

354

Returned to the Engineers Office  
Camp San Diego, Cal.

TRANSIT

398

F.B. 354

TRAVERSE TABLE FOR TRANSIT BOOK.

From 1° to 90° for a distance of 1000

354

Degrees.	DEGREES.		½ DEGREE.		¼ DEGREE.		¼ DEGREE.		Degrees.
	Lat.	Dep.	Lat.	Dep.	Lat.	Dep.	Lat.	Dep.	
0	99.98	1.75	100.00	0.44	100.00	0.87	99.99	1.31	89
1	99.94	3.49	99.98	2.18	99.97	2.62	99.95	3.05	88
2	99.86	5.23	99.92	3.93	99.91	4.36	99.88	4.80	87
3	99.86	6.98	99.84	5.67	99.81	6.10	99.79	6.54	86
4	99.62	8.72	99.73	7.41	99.69	7.85	99.66	8.28	85
5	99.45	10.45	99.58	9.15	99.54	9.58	99.50	10.02	84
6	99.25	12.19	99.41	10.89	99.36	11.32	99.31	11.75	83
7	99.03	13.92	99.20	12.62	99.14	13.05	99.09	13.49	82
8	98.77	15.64	98.97	14.35	98.90	14.78	98.84	15.21	81
9	98.48	17.36	98.70	16.07	98.63	16.50	98.56	16.93	80
10	98.16	19.08	98.40	17.79	98.33	18.22	98.25	18.65	79
11	97.81	20.79	98.08	19.51	97.99	19.94	97.90	20.36	78
12	97.44	22.50	97.72	21.22	97.63	21.64	97.53	22.07	77
13	97.03	24.19	97.34	22.92	97.24	23.34	97.13	23.77	76
14	96.59	25.88	96.92	24.62	96.81	25.04	96.70	25.46	75
15	96.13	27.56	96.48	26.30	96.36	26.72	96.25	27.14	74
16	95.63	29.24	96.00	27.98	95.88	28.40	95.76	28.82	73
17	95.11	30.90	95.50	29.65	95.37	30.07	95.24	30.49	72
18	94.55	32.56	94.97	31.32	94.83	31.73	94.69	32.14	71
19	93.97	34.20	94.41	32.97	94.26	33.38	94.12	33.79	70
20	93.36	35.84	93.82	34.61	93.67	35.02	93.51	35.43	69
21	92.72	37.46	93.20	36.24	93.04	36.65	92.88	37.06	68
22	92.05	39.07	92.55	37.86	92.39	38.27	92.22	38.67	67
23	91.35	40.67	91.88	39.47	91.71	39.87	91.53	40.27	66
24	90.63	42.26	91.18	41.07	91.00	41.47	90.81	41.87	65
25	89.88	43.84	90.45	42.66	90.26	43.05	90.07	43.44	64
26	89.10	45.40	89.69	44.23	89.49	44.62	89.30	45.01	63
27	88.29	46.95	88.90	45.79	88.70	46.17	88.50	46.56	62
28	87.46	48.48	88.09	47.33	87.89	47.72	87.68	48.10	61
29	86.60	50.00	87.24	48.86	87.04	49.24	86.82	49.62	60
30	85.72	51.50	86.38	50.38	86.16	50.75	85.94	51.13	59
31	84.80	52.99	85.49	51.88	85.26	52.25	85.04	52.62	58
32	83.87	54.46	84.57	53.36	84.34	53.74	84.10	54.10	57
33	82.90	55.92	83.63	54.83	83.39	55.22	83.15	55.56	56
34	81.92	57.36	82.66	56.28	82.41	56.64	82.16	57.00	55
35	80.90	58.78	81.66	57.71	81.41	58.07	81.16	58.42	54
36	79.86	60.18	80.64	59.13	80.39	59.48	80.13	59.83	53
37	78.80	61.57	79.60	60.53	79.34	60.88	79.07	61.22	52
38	77.71	62.93	78.53	61.91	78.26	62.25	77.99	62.59	51
39	76.60	64.28	77.44	63.27	77.16	63.61	76.88	63.94	50
40	75.47	65.61	76.32	64.61	76.04	64.94	75.76	65.28	49
41	74.31	66.91	75.18	65.93	74.90	66.26	74.61	66.59	48
42	73.14	68.20	74.02	67.24	73.73	67.56	73.43	67.88	47
43	71.93	69.47	72.84	68.52	72.54	68.84	72.24	69.15	46
44	70.71	70.71	71.63	69.78	71.33	70.09	71.02	70.40	45
Degrees.	Dep.	Lat.	Dep.	Lat.	Dep.	Lat.	Dep.	Lat.	Degrees.
DEGREES	½ DEGREE.		¼ DEGREE.		¼ DEGREE.		¼ DEGREE.		DEGREES

Published by H. S. CROCKER COMPANY, Stationers, Drawing Materials, Mathematical Instruments, etc., San Francisco.

Return to City Engineers Office  
City Hall, San Diego, Cal.

Crocker Quality

TRANSIT BOOK



No. \_\_\_\_\_

MANUFACTURED BY

H. S. CROCKER CO.

SAN FRANCISCO AND SACRAMENTO  
CALIFORNIA

FROM  
LORING'S BOOK STORE  
SAN DIEGO, CAL.

019  
938  
919

9.92  
9.8  
00.61  
Loring  
20.822

2.01  
6.91  
26.5

20.12  
20.61  
26.692  
20.822

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CULVERT	

TRAVERSE TABLE FOR TRANSIT BOOK.

From 1° to 90° for a distance of 10 **354**

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3	99.76	6.98	99.84	5.67	99.81	6.10	99.79	6.54	86
4	99.62	8.72	99.73	7.41	99.69	7.85	99.66	8.28	85
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7	99.03	13.92	99.20	12.62	99.14	13.05	99.09	13.49	82
8	98.77	15.64	98.97	14.35	98.90	14.78	98.84	15.21	81
9	98.48	17.36	98.70	16.07	98.63	16.50	98.56	16.93	80
10	98.16	19.08	98.40	17.79	98.33	18.22	98.25	18.65	79
11	97.81	20.79	98.08	19.51	97.99	19.94	97.90	20.36	78
12	97.44	22.50	97.72	21.22	97.63	21.64	97.53	22.07	77
13	97.03	24.19	97.34	22.92	97.24	23.34	97.13	23.77	76
14	96.59	25.88	96.92	24.62	96.81	25.04	96.70	25.46	75
15	96.13	27.56	96.48	26.30	96.36	26.72	96.25	27.14	74
16	95.63	29.24	96.00	27.98	95.88	28.40	95.76	28.82	73
17	95.11	30.90	95.50	29.65	95.37	30.07	95.24	30.49	72
18	94.55	32.56	94.97	31.32	94.83	31.73	94.69	32.14	71
19	93.97	34.20	94.41	32.97	94.26	33.38	94.12	33.79	70
20	93.36	35.84	93.82	34.61	93.67	35.02	93.51	35.43	69
21	92.72	37.46	93.20	36.24	93.04	36.65	92.88	37.06	68
22	92.05	39.07	92.55	37.86	92.39	38.27	92.22	38.67	67
23	91.35	40.67	91.88	39.47	91.71	39.87	91.53	40.27	66
24	90.63	42.26	91.18	41.07	91.00	41.47	90.81	41.87	65
25	89.88	43.84	90.45	42.66	90.26	43.05	90.07	43.44	64
26	89.10	45.40	89.69	44.23	89.49	44.62	89.30	45.01	63
27	88.29	46.95	88.90	45.79	88.70	46.17	88.50	46.56	62
28	87.46	48.48	88.09	47.33	87.88	47.72	87.66	48.00	61
29	86.60	50.00	87.26	48.86	87.04	49.24	86.81	49.62	60
30	85.72	51.59	86.38	50.38	86.16	50.75	85.94	51.13	59
31	84.80	52.99	85.49	51.88	85.26	52.25	85.04	52.62	58
32	83.87	54.46	84.57	53.35	84.34	53.74	84.10	54.10	57
33	82.90	55.92	83.63	54.83	83.39	55.21	83.15	55.56	56
34	81.92	57.36	82.66	56.28	82.41	56.64	82.16	57.00	55
35	80.90	58.78	81.66	57.71	81.41	58.07	81.16	58.42	54
36	79.86	60.18	80.64	59.13	80.39	59.48	80.13	59.83	53
37	78.80	61.57	79.60	60.53	79.34	60.88	79.07	61.22	52
38	77.71	62.93	78.53	61.91	78.26	62.25	77.99	62.59	51
39	76.60	64.28	77.44	63.27	77.16	63.61	76.88	63.94	50
40	75.47	65.61	76.32	64.61	76.04	64.94	75.76	65.28	49
41	74.31	66.91	75.18	65.93	74.90	66.26	74.61	66.59	48
42	73.14	68.20	74.02	67.24	73.73	67.56	73.43	67.88	47
43	71.93	69.47	72.84	68.52	72.54	68.84	72.24	69.15	46
44	70.71	70.71	71.63	69.78	71.33	70.09	71.02	70.40	45

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CALIFORNIA

FROM  
LORING'S BOOK STORE  
SAN DIEGO, CAL.

292  
98  
00.21  
20.192  
20.822

20.12  
90.61  
66.692  
06.822

2.2  
6.1  
6.5

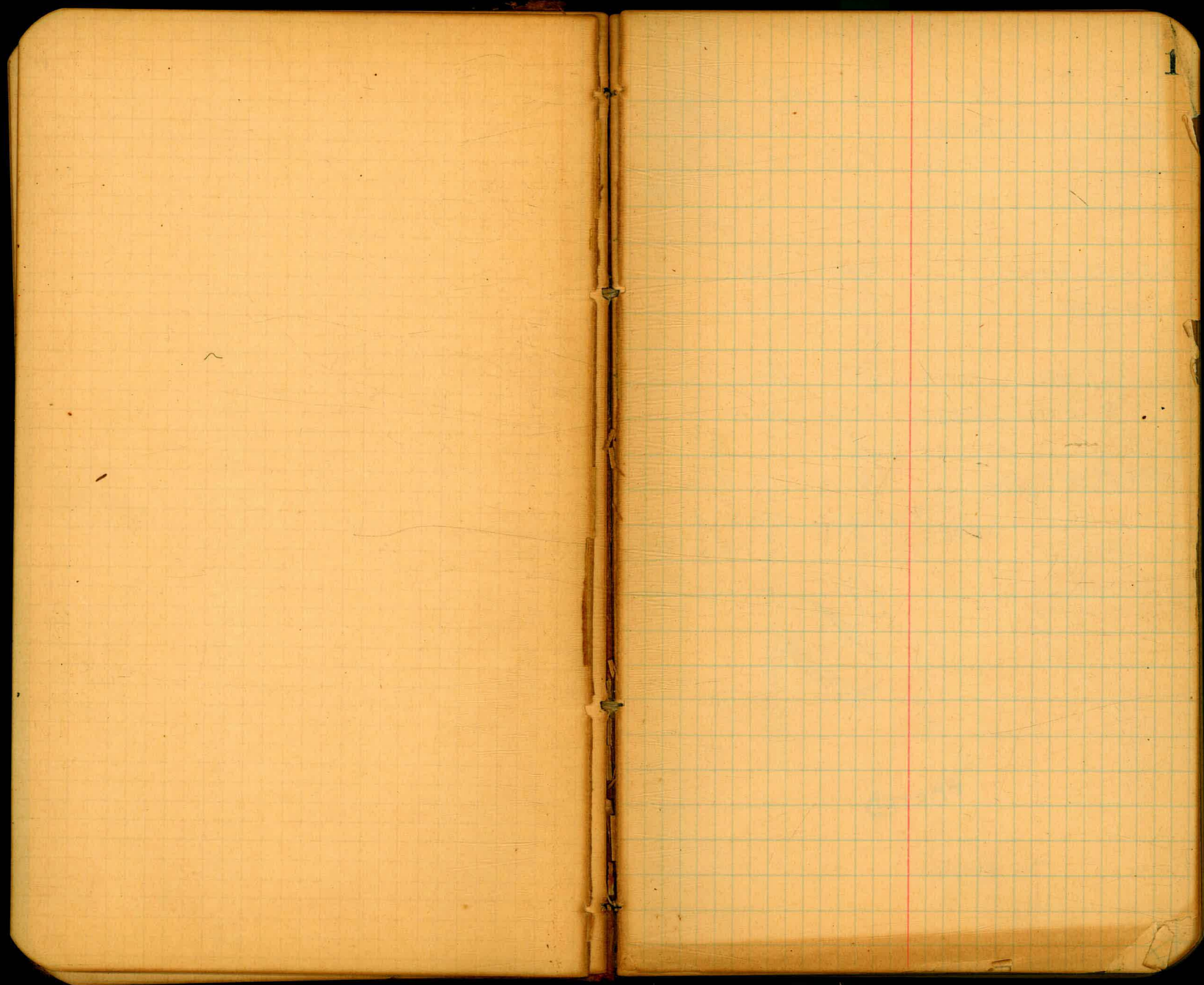
Jetts. Falcon. SW. RR. 266 15-C

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CALIFORNIA



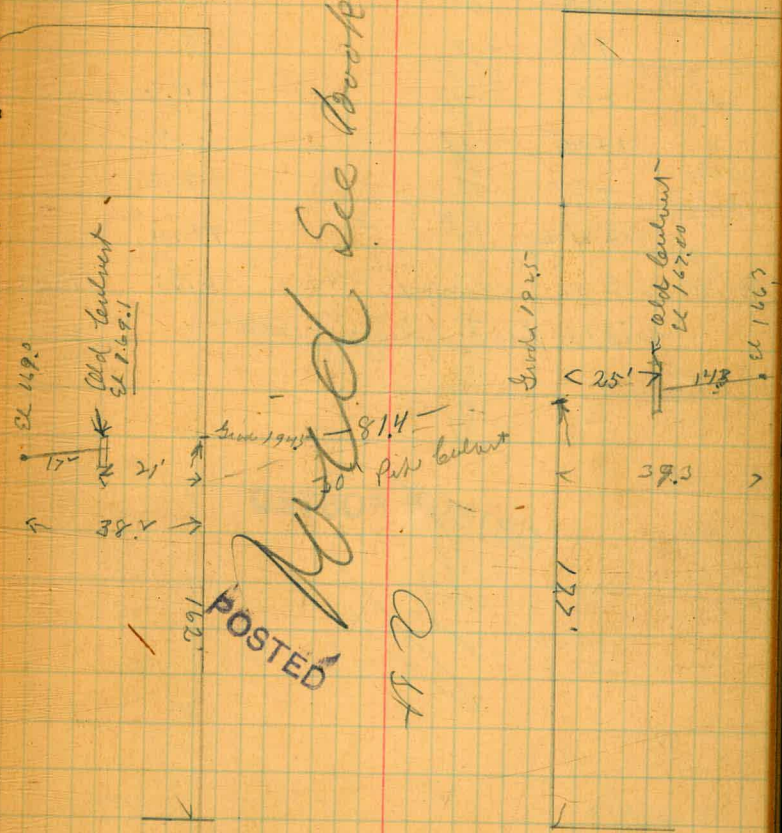
Location of Culvert on East

Along Gallatin Road	Dist	27 ft	+ 28 ft	
074	267.70		206.88	Bm 28th
00	194.74	1299	194.74	
191	183.57	1264	182.10	in Brackets
n End of old culvert		1440	169.0	
n end of new		14.5	169.00	
	240	184.50	182.10	
	6.26	178.30	172.04	
S End of Old culvert		11.20	167.10	
S " " new		12.00	166.3	

POSTED

945  
8775  
675  
335  
10.13

28th st



POSTED See Book 281 p 53

27th st

Location of culvert on A.H.

B.M. Beant 29 st.

Sta.	H.I.	Rod	elev.
205.18 3.04			
207.220			
12.96			
194.26			
0.22 ✓			
194.04			
12.67			
181.373 <sup>p</sup>			
0.14			
181.51			
1.02			
172.3			
11.6			
169.9			
+42			
B.M. S.E. cor. <sup>of No.</sup> <sub>concrete pier</sub>	6.31		175.16

middle bent of sewer treated

POSTED

306/1900 (6.7)

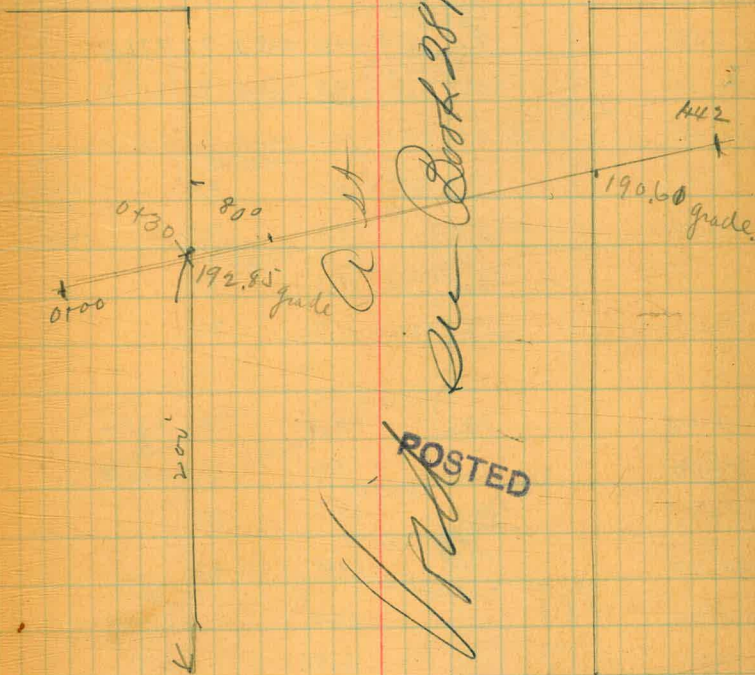
19.30  
6.40  
6.20  
5.80  
306/1800  
13.30  
27.00  
11.60  
2.00  
12.60  
20.30  
1.00  
19.30

Dec. 14/08

Lehields  
Barber  
Rogers

3

29 st



POSTED

Beant 29



H.I.  
190.93

X sect. for foot bridge

	30' W		C		+20 E	
Sta.	Rod Elev	Rod Elev	Rod Elev	Rod Elev	Rod Elev	Rod Elev
0+00	2.0	6.6	1.7	0.7		
+05		8.7	2.7	1.3		
+10		10.0	7.8	1.8		2.4
		279.06 H.I.				
+15		6.4	272.7	12.0	7.8	
		266.3 H.I.				
+50		8.5	257.8	10.4	268.7	7.7 271.4
		253.5 H.I.				
+75		5.1	248.5	9.8	256.5	9.1 257.2
		253.5 H.I.				
1+00	10' W	12.7	240.9	6.6	247.0	10.7 242.9 6.1 247.5
		240.5 H.I.				
+25			9.7	243.9	4.7	2.4
		240.5 H.I.				
+50			5.3		9.7	12.8
		231.9 H.I.				
+75			3.5		8.3	7.8
2+00			12.0	220.0	11.3	2.4
		240.5 H.I.				
+25			13.5		9.6	7.1 233.4
+50			1.5		0.6	-1.7 242.2
		266.3 H.I.				
+75			14.1		13.7	11.4
		279.0 H.I.				
3+00			13.8		10.4	8.2
		290.9 H.I.				
+25	20' W		13.8		10.0	30' E 70.4
+50			7.7		6.8	6.0
+75			4.6		3.6	287.3 2.6 288.3

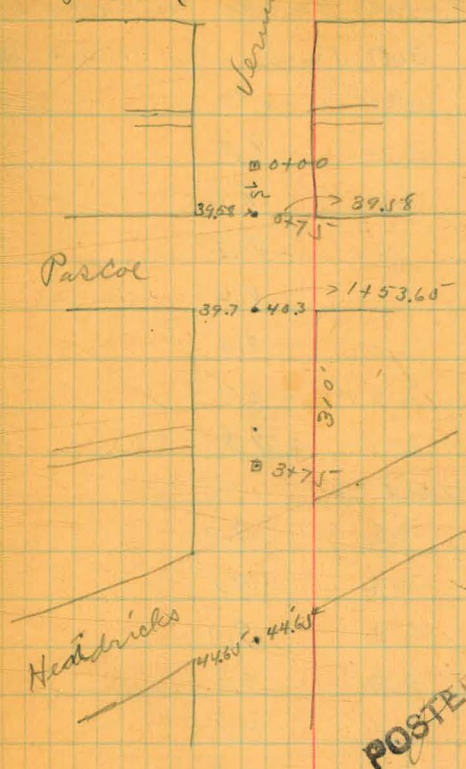
R

on Vermont  
Lincoln

Dec. 24/08

Childs  
Barber  
Rogers

4



POSTED

10' sidewalks on center

Levels for bridge on Robinson

150 H.E. 307.12 305.62 B.M.

west line center

n. line 8.2

8.6

8.7

c 8.4

8.5

8.8

So. line 8.8

west cb.

So. line 9.0

9.1

9.0

c 9.0

9.4

9.7

n. line 9.5

west 1/4

n. line 11.3

10.9

10.8

c 10.4

10.3

10.1

10.0

So. line

307.12

Dec. 28/08

Lehilds Barber Rogers

5

center to Park Boulevard.

So Center

So. line 11.2

11.2

11.6

c 11.9

11.9

12.2

n. line 12.8

J.P. 1.48 H.E. 295.62 12.98 294.14

E 1/4

n. line 3.9

3.1

2.2

c 2.2

2.1

2.0

So. line 1.9

POSTED E. cb.

So. line 3.9

3.1

2.9

c 3.1

4.3

6.0

n. line 5.3

295.62

East line

n. line	6.9
	7.9
	7.0
c	5.5
	4.3
	4.6
solino	4.6
	19' E
solino	9.8
	7.7
	7.5
	9.6
	10.3
	11.5
	9.4
n. line	6.3
	25' E
n. line	5.7
	9.6
	12.9
c	13.1
	12.1
	11.2
solino	12.5

295.62

50' E

n. line	5.0
	8.9
n/4	12.1
	60' E
n/4	12.0
	8.6
n. line	5.7
	70' E
n. line	7.1
	9.2
n/4	12.1
	80' E
n/4	13.5
	10.9
n. line	8.9
J.P.	0.57, 283.27, 12.92, 282.70
	50' E
solino	10.4
	8.8
	7.4
c	4.5

*Postcard*

593.27

60'E

C	4.5
	7.3
	10.7
Soline	13.4

70'E

Soline	13.9
	10.0
	6.8
C	3.9

80'E

C	4.8
	7.5
	10.6
Soline	13.2

100'E

N line	2.4
	5.0
	6.7
C	9.8
20 1/4	12.3

115'E

C	13.3
	10.9
	9.6
N line	8.1

7

125'E

N line	10.1
C	12.5

135'E

Soline	11.1
--------	------

200'E

Soline	6.9
	10.9
	15.3
	11.3
C	8.8
	7.3

N line	5.7
	6.4

225'E

N line	0.1
	1.3
	4.1
C	6.3
	8.4

26 + 8'  
Soline

Proctor

	11.0
	12.0
	13.4

283.27

250'E

soline			8.8
			8.1
cb+6'			7.3
			8.8
1/4+3'			6.4
C			4.2
n 1/4			0.9

275'E

C			-0.4	283.7
			0.3	283.0
			0.4	

soline			2.3	
J.P.	see page 9		0.40	282.87
low J.P.	3.96	274.25 <sup>H.I.</sup>	12.98	270.29

100'E

soline			8.6
so. cb			5.0

115'E

so 1/4			6.4
C			8.1
soline			12.1

125'E

soline			9.9
			11.9
			11.1
			11.0
C			5.4
n 1/4			

274.25

150'E

Mline			6.9
			9.2
			7.8
C			7.6
			8.2
1/4+7'			10.1
cb			8.4

soline			5.7
--------	--	--	-----

165'E

soline			2.7
			7.7
cb+4'			9.1
			6.3
C			5.4

5.7

6.5

Mline			8.9
-------	--	--	-----

175'E

Mline			5.3
			4.6
			3.7
C			4.0

1/4+7'			6.3
			8.5
			6.8

soline			2.1
--------	--	--	-----

J.P.	15.24	H.F. 295.11	282.87
		250' E	
n line			6.9
n.e.			9.2
		275' E	
n. 1/4			9.9
			6.7
n. line			4.0
		300' E	
n line			1.6
			3.1
			3.6
c			3.7
			3.9
			5.1
so line			7.0
		325' E	
so line			0.0
so line + 11'			0.2
			2.3
			1.4
c			1.3
			0.8
			0.3
n line			0.6

J.P.	10.22	H.F. 304.77	0.56	294.55
		350' E		
n line				8.7
				8.7
				8.6
c				9.0
				8.7
				9.5
so line				9.1
		375' E		
so line				6.9
				7.4
				7.3
c				7.5
				7.4
				7.4
n line				7.2
		400' E		
n line				6.2
				6.7
				6.7
c				6.5
				6.5
				6.7
so line				6.3

POSTED

	408' E	
So. line	6.2	
	6.4	
	6.3	
C	6.2	
	6.0	
	6.3	
N. line	5.8	
496.6 on North West line		Park Boulevard
N. line	1.6	
	2.2	
	3.4	
C	4.5	
	4.9	
	5.8	
So. line	6.2	
	1	

W  
 ↙ ↘  
 Center  
 Robinson  
 4906  
 4907  
 Park Boulevard

POSTED  
 J. J. J.

12 Hatel Levels on Cr Hubs for bridge  
 30 Mon.  
 08 Deydon Grape det Fern and 31st

30 <sup>th</sup> Hawthorn Curb Stake	1.45	251.45		250.00 ✓
TP	0.24	269.14	12.55	268.90 ✓
W Abutment	0.75	258.52	11.37	257.77 ✓
Bent 1			9.34	254.18 ✓
" 2			11.57	246.95 ✓
TP	0.595	245.99	13.075	245.495 ✓
" 3			6.66	239.33 ✓
TP	6.45	240.74	11.70	234.29
" 4			8.60	232.24
" 5			11.60	229.24
" 6			10.89	229.95
" 7			7.35	232.49
" 8			1.54	239.32
TP	12.06	252.285	0.575	240.225
" 9			5.73	246.65
TP	11.295	263.215	0.355	261.93
" 10			9.28	252.03
Abutment			1.77	261.54
			5.64	257.575

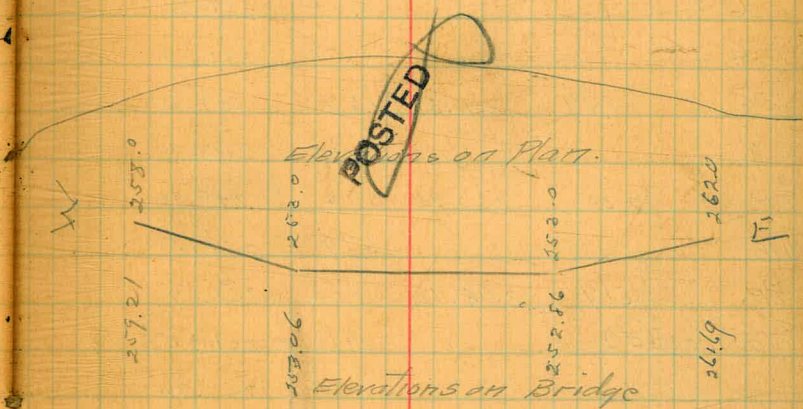
2632.15  
 172.85 -  
 251.930  
 2.45 +  
 253.575  
 12.355 -  
 270.220  
 0.705 +  
 240.925  
 0.84  
 234.085

280.0  
 1.57  
 281.27  
 12.65  
 249.62  
 0.19  
 268.81 HI  
 7.12  
 261.69  
 1.50  
 263.49 HI  
 12.55  
 250.94  
 0.07  
 251.01  
 11.69

W. E. E  
 9.60 7.12 10.63  
 259.21 261.69 252.86  
 2.88 3.62 2.03  
 (1.2) (3.1) (1.4)

10.92  
 253.06  
 2.55  
 .06

261.69 237.32 } check.  
 572.16 239.23 }  
 8.83



Chief  $\frac{1}{25}$  Hatch  
 09 Innow

10 and 12' Wing Fences  
 built on ends of Bridge  
 not shown on plan.

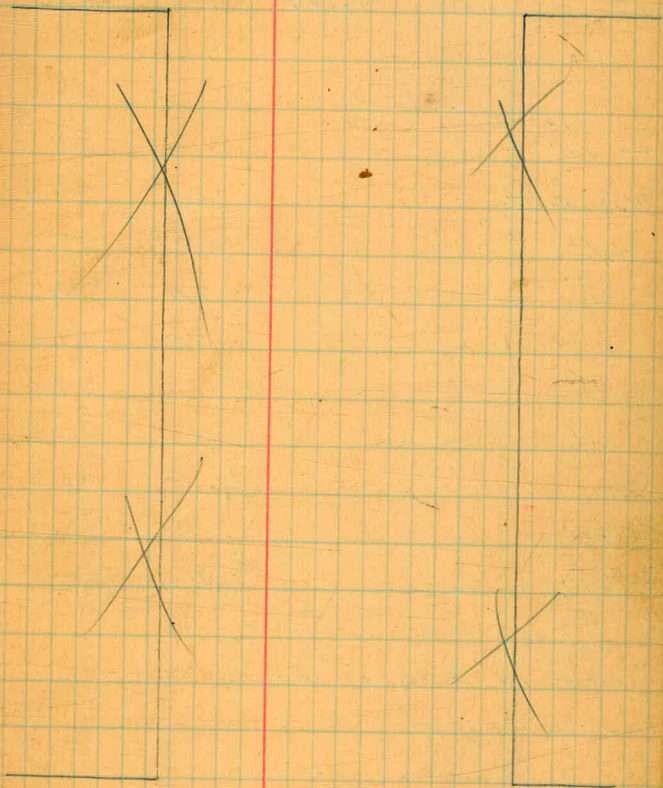
all timbers used are correct  
 size.

West end raised to meet  
 ground better.



Cont. from P 11

(W)				
Abutment	0.33	258.10		257.77
Cent 1			3.92	254.18
" 2			11.16	246.94
TP.	1.04	246.37	12.77	245.33
" 3			7.04	239.33
TP	6.60	240.89	12.08	234.29
" 4			8.75	232.14
" 5			11.75	229.14
" 6			11.04	227.85
" 7			8.30	232.39
" 8	10.09	249.31	1.67	239.22
" 9			2.54	246.77
TP.	12.35	260.94	0.72	248.59
10			6.79	254.15
TP.	5.17	264.76	1.35	259.59
Abutment (E)			3.11	261.65
			7.00	257.76



~~27~~ 51

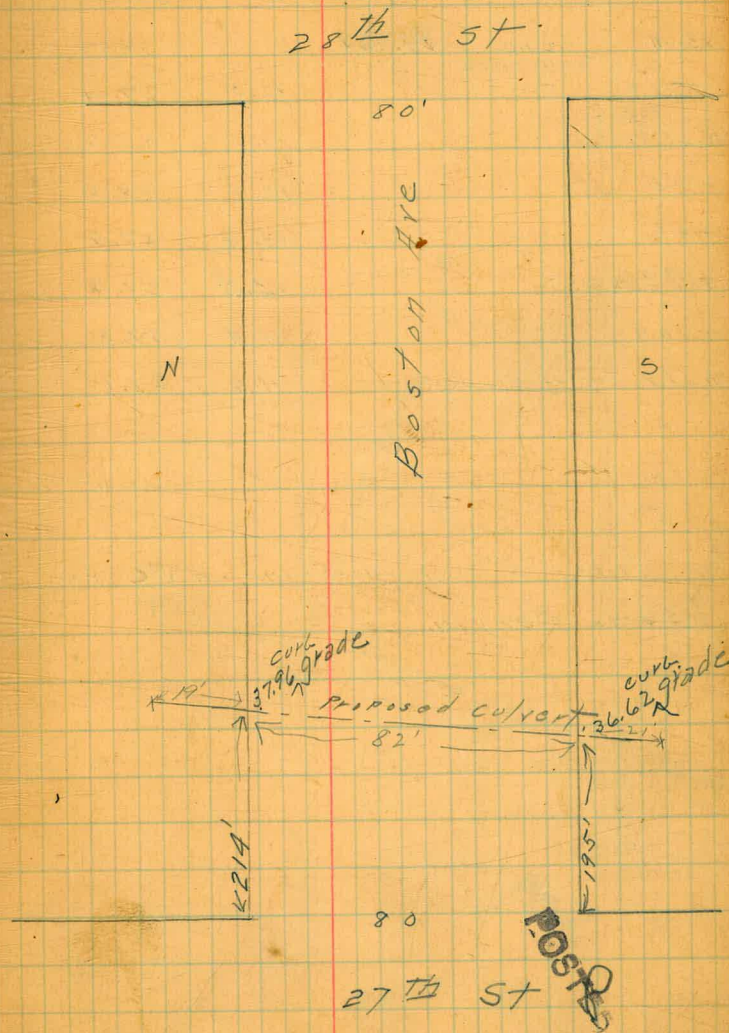
Levels for Culvert see opp. page.

B.M. 28 <sup>th</sup> & Boston	39.59		
B.M. 4.06	43.65		39.59
T.P. 1.21	31.97	12.89	30.76
	32.00		

	1+95	2+19	
- 19' = Top of slope		5.6	26.4
- 10'		6.0	26.0
N.L. Boston		6.6	25.4
crib		6.7	25.3
1/4		7.4	24.6
1/4		7.8	24.2
1/4		8.0	24.0
crib		8.1	23.9
S.L.		9.0	23.0
+ 10'		9.2	22.8
+ 21 = Top of Slope		9.4	22.6

Note. 14" pipe on Grand Ave for same canyon.

4/21/19  
 Sewer  
 Span  
 Thomas.



Levels for culvert see opp. page

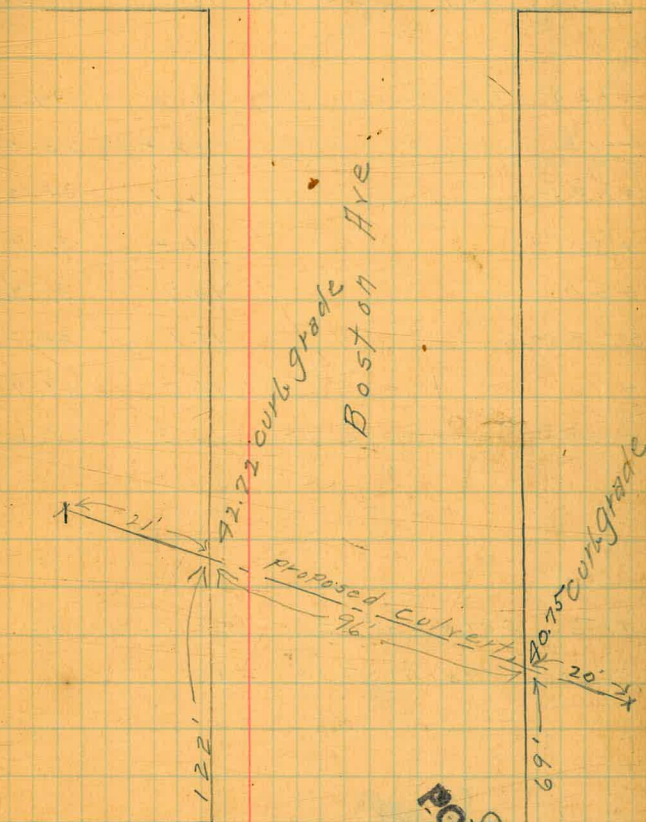
B.M. 5PK Cot 28 <sup>th</sup> & Boston		39.59
B.M. 210	41.69	39.59
- 2/1 = Top of slope		13.5
- 16		13.3
(0+0)		29.4
N.L. Boston		13.1
+ 30		13.5
+ 60		13.8
+ 99.5 Boston		14.3
+ 109		14.4
+ 119.0 Top of slope		14.6

Note - 10" pipe on Grand Ave for same canyon.

1/2/49  
Dunelle  
Shaw  
Thomas

13

29<sup>th</sup>



28<sup>th</sup> St

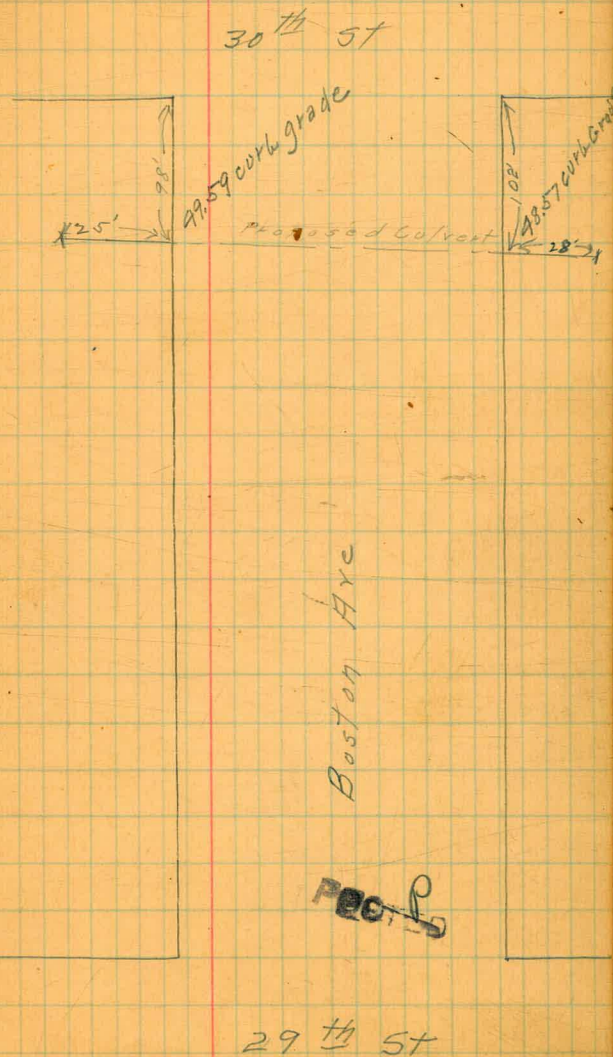
Levels for Culvert see opp page

B.N. SPK cut 31 <sup>st</sup> & Boston		50.52	
B.M.	7.62	58.14	50.52
T.P.	0.57	45.88	12.83
- 2.5 = Toe of slope		11.8	34.1
- 1.0		12.2	33.7
N.H. Boston		12.7	33.2
+ 3.0		14.2	31.7
+ 6.0		14.7	31.2
S.L. Boston		15.7	30.2
+ 1.0		16.0	29.9
+ 2.8 = Toe of slope		16.3	29.6

Note - culvert for this canyon  
across Main St is 2' x 3'

1/19  
Dunkle  
Shaw  
Thomas

14



15

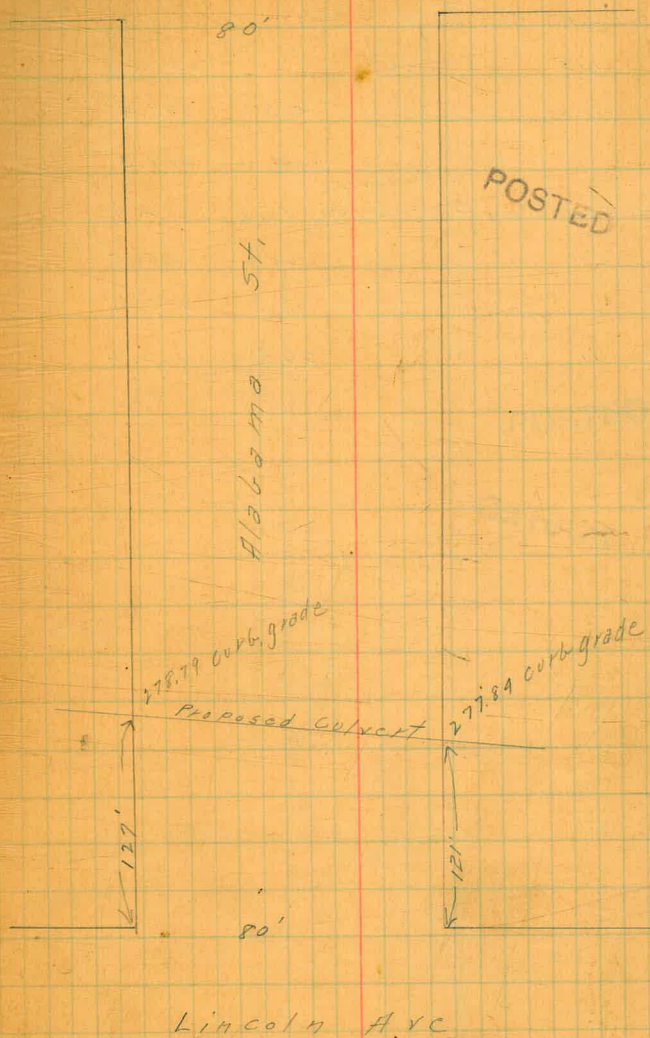
Levels for culvert Alabama sec. page 3/19

B.M. N.E. Min. brass dlg			265.57	Faculty
B.M.	12.50	278.07	265.57	
T.P.	5.44	282.01	1.50	276.57
T.P.	1.56	271.33	12.24	269.77
-2.5		7.5		263.8
-10		7.8		263.5
0+0 - E.L. Alabama		8.0		263.3
cul	POSTED	7.2		264.1
"		6.9		264.4
M		7.5		263.8
"		8.2		263.1
cul		9.0		262.3
N.L. Alabama		10.2		261.1
+ 10		10.3		261.0
+ 25		11.3		260.0

Note This is the only culvert on Alabama between Adams & University

University Ave

16



Levels for storm sewer Third St 3/19

Drumth  
Shaw

B.M. R.R. SPK Cor. Third & Broadway 287.54

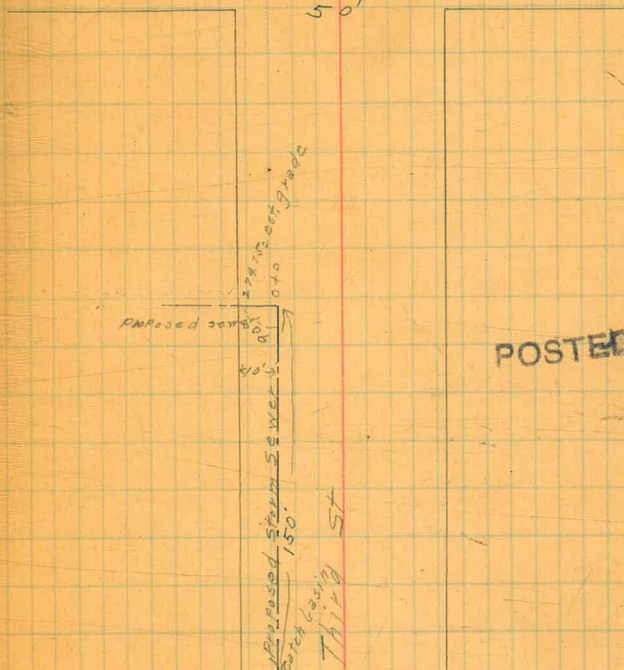
Thomas

B.M.	1.15	288.69	-	287.54
1+50 N. of Broadway on curb line		5.3		283.4
1+50 " " " Prop " "		11.4		277.3
			from Broadway	
N 10' from N. Prop line of 3 <sup>rd</sup> St Sta 1+50		15.8		272.9
" 20 " " " " "		20.2		268.5
" 30 " " " " "		23.3		265.4
" 40 " " " " "		26.5		262.2

POSTED

17

Street on  
50'

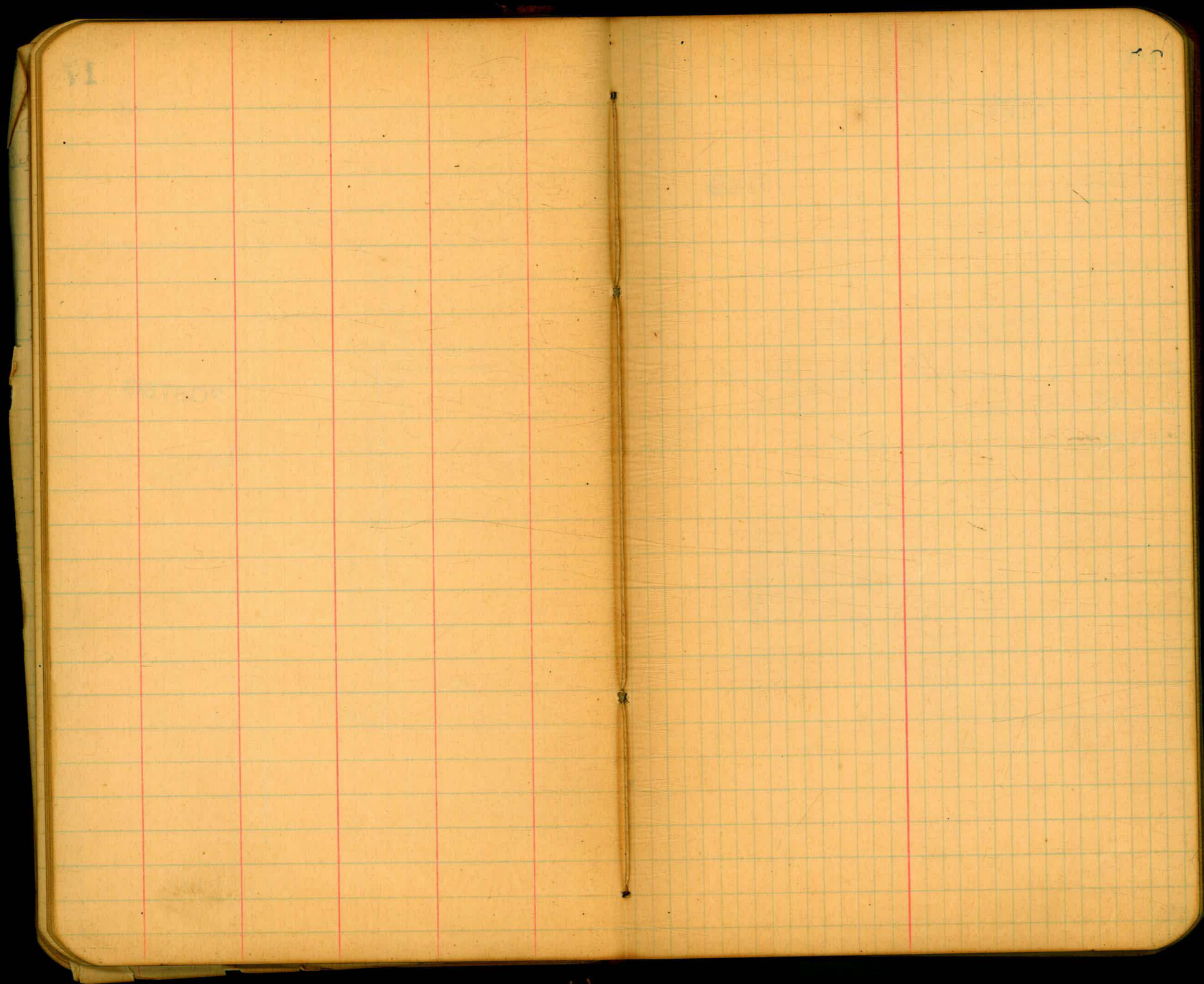


POSTED

Broadway

catch basin

50'





Levels for Proposed Culvert  $\frac{5}{16}$  Dunkle  
Arch St  
109 Shaw

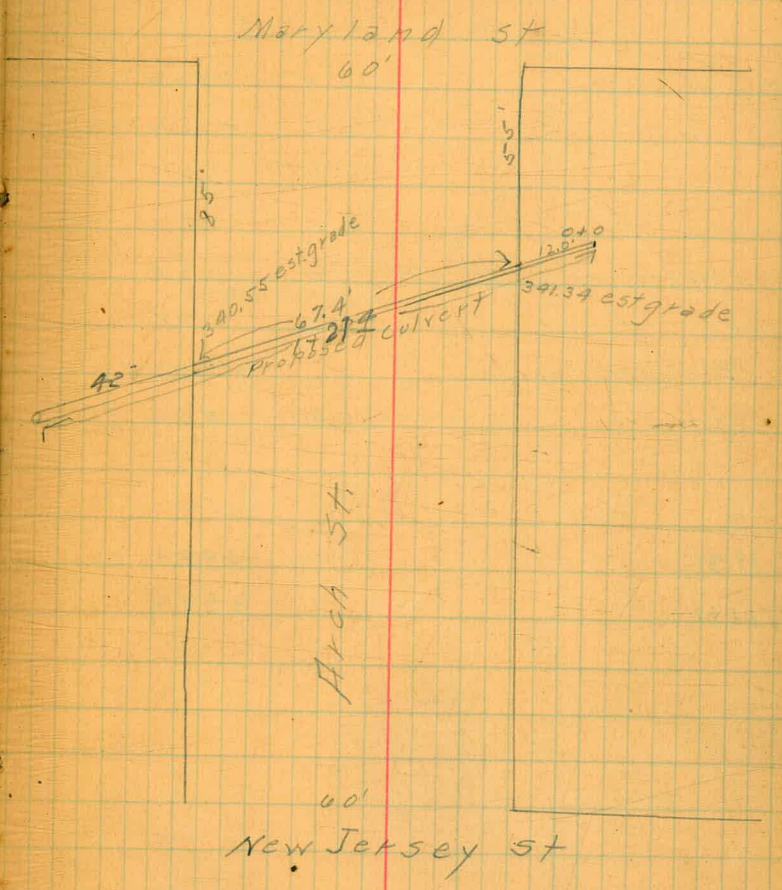
B.M. A.A. 5 PK S.E. Maryland & Monroe 345.76 Dyziel  
B.M. 7.05 347.01

0+0	5.9	POSTED
0+12 = S.L. Arch St	10.50	
0+32	11.2	
0+52	11.3	
0+70	11.5	
T.P. 1.83	337.71	11.3 335.88
0+79.9 N.L. Arch St	6.1	
1+21.4	25.8	

POSTED

19

POSTED



Levels for Culvert Arch St

4/109 Dunkle  
Shaw

B.M. Pub. cor. Arch & Connecticut 303.95 Digital

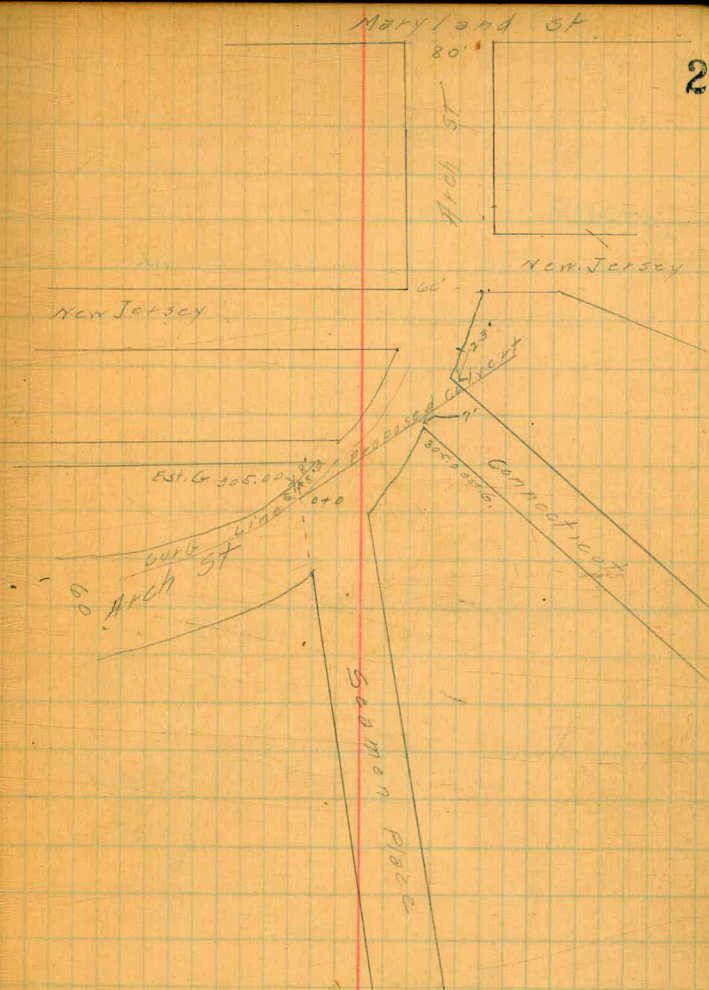
B.M. 5.17 308.62

0+0 = Curb Line Arch St

0+0	4.2	304.4
0+20	3.9	304.7
0+40	3.8	304.8
0+60	4.5	304.1
0+74 = W. curb Arch St	5.2	303.4
1+0	6.2	302.4
1+21 = edge canyon	6.6	302.0
1+55	15.4	293.2 ?

1+31 295.1

1+41 288.9



6  
23  
09

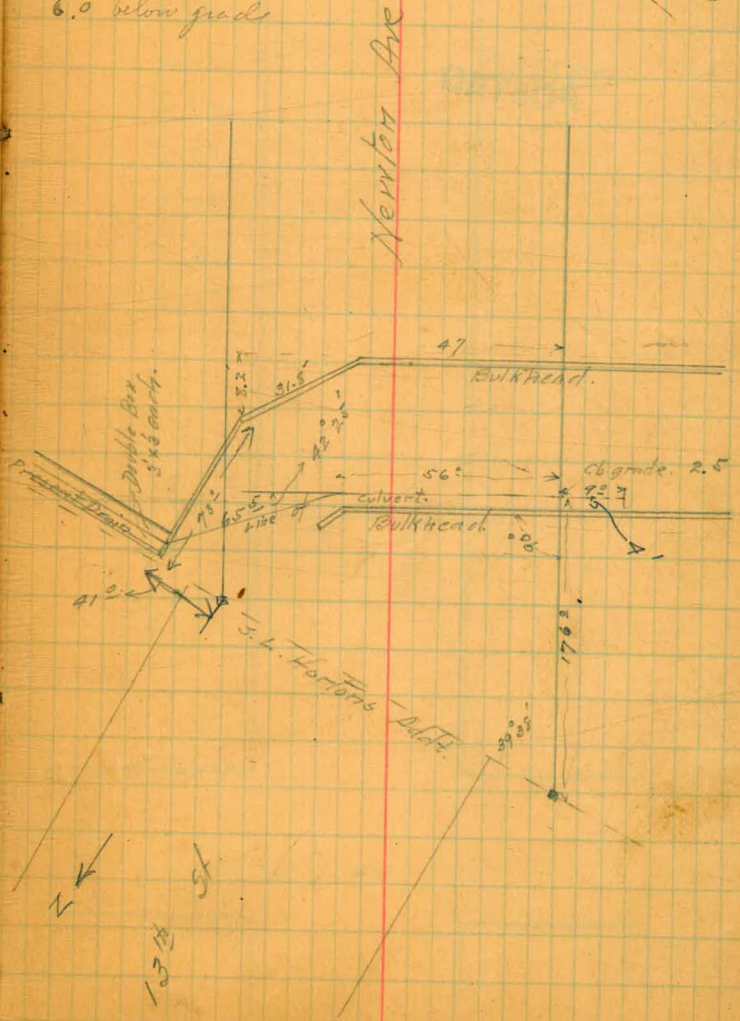
Hatch  
Troy  
Thomas

Measurements for Culvert  
on Newton at S.L. Horton's Ditch

B.M. SE of track 16 <sup>th</sup> N.	0.43	11.50		11.07	
	1.50	4.30	5.50	3.0	
Bottom of present Box		8.06	-3.26	grade- 27.5	

6.0 below grade

POSTED



Levels for Culvert Clay Ave 6/17/09 Dimple  
bet 30th & 31st St. Shaw

B.M. R.R. SPK 30th Clay 74.81 Level

B.M. 1.27 76.08

F.P. 1.0 65.19 11.89 64.19

0+0 7.6 57.6

0+25 8.8 56.4

**POSTED**

0+51 5.8 59.4

0+61 5.6 59.6

0+76 10.0 55.2

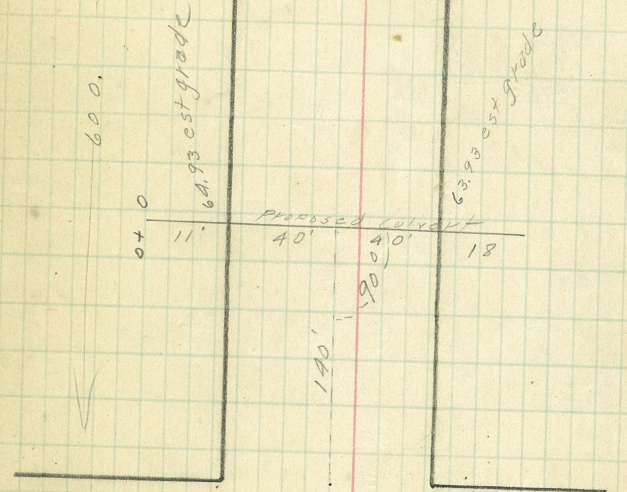
0+96 8.7 56.5

1+09 12.9 52.8

30th St

80

**POSTED**



31st St

measurements for culvert at  
Columbia & Laurel.

levels for culvert	H.I.	Rod	
0+00	<u>35.73</u>	13.0	22.7
+94		11.1	24.6
+165		8.9	26.8

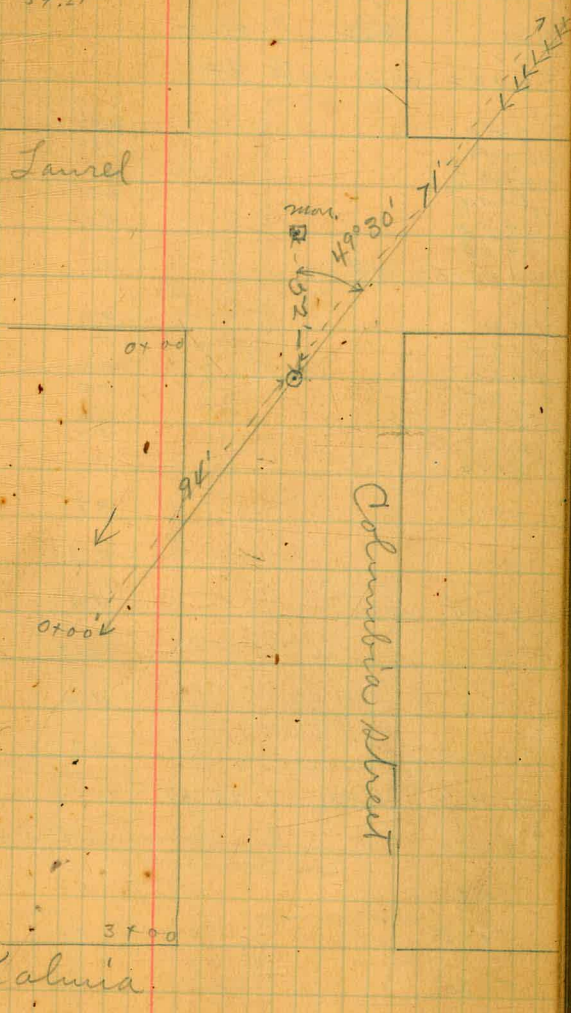
106 1/2 ft

West line Columbia X sect. for toe of slope

	H.I.				
0+00	<u>47.52</u>	Soil line Laurel	14.2	18.7	30.7
+25	<u>35.73</u>	4.8	1.9	3.1	1.7
+38	6.3		3.1	4.5	
+45	12.0		1.2	9.7	6.0
+50	5.4		8	11.5	18.0
+75	1.2		1.9	3.1	12.3
+75	H.I. <u>47.52</u>		5.1	2.1	5.9
+25			0.7	3.0	5.7
+50			2.6	3.0	5.2
+75	H.I. <u>39.27</u>		1.9	3.0	5.4
2+00	12.3		3.0	14.5	
+25	9.7		3.0	11.3	
+50	5.4		3.0	6.9	
+75	3.3		1.3	3.0	1.9
+92	2.3		1.3	1.9	1.9
3+00	20, line Kalmia				

56.33 B.M. 4903 d  
3.26  
59.39  
12.96  
46.43 I.P. 46.43  
12.84  
47.22  
12.44  
35.38 I.P.  
6.35  
35.73  
3.1  
15.25  
9.52

Nov. 10/09  
Blields Barber Taylor  
23



Levels for storm sewer 14<sup>th</sup> to conduit.  $\frac{1}{30}$  Dimple  
 taken 2' s. of N. curb.  $\frac{10}{10}$  Spade  
 Gravel.

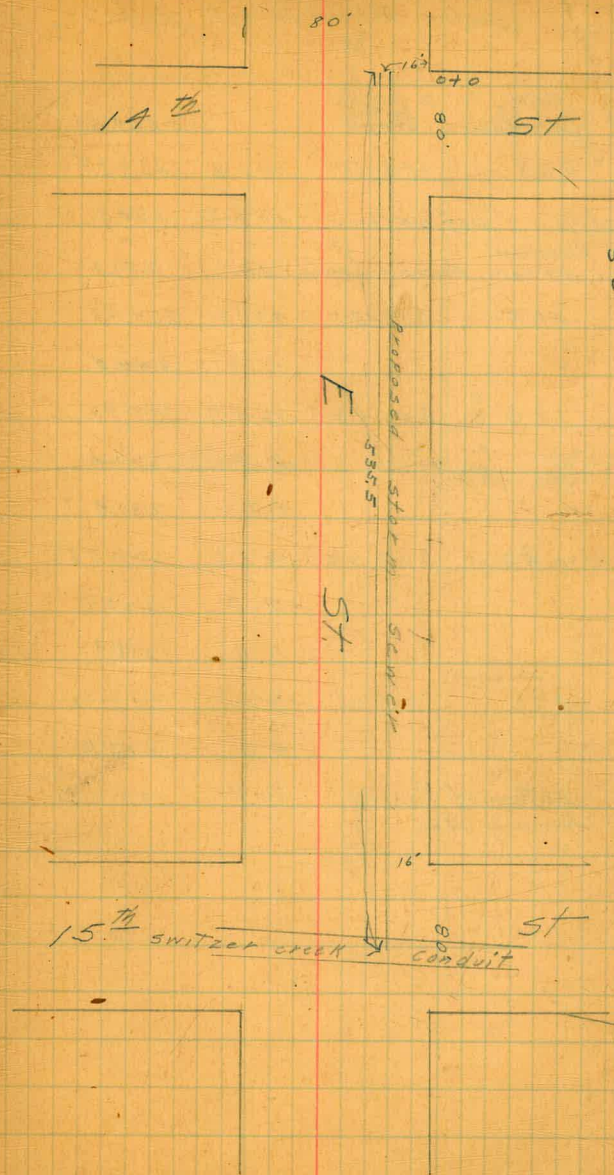
B.M. brass plg 14<sup>th</sup> E. 50.95

B.M. 4.62 55.57

0+0 = W.L. 14<sup>th</sup> St

0+0	4.8	51.1
0+14	4.6	51.0
0+27	4.7	50.9
0+40	4.7	50.9
0+53	5.1	50.5
0+66	5.2	50.4
0+80 = E.L. 14 <sup>th</sup> St	5.1	50.5
1+0	4.9	50.7
1+25	5.2	50.4
1+50	5.3	50.3
1+75	5.4	50.2
2+0	5.6	50.0
2+25	5.9	49.7
2+50	6.1	49.5
2+75	8.8	46.8
3+0	9.3	46.3
3+25	9.4	46.2
3+50	10.8	44.8
3+75	10.1	45.5
4+0	11.6	44.0
4+25	12.8	42.8
T.P.	5.23	48.67
		12.73
		42.84
4+50	6.3	42.4
4+80	7.7	41.0
5+0.5	9.9	38.8
5+30	9.8	38.9
5+35 = Top of Conduit	9.6	38.1
side of 12" hole cut in conduit 3' N. of N. curb line E of bottom of hole =	11.1	37.6

24



$\begin{array}{r} 40.0 \\ 55.6 \\ \hline 541.6 \\ 537.6 \end{array}$

3 Hatch Location for drain pipe  
 10 10' from Under Falcon St at Lewis

Curb at Goldmine Belt	240	272.00		268.60
	3.28	263.05	12.23	259.77
Toe of slope 7' E of NE Cor			8.3	254.7
0+00 of section				
0+7 = NE Cor Falcon - Lewis			12.1	251.0
TP	0.28	251.21	12.12	250.93
0+22			7.2	244.0
TP	1.20	240.08	12.43	238.78
0+37			2.7	237.4
+52			1.2	231.9
TP	0.92	227.92	12.58	227.50
+67			2.0	225.9
+87			9.0	218.9
TP	2.76	218.08	12.60	215.32
+102			4.5	213.6
+12 Bottom of Raring running down			10.6	207.5

25

N  
↑



Profile taken on this section

0+00

→ same slope to  
 edge of adjacent sec  
 Grate 207.5

Lewis St.

Grate 200.0

Falcon

40

Levels over offset stakes along line of storm sewer at  
 "E" St from 14th to Conduit in 18 1/2 ft

Note: Stakes set 9.0' N. of ctr line of sewer

2  
 12  
 27  
 { Davis  
 Williams  
 Churchman,  
 E. M. Pig in return  
 N. W. 14th St

Elev. of  
 bottom

Cut:

	3.50	H.I. 54.45	50.95		
0+0. Cross cut in sidewalk		3.30	51.15	48.00	+ 3.15
+25		3.55	50.90	47.46	+ 3.44
+50		3.91	50.54	46.92	+ 3.62
+75. Cross cut in sidewalk		3.41	51.04	46.38	+ 4.66
1		3.27	51.18	45.95	+ 5.23
+25		3.42	51.03	45.31	+ 5.72
+50		3.45	51.00	44.77	+ 6.23
+75		3.55	50.90	44.23	+ 6.67
2		3.54	50.91	43.69	+ 7.22
+25		3.56	50.89	43.16	+ 7.73
+51		3.62	50.83	42.62	+ 8.21
+75		3.65	50.80	42.08	+ 8.72
3		3.58	50.87	41.54	+ 9.33
+25		3.77	50.88	41.00	+ 9.88
+50		3.73	50.72	40.47	+ 10.25
+75		3.88	50.57	39.93	+ 10.64
A		5.92	48.63	39.39	+ 9.14
T.P. +25 2.16	H.I. 47.59	9.02	45.43	38.85	+ 6.58
+50		4.07	43.52	38.31	+ 5.21
+75		5.83	41.76	37.78	+ 3.98
5		6.01	41.58	37.24	+ 4.34
+343.2. Hole in side of Conduit		10.05	37.54	36.50	+ 1.04

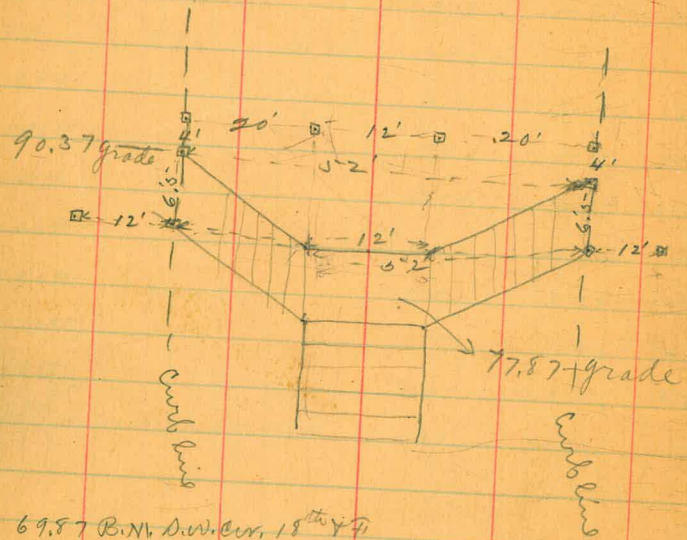


## Cuts for Storm drain 19th and A to Conduit.

	9.06	HI. 69.79	60.73 BM	Ground	Grade	Cut
0+00 End pipe				60.00	60.00	
+25				62.99	61.45	1.54
+50				66.62	62.91	3.71
T.P.	7.42	76.23		68.81		
+75				71.42	64.36	7.08
+92.25 P.C.				71.71	65.36	6.35
+130				70.39	66.57	3.82
+330				69.73	67.73	2.00
+530				70.68	68.89	1.79
+730				72.70	70.06	2.64
+830				74.72	70.64	3.58
+85.75 Inside end of present culvert				70.96	70.80	

Triant stakes & grades for  
17th & H

N  
↓  
S



69.87 B.N. D.W. Cur. 18th & H  
12.73  
82.60 H.I.  
77.87  
4.73

0.27  
82.33 J.P.  
12.60  
94.93 H.I.  
90.37  
4.56

Steps at June 14/10

Childs			
Barber			28
Taylor			

69.87	77.87	67.25	66.50
806	90.55	71.77	66.50
78.22			11.92

line ad grade stakes set for  
lower stairway 6/21/10 Hatch.

Hatch Moors Fitzpatrick		Elevation of points indicated on sketch relating to bridge footings Spine at Victoria Front and Bland.					
B.M.	089	255.89		255.004	NW pt Thom	222.50	
TP	088	244.16	12.1	243.68		40 W	
					N	3.5	229.00
					"	3.5	229.00
			11.9	232.26	21	3.7	228.80
			12.3	231.86	21	4.1	228.40
			12.9	231.26		50 W	
			12.5	231.66	N	3.9	228.60
TP	030	232.50	11.96	232.20	"	4.1	228.40
					21	4.2	228.30
			1.1	231.40	21	4.6	227.90
			1.5	231.00		60 W	
			2.0	230.50	N	4.7	227.80
			2.5	230.00	"	4.8	227.70
					21	4.7	227.80
			2.1	230.40	31	5.1	227.40
			2.2	230.30		70 W	
			2.5	230.00	N	5.4	227.10
			2.5	229.00	"	5.4	227.10
					21	5.6	226.90
			2.8	229.70	31	5.9	226.60
			2.7	229.80		80 W	
			3.0	229.50	N	6.1	226.40
			2.7	228.80	"	6.1	226.40
					21	6.4	226.10
					31	6.4	226.10

202.50			
90' W			
N		6.8	225.70
"		6.7	225.80
21		7.0	225.50
31		7.2	225.80
100' W			
N		7.8	224.70
"		7.7	224.50
21		7.5	224.70
31		7.7	224.80
110' W			
N		9.6	222.90
"		9.2	223.30
21		9.1	223.40
31		8.9	223.60
150' W			
N		12.5	220.00
"		11.9	221.10
21		10.7	221.80
31		10.9	222.10
TP	0.80	221.38	220.98
180' W			
N		5.2	216.10
21		4.0	217.30

221.28			
21		2.8	218.50
21		1.7	219.60
140' W			
N		9.2	213.10
"		6.8	214.50
21		5.9	215.40
31		4.4	216.90
TP	4.39 1.58	225.37 236.74	220.98 224.91
Cr. Grant St.			
N		0.9	225.84
"		4.1	222.64
21		7.1	219.64
31		10.6	216.14
10' E			
N		1.8	224.94
"		5.2	221.54
21		9.5	217.24
30' E			
N		2.7	224.04
"		7.5	219.24
21		12.4	214.34
30' E			
N		4.0	222.74
"		9.2	217.54

226.79

20' E = Elk Brant St

N		6.0	220.74
"		11.1	215.64
10' E of Brant			
N		7.2	219.54
"		12.5	214.24
30' E			
N		10.8	215.94
TP	0.10	219.66	217.56
10' E of Cr of Brant			
31		2.2	212.36
20' E of Cr.			
31		4.7	209.96
30' E of Cr.			
31		2.2	212.46
31		6.7	207.96
40' E of Cr = Elk Brant			
21		3.7	210.96
31		9.5	205.16
10' E of Brant			
21		6.7	207.96
31		12.9	201.76

214.66

20' E

"		3.8	210.86
31		9.6	205.06
30' E			
N		3.7	210.96
"		8.9	205.76
31		13.7	200.96
20' E			
N		10.3	204.36
"		13.3	201.36
TP	0.80	202.66	201.86
20' E			
31		4.3	198.36
30' E			
31		7.9	194.76
40' E			
31		5.7	196.96
31		12.6	192.06
50' E			
N		1.6	201.06
"		6.5	196.16
21		10.3	192.36
31		14.1	188.56

289.66  
60° E

N 4.7 197.76  
" 8.7 193.96  
31 12.2 190.46

70° E

N 7.4 195.26  
" 10.8 191.86

80° E

N 10.3 192.36  
" 13.5 189.16

T.P. 0.65 191.00 12.31 190.55

60° E

31 4.4 186.60

70° E

31 3.2 187.80  
31 6.1 184.90

80° E

31 5.3 185.70  
31 8.2 182.80

90° E

N 2.5 188.50  
" 8.4 185.60  
21 8.2 182.80  
31 11.0 180.00

191.00  
100° E

N 6.0 185.00  
" 9.0 182.00  
31 11.5 179.00

110° E

N 10.9  
" 13.0

T.P. 0.10 178.57 12.53 178.47

100° E

31 1.8

110° E

21 3.2  
31 4.7

120° E

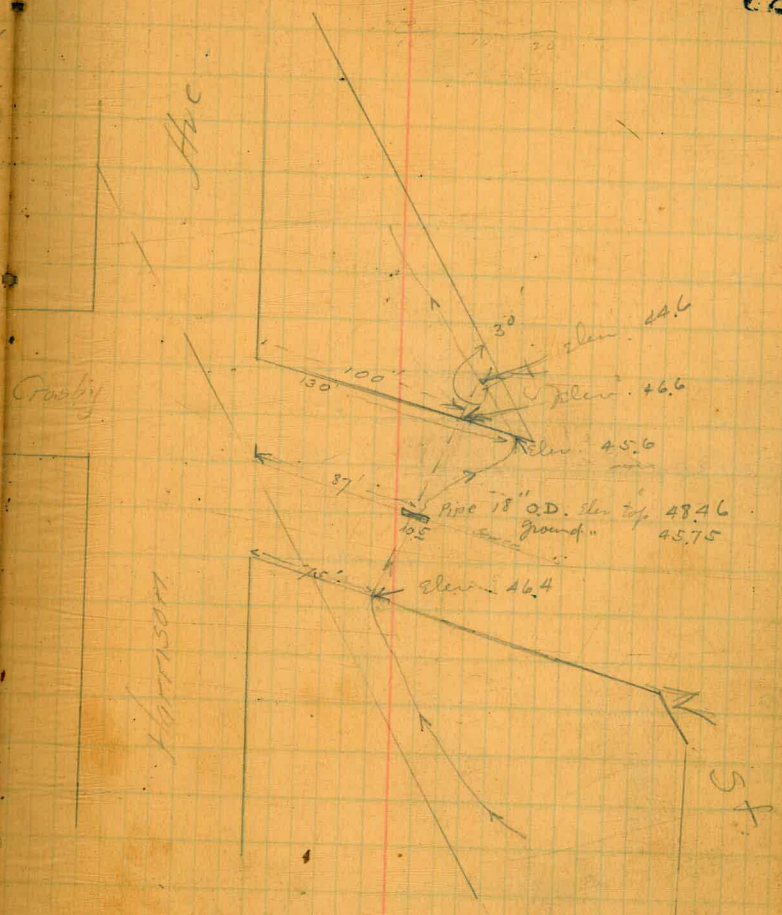
N 2.7  
" 5.9  
21 7.4  
31 7.4

130° E

N 8.1  
" 9.4  
21 10.6  
31 11.6 167.0

$\frac{5}{26}$  Hatal  
 $\frac{10}{10}$  Moor  
 Rogers.

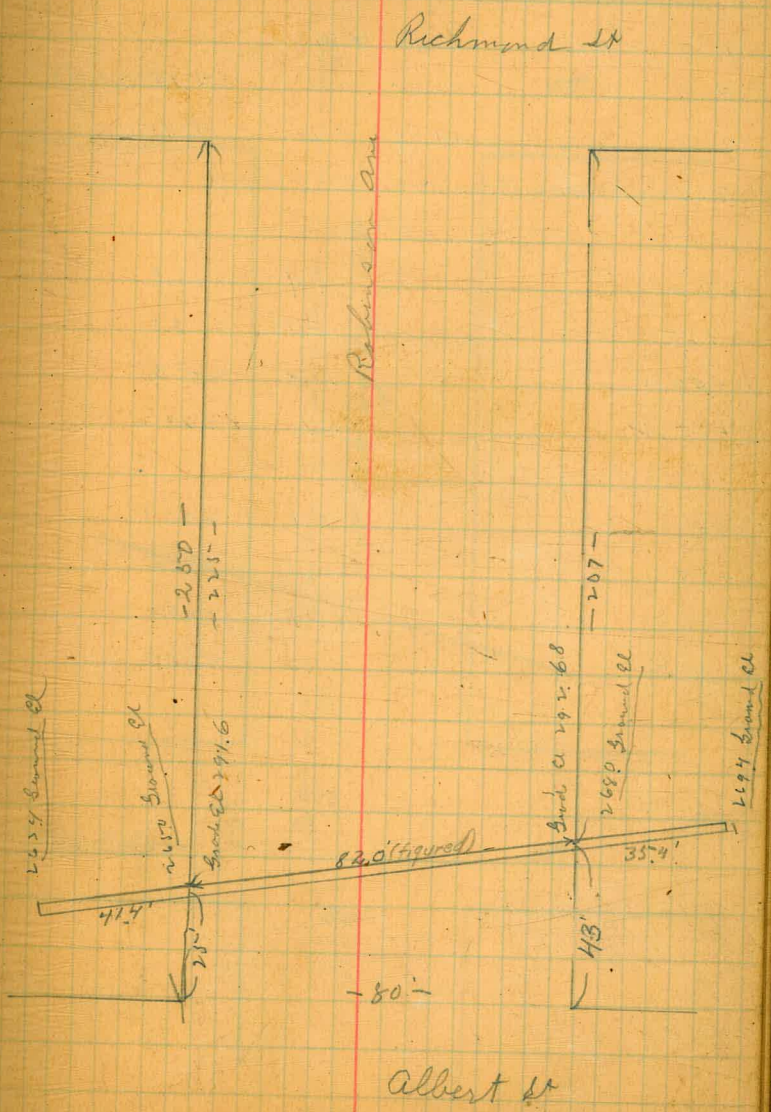
pm	228	56.60	5432	25 <sup>4</sup> N
		12.0	44.6	
		10.0	46.6	
	ground	11.0	45.6	
		10.85	45.75	
		8.14	48.46	
		12.2	46.4	



9. Height Location of center on  
 8. Pinner  
 10. 25/2/68 Robinson on Bet Richmond & Albert

28099 TP BM		7 P
0.38		
281.37		
1.26		
269.11		
4.28		
273.39	273.40	
35' n g 22	4.0	269.4
n 2	5.4	268.0
Stn	7.7	265.7
S 2	8.4	265.0
41.05 of S 2	10.0	263.4

(2 4" Pipe will carry all the water)  
 2 12" " " " "





Levels for Culvert Washington St between  
Jackdaw & Ingalls

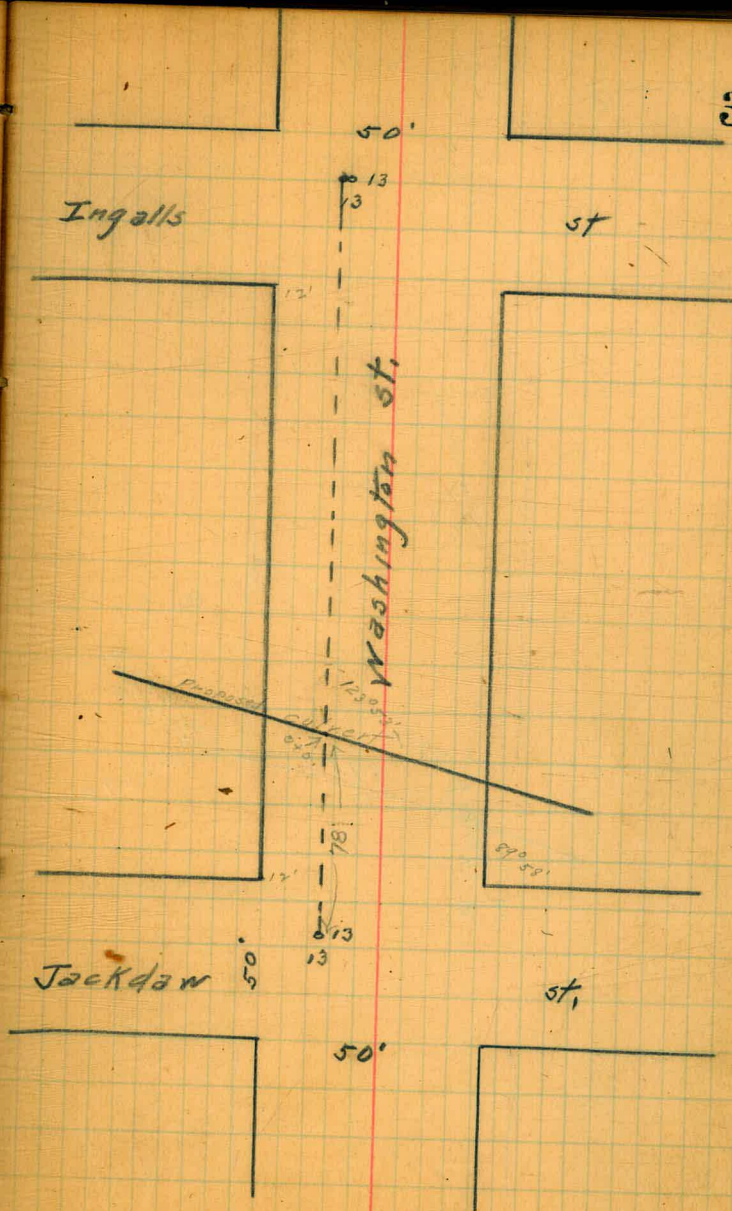
B.M. Brass Peg Hank & Washington		263.23		
B.M.	4.96	267.47		
T.P.	1.07	256.55	11.99	255.48
T.P.	2.31	249.26	12.60	243.95

Note - Levels are taken N & S. from 13' line

		244.26		
0+0		9.4		233.9
0+25 N		5.5		238.8
0+50 N		3.2		241.3
0+75 N		1.1		243.2
0+0		9.4		233.9
0+25 S		13.8		230.5
0+50 S		18.4		225.9
0+75 S		23.0		221.3

Drunk  
Shaw  
Evans

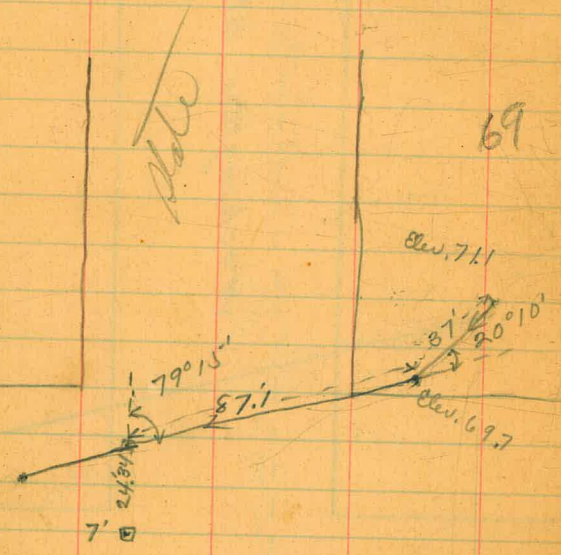
34



Nov. 29/10

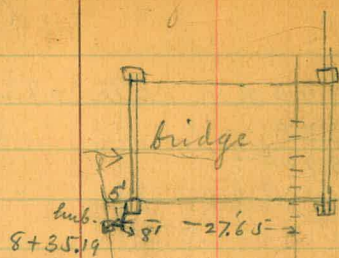
{ Childs  
Barber 35  
Taylor

74.90 B.N. State & Hwy  
500  
79.90 K.I.



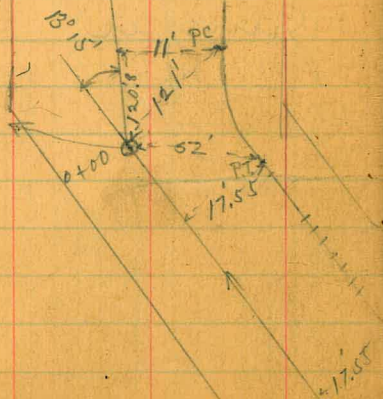
Juniper

Culvert, from near 33<sup>rd</sup> to Cholla  
Valley creek.



Sav. C. RR.

end of present  
culvert  
grade of culvert  
38.9



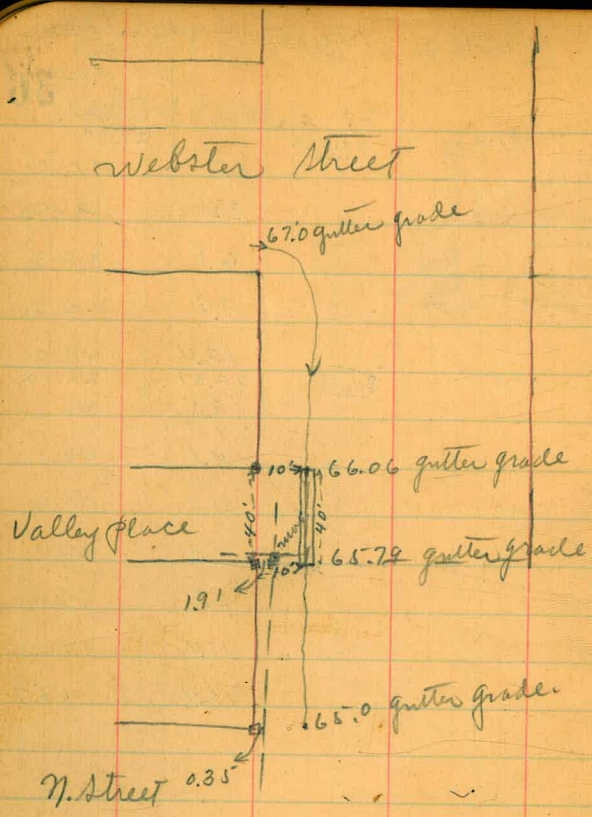
Levels.

Dec. 13/10

Builds  
Taylor  
Bunker

36

Sta	HT	Rod	Elev.
	11.71		29.70
0+00	41.41	0.3	41.1
1+00		3.4	38.0
2+00		6.1	35.3
3+00		9.4	32.0
4+00		12.4	29.0
5+00	10.5	12.31	29.10
6+00		3.5	26.7
7+00		4.1	26.1
8+00		4.6	25.6
+36		5.1	25.1
+50		3.8	26.4
+50		11.4	18.8
+60		12.4	17.7



Culvert at 28 + Valley place

68 66

37

20' B.M. N.E. cor. 28<sup>th</sup> + Webster

300	20	1.67	71.58		68.0
	28		73.59 H.I.		67.67
			68.0		67.33
			5.59		67.06
67			67.67	67.33	66.79
2686			5.92	6.26	6.80
			67.06	66.79	
			6.53	6.80	

Callick  
Taylor  
Bunker

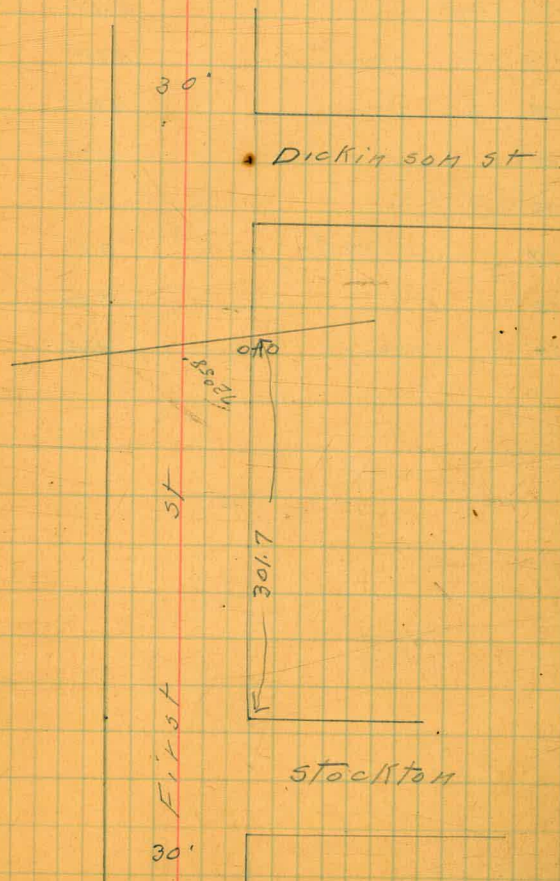
Dec. 30/10

J.P. Sta.	12.17	41.87	29.70	B.M.	Grade	Cut
0+00 end gold pipe		41.87	<del>#</del>		38.8	
+50			1.90	40.0	37.3	2.7
1+00			3.4	38.5	35.8	2.7
+50			5.2	36.7	34.3	2.4
2+00			6.5	35.4	32.8	2.6
+50			8.1	33.8	31.3	2.5
3+00			9.8	32.1	29.8	2.3
+50			11.3	30.6	28.3	2.3
4+00			12.73	29.14	26.8	2.3
J.P.	1.70	30.84				
+50			3.2	27.6	25.3	2.3
5+00			4.1	26.7	23.80	2.9
+50			4.5	26.3	22.93	3.4
6+00			4.6	26.2	22.07	4.1
+50			4.6	26.2	21.21	5.0
7+00			4.7	26.1	20.35	5.8
+50			4.4	26.4	19.49	6.9
8+00			3.8	27.0	18.63	8.4
+35			3.3	27.5	18.03	9.5
+60			13.23	17.6	17.60	0.0

Levels for culvert 15<sup>th</sup> St bet Stockton & Dickinson  
 8 Dickinson  
 11<sup>th</sup> Stockton

39

B.M.				292.00
B.M.	4.70	286.70		
T.P.	1.54	286.52	11.72	284.98
T.P.	0.70	284.68	12.59	273.93
0+0			11.3	263.3
0+10 W of E.L. 1 <sup>st</sup>			8.6	266.0
0+20 W "			7.1	267.5
0+30 W "			6.5	268.1
0+40 W "			5.6	269.0
0+50 W "			4.5	273.1
0+0			11.3	263.3
0+10 E of E.L. 1 <sup>st</sup>			16.6	258.0
0+20 F "			18.3	256.3
0+30 " "			18.7	255.9
0+40 " "			19.4	255.2
0+50 " "			19.2	255.4



4 1/2" H  
R.

Bottom stakes for Culvert  
on Crosby St.

40

BM	017	5449	54.32	25"-N
	114	49.62	601	48.48

		bottom	sides	
East end		362	329	46.0
+15	1' wide	380	397	45.82
+32	8 1/2" wide	397	362	45.66
+39		403	370	45.59
+42		409	376	45.53
+57	4' wide	427	394	45.35
+72		445	412	45.17
+86	west end.	462	429	45.00

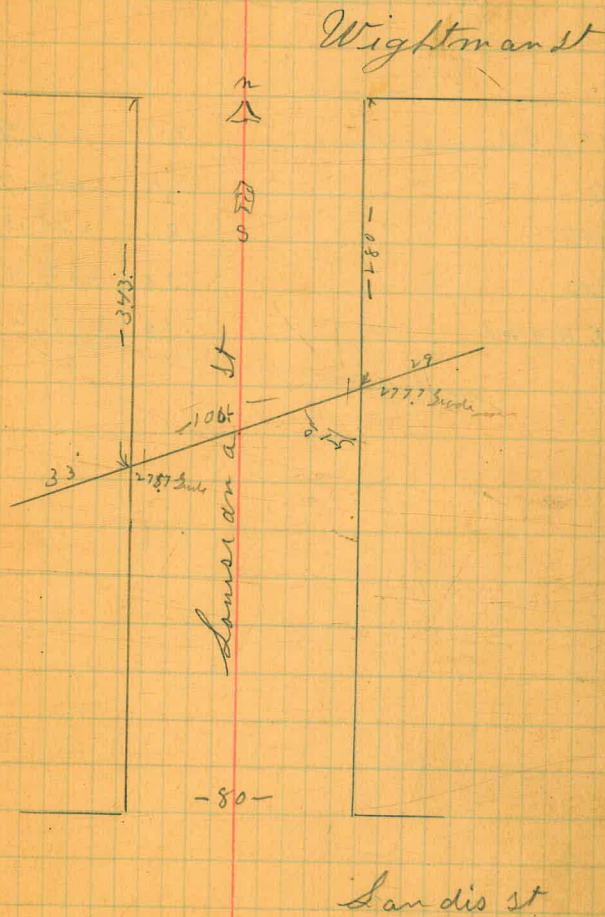
4 Along location of Culvert on Lousiana St  
 7 Corner  
 11 Titled Bet Wightman + Sandis St

30' Right of Way

41

263.46 from Book 515-P78

33' W of Md = End of Culvert	10.7
10' W " "	12.6
W L of Lousiana St at 343' S of right	9.0
30' E of W line	4.4
Center of Lousiana	5.7
37' W of E line	5.8
22' W of E line	8.2
13' W of E line	8.1
E line of Lousiana at 280' S of right	6.1
29' E of E line = E End	5.2





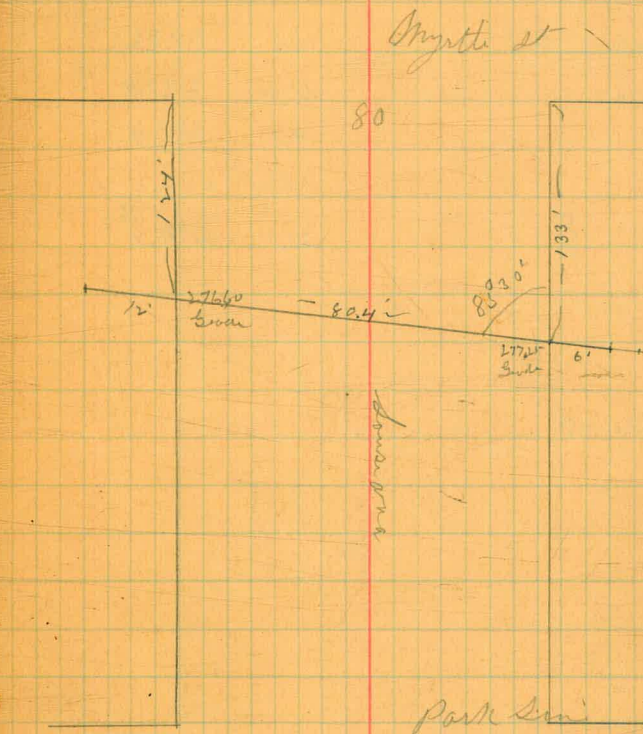
4  
13  
11 } brought levels for Culvert Lanesanast  
Dinner  
7 1/2 hrs Bet Myrtle St & Park Lane

3.07    281.29    278.32    SE of Patch

6 E of E line of lanesanast	8.5	272.9
EL	8.7	272.7
Center	10.1	271.3
WL	13.0	268.4
12 W of WL	14.8	268.6

8' Pipe is large enough

42



4/ Blount  
 13/ Dm  
 11/ 743

Leads for Culvert on Georgia St (60')  
 Bet Robinson + Cypress

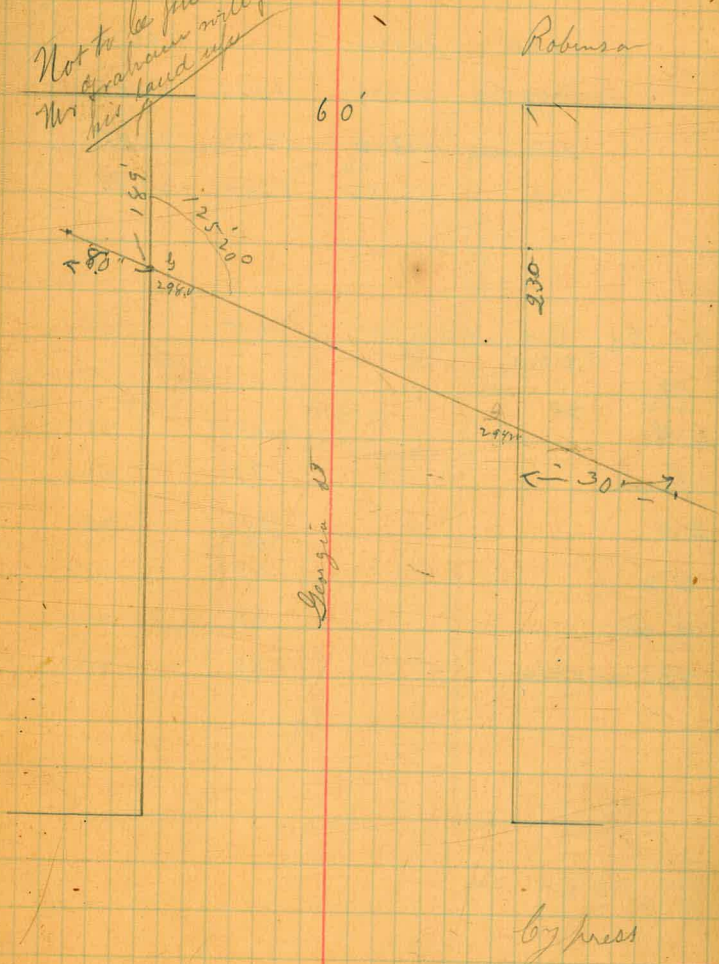
1.84 294.20

292.26 Ben Post

8' w of end of Georgia	1.6	292.6
w of Georgia	4.2	290.0
bet "	9.8	284.4
E 21 "	15.0	279.2
30' E of "	20.0	274.2

8" Pipe is large enough

Not to be put in  
 Mr. [unclear] will fill  
 the [unclear]



44 Along  
 28 Corner  
 11 City blocks But Wightman + Landis

				SW at Wightman Texas
1.20	30740		306.20	
0.18	29455	1303	29437	
1.51	28326	1280	28175	
0.80	27126	1240	27082	

30' E of E line of Texas (60) 4.5 267.2

E L 6.0 265.7

center 7.7 264.0

W L (80) 9.6 263.1

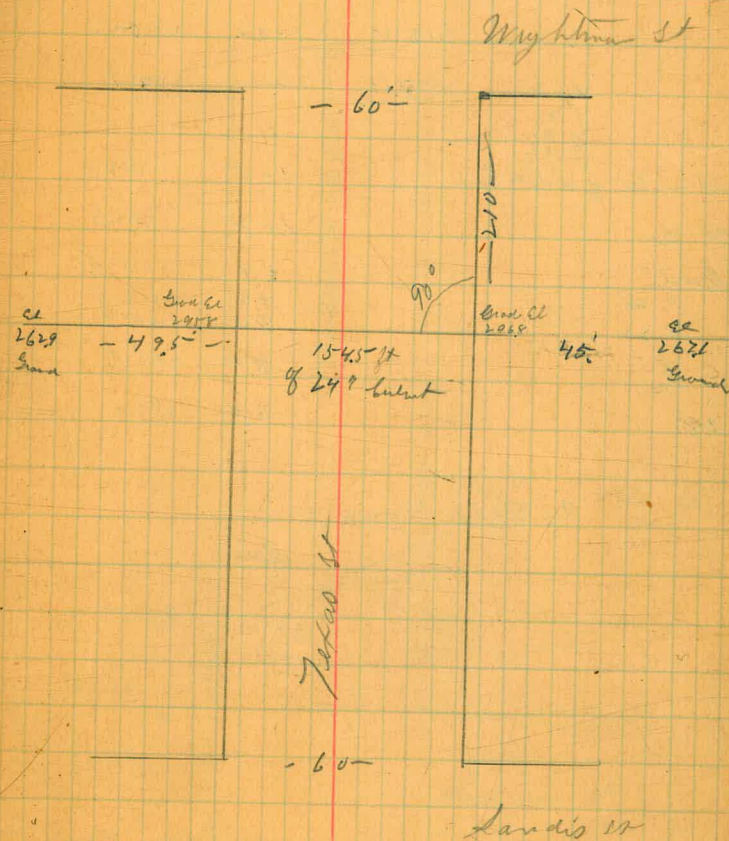
10' W 9.4 262.1

11' W 8.5 262.2

49.5' W = End 8.8 262.9

30'

44



Levels for Culvert on Mississippi St (60)

But Wightman + Landis St

1.78	278.76		276.98	Bm 52 Landis
0.22	266.15	1283	265.93	
0.02	<u>253.11</u>	1306	253.09	

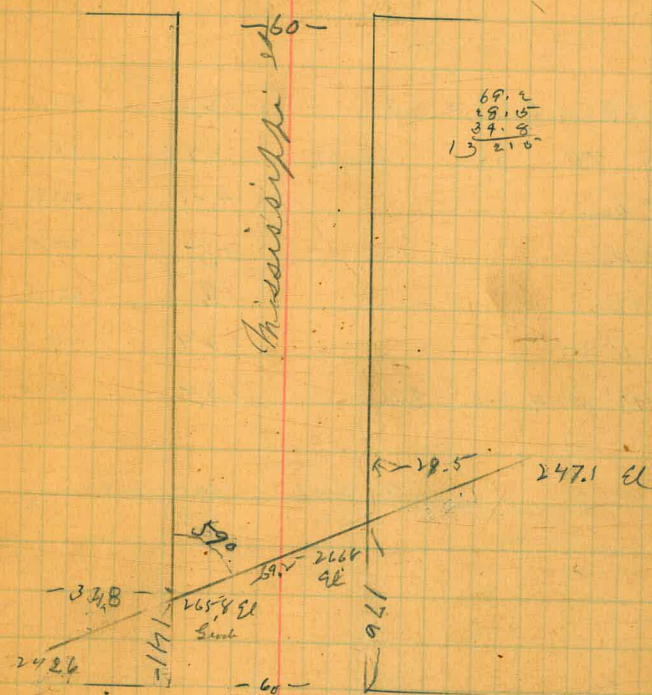
33.3' W of W L = End	10.5	242.6
W L	10.2	242.9
Center	6.7	246.4
+ 20	4.6	248.5
+ 22	8.2	244.9
E L	8.2	244.9
28	6.0	247.1

No Slopes Required

30"

45

Wightman St



Landis St

This culvert is 120' long as constructed, should be 134'

Mr. H-12.

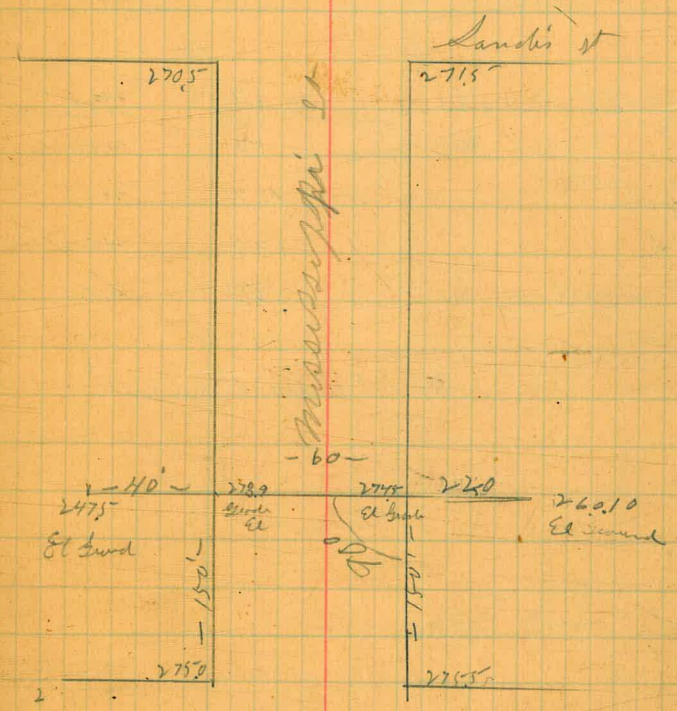
5) bludge levels for culvert on Mississippi  
 1) Common  
 11) City of St. Louis + Dwight St

663	28351	276.98	Bm SE Sandis
149	<u>27270</u>	1240	271.21

22' E of Edine = End	12.6	260.1
TR 0.86	<u>260.69</u>	259.63
E line	4.2	256.5
Center	5.5	255.2
W line	8.9	251.8
10' W	12.4	248.3
40' W # 2 = End	13.2	247.5

no slopes required

8" pipe



Dwight St

5  
3  
11

Levels or for culvert on Massachusetts

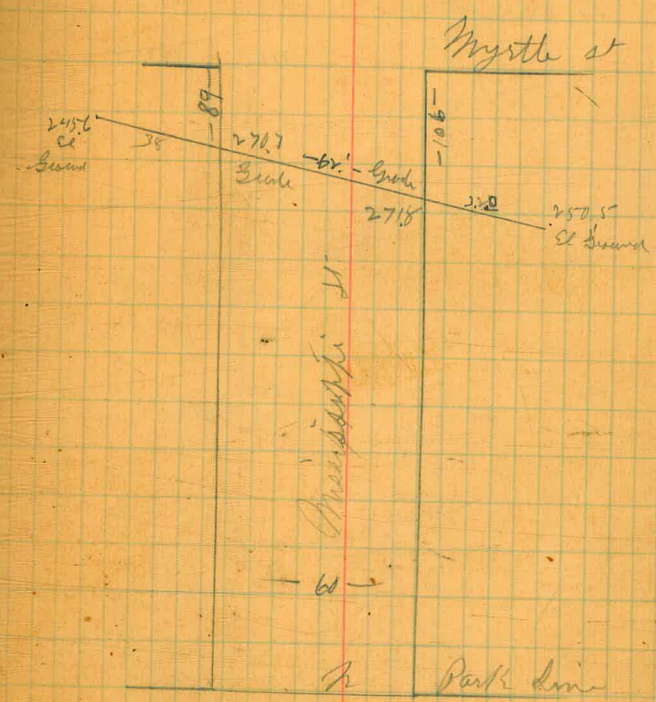
Myrtle + Park line

185	280.92		279.06	Bm
031	269.69	11.54	269.38	
008	<u>257.22</u>	12.55	257.14	

3' E of Ed = End of bed	67	250.5
13' " " "	88	248.4
Ed	80	249.2
Center	10.4	246.8
W L	12.0	245.2
38' W of E end of bed	12.7	245.5

No Slopes Required

10"



5/ Blough  
 9/ Donna  
 11/ Felypatent

Levels for Culvert on Indiana St  
 Between Cypress + Myrtle St

1.30      301.89      300.59

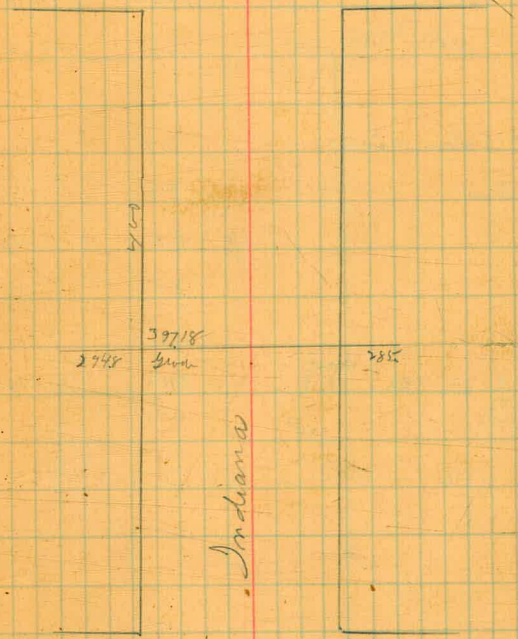
7.2      299.79

46

47

No Culvert Required F.P. 6

Cypress St



Myrtle St

5  
10  
9  
11

5' blough  
10' Down  
11' 2 1/2' natural

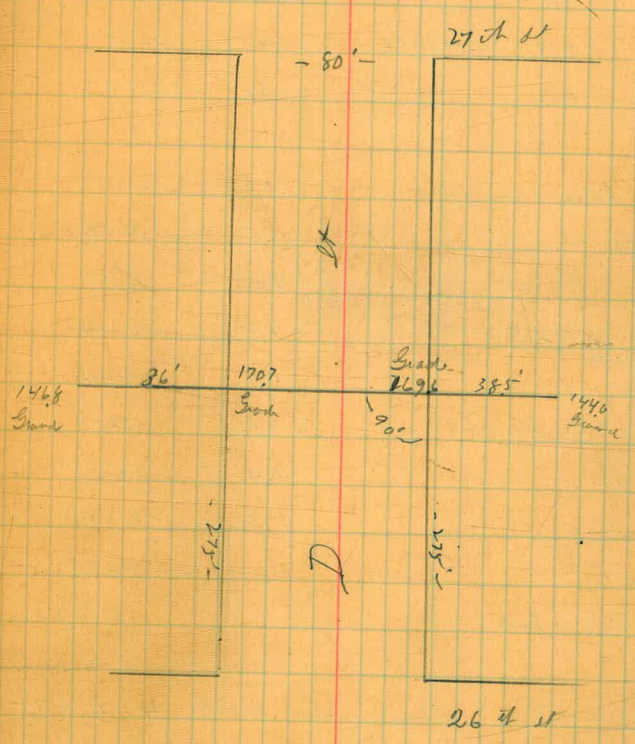
Levels for Culvert on D St  
Bet 26 & 27th St

172	19067		18895
0.53	17872	12.48	17819
0.20	16610	12.82	15990
112	<u>15435</u>	12.87	15323

38.5' S of S Line = End	10.4	144.0
S L of D St	9.0	145.4
Center "	8.8	145.6
6' + 25'	7.6	146.8
2' 30'	6.7	147.7
N Line	6.5	147.9
36' 7 1/2' = End	7.5	146.9

(No Slopes Required)

30"  
(18" culvert)





5/6/66  
9/8/66  
11/7/66

5 February  
10 March  
11 July 1966

Levels for Culvert on D St (80)  
at 28th St

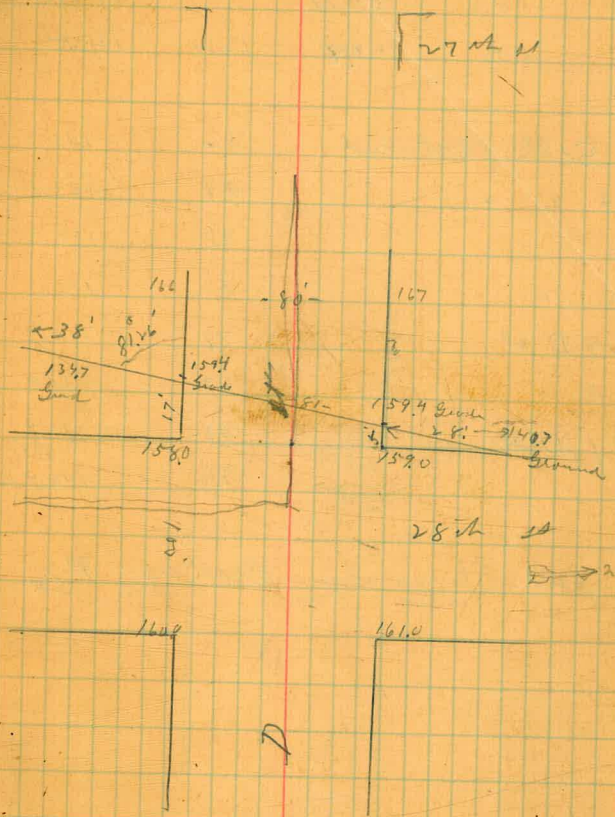
4.86	189.55		184.69
0.56	177.14	12.97	176.58
0.0	164.79	12.85	164.29
0.27	157.58	12.98	151.31
6.06	<u>144.75</u>	12.89	138.69

38' sq Sdr = End of Rd	10.0	134.75
35' sq Sdr	10.5	134.25
30 " "	9.2	135.55
Sdr of Det	7.2	137.55
center	5.7	139.05
Ndr of Det	6.0	138.75
6' n " "	7.3	137.45
12' n " "	5.8	138.95
25' n " "	4.1	140.65
28' n " " = End		140.7

For Slopes see Book 443 P 75

49

(30" culvert)



5 | blongt levels for culvert on D st (80)  
 10 | 2nd |  
 11 | 3rd |  
 12 | 4th |  
 13 | 5th |  
 14 | 6th |  
 15 | 7th |  
 16 | 8th |  
 17 | 9th |  
 18 | 10th |  
 19 | 11th |  
 20 | 12th |  
 21 | 13th |  
 22 | 14th |  
 23 | 15th |  
 24 | 16th |  
 25 | 17th |  
 26 | 18th |  
 27 | 19th |  
 28 | 20th |  
 29 | 21st |  
 30 | 22nd |  
 31 | 23rd |  
 32 | 24th |  
 33 | 25th |  
 34 | 26th |  
 35 | 27th |  
 36 | 28th |  
 37 | 29th |  
 38 | 30th |  
 39 | 31st |  
 40 | 32nd |  
 41 | 33rd |  
 42 | 34th |  
 43 | 35th |  
 44 | 36th |  
 45 | 37th |  
 46 | 38th |  
 47 | 39th |  
 48 | 40th |  
 49 | 41st |  
 50 | 42nd |

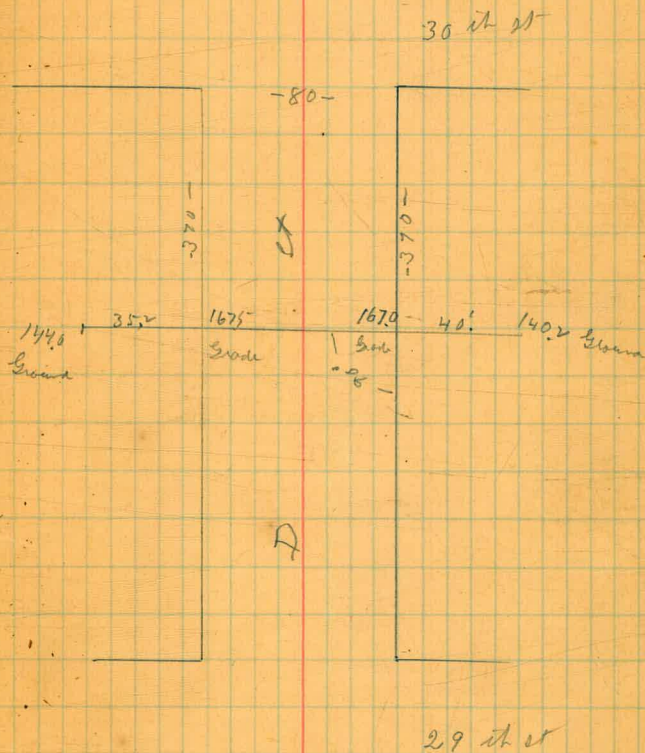
0.73    155.49       154.76  
 5.58    148.78    1234    143.15

40 S of D st	8.6	140.1
24 S " "	8.8	139.9
10 S " "	9.5	139.2
8 S " "	8.6	140.1
S of D st	7.8	140.9
center "	6.9	141.8
N of D st	6.0	142.7
35.0	4.8	143.9

For Slopes See Book 443 P 76

30" PIPE

50



51

5  
2  
11

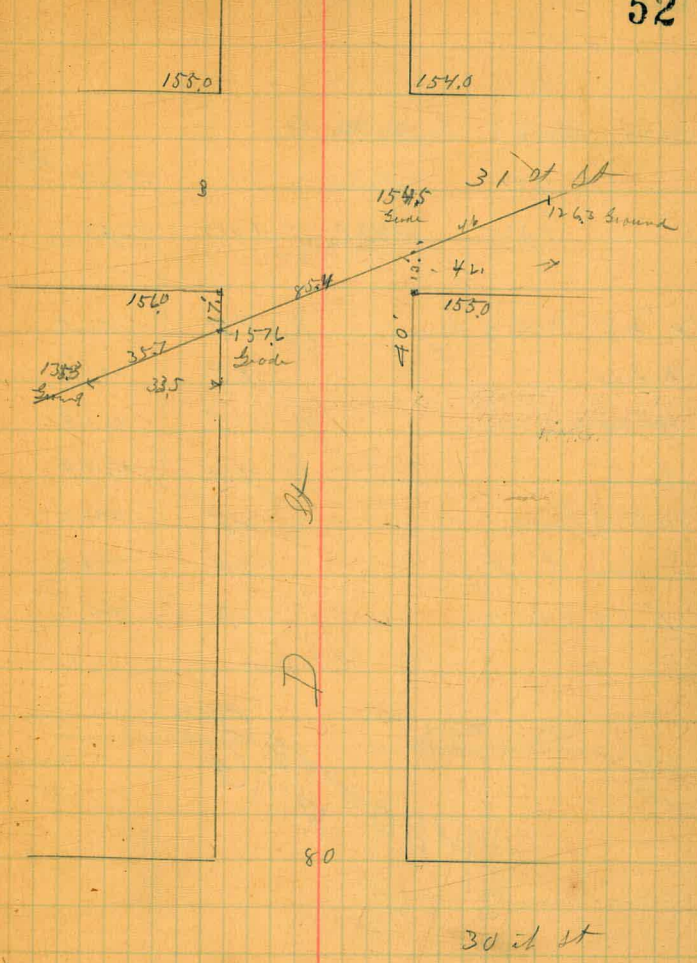
5 blough levels for culvert on D St  
13 Pennon  
11 Zephyr block at 31st St

5.54      142.30      136.76      Bm NW  
31+D

36' n of rd = End	7.0
rd of D St	8.0
22' H2	9.3
Center	9.4
SE of D St	10.5

Levels for Slopes Book 4.45 P 77

18" Red will Camp  
24"



5-6  
7-8  
9-10  
11-12

58

28624 Bm N E July 30

4.07	29030	28624	Bm
1.34	<u>278.97</u>	12.67	277.63

12' N of N E of try	7.8	271.5
N line	8.2	270.8
15' S of N E	11.5	267.5
center	4.6	274.4
20' S of center	4.8	274.2
S line of try	13.0	266.0
19' S of S line "	13.3	265.7

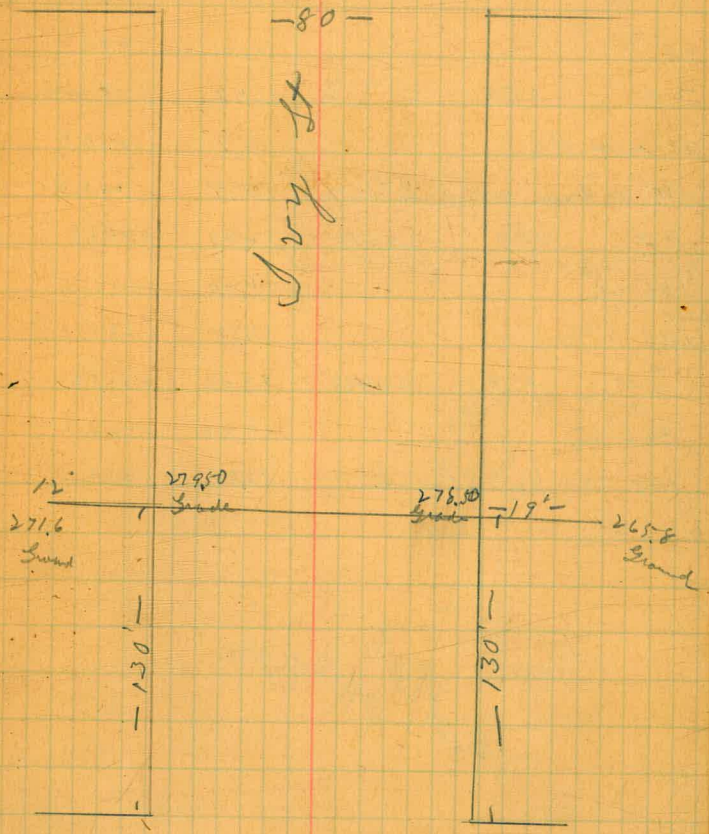
No Slopes Required

PLOTTED  
RMG

(8" or 10" pipe)

53

31 at St



Ferm St

5  
6  
7  
8  
9  
10  
11

8 / 160' / 15' / 11' / Levels for Calvert N E Cor of  
Bunker  
Ibis + Suis et

	4.70	<u>269.70</u>		265.00	bunb
10 = N E Bunk			5.2	264.5	
25' n			4.7	265.0	
35' n			4.5	265.2	
43' n			11.6	258.1	
TP	0.34	<u>257.56</u>	12.48	257.22	
75' n = P.C.			6.7	250.9	
104' or Curve = Rad. of 100' n			15.4	242.4	
TP	0.90	<u>245.56</u>	12.90	244.66	
120' n E			9.00	236.6	
130 "			14.0	131.6	
TP	1.50	<u>234.06</u>	13.00	232.56	
160' n E			9.00	225.1	
170' n E = 66 E of P.C. line			12.00	222.1	

Plotted  
P.M.G. 8/22/11

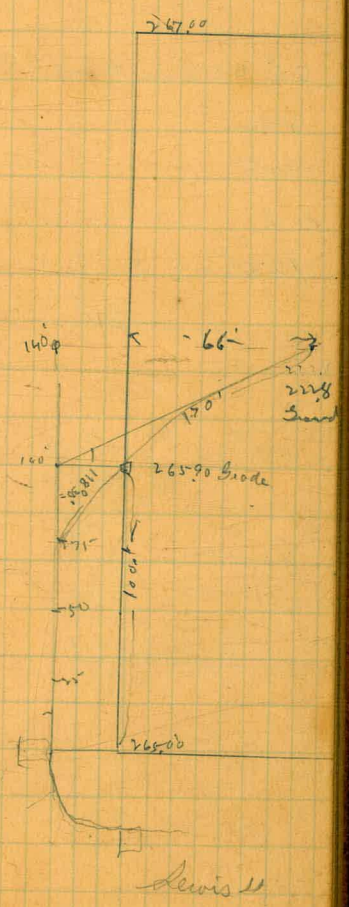
16' 16' Est

54

Broadway



Ibis + Suis et

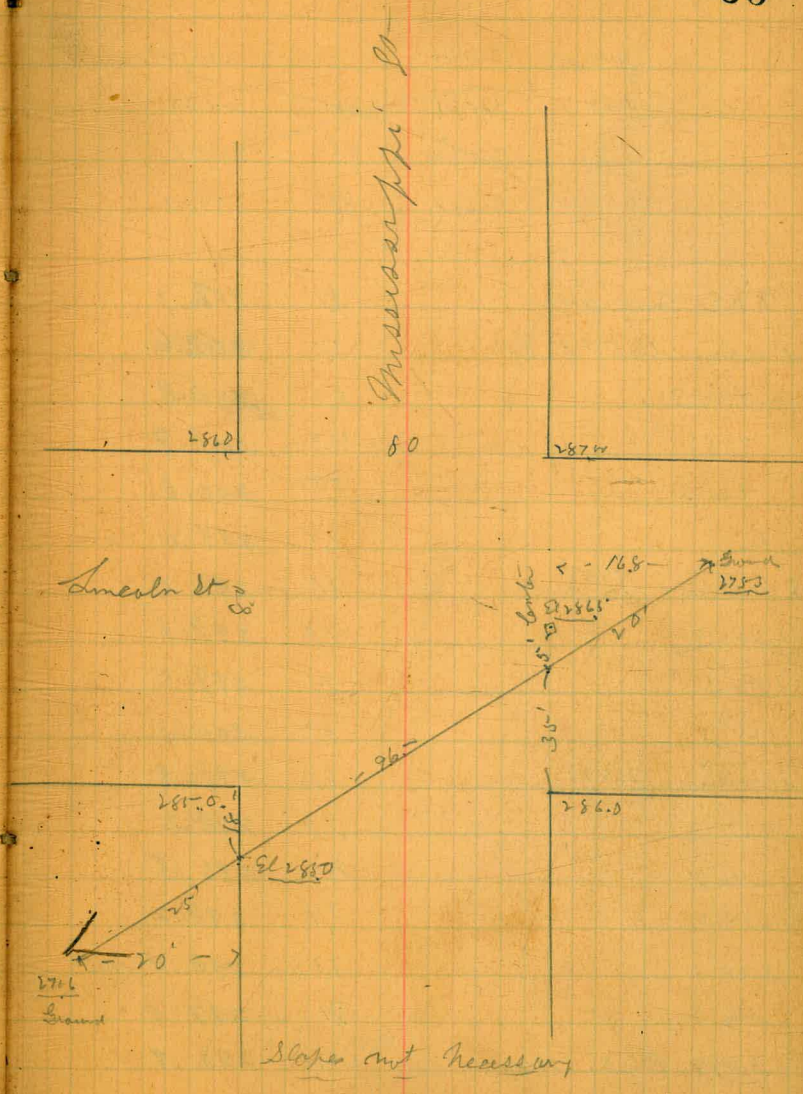


5/8 brought levels for Culvert Mississippi &  
 9/24 Down + Lincoln st  
 11/11 July 11 July 11

11.92	285.07	283.15	Bm & E
0.67	284.96	10.75	284.32
	285.0		

20' W of W line = end of culvert	13.4	271.6
W line	13.7	271.8
Center	14.0	273.0
E L	10.2	274.7
16.8 E of E L = end	9.7	275.0

36' Pipe Set



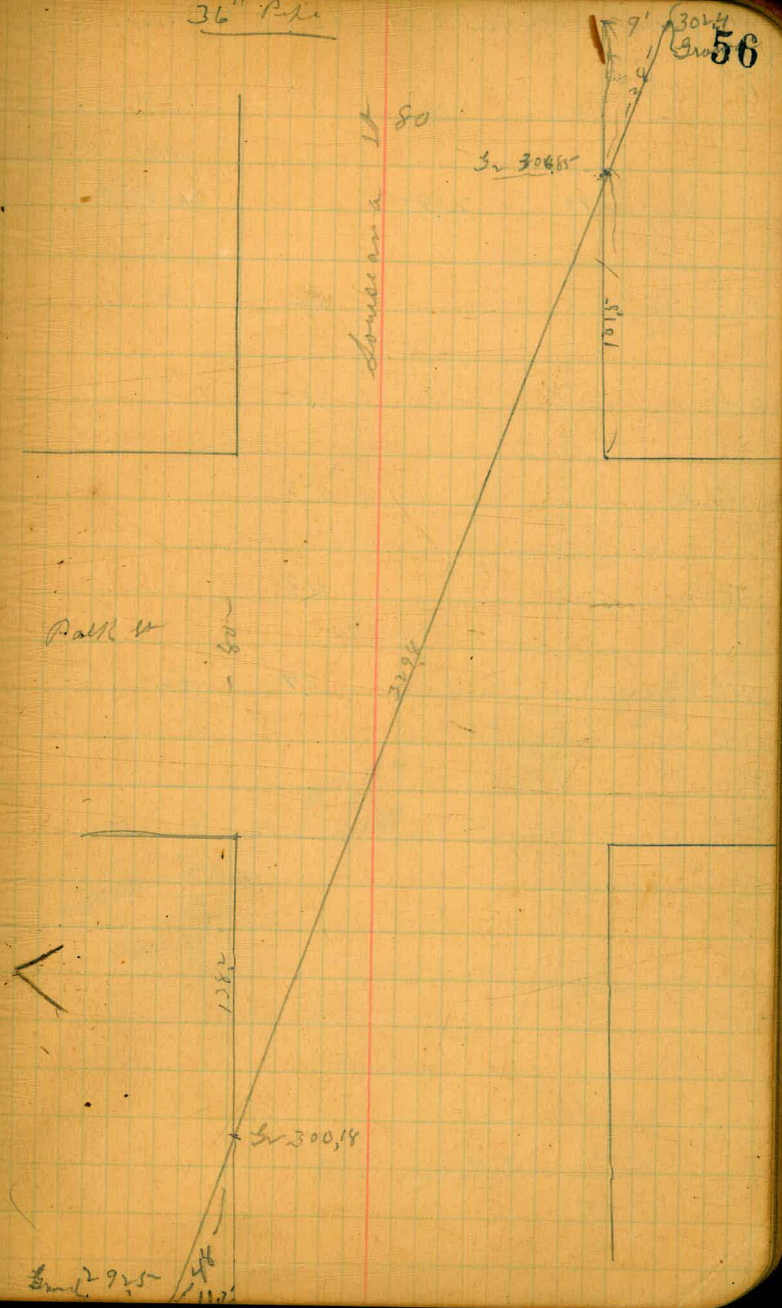
5  
19  
9  
11

Change ends for Culvert on Louisiana St (80)  
 at Park St

800	307.14		297.14	N.W.S. from Louisiana
568	<del>300.01</del>	<del>281</del>	<del>304.32</del>	
533	<del>306.32</del>	<del>262</del>	<del>309.99</del>	
852	306.97	875	297.57	

387 E End of Culvert	37	302.3
Prop. line 1015 mg Park	35	302.6
+25 S	53	300.8
+50 S	42	301.9
+60 S	55	300.6
100	71	299.0
2 Prop. line (105 S)	71	299.0
130 S	80	298.1
150 S	71	299.0
165 S	60	300.1
5 Prop. line (187 S)	68	299.3
200 S	79	298.2
240 S	96	296.5
250 S	79	298.2
275 S	77	298.4
300 S	91	297.0
3298 Prop. line 1382 3/4 Park	120	293.9
48 S W of Prop. line End of Cul.	136	292.5

36" Pipe



End 292.5



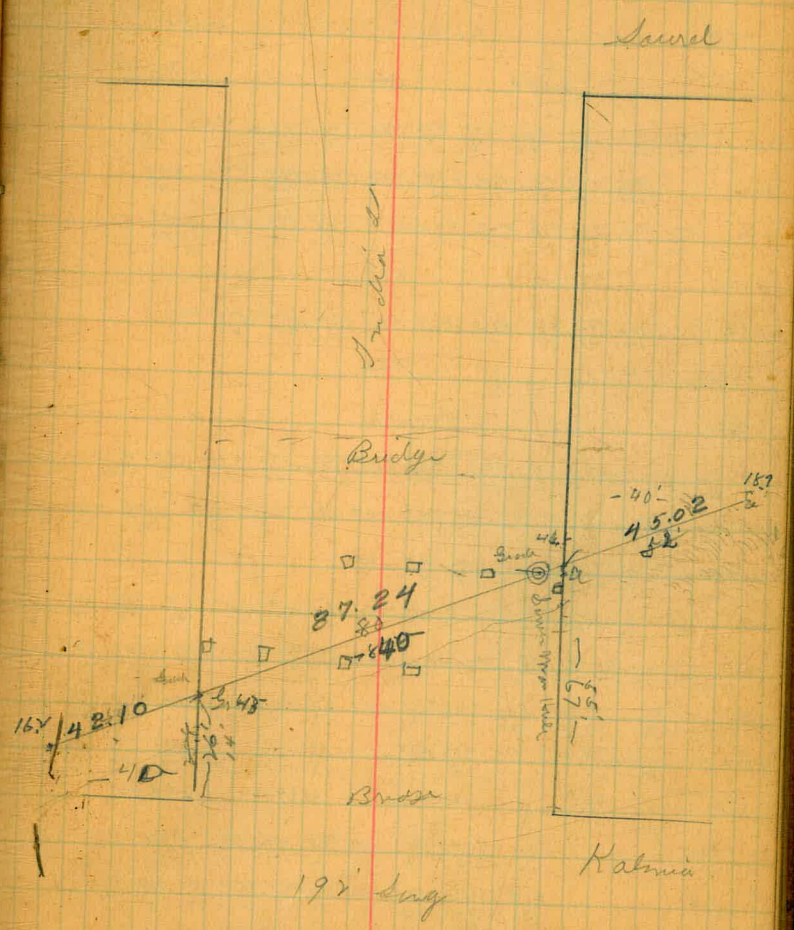
5-11  
6-11  
7-11  
8-11  
9-11  
10-11  
11-11  
12-11

11 Along Calcut at India St under Bridge

Dinner  
July  
4.20 47.20 43.10  
1.6 45.6 - 25.6 = 20.0  
3.90 23.92 20.00 TP

W 40' E of skin }  
56 in Pk } 5.0 18.9  
E line 4.0  
Lente 5.3  
W line 4.8  
40' W of skin }  
56 in Pk } 7.7 16.2

□ K. ADD.  
□  
□  
□  
LEGENT NO



5  
9  
11

41

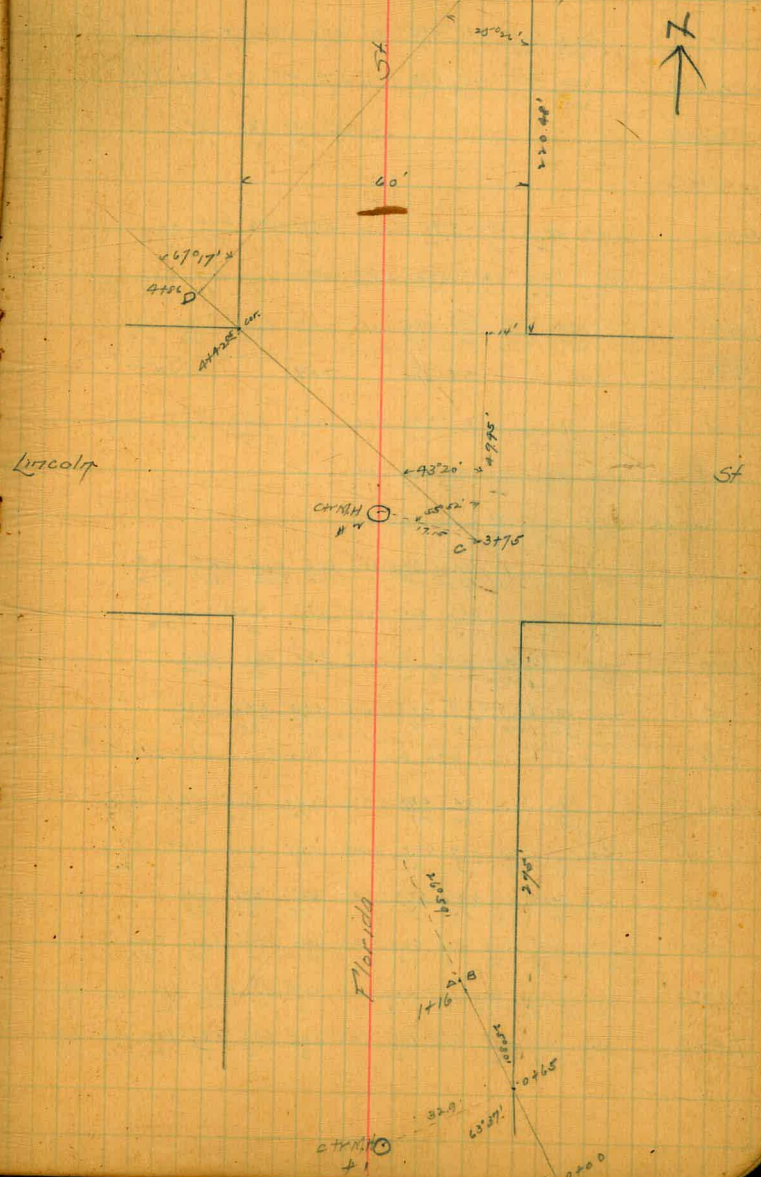
W. 1/4 Sec. 11 E. 1/4 Sec. 11 E. 1/4 Sec. 11 E.

372	269.29	265.57	256.73
TP	4.21	261.54	256.73
Left                      Ctr                      Right			
0+00	582 40	583 30	585 20
	582 40	582 30	582 20
0+20	581 40	582 30	583 20
	581 40	582 30	583 20
0+40	572 40	573 30	574 20
	572 40	573 30	574 20
0+60	572 40	573 30	574 20
	572 40	573 30	574 20
0+65	570 50	571 40	572 30
	570 50	571 40	572 30
Top M.H. #1                      562			
0+75		531	
0+90	600 60	595 50	580 40
	600 60	595 50	580 40
1+10	600 60	595 50	580 40
	600 60	595 50	580 40
1+16	600 60	595 50	580 40
	600 60	595 50	580 40
1+16	600 60	595 50	580 40
	600 60	595 50	580 40
1+25	595 60	590 50	585 40
	595 60	590 50	585 40
1+60	585 60	580 50	575 40
	585 60	580 50	575 40
1+85	620 70	615 60	610 50
	620 70	615 60	610 50
2+00	630 80	625 70	620 60
	630 80	625 70	620 60
TP	7.26	265.33	257.47
1+25	603 40	587 30	583 20
	603 40	587 30	583 20
1+50	610 30	595 20	585 10
	610 30	595 20	585 10
1+75	620 30	615 20	610 10
	620 30	615 20	610 10
3+00	620 30	615 20	610 10
	620 30	615 20	610 10
1+10		571	
1+25	619 30	601 20	582 10
	619 30	601 20	582 10

Cross-Sections  
for  
Location of Culvert on Florida at Lincoln

Davis  
Shaw  
Hancock

58



H  
26533

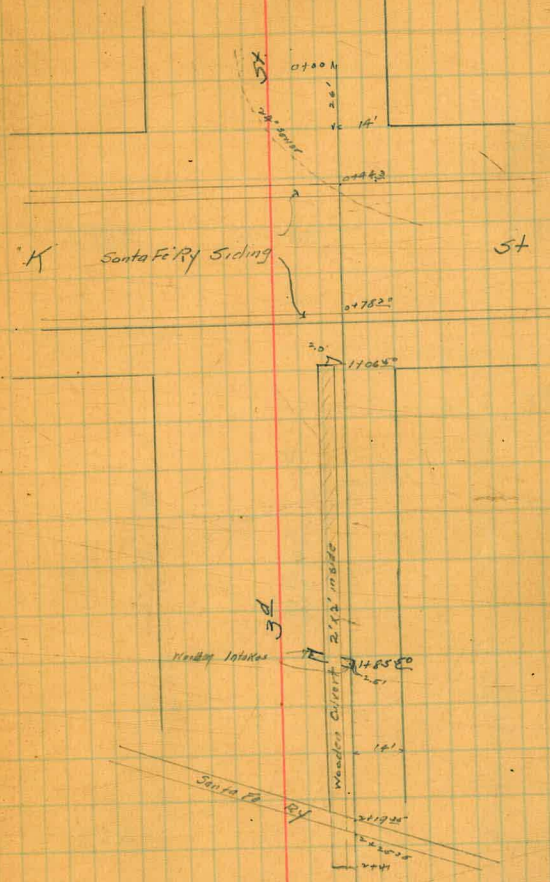
	Left	Chr	Right
3450	$\frac{621}{30} \frac{605}{20} \frac{581}{10} \frac{559}{2}$	$\frac{573}{7} \frac{527}{13} \frac{520}{19} \frac{419}{30}$	$\frac{629}{30}$
3475 Rate BC	$\frac{625}{40} \frac{614}{25} \frac{607}{15} \frac{578}{2}$	$\frac{570}{6} \frac{574}{12} \frac{607}{12} \frac{620}{12} \frac{630}{12} \frac{640}{20}$	
3475 Rate CD		$\frac{570}{7} \frac{577}{10} \frac{585}{10} \frac{630}{22} \frac{638}{30}$	
Top M/H		$\frac{612}{595}$	
H400	$\frac{620}{40} \frac{612}{20} \frac{613}{8} \frac{595}{2}$	$\frac{582}{2} \frac{572}{6} \frac{586}{10} \frac{602}{20} \frac{614}{30} \frac{628}{40}$	
+25	$\frac{626}{40} \frac{642}{30} \frac{625}{17} \frac{592}{5}$	$\frac{579}{3} \frac{580}{4} \frac{600}{10} \frac{610}{20} \frac{613}{30} \frac{612}{50}$	
+42.5	$\frac{605}{25} \frac{650}{20} \frac{589}{20} \frac{573}{5}$	$\frac{604}{10} \frac{617}{20} \frac{621}{40} \frac{621}{50}$	
T.P.	P.19	271.73	179 263.54
+65	$\frac{700}{40} \frac{679}{29} \frac{602}{23} \frac{600}{18}$	$\frac{613}{10} \frac{616}{10} \frac{620}{10} \frac{623}{20} \frac{625}{30} \frac{621}{50}$	
+6 Rate CD	$\frac{720}{50} \frac{720}{30} \frac{720}{24} \frac{604}{15} \frac{602}{5}$	$\frac{614}{5}$	
+6 Rate DE	$\frac{707}{50} \frac{722}{28} \frac{718}{14} \frac{602}{15} \frac{602}{9}$	$\frac{614}{4}$	
5400	$\frac{745}{50} \frac{734}{40} \frac{710}{31} \frac{691}{17} \frac{602}{10}$	$\frac{621}{10} \frac{626}{23} \frac{625}{35} \frac{619}{50}$	
+25	$\frac{723}{50} \frac{713}{37}$	$\frac{642}{22} \frac{607}{10} \frac{625}{18} \frac{627}{30} \frac{622}{30} \frac{623}{50}$	
+50	$\frac{724}{50} \frac{712}{38}$	$\frac{606}{11} \frac{619}{7} \frac{627}{6} \frac{620}{10} \frac{623}{30} \frac{623}{50}$	
+75	$\frac{704}{50} \frac{672}{34} \frac{627}{24}$	$\frac{625}{12} \frac{616}{7} \frac{626}{7} \frac{633}{10} \frac{645}{30} \frac{661}{50}$	
T.P.	P.32	270.81	9.24 262.49 Top Water Meter
6400	$\frac{682}{40} \frac{662}{30} \frac{634}{20} \frac{619}{10}$	$\frac{632}{2} \frac{640}{10} \frac{644}{20} \frac{656}{30} \frac{673}{50}$	
+25	$\frac{669}{40} \frac{652}{30} \frac{629}{18}$	$\frac{617}{10} \frac{626}{6} \frac{625}{20} \frac{647}{10} \frac{653}{20} \frac{670}{30} \frac{679}{40}$	
+50	$\frac{659}{40} \frac{649}{30} \frac{643}{20}$	$\frac{622}{10} \frac{620}{10} \frac{620}{10} \frac{653}{10} \frac{671}{21} \frac{684}{33}$	
+75	$\frac{663}{40} \frac{651}{30} \frac{648}{20}$	$\frac{629}{10} \frac{638}{4} \frac{625}{5} \frac{622}{3} \frac{630}{10} \frac{655}{20} \frac{680}{20} \frac{703}{30}$	
+93.0	$\frac{660}{41} \frac{658}{30} \frac{653}{20}$	$\frac{650}{10} \frac{627}{3} \frac{622}{2} \frac{621}{2} \frac{627}{2} \frac{631}{2} \frac{642}{10} \frac{678}{20} \frac{696}{25} \frac{705}{30}$	
7+25	$\frac{668}{40} \frac{660}{30} \frac{657}{20}$	$\frac{656}{8} \frac{658}{2} \frac{626}{3} \frac{625}{3} \frac{636}{5} \frac{648}{10} \frac{663}{20} \frac{675}{30} \frac{689}{40}$	

12 Davis  
23  
11 Hancock

Levels along East Gutter of 3<sup>rd</sup> St - 26<sup>th</sup> No. of N. Ave. K St to Bay

	HT		14# 8" x 13" 3/4" plg. rt.
0700	5.87	5.35	4.30 1.0
+ 44 <sup>th</sup> No. rail No. siding Top rail			4.94 0.4
+ 65			4.6 0.7
+ 78 <sup>th</sup> No. rail No. siding " "			4.74 0.61
+ 065			5.2 0.1
Inside Culvert No. end - (bit)			7.7 -2.4
+ 50			5.3 0.0
+ 55			5.3 0.0
+ 1935		Top rail {	4.2 1.1
		" " {	3.76 1.59
		" " {	3.70 1.55
+ 55		" " {	4.40 0.9
+ 30			4.7 0.6
+ 41			10.1 -4.8
Inside Culvert So. End (bit)			9.28 -3.93
+ 50			10.9 -5.6

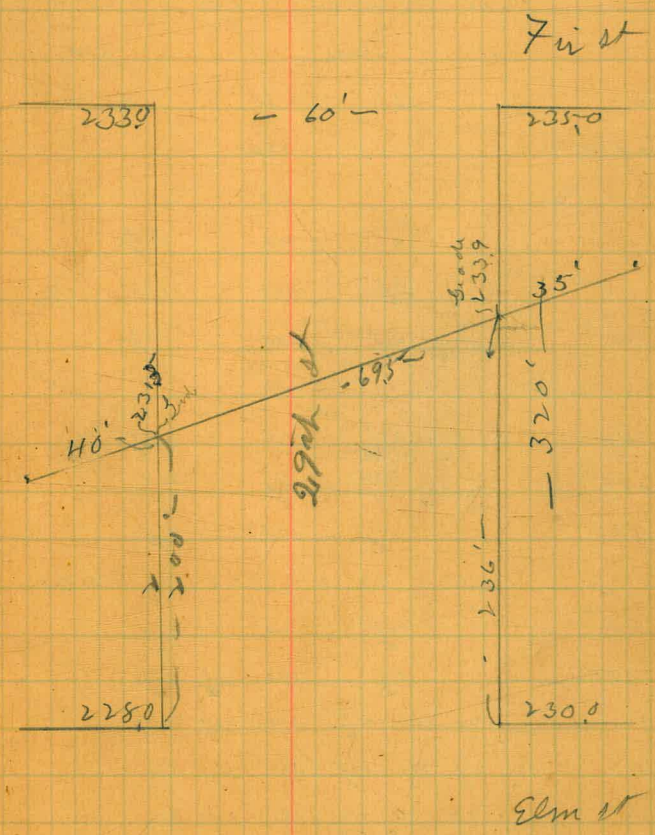
Location of Culvert at K and 3<sup>rd</sup> Sts.



Note: Sewer runs as shown in sketch. Top of pipe is about 2" below bottom of ties. So say the natives.

2  
24  
2

Survey for Culvert  
29th St Bet Fir & Elm St



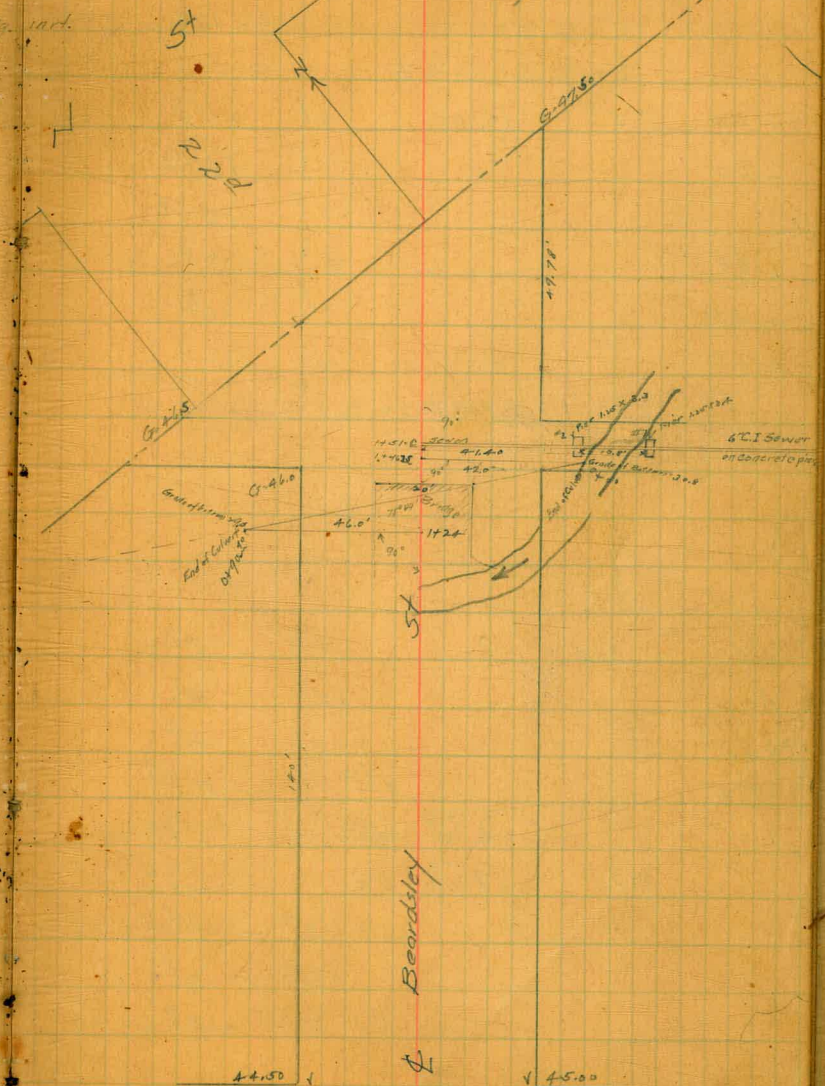
320  
236  
84

Levels for Culvert

Sta	No	Chr	50
Top of Pier #1			37.2
" " #2			36.8
+100	$\frac{317}{5}$		$\frac{307}{5}$
+14	$\frac{335}{5}$		$\frac{323}{5}$
+32	$\frac{415}{10} \frac{455}{10} \frac{420}{5}$	42.0	$\frac{375}{5}$
Floor of Bridge			44.3
+40	$\frac{440}{5} \frac{440}{5} \frac{397}{5}$	39.3	$\frac{355}{5}$
+47	$\frac{440}{5} \frac{440}{5} \frac{392}{4}$	36.3	$\frac{338}{5}$
+60		$\frac{361}{5}$	$\frac{315}{5}$
TP	44.50	36.27	31.77
+80		$\frac{328}{5}$	$\frac{289}{5}$
+97 End Culvert		$\frac{315}{5}$	$\frac{206}{5}$
+7 Wet Wood	$\frac{330}{10} \frac{319}{7} \frac{288}{5} \frac{286}{2}$	30.3	$\frac{307}{5} \frac{313}{10}$
+14	$\frac{350}{10} \frac{287}{7} \frac{286}{5} \frac{282}{2}$	30.0	$\frac{303}{5} \frac{313}{10}$
+20	$\frac{340}{10} \frac{285}{8} \frac{280}{2}$	29.6	$\frac{300}{5} \frac{310}{10}$
+20	$\frac{280}{15} \frac{310}{10} \frac{281}{7} \frac{285}{2}$	28.5	$\frac{272}{7} \frac{304}{10}$

Note - Put collars on ends of culvert high enough to catch fill - Ditch 2' from west end of culvert for outlet, bottom of ditch should be 28.5 elev.

Location of Culvert at Beardsley & 22<sup>nd</sup>



2  
P  
12  
Dover  
Hanshaw  
Tok  
62

Julian

Ave

Profile of Channel of Culvert on  
Logan near 16<sup>th</sup>

				11.139	
				12.521	
0+00	5.57	18.09	6 <sup>8</sup>	11 <sup>3</sup>	
+50			7 <sup>5</sup>	10 <sup>6</sup>	
1			7 <sup>8</sup>	10 <sup>3</sup>	
+87			8 <sup>3</sup>	9 <sup>8</sup>	
+50			7 <sup>8</sup>	10 <sup>3</sup>	
+87			6 <sup>1</sup>	12.0	
2	2.81	15.33	3 <sup>3</sup>	12.52 - B.M.	
				12.0	
+50					
3					
+50					
+55 angle					
+86 <sup>6</sup> w. end.			7 <sup>2</sup>	8 <sup>1</sup>	
dr.			10 <sup>3</sup>	5 <sup>2</sup>	
4+53 <sup>6</sup>			10 <sup>9</sup>	4 <sup>1</sup>	
T.P.			9 <sup>6<sup>4</sup></sup>	5 <sup>6<sup>9</sup></sup>	
T.P.	1 <sup>12</sup>	6 <sup>81</sup>	4 <sup>19</sup>	2 <sup>62</sup>	
	5 <sup>90</sup>	8 <sup>52</sup>	5 <sup>88</sup>	2 <sup>64</sup>	
			13 <sup>6</sup>	5 <sup>1</sup>	
			12 <sup>2</sup>	3 <sup>7</sup>	
			9 <sup>2</sup>	0 <sup>7</sup>	

B.M. br. plg in end of return "abt. 50' S of Est intersection"  
 " " " " " " " " N.E. cor 16<sup>th</sup> & N.

E end of Culvert in channel

" " " " " on top  
 on top of Culv. East end.

on top  
 Channel

Grade stk 50' ab. Newton 250' W of 16<sup>th</sup>  
 " " " " " " " " 16<sup>th</sup> & Newton

" " " " " " " " 600' " " "  
 Bottom of S.P. & W. drain  
 " of Wood box Culv. 4.  
 top of 15<sup>th</sup> st Conduit.

5. Blough  
9. Dorman  
11. July 1900

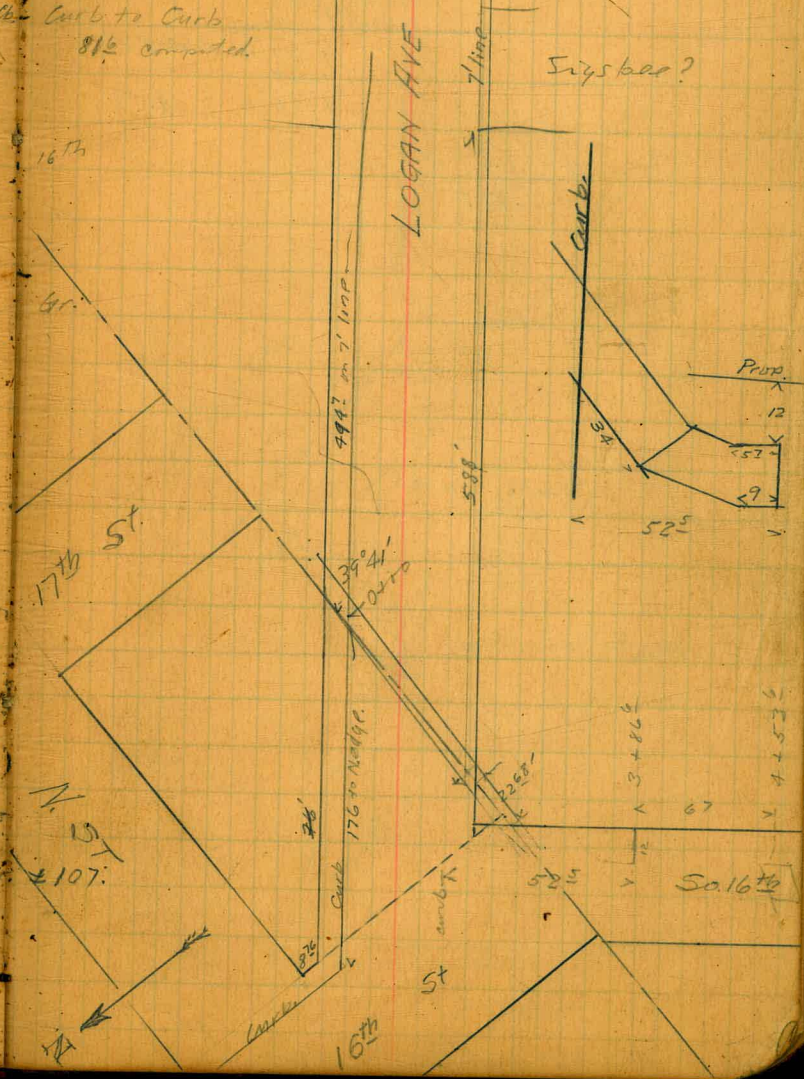
depth, - top to invert = 4.28 (Level 4)  
Rate =  $\frac{157}{790} = .0208$   
Grades for Culvert, 16th & Logan.

4.33	16	L2	11.79	Curbat E. S.
			11.54	top of E.
			7.26	bot of E. C.
				Curb to Curb
				8 1/2 computed.
			9.92	
			8.52	Gutter

0+00	0.74	12.53	5.27	7.26	Gr.
-35			4.54	7.99	
+20			5.69	6.84	

				11.79	
0+05	11.84	4.56	7.26		
				11.79	
2+16	13.95	8.04	5.91	0.65	Gr.
		8.56	5.39		Gr.
		9.31	1.64	1.26	Gr.
		(9.55)	4.40		Gr. inst. est.
		6.58			Top Sewer

E side of S.D. & A drains is 635 ft W of W line of S. 16th St + is 32' wide (out to out.)





52  
 .021  
 ---  
 52  
 104  
 ---  
 1092

.0208      4.16  
 35.

1040  
 624  
 ---  
 7280

9.92

.25 780.

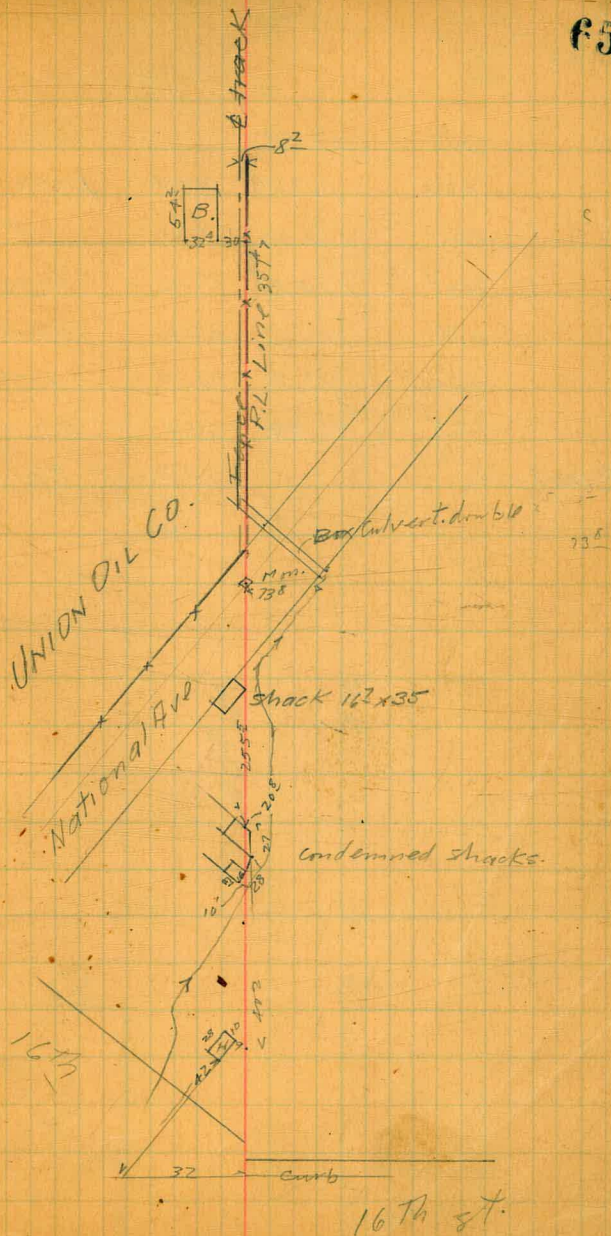
9.67 Gr. at West Ck.

1.09

8.58 G.      8.52

11.54  
 967  
 ---  
 901.871  
 .021

F5



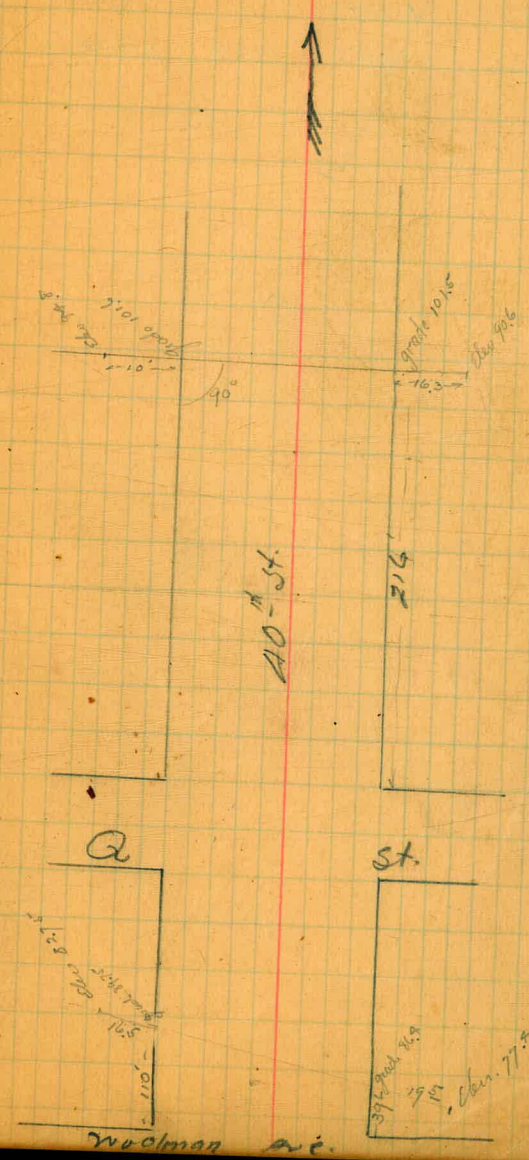
6/7  
112

Hatch  
Tweed  
Hall  
Culvert Measurements

40<sup>th</sup> St. Near Q St.

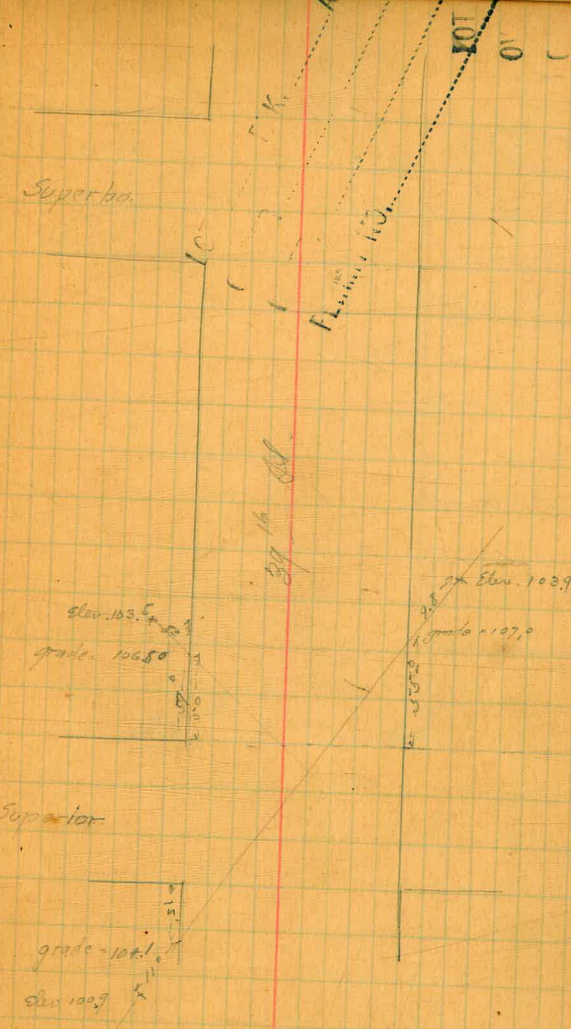
66

8211	7.57	127.39	119.82	39 <sup>th</sup> St 39 <sup>th</sup> - Seigel
	0.25	117.67	99.7	117.42
	0.65	112.00	63.2	111.35
	0.64	104.39	12.25	99.75
	0.94	105.07	0.26	104.13
	0.75	93.02	12.80	92.27
	1.78	86.42	82.8	84.64
TP, nail in pole,		83.2	83.10	



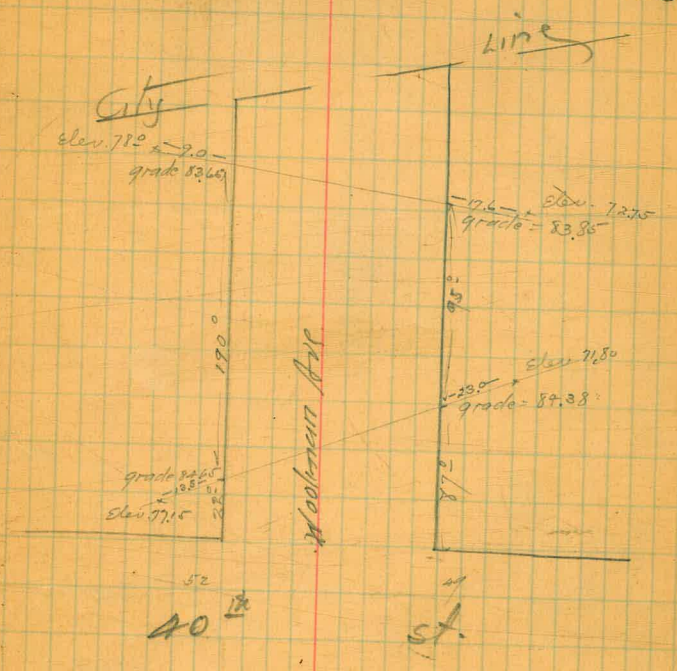
G. H. Hall  
 Cabt. Mans  
 Hall  
 Culvert measurement  
 on 39" H Superior

B27	0.58	120.40	119.82
	0.25	109.99	109.74



6/24/13 Hatch  
Moore  
Hals

0.15	83.25	83.10
0.56	83.66	83.10



catch  
mound  
hall

Culvert measurements  
on C-X

147	198.43		196.96	RM 5-28-13
210	156.25	12.15	136.25	
278	174.91	12.25	174.13	
349	163.19	11.81	163.10	
373	104.52 H	12.00	156.77	4/29/12

472	201.68		196.96	4/27/12
160	195.98	7.80	192.68	
382	182.16	12.64	183.34	
221	171.67	12.70	171.46	
154	160.81	12.70	158.97	

1.93	197.50		46.77
075	135.87	12.63	185.12
010	173.01	12.96	172.91

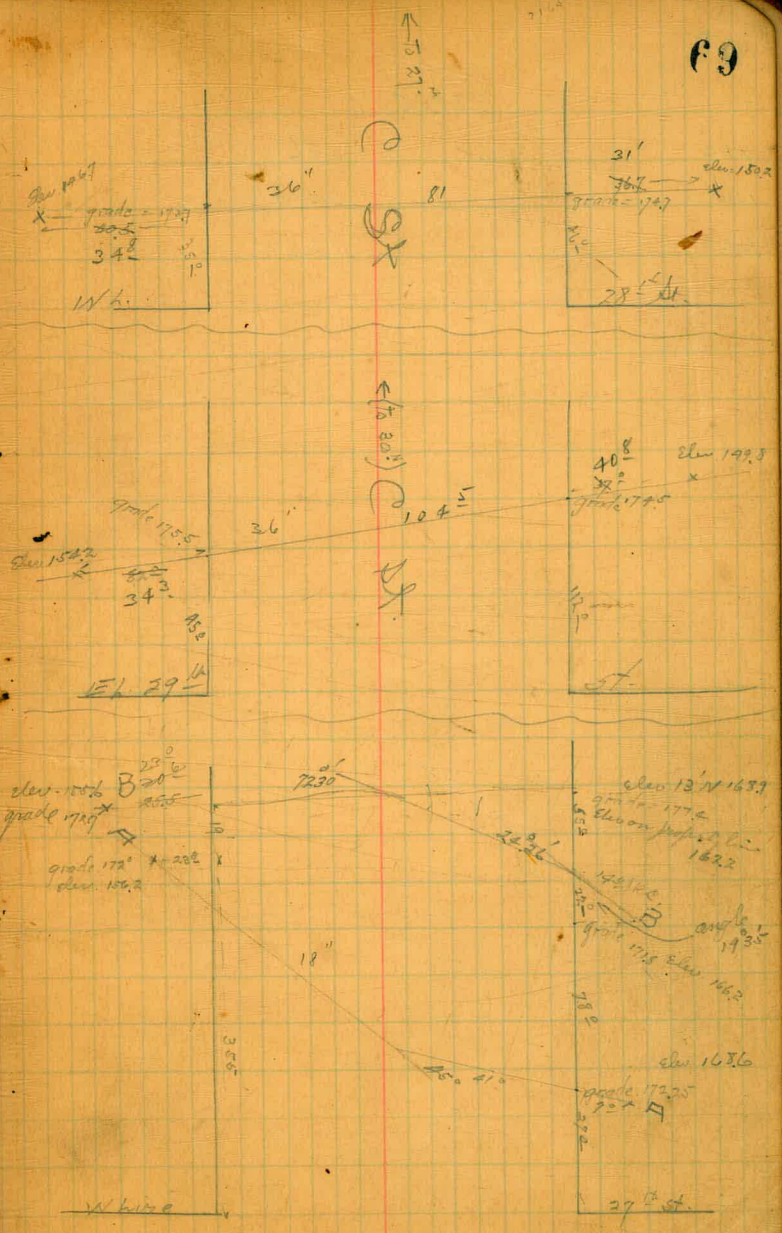
Profile of A-A

N end	34
+7	4.9
+25	5.0
+48	6.1
+68	8.1
	10.7
+20	12.1
+25	15.5
+46	16.8

7.90	118.15	12.26	160.75
------	--------	-------	--------

Profile B-B

N end	2.0
+23	6.4
+53	8.6
+72	9.1
+97	8.2



69

168.15

113

130

153

86

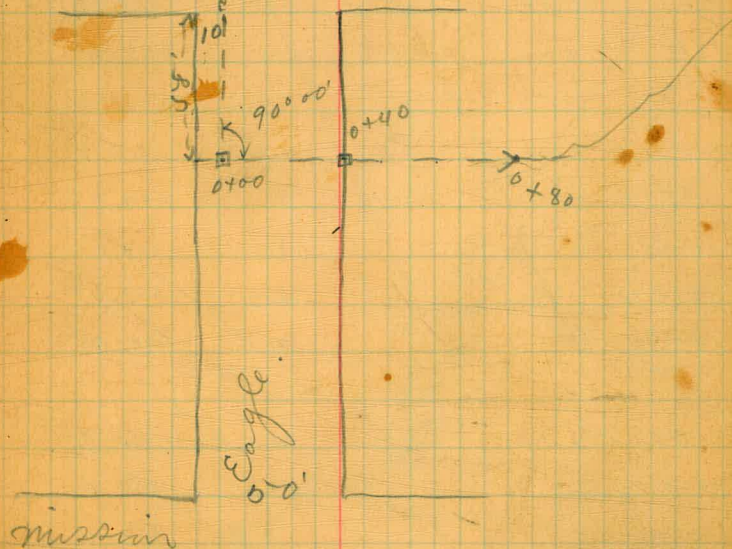
120

12.50

70

Levels for Culvert at Market.			
		H.I.	
J.P.	1.03	257.03	256.00
Sta.		255.00	
0+00	West curb of Eagle & 58' 20" of market.	1.97	255.0
+13		11.4	245.6
J.P.	0.36	244.46	12.93
+40	East line of Eagle Street 98' 20" Market.	7.12	237.34
J.P.	3.48	235.39	12.55
+80		9.4	226.0

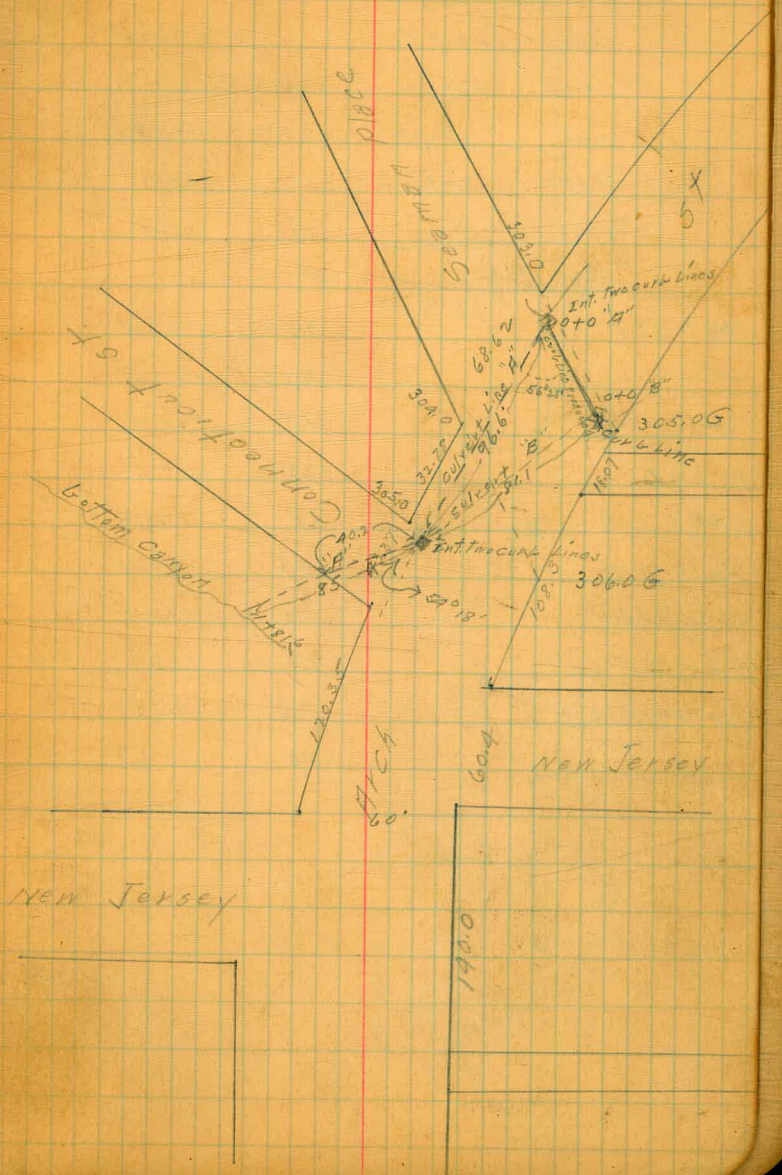
Eagle & Market Sept. 7/12 } Label 71  
 Taylor  
 Allen  
 Brunken



Levels for culverts Secopp Page

19/11  
 Brinkley  
 Evans  
 Kerr

B.M. curb 518 s.w. Meader Maryland.		331.00	
B.M.	1.90	332.90	
T.P.	0.98	320.93	12.95
T.P.	0.0	307.87	13.06
<hr/>			
0+0 on B Line	2.2	305.7	
0+25	3.0	304.9	
0+50	3.1	304.8	
0+75	4.2	303.7	
0+81 <sup>6</sup> = 0+96 <sup>6</sup> on A Line	4.5	303.4	
		307.87	
<hr/>			
0+0 on A Line	4.5	303.4	
0+25	4.3	303.6	
0+50	4.3	303.6	
0+75	4.3	303.6	
0+96 <sup>6</sup>	4.5	303.4	
1+0	5.8	302.6	
1+31 break	5.9	302.0	
1+36 s.w. connect	9.5	298.4	
1+50	17.0	290.9	
1+81 <sup>6</sup> = bottom of canyon.	33.1	274.8	





16. Level for Culvert 28 + D St

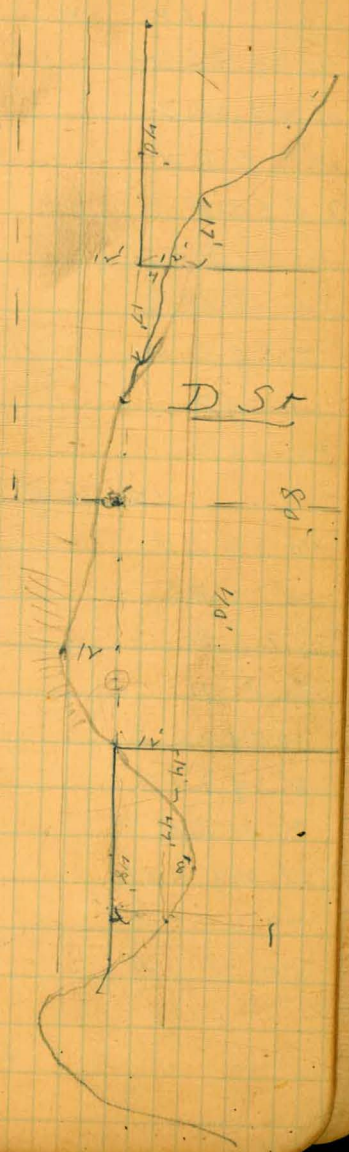
17. 7th  
18. 8th  
See P 49

SE 13414

0.80	197.76		196.96
0.40	185.51	12.65	185.11
0.20	172.79	12.92	172.59
0.10	160.23	12.66	160.13
0.25	<u>147.50</u>	12.98	147.25
W of 28th St			
48' n of Dst	147.50	8.50	139.0
45' " " "		6.10	141.4
25' " " "		7.0	140.5
2' of D		10.5	137.0
3' S of D		8.7	138.6
Cent Dst		10.1	137.4
60' S of D		11.6	135.9
S of Dst (80)		11.0	136.5
20' S of S of D		10.0	137.5
		7.8	139.7

See next Page

3



28th St

14750

12'	w of	w of	28th st
47' n of	n of		8.5
41' n of	n of		7.0
14' n of	n of		7.8
22' n of	n of		8.3
leant	n of		8.1
52'	n of		10.5
17'	s of		12.5
25'	s of		11.7
40'	s of		9.5

12'	s of	w of	28th st
40'	s of	n of	5.6
20'	"	n of	7.4
52'	n of		9.1
leant	n of		8.9
20.5'	n of	n of	10.7
8'	s of	n of	10.6
22'	n of		8.8
25'	n of	n of	5.5
49'	"	"	5.1
55'	"	n of	8.3

$\frac{2}{26}$  } Davis  
          } Hancock  
 $\frac{13}{13}$  } Herrick

75

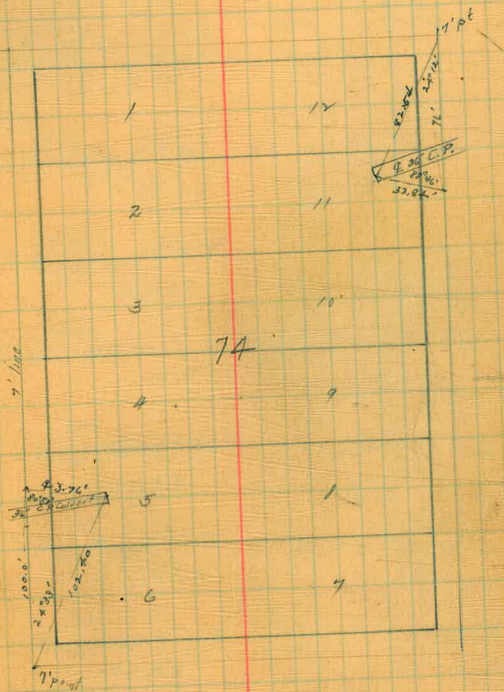
Location of ends of Culverts

Laurel St

St

St

India



St

Columbia

Kalmia

St

292.06 Lincoln + Vermont.  
 298.11 New York + Vermont.  
 6.56 H.I.  
 294.67 H.I.  
 13.07 J.P.  
 281.60 J.P.  
 1.33 H.I.  
 282.93 H.I.  
 12.75  
 270.18 J.P.  
 0.28  
 270.46 H.I.  
 12.49  
 257.97 J.P.  
 0.22  
 258.75 H.I. 14.0  
 10.79  
 247.40 J.P.  
 0.13  
 247.53 H.I.  
 25.0  
 235.24 J.P.  
 0.01  
 233.25 H.I. 35.0  
 6.68  
 228.57 J.P.  
 2.86  
 231.43 H.I. 47.5  
 0.36  
 231.07 J.P.  
 12.92  
 243.99 H.I. 54.5  
 0.34  
 243.65 J.P.  
 11.90  
 255.55 H.I. 61.5  
 12.81  
 60.0  
 53.0  
 47.0  
 42.0

36 to Kendrick's  
 70.1  
 282.90  
 283.23  
 276.90  
 283.57  
 267.74  
 283.90  
 257.67  
 284.23  
 247.40  
 284.57  
 286.74  
 284.90  
 226.07  
 285.23  
 220.40  
 285.57  
 223.24  
 285.90  
 231.07  
 286.23  
 239.40  
 286.57  
 247.24

Foot Bridge on Vermont, Colville  
 + Vermont. Aug. 25 to 27 1876  
 130  
 92

floor grade 285.23  
 1.53  
 286.57  
 1.83  
 283.40  
 284.74  
 221.90  
 floor 4.5 242.74  
 42.00  
 220.40  
 63.17  
 14.0 285.37  
 1.83  
 283.74  
 243.74  
 60.00  
 24.5 286.23  
 1.83  
 284.40  
 287.40  
 35.0 287.27  
 247.40  
 35.0  
 1.02  
 1.12  
 46.00 247.40  
 10.79  
 284.57  
 1.83  
 282.74  
 10.5 286.74  
 46.00  
 12.29 284.90  
 1.83  
 47.50  
 7.9 283.07  
 10.4 226.07  
 57.00  
 226.07  
 9.12  
 9.11  
 7 11.11  
 7 6  
 235.8 225.57  
 12.3 6.84  
 10.8 6.84  
 53.0 9.25  
 221.90 42  
 9.2 11.33  
 8.7 12.76  
 12.25  
 45.0 4.19 12.81  
 8.31  
 223.24 285.90  
 0.36 1.83  
 284.07  
 231.07  
 231.07 53.00  
 11.08

253.35 0.92 255.43 S.P.	38.5	no 13 5' 8.67' 7.50' 5'	286.90 253.57
11.75 267.18 H.I.		no 14 5' 8.67' 7.09' 5'	287.23 256.40
0.15 267.03 J.P.	38.5	246.90	
12.36 279.39 H.I.	32.5	no 15 5' 7.67' 7.25' 5'	287.57 258.74
0.32 279.07 J.P.		263.24	
11.47 290.54 H.I.	25.0	no 16 5' 6.42' 5.33' 5'	287.90 264.57
1.64 288.90 J.P.		261.07	
8.17 297.07 H.I.	15.0	no 17 5' 4.75' 5.0' 5'	288.23 269.90
		271.40	
		no 18 5' 3.06' 3.06' 5'	288.57 281.74
	5.0	281.74	
		no 19 5' 3' 3' 5'	288.90

287.23 1.83 285.40 286.40 29.00 8.65	31.5	77	74 33
32	29.0	630	77
32	30.0	58 2 3 6 5	74
34	21.5	4 3 8 .67 7.08	33
34	16.5	12.2	
35	5.0	287.90 1.83 286.07 261.07 25.00 264.57 21.50	
		1.64	
		floor grade	

# 998

$$\begin{array}{r} .0208 \\ 65 \\ \hline 1040 \\ 1248 \\ \hline 1.3520 \end{array}$$

$$\begin{array}{r} .0208 \\ 90 \\ \hline 18720 \\ 726 \\ \hline 187 \\ \hline 5.39 \end{array}$$

$$\begin{array}{r} 12.6 \\ .0208 \\ \hline 1008 \\ 252 \\ \hline 2.6208 \end{array}$$

$$\begin{array}{r} 726 \\ 262 \\ \hline 4.64 \end{array}$$

$$\begin{array}{r} 137.5 \\ .0208 \\ \hline 11000 \\ 2750 \\ \hline 2.86000 \end{array}$$

$$\begin{array}{r} 726 \\ 286 \\ \hline 4.40 \end{array}$$

$$\begin{array}{r} 6400 \\ 64 \\ \hline 6464(804) \\ 64 \\ \hline 6400 \\ 64 \\ \hline 1604 \end{array}$$

12.3

$$\begin{array}{r} 302.4 \\ 5.4 \\ \hline 307.4 \text{ HJ} \\ 12.3 \\ \hline 295.1 \\ 3.8 \\ \hline 298.9 \\ 10 \\ \hline 288.9 \end{array}$$

$$\begin{array}{r} (11.2 \\ 5.6 \\ \hline 2.25 \\ 3.35 \end{array}$$

$$\begin{array}{r} 299.2 \\ 1.0 \\ \hline 298.6 \end{array}$$

734

$$\begin{array}{r} 4 \\ \hline 694 \end{array}$$

92

$$\begin{array}{r} 19696 \\ 80 \\ \hline 197.76 \\ 1665 \\ \hline 185.11 \\ 185.51 \\ 12.92 \\ \hline 172.59 \\ 12.86 \\ \hline 160.23 \\ 12.95 \\ \hline 147.28 \end{array}$$

2942  
100  
275.0  
98  
275.0

$$\sqrt{12} \begin{array}{r} 3.6 \\ 1.8 \end{array}$$

5 5.4

47

19

26

466

188

188

19.1

237

74

16.5

$$\begin{array}{r} 281.40 \\ 42.6 \\ \hline 269.4 \\ 7.7 \\ \hline 3.7 \\ \hline 101.9 \end{array}$$

466

$$\begin{array}{r} 43 \\ 16 \\ \hline 27 \\ 13.5 \\ \hline 40.5 \end{array}$$

$$\begin{array}{r} 191 \\ 25 \\ \hline 481 \\ 165 \\ \hline 286 \\ 142 \\ \hline 429 \\ 14.3 \\ \hline 5.5 \end{array}$$

191

25

431

162

269

132

50.9

Handwritten calculations on the left page of the notebook, including various arithmetic problems and a table of values.

67.4  
 2.0  
 79.4  
 81.0  
 112.4

390  
 55.5  
 435.5

337.50  
 22.50  
 315.00

1.66  
 54  
 83.0  
 83.0  
 913.0

88.30  
 6743.8  
 480  
 555  
 535.5

90  
 119.4  
 3.83

91  
 65  
 26

1152  
 126  
 2092  
 4228  
 17267  
 17267

28475  
 27610  
 865

341.34  
 28475

25470  
 674

2929127.6  
 68  
 2436.8

191.96  
 39.0  
 199.76  
 12.6  
 187.11

390  
 27.6  
 158  
 41.9  
 342.25  
 1.70  
 340.55

185  
 546.26  
 1292.23  
 72.59  
 28  
 72.29  
 1266  
 160  
 12.98  
 147  
 147  
 197-59  
 0.18  
 208.60  
 5.17  
 503.43

85  
 19  
 765  
 89  
 1615  
 1665  
 8375  
 8073  
 588.25

11.79  
 13  
 20  
 35  
 12445  
 1200  
 36  
 888.70  
 480.70

Published by H. S. CROCKER COMPANY, Stationers, Drawing Materials, and Mathematical Instruments, San Francisco.

Table showing the difference of latitude and departure in running 80 chains at any course from 1 to 60 minutes.

MINUTES.	LKS.	MINUTES.	LKS.	MINUTES.	LKS.
1	2 1/2	21	49	41	95 3/4
2	4 3/4	22	51 1/2	42	98
3	7	23	53 3/4	43	100 1/2
4	9 1/2	24	56	44	102 3/4
5	11 3/4	25	58 1/2	45	105
6	14	26	60 3/4	46	107 1/2
7	16 1/2	27	63	47	109 3/4
8	18 3/4	28	65 1/2	48	112
9	21	29	67 3/4	49	114 1/2
10	23 1/2	30	70	50	116 3/4
11	25 3/4	31	72 1/2	51	119
12	28	32	74 3/4	52	121 1/2
13	30 1/2	33	77	53	123 3/4
14	32 3/4	34	79 1/2	54	126
15	35	35	81 3/4	55	128 1/2
16	37 1/2	36	84	56	130 3/4
17	39 3/4	37	86 1/2	57	133
18	42	38	88 3/4	58	135 1/2
19	44 1/2	39	91	59	137 3/4
20	46 3/4	40	93 1/2	60	140

TABLE FOR RUNNING ON SLOPES.

In the following table the first column shows the angle, the second the number of links to be added to a chain on the slopes, to make one chain, horizontal measurement.

ANGLE	COR. IN LINKS	ANGLE	COR. IN LINKS	ANGLE	COR. IN LINKS	ANGLE	COR. IN LINKS
0		0		0		0	
4	0.24	11	1.88	18	5.14	25	10.54
5	0.38	12	2.24	19	5.76	26	11.26
6	0.55	13	2.63	20	6.42	27	12.24
7	0.76	14	3.06	21	7.11	28	13.37
8	0.98	15	3.53	22	7.85	29	14.34
9	1.24	16	4.02	23	8.64	30	15.47
10	1.55	17	4.56	24	9.47	35	22.07