

IF FOUND RETURN TO

ERWIN U. MOSER
P. O. BOX 454
LOGAN, UTAH

36514

Made in U. S. A.



ERWIN U. MOSER
P. O. BOX 454
LOGAN, UTAH

Smithfield
CAG #9

360B

Full

**FIELD
BOOK**

1-13 / 5th West - 1st North to
16-17 2nd South { Both sides of Street

14-15 / 5th East - 1st N. to 3rd N.
18-22 on East side of Street

28-31 / 5th East - 3rd So. to 4th So
on East side of Street

32 - HEATON DITCHES

CHECKED 7-14-69

KEUFFEL & ESSER CO.

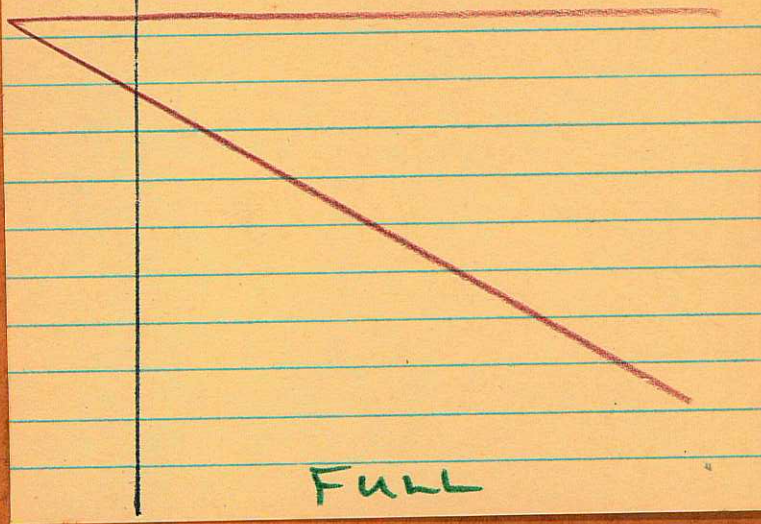
Full

6.

D-26

ERWIN U. MOSER
P. O. BOX 454
EDGAN, ILLAH

Page	Subject
1-13 ✓	1 st West from 1 st North to 2 nd South
16-17 ✓	on both sides
14-15 ✓	1 st East from 1 st North to 3 rd North
18-28 ✓	on East side
29-31 ✓	1 st East from 3 rd South to 4 th South on East side
32 ✓	Heaton Ditches



FIELD BOOK

KEUFFEL & ESSER CO.

*Drafting, Reproduction, Surveying
Equipment and Materials.
Slide Rules. Measuring Tapes.*

NEW YORK • HOBOKEN, N. J.
CHICAGO • DETROIT • ST. LOUIS
SAN FRANCISCO • LOS ANGELES • MONTREAL

partners in creating



Since 1867 K&E equipment and materials have been partners of the draftsman, the engineer, the surveyor and the scientist in shaping the modern world.

Whatever your needs, whether drawing instruments, papers, cloths, slide rules, surveying equipment, measuring tapes—in fact anything for the drafting room, for reproduction or for work in the field—think first of K&E.

6-17-53

Smithfield City

①

Curb face at 2nd So & 1st W
is 15.6' E from West
edge of Sidewalk.

Offset back on Curb for
parking cars is 3' at
Church Corner

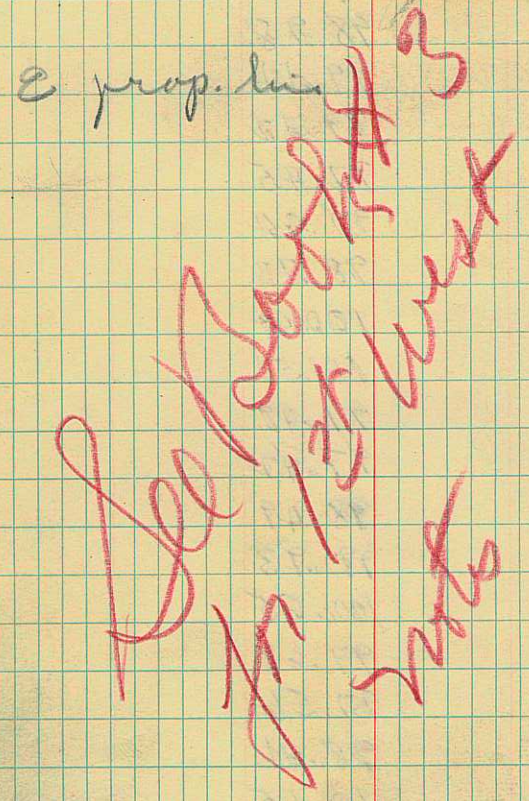
Center of 1 W
N. side of Walk on N. of Center
Str is Sta 6+70

S side of Walk on So of
Center Str is Sta 7+63

Sta	Red H17	Elev	E. L. M T
0-	6-17-53	John Downs	135
	Hub Line is	10.5'	off Prop. Line
B.M.#1	2.89	102.89	100.
0+00			
B.M.#2	3.09		99.80
West Hub	0+13.8	5.22	97.67
W. Walk	5.48		97.41
♀ Road	4.14		98.75
E. Hub	3.54		99.35
E. Walk	3.34		99.55
0+60 H	5.46		97.43
W. Walk	5.73		97.16
♀ Road	4.46		98.43
E. Hub	3.90		98.99
E. Walk	3.25		99.64
1+00 H	5.52		97.37
W. Walk	5.81		97.08
Inlet	6.65		96.24
♀ Road	4.48		98.41
E. Hub	3.20		99.69
E. Walk	2.89		100.02
1+50 H	5.76		97.13
W. Walk	5.71		97.18
Inlet	7.01		95.88
♀ Road	4.53		98.36
E. Hub	3.63		99.26
E. Walk	3.20		99.69
0+00	5.22		97.67
0+00	6.58		96.31

Levels Bob Hall Rod. (2)

BM#1 Stake on Tel. Pole on SE Cor^{1st} N
 C & G. Line on W. side of Road from
 1st North, running South to 150 S. 1st W.
 N. Beg. of Line on West Side of Road
 BM#2 Stake on Tel. Pole at SE Cor^{1st} W
 S. edge of Walk at West side of st. 1st W
 Prop line 2' W of Core Walk going So



top of Divider on west side of Road
 Bot. of Ditch at divider going South
 on W. Side of Road.

Sta	Rod	HI	Elev	F.S.	B.S.
2+00H	5.53	102.89	97.36		
W. Walk	5.62		97.27		
♀ Road	4.45		98.44		
E Hub	3.63		99.26		
E Prop.	3.07		99.82		
2+50H	5.36		97.53		
W. Walk	5.36		97.53		
♀ Road	3.91		98.98		
E. Hub	3.78		99.11		
E Prop.	3.77		99.12		
3+00H	5.44		97.45		
W. Walk	5.55		97.34		
♀ Road	4.16		98.73		
E. Hub	2.85		100.04		
E Walk	2.38		100.51		
3+50H	5.40		97.49		
W. Walk	5.47		97.42		
♀ Road	4.40		98.49		
E Hub	2.96		99.93		
E Walk	2.24		100.65		
4+00	5.21		97.68		
W. Walk	5.33		97.56		
♀ Road	4.48		98.41		
E. Hub	2.79		100.15		
E Walk	2.28		100.61		

	Red	HZ	Elev	FS.	B.S.
4+50H	5.40	102.89	97.49		
^{Initial} W. Walk	6.78 5.34	96.11 97.55	96.11 97.55		
♀ Road	4.49	98.40	98.40		
E. Hub	2.67	100.27	100.27		
E Walk	2.18	100.71	100.71		
5+00	5.65	97.24	97.24		
W. Walk	5.24	97.65	97.65		
♀ Road	4.55	98.34	98.34		
E. Hub	2.85	99.94	99.94		
E. Walk	2.10	100.79	100.79		
5+50	5.38	97.51	97.51		
^{Initial} W. Walk	6.32 5.15	96.57 97.74	96.57 97.74		
♀ Road	4.48	98.41	98.41		
E. Hub	2.82	100.07	100.07		
E. Walk	2.80	100.09	100.09		
6+00	4.80	98.09	98.09		
⁶⁺²⁵ W. Walk	5.8 5.06	97.89 97.83	97.89 97.83		
♀ Road	4.35	98.54	98.51		
E. Hub	3.66	99.23	99.23		
E. Walk	3.45	99.44	99.44		
6+50	5.05	97.84	97.84		
W. Walk	5.10	97.79	97.79		
♀ Road	4.11	98.78	98.78		
E. Hub	3.55	99.34	99.34		
E. Walk	3.25	99.64	99.64		
6+70	4.86	98.03	98.03		
W. walk	5.03	97.86	97.86		

N. side of Walk at Center (West side)

See Page 11 and 12

N. walk on N. side of Center St. West side

	Red	HI	Elev	FS	BS
7+00		102.89			
BM			99.34	3.55	3.32

Set June 27 1953

7+63 H	6.14	102.66	96.52		
W. Walk	6.17		96.49		
♀ Road	5.08		97.58		
E Hub	4.74		97.92		
E. Walk	4.62		98.04		

6-19-53

John Downsch

8+00 H	6.00	102.66	96.66		
W. Walk	6.12		96.54		
♀ Road	5.32		97.34		
E. Hub	4.70		97.96		
E. Walk	4.67		97.99		
8+50 H	5.95		96.71		
W. Walk	6.04		96.62		
♀ Road	4.98		97.68		
E. Hub	4.52		98.14		
E Walk	4.51		98.15		
9+00 H	5.81		96.85		
W. Walk	5.95		96.61		
♀ Road	4.52		98.14		
E Hub	4.31		98.35		
E Walk	4.36		98.20		

John Downsch chain

(5)

pt. in North side of Road (on oil)
Stake at SE cor pole.

Si side of Walk at Center (West side)

Bob Hall Rod

	Rod	H.I.	Elev	F.S.	B.S.
9+50 H	5.60	102.66	97.06		
W. Walk	5.84	96.82	96.82		
± Road	4.11	98.55	98.55		
E Hub	3.70	98.96	98.96		
E Walk	3.20	99.46	99.46		
10+00 H	5.45	97.21	97.21		
W. Walk	5.71	96.95	96.95		
± Road	4.36	98.30	98.30		
E Hub	3.72	98.94	98.94		
E Walk	3.14	99.52	99.52		
10+50 H	5.58	97.08	97.08		
Inlet	6.59	96.07	96.07		
W. Walk	5.20	96.96	96.96		
± Road	4.64	98.02	98.02		
E Hub	4.09	98.57	98.57		
E Walk	3.54	99.12	99.12		
10+91					
W. outlet	6.77	95.89	95.89		
E. Inlet	6.16	96.50	96.50		
11+00 H	5.50	97.16	97.16		
W. Walk	5.64	97.02	97.02		
± Road	4.64	98.02	98.02		
E Hub	4.18	98.48	98.48		
E Walk	4.12	98.54	98.54		

(6)

Ditch Crossing Road
 Walk is low from the point
 N of Center Street
 Suggest starting at this station

	Rod	HI	Elev.
11+50	H. 5.81	102.66	96.85
	Inlet 6.70	95.96	95.96
Wd Walk	5.81	96.85	96.85
♀ Road	4.64	98.02	98.02
E Hub	4.12	98.54	98.54
E Walk	3.78	98.88	98.88
12+00	H. 6.31	96.35	96.35
	Inlet 6.78	95.88	95.88
W. Walk	5.84	96.82	96.82
♀ Rd	4.77	97.89	97.89
E Hub	4.31	98.35	98.35
E Walk	4.14	98.52	98.52
12+50	H. 6.08	96.58	96.58
W. Walk	5.96	96.75	96.75
♀ Rd	4.84	97.82	97.82
E Hub	4.41	98.25	98.25
E Walk	4.03	98.63	98.63
13+00	H. 5.89	96.77	96.77
W. Walk	6.03	96.63	96.63
♀ Road	5.00	97.66	97.66
E Hub	4.64	98.02	98.02
E Walk	4.29	98.37	98.37
13+50	H. 5.96	96.70	96.70
W. Walk	6.15	96.51	96.51
♀ Rd	5.12	97.54	97.54
E Hub	4.66	98.00	98.00
E Walk	4.12	98.54	98.54

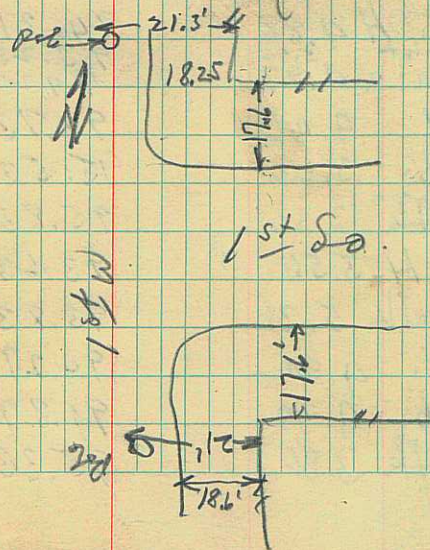
(7)

	Red	H.T.	Elev	FS	B.S.
14+00	H. 6.15	102.66	96.51		
W. Walk	6.13	96.53	96.53		
♀ Rd	5.19		97.52		
E. Hub	4.71		97.95		
E. Walk	4.14		98.52		
14+25.7	H. 6.14		96.52		
W. Walk	6.17		96.49		
♀ Rd	5.06		97.60		
E. Hub	4.82		97.84		
E. Walk	4.55		98.11		
Curb	5.04		97.62		
14+50	4.76		97.90		
♀ Rd	4.53		98.13		
15+00	4.96		97.70		
Curb	4.91		97.75		
13 W. Walk	4.17	102.66	98.47	4.17	0.70
15+20.3	H. 2.86	99.19	96.33		
W. Walk	2.80		96.39		
♀ Rd	2.06		97.19		
E. Hub	1.31		97.88		
E. Walk	1.16		98.03		
15+50	3.11		96.08		
W. Walk	3.25		95.94		
♀ Rd	2.71		96.48		
E. Hub	1.64		97.55		
E. Walk	1.40		97.79		

N. edge of Walk, N. and W. side (1st W & E) ⁵⁰

Top of Curb on 1st South
 E side of West.
 E of E-W Road, E side of West.
 Top of Curb at S. corner of 1st South
 S. edge of Walk S. and W. side (1st W & E) - So.

Note

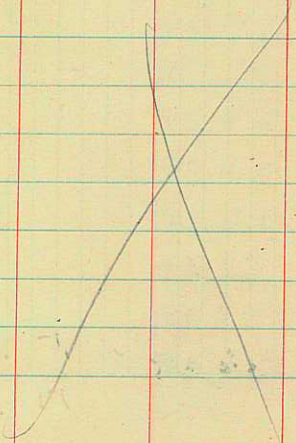


	Rod	HI	Elev	F.S.	B.S.
18+50 H.	5.92	99.19	93.27		
W. Walk	6.90		92.29		
W. Walk	5.73		93.46		
E Rd	5.19		94.00		
E Hub	4.28		94.91		
E Walk	4.06		95.13		
18+52.9	5.83		93.36		
18+59.5H	5.86		93.33		
Top of curb	5.87		93.32		
W. Walk	5.71		93.48		

See page 16917

East side of Road
1st North to 2nd South

- 0+00
- 0+15.8
- 0+60
- 1+00
- 1+01.8



Top of curb west side of Road

N. end of Church C & G Top of Curb

Beg. of offset of Church C & G
S. End of Line on W. Side of Road

Face of Curb on S. side at 1st North

South edge of Walk

Pt near S edge of Drive to Church
So. Edge of Conc. Drive to Church

Rod HI Elev

1+50

2+00

2+50

3+00

3+50

4+00

4+50

5+00

5+50

6+00

6+50

East side of Road

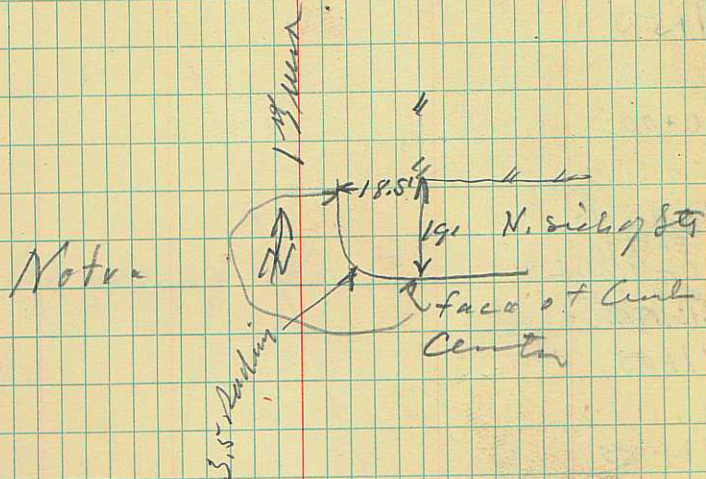
6+69.5 3.48 102.89 99.41

6+85.0 3.72 99.17

7+00 3.23 99.66

11

Pt. 3 1/2' N. of Bridge over Summit Cr.



See page 4

N. edge of Walk on N. Side of Center Str
Face of Curb " " " " " "

100
627

6-20-53 John Downs,

3rd Rod H.I. Elev F.S. B.S.

7+47.2					
7+50	3.38	102.89	99.51		
7+62.7	3.55		99.34	3.55	3.32
B.M.	2.13	102.66	100.53		
8+00					

8+50

9+00

9+50

10+00

10+50

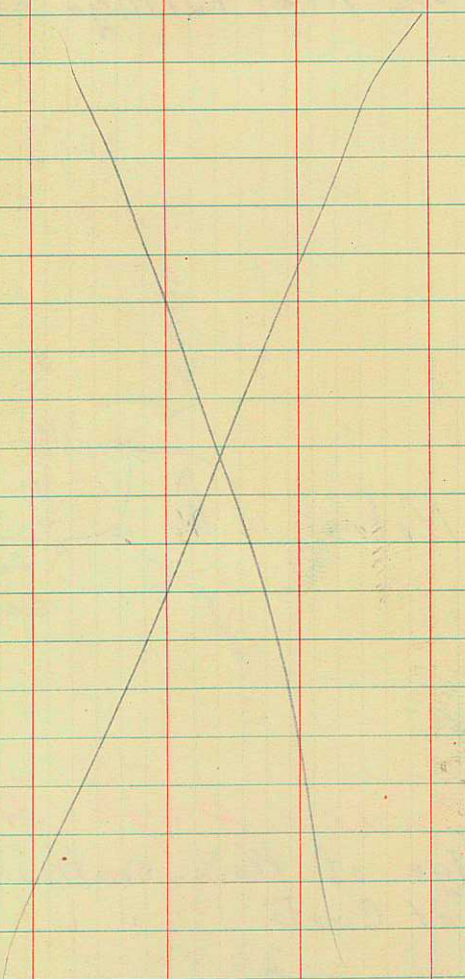
East end
10+90.6 E
West end
10+90.6

11+00

11+50

12+00

12+50



12

Face of Curb S. side of Center St.

S. edge of Walk on S. side of Center Str.

Power Pole E of Walk on S.E. Cor. of Str.

Ditch going West

East end
West end

15.8
25.3
41

13+00

13+50

14+00

14+25.3

~~14+40~~

14+41.1

14+50

15+00

15+03.95

15+19.4

N. edge of Walk on NE Cr. / W & I S.

S. Face of Curb on NE Cr of / W & I S.

N Face of Curb on SE Cr of / W & I S

S. edge of Walk on SE Cr of / W & I S.

1st E. Betw 1st N and 3rd N.

East Side of Road.

See page 20

29.7' = Dist from face of W Curb
E to Nail in Road, at 1st N
on N. side of Road. Same
dist at 2nd N. on S. side of
Road.

66.13' bet. E Hub & face of W Curb
at 2 North

66.63' betw. E. Hub & face of W Curb
at 1st N.

80.55' betw. Walks at 1st N.

76.6
60.1
16.5

14

E. edge of walk to West edge of
Walk = 91.1
Face of Curb at 1st N. & 1st E. on SE Cor
of Str. is 15.4' W. of E. edge of
East Walk.

60.1' = dist betw. face of Curb
on S. side of Street at 1 E & 1 N.

Face of Curb at 1 N. and 1 E SW Cor is 16.5'
E of W edge of Conc. Walk

Prop Line on West Side of Str
S. of Intersection is 2.25' W. of Walk.

Nail placed at 45.55' W. from E
edge of E. Walk at S side of
1 E and 1 N.

40.5' = dist to Nail from W. edge of
walk at 1st North & 1st East

30.25' = distⁿ to Nail from face of
Curb on E side of 1st East at 1st North

going S. on E side of 1W

15

15+50

16+00

16+50

17+00

17+50

	Rod	HI	Elev	F.S.	B.S.
18+00		99.19			

18+50

West side of Road.

18+52.4	No Hub 5.83	99.19	93.36		
---------	----------------	-------	-------	--	--

19+00	6.09		93.10		
W. curb	6.02		93.17		
Q Rd	5.28		93.91		
E Hub	4.52		94.67		
E Prop	4.45		94.74		
B.M.	4.52	99.19	94.67	4.52	4.63
19+50	with 6.51	99.30	92.79	4.52	7.
W curb	6.51		92.79		
Q R	5.47		93.83		
E Hub	4.88		94.42		
E Prop	4.41		94.89		

Top of Church curb
Opposit N. end of Church G. & G.

Top of West curb

Hub at 19+00 East side

	Rod	H.I	Elev	FS	B.S.
W Walk					
20+00	6.74	99.30	92.56		
Curb	6.87		92.43		
♀ Rd.	5.59		93.71		
E Hub	4.38		94.92		
E Prop	4.81		94.49		
20+50					
W Curb	7.14		92.16		
♀ Rd	5.81		93.49		
E Hub	4.66		94.64		
E Prop	3.98		95.32		
21+00					
W Curb	7.44		91.86		
♀ Rd	6.23		93.07		
E Hub	5.61		93.69		
E Prop	5.1		94.20		
21+50	7.50		91.80		
W Curb	7.76		91.54		
♀ Rd	6.73		92.57		
E Hub	6.59		92.71		
E Prop	5.97		93.33		
21+87.6	7.90		91.40		
W Walk	7.84		91.46		
W Curb	8.02		91.28		
♀ Rd	6.95		92.35		
E Hub	6.76		92.54		
E Prop	6.61		92.69		
B.M	6.15		93.15		

Hub North edge of Walk at 2nd S & 1st W

B.M on Pole NE cor.

16.3 1

13-12
14-4

15.
to main

12-12
5-4

11-14
6-4
1-8

1st West Core
2 extra

11-12
6-4

4-12
1-4

to main

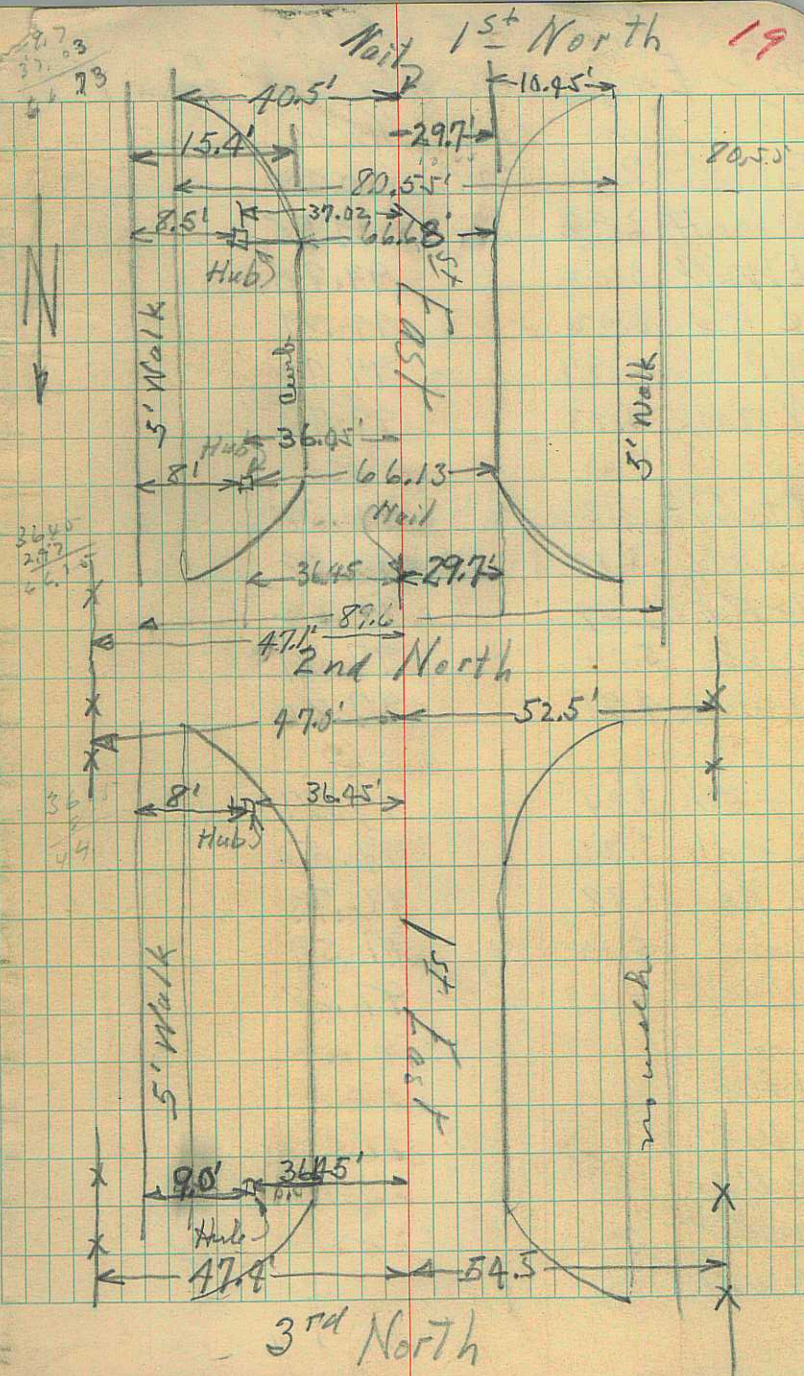
6-12
7-4
2 extra
8-12
9-4

1st E North end

3-12

1st East S end
2 extra

B.M.



18.3 Rod HI Elev.
 31.7 East side of 1st E. from 1st 63rd N
 54 Line runs North

BM	2.71	102.71	100.00
Cross	2.96		99.75
E Walk	3.01		99.70
♀ Rd	3.42		99.29
W Curb	4.99		97.72
W Walk	4.93		97.78

10+18.3H	3.13		99.58
E Walk	3.13		99.58
♀ Rd	3.69		99.02
Curb	5.04		97.67
W Walk	4.91		97.80

0+50	3.34		99.37
E Walk	3.21		99.50
♀ Rd	3.98		98.73
Curb	5.12		97.59
W Walk	5.03		97.68

1+00
 EW
 ♀ Rd
 W Curb
 W Walk

6-24-53 L.A. Moffett chain 20
 EUM
 6-26-53 Robert Hall - Road
 EUM

Stake nailed to Power Pole of
 Line of Curb going N. on E. side of
 S.W. 50' 16.5' No. Side SW to face of Curb
 Start C&G @ 0+03 @
 Replace 18' SW of Inter section
 Going West.

Hub in Parking N. of Walk on N. side of 1st N.
 Pole Line is 8.9 West of Base Line

99.58
 99.08
 99.3
 99.12

Sta	Rd	HT	Elev	
1750	3.04	102.71	99.67	
E Walk	3.18		99.53	
♀ Rd	4.16		98.55	1.07
Crack	5.23		97.48	
W Walk	4.99		97.72	
2750	3.33		99.38	
E Walk	3.32		99.39	
♀ Rd	4.42		98.29	.88
Crack	5.30		97.41	
W Walk	5.13		97.58	
2750				
2750	3.84		98.87	
E Walk	3.75		98.96	
♀ Rd	4.75		97.96	.85
Crack	5.60		97.11	
W Walk	5.42		97.29	
3700	4.3		98.41	
E Walk	4.10		98.61	
♀ Rd	5.19		97.52	0.76
Crack	5.95		96.76	
W Walk	5.80		96.91	

2730 Elm Tree 1.6' W. of Base Line

Pole 8.3 W. of Base Line. Poles South of here in this Approx. Line.

Sta Rd HI Elev F.S. B.S.

3+50 4.66 102.71 98.05
 E Walk 4.65 98.06
 Q Rd 5.69 97.02 0.6
 Creek 6.29 96.42
 W Walk 6.11 96.60

4+00

4+00 5.45 97.26
 E Walk 5.36 97.35
 Q Rd 6.25 96.46 -0.62
 Creek 5.63 97.08
 W Walk 6.76 95.95

4+50

4+50 6.29 96.42
 E Walk 6.15 96.56
 Q Rd 6.87 95.84 0.7
 Creek 7.74 94.97
 W Walk 7.57 95.14

5+00 6.77 95.94
 E Walk 6.84 95.87
 Q Rd 7.51 95.20 0.92
 Creek 8.43 94.28
 W Walk 8.22 94.49

82.2

Sta	Rd	HT	Elev.	FS	B.S.
5+50	7.55	102.71	95.16	7.55	5.28
E Walk	5.28		97.43		
♀ Rd	5.78		96.93		
Curb	6.85		95.86		
W, Walk	6.65		96.06		
6+00	6.37		96.34		
E Walk	6.15		96.56		
♀ Rd	6.50		96.21		
Curb	7.52		95.19		
W, Walk	7.30		95.41		
6+50	6.82		95.89		
E Walk	6.80		95.91		
♀ Rd	7.03		95.68		
Curb	8.22		94.49		
W Walk	8.16		94.55		
6+82.2	No stake				
6+86.2	7.22		95.49		
E Walk	7.19		95.52		
♀ Rd	7.45		95.26		
Curb	8.72		93.99		
W. Walk	8.82		93.89		

23

check - why 30 High?

Prop Line on SE Cor of Intersection
 Pole Line is 5' W. of Base Line
 Hubs in parking S. of Sidewalk Line
 Parking
 50 side 5 into Face of Curb 15.5'
 Dip in Gutter North.
 SW Intersection?

	Rod	HI	Elev	FS	B.S.
7+00	7.37	102.71	95.34		
E. Walk	7.30		95.41		
♀ Rd	7.64		95.07		
Curb	8.90		93.81		
W. Walk	9.10		93.61		
7+50	7.38		95.33		
E. Walk	7.26		95.45		
♀ Rd	8.17		94.54		
Curb	9.42		93.29		
W. Walk	10.06		92.65		
7+77.8	7.49		95.22		
E. Walk	7.28		95.43		
♀ Rd	8.02		94.69		
Curb line	9.33		93.38		
W. Walk	9.43		93.28		
B.M.	9.69		93.02 93.67		
8+00	7.25		95.46		
E. Walk	7.07		95.64		
♀ Rd	7.90		94.81		
Curb line	9.40		93.31		
West Prop.	9.26	102.71	93.45		
Hub 7+77.8	3.52	98.74	95.22		
B.M.	5.07	98.74	93.67		
	3.52				
	1.55 diff				

check shot
was
made to
establish
B.M. Elev.

This stake may be removed for Curb return

7+78.8 Pk. 14.2' inside SW to face of Curb

Hub N. of Walk on N. side of 2nd North Pole is 9.8' N. of Base Line Poles North from this point are in approx. line

Stake on Power Pole on NW Cor of Str. SW int.?

Used for reference
Stake on NW Cor. on Power Pole

Sta.	Red	H.I	Elev.	F.S.	B.S.
8+50	6.65	102.71	96.06		
E Walk	6.42		96.29		
± Rd	7.29		95.42		
Parking	8.65		94.06		
W. Prop Line	8.48		94.23		
9+00	6.38		96.33		
E Walk	6.44		96.27		
± Rd	6.90		95.81		
Parking	8.14		94.57		
W. Prop Line	8.34		94.37		
9+50	6.24		96.47		
E Walk	6.03		96.68		
± Rd	6.63		96.08		
Parking	7.98		94.73		
Prop Line	8.36		94.35		
10+00	5.78		96.93		
E Walk	5.68		97.03		
± R	6.24		96.47		
Parking	8.09		94.62		
W. Prop Line	7.96		94.75		

Sta.	Rod	H.I.	Elev	F.S.	B.S.
10+50	5.87	102.71	96.84		
E Walk	5.05		97.66		
Q Rd	5.66		97.05		
Parking	7.46		95.25		
W Prop. line	7.50		95.21		

11+00	4.58		98.13		
E Walk	4.42		98.29		
Q Rd	4.73		97.98		
Parking	6.30		96.41		
W Prop. line	6.40		96.31		

11+50	3.54		99.17		
E Walk	3.52		99.19		
Q Rd	3.96		98.75		
Parking	5.51		97.20		
W Prop. line	5.41		97.30		

12+00	2.67	102.71	100.04	2.67	9.31
E Walk	9.07	109.35	100.28		
Q Rd	9.82		99.53		
Parking	11.50		97.85		
W Prop. line	10.94		98.41		

Nail in East side of Stump

Tree is 1.5' West of Base Line

	Road	H.I.	Elev	F.S.	B.S.
	12+50	8.11	109.35	101.24	
	E Walk	7.86		101.49	
	± Rd	8.67		100.68	
	Parking	9.83		99.52	
	W. Profile	10.37		98.98	
	13+00	6.85		102.50	
	E Walk	6.56		102.79	
	± Rd	7.60		101.75	
	Parking	8.72		100.63	
	W Profile	8.65		100.70	
	13+50	5.34		104.01	
	E Walk	5.19		104.16	
	± Rd	6.38		102.97	
	Parking	7.53		101.82	
	W Profile	7.73		101.62	
	14+00	4.00		105.35	
	E Walk	3.93		105.42	
	± Rd	4.79		104.56	
	Parking	5.55		103.80	
	W Profile	5.43		103.92	

Sta.	Rod	HI	Elev
14+50			
B.M. 14+52	2.30	109.35	106.95

14+54.8	2.45		106.90
E. Walk	2.21		107.14
to Rd.	3.39		105.96
Parking	4.31		105.04
to Prop. Line	4.47		104.88

14+68.8	2.35		107.00
E. Walk	2.22		107.13

	0.48		108.87
--	------	--	--------

28

no stake

Hub in Property Line

Approx. N. end of Curb

Spot in Road going East
 Pole Line is 9' W of Base Line
 Base Line is 9' W. of East line
 of Sidewalk.

Curb Return 17.5' from Pk.
 to Curb face.
 Bridge over SW.

6777	Rod	Ht.	Elev	Fs	Bs.
	3 rd 5 ⁰ + 1 st E. on E. end of St.				
BM #1	0.53	104.06	101.73		
O+00H.	1.83				
Prop Line	1.32				
± Road	1.49				
E. end W. Walk	2.49				
Pipe Invert	2.39		99.49		
	2.61		99.82		
O+15H.	1.83	101.83	100.00		
Prop Line	1.32		100.51		
± Road	1.49		100.34		
W. Walk					
O+50H	1.98		99.85		
E. Prop Line	1.71		100.12		
± Rd	2.10		99.73		
W Walk	3.11		98.72		
O+00	3.03		98.80		
E Prop	2.66		99.17		
± Rd	2.89		98.94		
W Walk	3.80		98.03		
1+50	3.82		98.01		
E Prop	2.94		98.89		
± Rd	3.59		98.24		
W. Walk	4.54		97.29		

88

7-8-53 John Downs 29

Spot in Road 48.5' Not Prop. (SE)
Top of Stake on Power Pole (Con.)

Invert of Pipe going West (E. end)
going South (N. end)

Convent at bottom step to Farm Walk

	Rod	HT	Elev	F.S.	B.S.
2+00 H	4.76	101.83	97.07		
E Prop.	4.32		97.51		
± Rd	4.95		97.38		
W Walk	5.38		96.45		

2+50 H	5.31		96.52		
E Prop	4.86		96.97		
± Rd	5.36		96.47		
W Walk	6.02		95.81		

3+00 H	5.56		96.27		
E Prop	6.03		95.80		
± Rd	6.21		95.62		
W. Walk	6.95		94.88		

3+50 H	7.05		94.78		
E Prop.	6.97		94.86		
± Rd.	7.17		94.66		
W. Walk	7.77		94.06		

4+00 H	8.44		93.39		
E Prop	8.18		93.65		
± Rd	8.01		93.82		
W. Walk	8.64		93.19		

	Rod.	HI	Elev.
4+50H	9.94	101.83	101.87 91.89
E Prop.	9.34		92.49
± Rd	9.20		92.63
W Wall	9.57		92.26

5+00H	10.55		91.28
E Prop	10.06		91.77
± Rd	10.10		91.73
Walk,	10.50		91.33

6+00H	12.20		89.63
E Prop	11.81		90.02
± Rd	11.75		90.08
Walk,	None	taken	

6+79H	13.20		88.63
E Prop.	13.20		88.63
± Rd	12.60		89.23
W. Wall			
B.M.#2	12.77		89.06

B.M.#1	2.33	} Diff. in Elev	100.73 100.00
0+15 Hub	4.06		

B.M.#2	5.25	} Diff. in Elev.
6+79 Hub	4.01	

Telephone Pole on NFCor. (Stake on side)

6-17-53

Heaton Ditches

Rad

0+00 S 4.34

1+00 S 4.34

2+00 S 4.34

3+00 S 4.34

4+00 S 4.34

1+00 N 4.34

2+00 N 4.38

1+00 S 4.32

2+00 S 4.32

3+00 S 4.32

4+00 S 4.32

1+00 N 4.32

2+00 N 4.32

CURVE FORMULAS

32

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

$$T = \frac{50 \tan \frac{1}{2} I}{\sin \frac{1}{2} D}$$

$$\sin \frac{1}{2} D = \frac{50}{R}$$

$$\sin \frac{1}{2} D = \frac{50 \tan \frac{1}{2} I}{T}$$

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

$$R = \frac{50}{\sin \frac{1}{2} D}$$

$$E = R \text{ ex. sec } \frac{1}{2} I$$

$$E = T \tan \frac{1}{4} I$$

$$\text{Chord def.} = \frac{\text{chord}^2}{R}$$

$$\text{No. chords} = \frac{I}{D}$$

$$\text{Tan. def.} = \frac{1}{2} \text{ chord def.}$$

The square of any distance, divided by twice the radius, will equal the distance from tangent to curve, very nearly.

To find angle for a given distance and deflection.

Rule 1. Multiply the given distance by .01745 (def. for 1° for 1 ft.) and divide given deflection by the product.

Rule 2. Multiply given deflection by 57.3, and divide the product by the given distance.

To find deflection for a given angle and distance. Multiply the angle by .01745, and the product by the distance.

GENERAL DATA

RIGHT ANGLE TRIANGLES. Square the altitude, divide by twice the base. Add quotient to base for hypotenuse.

Given Base 100, Alt. $10 \cdot 10^2 \div 200 = .5$. $100 + .5 = 100.5$ hyp.

Given Hyp. 100, Alt. $25 \cdot 25^2 \div 200 = 3.125$. $100 - 3.125 = 96.875 =$ Base.

Error in first example, .002; in last, .045.

To find Tons of Rail in one mile of track: multiply weight per yard by 11, and divide by 7.

LEVELING. The correction for curvature and refraction, in feet and decimals of feet is equal to $0.574 d^2$, where d is the distance in miles. The correction for curvature alone is closely, $\frac{1}{3} d^2$. The combined correction is negative.

PROBABLE ERROR. If d_1, d_2, d_3 , etc. are the discrepancies of various results from the mean, and if $\sum d^2$ = the sum of the squares of these differences and n = the number of observations, then the probable error of the mean =

$$\pm 0.6745 \sqrt{\frac{\sum d^2}{n(n-1)}}$$

MINUTES IN DECIMALS OF A DEGREE

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

INCHES IN DECIMALS OF A FOOT

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