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LETTER



186

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.

"Copyright, 1895, by Keuffel & Esser Co."

	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.

Brownsburg ties tie from
 198°-29' - 106' }
 112°-36' } 448' } 154
 176°-24'W } }
 base line to
 stake at
 mile Wilson's Barn
 931
 287
 339
 839

199°-37' - 253' } tie from base
 109°-06' } 542' } line to stake at
 175°-54'W } } 2nd
 Chris' Kingman's house
 1315
 675
 758
 292
 2502

621' to P.R.

75
 65
 100
 65
 100
 100
 200
 700

805
 39

10

- T + BM
106.52 6.52 100.00

Fly Lily Levee Levels

B.M. E.A. 100.00 in High Line Pole
Third East from Bridge on Nail

10.00 at base of tree at sta. 23+

#8 "

105.10

1.42 on top of layer

105.90

0.62 on Nail at SE

Cor Bridge in tel.
Pole

99.69

6.83 on E side of twin hackberry
on E bank of creek near
sta. 8.

flat to sta. 8+0

101.52

5.00 N side of twin sycamores
near sta. 10

97.82

8.70 N side of locust near
Kycott's barn

98.54

sta 15

7.96

7.98

8.00 N side of cottonwood
at sta 22+

98.56

7.96 levee at sta. 22+75

106.39

5.18

" " at 1st Bench

Drop 2' to end

-	+	B.M.
103.94	5.40	98.54

103.40	3.40	100.00
--------	------	--------

98.05
3.89 High Water

102.80
1.40 High water
at lower end

102.06
1.34 High water
at fence east
of 1.40 reading

Sta 2 102.38
1.02 E side of fence

100.00
Sta. 4+00 3.90 Bench on Elm on
S. side of levee fence

96.15
Sta. 8+00 7.25 Bench on Red Oak
on water's edge

101.75
1.75 Top of levee at water
line

96.56
Sta 12+00 6.84 Bench on beech trees

101.79
1.60 Top of levee

100.05
3.35 Top of levee

100.10
3.30 " " " buckeye
qd. break 96.18
7.22 Bench in ~~back~~ ~~back~~

19

Δ
 103.40

5.80 ✓ High Water 31+0
 5.90

10340

25

18+50

101.16

2.29

Top of levee

99.47

3.93

High water mark

98.67

4.73

High water mark

99.52

3.88

Top of levee

95.20

Sta. 22+50 820

Bench on leaning
sycamore tree

98.22

✓ Sta 24+00 518

High water

97.35

Sta 31+00 605

Top of levee &

over

High water mark
Road over levee

96.53

39+0
Sta. 40+00

6.87

Bench on Blue Ash

96.01

Sta. 41+00

7.39

Bench on Sycamore

98.78

High Point

4.62

top of levee

97.35

605

High water

97.14

Sta. 43+00

6.26

High water

95.77

7.63

High water

94.92

51+0

4.16

top of levee

16

10340

17

Sta. 52+00

98.10
5.30

Bench sycamore

18

0.48

3.40

-

T

+

BM

100.62

0.62

100.00

12.12

89.63

1.13

88.50

19

100.64
0.98

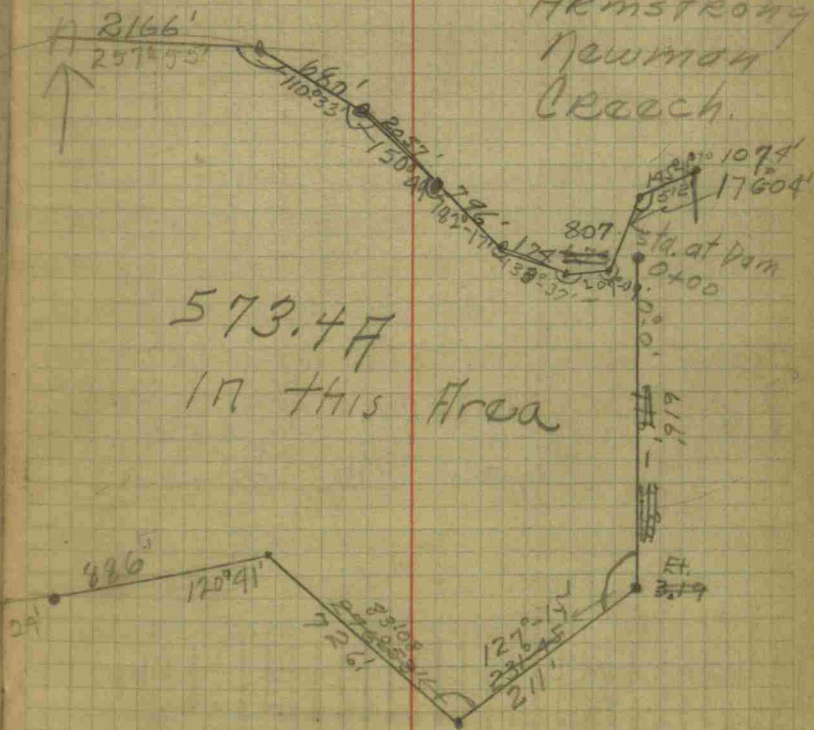
9.39 Top Water

79.56

10.07 flow line
Water

—	π	+	BM	Based on South T.M.
	104.19	4.19	100.	
Sta.		360		
	127°-15'	120.41		
	83-08	239-19		
	239-19	360		
	179-24	20302		
	130-28	156-58		
	118-55	360		
	156-58	25258		
	102-05	102-05		
	110-33			
	137-49			
	182-17			
	133-37			
	209-09			
	176-04			
	145-91			
	239-37			

Plainfield Boys School 23
 April 21, 38
 Hemstrong
 Newman
 Creach.



26

	-	T	+	Bm
Sta		10419	419	100

0400

6+16
7+16

4.69

104.36			
103.36	4.86	99.50	

8+27
9+27

4.98

104.50	5.12	99.38	
--------	------	-------	--

15+53
16+53

2.55	107.24	5.29	101.95
------	--------	------	--------

27

Plainfield Boys School Survey
 April 21, '38
 Hemstrong
 Newman
 Coach

gd.

El. 97.45
6.74

99.17
5.02

99.59
4.97

102.09
2.41

28

	-	π	+	Bm
24+33		107.24		
25+39				

1.64	111.32	5.72	105.60
------	--------	------	--------

~~29+46~~
~~29+46~~

0.52	116.13	5.33	110.80
------	--------	------	--------

~~32+84~~
~~33+28~~

1.38	120.71	5.96	114.75
------	--------	------	--------

116.26

Bench

in Tulip

Tree + 50 33+28

4.45	126.55	10.29	116.26
------	--------	-------	--------

1.26

~~47+90~~
~~48+90~~

131.92	6.63	125.29	115.09
--------	------	--------	--------

3.18

11.64	111.27	1.28	109.99
-------	--------	------	--------

8.80

102.47

3.18	140.38	11.64	128.74
------	--------	-------	--------

1.28	147.90	8.80	139.10
------	--------	------	--------

~~5.50~~
~~142.90~~
~~61+08~~
~~62+08~~

5.00

30

	L	T	+	Bm
	.33	147.90		
82+74				
93+74				
		149.31	1.74	147.57
	50.5			
89+54				
100+54				
		146.86	2.60	144.26
	10.89		2	135.97
		138.78	2.81	
	11.99		1.97	126.79
110+11		128.26	1.47	
121+11				
		128.26	1.47	12
	10.76			117.50
		121.71	4.21	
118+07				
129+07				
119+81				
130+81				
	5.82			115.89
		116.31	.42	

31

.33

50.5

11.99

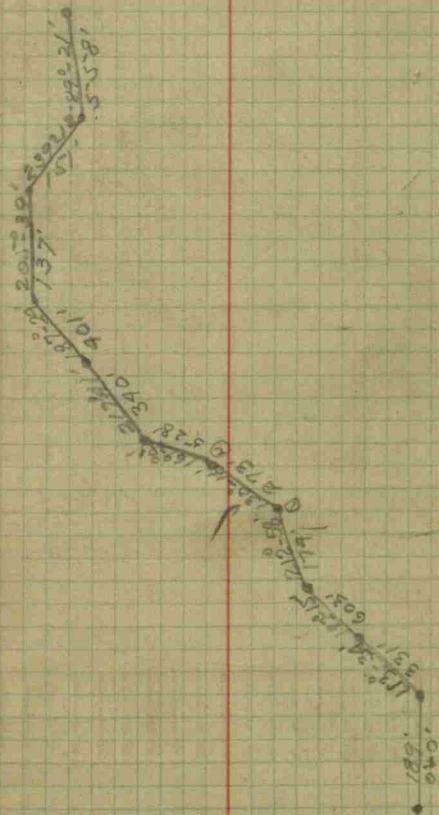
6.30

582

Back Survey on
Bush Lake
April 27, 1938

Flemsteong Cecch
Newman Greane

- ① stake 9' south of nail.
② " 7' north " "



44

-	∧	+	BM
	109.58	9.58	100.00
0.20			109.38
	12084	11.46	
0.33			120.51
	125.98	5.47	

15170
~~12181~~

12+97

3.49

124.73

2.24

122.49

11+23

1.12

135.65

980

125.85

.16

135.79

140.49

500

5+20

1+89

45

114 59
6 25

Top Milk
bucket mail

121.03
4 95

Box Martins
yard

118 65
7 33

122.49
2 24

5
135.49
500

129.61
10 88

46

-	+	BM
		120.51
	127.35	6.84
20+98	1.97	125.38
	133.04	7.66
20+98		
	5.44	127.60
	129.72	2.12
24+38		
		120.51
	129.96	9.45
	1.12	128.84
	137.84	9.00
	1.59	136.25
	146.27	10.02
28+39		
29+76		

120.51

127.35 6.84

~~20+98~~

1.97

125.38

133.04 7.66

20+98

5.44

127.60

129.72 2.12

24+38

129.49
3.55127.60
2.12

120.51

129.96 9.45

1.12

128.84

137.84 9.00

1.59

136.25

146.27 10.02

28+39

29+76

144.00

2.27

144.32

1.95

47

48

π + 311
 146.27
 11.55 134.72
 135.18 46

31+27

36+85

0.10 + 142.06 ~~153.15~~ 135.08
 153.15 6.98 146.17

Station
39+19

Station
46+25

3.05 141.48 139.01
 152.57 2.47 150.10

Station
47+89

29

134.72
 0.46

134.08
 1.10

139.95
 2.11

138.04
 4.02

139.39
 2.09

50

F		B	
-	141.48 152.57	+	B.M.
5.1+18			
5.07	139.02 150.11	2.62	136.40 147.79
3.54	138.93 150.02	3.45	135.48 PBM in 146.57 Elmer Esidenet
1.79	141.37 152.40	4.23	137.14 148.23
2.52	145.63 156.72	6.78	138.85 149.94
3.15	145.69	3.21	142.48 PBM 153.57 in Tel. P. on N. Market Pa.
5.63	141.34	12.8	140.06
9.45	133.14	12.5	131.89
11.64	121.79	0.29	121.50
10.83	123.26	12.30	110.96
9.49	114.15	0.38	112.77
10.70	110.52	7.07	103.45

51

136.13
5.35135.44
5.90

52

-	∧	+	B.M.
	110.52		
1.28			109.24
	120.84	11.60	
2.59			118.25
	122.89	4.64	

53

54

-	X	+	BM
			135.44
	139.50	4.06	
7.45			132.05
	133.19	1.14	
10.68			122.51
	122.76	0.25	
11.81			110.95
	111.32		110.45
	110.82	0.37	
11.97			99.35
	103.75		98.85
	103.25	4.90	
0.88			102.87
	114.00		102.37
	113.50	11.13	
0.31			113.69
	116.74		113.19
	116.24	3.05	
11.10			105.64
			105.14
	107.30	1.66	
7.49			99.81

55

56

	-	+	BM
			100.00
	103.25	3.85	
	2.05		101.80
	103.12	1.32	
	1.62		102.50
	108.80	6.30	
5+20			
	4.33		104.47
	105.97	1.50	
1+89			
	7.38		98.59
	99.82	1.23	
	8.63		91.19
	91.71	0.52	
0+00			
			109.47
	109.28	4.81	
	3.87		105.41
	117.42	12.01	

57

103.96
4.84

100.08
5.89

84.20
7.57

58

	-	π	+	311
		117.42		
11423				
	0.10			117.42
		121.25	3.83	
12497				
	5.48			115.77
		120.38	4.61	
15470				
	0.84			119.54
		126.06	6.52	
	4.07			121.99
		127.24	5.25	

59

0.58

5.48

2.13

$$\begin{array}{r} 117.69 \\ 9.55 \\ \hline \end{array}$$

62

-

π

+

BM

109.15 7.63 101.52

18.5

63

3 84

104.15
5.00105.60
5.55

-	+	BM
	103.78	3.78
11.32		92.46
	95.16	2.70
7.87		87.29
	92.43	5.14
11.42		81.01
	81.29	0.28
9.30		71.99
	73.74	1.75

87.26
7.90

88.62 E.L. B.M. on Nail
3.81 in Hickory
Tree 75' W of
Dam on North
Side of Dam in
South Side tree

86.6 of stream at
9.51 Dam

64.23

66

-	X	+	BM
	98.04	10.78	87.26
0.50			97.54 ✓

	101.96	4.92	
--	--------	------	--

6.90			95.06
------	--	--	-------

	96.99	1.93	
--	-------	------	--

	98.38	0.84	97.54
--	-------	------	-------

67

96.99
87.26
<hr/>
9.73

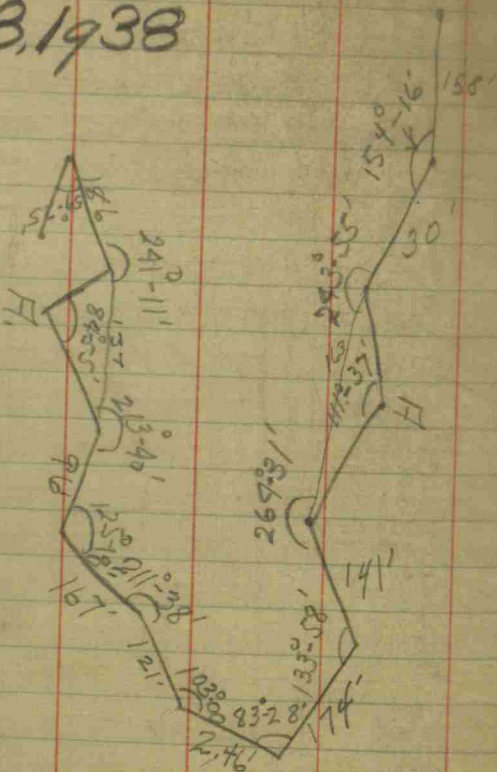
101.96
87.26
<hr/>
14.70

98.38
87.26
<hr/>
11.12

68

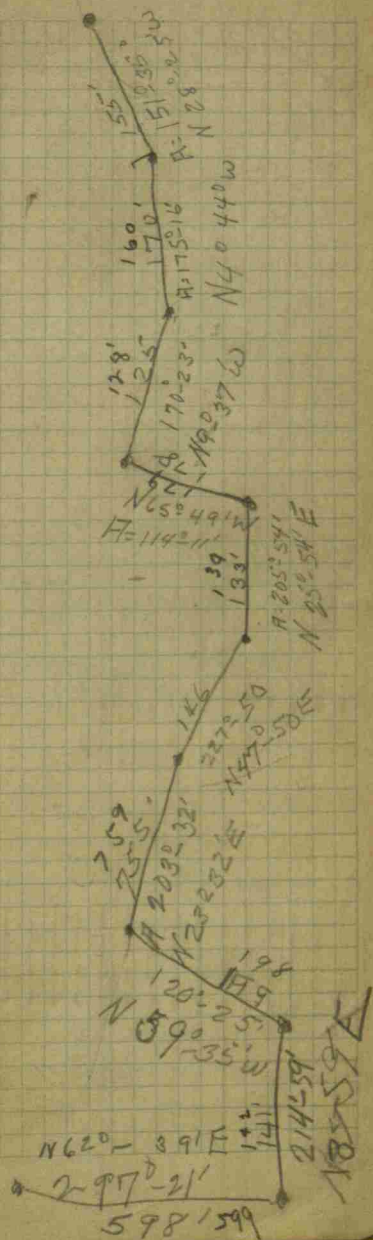
Bush Lake Survey

May 18, 1938

Newman
ArmstrongFred Beck Danville Ind. ⁶⁹

Tie 291° 45' Asimuth
 291° 44' Asimuth
 N 62° 16' E

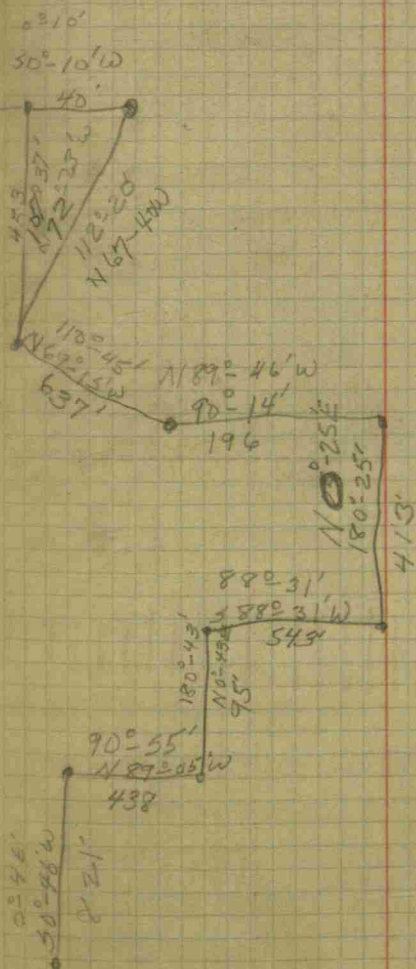
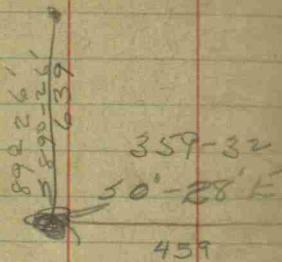
Fl. X. X. 207° 49'



$$\begin{array}{r} 179-60 \\ 110-45 \\ \hline 69-15 \end{array}$$

$$\begin{array}{r} 179-60 \\ 107-37 \\ \hline 72-23 \end{array}$$

$$\begin{array}{r} 179-60 \\ 112-20 \\ \hline 67-40 \end{array}$$

$$\begin{array}{r} 60 \\ 114 \\ \hline 2 \end{array}$$


78

179-60

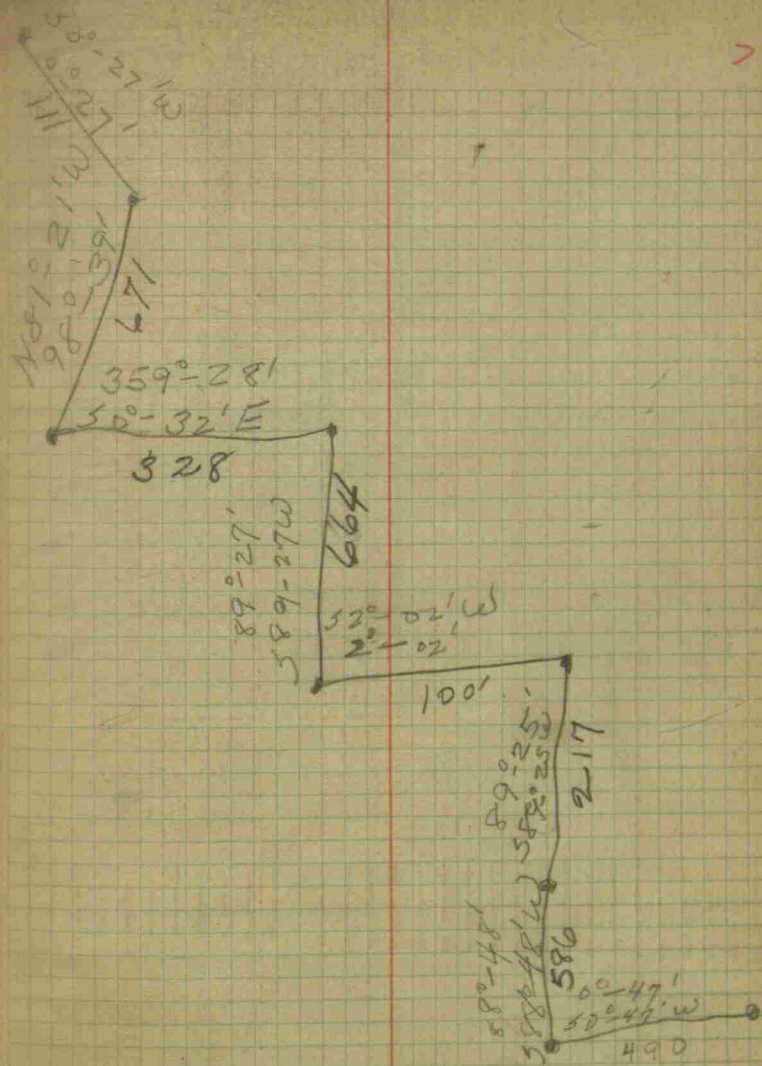
98-39

81-21

60

28

3



80

Plainfield Corp.

Base Line

81

North R.R. line

Penn. RR



02°-N'
508.14 W'

Center St.

34.5°-E
514.2 R'

98

	-	+	BM
	108.40	8.40	100.00

0+0

1+0

2+0

3+0

4+0

5+0 = 0+0 on E. Side Rd

6+0

7+0

8+0

9+0

10+0

Bm is
at 100.00R. Smith
Levels

99

95.98
12.42Bad stream
100' N.

109.12	99.70
8.40	8.70

105.90	104.53
2.50	3.87

106.60	105.29
1.80	3.16

105.10	104.29
3.30	4.16

104.29	103.45
4.17	4.95

103.59	102.78
4.91	5.10

103.07	101.95
5.33	6.43

103.58	101.80
4.82	6.60

103.67	102.55
4.73	6.85

104.18	102.89
4.22	5.51

103.68	102.60
4.72	5.80

100

0+0
= 5+0

0+50

1+0

2+0

3+0

Arm E side Rd.

⊥
108.90

+

B.M.

Stk.

Gt.
Ditch

101

4.92 102.778
 5.62

5.20 101.30
 7.10

5.23 101.70
 6.70

4.71 102.18
 6.22

104

	-	X	+	BM
		107.09	7.09	100.00
6.46				101.63
		102.15	0.52	
4.06				98.09
		106.67	8.58	
8.58				98.09
		105.67	7.58	
7.57				98.10
		109.68	10.58	
1.32				108.36
		112.82	3.96	
5.34				106.98
		109.76	2.78	
11.67				98.09
		99.46	1.37	
		107.63	9.54	98.09
2.73				104.90
		109.53	4.63	
11.43				98.10
		99.20	1.10	
11.10				88.10
		89.25	1.15	

BM SW Corner of Hill
at 5 AK.
E.L. 100000

107.76
98.09
10.67

109.68
89.09
10.59

102.15
98.09
4.06

105

109.53
98.09
11.44

98.09
7.00

112.32
98.09
14.23

99.20
98.09
1.11

88.10
11.10

North point

106

-	∧	+	BM
	89.25		
2.70			86.55 0
	96.52	9.97	
0.01			96.51
	107.13	10.62	
9.14			99.99
	105.49	7.50	
4.26			101.23
	107.78	6.55	
0.07			107.71
	118.05	10.34	
8.20			109.85
	112.26	2.41	
10.00			102.26
	105.09	2.83	
0.55			104.54
	110.09	5.55	
2.00			108.09

107.13

98.09

9.04

107.78

98.09

9.69

105.09

98.09

9.00

96.52

89.09

8.43

112.26

98.09

14.17

110.09

98.09

12.00

107

118.05

98.09

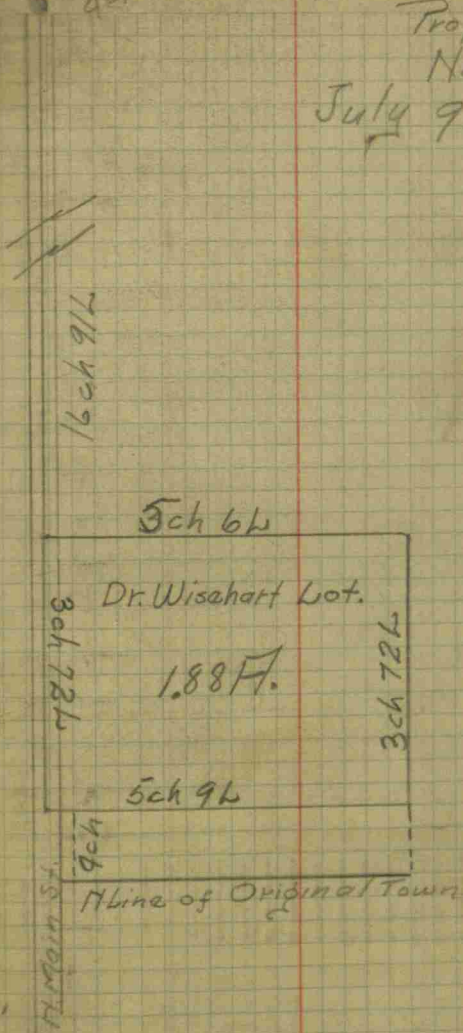
19.96

112

Description

Beginning at N^o mile stone of
 Sec. 7-16-RW. and running thence
 to the beginning point of this desc.
 South 67.64 R. Thence E 20.24 R
 Thence S 14.88 R. Thence W 20.36
 R. Thence N. 14.88 R to the
 place of beginning except so
 much off W. side as is used
 for public highway. Contains
 1.88 A or more or less.

 N^o Milestone
 9-16-2W

 113
 Dr. Wischort
 Property Survey
 North Salem
 July 9, 1938.


196

Alice White Survey

North Measurement

5.10ch

East Measurement

19.92

Tie to Road = 6.70ch

197

19.92

5.10

19920

9950

1014920

2.76

5.10

2760

1380

140760363

510

3630

1815

185130

156

May 5 - '38

Newman }
 Armstrong } 8 hrs.
 Foster }
 Moser } ✓

May 6 - '38

Newman }
 Armstrong } 8 hrs.
 Moser }
 Foster } 5 1/2
 Greene } ✓

May 12 - '38

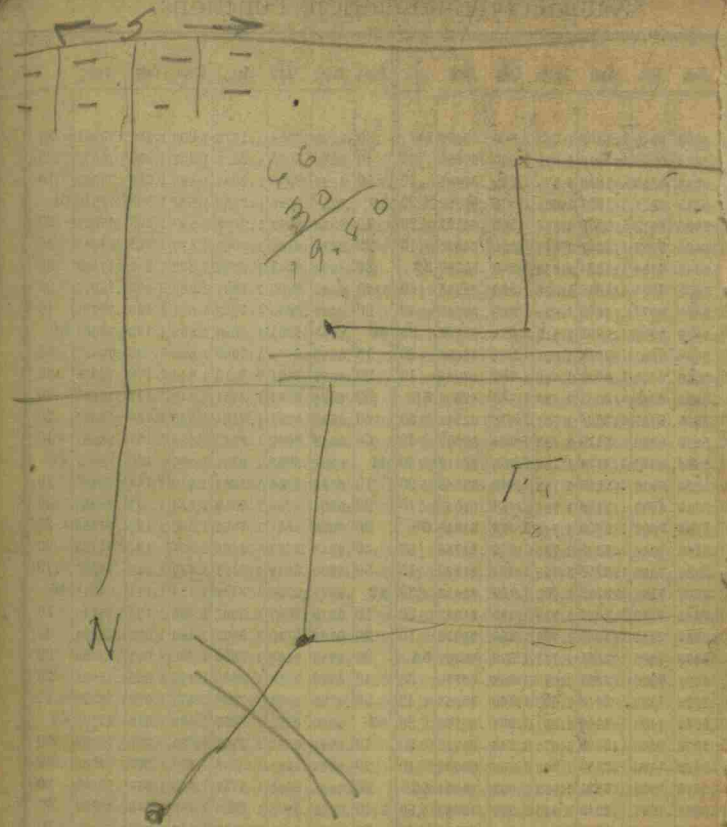
Moser }
 Foster } 5 hrs.
 Greene }
 Newman }
 Armstrong } ✓

Natural Trigonometrical Functions.

Angle.	Sine.	Tan.	Sec.	Cosec.	Cotg.	Cpsin.	Angle.	Sine.	Tan.	Sec.	Cosec.	Cotg.	Cosin.
0	0	0	1.	∞	∞	1.	90	1.	∞	∞	0	0	0
10	.0029	.0029		343.8	343.8	1.	50	.1392	.1405	1.0098	7.185	7.115	.9927
20	.0058	.0058		171.9	171.9	.9999	40	.1421	.1435	1.0102	7.040	6.988	.9898
30	.0087	.0087		114.6	114.6	.9998	30	.1449	.1465	1.0107	6.900	6.827	.9894
40	.0116	.0116	1.0001	85.94	85.94	.9993	20	.1478	.1495	1.0111	6.766	6.691	.9892
50	.0145	.0145	1.0001	68.76	68.75	.9989	10	.1507	.1524	1.0115	6.636	6.561	.9885
1	.0175	.0175	1.0002	57.30	57.29	.9985	89	.1536	.1554	1.0120	6.512	6.435	.9884
10	.0204	.0204	1.0002	49.11	49.10	.9979	50	.1564	.1584	1.0125	6.394	6.314	.9879
20	.0233	.0233	1.0003	42.96	42.96	.9973	40	.1593	.1614	1.0129	6.277	6.197	.9873
30	.0262	.0262	1.0003	38.20	38.19	.9966	30	.1622	.1644	1.0134	6.166	6.084	.9876
40	.0291	.0291	1.0004	34.38	34.37	.9958	20	.1650	.1673	1.0139	6.059	5.976	.9879
50	.0320	.0320	1.0005	31.26	31.24	.9949	10	.1679	.1703	1.0144	5.955	5.871	.9880
2	.0349	.0349	1.0006	28.65	28.64	.9939	88	.1708	.1733	1.0149	5.855	5.769	.9881
10	.0378	.0378	1.0007	26.43	26.43	.9929	50	.1738	.1763	1.0154	5.769	5.671	.9881
20	.0407	.0407	1.0008	24.56	24.54	.9917	40	.1765	.1793	1.0160	5.685	5.576	.9880
30	.0436	.0437	1.0010	22.93	22.90	.9905	30	.1794	.1823	1.0165	5.575	5.465	.9878
40	.0465	.0466	1.0011	21.49	21.47	.9892	20	.1822	.1853	1.0170	5.488	5.396	.9875
50	.0494	.0495	1.0012	20.23	20.21	.9878	10	.1851	.1883	1.0176	5.403	5.309	.9872
3	.0523	.0524	1.0014	18.11	18.08	.9863	87	.1880	.1914	1.0181	5.320	5.226	.9871
10	.0552	.0553	1.0015	18.10	18.07	.9847	50	.1908	.1944	1.0187	5.241	5.145	.9868
20	.0581	.0582	1.0017	17.20	17.17	.9831	40	.1937	.1974	1.0193	5.164	5.068	.9867
30	.0610	.0612	1.0019	16.38	16.35	.9813	30	.1965	.2004	1.0199	5.089	4.989	.9865
40	.0640	.0641	1.0020	15.84	15.80	.9795	20	.1994	.2035	1.0205	5.016	4.915	.9792
50	.0669	.0670	1.0022	14.96	14.92	.9776	10	.2022	.2065	1.0211	4.945	4.843	.9789
4	.0698	.0699	1.0024	14.34	14.30	.9756	86	.2051	.2095	1.0217	4.877	4.773	.9785
10	.0727	.0729	1.0027	13.76	13.73	.9736	50	.2079	.2126	1.0223	4.810	4.705	.9781
20	.0756	.0758	1.0029	13.23	13.20	.9714	40	.2108	.2156	1.0230	4.745	4.638	.9775
30	.0785	.0787	1.0031	12.75	12.71	.9692	30	.2136	.2186	1.0236	4.682	4.574	.9769
40	.0814	.0816	1.0033	12.29	12.25	.9668	20	.2164	.2217	1.0243	4.620	4.511	.9763
50	.0843	.0846	1.0036	11.87	11.83	.9644	10	.2193	.2247	1.0249	4.560	4.449	.9756
5	.0872	.0875	1.0038	11.47	11.43	.9619	85	.2221	.2278	1.0256	4.502	4.390	.9750
10	.0901	.0904	1.0041	11.10	11.06	.9594	50	.2250	.2308	1.0263	4.445	4.331	.9743
20	.0929	.0934	1.0043	10.76	10.71	.9567	40	.2278	.2338	1.0270	4.390	4.275	.9737
30	.0958	.0963	1.0046	10.43	10.39	.9540	30	.2306	.2367	1.0277	4.336	4.219	.9730
40	.0987	.0992	1.0049	10.13	10.08	.9511	20	.2334	.2401	1.0284	4.284	4.165	.9723
50	.1016	.1022	1.0052	9.839	9.788	.9482	10	.2363	.2432	1.0291	4.232	4.113	.9716
6	.1045	.1051	1.0055	9.587	9.514	.9452	84	.2391	.2462	1.0298	4.182	4.061	.9710
10	.1074	.1080	1.0058	9.309	9.255	.9421	50	.2419	.2493	1.0306	4.133	4.011	.9703
20	.1103	.1110	1.0061	9.065	9.010	.9390	40	.2447	.2524	1.0314	4.088	3.962	.9695
30	.1132	.1139	1.0065	8.834	8.777	.9357	30	.2476	.2555	1.0321	4.039	3.914	.9687
40	.1161	.1169	1.0068	8.614	8.556	.9324	20	.2504	.2586	1.0329	3.994	3.867	.9681
50	.1190	.1198	1.0072	8.405	8.345	.9290	10	.2532	.2617	1.0337	3.949	3.821	.9674
7	.1219	.1228	1.0076	8.206	8.144	.9255	83	.2560	.2648	1.0345	3.906	3.776	.9667
10	.1248	.1257	1.0079	8.016	7.953	.9219	50	.2588	.2679	1.0353	3.864	3.732	.9659
20	.1276	.1287	1.0082	7.834	7.770	.9182	40	.2616	.2711	1.0361	3.822	3.689	.9651
30	.1305	.1317	1.0086	7.661	7.596	.9144	30	.2644	.2742	1.0369	3.782	3.647	.9644
40	.1334	.1348	1.0090	7.498	7.428	.9106	20	.2672	.2773	1.0377	3.742	3.606	.9636
50	.1363	.1378	1.0094	7.337	7.269	.9067	10	.2700	.2805	1.0386	3.703	3.566	.9628
							82	.2728	.2838	1.0394	3.665	3.526	.9620
													74

Cosin. Cotg. Cosec. Sec. Tan. Sine. Angle.

Cosin. Cotg. Cosec. Sec. Tan. Sine. Angle.



Kreoch

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.

ROADWAY 14 FEET WIDE. SIDE SLOPES 1 1/2 TO 1.

FOR SINGLE TRACK EMBANKMENT.

	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	
0	7.0	7.2	7.3	7.5	7.6	7.8	7.9	8.1	8.2	8.4	0
1	8.5	8.7	8.8	9.0	9.1	9.3	9.4	9.6	9.7	9.9	1
2	10.0	10.2	10.3	10.5	10.6	10.8	10.9	11.1	11.2	11.4	2
3	11.5	11.7	11.8	12.0	12.1	12.3	12.4	12.6	12.7	12.9	3
4	13.0	13.2	13.3	13.5	13.6	13.8	13.9	14.1	14.2	14.4	4
5	14.5	14.7	14.8	15.0	15.1	15.3	15.4	15.6	15.7	15.9	5
6	16.0	16.2	16.3	16.5	16.6	16.8	16.9	17.1	17.2	17.4	6
7	17.5	17.7	17.8	18.0	18.1	18.3	18.4	18.6	18.7	18.9	7
8	19.0	19.2	19.3	19.5	19.6	19.8	19.9	20.1	20.2	20.4	8
9	20.5	20.7	20.8	21.0	21.1	21.3	21.4	21.6	21.7	21.9	9
10	22.0	22.2	22.3	22.5	22.6	22.8	22.9	23.1	23.2	23.4	10
11	23.5	23.7	23.8	24.0	24.1	24.3	24.4	24.6	24.7	24.9	11
12	25.0	25.2	25.3	25.5	25.6	25.8	25.9	26.1	26.2	26.4	12
13	26.5	26.7	26.8	27.0	27.1	27.3	27.4	27.6	27.7	27.9	13
14	28.0	28.2	28.3	28.5	28.6	28.8	28.9	29.1	29.2	29.4	14
15	29.5	29.7	29.8	30.0	30.1	30.3	30.4	30.6	30.7	30.9	15
16	31.0	31.2	31.3	31.5	31.6	31.8	31.9	32.1	32.2	32.4	16
17	32.5	32.7	32.8	33.0	33.1	33.3	33.4	33.6	33.7	33.9	17
18	34.0	34.2	34.3	34.5	34.6	34.8	34.9	35.1	35.2	35.4	18
19	35.5	35.7	35.8	36.0	36.1	36.3	36.4	36.6	36.7	36.9	19
20	37.0	37.2	37.3	37.5	37.6	37.8	37.9	38.1	38.2	38.4	20
21	38.5	38.7	38.8	39.0	39.1	39.3	39.4	39.6	39.7	39.9	21
22	40.0	40.2	40.3	40.5	40.6	40.8	40.9	41.1	41.2	41.4	22
23	41.5	41.7	41.8	42.0	42.1	42.3	42.4	42.6	42.7	42.9	23
24	43.0	43.2	43.3	43.5	43.6	43.8	43.9	44.1	44.2	44.4	24
25	44.5	44.7	44.8	45.0	45.1	45.3	45.4	45.6	45.7	45.9	25
26	46.0	46.2	46.3	46.5	46.6	46.8	46.9	47.1	47.2	47.4	26
27	47.5	47.7	47.8	48.0	48.1	48.3	48.4	48.6	48.7	48.9	27
28	49.0	49.2	49.3	49.5	49.6	49.8	49.9	50.1	50.2	50.4	28
29	50.5	50.7	50.8	51.0	51.1	51.3	51.4	51.6	51.7	51.9	29
30	52.0	52.2	52.3	52.5	52.6	52.8	52.9	53.1	53.2	53.4	30
31	53.5	53.7	53.8	54.0	54.1	54.3	54.4	54.6	54.7	54.9	31
32	55.0	55.2	55.3	55.5	55.6	55.8	55.9	56.1	56.2	56.4	32
33	56.5	56.7	56.8	57.0	57.1	57.3	57.4	57.6	57.7	57.9	33
34	58.0	58.2	58.3	58.5	58.6	58.8	58.9	59.1	59.2	59.4	34
35	59.5	59.7	59.8	60.0	60.1	60.3	60.4	60.6	60.7	60.9	35
36	61.0	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.

MADE IN GERMANY.