

W560

Book # 560



LAY-OUT OF  
AXIS & ARC OF 150'  
CONSTANT ANGLE DAM  
FROM PAPER LOCATION

5/18/20

McCarty

See Level Notes  
for Profile.



2

McCarty-inst.  
Soper-hd-chain  
Webb-rear-chain  
Osborne-ax.

Sta.	Angle	Bear.	Dist
15+42 <sup>77</sup>			
15+28 <sup>30</sup>	P.O.T.		
11+23 <sup>00</sup>	P.O.T.		
10+08 <sup>00</sup>	P.O.T.		
		N70°30'E	652.77
8+90 <sup>00</sup>	32°30'L		
		S77°00'E	290.00
6+00	86°49'R		
5+20 <sup>35</sup>	P.O.T.		
		N16°11'E	600.00
0+00			

May 18 (P.M.)  
May 19 (A.M.)

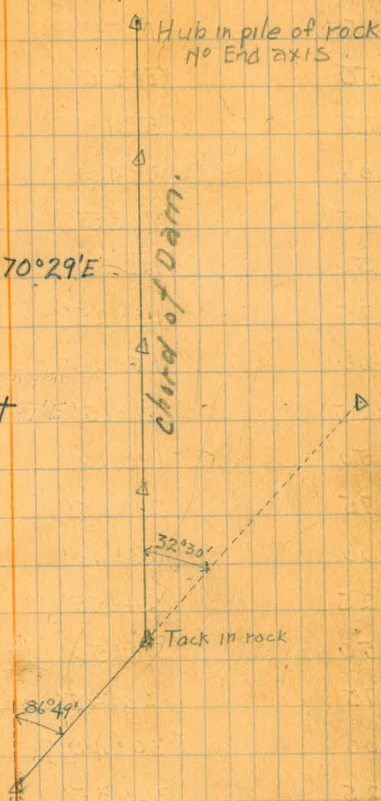
# Axis of Dam.

Solar gives bearing on axis  $N70^{\circ}29'E$

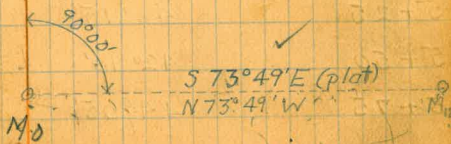
Temporary Transit point

South End Dam Axis

Solar gives bearing  $S77^{\circ}02'E$



Iron pin of  $M_0$  of  
Rectangular Co-ordinates





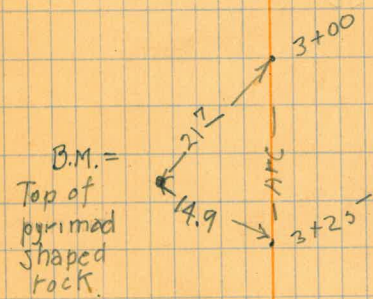
4

## Arch of Dam

May 19 (PM)  
May 20 (AM)

Sta	Deflection for 25' Chords	
0+00	0	Radius = 375'
0+25	1° 55'	Chord = 652.77
0+50	3° 50'	Length = 789.66
0+75	5° 45'	Central $\Delta = 121^\circ$
1+00	7° 40'	
1+25	9° 35'	
1+50	11° 30'	
1+75	13° 25'	
2+00	15° 20'	
2+25	17° 15'	
2+50	19° 10'	
2+75	21° 05'	
3+00	23° 00'	
3+25	24° 55'	
3+50	26° 50'	
3+75	28° 45'	
4+00	30° 40'	
4+25	32° 35'	
4+50	34° 30'	
4+75	36° 25'	
5+00	38° 20'	
5+25	40° 15'	
5+50	42° 10'	
5+75	44° 05'	

0+00 of Curve =  $15+42^{\frac{1}{2}}$  of traverse





6

## Arch of Dam

Sta.	Def.
6+00	46°00'
6+25	47°55'
6+50	49°50'
6+75	51°45'
7+00	53°40'
7+25	55°35'
7+50	57°30'
7+75	59°25'
7+89 <sup>66</sup>	60°30'

(11)

LOCATION OF BASE LINES  
ON AXIS OF 150' CONSTANT  
ANGLE DAM, MISCL  
TIES, & LOCATION & PROFILES  
OF SADDLES IN SANTA MARIA -  
SAN VICENTE DIVIDE

5/21/26

McCarty.



8

Base Lines

May 21

15+28<sup>30</sup> on Chord

10+08 on chord

(Angles to right from back tangent)

193°23'  
580°08'  
147°01"  
447°32'

199°27'  
590°21'

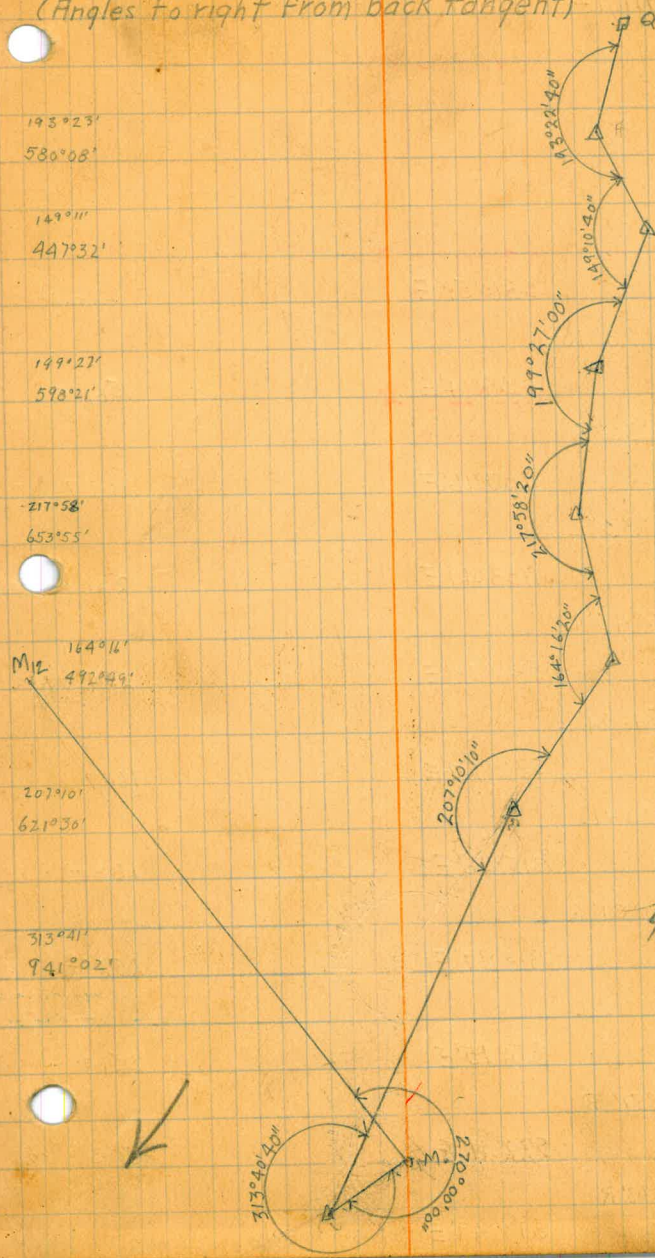
217°58'  
653°55'

M<sub>12</sub> 164°16'  
492°49'

207°10'  
621°30'

313°41'  
941°02'

Quarter Cor.



199  
265.85  
464.85





12

Traverse to Ranch House

May 21

Sta.	Angle	Bear.	Dist.
46+61 <sup>1</sup>		S86°51'E	206.0
44+55 <sup>1</sup>	1°23'R	S88°14'E	1561.4
28+93 <sup>7</sup>	8°30'R	N83°16'E	262.7
26+31 <sup>0</sup>	5°33'L	N88°49'E	241.8
23+69 <sup>2</sup>	4°43'L	S86°28'E	254.8
21+14 <sup>4</sup>	54°04'L	S32°24'E	161.7
19+52 <sup>7</sup>	17°08'L	S15°16'E	188.2
17+64 <sup>5</sup>	00°01'R	S15°17'E	256.5
15+08 <sup>0</sup>	10°02'L	S5°15'E	251.7
12+56 <sup>3</sup>	17°31'R	S22°46'E	56.5
12+00	51°03'R	S73°49'E	(BS. on Ma)

(Deflection angles)

South West Corner of Ranch House

12+00 from M<sub>0</sub>

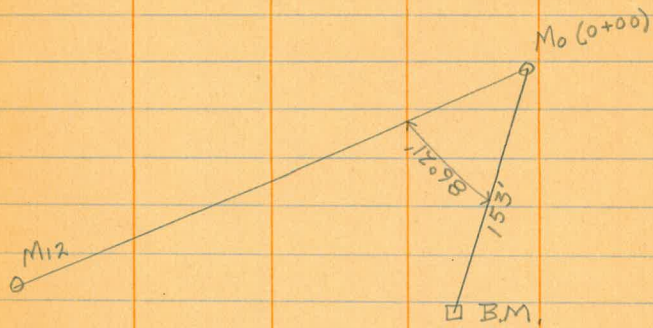
① M<sub>12</sub> iron pin

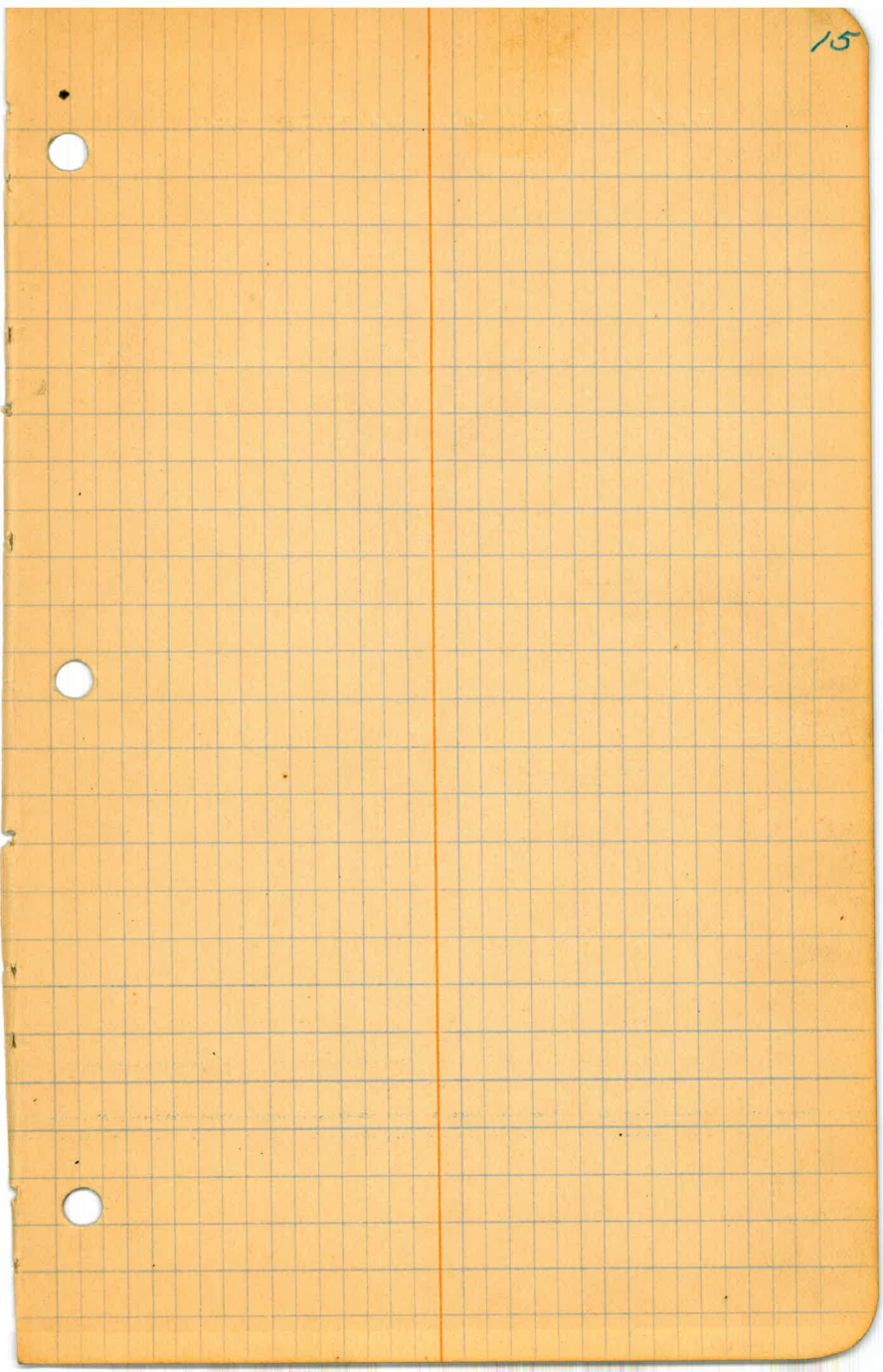


17

May 21

Tie to B.M. on traverse from  
 $M_0$ , in saddle near road





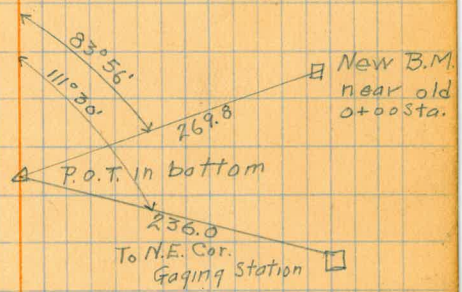


16

Tie to new Bench Mark and Gauge Station

7+59.56

0+00

$\odot M_{12}$  (Iron Pin)S  $73^{\circ}49'$  E $\odot M_0$  (Iron Pin)



18

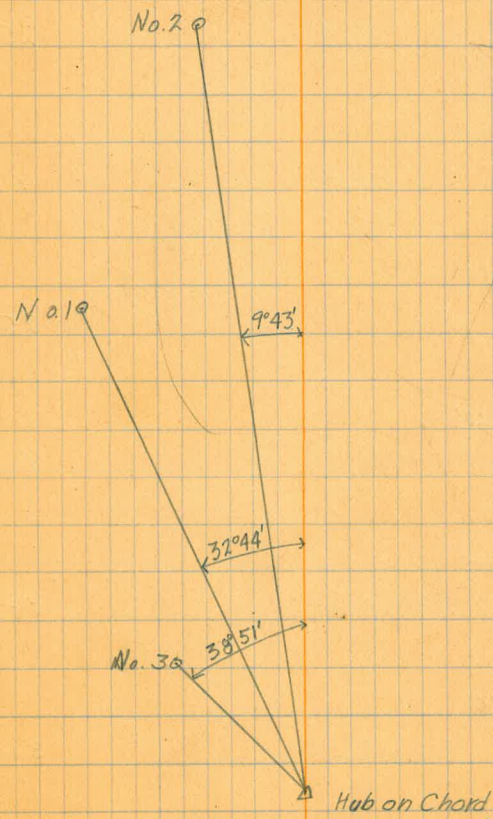
## Old Drill Holes on Lower Site

	Vert Δ	Rod	Hor. Δ	Dist.	Elev.
Drill Hole #1	-25°18'	3.88	32°44'	316.8	1894.7
Drill Hole #2	-10°34'	4.36	9°43'	411.4	1966.0
Drill Hole #3	-29°50'	1.50	38°51'	112.9	1979.9

15+28<sup>30</sup>

2044

Sight on 8+90



20

May 24 (PM)

## Traverse to Sec. Cor.

<del>41+02</del> <sup>91</sup>	S 11° 41.4' E	
<del>39+02</del> <sup>91</sup>	128° 36' 30"	
	S 39° 36.1' W	150.55
<del>39+52</del> <sup>36</sup>	237° 13' 45"	
<del>37+52</del> <sup>36</sup>	S 17° 37.7' E	256.45
<del>36+95</del> <sup>91</sup>	145° 31' 00"	
<del>34+75</del> <sup>91</sup>	S 16° 51.3' W	290.73
<del>34+05</del> <sup>18</sup>	181° 34' 40"	
<del>32+05</del> <sup>18</sup>	S 15° 16.7' W	256.95
<del>31+48</del> <sup>23</sup>	213° 51' 20"	
<del>29+48</del> <sup>23</sup>	S 18° 34.7' E	704.88
<del>24+43</del> <sup>35</sup>	162° 28' 40"	
<del>22+43</del> <sup>35</sup>	S 1° 03.3' E	387.46
<del>20+55</del> <sup>89</sup>	178° 11' 10"	
<del>18+55</del> <sup>89</sup>	S 0° 45.5' W	345.40
<del>17+10</del> <sup>49</sup>	159° 28' 40"	
<del>15+10</del> <sup>49</sup>	S 21° 16.8' W	
	S 11° 16.7' W	



237° 14'  
711° 41' 15"

145° 31' 15"  
436° 33'

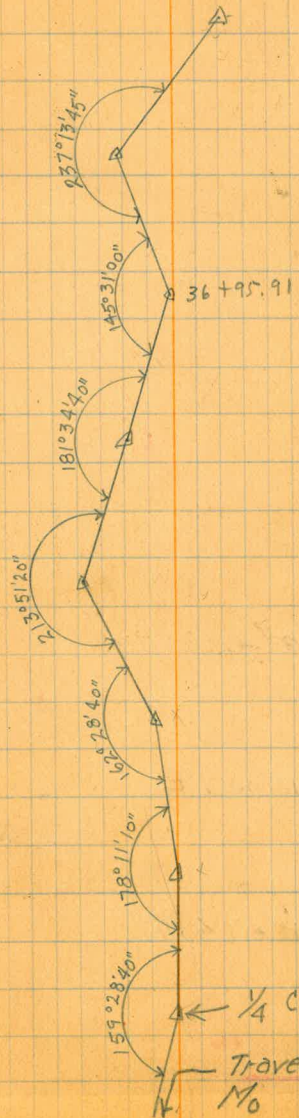
181° 35'  
4° 44'

213° 51' 30"  
641° 34'

162° 29'  
487° 26'

178° 11' 30"  
534° 33' 30"

159° 28' 30"  
478° 26'



← 1/4 Cor.

Travers from No

22

~~44 + 72<sup>00</sup>~~

~~42 + 12<sup>33</sup>~~ Sec. Cor.

S 31°42.3'W

175.24

~~42 + 96<sup>76</sup>~~

~~40 + 96<sup>76</sup>~~ 221°43'00"

S 10°00.7'E

81.28

~~42 + 15<sup>48</sup>~~

~~40 + 15<sup>48</sup>~~ 181°46'40"

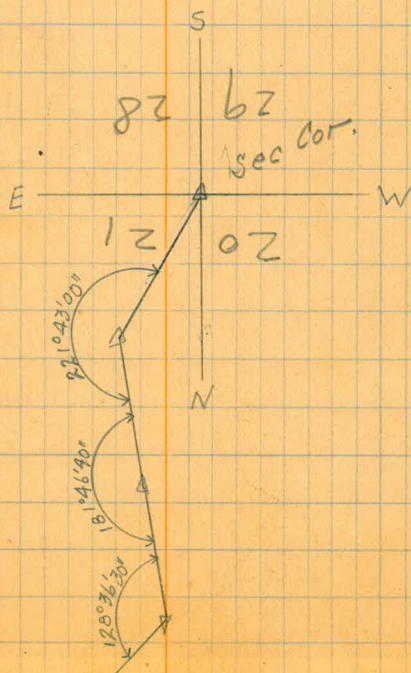
S 11°47.4'E

112.57

~~41 + 62<sup>91</sup>~~

~~39 + 62<sup>91</sup>~~ 128°36'30"

S 5°37.4'



181°47'  
545°20'

128°36'36"  
385°44'30'



24

May 25

Soper x  
Webb-rod  
Price-axe

	+	H.I.	-	Elev.
U.S.G.S.BM				1776.00
	6.70	1782.70	12.32	1770.38
	3.44	1773.82	12.98	1761.84
	0.47	1762.31	12.95	1750.36
	1.75	1752.11	2.63	1749.48
	11.69	1761.17	1.23	1760.94
	12.09	1773.03	0.05	1772.98
	11.90	1784.88	1.49	1783.39
	11.88	1795.27	2.56	1792.71
	7.15	1799.86	3.99	1796.87
	2.07	1798.94	9.95	1790.99
	2.23	1793.22	13.04	1790.18
	0.68	1790.86	11.76	1779.10
	0.87	1779.97	13.05	1766.92
	11.25	1778.17	0.41	1777.76
	11.38	1789.14	1.05	1788.09
	11.15	1799.24	0.16	1799.08
	11.91	1810.99	0.27	1810.72
	11.73	1821.45	0.35	1821.10
	12.84	1833.94	0.62	1833.32
	11.67	1844.99	0.53	1844.46
	13.00	1857.46	0.35	1857.11
	11.97	1869.08	0.97	1868.11
	11.03	1879.14	4.92	1874.22

McCarty  
Osborne

25

B.M. 50' East of Section Corner. (Spike in oak tree)

26

May 25

+	H I	-	Elev.
	1879.14	5.42	1873.72
10.65	1874.37	0.90	1873.47
12.83	1886.30	0.42	1885.88
12.01	1897.89	0.49	1897.40
12.42	1909.82	0.52	1909.30
12.14	1921.54	0.56	1920.98
12.14	1933.12	1.63	1931.49
12.14	1943.63	0.44	1943.19
5.26	1948.45	12.41	1936.04
1.84	1937.88	12.50	1925.38
2.21	1927.59	12.95	1914.64
0.56	1915.20	12.86	1902.34
0.25	1902.59	11.19	1891.40

Pt. in low part of Saddle # 1.



Pt. at low part in top Saddle No 1

28

May 26

## Traverse to Saddle #1

Sta.	Angle	Bearing	Dist
17+10 <sup>2</sup>	13°33' R		299.5
14+10 <sup>7</sup>	8°55' L		223.6
11+87 <sup>1</sup>	0°04' L		299.8
8+87 <sup>3</sup>	3°10' R		135.7
7+51 <sup>6</sup>	3°38' L		294.6
4+57 <sup>9</sup>	0°44' R		266.3
		N 84°34' E	
1+90 <sup>1</sup>	1°59' L		190.7

Sec. Cor. 50+00

McCarty  
Soper  
Webb  
Osborne  
Price

29

□ Pile of rock



30

Solar from  $1+90^{\circ}$  to  $4+57^{\circ}$ 

May 26

	Inst.	Time	Vert $\Delta$	Hor $\Delta$
$\frac{9}{10}$	Direct	7 <sup>h</sup> 51 <sup>m</sup> AM.	38°43'	1°55' L
$\frac{10}{10}$	Direct	7 <sup>h</sup> 53 <sup>m</sup>	38°35'	1°51' L
$\frac{10}{10}$	Reverse	8 <sup>h</sup> 00 <sup>m</sup>	39°02'	1°35' L
$\frac{9}{10}$	Reverse	8 <sup>h</sup> 01 <sup>m</sup>	39°52'	0°42' L

Bearing is apparently slightly North of East

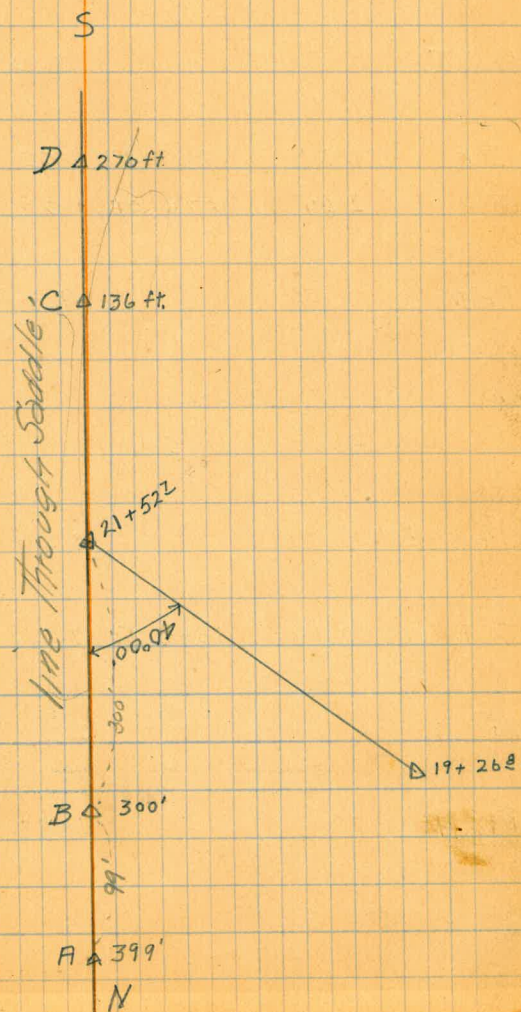
 $21 + 52^{\frac{7}{10}}$  40°00'

225.9

 $19 + 26^{\frac{8}{10}}$  52°35' R

216.6

 $17 + 10^{\frac{2}{10}}$



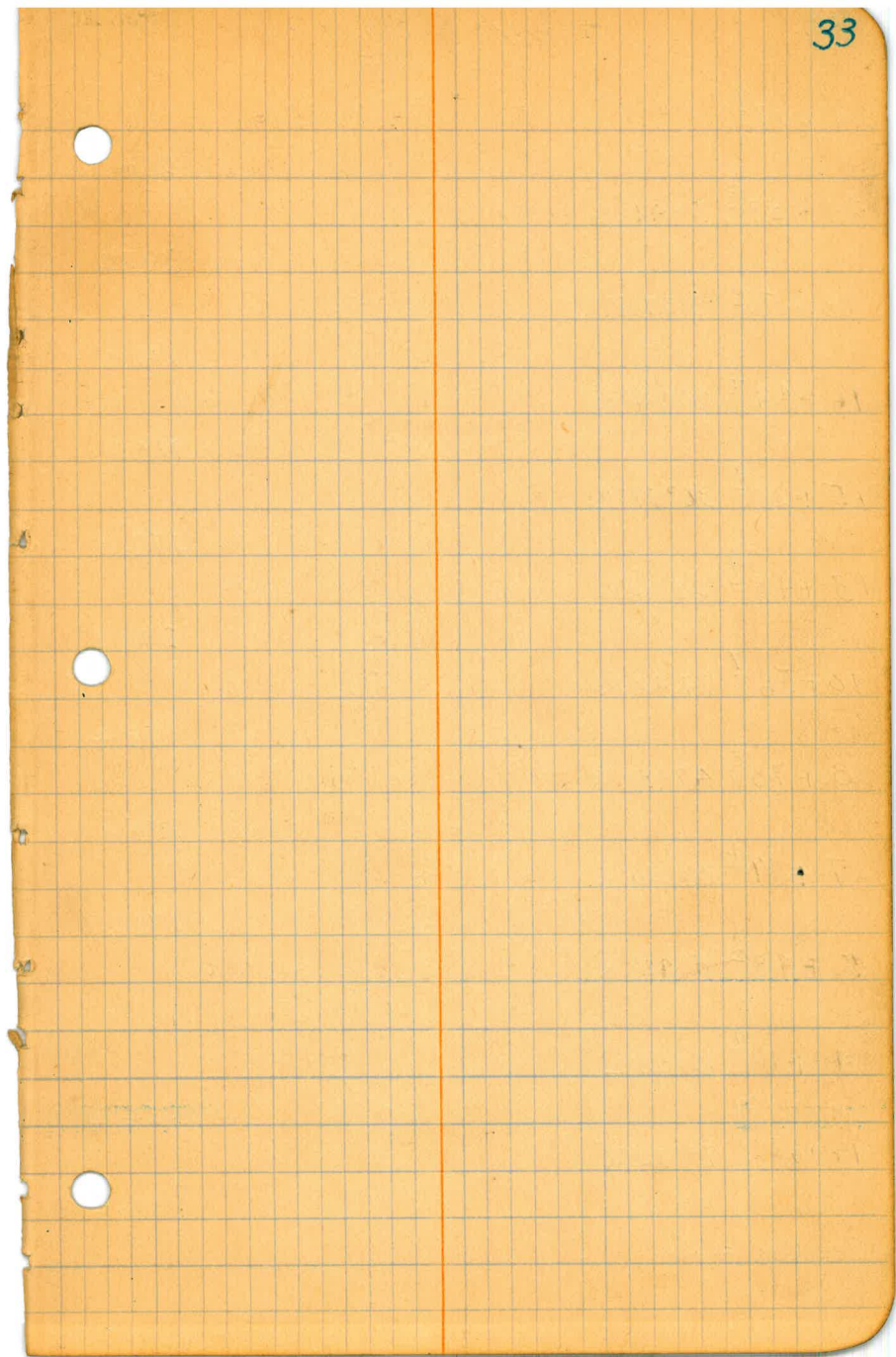
32

Profile over Saddle #1.

May 26

	+	∩	-	Elev
B.M.				1891.40
	3.22	1894.62		
21+52 <sup>2</sup>				
Pt. "C"			13.12	1881.50
T.P.	2.37	1885.47	11.52	1883.10
T.P.	2.67	1876.86	11.28	1874.19
Pt. "D"			9.47	1867.39
B.M.				1891.40
	4.07	1895.47		
21+52 <sup>2</sup>			3.40	1892.07
T.P.	0.99	1883.56	12.90	1882.57
Pt. "B"			2.23	1881.33
Pt. "A"			11.33	1871.23





34

Traverse to Saddles  
#1 + #3.

May 26

24 + 07<sup>9</sup>

254.1

21 + 53<sup>8</sup> 3°41'L

297.2

18 + 56<sup>6</sup> 3°37'R

212.2

16 + 44<sup>4</sup> 8°04'R

123.5

15 + 20<sup>2</sup> 86°19'R

172.0

13 + 48<sup>9</sup> 68°16'L

292.2

10 + 56<sup>7</sup> 27°42'R

178.4

8 + 78<sup>3</sup> 47°30'R

158.9

7 + 19<sup>4</sup> 38°54'R

171.2

5 + 48<sup>2</sup> 3°42'R

131.3

4 + 16<sup>2</sup> 12°58'L

226.2

1 + 90<sup>7</sup> 75°32'R

190.7

Sec. Cor. = 0 + 00

In Saddle #3

Top of saddle #2

□



36

Profile over Saddles 2 and 3

May 26

	+	∩	-	Elev.
BM				1874.22
	10.80	1885.02		
1+90 <sup>3</sup>			11.84	1873.18
4+16 <sup>2</sup> (T.P.)			1.97	1883.05
	0.65	1883.70		
5+48 <sup>2</sup>			9.69	1874.01
T.P.			12.36	1871.34
	0.26	1871.60		
7+19 <sup>4</sup>			11.54	1860.06
T.P.	7.92	1870.82	8.70	1862.90
T.P.	0.06	1859.22	11.66	1859.16
T.P.	10.40	1858.01	11.61	1847.61
15+20 <sup>2</sup>			5.68	1852.33
16+44 <sup>2</sup> (T.P.)	6.34	1863.94	0.41	1857.60
18+56 <sup>2</sup>			2.69	1861.25
T.P.	2.06	1854.82	11.18	1852.76
21+53 <sup>2</sup>			4.02	1850.80
T.P.	1.66	1843.92	12.56	1842.26
24+07 <sup>2</sup>			10.03	1833.89

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PROFILE ON AXIS  
& ARC OF 150'  
CONSTANT ANGLE DAM.

5/20/26

McCarty.

See Transit Note  
for Location Etc.

36

## Profile over Chord

May 20 (P.M.)

	Vert Δ	Rod	Diff. in Elev.	Elev.	Hor. Dist
Start +00	-22°50'	4.26	152.34	2052.01	0
	-27°43'	.18	7.42	2044.59	14
	-32°27'	3.64	164.16	1887.85	271
	25°50'	3.88	152.17	1899.84	314
	-17°40'	4.08	117.99	1934.02	370
	-13°01'	4.44	97.41	1954.60	422
	-4°41'	5.30	43.14	2008.87	526
End of Chord	+0°15'	6.54	2.88	2054.89	652.77



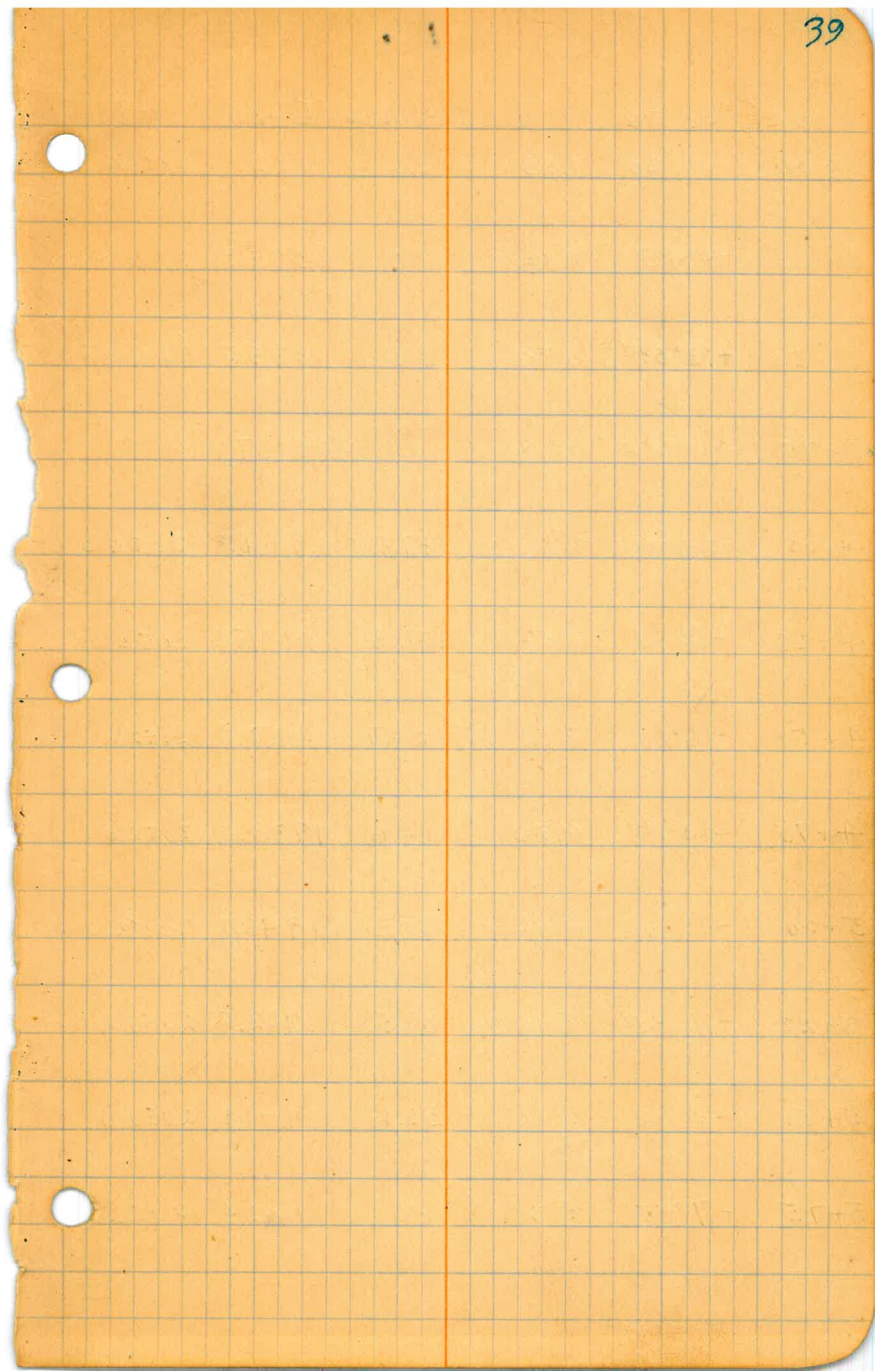
• P.O. of Curve:  $15+42.77$  of traverse  
From  $3+75$ , temporary B.M. Elev. 1899.67

38

## Profile over Curve.

May. 20 (1911)

	Vert Δ	Rod	Diff. in Elev	Elev.	H. I.
Start at 0+00					2052.6
0+25	+19° 53'	3.96	126.83	2031.1	# 1904.3
0+50	+20° 09'	3.78	122.2	2026.5	# 1904.3
0+75	+18° 36'	3.54	107.01	2011.3	# 1904.3
1+00	+18° 05'	3.16	93.2	1997.5	# 1904.3
1+25	+17° 49'	2.90	84.5	1988.8	# 1904.3
1+50	+18° 45'	2.66	80.9	1985.2	# 1904.3
1+75	+18° 30'	2.42	66.8	1971.1	# 1904.3
2+00	+17° 46'	2.14	62.2	1966.5	# 1904.3
2+25	+16° 00'	1.84	48.8	1953.1	# 1904.3
2+50	+11° 41'	1.46	29.0	1933.3	# 1904.3
2+75	+11° 39'	1.22	24.1	1928.4	# 1904.3





40

Sta	Vert Δ	Rod	Diff. in Elev	Elev.	H.I.
3+00	-1°28'	0.88	2.2	1902.1	H 1904.3
3+25	-9°45'	0.66	11.0	1893.3	H 1904.3
3+50	-15°30'	0.34	8.8	1895.5	H 1904.3
3+75				1899.7	H
4+00	-21°00'	4.40	147.2	1904.8	2052.0
4+25	-18°39'	4.50	136.4	1915.6	2052.0
4+50	-16°20'	4.62	124.7	1927.3	2052.0
4+75	-14°15'	4.78	114.0	1938.0	2052.0
5+00	-12°38'	4.84	103.3	1948.7	2052.0
5+25	-10°35'	4.96	89.5	1962.5	2052.0
5+50	-9°06'	5.16	80.6	1971.4	2052.0
5+75	-7°37'	5.30	69.6	1982.4	2052.0

E side Cr. Channel.

W Side Cr. Channel.

42

Sta.	Vert. A	Rod	Diff. in Elev.	Elev.	H.I.
6+00	-6°15'	5.34	57.8	1994.2	2052.0
6+25	-5°02'	5.48	47.9	2004.1	2052.0
6+50	-4°15'	5.68	42.0	2010.0	2052.0
6+75	-3°21'	5.86	34.2	2017.8	2052.0
7+00	-2°25'	6.00	25.3	2026.7	2052.0
7+25	-1°34'	6.20	16.9	2035.1	2052.0
7+50	-0°47'	6.32	8.6	2043.4	2052.0
7+75	-0°12'	6.48	2.3	2049.7	2052.0
7+89 <sup>66</sup>	+0°15'	6.54	2.9	2054.9	2052.0

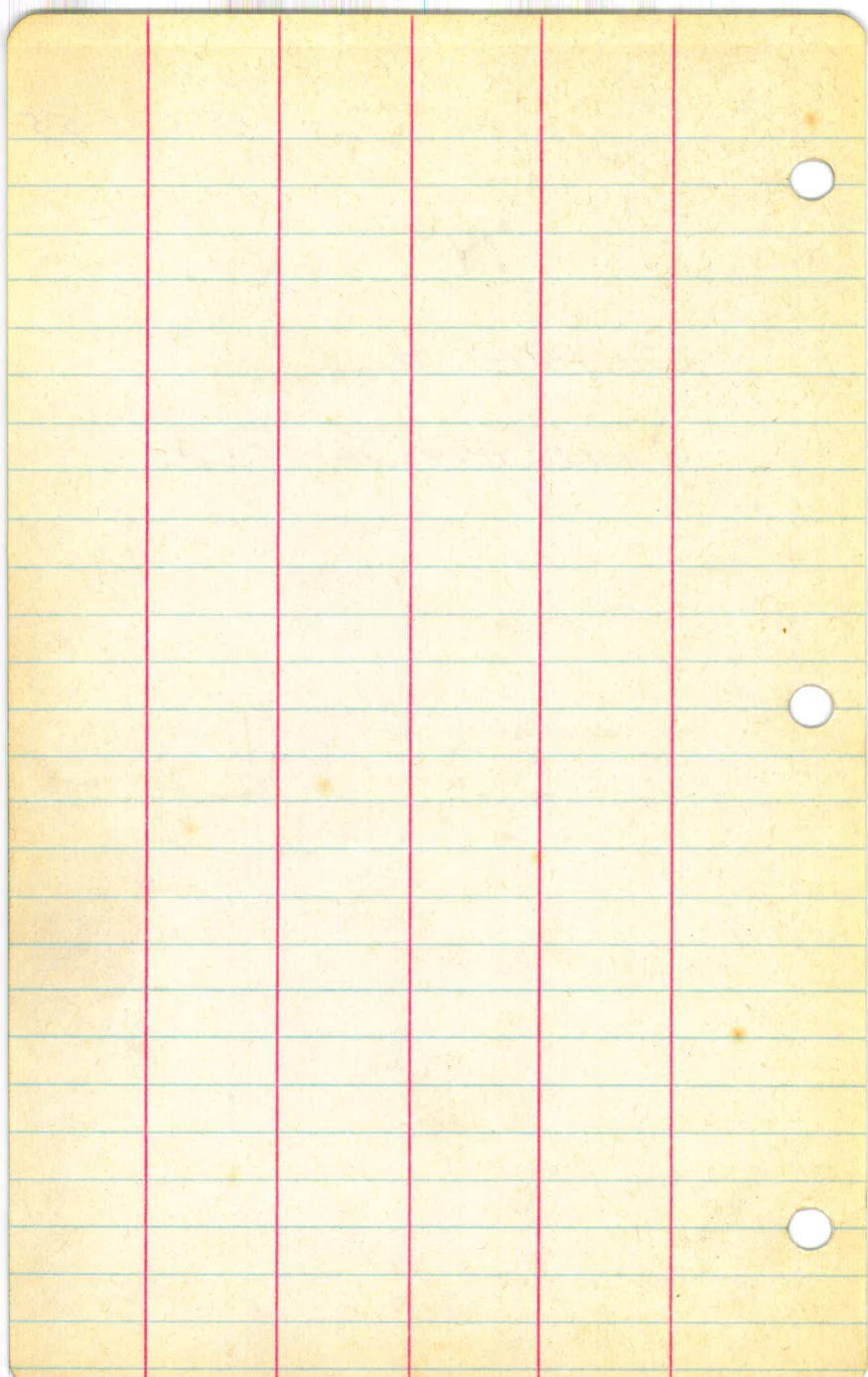
Elev. Set. up "H" is 4.60 above Sta 3+75



"N"

JUTHERLAND

SAND PIT SAMPLES



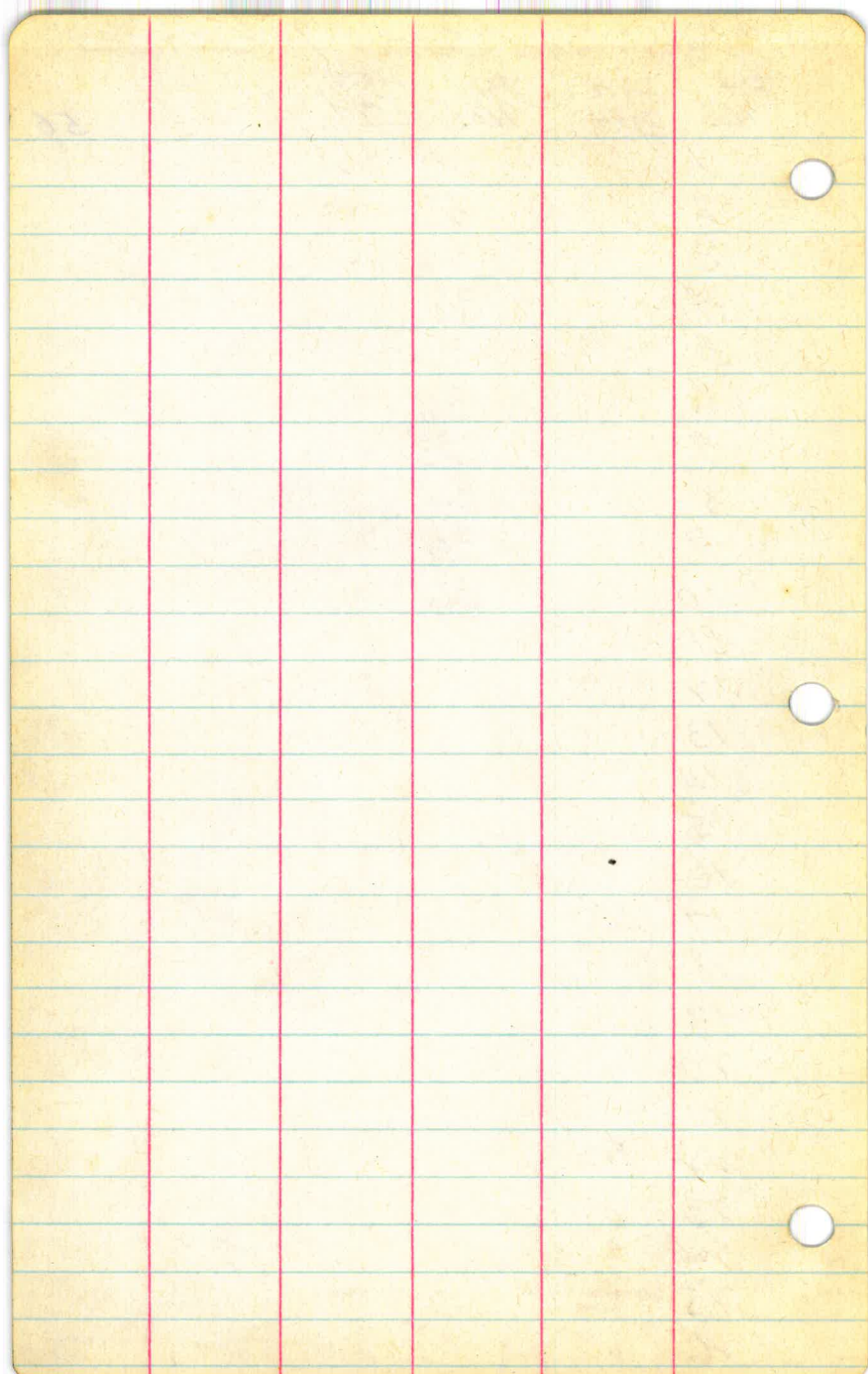
Jutherland Sand Pitsamples

Pit No.	Date sent	Pit No.	Date sent.
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56

1		27	1/13
2		28	"
3		29	"
4		30	"
5		31	"
6		32	"
7		33	"
8		34	"
9		35	"
10		36	"
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22	1/13		
23	"		
24	"		
25	"		
26	"		

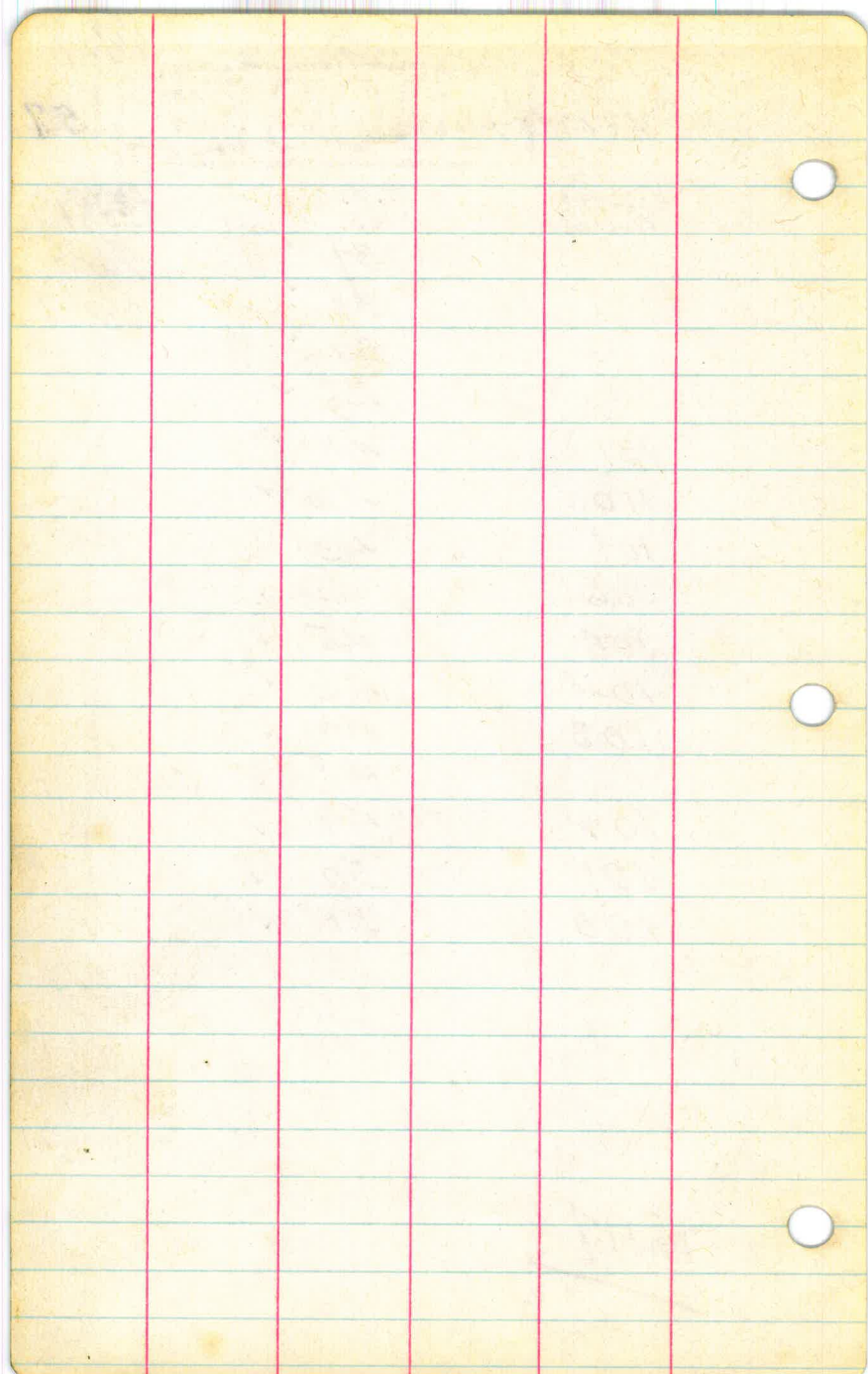




Test Pits samples 1/6/27  
 Sutherland Hines  
 Super  
 Subwater 57

Glover's Number	T.P. No.	Date sent
	37 ✓	1/6/27
	38 ✓	
	39 ✓	
	40 ✓	
131	41 ✓	
110	42 ✓	
108	43 ✓	
106	44 ✓	
105	45 ✓	
104	46 ✓	
103	47 ✓	
	48 ✓	
102	49 ✓	
101	50 ✓	
100	51 ✓	

No 117





17 N.

57A

Traverse Notes

Sutherland I.A.M.

Traverse for Location  
of Sand Pits.

N Traverse to 34+05<sup>18</sup> from  $\frac{1}{4}$  Cor. Dec. 29.  
 14) Angles taken Clockwise

Sta	Angle	Bear.	Dist.
34+05 <sup>18</sup>		S 15° 16.7' W	256.95
31+48 <sup>23</sup>	213° 51' 20"	S 18° 34.7' E ←?	704.88
24+43 <sup>35</sup>	162° 28' 40"	S 1° 03.3' E	387.46
20+55 <sup>89</sup>	178° 11' 10"	S 0° 45.5' W	345.40
17+10 <sup>49</sup>	159° 28' 40"	S 21° 16.8' W	

15)

58



16) N. Traverse to <del>the</del> Car from Mo			Dec. 29
Angles taken Clockwise			
Sta	Angle	Bear.	Dist
17+10 <sup>49</sup>		S 21° 16.8' W	350.62
13+59 <sup>87</sup>	193° 22' 40"	S 7° 54.2' W	204.30
11+55 <sup>57</sup>	149° 16' 40"	S 38° 43.5' W	180.91
9+74 <sup>66</sup>	199° 27' 00"	S 19° 16.5' W	93.20
8+81 <sup>46</sup>	217° 58' 20"	S 18° 41.8' E	218.50
6+62 <sup>96</sup>	164° 16' 20"	S 2° 58.2' E	198.11
4+64 <sup>85</sup>	207° 10' 00"	S 30° 08.3' E	265.85
1+99	313° 40' 40"		199.00
		N 16° 11' E	
Mo=0+00	270° 00' 00"		
M-12		N 73° 44' W	





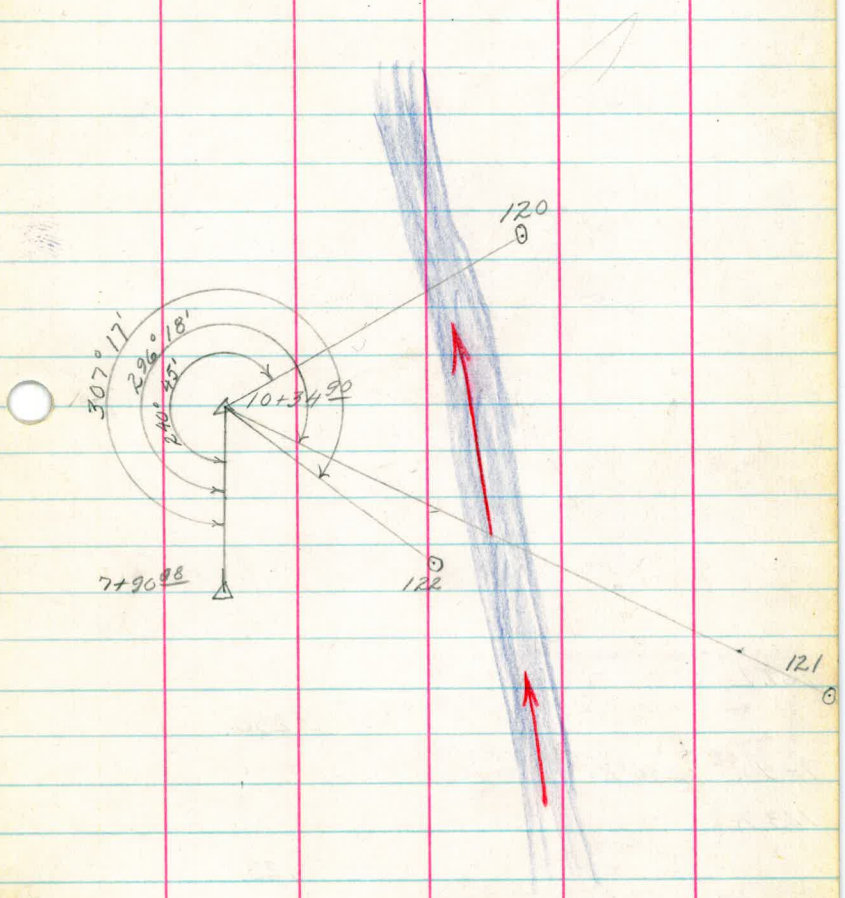
18) Traverse to locate sand pits from  
Sta. 7+90<sup>03</sup> up the river.

Sta	Angle	R. Bear	Asz.	Dist.
				159.16
29+13 <sup>41</sup>	306°10'30"			145.68
	153°05'15"			
27+67 <sup>73</sup>	450°06'30"			247.75
	225°03'15"			
25+19 <sup>98</sup>	401°08'			432.21
	200°54'			
20+87 <sup>22</sup>	276°19'			214.55
	139°09'30"			
18+73 <sup>22</sup>	F.O.T.			337.63
15+35 <sup>53</sup>	248°40'			285.12
	124°20'			
			196°44'20"	
12+50 <sup>42</sup>	F.O.T.		516°44'20"W	460.34
			196°44'20"	
			516°44'20"W	
7+90 <sup>03</sup>	600°41'			
	300°20'30"			
			76°23'50"	
			N76°23'50"E	
0+00	Refer to page 17 this book.			



19/  
N.

60



plotted  
N. - 1-6-27

20

Sta.	Angle, R.	Dist.
------	-----------	-------

127. L		
--------	--	--

		290.
--	--	------

7+90 <sup>08</sup>	234°21'	
--------------------	---------	--

123. R.		
---------	--	--

		123.
--	--	------

7+90 <sup>08</sup>	190°53'	
--------------------	---------	--

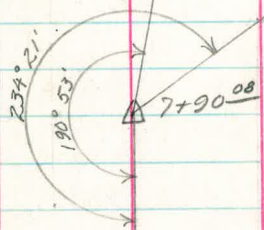
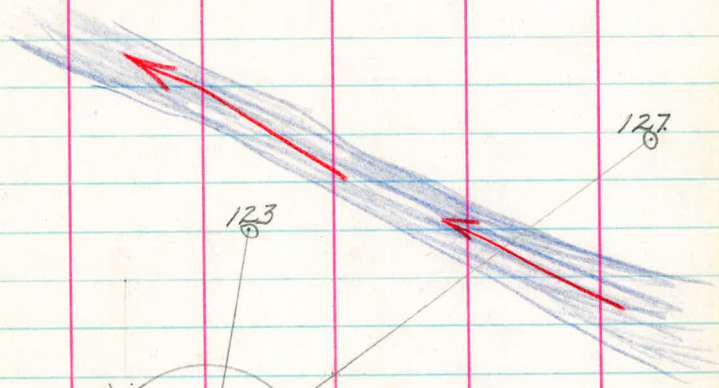
Refer to pages 6+7

0+00		
------	--	--

Plotted

211  
N.

61



Plotted  
K. 1-6-27



22)

Sta.	Angle. P.	Dist.
------	-----------	-------

18 R		
------	--	--

167.

12+50 <sup>42</sup>	95° 10'	
---------------------	---------	--

16 R		
------	--	--

108.

12+50 <sup>42</sup>	60° 24'	
---------------------	---------	--

17 R		
------	--	--

188.

12+50 <sup>42</sup>	31° 06'	
---------------------	---------	--

Refer to pages 50 + 51

7+90 <sup>00</sup>		
--------------------	--	--

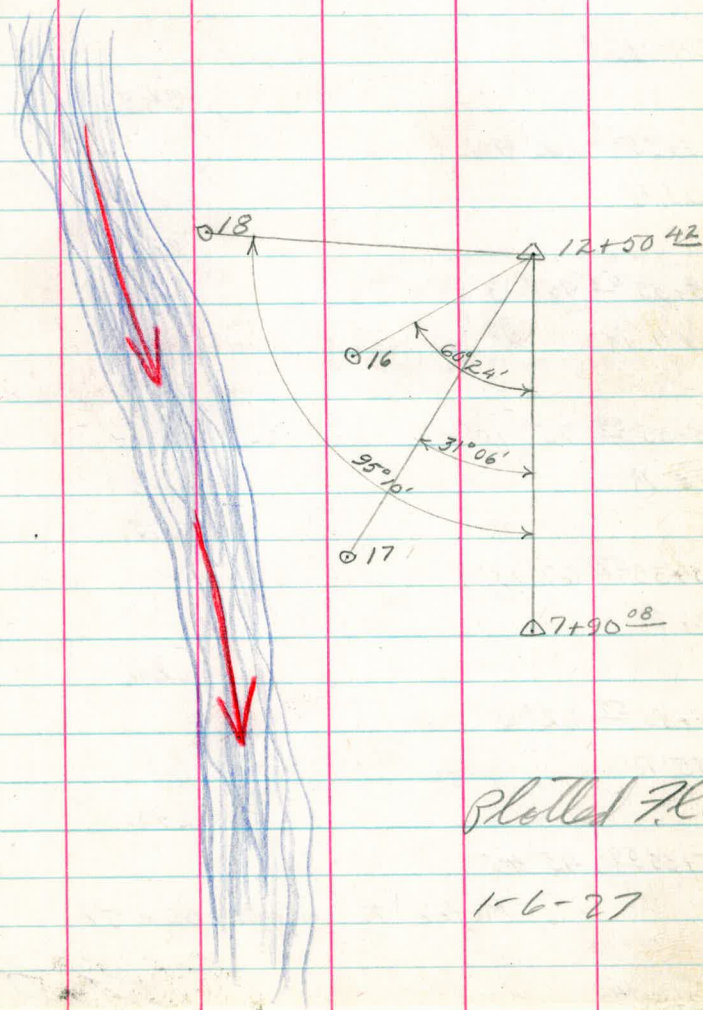
Plotted

23)

N.

Jan. 5, 1927  
N. Glover  
S. Bichet  
Bush.

62



Plotter F.C.

1-6-27

24)

Sta. Angle. R. Dist.

24 L

343.

15+35<sup>59</sup> 102° 40'

33 R

232

15+35<sup>59</sup> 95° 03'

14 R

167.

15+35<sup>59</sup> 75° 40'

15 R

275.

15+35<sup>59</sup> 67° 13'

34 R

224.

15+35<sup>59</sup> 62° 0'

35 R

290.

15+35<sup>59</sup> 43° 45'

Refer to pages 50 + 51

12+50<sup>42</sup>

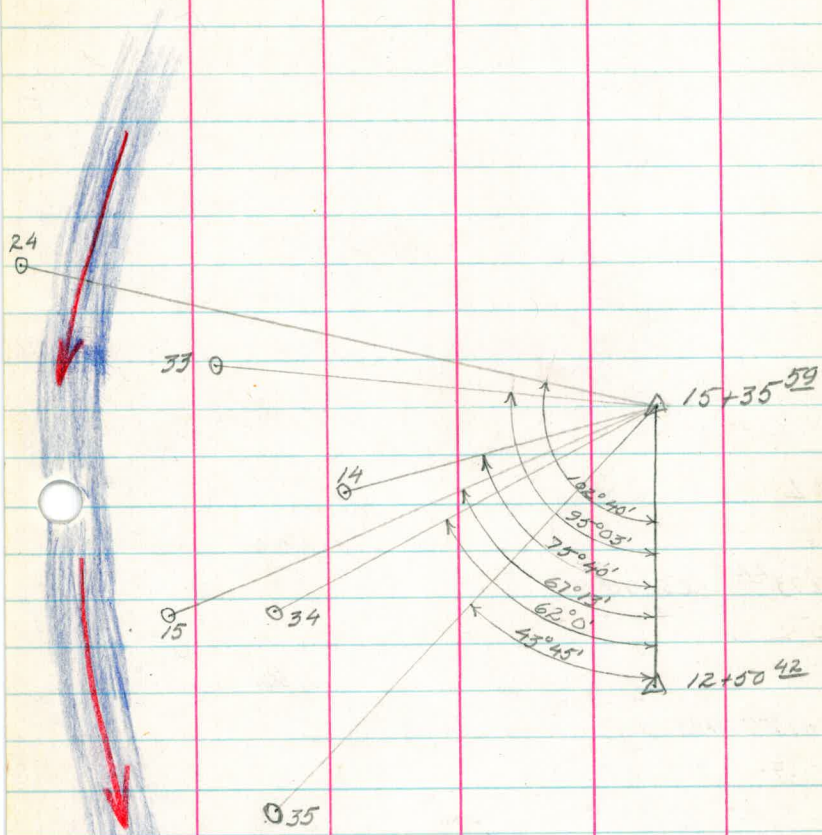
Plotted



25

N

63



Plotted R.  
1-6-27

26)

Sta      Angle. R.      Dist.

4 L

270.

18+73<sup>22</sup> 125°40'

5 L

250.

18+73<sup>22</sup> 103°58'

6 L

204.

18+73<sup>22</sup> 100°05'

7 L

121.

18+73<sup>22</sup> 126°23'

Refer to pages 50+51

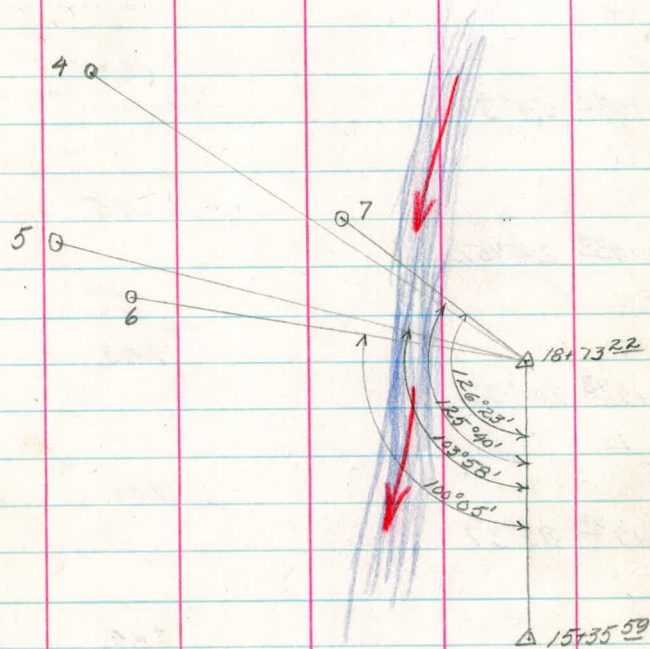
15+35<sup>59</sup>

Plotted

27

N

64



Plotted  
Fl.  
1-7-27



28)

Sta	Angle, R.	Dist.
12 R		124.
25+19 <sup>98</sup> 13 R	181° 23'	116.
25+19 <sup>98</sup> 32 R	54° 30'	185.
25+19 <sup>98</sup> 128 L	24° 52'	143.
25+19 <sup>98</sup> 26 L	101° 37'	200.
25+19 <sup>98</sup> 25 L	83° 37'	227.
25+19 <sup>98</sup> 133 L	58° 58'	308.
25+19 <sup>98</sup>	25° 04'	

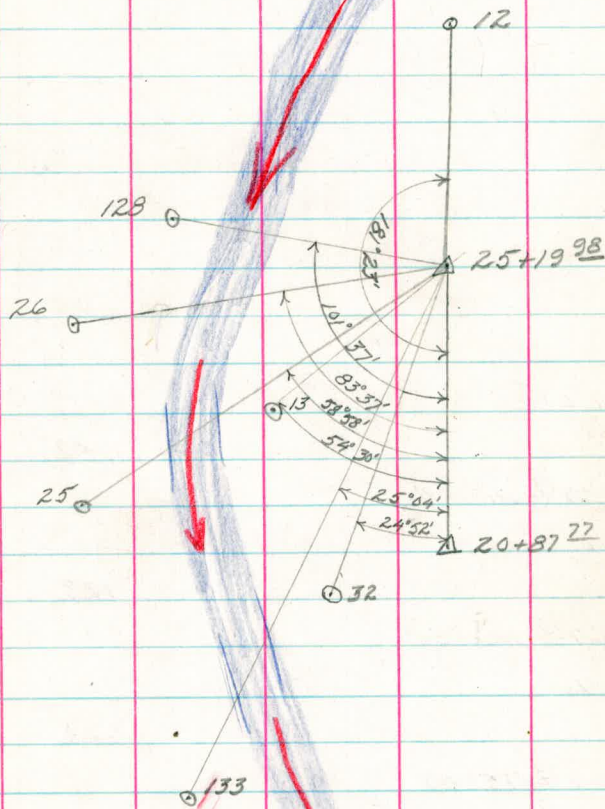
Refer to pages 50 + 51

20+87<sup>22</sup> Plotted

29)

N

65



Plotted H.  
1-7-27

30

Sta.	Angle. P.	Dist.
------	-----------	-------

27 L

182.

27+67<sup>73</sup> 147° 43'

1 L

123.

27+67<sup>73</sup> 122° 35'

11 L

129.

27+67<sup>73</sup> 75° 47'

2 L

215.

27+67<sup>73</sup> 67° 33'

Refer to pages 50 + 51

Plotted

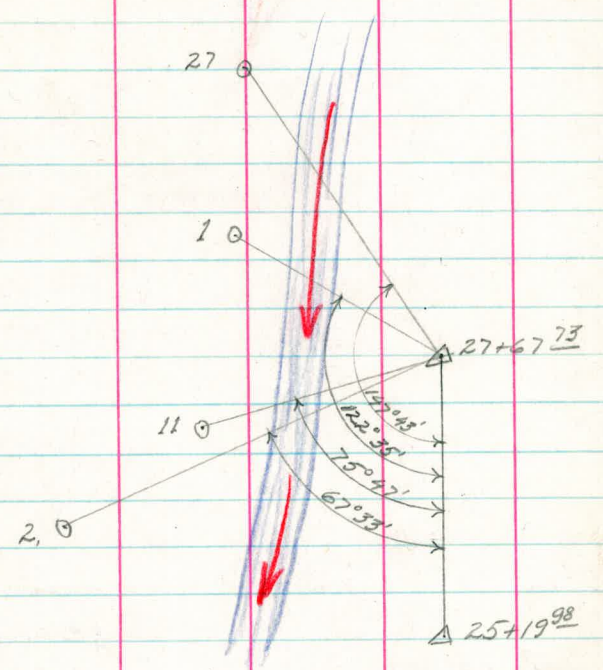
25+19<sup>98</sup>



31

N

66



Platte R.  
1-7-27

32

Sta

Angle R

Dist.

29 L

142.

30+72<sup>57</sup> 98° 16'

30 R

32.

30+72<sup>57</sup> 125° 14'

31 R.

141.

30+72<sup>57</sup> 26° 0'

Refer to pages 50 + 51

Plotted R.

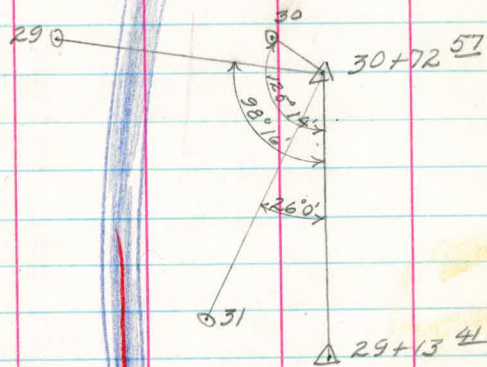
29+13<sup>41</sup>

1-7-27

33)

N

67



Plotted Fl.  
1-7-27



34) Stadia locations of sand pits,  
Sutherland.

Sta.	Angle. P.	Dist.
------	-----------	-------

3 L

63.

34+18<sup>12</sup> 63° 47'

28 L

134.

34+18<sup>12</sup> 69° 13'

Refer to pages 52+53

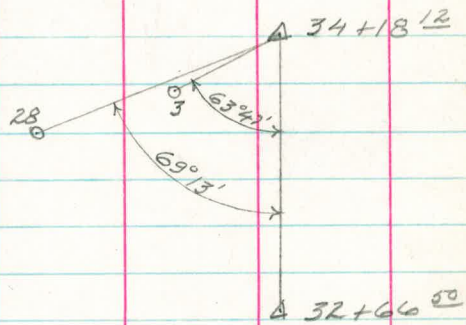
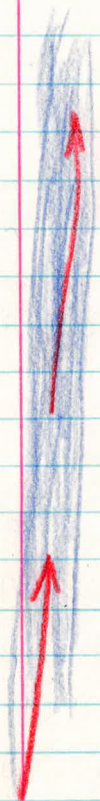
32+66<sup>20</sup>

Plotted

357

N

68



Plotted Fl.  
1-7-27

36

N

Sta. Angle. B

Dist

9 L

205.

40+72<sup>92</sup> 24° 18'

Refer to pages 54 & 55

34+18<sup>12</sup>

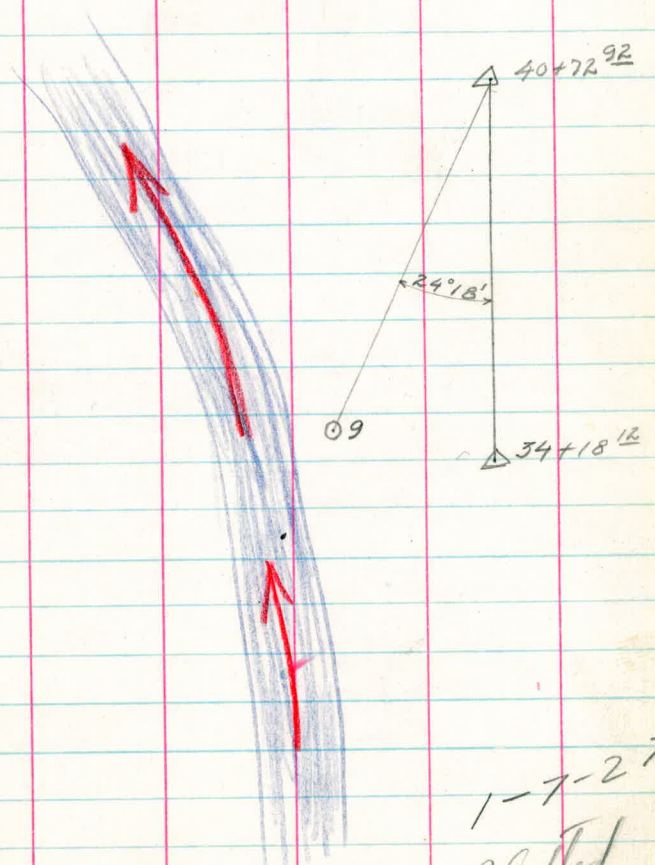
Plotted  
7/6.



37

N.

69



1-7-27  
Plotted  
R.

38/

82

(N)

70

TRVERSE FOR BASE LINE  
FOR ROAD LOCATION  
SUTHERLAND

12 - 20 26

VAN HORN



70  
69.79  
137.79

St	Ob. Dist	Hor Dist	V.A.	Pod	Mag
3			S 53°30' E		N 53°30' W

S 39°06' E 39°06' N 38°45' W

S 2°01' W 2°01' N 2°30' E

S 23°05' E 23°05' N 22°1/2' W

S 38°47' E 38°47' N 30 1/2' W

N 88°4' E S 88°04' W S 89° W

N 61°47' E S 61°47' W S 62°30' W

N 78°51' E S 78°51' W S 79°30' W

S 89°25' E 89°25' W N 88°30' W

N 70°50' E S 70°50' W S 71°30' W

S 78°33' E N 78°33' W N 77°30' W

N 74°20' E S 74°20' W S 75°00' W

N 87°20' E S 87°20' W S 88°30' W

S 15°19' E N 15°19' W N 9°30' W

12/18-26  
 Van Horn  
 Dredger  
 300 ft  
 11/20/26 71

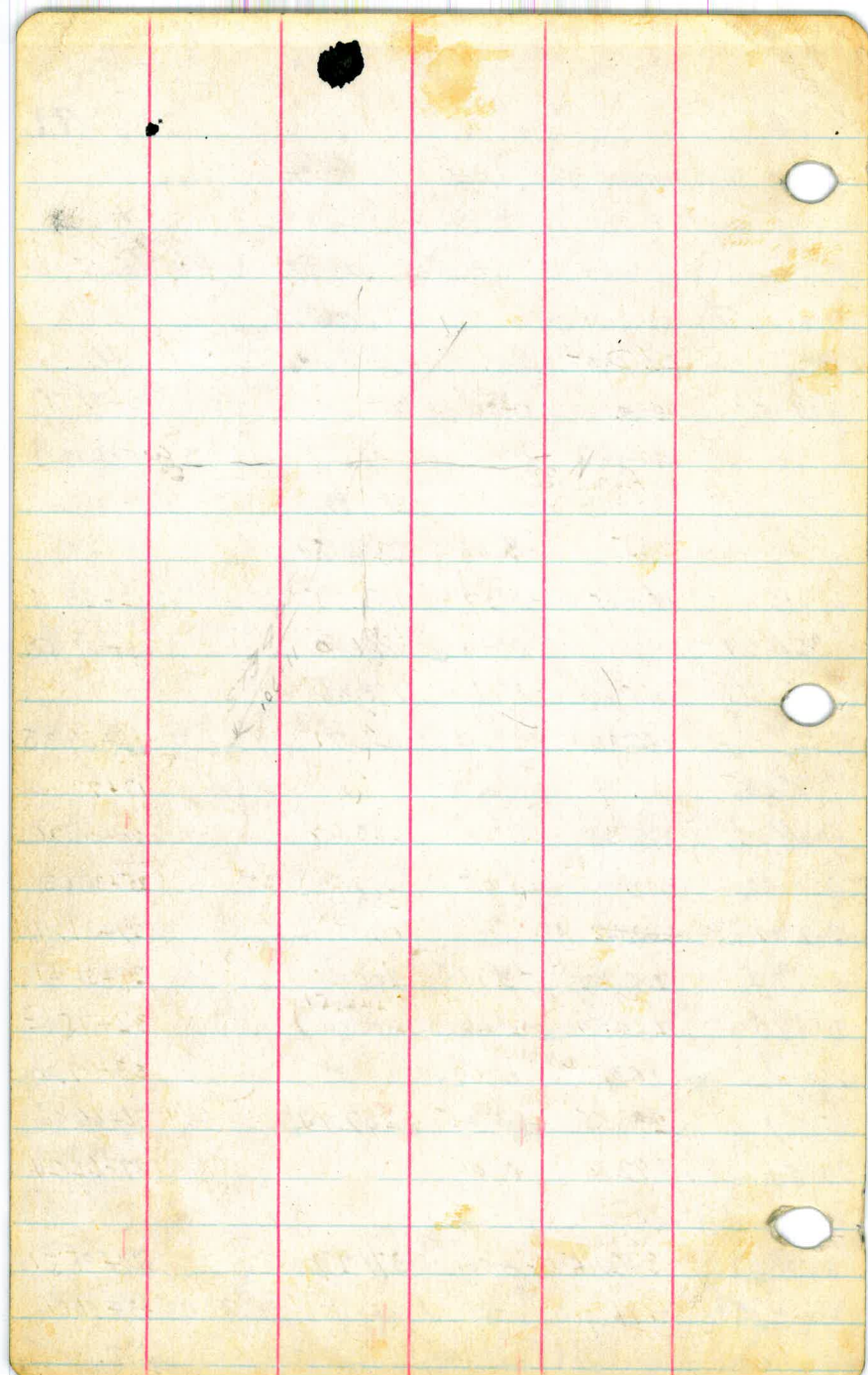
Traverse For Base Line For Road  
 Location Sutherland

Inst @ sta M.O. H.I. 2093.46

Backsight on M<sub>12</sub> = 106°11

A <sub>3</sub>	Sl. Dist	V. A.	Hor. Dist	Rod L.	Sta.
305°57	<del>285</del>	0°00	281.55	5°	2+81.55
"	278.87	0°00	278.87	5°	5+60.42
"	287	-9.30	280.04	5°	8+40.46
"	225	-8°26	222.57		10+3.92
"	157.15	-0°27	157.15		12+20.18
320°21		0°00	89.40		13+09.58
"	185.00	8°18	183.06		
"	146.80	-2°04	146.71		16+39.33
1°28	137.79	-0°00			17+22.14
336°22	224.38	-4°24	223.67		20+00.26
320°40	300.00	-4°05	(299.24 +288.63)		25+38.63
267°31	<del>200.62</del>		192.48, y		27+31.11
241°14	200.62	-3°16	200.30		29+31.41
258°18	244.80	-2°46	(244.51 +100.00)		32+75.92
270°02	103.08	0°00			33+29.00
250°17	288.55	-3°45	287.94		36+66.94
280°54	97.30	0°00			37+64.24
253°47	372.16	-4°00	371.27		44+35.51
266°47x?	186.10				43+21.61
244°08					± B.







5)

N

72

Dec. 29, 1926

N. Glover - A

S. Bichet - H. Ch.

Bush R. Ch.

Windy + Cold.

Traverse to locate sand pits in  
Santa Isabel Valley above the Sutherland  
Dam Site.

Transit on 31+48.<sup>23</sup> M. Traverse, backsight on  
hub marked 5+20.<sup>35</sup> on top of hill 520.<sup>35</sup> ft.  
north of Mo, on tangent produced through  
Sta. 1+99. Refer to pages 10+11 book #N.2  
Foresight on Sta 7+90.<sup>28</sup> of traverse for  
location of sand pits.

Sta 31+48.<sup>23</sup> M. Traverse = 0+00

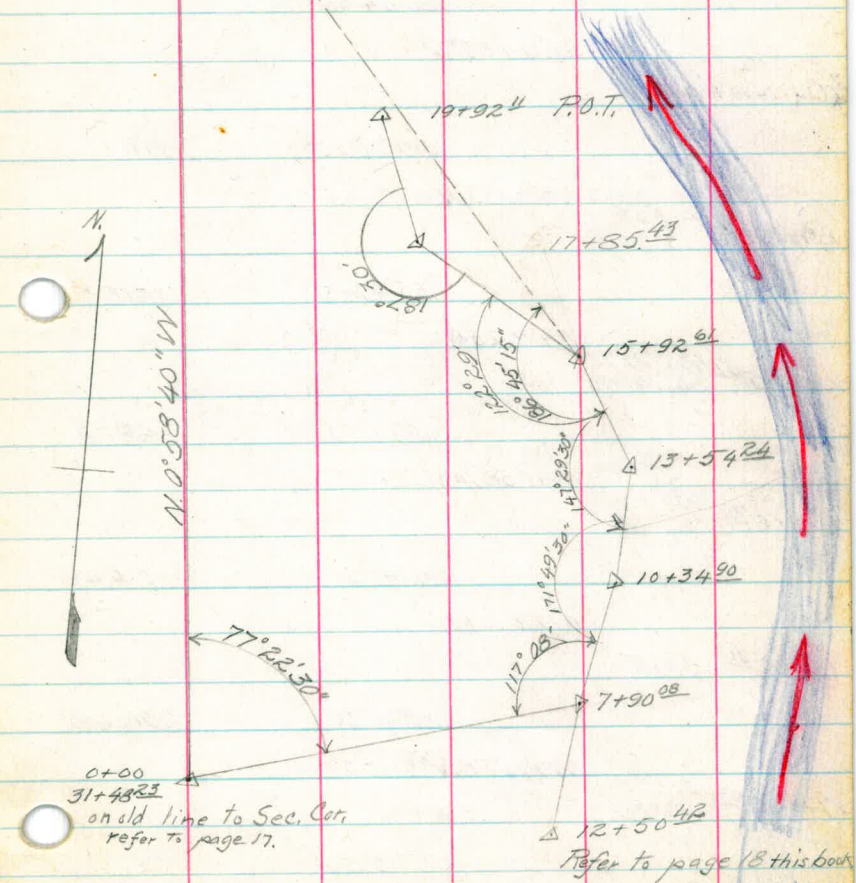
Sta.	Def. Angles		Bearing	Asz.	Dist
	Left	Right			
17+85 <sup>43</sup>	375° 0'	187° 30'	N77° 16' 10" W	282° 49' 50"	
				275° 19' 50"	192.82
15+92 <sup>61</sup>	244° 58'	122° 29'	N84° 40' 10" W		
13+54 <sup>24</sup>			N27° 09' 10" W	332° 50' 50"	
5+20 <sup>35</sup>				339° 36' 05"	
15+92 <sup>61</sup>	373° 30' 30"	186° 45' 15"	N20° 23' 55" W		
				332° 50' 50"	238.37
13+54 <sup>24</sup>	294° 59'	147° 29' 30"	N27° 09' 10" W		
				5° 21' 20"	319.34
10+34 <sup>90</sup>	343° 59' 30"	171° 49' 30"	N15° 21' 20" E		
				13° 31' 50"	244.82
7+90 <sup>08</sup>	234° 15' 30"	117° 08'	N13° 31' 50" E		
				76° 23' 50"	790.08
31+48 <sup>23</sup>	77° 22' 30"	154° 45'	N76° 23' 50" E		
				359° 01' 20"	
5+20 <sup>35</sup>			N0° 58' 40" W		

refer to page 17

N.

Traverse to locate sand pits. Sutherland.

5+20<sup>35</sup> Old hub on top of hill west of dam site.



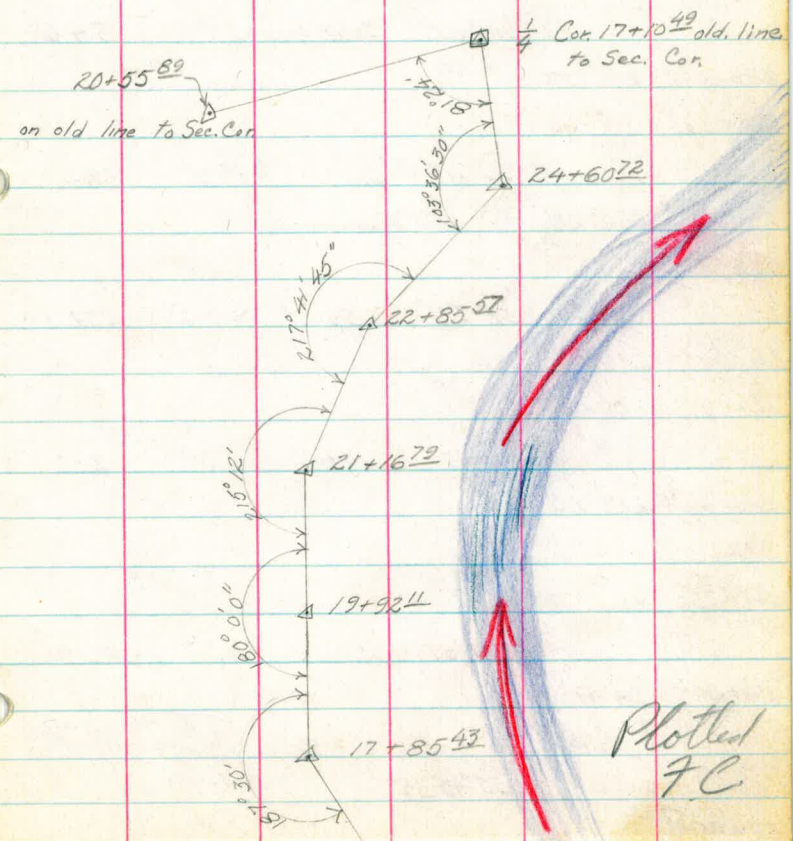
Plotted J.C.



Sta	Angle-R.	Bear	Asz.	Dist
20+55 <sup>89</sup>		on old traverse from $\frac{1}{4}$ Cor to Sec. Cor.	180°44'05"	
$\frac{1}{4}$ Cor. 17+10 <sup>89</sup>	162°48'	50°44'05"W	279°20'05"	337.07
	81°24'			
24+60 <sup>72</sup>	207°13'	180°39'55"W	355°43'35"	175.15
	103°36'30"			
22+85 <sup>51</sup>	435°23'30"	N4°16'25"W	318°01'50"	168.78
	217°41'45"			
21+16 <sup>72</sup>	430°24'	N41°58'10"W	282°49'50"	124.68
	215°12'			
19+92 <sup>4</sup>		N77°10'10"W	282°49'50"	206.68
17+85 <sup>42</sup>	375°0'	N77°10'10"W	275°19'50"	192.82
	187°30'			
15+92 <sup>64</sup>		N84°40'10"W		

9) N.

74



N.

19 Stadia location of sand pits from traverse by river

Sta. Angle-R. Az. Rod K.A. Dist.

Stations marked with letter L are on the

48. L left side of the river facing up stream

190. ✓

24+60<sup>72</sup> 262° 0'

105 R.

132° 09' 1.65 10° 0' 160.

24+60<sup>72</sup> 316° 26'

104 L

110° 22' 3.48 3° 55' 346.

24+60<sup>72</sup> 294° 39'

103 L

96° 11' 3.45 3° 35' 344.

24+60<sup>72</sup> 280° 28'

102 L

52° 33' 2.59 4° 45' 257.

24+60<sup>72</sup> 236° 50'

101 L

34° 05' 2.14 5° 19' 212. ✓

24+60<sup>72</sup> 218° 22'

100 L

26° 30' 3.00 4° 30' 298. ✓

24+60<sup>72</sup> 210° 47'

Refer to pages 8 &amp; 9.

Plotted R.

355° 43' 35"

1-10-27

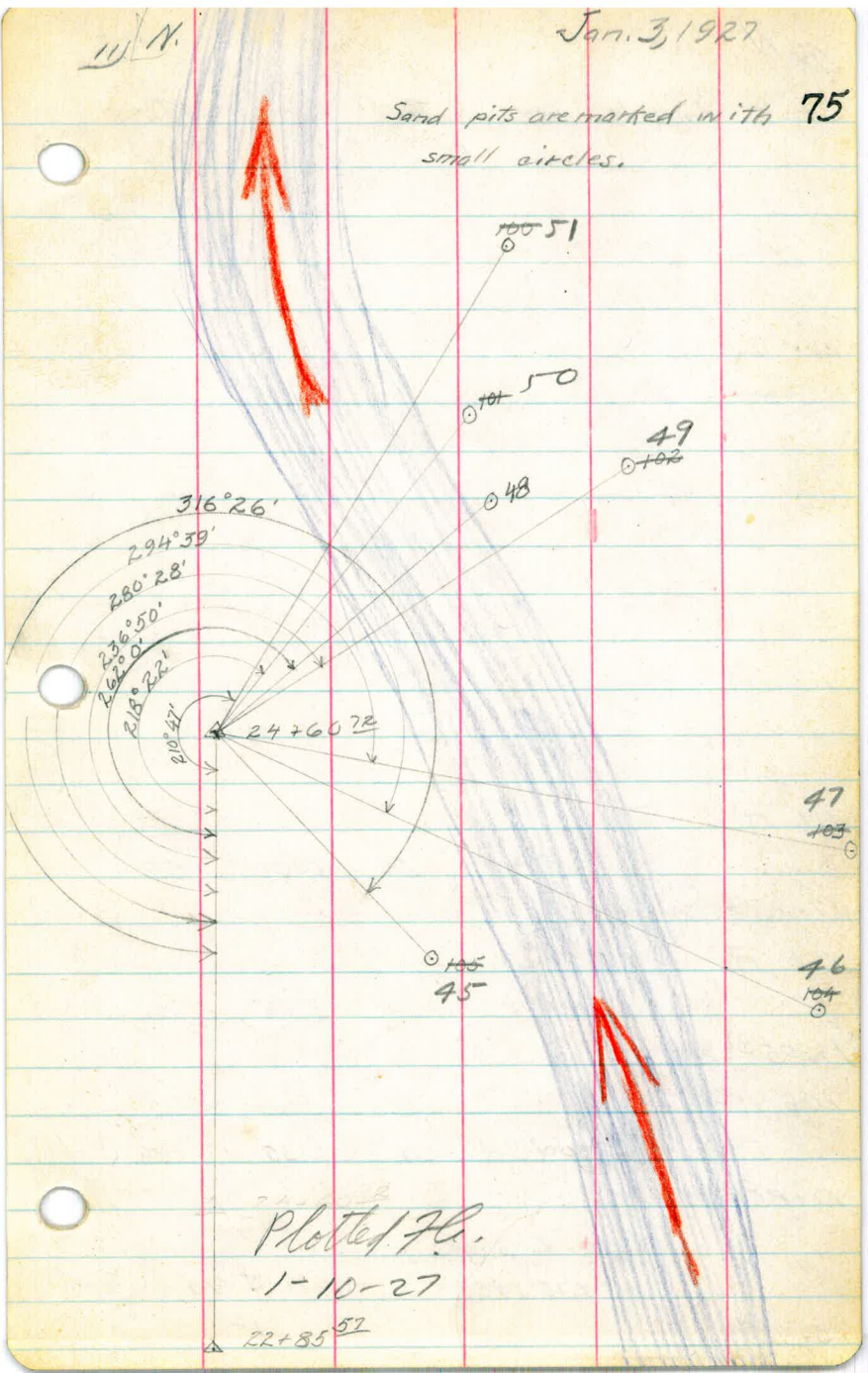
22+85<sup>52</sup>



U.N.

Jan. 3, 1927

Sand pits are marked with 75  
small circles.



Plotted F.C.

1-10-27

22+85.52

Sta	Angle. R.	Asz	Rod.	V.A.	Dist.
121 N					
110 R		69°44'	0.56	6°06'	55.
17+85 <sup>43</sup>	334°24'				
108 R		333°19'	0.76	3°16'	76.
17+85 <sup>43</sup>	237°59'				
106 R		300°38'	1.54	2°35'	154. ✓
17+85 <sup>43</sup>	205°18'				
15+92 <sup>61</sup>		275°19'50"			

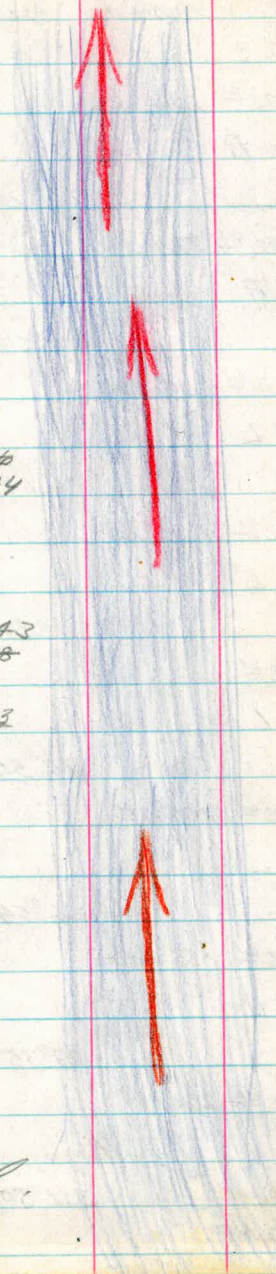
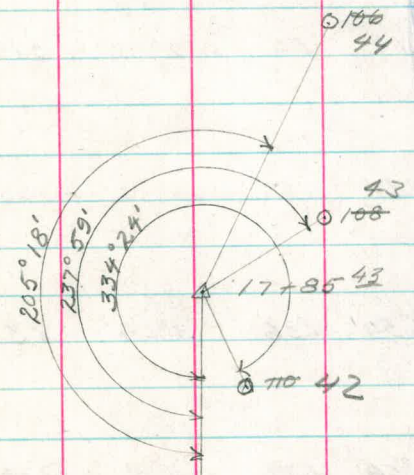
Refer To pages 6+7

Plotted 76  
1-10-27

13

Jan. 3, 1927

76



$\Delta 15+926$

Plotter H.

1-10-27

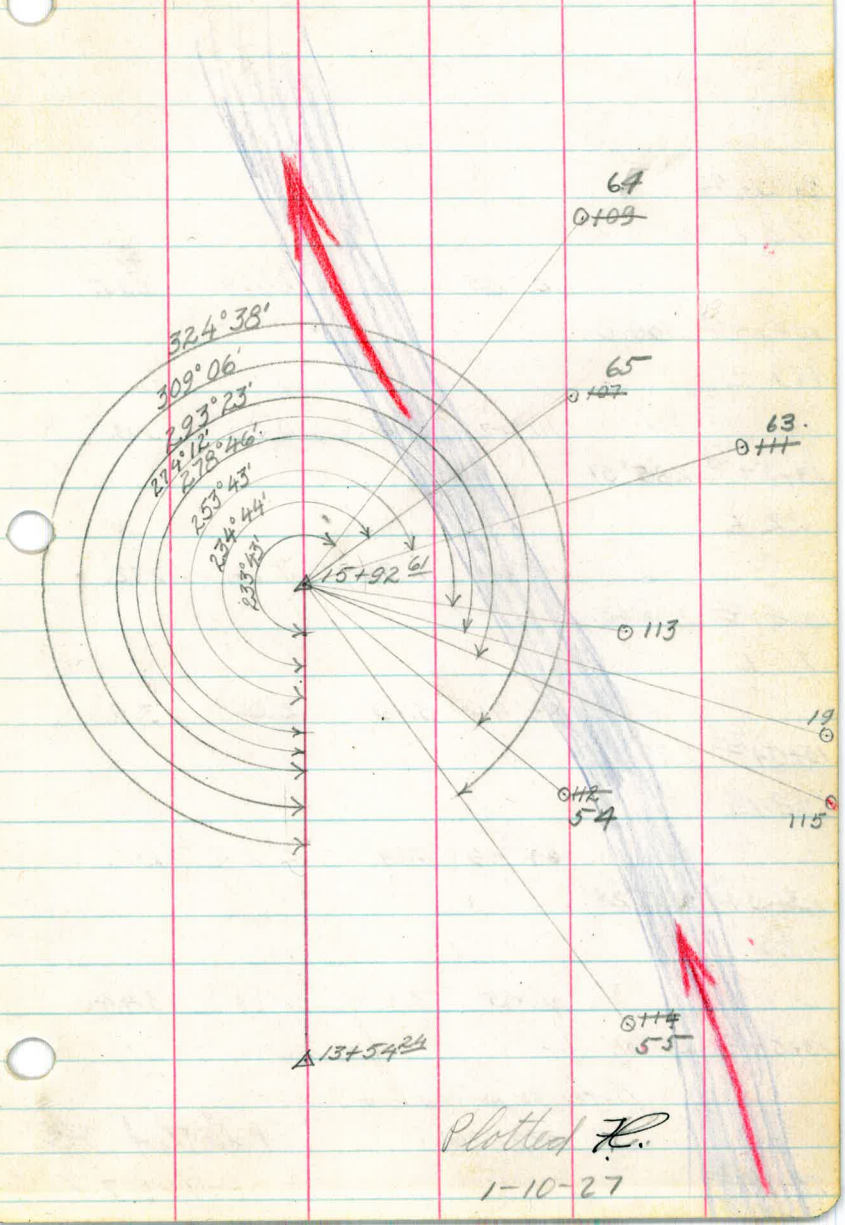


Sta	Angle R	Asz.	Pod	V.A.	Dist.
N. <sup>(4)</sup>					
19. L					285.
15+92 <sup>61</sup>	274°12'				
114 R		117°29'	2.85	2°30'	284.
15+92 <sup>61</sup>	324°38'				
112 R.		101°57'	1.74	6°0'	172.
15+92 <sup>61</sup>	309°06'				
115 L		86°14'	3.11	2°02'	310.
15+92 <sup>61</sup>	293°23'				
113 L		71°37'	1.68	6°03'	166.
15+92 <sup>61</sup>	278°46'				
111 L		46°34'	2.36	3°24'	235.
15+92 <sup>61</sup>	253°43'				
109 L		26°34'	2.39	4°28'	238.
15+92 <sup>61</sup>	233°45'				
107 L		27°35'	1.71	6°52'	169.
15+92 <sup>61</sup>	234°44'				
		Refer to pages 6 + 7			
		332°50'50"			
13+54 <sup>24</sup>					
				Plotted R.	
				1-10-27	

15

Jan. 3, 1921  
N. Glover  
S. Bichet  
H. Butzine  
Bush

77



Plotted R.

1-10-27

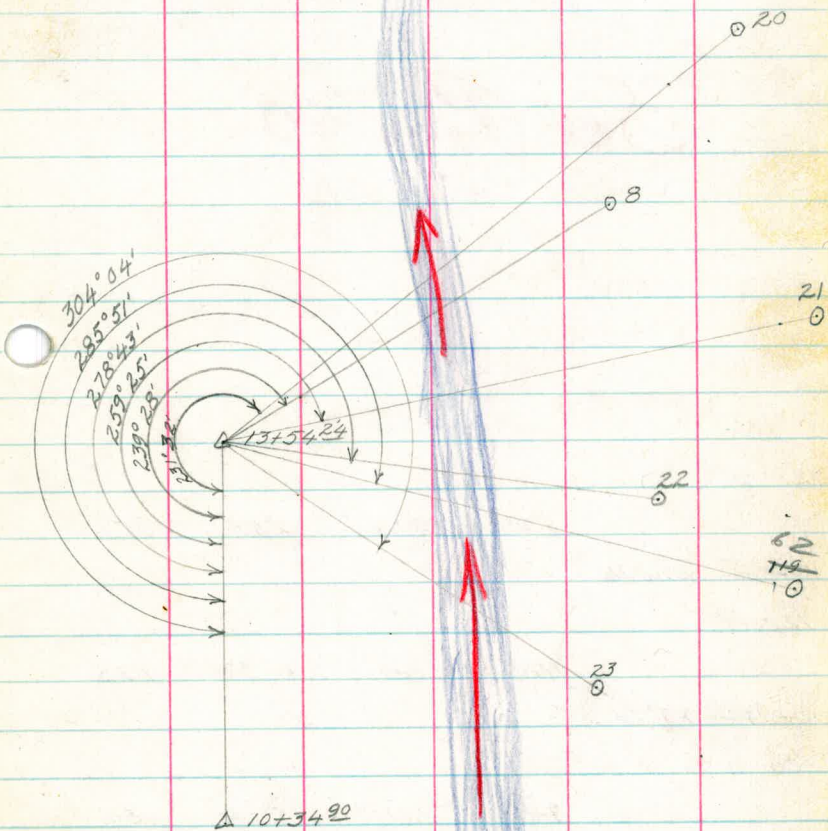
Sta.	Angle, P	Asz	Red	V.A.	Dist.
23 L		129° 25'	2.35	1° 24'	235
13+54 <sup>24</sup>	304° 04'				
119 L		111° 12'	3.03	0° 58'	303
13+54 <sup>24</sup>	285° 51'				
22 L		103° 64'	2.32	1° 16'	232
13+54 <sup>24</sup>	278° 43'				
21 L		84° 46'	3.19	2° 26'	319
13+54 <sup>24</sup>	259° 25'				
8 L		64° 49'	2.40	2° 28'	240
13+54 <sup>24</sup>	239° 28'				
20 L		56° 53'	3.44	1° 08'	344
13+54 <sup>24</sup>	231° 32'				
		Refer to pages 6 + 7			
		5° 21' 20"		Plotted Fe	
10+34 <sup>90</sup>				1-10-27	



17  
N.

Jan. 3, 1927  
N. Glover &  
S. Bichet  
H. Butzine  
Bush.

78



Plotted R.  
1-10-27

13)

Jan. 5, 1927.

Sta.	Angle. P.	Asz	Rad	V.A.	Dist.
See Page 60					
121 L		129° 50'	360	3° 53'	359.
10+34 <sup>90</sup>	296° 18'				
122 R		146° 49'	140	6° 30'	138.
10+34 <sup>90</sup>	307° 17'				
120 L		74° 17'	1.81	5° 08'	180.
10+34 <sup>90</sup>	240° 45'				
7+9 <sup>80</sup>		13° 31' 50"			

See Page 60

121 L

129° 50' 360 3° 53' 359.

10+34<sup>90</sup> 296° 18'

122 R

146° 49' 140 6° 30' 138.

10+34<sup>90</sup> 307° 17'

120 L

74° 17' 1.81 5° 08' 180.

10+34<sup>90</sup> 240° 45'

Refer to pages 6+7.

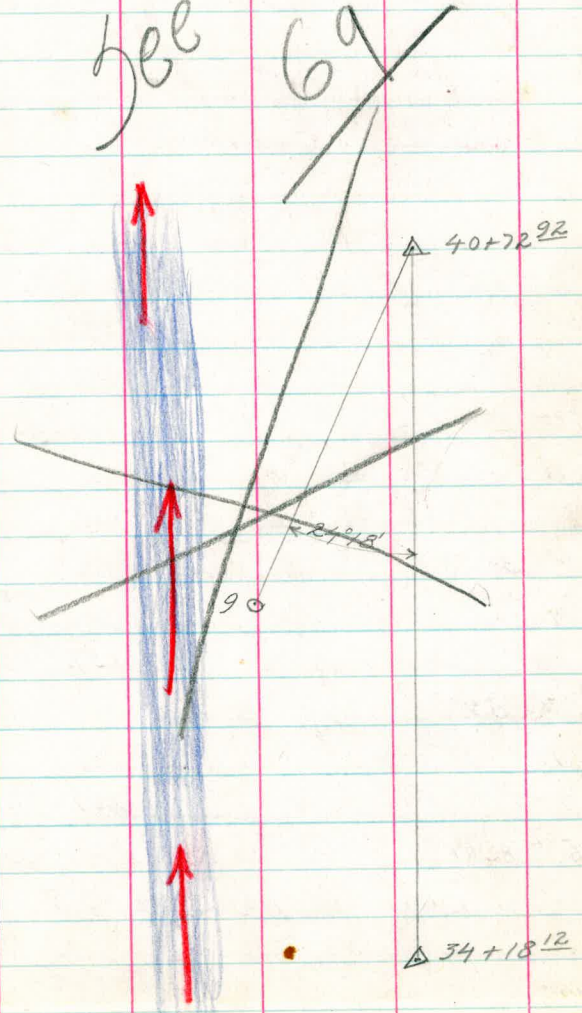
13° 31' 50"

Pg-60  
Plotted Fl.

1-11-26

7+9<sup>80</sup>

See Page 69



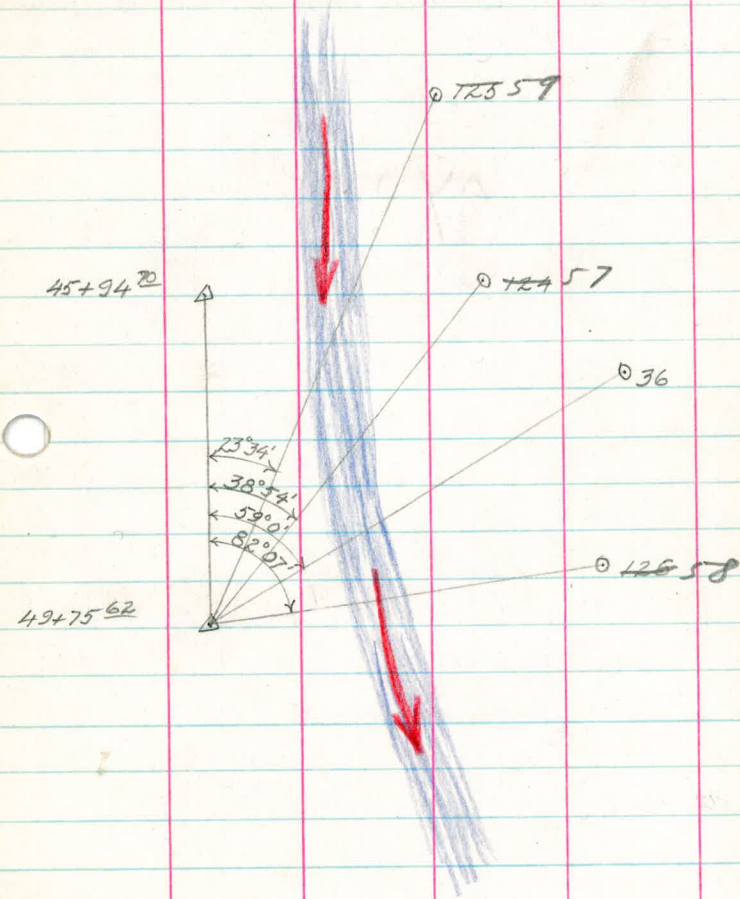


40)

Sta.	Angle. P.	Dist.
125 R		302.
49+75 <sup>62</sup>	23° 34'	
124 R		231.
49+75 <sup>62</sup>	38° 54'	
36 R		255.
49+75 <sup>62</sup>	59° 01'	
126 R		209.
49+75 <sup>62</sup>	82° 07'	
Refer to pages 54+55		
45+94 <sup>20</sup>		Plotted 76 1-10-27

41

80



Plotted R. 1-10-27

42)

Sta.	Angle. P.	Dist.
------	-----------	-------

Sand pits noted on this page are in small creek which runs into the Santa Ysabel River from the east.

116

105.

64+40<sup>44</sup> 182° 0'

118

110.

64+40<sup>44</sup> 139° 10'

Refer to pages 56 & 57.

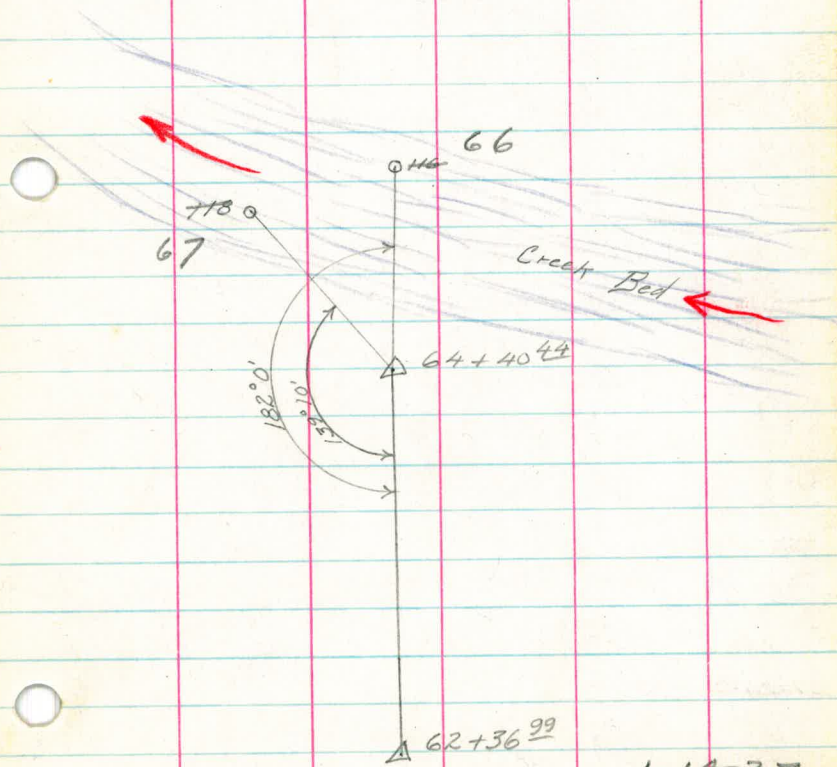
62+36<sup>99</sup>

Plotted P. 1-10-27



43)

81



1-10-27  
Plotted P.C.

44)

Sta

Angle. R.

Dist

132 L

192.

~~27+24<sup>98</sup>~~ 238° 21'

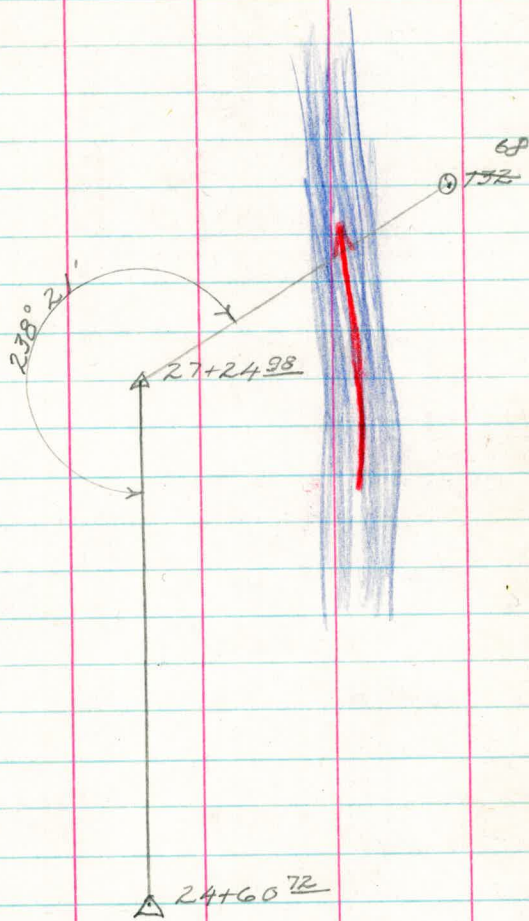
24+60<sup>22</sup>

Plotted *fl.*

1-10-27

45

82



Plotted F.R.  
1-10-27



46

Sta.

Angle. R.

Dist.

41 L

171.

30+69<sup>01</sup> 263°10'

130 L

107.

30+69<sup>01</sup> 263°10'

129 L

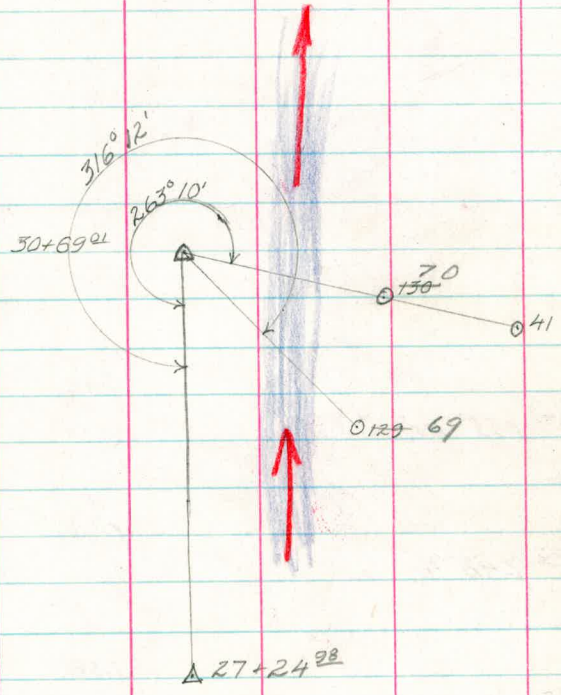
128.

30+69<sup>01</sup> 316°12'

27+24<sup>28</sup>

Plotted FG  
1-11-27

47)



Plotted Fl.  
1-11-27

48

Sta.	Angle. R.	Dist.
37 L		342.
35+97 <sup>69</sup>	233° 14'	
38. L		284.
35+97 <sup>69</sup>	242° 44'	
39 L		238.
35+97 <sup>69</sup>	261° 48'	
40 L		229.
35+97 <sup>69</sup>	305° 0'	

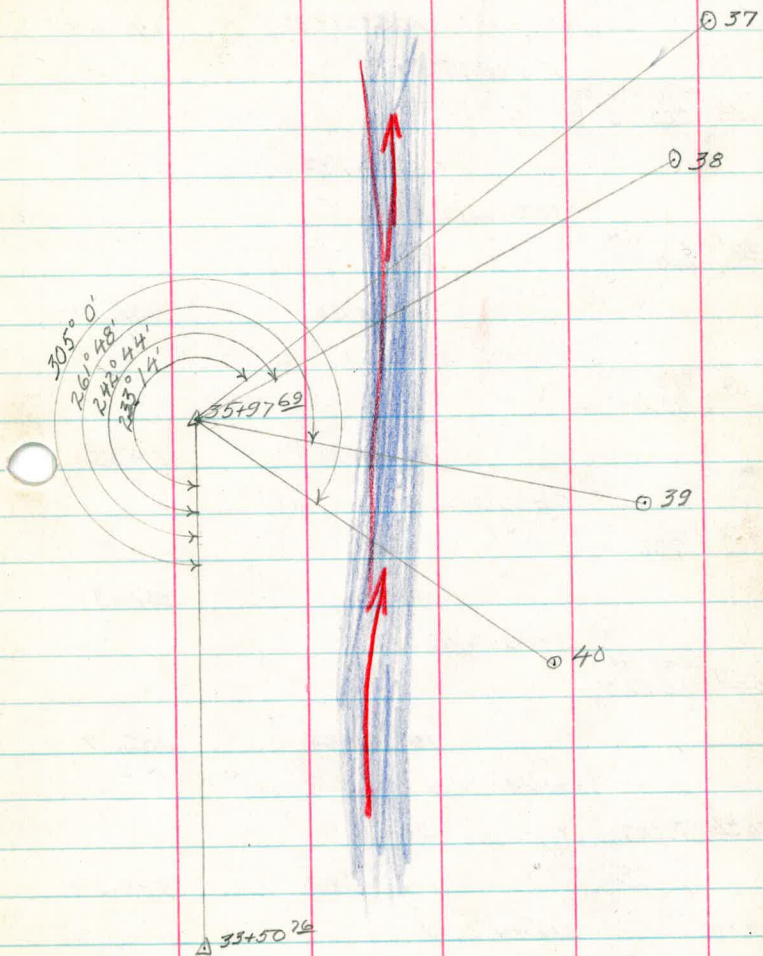
33+50<sup>26</sup>

Plotted R.  
1-11-27



49)

84



Plotted *RL*.  
1-11-27

Sta.	Angle. P.	Bear	Asz.	Dist.
50)	Traverse to locate sand pits from sta. 7+90 <sup>28</sup> up the river.			
		54°03'40"E	138°56'20"	159.16
29+13 <sup>41</sup>	306°10'30" 153°05'15"		165°51'05"	145.68
		514°08'55"E		
27+67 <sup>73</sup>	450°06'30" 225°03'15"		120°47'50"	247.75
		559°12'10"E		
25+19 <sup>98</sup>	401°08' 200°34'		100°13'50"	432.21
		579°46'10"E		
20+87 <sup>27</sup>	278°19' 139°09'30"		141°04'20"	214.55
		538°55'40"E		
18+73 <sup>22</sup>	P.O.T.		141°04'20"	337.63
		538°55'40"E		
15+35 <sup>59</sup>	248°40' 124°20'		196°44'20"	285.17
		516°44'20"W		
12+50 <sup>42</sup>	P.O.T.		196°44'20"	460.34
		516°44'20"W		
7+90 <sup>08</sup>	600°41' 300°20'30"		76°23'50"	
		N76°23'50"E		
0+00	Refer to page 17.			

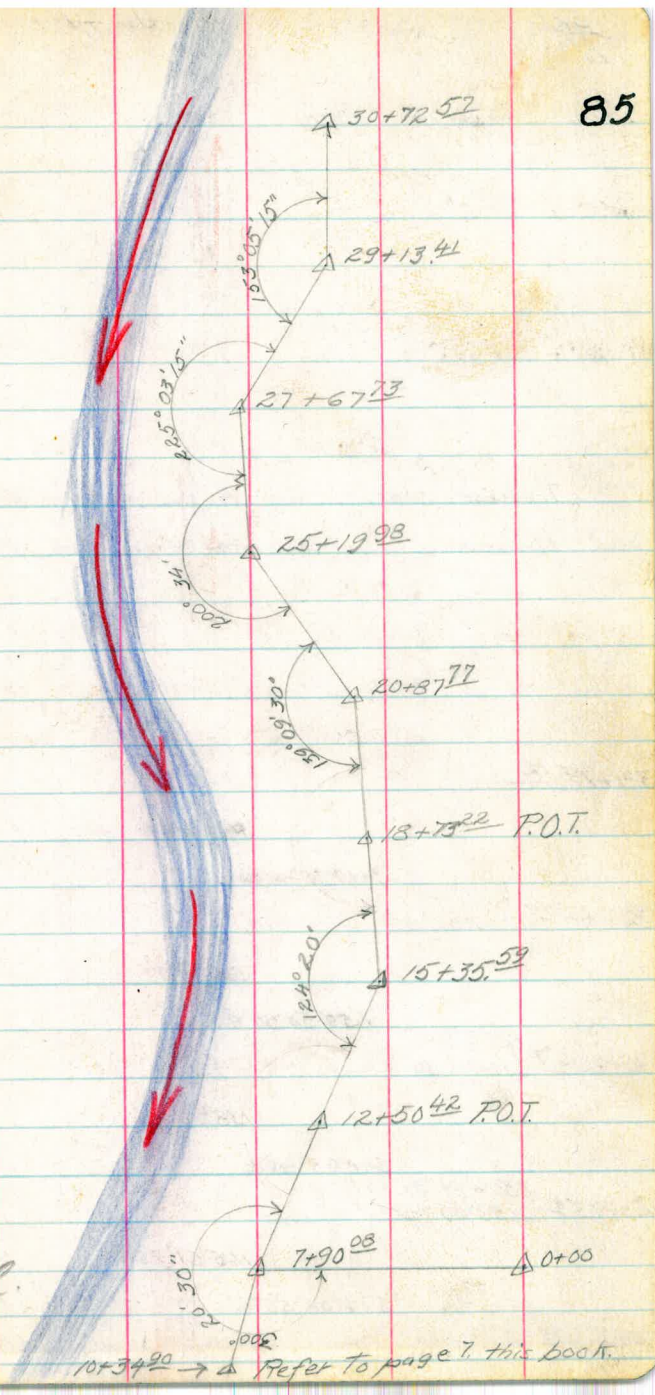
Plotted &c.

1-7-27

51

N.

85



Plotted R.  
1-7-27

Refer to page 7, this book.



52  
N.

Jan. 4, 1927.

Sta.	Angle - R.	Bear	Asz.	Dist.
Traverse crosses river from 30+72 <sup>57</sup> to 32+66 <sup>59</sup> and thence back down the river on the east bank.				
34+18 <sup>12</sup>			340°31'20"	151.62
32+66 <sup>59</sup>	201°05'	N 19°28'40" W		
	100°32'30"		59°58'50"	193.93
30+72 <sup>57</sup>	202°05'	N 59°58'50" E		
	101°02'30"		138°56'20"	159.16
29+13 <sup>4</sup>	306°10'30"	S 41°03'40" E		
	153°05'15"		165°51'05"	146.68
27+67 <sup>23</sup>		S 14°08'55" E		

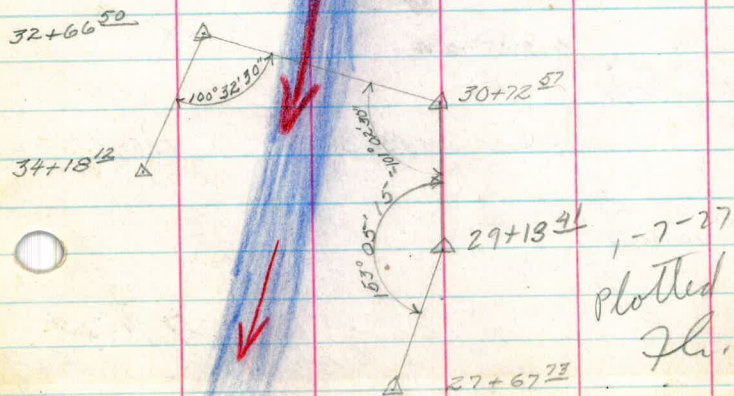
Plotted 7/2  
1-7-27

53)

N.

N Glover  
S Bicket  
Bush

86



Traverse from 30+72 <sup>57</sup> across the river to 32+66 <sup>50</sup>  
 thence down the river on the east bank.

Sta.	Angle. P.	Bear.	Asz.	Dist.
54+27 <sup>12</sup>	395° 146' 197° 32' 0"	N 21° 20' 05" E	21° 20' 05"	451.50
49+75 <sup>62</sup>	317° 52' 0" 158° 56' 0"	N 3° 43' 05" E	3° 43' 05"	380.92
45+24 <sup>70</sup>	501° 31' 45" 250° 45' 45"	N 24° 47' 05" E	24° 47' 05"	237.57
43+57 <sup>13</sup>	439° 45' 0" 219° 52' 30"	N 45° 58' 40" W	45° 58' 40"	284.21
40+72 <sup>92</sup>	262° 20' 0" 131° 10' 0"	N 85° 51' 10" N	85° 51' 10"	654.80
34+18 <sup>12</sup>	324° 55' 0" 162° 27' 30"	N 37° 01' 10" W	37° 01' 10"	151.62
32+66 <sup>50</sup>	201° 05' 0" 100° 32' 30"	N 19° 28' 40" W	19° 28' 40"	193.93
30+72 <sup>57</sup>	202° 05' 0" 101° 02' 30"		59° 58' 50"	

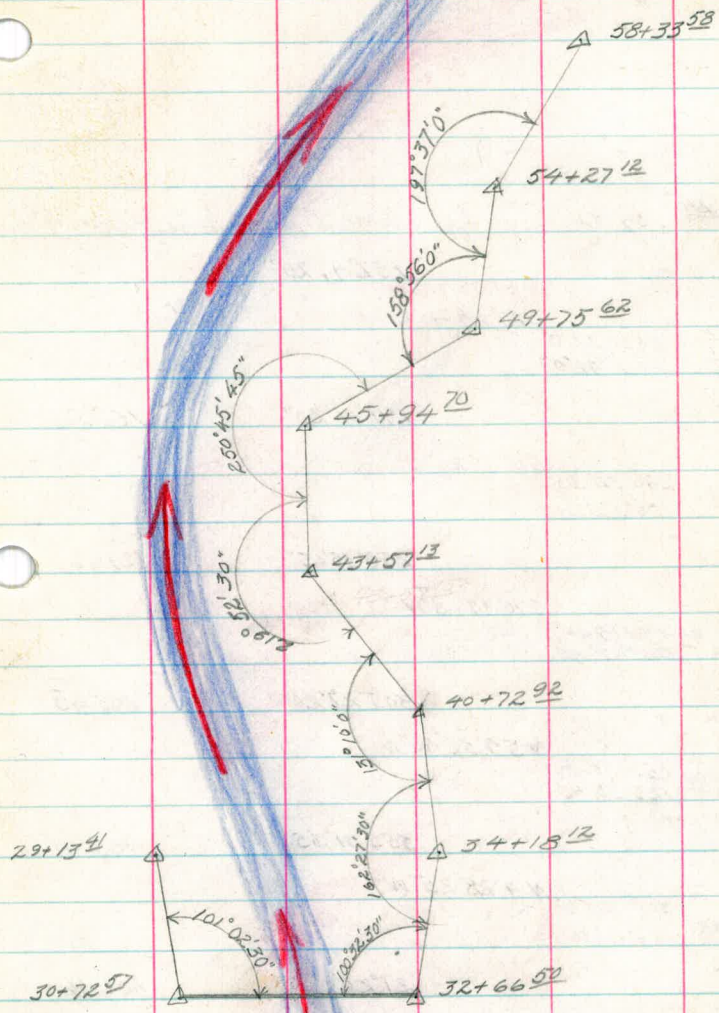
29+13 <sup>41</sup>

Plotted F.L. 1-7-27



55  
N.

87



Plotted Fe.  
17-27

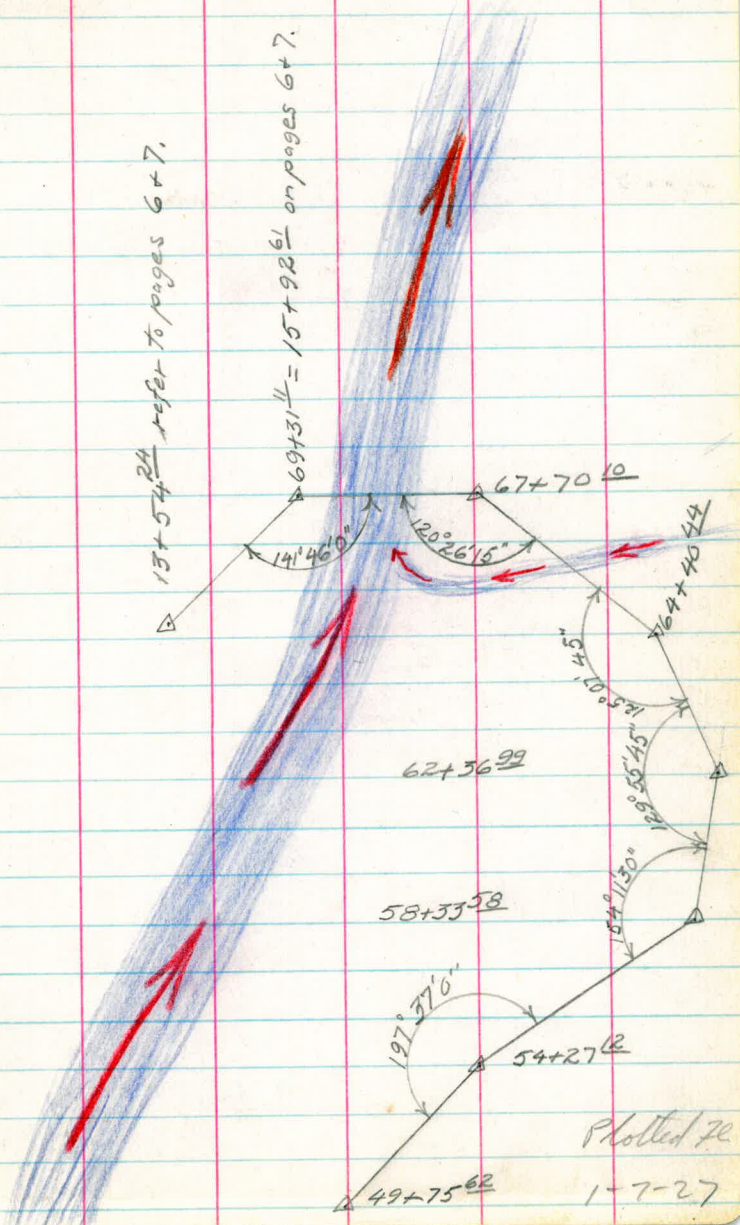
Sta	Angle. R.	Bear	Asz	Dist.
N. <u>56</u>				
13+54 <sup>24</sup>	on traverse from 7+90 <sup>08</sup> north on west edge of river.			
			152°41'20"	
15+92 <sup>6</sup>	283°32'0"		N 27°09'10" W	
69+31 <sup>11</sup>	141°46'0"		S 27°12'40" E	
			191°01'20"	161.01
			511°01'20" W	
67+70 <sup>10</sup>	240°52'30"			
	120°26'15"		250°35'05"	329.66
			570°35'05" W	
64+40 <sup>44</sup>	250°15'30"			
	125°07'45"		305°27'20"	203.45
			N 59°32'40" W	
62+36 <sup>99</sup>	259°51'30"			
	129°35'45"		355°31'35"	403.41
			N 4°28'25" W	
58+33 <sup>58</sup>	308°23'0"			
	154°11'30"		2120'05"	406.46
			N 21°20'05" E	
54+27 <sup>12</sup>	395°14'0"			
	197°37'0"		3°43'05"	451.50
			N 3°43'05" E	
49+75 <sup>62</sup>				plotted K.
				1-7-27

N. 571

88

15+54<sup>24</sup> refer to pages 6+7.

69+31<sup>11</sup> = 15+92<sup>61</sup> on pages 6+7.





58

88

59)

N.

Jan 6, 1927

N. Glover.

S. Bicket.

Bush.

89

Traverse for location of sand pits.

Starting at station 24+60<sup>72</sup> (refer to pages 8+9) and going north down the west bank of the Santa Ysabel River.

Transit set on Sta 24+60<sup>72</sup>, backsight on sta. 22+85<sup>57</sup>

Clear + Warm

Sta.	Angle	Bear.	Asc.	Dist.
60				
4+64 <sup>85</sup>				
6+62 <sup>96</sup>	552° 56'	S 2° 58' 12" E	357° 00' 53"	
38+70 <sup>85</sup>	276° 28'	N 2° 59' 05" W		
			260° 32' 55"	273.16
			580° 32' 55" W	
35+97 <sup>69</sup>	194° 52'			
	97° 26'			
			343° 06' 55"	246.93
			N 16° 53' 05" W	
33+50 <sup>26</sup>	325° 20'			
	162° 40"			
			0° 26' 55"	104.64
			N 0° 26' 55" E	
32+46 <sup>12</sup>	300° 44' 10"			
	150° 22' 05"			
			30° 04' 50"	177.11
			N 30° 04' 50" E	
30+69 <sup>01</sup>	366° 02'			
	183° 01'			
			27° 03' 50"	344.03
			N 27° 03' 50" E	
27+24 <sup>98</sup>	417° 48'			
	208° 54'			
			358° 09' 50"	264.26
			N 1° 50' 10" W	
24+60 <sup>72</sup>	364° 52' 30"			
	182° 26' 15"			
			355° 43' 35"	
			N 4° 16' 25" W	
22+85 <sup>57</sup>				

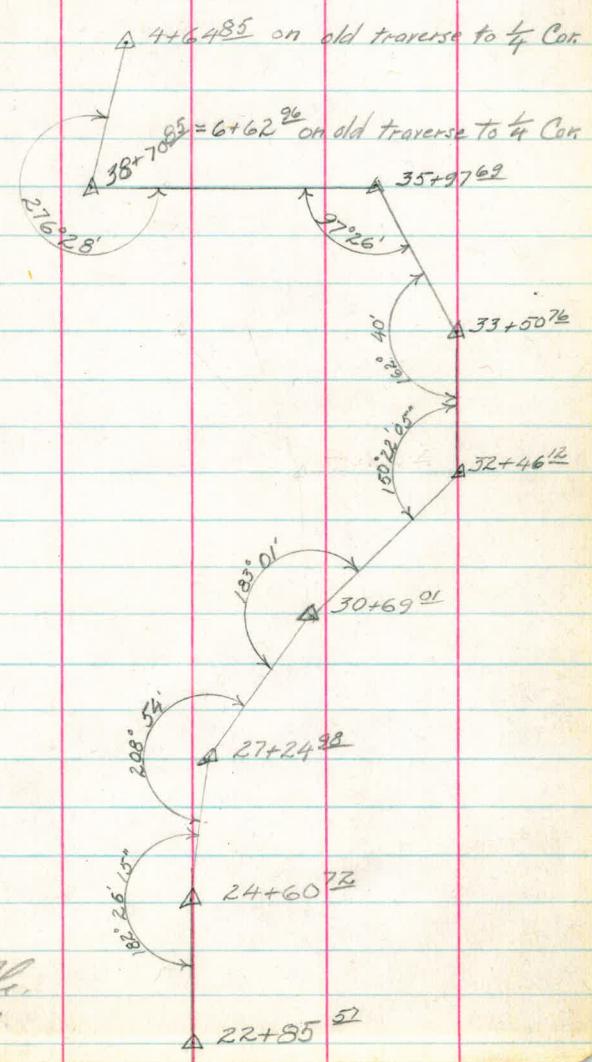
Plot of A-1-11-27



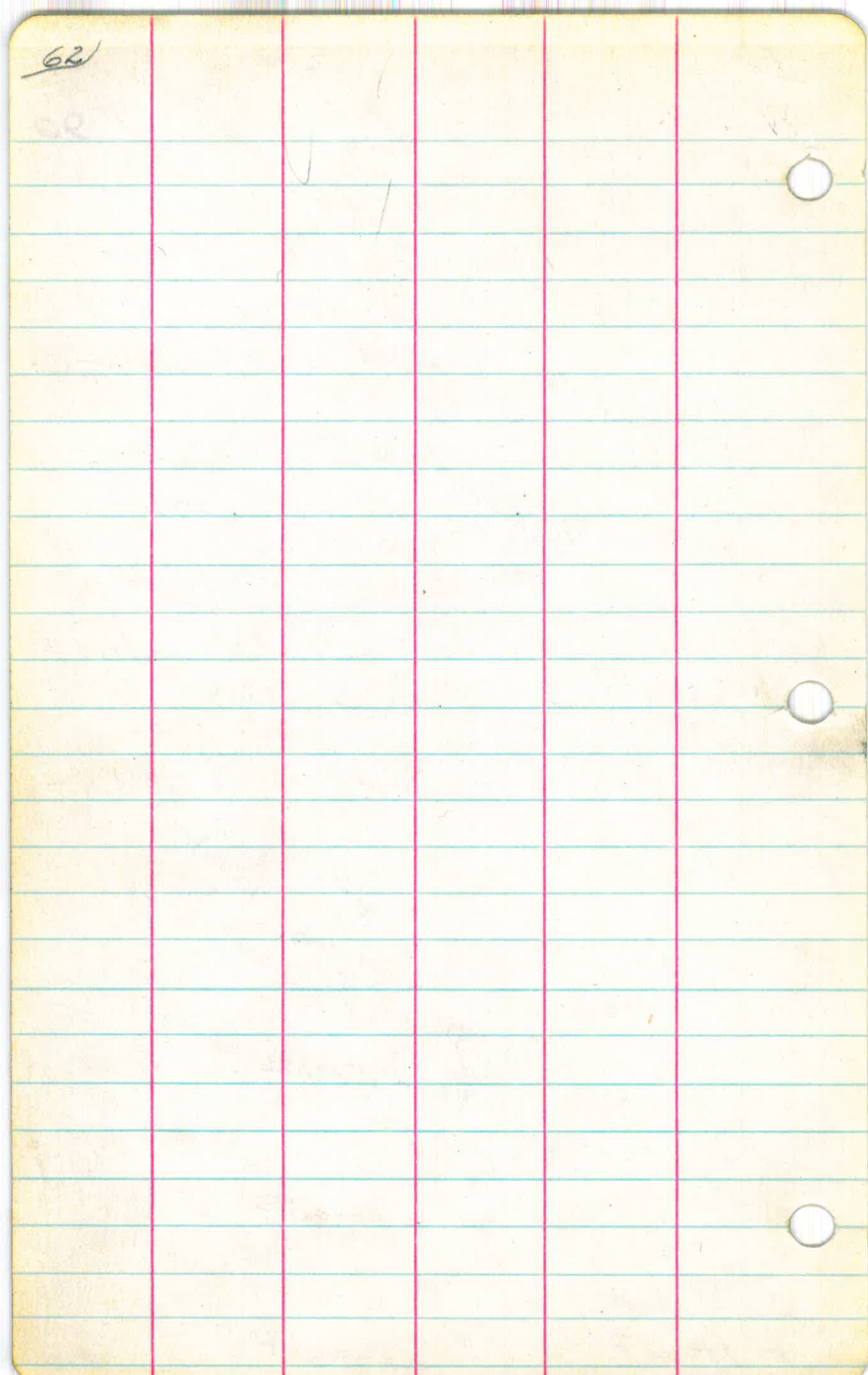
61

N.

90



Plotted 76.  
1-11-27



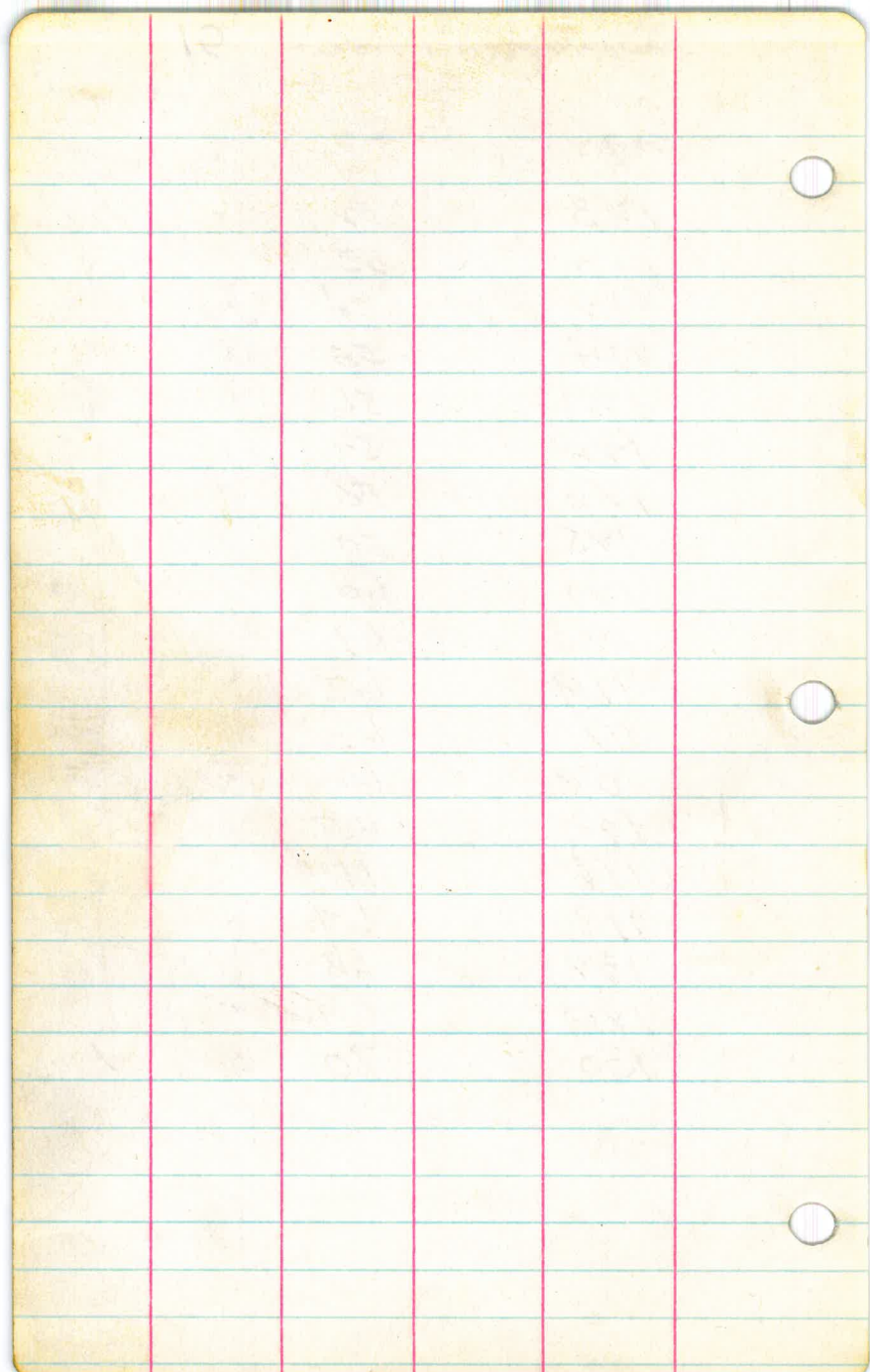
Sutherland Sand  
samples

91

Hines  
Vent Horn  
Soper

Glovers No	T.P. No	x	Date Sent
123	52	x	1/18/27
122	53	x	
112	54	x	
114	55	x	
127	56	x	
124	57	x	
126	58	x	
125	59	x	
121	60		
120	61	x	
119	62	x	
111	63		
109	64	x	
107	65	x	
116	66	x	
118	67	x	
132	68	x	
129	69	x	
130	70	x	





-N-

1-24-27

98

Mr. Getchin

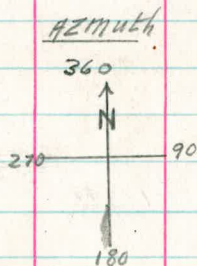
Bitchet

Bisbee

- Butzine -

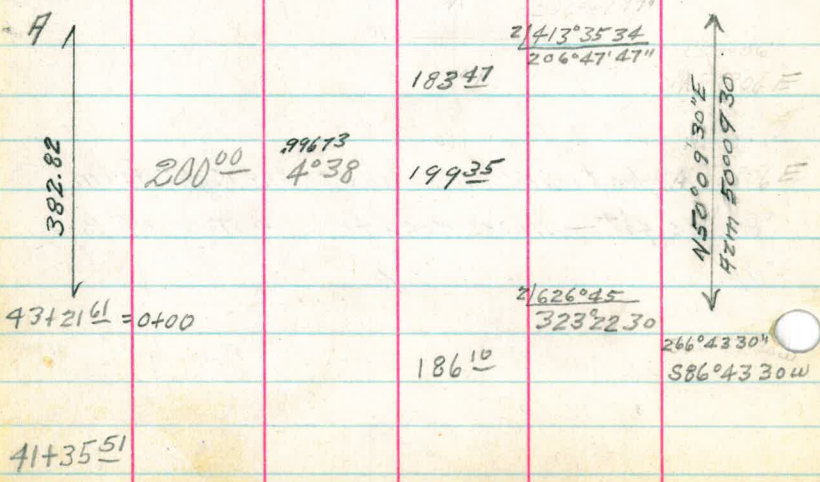
Traverse from 45+71.16

to the w.c. 5.73 chains 58949W of  
1/4 Cor. between sections 17+20 T. 12S R. 2E  
S. B. M. thence in an easterly direction  
to the N.E. Cor. of section #20 along the  
San Ysabel River to the Axis of the  
Sutherland Dam.



Angles turned twice and to the right from  
Backsight - notes read from bottom of Page  
up.

Sta	Dist	Slope	Dist	V. Angle	Conn. Dist.	Angles to Right from Backsight	Hzm N = 360° E = 90°	C. C. + Azm
-----	------	-------	------	----------	-------------	--------------------------------	----------------------------	-------------





True Position of  $\frac{1}{4}$  Cor between Sections 17 & 20 Falls in the San Ysabel River

Description of witness Corner =  
Granite stone

20" x 8" x 5"

15" in ground

marked w.c. on top =  
08 on south  
14 on N face

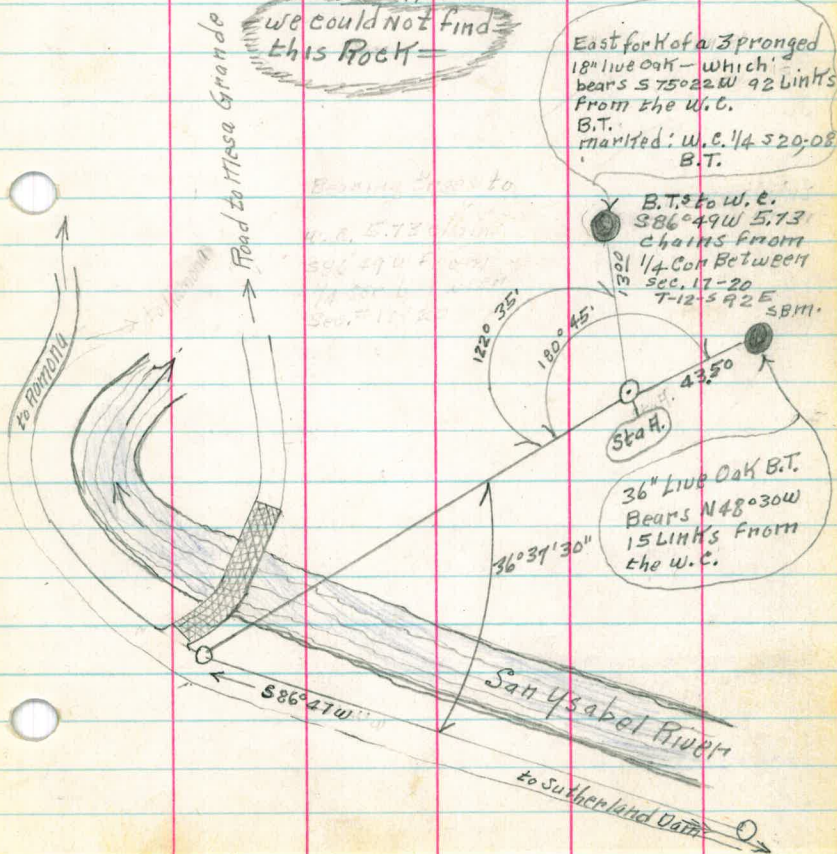
we could not find this rock

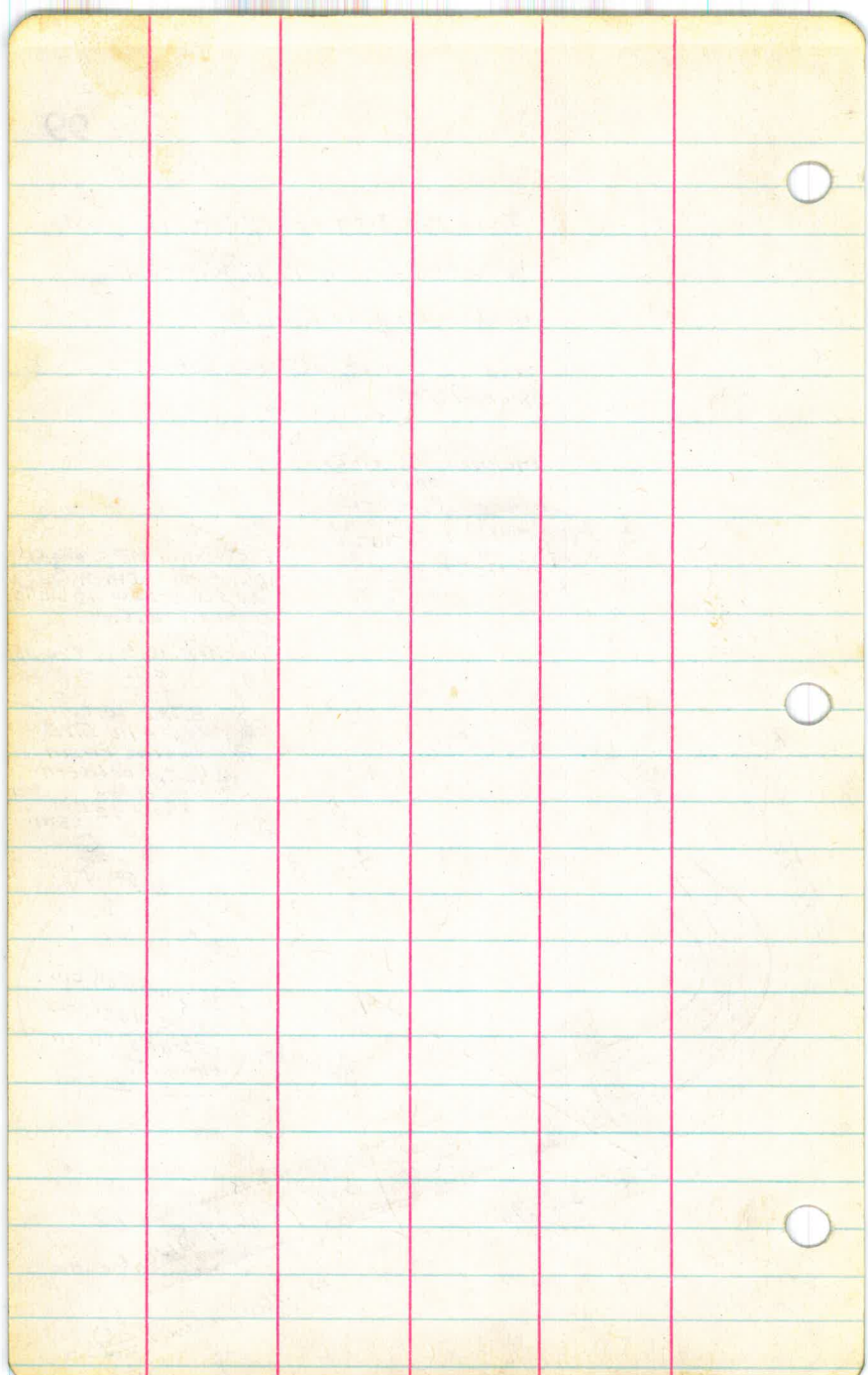
East fork of a 3 pronged 18" live oak - which bears S 75° 22' W 92 Links from the w.c.

B.T. marked: w.c. 14 520:08 B.T.

B.T. to w.c. S 86° 49' W 5.73 chains from  $\frac{1}{4}$  Cor between sec. 17-20 T-12-S 92 E S.B.M.

36" Live Oak B.T. Bears N 48° 30' W 15 Links from the w.c.

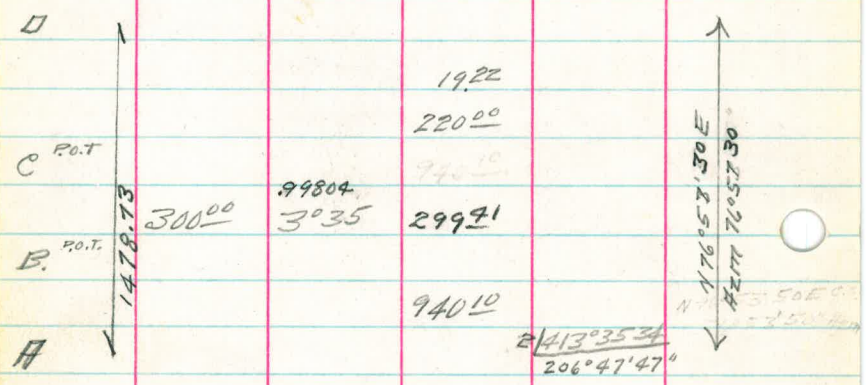




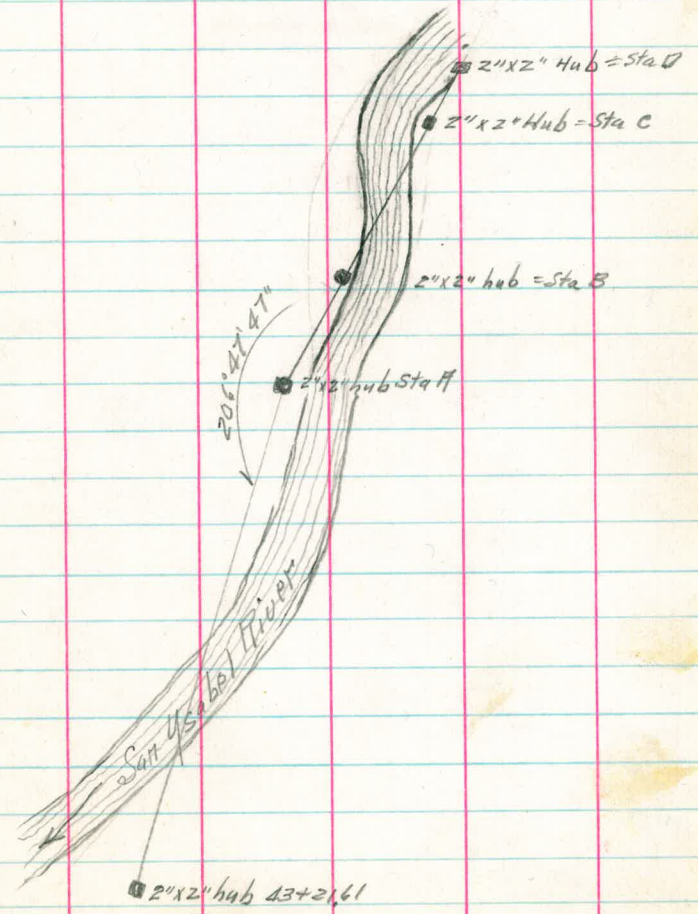
100

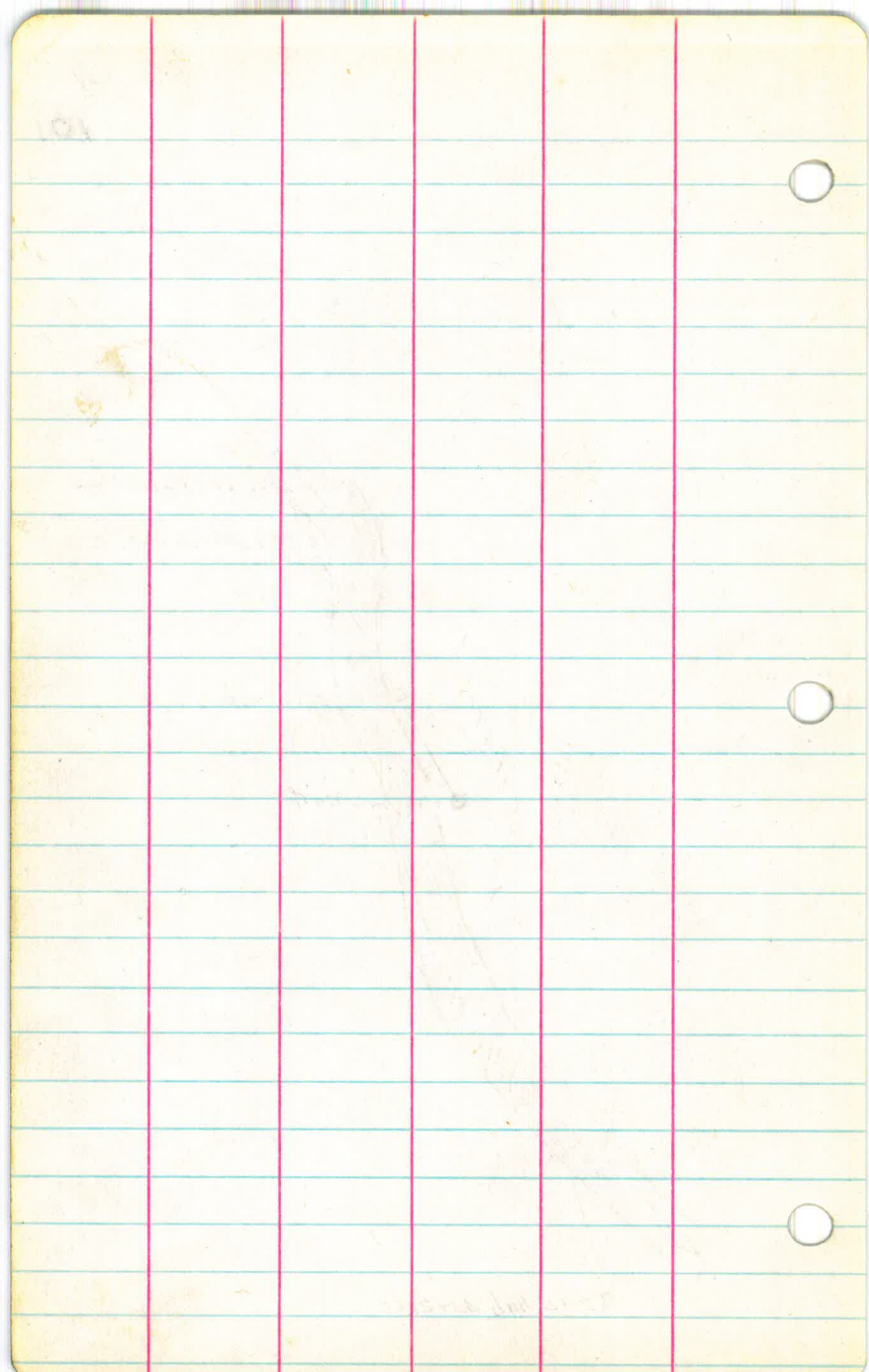


Sta	Dist.	Slope Dist	V. Angle	Correct Dist	Angle to Right From Backsight	Calc. Course - Azimuth
D				19.22		
C P.O.T				220 <sup>00</sup>		
B P.O.T	300 <sup>00</sup>	.99804	3 <sup>0</sup> 35	299.91		
A				940 <sup>10</sup>		
				206 <sup>0</sup> 47'47"		



4312161



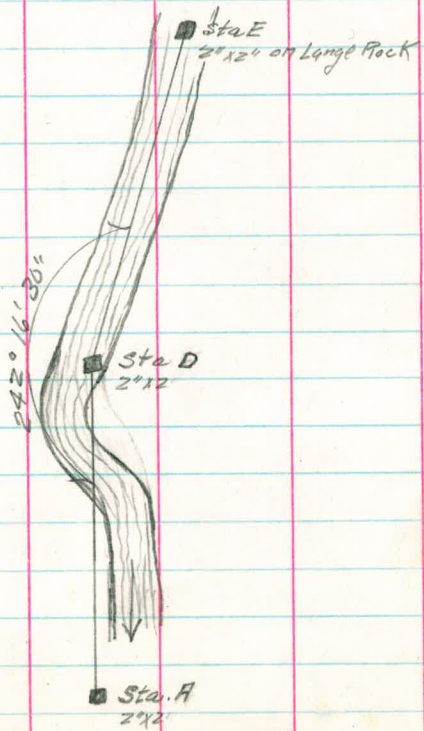




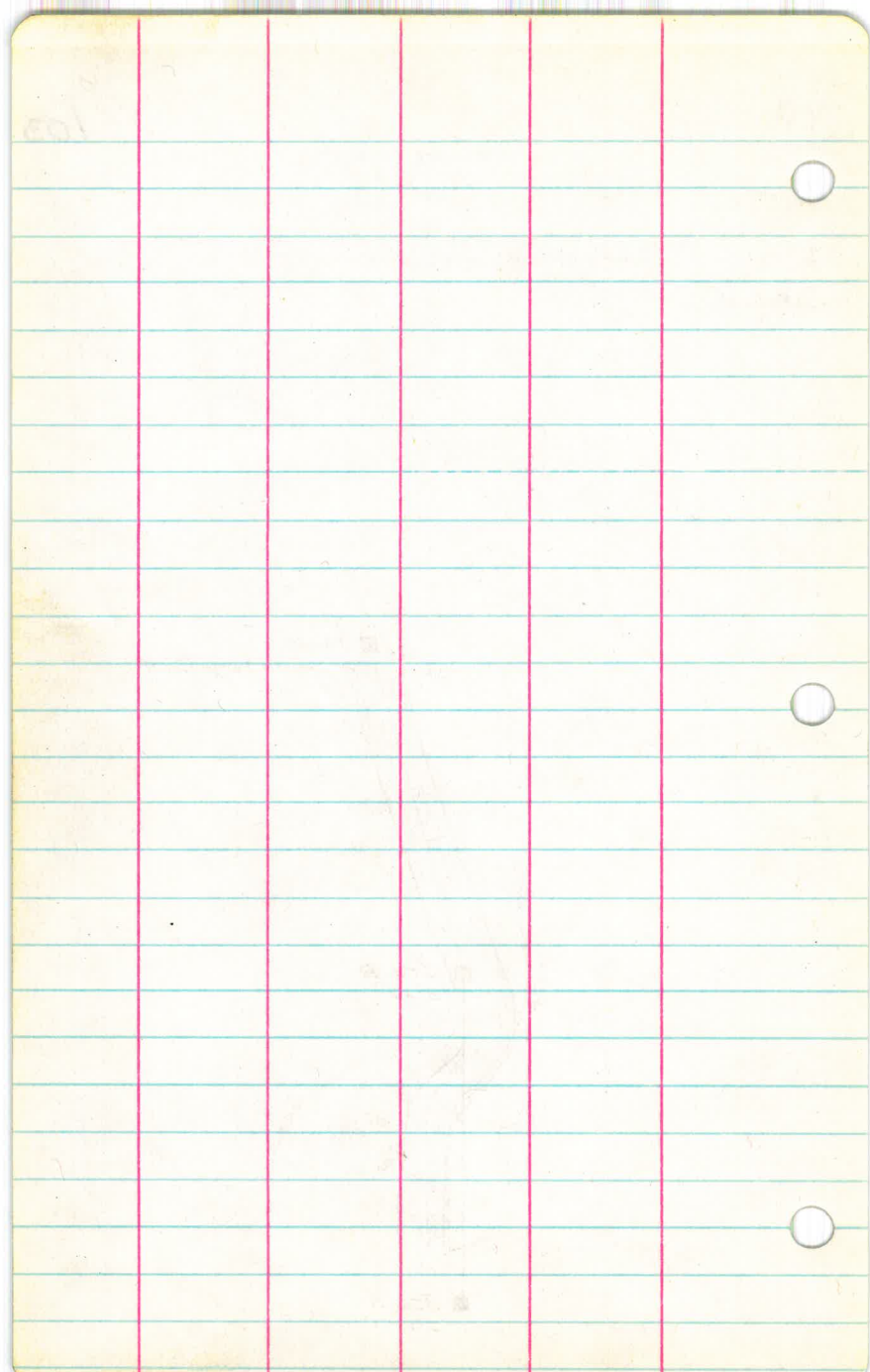
102

5	Slope Dist	V. Angle	Conn. Dist	Angle to Sight from - - Azim. - - Backsight -	Calculated Course
Sta	Slope Dist	V. Angle	Conn. Dist		
E			892.56		S40°46' E 139°14'
D				$\frac{2}{484^{\circ}33'}$ 242°16'30"	N76°57'30" E
A					

6  
103





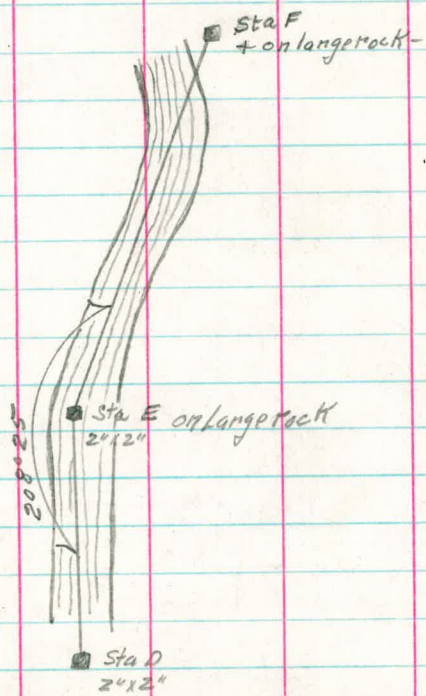


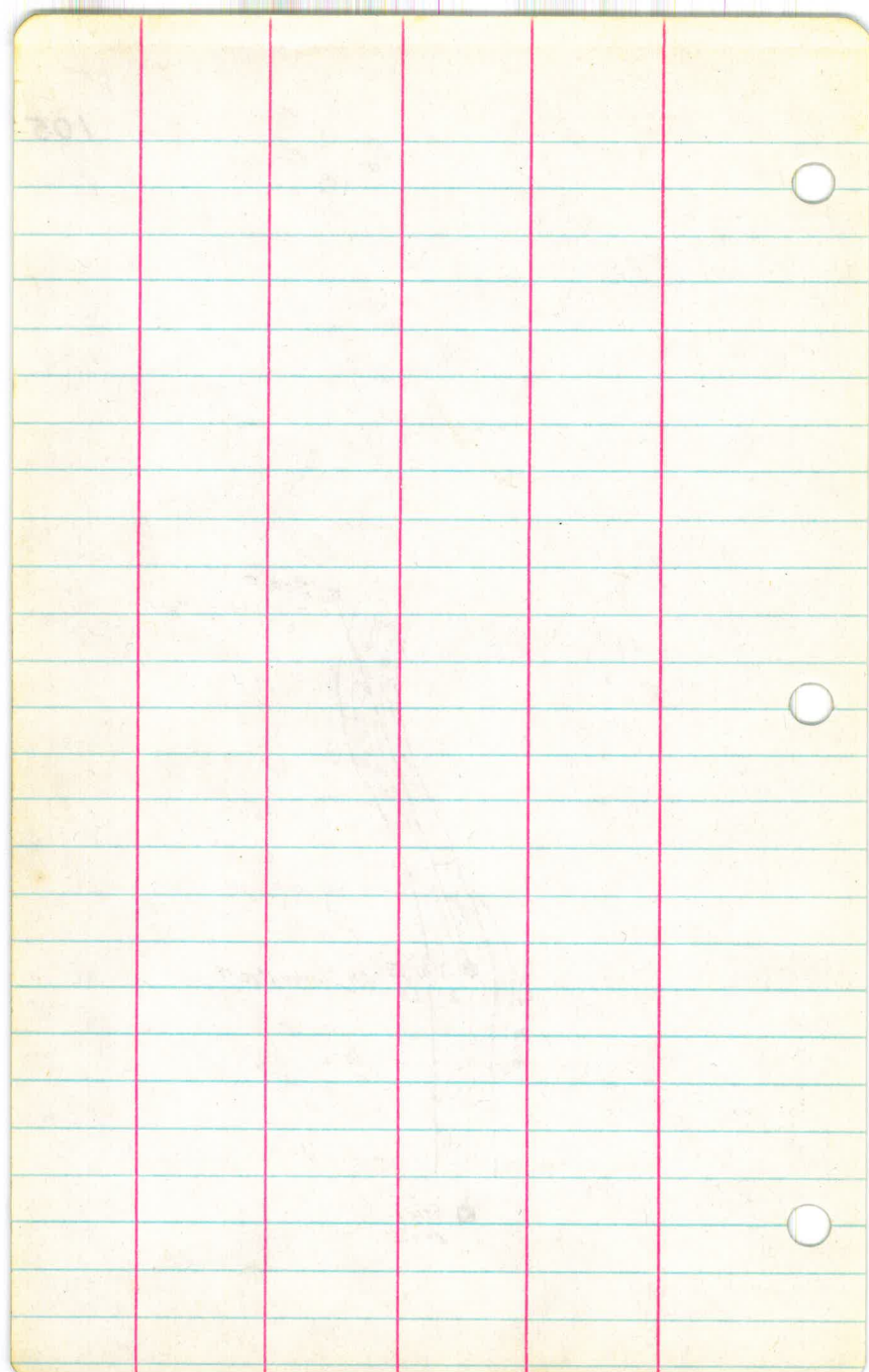
104





8  
105





106

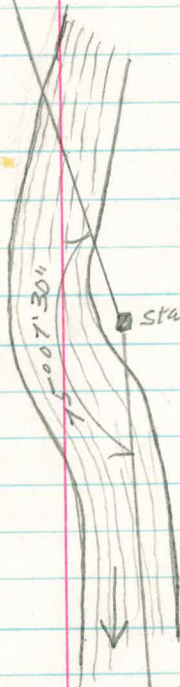


9	Slope Dist	V. Angle	Comm. Dist	Angle to Right from Backsight	Calculated Course Azim -
Sta					
G			305.72		N62°46'30"E 62°46'30"E
F				2/150.15 75°07'30"	S12°21'E
E					

10

107

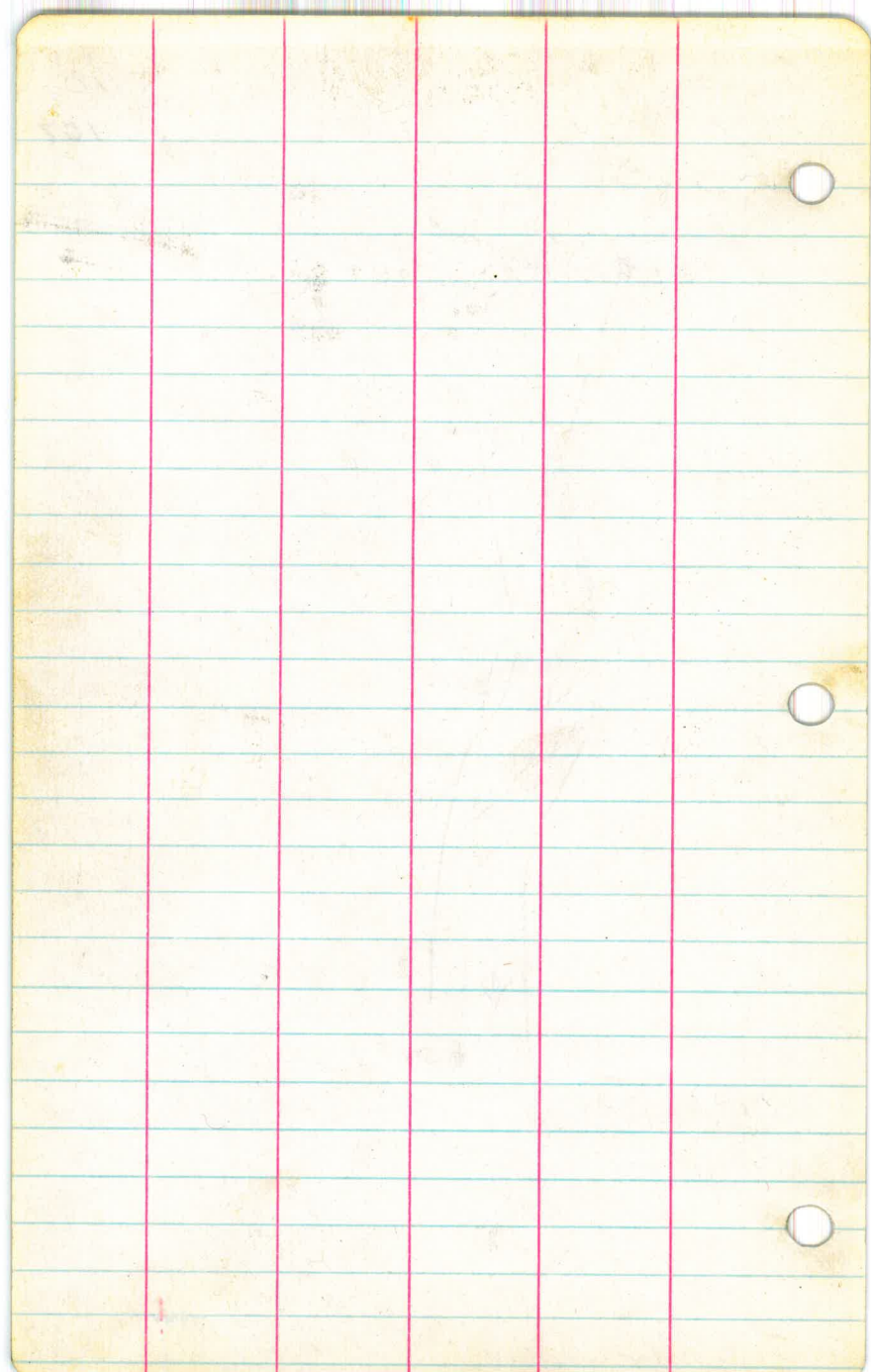
Sta G  
+ on large rock



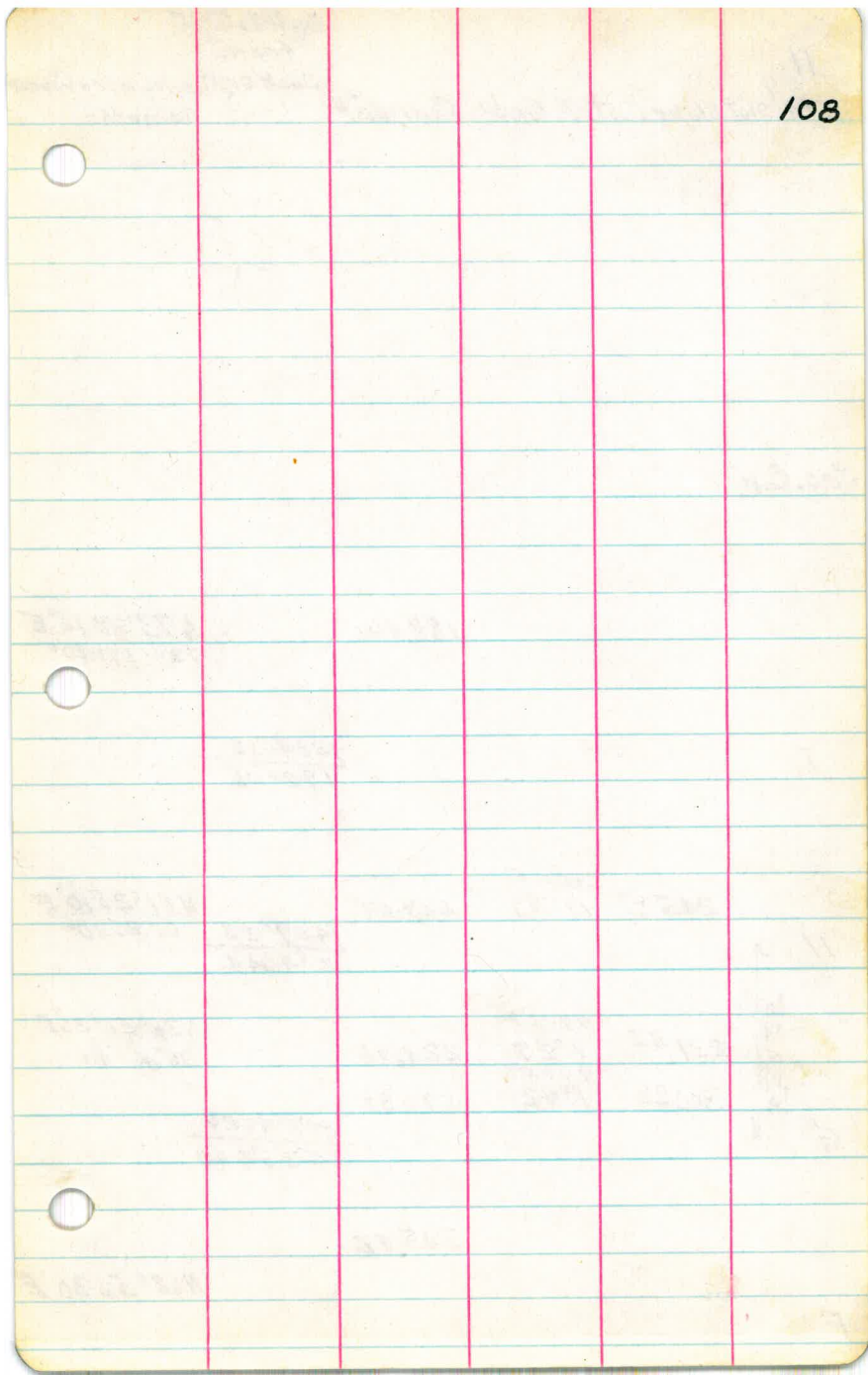
1500 ± 30''

Sta F

Sta E







Angle to Right  
from  
Backsight calculated Course  
Azimuth-

Sta	Dist	Slope	Dist	Angle	Corr. Dist.	Azimuth
II						
					188.40	N73°31'10"E 73°31'10"
I					1384.12 192°06	
	245.60	.95115 17°59	233.63		1409°28 204°44	N61°25'10"E 61°25'10"
H	231.33	.99156 7°27	229.38			N36°21'30"E 36°21'10"
	300.00	.99986 1°42	299.87		307°4920 153°54.40	
G						
					305.72	
F						N62°46'30"E

Sec. Cor.

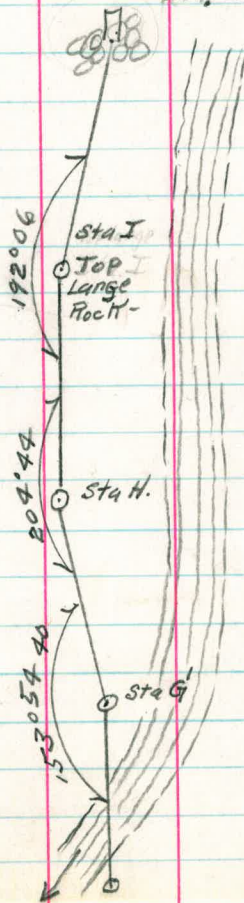
529.25

12

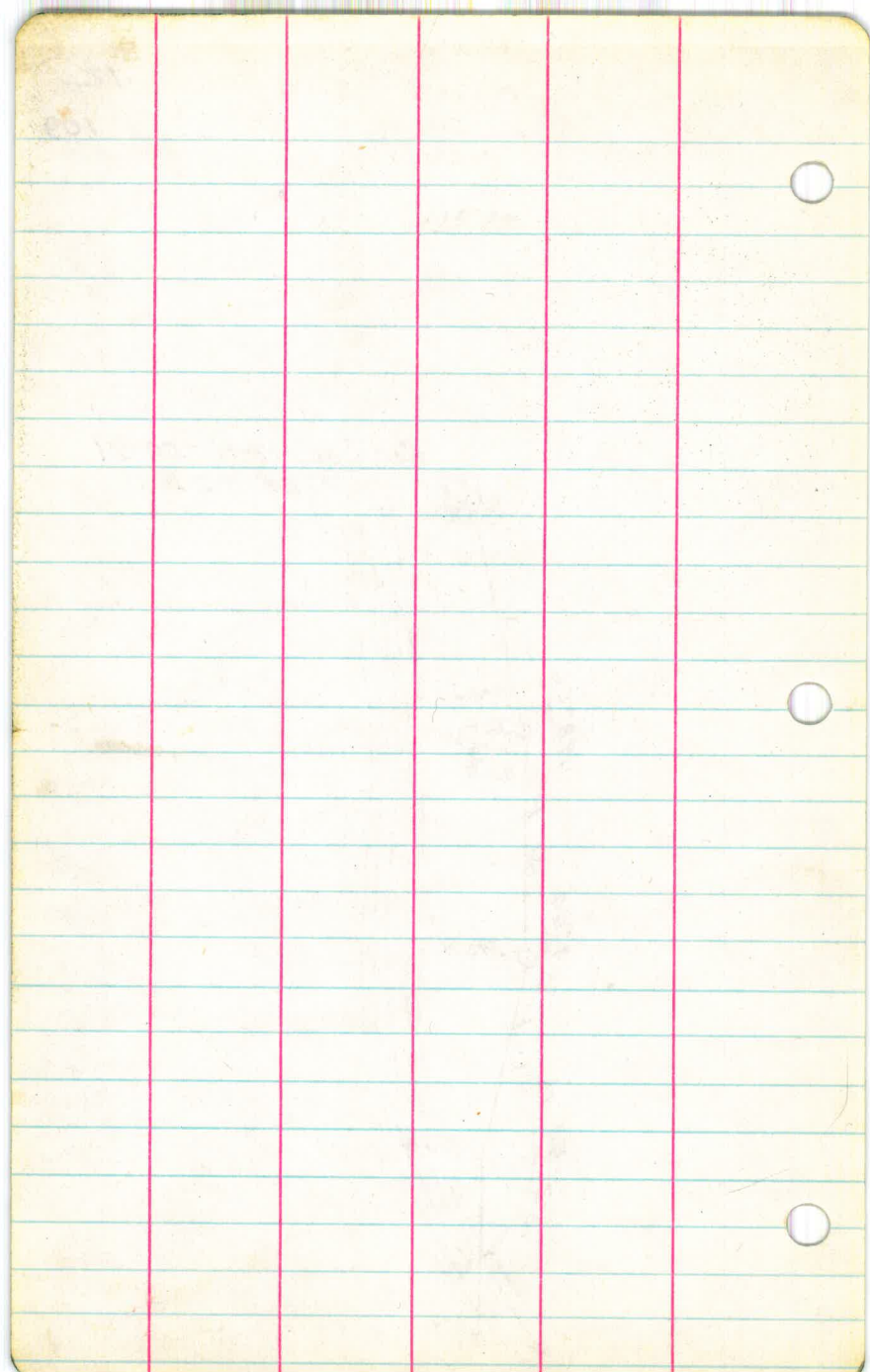
109

Cor. Sec. 17-16-20-21

T12S R2E







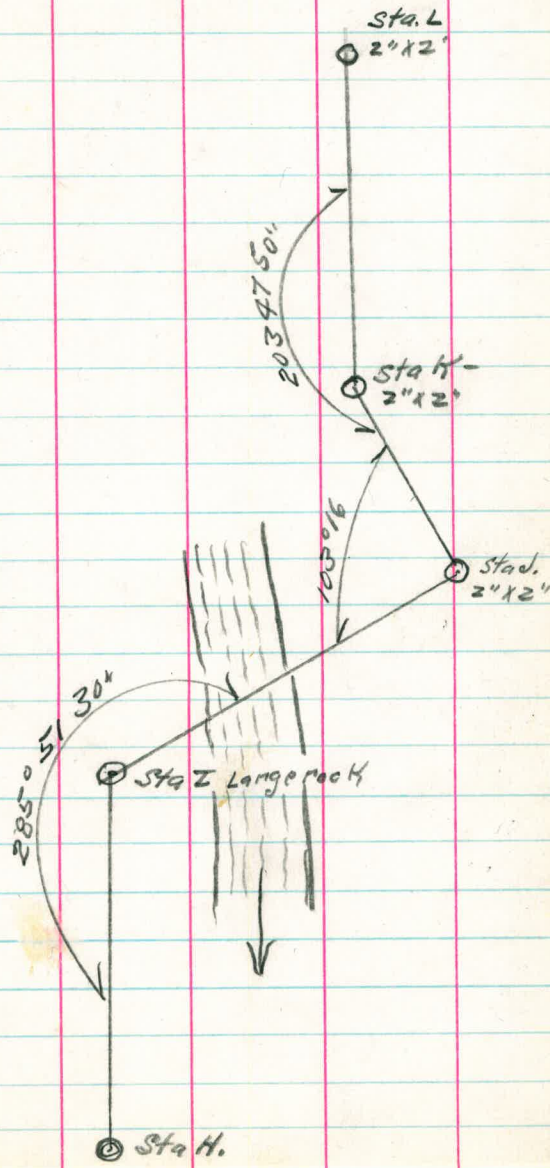
110

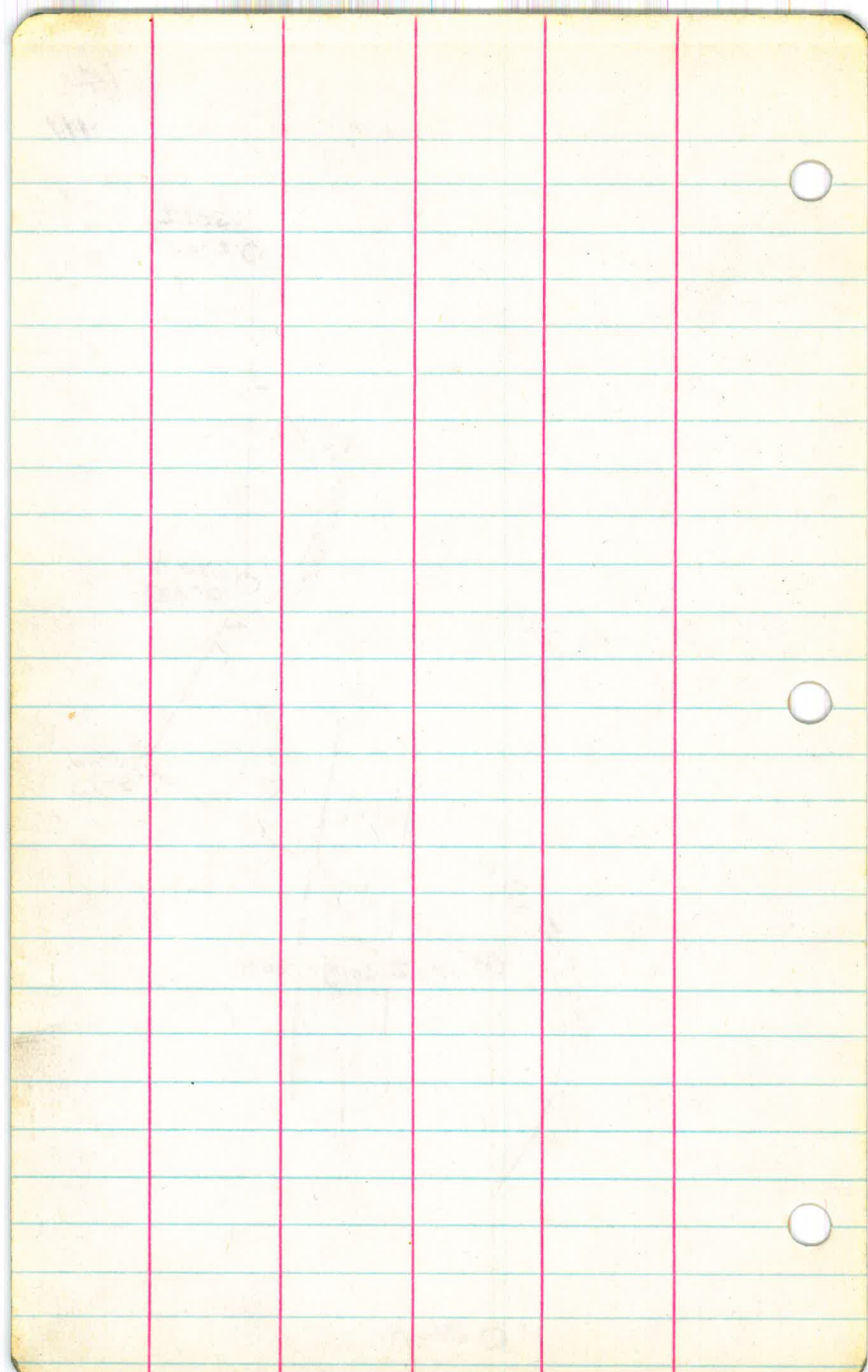
Sta	Slope	Dist	∠ Angle	Corr. Dist	Angle to Right from Backsight	calculated Course Azimuth -
L						
				365.49		S65°40' E 114°20' 54"
H					$\frac{407^{\circ}35'40''}{203^{\circ}47'50''}$	
H				62.21		S89°27'30" E 90°32'30"
J					$\frac{206^{\circ}31'30''}{103^{\circ}15'45''}$	
I	300°	99374	6°25'	1926 298.12		S12°43'20" E 167°16'40"
	317.38				$\frac{571^{\circ}43''}{285^{\circ}51'30''}$	
						N61°25'10" E 61°25'10"
H						



14

III





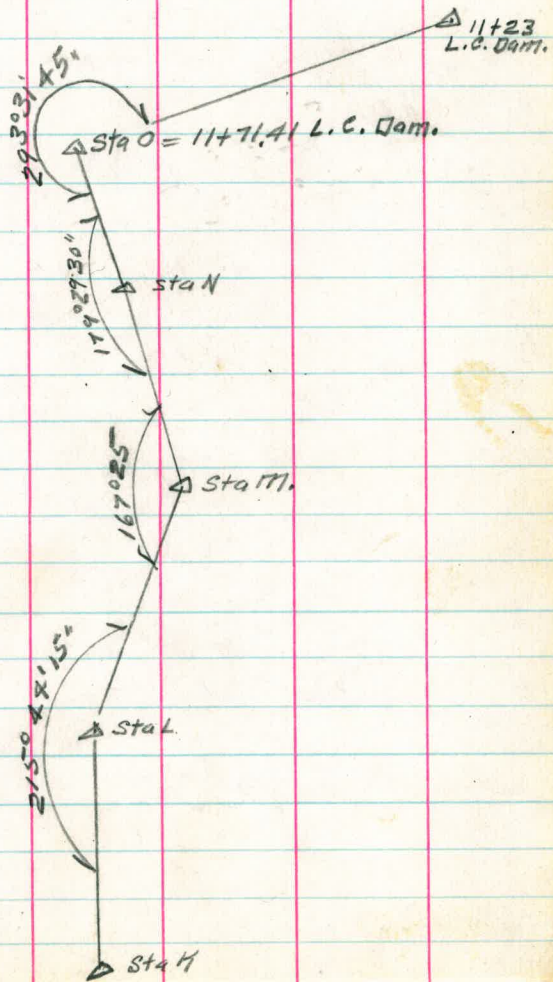
112

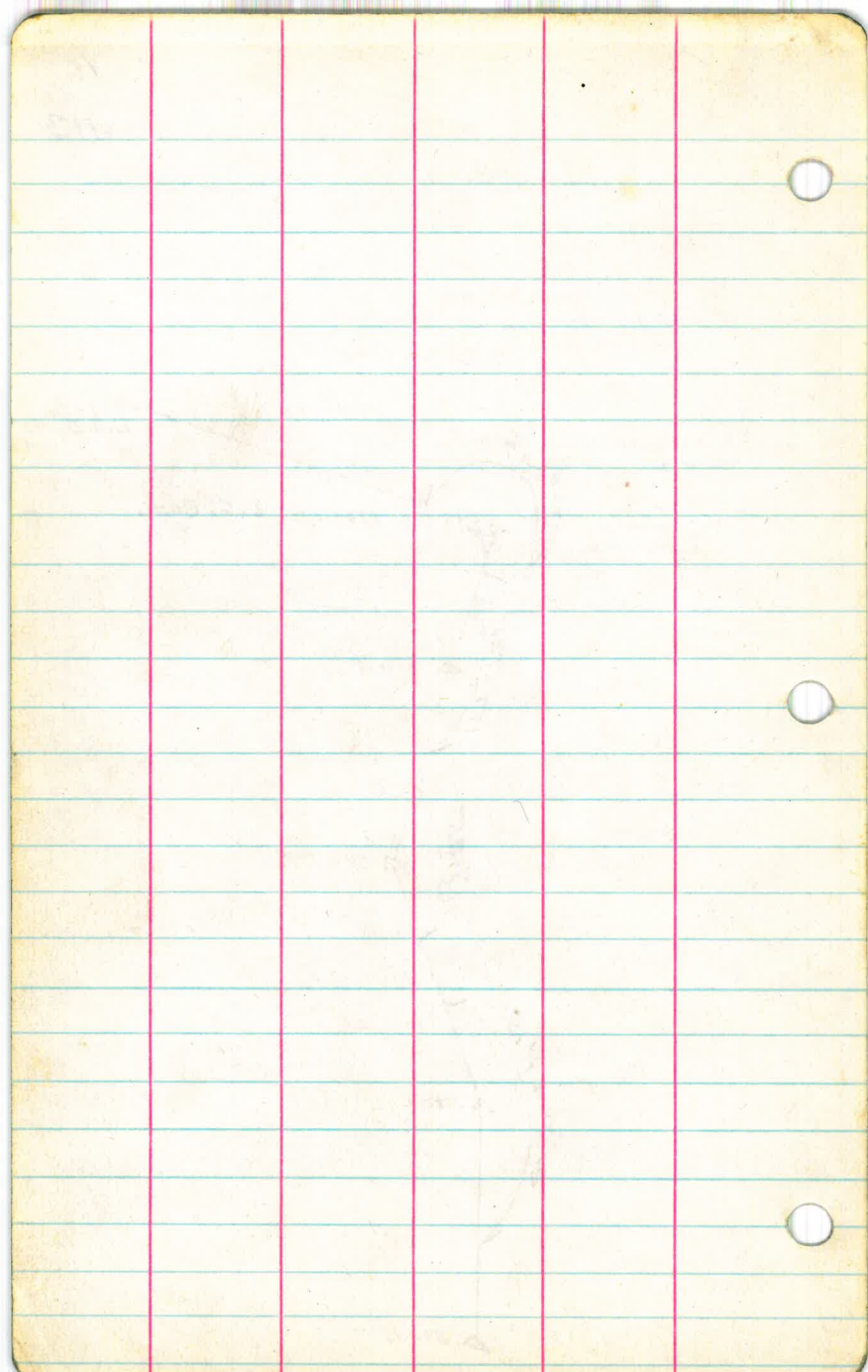


Sta	Slope	Dist	∠	Angle	Conn. Dist	Angle to Right from Backsight	calculated Course Azimuth
15							
	L.C. DAM Bearing & Given Mt.						
						570° 30' 30"	
						70° 30' 30"	
						00° 00' 30"	
11+23					48.41	570° 30' 30"	250° 30' 30"
0=11+71						587° 03' 30"	
					256.34	293° 31' 45"	543° 01' 30"
							136° 58' 30"
N						358° 59'	
						179° 29' 30"	
					194.71	542° 31' E	137° 29'
M						334° 50'	
						167° 25'	
					306.62	529° 56' E	150° 04'
L						431° 28' 30"	
						215° 44' 15"	
						565° 40' E	114° 20'
H							

16

113





N.

Jan. 11, 1927.

114

N. Glover - Tt

S. Bichet ?

R. Bush-Axe

### 2073 Contour - Sutherland.

Sta 0+00 of 2073 contour is on the line of the chord of the dam produced.

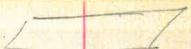
Transit set on Sta 8+90 at W. end of chord of dam, backsight on Sta 15+28<sup>30</sup> near E. end of chord.

Foresight on back line produced ahead up to the 2073 ft. elev.

This traverse is from 0+00 on 2073 Contour to the intersection of the 2073 Contour with the line from M<sub>0</sub> to 6+00 on top of hill north of spillway. (refer to pages 2+3 book N1)



2)

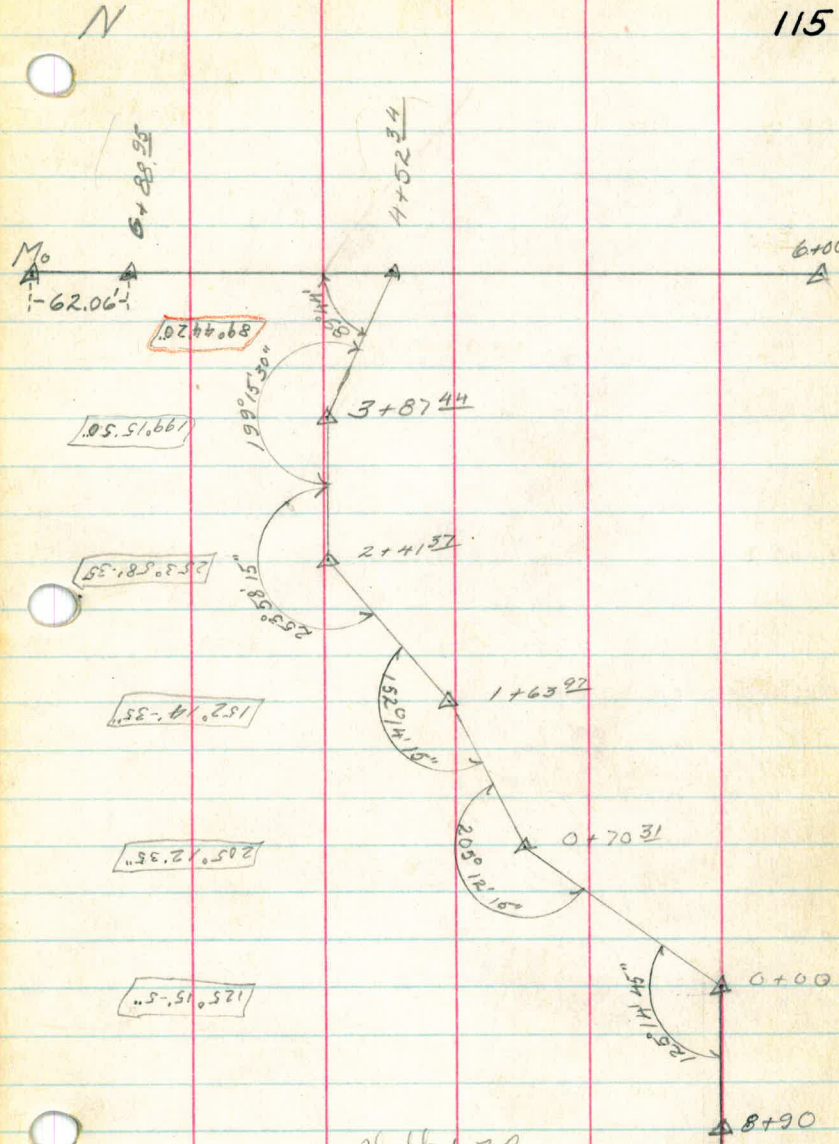
 Correction

Sta.	Angle-Bear.	Asz.	Dist.
0+62 <sup>02</sup> Mo 6+88 <sup>25</sup>	on tangent from Mo to 5+20 <sup>35</sup>		236.61'
		<del>S 16° 11' W</del> <del>S 16° 05' W</del>	
2+98 <sup>62</sup> Mo 4+52 <sup>34</sup>	179° 28' 0" 89° 44' 0" 89° 44' 20"	<del>N 73° 33' 20" W</del> <del>N 73° 35' W</del>	64.90'
	398° 31' 0"		
3+87 <sup>44</sup>	199° 15' 30" 199° 15' 50"	<del>S 87° 10' 50" W</del> <del>S 87° 09' 30" W</del>	146.07 ✓
	507° 56' 30"		
2+41 <sup>37</sup>	253° 58' 15" 253° 58' 35"	<del>S 13° 12' 15" W</del> <del>S 13° 11' 15" W</del>	77.40
	304° 26' 30"		
1+63 <sup>27</sup>	152° 14' 15" 152° 14' 35"	<del>S 40° 57' 40" W</del> <del>S 40° 57' W</del>	93.66 ✓
	410° 24' 30"		
0+70 <sup>31</sup>	205° 12' 15" 205° 12' 35"	<del>S 15° 45' 05" W</del> <del>S 15° 44' 45" W</del>	70.31
	250° 20' 30"		
0+00	125° 14' 45" 125° 15' 05"		63.72
	570° 30' W		
8+90	180° 0' 0"		
	570° 30' W		
15+28 <sup>30</sup>			

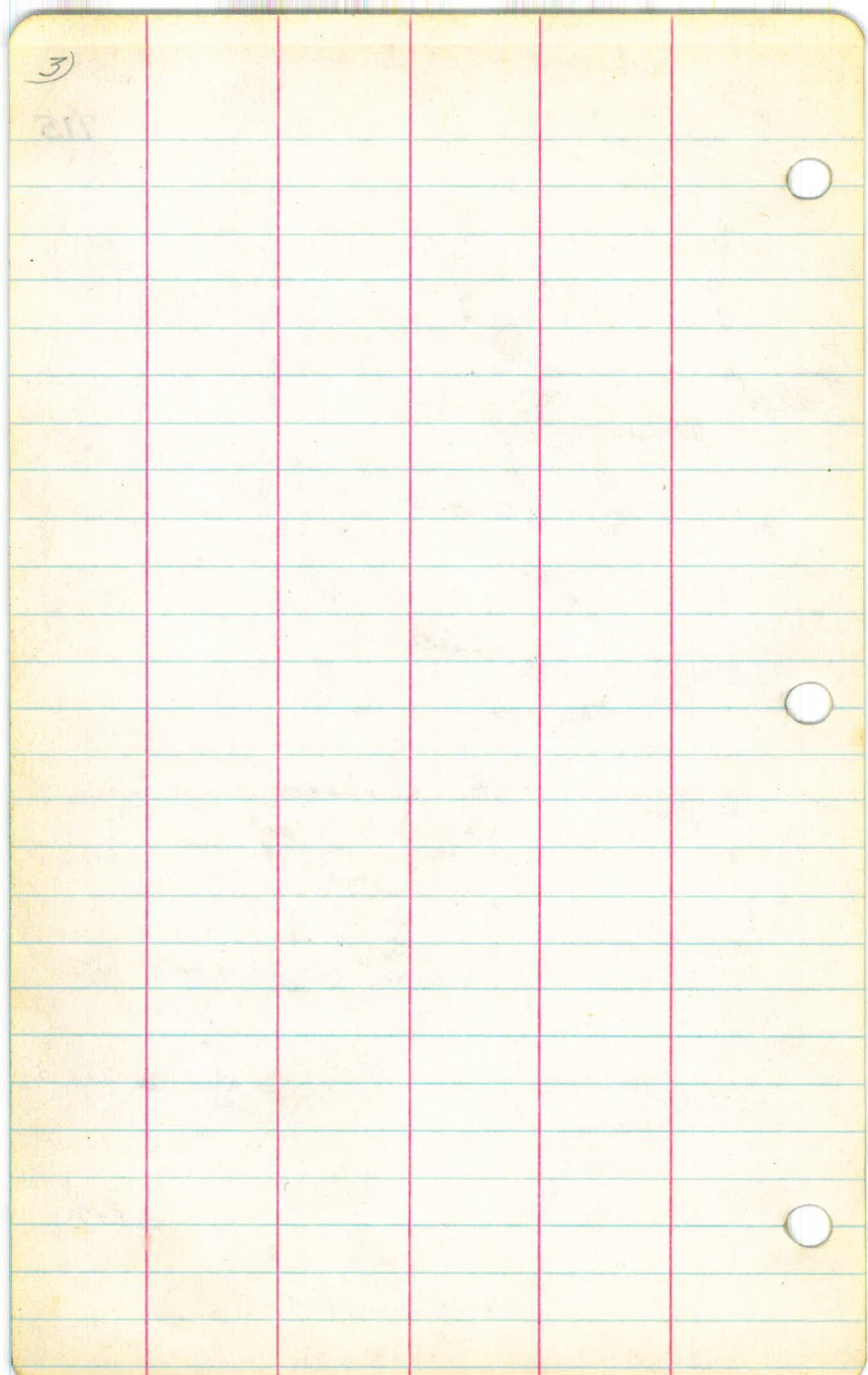
Correction

2

115



Plotted  $7\frac{1}{2}$ .  
 2-7-27 on Land Pat Dr.



(N)

3)

Jan. 26, 1927 116

N. Glover

S. Bisbet

R. Bisby

— Traverse of 2073 Contour —

— SUTHERLAND —

From Sta 6+88<sup>95</sup> To Sta 17+00<sup>98</sup> and  
tying into 1/4 Cor. (refer to pages  
10 + 11 book N1)

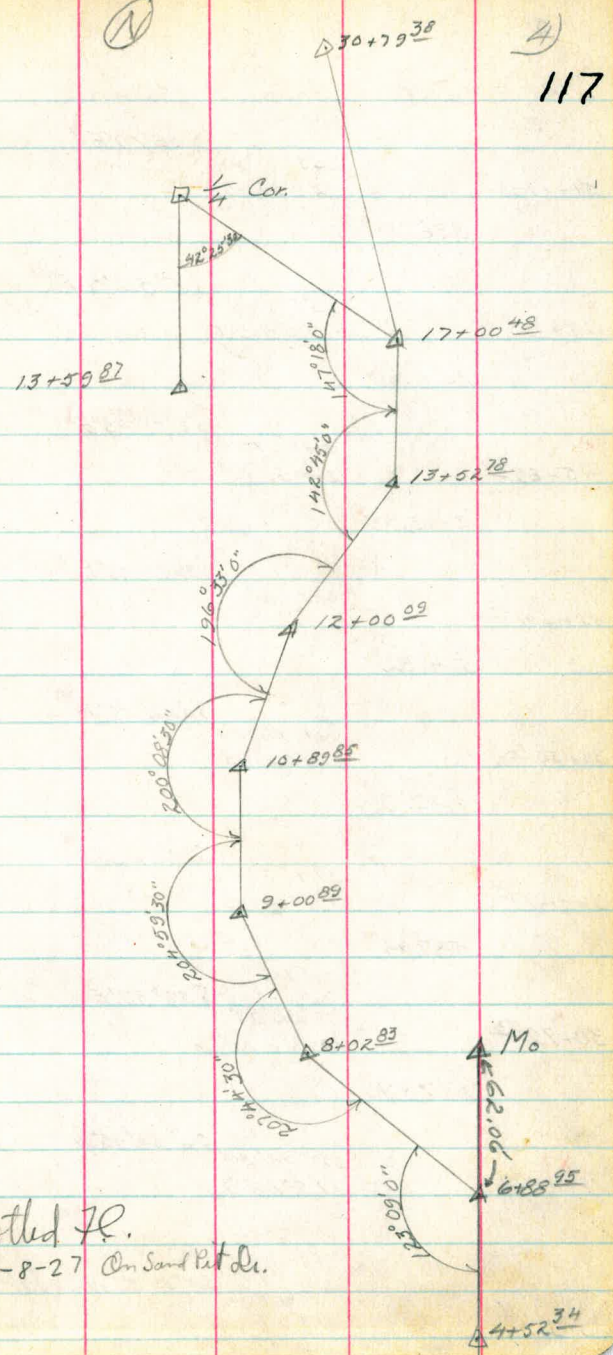


Sta.	Dist.	Angle-R.	Bear.
4)			
13+59 <sup>87</sup>			(refer to page 10+11 back N1)
1/4 Cor.		84°51'0" NR1°16.8'E	
	386.37	42°25'30" NR1°14'E	
XX 17+00 <sup>48</sup>	347.70 ✓	294°36'0"	S 21°11'30"E ✓
		147°18'0"	
X 13+52 <sup>28</sup>	152.69 ✓	285°30'0"	S 11°30'30"W ✓
		142°45'0"	
12+00 <sup>09</sup>	110.24 ✓	393°06'0"	S 48°45'30"W ✓
		196°33'0"	
10+89 <sup>85</sup>	188.96 ✓	400°17'0"	S 32°12'30"W ✓
		200°08'30"	
9+00 <sup>89</sup>	98.06 ✓	409°59'	S 12°04'W ✓
		204°59'30"	
8+02 <sup>83</sup>	113.88	415°29'0"	S 12°55'30"E ✓
		207°44'30"	
6+88 <sup>95</sup> ✓		246°18'0"	S 40°40'E ✓
		123°09'0"	
4+52 <sup>34</sup>	276.61		S 16°11'W
			110.09

(2)

(4)

117



Plotted F.R.  
 2-8-27 On Sand Pit De.

Sta	Dist	Angle. F.	Bear.
51+17 <sup>89</sup>	386.90 <sup>v</sup>	255°19'30" 127°39'45"	S 58°17'E <sup>v</sup>
47+30 <sup>99</sup>	161.00 <sup>v</sup>	353°44'0" 176°52'0"	S 5°56'45"E <sup>v</sup>
45+69 <sup>99</sup>	205.05 <sup>v</sup>	427°40'0" 213°56'0"	S 2°48'45"E <sup>v</sup>
43+64 <sup>94</sup>	514.82 <sup>v</sup>	285°58'0" 142°59'0"	S 56°38'45"E <sup>v</sup>
38+50 <sup>12</sup>	182.78 <sup>v</sup>	421°19'20" 210°39'45" 40	S 0°22'15"W <sup>v</sup>
36+67 <sup>34</sup>	587.96 <sup>v</sup>	374°39' 187°19'30"	S 30°17'30"E <sup>v</sup>
30+79 <sup>38</sup>	1378.90 <sup>v</sup>	270°52'30" 135°26'15"	S 37°37'E <sup>v</sup>
17+00 <sup>48</sup>		350°52'30" 175°26'15"	S 6°56'45"W <sup>v</sup>
13+52 <sup>78</sup>			S 11°30'30"W

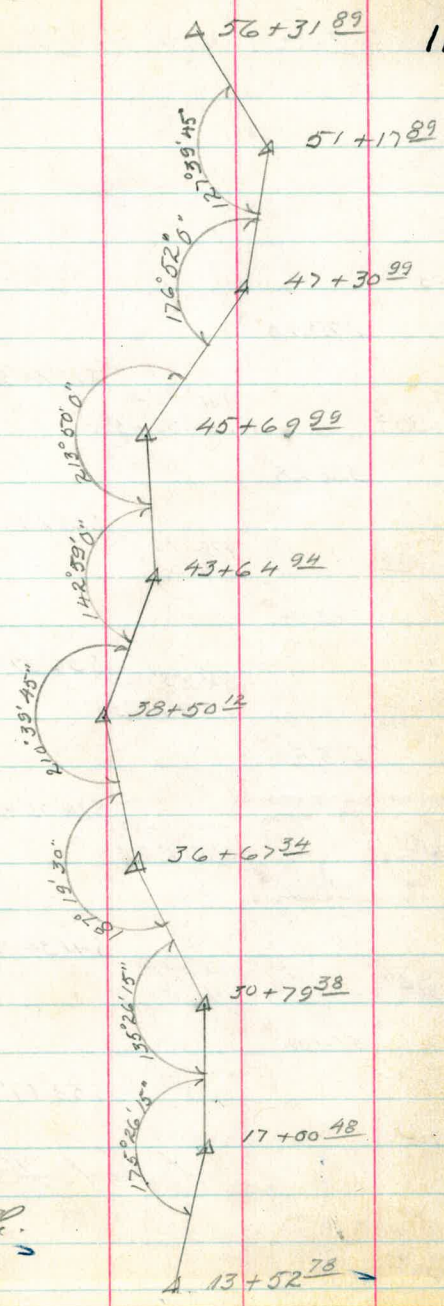
Plotted Re.  
2-24-27



(2)

51

118



Plotted by  
2-24-27



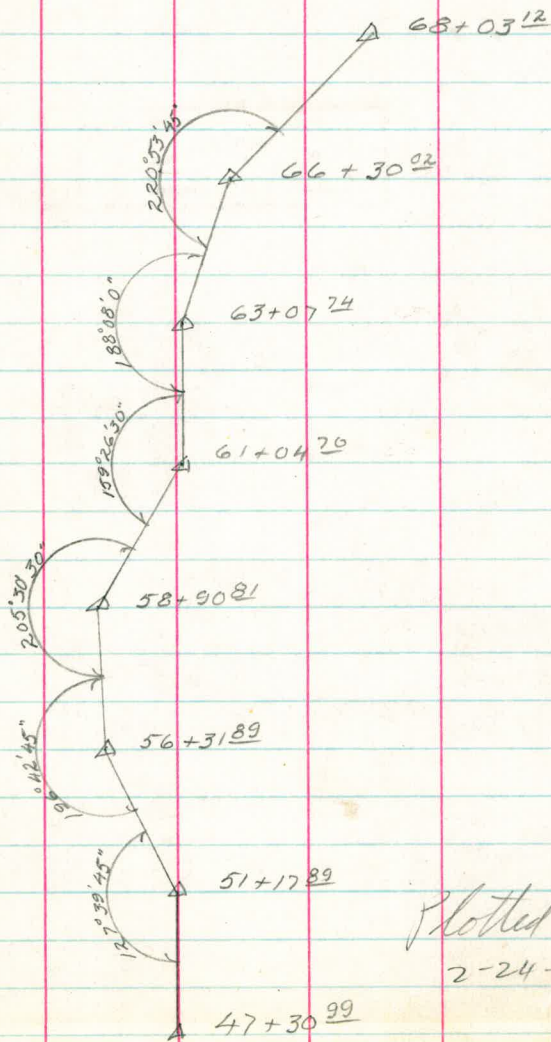
Sta.	Dist	Angle	Bear
68+03 <sup>12</sup>	173.10 ✓		
66+30 <sup>02</sup>	322.28 ✓	441°47'30" 220°53'45"	S 12°24'30" W ✓
63+07 <sup>74</sup>	203.04 ✓	376°16'0" 188°08'0"	S 28°29'15" E ✓
61+04 <sup>79</sup>	213.89 ✓	318°53'0" 159°26'30"	S 36°37'15" E ✓
58+90 <sup>81</sup>	258.92 ✓	411°01'0" 205°30'30"	S 16°03'45" E ✓
56+31 <sup>89</sup>	514.00 ✓	393°23'30" 196°42'45"	S 41°34'15" E ✓
51+17 <sup>89</sup>			S 58°17' E ✓
47+30 <sup>29</sup>			

Plotted *FL*  
2-24-27

(2)

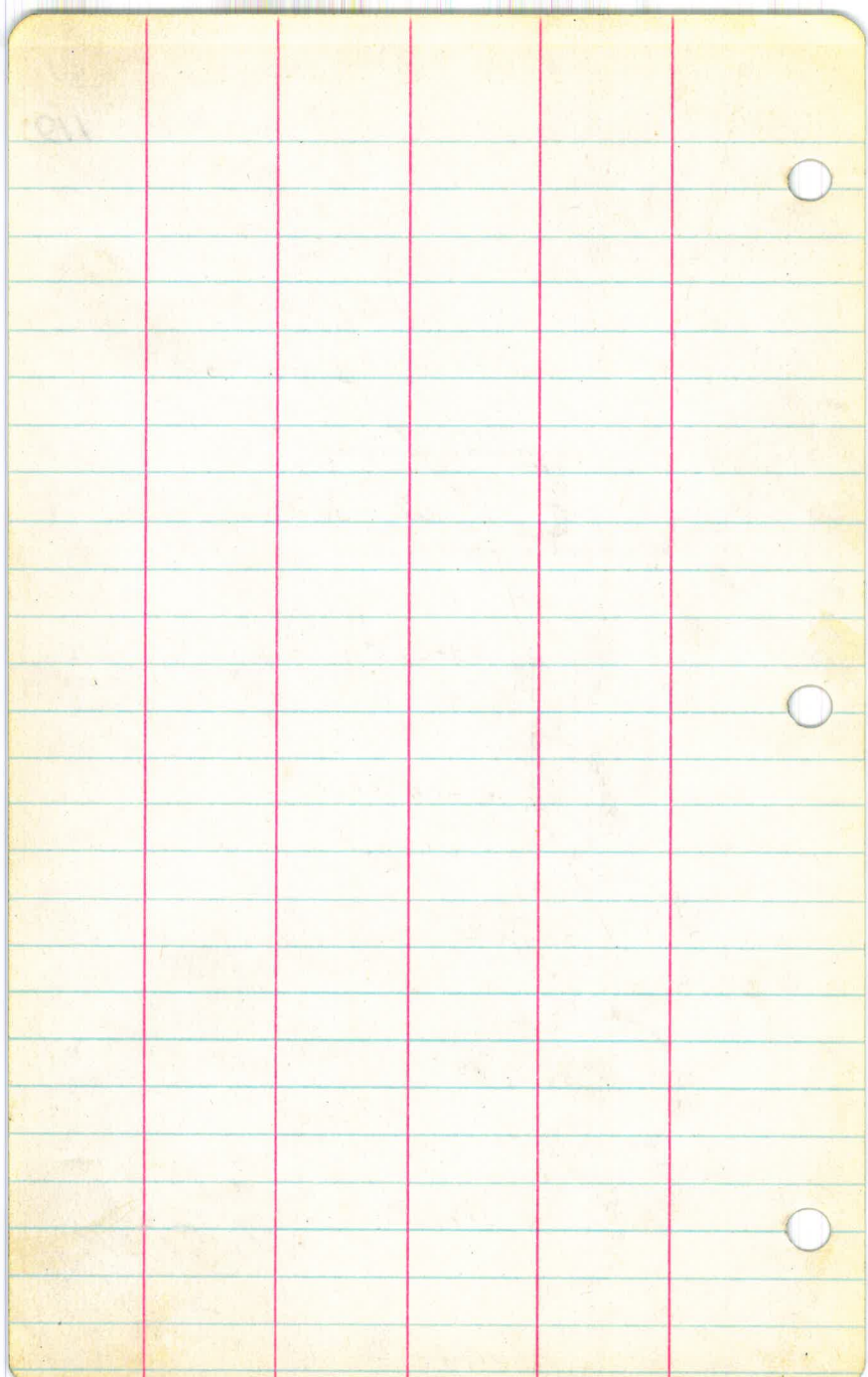
6)

119



Plotted &c.

2-24-27



(N)

Jan. 28, 1927 120

N. Glover

S. Bichet

R. Bisby

— SUTHERLAND —

Traverse up small canyon from  
main traverse. 2073 Contour  
Started off at Sta. 13+52<sup>28</sup> main  
contour traverse and ran line  
around canyon tying back  
into main traverse at Sta  
17+00<sup>48</sup>



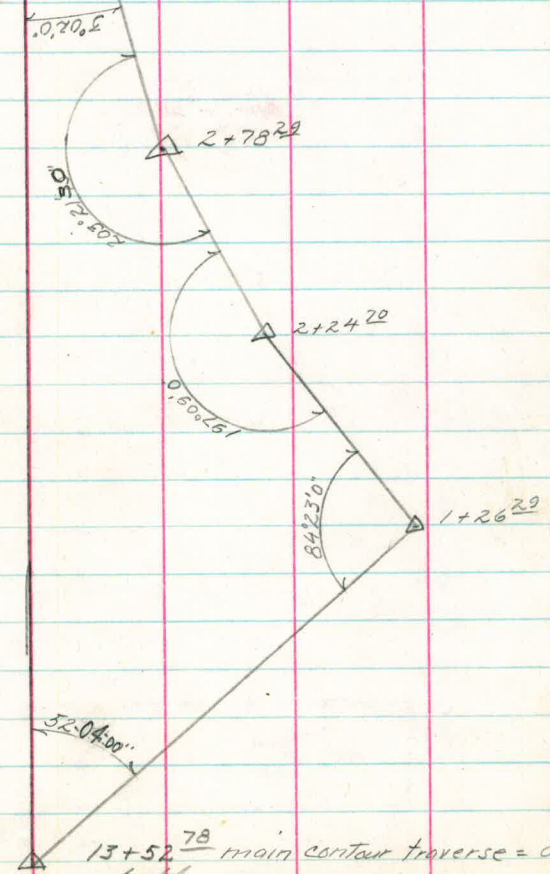
Sta	Dist	Angle P.	Bear
0+00			
13+52 <sup>78</sup>			
17+00 <sup>48</sup>			N 11° 30' 30" E
4+29 <sup>17</sup>			N 11° 30' 0" E
	150.90 ✓	3° 02' 0"	
			S 8° 28' 0" W
2+78 <sup>22</sup>		203° 21' 30"	
	53.57 ✓		
			S 14° 53' 30" E
2+24 <sup>70</sup>		197° 09' 0"	
	98.41 ✓		
			S 32° 02' 30" E
A			
1726 <sup>29</sup>		84° 23' 0"	
	126.29 ✓		
			S 63° 34' 30" W
0+00 A			
13+52 <sup>78</sup>		52° 04' 0"	
			N 11° 30' 30" E
17+00 <sup>48</sup>			

Plotted  
J. L. 2-24-27

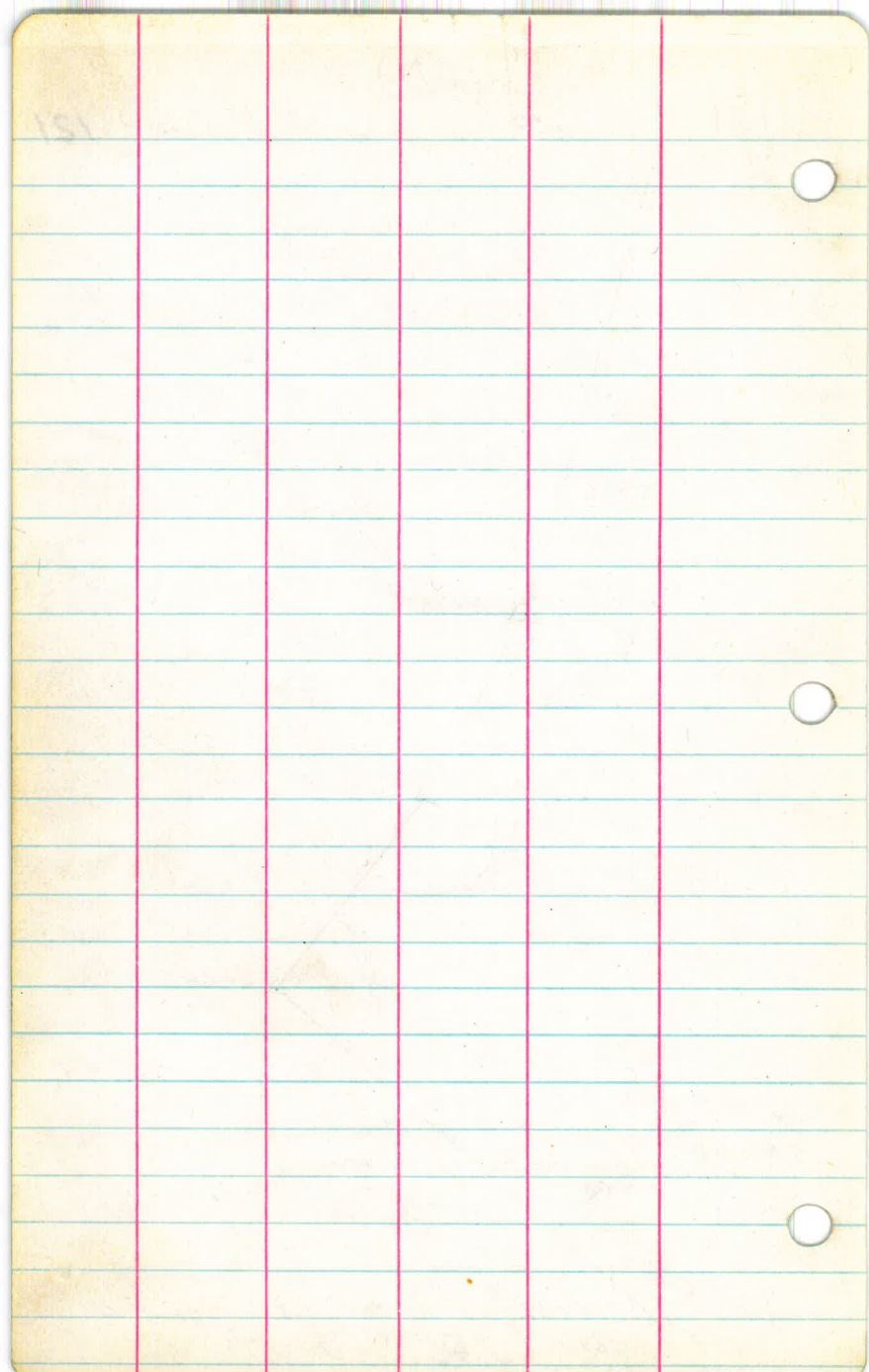
(N)

2)

17+00<sup>48</sup> main contour traverse = 4+29<sup>12</sup> 121



13+52<sup>78</sup> main contour traverse = 0+00  
Plotted H. 2-24-27



1)  
Jan. 28, 1927 122

N. Glover

S. Bisset

R. Bisby

— SUTHERLAND —

2073 Contour

Traverse of 2073 Contour in large  
canyon. Started off at Sta  
17+00<sup>48</sup> on main traverse of  
2073 Contour and tied back into  
main traverse at Sta 30+79<sup>48</sup>

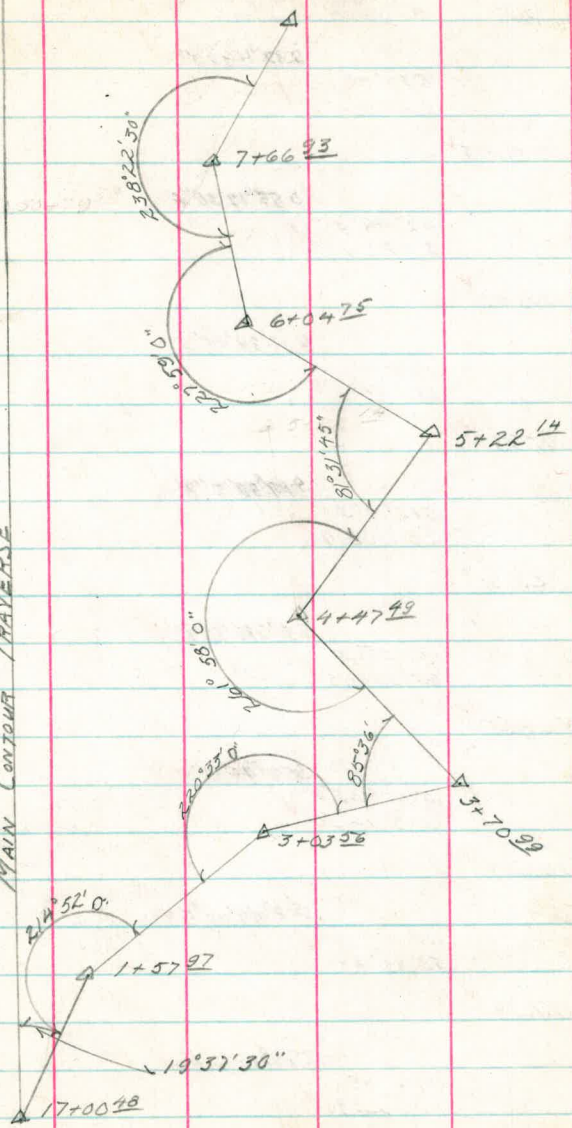


2)

Sta	Dist	Angle-Bear
7+66 <sup>95</sup>	162.18 ✓	N 82° 33' 30" W ✓ 476° 45' 0" ✓ 238° 22' 30" ✓
6+04 <sup>75</sup>	82.61 ✓	93° 04' 00" W ✓ 455° 58' 0" ✓ 227° 59' 0" ✓
5+22 <sup>14</sup>	74.65 ✓	58° 55' 00" E ✓ 163° 03' 30" ✓ 81° 31' 45" ✓
4+47 <sup>82</sup>	76.50 ✓	359° 37' 15" W ✓ 523° 56' 0" ✓ 261° 58' 0" ✓
3+70 <sup>99</sup>	67.43 ✓	57° 25' 15" W ✓ 171° 12' 0" ✓ 85° 36' 0" ✓
3+03 <sup>56</sup>	145.59 ✓	N 78° 00' 45" W ✓ 441° 06' 0" ✓ 220° 33' 0" ✓
1+57 <sup>97</sup>	157.97 ✓	S 61° 26' 15" W ✓ 429° 44' 0" ✓ 214° 52' 0" ✓
17+00 <sup>98</sup>		S 26° 34' 15" W ✓ 39° 15' 0" ✓ 19° 37' 30" ✓
		N 6° 56' 45" E
30+79 <sup>38</sup>		Plotted file 2-24-27

30+79.38 →

MAIN CONTOUR TRAVERSE

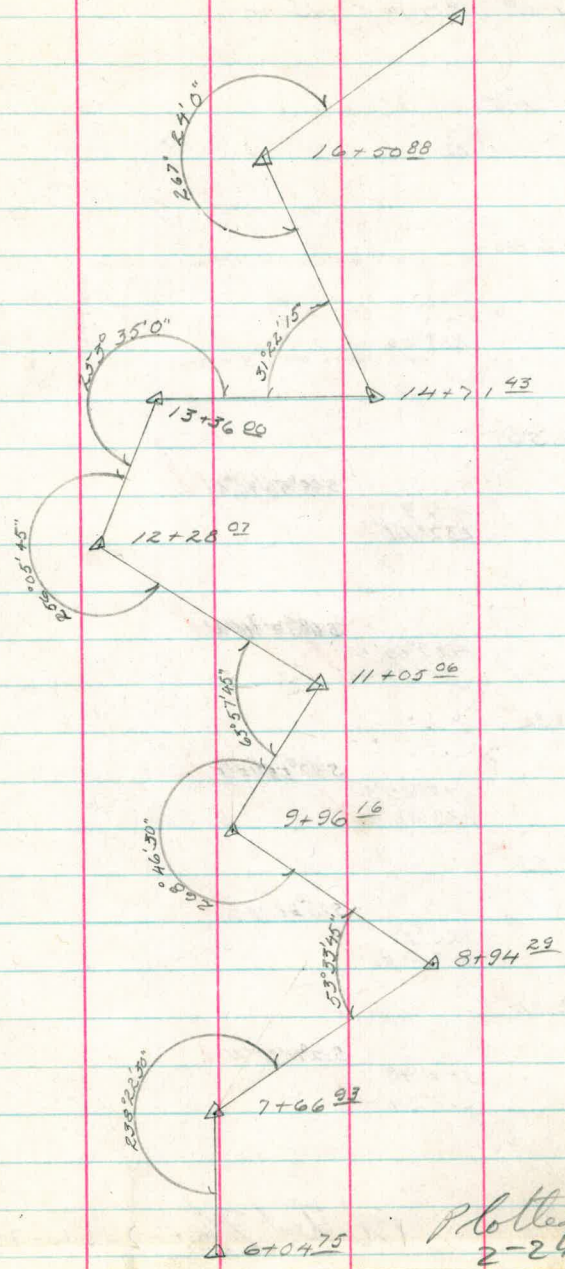


Plotted Feb. 2-24-27

3)

Sta.	Dist	Angle A	Bear.
16+50 <sup>88</sup>	179.45 ✓	534°48'0" 267°24'0"	S 32°11'30"W ✓
14+71 <sup>43</sup>	135.43 ✓	62°44'30" 31°22'15"	S 55°12'30"E ✓
13+36 <sup>00</sup>	107.93 ✓	507°10'0" 253°35'0"	N 86°34'45"W ✓
12+28 <sup>02</sup>	123.01 ✓	512°11'30" 256°05'45"	S 19°50'15"W ✓
11+05 <sup>06</sup>	108.90 ✓	127°55'30" 63°57'45"	S 56°15'30"E ✓
9+96 <sup>16</sup>	101.87 ✓	537°33'0" 268°46'30"	S 59°46'45"W ✓
8+94 <sup>29</sup>	127.36 ✓	107°07'30" 53°33'45"	S 28°59'45"E ✓
7+66 <sup>93</sup>		47°45' 238°22'30"	N 82°33'30"W ✓
6+04 <sup>38</sup>		Plotted Feb 24-27	



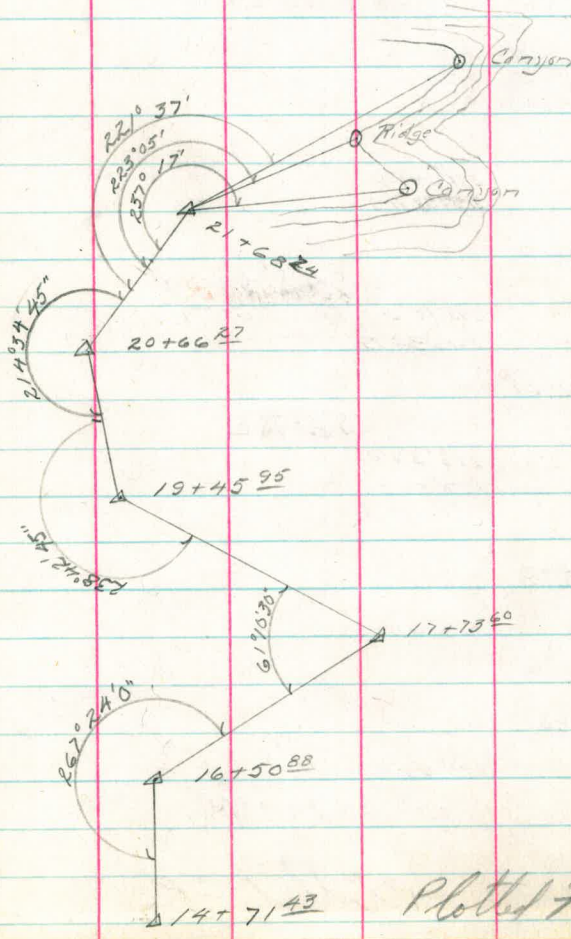


Plotted by  
2-24-27



Sta.	Dist	Angle	Bear.
Small canyon	121.45		
21+68 <sup>24</sup>		221°31'	
Small ridge	77.64		
21+68 <sup>24</sup>		223°05'	
Small canyon	79.50		
			563°56'30"W ✓
21+68 <sup>24</sup>		237°17'	
	102.47 ✓		
			56°39'30"W ✓
20+66 <sup>27</sup>		429°09'30" 214°34'45"	
	120.32 ✓		
			527°55'15"E ✓
19+45 <sup>95</sup>		477°25'30" 238°42'45"	
	172.35 ✓		
			586°38'00"E ✓
17+73 <sup>60</sup>		122°21' 61°10'30"	
	122.72 ✓		
			532°11'30"W ✓
16+50 <sup>88</sup>		534°48'0" 267°24'0"	
14+71 <sup>43</sup>			

Plotted by 2-24-27



Plotted Feb. 2-24-37

51

Sta. Dist. Angle R. Bear

17+00<sup>48</sup>

30+79<sup>38</sup>  
24+57<sup>45</sup>

151°14'30"  
75°37'15"

136.10 ✓

S-68°44'45"E

23+21<sup>35</sup>

293°12'30"  
146°36'15"

152.61 ✓

S35°21'E

21+68<sup>74</sup>

275°59'0"  
137°59'30"

Canyon

138.08

21+68<sup>74</sup>

195°44'

Ridge

100.50

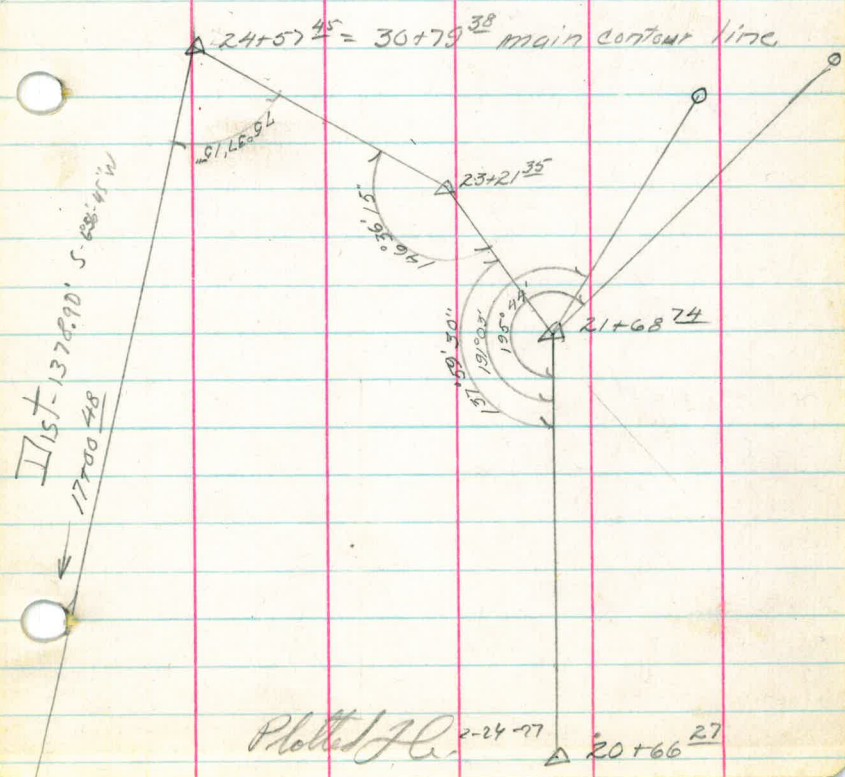
21+68<sup>74</sup>

191°03'0"

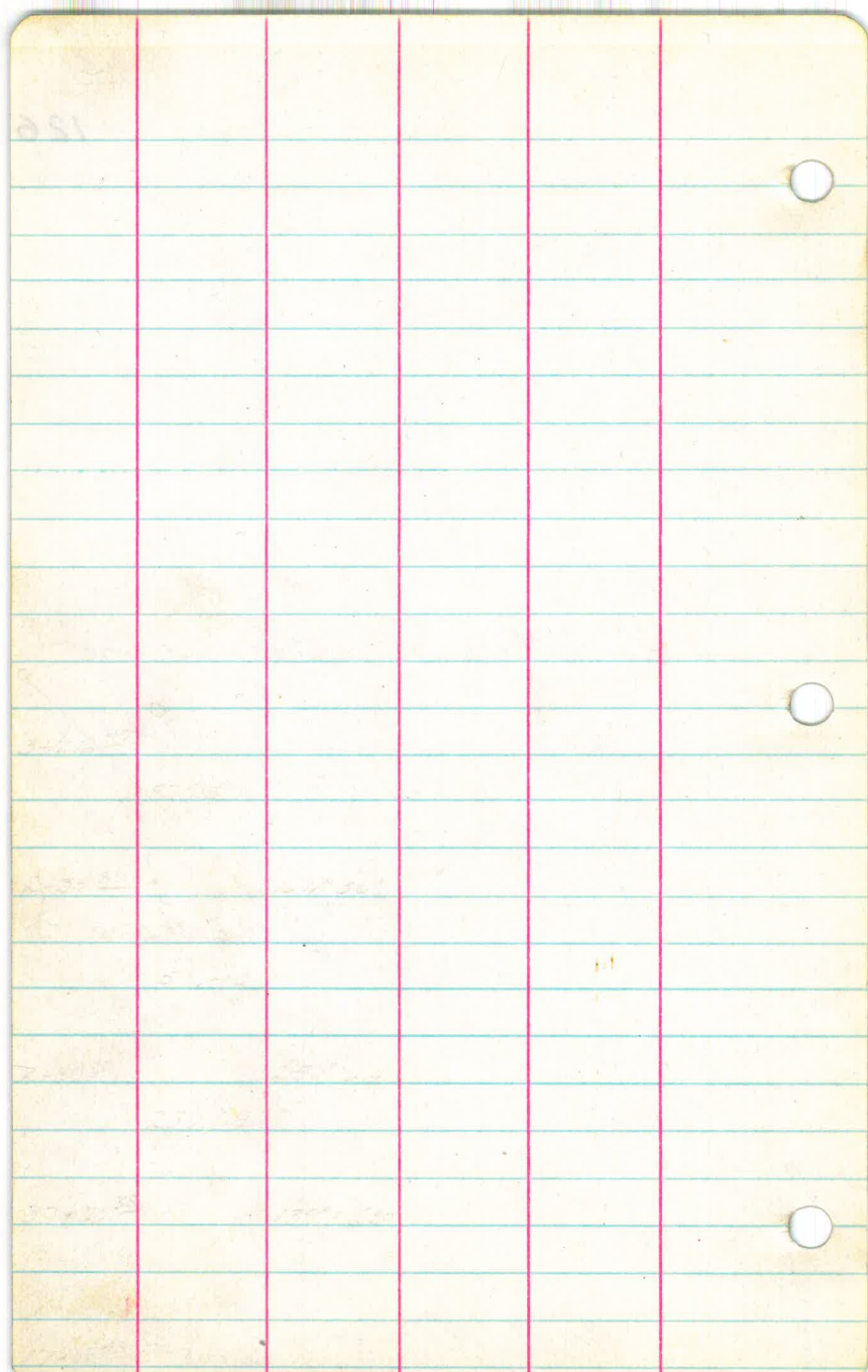
S6°39'30"W

20+66<sup>82</sup>

Plotted 96.







(N)

127  
1

Jan 27, 1927

N Glover

S Bichet

Bisby

— Sutherland Dam Site —

Tie from Sta. 43+64<sup>24</sup> on 2073

Contour Traverse to Sta 36+95<sup>21</sup> on

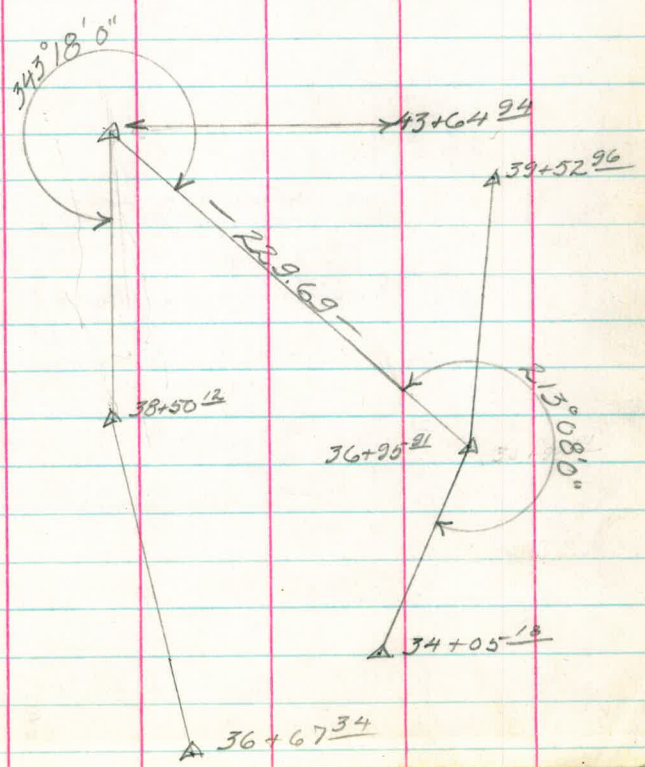
Traverse to Sea Con. (refer to page

20 book N/2)

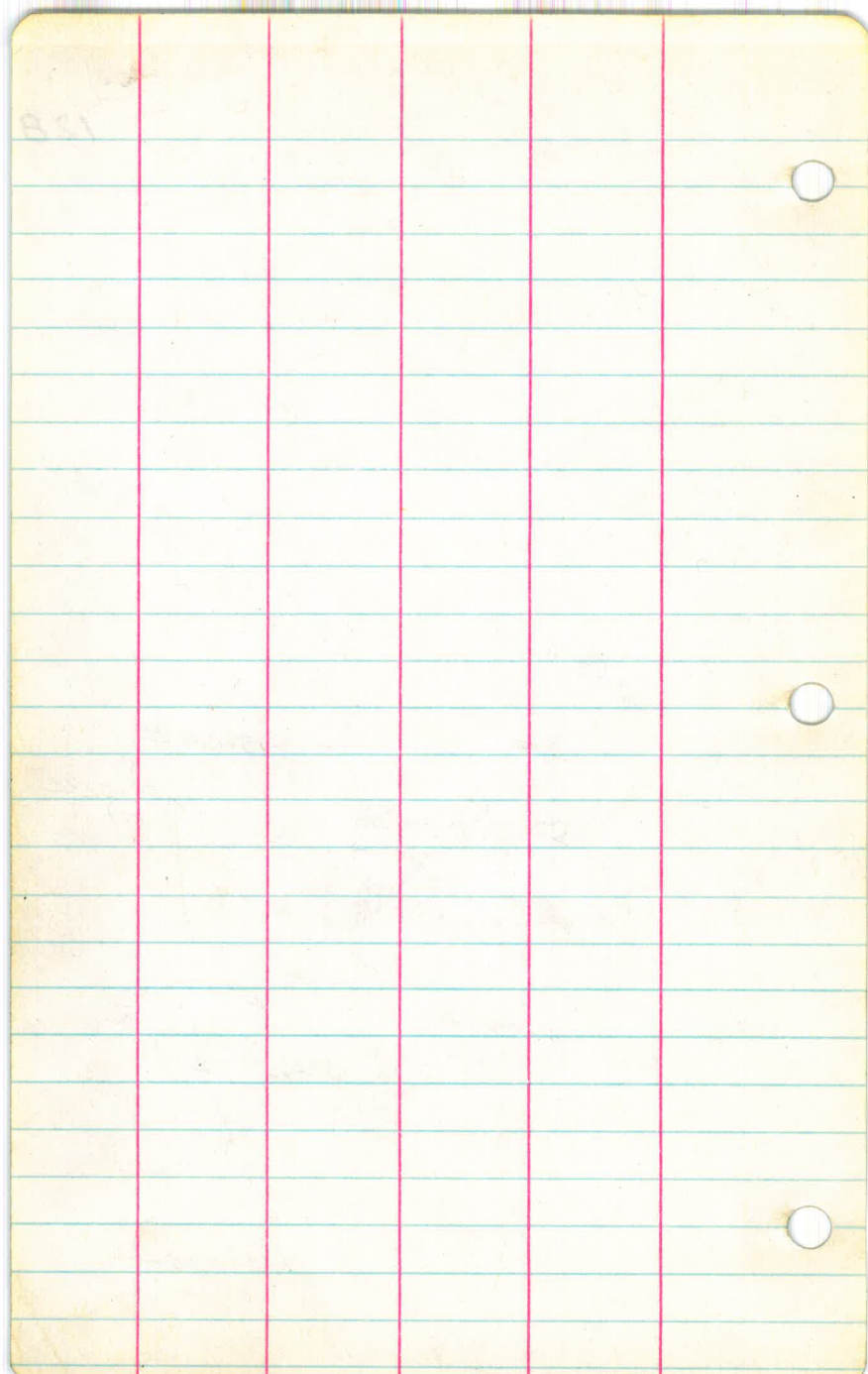
551

2)

Sta	Dist	Angle, R	Bear
34+05 <sup>18</sup>			
36+95 <sup>21</sup>	229.69	426°16'0" 213°08'0"	S 16°51.3' W N 16°48'15" E
43+64 <sup>24</sup>		686°36'0" 343°18'0"	N 16°19'45" W
38+50 <sup>12</sup>			S 022°15' W







(N)

2)

Jan 28, 1927 12.5

N Glover 139

S Bichet

R Bisby

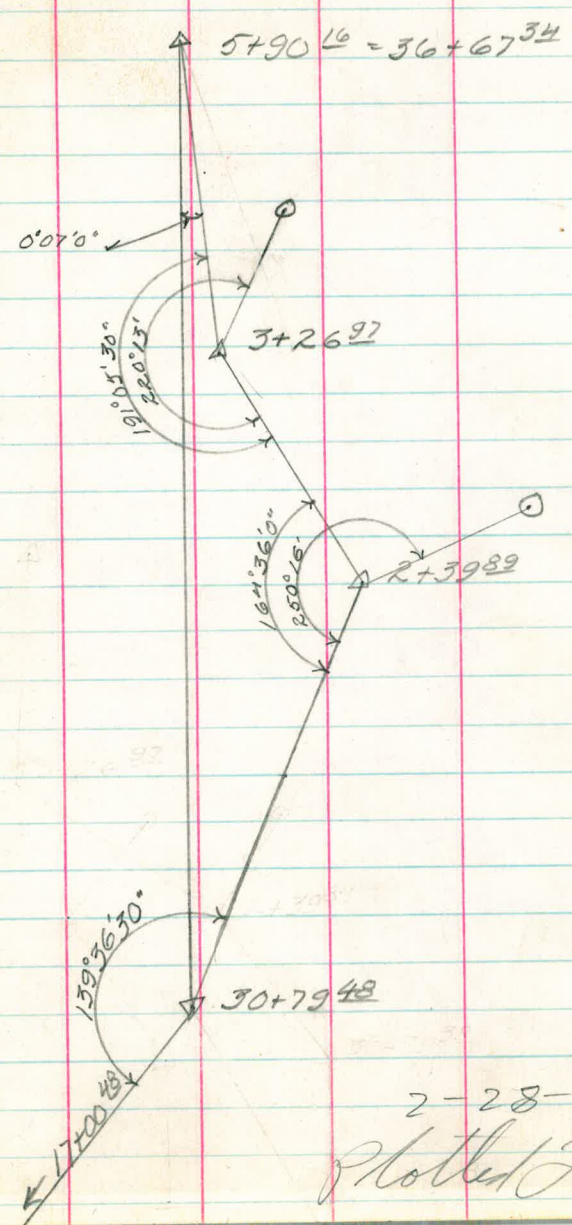
— SUTHERLAND —

Traverse of 2073 Contour of two  
small canyons from main  
contour line.

Started off at sta. 30+79<sup>38</sup>  
tied back into main traverse  
at sta 36+67<sup>34</sup>.

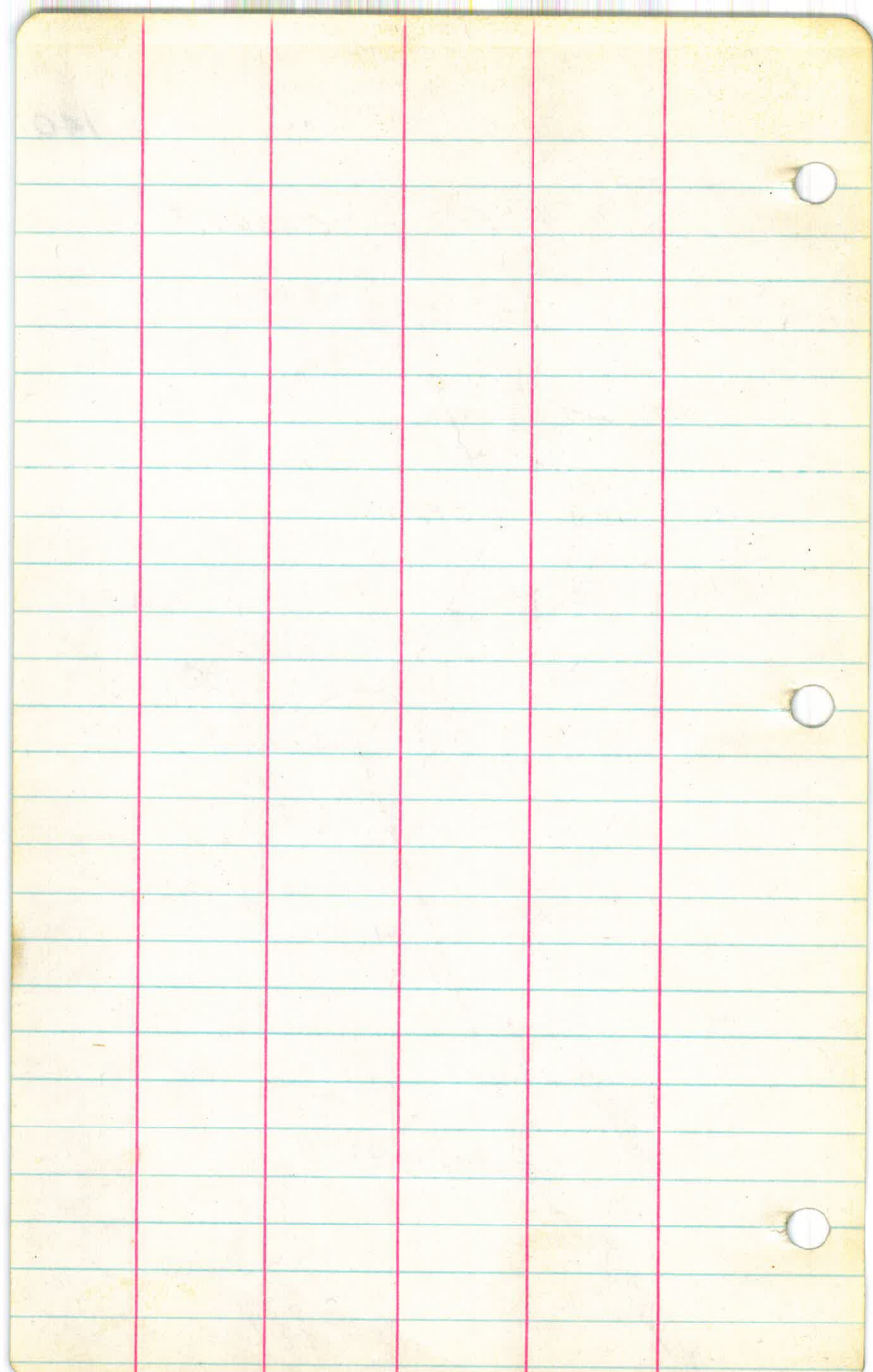
Sta.	Dist	Angle R.	Bear.
21			
30+79 <sup>38</sup>			
36+67 <sup>34</sup> 5+90 <sup>16</sup>	263.19	0°07'0"	S 37°37'E N 37°38'15"W
3+26 <sup>97</sup>		191°05'30"	S 37°45'15"E
Small Canyon	105.20		
3+26 <sup>97</sup>	87.08	220°13'	S 8°38'W
2+39 <sup>89</sup>		164°36'0"	S 48°50'45"E
Small Canyon	57.43		
2+39 <sup>89</sup>	239 <sup>89</sup>	250°16'	S 36°49'W
30+79 <sup>38</sup>		139°36'30"	S 33°26'45"E
17+00 <sup>40</sup>			S 6°56'45"W

F. Lottus



2-28-27  
Plotter Lee





(N)

Jan. 31, 1927

2)

141

N. Glover.

P. Bisby.

R. Bush.

— SUTHERLAND —

Traverse of 2023 Contour up small  
canyon from main traverse.

Set P.O.T. between Sta 38+50<sup>12</sup> +  
43+64<sup>94</sup> on main Contour Traverse  
at Sta. 42+13<sup>57</sup>.

Starting off at Sta. 42+13<sup>57</sup>  
on main traverse and tying back  
into main traverse at Sta. 43+64<sup>94</sup>

21

Sta. Dist. Angle P. Bear.

~~42+13<sup>57</sup>~~

~~43+64<sup>84</sup>~~  
~~3+75<sup>87</sup>~~

75° 31'

172.60

50° 22' 15" W  
50° 22' 15" W

N 75° 08' 45" W

~~2+03<sup>27</sup>~~

38° 37'

128.15

N 66° 14' 15" E

~~0+75<sup>12</sup>~~

203° 52'

75.12

N 42° 22' 15" E

~~42+13<sup>57</sup>~~

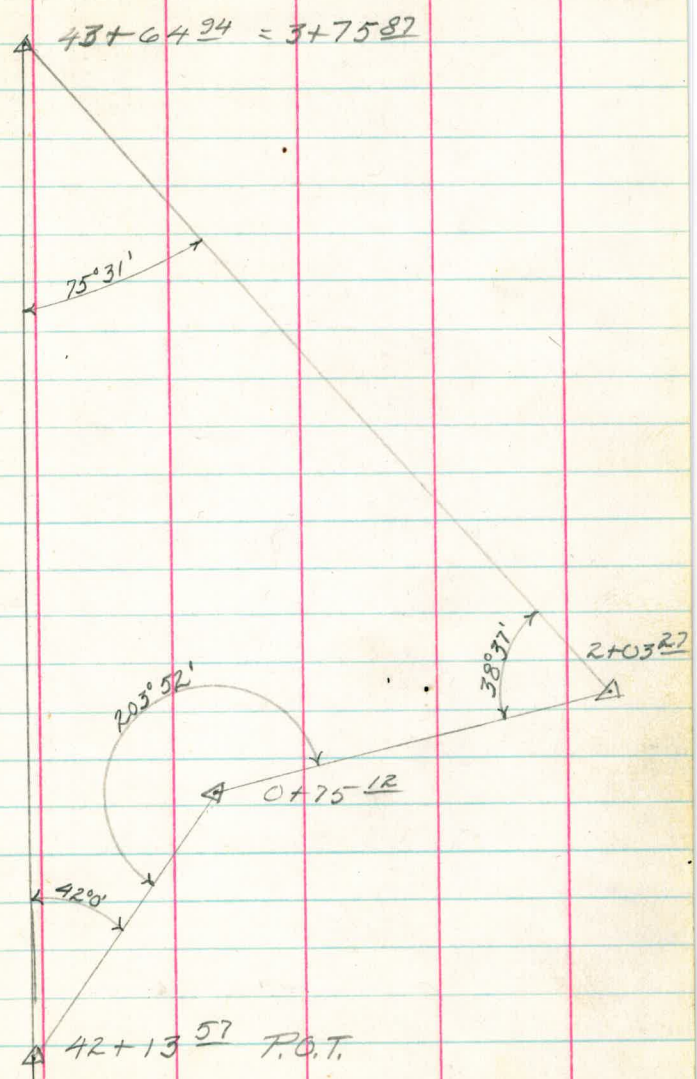
42° 0'

S 0° 22' 15" W

~~43+64<sup>84</sup>~~

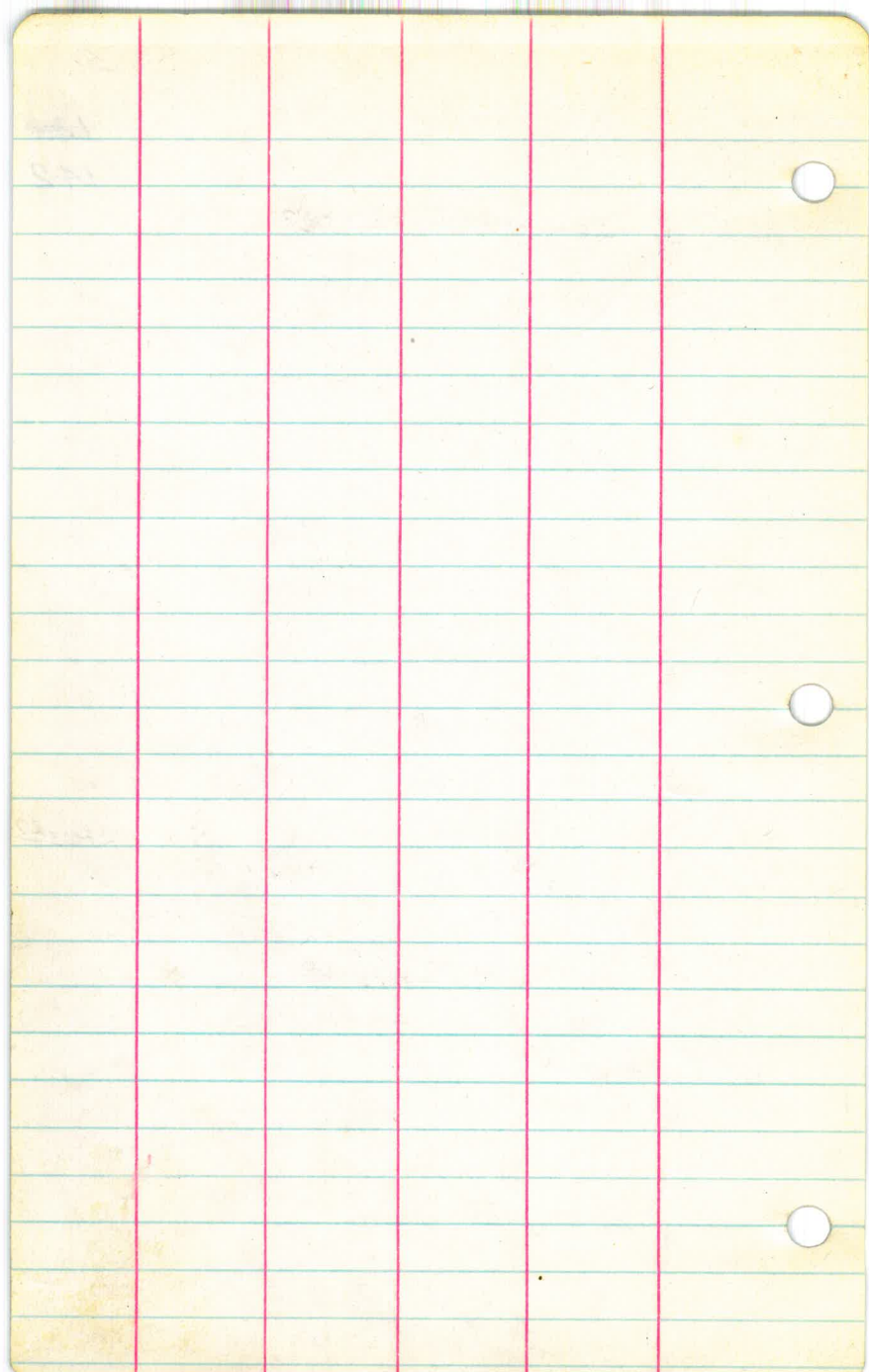
Plotted 2-25-27 R,

2)  
~~124~~  
142



Plotted F.C. 2-28-27





(N)

Jan 3, 1927 143

N. Glover

R. Bisby

R. Bush.

— Sutherland —

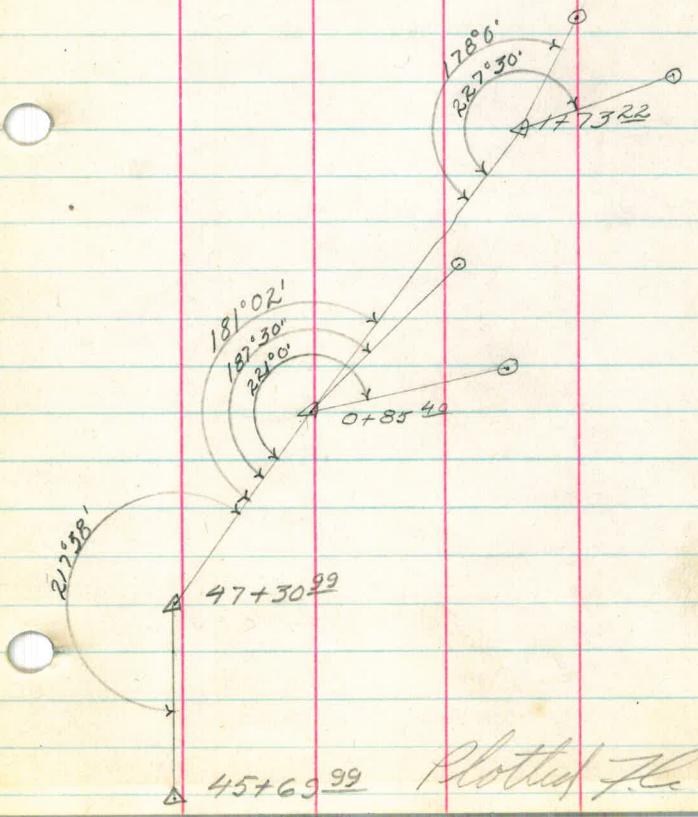
Traverse of 2073 Contour up  
small canyon from main  
2073 Contour Traverse

Starting off at Sta  
47+30<sup>29</sup> on main traverse.

2)

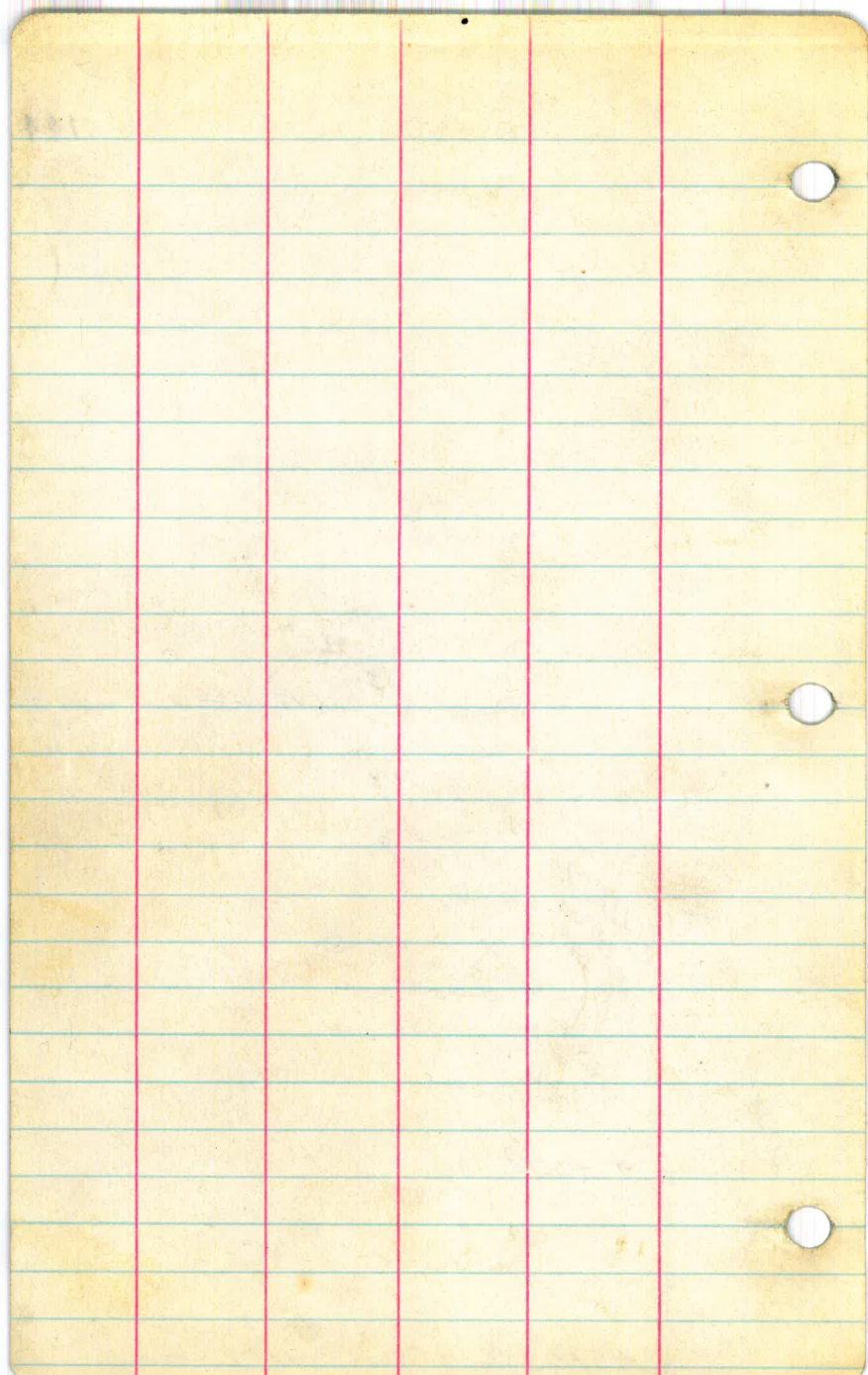
Sta	Dist	Angle	Bear
ridge			
1+73 <sup>22</sup>		178°0'	
canyon	61.0		
1+73 <sup>22</sup>		227°30'	
	87.82		
			S 35°51'15" W
0+85 <sup>40</sup>		181°02'	
ridge	40.0		
			S 42°19'15" W
0+85 <sup>40</sup>		187°30'	
Small canyon	28.0		
			S 25°49'15" W
0+85 <sup>40</sup>		221°0'	
	85.40		
			S 34°49'15" W
47+30 <sup>29</sup>		217°38'	
			S 2°48'45" E
45+69 <sup>29</sup>			

Plotted J.L.



Plotted F.L.





Jutherland  
Sand Pit Samples

&c

Traverse on  
2073 Contour

Pgs 1 to 54 Given to Parkin

5-28-27