B-1930 19

DIETZGEN

ENGINEERS'
FIELD BOOK
No. 404

19

...slope stake point? Ans. from Table 30.6. For same slopes but other widths ...adbed, correct above figures by one-half difference in width of roadbed; thus in ...e above, for 20 ft. roadbed distance will be 30.6+(20—16)÷2 or 2 ft. added to ...2.6. For slopes of 1 on 1½ see inside of back cover.

Eugene Schaub
Logan Utah
Feb - 1930

3 — 1930

Checked & Indexed by E. S. Schaub June 25, 1932

2-19-30 ✓ Fairview Village

Study of Water physical

Char.

	Vol.	Q cfs	Q gal per min	TEMP	Gag
2.38P	1 qt.	0.26	117	69½°	.18
3:42	✓	0.326	150±	69½??	.21
3:55		0.280	136		.19
4:13			136		0.19
4:18P		0.32	144		0.208
4:35		.41	184½	70°	0.255
5:16		.446	200.7		0.26
5:23					0.262
5:30			212±		0.270

(120 ft air line)

[illegible] .8' below top [illegible]

[illegible] down

(1' orifice)

$\frac{46'}{}$ = (60 − 14) = $\frac{.26}{.43}$ (−14)

air pres. = 26#

same gate opening ✓ 1015 RPM

25# air pres 1015 RPM

~~24#~~ 20# (drop 60') [illegible] to 1100

figure 210 (8-2) [illegible]

water flow increasing same speed

21½# P.

$\frac{1}{17}$ = .43 [illegible]

260 / 258 , 43 / 6 / 14 / 46

446
450
22300
1784
200.7

11' - 3" 31"

132
3
135
31
135
405
4185
6
25110
248
31

31
810
693
1170
1155
150

.231
3.5
60
210.0

Secy

Start 0.196

8 3/4
3
5.75

11 - 3

11
12
22
11
132
31
132
396
4092
5.75
15460
2166 44
15460
1777.9.00

32
450
1600
128
144

4092
5.75
20460
28644
20460
23529.00
235

47
500

500
466
340
136.0

.231
2.1
60

.28
410
1400
112
136

2-20-

Time	Hook Gage	Q cfs	Q.G.M.	Pres	RPM	Tmp. F
1:50P	0.315	.60	272	14½#	1255	70¼°
		2-21-30				
5:45	0.38	0.80	360	10#	1450	

450
.6
2720

120
33.5
86.5
14

Steam on since 1:30 P

8

2-27-30

Survey Thatcher
Mill & Ele. Co
Gasave Ser. Station

1.	3.28			100.00	103.28
			3.45		
			2.61	100.67	

341°48 12' peg

251°48 FS to ℄ of V mac's Ser. Sta

9

3.28
.67
2.61

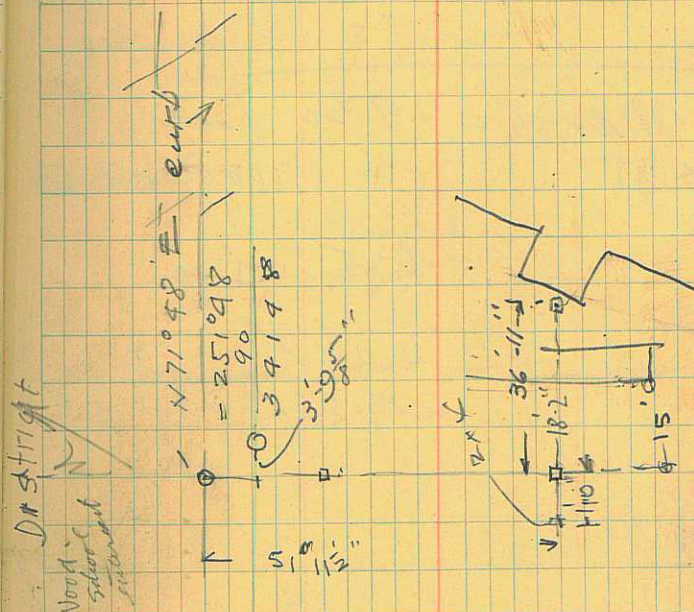
39 .11½
12
51. 11½

103.28
100.67
2.61

71 48
180
251 48

12 11
12 3½
14 9
12
51 11½

about 14 W on Curb
sill grade of primary Floor



Mill

38 6 1/4 .36 11

3-4-30

37 18 1/4

36 11

1 7 1/4

1 10

38 — 9

5

19 1/4

5.07
.67

4.40

100 105.07

100.67

101.00

4.55 100.52

Mar 5 - 1930 Levels

5.75 100.00 105.75 on cast

4.75 101.00

4.99

11

105.07
100.67
4.40

5.07
.67
40

105.67
1.45.5
100.52

100.67
1.52
15

on sub grade floor

on Top 2 x 4 should be 100.67
Top 2 x 4 2" low

~~105.75~~
~~100.67~~
~~1.08~~

105.75
4.99
100.76
24
101.00

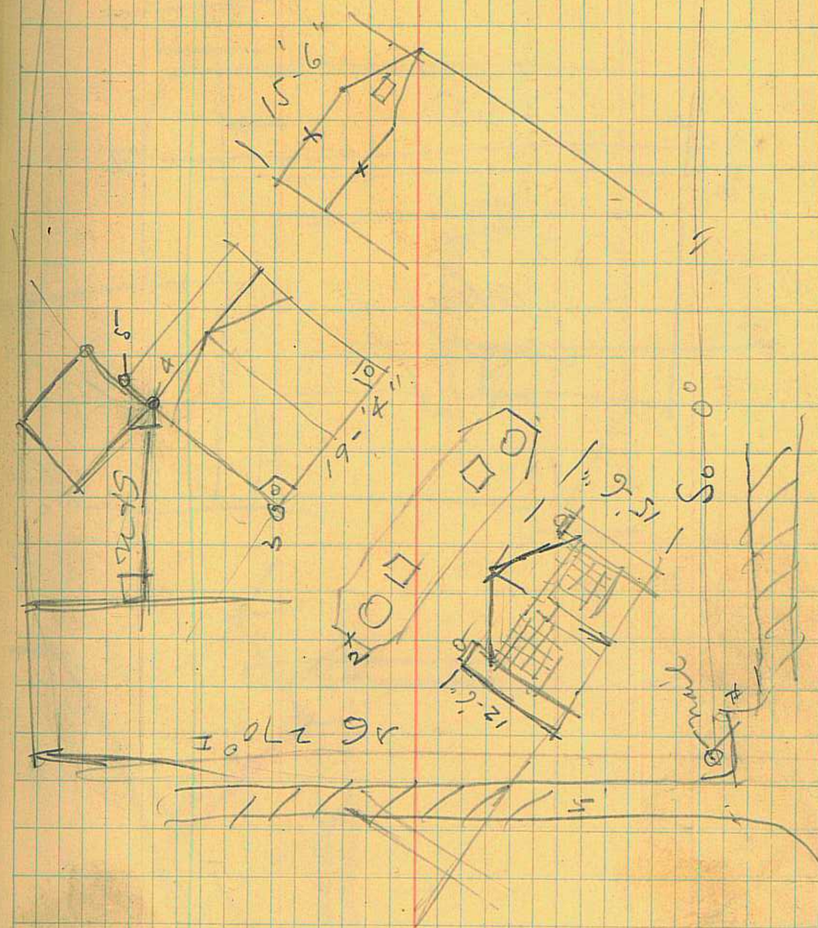
on Top Jesis form 5 E ____ 3" lap
to finished floor

3-5-30

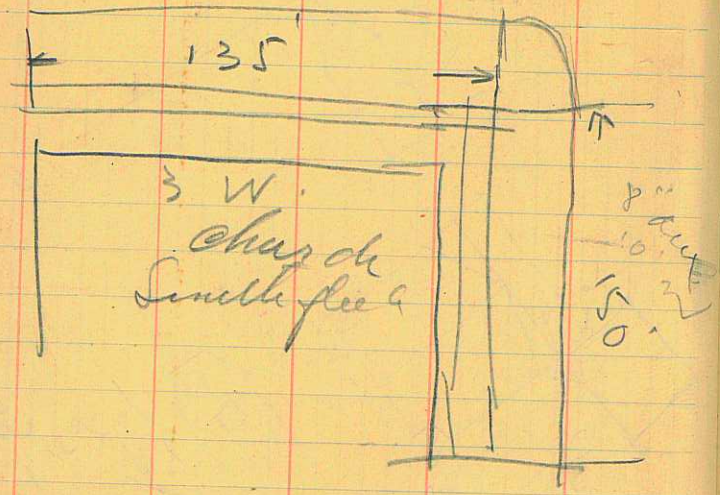
Survey & sketch
for [illegible] Smith Ferraco
Sta - 3 S. + Main

89°20 To n line operating tower (Gram Elev.)

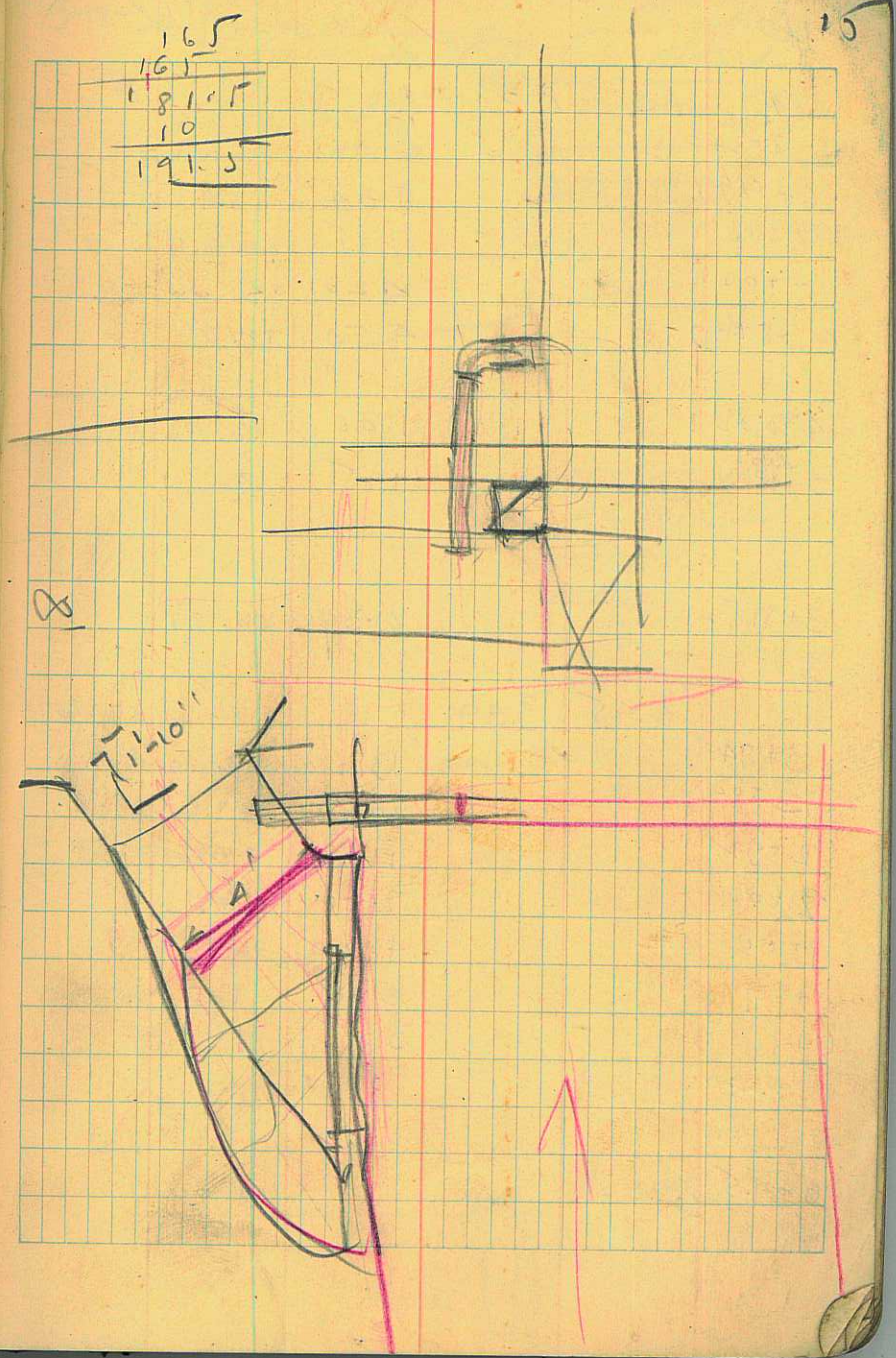
5	301°04'	59'-7"
4	302°05'	53'-8"
3	305°45'	39'-3"
√	308°	23'-3"



1½ deep



165
165
1815
10
1915

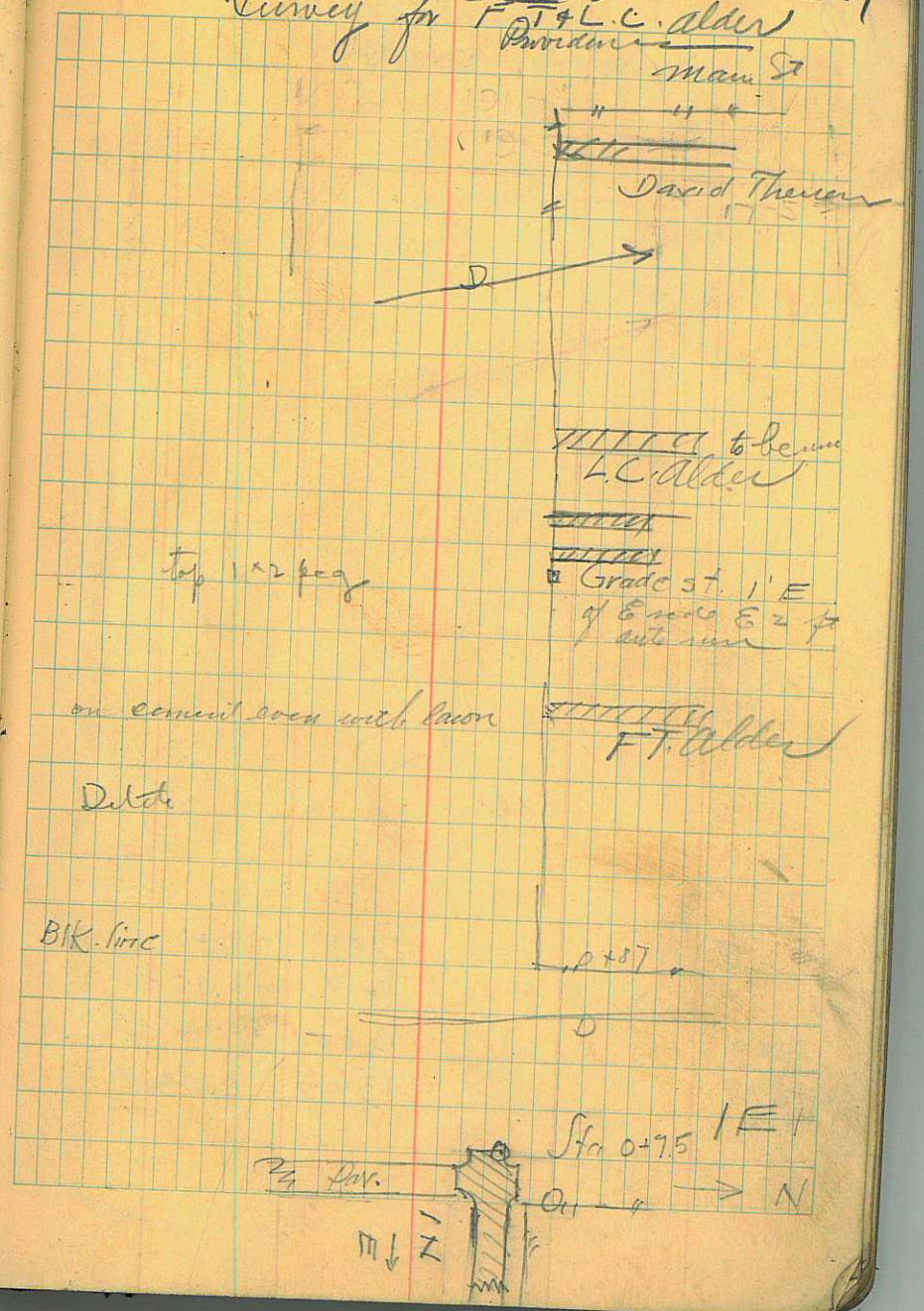


160

Sta.	BS	FS	HI	Ele	
6+82			10.20	71.06	
6+49			9.50	77.76	
6+00			8.34	78.92	
5+00			7.35	79.91	
4+84 D			4.20	83.06	
			4.50	82.76	
4+00			1.00	86.26	
3+98			1.15	86.11	
3+81.5			0.39	86.87	
	0.45	13.49		86.81	87.26
3+74			13.20	87.10	
3+00			10.50	89.80	
2+92			11.00	89.30	
2+00			7.40	92.9	
1+00			4.20	96.1	
0+87			3.80	96.5	
0+70 D			3.8	96.5	
0+7.5	0.30			100.00	100.30

3-12-30 Providence — Grade 17

Survey for F.T. & L.C. alder

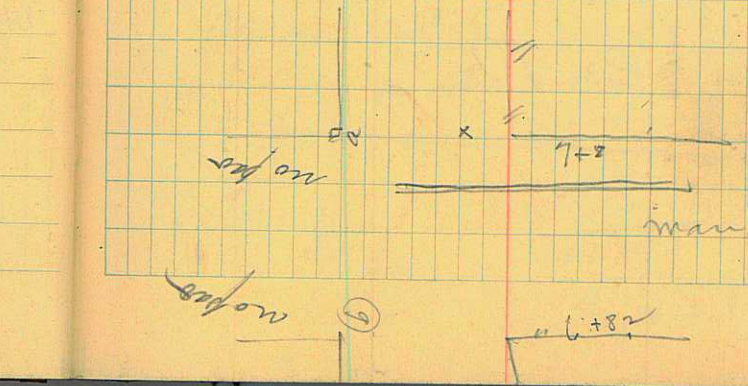


(b)
a

9.00	78.26
12.3	74.96 ✓
13.00	74.26 ✓
13.00	74.26 ✓

7+80
9+66

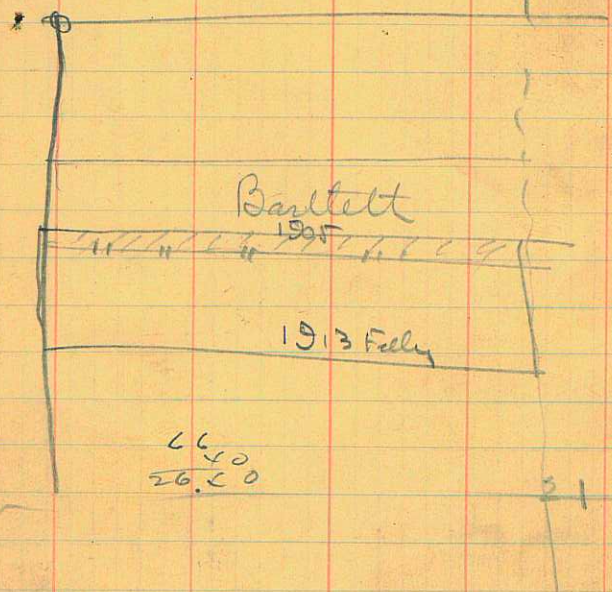
Alder survey for
Grade embedded



26

Survey for Wm M. Haslum

3-29-30



66
40
26.60

.8746
30.46
36476
34984
26238
26.6224 3 16
26225
.409

in Sec 21 - Tp 11 N 1 W

Deed 34-145
38.543

Wm M Haslum 30 ac
[illegible] 51-52-53-54 Page 58 - B 13
[illegible] 10 - pag 58 beg 26.225 ch S of
NW cor sec 21 S 9.10 ch; E 35.59
to W l Co. Road N 29° 46 W 10.49; W
30.38 ch to beg area 30 ac

1455 - Sep 9. 1910

Feb 7 - 1913

Wm Bartlett / 30 ac
Beg at pt. 50 ch E & 15.10 ch S
of NW qr sec 21 -
E 23.52 to W l Co Road S 29° 46 E
12.81 ch. W 30.38 ch N 5.975
ch E 0.50 ch N 5.15 ch to beg

Deed 25 - 487
Apr 22 1905
apr 20 - 1905

5.975
5.15
11.125
15.10
26.225

15.10
11

90

(25)

.011
30
.330
10

.874
9
7.866
7.63
3

488
275
7.63

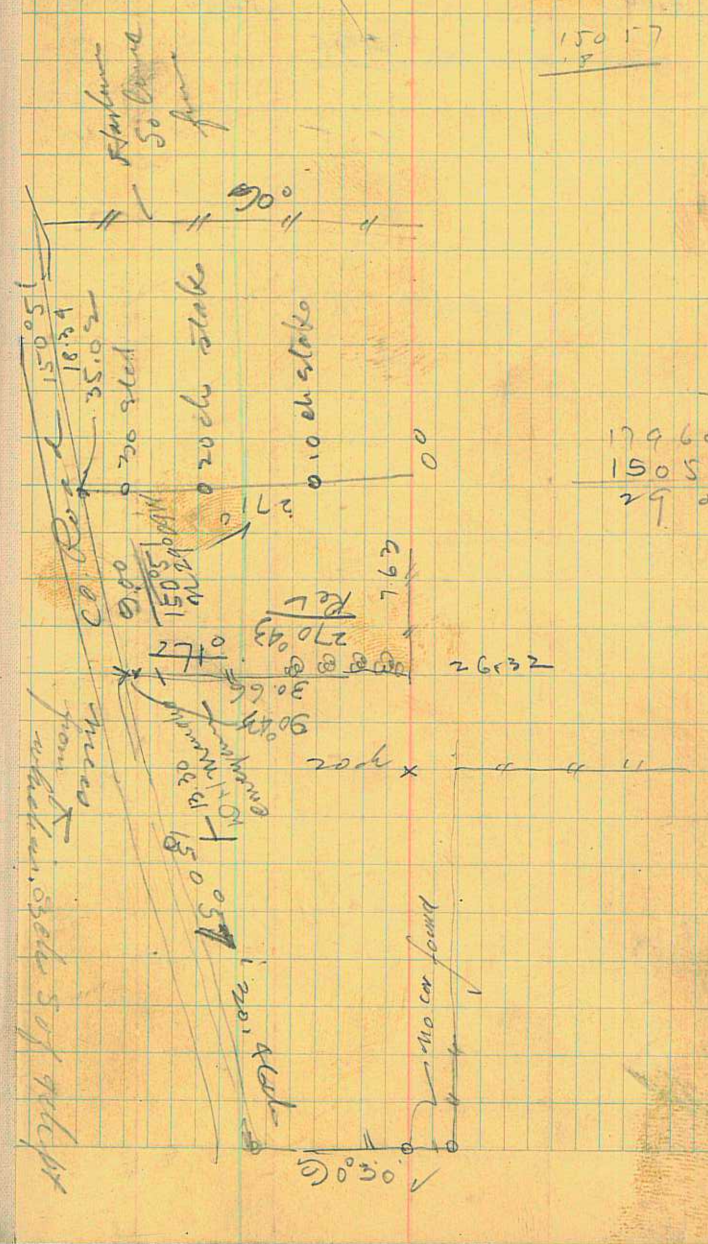
100 (7
30.6

66
6
3

32
22

3.65
66
3.90
3.90

150 17
.8



26.32
26.22

17960
15057
2903

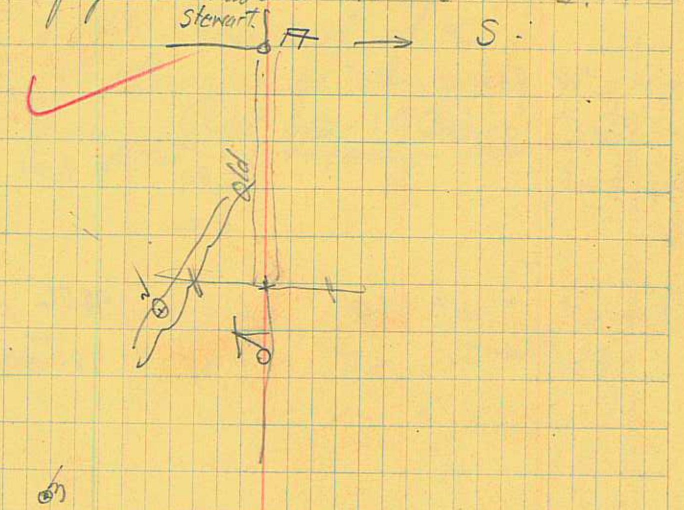
2 2f

	BS	FS	IM	Ele	
1 –	4.80			10000	10480
2			4.95		
			5.25		

Levels study – I.P. Stewart
Jos. Cowley & H Whlewitt

on peg even with H_2O Seed ar I. P's land

370



③ S18°E 780 — 5.60 — Close within .02

Pt	Bearing	Dist	Bs	Fs	Int	Elev	HI
15	S84°E	280			5.62	100.04	
14	N50°E	375			5.62	100.04	
13							
12	N75°W	510	5.75				105.66
12	East	575		5.10		99.91	
11a	West				5.80	99.21	
11					~~5.80~~		
8	West	700±	6.45			98.56	105.01
10	N38°W	460	6.45		5.35	98.68	
9							
8	S38°E	20'	4.87				103.43
8	N15°W	400	~~4.87~~	5.05		98.56	103.43
6							
7	S60°W	12'			4.78	98.83	
5	S73°E	5810	4.56				103.61
5	N49°W	750'		5.75	~~5.75~~	99.05	
4	N40°W	370'			5.25	99.55	
2					4.95	99.85	
3	E	1000'	4.80			100.00	104.80
①							

10.80
9.76

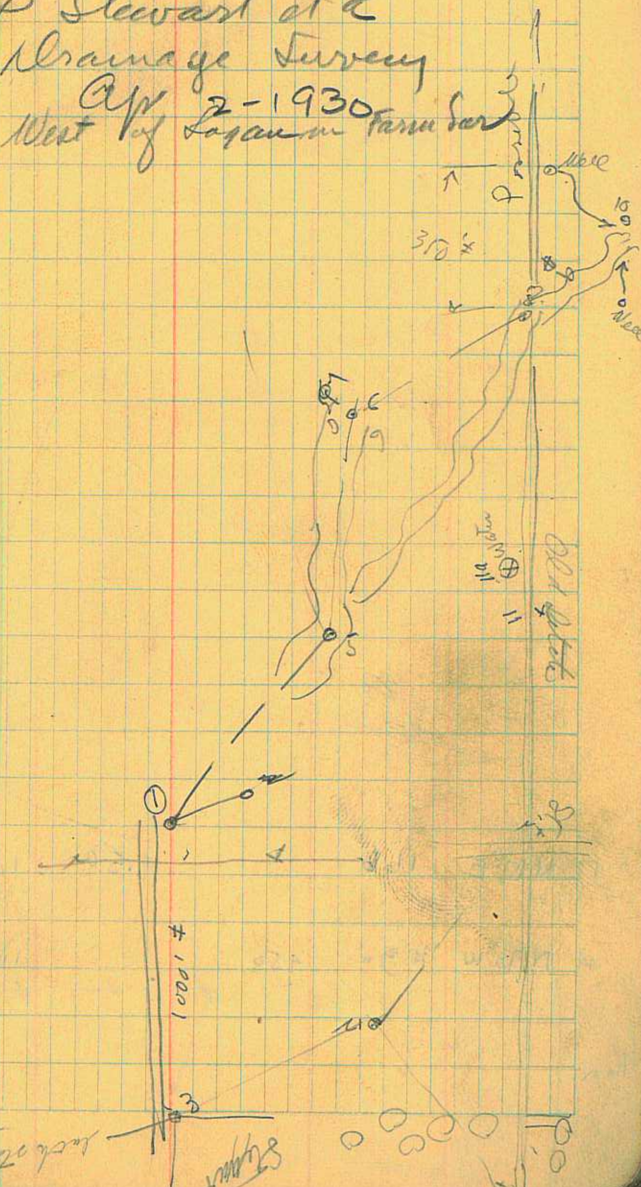
105.66
5.62
100.04
4.50

98.56
6.45
105.01
5.1
99.91
5.75

4.78
4.56
22

I. P. Stewart et al
Drainage Survey
Apr 2-1930
West of Logan on Farm Sec

on H20



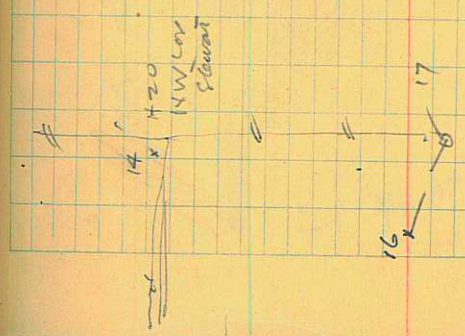
28

Beam Dist Bs F m

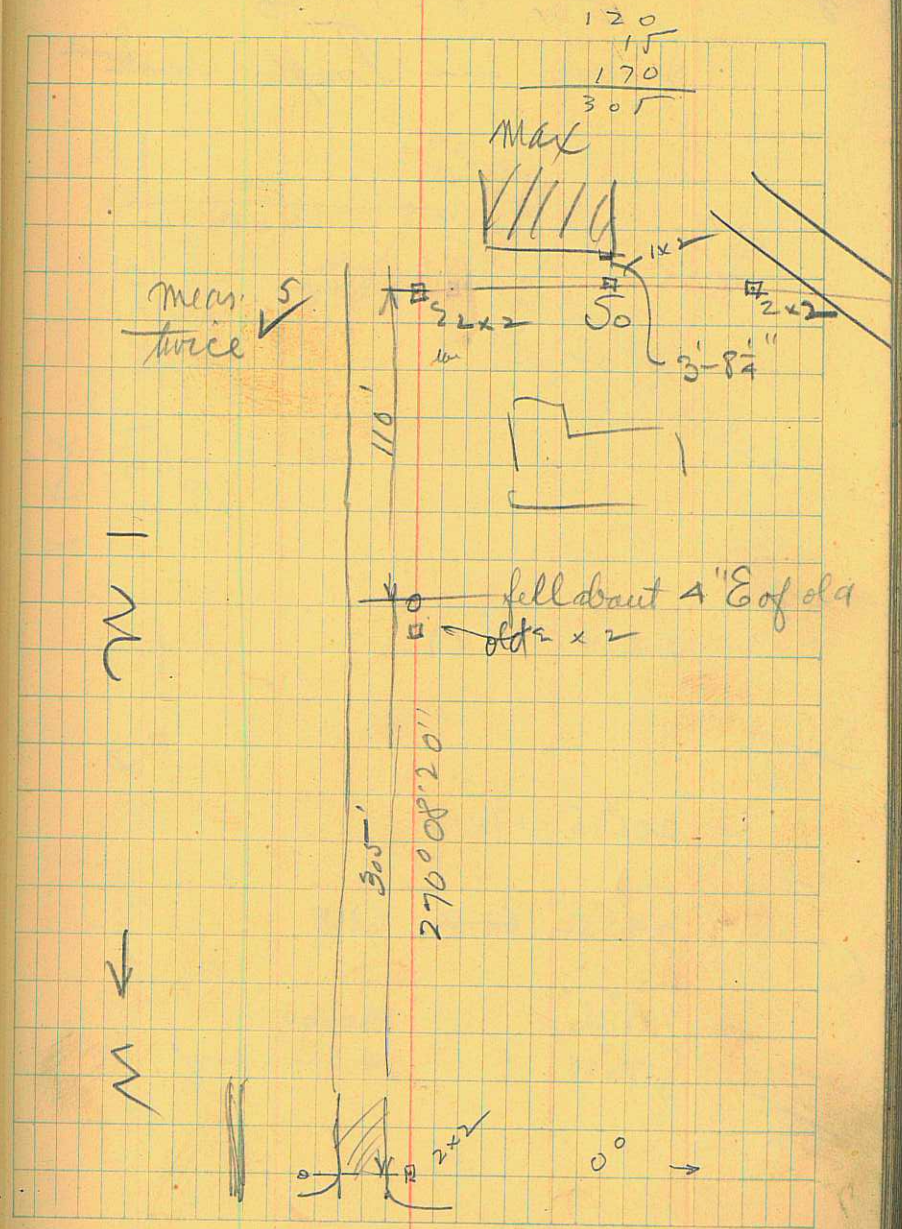
17	N17°E	166		4.50	100.04
14	N70°W	490	450		100.04 104.54

16

29



Survey Mac Johnson
4 - 3 - 1930
his West line

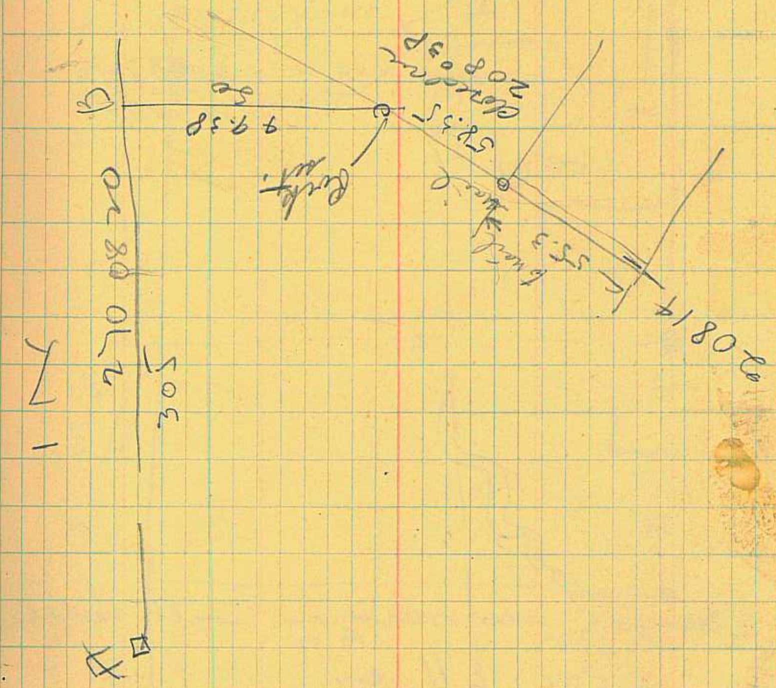


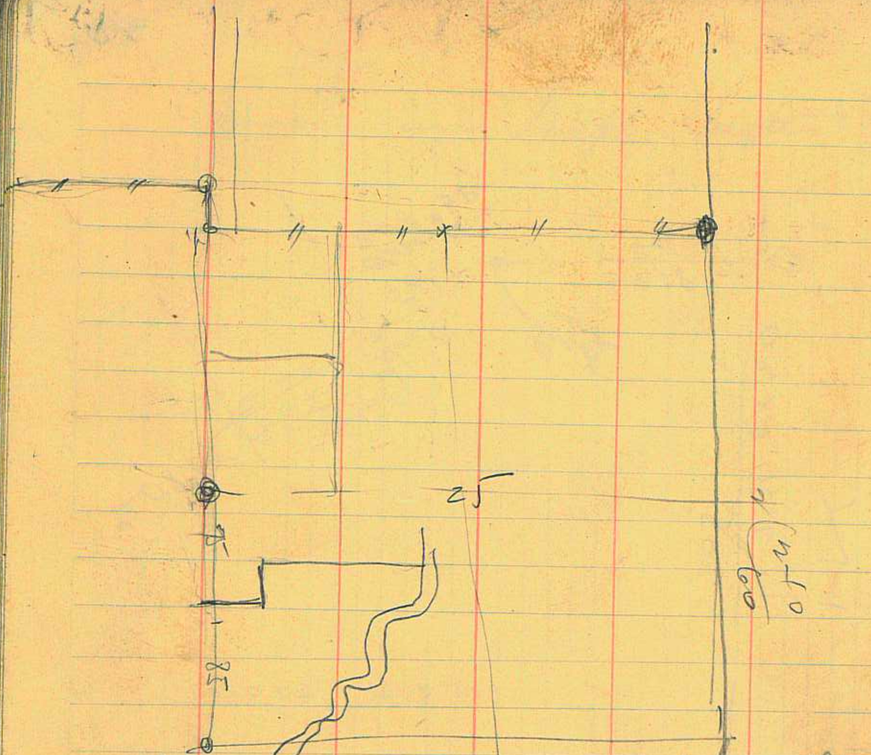
2 F

Apr. 18 - 1930

Survey in Temple Heights

208 14	36 87	
5		
201°15	176.12	
7 240°52	~~61.8~~	61.8
6 328°26'		140-60
S 76°W		24,84 peg
5		

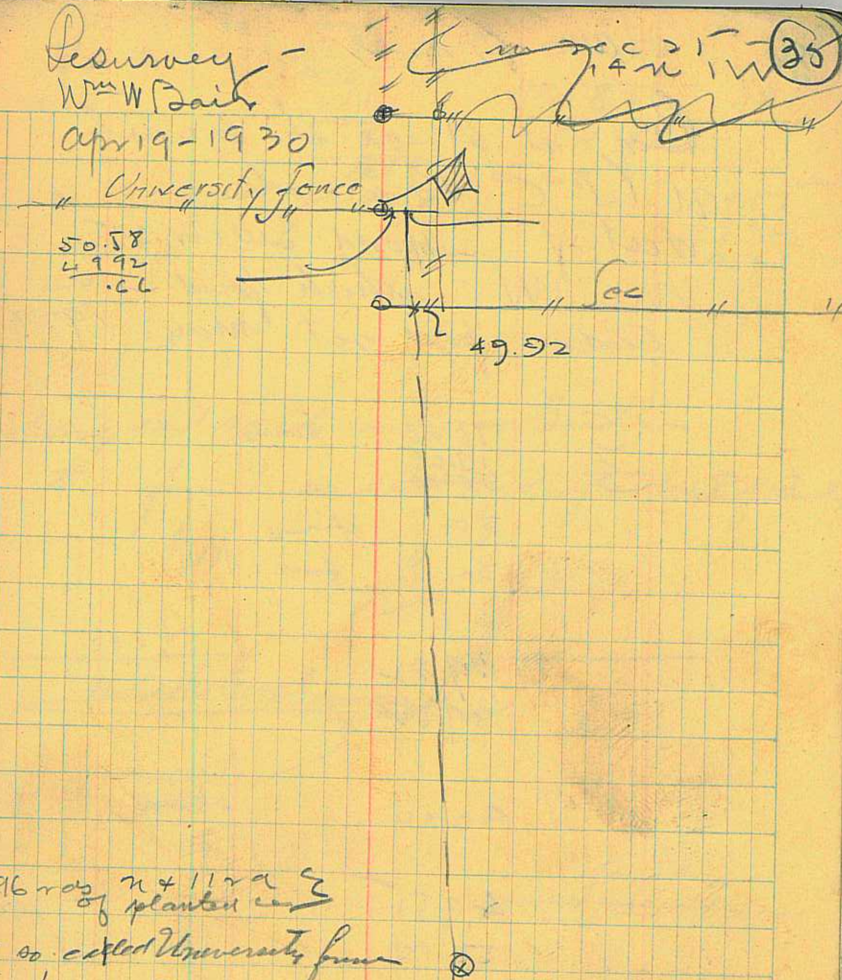




assumed new meridian with needle
35857 4.00
175°02 to U. cr.
358°57 S 4.00 repost
N4°42W 50.58
49.92 to old sec
50.00
40.00 pins
30.00 pins
N4°42W 30.00 pin
175°18 N4°42W 10.00 pins

1-A

Resurvey -
Wm W Bair
Apr 19-1930



50.58
49.92
.66

96 rds N 4 11 r a E of planted cor
To so called University fence line fence on E

(over)

Wm Bain

Beg at pt on the Grail U.I.C. Branch West of Supposed Sewer 25-14 N 1W - which point is a Cedar post set May 1929

S	10.00	fence
S	19.65 ~~20.00~~	
	20.	fence
	30.	fence
	39.32	
	39.62	
	40.00	fence.
	49.55	
	50.00	fence
	59.42	
	59.55	
	60.00	fence
	69.50	fence on E
	700	fence
	79.43	
	79.81	

79.43
3932
4011

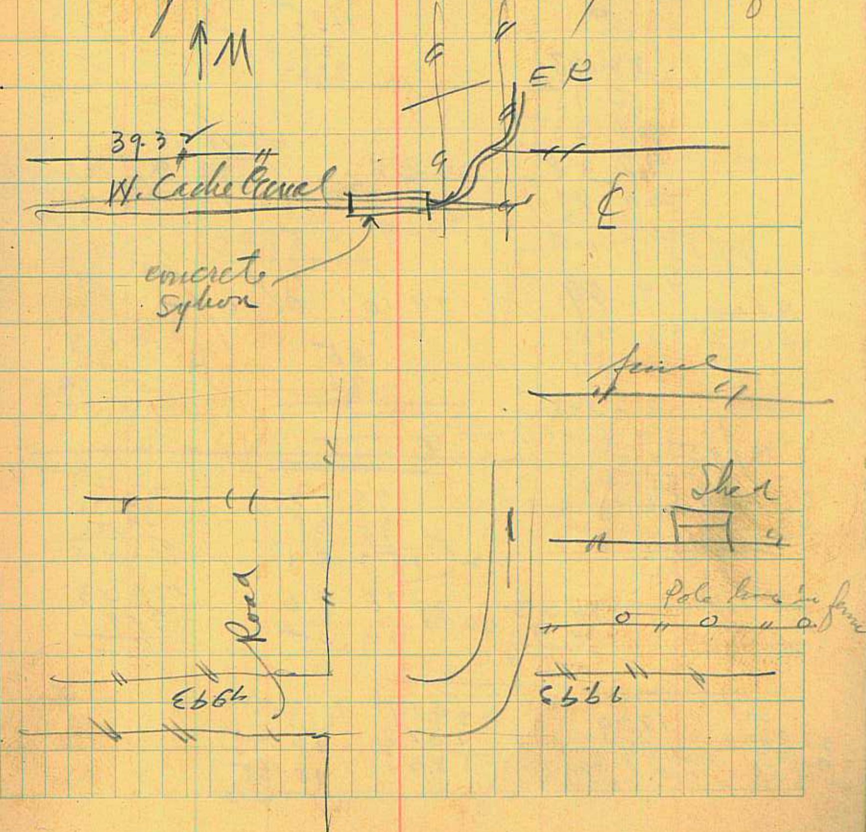
75
164
160
224

330 320
85
235
11
224
218.32
5.68
22400

54×58
4
4 | 218.32
54.58
5×68

4955
3932
10.23

along east rail and over Beaulieu to "fence" on east and extending E of Road



.996
51
996
4980
50.796
21

50.58
21
50.37
5058
.996
30348
45522
45522
50.37768

50.38
4

4(11.
2.

4/85
21.25

54.38
2.75
21.25
78.38
79.81
2/158.19
79.09
78.78
71

78.38
71
79.09

2/78.38
39.19
19.59

7910 chau

45
71

4/158.19
39.55
79.10

79.43
78.38
2/157.81
2/78.90
39.45

79.43
78.90
0.53

79.43
989

21.25
20.84
.41

19.59
1.25
20.84

39.19
20.84
18.35

4(73.5
18.75
18.35
.40

0

39.19 x

5438 0

54.38
2.75
57.13
21.25

4/78.38
19.19
81
66
48
48
53.46

4/78.38
19.595
4
78.380

2/78.38
39.19

2/78.38
39.19

78.38
0.53

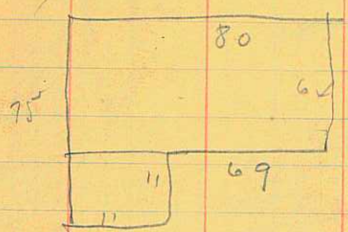
78.38
79.43
157.81
78.90

79.43
78.90

18.35
20.84
39.19

78.90

/157.81



64
80
5120
124
5244
480
444

160
3

2(78.38
2(39.19
19.59
125
275
2359

19.59
125
20.84

39.19
2319
1560

3919
2084
1835

2(37.5
18.75
1835
40

2(157.81
78.95
7838
.57 go so with tentative Sevor

274 15
90

65.00
51

64.17
52 1
12.00

64.1
42
106.1

52.1
6

105.9
64 1
41.8

160.1
138 8
21 7

1061
12

138.8
118 1
20 7

160.5
118 1
42 4

160.5
118 1
42.4

118.1
21 2

172.4
160 5
11 9

118.1
21
139.

21.2
118.1
139.3

160.5
1391

172.4
42
214.4

166.5
54
220 5

166.5
54
220 5

160.5
118
42 4

58.10
54
112 10

112.1
54
166 1

112.1
48

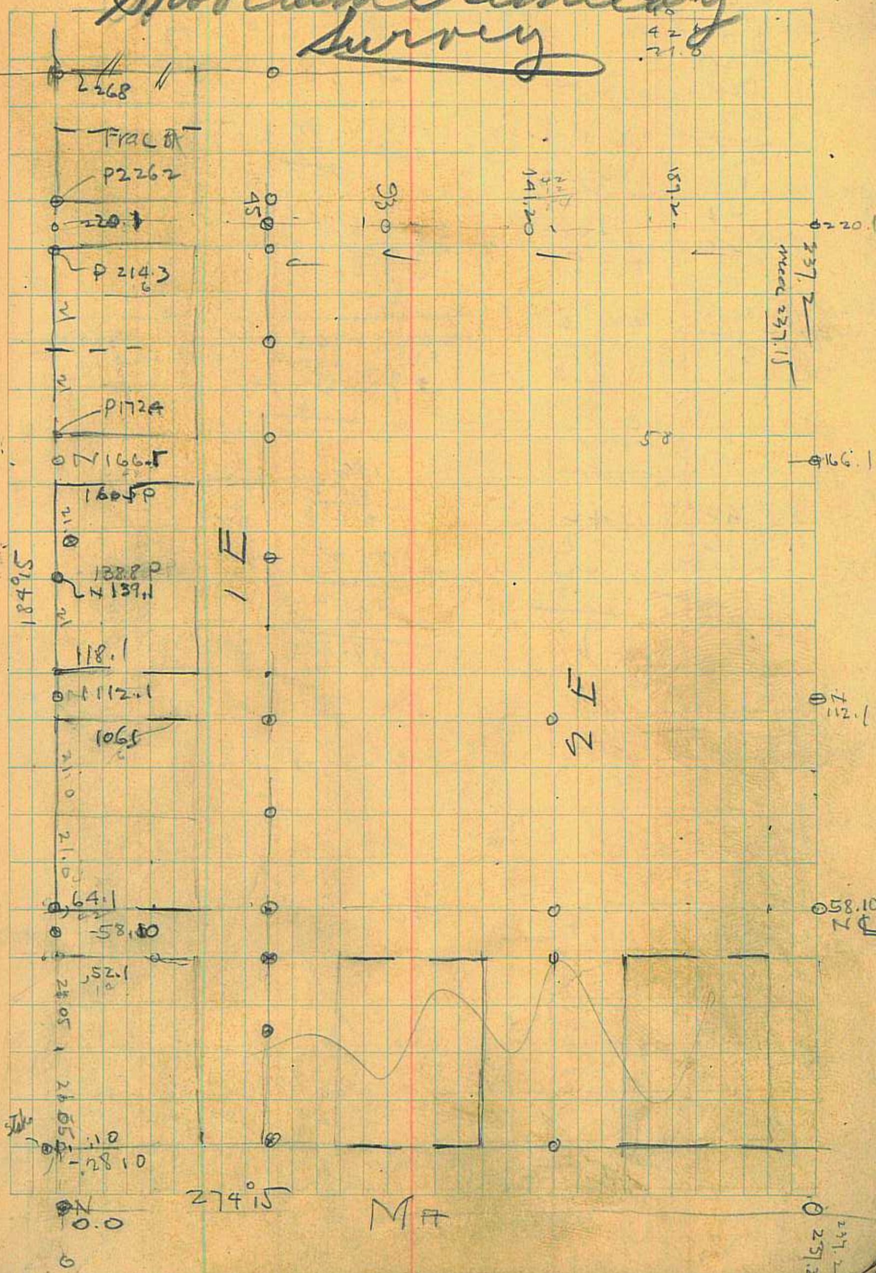
112.1
54
166 1
54

42

166 1
54
220 1

Providence Cemetery Survey

P = Pipe
N = Nail



52.5
12

64.5
42
10 6.5

42
6

10
42
12
42
10 6
12
42
1 60

234.3
1 90
44.3

234.3
6
240.3
5

31
21

42
6

93
48
141

99
48
141

289
240.3
48.6
6

289.6
268
21.6

240.3
68
8 3

268
240.3
27

268
240.3
27

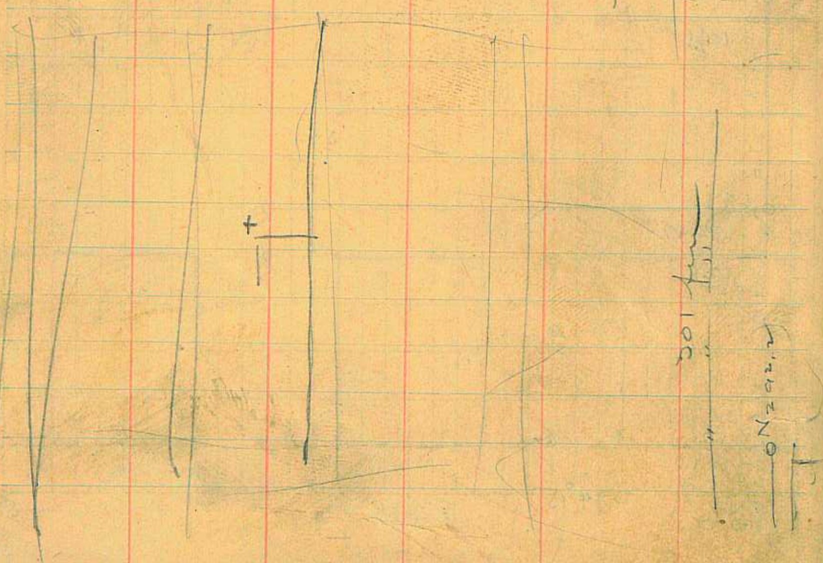
10
42

1.86
165.2
20.8

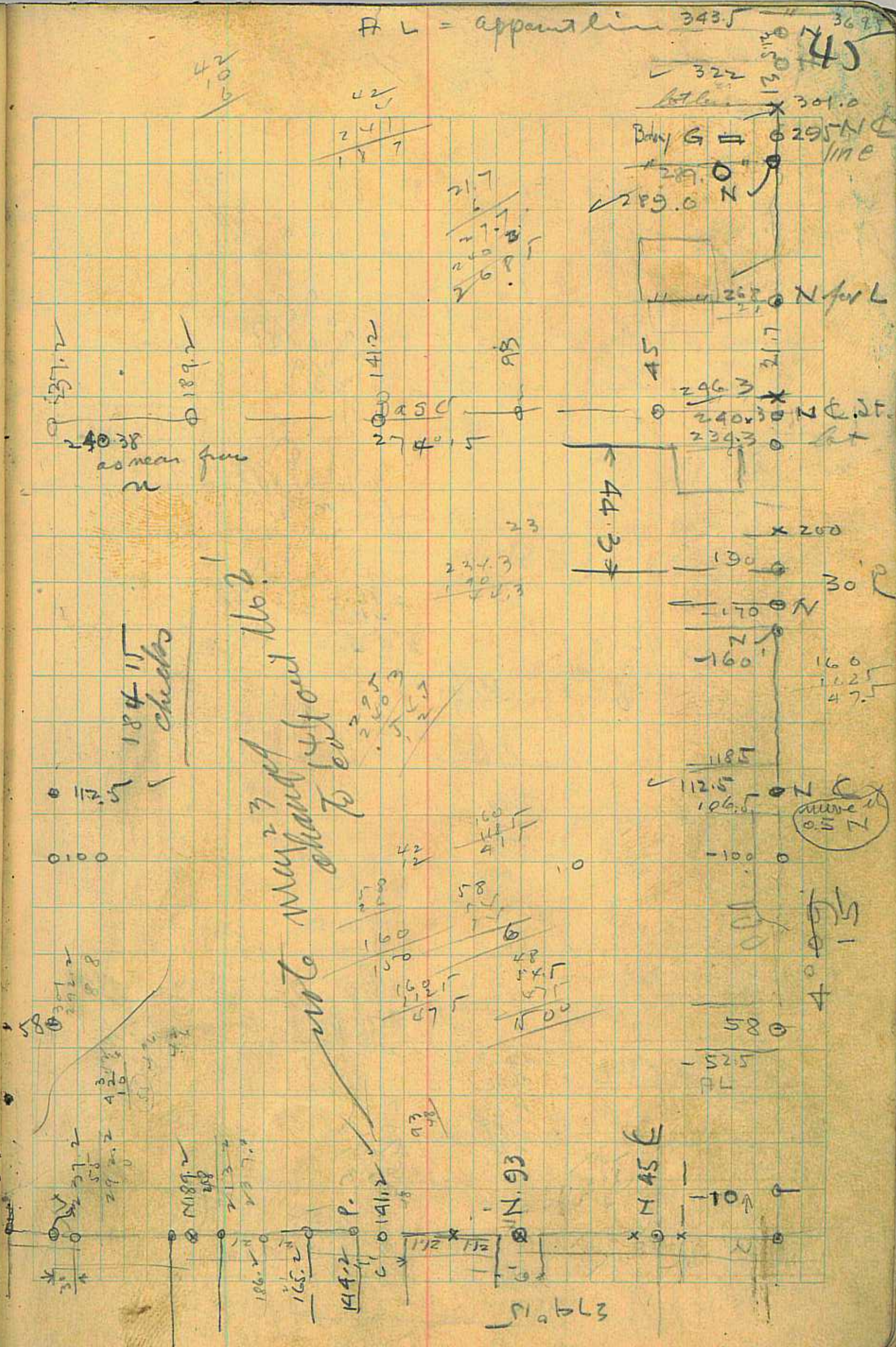
186.2
6
192.2
3
189.2

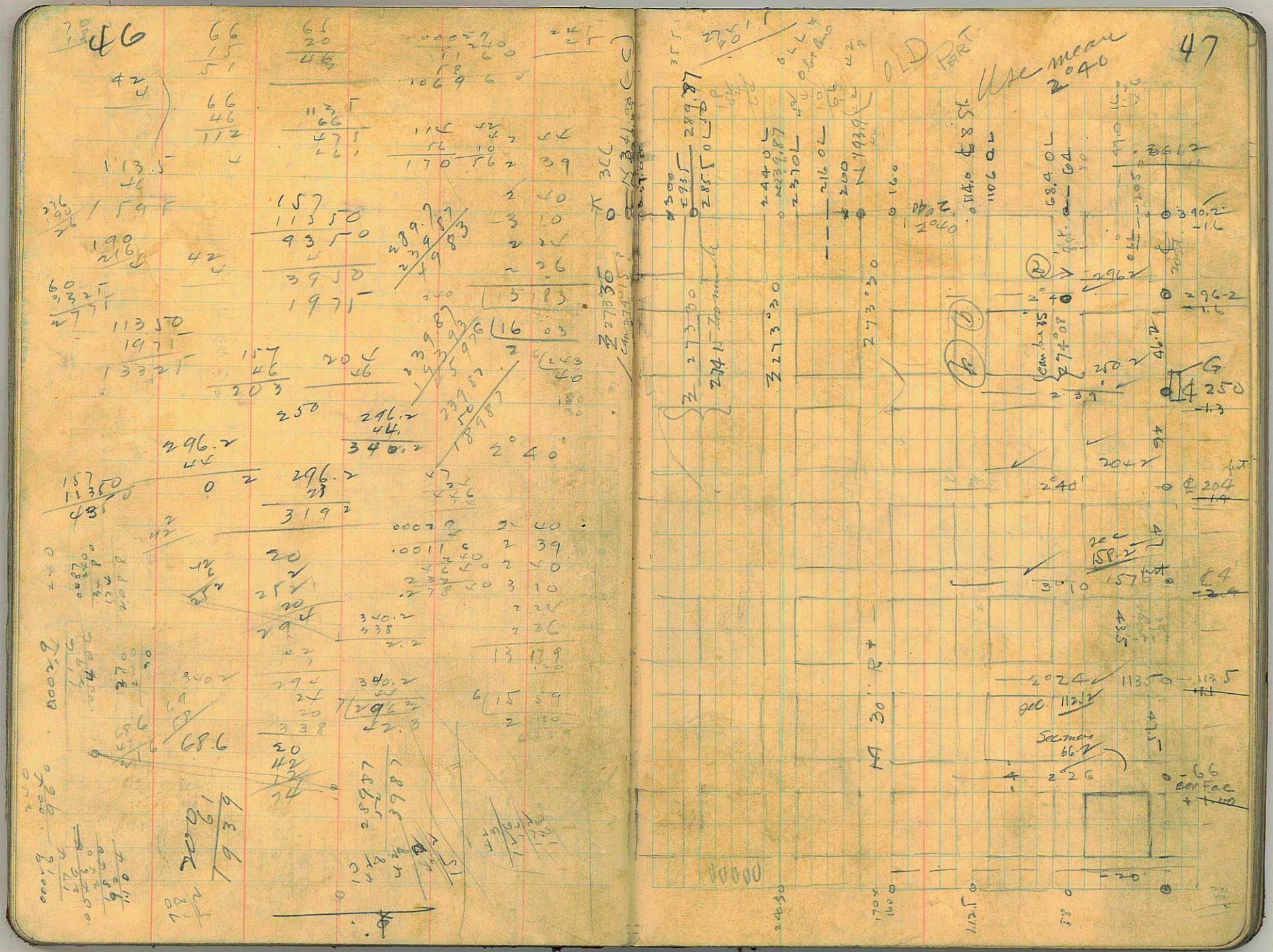
42
6
42
90

42
6
42
3
93



AL = apparent line




46
47
OLD PART
Use mean
2040

160

160
1186
14

40
42
12
42
116

160
116
44

42
8
42
8
42
142
18
150
10

18
21
21
150

340 2
44
7 | 296
42 x 31

42
7
294
21
20
338

193 9
239 87
54

42.3
4

42.3
4

23957
1939
4597

42.3
2

45
21

44.3
46.3
90.6

44.3
21
65 3

46.3
90 7
1360
46.3
1823
46.3
2286
46.3
2749

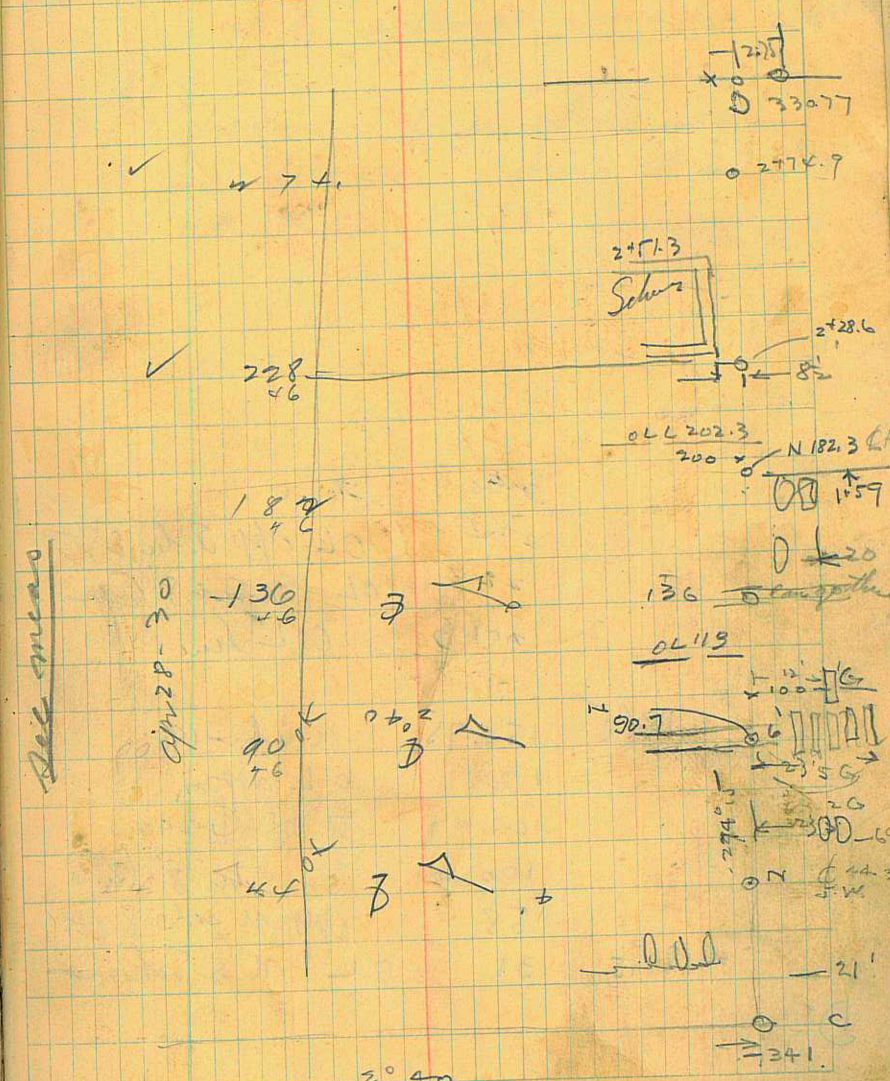
42.
21.15
23.15
90.7
113 85

23

160
30
42
4
296

100
23
30 77

83 5
59



	3240.9	to O
	274	OL, opp S. line 8' St.
	224	OL So Side 8 lane
	201.3	O L line
184°15	150.75	nail -190
	130.	O L oppos
	100.47	to N ℄-240.3
	100.00	So. Side 8' lane
	58	opp N side 8 st.
184°15	31	O L N & Sch

D-

Apr 28 .30

Mob -

℄ E & W (a)
can be moved about 0.5 N
and approach average 274°15

(b) Leave b on west end
in place project 274°15
OK

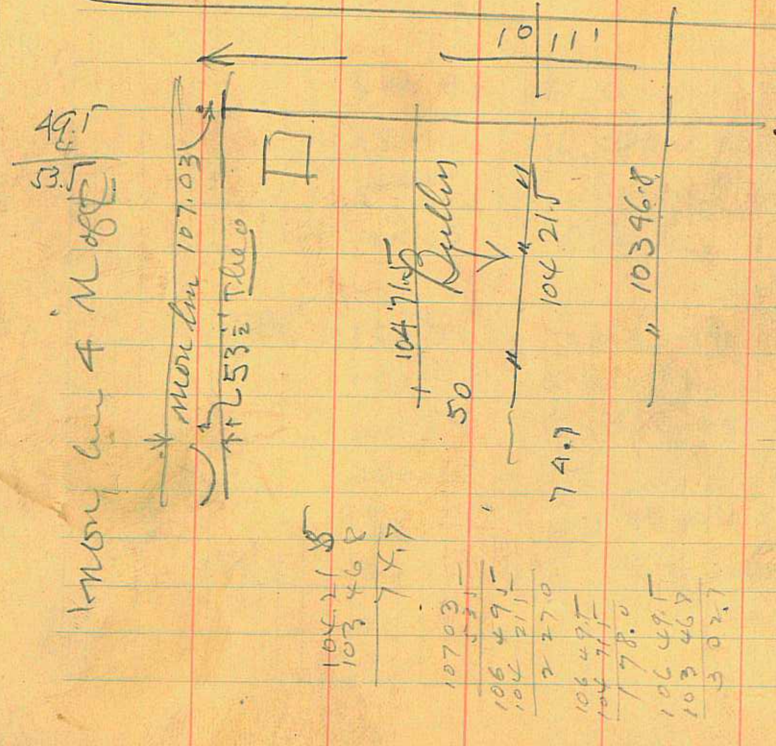
165
165
181.5
50.5
15
233.0 ft to So line M

165
165
81.5

165
14
660
165
231 1/2 0

233

OK



165
9.5
1x8.5
29.5 0

5 9 4

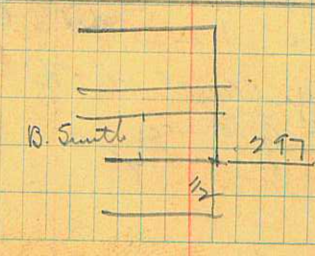
63 - 160

Mrs E.R. Johnson beg at pt 14 rds 1/2 ft S of N E cor lot 8, S 30 ft to Side walk pav. th fol sd pav. in a SWerly dir. to S line lot 1. W 75' to E bk Canal thn N fol E Bk canal to pt due west of beg

47 - 608

Naisbett

Beg at pt 11 rd 1 1/2' S of NE cor lot 8 - Blk 16 Pl "A" Logan City - S. 50 ft - west ~~west~~ to E bk Canal Norly along sd bk of sd canal to pt due west of beg east to beg - also R of W 8' wide along east bk canal 2' east therefrom extending from center St. to so. line of sd property -

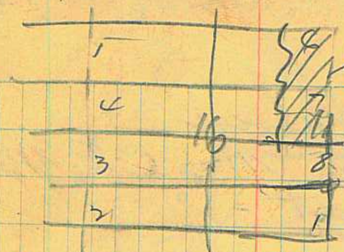


H Buller
Bessie Smith ✓
Mae Smart ✓
Verde P Cardon ✓
Evelyn W. Farr ✓

Bessie Smart
Beg at SE cor lot 7. N 4 rds W on l parallel with S L of lot 7 to Elk Canal. S along sd bk to S L sd lot 7 E to beg S.

Verde P Cardon
beg 3 rds & 12 ft S of NE cor lot 8, S 3 rds 12 ft W to Canal N along Canal to pt due W of beg E to beg

Mae Smart
Beg at NE cor lot 8 S 3 rds 12', W to Canal N along canal to N line sd lot E to beg



Buller

90 08 20

EW Farr com at pt 7 rd 7½ S of NE cor lot 8 S 60' W to Canal N'ly along Canal 60 to pt due W of beg E to beg

H Buller all that portion of 6-7 lying E of Canal

16.5
11
165
165
181.5
183.

16.5
165
181.5
1.5
183.0 W beg

16.5
7
115.5
7.5
123.0
60
183. Farr on line

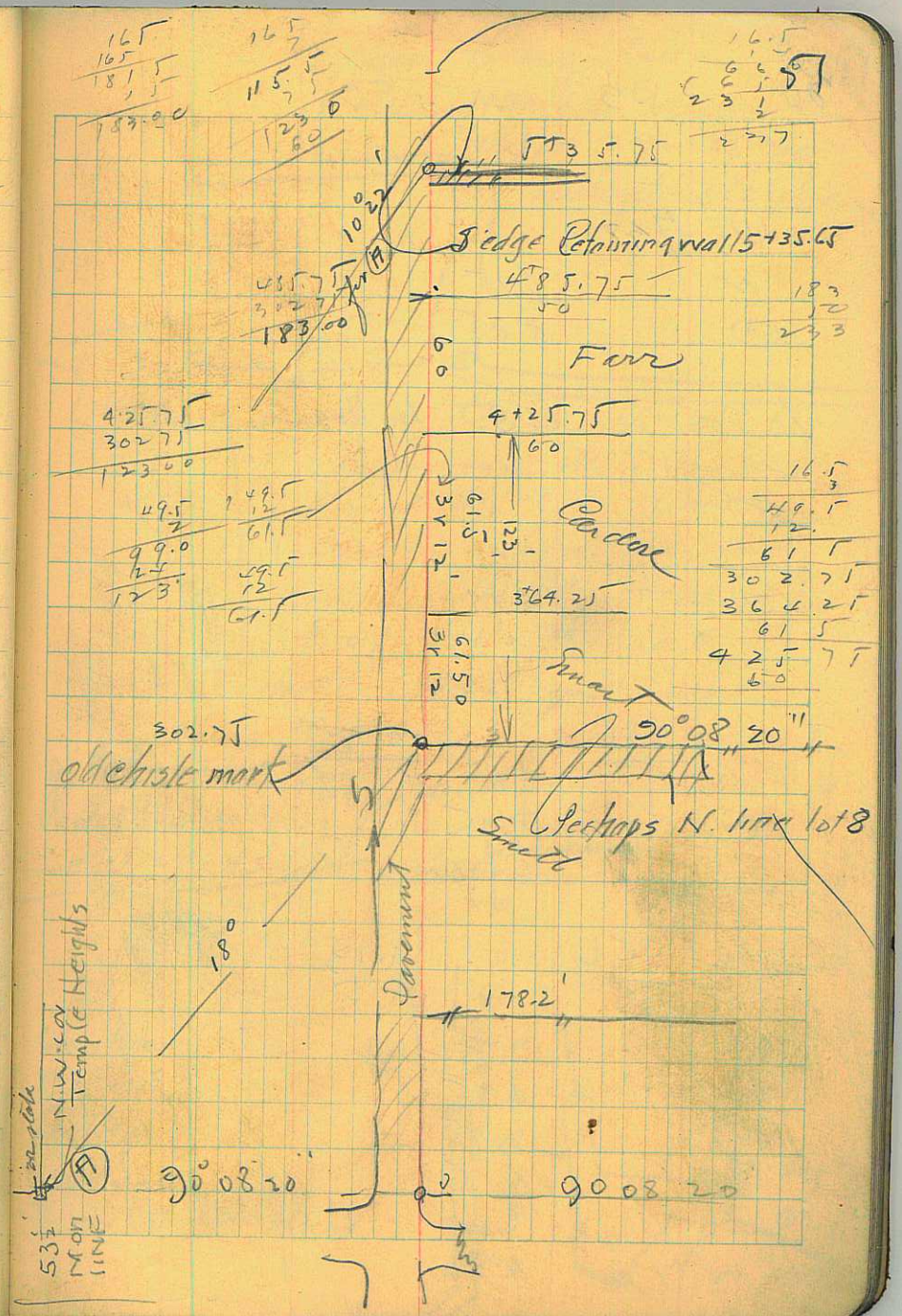
6 24
7 16.5
7 7 5

16.5
18
132.0
16.5
297 ½ Blk
66
231
1.8
4.5

56

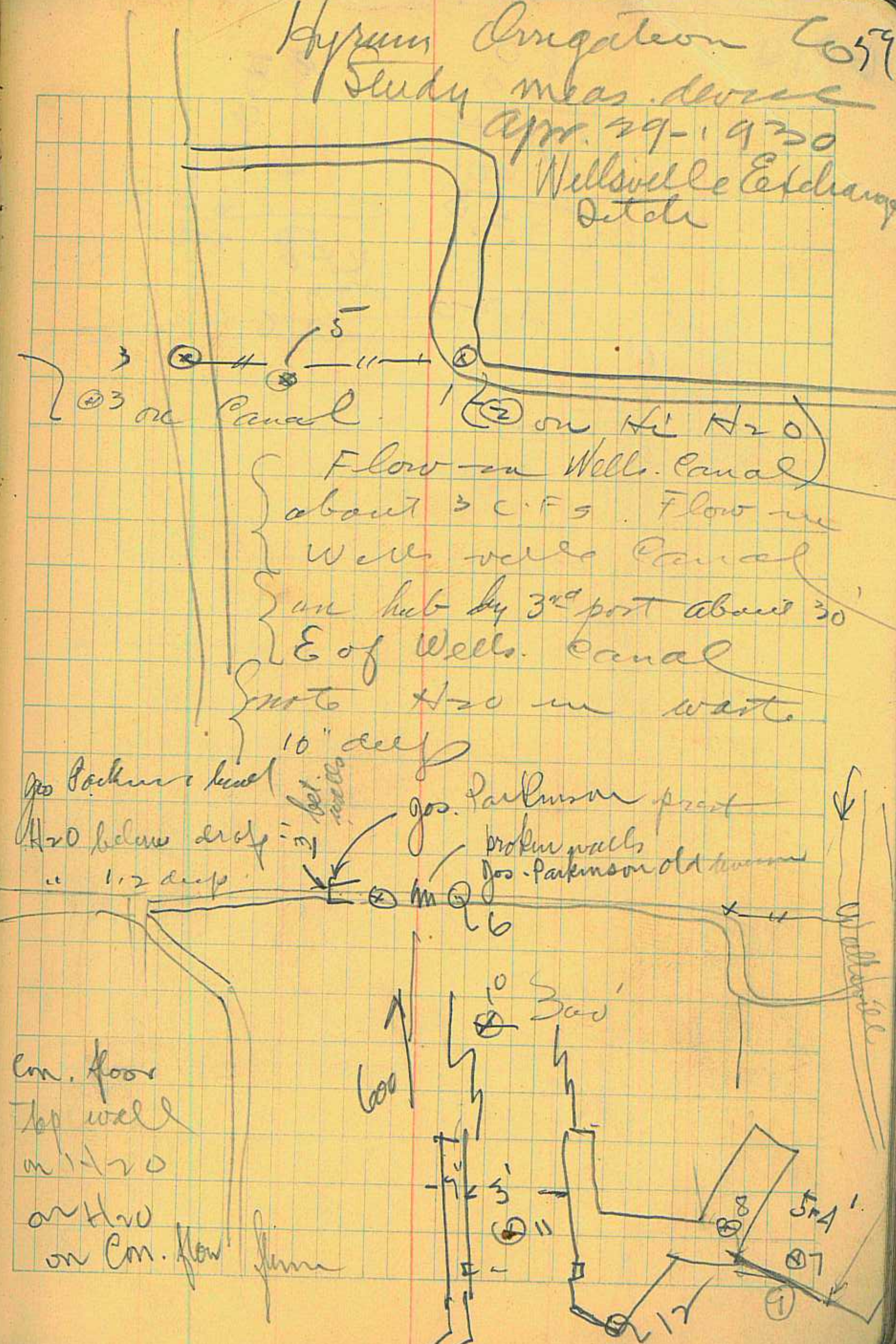
apr 25 - 1930

Survey for
Contractor Gabulsen
Line between Mrs C.R. Johnson
& Rausbett -



	BS	AM	-FS	
①	7.48			
2		6.15		
③		8.05		
		6.45	Hi H_2O Wells Canal	
~~4~~				
⑤		4.79		
T1	+5.10		-4.24	
		4.8	at	
⑥		7.35		
		6.70		
	5.56		4.13	
7		7.75		
8		4.85		
⑨		6.35		
10		7.75		
11		8.00		
BM 12		4.86		

Hyrum Irrigation Co.
Study meas. device
Apr. 29 - 1930
Wellsville Exchange Ditch



⊗3 on Canal
⊗2 on Hi H_2O
Flow in Wells Canal about 3 C.F.S. Flow in Wellsville Canal
on hub by 3rd post about 30' E of Wells Canal
note H_2O in waste 10" deep

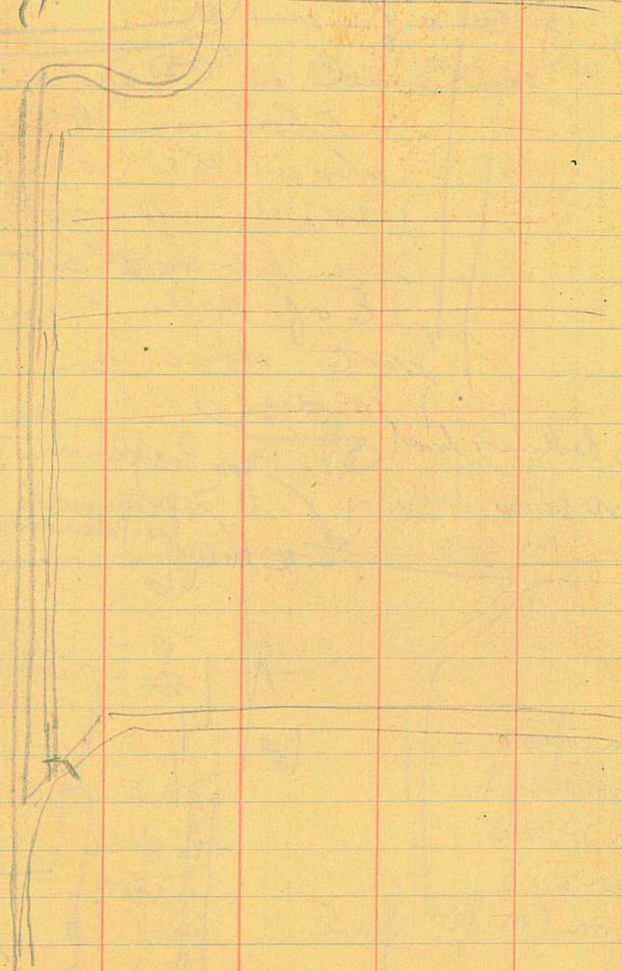
Geo. Parkinson head
H_2O below drop = 1.1 feet
" 1.2 deep
Geo. Parkinson post
broken walls
Geo. Parkinson old house

Con. floor
Top wall
on H_2O
on H_2O
on Con. floor
flume

80
.09
7.20
60
432.0

87
9
7.47
60
448.20

120
16

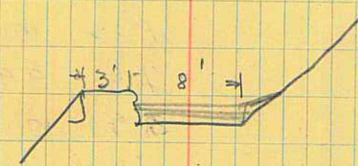


Profile Level Survey
Farmers Union May 3-1930

Sta	BS	FS	um	Elev	HI
BK			4.30	101.48	
H2O			5.60	100.18	✓
6.000 CB			7.00	98.78	✓
	5.00	4.66		100.78	105.78
BK			5.00	100.44	–
H2O			5.35	100.09	–
5.00 CB			6.50	98.94	–
BK			4.6	100.84	–
H2O			5.5	99.94	–
4+00 CB			6.7	98.74	–
+68					
BK			4.70	100.74	–
H2O			5.82	99.62	–
3 CB			7.0	98.44	–
	6.100	5.630		99.34	105.44
BK			4.85	100.12	–
H2O			5.72	99.25	✓
✓ CB			6.8	98.17	✓
BK			4.9	100.07	✓
H2O			5.96	99.01	–
1 CB			7.0	97.97	✓
0 CB				97.00	
0 H2O			5.95	99.02	
0	497			100.00	104.97

Spill 3-4 CB = Canal bed

.99
1.52
.57



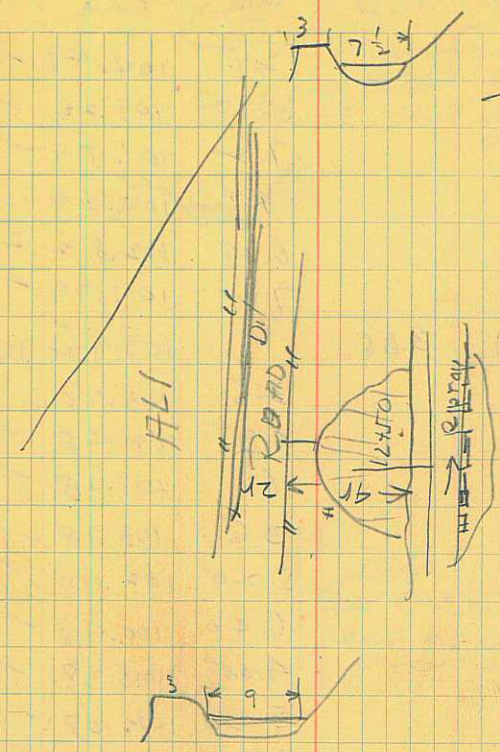
Smithfield City Spill pipe

64

Sta		BS	FS		Elev	HI
	Hub			5.00	102.38	
				5.70	101.68	
14	eB			7.1	100.28	
	B/R			4.9	102.48	
	H2O			5.85	101.53	
13	CB			7.3	100.08	
	B/R			5.2	101.98	
	H2O			6.12	101.26	
12	eB			7.6	99.78	
11	B/R			5.70	101.68	
		4.60	4.70		102.78	107.38
	H2O			6.36	101.12	
11	eB			7.9	99.58	
	B/R			5.65	101.83	
	H2O			6.40	101.08	
10	CB			8.10	99.38	
	B/R			4.75	102.73	
	H2O			6.60	100.88	
9	CB			7.85	99.63	
	B/R			4.9	102.58	
	H2O			6.9	100.58	
8	CB			8.15	99.33	
		5.95	4.25		101.53	107.48
	B/R			4.70	101.08	
				5.50	100.28	
4	+ow eB			6.80	98.98	105.78

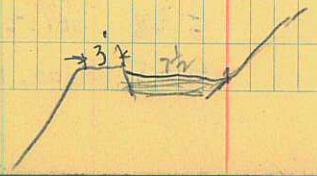
7.3
5.85
1.45

65



Note 13 Sta where intersection cleaning apron developed

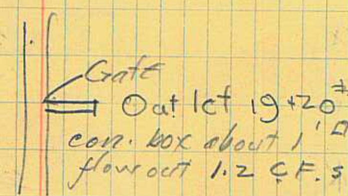
place where rock canal broke out



Sta	BS	FS	In	Ele	HI
B/K			4.5	104.49	✓
H2O			5.77	103.22	✓
22 CB			7.2	101.59	✓
BK			4.7	104.29	✓
H2O			6.17	102.82	✓
21- CB			7.2	101.79	✓
	5.27	3.66		103.72 ✓	108.99
BK			3.6	103.78	✓
H2O			4.9	102.48	✓
20+00 CB			6.1	101.28	✓
BK			3.6	103.78	✓
H2O			5.20	102.18	✓
19 CB			6.40	100.98	✓
BK			4.00±	103.38	✓
H2O			5.30	102.08	✓
18- CB			6.80	100.58	✓
BK			4.4	102.98	✓
H2O			5.44	101.94	✓
17- CB			7.1	100.28	✓
BK			4.60	102.78	✓
H2O			5.46	101.92	✓
16- CB			7.18	100.20	✓
BK			4.60	102.78	✓
H2O			5.68	101.70	✓
15- CB			7.25	100.13	107.38

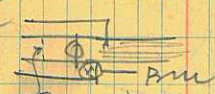
not at 4 pm

H2O Surface at meas sta 18 below City Spill just the same as at 10:55 am

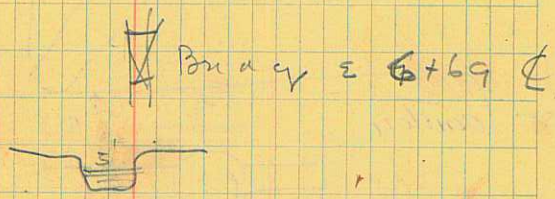


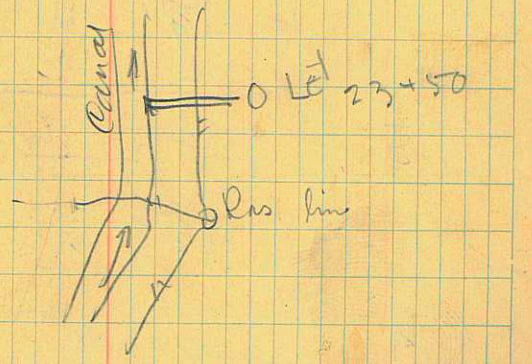
Sta	BS	FS		
28+27			6.4 on H_2O	106.35
BM			8.50	104.32
			4.63	108.19
			8.00	H_2O 104.82
28+27				
BK			4.9	107.92
28				
	7.18	5.80		105.64 112.82
BK			4.7	106.74
H_2O			7.10	104.34
27 CB			8.4	103.04
BK			5.70	105.74
H_2O			7.78	103.66
26 CB			8.65	102.79
BK			6.0	105.44
H_2O			7.92	103.52
25 CB			9.1	102.34
	9.020	6.570		102.42 111.44
BK			4.60	104.39
H_2O			5.58	103.41
24 CB			7.0	101.99
+15				
BK			4.80	104.19
H_2O			5.65	103.34
CB			7.7	101.29 108.99
23				

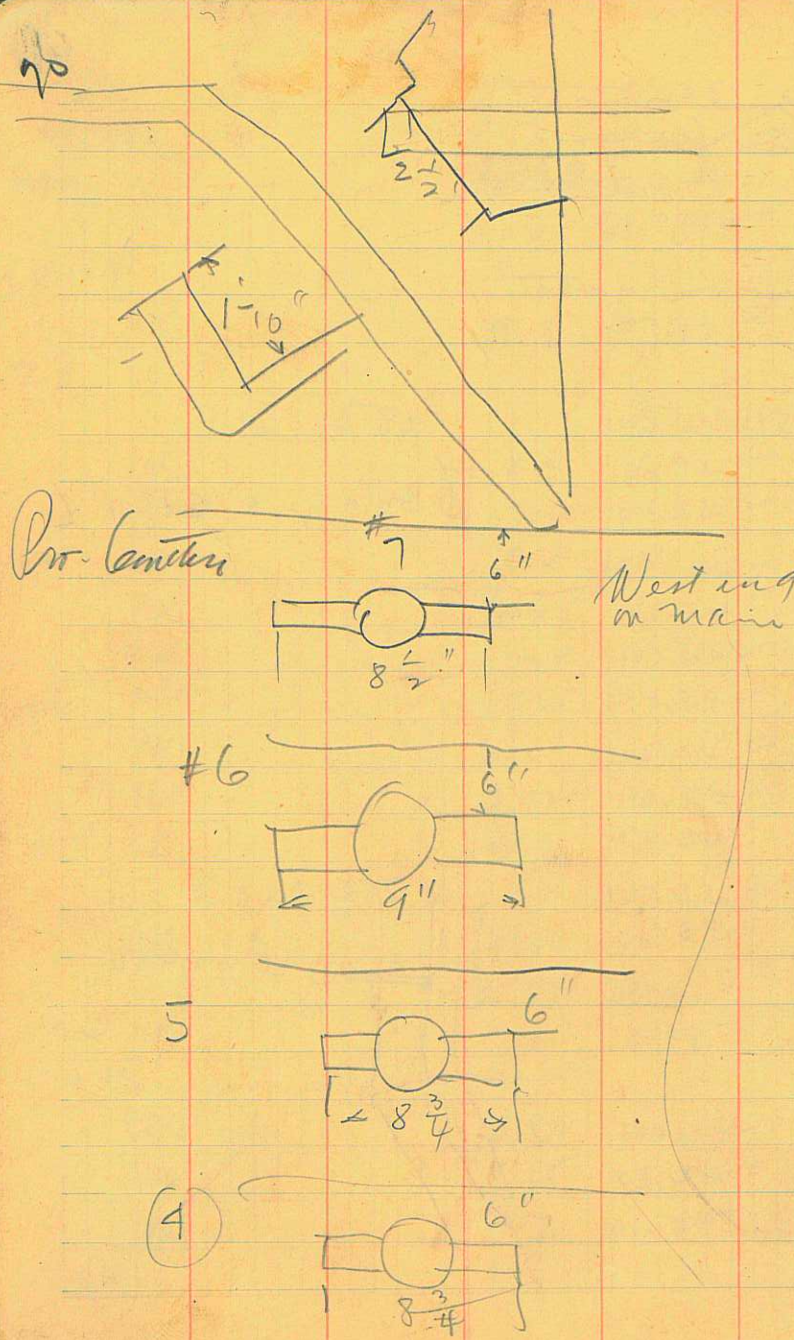
above gate
on Con-floor

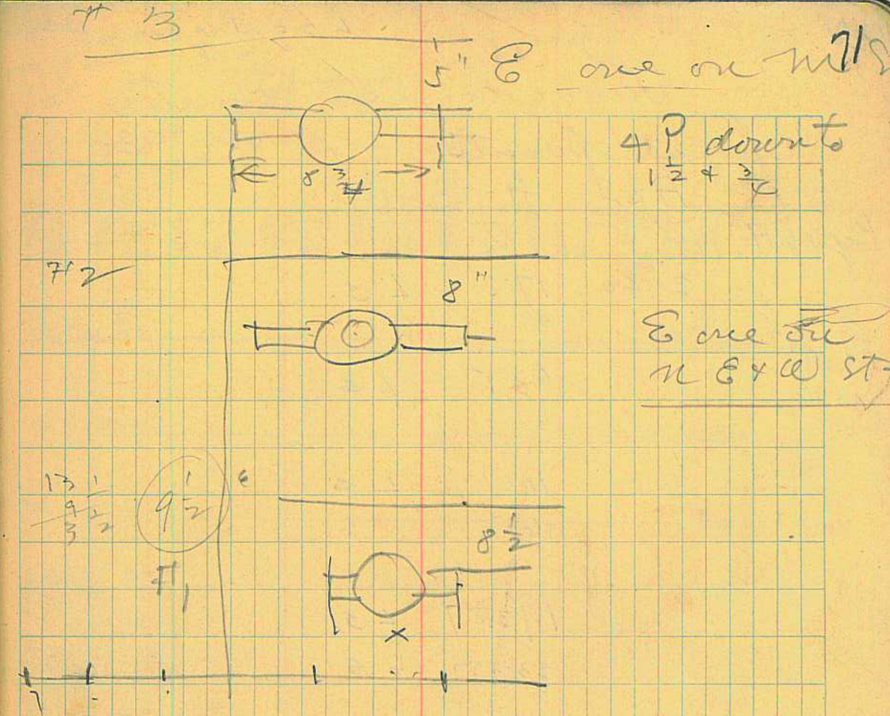


Sta
Crew on gate






2 1/2"
1'-10"
Pro. Cemetery
#7
6"
8 1/2"
West end on main
#6
6"
9"
5
6"
8 3/4
4
6"
8 3/4


#3
5" E one on N…
8 3/4
4 P down to
1 1/2 & 3/4
#2
8"
E one on N E & W St
13 1/2
9 1/2
3 1/2
9 1/2
#1
8 1/2

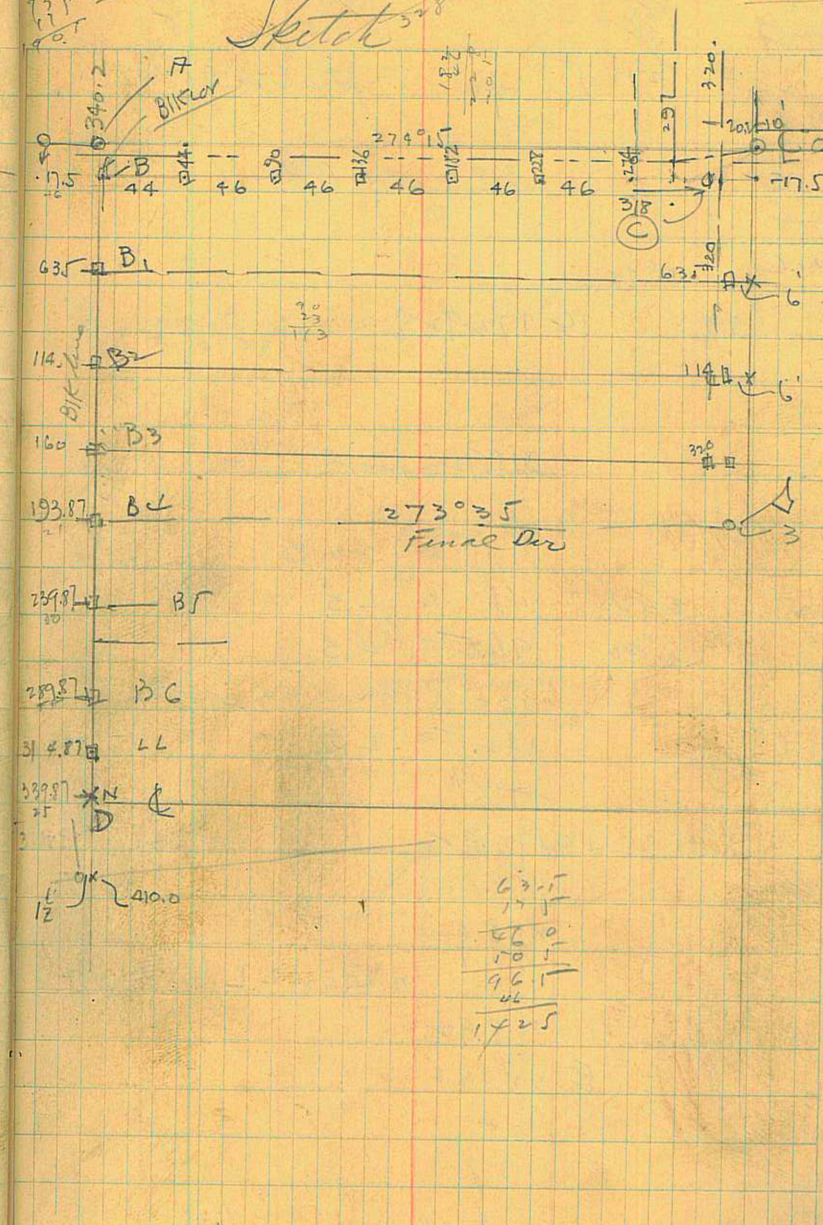
L S = lag screw

Providence Cemetery
final points – 5-22-1930

	Az.	ft.	
Beg at pt. A			
	2°40	17.5	L.S.
		63.5	LS
		114	LS
		193.87	LS
		239.87	LS
		289.87	LS
		339.87	LS
Beg pt B.			
	274°15	44	LS ℄ 4' N + S walk
		90	LS "
		100	nail fnd
		136	LS
		182	LS
		200	
		205	Lot line
		228	LS
		274	
		297	LL

Sketch

X no cor



from B

274.5   300   pt a nail   96.5

680
114
46

114
63.5
50.5
46
96.5

c   318.0 cor Blk –

C – frame

2°40

1L 172.92

318.92 nail

c

2°40'   46   L S

2°40   96.5   L S

100.

142.5   L S

1L 172.92
46

218.92
50

239.92 L.L. no L S

268.92
50

E 318.92

172 ad
93.92

274
46
320

114
63.5
50.5
46
96.5
46
142.5
171.5

33987
19387
14600
17292
318.92

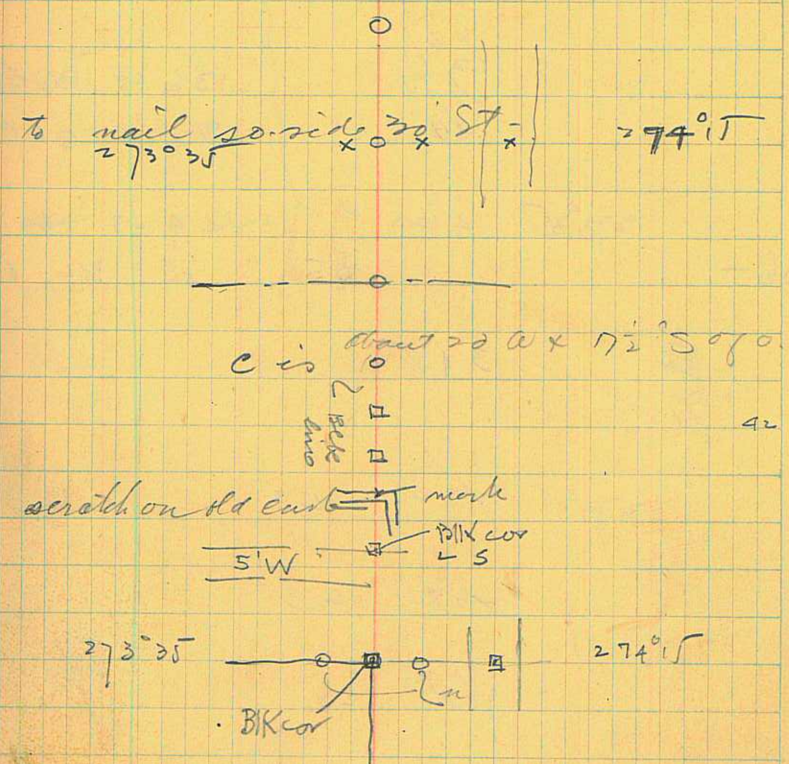
172.92
42.5
130.42

96.5
46
142.5

17.5
46

160
114
46

46
50.5



 136

up

	318 44	318	318	318 full. 18' s corrected				17.5
	274	274 LS	274 LS	274 LS		274 LS		46.0
	228	228 LS	228 L	228	228	228 LS		50.5
	182	182 LS	182 L	182 LS	182 LS	182 LS		46
	136	136 LS	136 LS	136 LS	136 LS	136 LS		160
	90	90 LS	90	90 LS	90 LS	90 LS		
273°35'	44	44 LS	44	44	44 LS	44		
B6 —		B5 ↑	B4 —	B3	B2	B1		

274°0' 274°0' 274°0'

E 318

273°35' 274 LS

228 LS

182 LS

136 LS

90 LS

273°35' 44

D —

44.2
22.1
190
21 21

Providence Cemetery

5-23-1930

Az Dist

	220			220
	166	L S		166 LS
	112	L S		112 LS
	58.00	L S		58 LS
184°15	10'			10 LS
F—			0.0	
	240.42	as meas to nail		
	190	L S L		
4°15	160	L S		
	112			
	58			
4°15	10	L S		
F—				

Beg at the E pt of 0 0 call F

240.42
190
50.42
c
44.42

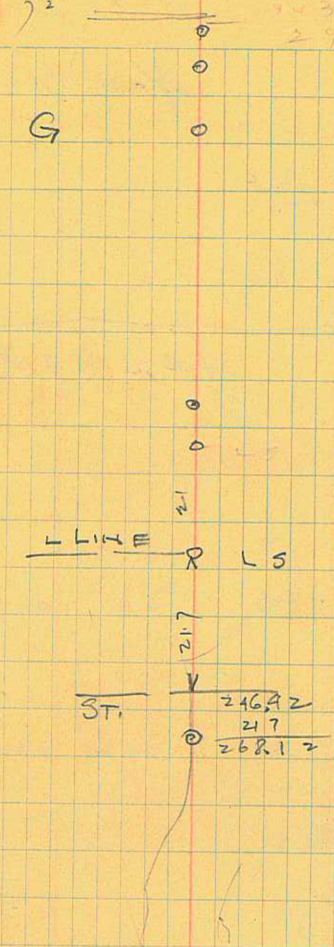
42

80

	141.2		
27°15	93		514½ to fence E
27°15	45	LS	
G –			
	370	old fence	
G –	343.62	LS	Caytone S. end
	322.12	L line a LS	
	301.12	Lot line	
	300.	nail	
	295.12	LS	
4°15	289.12	LL	
4°15	268.12		
	240.42	LS	
	200	nail	
	190	LS	
	160	LS	
	112	LS	
	100	nail	
	58	LS	
4°15	10	LS	

0.0

45 / 93   93 24 / 6   45 24 / 72   48 / 81 / 42   48 93 / 141



82 intermediate

237
89
48

48.29

place old LS .2' W

189 LS
48
141 LS
100 nail
93 LS

45 LS

J-

N 370 feel 2 ft West of old corner

48
189

48
141 LS So 14' to form

141 LS So 14' to cor form

I- 274 0/5
93 LS
45

145 to form N + S
117 LS feel 48 N of pipe form
24
II- 279 0/5
93
45

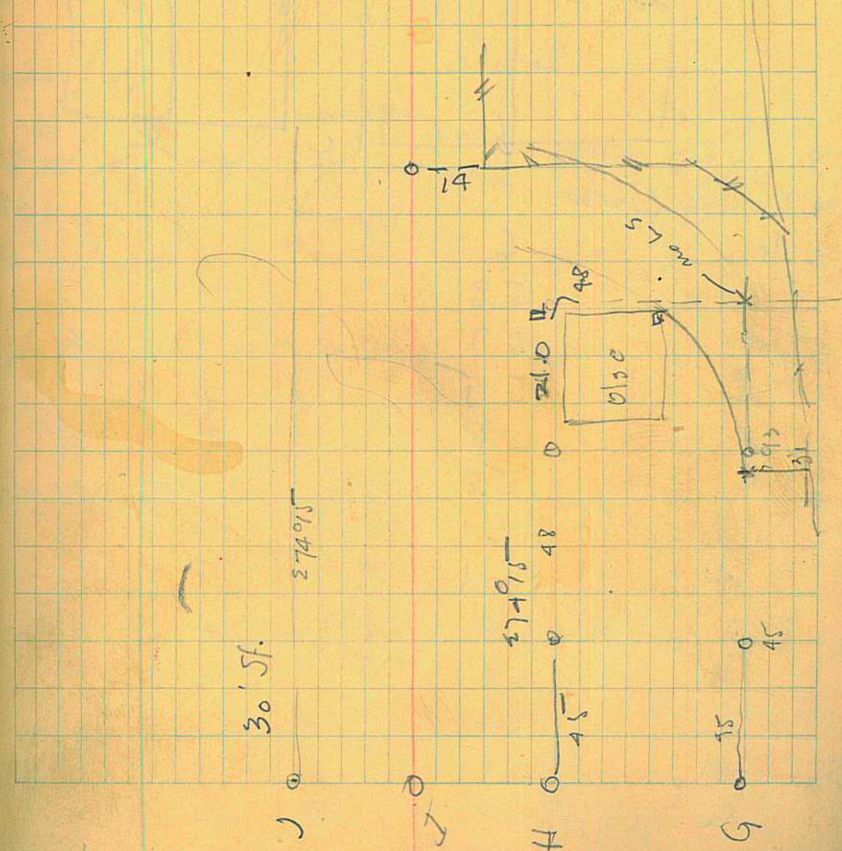
141
24
117

21/3

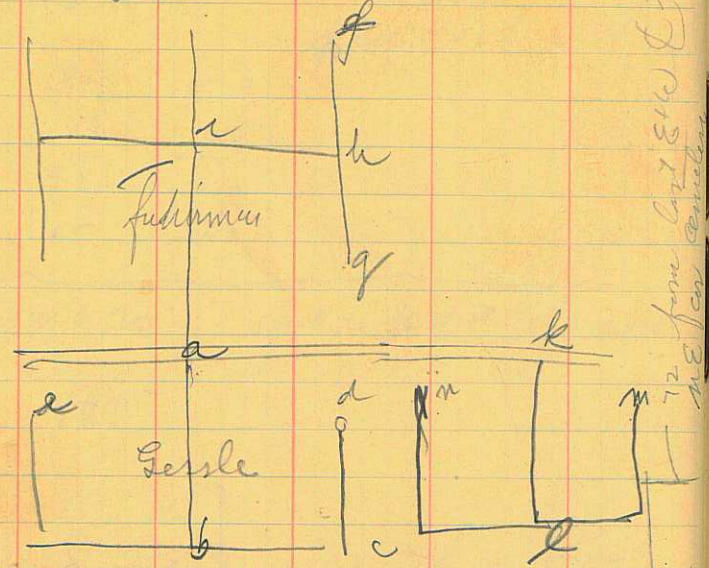
93
141
24
117

249 71
48 29

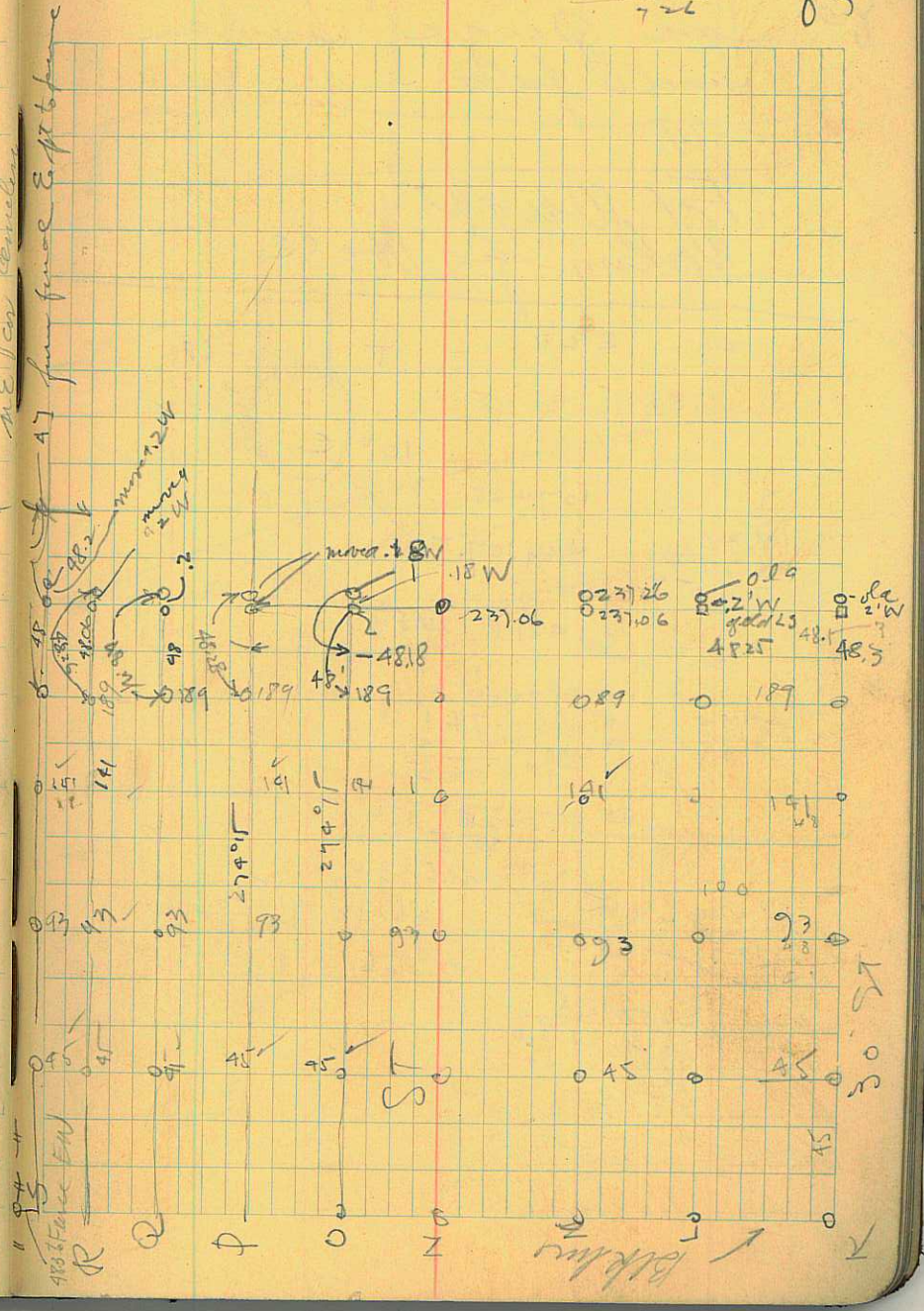
83



Levels



a	6.20
b	6
c	5.8
d	5.7
e	5.5
f	5.8
g	5.8
h	6.1
i	6.1
k	5.4
l	6.8
m	6.6
n	6.5
	6.2



86 Sam Paige Lineman
Smithfield –
W.

Fat Wright
Working for Bell

△ 520 = T 107.4.68 / 90 / 174 (90 / 12

183 90 ft

10° C Sta

107.4.68

say 107.50

183
107.50
75.50

148.8 (75.5 / 1

148.8 (20 / 74.1 / 4 / 74.5

81
80
18

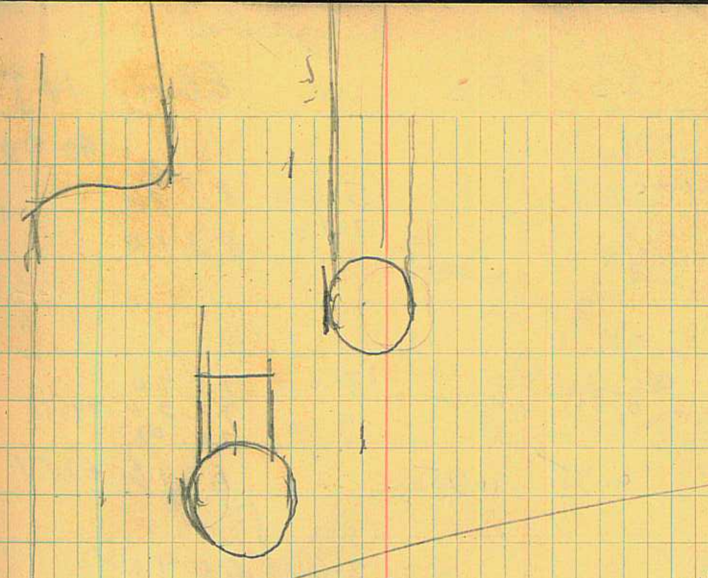
281.50
255 20
26 30

1349.2 (15 / 90.0
135

156.70 (15 / 10.4
15
066

2650 (15 / 176.6
15
115
105
100

87



1670.0 (165 / 1

1670 (15 / 111

2386 (15 / 15
80

1800 / 45 / 2250

1670 / 70 / 835

1670 / 1720

20 / 119

12 – E

84 – T

17960
3230
2 (14730
7345

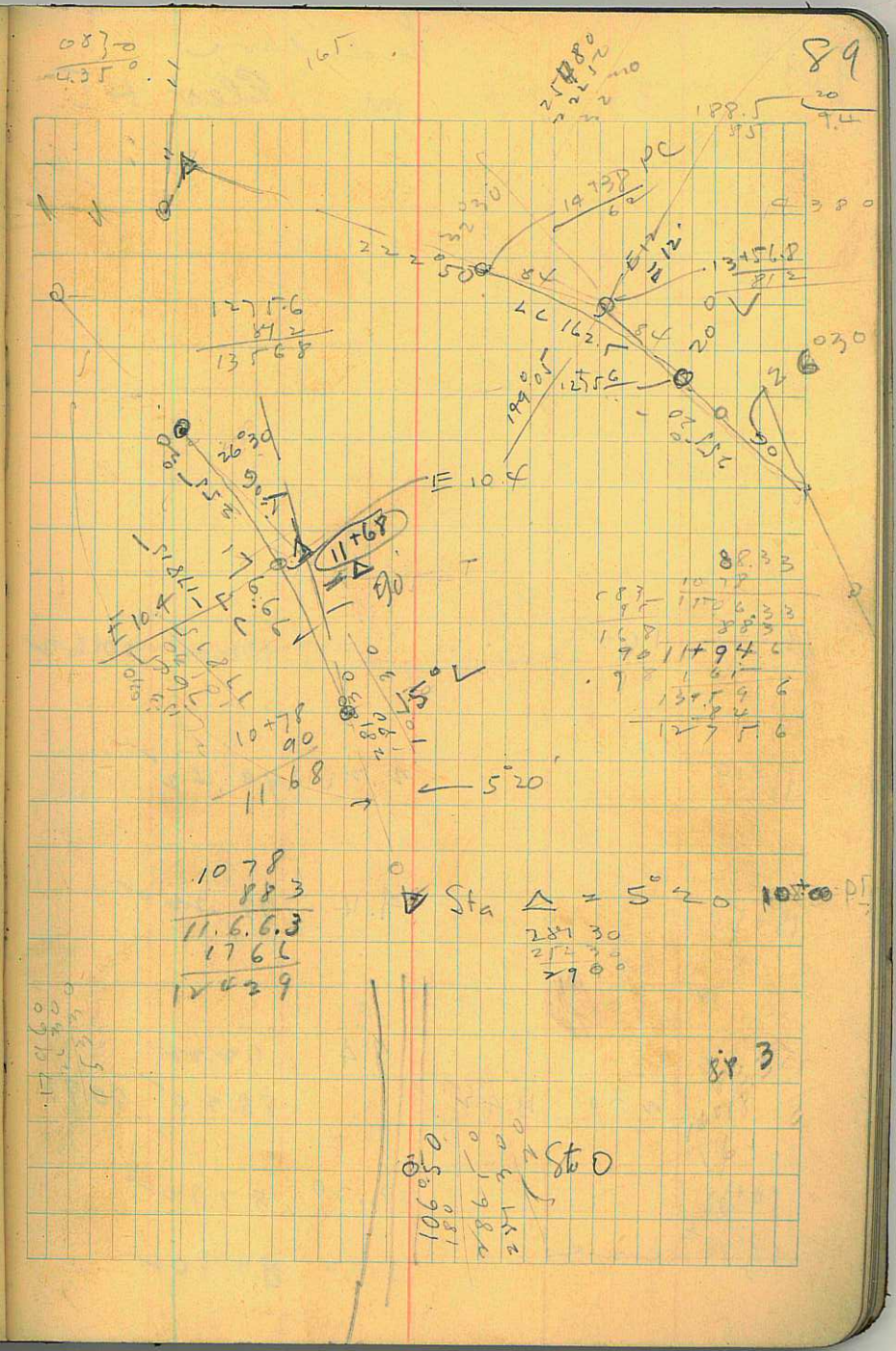
22450 / 7345 / 14905

32.50 (20 / 162.5
.25
50

27335
18840
99
45

levels taken

	BS	FS	HI	Elev	HI
14+38 BC					90.90
13+76.8 Curve curve				5.60	85.30
13+06 ±				7.80	83.10
13+59.6 PI 14+30					
PC 12+75.6 12.5 ±				12.00	78.90
PT 11+94.6 11+66	0.81	12.60		7.10	78.30 79.11
					72.01
	0.35	11.95			67.16 67.51
11+06.3 11+66				2.60	64.91
10+78 ✓				10.1	57.41
Sta. 10+00				11.50	56.01



Levels down

	BS	FS	[illegible]	Elev	HI
16+71	1.62			100.00	101.62
16+00			2.20	99.42	
15+50			4.4	97.22	
15+00 (50)			9.4	92.22	
	2.70	13.42		88.20	90.90
14+38			3.20	87.70	
13+88± on curve			3.80	87.10	

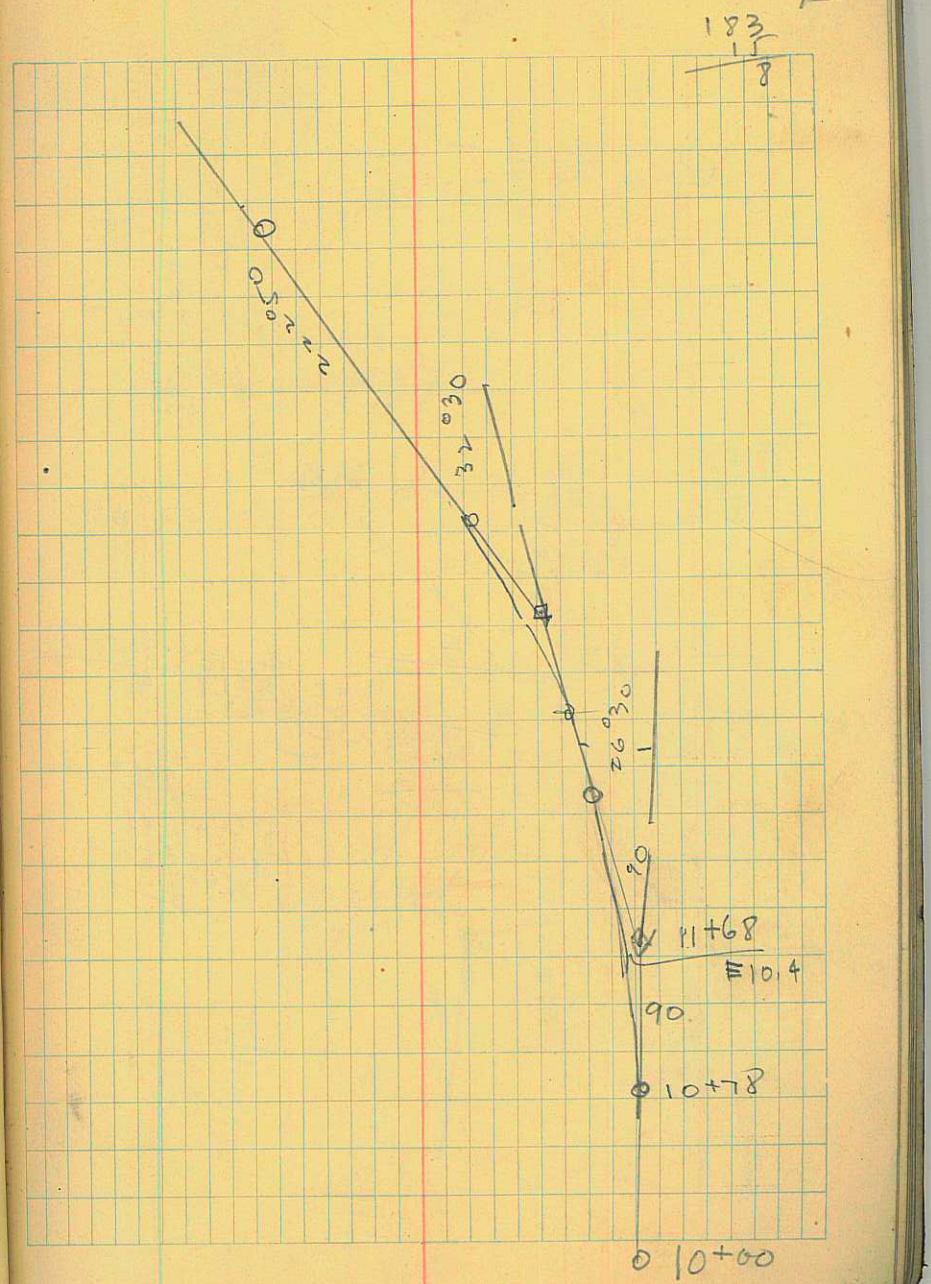
on nail raise gr. 5' o nail

2.22

o

92

93



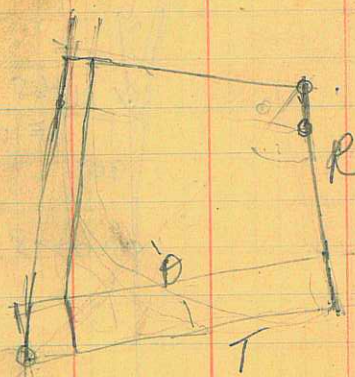
94

$R = \tan \frac{1}{2} I \, T$

$T = R \tan \frac{1}{2} I$

$\tan \frac{1}{2} I$

$R = 43.7$

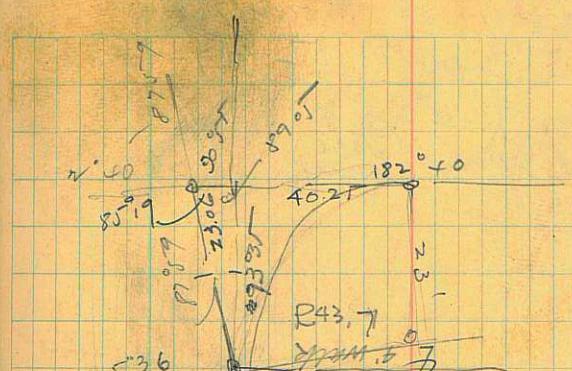


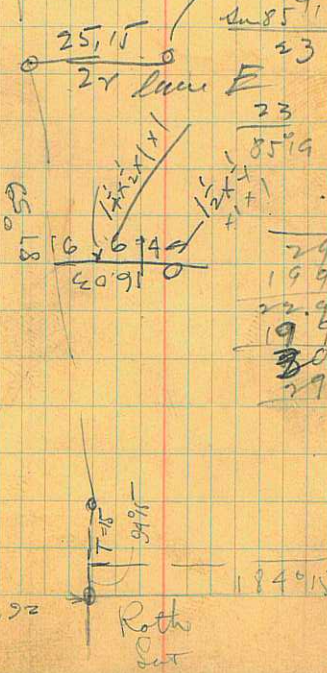
$\tan \theta \cdot \frac{R}{T}$

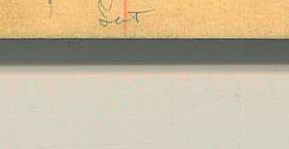
$\tan \frac{1}{2} I = \frac{R}{T}$

95

87°59







Cemetery

16 Providence Pump

Started 5:30 PM 5-27-1930

Rev time Pres. Gate open

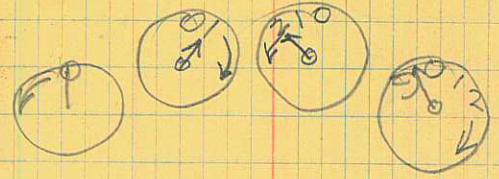
15 60"

to here

2560

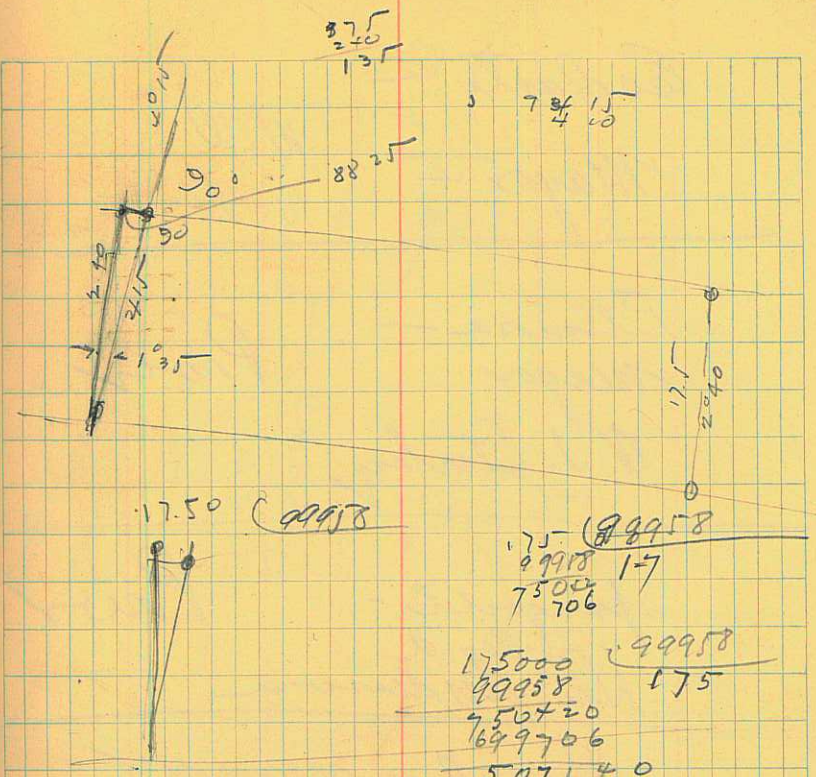
5000 3600

1



29' - 1"

1600 (.99962
99962 1600.06
600380
599772
608.000



Escalante — W.W

Mayor —

Fillmore — Power

mayor

W. J. Starley

Springville — Power

see a

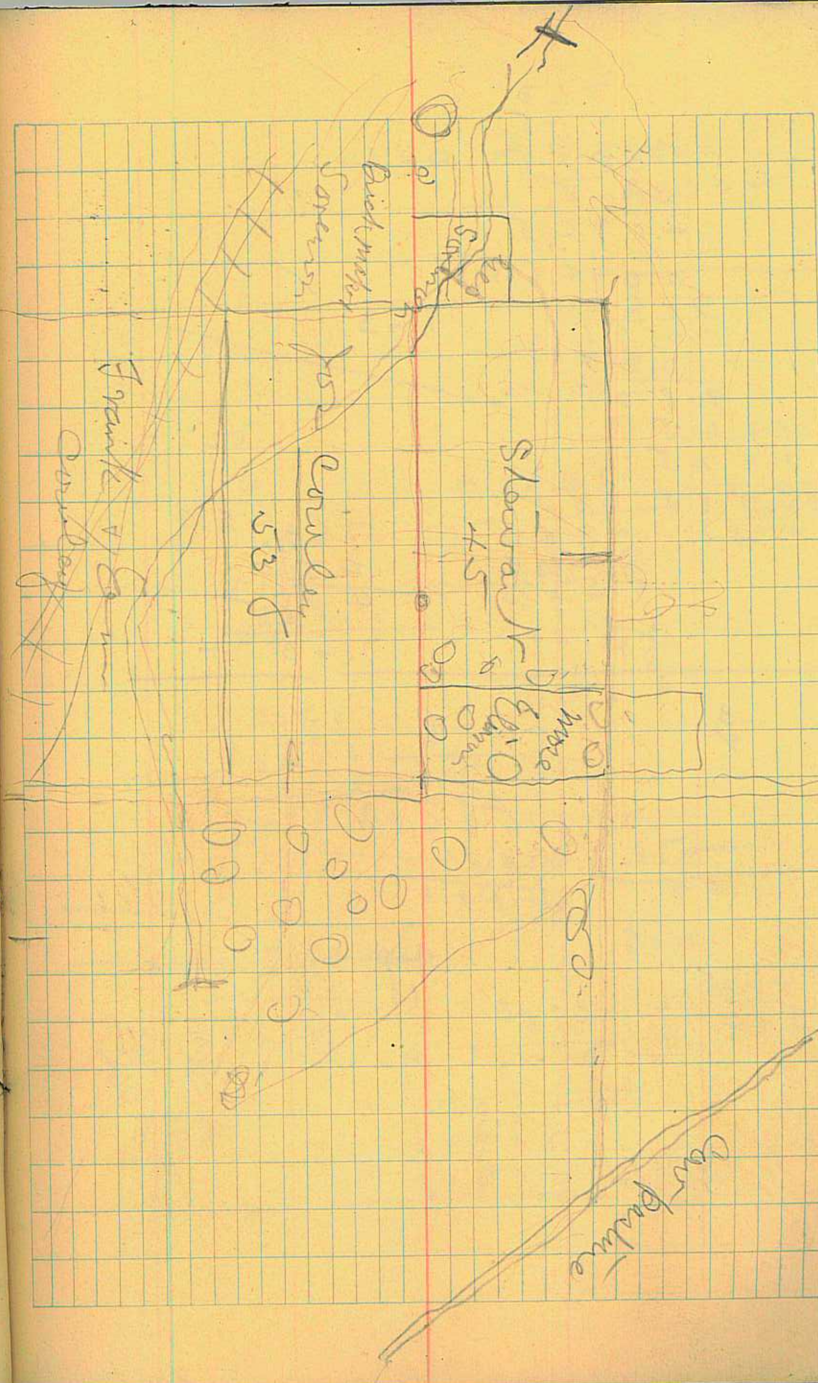
Dr Anderson

Vernal — mayor W Work

W. M. Preas.

Price W Work

Mayor Frank Olsson



7.63
.55
3815
3815
4.1965

2.09
3066
32.75
7.63
9825
19650
22925
24.988 25

7.63 ✓

763
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4.88
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30.66
419
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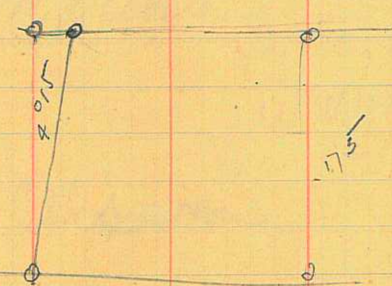
35

3/4

.00029
.00174
2240
6960
348
.41760

415



4860 = 3.68664
1.84332

69.72

.55
6
3.30

.55
8
4.40

30.66
330
3396
3066
6462

32.31
6
19.386

30.66
44
3506

30.66
222
32.886
8 ch
26.488
25
1.48

14.88
1X0
88
35.40
.42

7.60 ch
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4.1800

7.63

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34.86
3

30.66
42
3486

1998
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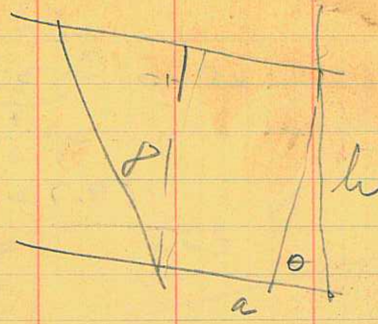


$\sin\theta\, h \left(\frac{a + (a + \sin h \tan 8)}{2} \right) = 250$

$\sin\theta\, h a + \sin\theta\, h a + \sin^2\theta\, h^2 \tan 8 = 500$

a b c

$h^2 \sin^2\theta \tan 8 + 2\sin\theta\, h a - 500 = 0$

$\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

.55
4
2.2000
1100

.55 = a

2 30.66
2
61.32

61.32 = b
500 c

61.32
61.32
12264
18396
6132
36792
3760.1424

3760
11
2660 | 51
25
160

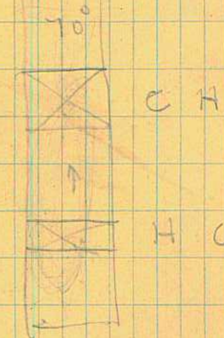
14
23
42
28
32.5

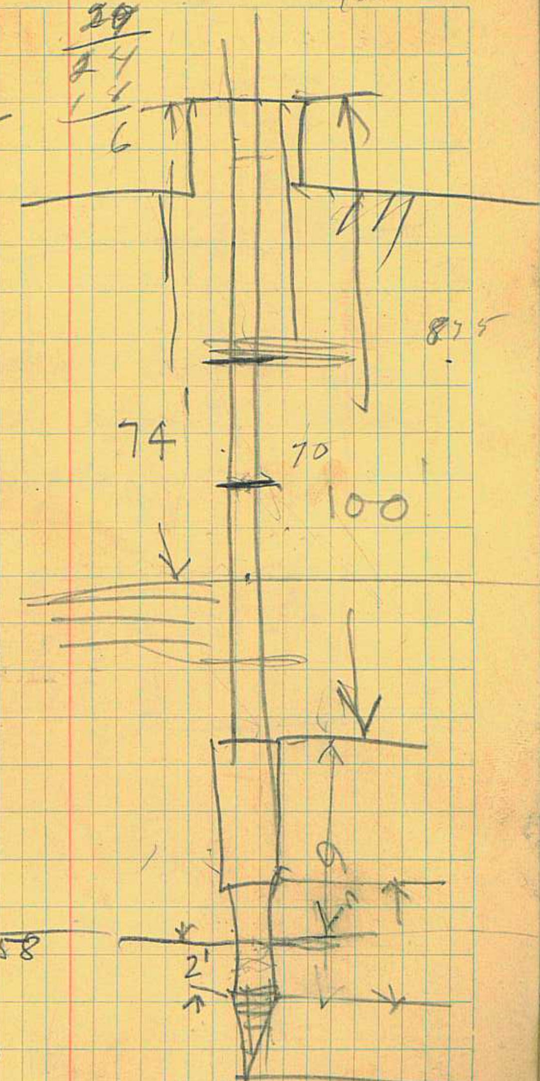
120
325
875

4
20
24
14
6

18

875





50

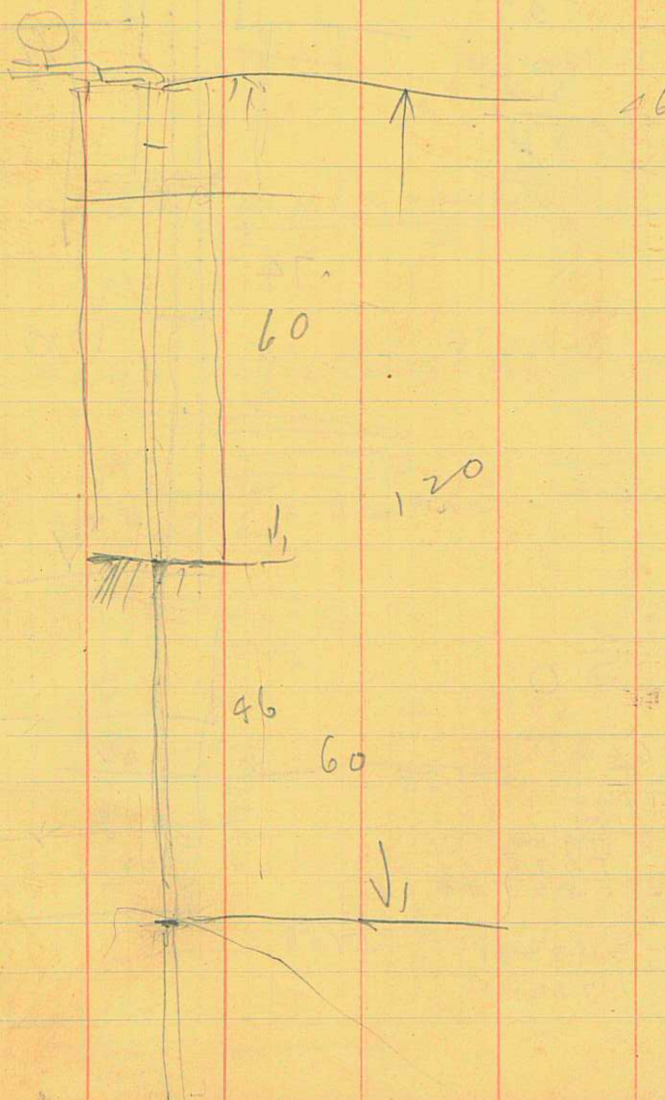
2660 (51.58
21
100 160
1 101
1015 5900
5 5075
1020 82500

2)3.42488
1.71244

51.58

84
28
112

28
3



2.31
20
46.20

396
421
817
.408

120
46
14
14

.41
4150
2050
164
184.

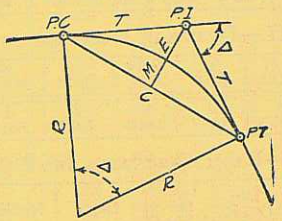
Butanol Commercial Solvents Corp
Terre Haute, Indiana
sample

cos 89° .0175
.0175
825
1225
175
.000305775

.55
.003
.00165

.0016

DIETZGEN'S RAILROAD CURVE AND REDUCTION TABLES



CURVE FORMULAS

Radius=R=$\frac{50}{\sin. D/2}$ (1) Degree of Curve=D and sin. $\frac{D}{2}=\frac{50}{R}$ (2)

Tangent=T=Rtan$\frac{\Delta}{2}$ (3) Length of Curve=L=100$\frac{\Delta}{D}$ (4)

Middle ordinate=M= R(1—cos. $\frac{\Delta}{2}$) (5) =Rvers $\frac{\Delta}{2}$ (6)

External=E=Ttan$\frac{\Delta}{4}$- (7) =R÷cos.$\frac{\Delta}{2}$—R (8)=Rexsec$\frac{\Delta}{2}$ (9)

Long Chord=C=2 R sin.$\frac{\Delta}{2}$ (10) Δ=Central Angle

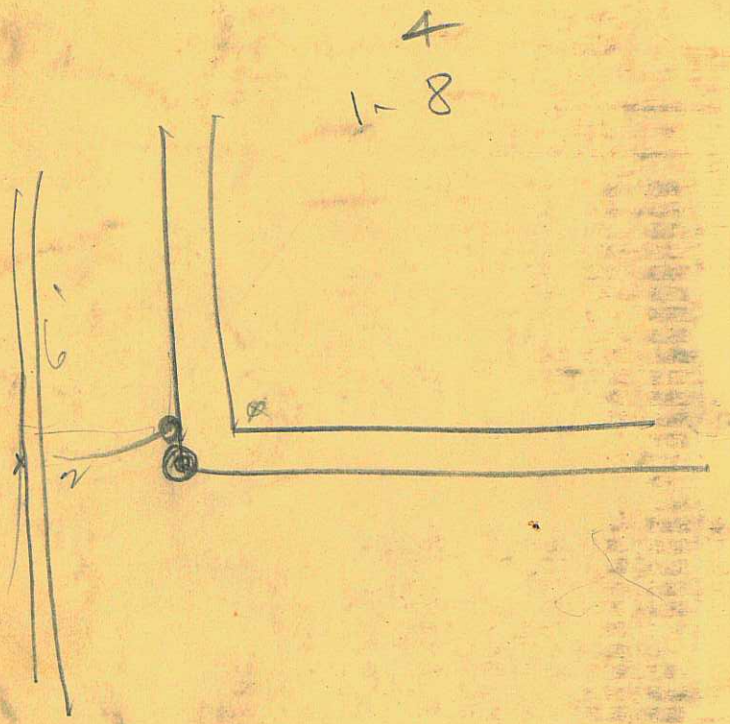
EXPLANATION AND USE OF TABLES

Stations.—Given P. I.=Sta. 161+60.35 to find Sta. of P. C. and P. T. Δ=62° 10′ D=8° 20′. From Table IV for 1° curve T=3454.1 and÷8⅓=414.49 ft. From Table V correction=.36 or T=414.85 ft. P. C.=Sta. P.I.—T=157+45.50. Also from (4) L=746.00 and P. T.=Sta. P. C.+L=164+91.50.

Offsets.—Tangent offsets vary (approximately) directly with D and with square of the distance. Thus tangent offset for Sta. 158 on above curve is 2.16 ft. found as follows. From Table III tangent offset for 100 ft.=7.27 ft. Distance=158—Sta. P. C.=54.50, hence offset=7.27 $(54.50\div100)^2$=2.16 ft. Also square of any distance divided by twice the radius equals (approximately) the distance from tangent to curve. Thus $(54.50)^2\div(2\times688.26)$=2.16 ft.

Deflections.—Deflection angle=½ D for 100 ft., ¼ D for 50 ft., etc. For c ft.=(in minutes) .3 x C x D° or=defl. for 1 ft. from Table III x C. For Sta. 158 of above curve=.3 x 54.5 x 8⅓=136.2′ or 2° 16.2′, or=2.50 x 54.5=136.2′ from Table III. For Sta. 159 deflection angle=2° 16.2′ +8° 20′ ÷2=6° 26.2′, etc.

Externals.—May be found in similar manner to tangents. Thus E for curve above is 91.37. For from Table IV for 1° curve E=960.6 for 8° 20′=960.6÷8⅓=91.27 and from Table V correction=.10 or E=91.37 ft. Or suppose Δ=32° and E is measured and found to be 42 ft. What is D? From Table IV E=230.9 and÷42=5.5 or D=5° 30′.



DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.

Roadway 16 feet wide. Side Slopes 1 on 1½.

For Single Track Embankment.

H	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	H
0	8.0	8.2	8.3	8.5	8.6	8.8	8.9	9.1	9.2	9.4	0
1	9.5	9.7	9.8	10.0	10.1	10.3	10.4	10.6	10.7	10.9	1
2	11.0	11.2	11.3	11.5	11.6	11.8	11.9	12.1	12.2	12.4	2
3	12.5	12.7	12.8	13.0	13.1	13.3	13.4	13.6	13.7	13.9	3
4	14.0	14.2	14.3	14.5	14.6	14.8	14.9	15.1	15.2	15.4	4
5	15.5	15.7	15.8	16.0	16.1	16.3	16.4	16.6	16.7	16.9	5
6	17.0	17.2	17.3	17.5	17.6	17.8	17.9	18.1	18.2	18.4	6
7	18.5	18.7	18.8	19.0	19.1	19.3	19.4	19.6	19.7	19.9	7
8	20.0	20.2	20.3	20.5	20.6	20.8	20.9	21.1	21.2	21.4	8
9	21.5	21.7	21.8	22.0	22.1	22.3	22.4	22.6	22.7	22.9	9
10	23.0	23.2	23.3	23.5	23.6	23.8	23.9	24.1	24.2	24.4	10
11	24.5	24.7	24.8	25.0	25.1	25.3	25.4	25.6	25.7	25.9	11
12	26.0	26.2	26.3	26.5	26.6	26.8	26.9	27.1	27.2	27.4	12
13	27.5	27.7	27.8	28.0	28.1	28.3	28.4	28.6	28.7	28.9	13
14	29.0	29.2	29.3	29.5	29.6	29.8	29.9	30.1	30.2	30.4	14
15	30.5	30.7	30.8	31.0	31.1	31.3	31.4	31.6	31.7	31.9	15
16	32.0	32.2	32.3	32.5	32.6	32.8	32.9	33.1	33.2	33.4	16
17	33.5	33.7	33.8	34.0	34.1	34.3	34.4	34.6	34.7	34.9	17
18	35.0	35.2	35.3	35.5	35.6	35.8	35.9	36.1	36.2	36.4	18
19	36.5	36.7	36.8	37.0	37.1	37.3	37.4	37.6	37.7	37.9	19
20	38.0	38.2	38.3	38.5	38.6	38.8	38.9	39.1	39.2	39.4	20
21	39.5	39.7	39.8	40.0	40.1	40.3	40.4	40.6	40.7	40.9	21
22	41.0	41.2	41.3	41.5	41.6	41.8	41.9	42.1	42.2	42.4	22
23	42.5	42.7	42.8	43.0	43.1	43.3	43.4	43.6	43.7	43.9	23
24	44.0	44.2	44.3	44.5	44.6	44.8	44.9	45.1	45.2	45.4	24
25	45.5	45.7	45.8	46.0	46.1	46.3	46.4	46.6	46.7	46.9	25
26	47.0	47.2	47.3	47.5	47.6	47.8	47.9	48.1	48.2	48.4	26
27	48.5	48.7	48.8	49.0	49.1	49.3	49.4	49.6	49.7	49.9	27
28	50.0	50.2	50.3	50.5	50.6	50.8	50.9	51.1	51.2	51.4	28
29	51.5	51.7	51.8	52.0	52.1	52.3	52.4	52.6	52.7	52.9	29
30	53.0	53.2	53.3	53.5	53.6	53.8	53.9	54.1	54.2	54.4	30
31	54.5	54.7	54.8	55.0	55.1	55.3	55.4	55.6	55.7	55.9	31
32	56.0	56.2	56.3	56.5	56.6	56.8	56.9	57.1	57.2	57.4	32
33	57.5	57.7	57.8	58.0	58.1	58.3	58.4	58.6	58.7	58.9	33
34	59.0	59.2	59.3	59.5	59.6	59.8	59.9	60.1	60.2	60.4	34
35	60.5	60.7	60.8	61.0	61.1	61.3	61.4	61.6	61.7	61.9	35
36	62.0	62.2	62.3	62.5	62.6	62.8	62.9	63.1	63.2	63.4	36
37	63.5	63.7	63.8	64.0	64.1	64.3	64.4	64.6	64.7	64.9	37
38	65.0	65.2	65.3	65.5	65.6	65.8	65.9	66.1	66.2	66.4	38
39	66.5	66.7	66.8	67.0	67.1	67.3	67.4	67.6	67.7	67.9	39
40	68.0	68.2	68.3	68.5	68.6	68.8	68.9	69.1	69.2	69.4	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 41.9. 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 41.9 + (20—16) ÷ 2 or 2 ft. added to 41.9 = 43.9.

For slopes of 1 on 1 see inside of front cover.

Made in Germany.