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DRAWING MATERIALS
AND
SURVEYING INSTRUMENTS.

NEW YORK.
CHICAGO. SAN FRANCISCO. ST. LOUIS

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, 1885, 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.

89-51
90-02

See Page 53 for
North Broad Street

102.8
11.28
99.18

13.26

207.20
213.26
93.74

276.1
98.7

99.75

97.15
82.07
181.22

81.54
45.26
98.70

230.96
181.22
49.74
161.76

32.98

CH

T

DIS

0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
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17
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31
32
33
34
35
36

Survey to
Establish the
Center Line of Bone St.

from

Broad St to Pt. 427.13 ft. West.

Nov. 11-07

Enderlin Inst.
Flour Co.

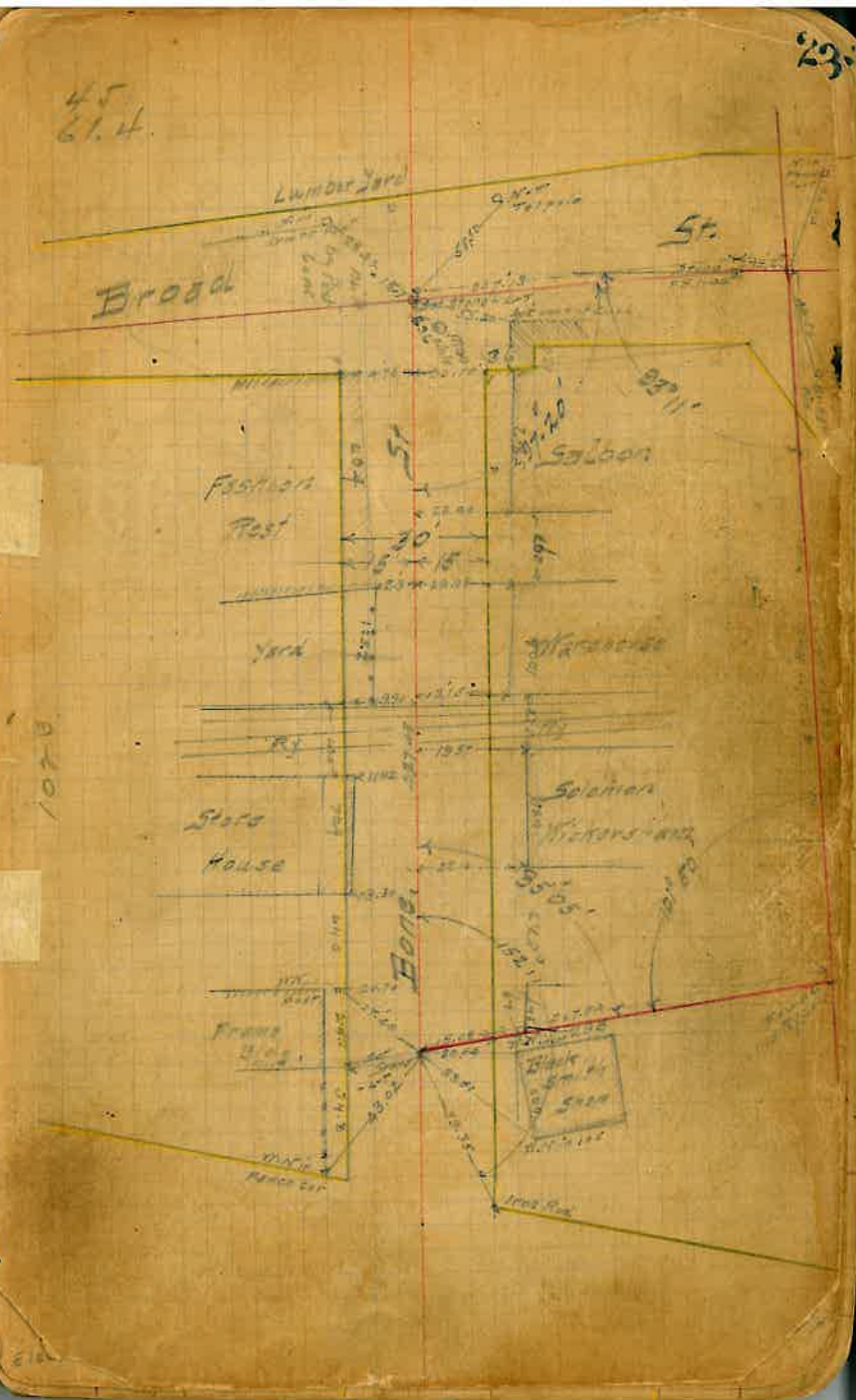
Broad St. F.B. 1- p. 44.

Bone St. Reprod. mark 30 ft. West

45
61.4

1020

510



K

Chr. Lines + Ties

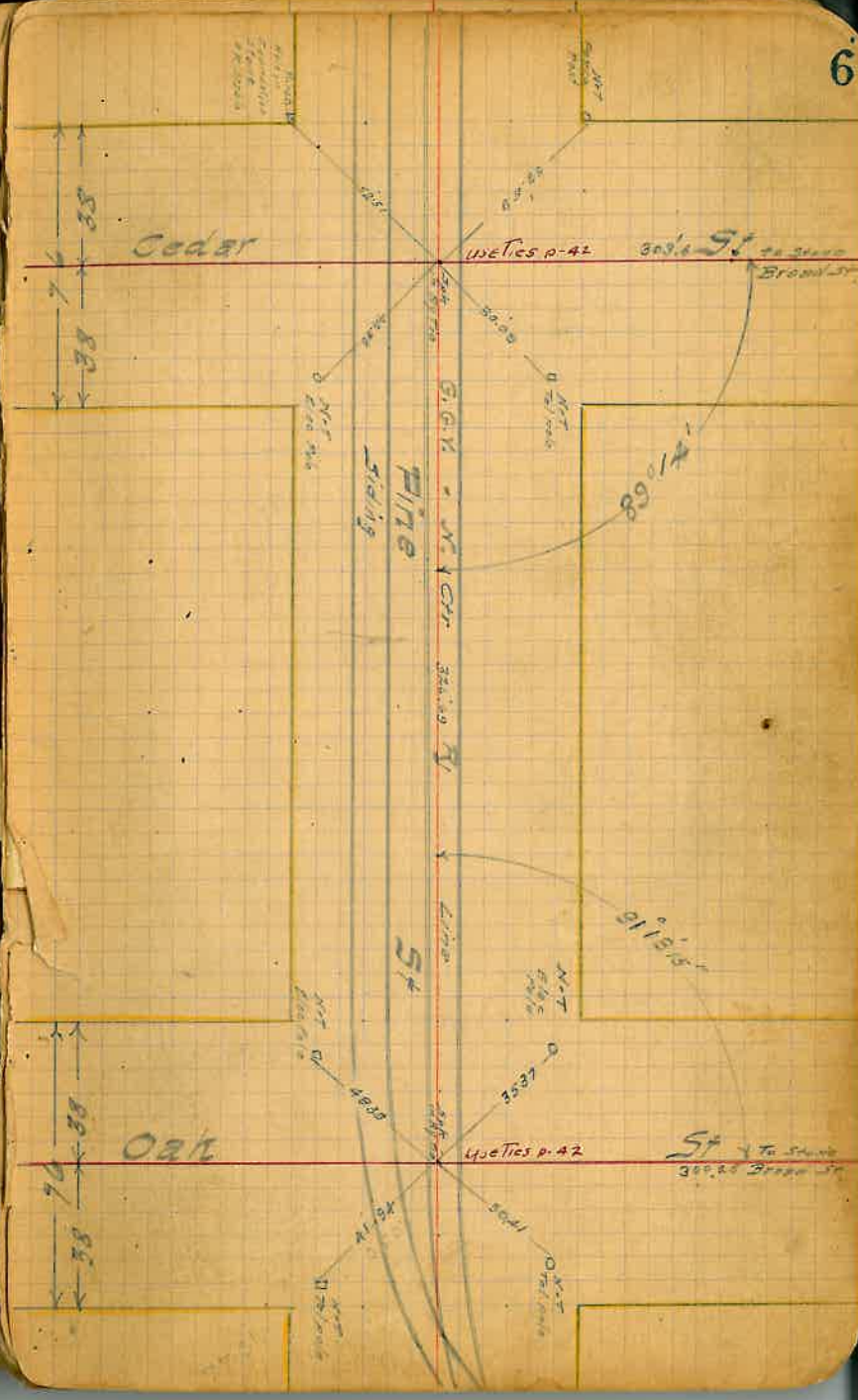
Pine, Cedar + Oak Sts

Nov. 16-07

Enderlein Inst.
Fflaum ch.

Cedar St
Pine St
Oak St

CHIC	
TA	
DIST	
	0
0	9
1	10
2	11
3	12
4	13
5	14
6	15
7	16
8	17
9	18
10	19
11	20
12	21
13	22
14	23
15	24
16	25
17	26
18	27
19	28
20	29
21	30
22	31
23	32
24	33
25	34
26	35
27	36
28	37
29	38
30	39
31	40
32	41
33	42
34	43
35	44
36	45



K

CHICAGO

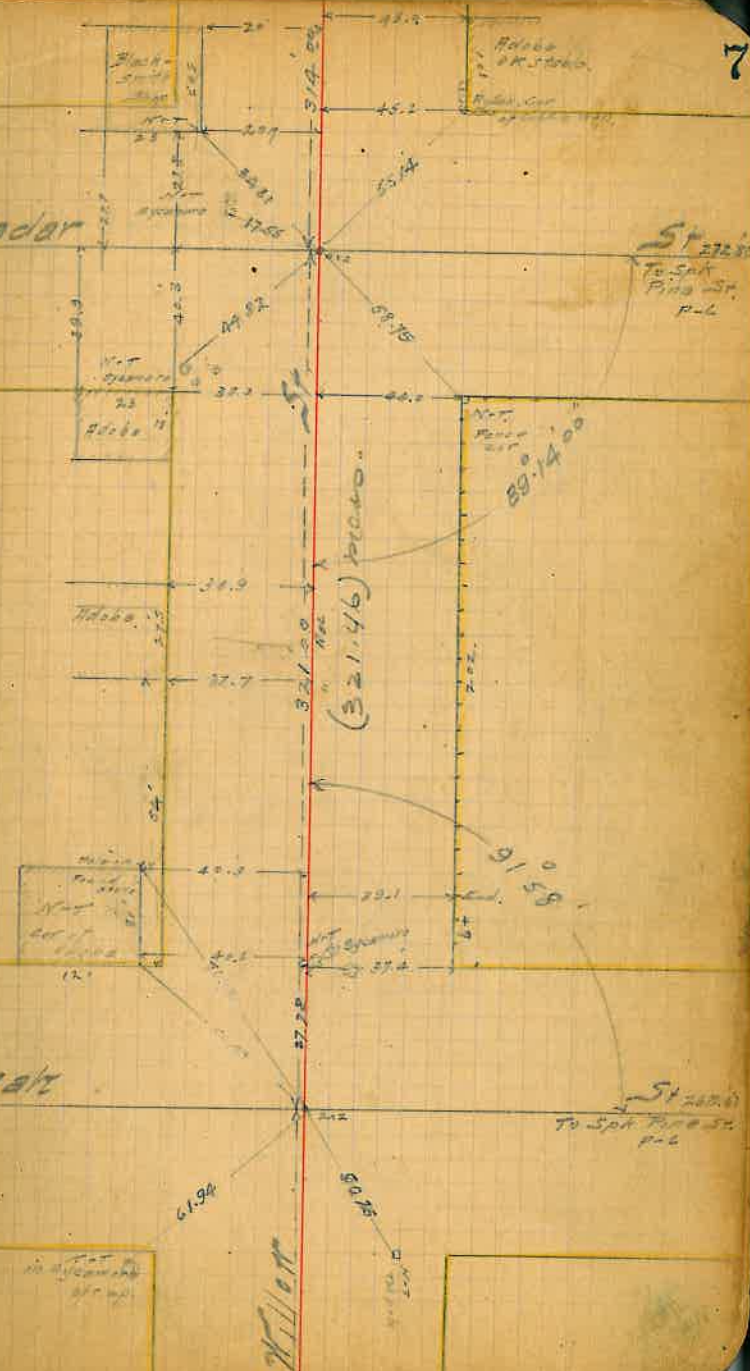
TARRANT

DISTRICT

0	39
1	10
2	11
3	12
4	13
5	14
6	15
7	16
8	17
9	18
10	19
11	20
12	21
13	22
14	23
15	24
16	25
17	26
18	27
19	28
20	29
21	30
22	31
23	32
24	33
25	34
26	35
27	36
28	37
29	38
30	39
31	40
32	41
33	42
34	43
35	44
36	45

Cedar

Oak



St 200.00
To Spk Pine St.
P.L.

89° 14' 00"

(321.46) P.L.C.D.

91° 58'

St 200.00
To Spk Pine St.
P.L.

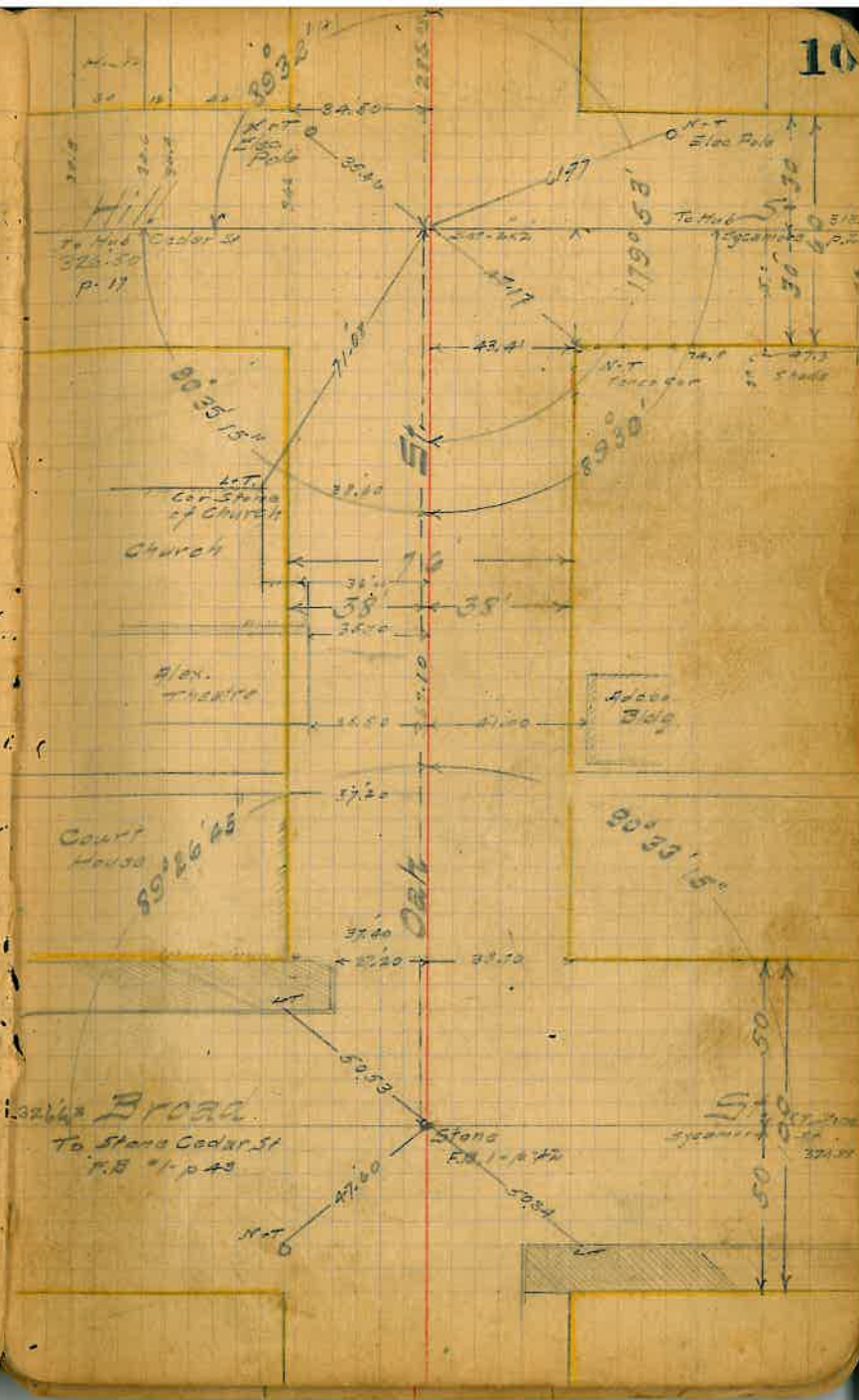
Survey to Establish
the
Center Lines of
Oak + East St.

from
Broad St to East St
thence
South to S. City Boundary.

- Broad St. F.B. 1-42-43 180ft Wide
- Oak St No Prop. Mark 76ft
- Hill St " " 60 " "
- Sutherland St " " 60 " "
- Deveraux " " 60 " "
- High St " " 60 " "
- East St " " 60 " "

Enderlein Inst
Pflaum ch
Nov. 19-07

CH
T
DIS
0
1
2
3
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5
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7
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9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36



Sycamore

57

57

215

East

Cottonwood

57

1957

Maple

57

East

Ash

57

$$\begin{array}{r} 115.35 \\ 60 \\ \hline 55.35 \end{array}$$

54

East

89°39'

734.90

5pk
To Stone Break

115.35

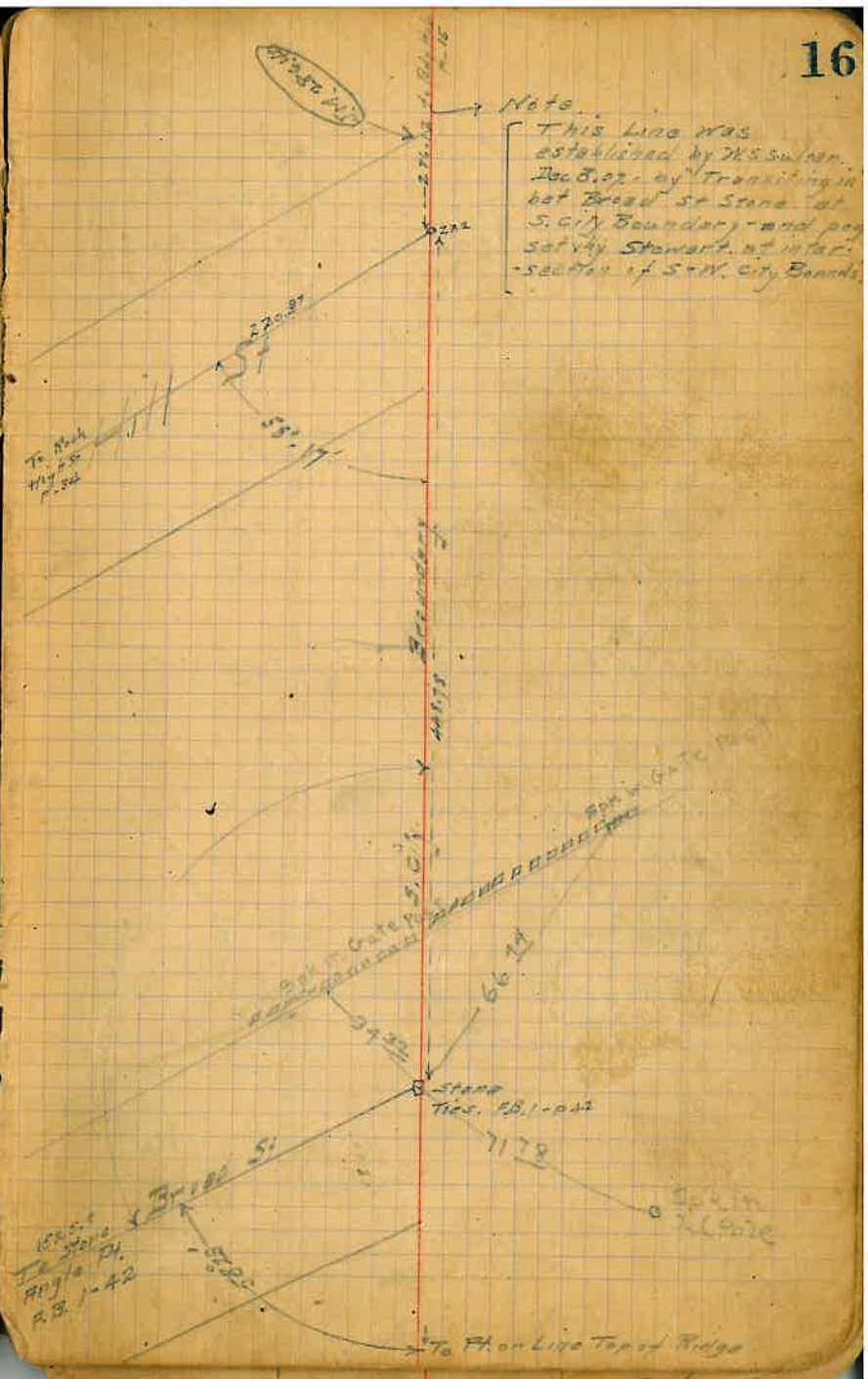
Boundary

712

6.81

720.11

$$\begin{array}{r} 115.35 \\ 94.80 \\ \hline 10.95 \end{array}$$



Survey to Establish
Center Line of Cedar St.

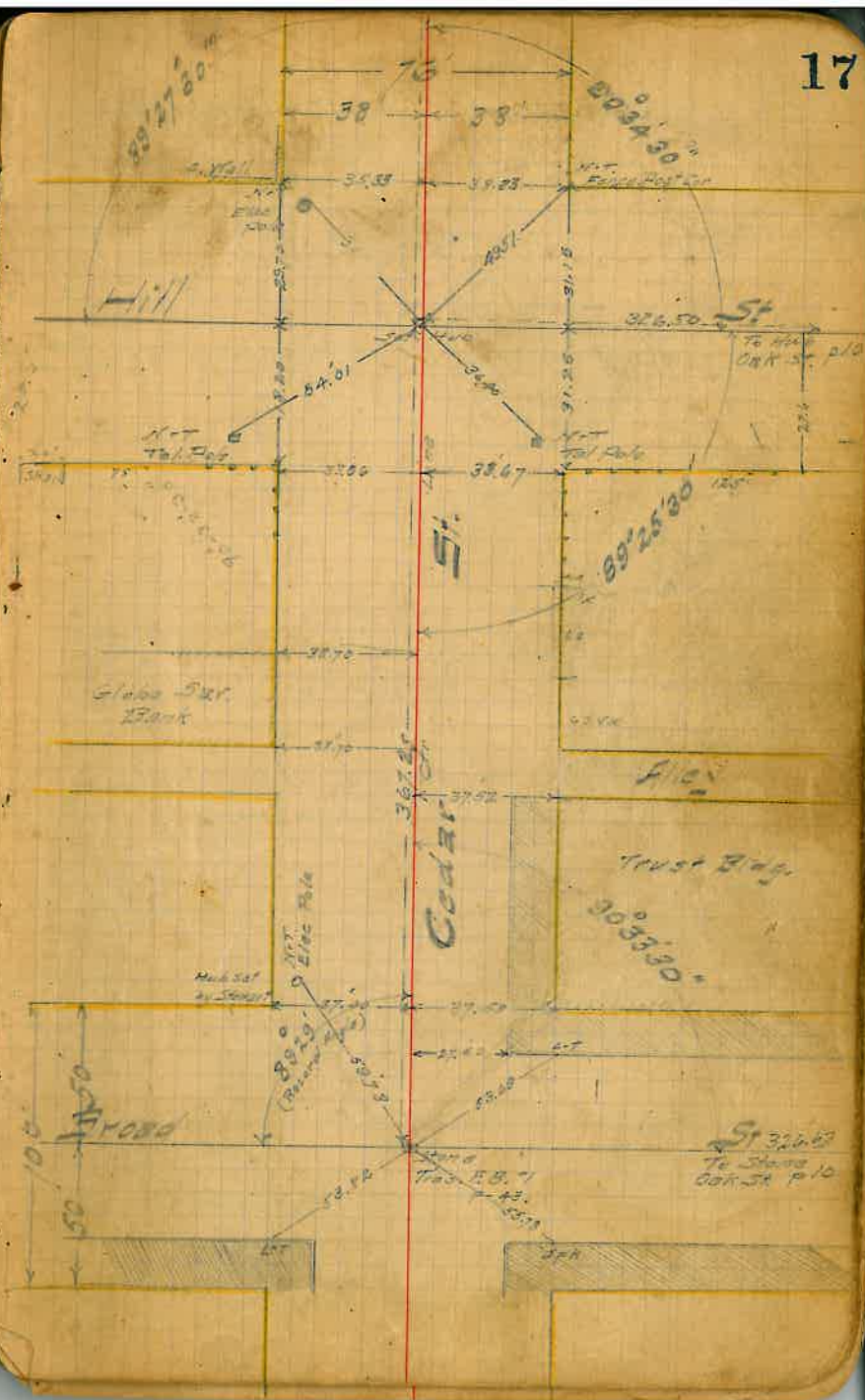
from

Broad St. to East City Boundary.

Entered in last Nov 20-07
F. Laum ch

Cedar St.	No prev. work	76 ft	Wide
Broad St.	P.B. 1 p 43	100 "	"
Hill St.	No prev. work	60 "	"
Sutherland St.	" "	60 "	"
Derroux St.	" "	60 "	"
High St.	" "	60 "	"
East St.	" "	60 "	"
City Boundary	" "	60 "	"

(as established by Stewart)



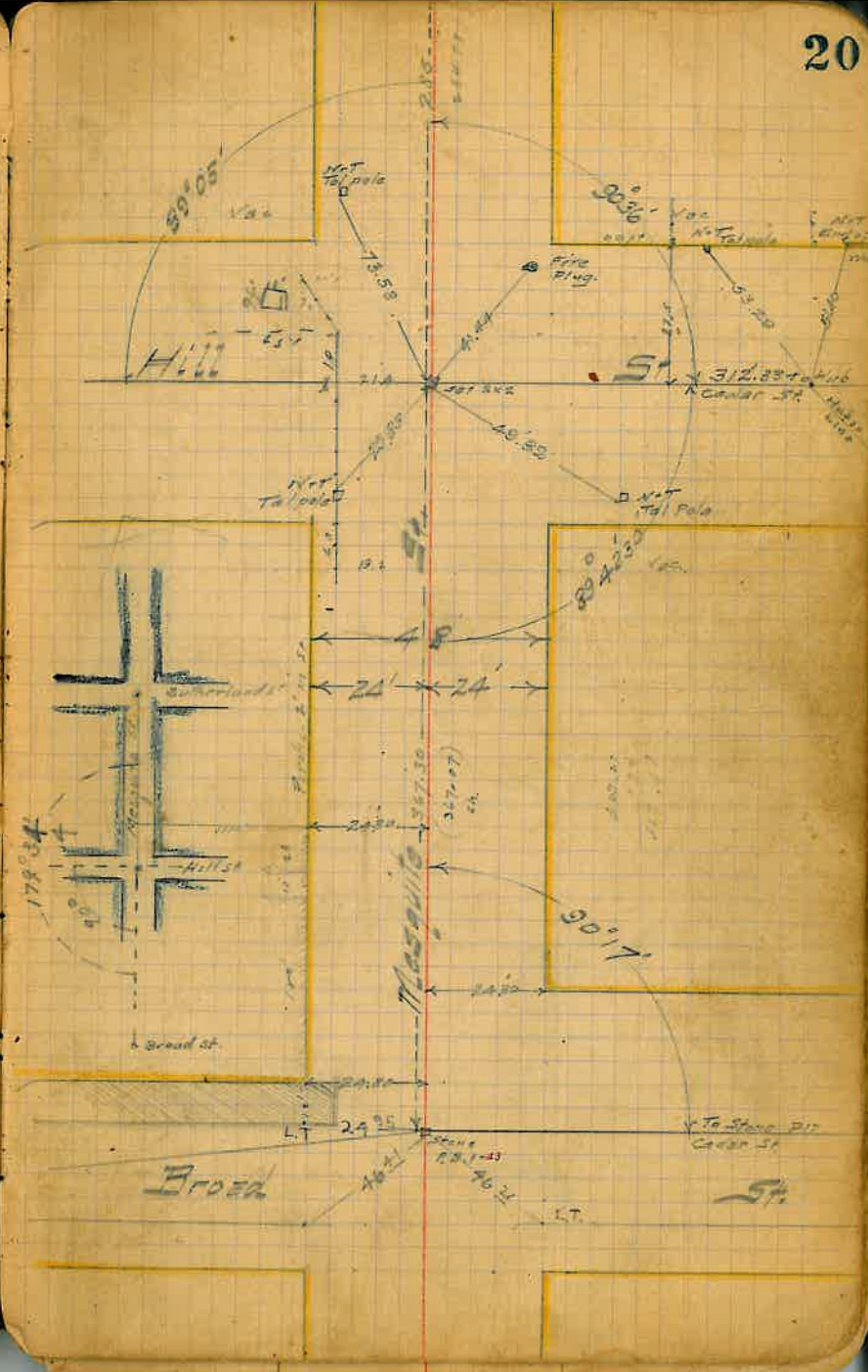
Survey to Establish
 the
 Center Line of Mesquite St.
 from
 Broad St to East City Boundary.

Nov 29-07

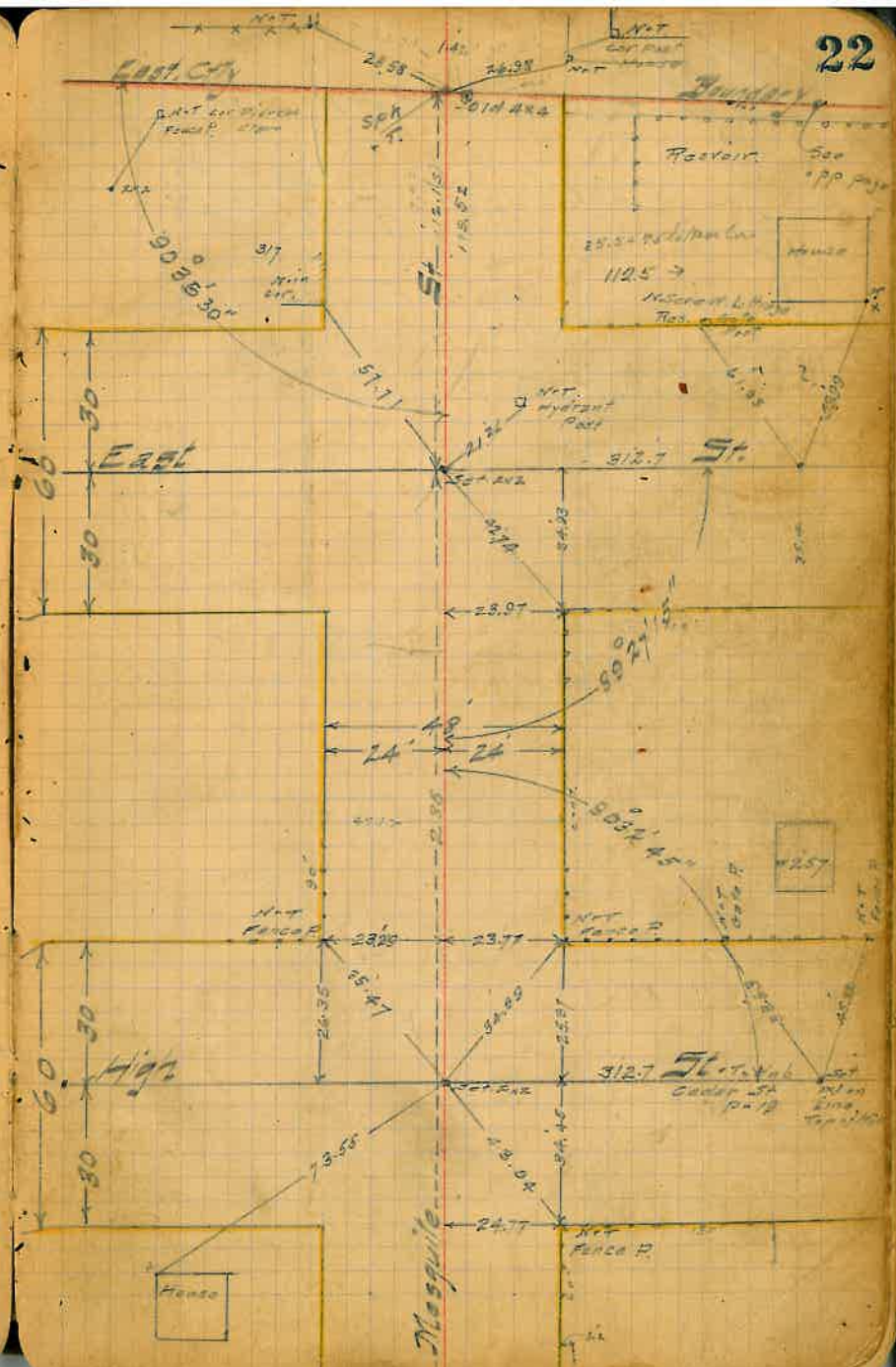
Enoch's Inst.
 Pflaum ch.

Mesquite St - 1-		48 ft Wide
Broad St 1-		100 ft "
Hill St	p-10-17	60 "
Sutherland St	p-11-18	60 "
Deveraux St	p-11-18	60 "
Night St	p-12-19	60 "
East St	p-12-19	60 "

27 ft to Barn 56.3
 55.89
 41
 68-13
 63-08 56.3



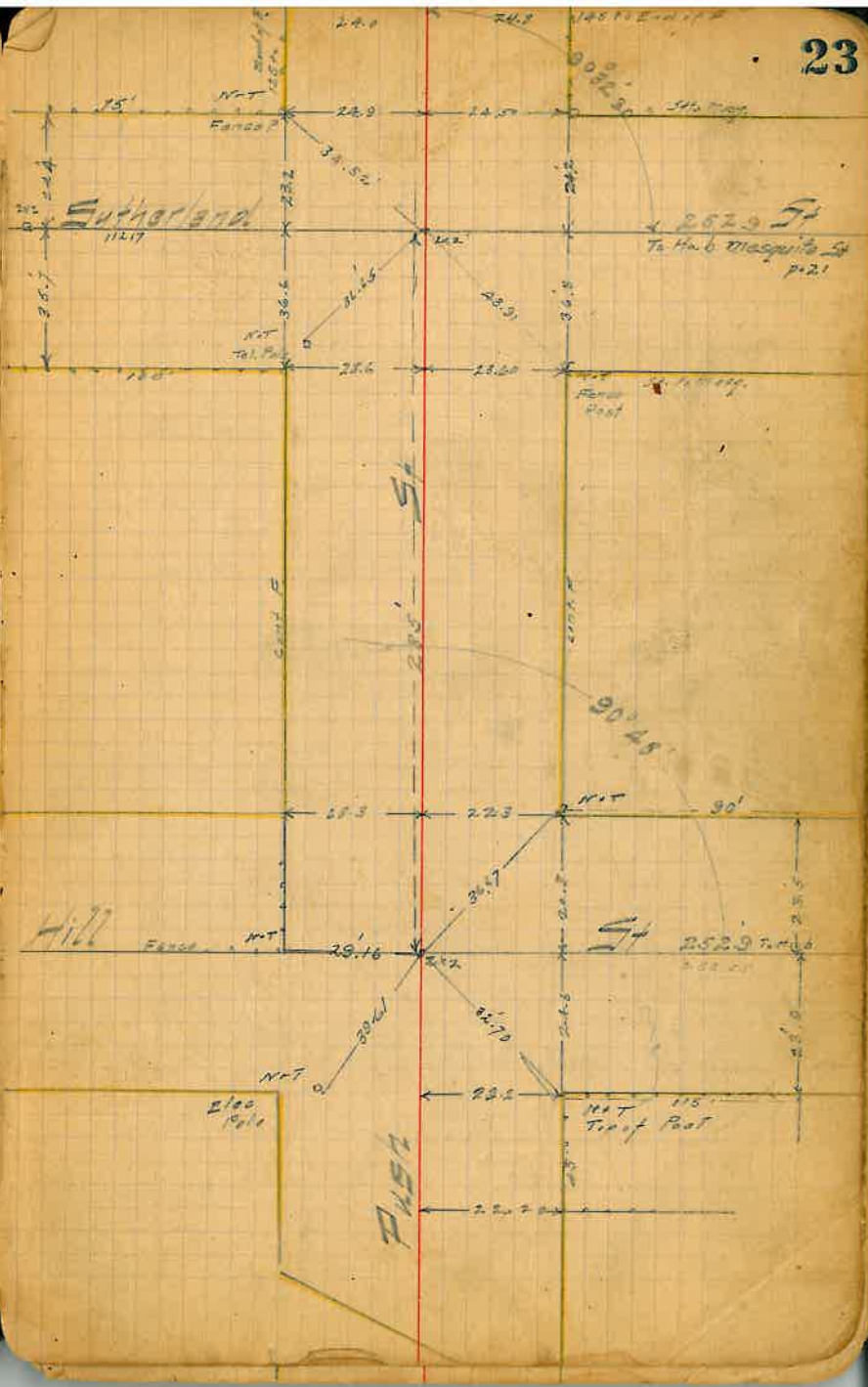
Mesquite St - Ctr Line Cont'd.



Survey to Establish
the
Center Line of Fish St.

from

Hill St to



Push St. Car W/O

30' 60' 30'

57

High

St. 202.9

11
130
6

Push
2,855.00

Deveraux

360'

Bridge

34'

6.0'

not shown
in plan.

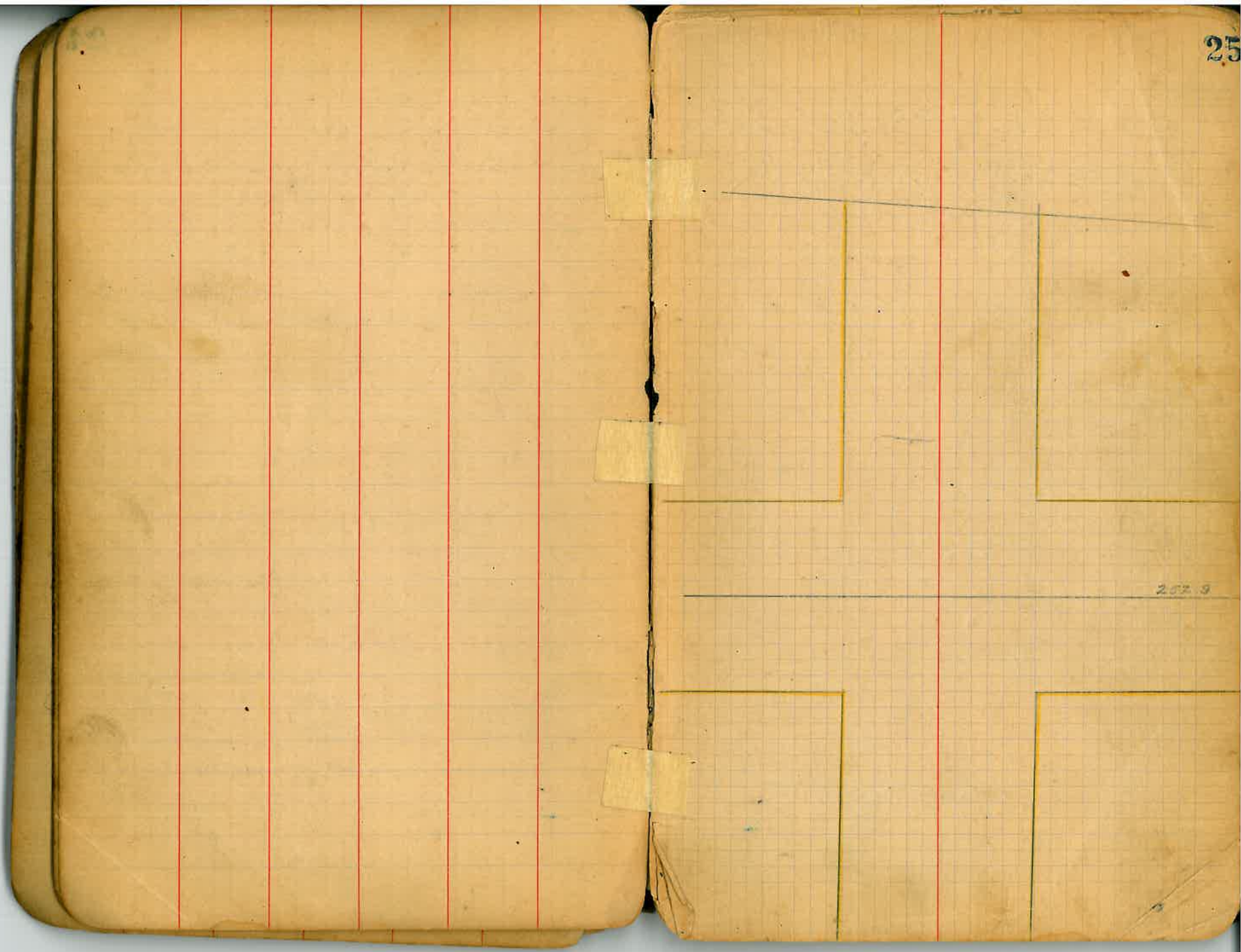
St.

252.3

To Hub.
Masquillo St
p. 21

2.85

89° 27'



Cottonwood St. Cont'd

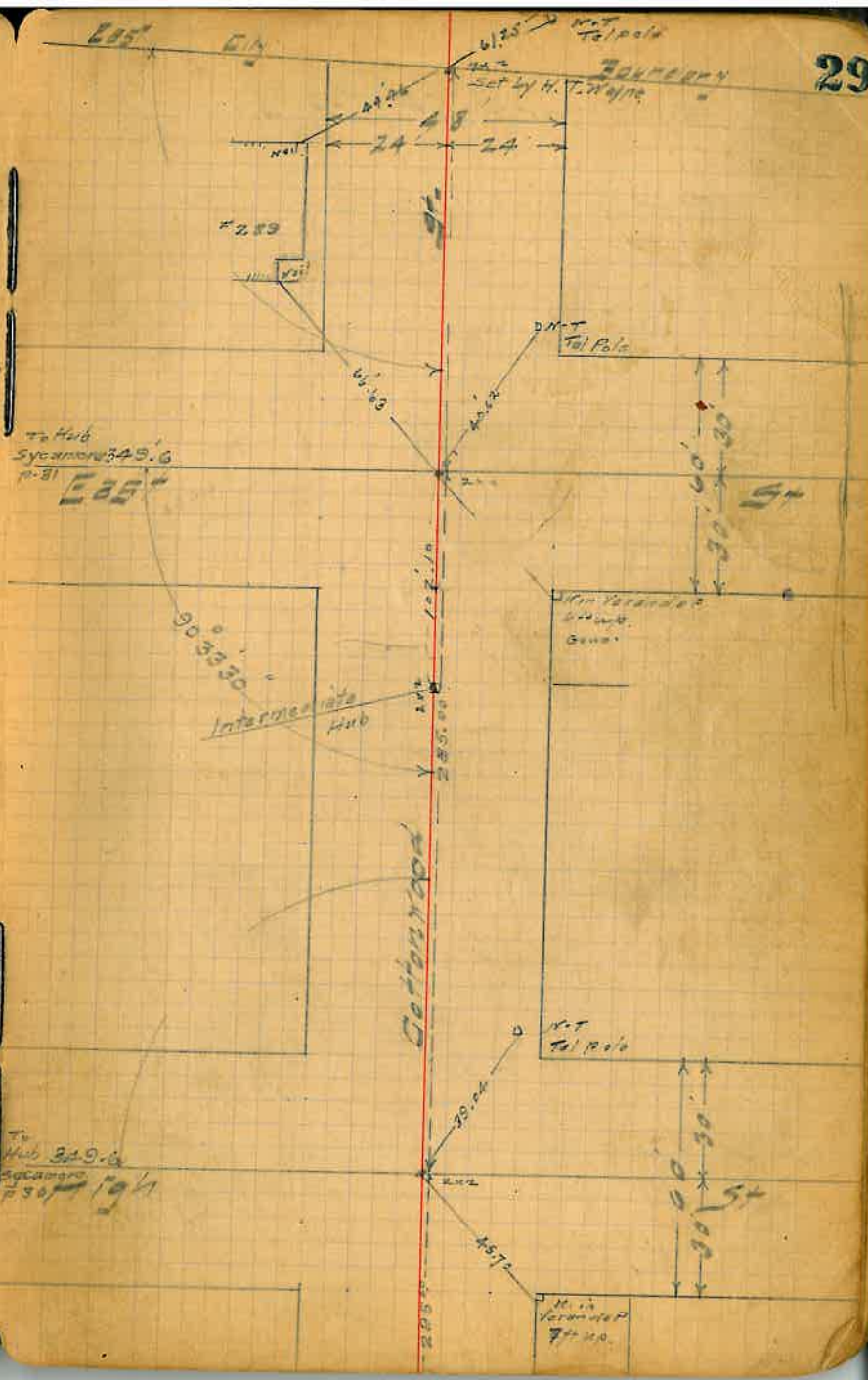
50

100
53.33
30

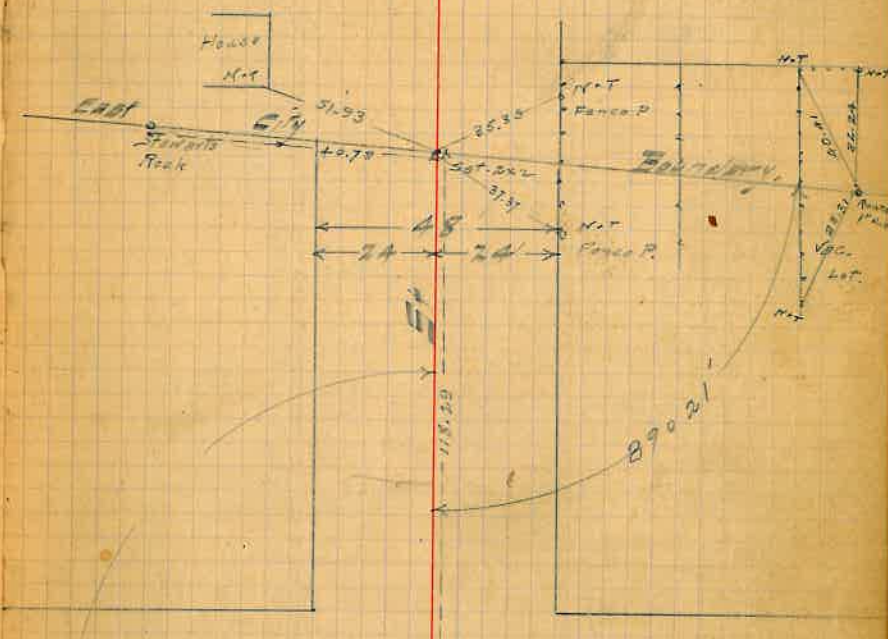
83.33
152.9

285.0
102.1

182.9



10-29
10-31
11-27



313.3 East
To Hub
Dak St
p-12

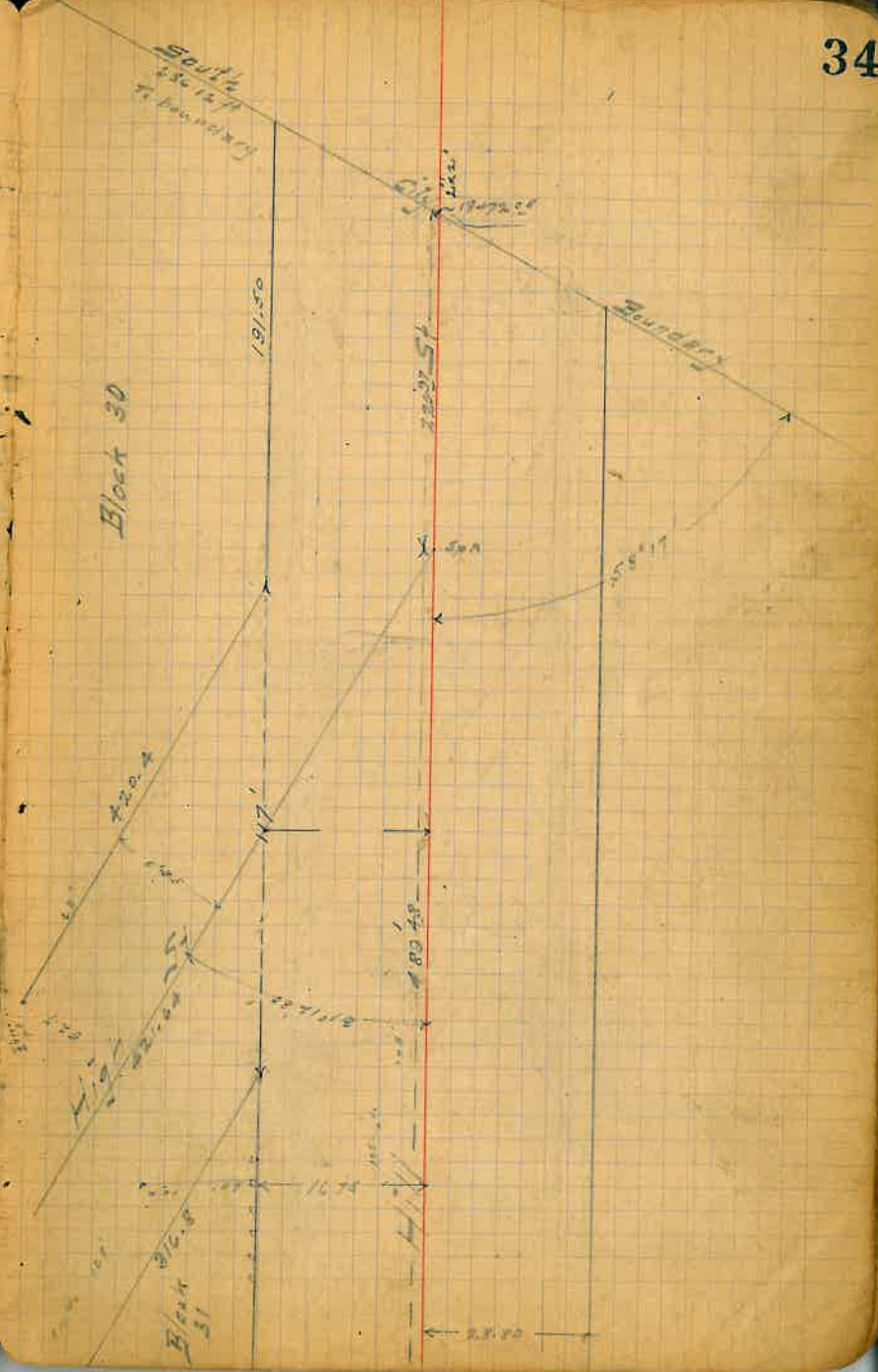
118.29
80.29
88.29

Sycamore
2852'

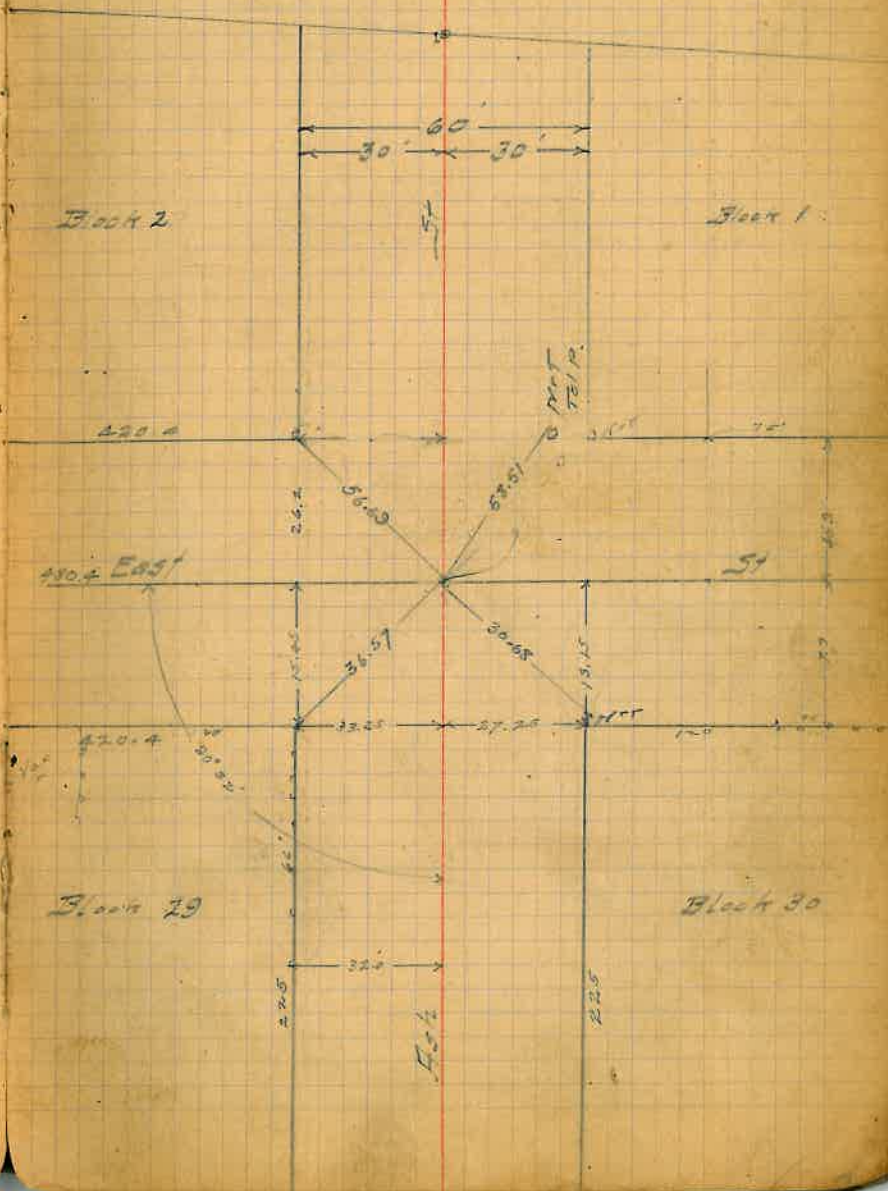
South
1/4 127
to boundary

Block 30

Block 31



Ash St Ctr Line



Mesquite St.

Broad to Willow

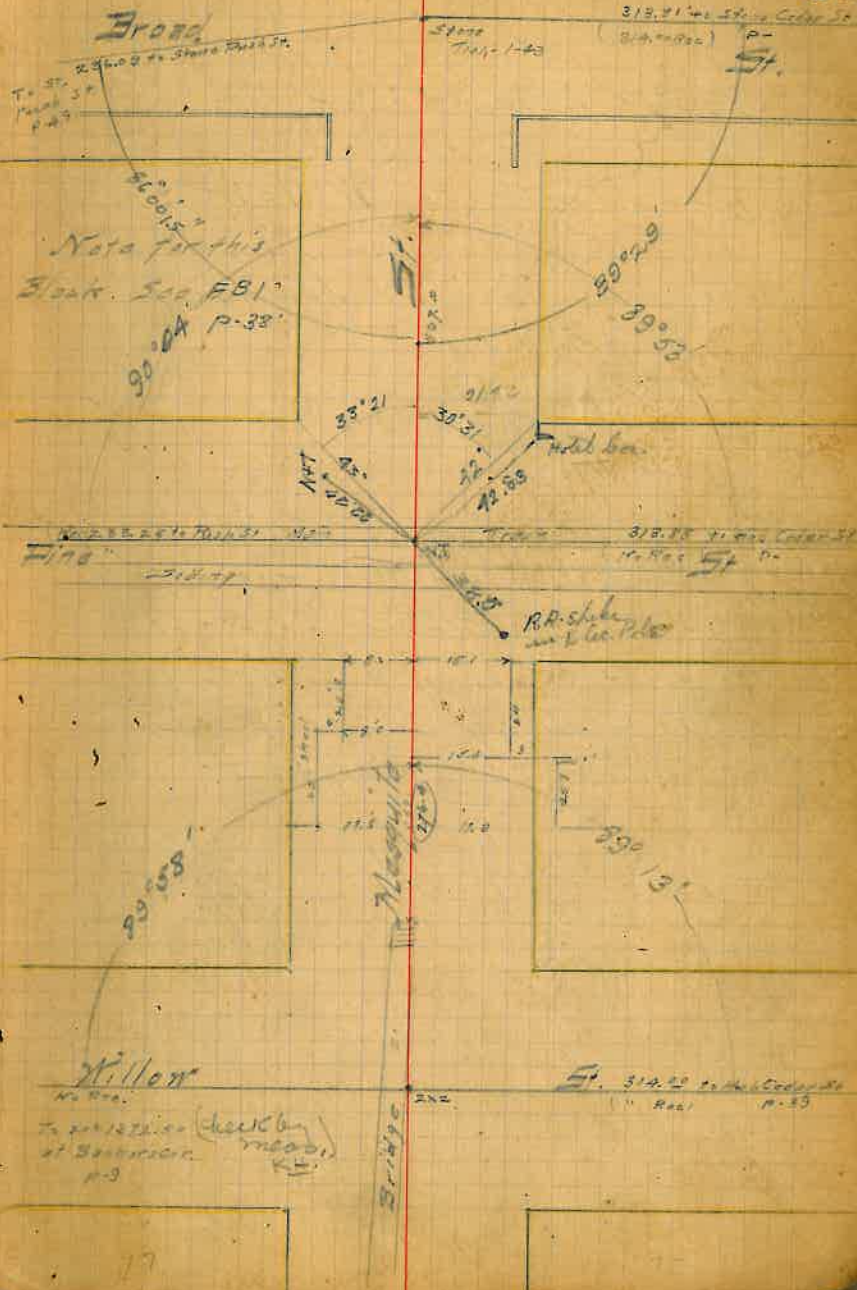
Hand and car

225.0

Broad St

1108.

Mesq to Cedar	314.00
Cedar to Oak	321.15
Total	635.15



Survey to Establish
the
Center Line of Oak St.
from
Broad St to Willow St.

Jan-16-07

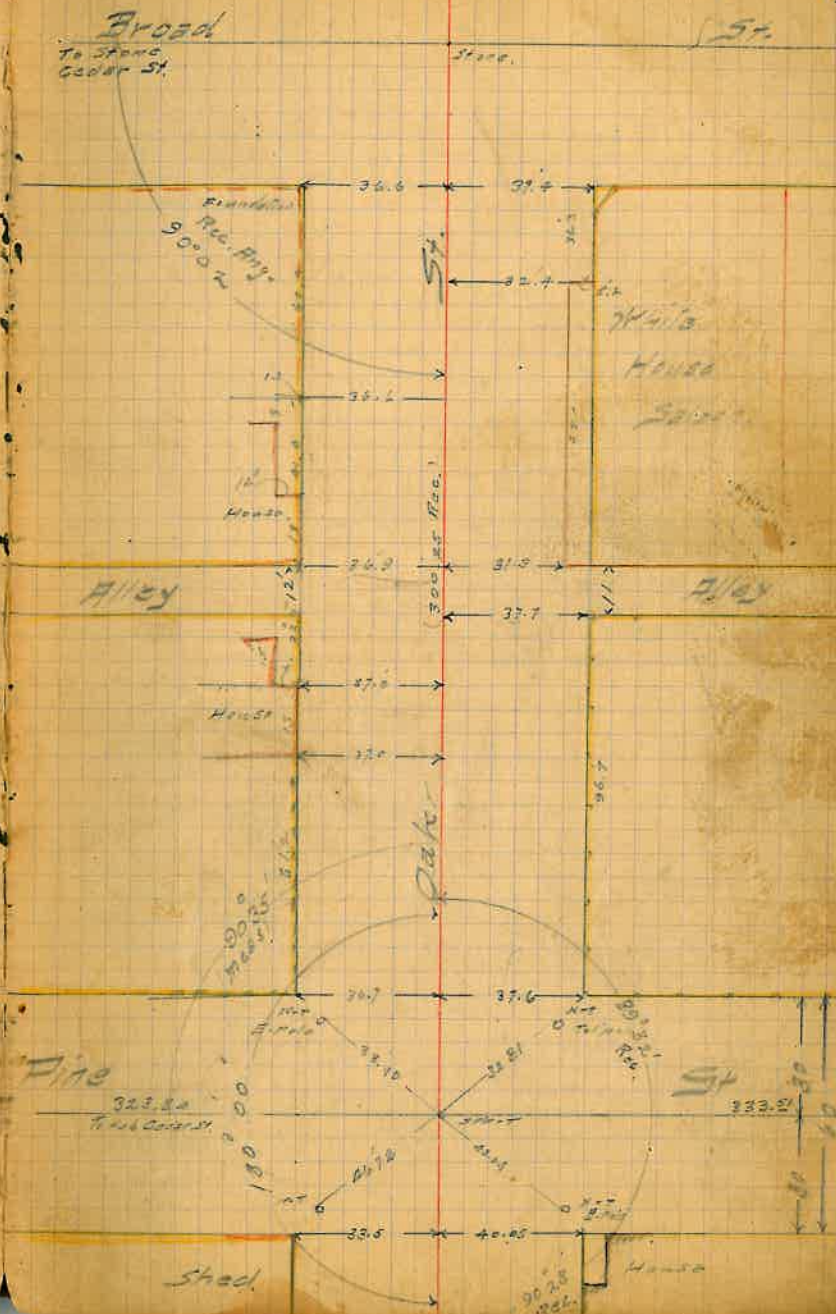
Enderlain Inst
Tacey ch
Fox ch

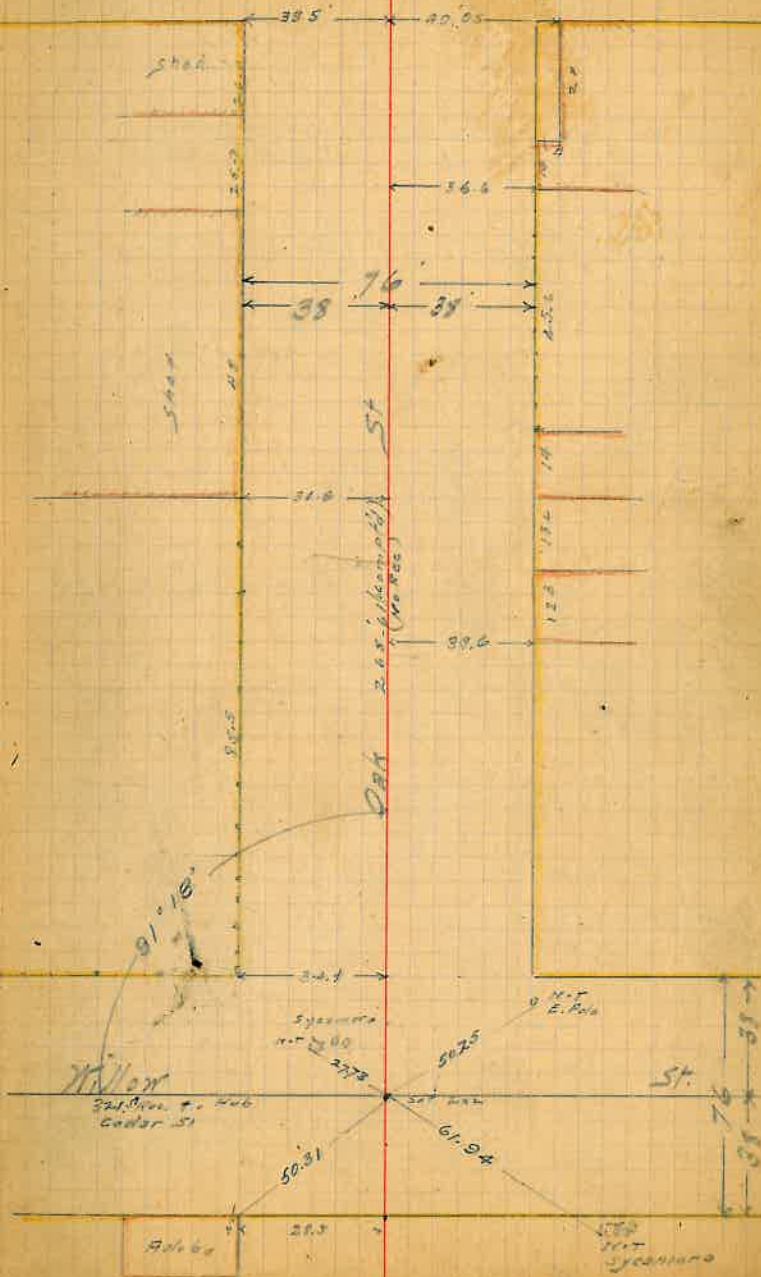
Line Established as follows.
Recorded Angle 90°02' turned from
Broad St. Ctr Line. Ctr of
Pine St. estab. in Rec. Dist.
Line Continued to meet Rec. Dist
at Willow from Cedar St

Oak to Cedar 323.84

268.61
300.21

V 68.80



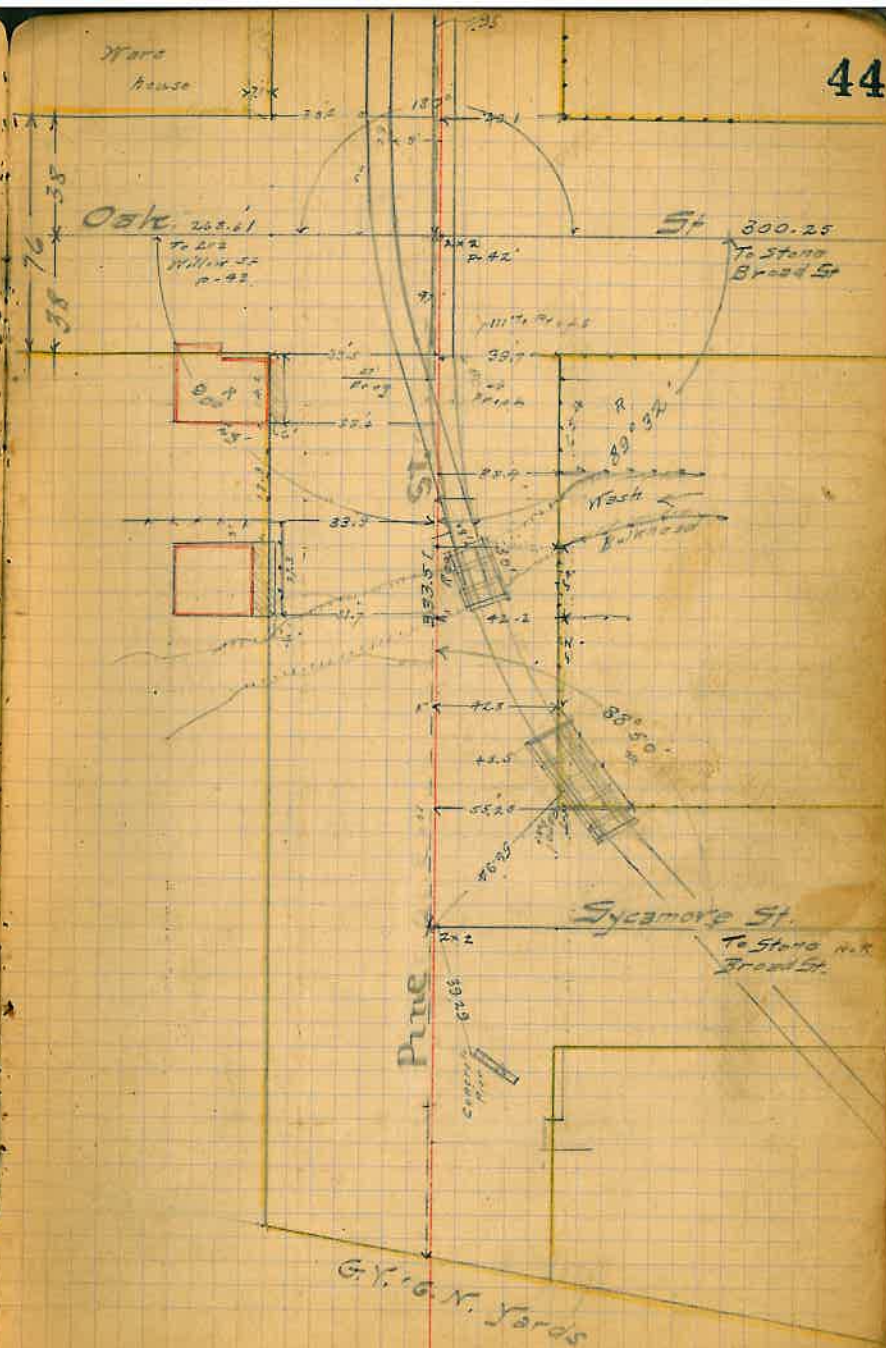


Survey to Establish
 the
 Center Line of Pine St.
 from
 G.N. & G.N. Ry Yard. to Broad St.

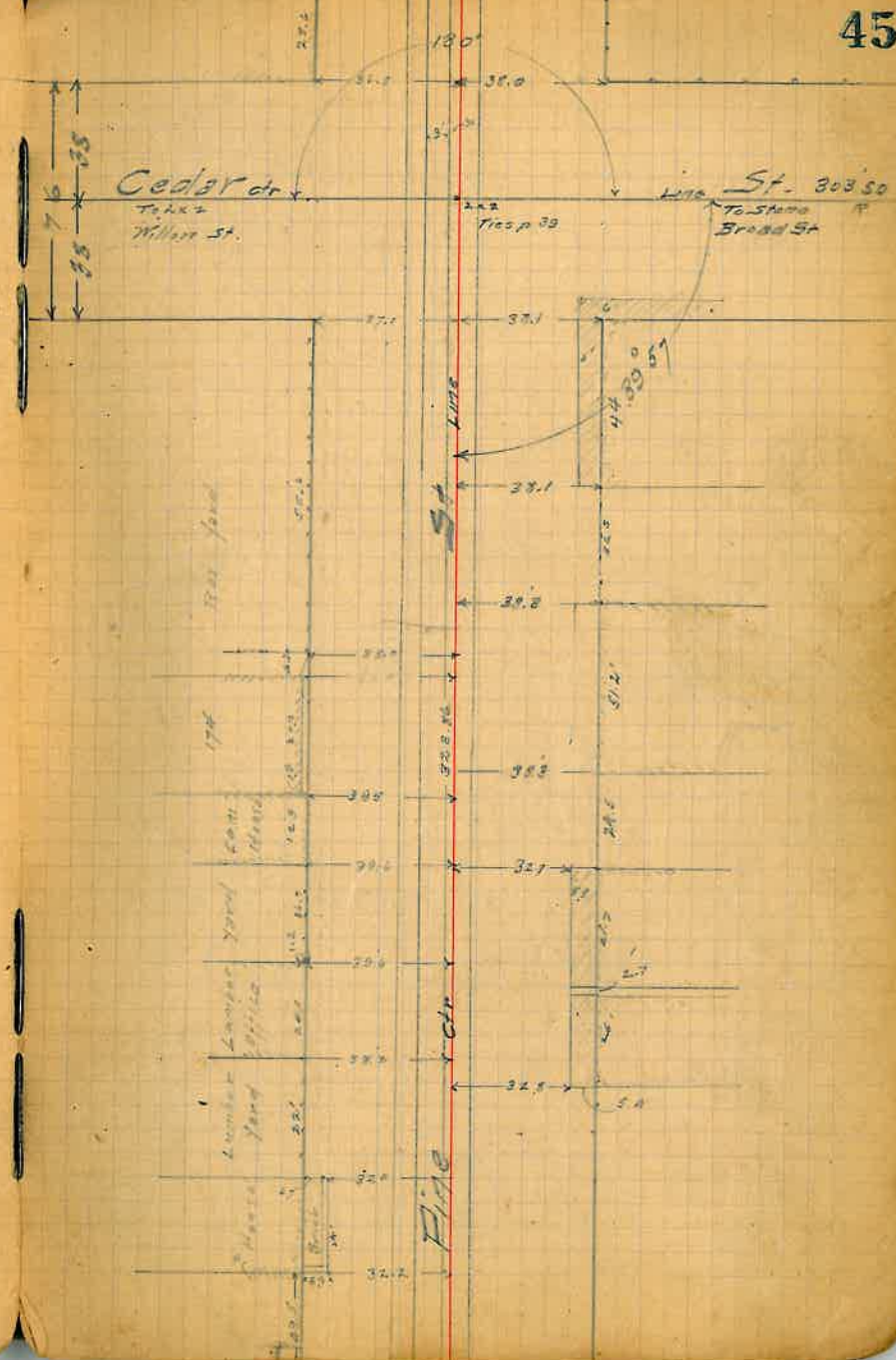
Jan 17-07

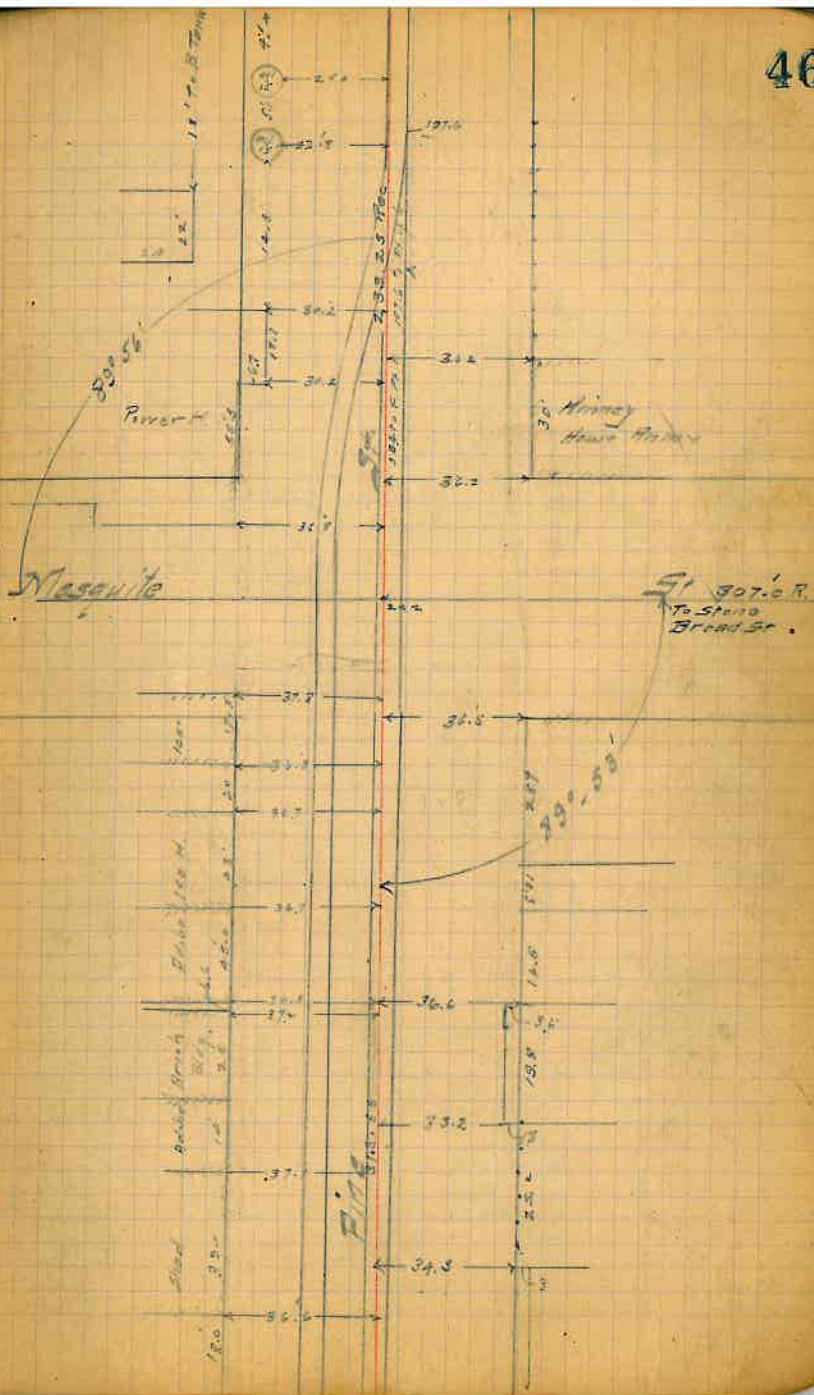
Enderlein - Inst.
 Torrey - ch.
 Fox - ch.

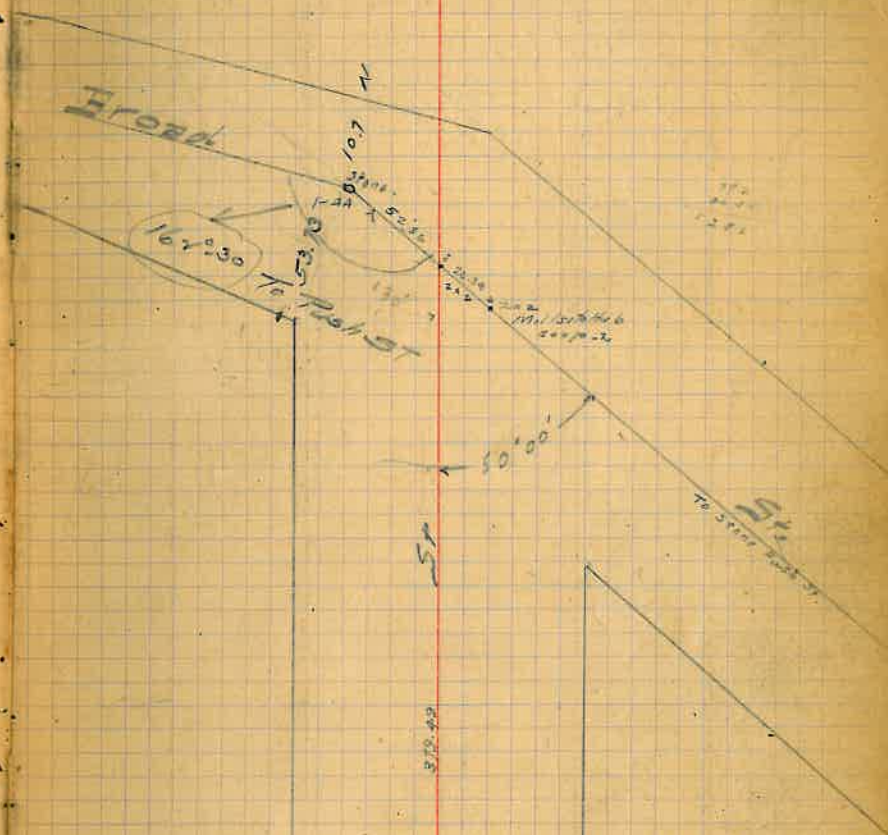
Note: The intersection of Cedar & Pine
 is the initial Pt of this survey.
 This Pt was estab'd by turning the Rec
 Angle at Broad St. and chaining the Dist
 to Pine.



W. Pine St Ctr Line Cont'd





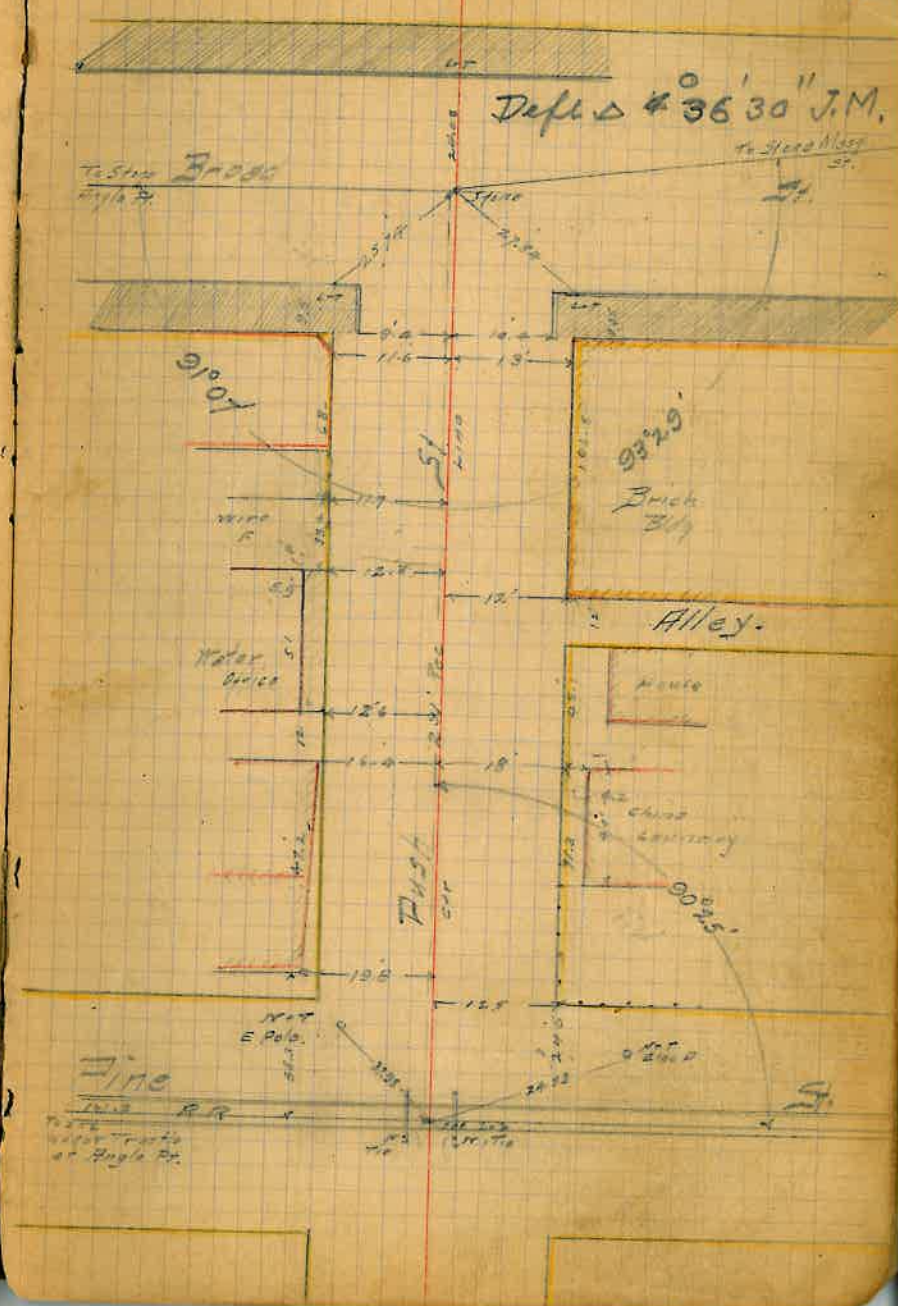


52.86
 26.84
 79.20 ✓

Fine

Survey to Establish
 the
 Center line of Rush St
 from
 Broad St to Willow St.

N^o 31



Grid St South of Baltimore
N+T
Tel Pole

27.3
N+T
Elec Pole

Calloway & Bonds
N+T
fence post

579
Dyermore & Bonds

56.95
Jones
Cor
51.7

N+T
Tel Pole



57

Push

90° 31'

Willow

57 250.96
T2112
Mass St. N. 51

324.85 Broad

325 ↑

88° 28'

55.95

41.70

47.60

SP.

33.8

76

Dem. Hotel

←

→

Stewart's fence

55.2

31.7

32.4

Alley

26.1

Sycamore

28° 50'



238.51

Fire

concrete

post

nail

now

nail in post

nail in post

G.V.G. + N. yards

St.

T. Stone Coloured 2027

Broad St Prop Fronts

from

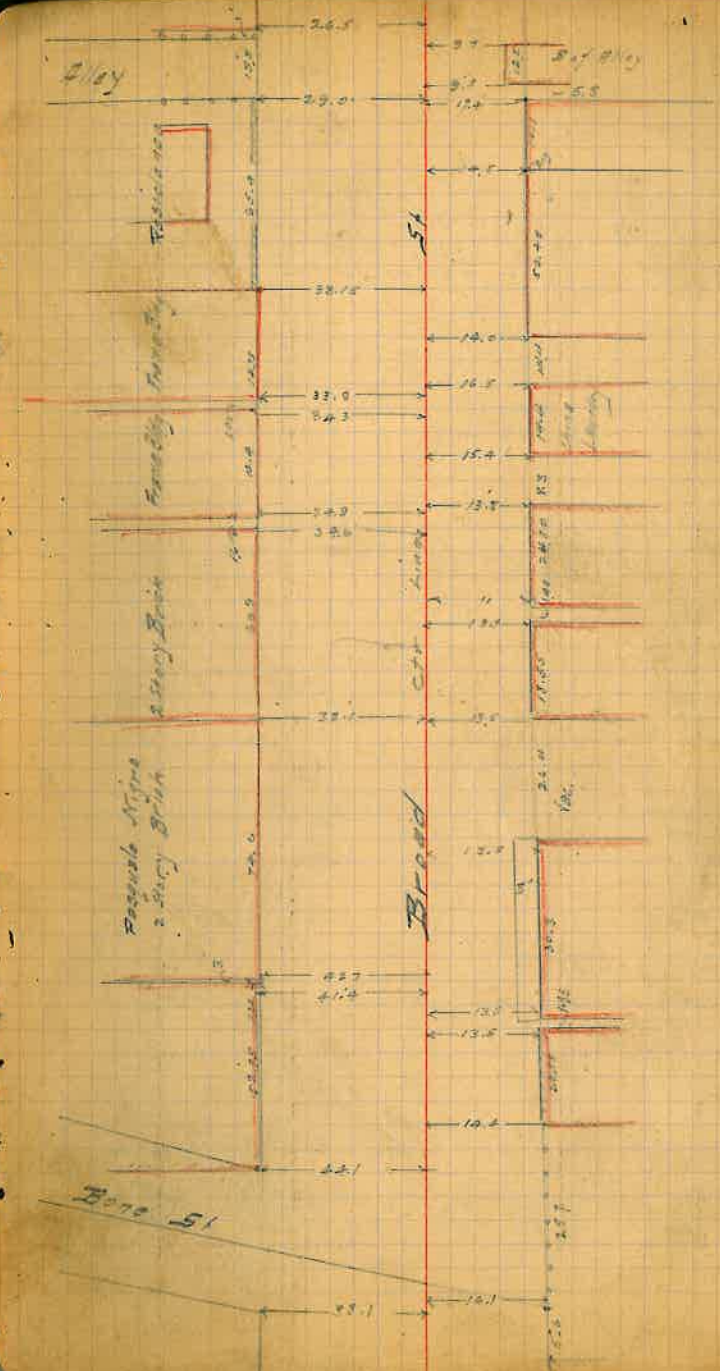
Bone St to Scott St

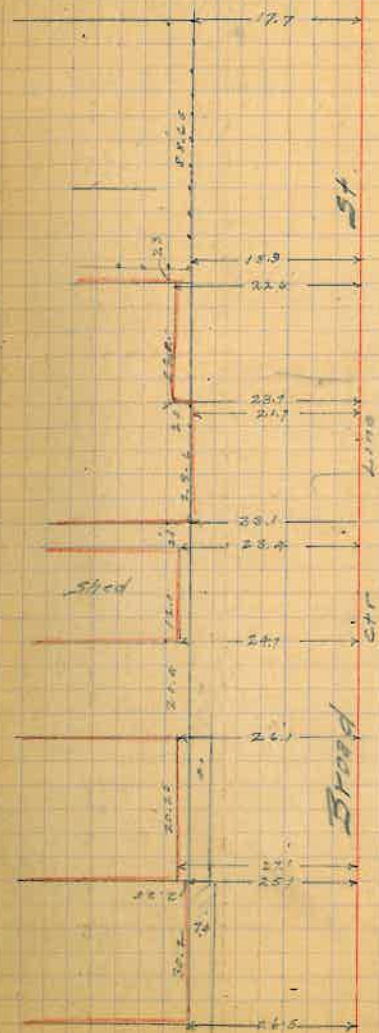
Jan 20-07

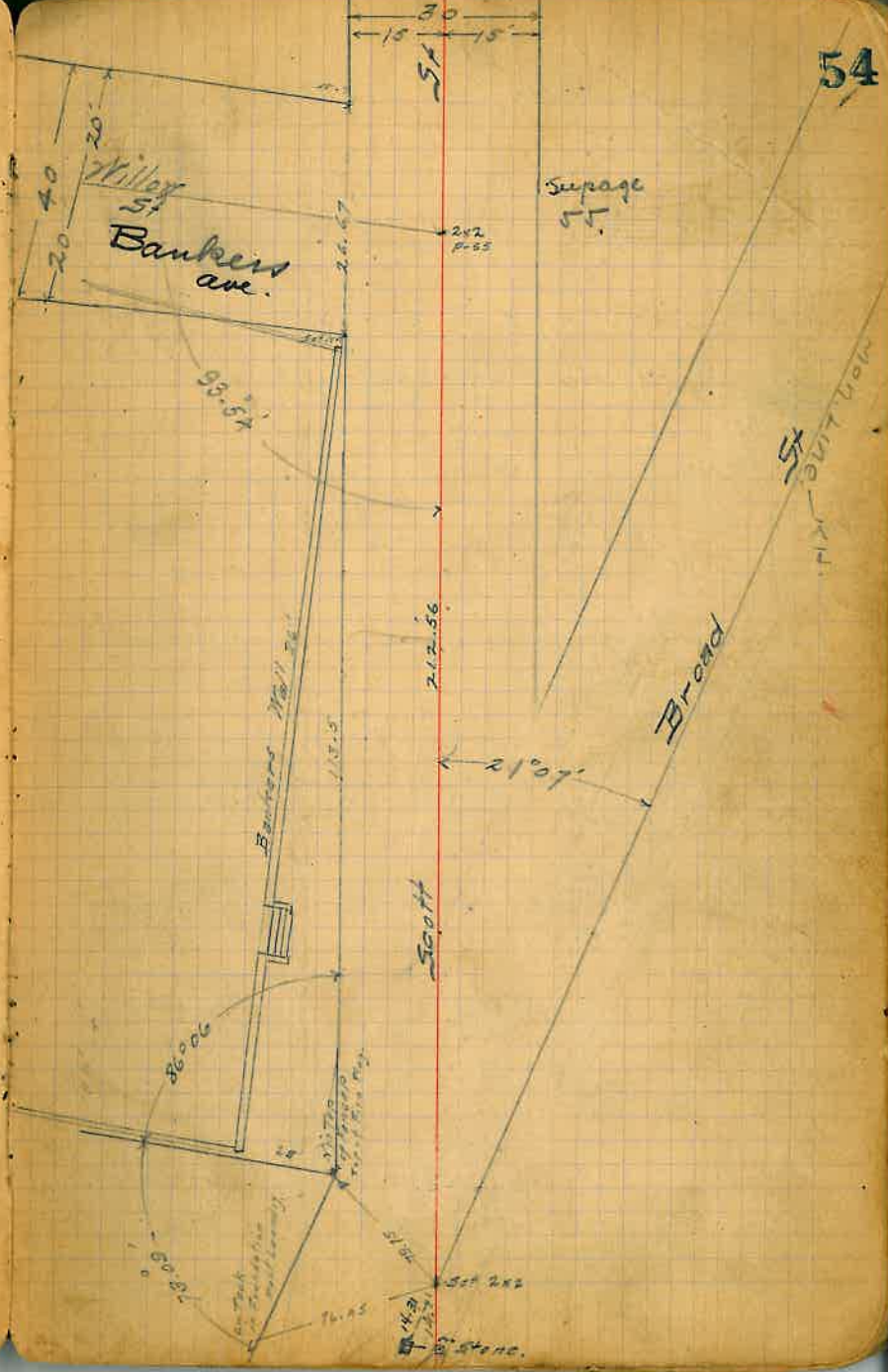
Enderlein Inst.

Tovey ch.

Fox ch.







80.00
73.00
159.15
179.60
20.00

179.50
161.15
18.35

Survey to Establish
Center Line of Scott St.

from

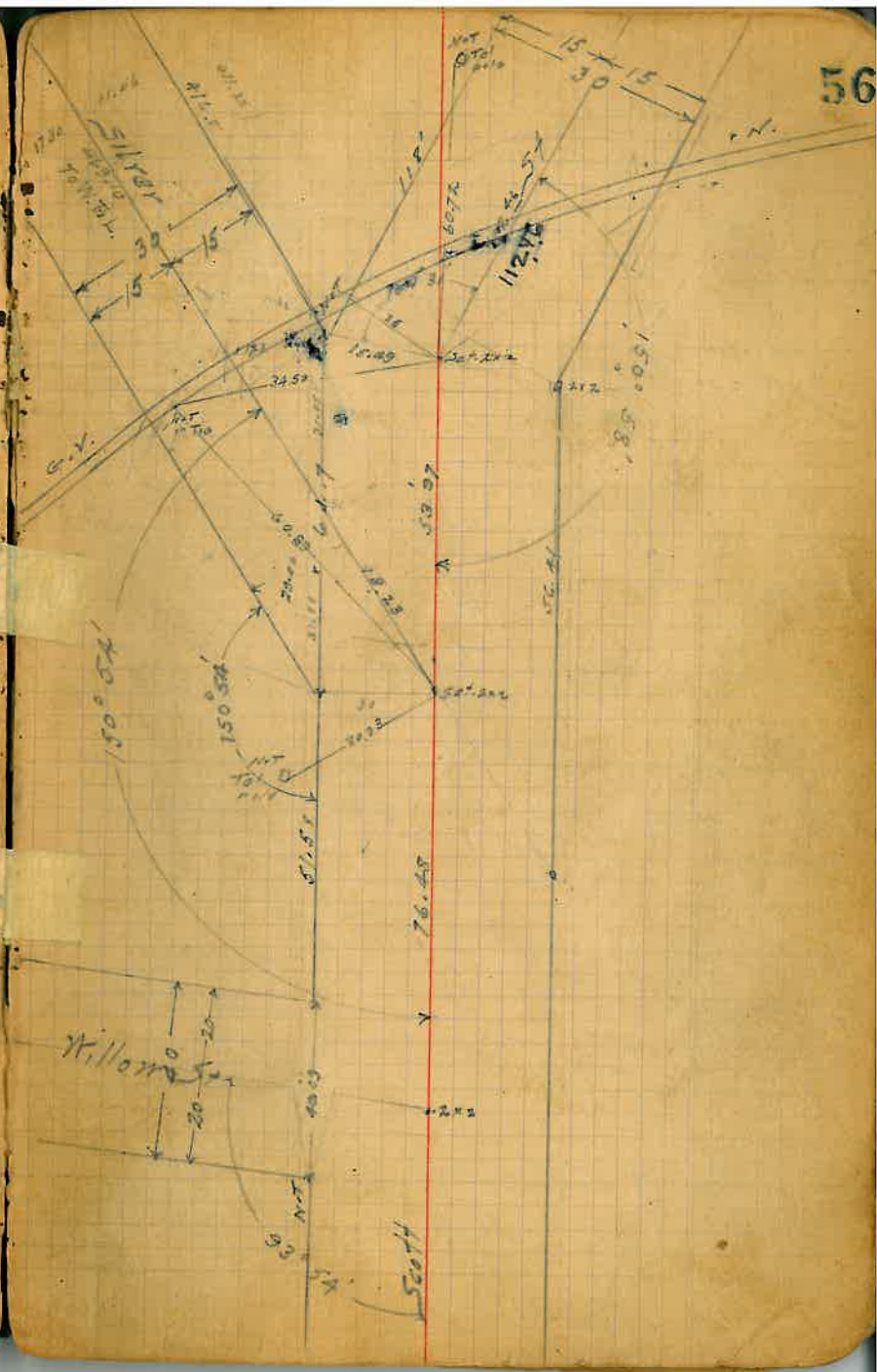
Willow St to N Tennessee Line.

Enderlein, Inst. Feb. 20.07

Torrey ch.

Fox ch.

Note: This survey was started from
Barkers + Broad St (see p. 8) and Run thence
N. to Pt on N Tennessee Line. The last
Course + Angle fail to check - as indicated
in Plot. Work never completed.



Scott St City Line Cont'd

(211.2) Stewart

1585.51	1258.96
<u>1112.17</u>	<u>1190.30</u>
473.38	168.66

2.2270121	
<u>2.6267803</u>	
7.6002818	21.4318

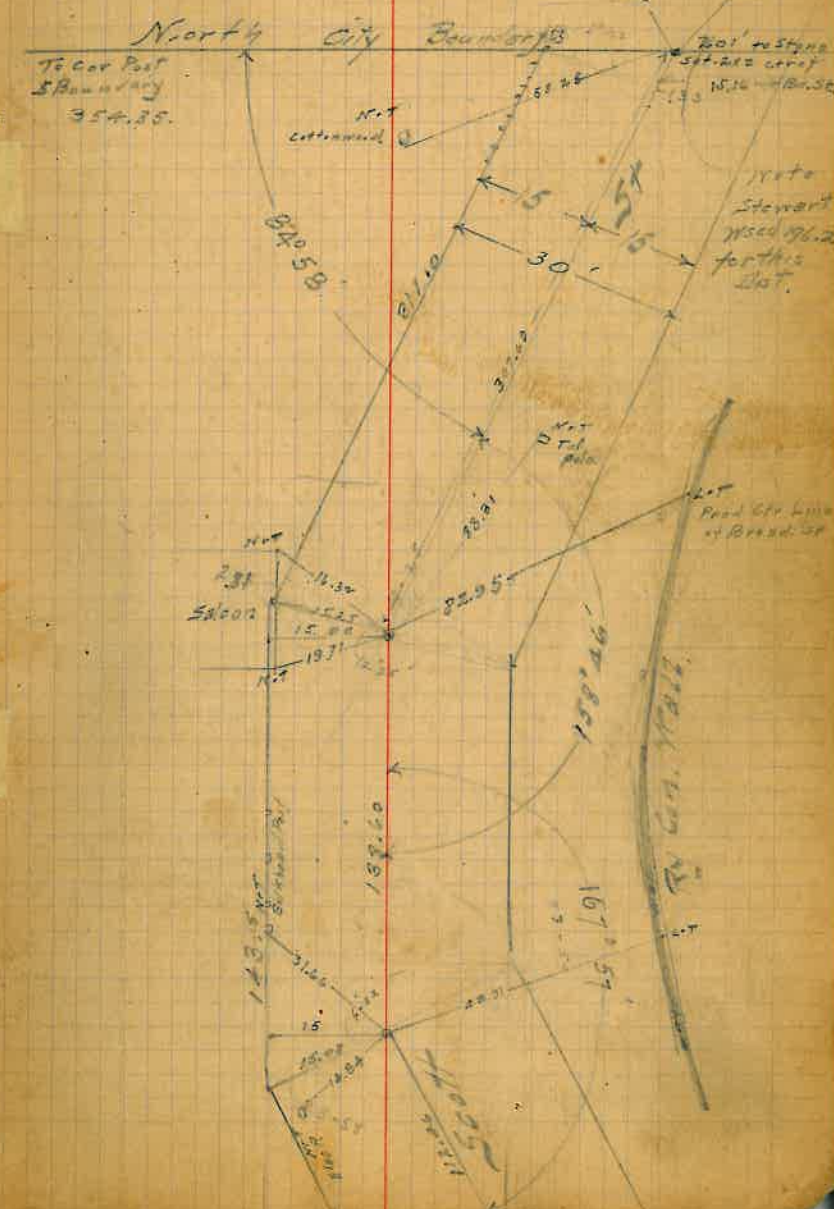
2.2270121	
<u>9.5683274</u>	
2.6486847	= 455.71 - Jim

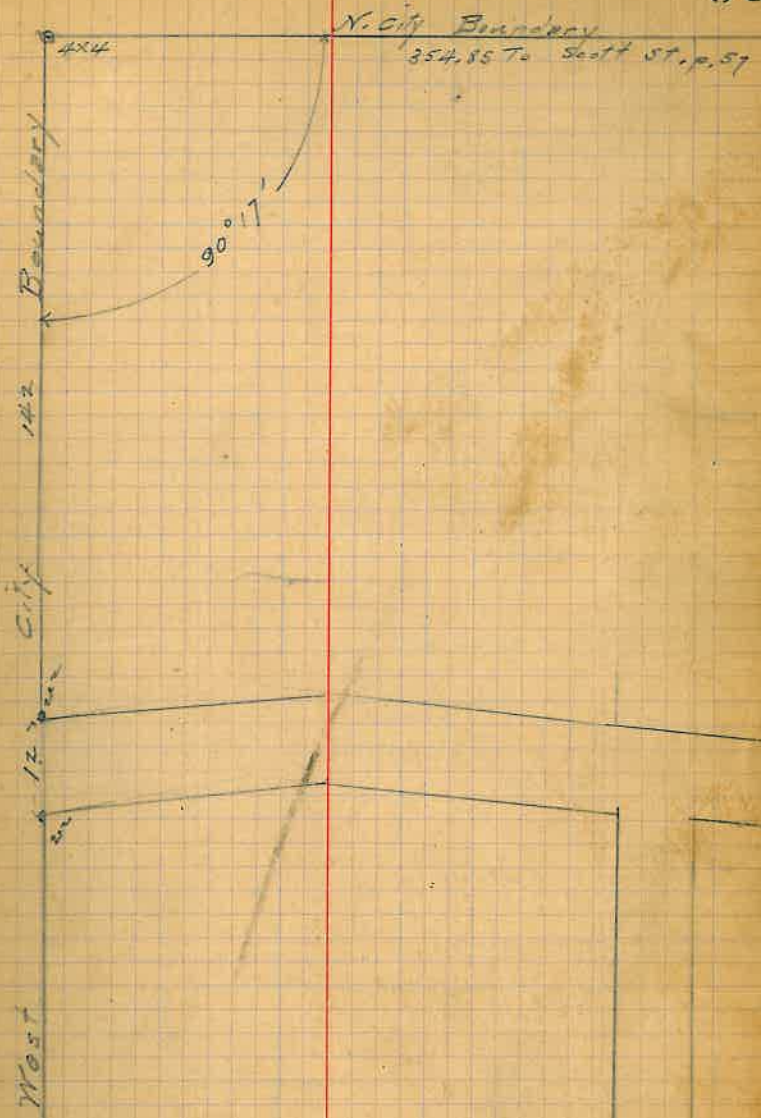
Dist. NW. cor to trambor in center of
A.E. abandoned track

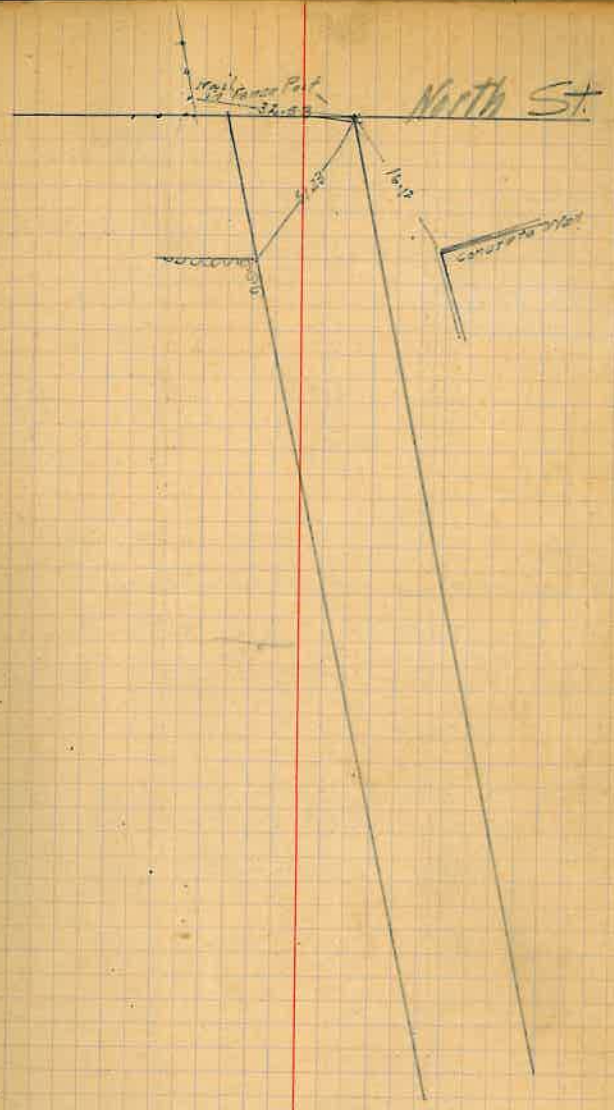
555.85
<u>455.71</u>
100.14

84.58	29.02	28.03
<u>168.16</u>	12.03	11.45
	21.14	20.47
	84.58	84.22

21.14
20.56





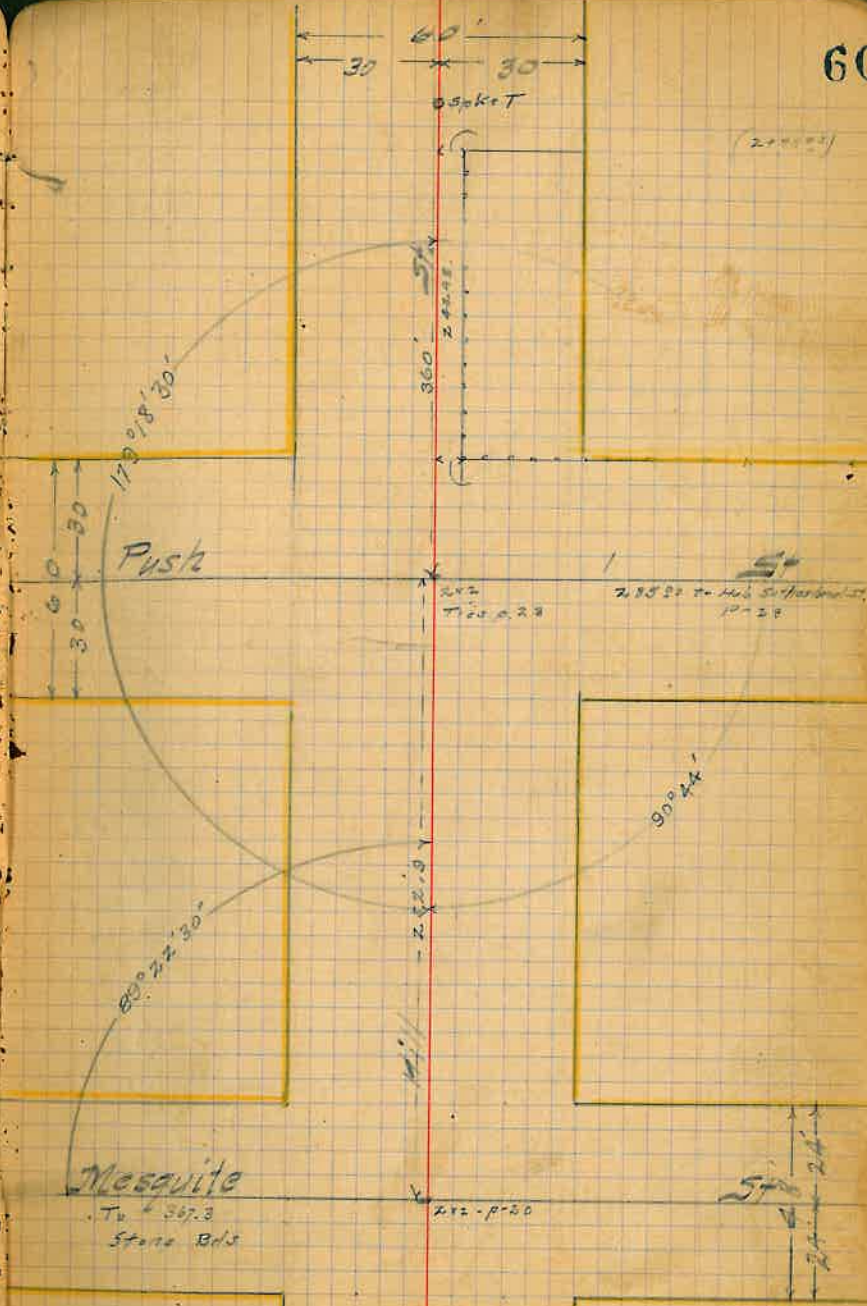


Survey to Establish
the
Center Line of Hill St
from
Mesquite St to N. Townsite Line.
Apr 13-07

Enderlain Inst
Tacey ch
Fox ch

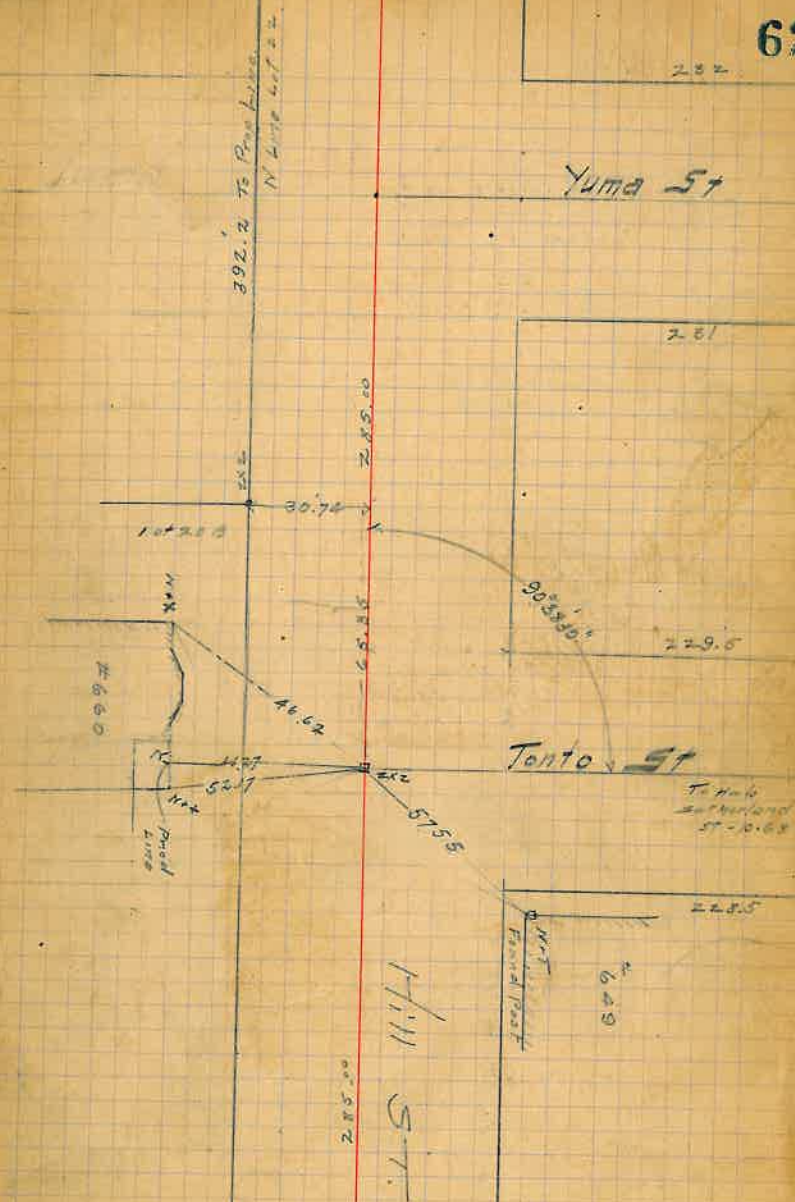
Note - Line produced N to N line of Kline St
Turned from that Pt to pass thro' Hub 30ft
30ft E of N.E. cor. of Lot. 22. - 545' from
E Line of Broad St.

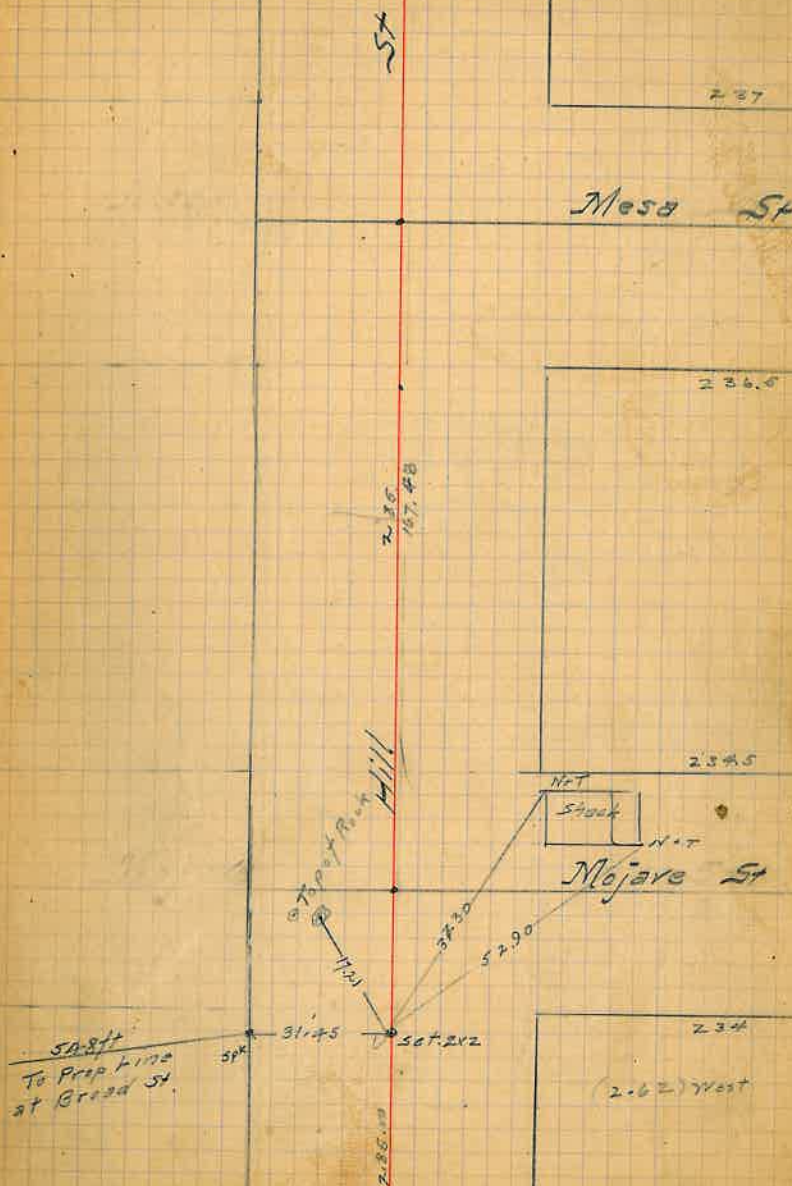
(Trial Line in Notes. True Line)
unestablished - Apr. 20-08.



Angle $80^{\circ}-02''$

94-10 $\frac{1}{2}$	---	94.87
55-7 $\frac{1}{2}$	8-20'	55.03
93-4 $\frac{1}{2}$	12-50'	93.33
36-11 $\frac{1}{2}$	---	36.93
		280.16





57

South
 270.20 - 20 = 250.20
 250.20 + 25 = 275.20

271.3

~~1299.5~~
 1299.5
~~1256.5~~
 43.5

To Rd st. stone 775.20

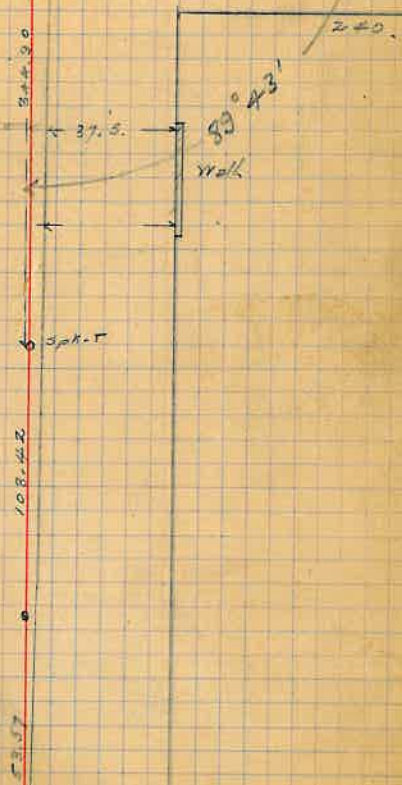
3.64
 100.00
 103.64

1299.5 to 4x4
 St. E Tenn site

North

St.

Hill Street



North Tennessee Line.

30
240

Sutherland St

1299.8 To E. Tennessee Line

Spr. T

8.14

775.2

North

240

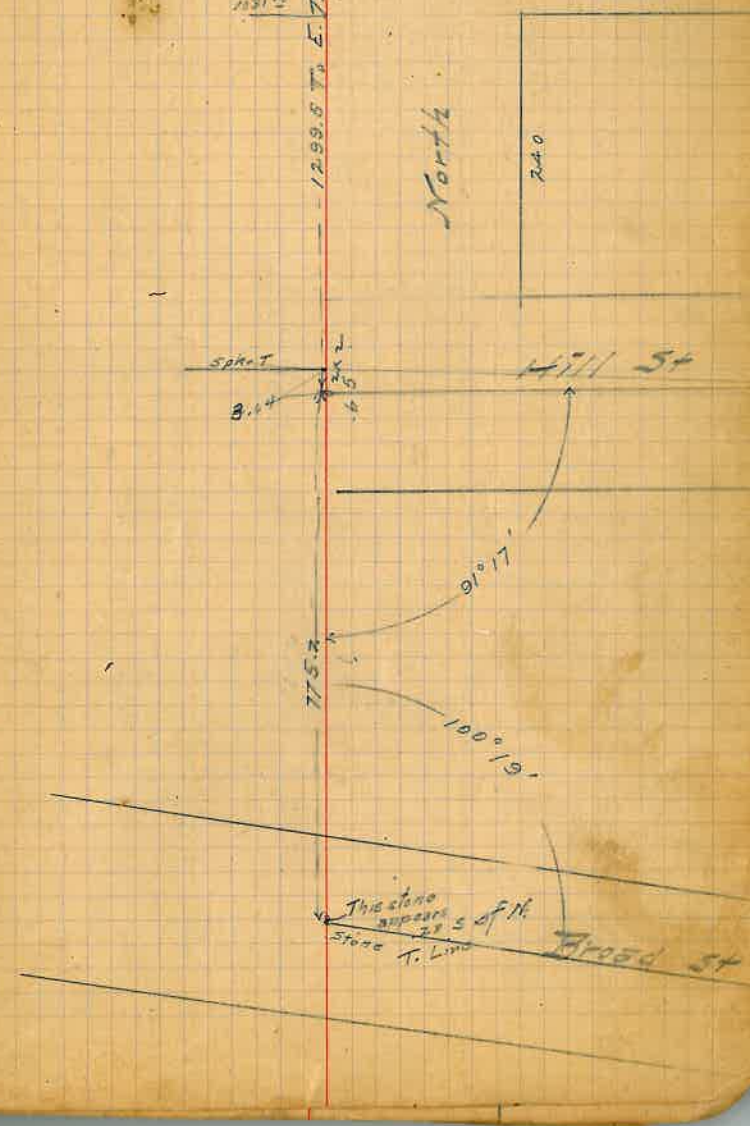
Hill St

91° 17'

100° 19'

This stone appears 5 ft N
Stone T. Line

Wood St



4-27 - 112-20-64 95

Note.

Set out
over street.
This point was
relocated + set
to stone.

712	
<u>30</u>	
742	
<u>225</u>	
517	
<u>60</u>	
1027	
<u>225</u>	
1252	
<u>260</u>	
1512	
<u>240</u>	
1752	
<u>30</u>	
1782	

Switzerland

712

112	
<u>60</u>	
397	
<u>30</u>	
427	
<u>30</u>	
457	
<u>225</u>	
682	
<u>30</u>	
712	

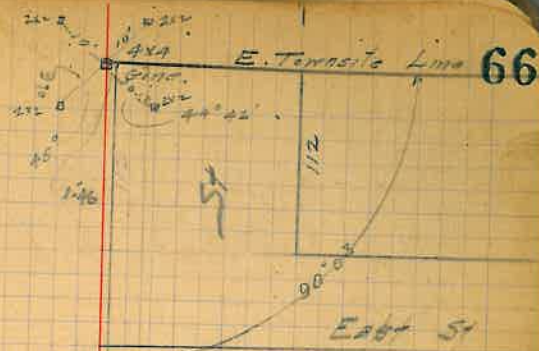
← To Old Mill St

Terrace Line

← To 5th Street

Line

712



North

Deroy St

High St

E 5th St

Kline

St

top of concrete
fence wall

St

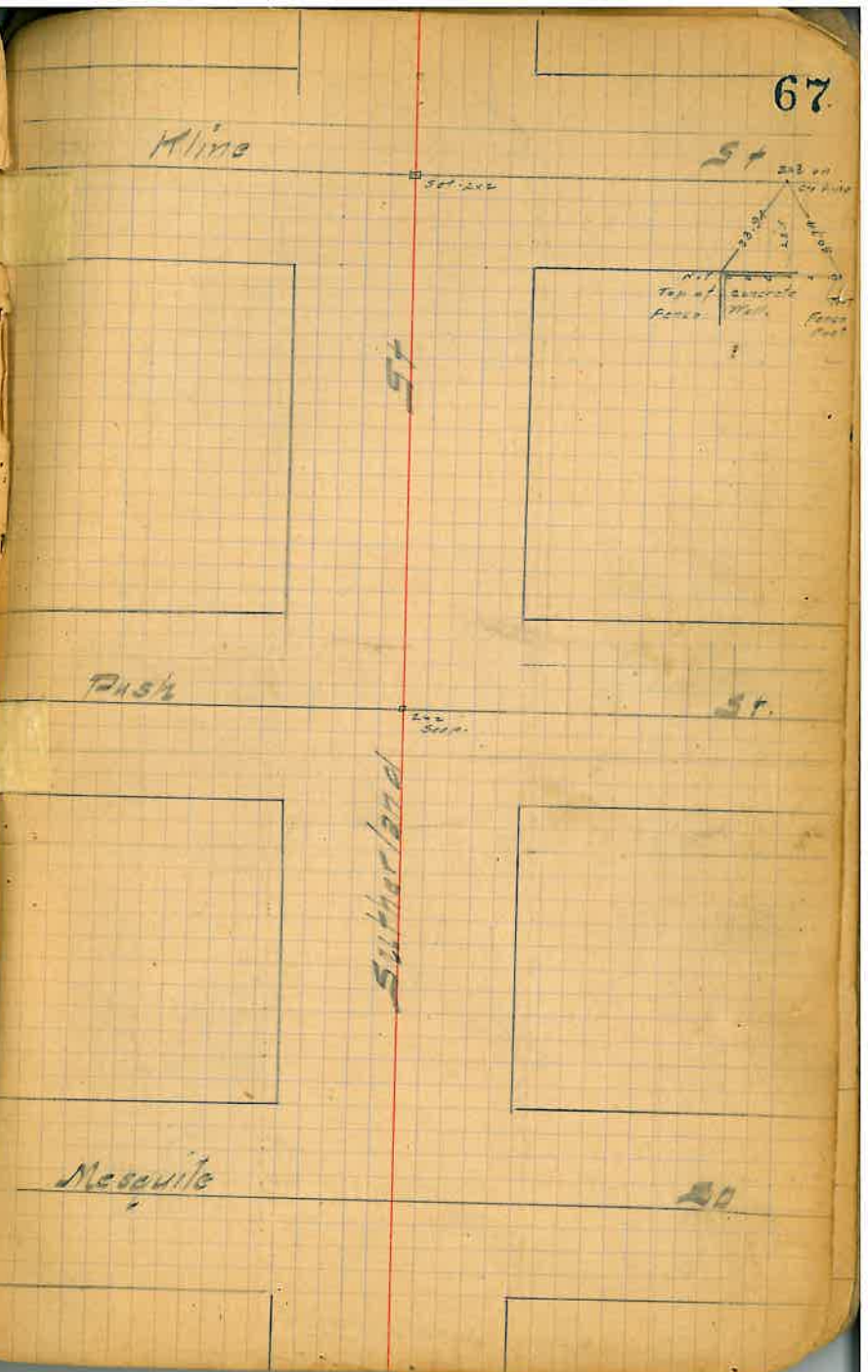
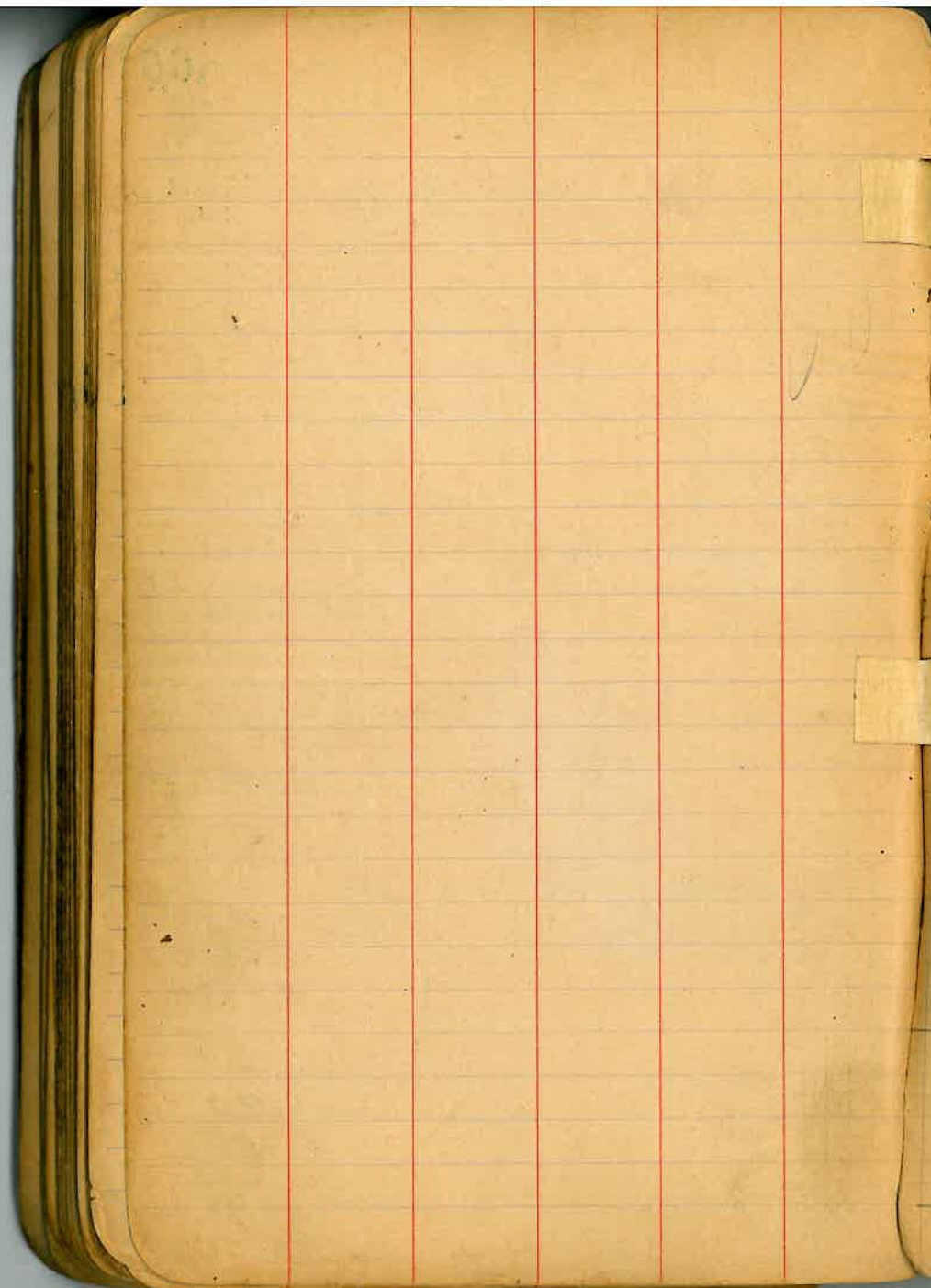
Rash

St

Subhorland

Mesquite

St



North

54

54

Mesa

54

54

Mojave

54

Deveraux St
Ctr Line

Push St To N. Townsite Line

Ties for Intermediate pt



Bet. Apache + Tonto St.



Apache

St

Top of fence

MIT
Top of fence
Top of fence

N.T.
Elec. Pole

Alma

St

small in
Tonto St

Brigo

Deveraux

Push

St