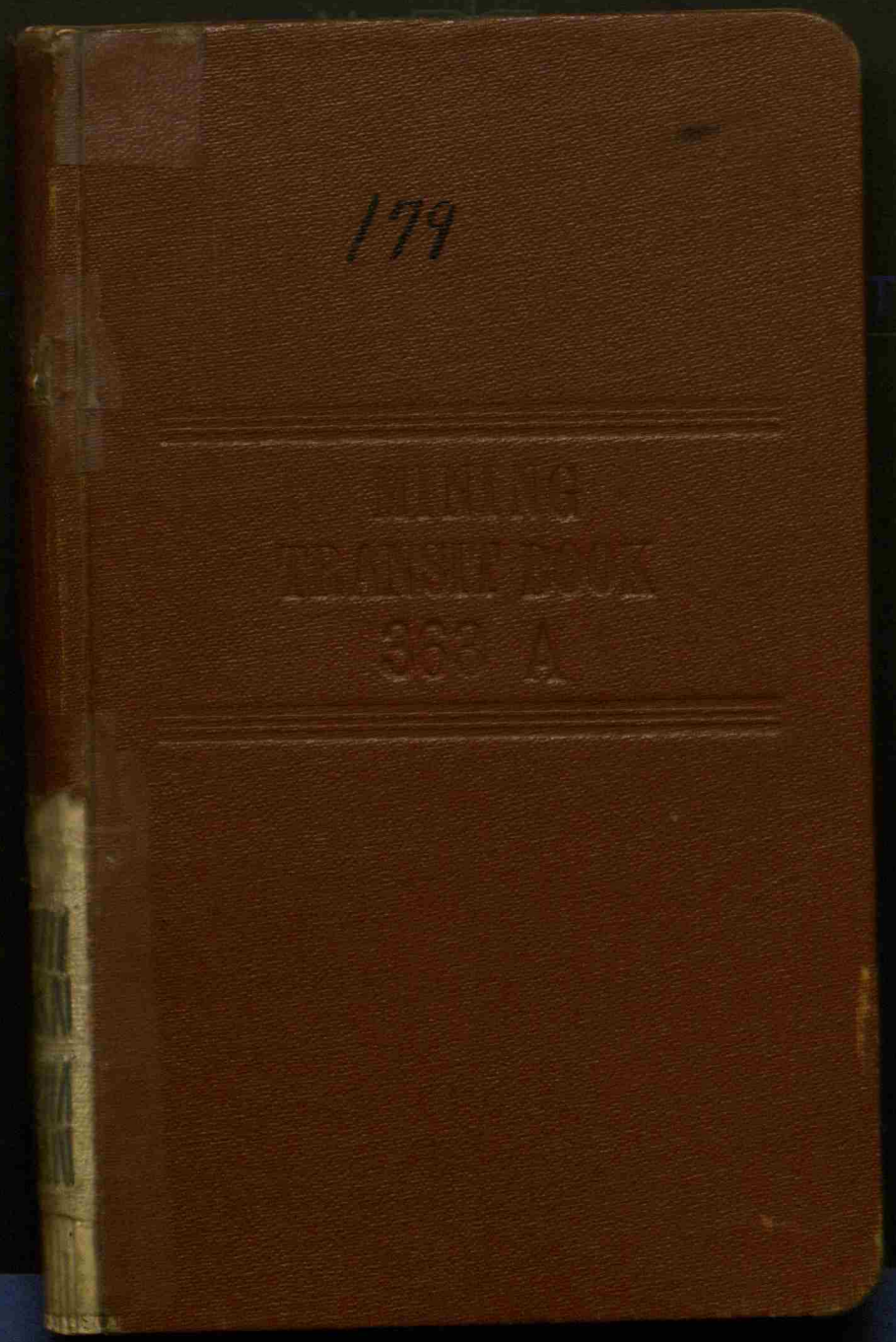

179

KEUFFEL & ESSER CO.

DRAWING MATERIALS
AND
SURVEYING INSTRUMENTS.
NEW YORK.

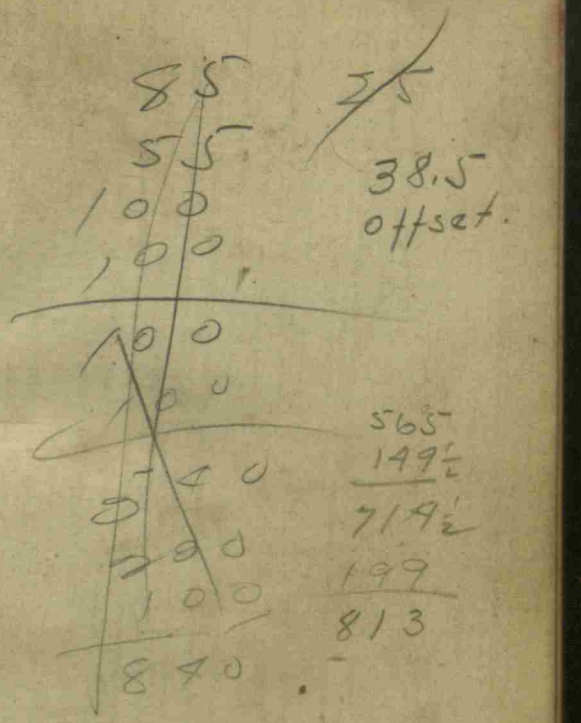
CHICAGO. ST. LOUIS. SAN FRANCISCO. MONTREAL.

TABLES FOR EXCAVATIONS AND EMBANKMENTS.

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.
ROADWAY 18 FEET WIDE. SIDE SLOPES 1 TO 1.
FOR SINGLE TRACK EXCAVATION.

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

Calculated by Julien A. Hall, M. Am. Soc. C. E.



0	+	T	−	BM
	0.84	937.50		936.66
			8.36	929.14
	0.69	929.83		

929.83
924.22
5.41
5.58

929.83
923.50
6.33

923.
6.83

983
924.08
5.75
83

929.83
924.08
5.75

929.83
924.75
5.08

−	⊼	+	B M	
	101.00	1.00	100.00	on top of West gate post
0.13			100.87	
	111.72	10.85		
2.18			109.54	
	120.76	11.22		
0.19			120.57	
	130.01	9.44		
1.15			128.86	
	137.76	8.90		
1.57			136.19	
	146.50	10.31		

88.85
Top tile 12.15

94.45
6.55 top Ground at #1

100.51
11.21 in ditch between #1 + 2

107.54
8.18 stk #2

119.95
0.81 stk #3

126.11
3.90 stk #4

127.01
3.00 Fl. storm sewer

141.70
4.80 stk #5

140.38
3.12 BM on NE corner of Concrete Slab at boiler Room

#1 to #2 = 213'

#2 to #3 = 224'

#3 to #4 = 90'

#4 to Wall = 100'

Wall to Stk # 5 = 24'

Stk # 5 to old Dept. Tank 69'

		π	+	BM
		108.01	8.01	100.00
7+0				
8+0				
8+60				

SHK

105.73
4.28

105.17
2.84

104.20
3.81

Sta.	−	⊼	+	BM
		102.87	2.87	100.00
0+0				
1+0				
2+0				
2+25				
3+0				
	0.92			101.95
		108.33	6.38	
~~3+??~~				
4+0				
5+0				
6+0				
7+0				
8+0				
8+40				

B.M. on top Hand Rail
Bridge S.W. Cor. Ele. 100.00
Sta. 0+0

8+40

th. stream 92.08 / 10.84

Sta.	Stk	Ground
0+0	95.15 / 7.72	93.74 / 9.13
1+0	98.75 / 4.12	97.00 / 5.88
2+0	99.76 / 3.11	97.87 / 5.00
2+25		98.55 / 4.32
3+0	101.95 / 8.92	98.55 / 4.32
4+0	104.48 / 3.85	102.28 / 6.05
5+0	105.72 / 2.61	103.11 / 5.22
6+0	103.81 / 4.52	102.49 / 5.84
7+0		102.22 / 6.11
8+0		103.58 / 4.75
8+40		103.21 / 5.12

	Cut
0	2.15'
1	5.25'
2	5.76'
3	7.90'
4	8.45'
5	7.72'
6	5.23'
7	4.57
8	5.43
+60	3.83

8 and ½ ton tile to be gotten

[illegible] 1

from Cor .1 Mile to Gray + Hawkins N. Line
from Cor. .3 Mile to turn E.
.5 mile long East + West

.35 N to where road goes west,
.55 over all length.

Surveyed: Dec. 14, 15, 1936
G. H. Cook.
R. W. Armstrong.

10
10
10
10
4
6
10
10
10

63.16
61.715
1.445

4 | 2.33
.58
3
1.74
.7

17

Reestablishment N. line Sec 27-15-1E.
NW corner of 27-15-1E.

On Randam running E.

44 chains - Def. L - 1°38'

63.16 Def R - 2°37'

82.33 NE cor Sec 27-15E

Set N[r] mile stone 41.10
E of mid corner on true line

Set Cen N - NE[4] - 27-15-1E
61.65 E of mid cor of Sec. on true line

Ran Randam W. from NE corner 27 - Intersect W. line Sec. 27 - 91½ lks N. of NW corner

44 ch. - offset S. .426 ch.
63.16 ch. - " S. .213 ch.

Bush Lake

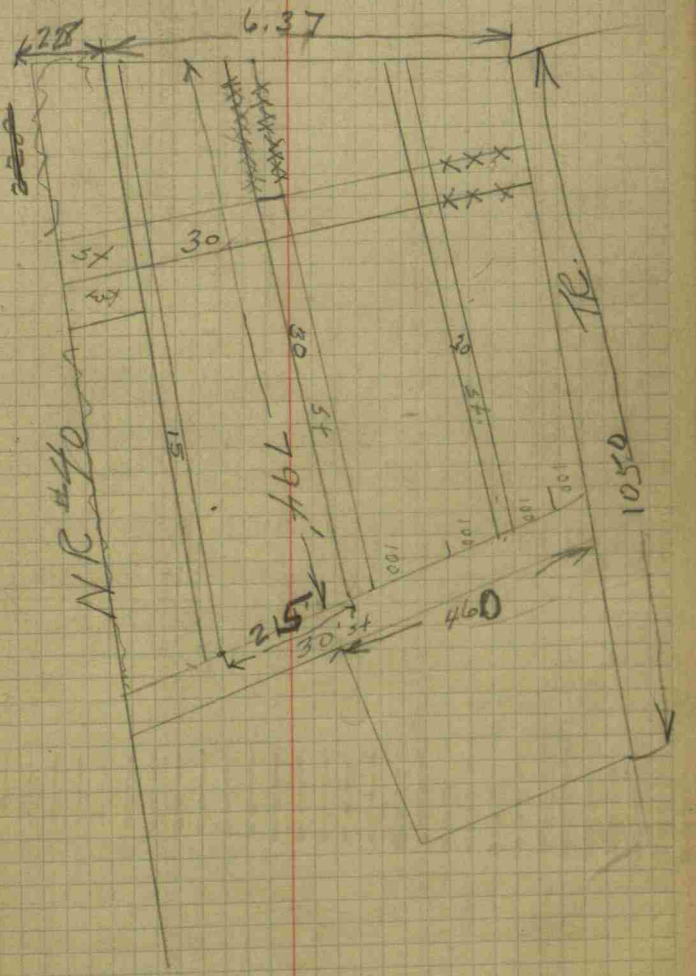
153' – 219°-29'
1098' – 242°-50'
245' – 116°-55'
730' – 256°-00'

22.84

	−	⊼	+	BM
		109.62	9.62	100.00
	0.14			109.48
		120.91	11.43	

120.51
0.40 BM on Concrete Wall

7.65
2.28
6.37



Sewer

6"
12" } 36"

	−	⊼	t	BM	3 pts 100.00 5 ft Ret. Wall Sta. 0+40	Top Stk	Ditch
~~+0~~		100.92	0.92	100			
0+0						0.69	99.29 1.63
1+0						6.89	
	6.89						
		94.61	0.58	94.03			
2+40						8.60	85.56 9.05

13.70

Bush Lake Levels

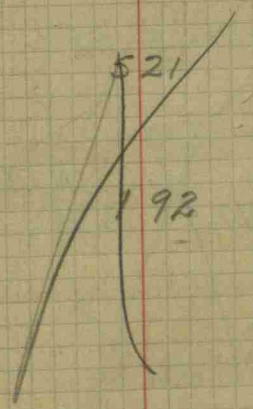
−	π	+	BM	
			120.51	Con. head wall
	129.73	8.82		
8.80				
15+70				
8.20			121.93	
	121.35	.22		
5.92			126.05	

8.20

5.58

Bush Lake Levels

	−	⊼	+	BM
				120.51 Bone Head
		128.06	7.55	
15+70				
	0.75			119.76
		127.13	7.37	
20+98				
21+38				
	1.38	133.29		125.75
		~~128.29~~		~~118.38~~
		~~126.92~~	7.54	
	.52			132.77
				~~125.40~~
		140.07	7.30	
28+39				
29+76				
31+27				



Note → Levels in new book

7+02

5+21

1+92

4+86

3+62

3+35

	−	TI	+	BM
		140.07		
	2.54			137.53
		148.51	10.98	
36+85				
39+19				
	0.26			148.25
		154.13	5.88	
46+25				
	0.27			153.86
		157.40	3.54	
47+89				
51+18				
	4.04			153.36
		157.05	3.69	
55+36				

0.60

128

103

624

491

760

	−	+		
			TP 157.05	BM
	6.47			150.58
			155.50	4.92
~~5812~~	1.05			154.45
			159.95	5.50
58+12				
60+71				
	2.70			157.25
			161.07	3.82
64+78				
	0.82			160.25
			167.20	6.95
69+50				
71+34				
73+52				

4	20
	3.68
7	41
4	88
9	33
7	71

	−	π	+	BM
		167.20		
77+53				
	6.17			161.03
		161.29	0.26	
83+04				
86+23				
	3.71			157.58
		160.91	3.33	
89+54				
	0.63			160.28
		171.78	11.50	
91+27				
	11.25			160.53
		161.13	.60	
	11.10			150.03
		153.08	3.05	
95+51				
101+11				

7 20

5.35

11 65

5 15

1 28

4.50

9 30

	−	TP	+	BM
		153.08		
105+23				
	1.05			152.03
		156.23	4.20	
106+76				
	4.60			151.63
		154.68	3.05	
117+79				
120+79				
	8.20			146.48
		150.98	4.50	
121+89				
133+89				
	2.67			148.31
		148.59	0.28	
~~137+11~~				
~~139+11~~				

1 90

9 55

1 64

9 27

2 98

3 70

	−	↑	+	BM
		148.59		
	10.18			138.41
		144.76	6.35	
	10.90			132.86
~~137+11~~		134.06	1.20	
137+11				
	9.70			124.36
		127.18	2.82	
139+60				
	5.95			121.23
		126.73	5.50	
	.65			126.08
		135.86	9.78	
145+65				
	3.14			133.72
		134.54	.82	
	11.94			122.60
		123.50	.90	

139+60

3 99

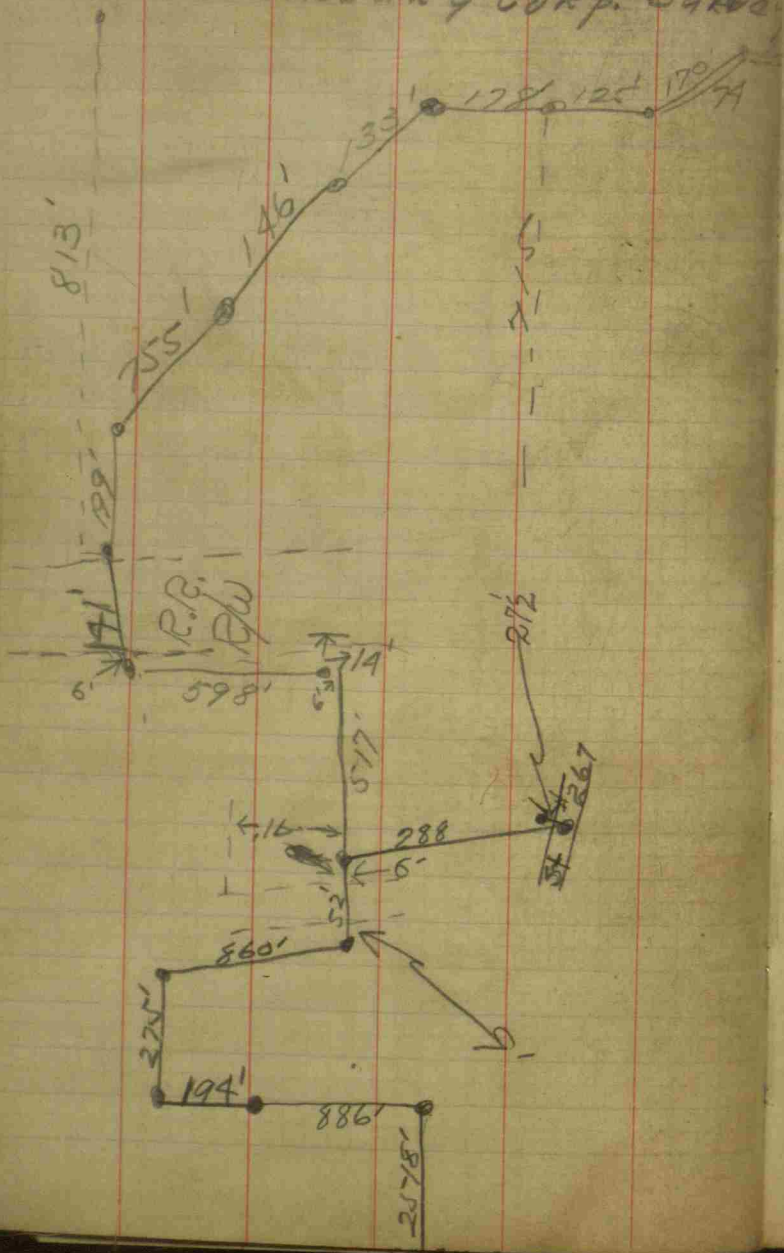
10 95

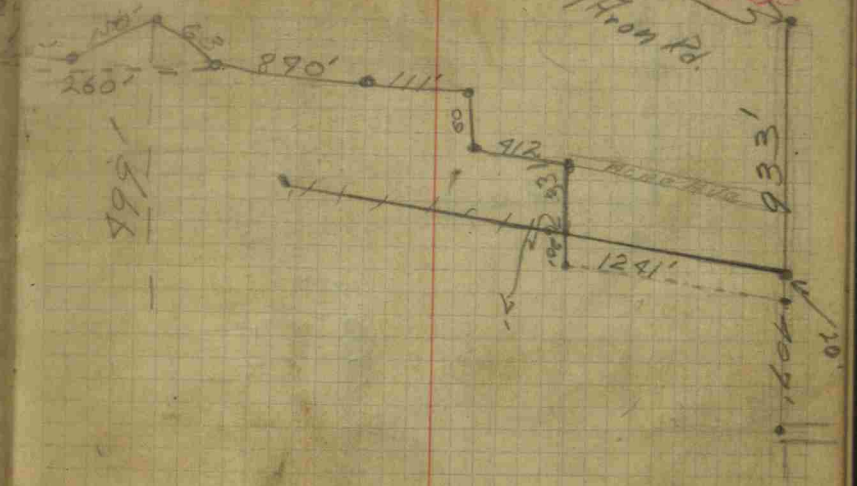
7 00

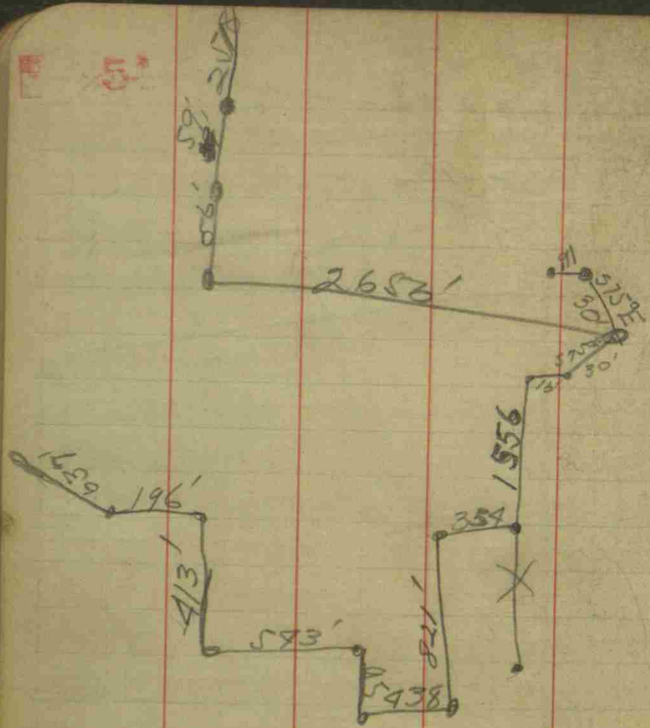
3 34

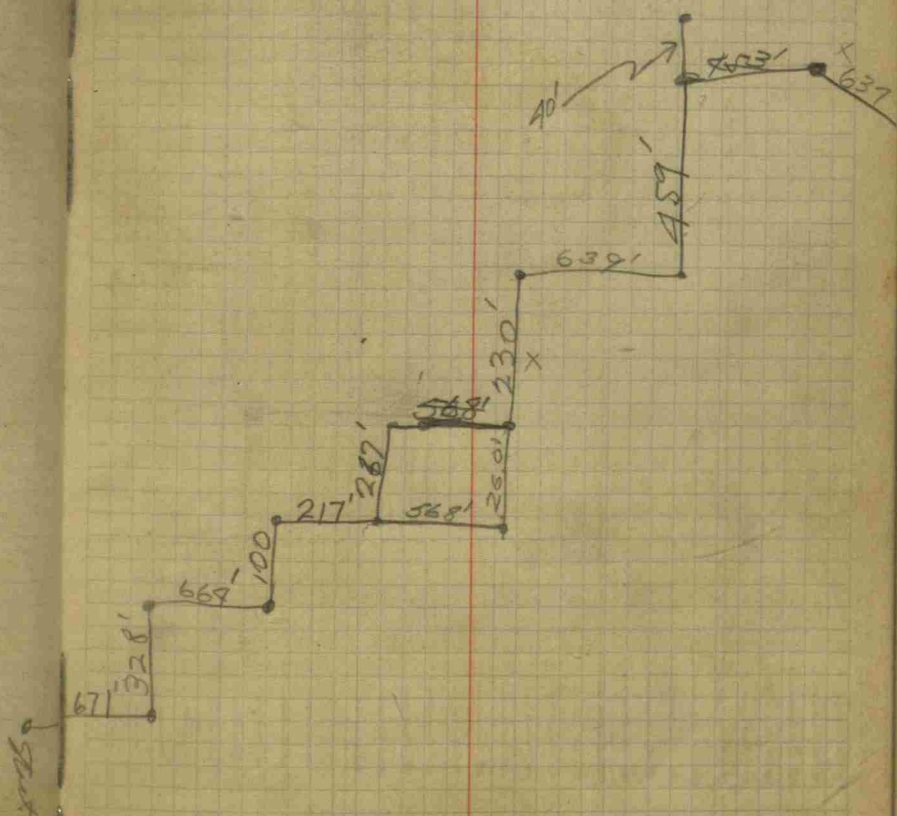
−	TP	+	BM
	123.50		
9.58			113.92
	114.37	AS	
6.24			109.13
	115.07	5.94	
6.20			108.87

Brownsburg Corp. Surv.






217
59'
56'
2658'
50'
30'
1556
354
196'
413'
583'
821'
5438


40'
637
459'
639'
230'
568'
287'
260'
568'
217'
100
664'
328'
671'

St. Rd #34

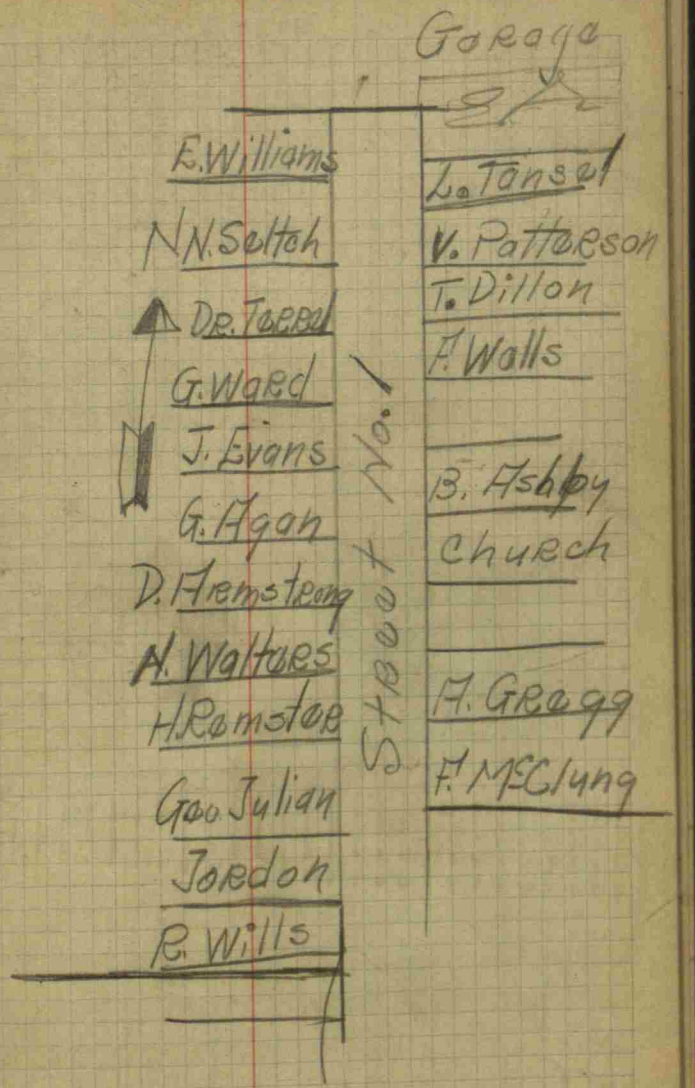
S. Line of Original Town

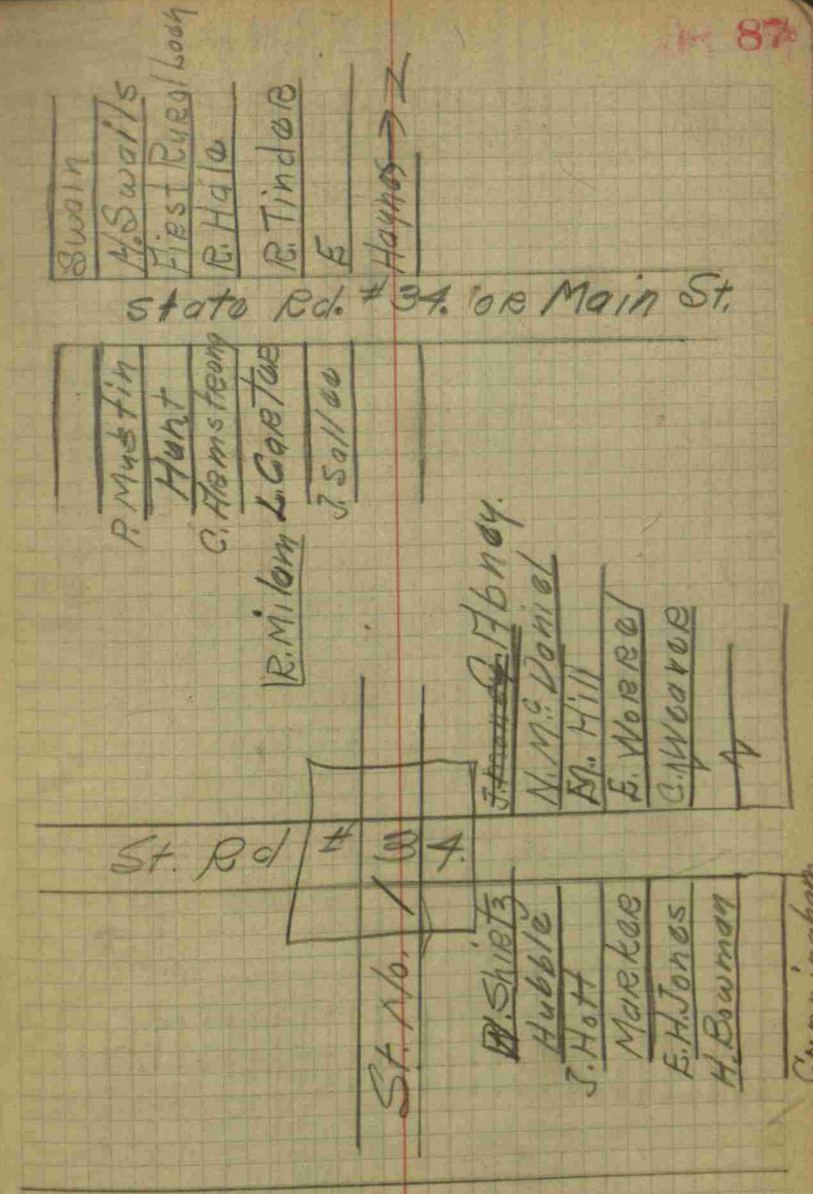
To Co Rd Line E. Side 1320'

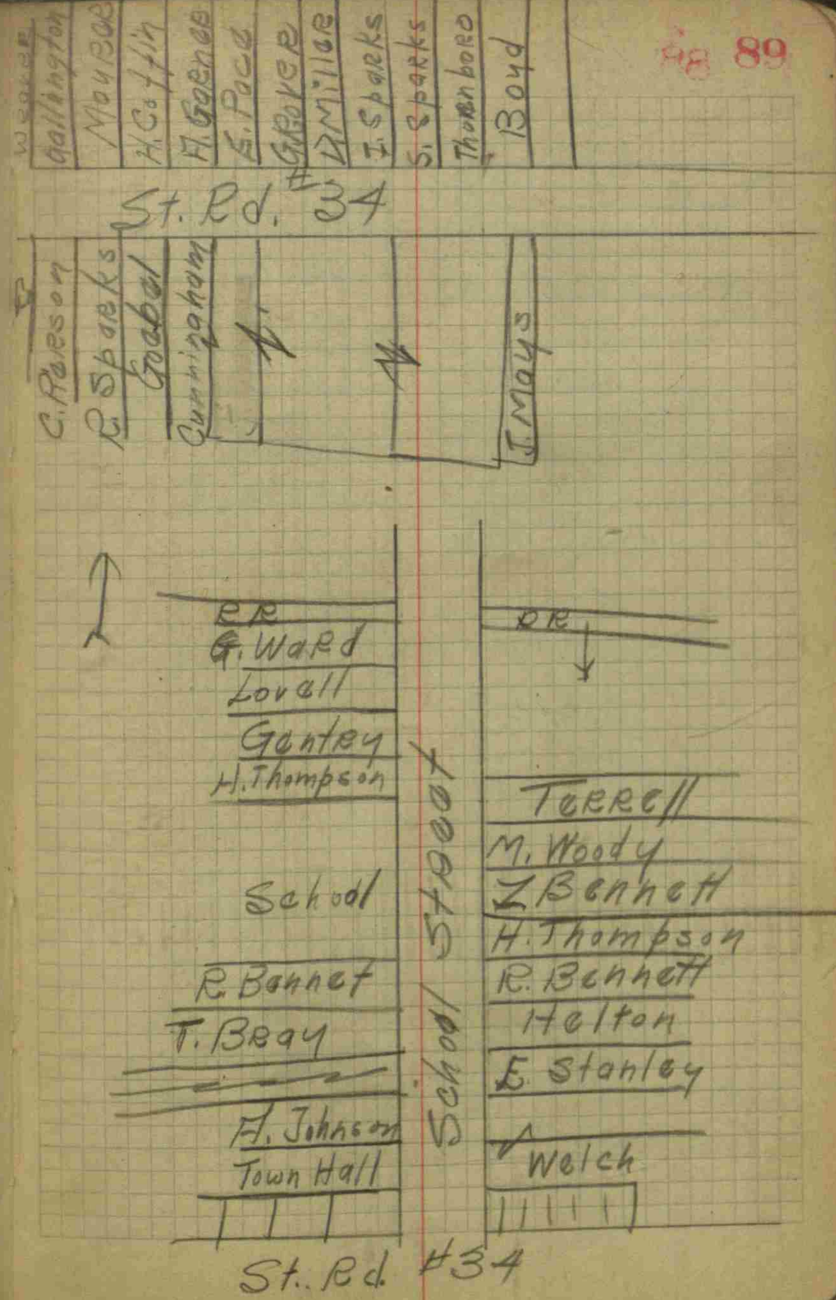
St. Rd #34

S. Line of Original Town

to Co Rd Line W. Side 439'




Swain
H. Swails
First Presb.
R. Hale
R. Tindee
E
Haynes
State Rd. #34. or Main St.
P. Mustin
Hunt
C. Armstrong
L. Carter
J. Sallee
R. Milam
C. Abney
N. McDaniel
M. Hill
E. Warren
C. Weaver
St. Rd # 34.
St. No. 13
D. Shields
Hubble
J. Hott
Marker
E. H. Jones
H. Bowman
Cunningham

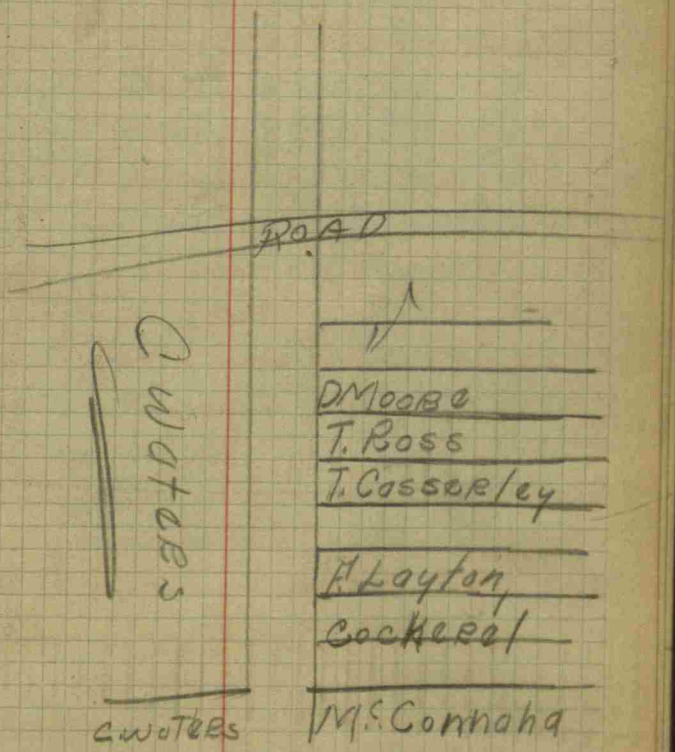

Gallington
Moubes
H. Coffin
A. Goenes
E. Pace
G. Booker
D. Miller
I. Sparks
S. Sparks
Thornboro
Boyd
St. Rd. #34
C. Pearson
R. Sparks
Goebel
Cunningham
I. Mays
RR
G. Ward
Lovell
Gentry
H. Thompson
School
R. Bennet
T. Bray
A. Johnson
Town Hall
School Street
RR
Terrell
M. Woody
Z Bennett
H. Thompson
R. Bennett
Helton
E. Stanley
Welch
St. Rd. #34

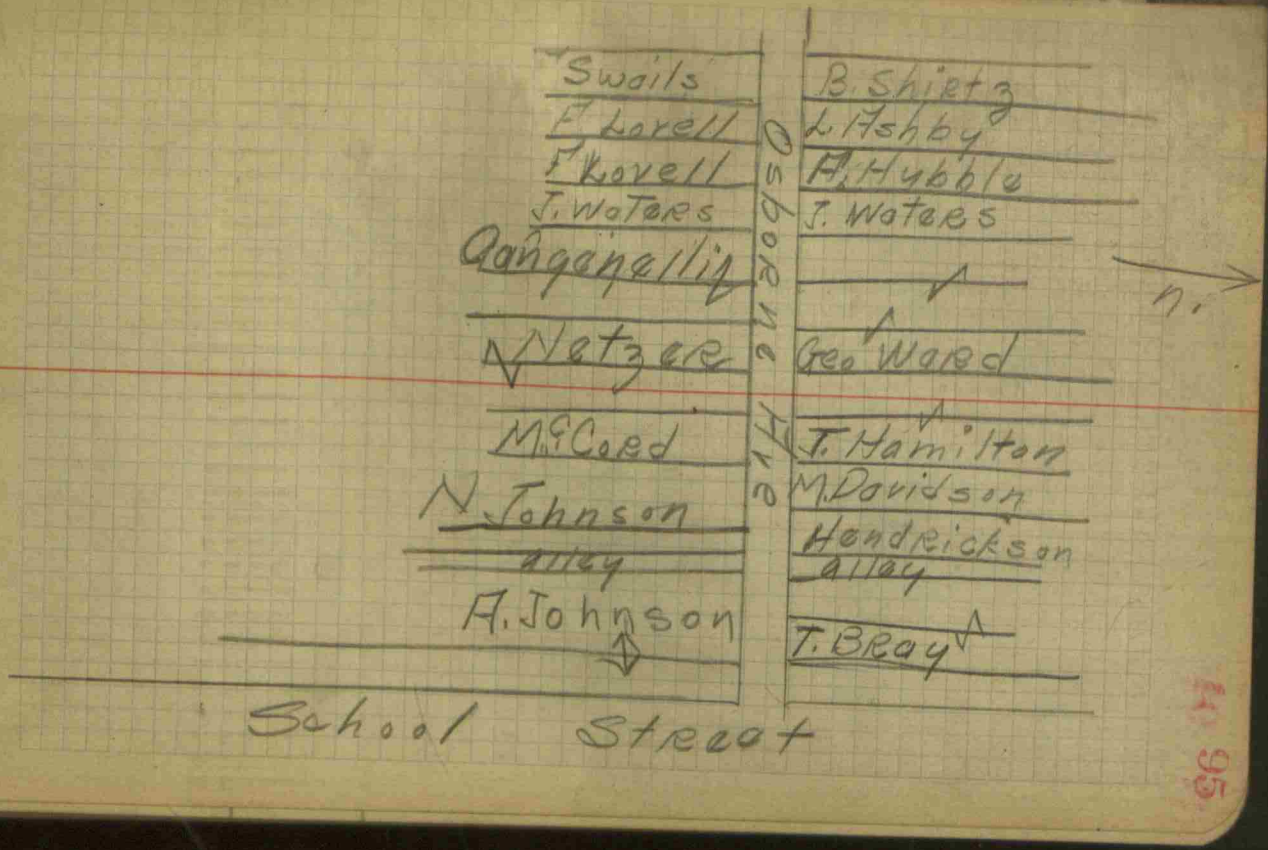
C. Waters
I Rains
P.D. Terrell
H.J. Woody
Wilkinson
Big 4
H. Terrell
E. McConnaha
Ch. Church
J. Fowler
G. Word.
Schenck Sis.
F+AM
I.O.O.F.
W.H. Schenck
F. Keeney
E Evans
ME. Church
Original
St. Road

Street No. 1

McConnaha
J. Johnson
Ashby
D. Cummins
I. Jones
W. Rounds
J. Schenck
J. Woody
Walls + Son Fl.
Sears
Z. Pettigoe
N. Walls
B. Watton
N McDaniel
J. Whistler
Walters House
Toute
Campbell
Pigg
L. Yeager
A Junkin
Town
#34

Terrell


ROAD
C WATERS
D MOORE
T. ROSS
T. COSSERLEY
H LAYTON
COCKEREL
C WATERS
M. S. CONNAHA


Swails
F. Lovell
F. Lovell
J. Waters
Gangaelli
Netzer
McCord
N. Johnson
alley
A. Johnson
B. Shietz
L. Ashby
A. Hybble
J. Waters
Geo. Ward
T. Hamilton
M. Davidson
Hendrickson
alley
T. Bray
Osborne Ave
N.
School Street

Centerburg [illegible] Ditch

S + K	Gd	P. [illegible]
6.45	7.10	10.44
100.00	99.35	96.01
102.27	101.60	
4.23	4.85	
103.45	102.80	
3.00	8.65	
107.89	107.23	
4.74	5.40	
108.68	107.95	
3.95	4.68	
109.10	108.18	
3.53	4.45	

110.19
2.44 [illegible] BM on S E Cor
[illegible] Porch Ott Lowe

109.18	107.83
3.45	4.80
108.88	107.83
3.75	4.80
109.39	108.06
3.24	4.57

Sta.	−	⊼	+	BM	Stk	Gd
		112.63				
7+0					109.28 3.35	107.41 5.22
7+50					109.31 3.32	107.43 5.20
8+0					109.30 3.33	108.00 4.63
8+50					108.81 2.82	108.63 4.00
5+00 = 0+00 on Line A.						
0+50					108.38 4.25	107.52 5.11
1+0					108.12 4.51	107.41 5.22
1+50					108.27 4.36	107.31 5.32
2+0					108.33 4.30	107.40 5.23
	4.30			108.33		
		115.10	6.77			
2+50					108.98 6.12	108.08 7.02

Note – Rock Filter Stake 8+0
Arm E off Stk 5+0 Catch Basin at
Same station

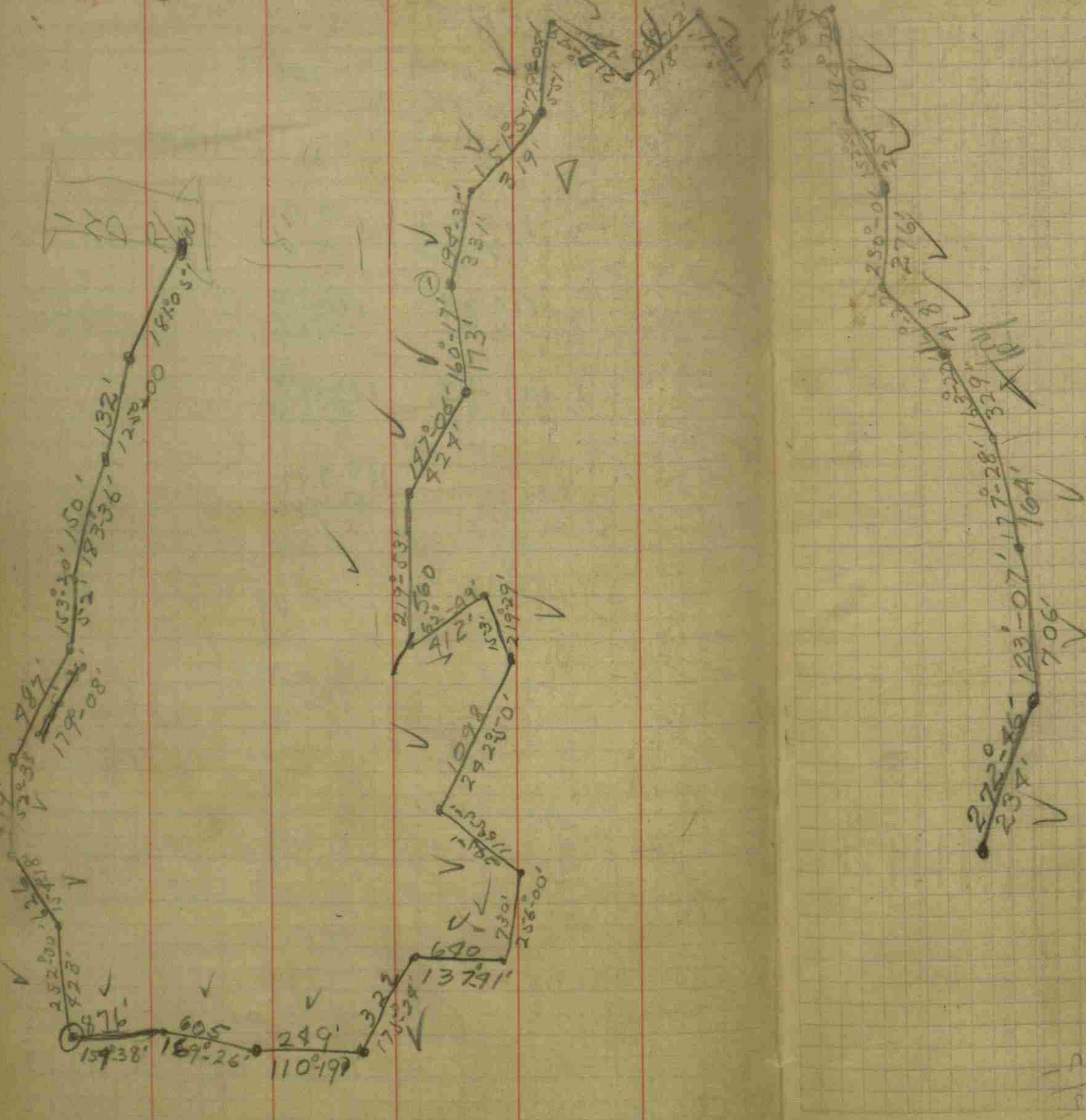
	−	K	+	BM
3+0		116.10		
3+50				
4+0				
4+50				
5+00				
5+10				

tile Lower
Basement in James 3+ 3+50 —— 106.10
9.00

B.M. N W Cor of wood Shed Shop about
stal 4+0 → 3.94 − 111.16

SHK	Gd
110.29 4.81	109.79 5.31
111.68 3.42	4.49 − 110.61
110.47 4.63	109.94 5.16
110.69 4.41	110.10 5.00
111.17 3.93	110.45 4.65
	109.77 5.33

Bush Lake



① Stake 165 of Nails

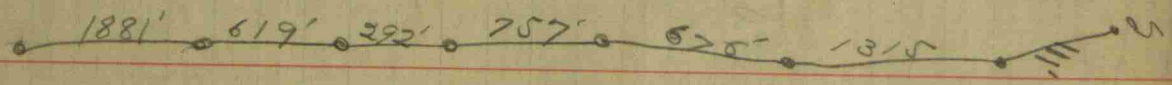
412
560
424
173
331
319
551
401
218
184
472
407
254
276
418
329
164
706
1234

68+33

359-60
183-36
176-24

360
123
234

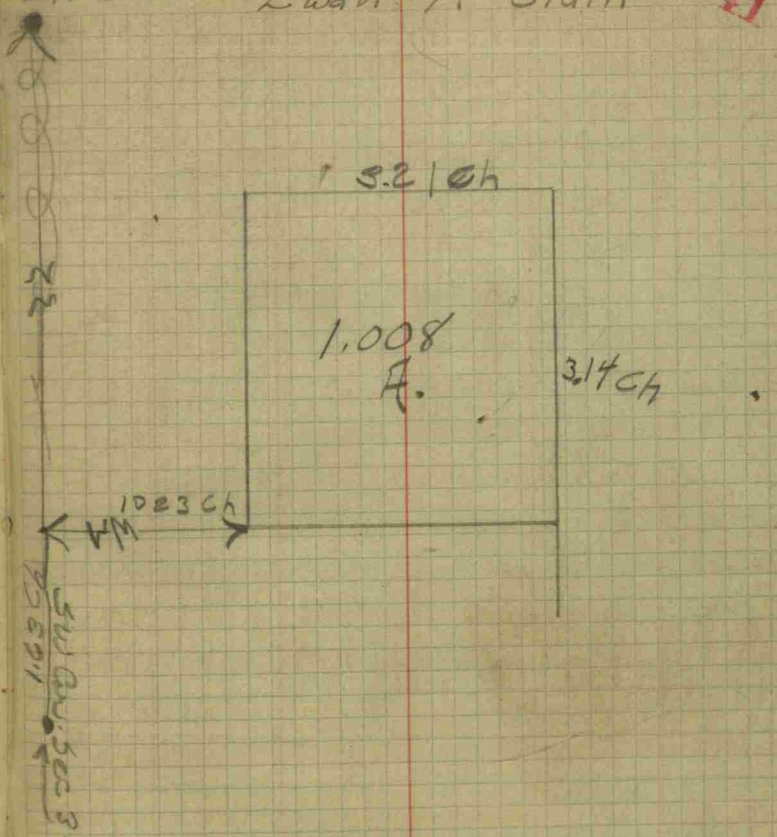
1881
619
2500



1.63
66
978
978
107.5-8

W¼ Milestone Sec. 4-15-1E

Ewan McClain



(Little Addition Field)

Mar 24, 1938

Earl
Newman
Armstrong } 4 hr.

Tom Julien

Jan 4 County ditches 65 mi

Jan 5 Office — Travel bids

Jan 6 Guilford twp Rd.

Tom Julien

Jan 11 Brown Lincoln Wash. 78 mi
with Cook

Jan 20 Brown twp about Water on Rd. 48 mi

Jan 13 Center Washington & Guilford
twp Roads Water 79 Mi.

Jan 18 Guilford twp Liberty & Clay 62 mi

389
.05
19.45

3.20
4
12.80
64
4.40
80.20

152 Brownsburg Indiana

May 19, 1938

Newman
Armstrong } 7 hrs.
Moser

May 20, 1938
Newman
Armstrong } 7 hrs.
Moser

May 25, 1938
Armstrong
Newman } 8 hrs
Shartle

26/38

Armstrong
Newman } 8
Shartle

27/38

Armstrong Shartle } 8 hrs
Newman

May 31 '38
Armstrong
Newman } 7 hrs.
Shartle

June 1
Armstrong
Newman } 4 hrs.
Shartle

June 2
Armstrong
Newman } 6 hrs
Shartle

1371
1489
5720
12797

139+60
145+65
154+41
158+64
164+90
169+09
173+56
174+48
175+98
177+30

153

151

Hoadley Survey.

Dec. 14

Bob – 8 hrs. – 20 miles @ 0.06

GHC – 8 hrs –

Tom – 8 hrs. –

Dec. 15 –

Bob – 4 hrs – 20 miles @ .06

Tom 4 hrs.

Self 2 hrs.

Dec. 16

Bob 4 hrs 20 miles @ 0.06

Tom 4 hrs.

Self 4 hrs.

Dec 28

Bob 8 hrs. 20 Miles @ .06

Tom 7 hrs.

Jan 4

Bob 4 hrs. 20 Miles @ .06

Tom 4 hrs.

Natural Trigonometrical Ratios.

°	Sine.	Tan.	Sec.	Cosec.	Cotg.	Cosin.	
′	0	0	1.	∝	∝	1.	90
0	.0029	.0029		343.8	343.8	I.	50
20	.0058	.0058		171.9	171.9	.99998	40
30	.0087	.0087		114.6	114.6	.99996	30
40	.0116	.0116	1.0001	85.94	85.94	.99993	20
50	.0145	.0145	1.0001	68.76	68.75	.99989	10
	.0175	.0175	1.0002	57.30	57.29	.99985	89
10	.0204	.0204	1.0002	49.11	49.10	.99979	50
0	.0233	.0233	1.0003	42.98	42.96	.99973	40
0	.0262	.0262	1.0003	38.20	38.19	.99966	30
0	.0291	.0291	1.0004	34.38	34.37	.99958	20
0	.0320	.0320	1.0005	31.26	31.24	.99949	10
	.0349	.0349	1.0006	28.65	28.64	.99939	88
	.0378	.0378	1.0007	26.45	26.43	.99929	50
	1407	.0407	1.0008	24.56	24.54	.99917	40
	436	.0437	1.0010	22.93	22.90	.99905	30
	65	.0466	1.0011	21.49	21.47	.99892	20
	94	.0495	1.0012	20.23	20.21	.99878	10
	23	.0524	1.0014	19.11	19.08	.99863	87
	.0552	.0553	1.0015	18.10	18.07	.99847	50
	.0581	.0582	1.0017	17.20	17.17	.99831	40
0	.0610	.0612	1.0019	16.38	16.35	.99813	30
40	.0640	.0641	1.0020	15.64	15.60	.99795	20
50	.0669	.0670	1.0022	14.96	14.92	.99776	10
4	.0698	.0699	1.0024	14.34	14.30	.99756	86
10	.0727	.0729	1.0027	13.76	13.73	.99736	50
20	.0756	.0758	1.0028	13.23	13.20	.99714	40
30	.0785	.0787	1.0031	12.75	12.71	.99692	30
40	.0814	.0816	1.0033	12.29	12.25	.99668	20
50	.0843	.0846	1.0036	11.87	11.83	.99644	10
5	.0872	.0875	1.0038	11.47	11.43	.99619	85
10	.0901	.0904	1.0041	11.10	11.06	.99594	50
20	.0929	.0934	1.0043	10.76	10.71	.99567	40
30	.0958	.0963	1.0046	10.43	10.39	.99540	30
40	.0887	.0992	1.0049	10.13	10.08	.99511	20
50	.1016	.1022	1.0052	9.839	9.788	.99482	10
6	.1045	.1051	1.0055	9.567	9.514	.99452	84
10	.1074	.1080	1.0058	9.309	9.255	.99421	50
20	.1103	.1110	1.0061	9.065	9.010	.99390	40
30	.1132	.1139	1.0065	8.834	8.777	.99357	30
40	.1161	.1169	1.0068	8.614	8.556	.99324	20
50	.1190	.1198	1.0072	8.405	8.345	.99290	10
7	.1219	.1228	1.0075	8.206	8.144	.99255	83
10	.1248	.1257	1.0079	8.016	7.953	.99219	50
20	.1276	.1287	1.0082	7.834	7.770	.99182	40
30	.1305	.1317	1.0086	7.661	7.596	.99144	30
40	.1334	.1346	1.0090	7.496	7.429	.99106	20
50	.1363	.1376	1.0094	7.337	7.269	.99067	10
							82
	Cosec.	Sec.	Tan.	Sine.			Angle.

Angle.	Sine.	Tan.	Sec.	Cosec.	Cotg.	Cosin.	
° ′							
8	.1392	.1405	1.0098	7.185	7.115	.99027	82
10	.1421	.1435	1.0102	7.040	6.968	.98986	50
20	.1449	.1465	1.0107	6.900	6.827	.98944	40
30	.1478	.1495	1.0111	6.766	6.691	.98902	30
40	.1507	.1524	1.0115	6.636	6.561	.98858	20
50	.1536	.1554	1.0120	6.512	6.435	.98814	10
9	.1564	.1584	1.0125	6.394	6.314	.98769	81
10	.1593	.1614	1.0129	6.277	6.197	.98723	50
20	.1622	.1644	1.0134	6.166	6.084	.98676	40
30	.1650	.1673	1.0139	6.059	5.976	.98629	30
40	.1679	.1703	1.0144	5.955	5.871	.98580	20
50	.1708	.1733	1.0149	5.855	5.769	.98531	10
10	.1736	.1763	1.0154	5.759	5.671	.98481	80
10	.1765	.1793	1.0160	5.665	5.576	.98430	50
20	.1794	.1823	1.0165	5.575	5.485	.98378	40
30	.1822	.1853	1.0170	5.488	5.396	.98325	30
40	.1851	.1883	1.0176	5.403	5.309	.98272	20
50	.1880	.1914	1.0181	5.320	5.226	.98218	10
11	.1908	.1944	1.0187	5.241	5.145	.98163	79
10	.1937	.1974	1.0193	5.164	5.066	.98107	50
20	.1965	.2004	1.0199	5.089	4.989	.98050	40
30	.1994	.2035	1.0205	5.016	4.915	.97992	30
40	.2022	.2065	1.0211	4.945	4.843	.97934	20
50	.2051	.2095	1.0217	4.877	4.773	.97875	10
12	.2079	.2126	1.0223	4.810	4.705	.97815	78
10	.2108	.2156	1.0230	4.745	4.638	.97754	50
20	.2136	.2186	1.0236	4.682	4.574	.97692	40
30	.2164	.2217	1.0243	4.620	4.511	.97630	30
40	.2193	.2247	1.0249	4.560	4.449	.97566	20
50	.2221	.2278	1.0256	4.502	4.390	.97502	10
13	.2250	.2309	1.0263	4.445	4.331	.97437	77
10	.2278	.2339	1.0270	4.390	4.275	.97371	50
20	.2306	.2370	1.0277	4.336	4.219	.97304	40
30	.2334	.2401	1.0284	4.284	4.165	.97237	30
40	.2363	.2432	1.0291	4.232	4.113	.97169	20
50	.2391	.2462	1.0299	4.182	4.061	.97100	10
14	.2419	.2493	1.0306	4.133	4.011	.97030	76
10	.2447	.2524	1.0314	4.086	3.962	.96959	50
20	.2476	.2555	1.0321	4.039	3.914	.96887	40
30	.2504	.2586	1.0329	3.994	3.867	.96815	30
40	.2532	.2617	1.0337	3.949	3.821	.96742	20
50	.2560	.2648	1.0345	3.906	3.776	.96667	10
15	.2588	.2679	1.0353	3.864	3.732	.96593	75
10	.2616	.2711	1.0361	3.822	3.689	.96517	50
20	.2644	.2742	1.0369	3.782	3.647	.96440	40
30	.2672	.2773	1.0377	3.742	3.606	.96363	30
40	.2700	.2805	1.0386	3.703	3.566	.96285	20
50	.2728	.2836	1.0394	3.665	3.526	.96206	10
							74
	Cosin.	Cotg.	Cosec.	Sec.	Tan.	Sine.	Angle.

Plainfield & Mayesville Rd

Plainfield & Ledge Rd 9 Ⓜ

Indianapolis & Mayesville Rd 77 mi

Brown Lincoln & Washington Tp 78 mi
With Cook

24
3
72

54 hrs - 1.60 - 38.40
15 hrs - 1.00 - 15.00
54 miles - 3 trips @ .06 3.24

56.64

321
3.14
1284
321
963
1.00794

3.2164
3.14) 1.00.0
932
680
628
520
314
2060
1884
1760

322
314
1288
322
966
1.01108

1/2
640
320
3820

74.38
88.85
54.50

...NTER OF ROADWAY FOR CROSS-SECTIONING.

...AY 14 FEET WIDE. SIDE SLOPES $1^1/_2$ TO 1.

FOR SINGLE TRACK EMBANKMENT.

	.2	.3	.4	.5	.6	.7	.8	.9	
	7.3	7.5	7.6	7.8	7.9	8.1	8.2	8.4	0
	8.8	9.0	9.1	9.3	9.4	9.6	9.7	9.9	1
	0.3	10.5	10.6	10.8	10.9	11.1	11.2	11.4	2
	1.8	12.0	12.1	12.3	12.4	12.6	12.7	12.9	3
	3.3	13.5	13.6	13.8	13.9	14.1	14.2	14.4	4
	4.8	15.0	15.1	15.3	15.4	15.6	15.7	15.9	5
	6.3	16.5	16.6	16.8	16.9	17.1	17.2	17.4	6
	7.8	18.0	18.1	18.3	18.4	18.6	18.7	18.9	7
	19.3	19.5	19.6	19.8	19.9	20.1	20.2	20.4	8
	20.8	21.0	21.1	21.3	21.4	21.6	21.7	21.9	9
	22.3	22.5	22.6	22.8	22.9	23.1	23.2	23.4	10
	23.8	24.0	24.1	24.3	24.4	24.6	24.7	24.9	11
	25.3	25.5	25.6	25.8	25.9	26.1	26.2	26.4	12
	26.8	27.0	27.1	27.3	27.4	27.6	27.7	27.9	13
2	28.3	28.5	28.6	28.8	28.9	29.1	29.2	29.4	14
.7	29.8	30.0	30.1	30.3	30.4	30.6	30.7	30.9	15
.2	31.3	31.5	31.6	31.8	31.9	32.1	32.2	32.4	16
2.7	32.8	33.0	33.1	33.3	33.4	33.6	33.7	33.9	17
4.2	34.3	34.5	34.6	34.8	34.9	35.1	35.2	35.4	18
5.7	35.8	36.0	36.1	36.3	36.4	36.6	36.7	36.9	19
7.2	37.3	37.5	37.6	37.8	37.9	38.1	38.2	38.4	20
38.7	38.8	39.0	39.1	39.3	39.4	39.6	39.7	39.9	21
40.2	40.3	40.5	40.6	40.8	40.9	41.1	41.2	41.4	22
41.7	41.8	42.0	42.1	42.3	42.4	42.6	42.7	42.9	23
43.2	43.3	43.5	43.6	43.8	43.9	44.1	44.2	44.4	24
44.7	44.8	45.0	45.1	45.3	45.4	45.6	45.7	45.9	25
46.2	46.3	46.5	46.6	46.8	46.9	47.1	47.2	47.4	26
47.7	47.8	48.0	48.1	48.3	48.4	48.6	48.7	48.9	27
49.2	49.3	49.5	49.6	49.8	49.9	50.1	50.2	50.4	28
50.7	50.8	51.0	51.1	51.3	51.4	51.6	51.7	51.9	29
52.2	52.3	52.5	52.6	52.8	52.9	53.1	53.2	53.4	30
53.7	53.8	54.0	54.1	54.3	54.4	54.6	54.7	54.9	31
55.2	55.3	55.5	55.6	55.8	55.9	56.1	56.2	56.4	32
56.7	56.8	57.0	57.1	57.3	57.4	57.6	57.7	57.9	33
58.2	58.3	58.5	58.6	58.8	58.9	59.1	59.2	59.4	34
59.7	59.8	60.0	60.1	60.3	60.4	60.6	60.7	60.9	35
61.2	61.3	61.5	61.6	61.8	61.9	62.1	62.2	62.4	36

Calculated by Julien A. Hall, M. Am. Soc. C. E.