#237 N-2

Transit Notes

Dam To Tunnel

L. L. L" Lines.

W 237

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No. 380 LEVEL BOOK. Left and Right Hand Page the same as Left Hand Page of this Book.

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THE FREDERICK POST CO.

ENGINEERING and DRAFTING SUPPLIES

IRVING PARK STATION

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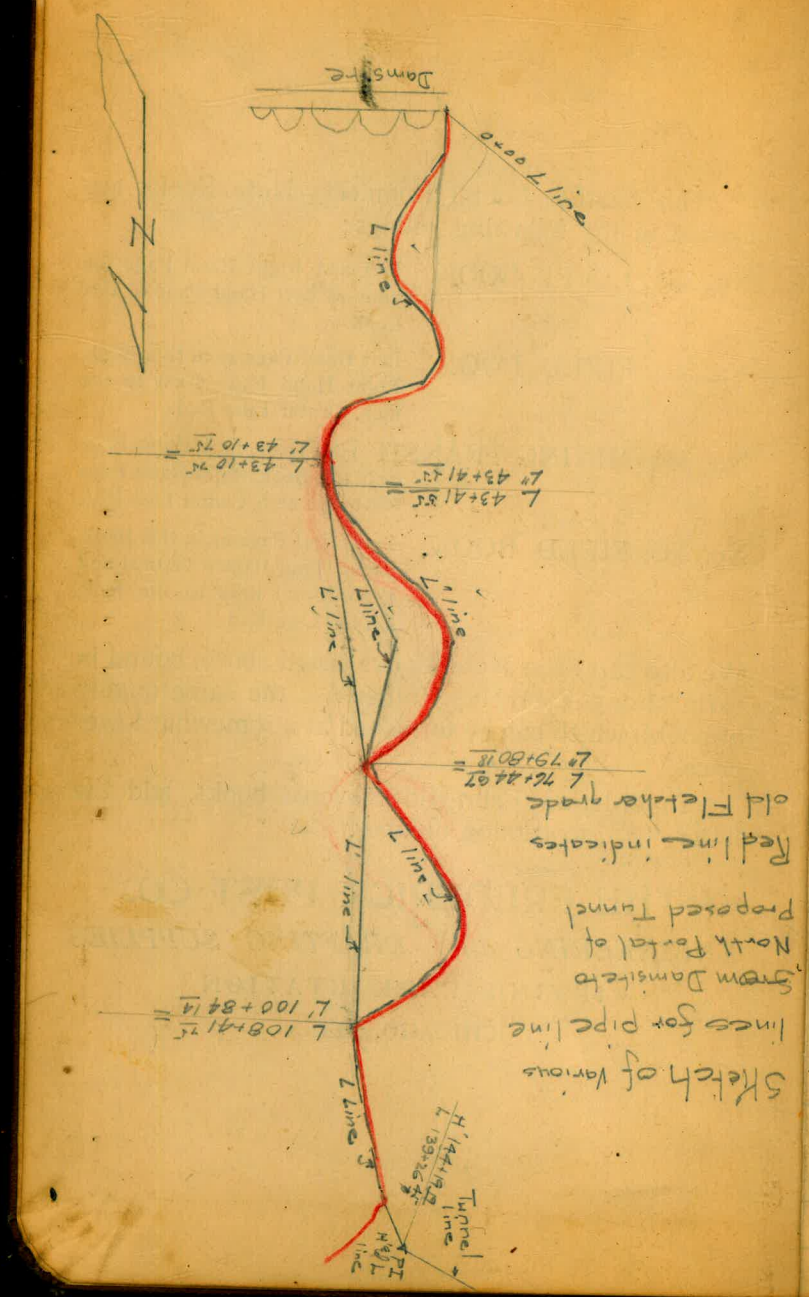
Transit Notes - L. line - Dam to Tunnel

Location of Pipe line from New Location of Sutherland Dam West and South Line marked: L

Note: discrepancy in Bearing is due to having taken course, given by Mr Pue as North - should be N 0°04-30 W

Copied Notes of Pipe Line - Tunnel to South End of Line - after all changes Made - 18-37



L line.

△

Sta	Lt	Rt	Calc. Bear.	Mag. Bear.	
153.36			N31-31-45 (36 16 W)	N31-30 W	
$11+02^{74}$	12°50'				12-50 25-40
234.77					
$8+67^{97}$	P.O.T.				
21.86			N18-41-45 W (46 16)	N18-00 W	
$8+46^{11}$	56°58'30				113-57 56-58-30
200.69			N38-16-45 (12 14)	N38-45 E	
$6+45^{42}$	6°14'				12-28 6-19
102.27			N44-30-45 E (44 26 14)	N 45-00 E	
$5+43^{15}$		30°31'15"			61-02-30 30-31+
102.54			N13-59-30 E (13 54 59)	N 14-30 E	
$4+40^{61}$		13°59'30"			27-59 13-59-30
$3+29^{21}$	P.O.T.				
			North N. 0° 04' 31" W.	N 00° 04-30 North	
0+00					

Elliott ⊼

10+46 ± Old Dam Axis

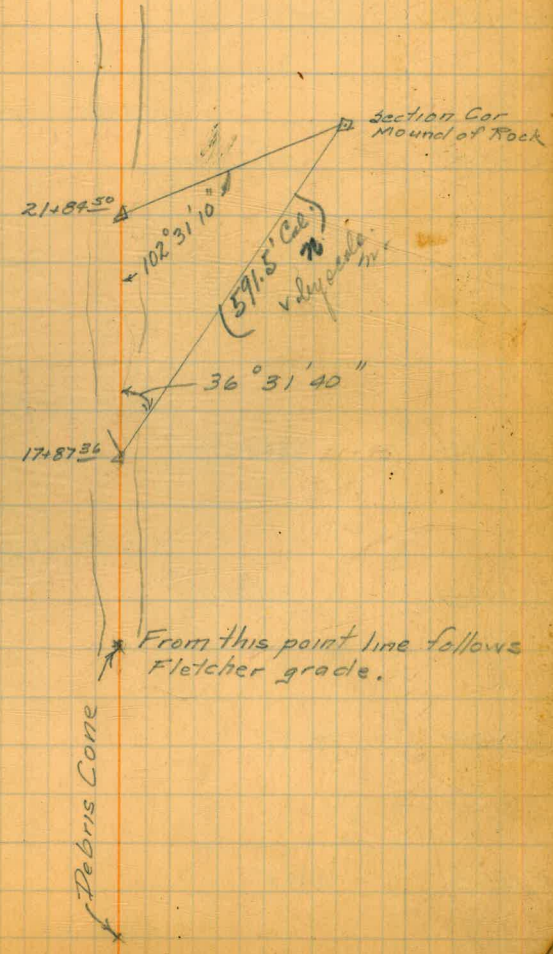
4 Lines

Sta	Lt △	Rt	C. Br	M B.
27+25.00	14°19'10"		S 30-56-35W	S 31-00W
			52'04"	
				28-38-20
				14-19-10
25-14				
161.70				
25+63.30	1°24'00"		S 45-15-45W	S 45-30W
			11'14"	
				2-48
				1-29
273.10				
22+90.20	23°19'40"		S 46-39-45W	S 46-30W
			35'14"	
				22-19-40
185.71				
21+84.50	44°13'10"		S 69-59-25W	S 69-45W
			54'54"	
				44-13-10
397.14				
17+87.36	37°01'50"		N 65-47-25W	N 65-45W
			5'56	
				74-03-40
				37-01-50
261.08				
15+26.28	X	16°05'40"	N 28-45-35W	N 29-00W
			50'06"	
				32-11-20
				16-05-40
147.73				
13+78.55	4°31'20"		N 44-51-15W	
			55'46"	
				9-02-40
				4-31-20
122.45				
12+56.10	8°48'10"		N 40-19-55W	N 40-15W
			24'26"	
				17-36-20
				8-48-10

1-17-28 2

P.O.G.	Location
Elliott	⊼ Notes
Lecky	Hd. Ch.
Bailey	Tr. Ch.
Brooks	Brush

Clear - Cold



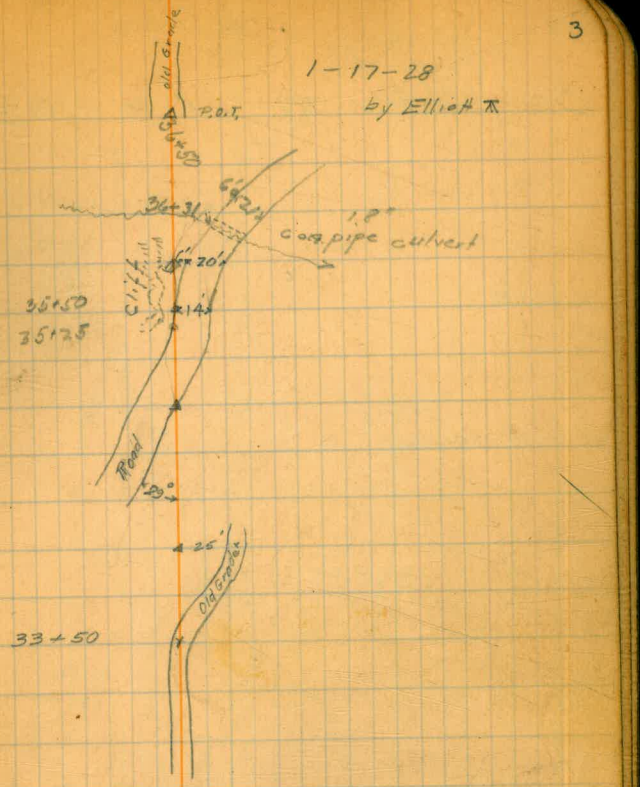
Li. Lime

Sta	Lt.	Rt.	C. Br	M Br
36+85.43		P.O.T		
		N 09-32-10 W	N 09-30 W	
36+06.12	X	45°06'15"	36' 41"	30-12-30 45-06-15

See Book N-1, Pg 13-15

35+02.06		P.O.T	
		N 54-38-25 W	N 54-15 W
34+27.80		25°57'20"	42' 56"
33+06.45		P.O.T.	
		N 80-35-45 W	N 80-30 W
30+85.66		29°26'40"	40' 16"
		S 69-57-35 W	S 36-45 W
28+89.57		39°01'00"	53' 04"
28+69.25		P.O.T.	
27+50.14		P.O.T.	
		S 30-56-35 W	
		52' 04"	

1-17-28
by Elliott

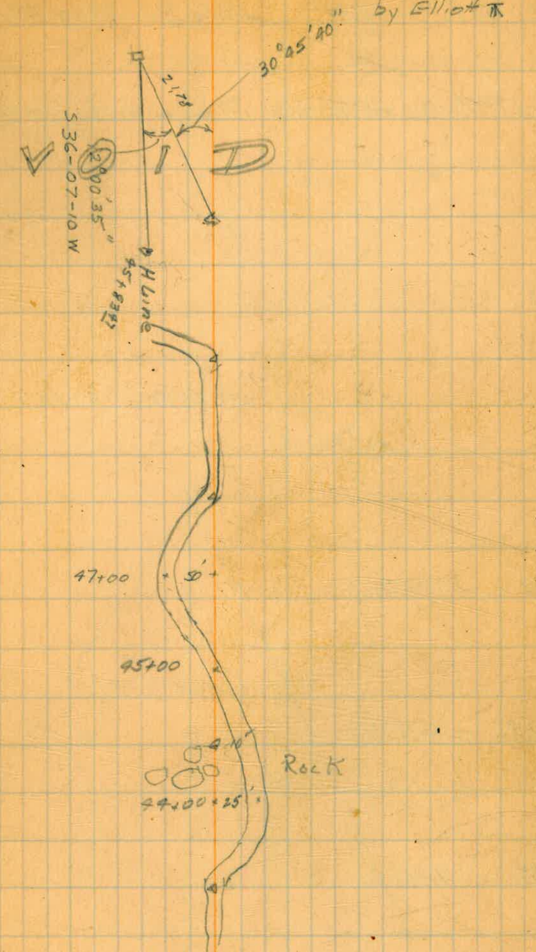


4 Line

Sta	Δ Lt.	Rt	C.B.	M.B.	
			S70-32-15W 27'44"		
~~52+03.06~~					
153.47					
50+47.92	P.O.T. ~~15°40'00"~~				~~31-20-00~~ ~~15-40-00~~
86.02					
49+61.80	P.O.T.				
505.75					
44+56.05	14°54'00"		S70-32-15W 27'44"	S70-15W	29-48 14-54
114.50					
43+41.55	51°-26'-10"		S85-26-15W 21'44"	S86-15W	51-26-10
361.53	⊙43+10.75 = P.O.T. 3+30.73				
39+80.02	12°27'45" L.		N43-07-35W 12'06"	N43-00W	24-55-30 12-27-45
104.35					
37+85.67	21°07'40" Lt		N30-39-50W 44'21"	N30-30W	42-15-20 21-07-40

505.75
86.02
153.47
743.24

1-18-28
Cold - Windy
by Elliott ⊼



L Line

Sta	Δ Lt.	Rt.	Calc Br.	Mag. Br.
73 55			S83-56-35W 52'04"	
76+44.67	17°09'50	~~17°09'50~~	PI with L' line	
162 74				
74+81.93	⊙			
118 18				
62+93.75		30°34'10"	N78-53-35W 58'06"	N77-45W
21 32				
62+72.42	P.O.T.			
414 72				
58+57.71	P.O.T.			
231 86				
56+25.85	P.O.T.			
199 32				
54+26.53	P.O.T.			
225 24				
52+01.29	P.O.T.			
			S70-32-15W 27'44"	

61-08-20
30-34-10

62+93.75
44+56.05
18+37.70

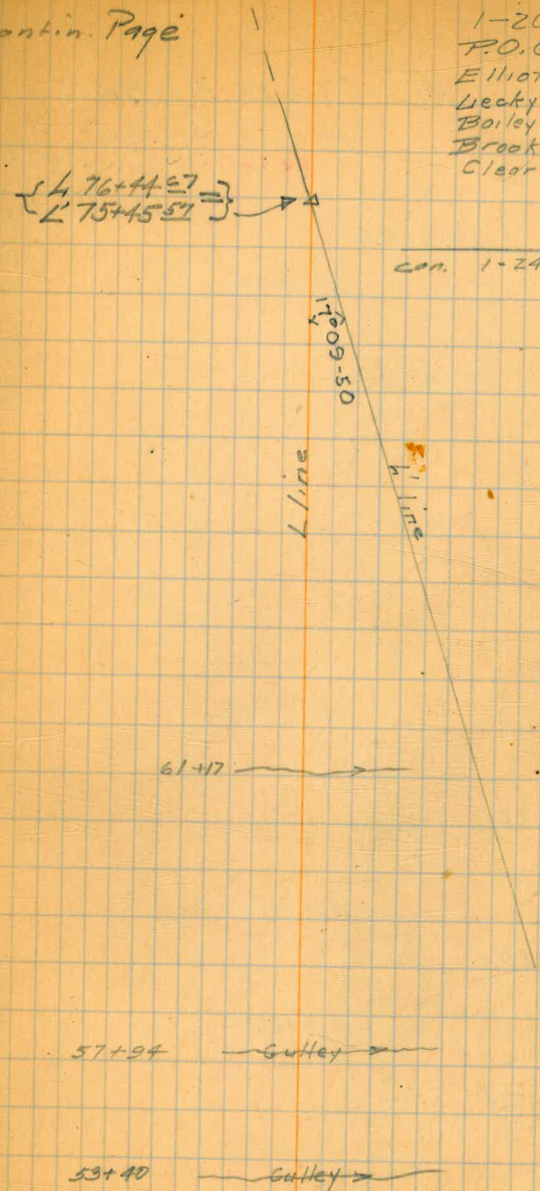
135.0?

92

contin. Page

1-20-28
P.O.G. Location
Elliott π Notes
Lecky Hd Ch.
Bailey R. Ch.
Brooks Brush
Clear - Cold

Con. 1-24-28
P.O.G.
Lecky
Bailey
Brooks



L line contin. Page 10

on Top of old Fletcher grade

Jan. 24-78 P.O.G.

6

Sta	Lt.	Rt	Calc Br.	Mag. Br
	116 24		S77-28-45W	S64-00W
			24'14"	
89+62 65		24°02-20		
	72 95		S83-26-25W	
			21'54"	
88+89 70		39-05-50		
	73 15			
88+16 50	⊙			
	174 25			
86+42 30	⊙			
	210 99		S84-20-35W	
			16'04"	
84+31 31		9°26-10		
	416 40			
			S73-46-45W	
			42'14"	
80+14 91		14°37-50		
	245 35			
			S38-24-35W	
			S43-18-35W	
			38 20 04	
77+69 56		19°31-50		
			S57-56-25W	
	51 34		51'54"	
77+18 22				
76+91 12		26°00-10		
			S83-56-35W	
			52'04"	

88+89-70
84+31-31
4 58-39

✓ L' line alternate to L line

Sta.	L^t △	R^t	Calc Bear.	Mag. Bear.
54+51 17	⊙	Fd L.K.		
53+14 75	⊙	Fd L.K.		
52,60				
51+62 15	⊙	Fd L.K.		
			S83-56-55W 52'24"	
50+47 29	⊙	FD L.K.		
49+33 66	⊙	Fd L.K.		(96° 7' 36")
45+13 58	⊙	Fd L.K.		
44+20 09	⊙	Fd L.K.		
PI 43+10.75 / 43+10.75 POT	52°55½ (Lt.)	7-8-51 Fd L.K. ING		52-55 105-51
			N43-07-35W 12'06"	

Jan. 23. 28

7

P.O.G.
Leckey
Bayler
Brooks

good Soil - Few Bldrs.

Large Bldrs.

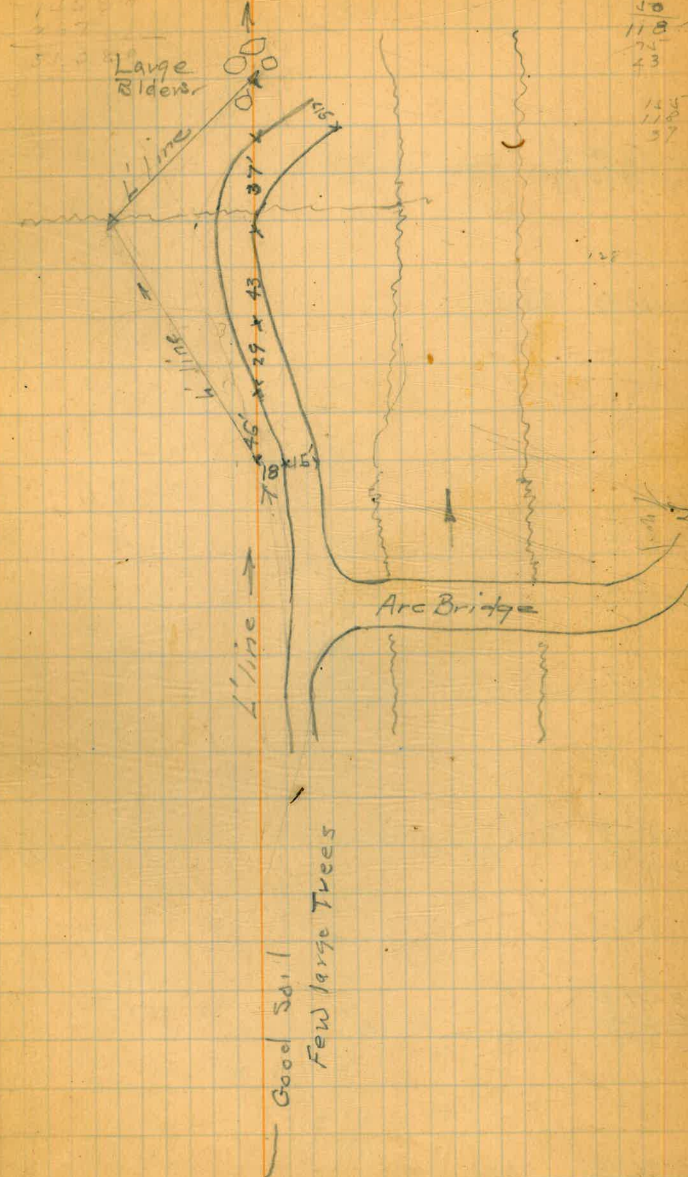
✓

L' line

Δ

Sta.	Sta.	L+	R+	
	64+58 29	(27°56'10" L Cal. [illegible])		Fd Hub
54+51	63+53 64.5	Fd. Nail only 2R	49°28'40"	
53+14	1+35.59			
51+62	62+18 06	21°32 1/2	Fd. LK	
50+47	60+86 48	⊙	Fd King	S 83-56-55 W 52'24"
49+33	59+78 72	⊙	Washed out	
45+13	58+86 64	⊙	Fd	
44+2	55+74 55	⊙	Fd LK	
43+10	55+34 61	⊙	Fd LK	

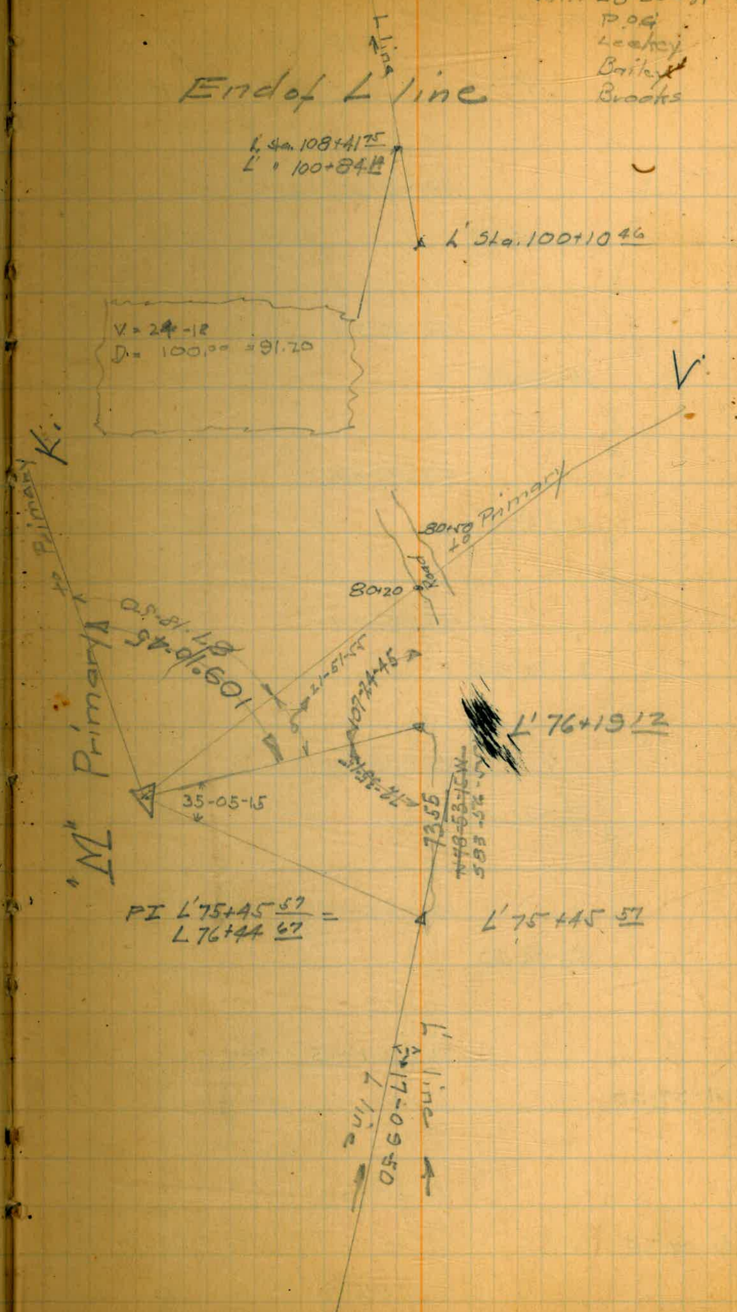
Jan. 23 - 28
P.O.G.



✓ L' line △

Sta.	Lt.	Rt.		
			(08 49) S58-13-20W = S58-12-40 (L line)	0-00-00-40" (dif)
100+84 14/108+41 75	L'/L = end of L' line = PI with L line Fd			
100+10 46	3°42-10	Fd		
			(50' 59") S61-55-30W	
80+51 18	⊙	on West edge of Road	377	Fd Hub
P.O.T.		Fd. Hub		
76+19 12	22-01-25	Fd. Hub		
13.55			S 83-56-55W 52' 24" ~~N78-53-15W~~	
75+45 57	P.O.T.	~~14°09-50~~	Fd. Hub	
73+17 65 ~~72+64 65~~	⊙	on rock		
			S 83-56-55W 52' 24"	
66+26 96	⊙	No, on Rock		

Jan. 28-30-31-1928
P.O.G.
Leakey
Bailey
Brooks



△ L line on Top of old Fletcher grade

cont. from Page 6
turn to Page 14

Jan. 24-28
P.O.S. 21-28

Sta.	L'	R+	Calc. Bear. N. B.	contin. Page 15
64 20				
97+22 00		10-20-10	N49-00-40W N69-50 W 05'11"	
83 65				
96+38 36		15-06-55	N57-20-50W 25'21"	
86 13				
95+52 23		9-54-15	N72-27-40W 32'16"	1
68 27				
94+83 96		7-13-20	N82-25-00W 29'31"	
84 02				
93+99 94		24-01-50	N89-38-20W S77 W 42'57"	
58 58				
93+41 36		42-06-40	SCA-19-50W 15'19"	
183 20				
91+58 16		14-07-40	S22-13-10W S 8-40W 08'39"	
79 27				
90+78 89		41-07-55	S36-20-50W 16'19"	
			S77-28-45W 24'14"	

Used L' Line Here

Old Fletcher grade

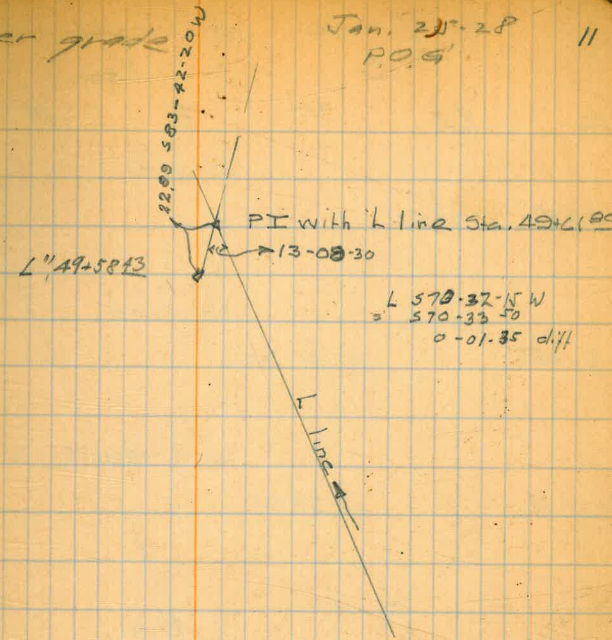
L" line Retracing old

Sta	Δ L	Δ R	Bear. C	Bear. N
			S70-23-~~20~~05W	
49+58 43	13-19			
			83-42-05 S83-~~42~~-20W	
48+84 88		14-59-30		
			68-42-35 S68-~~43~~00W	
47+90 24	10°10			
			78-52-35W S~~78-53-00W~~	S65-15 W 13-29 79-05
46+72 18		13-27-40 ~~13-28-05~~		
			S65-74-55	
45+94 00		15-50-45		
		5	S49-34-10W 29' 39"	
44+77 00	20° 57			
			S70-31-10W 26' 39"	
44+~~42~~ 24 09	30-37-45			
			N78-51-05W 55' 36"	S87-50 W
43+41 55 43+41 55 =	35°43-30 on L line	~~35°43-~~		
			N43-07-35W 12' 06"	

Used L' Line Here

Fletcher grade

Jan. 25-28
P.O.G.



"L" line after Fletcher grade

Jan. 25-28
1906

Sta	D	L'	R'	C	Bear.	RT
				12-55	S 57-45-10W	
60+28 47		21-24-50				
				79-07-45	S 79-10-00W	
58+84+64		10-08-30				
				68-59-45	S 69-01-30W	S 55 W
58+35 43		13-30-05				
				29-10	S 55-31-25W	
56+95 15		37-29				
				87-01-50	N 86-59-35W	S 80-20 W
55+42 12		20-31-50				
				26-20	S 72-23-40W	
53+70 54		41-59-45				
				26-35	S 30-25-55W	
52+21 08		24-31				
				35	S 54-57-55W	
50+86 11		15-25-30				
				05	S 70-23-20W	

Used L' Line Here.

L" line over Fletcher grade

Sta.	L±	R±	Δ Bear. C. M
			N87-~~44-45~~W 46-20
68+41 91	28-35		
			N59-~~09-45~~W 11-20
67+68 62		14-39-15	
			N73-~~48-20~~W 50-31"
66+71 87		4-57-10	
			N78-~~46-30~~W 47-47" S 88° W
65+55 00		62-09-30	
64+04 67			S39-~~01-00~~W 02-45"
	10-30		
			S49-~~35-00~~W 32-45"
62+99 48	22-22-25		
			S71-~~54-25~~W 55-10
61+71 87	~~34-37-50~~	34-37-50	
			S37-~~49-35~~W 17-20
60+81 33	20-25-35"		

Used L' Line Plate

1-25-28
P.O.G
Leckey
Baily
Brooks

L" line over Fletcher grade

L± R±

N78-53 W

79+80 18 1°16-35 end of L" line

N77-34-20W (35-25)

78+72 91
~~79+80 18~~ 14-52-25

N62-44-55W (44-10)

~~14+05 45~~
~~78+72 91~~ 8-05-15

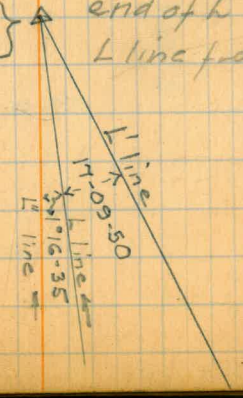
Used L line here.

N54-~~36-40~~W (38-55)

70+16 ℄℄ 33-07-25

N 87-44-25W

PI { L" 79+80 18 = L' 75+45 57 = L 76+44 67 = } end of L" line
L line from here on



L line over Fletcher grade

Stg.	Lt	Rt	C. (Bearing)	M
✓ 114 85			S58-12-40W 08 09	
108+41.75	23-34-30			Fd
170 29			S81-47-10W 42'39"	
106+71.46	17-18-30			
80 59				
105+90.87	(·)			
319 87			N80-54-20W 58 51	
102+71.00		36-24-10		
93 46			S62-41-30W 36 59	
101+77.54	13-18-30			
103 12			S76-00-00W 75 55 29	
100+74.42	13-19-25			
52 32			S89-19-25W 14'54"	
100+22.10	20-34			
124 77			N40-06-35W 11'06"	
98+97.33	19-50			
111 23			N50-16-35W 21'06"	
97+86.10	3-15-55			

Used L' Line Here

contin. from Page 10

Jan. 26-28

POG

Leckey

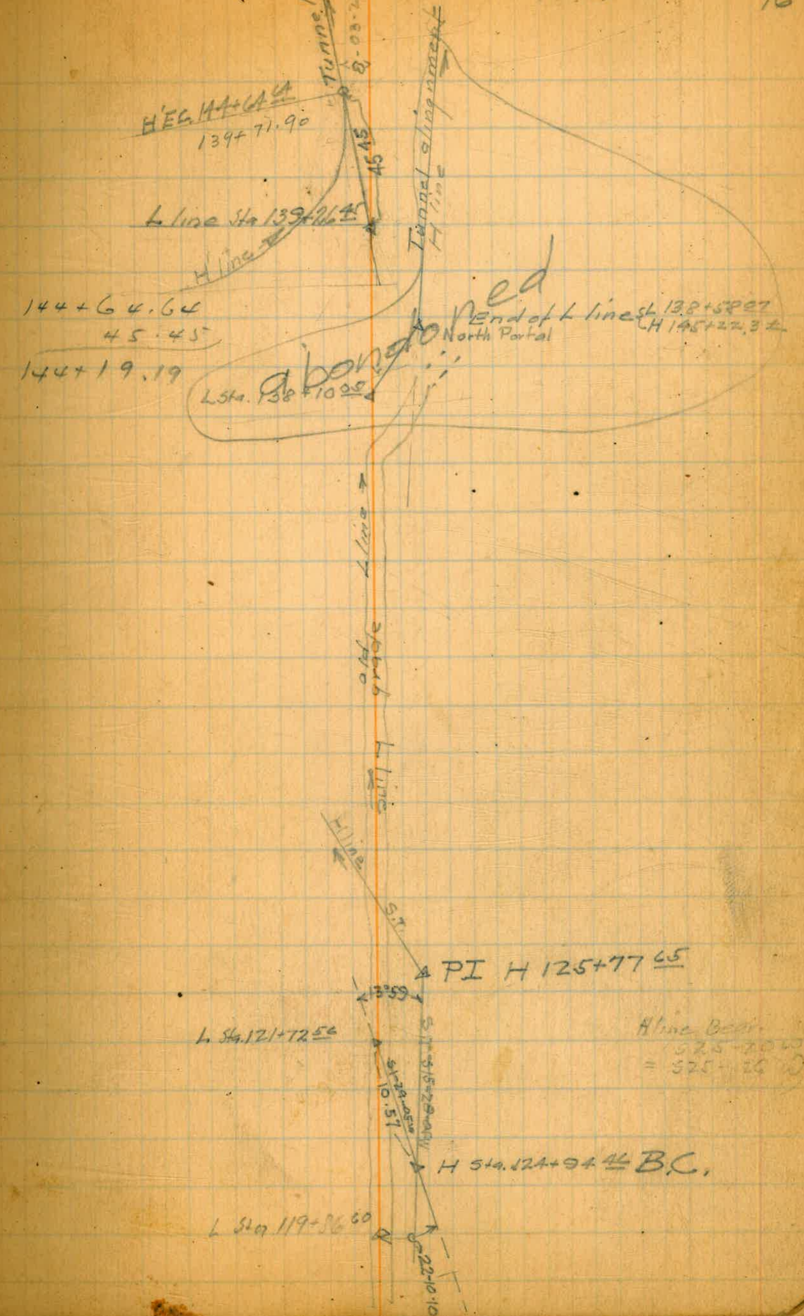
Bailey

Brooks

✓ L line over Fletcher grade
△ Bear

Sta	L±	R±	C	M
		End of L line		
~~138+58 07~~	~~19-50-50~~	= H	S30-09-55W = S30-05-14 0-04-41 H 05'24" 145+22.7 approx. (guard stake out)	
139+26 45	= 8-03-20	= Sta 144+19.19 of Old H Line? N. See Vol.		
116.40				
138+10 05	P.O.T	~~11-48-20~~		
131.89				
136+78 06	⊙	77.53±		
526.95			S38-18-15W ~~S4-11-30E~~ 08' 44"	P.O.T. 133+81.11± Stadia
131+51 11	11-33-00	Fd.		
109.76			S49-46-15W ~~S7-12-00W~~ 41' 44"	
130+41 85	18-48-45	Fd		
420.85			S68-35-00W ~~S26-02-15W~~ 30' 29"	
126+20 50	~~21-11-15~~	21-11-15	Fd	
95.37			S47-23-45W 19' 14"	S33-15W
125+25 13	Fd	23-39-30		
352.57				S9-20W
			S23-49-15W 44' 44"	
121+72 56	9-47-55	Fd - 11°27' Lt.		
185.96			S33-37-10W 32' 39"	
119+86 60	24-35-30	Fd		
			S58-02-40W 08' 09"	

Jan. 25-28
P.O.G.



Copy of Alignment Notes for Pipe Line from South End of Tunnel L to South End of Pipe Line after Making Line Changes.

Sta.	Lft.	Rgt.	Cal. Course,
202+67.2			P.I. 17°55'40"
			S. 26°29'09" W.
171+87.5			P.I. 3°36'05"
			S. 30°05'14" W.

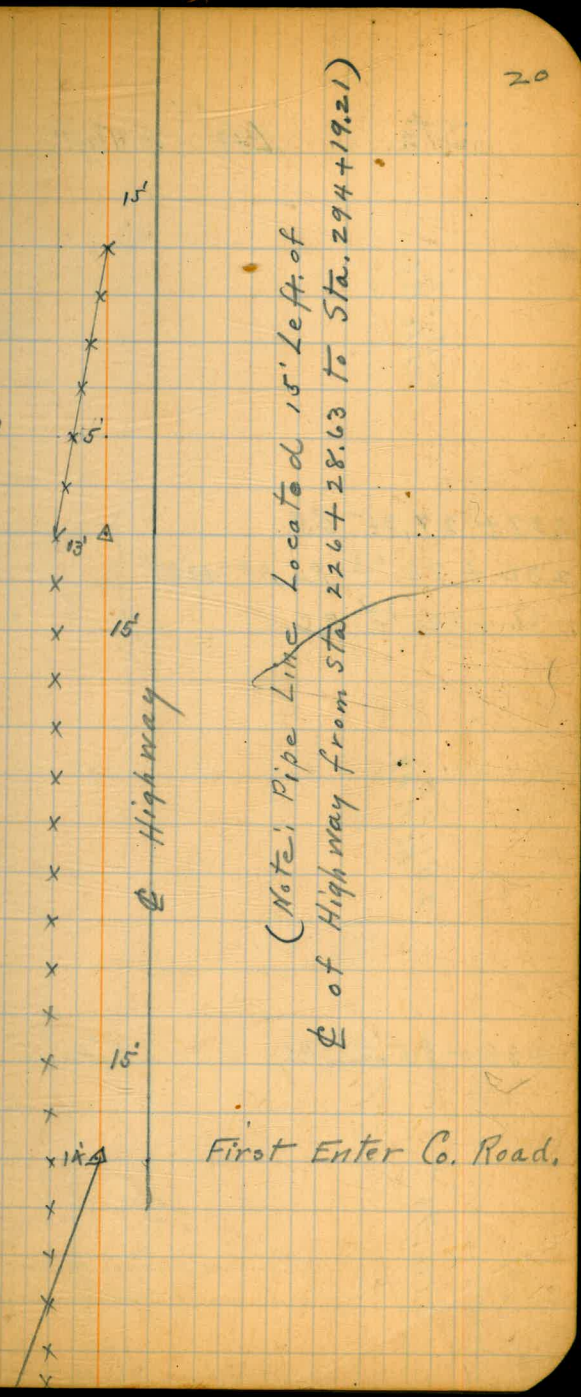
3080.36'

Part of alignment removed
Details taken from topo sheets
See profiles 1458-D-6 & 7 filed

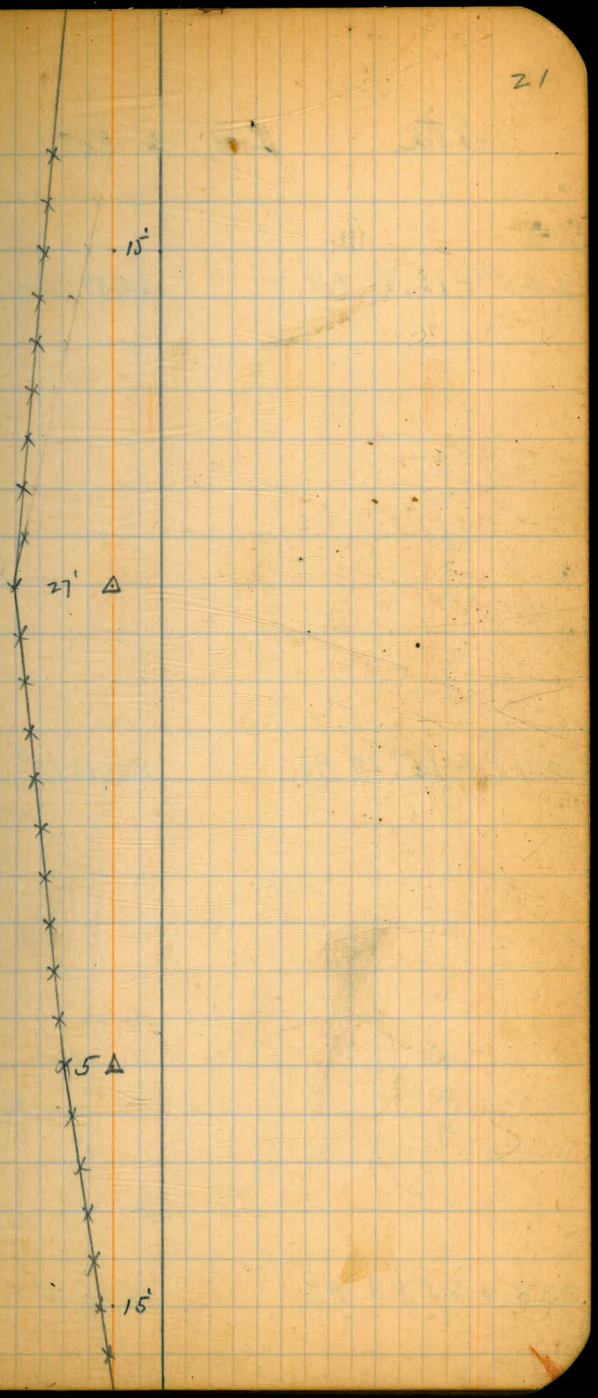
Tunnel L

Sta.	Lft.	△	Rgt.	Cal. Course
226+21.87 ahead				
226+34.08 = P.O.T.				S. 34° 31' 59" W.
	1227.01'			
214+07.07 ahead.				
214+00.41 = P.I.				19° 25' 35"
	474.74'			
				S. 15° 06' 24" W.
209+25.67 P.I.				6° 32' 55"
	657.76'			
				S. 8° 33' 29" W.

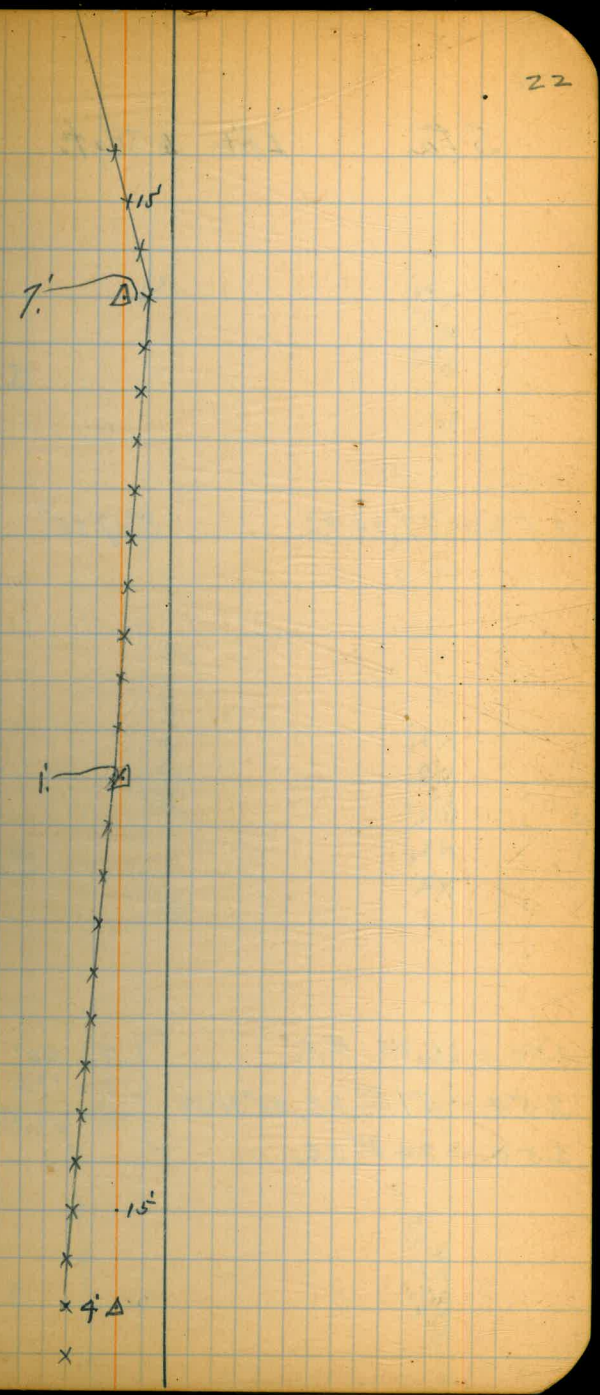
Sta	Lft. & Rgt.	Cal. Course
230+80.5 P.I.	8°46'05"	
181.9		S. 0°37'33" W.
228+98.5 P.I.	3°36'41"	
269.92		S. 4°14'14" W.
226+28.63 P.I.	30°17'45"	
6.76		S. 34°31'59" W.



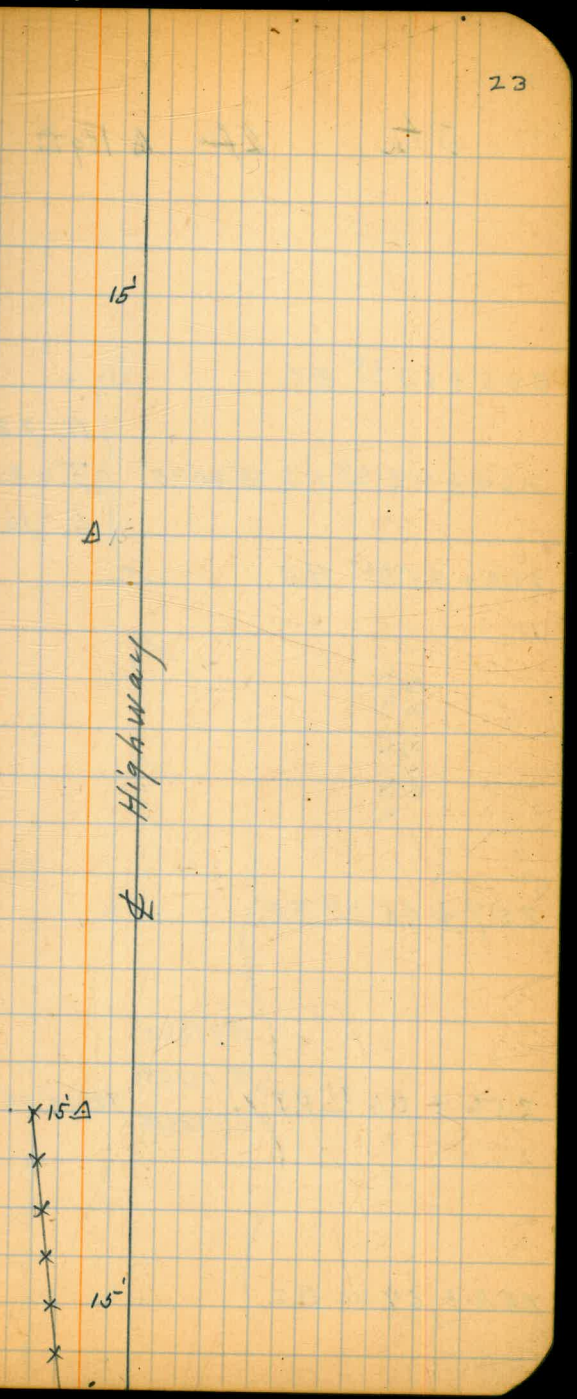
Sta.	Lft.	Δ	Rgt.	Cal.	Course
213.22' P.I. to P.I.					S. 23° 11' 52" E.
237 + 27.35 E.C.				R = 160'	
236 + 76.68 P.I.		37° 42' 35"		T = 54.64	
236 + 22.04 B.C.				L = 105.31	
281.23' P.I. to P.I.					S. 14° 30' 43" W.
233 + 95.45 P.I.				5° 07' 05"	
314.95'					S. 9° 23' 38" W.



Sta.	Lft. Δ Rgt.	Cal. Course
245+12.81 P.I.	26°37'10"	
397.62'		S. 17°18'38" W.
241+15.19 P.I.	23°46'25"	
229.26'		S. 6°27'47" E.
238+85.93 P.I.	16°44'05"	



Sta	Lft. Δ Rgt.	Cal. Course
328.61 P.I. To P.I.		
		S. 0°41'24" W
252+77.70 P.I.	3°17'15"	
228.07 P.I. To P.I.		
		S. 2°35'51" E.
250+66.83 E.C.		
250+51.55 P.I.	46°31'39"	R = 40'
250+34.35 B.C.		T. = 17.2
		L. = 32.48
538.74 P.I. To P.I.		
		S. 43°55'48" W.



Sta. Lft. Δ Rgt. Cal. Course

265+63 68 E.C.

264+82 28 P.I. 33°44'15"

263+95 85 B.C.

R = 285.
T. = 86.43
L. = 167.83

9.13.83
P.I. to P.I.

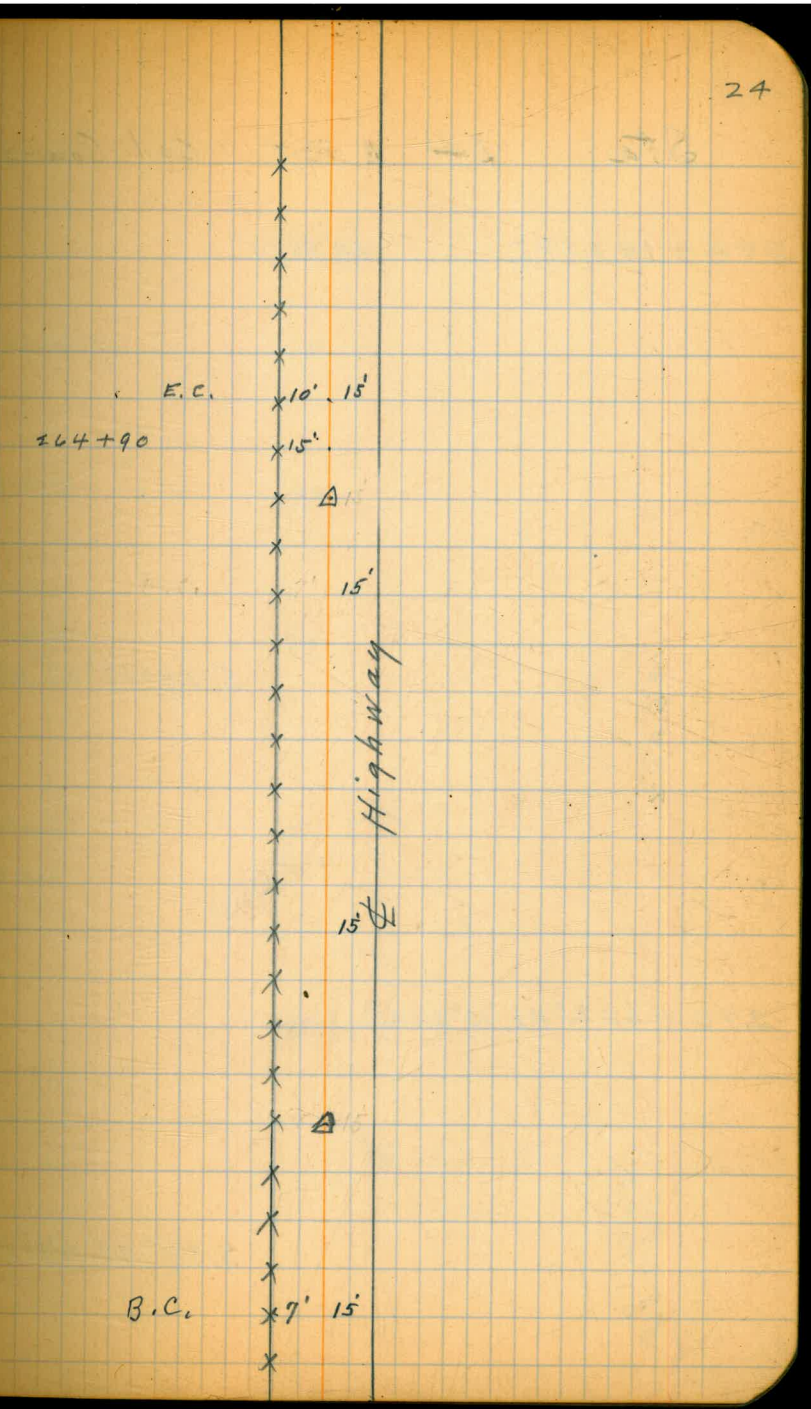
S. 73°26'22" W.

257+05 44 E.C.

256+06 31 P.I. 72°44'58"

254+69.32 B.C.

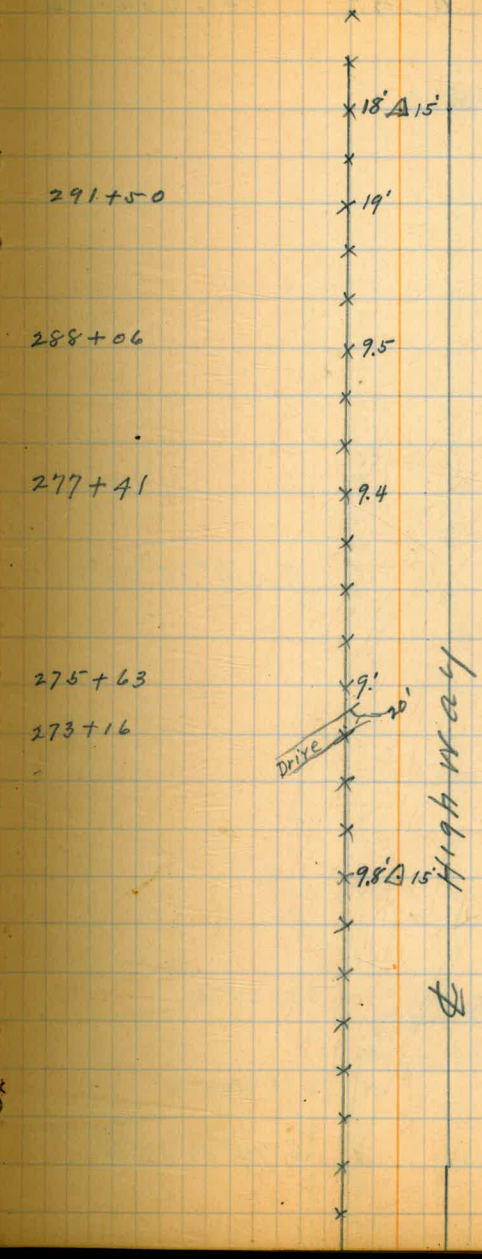
R = 186.0'
T. = 136.99
L. = 236.12



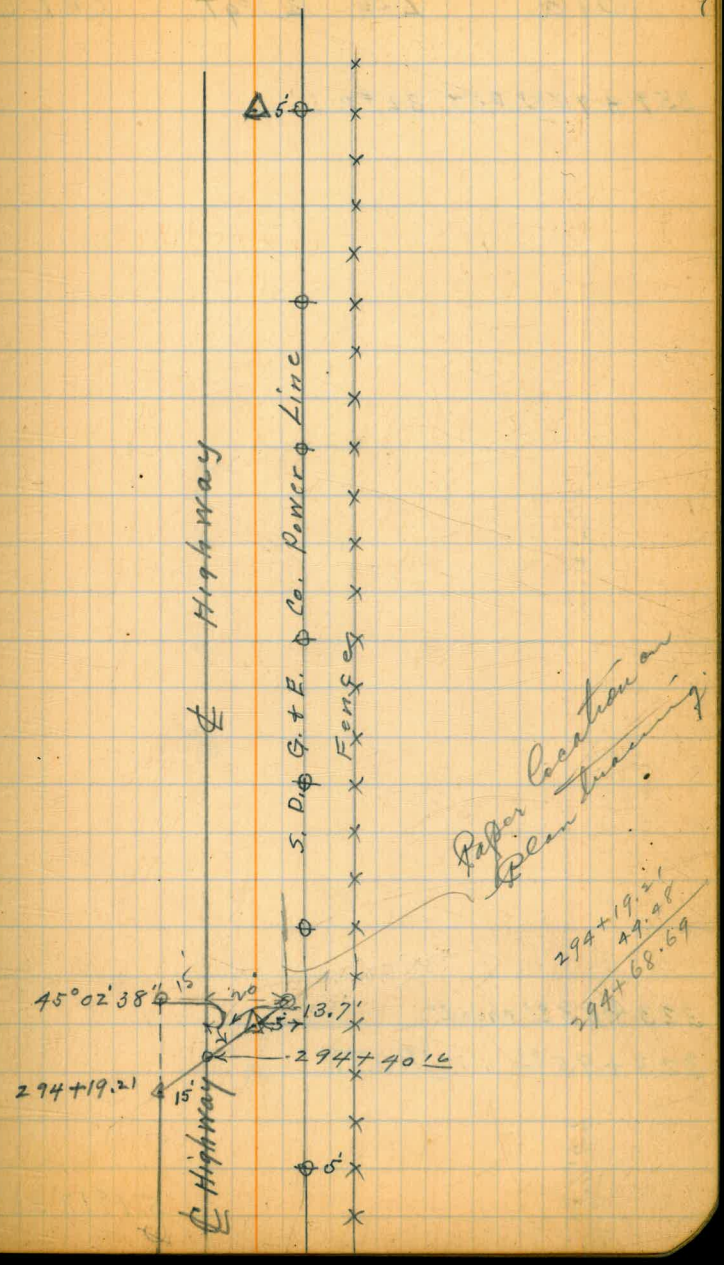
Sta.	Lft. Δ Rgt.	Cal. Course
294+19.21 P.I.	44°59'55"	
		5. 29°17'22" W.
270+60 ℄ P.I.	10°24'45"	
		5. 39°42'07" W.

2359.01'

582.95'
P.I. to P.I.



Sta.	Lft. Δ Rgt.	Cal. Course
323+37 ½ P.I.	30°28'38"	
		S. 29°15'02" W.
2817.90'		
294+39.52 P.I.	45°02'15"	
		S. 74°17'17" W.
40.31'		



Sta Lft. △ Rgt. Cal. Course

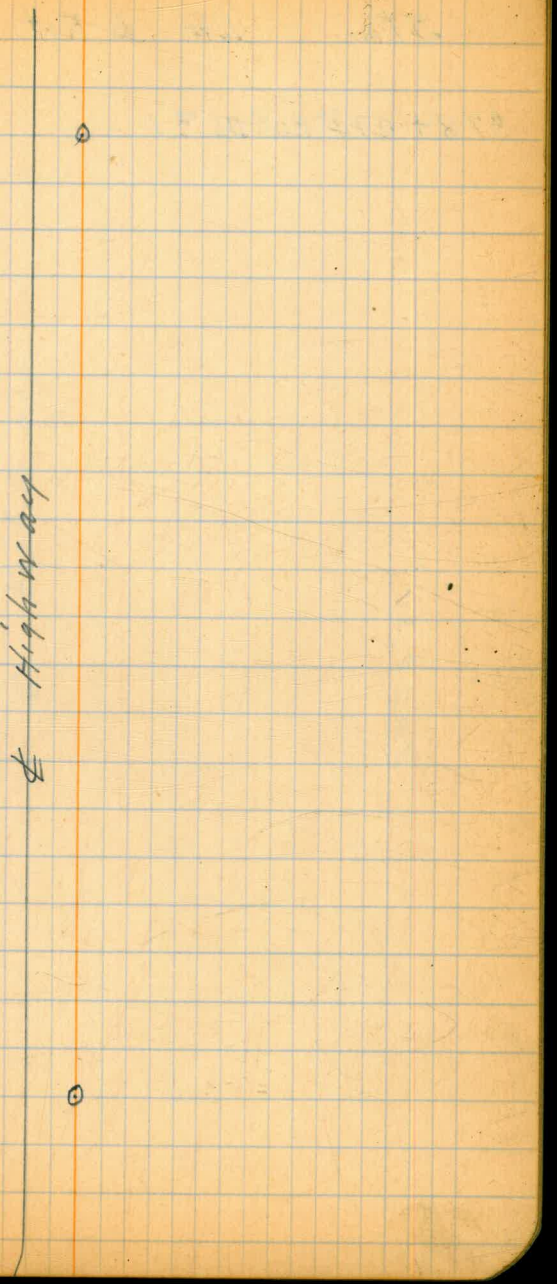
357 + 78 01 P.O.T. B.L. #2

339.00'

323 + 83 01 ahead.
323 + 95 31 } P.O.T.

57.69

S. 1°13'36" E.

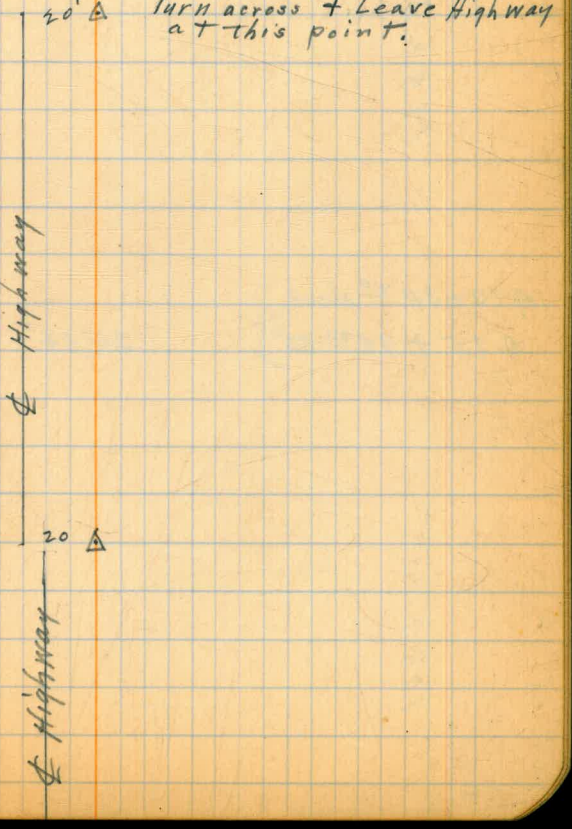


Sta. Lft. Δ Rgt. Cal. Course

378+07.32 P.O.T. BL. # 1

2029.31'

Sta.	Lft. Δ Rgt.	Cal.	Course
			S. 0°51'36" E.
405+03 87 P.I.		91°08'	
	665.19'		N. 89°43'36" W.
398+38 72 P.I.		91°30'	
	2031.40'		



Sta.	Lft. △ Rgt.	Cal. Course
430 + 27 15 P.I.		19°38'11"
		S. 19°42'24" W
	1992.75	
410 + 34 40 ahead.		
415 + 92 92 P.I.		20°34'
	1089.05	

△

△

Sta	Lft. Δ Rgt.	Cal. Course
443+67.48 P.O.T.		
	292.01'	S. 0° 00' 59" W.
440+75.47 P.I.	3°32'27"	
	571.00'	S. 3° 31' 28" E.
440+24.47 P.I.	3°35'41"	
	997.32'	S. 0° 4' 13" W.

Sta	Lft. △ Rgt.	Cal. Course
	1334.40'	
		S. 0°00'49" W.
453+91.48	P.I.	45°00'10"
	45.18'	
		S. 45°00'59" W.
453+46.50	P.I.	45°00'
	979.02	

△

Sta	Lft.	△ Rgt.	Cal. Course
$493+59^{95}$ ahead. }			
$493+62^{23}$ P.I. = }		$90°01'55''$	
2636.15'			
$467+26^{08}$ P.O.T.			

△

⊙

Sta	Lft. △ Rgt.	Cal. Course
533+02 24 P.I.	0°02'00"	
1318.96'		N89°49'46" W.
519+83 30 P.I.	0°07'30"	
1623.33'		N89°57'16" W.

Sta	Lft. △ Rgt.	Cal. Course
585+86.82 P.I.	90°11'30"	
	3944.35'	S. 0° 00' 14" W.
546+42.47 P.I.	90°08'00"	
	1340.21'	N. 89° 51' 46" W.

Sta	Lft.	Δ	Rgt.	Cal. Course
649+88.63 P.I.		90°14'30"		
	2406.57'			S.0°10'44"W.
625+82.09 P.I.		90°01'00"		
	3996.27'			N 89°48'16" W.

Sta.	Lft. △ Rgt.	Cal. Course
702+86 53 End.		
	2484.29'	S. 0°25' 14" W.
678+02 24 P.I.	90°00'00"	
	2813.61'	N. 89°34' 46" W

Resived Location of Pipe line
Sta. 39+80.02 to 43+25.69
Profile on following page

S 83-52-24 W

43+25.69 = P.I.
43+33.43 P.O.T.   Δ Lt 48°58-30

43+03.67 P.O.T

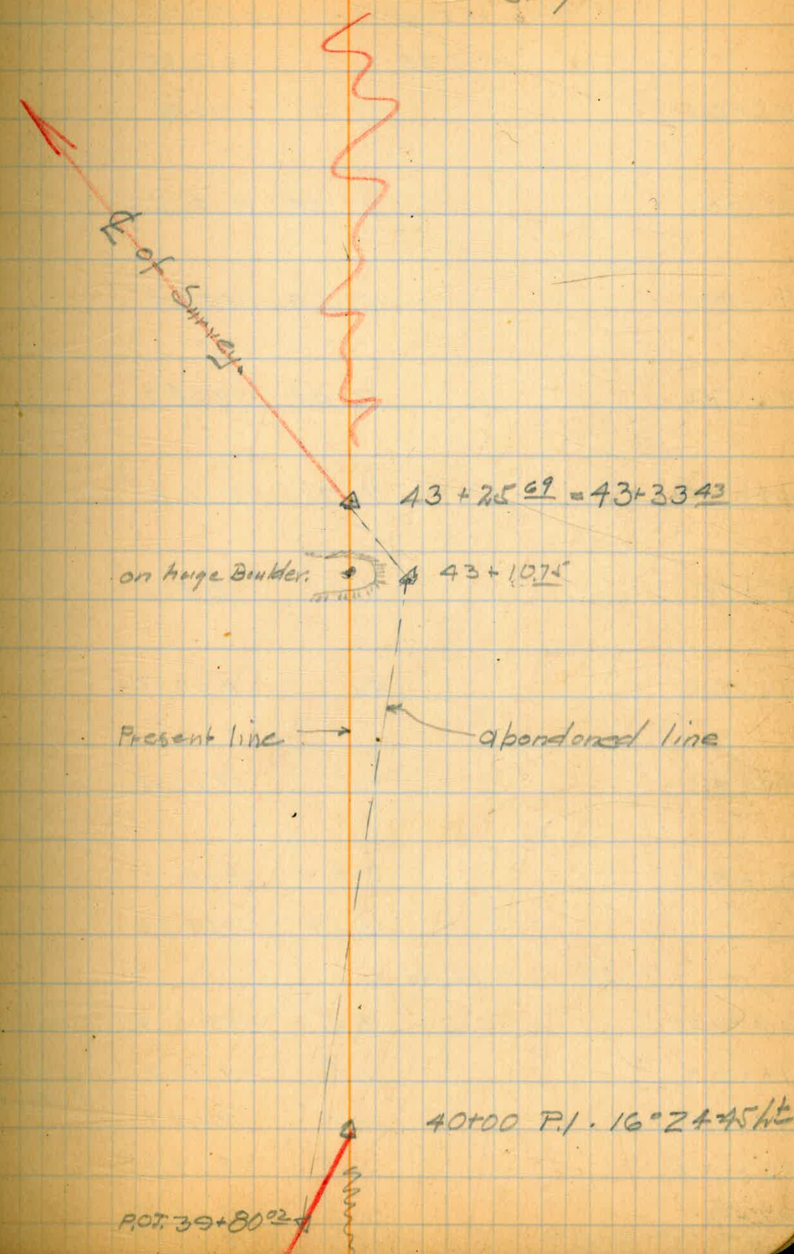
N 47-09-06 W
325.69

40+00 P.I.   Δ Lt 16°24-45

N30-44-21W
214.33

39+80.02 changed to P.O.T

June 7-28
P.O.G.
Leach
Simpson



June 7-28
P.O.G.
Leach
Simpson

See preceding Page

	+	H.I.	−	Elev.	BM = ground observation Sta. 40+50 abandoned line
	10.95	1921.35 ✓		1910.40	
40+00			10.7	1910.6 ✓	
40+50			11.00	1910.3 ✓	
41+00			12.60	1908.7 ✓	
41+50			13.00	1908.3 ✓	
42+00			9.7	1911.6 ✓	
42+50			5.8	1915.5 ✓	
42+60			4.1	1917.2 ✓	
42+83			4.5	1916.8 ✓	
42+95			2.0	1919.3 ✓	
			0.52	1920.83 ✓	
	11.58	1932.41 ✓			
42+97			3.5	1928.9 ✓	
43+03			1.5	1930.9 ✓	huge rock
43+10			4.7	1927.7 ✓	
43+11.5			12.8	1919.6 ✓	
43+21			12.6	1919.8 ✓	
43+25 ~~69~~ = 43+33 13			15.9	1916.5 ✓	

44+00 7.7 1924.7 = OK from P-file

end of line change

Revised line Sta. 61+72 21
to 64+53 01

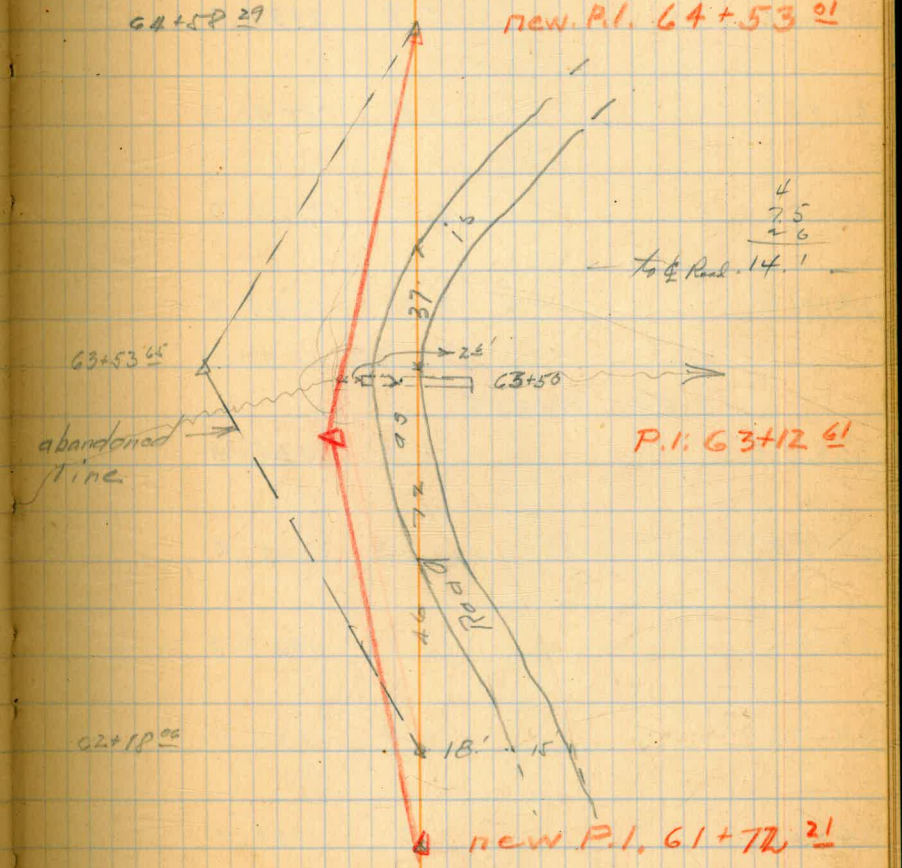
64+53 01 P.I. × × Δ 13°00 L

63+12 61 P.I. × × Δ R 26°00'

61+72 21 P.I. × × Δ L 13°00'

June 7-28
P.O.C.
Leach
Simpson

40



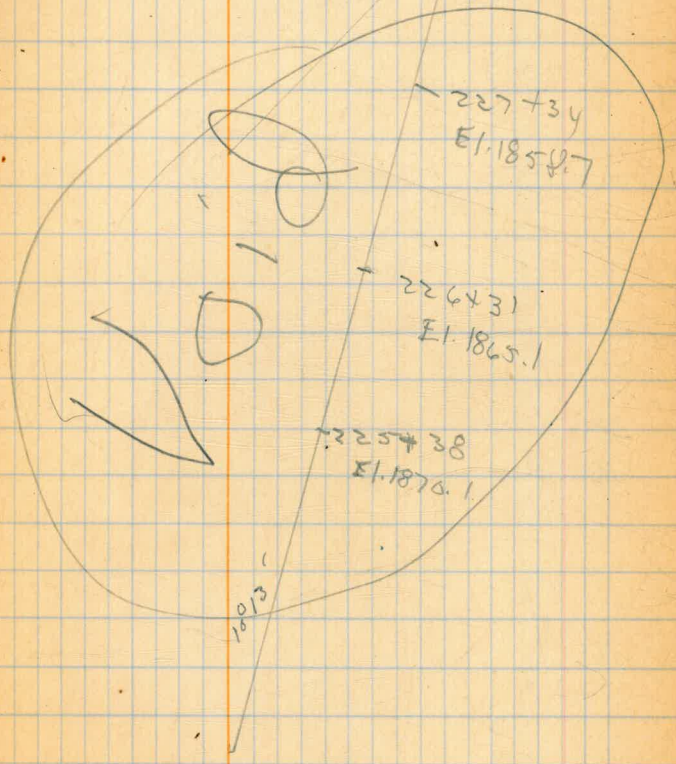
See preceding page

	+	H.I.	−	Elev.	
	7.85	1743.05		1735.2	ground elev. sta. 62+00
61+72 21			4.2	1738.8	
62+00			5.7	1737.3	
62+50			1.8	1741.2	
63+00			4.7	1738.3	
63+12 61			7.3	1735.7	
			12.30	1730.75	
	7.00	1737.75 1740.75			
63+31 5			14.4	1723.3 1726.3	
63+50			17.3	1720.4 1723.4	
63+68			13.8	1724.0 1727.0	
63+76			9.4	1728.3 1731.3	
64+00			1.0	1736.7 1739.7	
64+53 01				see Profile	

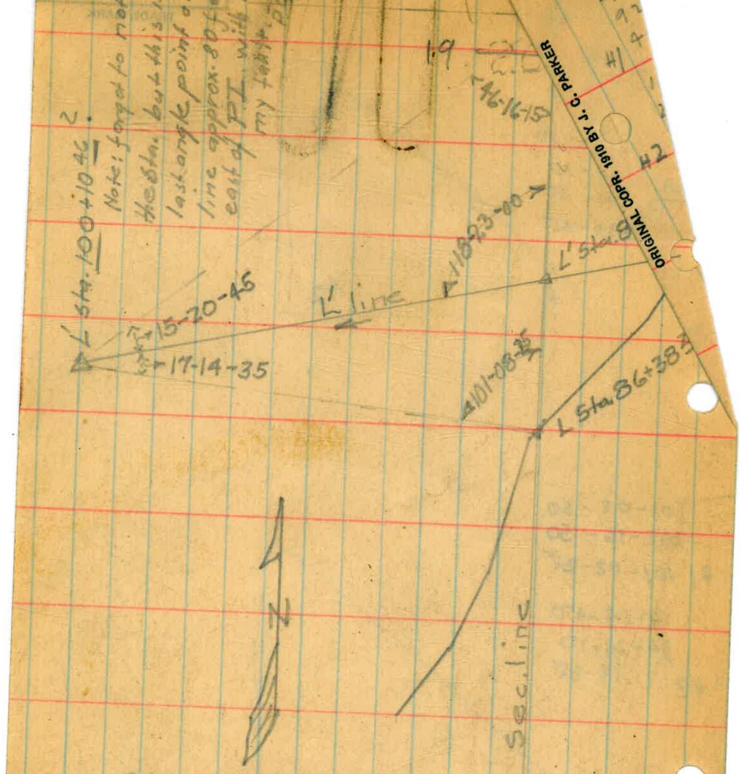
<26.5 Culvert under Road

King - 8-17-5

Proposed Revision at Sta. 223+15.95 (Stading)



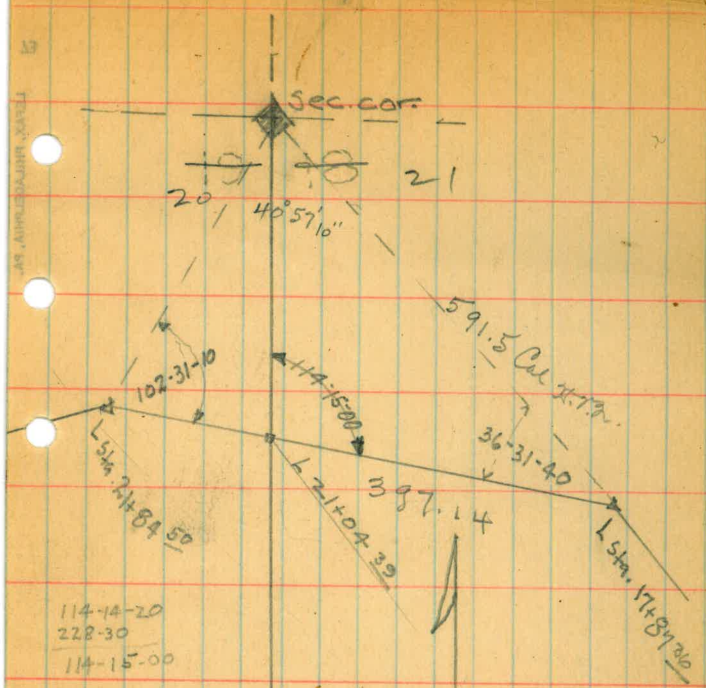
LEFAX, PHILADELPHIA, PA.



Note: forgot to note the sta. but this is the last angle point on L' line approx. 80 feet east of P.I. with L line my tally. P.O.G.

Sketch showing tie to
sec. cor. 20-19
North of Sta. 81+85 28 on L' line
Sta. 86+38 29 on L line

2-2-28
P.O.G
Leach
Simpson



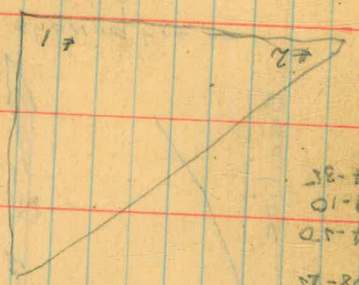
114-14-20
228-30
114-15-00

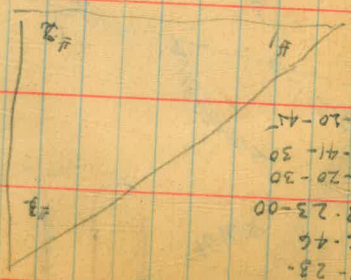
Sketch of tie to Sec. cor.
North of Sta. 21+04 39
on L line

2-2-28
P.O.G

=397.14
Log a = Log b + log sine A − Log sine B 102°31'10" 40°57'10"
= 2.59894
9.98955
2.58849
9.81653
2.77196
a = 591.51

1/4 cor.





6°22'-200' 199.76

200 42085
399.76 399.76
21,09

IMPROVED TABLES
AND
INFORMATION

TABLE X.

MIDDLE ORDINATES OF RAILS

Length of Rail (feet)

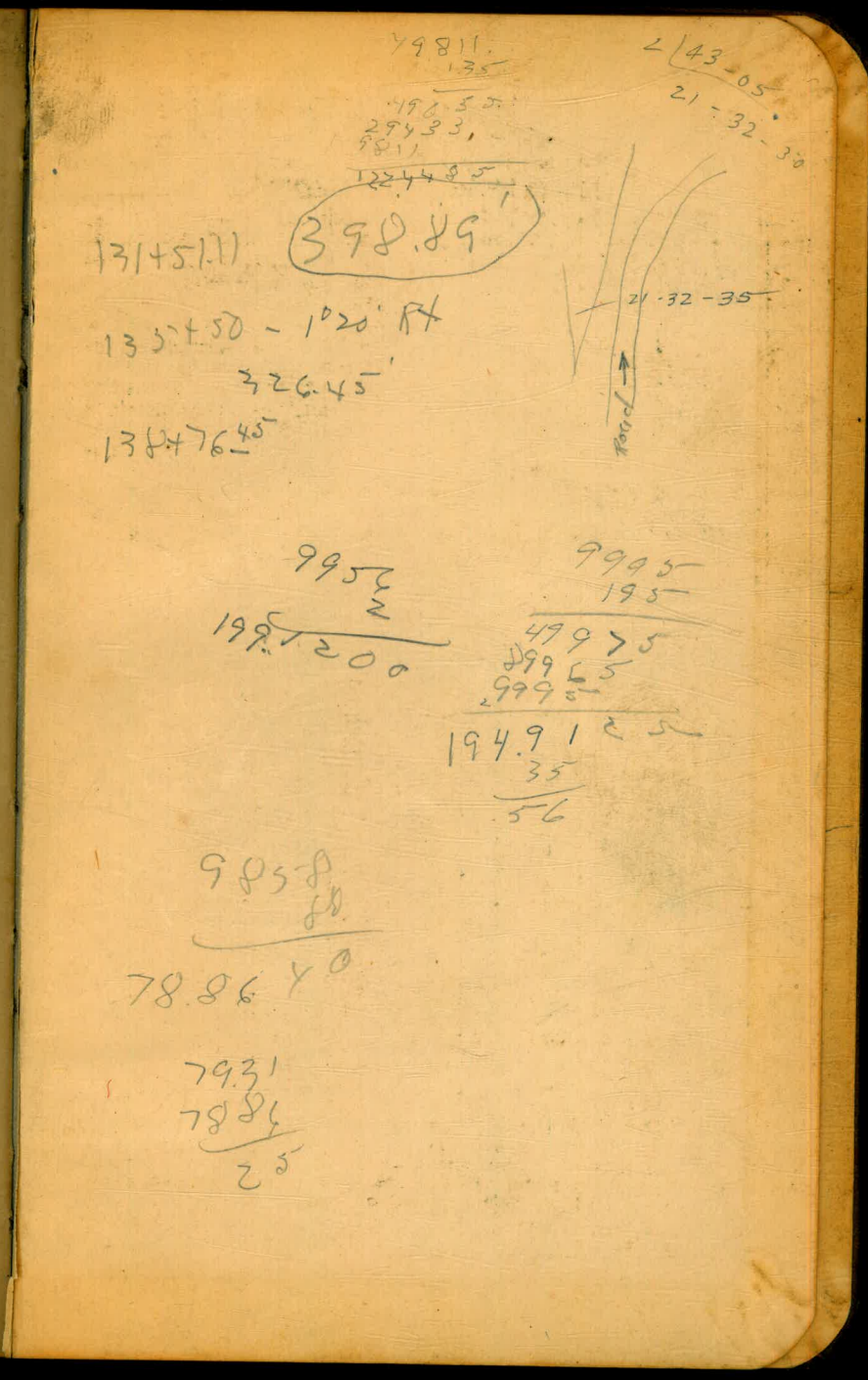
C ° ′	R Feet	30 Inch	28 Inch	26 Inch	24 Inch	22 Inch	20 Inch	C °	R Feet	30 Inch	28 Inch	26 Inch	24 Inch	22 Inch	20 Inch
0–20	17189	.08	.07	.06	.05	.04	.03	8	716.8	1.88	1.64	1.42	1.20	1.01	.84
0–40	8594	.16	.14	.12	.10	.08	.07	9	637.3	2.12	1.84	1.60	1.35	1.14	.94
1–0	5730	.24	.20	.18	.15	.13	.10	10	573.7	2.36	2.05	1.78	1.50	1.27	1.04
1–20	4297	.31	.27	.23	.20	.17	.13	11	521.7	2.59	2.26	1.95	1.65	1.39	1.15
1–40	3438	.39	.34	.29	.25	.21	.17	12	478.3	3.83	2.47	2.15	1.81	1.54	1.26
2–0	2865	.47	.41	.35	.30	.25	.20	13	441.7	3.05	2.66	2.30	1.96	1.66	1.36
2–20	2456	.55	.48	.41	.35	.29	.23	14	410.3	3.30	2.87	2.48	2.10	1.78	1.46
2–40	2149	.63	.55	.47	.40	.33	.27	15	383.1	3.54	3.08	2.68	2.26	1.91	1.57
3–0	1910	.71	.62	.53	.45	.38	.31	16	359.3	3.76	3.28	2.83	2.40	2.04	1.67
3–20	1719	.78	.68	.59	.50	.42	.35	17	338.3	4.00	3.48	3.02	2.57	2.16	1.78
3–40	1563	.86	.75	.65	.55	.46	.38	18	319.6	4.21	3.67	3.18	2.70	2.28	1.87
4–0	1433	.94	.82	.71	.60	.50	.42	19	302.9	4.45	3.89	3.36	2.86	2.41	1.98
4–20	1323	1.02	.89	.77	.65	.55	.45	20	287.9	4.70	4.09	3.55	3.00	2.54	2.09
4–40	1228	1.10	.96	.83	.70	.59	.48	22	262.0	5.16	4.44	3.84	3.30	2.80	2.29
5	1146	1.18	1.03	.89	.75	.63	.52	24	240.5	5.64	4.92	4.20	3.59	3.04	2.50
6	955.3	1.41	1.23	1.06	.90	.76	.62	26	222.3	6.07	5.29	4.58	3.88	3.29	2.70
7	819.0	1.65	1.44	1.24	1.05	.89	.73								

TABLE XI.

SHORT RADIUS CURVES

Radius Feet	Chord Feet	Central Angle	Deflection Angle	Deflection for 1 Foot
35	10	16-26	8-13	49.3
45	10	12-46	6-23	38.3
50	15	17-16	8-38	34.5
60	15	14-22	7-11	28.8
75	15	11-30	5-45	23.0
100	20	11-30	5-45	17.3
120	20	9-34	4-47	14.3
150	20	7-39	3-49	11.5
190	25	7-32	3-46	9.15
200	25	7-10	3-35	8.6
225	25	6-25	3-12	7.7
240	25	5-58	2-59	7.2
250	25	5-44	2-52	6.9
275	25	5-12	2-36	6.2
288	50	9-58	4-59	6.0
300	50	9-32	4-46	5.7
350	50	8-12	4-06	4.9
376	50	7-40	3-50	4.6
400	50	7-10	3-35	4.3
410	50	7-00	3-30	4.2

To find length of curve divide angle from P. C. to P. T. by central angle of chord, and multiply by length of chord.



373

7991
89
8919
7928
88.199

62.88
16.43
79.31
06.72
85.93

9916
.90
892440
8745
1.79

30 - 34 - 20
61 - 08 - 20

9938
200
1997600

361.6
347
14.6

34.51
51.17
83.44

8175

10.09
11.75
10.34
175
418

1050
97.4125

3521.52

35257
26512
87.45

8820
8745
.75

12 - 49 - 40
2 / 25 - 40
12 - 50

2 / 31 - 20 - 10
15 - 40 - 05

36 - 08 - 70
4 - 31
36 - 02 - 39

66
5° 22' 200'
66
199.12
265.12
~~9° 25' 90~~
7941' 89

Funnel Bearing
S 30 - 05 - 140 W