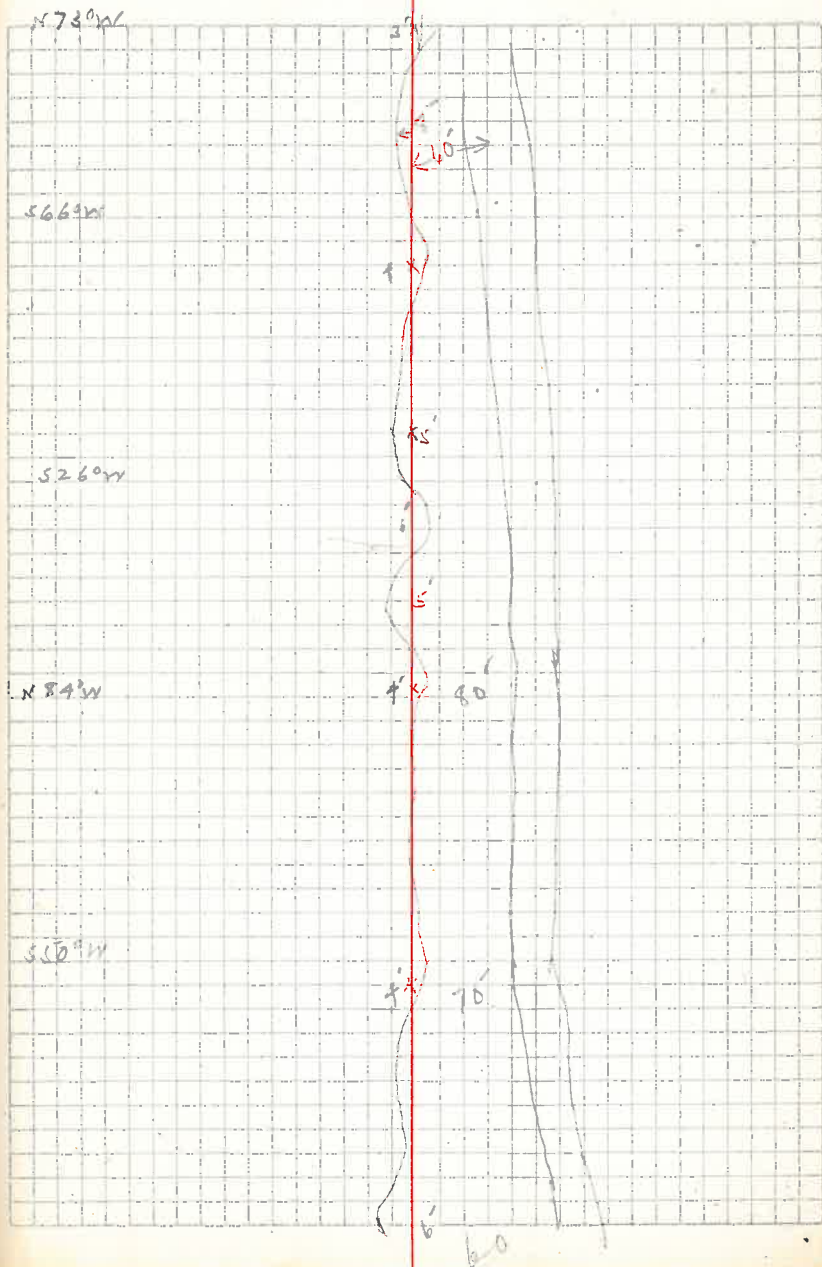
348+94 ΔR 44°10'

106.5

347+87.2 ΔR 42°09'

133.9

346+53.3



88

366+48.2 $\Delta R 8^{\circ} 04'$

175.7

364+72.5 $\Delta L 23^{\circ} 08'$

225.5

362+77.0 $\Delta R 9^{\circ} 39'$

696.0

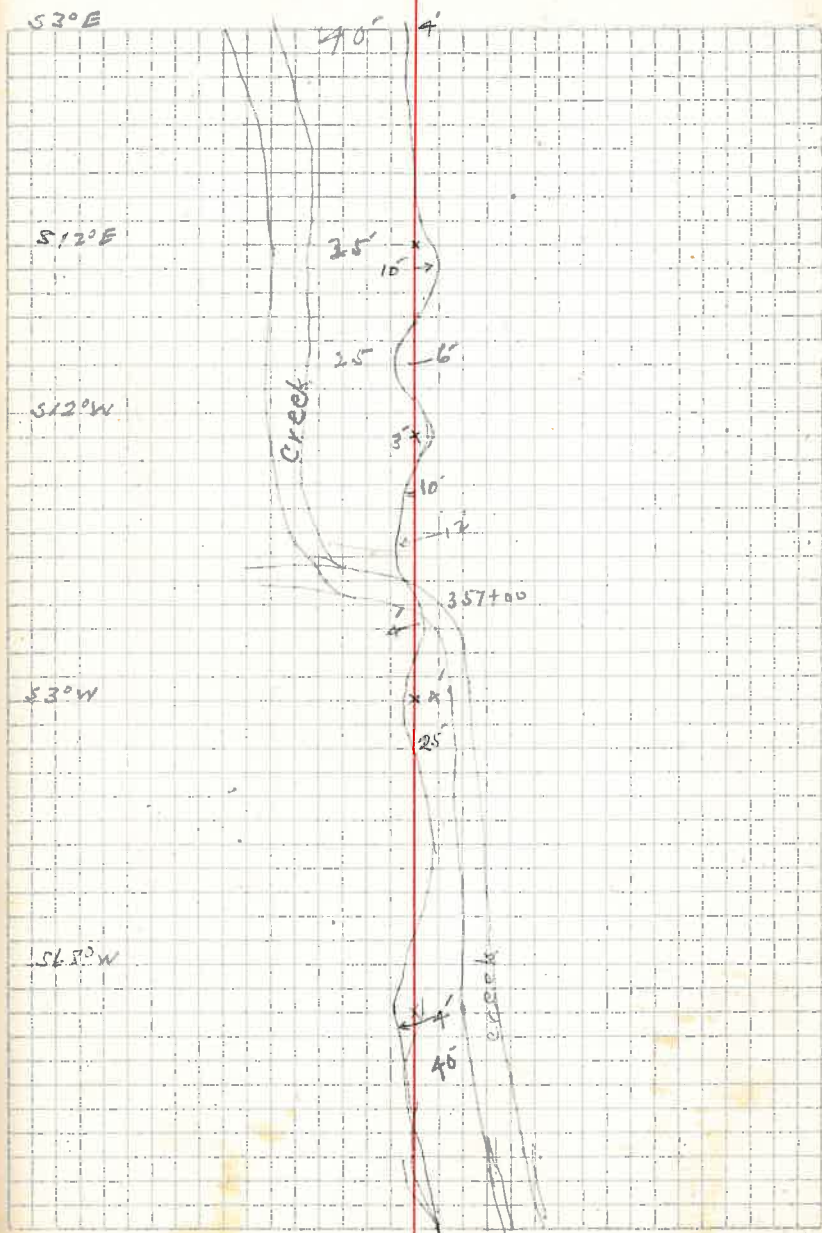
355+55.2 $\Delta L 65^{\circ} 29'$

94.2

354+57.8 $\Delta L 39^{\circ} 26'$

122.6

353+35.2



90

378 + 01.8 Δ L 33° 51'

227° 17' W

186

376 + 15.8 Δ R 41° 07'

85.1

375 + 30.7 Δ R 20° 52'

407.9

371 + 22 Δ L 32° 40'

320

368 + 02.8 Δ R 18° 45'

154.6

366 + 48.2

S 12° W

S 49° W

S 20° W

S 17° E

S 14° W

20' 20' →

30' 8"

25'

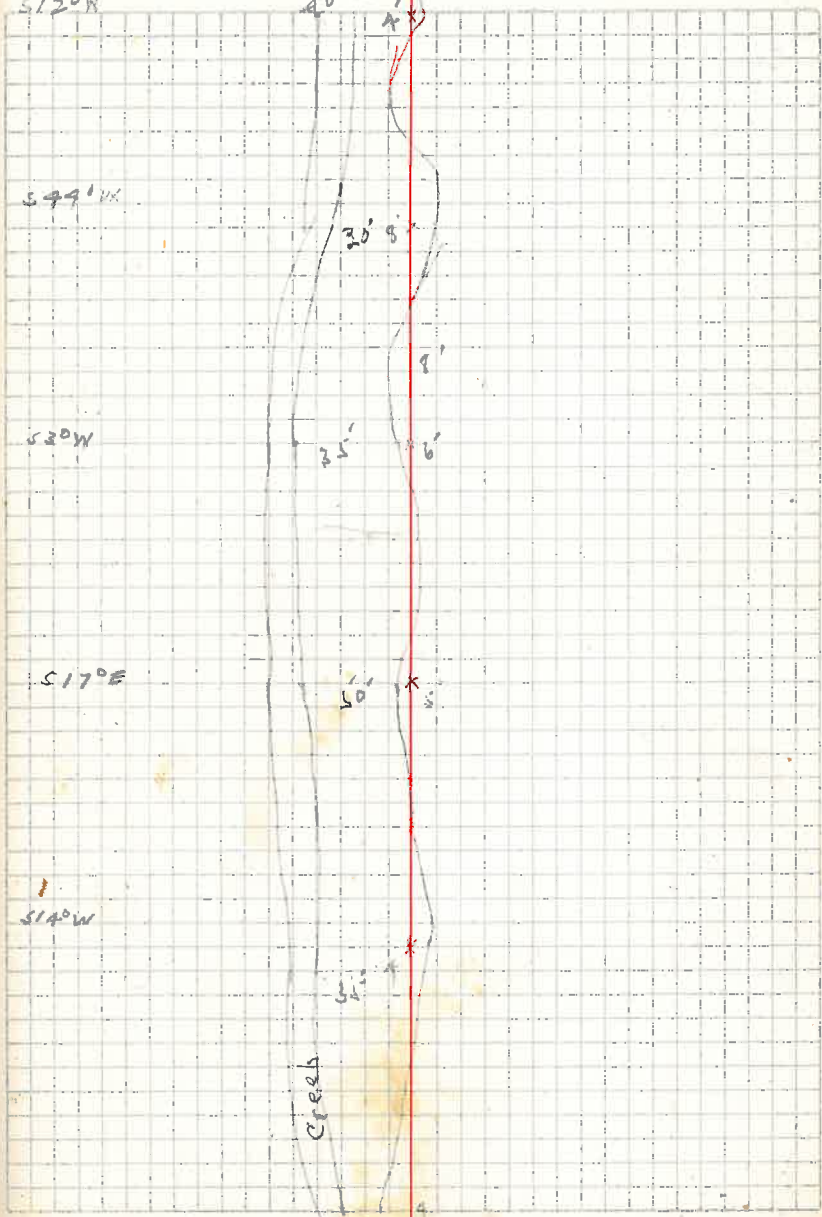
8'

6'

50' 10"

54'

Creek



92

384+90.5 Δ L 81° 01'

383+96.8 Δ R 60° 32'

382+67.3 Δ L 17° 58'
Canton

380+46.8 Δ L 25° 36'

379+69 Δ R 34° 14'

378+06.8

93.7

129.5

221

77.3

167.2

S 19° P

S 61° W

S 30° W

S 18° W

S 45° W

60'

S 6

40'

36'

8'

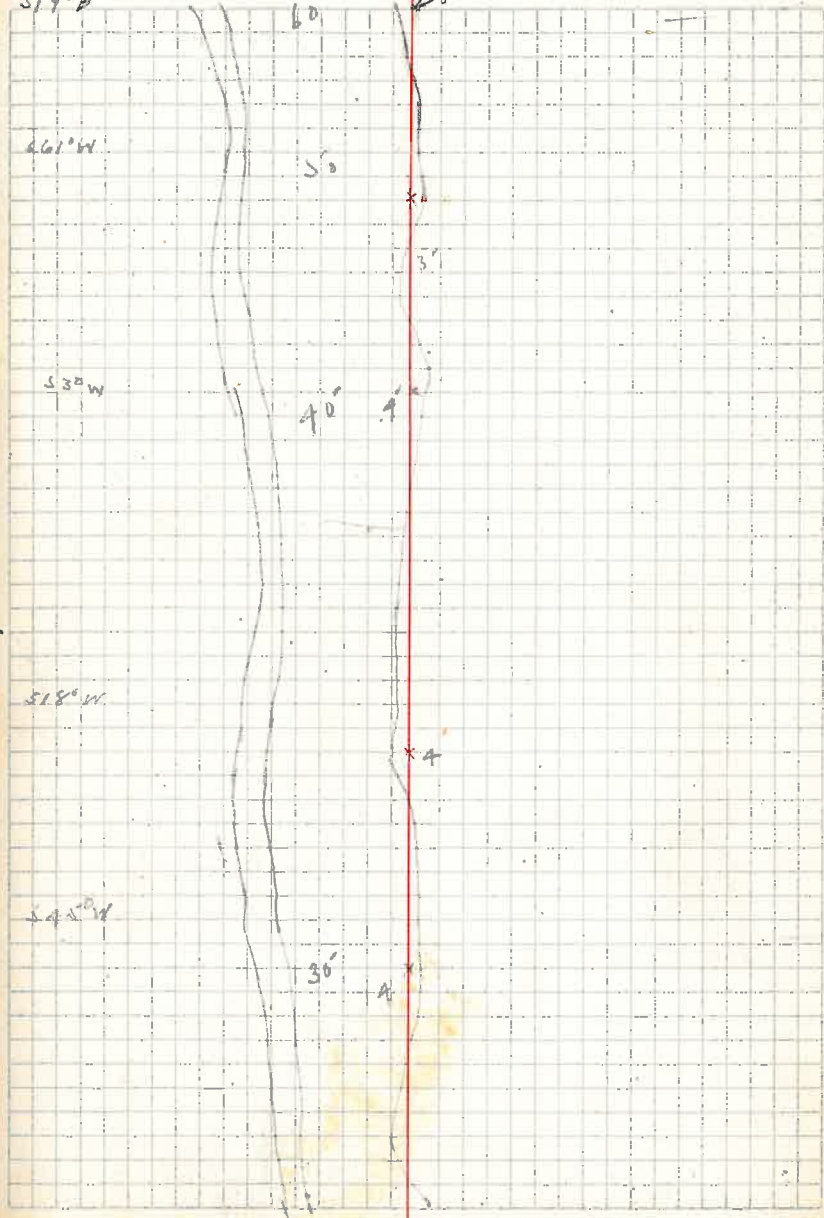
x 1

3'

x 4

A

24' P/P



94.

392 + 56.4 Δ L $104^{\circ}15'$

72.2

391 + 89.2 Δ R $40^{\circ}55'$

168.2

390 + 21 Δ R $29^{\circ}15'$

281

387 + 40. Δ L $27^{\circ}55'$

166.7

385 + 73.3 Δ R $42^{\circ}05'$

82.8

384 + 90.5 ~~80~~

S $40^{\circ}E$

100'

4'

S $65^{\circ}W$

5'

S $24^{\circ}W$

5'

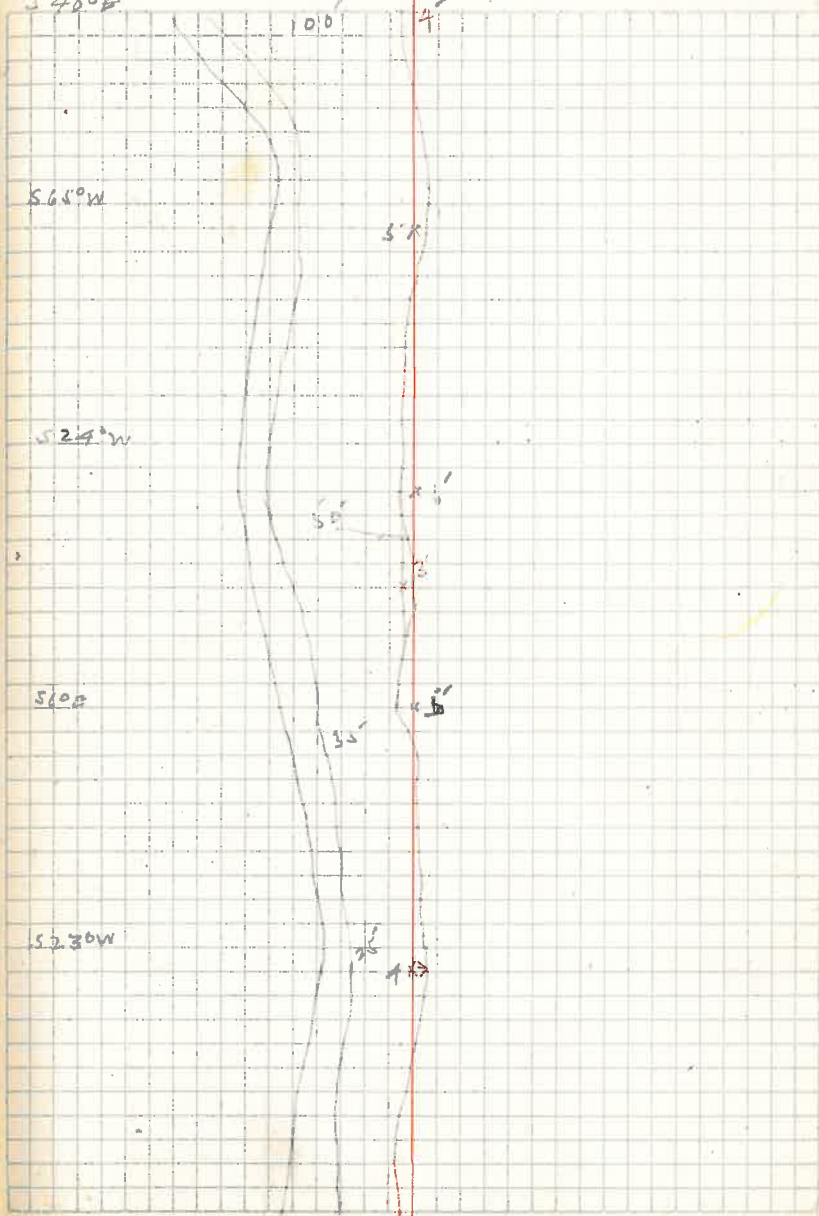
S $60^{\circ}E$

155'

S $23^{\circ}W$

4'

← 42° Dip



96

70.2 + 13.5 Δ L 23° 20'

177.4

400 + 16.1 Δ R 53° 32'

162

398 + 59.1 Δ L 44° 24'

120.6

397 + 33.5 Δ R 33° 22'

360.1

393 + 73.4 Δ R 42° 26'

117

392 + 56.4

S 22° W

60'

3'

S 46° W

60'

4'

S 7° E

80'

5'

S 26° W

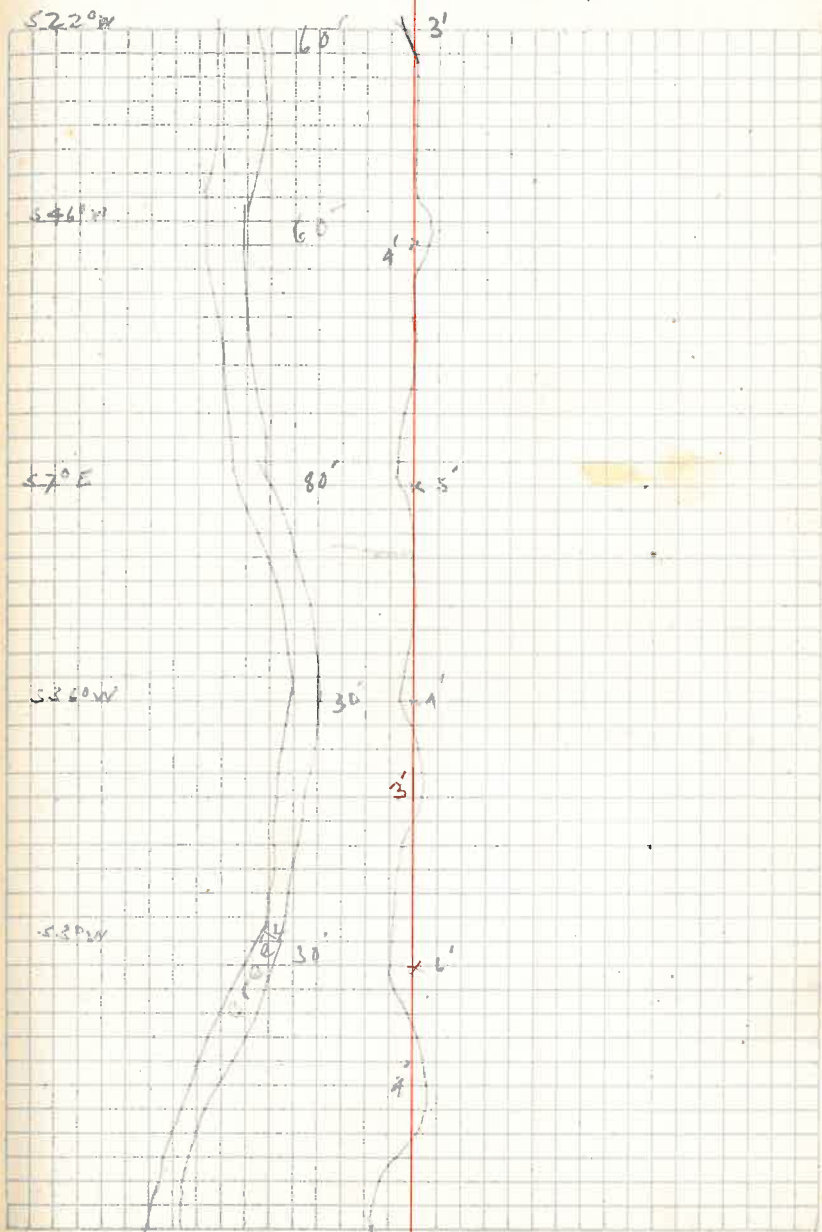
30'

1'

S 39° W

30'

6'



98

411+88.6 Δ L16°50'

197.0

409+88.6 Δ R8°50'

190.6

407+98.1 Δ R26°20'

286.8

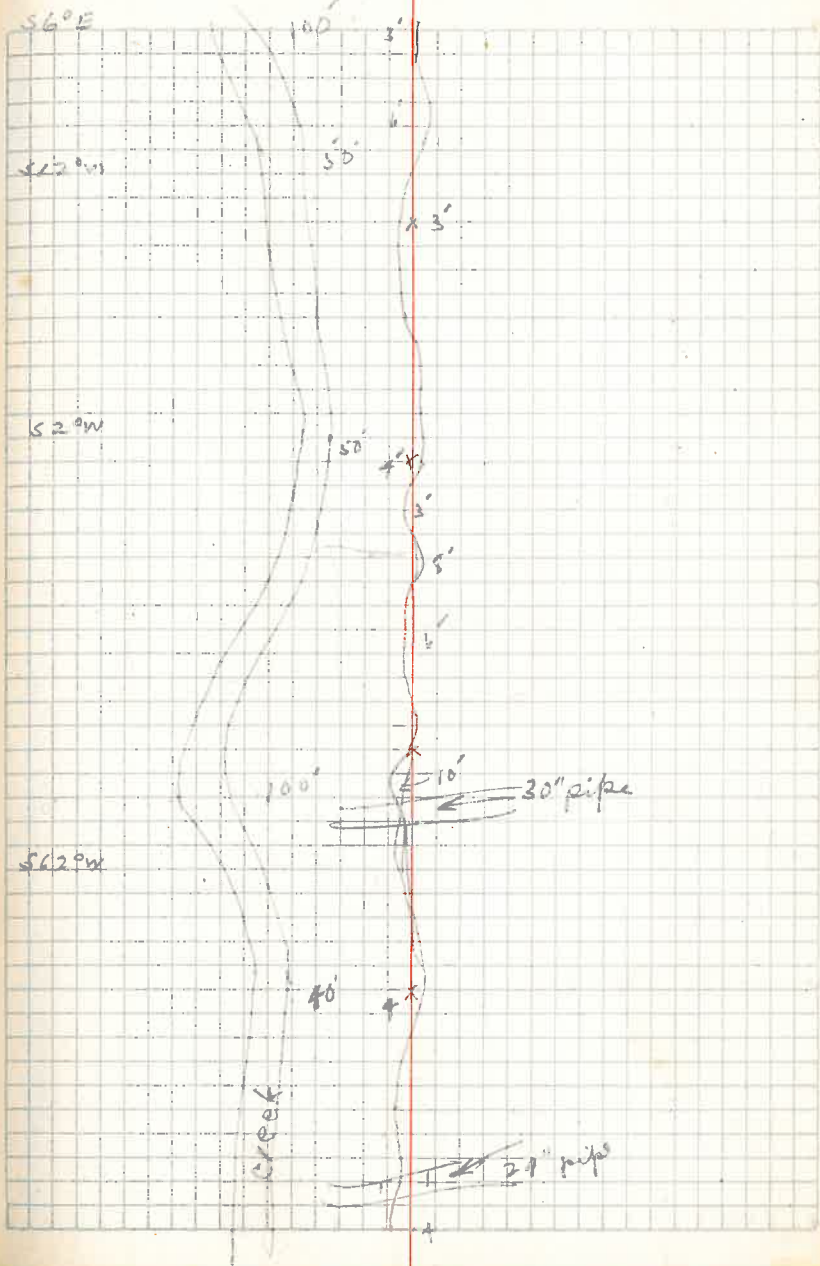
405+11.3 Δ L87°44'

160.3

403+51 Δ R41°21'

137.5

402+13.5



100

421 + 13.1 $\Delta R 15^{\circ} 51'$

167.9

419 + 46.4 $\Delta L 26^{\circ} 04'$

233

417 + 13.4 $\Delta R 4^{\circ} 48'$

105.3

416 + 08.1 $\Delta R 99^{\circ} 42'$

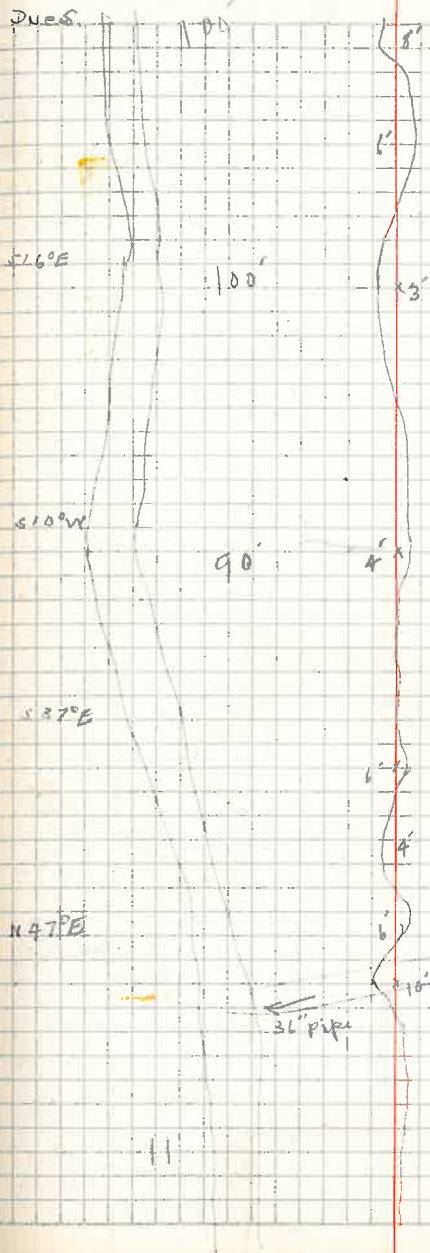
124.9

414 + 83.5 $\Delta L 125^{\circ} 05'$

297.6

411 + 85.6

Dues



102

421+41.7 ΔR13°15'

S. 70° 45' W

124

428+17.7 ΔR14°25'

147.0

426+70.7 ΔL86°10'

177.5

424+93.2 ΔR32°42'

154.4

423+38.5 ΔR64°13'

225.2

421+13.8

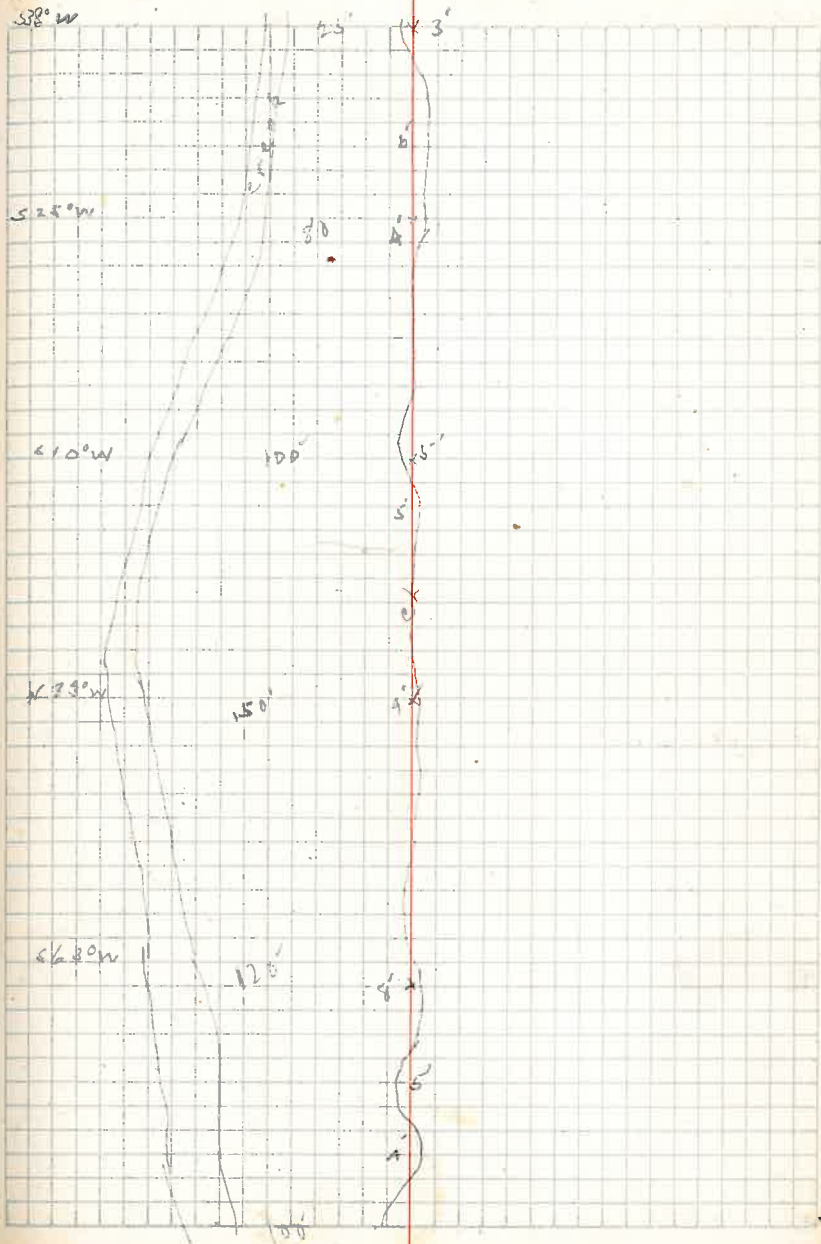
S 78° W

S 25° W

S 10° W

N 73° W

S 63° W



10.6

444+44.7 DR 66°53'

84.6

443+60.1 DL 46°30'

63.7

442+96.4 DL 50°20'

96.8

441+99.6 DR 39°30'

54.8

441+44.8 DL 20°34'

19.6

439+48.8

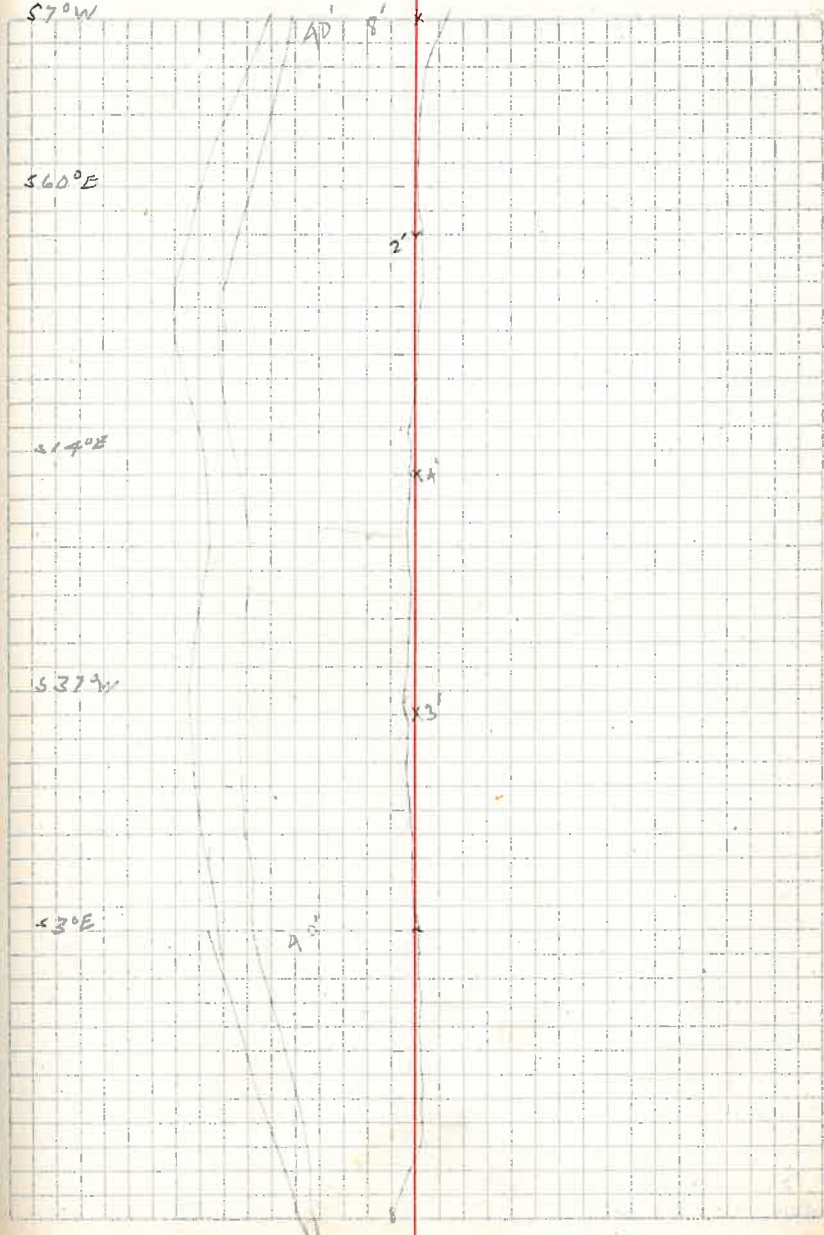
57°W

560°E

514°E

537°W

53°E



108

448+61.4 Δ L 90° 47'

78.6

447+82.8 Δ R 78° 06'

92.8

447+00 D L 19° 29'

113.4

445+86.6 Δ R 72° 51'

73.5

445+13.1 Δ L 51°

68.4

444+44.7

S 79° E

4' 100'

S 68° W

16'

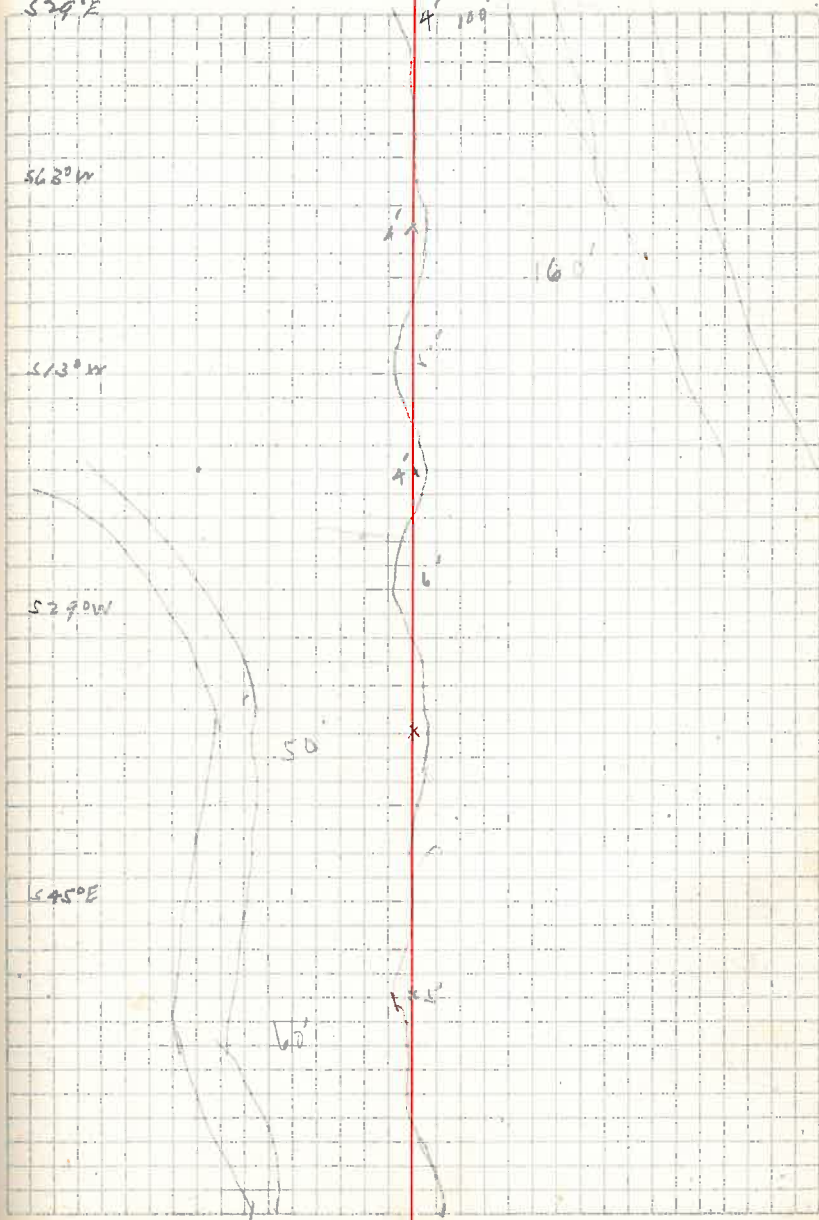
S 13° W

S 27° W

50'

S 45° E

60'



110

453+36.1 Δ 53°41'

58.5

452+77.6 Δ 57°41'

126.6

451+51.0 Δ 2°09'

113.8

450+37.2 Δ 52°16'

125.3

449+11.9 Δ 63°35'

50.5

448+61.4

537°E

x4'

520°W

x4'

538°E

540°E

579°E

x6'

112

458+91.4 End of line

133.9

457+57.5 $\Delta R 33^{\circ} 25'$

143.7

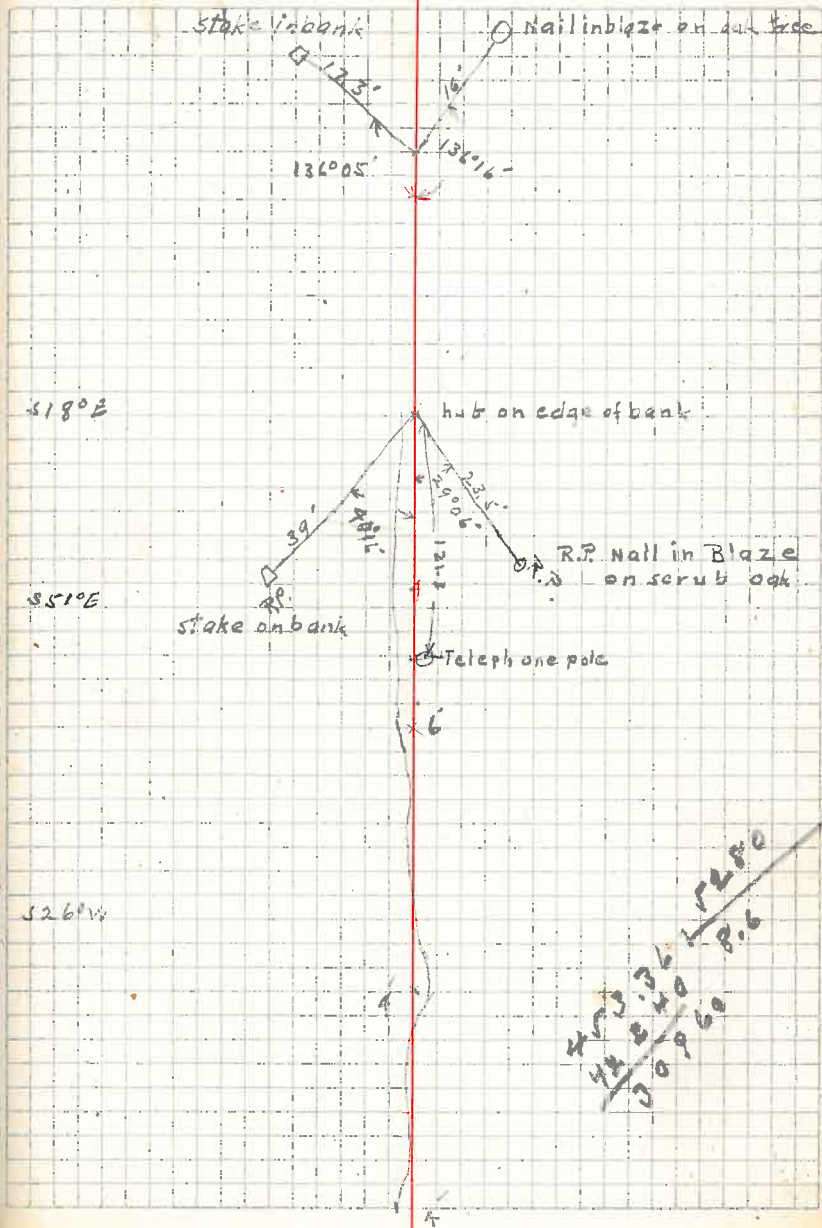
456+13.8 $\Delta L 78^{\circ} 42'$

209.2

454+066 $\Delta R 60^{\circ} 10'$

70.5

453+36.7



15 158

Direct ^{Solar} observation Aug 6th 1919

Time standard 4^h 07^m

aT B.S. Hor $\Delta R 55^{\circ} 30''$ V $\Delta 50^{\circ} 31''$
 84+75 87+85 R

#12

7^h 19^m p
 R 56° 34' 79° 08' 561° 30' W

Natural Trigonometrical Ratios.

Angle.	Sin.	Tan.	Sec.	Cosec.	Cotg.	Cosin.	Angle.	Sin.	Tan.	Sec.	Cosec.	Cotg.	Cosin.
0	0	0	1.	∞	∞	1.	90	0	0	1.	∞	∞	1.
10	.0029	.0029		343.8	343.8	1.	50	8	.1392	.1405	1.0098	7.185	7.115
20	.0058	.0058		171.9	171.9	.99998	40	10	.1421	.1435	1.0102	7.040	6.968
30	.0087	.0087		114.6	114.6	.99996	30	20	.1449	.1465	1.0107	6.900	6.827
40	.0116	.0116	1.0001	85.94	85.94	.99993	20	30	.1478	.1495	1.0111	6.766	6.691
50	.0145	.0145	1.0001	68.76	68.75	.99989	10	40	.1507	.1524	1.0115	6.636	6.561
1	.0175	.0175	1.0002	57.30	57.29	.99985	89	50	.1536	.1554	1.0120	6.512	6.435
10	.0204	.0204	1.0002	49.11	49.10	.99979	50	8	.1564	.1584	1.0125	6.394	6.314
20	.0233	.0233	1.0003	42.98	42.96	.99973	40	10	.1593	.1614	1.0129	6.277	6.197
30	.0262	.0262	1.0003	38.20	38.19	.99966	30	20	.1622	.1644	1.0134	6.166	6.084
40	.0291	.0291	1.0004	34.38	34.37	.99958	20	30	.1650	.1673	1.0139	6.059	5.976
50	.0320	.0320	1.0003	31.26	31.24	.99949	10	40	.1679	.1703	1.0144	5.955	5.871
1	.0349	.0349	1.0006	28.65	28.64	.99939	88	50	.1708	.1733	1.0149	5.855	5.769
10	.0378	.0378	1.0007	26.45	26.43	.99929	50	8	.1736	.1763	1.0154	5.759	5.671
20	.0407	.0407	1.0008	24.56	24.54	.99917	40	10	.1765	.1793	1.0160	5.665	5.576
30	.0436	.0437	1.0010	22.93	22.90	.99905	30	20	.1794	.1823	1.0165	5.575	5.485
40	.0465	.0466	1.0011	21.49	21.47	.99892	20	30	.1822	.1853	1.0170	5.488	5.396
50	.0494	.0495	1.0012	20.23	20.21	.99878	10	40	.1851	.1883	1.0176	5.403	5.309
1	.0523	.0524	1.0014	19.11	19.08	.99863	87	50	.1880	.1914	1.0181	5.320	5.226
10	.0552	.0553	1.0015	18.10	18.07	.99847	50	8	.1908	.1944	1.0187	5.241	5.145
20	.0581	.0582	1.0017	17.20	17.17	.99831	40	10	.1937	.1974	1.0193	5.164	5.066
30	.0610	.0612	1.0019	16.38	16.35	.99813	30	20	.1965	.2004	1.0199	5.089	4.989
40	.0640	.0641	1.0020	15.64	15.60	.99795	20	30	.1994	.2035	1.0205	5.016	4.915
50	.0669	.0670	1.0022	14.96	14.92	.99776	10	40	.2022	.2065	1.0211	4.945	4.843
1	.0698	.0699	1.0024	14.34	14.30	.99756	86	50	.2051	.2095	1.0217	4.877	4.773
10	.0727	.0729	1.0027	13.76	13.73	.99736	50	8	.2079	.2126	1.0223	4.810	4.705
20	.0756	.0758	1.0029	13.23	13.20	.99714	40	10	.2108	.2156	1.0230	4.745	4.638
30	.0785	.0787	1.0031	12.75	12.71	.99692	30	20	.2136	.2186	1.0236	4.682	4.574
40	.0814	.0816	1.0033	12.29	12.25	.99668	20	30	.2164	.2217	1.0243	4.620	4.511
50	.0843	.0846	1.0036	11.87	11.83	.99644	10	40	.2193	.2247	1.0249	4.560	4.449
1	.0872	.0875	1.0038	11.47	11.43	.99619	85	50	.2221	.2278	1.0256	4.502	4.390
10	.0901	.0904	1.0041	11.10	11.06	.99594	50	8	.2250	.2309	1.0263	4.445	4.331
20	.0929	.0934	1.0043	10.76	10.71	.99567	40	10	.2278	.2339	1.0270	4.390	4.275
30	.0958	.0963	1.0046	10.43	10.39	.99540	30	20	.2306	.2370	1.0277	4.336	4.219
40	.0987	.0992	1.0049	10.13	10.08	.99511	20	30	.2334	.2401	1.0284	4.284	4.165
50	.1016	.1022	1.0052	9.839	9.788	.99482	10	40	.2363	.2432	1.0291	4.232	4.113
1	.1045	.1051	1.0055	9.567	9.514	.99452	84	50	.2391	.2462	1.0299	4.182	4.061
10	.1074	.1080	1.0058	9.309	9.255	.99421	50	8	.2419	.2493	1.0306	4.133	4.011
20	.1103	.1110	1.0061	9.065	9.010	.99390	40	10	.2447	.2524	1.0314	4.086	3.962
30	.1132	.1139	1.0065	8.834	8.777	.99357	30	20	.2476	.2555	1.0321	4.039	3.914
40	.1161	.1169	1.0068	8.614	8.556	.99324	20	30	.2504	.2586	1.0329	3.994	3.867
50	.1190	.1198	1.0072	8.405	8.345	.99290	10	40	.2532	.2617	1.0337	3.949	3.821
1	.1219	.1228	1.0075	8.206	8.144	.99255	83	50	.2560	.2648	1.0345	3.906	3.776
10	.1248	.1257	1.0079	8.016	7.953	.99219	50	8	.2588	.2679	1.0353	3.864	3.732
20	.1276	.1287	1.0082	7.834	7.770	.99182	40	10	.2616	.2711	1.0361	3.822	3.689
30	.1305	.1317	1.0086	7.661	7.596	.99144	30	20	.2644	.2742	1.0369	3.782	3.647
40	.1334	.1346	1.0090	7.496	7.429	.99106	20	30	.2672	.2773	1.0377	3.742	3.606
50	.1363	.1376	1.0094	7.337	7.269	.99067	10	40	.2700	.2805	1.0386	3.703	3.566
							82	50	.2728	.2836	1.0394	3.665	3.526

Cosin. Cotg. Cosec. Sec. Tan. Sin. Angle