

52
M

FIELD BOOK

W-64

Department of Water
City of San Diego

PINE CREEK
AND ROADS

COTTONWOOD CONDUIT

EUGENE DIETZGEN CO.

Drawing Materials and Surveying Instruments

NEW YORK.

CHICAGO.

SAN FRANCISCO.

TABLES FOR EXCAVATIONS AND EMBANKMENTS.
DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING
ROADWAY 20 FEET WIDE. SIDE SLOPES 1 TO 1.
FOR SINGLE TRACK EXCAVATION.

Copyright, 1902. No. 30340.

	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	
0	10.0	10.1	10.2	10.3	10.4	10.5	10.6	10.7	10.8	10.9	0
1	11.0	11.1	11.2	11.3	11.4	11.5	11.6	11.7	11.8	11.9	1
2	12.0	12.1	12.2	12.3	12.4	12.5	12.6	12.7	12.8	12.9	2
3	13.0	13.1	13.2	13.3	13.4	13.5	13.6	13.7	13.8	13.9	3
4	14.0	14.1	14.2	14.3	14.4	14.5	14.6	14.7	14.8	14.9	4
5	15.0	15.1	15.2	15.3	15.4	15.5	15.6	15.7	15.8	15.9	5
6	16.0	16.1	16.2	16.3	16.4	16.5	16.6	16.7	16.8	16.9	6
7	17.0	17.1	17.2	17.3	17.4	17.5	17.6	17.7	17.8	17.9	7
8	18.0	18.1	18.2	18.3	18.4	18.5	18.6	18.7	18.8	18.9	8
9	19.0	19.1	19.2	19.3	19.4	19.5	19.6	19.7	19.8	19.9	9
10	20.0	20.1	20.2	20.3	20.4	20.5	20.6	20.7	20.8	20.9	10
11	21.0	21.1	21.2	21.3	21.4	21.5	21.6	21.7	21.8	21.9	11
12	22.0	22.1	22.2	22.3	22.4	22.5	22.6	22.7	22.8	22.9	12
13	23.0	23.1	23.2	23.3	23.4	23.5	23.6	23.7	23.8	23.9	13
14	24.0	24.1	24.2	24.3	24.4	24.5	24.6	24.7	24.8	24.9	14
15	25.0	25.1	25.2	25.3	25.4	25.5	25.6	25.7	25.8	25.9	15
16	26.0	26.1	26.2	26.3	26.4	26.5	26.6	26.7	26.8	26.9	16
17	27.0	27.1	27.2	27.3	27.4	27.5	27.6	27.7	27.8	27.9	17
18	28.0	28.1	28.2	28.3	28.4	28.5	28.6	28.7	28.8	28.9	18
19	29.0	29.1	29.2	29.3	29.4	29.5	29.6	29.7	29.8	29.9	19
20	30.0	30.1	30.2	30.3	30.4	30.5	30.6	30.7	30.8	30.9	20
21	31.0	31.1	31.2	31.3	31.4	31.5	31.6	31.7	31.8	31.9	21
22	32.0	32.1	32.2	32.3	32.4	32.5	32.6	32.7	32.8	32.9	22
23	33.0	33.1	33.2	33.3	33.4	33.5	33.6	33.7	33.8	33.9	23
24	34.0	34.1	34.2	34.3	34.4	34.5	34.6	34.7	34.8	34.9	24
25	35.0	35.1	35.2	35.3	35.4	35.5	35.6	35.7	35.8	35.9	25
26	36.0	36.1	36.2	36.3	36.4	36.5	36.6	36.7	36.8	36.9	26
27	37.0	37.1	37.2	37.3	37.4	37.5	37.6	37.7	37.8	37.9	27
28	38.0	38.1	38.2	38.3	38.4	38.5	38.6	38.7	38.8	38.9	28
29	39.0	39.1	39.2	39.3	39.4	39.5	39.6	39.7	39.8	39.9	29
30	40.0	40.1	40.2	40.3	40.4	40.5	40.6	40.7	40.8	40.9	30
31	41.0	41.1	41.2	41.3	41.4	41.5	41.6	41.7	41.8	41.9	31
32	42.0	42.1	42.2	42.3	42.4	42.5	42.6	42.7	42.8	42.9	32
33	43.0	43.1	43.2	43.3	43.4	43.5	43.6	43.7	43.8	43.9	33
34	44.0	44.1	44.2	44.3	44.4	44.5	44.6	44.7	44.8	44.9	34
35	45.0	45.1	45.2	45.3	45.4	45.5	45.6	45.7	45.8	45.9	35
36	46.0	46.1	46.2	46.3	46.4	46.5	46.6	46.7	46.8	46.9	36
37	47.0	47.1	47.2	47.3	47.4	47.5	47.6	47.7	47.8	47.9	37
38	48.0	48.1	48.2	48.3	48.4	48.5	48.6	48.7	48.8	48.9	38
39	49.0	49.1	49.2	49.3	49.4	49.5	49.6	49.7	49.8	49.9	39
40	50.0	50.1	50.2	50.3	50.4	50.5	50.6	50.7	50.8	50.9	40

Calculated by F. E. Paradis, C. E.

Section $\frac{1}{4}$ $\frac{13}{24}$ 401

13' $\frac{1}{4}$ 40' oak.

46' $\frac{1}{4}$ 26'

49'

Property of
Dept of Water
City of San Diego

MICROFILMED

JAN 6 1985

Draw
NEV

TABL
DISTANC

0	10.0
1	11.0
2	12.0
3	13.0
4	14.0
5	15.0
6	16.0
7	17.0
8	18.0
9	19.0
10	20.0
11	21.0
12	22.0
13	23.0
14	24.0
15	25.0
16	26.0
17	27.0
18	28.0
19	29.0
20	30.0
21	31.0
22	32.0
23	33.0
24	34.0
25	35.0
26	36.0
27	37.0
28	38.0
29	39.0
30	40.0
31	41.0
32	42.0
33	43.0
34	44.0
35	45.0
36	46.0
37	47.0
38	48.0
39	49.0
40	50.0

INDEX

①

R1	prelim survey	79
R2	do do	78
R3	do do	75
Pine Creek (contour at 78)		2
R4	prelim survey	69
R3A	" "	68
R6	" "	73
Tie "A" Line to R1 + R3		74
R1		80
Meander line through Blochs		32
M1	meander	64
M2	"	34
Check Levels		35
Check levels BM's to L161		41
Siphon across Dry Canyon		42
BM # 4 1/2		42
Traverse for Road N.R.		43-46
Grades Houser Creek Road		4-7
N.R. Road		3-10

Pine Creek
Contours at 78

Sta AL AR CC AC

74	24
85	33
159	57
180	
20	03

8+47⁷⁰

6+75²⁰

5+76²⁰ 19°46'

5+04⁷⁰

3+35⁷⁰

2+50⁵⁰ 32°18'

196+60 39°16'

5+0

Copied
Filed
page

N80°44'E N79°50'W

N66°25'E N66°10'E

N86°11'E N86°0'E

N64°45'W N64°50'W

N78°26'W N78°30'W

N46°08'W N46°15'W

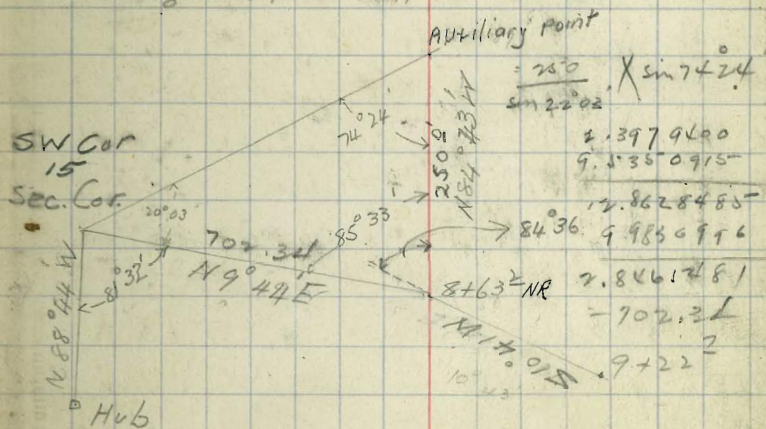
N6°50'W

June 19th 14

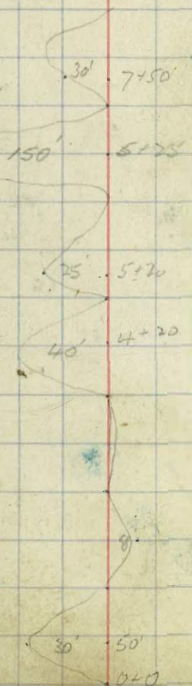
(2)

Copied in Comp Book
page 141

Triangulation from R₁ to Sec. Cor.



deduct from distance
for 7' slope

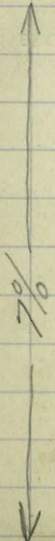


N.R. Line

Sta.	ΔL	ΔR	C.C.	M.C.
153 ²	—	—	N4°09'E	
14+33.2	33°14'		N37°23'E	
53 ¹	—	—	N61°57'E	N62°0'E
13+80.1	24°34'		N18°52'E	
129 ⁶	—	—	N59°13'W	N59°10'W
12+53.5	43°05'		N10°41'E	N10°30'E
87 ³	—	—	S86°01'E	S85°50'E
11+63.2	78°05'		(86 01)	
240 ⁵	—	—	N83°59'E	N84°00'E
9+22.7	69°54'		(83-53)	
59 ⁵	—	—	S86°41'E	S66°35'E
8+63.2	83°07'		(66 47)	
294 ⁷	—	—	S86°51'E	S86°50'E
5+68.5 = 11+88 ⁵ R ₃	10°0'		(86 51)	
149 ³	—	—	N49°41'E	N49°45'E
4+19.2	29°20'		(49 35)	
113 ⁵	—	—	N53°54'E	N53°50'E
3+05.6	20°10'		(53 48)	
126 ²	—	—	N25°58'E	
1+78.9	43°28'			
72 ²	—	—		
14+06.9	4°13'			
106 ³	—	—		
0+00 = 17+74 ² R ₃	27°58'			
17+74 ² R ₃	—	—		

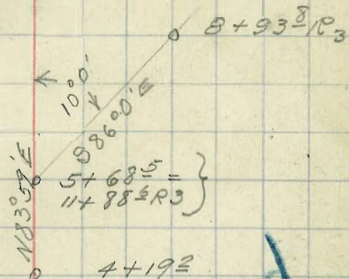
Copied from Page 75

Copied from Page 73

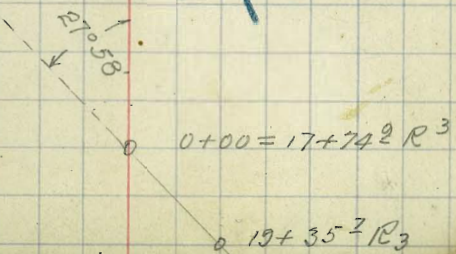


Note
Check Angles from
Head Gate using
Polaris OB back to
and then Correct from
Course from
Sta 00
all Courses

(3)



Platted



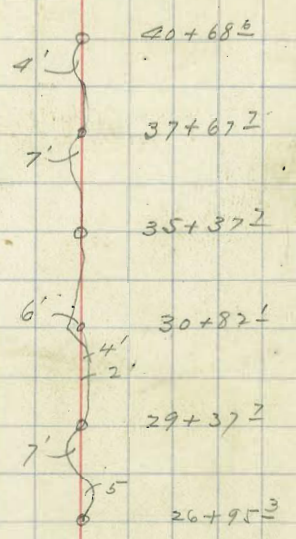
N.R. Line

(4)

Sta	Δ L	Δ R	C.G.	M.C.
453 ⁴			N50°16'E	N50°20'E
40+68 ⁶		44°18' ✓		
300 ²			N5°58'E	N6°0'E
37+67 ⁷		27°41' ✓		
230 ⁶			N21°43'W	N21°30'W
35+37 ⁷	14°47' ✓			
455 ⁶			N6°56'W	N6°45'W
30+82 ⁴	33°54' ✓			
144 ⁴			N26°58'E	N27°05'E
29+37 ⁷		10°39' ✓		
242 ⁴			N16°19'E	N16°30'E
26+95 ³	25°02' ✓			
273 ²			N41°21'E	N41°20'E
24+21 ⁶		26°57' ✓		
195 ³			N14°24'E	N14°20'E
22+26 ³				
3+91 ⁶	22°48' ✓			
233 ³			N37°12'E	N37°0'E
19+93 ⁰		51°55' ✓		
115 ⁹			N14°43'W	N14°50'W
18+77 ¹	5°40' ✓			
120 ²			N9°03'W	N9°10'W
17+57 ⁰	28°36' ✓			
169 ²			N19°33'E	
15+87 ¹		15°24' ✓		
153 ²			N4°09'E	

Copied From Page 59

Note
~~Copied From Page 68~~
~~Copied From Page 75~~



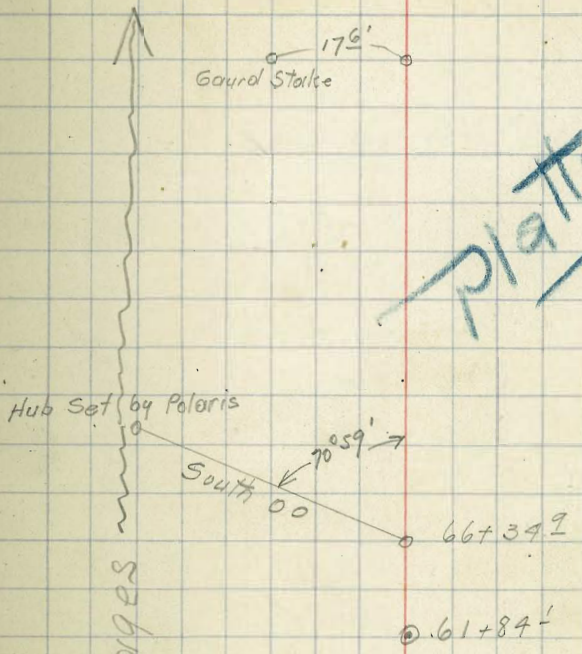
21+27³

21+27³

Platted

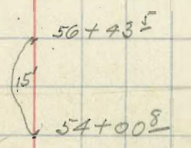
Sta	Δ L	DR	C.B.	M.B.
77+99 ⁰				
473 ²				
474 ²				
73+25 ²		6° 26'	S55° 58' E	S55° 45' E
73+24 ²		6° 34'		
323 ²			S62° 24' E	
322 ²			S62° 32' E	S62° 30' E
70+02 ⁰		34° 35'		
		39° 47'		
95 ²			N82° 41' E	N83° 0' E
69+06 ³	19° 22'	30° 17'		
213 ²			S77° 57' E	S77° 35' E
66+9P ^L	19° 22'	31° 04'		
57 ²				
66+34 ⁹	} POT			
4+00 ⁰				
450 ²			N70° 59' E	N71° 05' E
61+84 ¹	46° 00'			
131 ²			S63° 01' E	S63° 0' E
60+53 ¹	20° 07'			
409 ⁶			S42° 54' E	S43° 0' E
56+43 ⁵	17° 42'			
242 ⁷			S60° 36' E	S60° 35' E
54+00 ²	14° 15'			
489 ⁶			S74° 51' E	S74° 45' E
49+11 ²	18° 18'			
389 ²			N86° 51' E	N87° 0' E
45+22 ⁰	36° 35'			
453 ⁴				
			N50° 16' E	N50° 20' E

see next page



Platted

copied from pages 59 & 60



NIP

6

2F
3
4
5
6
7
8
9
10

Sta DL DR CC MC

N53°13'30"E

98+28⁷ 47°53'30"

71⁴

S78°53'E ✓

97+77³ 24°51'

737⁷

S54°02'E ✓

90+40¹ 24°24'30"

44⁵

S29°37'30"E ✓

85+95¹

48°22'30"

S78°0'E ✓

417⁶

81+77² 9°43'

26¹

S68°17'E ✓

79+14⁴ 11°9'

134⁹

S57°08'E ✓

77+99⁰

77+79⁵ 1°10'

473²

S55°58'E ✓

73+25²

6°26'

S62°24'E ✓

323¹

70+02⁰

34°55'

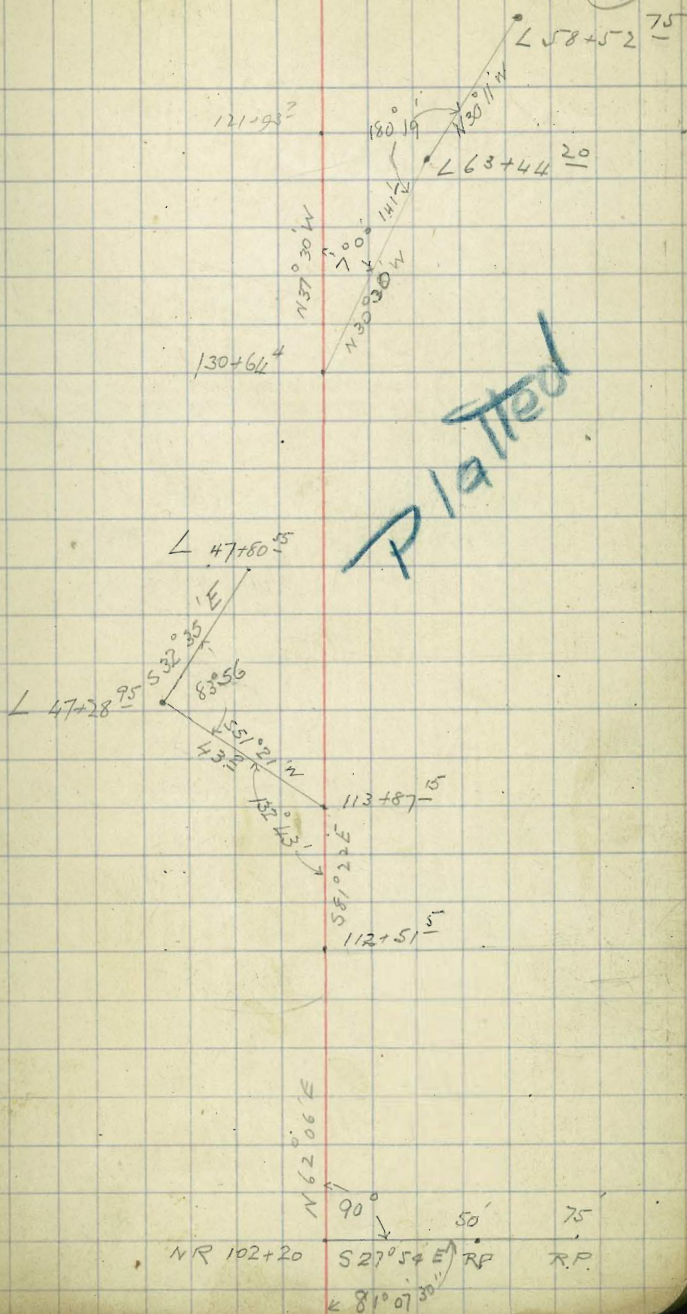
N82°41'E ✓

Platted



M.R. line

Sta	ΔL	ΔR	CC	MC
659 ⁹			S 72° 10' E	S 72° 00' E
130+64 ⁴	34° 46'			
597 ⁵				
124+67 ²	P.O.T.		37° 30'	
276 ⁴			S 37° 28' E	
121+93 ⁷		22° 25'		
193 ⁷				
120+00	P.O.T.			
182 ⁹			S 59° 53' E	
118+17 ⁰	13° 0'			
62 ⁵			S 72° 53' E	S 72° 50' E
117+54 ⁵	12° 49'			
367 ⁴			S 60° 04' E	
113+87 ¹	21° 18'			
135 ⁴			S 81° 22' E	
112+51 ⁷	10° 49'			
33 ⁶				
112+17 ⁹	P.O.T.		S 70° 33' E	
633 ⁹				
105+84 ⁸	26° 50'			
218 ²			N 82° 37' E	
103+66 ²	20° 31'			
146 ²				
102+20	8° 52' 30"		N 62° 06' E	
372 ³			N 53° 13' 30" E	

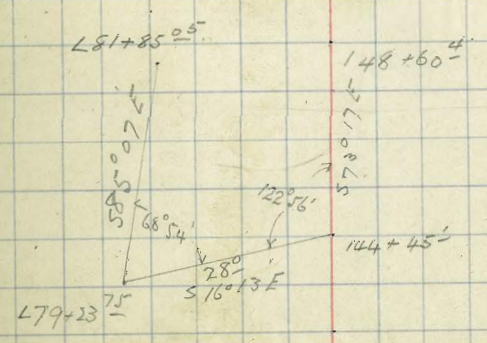
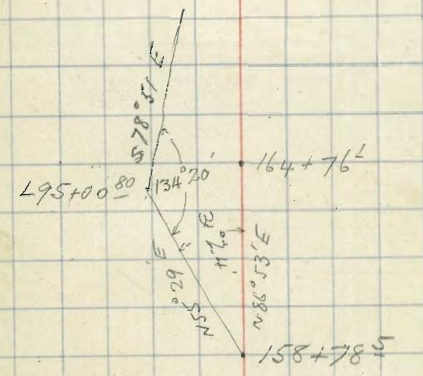


NR

8

ΔL	ΔR	CC	MC
		$553^{\circ}51'E$	$553^{\circ}30'E$
$173+174$	$20^{\circ}30'$		
520^{\pm}		$574^{\circ}21'E$	
$167+97^{\circ}$	$5^{\circ}36'+$		
270^{\pm}		$568^{\circ}45'E$	$568^{\circ}20'E$
$164+76^{\pm}$	$24^{\circ}22'$		
15^{\pm}			
$164+60^{\circ}$	POT		
582^{\pm}		$N86^{\circ}53'E$	
$158+78^{\pm}$	$7^{\circ}51'$		
57^{\pm}			
$158+21^{\circ}$	POT		
374^{\pm}		$N79^{\circ}02'E$	
$154+48^{\circ}$	$21^{\circ}32'$		
242^{\pm}		$N57^{\circ}30'E$	$N58^{\circ}00'E$
$152+07^{\circ}$	$31^{\circ}11'$		
348^{\pm}		$N88^{\circ}41'E$	
$148+60^{\pm}$	$18^{\circ}02'$		
116^{\pm}		$573^{\circ}19'E$	
$144+45^{\pm}$	$24^{\circ}05'$		
121^{\pm}			
$143+24^{\circ}$	POT		
60°		$N82^{\circ}38'E$	$N82^{\circ}45'E$
$137+19^{\circ}$	$25^{\circ}12'$		
		$572^{\circ}10'E$	

Platted

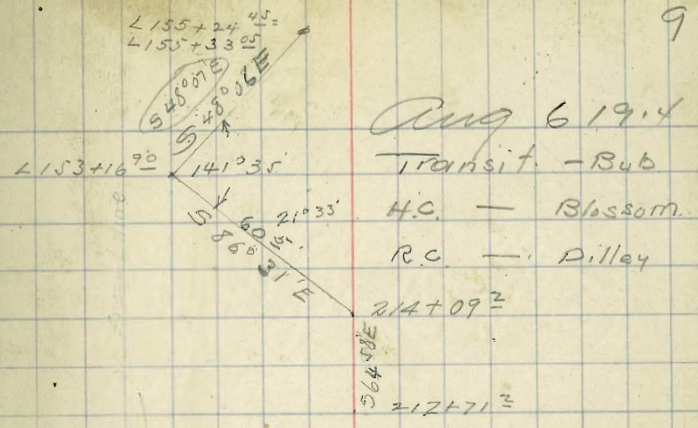


NR

9

AL	DR	CC	MC
		S60°17'E	
216+90 ³	25°48'	✓	
✓81		S86°05'E	
214+09 ²	21°07'	✓	
139 ²		S67°58'E	
212+71 ²	29°19'	✓	
143 ²		N85°43'E	
211+27 ⁵	21°26'	✓	
✓38 ⁹		S72°51'E	
208+38 ⁶	12°04'	✓	
✓49 ⁸		S60°47'E	
204+28 ⁴	8°55'	✓	
✓74 ⁵		S69°47'E	
201+54 ³	12°11'	✓	
528 ⁴		S57°31'E	
196+25 ⁷	10°05'	✓	
311 ²		S67°36'E	
193+14 ²	17°47'	✓	
✓96 ³		S85°23'E	
190+92 ⁸	✓ POT	✓	
182+18 ⁴	1°05'	✓	
590 ²		S84°18'E	
176+27 ⁷	30°27'	✓	
310 ²		S53°51'E	✓

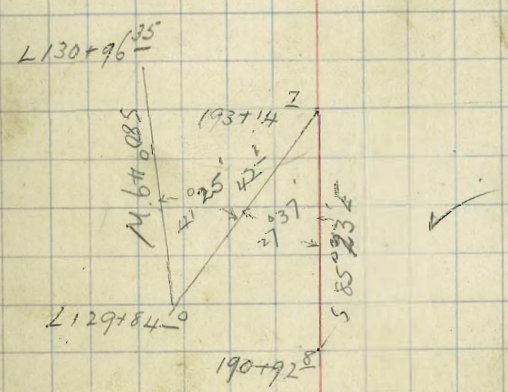
↑
10963
↓



Aug 6 1914
Transit - Bub
H.C. - Blossom
R.C. - Dilley

Platted

8/12/14
X

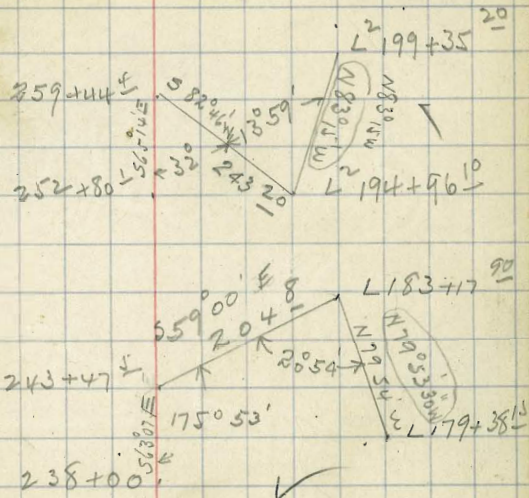


N.R. Line

10

Sta DL AR CC MC

259+44 ⁴	23° 21'	S 88° 35' E	✓
258+88 ²	P.O.T	S 65° 14' E	✓
252+80 ²	P.O.T	1° 05'	✓
243+47 ²	90° 2'	S 72° 19' E	✓
238+00 ²	P.O.T	Con. Page 43	
228+87 ²	325	22° 54'	✓
225+62 ²	130 ³	45° 48'	✓
224+32 ²	183 ²	54° 57'	✓
222+49 ²	22° 12'	N 48° 11' E	✓
221+92 ²	P.O.T	S 76° 52' E	✓
221+70 ²	40° 49'	22° 12'	✓
82 ²		N 80° 56' E	✓
220+88 ²	57° 37'	S 58° 15' E	✓
90 ²		N 64° 08' E	✓
219+98 ²	55° 35'	S 60° 17' E	✓
306 ²			✓



8/12/14
8/14/14

Platted
Feb 1915

NR' Across Salazar

10177

Sta ΔL ΔR CC MC

NR'
224+14E=
NR224+45 40° 28'

N48°11'E

221+81² 120° 51'

N88°39'E

219+98² P.O.T.

S78°30'E

NR 219+64² = 18° 13'

NR 219+60²

S60°17'E

Levels NR'

11

Sub T
Olney H.C
8/14/14

Sta + 241 - Ele.

219+75 12.2 161.5 149.3

219+64² 12.9 148.6

+80 11.4 150.1 G = 3' L

219+98² P.O.T. 5.9 155.6 P.O.R.

220+10 2.0 159.5 Rock

+20 8.5 153.0 G = on Line

+40 13.5 148.0

+50 17.0 144.5

+60 19.5 142.0

+80 14.0 147.5 G = 22' L + 70

221 11.3 150.2

+10 18.0 143.5 3' L

+25 11.0 150.5

+38 11.0 150.5

+50 8.0 153.5 G on Line

+65 14.0 147.5

+81² 0L 11.4 150.1

TP 11.1 162.6 10.1 151.5

222 15.0 147.6 222+10 10' L

+25 19.0 143.6 +25 = 20' L

+50 14.0 148.6

+65 10.4 152.2 222+60 on Line

223 12.7 149.9

+08 17.0 145.6 ~~4~~ 6' L

+40 13.5 149.1

81.07
162.15
81.07.30

12

162.6

+50
+70
224 + 14 $\frac{4}{1}$

10.7 151.9
80 154.6 +60-3R'STAT
11.0 151.6 EQUATION

check

Sta ΔL ΔR CC M.C

$$\begin{array}{r} 2/7 \sqrt{42} \\ 47 \\ 3 \end{array}$$

$$\begin{array}{r} 2/109 \sqrt{60} \\ 54 \quad 57 \quad 30 \end{array}$$

1212

533

5737

N64° 57' 30" E

5° 26'

S 60° 17' 30" E

15° 13'

S 11° 28' 30" E

Reference Points on "L" line.

Kneeshaw.
gale 5-18-14
Brackett

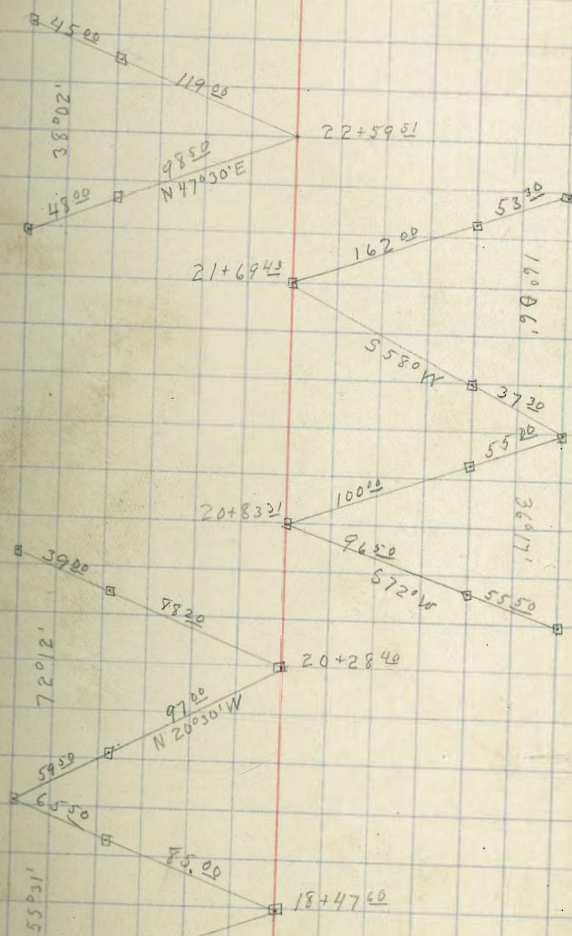
22+5951

21+6943

20+8321

20+2840

18+4760



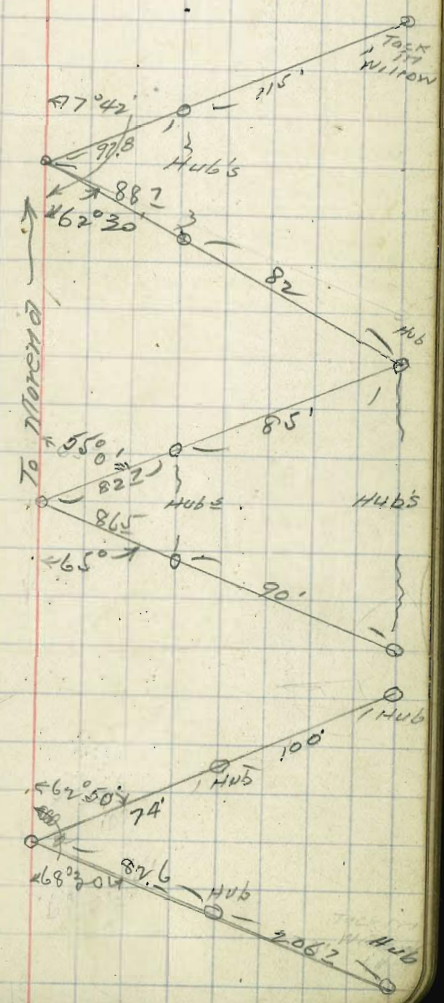
89 60
77 42
12 18

15

444 14⁸¹ P.I.

42 + 445⁶ P.I.

41 + 57⁶⁸ P.I.



49+81⁵⁹ P.I.

49+18³⁸ P.I.

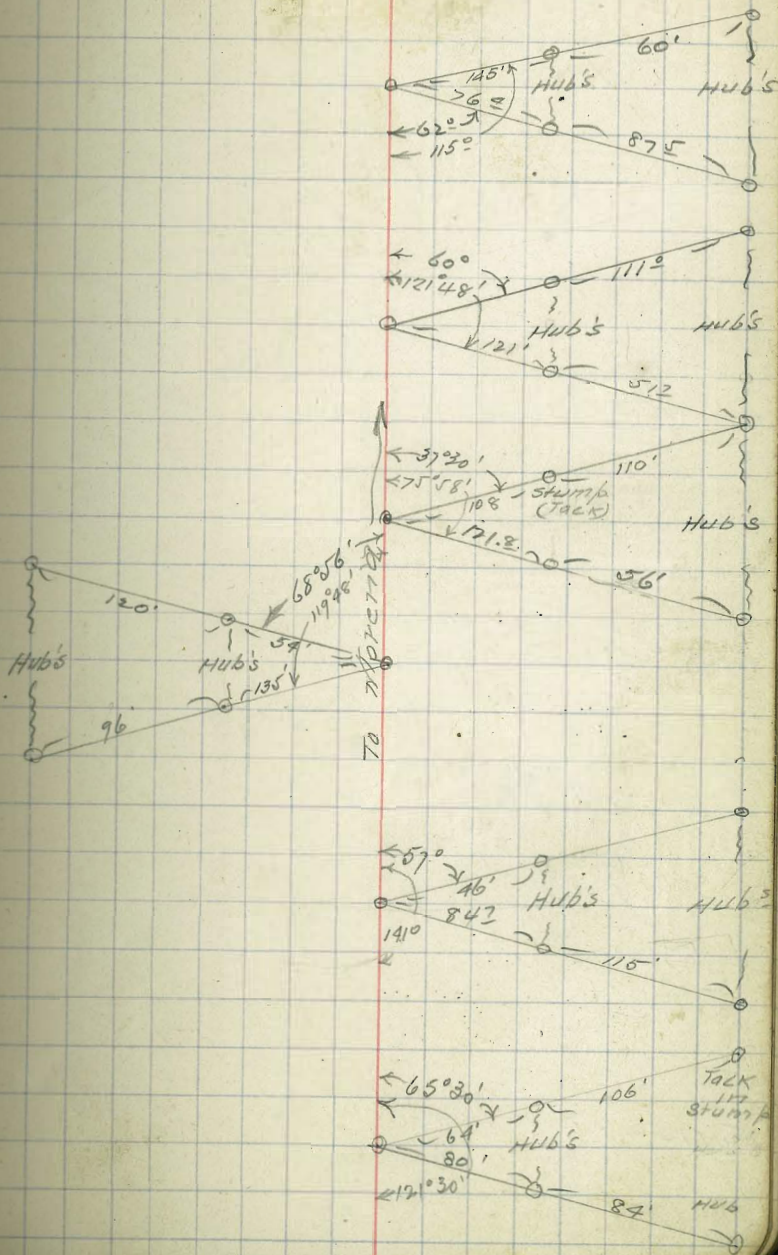
48+69⁷² P.I.

47+50⁰ P.I.

46+70³⁴ P.I.

45+04³⁴ P.I.

16



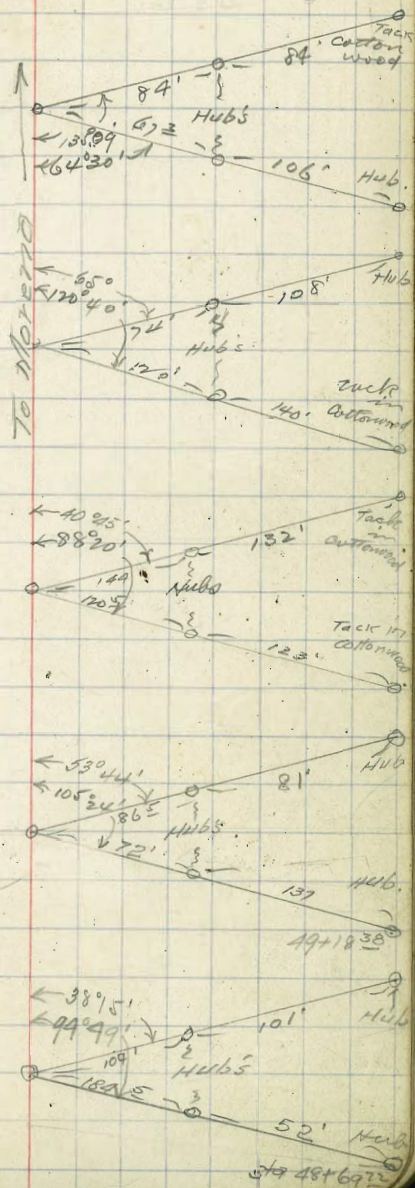
87+75²³ P.I.

86+75¹⁶ P.I.

85+98⁹⁶ P.I.

51+15²² P.I.

50+72³ P.I.



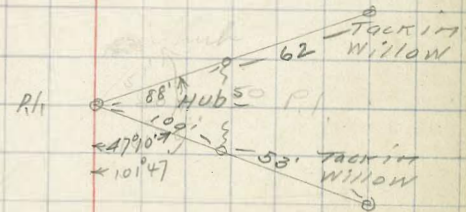
179 60
 42 17
 137 43

18

108+03⁶⁸ P.I.



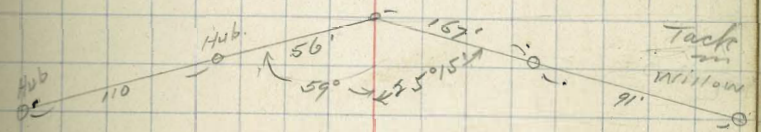
107+49⁵⁷ P.I.



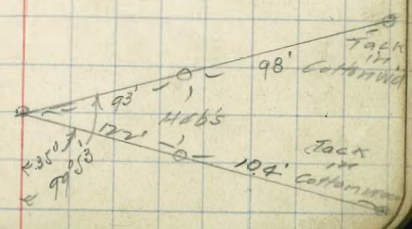
91+56³²

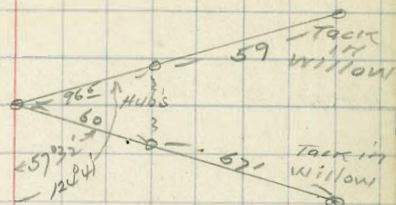
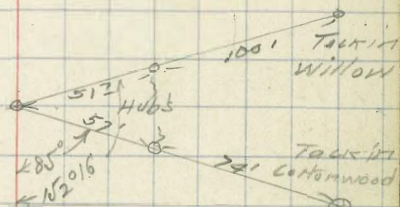
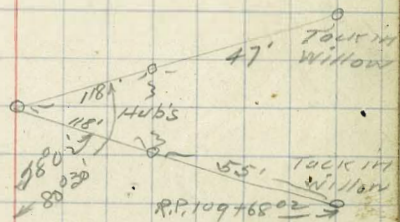
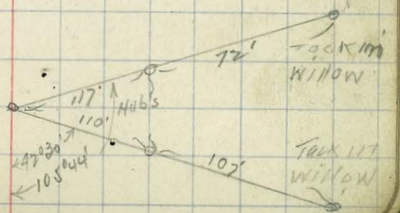


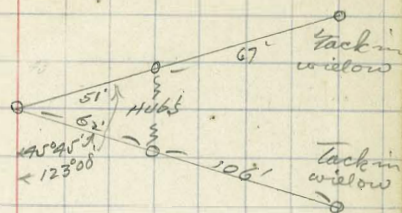
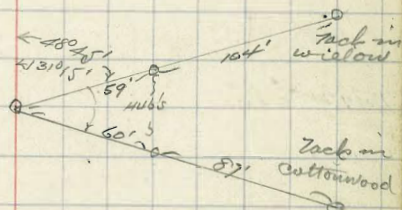
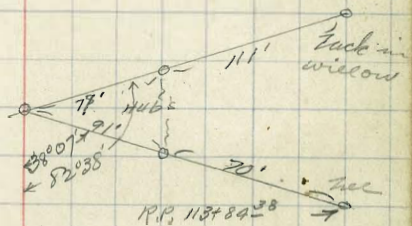
91+04⁹² P.I.



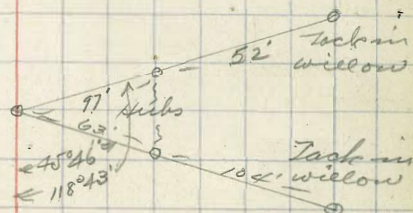
90+24²⁹ P.I.



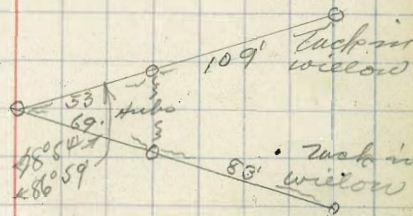
113+04⁸² P1112+00²² P1111+64¹⁴ P1111+25²⁷ P1109+68⁰² P1

117+140¹ P1.116+247³ P1.115+76¹⁹ P1.114+74² P1.113+84³⁸ P1.

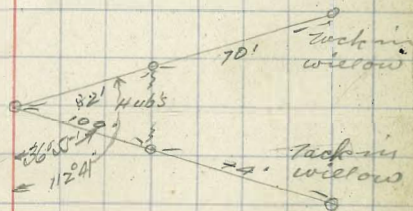
11 171+21⁶³ P.I.



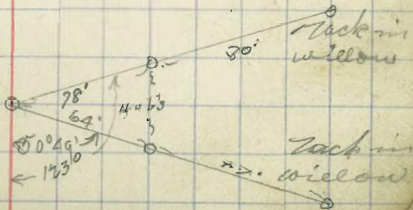
11 120+08⁴⁹ P.I.



11 19A24⁷⁷ P.I.



11 117+76¹⁵ P.I.



Line Change #3 cont.

44+68.9 PT. 30'19"
 44+44.49 2°15'
 44+19.49 1007'30"
 43+94.49 PC 90°
 Δ=6038'
 D=90°L
 R=637.28
 T=36.93
 L=7370
 E=107
 P.I. 44+31.42

43+39.72 PT. 9°26'30"
 43+17.09 6°30'
 42+92.09 3°15'
 42+67.09 PC 26°R
 Δ=18053'R
 D=26°R
 R=220.74
 T=36.73
 E=3.03
 L=72.63
 P.I. 43+03.52

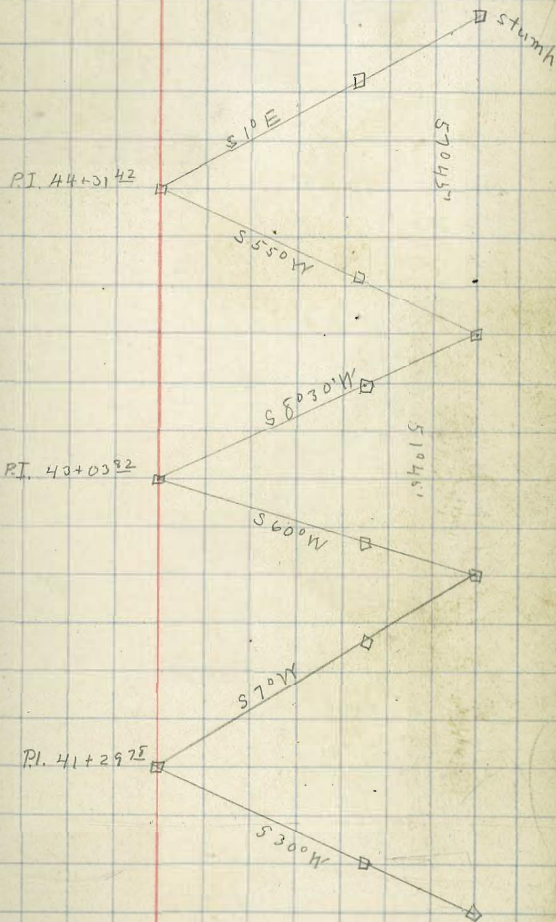
41+86.79 PT. 2°02'30"
 41+78.22 2°00'
 41+28.22 1°00'
 40+78.22 PC 40°L
 Δ=4005'
 D=40°L
 R=1432.69
 T=51.07
 L=102.08
 E=0.91
 P.I. 41+29.75
 S 73°28'E

39+62.25 PT 12°32'
 39+51.42 8°00'
 39+41.45 4°00'
 39+31.42 PC 10°R
 Δ=25004'
 D=80°L
 T=16.00
 L=31.33
 E=1.76
 P.I. 39+47.45

N 71°28'E

9-3-14 Kneeshaw Tract,
 Dilly H.C.
 Rogers R.C.
 Teesdale Stake
 McKellar, axe

22



Copied 9-4-14
 T Books page 52
 J.K.

= 47+7294

48+0378 PT 40°04'

47+9793 31°

47+892 15°30'

47+7793 PC 310°R

$A=80^{\circ}08'$
 $D=310^{\circ}R$
 $R=19.97$
 $T=16.80$
 $L=25.85$
 $E=6.12$
 P.I. 47+9473

47+6367 PT 16°59'

47+5952 12°

47+4952 PC 240°L

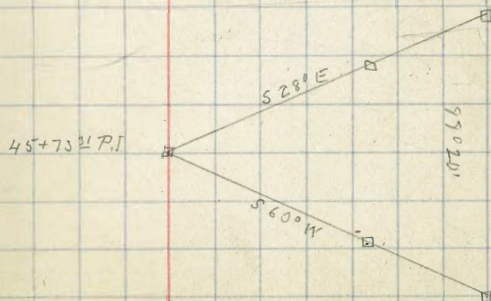
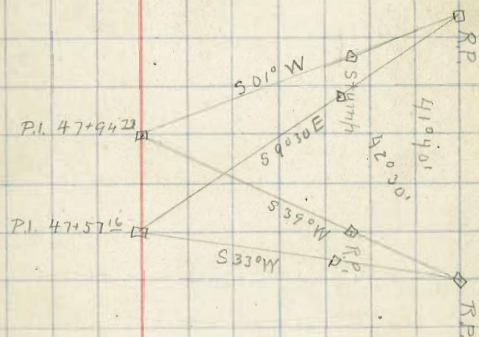
$\Delta 33^{\circ}58'$
 $D=240^{\circ}L$
 $R=25.00$
 $T=7.64$
 $L=14.50$
 $E=1.14$
 P.I. 47+5716

45+9020 PT 6°42'30"

45+8039 4°45'

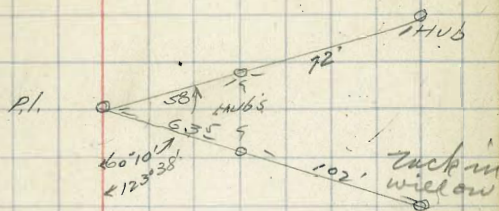
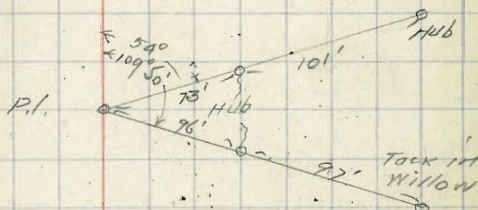
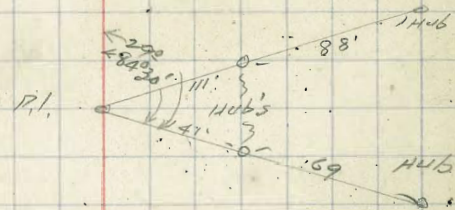
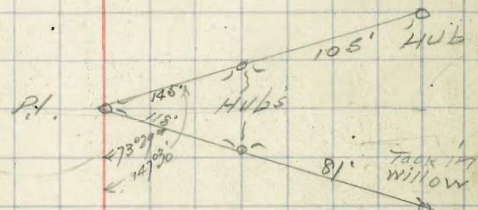
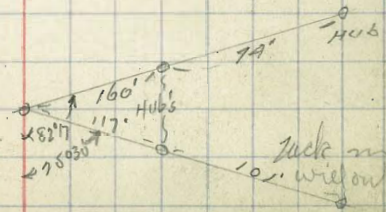
45+5529 PC 380°E

$A=13^{\circ}25'$
 $D=380^{\circ}L$
 $R=151.47$
 $T=17.82$
 $L=35.31$
 $E=1.64$
 P.I. 45+7321



Copied 9-9-14

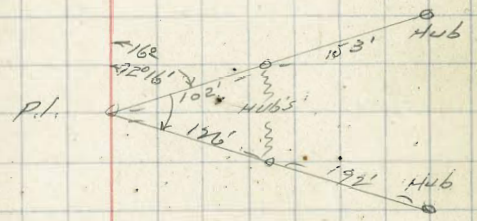
T. Book 3 p. 53

126+82⁵¹ P.I.124+40⁹⁴ P.I.123+93⁶⁹ P.I.122+90³⁹ P.I.122+13³² P.I.

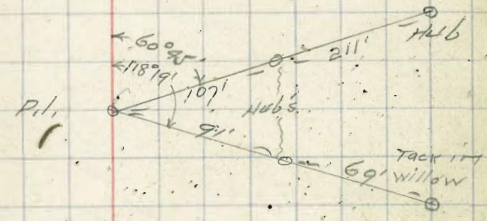
132+26²⁶ P.I.



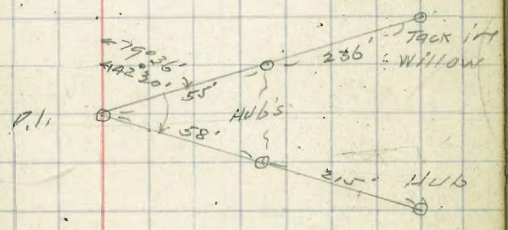
131+65⁴⁴ P.I.



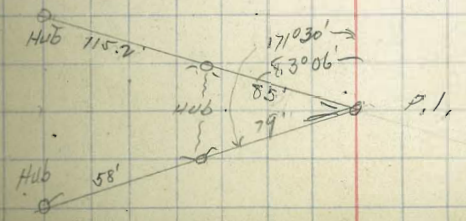
130+66⁵⁶ P.I.



129+56⁵¹ P.I.



117+99⁷⁸ P.I.



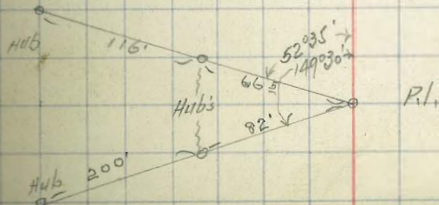
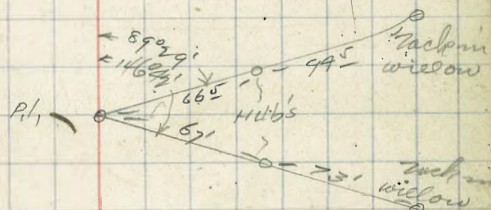
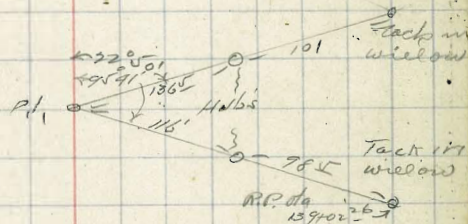
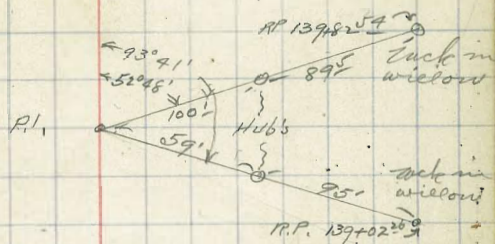
140+3164 P.I.

139+82⁵⁴ P.I.

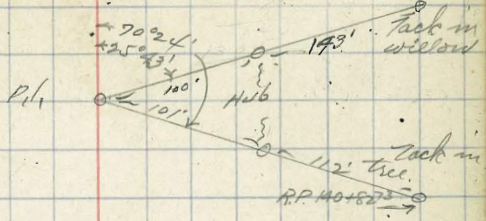
139+02²⁶ P.I.

135+78⁹² P.I.

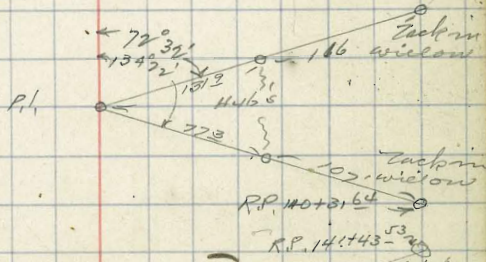
139+2516 P.I.



140+9372 P.I.



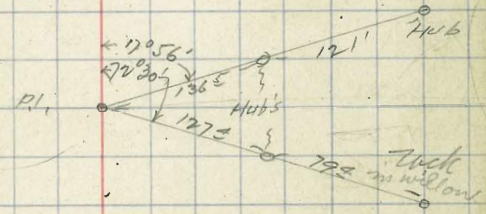
142+4078 P.I.



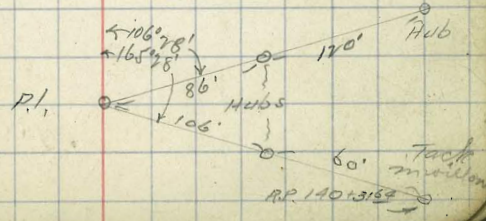
141+8948 P.I.



141+43 P.I.



140+8273 P.I.



144722⁸¹ P.I.

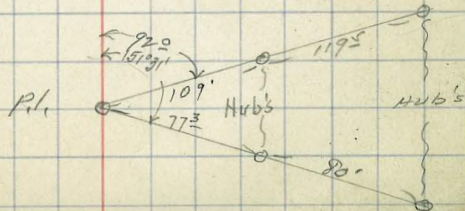
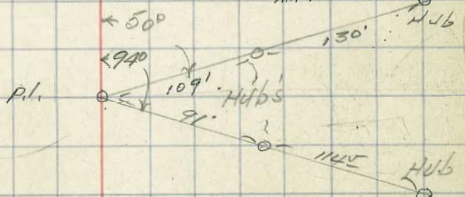
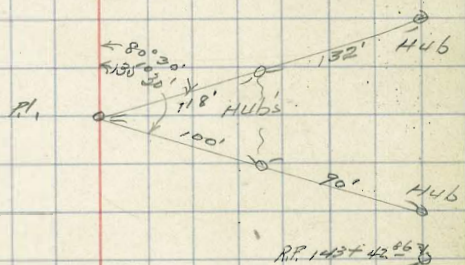
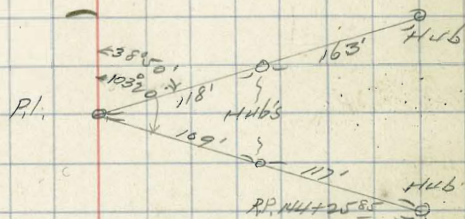
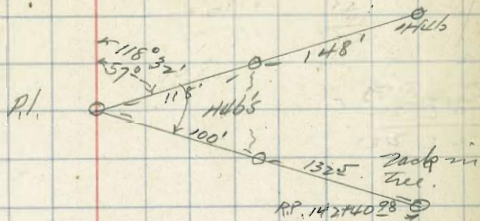
144767⁵¹ P.I.

144725⁸⁵ P.I.

144787⁸² P.I.

144742⁸⁶ P.I.

28
153+162° = 152+3792 min
150+115°
148+63°



~~148+63~~⁹⁵ P.I. = 147+8883

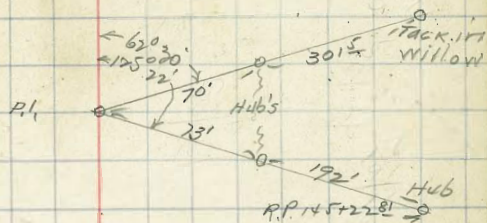
~~148+14~~⁷
~~147+8883~~⁰⁵ P.I. 147+38 ✓

~~147+8885~~⁰⁵ P.I. 146+9804 P.I. ✓

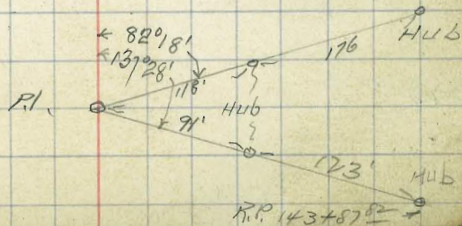
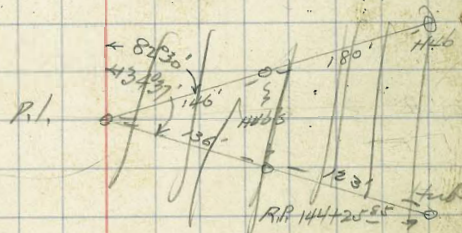
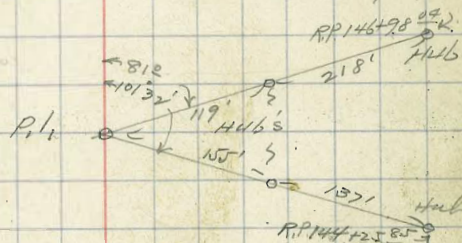
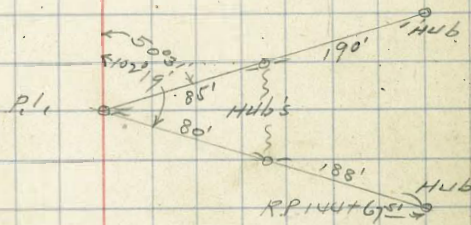
~~146+9804 P.I.~~

145+95⁴⁹ P.I.

148+65¹⁰ 29
148+14¹⁰ 150
51. 43
158



75.12



161+20⁵⁰ P.I., $\sqrt{= (62+11^{35} \text{ old})}$

what sta?
old 155+24⁴⁰ = 157+33⁰⁰

155+08³² P.I. ✓

612

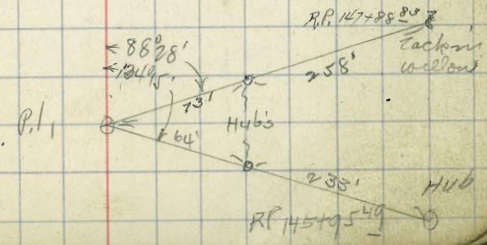
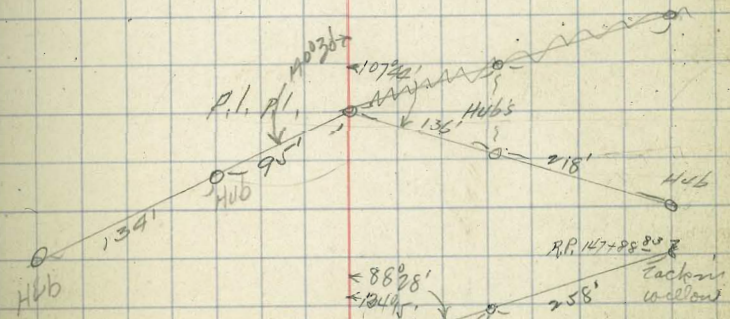
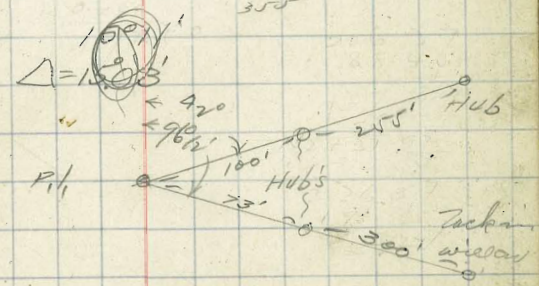
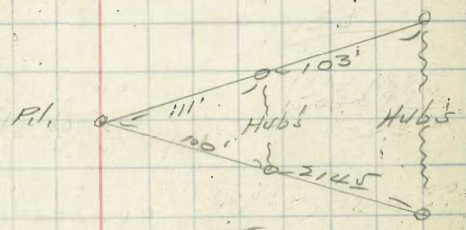
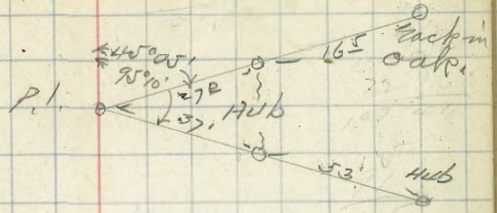
152+37⁹² P.I.

150+11⁵⁵ P.I.

148+63⁹⁵ P.I.

$$\begin{array}{r} 161+20 \text{ 50} \\ 155+08 \text{ 32} \\ \hline 6 \text{ 1218} \end{array}$$

$$\begin{array}{r} 155+96 \text{ 75} \\ 6 \text{ 1218} \\ \hline 162 \text{ 0893} \end{array}$$

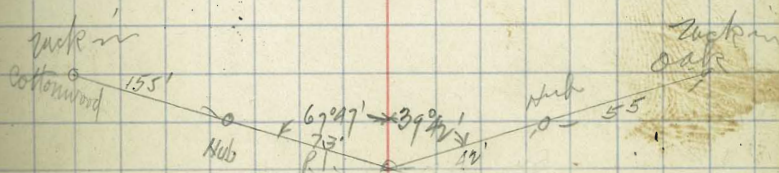
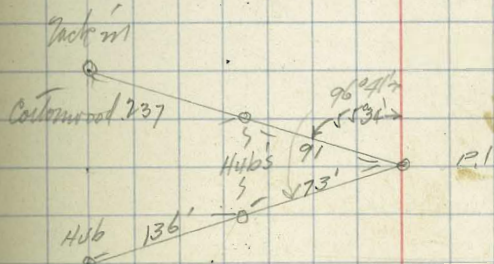
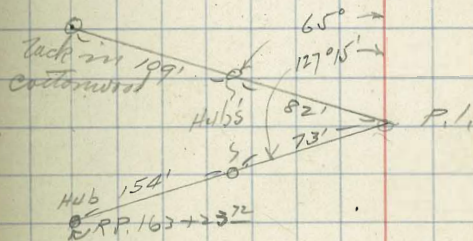
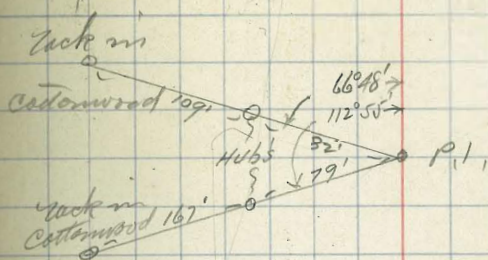


164+90³⁶ P.I.

163+84⁶³ P.I.

163+237² P.I.

162x 18¹² P.I.



Meander Line down Johnson Gulch

A line in road offsets to creek.

Sta	ΔL	ΔR	C.C.	M.C.	Dist. VA.
81 E			S 76° 27' E	S 76° 15' E	
# 11-43+6470	47° 39'				
727.55			S 28° 45' E	S 28° 30' E	786 ± 15.055
# 10-36+4715		49° 17'			
225.2			S 78° 05' E	S 79° E	chain
# 9-34+2125	10° 33'				
940.7			S 76° 22' E	S 76° E	950 ± 5.043
# 8-24+8055		7° 69'			
99.			S 83° 41' E	S 84° E	chain
# 7-23+8125	34° 01'				
597.2			S 49° 40' E	S 49° 15' E	550 ± 3.044
# 6-18+3385	40° 33'				
301.2			S 45° 07' E	S 44° 45' E	chain
# 5-15+3265	31° 40'				
349.4			S 13° 27' E	S 13° 30' E	3505 ± 3.020
# 4-11+8325	7° 49'				
344.3			S 5° 39' E	S 5° 15' E	345 ± 2.035
# 3-8+3895	11° 55'				
477.2			S 6° 17' W	S 6° 30' W	476 ± 11.025
# 2-3+6125	0° 23'				
292.25			S 6° 45' W	S 6° 45' W	3265 ± 19.035
# 1-4684		9° 24'			
			S 2° 39' E	S 2° 30' E	

Creek 60' R
Blochs house

leave road

Creek 4.28 24° 38' = 354. Well

Creek 4.28 24° 03' = 358

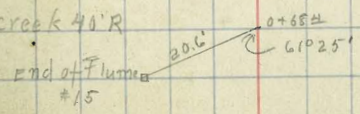
Creek 4.38 19° 40' = 390.

Creek 280. 25° 50' = 227.

Creek 224 23° 37' R = 199.1

creek 87' R

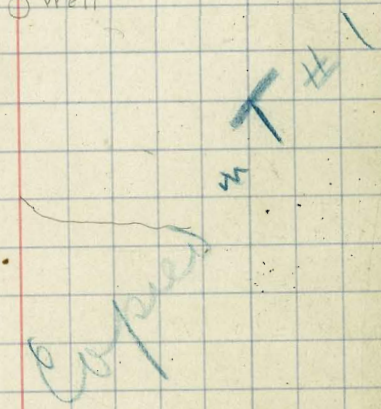
Bottom of creek 40' R



Hub above Flume #15 at end of pipe.

9-25-14 clear.
Kneeshaw.
Dilly
Rogers
Teasdale.
Ballamy
Debeer

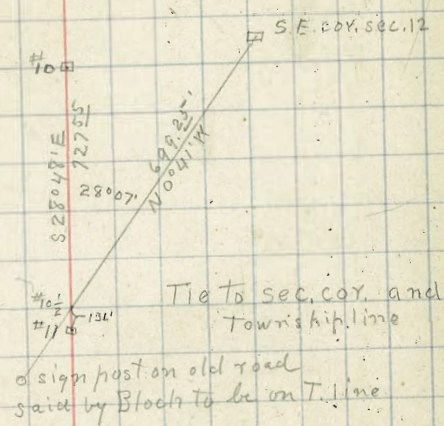
9-26-14
rain



Sta AL AR CC MC

Copy in book #1

# 78=73+869			
1474		S23°08'E S23°E	chain
# 17=72+392	10°47'		
7395		S12°19'E S12°00'E	chain
# 16=64+992	11°34'		
465.0		S0°58'E S0°45'E	466±200
# 15=60+342	35°34'		
885.2		S36°13'E S36°15'E	877±2012
# 14=51+489	47°25'		
333E		S83°39'E S83°30'E	chain
# 13=48+154	1°30'		
368.6		S85°08'E S85°E	chain
# 12=44+468	8°41'		
		S76°27'E	



Pumping Plant S55°52' W 323'

Bank of Cottonwood creek +30'

Mouth of creek 75'L

Earth diverting dam 1192

creek 15'R

Creek 110'R

Creek 125'R

Creek 75'R

Creek 50'R

NOV 12th 14

Continuation Meander
Line up Bear Creek M²

Sta AL DR C'G MAGC

M 21+58^S = (98) 82+54^S

82+54^S (98)
21+58^S =

20+21^S AL 20°25'

19+77^L DR 25°13'

16+54^L DR 49°59'

15+86^L AL 13°50'

14+21^H AL 42°32'

12+40^L AL 22°20'

11+90^L DR

N5°44'W N5°30'W

N14°41'E N15°15'E

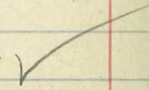
N10°32'W N10°0'W

N60°31'W N60°15'W

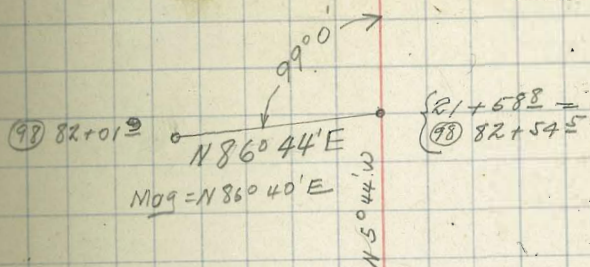
N46°41'W N46°45'W

N4°09'W N4°0'W

N18°11'E



34



M 21+00 practically = (98) 83+13^Z

End.

Copied
P C
G 3
89

Nov 12. 14

Check Levels

35

Sta	+	Hi	-	Ele
59+58 ⁶ (8)	14.13	72.13		58.00
TP	13.95	86.05	0.03	72.10
TP	15.10	1601.07	0.08	85.97
(98) 115+402			4.75	96.32
TP	10.25	1607.69	3.63	97.44
TP	4.50	1600.94	11.25	96.44
TP	0.30	1600.54	0.70	1600.24
TP	6.70	1603.14	4.10	96.44
TP	3.40	91.54	15.00	88.14
TP	3.91	90.10	5.15	86.79
TP	6.60	84.50	12.20	77.90
			12.65	71.55

Rock

Continuation of Levels M2
Bear Creek

11-12-14

Sta	+	H.I	-	Elev
12+40'	7.70	82.95	9	76.15
13+00			6.00	77.8
14+00			4.8	79.0
14+21.4			4.5	79.3
15			2.8	81.0
T.P.	6.30	89.45	0.7	83.15
+810			5.0	85.1
16			5.0	85.1
+54-			4.8	85.3
17			1.9	88.3
T.P.	9.78	98.72	0.51	88.94
18			2.3	92.0
+77-			4.9	94.4
19			4.5	94.8
20 T.P.	10.70	1604.57	4.85	93.87
+210			10.4	94.8
21			4.9	99.67
+550 END			5.1	99.47

✓
Copied PC book
page 64

Nov 13¹⁴ Meander up Hazel's Gulch
1773

Sta PL LSR CC MFG

$11+79^4 \text{ END} = (98) 258+43 \text{ E}$

$9+57^5 = 199+68^4 \text{ P } (78) 1^{\circ}59'$

$5+87^2 = (49) 77+43^4 \text{ AR } 63^{\circ}2'$

$4+73^6 = (48) 78+56^2 \text{ AL } 51^{\circ}18'$

$2+63^0 = (38) 42+56^4 \text{ AL } 30^{\circ}37'$

$0+87^8 = (28) 13+22^2 \text{ AR } 16^{\circ}18'$

$0+00 \quad 70^{\circ}13'$

$M 4+69^4 = M^3 0+00$

$7+37^2$

S55°29'E S55°45'E

S57°28'E S57°40'E

N59°30'E N59°30'E

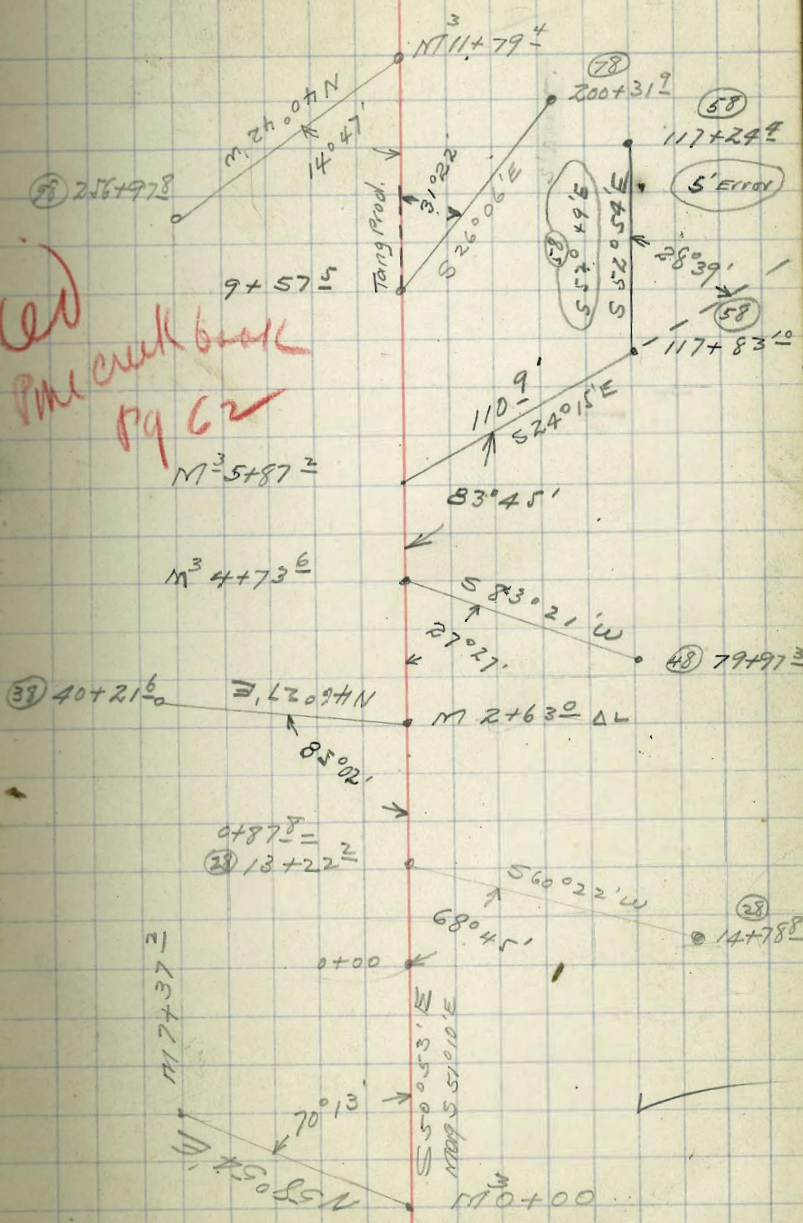
S69°12'E S69°20'E

S38°35'E S38°50'E

S50°53'E S51°10'E

N58°54'E

Cap
Pine creek bank
Pg 62



Levels up Hazels Gulch M^s

11-13-14

38

Sta	+	H.I.	-	Elev
M ^s 0+00	11.47	36.23		24.75
13+22 ² (27)			8.0	26.2
+87 ³				
1+00			5.4	30.8
2			3.4	32.8
T.P.	7.82	41.15	2.9	33.33
42+56 ⁴ (28)			6.9	34.3
2+63 ⁵				
3			4.8	36.4
T.P.	12.42	52.40	1.17	39.98
4			14.3	38.1
79+56 ² (28)			3.7	48.7
+73 ⁵				
5			4.3	48.1
+60			8.6	43.5
77+34 ² (28)	14.67	63.33	3.74	48.66
T.P. +87 ²				
6			13.5	49.8
7			5.7	57.6
8			7.0	56.3
T.P.	14.68	74.78	3.23	60.10
9			7.4	67.4
T.P.	14.23	97.34	1.67	73.11
199+68 ⁴ (28)			6.2	81.1
9+57 ⁵				
10			7.4	79.9
T.P.	14.67	99.51	3.5	83.94
11			15.7	92.8
740			17.5	91.0
258+43 ⁶ (28)			+1.5	100.0
11+79 ⁴				

Elev of creek bottom

Bottom of creek bed

rd	elev	dist
19.5	43.8	20' R
15.0	48.3	40' R
9.3	54.0	41' R

Rock

16.0	58.8	30' R
------	------	-------

25.0	62.3	28' R
------	------	-------

26.0	72.5	8' R
------	------	------

bottom of gulch

7.0	91.5	15' L
-----	------	-------

(12+25 = 98.0 on L)

Copied in Pine
Creek Book
Page 34

NT Levels up Sky Creek

Sta	+	HI	+	Ele	
53+47 ⁵ = NT 0+00				51.91	Sta 53+47 ⁵
	10.05	61.96		51.91	
1+00			9.3	52.7	4' L fr ELE
$\left\{ \begin{array}{l} 1+44^{\frac{5}{2}} \\ 1+64^{\frac{5}{2}} \end{array} \right.$			9.5	52.5	6' R fr ELE
2+00			5.1	56.9	6' L
2+51 ²			3.2	58.8	4' L
TP	12.60	72.11	24.5	59.51	
3+00			12.0	60.1	12' L
4+00			10.3	61.8	on E
4+92 ²			7.3	64.8	8' L
5+00			7.0	65.1	7' L
6+00			5.4	66.7	34' L
TP	13.85	83.21	27.5	69.36	
7+00			11.1	72.1	8' L
8+00			7.7	75.5	8' R
8+12 ⁸			8.0	75.2	9' R
NT 8+89 ⁰ =			4.6	78.6	7' L
144+99 ² (28)					
TP	15.15	95.61	27.5	80.46	
9+00			16.0	79.6	12' R
10+00			11.0	84.6	9' L
11+00			8.7	86.9	45' R
11+73 ⁴ = 189+19 ⁸ (30)			5.0	90.6	50' R
TP	6.65	100.76	1.50	94.11	✓
11+73 ⁴			0.60	100.16	on E

Copied in
Pine Creek Book
page 65

Check levels on M Line.

11-13-14

Sta	+ HI	-	Ele
	4.09	30.28	1526.19
4769 ⁴	7.70	22.45	-5.53 24.75
TP	5.23	38.73	1.95 30.50
TP	4.55	36.53	3.75 31.98
27+442			4.1 32.43
TP	6.08	39.48	3.05 33.48
TP	4.15	41.13	2.80 36.98
27+182			4.4 36.73
TP	13.25	52.63	1.75 39.38
TP	7.35	52.83	7.15 45.48
(48) 41+99 ⁵			5.0 47.8
M ² 0+462			4.0 48.83
TP	6.35	53.73	5.45 47.38
47+14 ⁰ TP	6.75	56.28	4.25 49.48
53+37 ²⁰ TP			4.40 51.88

BM Bolt in Rock

End

✓
Copied to PC
book page 64

CHECK LEVELS BM 15 to L161

sta	+	HI	-	elev
BM 15	1270	1631.44		1618.74
TP			2.53	2891
TP	1183	4391	0.26	31.18
TP	729	4618	4.12	3889
TP	453	4091	1010	3608
BM #16			843	3218

Rock 159+90
 " 160+52-
 " 162+05-
 PT 164+90
 correct ele 1632.12

Kneeshaw

Dilly

Rogers

clear & windy

A1

9-15-14

Copied from level book #4

Syphon across Dry Canyon

sta	+	H1	-	elev
BM #10	0.86	69 ³⁹		1568 ⁵³
53+52 ²⁵			8 ⁵	60 ⁹
+56			4 ⁹	64 ⁵
+74			4 ³	65 ⁻¹
+89			10 ^L	59 ³
+98			11 ^I	57 ⁵
54+11			8 ^L	60 ⁵
+52			4 ⁰	65 ⁻⁴
+65			3 ⁹	65 ⁵
+78			7 ⁰	62 ⁴

Copied from level book #4

42

BM #4^{1/2}

+	H1	-	elev	
8 ⁵²	50 ⁰⁵		1521 ⁵²⁹	BM #3
12 ³⁰	41 ⁷⁵	0.60	29 ⁴⁵	TP
		0.78	40 ⁹⁷	PI Hub sta L7+31 ¹³
		A.32	1537 ⁴²	BM #4 ^{1/2} spike in tree
				20' to L sta L6+75

Copied from level book #4

N85°54'E

284+43⁵ Δ28°49' L

Dist. 37.20

284+06⁵ Tiepoint Bridge (concrete)24⁸⁰

S65°17'E ✓

283+81⁷ Δ49°35' R

Dist. 47.4

N74°08'E ✓

279+03³⁰ Δ15°06' L

Dist. 613.60

N89°14'E ✓

272+89⁷ Δ2°07' L

(Dist. 1237.4)

S88°39'E ✓

260+52² Δ22°51' L

(Dist. 717.0)

S65°48'E ✓

Sta. 253+74⁸ A 7°40' R

(Dist. 932.0)

Sta. 244+02² Δ Tiepoint (P.O.T.)

(Dist. 327.0)

S73°28'E ✓

Sta. 240+75² Δ44°16' L ✓

(Dist. 380.30)

240+40 - Bridge (wood)

S29°17'E ✓

Sta. 236+94⁷ Δ27°57' R

(Dist. 277.80)

S57°09'E ✓

Sta. 234+16² Δ23°30' R ✓

(Dist. 529.4)

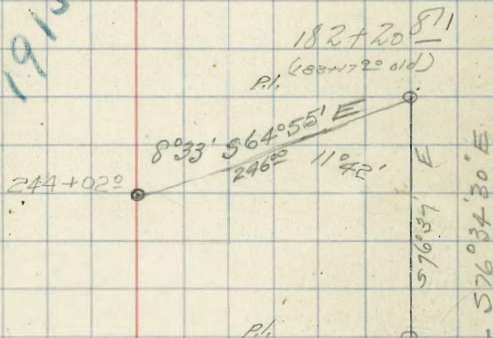
S80°39'E ✓

n^o 17°32'228+87⁵ Δ5°22' R

S86°01'E ✓

P.I. 222+11³²P.I. 202+74⁰³⁶

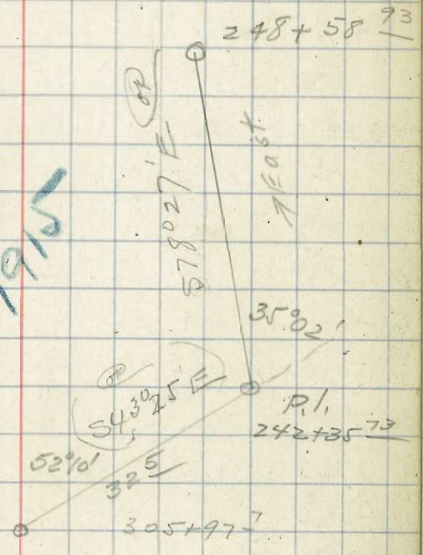
S73°07' W

P.I. 214+74⁵⁹Plated
Feb 1915

353+30² $\Delta 6^{\circ}59' L$
 (Dist 4572)
 348+72³ $\Delta 9^{\circ}17' L$
 (Dist 4749)
 343+97⁴ $\Delta 27^{\circ}39' R$
 (Dist 4452)
 339+57⁷ $\Delta 6^{\circ}34' L$
 (Dist 7243)
 332+27⁴ P.O.T.S
 (Dist 18143)
 314+13¹ $\Delta 6^{\circ}03' L$
 (Dist 8154)
 305+97⁷ $\Delta 16^{\circ}11' R$ (Tie point)
 (Dist 282)
 305+69⁵ Bridge (concrete) $\Delta 84^{\circ}25' E$
 (Dist 711)
 304+98⁴ $\Delta 30^{\circ}06' L$
 (Dist 2574)
 302+41⁰⁰ $\Delta 14^{\circ}34' R$
 (Dist 5548)
 296+86² $\Delta 7^{\circ}13' R$
 (Dist 7732)
 289+12² $\Delta 0^{\circ}51' L$
 (Dist 13540)
 287+76⁸ $\Delta 7^{\circ}41' R$
 (Dist 3303)

S 80° 38' E ✓
 S 73° 39' E ✓
 S 64° 22' E ✓
 N 87° 59' E ✓
 S 85° 27' E ✓
 S 79° 24' E ✓
 N 84° 25' E ✓
 S 65° 29' E ✓
 S 80° 03' E ✓
 S 87° 16' E ✓
 S 86° 25' E ✓
 N 85° 54' E ✓

Platted Feb 1915



N 38° 40' E ✓

N 83° 50' E ✓

S 82° 58' E ✓

S 64° 07' E ✓

S 52° 56' E ✓

S 15° 21' E ✓

S 13° 11' W ✓

S 46° 30' W ✓

S 15° 45' W ✓

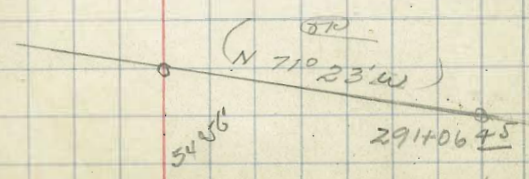
S 41° 54' E ✓

S 16° 49' E ✓

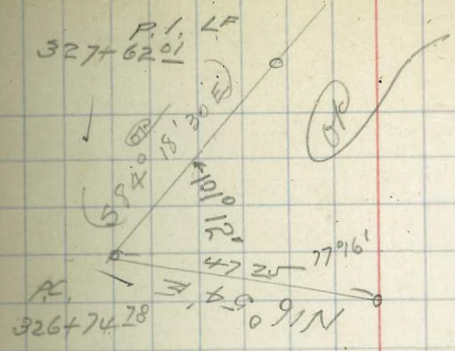
S 80° 38' E ✓

- 31 D. 373+227 A 45° 10' L
- 34 (Dist 2133) ←
- D. 371+095 A 13° 12' L
- 34 13122
- D. 369+771 A 18° 51' L
- 33 Dist 2638
- D. 367+133 A 11° 11' L
- 33 (Dist 2700)
- D. 364+433 A 37° 35' L
- 30 (Dist 2075)
- D. 362+358 A 28° 32' L
- 30 Dist 1024
- D. 364+332 A 33° 19' L
- 32 (Dist 1299)
- 31 360+038 A 30° 45' R
- 21 (Dist 614)
- 30 359+424 A 57° 39' R
- D. (Dist 1595)
- 21 357+822 A 25° 05' L
- D. (Dist 5920)
- 28 357+232 Tie point. bridge (concrete)
- D. (Dist 856)
- 2 356+376 A 63° 49' R
- D. (Dist 3074)

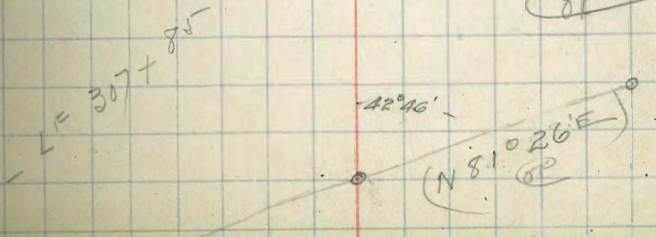
Platted Feb 1915



- 32 393159⁸ 77°16' L N16°54'E
- 33 (Dist 2275)
- 34 391132³ 415°01' R S85°50'E
- 35 (Dist 584)
- 36 385773⁹ 44°30' L N79°09'E
- 37 (Dist 2530)
- 38 383+26⁹ 415°19' L S56°21'E
- 39 (Dist 831)
- 40 382+94² Conduit Crossing S41°02'E
- 41 382+37⁸ 431°21' R S72°23'E
- 42 (1165)
- 43 381+21² 428°23' R N79°04'E
- 44 (Dist 4912)
- 45 380+63⁰ Bridge (wood) N82°29'E
- 46 376+29⁴ 43°15' L
- 47 (Dist 1940)
- 48 374+35⁴ 43°04' R
- 49 (Dist 607)
- 50 373+74¹ Tie Point Bridge (concrete) N38°40'E
- 51 (Dist 520)



Platted
Feb 1915



ROAD

GRADES HOUSER CREEK

Sta	to	Sta	+	-
00		5+50	9.5%	+9.03%
5+50	-	12+00	8.0%	8.9%
12+00	-	16+50	7%	6.5%
16+50	-	22+50	Level	
22+50	-	27+00	5%	
27+00	-	32+50	10%	
32+50	-	36+00	7%	
36+00	-V	43+00	10%	sharp point
43+00	-	44+50	4.6%	
44+50	-	46+00		-1.6%
46+00	-	48+50		-2.4%
48+50	-	49+50		-7.4%
49+50	-	53+00	4.0%	
53+00	-	54+00	Level	
54+00	-	56+00	5.6%	
56+00	-	56+50	1.2%	
56+50	-	57+50	9.2%	
57+50	-	58+50	8.0%	
58+50	-	59+00	6.0%	
59+00	-	60+00	Level	
60+00	-	64+50	4.4%	
64+50	-	67+00	5.4%	
67+00	-	69+00	4.0%	
69+00		69+65	Level	

47

Sta to Sta	+	-
69+65 - 72+00	8.9%	
72+00 - 73+30	5.6%	
73+30 - 74+80	10%	
74+80 - 78+50	8.0%	
78+50 - 84+50	Level	
84+50 - 87+00	5.1%	
87+00 - 89+00	1.1%	
89+00 - 92+00	2.1%	
92+00 - 93+50	4.0%	
93+50 - 96+50	9.6%	
96+50 - 97+50	7.6%	
97+50 - 98+00	Level	
98+00 - 100+00	10%	
100+00 - 106+00	1%	
106+00 - 109+50	Level	
109+50 - 113+50	8.0%	
113+50 - 115+50	10.0%	
115+50 - 116+00	Level	
116+00 - 127+50	10.0%	
127+50 - 132+50		-1.0%
132+50 - 135+00	5.1%	
135+00 - 152+00	Average	2.5%

85

New Road

Sta	DL	DR	CC	MC
409 ⁶ ✓			542°45'E	543°0'E
55+44 ⁵		17°42'		
242 ⁷ ✓			560°27'E	560°35'E
53+01 ⁸		14°15'		
489 ⁶ ✓			574°42'E	574°45'E
48+12 ²		18°19'		
389 ² ✓			N86°59'E	N87°0'E
44+23 ⁰		36°35'		
453 ⁴ ✓			N50°24'E	N50°20'E
39+69 ⁶		44°18'		
300 ⁹			N6°06'E	N6°0'E
36+68 ⁷		27°41'		
230 ⁰ ✓			N21°35'W	N21°30'W
34+38 ⁷	14°47'			
455 ⁶ ✓			N6°48'W	N6°45'W
29+83 ²	33°54'			
144 ⁴ ✓			N27°06'E	N27°05'E
28+38 ⁷		10°36'		
742 ⁴ ✓			N16°30'E	N16°30'E
25+96 ³	25°01'			
273 ¹ ✓			N41°31'E	N41°20'E
73+22 ⁰		26°57'		
195 ³ ✓			N14°34'E	N14°20'E
21+27 ³ }	22°48'			
3791°R3A }			N37°22'E	

519

Copied on page 5 with corrected Stations

15'

4'

7'

6'

4'

2'

7'

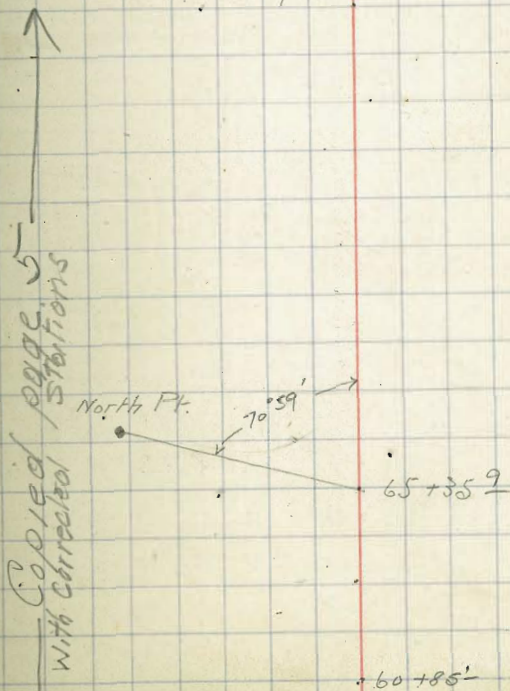
5'

Sta BL DR CC MC

180
70 59
109 01

77+00 ² 474 ² ✓		S55°58'E S55°45'E
72+25 ⁸ 322 ⁸ ✓	6°34'	S62°32'E S62°30'E
69+03 ⁰ 952 ² ✓	34°47'	N82°41'E N83°0'E
68+07 ³ 19°22'		S77°57'E S77°35'E
65+93 ⁷ 578 ² ✓	31°04'	
65+55 ⁹ D.O.T. 450 ⁸ ✓		N70°59'E N71°08'E N71°05'E
60+85 ¹ 45°58' 1312 ² ✓		S62°54'E S63°0'E
59+54 ¹ 20°09' 409 ⁶ ✓		

quard state 17⁵

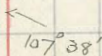


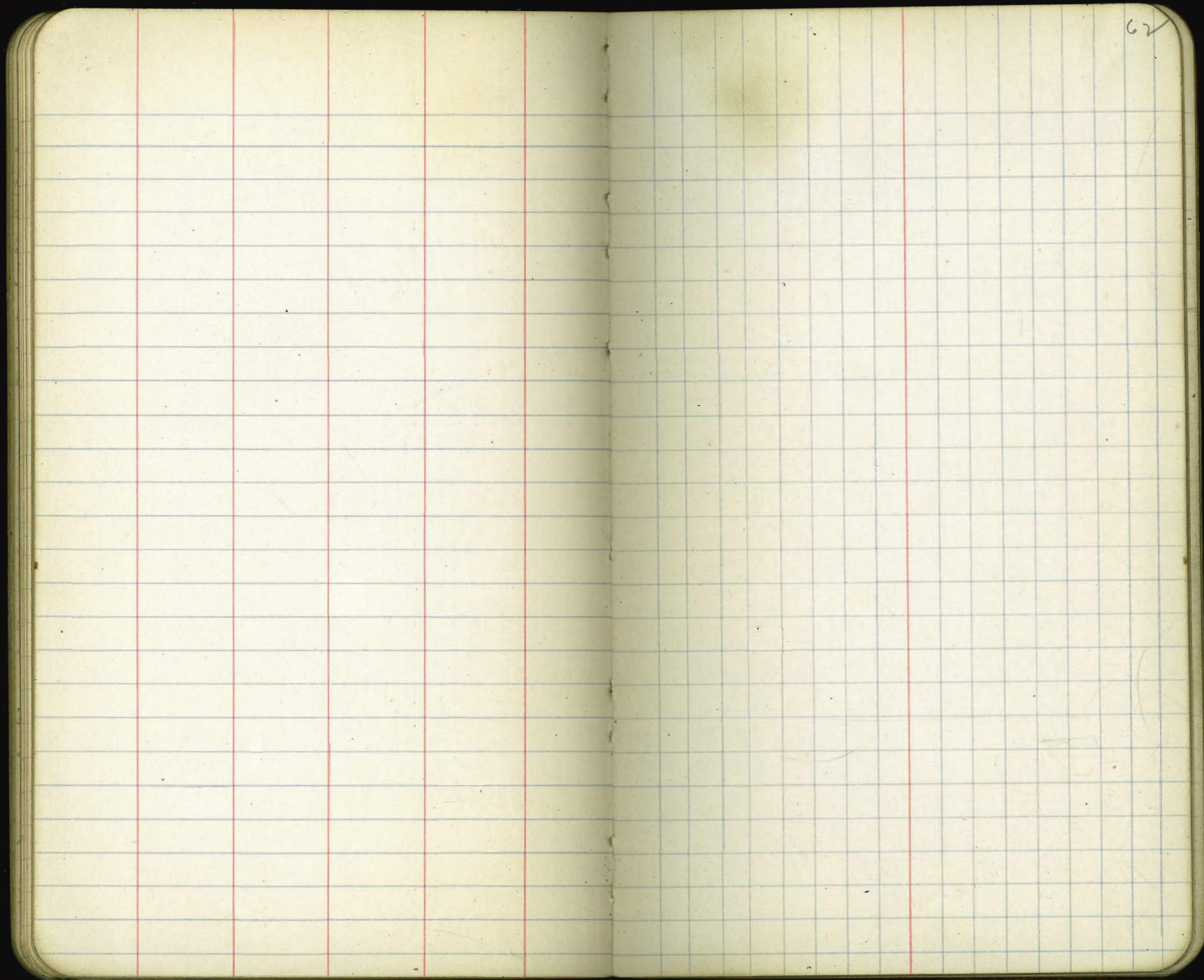
DL

DR

CC

MC

 $(21+21)^{65}$ Dist $66+34^9$  $107^{\circ} 38'$



33
231

151.1
138.9
12.2

133
142.6 HI
171.4

147.2 TP
9.9

151.1 HI
142.7

148.4 TP
12.0

160.4 HI
2.1

158.3 TP
9.0

167.3 HI
7.6

159.7 TP
8.9

168.6 HI
168.6 HI

127.8
123.4
4.4

168.6 HI

131

155.5 TP

2.3

157.8 HI

9.2

148.6 TP

1.0

149.6

10.2

139.4 TP

1.3

140.7 HI

12.4

128.3

1.4

129.7 HI

149.7
102
139.5
3

178.6
1.1

149.7 HI
138.6

139.8 HI
12.9

126.7 TP
2.0

128.9 HI
121.1

138.6
13.1

13.1

12.2

7.8

10.3
7.8
6.5

142.6

147.6

136.6

133.6

130.6

127.6

124.6

121.6

117.6

136
113
135

128.9
117.6
11.3

2.3

00 = 100.0

213 = 100.4

+50 103.9

214 107.4

+50 120.9

215 114.4

+31

+50 117.9

216 121.4

+30 123.5

+25 123.2

216+50 124.9

+77 126.5

217 128.4

+50 131.9

218 135.4

+50 138.9

219 142.4

+50 145.9

+93 148.9

220+50 152.9

+88 155.2

221 156.4

+25 157.1

221+50 158.1

160.4
148.9
11.5
9.0
16
9.0
3.2
6.8

167.3
155.1
10.2

160.4
152.9
7.5

16.0
13.5
2.4

14.2
1.3
10.7

7.2
3.7

8.7
1.26
7.8
4.8

5.2
11.5
17

7.5
5.2

↑

10.2
+

9.2

Ele of Peg
8/14/14

1333

232

10.4

25

37

1.75

12.4

128.3

1.4

129.7 HI

221+75 159.1 9.2

222 160.1 7.5

+50 159.6 9.0

223 156.1 12.5

+50 152.6 16.0

TP

+50 152.6 5.2

224 149.1 8.7

+50 145.6 12.2

225 142.1 7.5

+50 138.6 14.0

226 135.1 14.5

+50 131.6 18.0

227 128.1 12.6

+50 124.6 16.1

228 121.1 8.6

+50 117.6 12.1

229 114.1 15.6

15.6

139.8 HI

129

126.7 TP

128.9 HI

121.1

7.8

10.3

7.8

6.5

2.1

F04

0.8

F2.0

F0.5

2.0

F12

1.3

F2.2

0.8

4.0

0.8

128.9

117.6

11.3

136

113

135

2.3

135

2.3

135

2.3

135

2.3

135

2.3

9.2
6.7
2.5

10.2
7.8
2.4

0.5
1.0

1.5
2.0

2.5
3.0

3.5

3.5

3.5

3.5

3.5

3.5

3.5

3.5

3.5

3.5

3.5

Nov 11 14 Levels for M7 line Cont

Cont

60

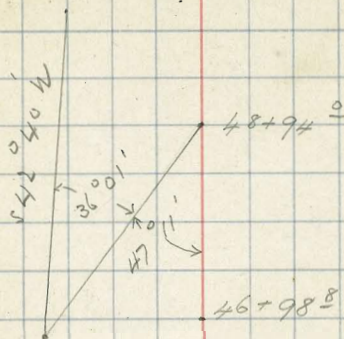
Sta	+ 2/1	-	Ele
68+77 ⁹ M	7.4 ⁵	70.79	63.34 <small>Andy's Ele</small>
73+54 ⁰⁰		53.7	65.42
74+60 ⁶⁰	5.95	72.99	3.75 67.04 TP
76+33 ⁵			4.75 68.24 TP
77+00			3.1 69.9
78			4.6 68.4
TP	8.60	79.37	2.22 70.77
78+38 ³			8.92 70.45
79			8.9 70.5
80			6.5 72.9
80+17 ³			4.65 74.72
81			3.3 76.1
81+30 ⁹			3.74 75.63
TP	8.68	86.55	1.50 77.87
82+21 ⁸			7.10 79.45
83			8.10 78.45
84			6.7 79.9
TP	9.80	96.30	0.05 86.50
85			10.2 86.1
85+31 ⁹ PT			4.25 92.05
86			4.6 91.7
87			3.1 93.2

Copied in Pine Creek
back page 35

Sta	+ 2/1	-	Ele
		96.30	3.65
	6.15	98.80	72.65
88			7.5 91.3
88+58 ⁶			5.75 93.05
89+42 ⁰ =			3.50 95.3
(147+35 ⁹)			
62.80 TP Hub			
3.95			
64.75 HI			
5.35			
59.40 TP = 63+55 ² M			(130+95) 98.00
3.40			1.5
62.80 HI			77.50
6.9			160
55.90 54+96 ⁹			83.50
7.563			1.0
8.1			83.60
83.73			6.25
800			77.35
54.50 TP			(108+41 ⁸)
3.50			
57.70 HI			83.60
6.85			15.10
50.85 55+97 ⁹			68.50
2.70			9
53.55 HI			69.40
4.15			7.05
47.40 = 53+47 ⁹ TP			67.35
12.15			3.35
61.55			65.70
3.55			4.90
58.00			60.80
			(68+77 ⁹)

Check line on R₃

Sta	AL	AP	CC	MC
48+94 ⁰				
46+98 ⁸	12° 33'			
45+72 ⁵		28° 38'		
		45° 40'		
43+22 ⁴	13° 51'			
41+78 ²		29° 21'		
40+80 ³		26° 17'		
38+51 ²	40° 53'			
36+01 ¹		46° 18'		
30+61 ⁷		0° 55'		
27+46 ⁵				



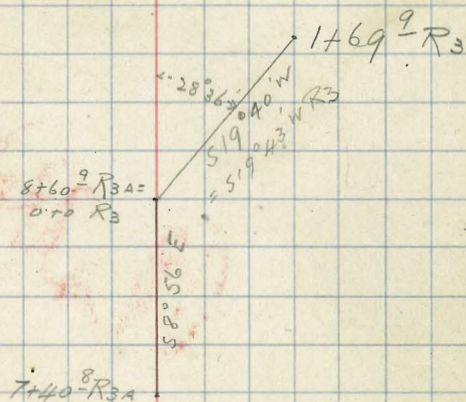
R3A
Tie from RA to R3

Sta. DL A.R. CC MC

Plotted from R3
R95

8+60 ⁹ 0+00 ^{RA} 120 ¹	28°36'	519°40'W
7+40 ⁸ 115 ²	5°39'	58°56'E 59°10'E 514°35'E 514°50'E
6+24 ⁹ 233 ³	31°57'	537°22'W 537°0'W
3+91 ⁶ 246 ⁵	12°37'	524°45'W 524°35'W
1+45 ¹ 145 ⁰	12°36'	537°11'W
0+00 ¹ 23+98 ^{8RA}		

68



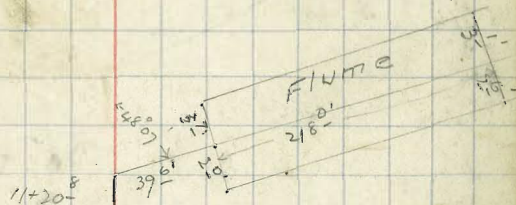
Note

← Copied on page 4

R4

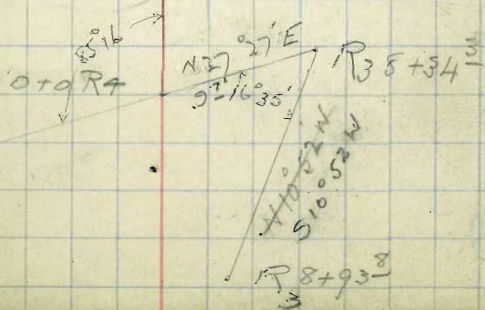
Sta	ΔL	ΔR	CC	MC
12754 ⁰	8°23'		N63°27'W	N63°30'W
11720 ⁸	29°45'		N55°04'W	N55°05'W
10727 ⁰	11°0'		N25°19'W	N25°30'W
9716 ⁵	25°05'		N14°19'W	N14°30'W
7718 ⁵	19°04'		N10°46'E	N10°20'E
5763 ⁶	36°36'		N8°18'W	N8°15'W
5706 ⁹	32°52'		N28°18'E	N28°10'E
3799 ²	33°44'		N61°10'E	N61°0'E
2776 ⁵	54°08'		N27°26'E	N27°20'E
2715 ²	41°26'		N26°42'W	N26°45'W
1735	0°51'		N68°08'W	N68°30'W
0700	85°16'		N67°17'W	N67°25'W

69

10+27⁰

Plotted from R4

R4 1+35



RA

Sta DL AR CC MC

23+98 ⁸				
2084				N46°32'E N46°30'E
21+90 ⁴		34°32'		
1335				N12°0'E N12°0'E
20+56 ⁸	5°49'			
1335				N17°49'E N17°50'E
20+05 ⁷	65°54'			
389				N83°43'E N83°40'E
19+66 ⁸	22°16'			
2779				S74°01'E S74°10'E
16+89 ¹²	27°18'			
1844				N78°41'E N78°30'E
15+04 ⁸	67°56'			
75-				N10°45'E N10°40'E
14+29 ¹⁸	74°12'			
1758				N63°27'W

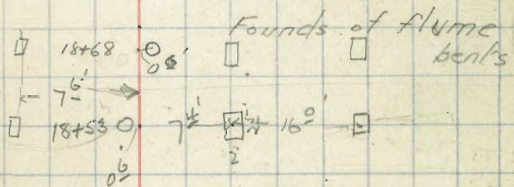
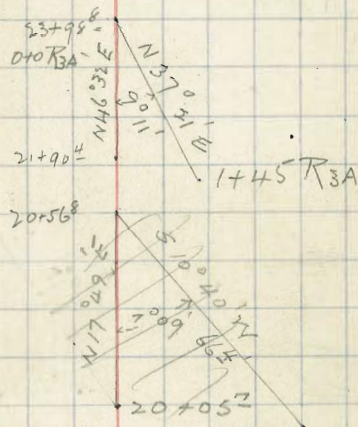
END 1%

5% 14+00 TO 15+04⁸

7% ENDS AT 14+00

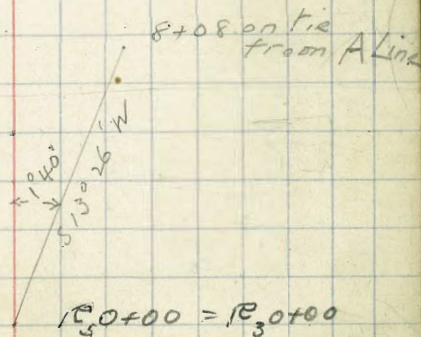
70

Platone per 13
~~13~~



R5

	ΔL	DR	CC	MC
60 [±]			S66°37'W	S66°40'W
13+41 [±]	31°16'			
174 [±]			N82°07'W	N82°10'W
11+66 [±]	16°32'			
129 [±]			S81°21'W	S81°0'W
10+36 [±]	41°11'			
97 [±]			N57°28'W	N57°20'W
9+38 [±]	91°54'			
145 [±]			S30°38'W	S30°30'W
7+93 [±]	13°58'			
128 [±]			S16°40'W	S16°30'W
6+64 [±]	32°08'			
57 [±]			S15°28'E	S15°50'E
6+07 [±]	39°11'			
49 [±]			S54°39'E	S55°0'E
5+57 [±]	21°59'			
110 [±]			S76°36'E	S76°50'E
4+47 [±]	104°42'			
139 [±]			S28°04'W	S27°50'W
3+07 [±]	30°05'			
112 [±]			S2°0'E	S2°20'E
1+95 [±]	13°47'			
195 [±]			S11°46'W	S11°50'W
0+00 =	1°40'			
0+00 R3			S13°26'W	

71
June 20th 1914Bub
Anderson
Kneeshaw
WhitmorePlates from 21
Anderson

R5

72

Sta. ΔL ΔR CC MC

21+62'

83²

58°04'W 57°45'W

20+78²

34°55'

542°59'W 542°45'W

19+54²

5°26'

548°15'W 548°10'W

16+14⁴

64°23'

N67°12'W N67°15'W

14+01⁵

46°11'

566°37'W

60³

Plater June 21
Anderson

R₃ 22+52⁷

57°35'W
58°15'W
58°12'

3°05'

36°12'N

21+62'

M. 40085

20+78²R₃ 21+16'

R6 7%

Sta ΔL ΔR CC MC

Plotted July 11
PP

5+68⁵ = }
11+88⁵ R3

4+19² = 29° 20'

3+05⁶

1+78⁹

1+06⁹ 4° 13'

0+00 = }
17+74⁹ R3

N83° 59' E N84° 0' E

S66° 41' E S66° 35' E

S86° 51' E S86° 50' E

N49° 41' E N49° 45' E

N53° 54' E N53° 50' E

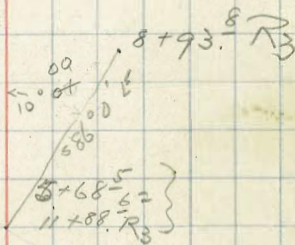
N25° 58' E

20° 10'

43° 28'

27° 58'

Copied on Page 3



4+19.2

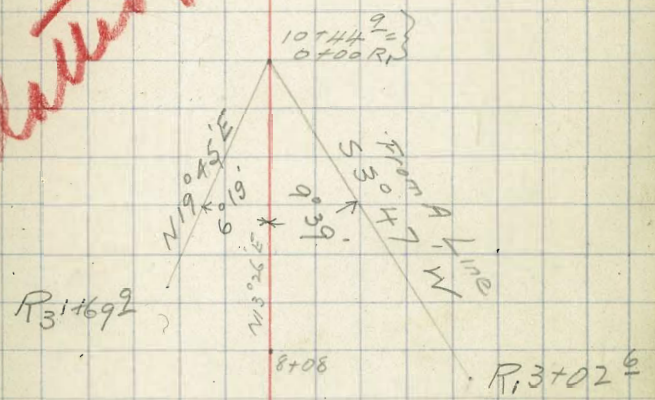
0+00 }
R3 17+74.2 }

19+35.2 R3

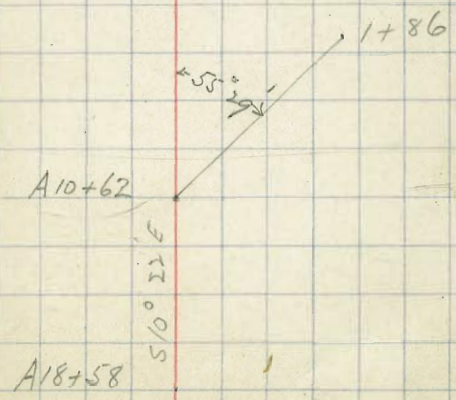
Tie A Line to R₁ & R₃

Sta. ΔL ΔR CC MC

*Plotted from 18-14
Rgs*



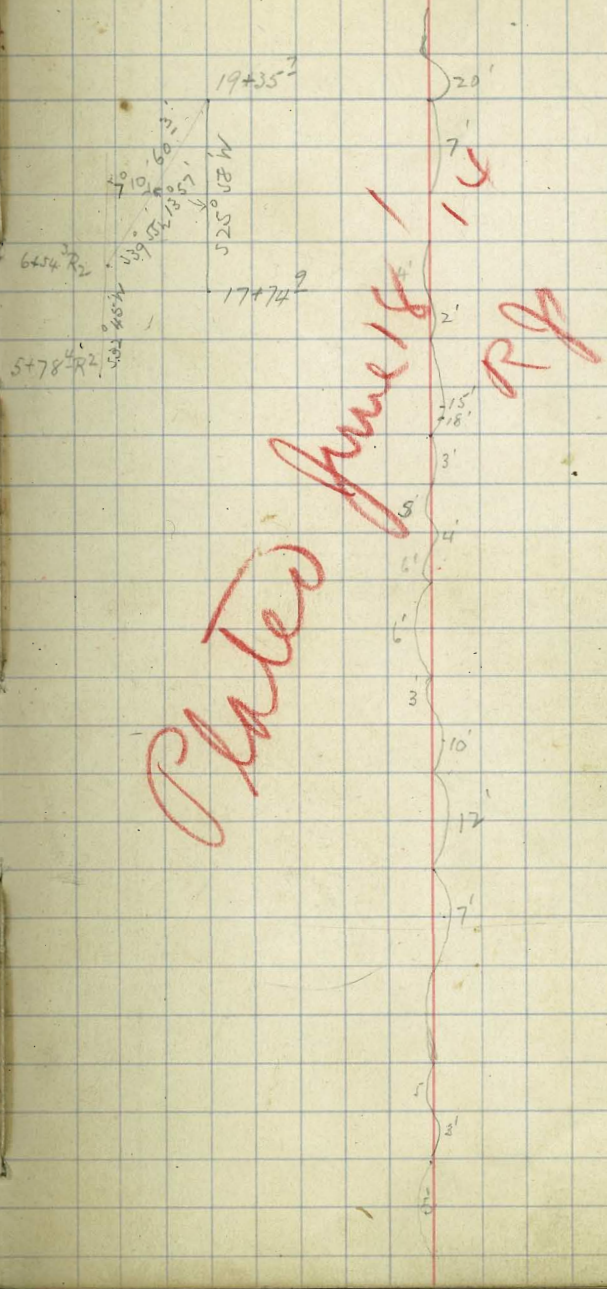
0+00 R ₁ }		
10+44 ² }		
236 ²		13°14
8+08	80°21'	N13°26'E N13°15'E
622		N66°55'W N67°00'W
1+86	67°58'	S45°07'W S44°40'W
10+62A =	55°29'	
0+00 R ₁		S10°22'E
		10 34



TC 3

75

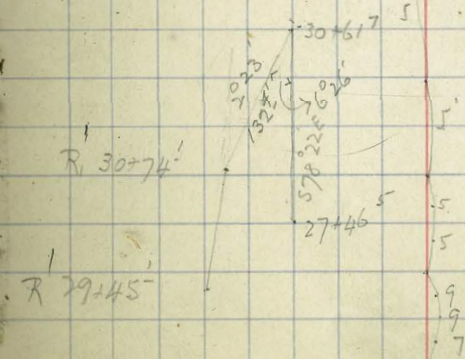
Sta.	ΔL	ΔR	C.C. 536° 51' E	M.C. 537° 10' E
24+16 ⁻	86° 25'			
180 [±]			549° 34' W	
19+35 ⁻		23° 36'		
160 ⁸			525° 58' W	525° 40' W
17+74 ⁹	23° 45'			
0+00 NR			549° 43' W	549° 0' W
15+39 ⁵⁰	53° 29'			
151			N76° 48' W	N75° 20' W
11+88 ⁵		9° 13'		
0+0 R ₂				
294 [±]			N66° 01' W	N48° 50' W
8+93 ⁸		83° 07'		
59 [±]			510° 52' W	510° 50' W
8+34 ³		69° 54'		
240.5 ^v			559° 02' E	559° 10' E
5+93 ⁸	78° 05'			
87.3 ^v			519° 03' W	
5+06 ⁵	43° 05'			
129.6 ^v			562° 08' W	562° 0' W
3+76 ⁹		24° 35'		
53.1 ^v			537° 33' W	
3+23 ⁸		33° 14'		
153.9 ^v			54° 19' W	
1469 ⁹	15° 24'			
169 ⁹			519° 43' W	
0+00 = 000 ⁰	15° 58'			
			53° 45' W	



Copied on Page 3 & 4

Sta.	ΔL	ΔR	CC	MC
			S45°01'W	S44°10'E
45+72 ⁵		34°32'		
121 ⁶			S10°29'W	
44+50 ⁹		40°23'		
128 ⁵			S29°54'E	S30°20'E
43+22 ⁴⁰	15°07'			
143 ⁵			S14°47'E	S15°20'E
41+78 ⁹		33°17'		
98 ⁹			S48°04'E	
40+80 ³		27°09'		
124 ⁴			S75°13'E	S75°05'E
39+55 ⁹	6°56'			
104 ²			S68°17'E	
38+51 ²	37°08'			
160 ¹			S31°09'E	S31°20'E
36+01 ¹		46°18'		
539 ⁴			S77°27'E	S79°0'E
30+61 ²		0°55'		
315 ²			S78°22'E	S78°20'E
27+46 ⁵	12°47'			
188 ⁴			S65°35'E	S65°30'E
24+58 ⁰	45°27'			
105 ⁴			S20°08'E	S20°20'E
22+52 ⁷		16°43'		
136 ⁶			S36°51'E	

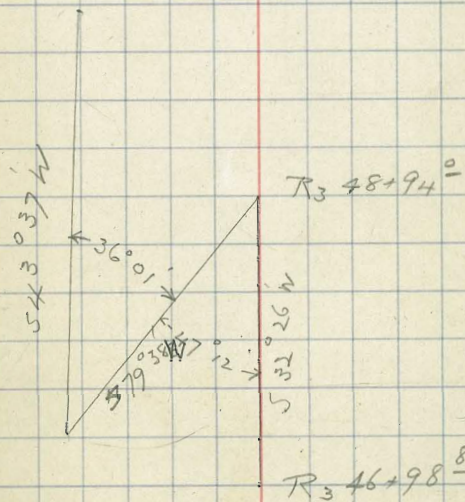
Plate for 15' 4



10³

77

Sta	ΔL	ΔR	CC	MC
-----	----	----	----	----



48+94⁰⁰

1952

46+98⁸

12° 35'

1263

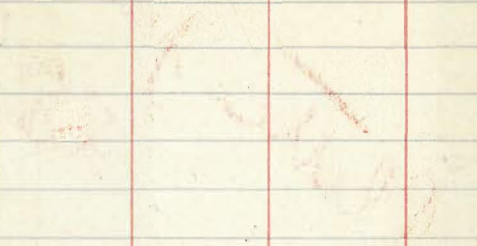
532° 26' W 531° 05' W

545° 01' W

Road #2

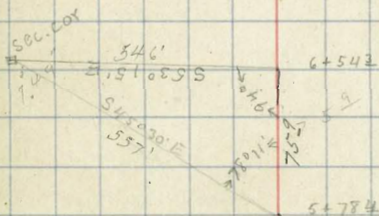
R 3

L R.

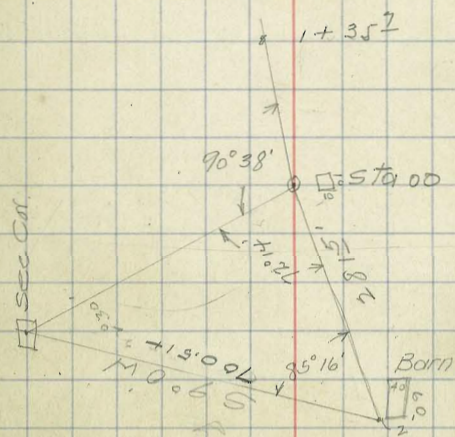


7+54 ²			
100		S 44° 47' W	S 44° 15' W
6+543	11° 13'	S 33° 34' W	S 32° 30' W
126 ¹			
5+282	25° 38'	S 59° 12' W	S 58° 30' W
72 ⁵			
4+552	5° 10'	S 54° 02' W	S 53° W
89°			
3+562	53° 18'	N 72° 40' W	N 73° W
221 ⁹			
1+352	29° 28'	S 77° 52' W	S 78° 30' W
135 ²			
0+00	96° 38'		S 12° 15' E

plates June 18 14 78
RF



Point in road



in front of small house

Road

Barrett

R¹

Sta	ΔL	ΔR	C.C. M.C.
245 ⁹ 15+31 ² 136 ²		13°30'	N 86°34' W N 86° W
13+950 90 ⁸	75°47'		79 S 80°56' W S 80° W
12+042 84 ⁸	8°37'		24 N 23°17' W N 24°15' W
12+19 [±] 84 ⁸	35°55'		32 N 31°54' W N 33° W
11+346 110 ⁶	92°39'		68 N 67°49' W N 69° W
10+24 145 ⁹	39°16'		18 S 19°32' W S 19° W
8+78L 133 ²	77°02'		20 S 19°44' E S 20°45' E
7+44E 139 ⁹	64°24'		56 S 57°18' W S 56°30' W
6+05 138 ⁴	21°0'		8 S 7°06' E S 8° E
4+66E 69 ⁴	57°19'		29 S 28°06' E S 29° E
3+972 94 ⁶	85°55'		86 25 S 85°26' E
3+026 302 ⁶	4°15'		S 0°30' E
0+00			S 3°45' W

Anderson ch
Kneeshaw inst.
Whitmore HC
Dilly RC
Teesdale BF

June 11-14

79

Plater June 18-14

54°10'

Bridge over Conduit

R'

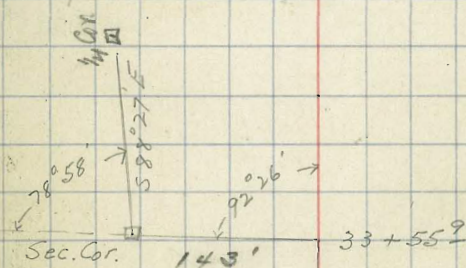
80

Sta	ΔL	DR	C.C.	M.C.
			S 88° 44' E	
			N 97° 44' E	N 88° 30' E
Sec. cor.		78° 59'		
143'			¹²	N 13° 18' E N 13° E
33+559	92° 26'		⁷⁵	S 74° 16' E S 75° E
285 ⁴ '				
30+74 ⁵	0° 45'		⁷⁴	S 73° 31' E S 74° E
129 ⁴ '				
29+45'	14° 19'		^{60 12}	S 59° 12' E S 60° E
329 ⁷ '				
26+154	50° 37'		⁹	S 7° 35' E S 9° E
153 ⁴ '				
24+620	19° 30'		²⁹	S 29° 05' E S 29° E
89 ⁶ '				
23+724	75° 26'		⁴⁶	S 47° 21' W S 46° 30' W
147 ⁵ '				
22+249	18° 28'		²⁷	S 28° 53' W S 28° W
81 ² '				
21+432	24° 40'		⁵²	S 53° 33' W S 53° W
119 ⁸ '				
20+239	5° 41'		⁵⁸	S 59° 14' W S 58° 15' W
82 ⁷ '				
19+412	57° 05'		⁶⁴	N 63° 41' W
164 ¹ '				
17+774	21° 53'			N 64° 30' W

True course S 88° 27' E
 Sec. cor. vert A 23° 35' 156'

point in road

End of line



Plotted June 15th 1914
 RJS

TABLE IV.—MINUTES IN DECIMALS OF A DEGREE.

1'	.0167	11'	.1833	21'	.3500	31'	.5167	41'	.6833	51'	.8500
2	.0333	12	.2000	22	.3667	32	.5333	42	.7000	52	.8667
3	.0500	13	.2167	23	.3833	33	.5500	43	.7167	53	.8833
4	.0667	14	.2333	24	.4000	34	.5667	44	.7333	54	.9000
5	.0833	15	.2500	25	.4167	35	.5833	45	.7500	55	.9167
6	.1000	16	.2667	26	.4333	36	.6000	46	.7667	56	.9333
7	.1167	17	.2833	27	.4500	37	.6167	47	.7833	57	.9500
8	.1333	18	.3000	28	.4667	38	.6333	48	.8000	58	.9667
9	.1500	19	.3167	29	.4833	39	.6500	49	.8167	59	.9833
10	.1667	20	.3333	30	.5000	40	.6667	50	.8333	60	1.0000

TABLE V.—INCHES IN DECIMALS OF A FOOT.

1-16	3-32	1/4	3-16	1/2	5-16	3/8	1/2	5/8	3/4	7/8
.0052	.0078	.0104	.0156	.0208	.0260	.0313	.0417	.0521	.0625	.0729
1	2	3	4	5	6	7	8	9	10	11
.0833	.1667	.2500	.3333	.4167	.5000	.5833	.6667	.7500	.8333	.9167

TABLE VI.—RADIUS, ORDINATES AND DEFLECTIONS.

Deg.	Radius	Mid Ord	Tan Def.	Chd. Def	Def for 1 Foot	Deg.	Radius	Mid. Ord.	Tan Def.	Chd. Def.	Def. for 1 Foot
0° 10'	34377.	.036	.145	.291	0.05'	7°	819.0	1.528	6.105	12.21	2.10'
20	17189.	.073	.291	.582	0.10	20'	781.8	1.600	6.395	12.79	2.20
30	11459.	.109	.436	.873	0.15	30	764.5	1.637	6.540	13.08	2.25
40	8594.4	.145	.582	1.164	0.20	40	747.9	1.673	6.685	13.37	2.30
50	6875.5	.182	.727	1.454	0.25	50	716.8	1.746	6.976	13.95	2.40
1	5729.6	.218	.873	1.745	0.30	20	688.2	1.819	7.266	14.53	2.50
10	4911.2	.255	1.018	2.036	0.35	30	674.7	1.855	7.411	14.82	2.55
20	4297.3	.291	1.164	2.327	0.40	40	661.7	1.892	7.556	15.11	2.60
30	3819.8	.327	1.309	2.618	0.45	50	637.3	1.965	7.846	15.69	2.70
40	3437.9	.364	1.454	2.909	0.50	20	614.6	2.037	8.136	16.27	2.80
50	3125.4	.400	1.600	3.200	0.55	30	603.8	2.074	8.281	16.56	2.85
2	2864.9	.436	1.745	3.490	0.60	40	593.4	2.110	8.426	16.85	2.90
10	2644.6	.473	1.891	3.781	0.65	50	573.7	2.183	8.716	17.43	3.00
20	2455.7	.509	2.036	4.072	0.70	10	546.4	2.292	9.150	18.30	3.15
30	2292.0	.545	2.181	4.363	0.75	20	521.7	2.402	9.585	19.16	3.30
40	2148.8	.582	2.327	4.654	0.80	30	499.1	2.511	10.02	20.04	3.45
50	2022.4	.618	2.472	4.945	0.85	40	478.3	2.620	10.45	20.91	3.60
3	1910.1	.655	2.618	5.235	0.90	50	459.3	2.730	10.89	21.77	3.75
10	1809.6	.691	2.763	5.526	0.95	10	441.7	2.839	11.32	22.64	3.90
20	1719.1	.727	2.908	5.817	1.00	20	425.4	2.949	11.75	23.51	4.05
30	1637.3	.764	3.054	6.108	1.05	30	410.3	3.058	12.18	24.37	4.20
40	1562.9	.800	3.199	6.398	1.10	40	396.2	3.168	12.62	25.24	4.35
50	1495.0	.836	3.345	6.689	1.15	50	383.1	3.277	13.05	26.11	4.50
4	1432.7	.873	3.490	6.980	1.20	10	370.8	3.387	13.49	26.97	4.65
10	1375.4	.909	3.635	7.271	1.25	20	359.3	3.496	13.92	27.84	4.80
20	1322.5	.945	3.718	7.561	1.30	30	348.5	3.606	14.35	28.70	4.95
30	1273.6	.982	3.926	7.852	1.35	40	338.3	3.716	14.78	29.56	5.10
40	1228.1	1.018	4.071	8.143	1.40	50	319.6	3.935	15.64	31.29	5.40
50	1185.8	1.055	4.217	8.433	1.45	10	302.9	4.155	16.51	33.01	5.70
5	1146.3	1.091	4.362	8.724	1.50	20	287.9	4.374	17.37	34.73	6.00
10	1109.3	1.127	4.507	9.014	1.55	30	274.4	4.594	18.22	36.44	6.30
20	1074.7	1.164	4.653	9.305	1.60	40	262.0	4.814	19.08	38.16	6.60
30	1042.1	1.200	4.798	9.596	1.65	50	250.8	5.035	19.94	39.87	6.90
40	1011.5	1.237	4.943	9.886	1.70	10	240.5	5.255	20.79	41.58	7.20
50	982.6	1.273	5.088	10.18	1.75	20	231.0	5.476	21.64	43.28	7.50
6	955.4	1.309	5.234	10.47	1.80	30	222.3	5.697	22.50	44.99	7.80
10	928.6	1.346	5.379	10.76	1.85	40	214.2	5.918	23.35	46.69	8.10
20	905.1	1.382	5.524	11.05	1.90	50	206.7	6.139	24.19	48.38	8.40
30	881.9	1.418	5.669	11.34	1.95	10	199.7	6.360	25.04	50.07	8.70
40	859.9	1.455	5.814	11.63	2.00	20	193.2	6.583	25.88	51.76	9.00



DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING

ROADWAY 14 FEET WIDE. SIDE SLOPES 1½ TO 1.
FOR SINGLE TRACK EMBANKMENT.

	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	
0	7.00	7.15	7.30	7.45	7.60	7.75	7.90	8.05	8.20	8.35	0
1	8.50	8.65	8.80	8.95	9.10	9.25	9.40	9.55	9.70	9.85	1
2	10.00	10.15	10.30	10.45	10.60	10.75	10.90	11.05	11.20	11.35	2
3	11.50	11.65	11.80	11.95	12.10	12.25	12.40	12.55	12.70	12.85	3
4	13.00	13.15	13.30	13.45	13.60	13.75	13.90	14.05	14.20	14.35	4
5	14.50	14.65	14.80	14.95	15.10	15.25	15.40	15.55	15.70	15.85	5
6	16.00	16.15	16.30	16.45	16.60	16.75	16.90	17.05	17.20	17.35	6
7	17.50	17.65	17.80	17.95	18.10	18.25	18.40	18.55	18.70	18.85	7
8	19.00	19.15	19.30	19.45	19.60	19.75	19.90	20.05	20.20	20.35	8
9	20.50	20.65	20.80	20.95	21.10	21.25	21.40	21.55	21.70	21.85	9
10	22.00	22.15	22.30	22.45	22.60	22.75	22.90	23.05	23.20	23.35	10
11	23.50	23.65	23.80	23.95	24.10	24.25	24.40	24.55	24.70	24.85	11
12	25.00	25.15	25.30	25.45	25.60	25.75	25.90	26.05	26.20	26.35	12
13	26.50	26.65	26.80	26.95	27.10	27.25	27.40	27.55	27.70	27.85	13
14	28.00	28.15	28.30	28.45	28.60	28.75	28.90	29.05	29.20	29.35	14
15	29.50	29.65	29.80	29.95	30.10	30.25	30.40	30.55	30.70	30.85	15
16	31.00	31.15	31.30	31.45	31.60	31.75	31.90	32.05	32.20	32.35	16
17	32.50	32.65	32.80	32.95	33.10	33.25	33.40	33.55	33.70	33.85	17
18	34.00	34.15	34.30	34.45	34.60	34.75	34.90	35.05	35.20	35.35	18
19	35.50	35.65	35.80	35.95	36.10	36.25	36.40	36.55	36.70	36.85	19
20	37.00	37.15	37.30	37.45	37.60	37.75	37.90	38.05	38.20	38.35	20
21	38.50	38.65	38.80	38.95	39.10	39.25	39.40	39.55	39.70	39.85	21
22	40.00	40.15	40.30	40.45	40.60	40.75	40.90	41.05	41.20	41.35	22
23	41.50	41.65	41.80	41.95	42.10	42.25	42.40	42.55	42.70	42.85	23
24	43.00	43.15	43.30	43.45	43.60	43.75	43.90	44.05	44.20	44.35	24
25	44.50	44.65	44.80	44.95	45.10	45.25	45.40	45.55	45.70	45.85	25
26	46.00	46.15	46.30	46.45	46.60	46.75	46.90	47.05	47.20	47.35	26
27	47.50	47.65	47.80	47.95	48.10	48.25	48.40	48.55	48.70	48.85	27
28	49.00	49.15	49.30	49.45	49.60	49.75	49.90	50.05	50.20	50.35	28
29	50.50	50.65	50.80	50.95	51.10	51.25	51.40	51.55	51.70	51.85	29
30	52.00	52.15	52.30	52.45	52.60	52.75	52.90	53.05	53.20	53.35	30
31	53.50	53.65	53.80	53.95	54.10	54.25	54.40	54.55	54.70	54.85	31
32	55.00	55.15	55.30	55.45	55.60	55.75	55.90	56.05	56.20	56.35	32
33	56.50	56.65	56.80	56.95	57.10	57.25	57.40	57.55	57.70	57.85	33
34	58.00	58.15	58.30	58.45	58.60	58.75	58.90	59.05	59.20	59.35	34
35	59.50	59.65	59.80	59.95	60.10	60.25	60.40	60.55	60.70	60.85	35
36	61.00	61.15	61.30	61.45	61.60	61.75	61.90	62.05	62.20	62.35	36
37	62.50	62.65	62.80	62.95	63.10	63.25	63.40	63.55	63.70	63.85	37
38	64.00	64.15	64.30	64.45	64.60	64.75	64.90	65.05	65.20	65.35	38
39	65.50	65.65	65.80	65.95	66.10	66.25	66.40	66.55	66.70	66.85	39
40	67.00	67.15	67.30	67.45	67.60	67.75	67.90	68.05	68.20	68.35	40

Calculated by F. E. Paradis, C. E.

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING

ROADWAY 14 FEET WIDE. SIDE SLOPES 1½ TO 1.
FOR SINGLE TRACK EMBANKMENT.

	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	
0	7.00	7.15	7.30	7.45	7.60	7.75	7.90	8.05	8.20	8.35	0
1	8.50	8.65	8.80	8.95	9.10	9.25	9.40	9.55	9.70	9.85	1
2	10.00	10.15	10.30	10.45	10.60	10.75	10.90	11.05	11.20	11.35	2
3	11.50	11.65	11.80	11.95	12.10	12.25	12.40	12.55	12.70	12.85	3
4	13.00	13.15	13.30	13.45	13.60	13.75	13.90	14.05	14.20	14.35	4
5	14.50	14.65	14.80	14.95	15.10	15.25	15.40	15.55	15.70	15.85	5
6	16.00	16.15	16.30	16.45	16.60	16.75	16.90	17.05	17.20	17.35	6
7	17.50	17.65	17.80	17.95	18.10	18.25	18.40	18.55	18.70	18.85	7
8	19.00	19.15	19.30	19.45	19.60	19.75	19.90	20.05	20.20	20.35	8
9	20.50	20.65	20.80	20.95	21.10	21.25	21.40	21.55	21.70	21.85	9
10	22.00	22.15	22.30	22.45	22.60	22.75	22.90	23.05	23.20	23.35	10
11	23.50	23.65	23.80	23.95	24.10	24.25	24.40	24.55	24.70	24.85	11
12	25.00	25.15	25.30	25.45	25.60	25.75	25.90	26.05	26.20	26.35	12
13	26.50	26.65	26.80	26.95	27.10	27.25	27.40	27.55	27.70	27.85	13
14	28.00	28.15	28.30	28.45	28.60	28.75	28.90	29.05	29.20	29.35	14
15	29.50	29.65	29.80	29.95	30.10	30.25	30.40	30.55	30.70	30.85	15
16	31.00	31.15	31.30	31.45	31.60	31.75	31.90	32.05	32.20	32.35	16
17	32.50	32.65	32.80	32.95	33.10	33.25	33.40	33.55	33.70	33.85	17
18	34.00	34.15	34.30	34.45	34.60	34.75	34.90	35.05	35.20	35.35	18
19	35.50	35.65	35.80	35.95	36.10	36.25	36.40	36.55	36.70	36.85	19
20	37.00	37.15	37.30	37.45	37.60	37.75	37.90	38.05	38.20	38.35	20
21	38.50	38.65	38.80	38.95	39.10	39.25	39.40	39.55	39.70	39.85	21
22	40.00	40.15	40.30	40.45	40.60	40.75	40.90	41.05	41.20	41.35	22
23	41.50	41.65	41.80	41.95	42.10	42.25	42.40	42.55	42.70	42.85	23
24	43.00	43.15	43.30	43.45	43.60	43.75	43.90	44.05	44.20	44.35	24
25	44.50	44.65	44.80	44.95	45.10	45.25	45.40	45.55	45.70	45.85	25
26	46.00	46.15	46.30	46.45	46.60	46.75	46.90	47.05	47.20	47.35	26
27	47.50	47.65	47.80	47.95	48.10	48.25	48.40	48.55	48.70	48.85	27
28	49.00	49.15	49.30	49.45	49.60	49.75	49.90	50.05	50.20	50.35	28
29	50.50	50.65	50.80	50.95	51.10	51.25	51.40	51.55	51.70	51.85	29
30	52.00	52.15	52.30	52.45	52.60	52.75	52.90	53.05	53.20	53.35	30
31	53.50	53.65	53.80	53.95	54.10	54.25	54.40	54.55	54.70	54.85	31
32	55.00	55.15	55.30	55.45	55.60	55.75	55.90	56.05	56.20	56.35	32
33	56.50	56.65	56.80	56.95	57.10	57.25	57.40	57.55	57.70	57.85	33
34	58.00	58.15	58.30	58.45	58.60	58.75	58.90	59.05	59.20	59.35	34
35	59.50	59.65	59.80	59.95	60.10	60.25	60.40	60.55	60.70	60.85	35
36	61.00	61.15	61.30	61.45	61.60	61.75	61.90	62.05	62.20	62.35	36
37	62.50	62.65	62.80	62.95	63.10	63.25	63.40	63.55	63.70	63.85	37
38	64.00	64.15	64.30	64.45	64.60	64.75	64.90	65.05	65.20	65.35	38
39	65.50	65.65	65.80	65.95	66.10	66.25	66.40	66.55	66.70	66.85	39
40	67.00	67.15	67.30	67.45	67.60	67.75	67.90	68.05	68.20	68.35	40

Calculated by F. E. Paradis, C. E.