

29

6101

#29
DIETZGEN
INC.

ENGINEERS
FIELD BOOK
No. 404

EUGENE DIETZGEN CO.

DRAWING MATERIALS, MATHEMATICAL and
SURVEYING INSTRUMENTS

Chicago New York San Francisco New Orleans Pittsburg Toronto

Distances from Center of Roadway for Cross-Sectioning
Roadway 16 feet wide. Side Slopes 1 on 1.
For Single Track Embankment.

H	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	H
0	8.0	8.1	8.2	8.3	8.4	8.5	8.6	8.7	8.8	8.9	0
1	9.0	9.1	9.2	9.3	9.4	9.5	9.6	9.7	9.8	9.9	1
2	10.0	10.1	10.2	10.3	10.4	10.5	10.6	10.7	10.8	10.9	2
3	11.0	11.1	11.2	11.3	11.4	11.5	11.6	11.7	11.8	11.9	3
4	12.0	12.1	12.2	12.3	12.4	12.5	12.6	12.7	12.8	12.9	4
5	13.0	13.1	13.2	13.3	13.4	13.5	13.6	13.7	13.8	13.9	5
6	14.0	14.1	14.2	14.3	14.4	14.5	14.6	14.7	14.8	14.9	6
7	15.0	15.1	15.2	15.3	15.4	15.5	15.6	15.7	15.8	15.9	7
8	16.0	16.1	16.2	16.3	16.4	16.5	16.6	16.7	16.8	16.9	8
9	17.0	17.1	17.2	17.3	17.4	17.5	17.6	17.7	17.8	17.9	9
10	18.0	18.1	18.2	18.3	18.4	18.5	18.6	18.7	18.8	18.9	10
11	19.0	19.1	19.2	19.3	19.4	19.5	19.6	19.7	19.8	19.9	11
12	20.0	20.1	20.2	20.3	20.4	20.5	20.6	20.7	20.8	20.9	12
13	21.0	21.1	21.2	21.3	21.4	21.5	21.6	21.7	21.8	21.9	13
14	22.0	22.1	22.2	22.3	22.4	22.5	22.6	22.7	22.8	22.9	14
15	23.0	23.1	23.2	23.3	23.4	23.5	23.6	23.7	23.8	23.9	15
16	24.0	24.1	24.2	24.3	24.4	24.5	24.6	24.7	24.8	24.9	16
17	25.0	25.1	25.2	25.3	25.4	25.5	25.6	25.7	25.8	25.9	17
18	26.0	26.1	26.2	26.3	26.4	26.5	26.6	26.7	26.8	26.9	18
19	27.0	27.1	27.2	27.3	27.4	27.5	27.6	27.7	27.8	27.9	19
20	28.0	28.1	28.2	28.3	28.4	28.5	28.6	28.7	28.8	28.9	20
21	29.0	29.1	29.2	29.3	29.4	29.5	29.6	29.7	29.8	29.9	21
22	30.0	30.1	30.2	30.3	30.4	30.5	30.6	30.7	30.8	30.9	22
23	31.0	31.1	31.2	31.3	31.4	31.5	31.6	31.7	31.8	31.9	23
24	32.0	32.1	32.2	32.3	32.4	32.5	32.6	32.7	32.8	32.9	24
25	33.0	33.1	33.2	33.3	33.4	33.5	33.6	33.7	33.8	33.9	25
26	34.0	34.1	34.2	34.3	34.4	34.5	34.6	34.7	34.8	34.9	26
27	35.0	35.1	35.2	35.3	35.4	35.5	35.6	35.7	35.8	35.9	27
28	36.0	36.1	36.2	36.3	36.4	36.5	36.6	36.7	36.8	36.9	28
29	37.0	37.1	37.2	37.3	37.4	37.5	37.6	37.7	37.8	37.9	29
30	38.0	38.1	38.2	38.3	38.4	38.5	38.6	38.7	38.8	38.9	30
31	39.0	39.1	39.2	39.3	39.4	39.5	39.6	39.7	39.8	39.9	31
32	40.0	40.1	40.2	40.3	40.4	40.5	40.6	40.7	40.8	40.9	32
33	41.0	41.1	41.2	41.3	41.4	41.5	41.6	41.7	41.8	41.9	33
34	42.0	42.1	42.2	42.3	42.4	42.5	42.6	42.7	42.8	42.9	34
35	43.0	43.1	43.2	43.3	43.4	43.5	43.6	43.7	43.8	43.9	35
36	44.0	44.1	44.2	44.3	44.4	44.5	44.6	44.7	44.8	44.9	36
37	45.0	45.1	45.2	45.3	45.4	45.5	45.6	45.7	45.8	45.9	37
38	46.0	46.1	46.2	46.3	46.4	46.5	46.6	46.7	46.8	46.9	38
39	47.0	47.1	47.2	47.3	47.4	47.5	47.6	47.7	47.8	47.9	39
40	48.0	48.1	48.2	48.3	48.4	48.5	48.6	48.7	48.8	48.9	40

Example—If point is 22.6 ft. above grade, how far should it be from center line to be a slope stake point? Ans. from Table 30.6. For same slopes but other widths of roadbed, correct above figures by one-half difference in width of roadbed; thus in example above, for 20 ft. roadbed distance will be $30.6 + (20 - 16) \div 2$ or 2 ft. added to $30.6 = 32.6$. For slopes of 1 on $1\frac{1}{2}$ see inside of back cover.

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Eugene
Schaub

Logan
J. H.

1019



$$\begin{array}{r} 4 \\ 5 \overline{) 20} \\ \underline{20} \\ 0 \end{array}$$

$$7.0 \overline{) 36} \\ \underline{2} \\ 1.6$$

$$\begin{array}{r} 6 \\ 6 \overline{) 36} \\ \underline{36} \\ 0 \end{array}$$

$$\begin{array}{r} 500 \\ 325 \\ \underline{175} \\ 1629 \\ \underline{1210} \end{array}$$

$$\begin{array}{r} 5.00 \\ 20 \overline{) 100} \\ \underline{20} \\ 1.6$$

$$\begin{array}{r} 325 \\ 12 \\ \underline{650} \\ 325 \\ \underline{390} \end{array}$$

$$\begin{array}{r} 700 \\ 69 \\ \underline{310} \\ 273 \\ \underline{27} \end{array}$$

1019

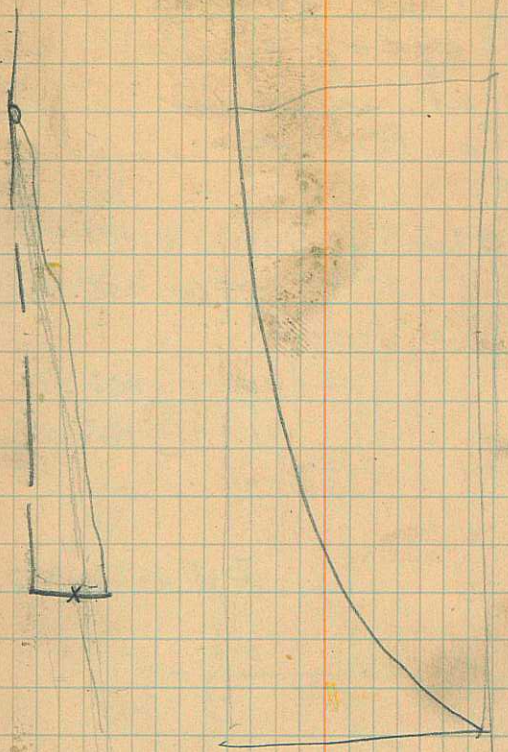
Engage Schaub
Logan Wak

No successful notes
in this book

Checked for index
L.S.S. 8/3/33

2

3



$$\begin{array}{r} 133 \\ \hline 129 \\ \hline 43 \\ \hline 131 \end{array}$$

$$\begin{array}{r} 174 \\ \hline 26 \\ \hline 5 \end{array}$$



4 Eccles Invest. Co
 Wrayton Farm
 5/20/19

Levels at syphon
 across Co. Road

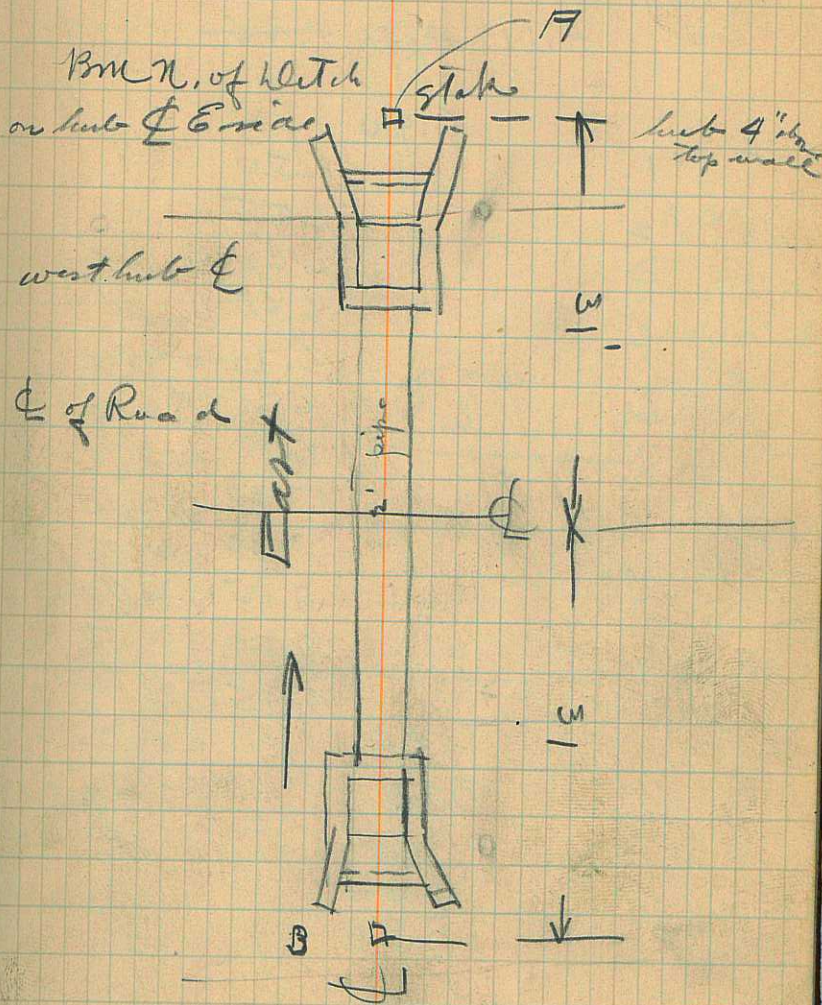
	4.87	101.62	106.49
A		0.86	105.63
			105.30
B		1.49	105.00
		5.0	

106.49	98.5
5	
101.99	
1-9	

$$\begin{array}{r} 101.62 \\ 106.49 \\ \hline 86 \\ 105.63 \end{array}$$

$$\begin{array}{r} 106.49 \\ 1.50 \\ \hline 105 \end{array}$$

56
25



b BS FS

3.65

b 4.11 4.80 ~~4.80~~

1 6.40

6.50

6.55

6.60

6.65

6.70

6.75

6.80

7.00

7.10

7.15

7.20

4.95

3.40

~~3.60~~

3.70

4.60

5.50

Van air supply 7

0
3.65

fuel

x b

3.40

down

~~4.80~~

4.95

5.20

5.00

5.30

5.40

5.40

5.50

5.50

5.70

BS } 6.00

4.40

5.00

4.3

~~4.8~~

4.8

3

5.00

1.850

3.10

1.5

8

1.50

0.10 25

$$\begin{array}{r} 23 \\ 100 \\ \hline 1230 \end{array} \begin{array}{r} 138 \\ 90 \end{array}$$

$$\begin{array}{r} 0.2030 \\ 40007 \end{array}$$

-0.03

$$\begin{array}{r} 100155 \\ 15 \end{array} \begin{array}{r} 1.007 \\ 2 \end{array}$$

0.250

$$\begin{array}{r} 90 \times .7 \times .03 \\ 2 \quad .03 \\ \hline 180 \quad .021 \end{array}$$

$$\begin{array}{r} 2.00 \\ .50 \\ 0.7 \end{array} \begin{array}{r} 1 \\ - \\ \hline \end{array}$$

$$\begin{array}{r} .02567 \\ 46 \end{array}$$

$$\begin{array}{r} 2.16 \\ 2.16 \\ \hline 4.32 \\ 4.65 \end{array} \begin{array}{r} \\ \\ \\ \\ \hline \end{array}$$

$$\begin{array}{r} 23 \\ 226 \\ \hline 138 \\ 69 \\ \hline 1820 \\ 454 \\ \hline 138 \end{array}$$

$$\begin{array}{r} 375 \\ 325 \\ \hline 362 \end{array}$$

3.14

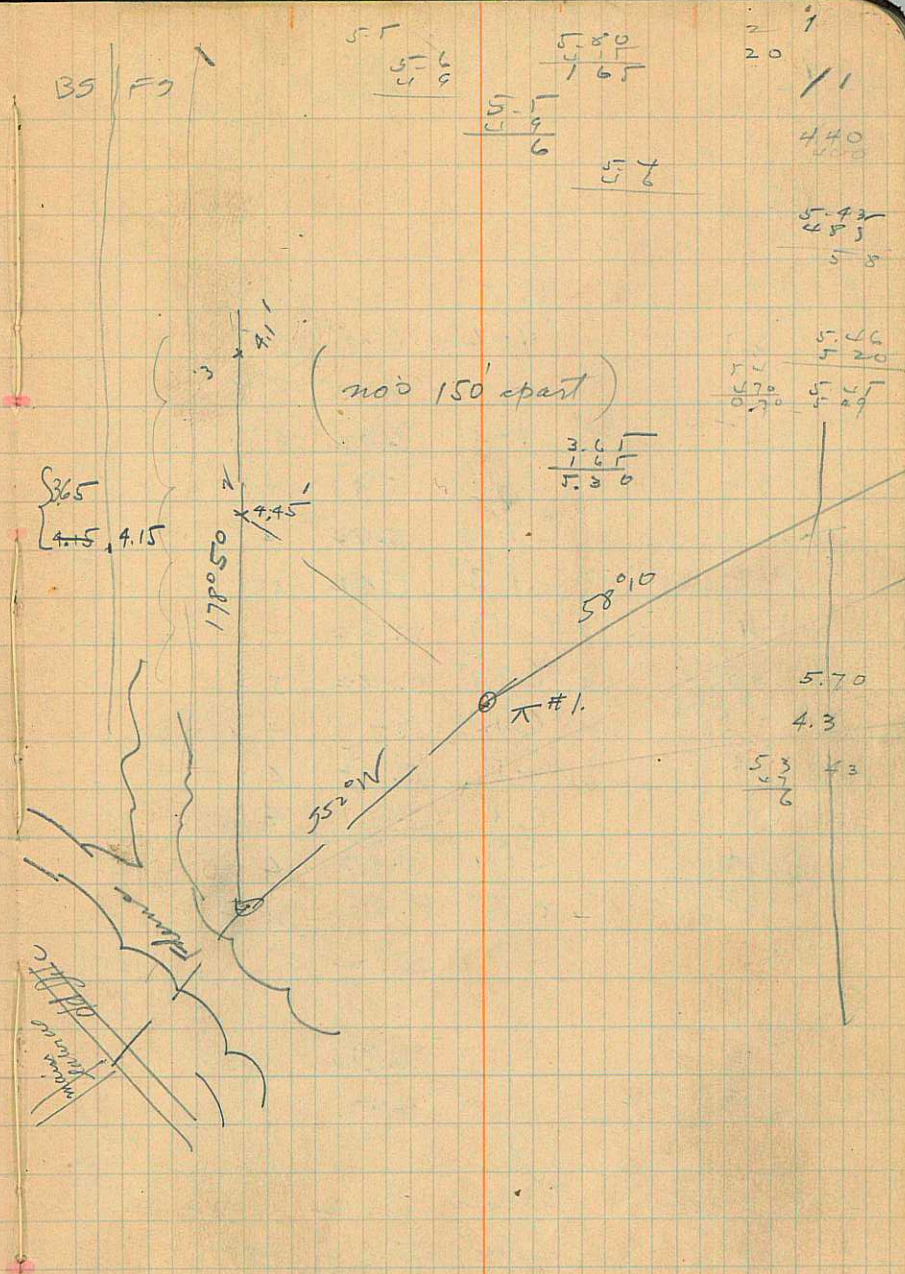
$$\begin{array}{r} 5.00362 \\ 362 \\ \hline 1380 \end{array}$$

Grade H₂O NI
325 on 9



10

		in	R.R. grade	in	U	BS	FS
	23	C9"	5.60	4.9			
	22	C9"	5.56	4.95			
	21	C3"	5.52	5.35			
	20	C8"	5.46	4.9			
	19	C10"	5.42	4.6			
	18	G5"	5.38	5.00			
	17	G	5.34	5.95			
	16		5.30		6.3		
T #	16	238°09'	C1.65	5.80	4.15	9	
	15		C1'3"	5.76	4.50		
	14		C10"	5.72	4.9		
	13	238°09'	C7"	5.68	5.1		
	12		C10"	5.64	4.8		
	11		C9"	5.60	4.9		
	10	238°09'	C1'	5.56	4.5		
Δ9							
T Δ9				5.53	4.7		
	8		F1'	5.51	6.52		
	7		G	5.49	5.45		
	6		C.26	5.46	5.20		
State #	5		C.58	5.43	4.85		
	4	52°		5.40	4.70	8.35	
	3	140°11'			4.1	8.75	
	2	125°45'			4.95	8.	



12

RR
grade

m

U

BS FS

6.2
5.6
5.09.5
48.1
9.01.8
3.6
4.0BS
5.43
5.30
10.73FS
5.80
5.62
11.42

13

17.00
1.00
18.007.30
9.70
5.30
5.00
27.3011.42
10.73
16.9
5.6
8.5000 = 9
0017

C 7" 6.11 5.6

37 1-6" 6.08 4.5

36 1-2 6.05 4.9

35 1-4" 6.02 4.7

34 1-8 5.99 4.3

- 33 C 1'10" 5.94 4.1

32 x C 1'2" 5.92 4.7

31 x C 1'4" 5.87 5.1

30 x C 1'8" 5.82 5.2

29 x C 1'10" 5.77 4.9

28 C 1' 5.75 4.7

27 C 1' 5.57 4.6

26 C 1' 5.42 4.30

25 C 1'10" 5.27 4.4

C- 5.12

9 3.50

6.50 6.50

C- 6.17

* edge
hub fall pin

C 1.62 5.62

6.95

4.00

24 C 1'0" 5.64 4.80

23 5.60

m fall pin

fall pin

m fall pin

6.60

4.00

4.55

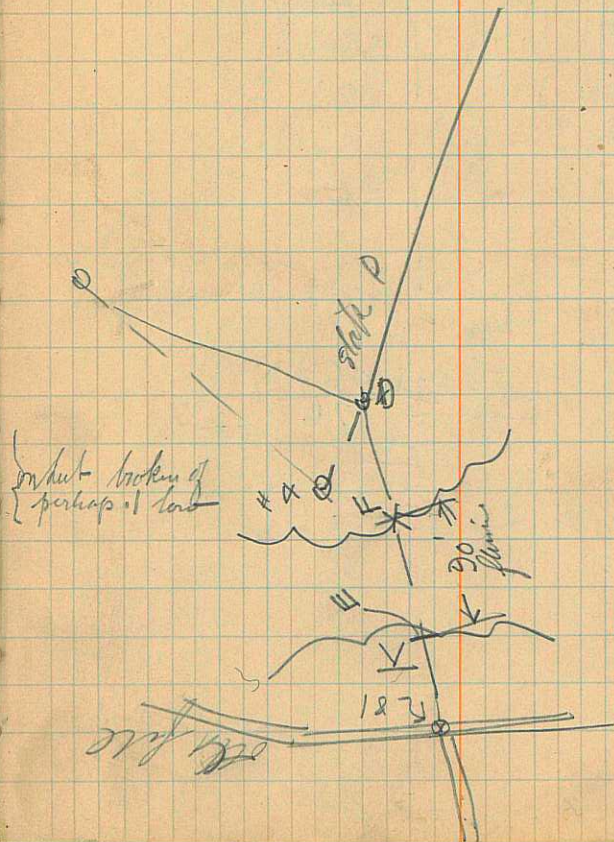
4.55

5.7
8.73.5
5.5
9.04.5
5.5
10.07.00
2.00
16.00

89.25

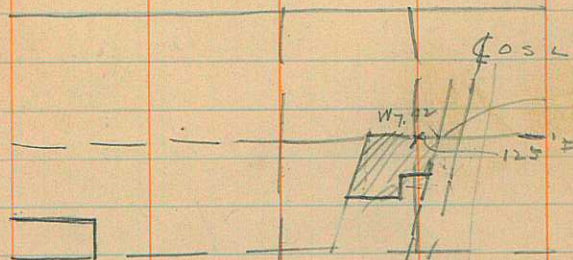
Bm G is about 25 up old death from
81 and is on the bank.

Bm G		2.06	
dq 81		4.02	4.93
E		4.8	
F		4.4	4.84
D	4.1	4.4	5.7
#4	3.66		4.5
E-			



16

Eccles Inwent. to



$$\begin{array}{r} 500 \\ \underline{166} \\ 334 \end{array}$$

Wm Myman 17

Com. at pt. on N line
 of SE^{1/4} of NE^{1/4} sec 14
 15 S 38 E; sd. pt. of
 beg. being 50' W
 of the E of the O.S.L
 R.R. 125' more or less
 E of NW cor. of the sd.
 SE^{1/4} of NE^{1/4} of sd 14
 W 742'; SE 4 para
 R.R. W. 627 ft;
 E 642'; N 294';
 E 100'; N along west
 line of R.R.
 333' to beg. 10

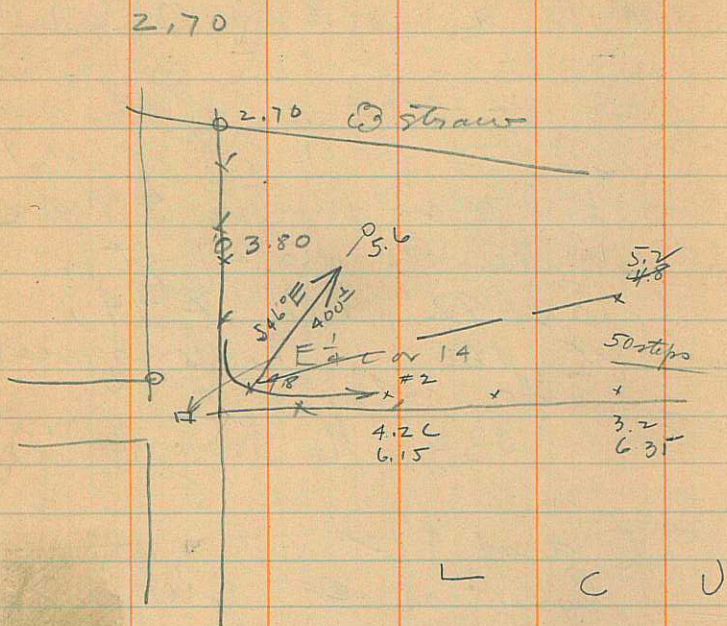
John Aust #12

Com. at SW cor
 of NW^{1/4} sec 14 - 15 - 38
 E 32 rds; N 28 rds
 W 32 rds; S 28 rds
 to beg. 5⁰⁰ ac

18

$$\begin{array}{r} .76 \\ 8 \\ \hline .608 \end{array}$$

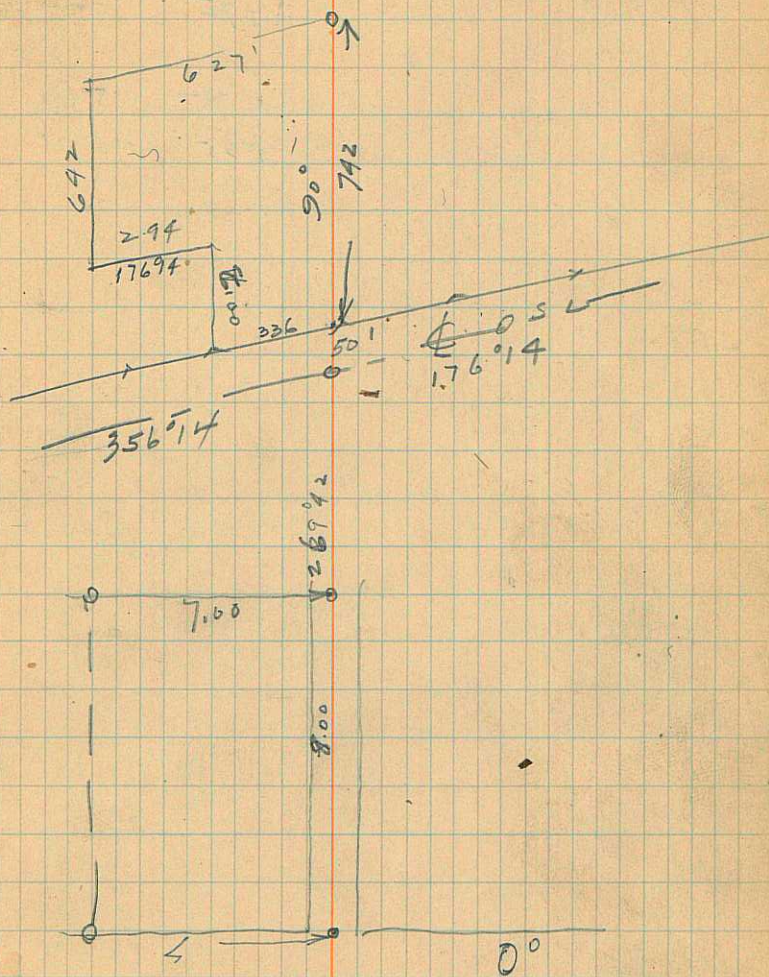
5x6



$$\begin{array}{r} 2.92 \\ 1 \\ \hline 1.92 \end{array}$$

$$\begin{array}{r} 1.25 \\ 74.5 \\ \hline \end{array}$$

19

$$\begin{array}{r} .6 \\ 2.64 \\ \hline \end{array}$$


20

BS

FS

m

hub 10

2.11

Am

$$\left\{ \begin{array}{l} 4.74 \\ \text{near } \pi \\ +75 \end{array} \right.$$

104.25 106.36

101.62

0.75 105.61

1.35 105.01

21

$$\begin{array}{r} 104.25 \\ 2.11 \\ \hline 106.36 \end{array}$$

$$\begin{array}{r} 106.36 \\ 101.62 \\ \hline 4.74 \end{array}$$

$$\begin{array}{r} 106.36 \\ 105.61 \\ \hline \end{array}$$

$$\begin{array}{r} 106.36 \\ 1.1 \\ \hline \end{array}$$

hub east side
" w. side

22 ~~Poche Valley Corn~~
Clyde Jones to Lewis Johnson

Beq. at the Union
lot 2 of Blk 8 - Pl C
Pave from E 12
rds; S 40 rds; W
12 rds N 90 rds to
beg. x

139
28

167

23

24

6/16/19

Survey of Farrell Property

5-

5	270°23'	2640'	to W. side of R.R.
5a	270°23'	1082.50'	

4

4	180°	3934'
---	------	-------

3		1297'
---	--	-------

2		665.2'
---	--	--------

1-

111

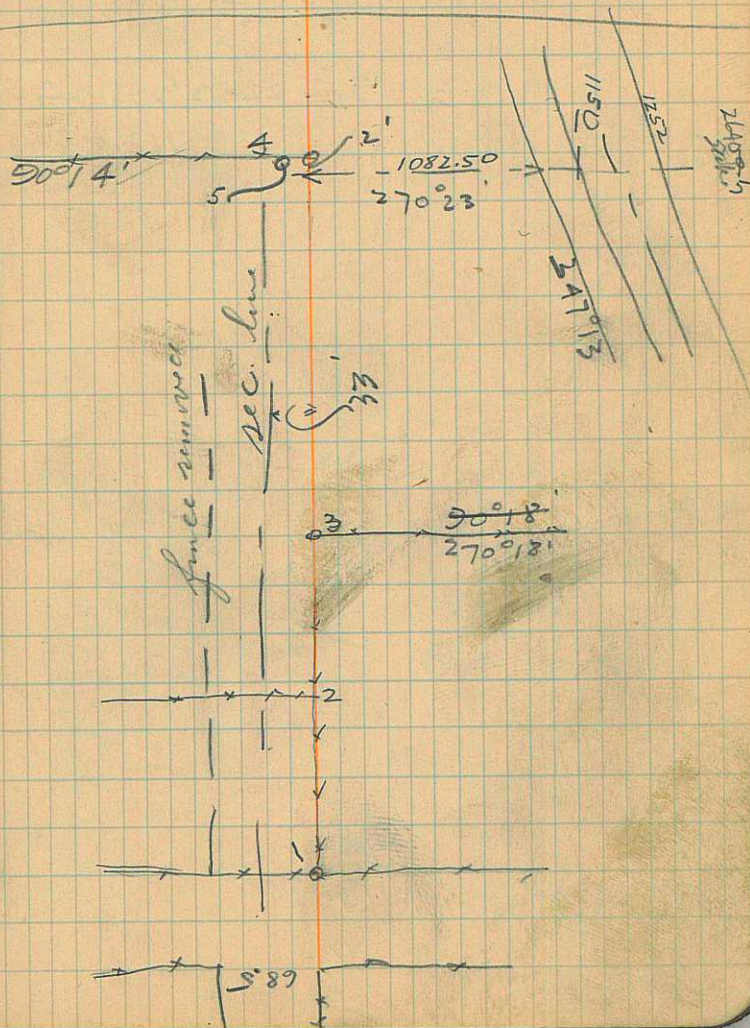
↑ E

25

3267
6662
3933.2
33
3966
2250
1716

75

0



26

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24

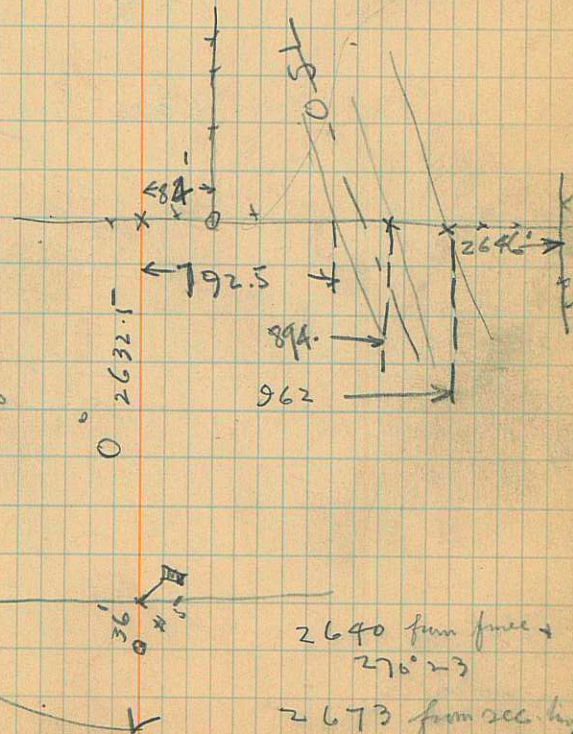
1082

27

$$\begin{array}{r}
 12270 \\
 2670 \\
 \hline
 9080 \\
 1362 \\
 \hline
 10442 \\
 594 \\
 \hline
 10836 \\
 1681 \\
 \hline
 9155 \\
 2643 \\
 \hline
 2640
 \end{array}$$

$$\begin{array}{r}
 962 \\
 594 \\
 \hline
 1556 \\
 928 \\
 \hline
 2484
 \end{array}$$

line of section projected
 and to 3rd station
 10. side of ground



28

Beg at a point in the
south line of sec. 17. T₁₂ N
R1W 33

Levels at Head
Temple Kitch

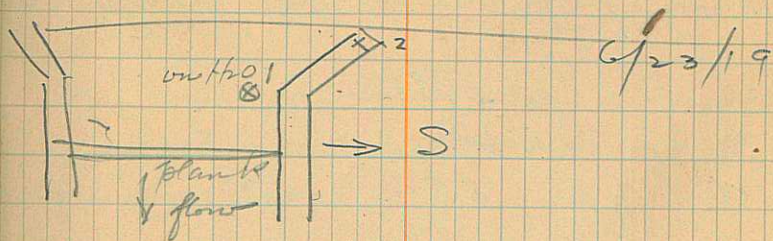
6.18

5.15

6.28

6.30

29



on top and end of wall
on 420 below gate
on 420 5 Ammison S line

30 Benson 6/30/19
annual
Readings for
gages.

7.515

5.81

8

8.840

4.47

6.16

8.82 ⁸ me an
4 + 7
35

88 ✓ 31 8.84
7.51 ✓
1.33 ✓ 4.37

on hook, hook read 1.00

on top $\frac{3}{4}$ " bolt above top wall
west end lower spill
on control

5
on wall above Anderson
intake of gage 4'-4 $\frac{1}{4}$ "
in below

on wall by Benson gage
8.82
6.16
2.66

6/20/19

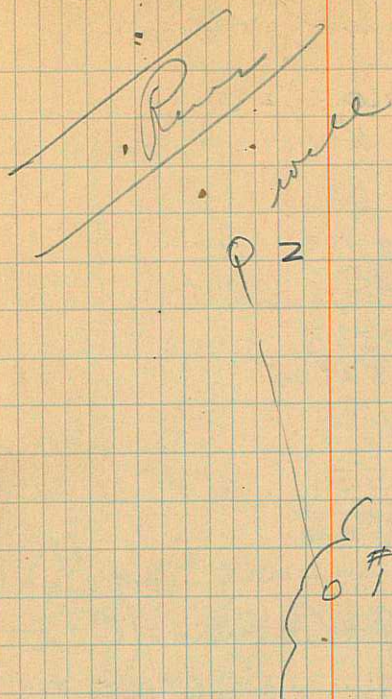
32

River Heights

Pre. survey of H2O
works

	0°	1400 ²	-2°43
3	326°22		
~	156°43	5.0	-16°56 8.70
1-		s	

38



to E+W road thru Berg -
center NE² 3-11 NE 1E

7/6/19
34

Obs for Goldberry

205°20'

az to White Creamery

Spire

44. Az V angle time

Direct 279°52' 45°36' 9:15 true time

Unnot 278°55' 45°23'
278°23'30" 45°29'30"

Direct 278°30' 46°11'

Unnot 279°33' 45°51' 9:20
279°01'30" 46°04'

$$\sin \frac{1}{2} \alpha = \frac{\sqrt{\cos^2(\phi + \delta + z) \sin^2(\phi + z - \delta)}}{\cos \phi \sin z}$$

4134
441410
854810
224550
2 | 1083350

854940
224550
2 | 630230
313115

~~cos 541655 = T.7662766~~

~~sin 630230 = T.9500417~~

~~+147163183~~

~~tan 441410 = T.8436169~~

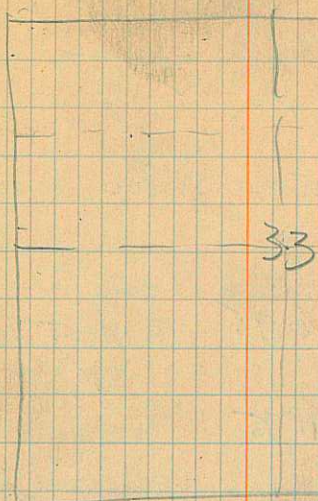
~~T.8727014~~

~~tan cos 41°34' = T.8740085~~

~~2 | T.9886929~~

~~T.9943464~~

33



$\phi = 41^{\circ}34'$

$\delta = 22^{\circ}45'40'' / 22^{\circ}46'39''$

$z = 4414'10''$ corrected

~~804640 1609280
2
1613320
161 3320
180
341 3320~~

True ϕ 279°46'
all ϕ 1°04'

36

40°12' to W¹ cor 33

13

A13 163°58' 5.00 tri base

1-

30°57'
33130 .095 to post a

7-

12 74°30' 1.75

11

11 45°02' 7.28

10

10 32°04' 2.26

9-

9 265°25' 3.18

8

8 275°42' 0.54

7-

7 284°47' 5.065

6 3°10' 0.08

5 356°38'

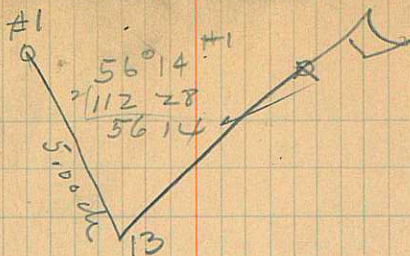
4 183°10' 4.125

3 205°20'

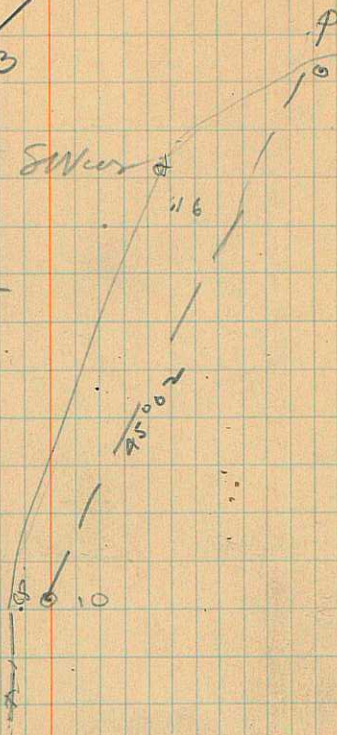
Cor
Apt 4935

1-

37



to black post SW cor
of tract
set 284°47'
black post

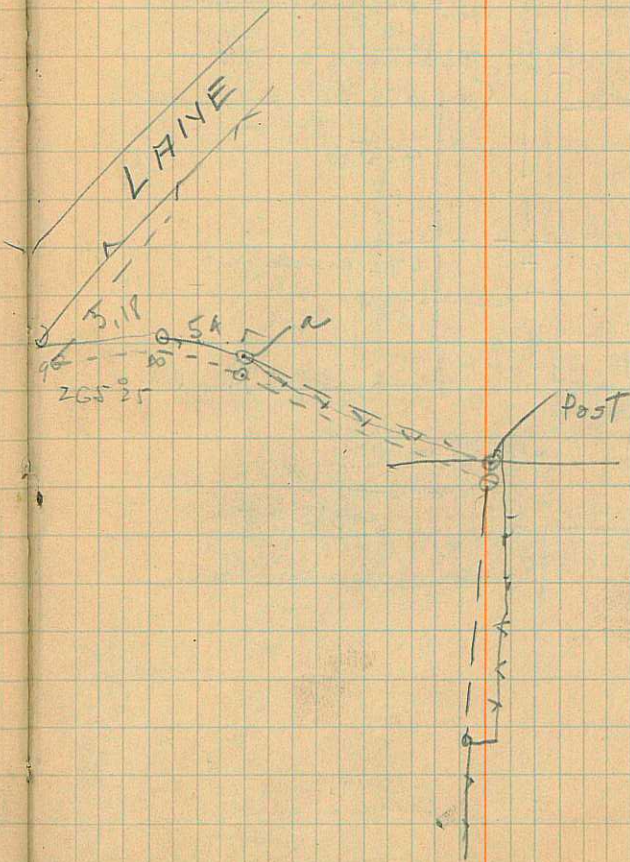


to black post at SW cor of tract
post supposed to be center of new
to Creamer space of White
to W¹ cor 33 to N¹ E SW cor Jim M^c

38

39

66
8
8



48 Water Meas on
Cuba River System 7/9/19

at waste gate about 1 1/2 miles below
diversion

Distance out	Depth	Height of Obser.	Time in Sec	Revo- lutions
0	1.80	.4	59	40
		1.4	42	30
1	1.87	.4	52	40
		1.5	43 1/2	20
2	1.86	.4	47	40
		1.4	48	30
4	1.85	.4	41	40
		1.4	50 1/2	40
6	1.83	.4	40	40
		1.4	48	40
8	1.8	.4	41	40
		1.4	39	30

Gage Reading 2.16 Start 49

" " 2.13 Finish 9:20 AM

Sewerton Canal

30 Water Meas. on Cub River System 7/9/19

Distance Out	Depth	Depth of Obser	Time in Seconds	Revo- lutions
10	1.8	4	4 1/2	40
		1.4	4 2 1/2	30
		1.4	4 1/2	30
12	1.83	4	46	40
		1.4	53	30
		1.4	47	30
14	1.83	4	44	30
		1.4	47	20
16	1.84	4	44	10
		1.4	43	25

48 65
of 0

Swinton Canal

52 Water Meas. on Cub River System
 7/9/19 Lewiston Canal
 at Diversion

Dist. Out	Depth	Pos.	Time in S.	Percol.
0	1.2	.25	49	40
		.90	47	40
1.5	1.21	.25	46	50
		.90	40	40
3	1.2	.25	42	50
		.90	45	60
		.25		
5	1.2	.25	44	60
		.90	46	60
7	1.16	.2	43	70
		.9	44	70
		.72		
9	1.2	.25	42½	60
		.90	42	60
		.72	42	60
11	1.22	.25	42	70
		.90	41	70
		.72	40½	70

X

continued

Start 10:00 am. 1.68

Finish 10:25 am. 1.68

water surface 1.68
 down to front wall
 in lower end of right wall

3½ or 4 cfs leaking
 thru Dam

53

54 Lewiston Canal at Diversion

55

Dist out	Depth	D.of O.	Remains	Revol.
12	1.22	.25	43	60
		.72	43 1/2	60
		.90	43	50
13.2	1.2	.72	44	50
9	1.2	.72	42	60
7	1.16	.72	43	70

46.48 et. 3

S6 Whitney Ditch 7/9/19
 100ft below power comp. intake

Dist. out	Depth	D. of O.	Time in S.	Revol.
0	0.6	0.36	43	10
1	0.75	0.42	53	15
3	0.93	0.60	41	20
		I	43	20
5	0.85	0.50	53	30
		I	51	30
7	0.90	0.54	50½	30
		I	50½	30
8.5	0.85	0.50	42	20
9.9	0.86	0.50	42	20

S7
 Start Gage Reading 0.88 Time 10:55 am
 Finish " " 0.88 " 11:55

58 Preston Ditch 7/9/19
at concrete flume near head of Ditch

Dist. out	Depth	D. of O.	Time in S.	Rev.
0	0.56	0.35	49	20
1	0.56	0.35	60	30
2	0.57	0.35	43	30
4	0.56	0.35	48½	50
6	0.55	0.35	48	50
8	0.55	0.35	53	50
9	0.55	0.35	55	15
2	0.57	0.35	42	30

59

Start Gage Reading 0.5 Time 12:20 pm
Finish " " 0.5 " 12:55 pm

60 at Franklin Ditch
Diversion.

7/9/19

Dist. out.	Depth	Dist. D of D	Time ins.	Per.
0	0.75	0.42	44	15
1	0.80	0.50	48	20
2	0.90	0.54	45½	20
3	0.88	0.5	45	15
4	0.80	0.5	40	5
4.4	0.50		45	5

Gage Reading on mail in right
side under headgate 61

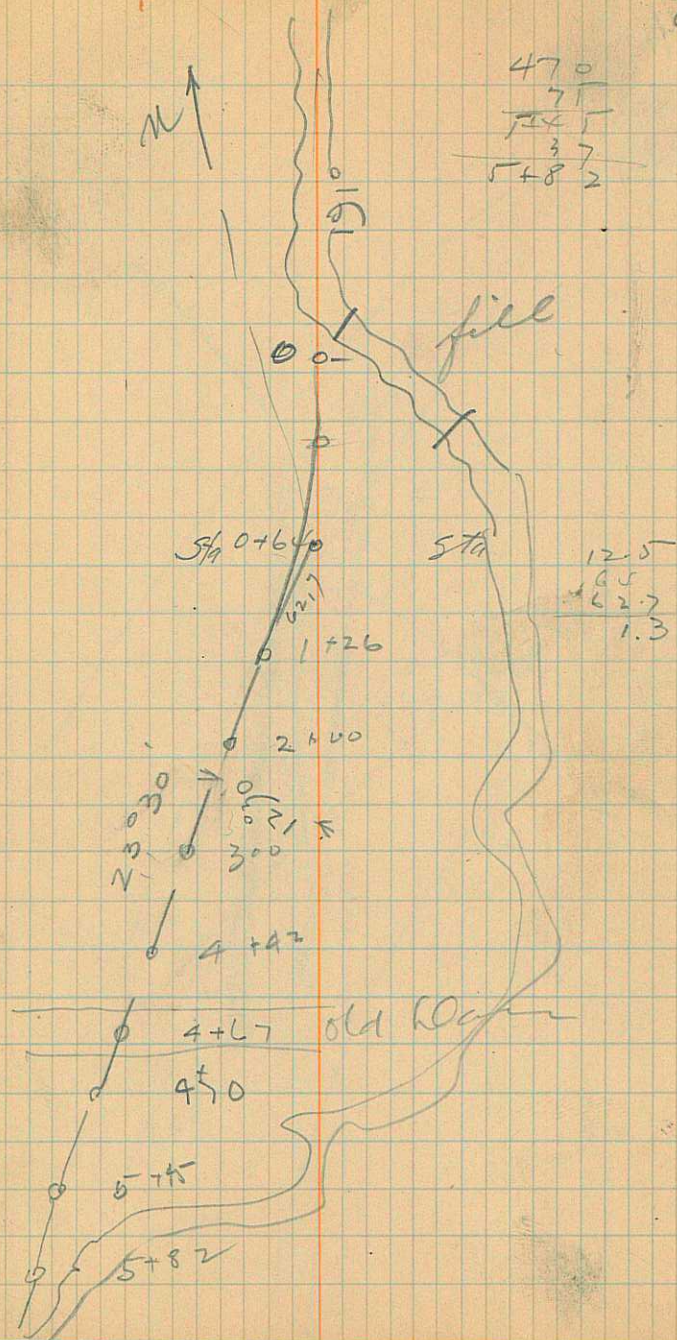
Start 1:55 pm

Finish 2:05 pm.

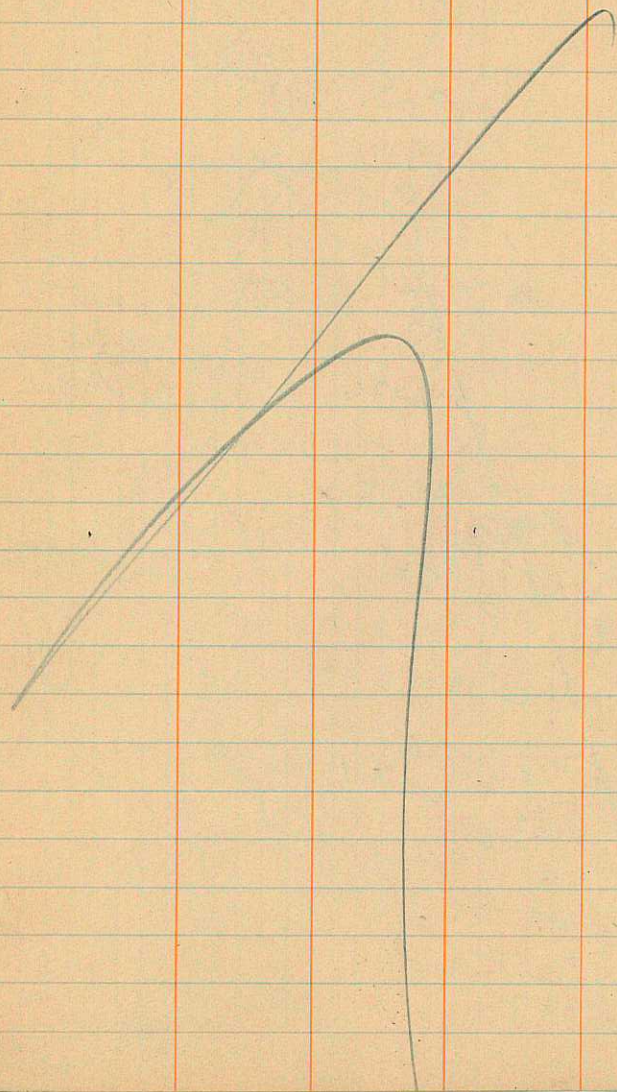
.2 S.F. leaking through Dam

S. T. Benson 229 F13
James Ramsbottom
E. W. Swann 3115

62 Side Cut
 near Arunage
 System for Baroda
 H.O. work
 7/9/19



64

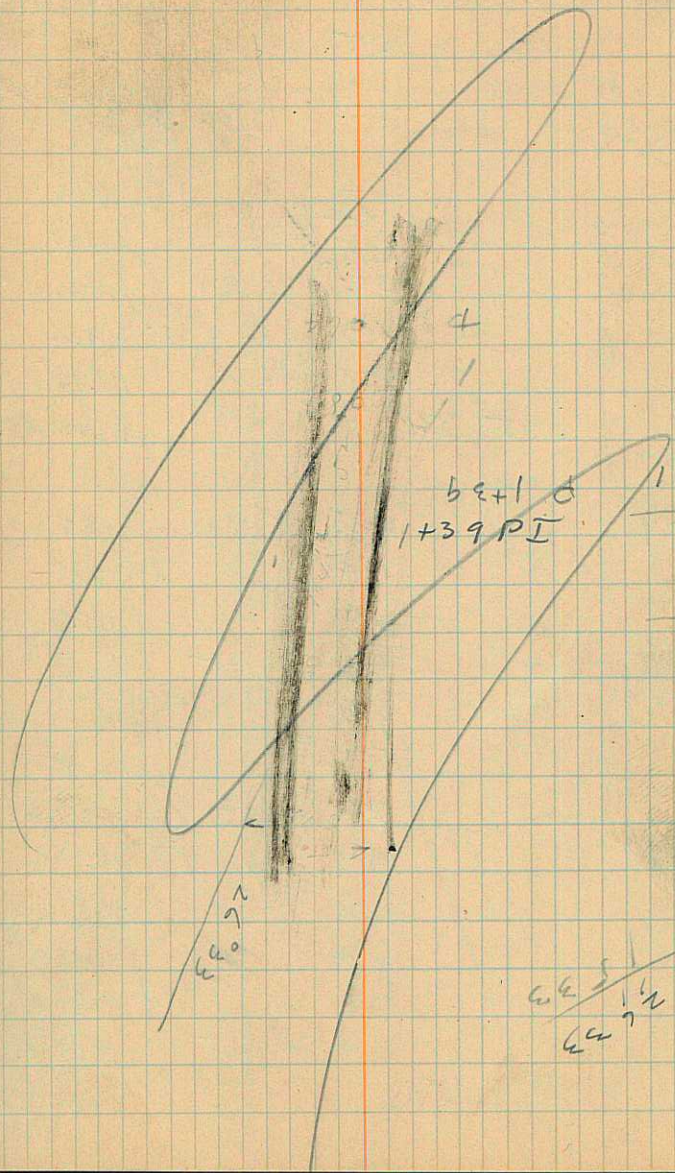


$\frac{780}{30} = 26$

53

$\frac{1550}{0.55} = 2818$

$\frac{64}{21} = 3$
 139



$\frac{68+10}{1+39} = \frac{78}{40} = 1.95$

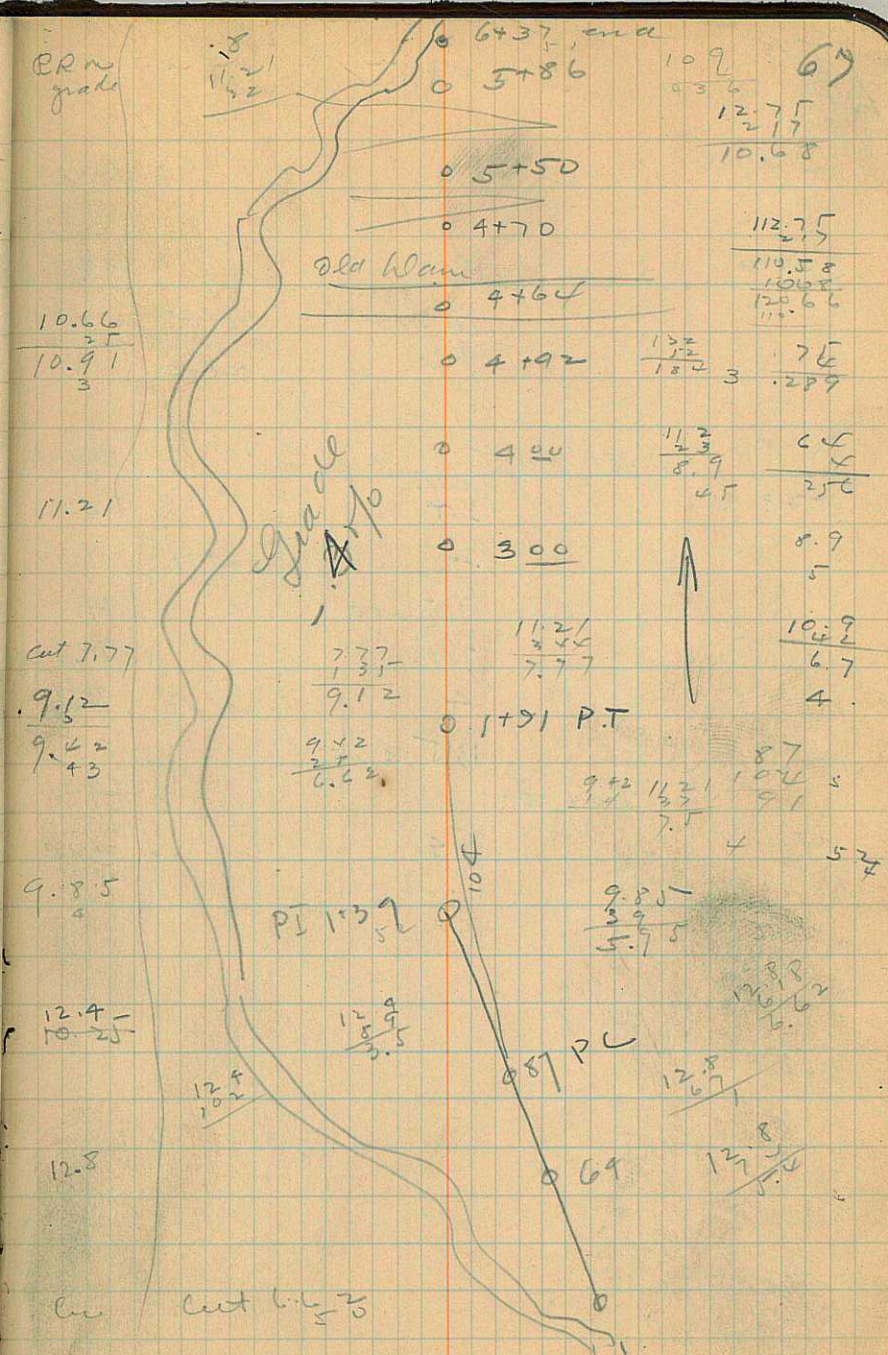
$\frac{139}{12} = 11.58$
 87

$\frac{104}{37} = 2.81$
 191

$\frac{68+10}{1+39}$

$\frac{68+10}{1+39}$

Sta	BS	F5UM	L	cut	Ran	Ele	HI
665							
at bed creek	12.75					100	112.75
on top peg	0	10.08	247			110.58	120.66
Prm#1		0.75					
0							
0+64				3. RR	7.91	116.66	117.06
			2	8' 11"		116.66	
			4.2	6'-9" cut		116.46	
1+39			3.2	center	8.0	117.46	118.36
			2.3			118.36	
			3.7	7'-6" cut		116.96	
1+37	1.35	3.44				117.22	118.57
1+39							
1+91			2.00		7.42	116.57	
			1.4	6'-8" cut		117.17	
			2.8	7'		115.77	
300			4.3		5.5	114.27	
			3.9	5'-11" cut		114.67	
			5.1	4'-8" cut		113.47	
4			9.4	3'		109.17	
			8.9	3'-6" cut		109.67	
			10.2	2'-3" cut		108.37	
4+70			6.70	6'		111.87	
			6.5	6'-4" cut		112.07	
			7.4	5'-5" cut		111.17	
top 4+70	0.50	6.18				112.39	112.87



68 ^{Sto}

BS FS WM $\frac{1}{2}$ C out R Cwt Ele H I R Rm grade

662 69

4+70

112.89 7.12

9.80

5+50

9.80

103.09

~~12.0~~ 9' out

~~100.89~~ 100.89
103.09, 103.09
out 12

13.80

7.12

5.68

9.80

5+86

2.870 3.4

99.64

102.51

5+86

centr
3.4

99.11

102.51

"

2

out 7

102.31

6+57

7.8 out 10

94.71

"

centr
7.9

94.61

"

4

out 10

98.51

6+67

3.00 ~~13.1~~

13.5 4' out

89

89.41

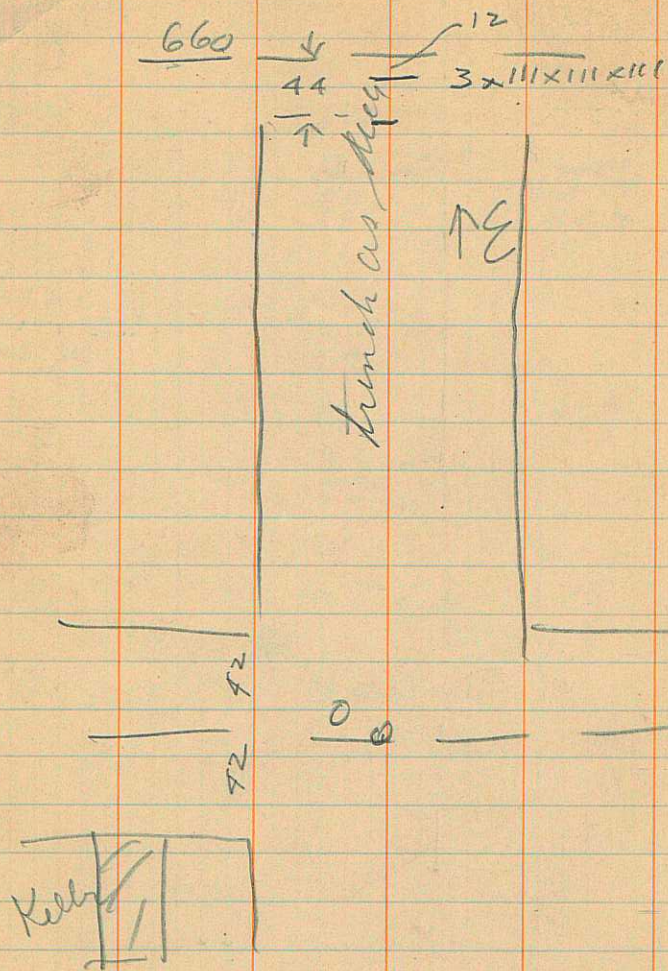
92.41

9.4

83.00

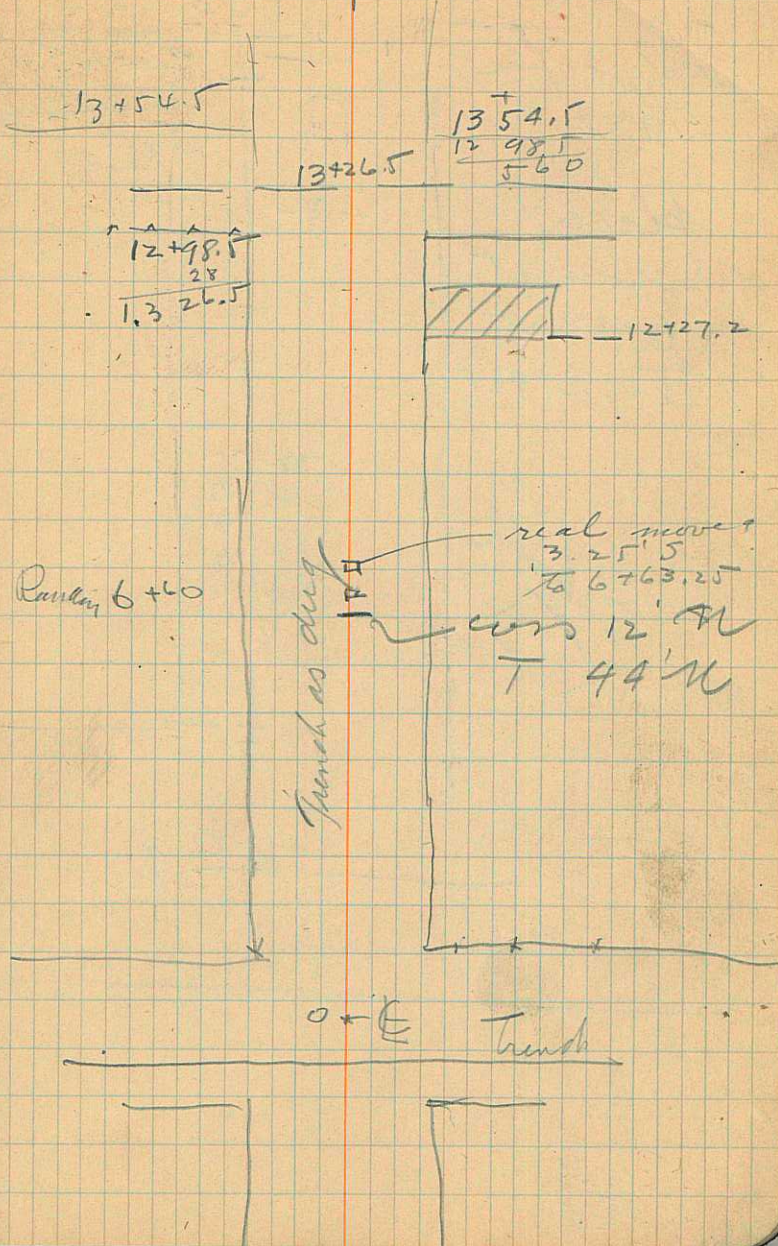
in Creek bed

70



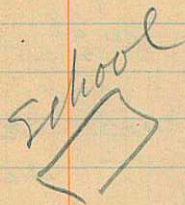
NS

71



$6 + 63.2$
 663.25 *fun*
 $12 \times 4 = 48$
 $663.25 - 48 = 615.25$
 $615.25 - 26 = 589.25$

place
 cross at
 $6 + 51.25$
 Tue 619.25



44

bench
 $663'$

$\times 0$

663.25
 cross 3 $\times 11111$
 $\times 111$
 Tue

Pre-Survey for Run Heights

Station	Angle	Dist	Height
14	19°20'	3.2	-2.11
11	90°31'	3.1	5.4
10	90°35'	1.1	+0.04
9-	29°46'	3.1	-2.19
	139°33'		3.10
1-	50°57'	3	-2.8
8-	53°27'	4.7	-1.25
	257°07'	4.7	-1.25
NE cur	56°42'	2	+4.07
see 3-11		4	7.8

110°04' to E Temple spine

4	129°30'	4	-17.35	8.62
---	---------	---	--------	------

3-

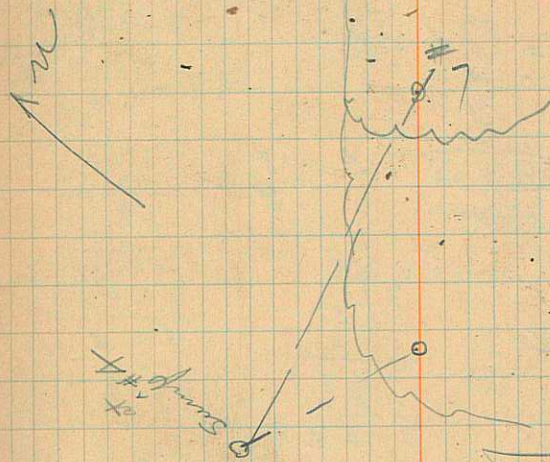
2	110°33'	4	-23.45	7.00
-	139°55'			

1-

1

to Benja Wood Home

20	300
800	150
360	75
	2
3240	150



288	4.62
5768	
17304	
10536	
183.2	408

388
116.4

133.2 HI 4.75

not slope
from on hill
Benja Wood Home
to LHPSE + 201
to CR + 35

116.4

East Temple spine



76

8000 x

$$\begin{array}{r} 16 \\ 7 \\ \hline 112 \\ 09 \\ \hline 10.08 \end{array}$$

$$\begin{array}{r} \text{HP} = 2 \text{ to } .18 \\ \hline .18 \times 100 \end{array}$$

$$\begin{array}{r} .10 \\ \hline .18 \times 100 \end{array} \quad \begin{array}{r} .10 \\ .18 \\ \hline .28 \end{array}$$

$$\begin{array}{r} 4.05 \\ \hline 13.50 \\ 31 \\ \hline 10.2 \\ 2 \\ \hline 2080 \\ 4.05 \\ \hline 8320 \\ 8320 \\ \hline 89032 \\ 68 \\ \hline 154 \end{array}$$

River Heights 7/14/69
Levels

Lower bog to River

6.05

6.80

77

8000
4.800
$$\begin{array}{r} 1200 \times 100 \\ 1000 \times 100 \\ 1000 \times 100 \\ \hline 3200 \times 100 \end{array}$$

5000 x

$$\begin{array}{r} 308 \\ 716 \\ \hline 1858 \\ 308 \\ \hline 2156 \\ \hline 220528 \end{array}$$

$$\begin{array}{r} 13.5 \\ \hline 8.2 \end{array}$$

$$\begin{array}{r} 17.6 \\ 247 \\ \hline 1232 \\ 704 \\ \hline 352 \\ \hline 43.472 \end{array}$$

$$\begin{array}{r} 3.53 \\ 8 \\ \hline 2.816 \end{array}$$

$$\begin{array}{r} 7.3 \\ .62 \\ \hline 1.46 \\ 386 \\ \hline 1.52 \end{array}$$

$$\begin{array}{r} 12.5 \\ 7.2 \\ \hline 13.2 \\ 0.8 \\ \hline 1.056 \end{array}$$

$$\begin{array}{r} 22 \\ 4.3 \\ 3 \\ \hline 6.8 \end{array}$$

89 level

$$\begin{array}{r} 268 \\ 154 \\ \hline 113 \\ 52 \\ \hline 27 \end{array}$$

.08

on bog.
on River H₂O

78 Levels from
#4 and down the River

B S F S M

#4 8.60

+ 10.25

8.80

5.45

BMP by foot

2.06 7.96

1.75 6.58

2.30 7.25

#13

3.65 11.60

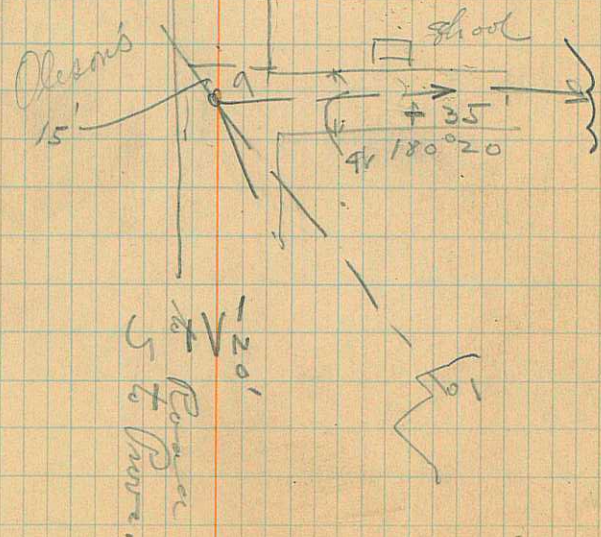
10-66 14.54

79

on H₂O in test hole

on River bed

River bottom

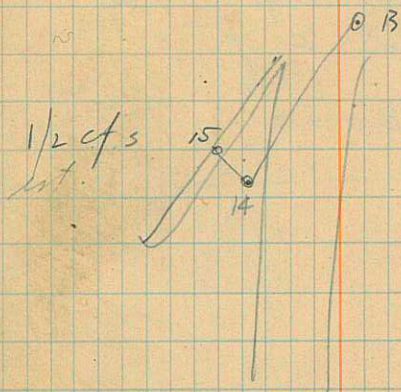


80

	BS	FS	C	U	L
13		561°W	8.50	7.50 [±]	7.32
14 -					
15		53°30'E	7.00	6.75	6.75
16	3.65	N41°20'E		4.75	
17	6.9	53°30'W			5.1
17	6.67	N39°W			6.45
18 -					
19	5.81	511°E		6.15	
20		522°E	intermediate	1.95	2.07

in
Pmm cotton
wool

A1
Green
Gray
white



12 Paradise Drive + Res Co

12
30
36.0
25
18.0
72
800

25
30
375.0
250
40
1000 10000

Esti. 200 $\frac{10}{30}$ 6
Second below 12
Mineral part

Cliff 100' dam
500' on top
cap. 700 ac ft
cost \$100000

7/21/19

18
600
10800
97200
90000

AS

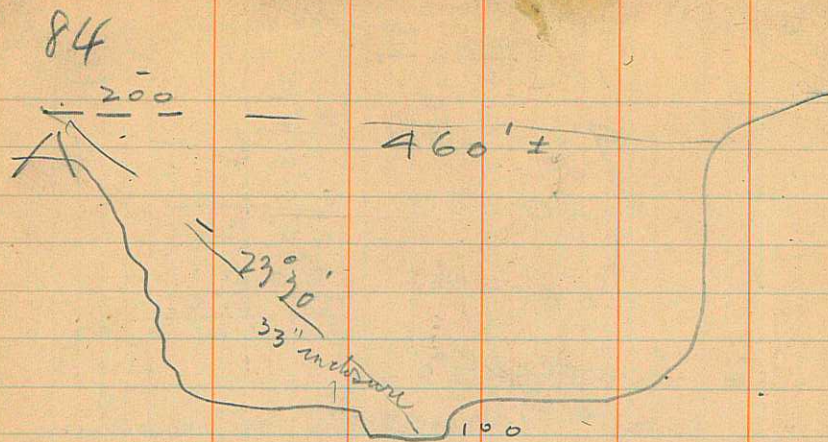
200
50
10000

600 ac ft.
cost \$100000.
100' dam.

12
400
50000
270000
10000

30000
18000
7000

400
20500
100000
150000



2400 ac ft

Cost 150,000

Below Portkipini

83

2.75

55 — 12
43 — 460
70
72

36.6

275

1830

2562

732

10 0.650

fs

40

80

30

2400

800

150

460

69000

69000

27600

10000 years conv.

150000

800

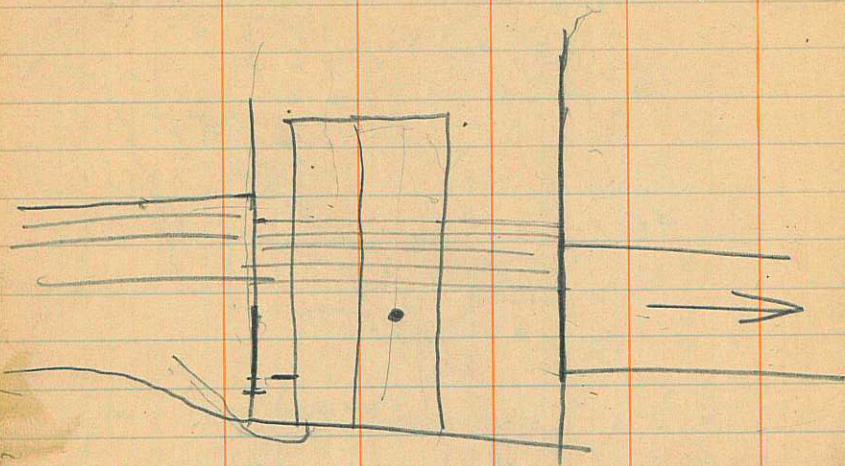
40000

120

300

36000

86



87

8/11/19
88

Survey for
J. C. Larson

set on # 33 of Henricks
Stadia

52 296°35' 0.333
57 261°40' 1.38 L C U

50 -

50 296°35' 14.164

49 276°22'

48 116°35'

3'

5'

47 237°54' .80 slope -16°20'

46 -

46 183°57' 0.95

LRG 45 71°15'

2

5.3

LRG 44 85°50'

3

5.5

L River bank = LRB

43 121°40'

3

5.4

42 0.32

40 78°56'

41

41 183°57' 5.00

40 100°58'

39 -

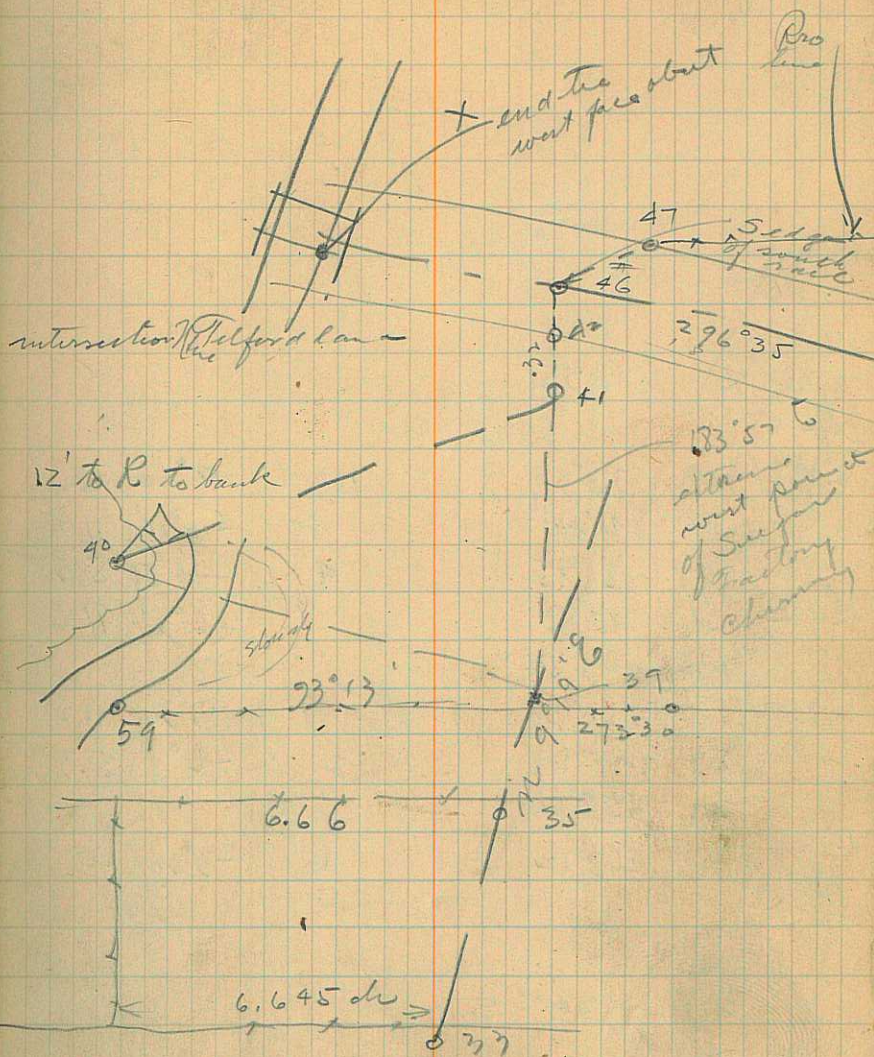
39 189°19' 1.70

35 -

33 -

1042

89



set on old ay 189°19'

90

$$\begin{array}{r} 10.42 \\ \underline{66} \\ 382 \\ \underline{264} \\ 1181 \end{array}$$

$$\begin{array}{r} 942 \\ \underline{66} \\ 288 \\ \underline{20} \\ 1308 \\ \underline{130} \\ 480 \end{array}$$

X 16331

39-

LRb 59	310°38'	11.24	-9°20'	13.0
LRb 57	294°49'	10	-10°20'	11.70
LRb 57	239°35'	4	-16°50'	5.35
LRb 56	185°53'	9	-6°30'	11.6
X	245°50' ✓			
LRb 55	220°30'	9	-7°30'	11.25
LRb 54	248°22'	2	-6°	5.3
41	258°56'			
LRb 53	263°12'	6	-3°30'	10

40

49 17747 5.10

52- X

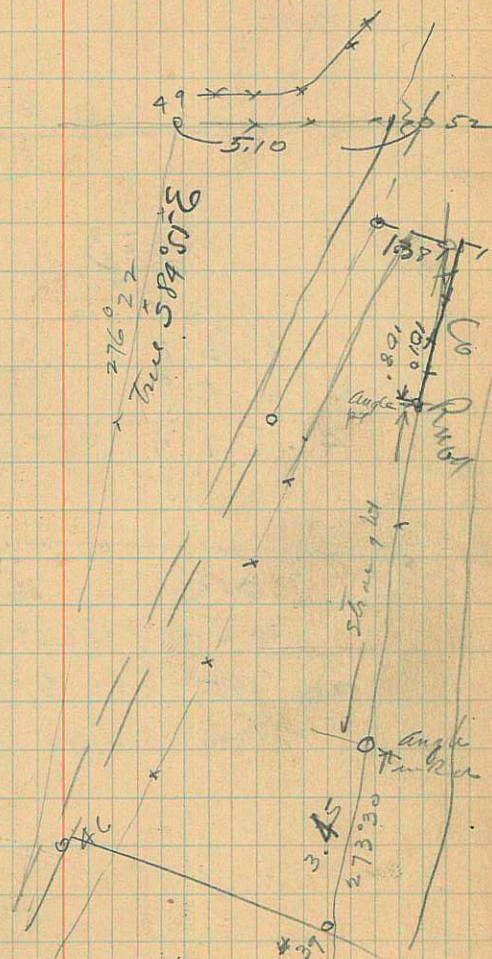
52 29635

50-

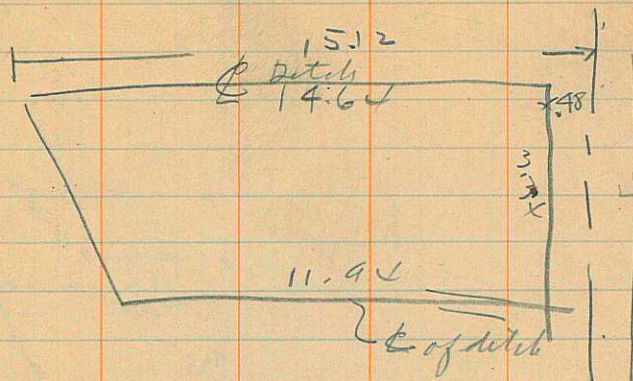
36

3

91



92



$$\begin{array}{r} 11.64 \\ 48 \\ \hline 11.12 \end{array}$$

$$\begin{array}{r} 11.64 \\ 48 \\ \hline 11.94 \\ 15.12 \\ \hline 27.06 \\ 13.53 \end{array}$$

$$\begin{array}{r} 13.53 \\ 3.33 \\ \hline 4059 \\ 4059 \\ \hline 4.51902 \end{array}$$

$$\begin{array}{r} 219 \quad 6 \quad 50 \\ \hline 1890 \quad 17-Qu15 \quad 50 \\ 20 \quad 15 \quad 1 \quad 6 \\ 100 \quad 12000 \end{array}$$

93

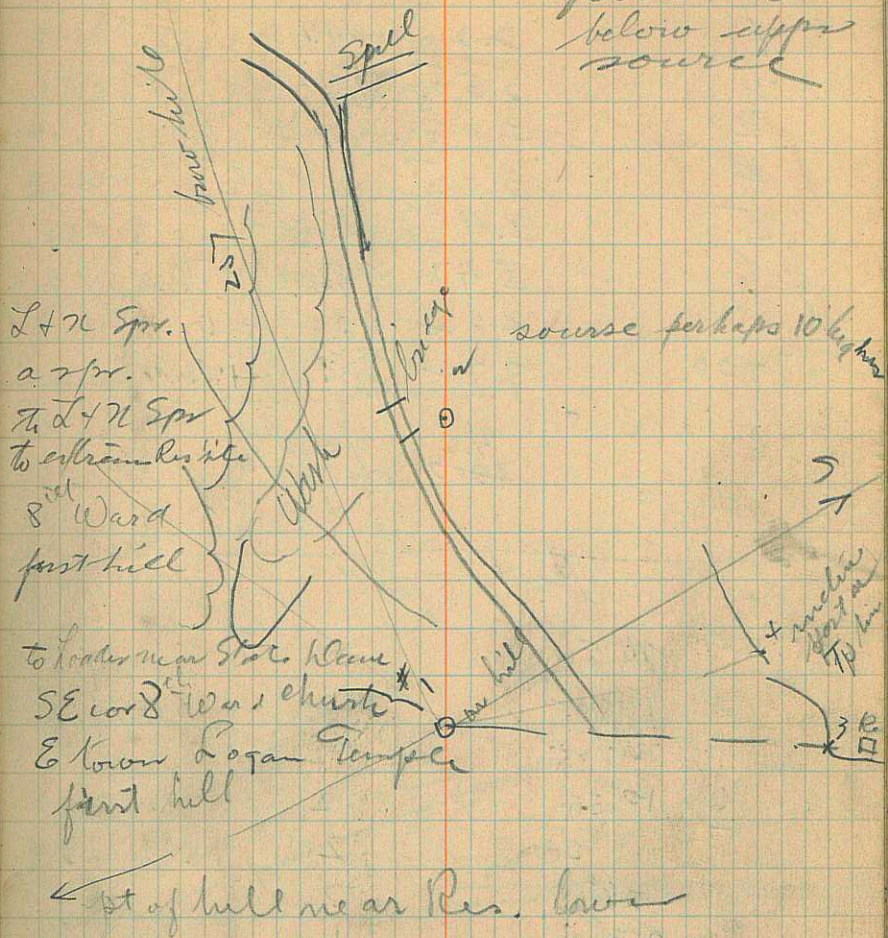
94 River Heights
 Water System, Study from
 L+70 Spr. 8/29/19

	114°30'	3	+10°	4.95
	136°30'	4	+16°08'	6.00
	113°30'			
	35°20' ± 200'			
	35°0'			
	21°35'		+42'	
2 -				
	26745			
	21°29'		-6' ± 200'	
	6720			
5	1490		-1°28'	
4	21°50'			
3	2825		-1°28'	
2	27845	0.5	-16°05'	5.83

1 -

95

first hill
 about 10
 below upper
 source



966	h/ran	Ele	#I	C
0	3.10	100	103.40	4
1	3.20	99.90	-	
2	3.55	99.55	-	
3	3.00	100.10	-	
4	3.05	100.05	-	
5	3.40	99.70	-	
6	3.47	99.63	-	
7	4.62	98.48	-	
7+30	7.72	95.38	-	
	9.6	93.50	-	
	10.3	93.50	-	

Beet Land

9	96°50	2	7.72
8	139°35	2	7.38
7	185°15	2	8.6
6	198°50	2	8.8
5	208°30	2	9.3
4	236°06	2	8.35
3	254°06	1	6.46
2	339°27	3	7.58
	341°42		

Grade 206	Grade 240f	C	RR
9600 7.10	7.10	3	7.10
4'-1/4" 7.306	7.34	4	7.34
3'-11/2" 7.516	7.58	4	7.58
4.71 7.718	7.82	4	7.82
4'-10 7.928	8.06	5	8.06
473 8.130	8.30	4	8.30
487 8.338	8.52	5	8.52
3'-11" 8.54	8.78	4	8.78
8.58	8.85	1	8.85

16 1/2 ac
G Eschler

11/25/19

to run stake Pandors house

2	5	2	28
18	0		28
43	6	0	
	7	2	28

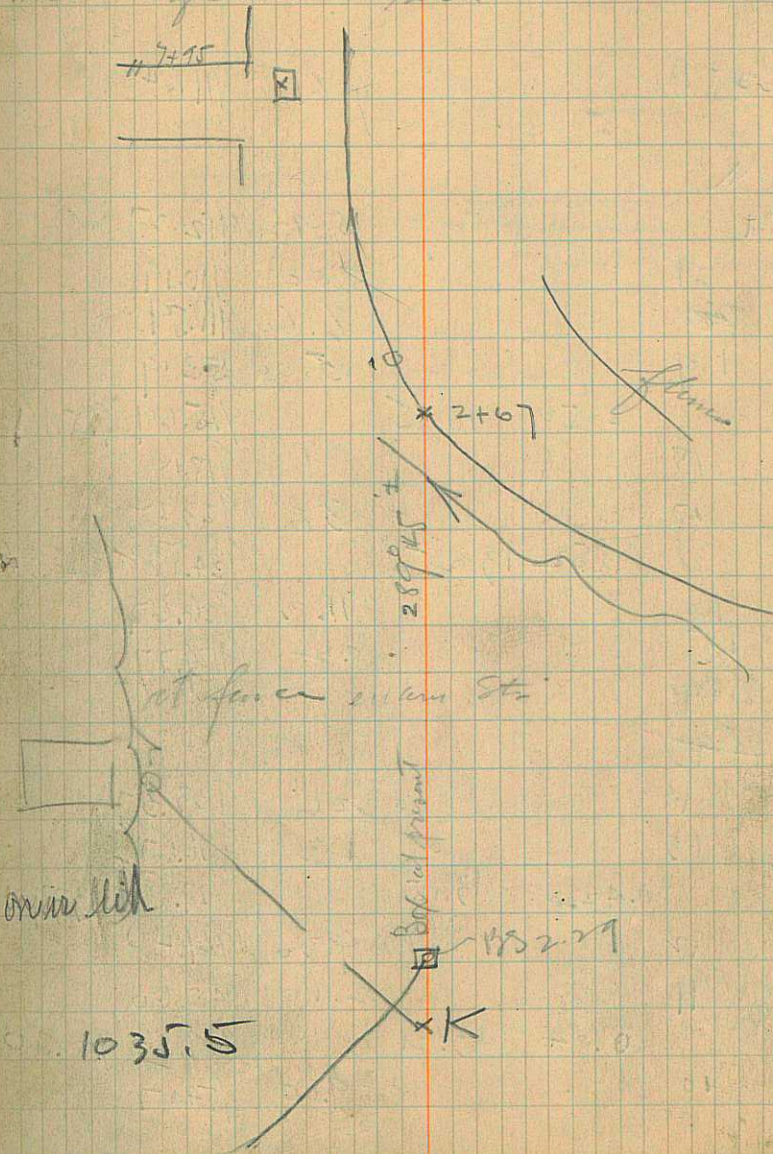
98

	Bs	Fs	mi	Elev	HI
7	0.21	13.44	3.00	960.07 962.86 967.20	963.07
7			3.00	973.30	
7+95	0.77	13.34		975.53	976.30
6			9.7	979.17	
5	0.41	5.66		988.46	988.87
4			4.00	990.12	
3			13.5	980.62	
2+67			12.7	981.37	
2	6.08	12.21	8.50	985.67	
Sta 1			9.80	988.04	990.12
Sta 0	2.29			990.50	1000.29
	2-243.88		4.5	+BIS	622

1-

Providence No work 99
out of Henry Hollow
2-17-23

middle segment no.



100 Sta Bs F S in

7+98

6.65 911.54

km

5.92 912.27

21

8.00 910.19

20

6.60 911.59

19

5.00 913.19

2.50 10.55

915.69 918.19

18

8.1 918.14

17

3.0 923.24

1.52 13.25

924.72 926.24

16

11.3 926.67

15

8.2 929.77

14+99

~~14+95~~

14

4.6 933.37

13

1.3 936.67

0.42 13.15

937.55 937.97

12

9.30 941.40

11

2.10 948.60

0.84 13.21

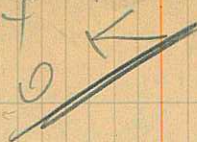
949.86 950.70

10

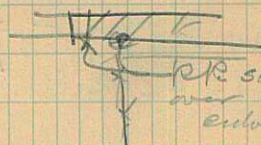
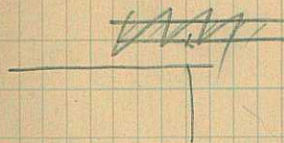
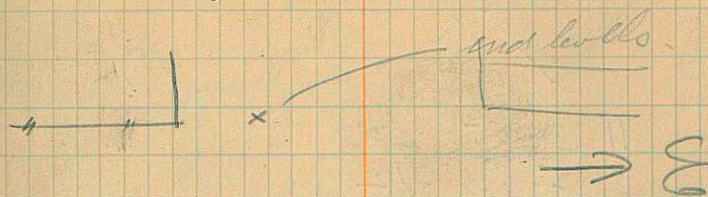
9.00 954.07

86.56

15.04



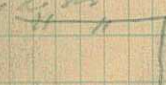
101



note this HI = high pt. 11k N
note

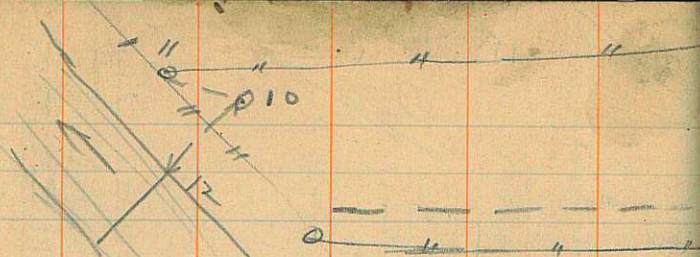


5.92



x 5.14

102



11	3°05'	48
7	229°30'	312
12	334°20'	68

10-

10	348°23'	587
9	224°2'	21.9

8-

8	78°02'	334.0'
7	356°20'	443.
4	356°20'	31.5 to
6	298°55'	51.6
5	93°11'	113½'

fence bears SW

4-

4	78°02'	✓ 576
3	49°17'	109.7
2	76°22'	73.7
	180°02'	

sec mean 576

1-

1	1°11'	1040'
---	-------	-------

17622

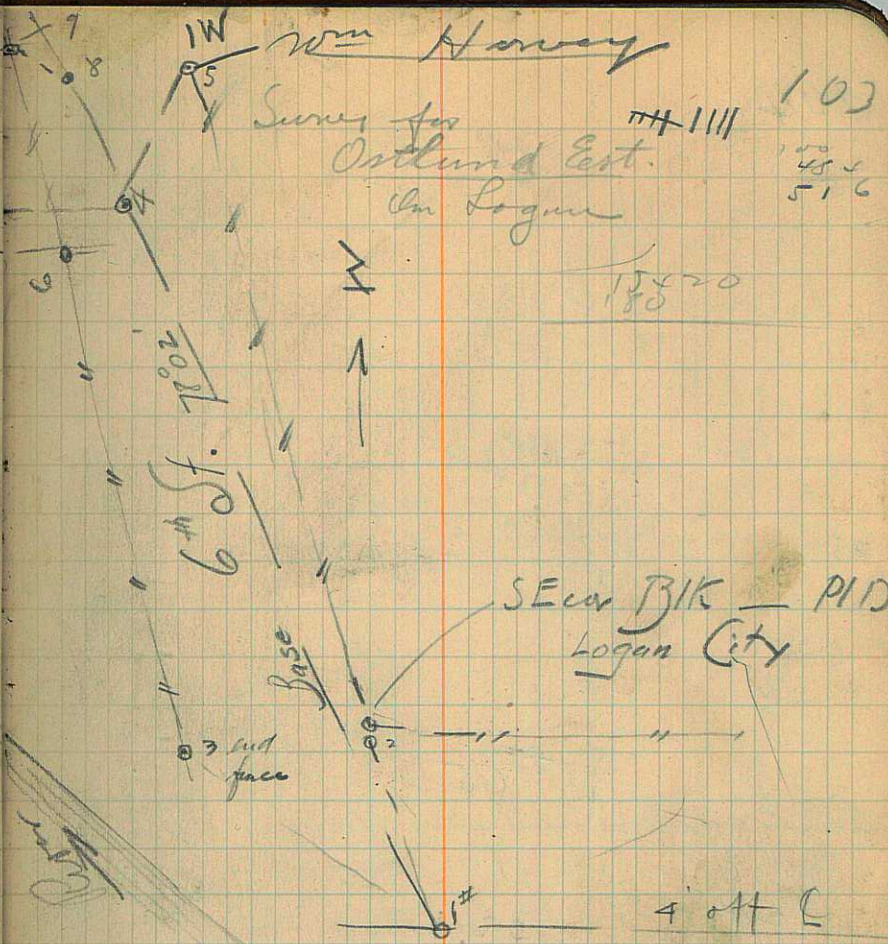


103

Wm Norway

Survey for
Ostlund Est.

On Logan

48
51615420
180SE corner BIK - PID
Logan City

Base

3rd
face

4th E

To Flag Staff on Bank E one in all in line

to spin Thatcher H2O tank
4 S City Man. BS to Man m35

