

887

F.B. 887

LEVEL BOOK

373



# KEUFFEL & ESSER CO.

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, 1895, by Keuffel & Esser Co."

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

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







May 26/13

Schulds  
 Altus  
 Bunker

2  
 2

J.P.

2.76 H.I.  
 357.19

354.43

50' W.

West line Ray,

no line

5.2 352.0

no line

5.4 351.8

5.0 352.2

5.4 351.8

5.3 351.9

5.2 352.0

C

4.9 352.3

C

4.5 352.7

4.8 352.4

4.9 352.3

4.7 352.5

5.2 352.0

no line

4.1 353.1

no line

4.5 352.7

75' W.

25' west

no line

4.4 352.8

no line

3.9 353.3

4.7 352.5

4.2 353.0

C

4.6 352.6

4.3 352.9

C

4.9 352.3

C

5.2 352.0

5.1 352.1

5.2 352.0

4.9 352.3

4.9 352.3

no line

5.2 352.0

no line

5.4 351.8



357.19

100' W.

no line

5.3 351.9

4.9 352.3

5.3 351.9

c

5.3 351.9

5.1 352.1

5.1 352.1

no line

4.2 353.0

125' W.

no line

4.5 352.7

4.8 352.4

4.7 352.5

c

4.8 352.4

5.3 351.9

5.4 351.8

no line

5.8 351.4

357.19

150' W.

no line

5.5 351.7

5.3 351.9

4.4 352.8

c

4.8 352.4

4.7 352.5

5.1 352.1

no line

4.5 352.7

175' W

no line

4.5 352.7

5.2 352.0

4.9 352.3

5.3 351.9

c

5.2 352.0

5.3 351.9

5.7 351.5

no line



357.19

195' west

no line

6.9 350.3

no line

6.6 350.6

5.7 351.5

C

4.8 352.4

C

5.6 351.6

4.7 352.5

no line

4.8 352.4

no line

East line 30<sup>th</sup>

no line

6.0 351.2

no line

6.5 350.7

6.7 350.5

C

7.0 350.2

C

7.7 349.5

7.8 349.4

no line

7.4 349.8

no line

357.19

West line 30<sup>th</sup>Wrightman  
4

7.4 349.8

7.9 349.3

7.9 349.3

7.4 349.8

7.7 349.5

6.8 350.4

5.9 357.3

25' west

6.4 350.8

7.3 349.9

7.9 349.3

7.6 349.6

7.9 349.3

7.7 349.5

7.4 349.8



357.19

50' W.

No line

7.8 349.4

No line

8.2 349.0

8.4 348.8

c

8.1 349.1

c

7.7 349.5

7.0 350.2

No line

6.9 350.3 No line

75' W.

No line

7.0 350.2 No line

7.9 349.3

8.3 348.9

c

8.5 348.7 c

8.3 348.9

8.7 348.5

No line

8.7 348.5 No line

357.19

100' W.

Wrightman 5

9.0 348.2

9.0 348.2

8.8 348.4

8.1 349.1

7.9 349.3

7.9 349.3

7.2 350.0

125' W.

7.5 349.7

8.2 349.0

8.1 349.1

8.7 348.5

8.6 348.6

9.2 348.0

9.0 348.2



257.19

150' w.

no line

8.9 348.3

8.9 348.3

9.2 348.0

c

7.8 349.4

7.3 349.9

8.2 349.0

no line

7.4 349.8

175' w.

no line

7.5 349.7

8.1 349.1

8.3 348.9

c

8.0 349.2

8.5 348.7

7.8 349.4

no line

8.6 348.6

357.19

195' w.

no line

8.6 348.6

8.2 349.0

7.9 349.3

c

8.1 349.1

8.1 349.1

8.0 349.2

no line

8.3 348.9

East line Kansas

no line

8.6 348.6

9.7 347.5

9.5 347.7

c

9.5 347.7

9.9 347.3

10.3 346.9

no line

9.8 347.4

Wightman  
6



357.19

West line Kansas

solino	9.8	347.4
	9.7	347.5
	9.8	347.4
c	9.5	347.7
	9.4	347.8
	9.5	347.7
solino	8.8	348.4
	25' w.	
solino	8.7	348.5
	9.1	348.1
	8.9	348.3
c	8.9	348.3
	9.4	347.8
	8.5	348.7
solino	9.0	348.2

357.19

50' w.

solino	10.5	346.7
	10.4	346.8
	10.5	346.7
c	9.8	347.4
	9.4	347.8
	9.2	348.0
solino	9.0	348.2
	75' w.	
solino	9.4	347.8
	9.6	347.6
	9.4	347.8
c	9.2	348.0
	10.1	347.1
	10.2	347.0
solino	9.4	348.8

Wrightman

7



357.19

100' W.

nothing	10.0	347.2
	10.4	346.8
	10.5	346.7
C	8.8	348.4
	8.6	348.6
	9.4	347.8
nothing	9.4	347.8

125' W.

nothing	9.9	347.3
	10.0	347.2
	10.1	347.1
C	10.1	347.1
	10.2	347.0
	10.7	346.5
nothing	10.3	346.9

357.19

150' W.

nothing	10.8	346.4
	10.6	346.6
	10.2	347.0
C	10.1	347.1
	10.4	346.8
	10.3	346.9
nothing	9.8	347.4

175' W.

nothing	9.5	347.7
	10.7	346.5
	10.2	347.0
C	10.4	346.8
	10.6	346.6
	10.2	347.0
nothing	10.3	346.9

weight mean

8



357.19

## East line Sherman

no line		11.0	346.2
		11.1	346.1
		11.1	346.1
c		10.8	346.4
		10.4	346.8
		10.6	346.6
no line		10.0	347.2
J.P.	3.96	H.I. 1 351.02	10.13 347.06

## West line Sherman

no line		4.2	346.8
		4.3	346.7
		4.7	346.3
c		5.0	346.0
		5.1	345.9
		5.4	345.6
soline		5.7	345.3

351.02

Wightman

## 25' west

soline		4.7	346.3
		4.4	346.6
		3.6	347.4
c		4.3	346.7
		4.4	346.6
		4.0	347.0
no line		4.2	346.8

## 50' NW

no line		5.4	345.6
		4.9	346.1
		4.9	346.1
c		4.6	346.4
		4.6	346.4
		4.8	346.2
soline		5.1	345.9



351.02

75' W.

no line

5.2 3458

6.2 3448

5.5 3456

c

4.6 3464

4.6 3464

4.1 3469

no line

4.5 3465

100' W.

no line

3.9 3471

5.5 3455

5.5 3455

c

5.4 3456

5.7 3453

5.8 3452

no line

6.1 3449

v

Wightman

351.02

120

125' W.

no line

5.4 3456

4.8 3462

5.5 3455

c

5.3 3457

5.2 3458

5.2 3458

no line

5.4 3456

150' W.

no line

3.9 347.1

4.3 346.7

5.7 345.3

c

5.7 345.3

5.3 345.7

5.2 345.8

no line

4.6 346.4



351.04

175' alt

no line	4.2	3468
	4.5	3465
	4.7	3463
c	5.3	3457
	5.0	346.0
	5.6	3454
no line	4.9	3461

East line Utah

no line	5.0	3460
	6.7	3453
	4.9	3461
c	6.7	3453
	5.7	3453
	6.1	3449
no line	6.1	3449

351.04

1/11

West line Utah

no line	5.7	345.3
	6.0	345.0
	5.9	345.1
c	5.6	345.4
	5.8	345.2
	5.6	345.4
no line	5.1	345.9

25' W.

no line	5.9	345.1
	5.9	345.1
	6.1	344.9
c	5.9	345.1
	4.8	346.2
	5.6	345.4
no line	5.7	345.3



351.02  
50' W.

solino	6.0	345.0
	6.1	344.9
	6.1	344.9
C	6.1	344.9
	5.5	345.5
	6.0	345.0
solino	6.1	344.9

75' W.

solino	5.8	345.2
	6.0	345.0
	5.9	345.1
C	6.2	344.8
	6.2	344.8
	5.9	345.1
solino	6.1	344.9

351.02  
100' W.

solino	6.3	344.7
	6.4	344.6
	5.2	345.8
C	4.7	346.3
	6.0	345.0
	5.5	345.5
solino	5.5	345.5

125' W.

solino	6.1	344.9
	6.2	344.8
	6.4	344.6
C	6.5	344.5
	6.4	344.6
	6.4	344.6
solino	6.3	344.7

12



12



351.0v

150' W.

noline	6.3	3447
	5.9	3451
	6.0	3450
c	5.6	3454
	6.2	3448
	5.6	3454
noline	5.8	3452

175' W.

noline	6.5	3445
	6.3	3447
	6.0	3450
c	6.4	3446
	6.6	3444
	6.4	3446
noline	6.4	3446

May 26/13

Childs  
Ester  
Bunker

13

17

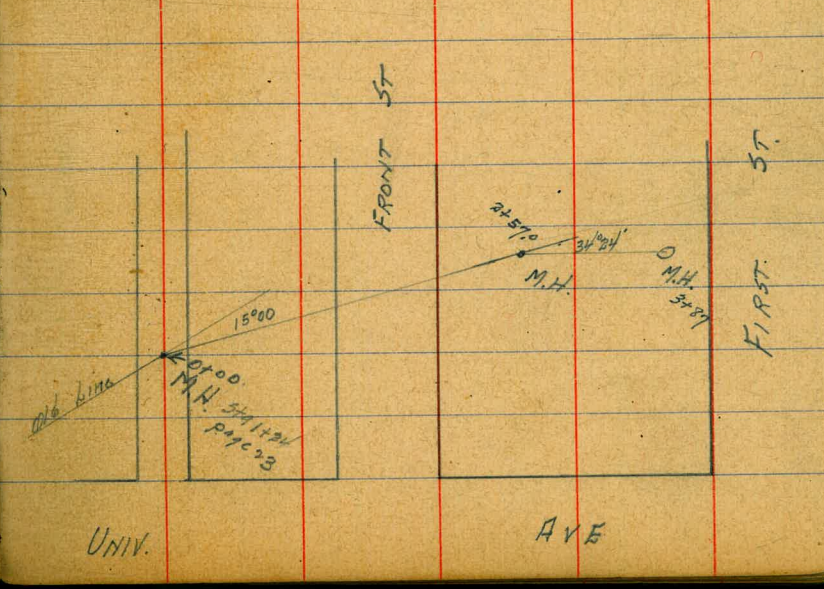
Eastline Idaho

noline	6.4	3446
	6.6	3444
	6.7	3443
c	6.6	3444
	6.6	3444
	6.5	3445
noline	6.1	3449



Station	Dist	Reading	Reading	Notes
00	13.02	247.24	234.26	Top of MH 1100 Page 60
00			229.11	Flow Line MH
0+64 <sup>25</sup>		14.64	232.64	F.L. Spool Pipe
40.75		3.39	243.89	Stub
1+05	break	7.61	234.67	Ballooning Stub
45		4.91	242.37	
1+50		9.30	238.10	Ballooning Stub
		7.2	240.08	Ballooning Stub
1+75		8.9	238.4	Ballooning Stub
		5.20	242.08	
2+00		7.5	239.8	Ballooning Stub
T.P.	11.87	258.94	0.21	247.07
			10.42	248.52
M.H. 2+57 = M.H.			15.10	243.8
			9.17	249.75
3+00			12.5	246.4
			3.63	255.31
3+50			10.1	248.9
			1.85	257.09
3+87 = M.H.			8.1	250.8

Grade	Stake	Dist	Reading	Notes
			232.64	
			234.8	+ 9.09
			237.49	+ 4.88
			240.48	+ 1.60
			244.	+ 4.52
			246.17	+ 3.58
			248.82	+ 6.49
			251.0	+ 4.09



UNIV. AVE



Levels for proposed sewer & Alley West of Grim St  
 from M.H. (constructed) & Thorn North to E of Alley E.W.R. 500 of University  
 B.M. 501.00 S.E. Thorn 320.15  
 B.M. 10.18 320.33 Bottom T.P. 9.7 317.1  
 6+0 = M.H. & Thorn 320.6

331.85

+30

+35

+50

+40

+50

+20

+50

+30

+50

+40

+50

+70

+50

+40

6+29.3.2 11725

+50

+70

+50

T.P.

5' deep on pipe on extra line

320.15  
 317.1  
 320.6  
 321.6  
 323.1  
 323.0  
 323.2  
 323.7  
 324.1  
 324.4  
 324.7  
 325.6  
 326.2  
 326.9  
 328.1  
 328.0  
 328.3  
 328.5  
 328.6  
 329.1  
 329.1  
 329.28

710  
 +50  
 9+0  
 +50  
 10+0  
 +50  
 11+0  
 +50  
 12+0  
 +50  
 13+0  
 +50  
 14+0  
 +50  
 15+0  
 16+16.5

+58.5 = S.L. MYPTIC

10.57

S.L. Dright

2.7 329.2  
 3.4 328.5  
 3.8 328.1  
 4.4 327.5  
 4.1 327.8  
 4.3 327.6  
 4.8 327.1  
 5.2 326.7  
 5.4 326.5  
 5.6 326.3  
 5.9 326.0  
 5.1 326.8  
 4.1 327.8  
 2.9 329.0  
 1.7 330.2  
 0.8 331.1  
 0.74 331.11  
 9.8 331.9  
 9.0 332.7  
 8.6 333.1

5' deep if necessary account of grade



16+50		341.68	8.7	333.0
+ 80			8.0	333.1
+ 83			6.8	334.9
17+0			5.5	336.2
+ 50			5.3	336.4
18+0			4.9	336.8
+ 50			4.7	337.0
19			4.5	337.2
+ 50			4.2	337.5
20			3.9	337.8
+ 50			4.0	337.7
21			3.8	337.9
+ 50			3.1	338.6
22			2.7	339.0
+ 50			2.1	339.6
+ 76 <sup>5</sup> = 3.1, Landis			1.4	340.3
23+0			1.5	340.2
T.P.	10.91	351.94	0.65	341.03
+ 50			10.3	341.6
24			9.1	341.8

		351.94				
+ 50			8.4	343.5		16
25			8.4	343.5		
+ 50			6.9	345.0		
+ 82			6.0	345.9		
183			5.1	346.8		
26			4.8	347.1		
+ 50			3.5	348.4		
27			2.3	349.6		
+ 50			1.4	350.5		
28			0.1	351.8		
T.P.	9.28	360.58	0.64	351.30		
+ 50			7.9	352.7		
29			7.6	353.0		
+ 25			7.8	352.8		
+ 36 = 5 L. Wrightman			9.2	351.4		
+ 50			10.2	350.4		
30			8.1	352.5		
+ 20			5.2	355.4		
+ 50			4.8	355.8		
31			4.4	356.2		
+ 50			4.0	356.6		
32+03 <sup>5</sup> = P. Alley S. of Univ			4.3	356.3		



Lords proposed sewer & Alley between University  
& Nighthall

360.58

32+03<sup>0</sup> Page 16 West Line

0+0 = Alley bet Ray & Grim 4.3 356.3

+50 4.5 356.1

+75 = 35<sup>APPROX</sup> E of Ray 4.8 355.8

F. Line

32+03<sup>0</sup>  
0+0 = Alley bet Ray & Grim 4.3 356.3

+50 4.4 356.2

+100 4.9 355.7

+105 = 27<sup>5</sup> W of Grim 5.1 355.5



Levels for proposed sewer <sup>Canyon line</sup> & Alley between Herman & Nash  
 from Sta 23+175 Canyon Line book 510 page 57 Sta 29+33 E  
 = 0 to book 510 page 33 thence to Sta 25+69 page 34 thence  
 to Sta 33+714 Alley bet University & Wrightman

Sta	8.35	345.55	337.20
25+69 L		6.3	339.3
26+0		6.1	337.5
+50		5.0	342.6
27		4.2	341.4
+50		3.7	341.9
28+0		3.1	342.5
+50		2.9	342.7
29+0		2.6	343.0
+42		2.5	342.8
+44 = S. Land's St		4.7	341.5
+50		4.5	341.1
30+0		3.9	341.7
+50		3.6	342.0
31		3.2	342.4
+50		4.1	341.5
32+0		3.5	342.1
+50		3.0	342.6
T.P.	11.25	353.70	310 347.45

5' deep pit any place from 25+69 north

3/4  
 14  
 Summit  
 Shaw  
 Kerr

	353.70	
33	10.8	342.9
+50	10.5	343.2
34	7.6	344.1
+50	8.6	345.1
35	7.6	346.1
+50	6.8	346.9
36+0	4.9	348.8
36+04 S.L. Wrightman	5.2	348.5
+50	6.1	347.6
37	4.5	349.2
+50	3.7	350.0
38+0	2.9	350.8
+50	2.3	351.4
+71 = E. W. Alley bet Univ & Wrightman 2.2		351.5

38 71  
 36+31  
 2.37



Levels for proposed sewer &amp; Alley between University

&amp; Highman from Herman &amp; Nash

B.M.		353.70	
at 38471 page 18 West Line			
0+0 = Alley between Herman & Nash	2.2	351.5	
+50 W	1.5	352.2	
140	0.7	353.0	
140.5 = 27' E of Herman	0.6	353.1	

East Line

0+0 = Alley bet Herman & Nash	2.2	351.5	
+50 E	2.4	351.3	
140	3.0	350.7	
140.5 = 25.5' W of Nash	3.2	350.5	



sewer & Alley between 30<sup>th</sup> St & Grimm from N.H. & Thon  
 North to M.H. & Dwight - stakes set 2' W of E Alley  
 Bid. Brassplg 2.66 329.54 326.85

0+0 M.H. & Thon

+50 7.34 321.20 314.23 ✓ 1.97

1 6.39 323.15 317.45 ✓ 5.70

+50 5.96 323.58 317.68 ✓ 5.90

2 5.50 324.04 317.91 ✓ 6.13

+50 5.22 324.22 318.14 ✓ 6.18

3 4.91 324.63 318.27 ✓ 6.26

+30 M.H. 4.10 325.44 318.50 ✓ 6.94

+50 3.99 325.55 318.59 ✓ 6.96

4 5.37 326.17 318.22 ✓ 7.35

+50 2.72 326.52 319.05 ✓ 7.77

5 1.67 327.57 319.25 ✓ 8.59

+50 5.44 333.33 1.65 327.89 319.51 8.38 ✓ III

6 4.98 328.35 319.75 8.60 ✓

+50 4.89 328.44 319.97 8.47

6+60 M.H., XL, UP 85 4.69 328.64 320.00 8.64 ✓ 8.8

7 4.64 328.69 320.18 8.57 ✓

+50 4.27 329.06 320.40 8.66 ✓

8 4.21 329.12 320.63 8.79 ✓

3.55

20

322.20	317.45	319.10	318.89	319.28	
6.22	10.97	10.28	9.83	9.14	
328.42	HI 317.68	318.87	318.82	319.51	
317.23	10.74	10.95	9.60	8.91	
11.19	317.91	318.50	319.05		
	10.51	9.92	9.37		
<hr/>					
327.89					
328.69	33.12	33.12	33.12	33.12	33.12
4.43	19.51	19.75	20.00	20.18	20.40
333.1257	13.61	13.37	13.12	12.94	12.72
					12.49
	33.12				



333.33

8+50		4.70	328.63	320.85	7.78 ✓
9		5.54	327.79	321.07	6.72 ✓
+50		5.50	327.83	321.50	6.53 ✓
9+90 M.H. & Myrtle		5.35	327.98	321.50	6.48 ✓
10		5.61	327.72	321.55	6.17
+50	5.41	6.33	327.00	321.78	5.22 ✓
11	332 H1	5.35	327.16	322.00	5.16 ✓
+50		6.05	326.36	322.23	4.13 ✓
12		6.15	326.26	322.45	3.81 ✓
+50		5.95	326.46	322.68	3.78 ✓
13		5.55	326.86	322.90	3.96 ✓
+20 M.H. & Green		5.12	327.29	323.00	4.29 ✓
+40				323.24	
+50		4.53	327.88	323.36	4.52
14		3.56	328.85	323.96	4.89 ✓
+50		2.63	329.78	324.57	5.21 ✓
15		1.58	330.83	325.17	5.66 ✓
+50	4.73	0.86	331.55	325.78	5.77
16	336.28	3.78	332.50	326.38	6.12
+50 M.H. & Dwight		3.50	332.78	327.00	5.78

333.12 M1

33.12	33.12				
20.85	21.07				
12.27	12.05				
✓	✓				
327.83					
5.25	33.08	33.08	33.08		
333.08 M1	21.30	21.50	21.78		12.0
	11.78	11.58	11.30		21
	✓	✓	✓		
327.16	31.49	31.49	31.49	31.49	31.49
4.33	22.00	22.23	22.45	22.68	22.90
331.49 M1	9.79	9.26	9.04	8.81	8.59
	✓	✓	✓	✓	✓
	31.49	31.49			
	23.96	24.57			
	7.53	6.92			
	✓	✓			
320.83	34.52				
3.69	25.17				
334.52 M1	9.35				
	✓				
					16.20

21







I. Sewer in alley bet. Albatross & Canyon to University ave.

Front and down

6/25/18 } Shields  
Name 23  
Evan

Sta.		H.I.	Rod	Ground	Grade	cut.	
0+00	break 13.5 M.H. in alley	5.61 0.31 282.60 273.71	9.20 1.81	276.978, M 273.40 271.90	264.08	7.82	
+27		0.65 261.21	13.15	260.56	254.38	6.18	
+50			11.26	249.95	244.77	5.18	8.2
J.P. +65	break	-0.03 249.58	12.60 4.6	248.61 244.0	239.00	6.00	8.5
J.P. +75			7.45	241.13	235.87	5.26	
J.P. +85	break	1.41 237.17	12.82 4.3	235.76 232.9	229.60	3.3	32.9 90
+80			6.08	231.09	229.50	1.59	26 23
+24	M.H. bottom of canyon on center alley. A.R.		3.32	233.85	229.02	4.8	
+50			3.74	233.43	227.88	5.55	30 9.4 3.133 20 240
2+00			8.84	228.93	225.69	2.64	30 20
+50			11.68	225.49	223.50	2.00	31 33 6
3+09	M.H. center University ave. in canyon	3.53 229.02	3.79	225.23	220.92	4.31	1.88 08

Exten. Sec  
page 60

Sec 435-24  
" 288-5  
Cement pipe



8/26/88 Gregory CROSS SECTION OF 60' wide  
32nd St from Main to Newton 10' abs

B.M. 5.84 44.43 38.59 SEE SKETCH PAGE 34  
N.E. Line Main = SECT A.

W	4.5	39.9
cb	5.2	39.2
1/4	5.1	39.3
C	5.2	39.2
1/4	6.1	38.3
cb	6.5	37.9
E	6.8	37.6

23.88' No on E = SECT. B

E	7.5	36.9
cb	7.3	37.1
1/4	5.5	38.9
C	5.2	39.2

26.29' No on E } = SECT C.  
00' - W }

W	4.5	39.9
cb	5.3	39.1
1/4	5.1	39.3
C	6.0	38.4

44.43

24

1/4	6.6	37.8
cb	5.5	38.9
E	6.9	37.5
20' No. x C.		
E	7.8	36.6
cb	8.2	36.2
1/4	8.9	35.5
C	8.1	36.3
1/4	7.4	37.0
cb	5.4	39.0
W	4.8	39.6
28' No.		
W	5.7	38.7
cb	7.1	37.3
1/4	7.9	36.5
C	8.7	35.7
1/4	10.0	34.4
cb	10.7	33.7
* E	11.3	33.1
+ 10	12.3	32.1



	44.43	1110 No. 07 W 39.93	OLD MAIN 80' wide -E = 31.5			37.35	32 <sup>nd</sup> St.	25
-10			18.9	31.5	E	10.5	26.9	
E			18.1	32.3	cb	7.8	29.6	
cb			17.2	33.2	1/4	6.5	30.9	
1/4			10.4	34.0	C	5.2	32.2	
C			9.6	34.8	1/4	4.1	33.3	
1/4			8.5	35.9	cb	2.8	34.6	
cb			7.6	36.8	W	1.6	35.8	
W			7.0	37.4	Center			
	So. Curb				W	3.2	34.2	
W			7.7	36.7	cb	4.3	33.1	
cb			8.5	35.9	1/4	5.8	31.6	
1/4			9.6	34.8	C	7.6	29.8	
C			10.8	33.6	1/4	9.9	27.5	
1/4			11.9	32.5	cb	11.3	26.1	
cb			12.9	31.5	E	13.0	24.4	- 14.0
E			14.4	30.0	+15	14.5	22.9	
+10			15.6	28.8	No 1/4			
T.P.	5.49	37.35	12.57	31.86	-20	16.3	21.1	
-		So 1/4			E	14.9	22.5	
-15			14.6	24.8	cb	13.7	23.7	



37.35

1/4	12.6	24.8
C	10.7	26.7
1/4	8.9	28.5
cb	7.0	30.4
W	5.2	32.2

No. Curb

-10	5.8	31.6
W	7.7	29.7
cb	10.0	27.4
1/4	11.7	25.7
C	13.3	24.1
1/4	14.5	22.9
cb	15.4	22.0
E	16.4	21.0
+20	17.7	19.7

No. Line

-25	18.0	19.4
E	17.7	19.7
cb	16.6	20.8
1/4	15.2	22.2
C	14.4	23.0

-18.9

37.35

1/4	19.8	23.6
+6	13.0	24.4
cb	11.2	26.2
+4	8.2	29.2
W	8.1	29.3
+15	8.2	29.2

25' No.

-20	10.4	27.0
-7	11.1	26.3
W	8.0	29.4
+5	8.1	29.3
cb	12.4	25.0
+5	13.7	23.7
1/4	14.3	23.1
C	14.6	22.8
1/4	15.1	22.3
cb	14.5	22.9
E	15.1	22.3
+15	15.2	22.2

50' No.

-15	13.3	24.1
E	11.1	26.3

37.35

26



37.35

cl	10.5	26.9	
1/4	10.7	26.7	
C	10.3	27.1	
1/4	10.2	27.2	
cl	9.8	27.6	
+5	71	30.3	
W	89	28.5	
+3	92	28.2	
+20	97	27.7	
	60' No		
-20	87	28.7	
-5	89	28.5	
W	85	28.9	
+5	80	29.4	
cl	85	28.9	
1/4	8.9	28.5	
C	87	28.7	
1/4	8.9	28.5	
cl	9.1	28.3	
P	9.7	27.7	-11.2

37.35

+15			120	25.4	27
			100 No		
-10			3.9	31.5	
E			5.2	32.2	-6.9
cl			4.9	32.5	
1/4			4.3	33.1	
C			3.8	33.6	
1/4			3.6	33.8	
cl			2.9	34.5	
W			2.2	35.2	
+10			1.7	35.7	
T.P.	7.84	42.89	2.30	35.05	17 pole
			130' No		
W			3.4	39.5	
cl			5.1	37.8	
1/4			6.1	36.8	
C			7.0	35.9	
1/4			7.3	35.6	
cl			7.7	35.2	
E			8.5	34.4	-4.8
+15			8.9	34.0	



4P.89

165' No

-10	93	336
E	85	324
db	78	351
1/4	73	356
C	61	368
1/4	46	383
db	34	395
W	23	406

205' No

W	1.4	415
db	26	403
1/4	54	375
C	88	341
1/4	11.4	315
db	12.9	302
E	14.1	288
+20	14.8	281

225' No

-20	18.6	30.3
-----	------	------

-10

E

db

1/4

C

1/4

db

W

W

db

1/4

+5

C

+5

1/4

+5

db

+5

E

-5.0

-10.7

32nd St.

136 293

134 295

131 298

127 302

113 316

87 342

43 386

1.4 415

1.6 413

7.9 350

17.0 319

10.8 321

9.2 337

8.0 349

10.0 329

11.8 311

9.5 334

4.9 38.0

5.4 37.5

298

-10.1

245' No



4289

265' No

-10	6.0	36.9	
E	6.9	36.0	- 3.8
+9	9.3	33.6	
cl	6.3	36.6	
+5	5.4	37.5	
1/4	3.6	39.3	
C	3.1	39.8	
1/2	2.5	40.4	
+4	3.5	39.4	
cl	7.5	35.4	
W	1.8	41.1	

280' No

W	1.5	41.4	
cl	5.1	37.8	
+5	2.4	40.5	
1/4	2.1	40.8	
C	2.3	40.6	
+5	2.8	40.1	
+6	3.7	39.2	

32nd St

1/4	4.1	38.8	30
cl	4.8	38.1	
E	3.7	39.7	<del>---</del>
+5	4.2	38.7	
300' No = S.L. Boston Ave 80' wide 14' abs			
E	2.8	40.1	
cl	1.9	41.0	
1/4	1.9	41.0	
C	1.6	41.3	
1/4	1.6	41.3	
+1	3.0	39.9	
T.P	4.75	46.32	1.32 41.57
cl		6.0	40.3
W		4.3	42.0
30' Corb.			
W		5.0	41.3
+4		5.1	41.2
cl		6.1	40.2
+1		4.9	41.4
1/4		4.9	41.6



46.32

C	47	41.6
1/4	49	41.4
db	52	41.1
E	55	40.8

50 Quarter

E	47	41.6
db	45	41.8
1/2	41	42.2
C	41	42.2

1/4	47	41.6
db	46	41.7
W	48	41.5

Center Boston

W	44	41.9
db	44	41.9
1/4	43	42.0
C	41	42.2

1/2	40	42.3
db	40	42.3
E	40	42.3

46.32

No. Quarter

32nd St

31

E	35	42.8
db	32	43.1
1/2	34	42.9
C	36	42.7
1/4	40	42.3
db	40	42.3
W	41	42.2

No. Curb

W	42	42.1
db	40	42.3
1/2	37	42.6
C	35	42.8
1/4	33	43.0
db	29	43.4
E	27	43.6

No. Line Boston

E	27	43.6
db	28	43.5
1/2	29	43.4



46.32

C			34	429
1/4			35	428
db			40	423
W			41	422
		50' No		
W			34	429
db			31	432
1/4			30	433
c			28	435
1/4			22	441
db			19	444
E			19	444
		100' No		
E			11	452
db			16	447
1/4			18	445
c			22	441
1/4			24	439
db			25	438
T.P.	4:30	49.35	1.27	45.05

49.35

3244 St

32

+6			51	44.0
W			45	44.9
		125' No		
W			40	45.4
db			46	44.8
1/4			47	44.7
c			47	44.7
1/4			44	45.0
db			40	45.4
E			33	46.1
		150' No		
E			29	46.5
db			35	45.9
1/4			38	45.6
c			39	45.5
1/4			38	45.6
db			39	45.5
W			35	45.9
		165' No		
W			27	46.7



49.35

cb	2.9	465
1/2	3.1	460
c	3.4	46.0
1/2	3.3	46.1
cb	3.5	45.9
+6	3.4	46.0
E	3.0	46.4

200' No.

E	1.7	47.7
cb	1.7	47.7

TP	12.47	60.54	12.8	48.07
----	-------	-------	------	-------

1/2	12.5	48.0
-----	------	------

c	12.6	47.9
---	------	------

1/2	12.8	47.7
-----	------	------

cb	12.8	47.7
----	------	------

W	12.5	48.0
---	------	------

250' No.

W	10.2	50.3
---	------	------

cb	10.4	50.1
----	------	------

1/2	10.3	50.2
-----	------	------

60.54

32nd St

c	10.3	50.2	33
1/2	10.5	50.0	
cb	10.5	50.0	
E	10.7	49.8	

280' No

E	10.7	49.8
---	------	------

cb	9.8	50.7
----	-----	------

1/2	9.9	50.6
-----	-----	------

c	9.6	50.9
---	-----	------

1/2	9.4	51.0
-----	-----	------

cb	9.1	51.4
----	-----	------

W	8.3	52.2
---	-----	------

299' No = S.L. Newton Ave

W	7.0	53.5
---	-----	------

cb	8.1	52.4
----	-----	------

1/2	8.7	51.8
-----	-----	------

c	9.1	51.4
---	-----	------

1/2	9.3	51.2
-----	-----	------

cb	9.5	51.0
----	-----	------

E	9.3	51.2
---	-----	------

on B.M.	+0.38	
---------	-------	--

60.92 = 114.32nd  
61.22 = 114.11











55.36 Plat NW 32<sup>nd</sup> & Newton

18.36 BM Stop to pile Alley bet Grand & Boston - E side 22<sup>nd</sup>

49.39 HI	6.17	44.90	44.05	41.50	43.24	43.17
		44.05	41.50	41.05	41.82	42.02
		4.29	39.90	8.34	41.82	42.02
		4.42	35.48	2.60	7.57	7.27
			3.68	5.8	5.5	1.32
45.85	45.42	47.23	48.85	52.10	52.45	52.45
3.54	43.93	43.73	48.8	1.5	2.03	4.03
55.36	5.26	5.46	5.46	4.88	5.44	-1.2
56.48 HI	51.75	51.85	51.8	50.88	49.11	49.07
8.11	50.25	50.45	49.68	49.48	49.0	47.52
48.07 TP	6.23	6.23	6.80	7.00	-1.17	8.91
	49.27	49.65	47.15	0.6		4.0
	47.77	45.8	45.85	1.083	13.58	
46.28 HI	47.77	47.4	45.85	1.083	13.58	
	8.71	7.4	1.083	13.58		

City station set 1.5 below grade

55.36	51.5	51.05	49.17	47.25	45.32	43.42
0.57	3.87	4.89	4.20	3.12	1.04	1.58
55.37	1.5	1.5	1.5	1.5	1.5	1.5
12.75	5.9	5.9	5.9	5.9	5.9	5.9
42.67	43.42	43.42	43.42	43.42	43.42	43.42
4.11	4.05	4.05	4.05	4.05	4.05	4.05
7.30	7.5	7.5	7.5	7.5	7.5	7.5
55.36	53.10	51.86	50.20	49.17	47.35	
0.25	2.31	3.46	4.61	6.14	8.06	
55.41 HI	45.42	43.52	41.62	41.10	41.12	40.75
9.99	2.42	4.32	6.27	7.08	7.86	7.93
45.42 TP	53.10	51.95	49.27	45.42	41.10	40.75
2.45	2.30	3.45	6.13	3.26	7.08	7.93
47.87 HI	55.36	55.36	55.36	55.36	55.36	55.36
0.04	0.04	0.04	0.04	0.04	0.04	0.04
55.40 HI	47.34	47.34	47.34	47.34	47.34	47.34
9.86	1.34	1.34	1.34	1.34	1.34	1.34
47.34 TP	48.68	48.68	48.68	48.68	48.68	48.68
1.34						
48.68 HI						

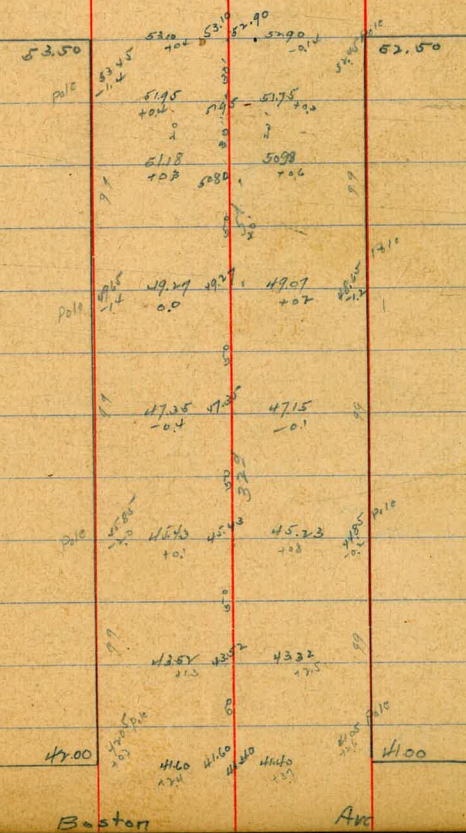
51.05  
1.5  
20.85  
5.24

60.0

59.0

36

55.50  
54.5  
Newton  
Ave  
BM 55.36  
19.4





Pole grades 32<sup>e</sup> Boston - Main

Boston Ave

41.50

41.13  
-1.6

40.93  
-1.0

40.44  
-1.0

39.92  
-1.0

39.51  
-1.0

39.30

Main St

40.00

39.92  
-1.05

39.10  
-1.1

38.89  
-1.1

38.37

37.92  
-1.5

37.50

38.59

1.00  
40.03  
0.18

TP 39.85  
6.63  
Ht. 46.48

55.36 BM  
4.72  
60.10 M

4.73 264  
55.37 5246

2.31  
57.79 490  
1.70 58.37

55.40 TP  
4.87  
59.27 M

55.36 BM  
1.32  
59.68 M

3.28  
56.40 TP  
5.67  
63.58 M

55.36  
3.64  
59.00 M

55.36  
4.76  
60.12 M

BM 510 32<sup>e</sup> & main

Ht. 39.51  
0.57

6.00  
34.03  
38.9

6.00  
-4.9

60.00

1.83 286  
59.27 57.24

506 493  
58.21 58.44

55.31 55.65  
4.37 4.03

32.40 57.15  
3.28 6.43

57.90 58.63  
5.68 4.93

57.90  
4.10

5.50  
53.50

55.15 55.51  
4.27 4.61

56.20 57.85  
3.52 2.97

58.10 58.65  
2.02 1.27

17' W of E Track  
CH. for Dummy  
3' W of PC

Ht. 55.55  
55.81  
PC

55.60

55.10

54.90

54.50

54.00

53.50

53.00

52.50

37.97

2.11

6.21

40.17

60.00

59.27

58.21

55.31

32.40

57.90

57.90

53.50

55.15

56.20

58.10

55.60

55.10

54.90

54.50

54.00

53.50

53.00

52.50

52.00

51.50

51.00

60.00

39.92  
10.09

39.92  
6.56

60.00

59.40

59.00

58.86

58.65

58.37

58.10

57.90

57.90

57.90

57.90

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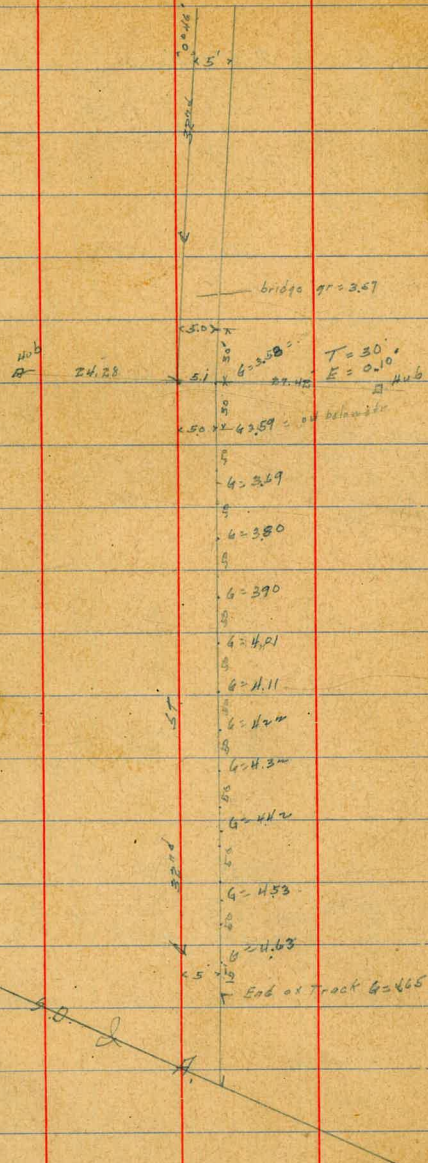
57.90



Layout of 4 Car Tracks at 3<sup>rd</sup> St.  
 Stakes set to grade  
 & 3' E. of E gauge

38.59  
 5.06  
 43.61

11.10  
 11.10  
 11.10  
 11.10  
 11.10  
 11.10

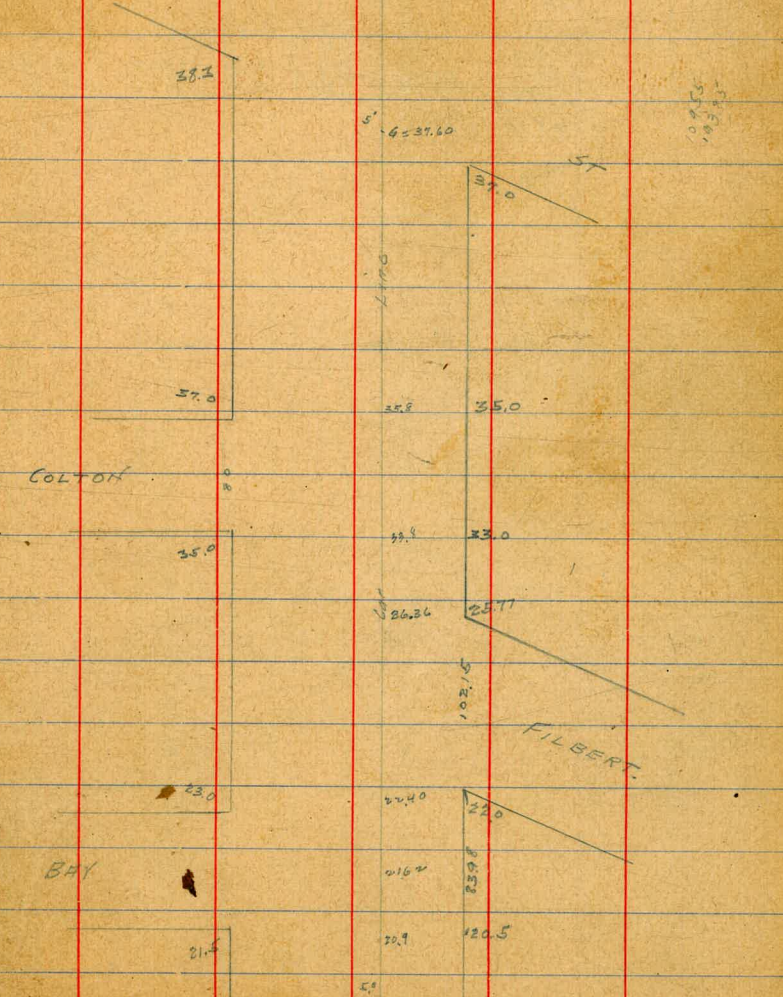


150.44 50.4 Bay on E=5  
 154.59 - - - - - 4=5

4.48 3.70	4.16 3.87	4.33 3.93	4.30 4.03	4.40 4.13	4.11 4.11	4.01 4.01	3.80-3.80 4.45 4.45	3.69 3.6	3.59 3.6	7.63 3.59
21.80	21.80	21.80	21.80	21.80	21.80	21.80	21.80	21.80	21.80	21.80

SW Bay=32nd

2.40	4.15	38.59	35.8	37.1
2.65	4.20	0.5	3.29	5.9
		37.07		
		12.00		
		24.77	26.26	25.40
		1.79	2.80	6.26
		4.3850	28.66	1.62
				2.09
				7.76
			4.38	37.00
				3.78
				2.81





58.65	61.02	59.73	60.21	60.50	60.98
6.44	4.03	5.70	5.22	4.93	4.45
65.09 NT	65.10 NT				
65.43 NT	67.72	63.60	65.15	65.97	66.55
61.02	67.72	54.0	3.92	3.07	2.19
69.04 NT	5.43	41.56	69.23	69.85	70.48
66.85 TP	66.17	59.60	62.45	59.25	57.15
6.31	3.07	5.05	4.20	5.00	5.47
73.16 NT	4.77	1.20	6.26	6.57	
61.02	61.02	3.69	2.19	0.69	
363	65.79 NT	6.07	6.85	6.96	6.93
64.65 NT	61.10 TP	6.76	4.88	4.00	3.13
	6.63	70.48			2.50
	71.73 NT	1.25			1.88

31st

5th

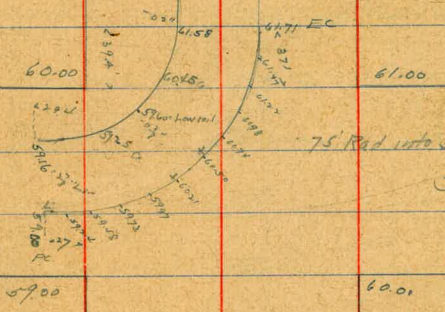
70.50	70.90	71.00	71.50
	70.48		
		69.85	
		69.23	
68.00	68.40	68.60	69.00 x

2.00

60.50	60.10	60.50 x
-------	-------	---------

2.00

1.50



32d

5th

67.00	60.00
-------	-------



31st NW 19th 71.46  
30th NW " " 64.91

71.46  
3.32  
74.78 M

44.31 3.75 71.03

46.21 3.65 71.13

45.0 4.73 70.05

1 5.12 69.36

1.50 6.17 68.61

✓ 6.90 67.88

1.50 7.61 67.17

3 8.23 66.45

4.50 4.24 66.06

4 4.67 65.73

1.50 4.89 65.41

5 5.25 65.05

1.50 5.62 64.68

6 5.89 64.43

66.50	67.25	68.00	68.75
8.28	7.53	6.78	6.03
69.50	70.25	71.00	71.75
5.28	4.53	3.78	3.03
3.80	3.05	2.30	1.55
6.50	5.75	5.00	4.25
70.30	71.05	71.80	72.55
65.83	66.58	67.33	68.08
4.47	3.72	2.97	2.22

61.00

62.00

40

64.00

65.00

30th

56

64.00

64.50

65.00

64.83

65.17

65.50

65.83

66.17

66.00

66.50

67.00

67.50

68.00

68.50

69.00

69.50

70.00

70.50

71.00

71.50

31st

54



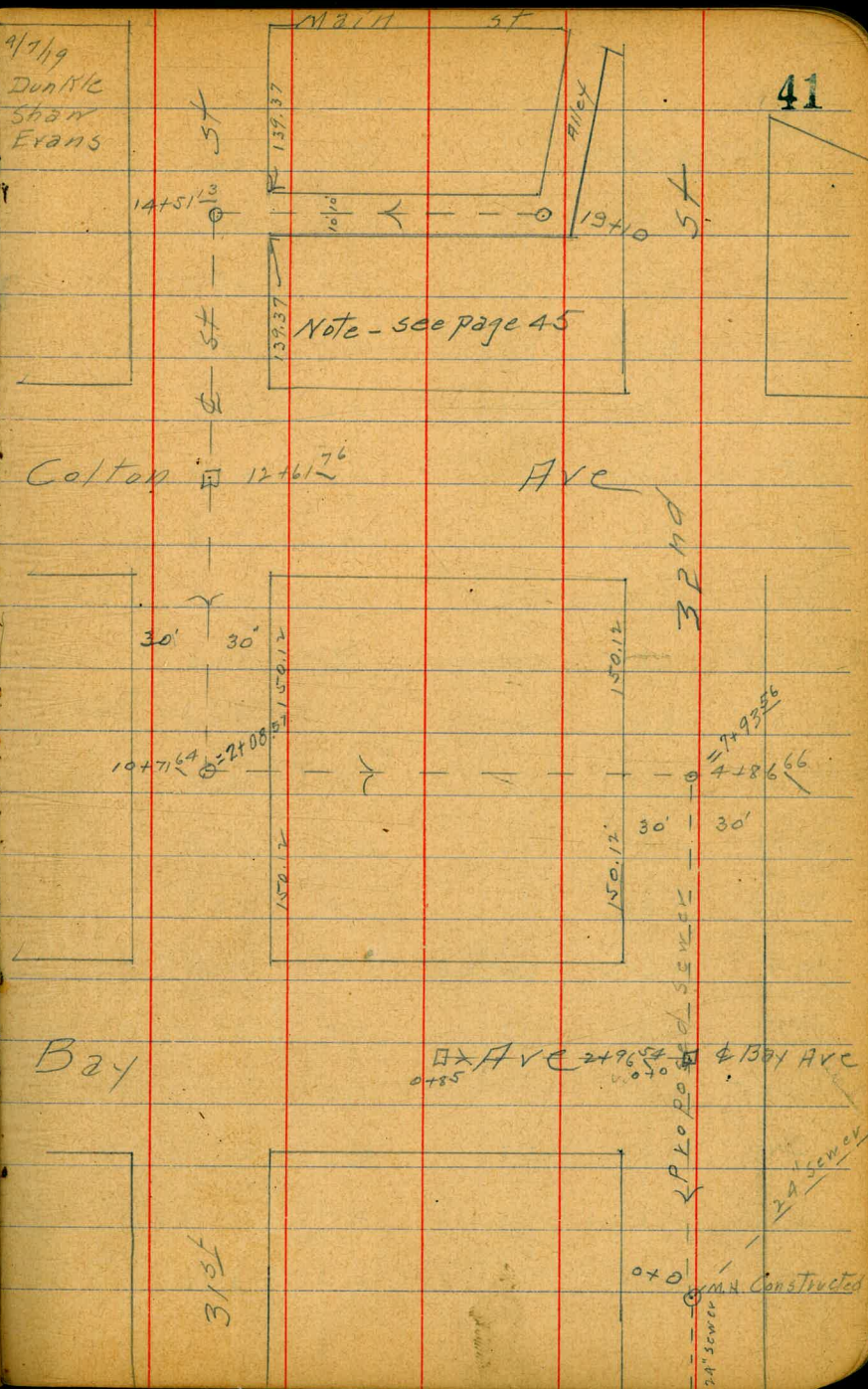
Levels for proposed sewer - see sketch opp. page

13. Mi. bottom of M.N.

T.P.	19.53 10.12	14.73 22.35	2.50 12.4	- 4.85 12.23 No. West of M.N.	10.0
+25			11.4		11.0
+50			10.4		12.0
+75			9.2		13.2
1			8.1		14.3
+25			7.0		15.4
+50			5.9		16.5
+75			5.0		17.4
2			3.9		18.5
+25			2.9		19.5
+50			1.9		20.5
+75			1.3		21.1
+96 <sup>54</sup>	1324 Ave 11.73	33.28	0.80		21.55
3			11.7		21.6
+25			11.2		22.1
+50			10.5		22.8
+75			9.7		23.6
4			8.7		24.6
+25			7.7		25.6

4/7/19

Dunkle  
Shaw  
Evans





33.28

450			6.7	
+86 <sup>66</sup> = 0/2 of 1311			5.2	28.1
5			5.2	28.1
406			5.5	27.9
407			4.4	28.9
+17			3.8	29.5
+18			1.5	31.8
+25			1.6	31.7
+50			1.4	31.9
+75			1.3	32.0
6			1.3	32.0
+25			1.4	31.9
+50			0.9	32.4
+75			0.4	32.9
T.P.	2.35	35.22	0.41	32.87
7			2.4	32.8
+25			2.6	32.6
+50			2.6	32.6
+75			2.4	32.8
8			2.2	33.0

35.22

8+25			2.3	32.9
+50			3.5	31.7
+75			6.1	29.1
9			9.4	25.8
+25			13.8	21.4
+50			15.5	19.7
+75			16.1	19.1
10			15.4	19.8
+25			14.3	20.9
+50			13.1	22.1
47/64 = 318 <sup>54</sup>			10.65	24.57
	11.48	36.05		
+88			10.0	26.0
+90			8.7	27.3
11			7.9	28.1
+25			6.6	29.4
+50			5.7	30.3
+75			4.6	31.4
12			3.6	32.4
+25			2.8	33.2
+50			1.5	34.5

42



		36.05		
12+61 <sup>76</sup>	♀ Colton		1.1	35.0
+75			0.6	35.4
T.P.	9.26	44.79	0.52	35.53
13			8.7	36.1
+25			7.9	36.9
+50			7.3	37.5
+75			6.8	38.0
14			6.5	38.3
+25			5.9	38.9
+51 <sup>13</sup>	♀ Alleybet Colton & Main		5.3	39.5
+75			4.8	40.0
15			4.4	40.4
+25			4.1	40.7
+50			3.5	41.3
+75			3.0	41.8
16			2.6	42.2
+25			2.3	42.5
+50			1.8	43.0
+75			1.8	43.0
17			1.6	43.2
T.P.	7.52	50.68	1.63	43.16

		50.68		
17+25			7.2	43.5
+50			6.8	43.9
+75			6.3	44.4
18	cut 6'		5.5	45.2
+25			4.5	46.2
+50			4.0	46.7
+75			4.0	46.7
19			4.2	46.5
+10			4.2	46.5

Levels for proposed sewer ♀ Bay Ave from ♀ 32<sup>nd</sup> St  
west for 85'

B.M.	4.73	26.28		21.55
0+0 = ♀ 32 <sup>nd</sup> St			4.7	21.6
+25			4.5	21.8
+50			4.3	22.0
+85			4.6	21.7

B.M.

45.90



Levels for sewer main - see sketch page 45

B.M.	1.22	13.45	12.23	3+66 <sup>80</sup>	L 18° 22'	7.69		
0+0 = M.H. Constructed 32 <sup>nd</sup> St			3.6	9.9	4		6.7	+ 1.0
+25			3.7	9.8	+25		6.7	1.0
+30			4.3	9.2	+50		8.1	- 0.4
+37			2.6	10.9	+58		7.2	+ 0.5
+50			2.0	11.5	+75		5.8	+ 1.9
+75			10.0	3.5	5		4.9	2.8
T.P.	7.06	7.69	12.82	0.63	+05		5.0	2.7
+97			10.5	- 2.8	+25		5.8	1.9
1			10.7	- 3.0	+49 <sup>54</sup>	R 29° 15'	5.0	2.7
+25			10.7	- 3.0	+65		5.6	2.1
+50 <sup>98</sup> L 24° 38'			8.2	- 0.5	+75		3.8	3.9
+75			8.3	- 0.6	T.P.	12.17	18.28	1.58
2			8.9	- 1.1	6		6.11	9.5
+25			8.6	- 0.9	+25		9.5	8.8
+50			9.3	- 1.6	+50		6.2	12.1
+75			9.1	- 1.4	+63		2.4	15.9
3			8.7	- 1.0	+75		0.8	17.5
+25			6.8	+ 0.9	+85		1.8	16.5
+50			7.1	0.6	7		3.2	15.1
							8.8	9.5







18.28

712			12.2	6.1
+29 <sup>37</sup>	L 27° 01'		12.57	5.71
	= 31° 57'			
+36			12.4	5.9
+50			10.6	7.7
+75			9.6	8.7
+88			11.1	7.2
+89			15.6	2.7
8			15.6	2.7
+06			14.5	3.8
T.P.	0.96	6.72	12.52	5.76
+25			3.5	3.2
+50			5.4	1.3
+75			6.0	0.7
9			5.0	1.7
+14 <sup>50</sup>	R 21° 21'	18° 33' 30"	5.10	1.62
+25			5.2	1.5
+50			3.9	3.8
+66 <sup>70</sup>	= Alley bet Bay & Colton		2.89	3.83
+75			2.5	4.2
+84			2.7	4.0

6.72

46

9+90			4.5	2.2
10+0			5.3	1.4
+25			9.0	-2.3
+50			9.3	-2.6
+75			8.6	-1.9
+88			7.8	-1.1
+96			4.0	2.7
+99 <sup>60</sup>	L 29° 02' 30"		3.30	3.42
	9.80	13.22		
11+25			9.0	4.2
+50			9.1	4.1
+75			9.4	3.8
12			9.6	3.6
+25			9.7	3.5
+50			9.1	4.1
+54 <sup>88</sup>	L 8° 49' 30"		8.9	4.3
+75			8.1	5.1
13			6.9	6.3
+25			6.0	7.2
+50			6.3	6.9
+75			6.3	6.9



	13.22		
14		6.1	7.1
+25		6.1	7.1
+53 <sup>8</sup>	R 12° 31' 30" 13' Line of 30 <sup>th</sup> St 7.87 12.20	8.89	9.33
+75		8.9	3.3
15		9.7	2.5
+25		8.9	3.3
+50		4.7	7.5
+75		2.9	9.3
16		3.4	8.8
+25		5.5	6.7
+33 <sup>5</sup>	R 88° 46' 12.37 18.10	6.47	5.73
+50		7.0	11.1
+60		3.4	14.7
+75		5.4	12.7
17		6.5	11.6
+25		9.1	9.0
+50		9.5	8.6
+81 <sup>5</sup>	L 6° 32' 30" 4.80 10.82	12.08	6.03
1840		4.9	5.9
+25		5.1	5.7

	10.82		
18+50		4.3	6.5
+75		4.3	6.5
19	12.21 20.21	2.82	8.00
+04 <sup>11</sup>	Alley between Main & Collier 12.23		7.98



Levels for proposed <sup>50' or</sup>  $\frac{1}{2}$  31<sup>st</sup> St from sta  
 7+29<sup>32</sup> (page 45) north for 80.56' to sta 10+71<sup>64</sup>  
 page 41

B.M.	12.33	18.04		5.71
0+0 = sta 7+29 <sup>32</sup>	page 45	12.33		5.71
+07		11.6		6.4
+25		7.0		11.4
T.P.	10.93	28.64	0.33	17.71
+50		10.7		17.9
+75		5.1		23.5
+80 <sup>56</sup> = sta 10+71 <sup>64</sup>	page 41	4.07		24.57

Levels for proposed sewer & Alley between  
 Bay Ave & Colton St from sta 9+66<sup>72</sup> page (45)  
 East for 155.91 or 65 west of  $\frac{1}{2}$  31<sup>st</sup> St

B.M.	12.64	16.47		3.83
0+0 = sta 9+66 <sup>72</sup>	page 45	12.64		3.83
+25		7.5		9.0
+41		5.6		10.9
+50		5.8		10.7
+62		6.2		10.3
+75		6.9		9.6
+85		7.4		9.1
1		6.4		10.1
+25		5.2		11.3
+40		3.7		12.8
+50		0.9		15.6
T.P.	3.12	19.37	0.22	16.25
+55 <sup>91</sup> = 65' west of $\frac{1}{2}$ 31 <sup>st</sup> St		2.3		17.1



Levels for Proposed sewer from Sta 10+99<sup>60</sup> page 45  
 easterly for 325.63' to Alley between Main & Colton

B.M.	12.46	15.88	3.42
0+0 = Sta 10+99 <sup>60</sup> page 45	12.46	3.42	
+25	8.1	7.8	
+50	5.2	10.7	
+57	4.4	11.5	
+75	4.5	11.4	
1	5.0	10.9	
+25	6.7	9.2	
+50	8.0	7.9	
+75	6.3	9.6	
2	5.6	10.3	
+25	4.9	11.0	
+50	3.2	12.7	
+75	1.6	14.3	
T.P.	12.42	26.80	1.50
3		9.0	17.8
+25 <sup>63</sup> Alley bet Main & Colton			20.6

Levels for proposed sewer of Alley between Main  
 & Colton from Sta 3+25<sup>63</sup> page 45 East 212.20' to  
 & 31<sup>st</sup> St

	HT.	26.80	
East to & 31 <sup>st</sup> St = Sta 14+51 <sup>13</sup> page 41			49
0+0 = Sta 3+25 <sup>63</sup>	6.20	20.6	
+25	7.3	19.5	
+50	5.5	21.3	
+75	1.6	25.2	
T.P.	12.60	39.00	0.40
1		8.2	26.40
+25		4.5	30.8
+41		2.1	34.5
+50		0.4	36.9
T.P.	9.07	47.14	0.93
+75		7.7	38.6
2+12 <sup>20</sup> = Sta 14+51 <sup>13</sup> Page 41		7.64	39.07
			39.5
West for 382.40' or 88' E of 13 <sup>th</sup> Line 30 <sup>th</sup> St			
	26.80 HT.		
0+0 = Sta 3+25 <sup>63</sup>	6.20	20.6	
+25	4.5	22.3	
+50	3.4	23.4	
+75	2.4	24.4	
1		1.2	25.6
T.P.	12.60	39.00	0.40
			26.40
+25		11.0	28.0
+50		8.3	30.7
+75		5.5	33.5
2		2.8	36.2
+25		1.6	37.4
+50		1.1	37.9
+75		1.0	38.0
3		1.1	37.9
+25		1.5	37.5
+50		1.7	37.3
40		2.60	36.4
+82 = 88' E of 13 <sup>th</sup> Line 30 <sup>th</sup> St			

out 7'



Levels for proposed sewer & Alley between Main & Colton from Sta 19+04.27 (page 45) east for 91.40' or 62' west of 13' line 30<sup>th</sup> St

B.M.	12.21	20.21	8.00
0+0 = Sta 19+04.27		12.23	7.98
+25		2.0	18.2
T.P.	12.76	32.64	0.33 19.88
0+50		3.4	29.2
+60		2.1	30.5
+75		1.9	30.7
+91.40		2.5	30.1

Levels for proposed sewer & Alley between Main & Colton from Sta 19+04.27 (page 45) west for 1093.60 or 35' East of E.L. 28<sup>th</sup> St

50

B.M.	10.84	18.82	7.98
0+0 = Sta 19+04.27		10.84	7.98
+15		13.2	5.6
+25		12.9	5.9
+35		12.3	6.5
+50		6.8	12.0
T.P.	12.97	31.44	0.35 18.47
+75		9.4	22.0
1		1.2	30.2
T.P.	6.16	36.41	1.19 30.25
+25		3.7	32.7
+50		2.3	34.1
+75		1.7	34.7
2		0.7	35.7
+25		1.9	34.5
+50		4.5	31.9
+75		8.0	28.4
3		10.7	25.7
+25		12.0	24.4



36.91

3+50			11.6	24.8
+75			10.3	26.1
4 cut 8'			9.7	26.7
+25			8.5	27.6
+50			6.3	30.1
+75			4.2	32.4
+87			4.9	31.5
5			4.1	32.3
+25 cut 9'			4.1	32.3
T.P.	5.23	37.62	4.02	32.39
+50			5.6	32.0
+75			6.0	31.6
6			6.2	31.4
+25			6.1	31.5
+50			6.1	31.5
+75			6.1	31.5
7			5.8	31.8
+25			5.3	32.3
+50			5.4	32.2
+75			7.4	30.2

37.62

51

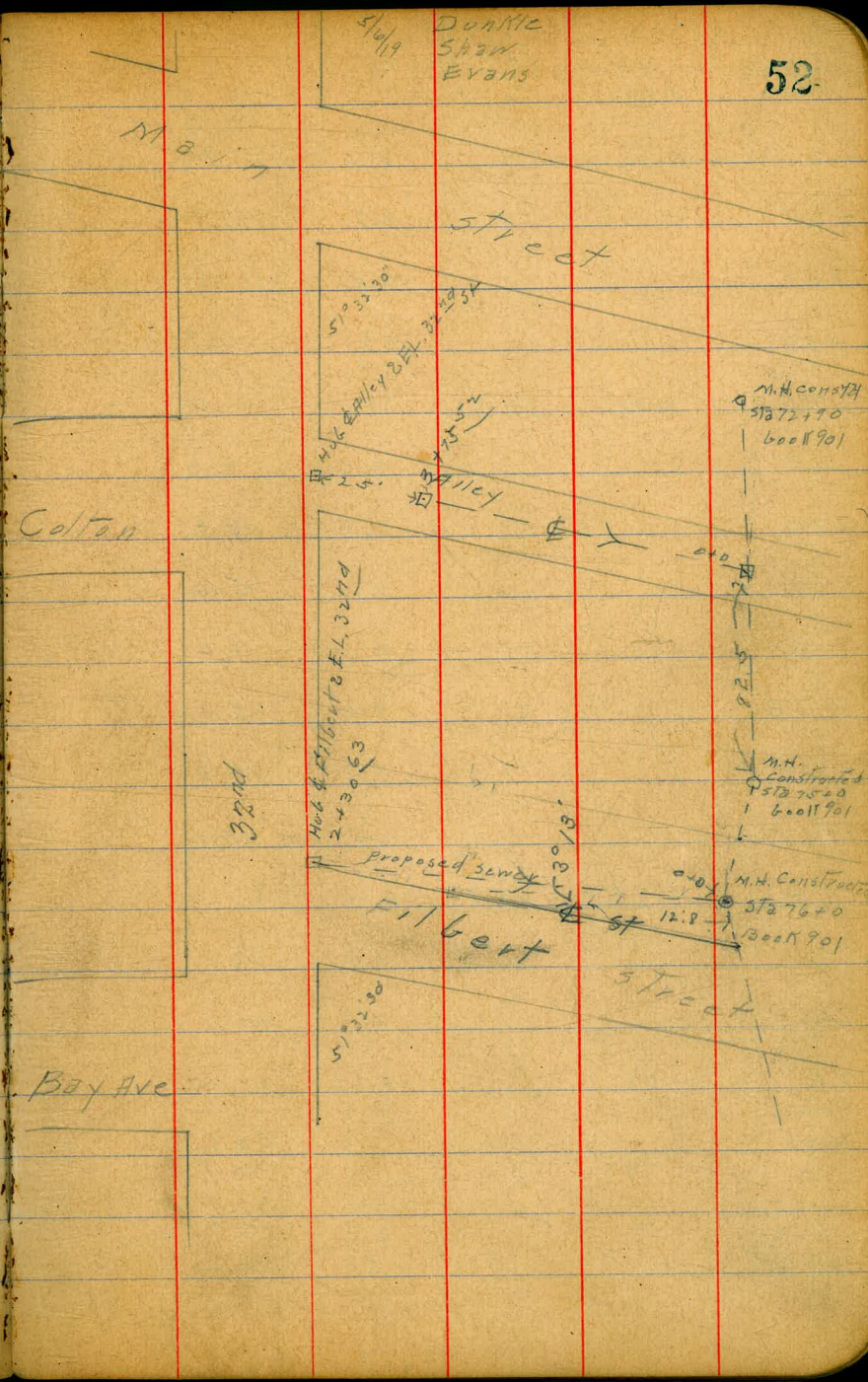
8+0				10.9	26.7
T.P.	4.18	29.37		12.43	25.19
+25				8.6	20.8
+50				12.4	17.2
+63				12.8	16.6
+75				12.0	17.4
+85				10.8	18.6
9				6.0	23.4
+25				0.9	28.5
T.P.	8.21	36.90		0.68	28.69
+50				4.7	32.2
+75				4.7	32.2
10				5.6	31.3
+25				6.9	30.0
+50				8.5	28.4
+75				10.3	26.6
+93 <sup>60</sup>				11.9	25.0

65 E of & 28th St



Levels for proposed sewer Filbert St - see sketch  
opp page

	12.73	13.59		0.86
Bottom			17.73	-4.14
0 to = M.H.	Top		12.73	0.86
+25			7.3	6.6
+50			3.9	9.7
T.P.	12.57	25.08	1.08	12.51
+75			11.5	13.6
1			8.9	16.2
+15			6.2	18.9
+25			5.9	19.2
+50			3.1	22.0
+75			1.9	23.2
2			1.3	23.8
+25			0.5	24.6
+30 <sup>63</sup>	= EL. 32 <sup>nd</sup> St		0.8	24.9





Levels for proposed sewer & Alley between Main  
 & Filbert - see sketch page 52

	13.71	5.87	10.99	5.12	
Ground			13.4	-2.4	
0+0 Top of Pipe			12.76	-1.77	
+25			12.9	-1.9	
+50			12.5	-1.5	
+56			11.9	-0.9	
T.P.	11.48	14.60	7.87	3.12	
+69			10.3	4.3	
+75			10.2	4.4	
1			9.6	5.0	
+25			10.2	4.4	
+38			9.5	5.1	
+50			7.8	6.8	
+75			1.4	13.2	
T.P.	12.75	26.97	0.38	14.22	
2			6.9	20.1	
+25			2.7	24.3	
T.P.	10.37	36.72	0.62	26.35	
+50			8.5	28.2	
+75			6.6	30.1	
3			5.8	30.9	
+25			5.0	31.7	
+50			4.0	32.7	
+75 <sup>53</sup>			3.5	33.2	

519  
~~312~~  
 127

392 9  
 393  
 389  
 395  
 408  
 420

53



Cut stakes for Sewer & Alley bet Ray  
& Grim from M.H. & ex Dwight to a  
point 255' No. = N.L. Lot 40 Appr.

5.73

338.19

332.46

N.E. of Dwight

16 + 46.5 = M.H. & Dwight

327.0

16 + 76.5 = N.L. Dwight

4.26

333.93

327.41

6.52

17

2.04

326.15

327.73

8.42

+ 25

2.55

35.64

328.07

7.57

+ 50

1.76

36.63

328.41

8.02

+ 75

1.19

37.00

328.75

8.25

18

349

40.00

1.68

36.51

329.09

7.42

+ 25

2.65

36.35

29.43

6.92

+ 50

3.26

36.74

329.77

6.97

+ 75

3.12

36.88

330.11

6.77

19 + 01.5 = N.L. Lot 40 = D.E.

2.85

37.15

330.47

6.68

continued page 58

+ 50

+ 76.5 Break

331.5

331.5  
327  
330

1.01364

4.50  
12.00  
19.80  
12.00

.01364  
30  
409.20

0.1364  
40  
682.00  
11.20

6.5  
3.0  
1.0

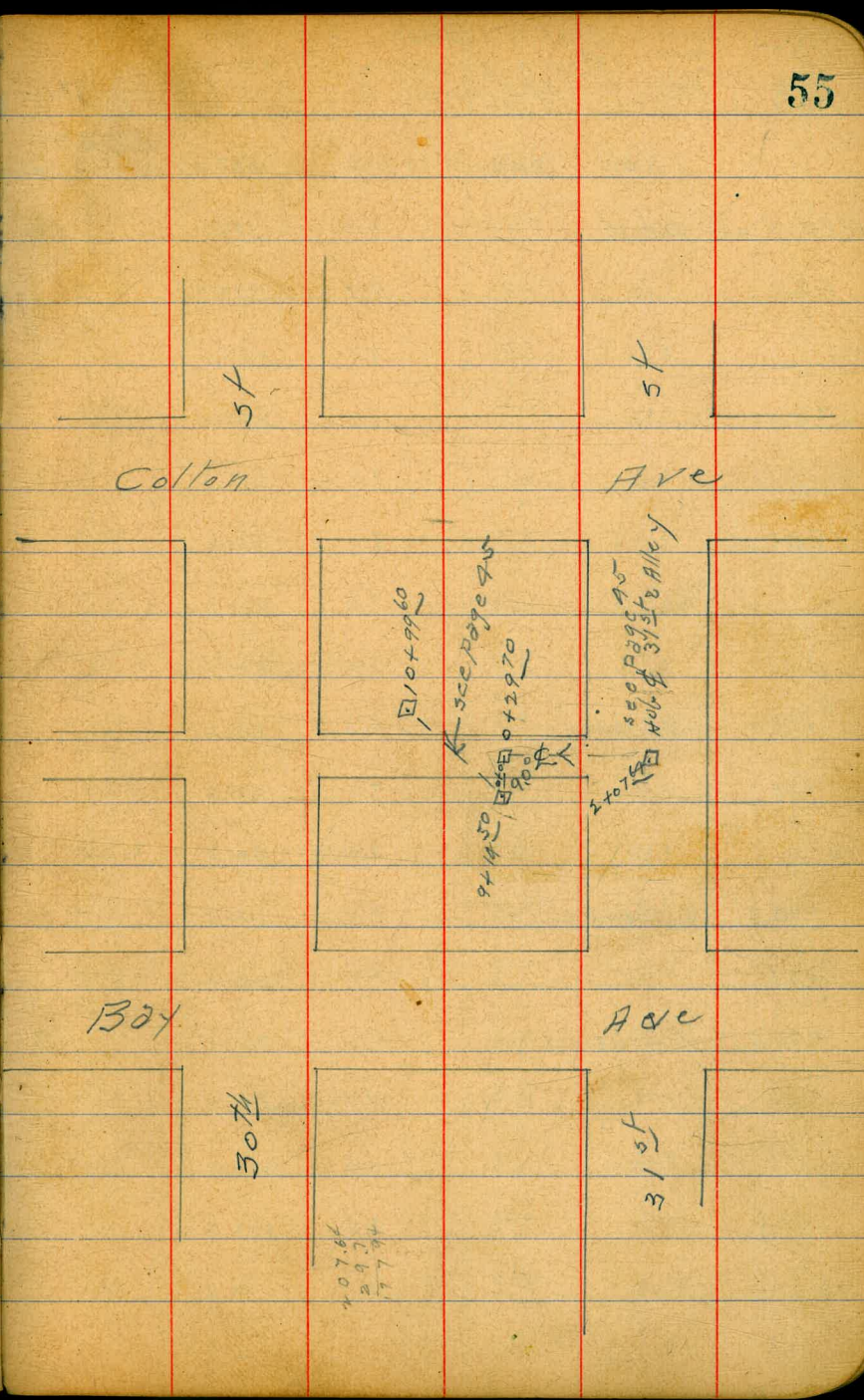
0.1364  
4.31  
682.0  
409.2  
292.8  
320.5 40



Change of line sc page 45

4/19 Dunkle  
Shaw

B.M.	12.49	14.11	1.62	EVANS
0+0 = 5 <sup>th</sup> St	9+14 <sup>50</sup>	Page 45	12.49	1.62
+15			8.7	5.4
0+29 <sup>70</sup> = $\phi$ Alley			3.0	11.1
+50			3.9	10.2
+75			5.1	9.0
1			3.0	11.1
+12			2.9	11.2
+25			1.4	12.7
T.P.	12.75	26.46	0.40	13.71
+43			9.5	17.0
+50			7.3	19.2
+65			3.7	22.8
+75			2.8	23.7
+93			1.4	25.1
2+07 <sup>64</sup> = $\phi$ 31 <sup>st</sup> St			1.89	24.57





1/22/22

Gregory  
Maore  
Miller  
Shatt

Prelim Sewer Alk. bet  
Ray + Gr 127 from DE 255 N of  
LDX Dmght + N. to E+W side/  
3. x Vain. 500 page 54 this book

	7.37	346.37	338.95	BP SE Gr 127 + Landis	+50	12.50	358.50	1.5	44.8
19 + 01.5 = DE. page 54			337.1					0.32	346.0
+50			337.2					11.7	46.8
20			337.5					10.2	48.1
+50			337.4					9.3	49.2
21			337.7					8.2	50.1
+50			338.3					7.0	51.5
22			338.7					6.2	52.3
+50			339.1					5.9	52.6
+76.5 = S.L. Landis			340.0			+36.5 = J.L. Wightman		6.9	51.6
+87			339.3			+47		8.3	50.2
23			339.9			+50		8.3	50.2
+06.5 = L Landis			340.3			+66.5 = G. Wightman		7.3	51.2
+76			340.2			+86		7.5	51.0
+36.5 = N.L. Landis			341.3			+96.5 = N.L. Wightman		6.1	54.4
+50			341.2			30		6.0	54.3
24			342.0			+30		3.4	55.1
+50			343.0			+50		3.0	55.5
25			43.6			31		2.3	56.2
						+50		2.2	56.3



358.50

32

2.4

56.1

+ 04.0 = L. E. N. Alley.

2.3

356.2

1/28/22

Gregory Prelim Sewer & Alley  
Moore  
Miller  
Shaw  
from W.L. Grim to E.L. Ray.  
S. of Van Ray.

57

358.50

0+00 = W.L. Grim St.

39

54.6

+ 50

9.0

55.5

1

27

55.8

+ 37.53 = sta 37+04.0 on N.Y. Line  
2' x 4' 5" Alley

2.4

56.1

+ 50

23

2

2.4

+ 34.03

3.3

+ 40.03 = E.L. Ray St.

4.2

chk BM

8.30

350.20

BD SE Grim  
+ 1/2" margin  
= 350.30



Gregory  
Moore  
Miller  
Shaw

CUT STAKES SEWER  
in alley bet Ray & Grim  
from X from D.E. cross N. of N.L. at  
Dwight to E-W Alley S. of  
Univ. thence E 110'

9.98 347.44 332.46 NE Ray  
& Dwight

19+01.5	on page 54	4.95	337.49	330.47	7.02 ✓
+50		5.20	337.24	331.13	6.11 ✓
+76.5	M.H. Break	4.80	337.64	331.5	6.14 ✓
20		4.80	337.64	331.82 96	5.82 ✓
+50		4.84	337.60	332.50	5.10 -
21		4.56	337.88	333.18	4.70 ✓
+50		3.95	338.49	333.86	4.63 ✓
22		3.55	338.89	334.54	4.35 ✓
+50		3.15	339.29	335.22	4.07 -
23+06.5	M.H. & Land's Break	1.95	340.49	336.0	4.49 ✓
+50	17.53 354.13	0.84	341.60	336.92	4.68
24		11.44	342.69	337.98	4.71
+50		10.35	343.78	339.04	4.74 ✓
25		10.65	343.48	340.10	3.38
+50		9.25	344.88	341.16	3.72 ✓
26		7.14	346.99	342.22	4.77
+36.5	M.H. Break	6.18	347.95	343.0	4.95 ✓
+50		5.83	348.30	343.15	5.12



354.13

59

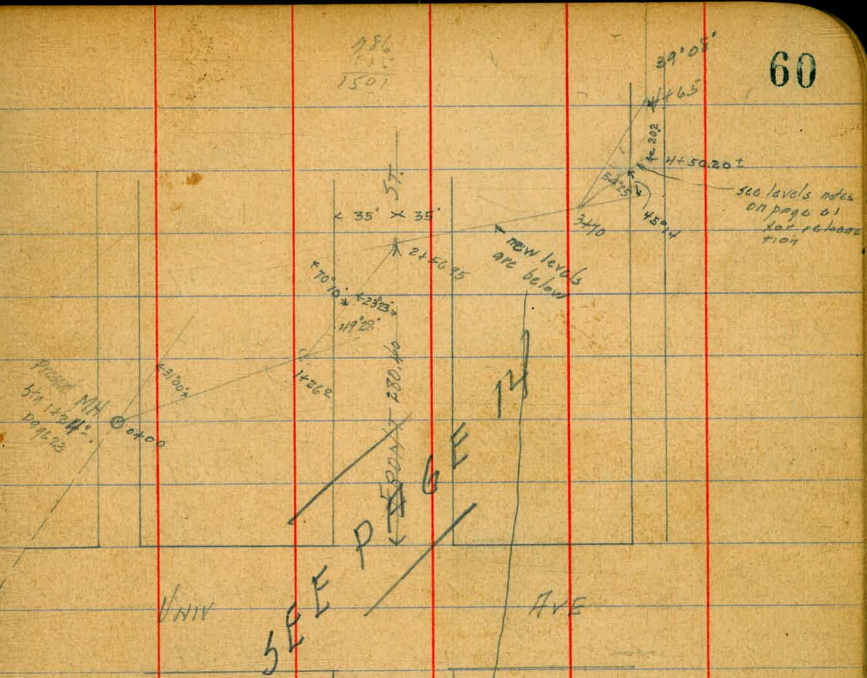
27			4.78	349.35	343.86	5.49
+50			3.90	350.33	344.54	5.79
28			2.60	351.53	345.22	6.31
+50			1.72	352.41	345.90	6.51
29			1.40	352.73	346.58	6.15
+66.5 M.H. & Nightman Break			2.74	351.39	347.5	3.89
30	7.03	359.68	1.48	352.65	347.89	4.46
+50			3.81	355.87	348.47	7.40
31			3.38	356.30	349.05	7.25
+50			3.16	356.52	349.63	6.89
32	$\Delta 90^\circ R.$ + 04 = M.H. & E-W Ailer Break		3.38	356.30	350.25	6.05
+59			3.67	356.91	351.62	4.39
33	+ 14 = D.F.		4.03	355.65	351.0	4.65



8/15/23  
 Sewers Levels from M.H.  
 & Alley bet Albarrasse & Front N. Van  
 To & Alley Front & First

	0.65	279.13	249.50	BP NE 1st & Wash.
	0.02	266.12	13.05	266.10
	0.33	253.70	12.75	263.37
M.H. Station	3.22	246.12	12.80	240.90
20+00			15.01	229.11
0+00	Top.		9.86	234.26
+29			7.6	236.52
+50			8.3	235.82
+55			8.3	235.82
+67			10.7	233.42
+76			10.3	233.82
+78			5.8	238.32
+80			5.6	238.52
+86	A 49.28 L		6.78	237.34 on stub
+88			5.7	238.72
+90			5.1	239.02
+93			4.5	239.62
+95			3.0	241.12
+95			1.8	242.32

VOID  
 PAGE IN FOR  
 CONSTRUCTION  
 NOTES  
 SEE



Second line Levels for sewer shown above.

13.11	250.45	237.34	stub @ 1+26	
2+45 = old ground		8.3	242.15	
+50 = on hill		6.8	243.65	
+56.95 Δ 70°10' R.		6.90	243.55 on hub	
+70 on hill		5.6	244.85	
3 - -		3.1	247.05	
+90 - -		2.2	248.25	
+50 - -		0.0	250.45	
TP	11.25	261.55	0.15	250.30

Continued on page 61



		244.12			continued from page 60	261.55		
T.P.	9.56	251.09	7.59	241.53	3+70 Δ 45°16' L	8.96	252.59	61
2+56.95 Δ 70°10' R			8.46	242.63	5+0.6	+9.5	253.65	on hill
+75			7.4	243.69	4+04.0	natural grad	11.5	250.05
3			5.6	245.49	+07.0		9.3	252.25
+25			6.0	245.09	+12		9.0	252.55
+50			4.5	246.59	+13		7.7	253.85
+70 Δ 54°25'			2.7	248.39	+25		5.9	255.65
T.P.	8.31	258.54	0.86	250.23	4+50.80 Δ 48°19' L	4.80	256.75	on hub
4+00			9.7	248.84	+55		5.5	256.05
+15			7.2	251.34	+62		7.8	253.75
+45			6.2	252.34	+70.4 = 4+65±		7.6	253.95
+65± = 4.4/6 Δ			4.4	254.14	4+85.4			
+80			7.2	257.1	5+05.4			
5			1.1	263.2	5+25.4			
+20			3.7	270.6				

and page 60  
 oppo  
 500  
 oppo  
 204.34  
 274.28



9/21/23  
 Leonard Moore Miller  
 CROSS SECTION OF ALLEY  
 BLK 8 HILCREST 15' wide  
 4th & 5th St  
 Univ. to Washington

	4.52	294.46	289.94	NW 5th - Univ.
				D.L. University
T.P.	5.07	293.73	583	288.66
W on parking		4.90		288.83
C ✓ ✓		4.98		288.85
E ✓ ✓		4.78		288.95
				35' N
E		4.5		289.1
C		4.6		289.1
W		4.8		288.9
				80' N
W		5.1		288.6
C		4.9		288.8
E		5.0		288.7
				100' N
E		5.1		288.6
C		5.0		288.7
W		5.1		288.6

140' N

62

W	4.6	289.1
C	4.6	289.1
E	4.5	289.2

145' N

E = front of garage dirt	4.6	289.1
--------------------------	-----	-------

156' N

E = front of garage dirt	4.6	289.1
--------------------------	-----	-------

170' N

E = front of garage dirt	4.7	289.0
--------------------------	-----	-------

C	4.6	289.1
---	-----	-------

W	4.4	289.3
---	-----	-------

200' N

W	4.3	289.4
---	-----	-------

C	4.4	289.3
---	-----	-------

E	4.4	289.3
---	-----	-------

210' N

W = edge cement approach	4.23	289.5
--------------------------	------	-------

217' N = S. end of string of garages

E = front of garage	3.8	289.9
---------------------	-----	-------



193.73  
 4.2 189.5  
 W 4.2 189.5

355' N = N. end of string of garages

W 4.1 189.6

C 4.1 189.6

E = front of garage 4.0 189.7

#75' N

E 3.3 190.1

C 3.7 190.0

W 3.7 190.0

320' N

W 3.7 190.0

C 3.6 190.1

E = edge of cement 3.65 190.08

+ 4.5 = garage 3.60 190.13

335' N

- 4.5 = garage 3.60 190.13

E = edge of cement 3.65 190.08

370' N

- 2.5 = garage dirt 3.3 190.1

193.73  
 3.4 190.3 63

C 3.7 190.0

W 3.8 189.9

400' N

TP 4.97 195.25 3.45 190.28 ✓

- 6.5 = front of garage 5.17 190.08

- 5.0 = edge of cement 5.30 189.95

W 5.0 190.15

C 5.0 190.15

E 4.9 190.3

414' N

E - 1.7 = S. End of cement approach 4.84 190.11

456' N

E - 1.7 = N. End of cement approach 4.92 190.33

E 4.9 190.3

C 5.0 190.1

W 5.0 190.1

4.7 W of WL = garage wood floor 5.00 190.1

W 5.0 190.2

C 5.0 190.1



$\frac{295.25}{E}$   
 50 190.2  
 +3 = dirt floor garage 48 190.4

520' N

-9 = cement floor 5.05 190.10  
 W 5.2 190.0  
 C 5.4 189.8  
 E 5.1 190.1

540' N

E 5.5 189.7  
 +5 6.5 188.7  
 C 6.6 188.6  
 +5 6.5 188.7  
 W 5.8 189.2

560' N = 5L Washington

W on paving 7.88 187.37  
 C ✓ ✓ 8.10 187.15  
 E ✓ ✓ 8.05 187.20



32nd St Outfall  
continued from page 70

8+97		12.1	-5.68	
9		11.7	-5.28	
+10 =	Naval Bulkhead	10.7	-4.28	
+10 =	Top ✓ ✓	7.3	- .88	mil in top.
+17		6.6	- .18	
+19		4.6	1.82	
+50		5.2	1.22	
+65		6.1	.32	
+73		3.1	3.32	
10		3.0	3.42	
+50		3.9	2.52	
11		5.0	1.42	
+25		5.4	1.02	
+55		4.2	2.22	
12		3.9	2.52	
+50	Naval Bulkhead Top.	3.9	2.52	
+51	Bottom	8.1	-1.78	
T.P.	5.49	4.15	7.56	-1.14
+90		5.7	-1.55	

65

13		7.3	-3.15
+09.0		8.1	-3.95
+43		5.8	-1.65
+44		10.1	-5.95
14+00		10.0	-5.85
+30		8.9	-4.75
+92		9.8	-5.65
15+00		11.1	-6.05
+06		10.1	-5.95
+30		9.4	-5.25
+50		9.3	-5.15
16		9.5	-5.35
+50		10.0	-5.85
17		10.1	-5.95
+50		10.2	-6.05
18+00		10.2	-6.05
+25	65' to Left - outer edge of Naval Bulkhead		
+50		10.2	-6.05
19		10.3	-6.15
+50		10.1	-5.95
20		10.1	-5.95



4.15

20+50	10.4	-6.25
21+00	10.5	-6.35
+50	10.6	-6.45
22	10.7 11.0	-6.85
+50	11.0	-6.85
23	11.0	-6.85
+50	11.6	-7.45
24	11.8	-7.65
+50	12.6	-8.45
25	13.0	-8.85
+50	13.3	-9.15
26+00	14.1	-9.95
+70 = edge of deep water	14.2	-10.05

2' in the water

66



Alley 5 of Univ. from 25 E ~~305~~ to  
 Surface Els on E Alley. Ray

July 9-1913  
 West  
 Evans  
 Moore

67

NE Cor. Wightman & Grim 351.00

9.46 360.46

0+00-25'E ~~305~~ Ray 4.8 355.7

+50 4.3 356.2

1+00 4.2 356.3

+50 4.3 356.2

2+00 5.0 355.5

+45 E Grim 6.3 355.7

3+00 5.1 355.4

+50 4.9 355.6

4+00 4.8 355.7

+13 E Alley bet Grim + Hart. 4.7 355.8

+50 4.1 ~~356.4~~

5+00 3.7 356.8

+45 W.L. Hart. 4.5 356.0

+50 4.8 355.7

+78 E Hart. 5.1 355.4

6+00 5.9 354.6

T.P. 5.13 355.33

3.07 358.40



358.40

6+50		2.4	356.0
7+00		2.6	355.8
+43	Alley bet Hartz + Herman.	3.8	354.6
+50		4.2	354.2
8+00		4.8	353.6
+50		5.5	352.9
+51	25' W. of WL Herman.	5.5	352.9
+76	WL Herman.	5.5	352.9
+86	W Curb "Gutter"	6.2	352.2
9+00		5.9	352.5
+08	- 4	5.8	352.6
+30	E Gutter	6.5	351.9
+40	E L. Herman.	5.5	352.9
+50		5.4	353.0
10+00		6.1	352.3
+50		7.0	351.4
+75	Alley E of Herman.	7.2	351.2
11+00		7.3	351.1
+50		7.6	350.8
11+82	25' W. of WL St E Herman.	8.2	350.2
SE Curb. Univ + Herman.		4.10 4.20 4.30	354.30 354.20 354.10

ak.



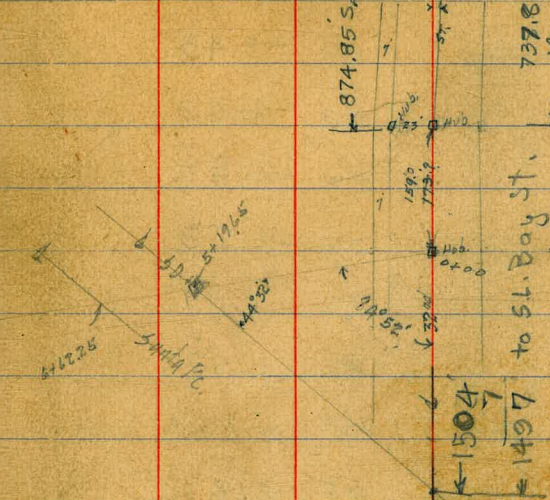
9/25/23

Gregory

Levels for proposed  
SEWER OUTFALL  
from 32nd St Main

nails in  
pole Bay  
32nd St.

	0.00	21.80	21.80	
	-0.53	9.39	12.94	8.86
	1.05	4.67	5.77	3.62
0+00			1.1	3.57
+19			1.6	3.07
+21			0.9	3.77
+28			0.8	3.87
+34			3.8	0.87
+40			6.6	-1.33
+45			7.4	-2.73
+50			8.0	-3.33
+72			9.0	-4.33
+91 = center small slough			9.5	-4.83
+96			9.4	-4.73
+97			8.4	-3.73
1+50			8.4	-3.73
+75			8.3	-3.63
2			9.2	-4.53
+08.0			8.3	-3.63



2+45	7.9	-3.23
+42 = Edge of Slough	8.1	-3.43
+43 =	9.2	-4.53
+54 =	10.0	-5.33
+63	9.8	-5.13
+64 = Edge of Slough	8.8	-4.13
+77	8.0	-3.33
+93 = Edge of Slough	8.9	-4.23
+97 = center - -	10.3	-5.63
3+00	9.4	-4.73
+02.0 = W. Edge of Slough	8.9	-4.23

874.85  
1490  
1497  
1504



3+50			8.1	-3.43
+85	Edge of <sup>Armed</sup> Big Slough		8.1	-3.43
+93			9.3	-4.63
4+23			9.2	-4.53
+28			7.9	-3.23
+43			3.6	1.07
+60			3.1	1.57
T.P.	5.15	6.42	3.10	1.27
+80			3.8	2.62
5			2.9	3.52
+16±	= E. rail S.D. + A		2.51	3.91
+19.65	= Ctr. of - -		3.0	3.42
+27			3.1	3.32
+30			4.0	2.42
+39			4.8	1.62
+45			8.7	-1.28
+50			9.9	-3.48
+65			11.7	-5.28
6+15			11.9	-5.48
+70			13.4	-6.92

+24			11.9	-5.48
+30			11.9	-5.48
+39			10.6	-4.18
+41			8.1	-1.68
+50			3.9	2.52
+51			3.9	2.52
+58.8±	= E. rail Santa Fe.		2.90	3.52
+62.45	= L ✓ -		3.3	3.12
+69.			3.7	2.72
+75			3.9	2.52
+85	= Top of Santa Fe Bulkhead		8.4	-1.98
This L is 2.5' N. of S. end of Bulkhead				
+86.0			10.1	-3.68
+90			11.4	-4.98
+93			11.9	-5.48
+96			12.4	-5.98
7+00			11.8	-5.38
+50			12.1	-5.68
8+00			12.1	-5.68
+50			12.1	-5.68

continued on page 65



Alley line bet Hart & Grimm  
From 25' N Alley So. Univ to Mt at NL Upris  
Surface E/s & Alley.

West  
Evans  
Moore

71

Corb. N.E. Wightman & Grimm

351.00 ✓

4.84 355.84

0+00 = 25' N Alley So Univ.

-0.3 356.10

+50

0.1 355.7

1

0.5 355.3

+50

1.2 354.6

2

2.0 353.8

+50

4.5 351.3

+70 = E Wightman

4.6 351.2

3

4.2 351.6

+50

3.0 352.8

4

3.5 352.3

+50

4.5 351.3

5 = TP

1.10

352.05

4.89 350.95

+50

2.8 349.2

6

3.7 348.3

+50

4.7 347.3

7

5.3 346.7

+50

6.4 345.6

8

7.1 344.9



Cont.

72

352.05

8+50 7.8 344.2

9 10.6 341.4

T.P. 11.36 340.69

1.52 342.21

9+30 = ~~Gunnst.~~ (Lancis?) 1.7 340.5

+50 2.6 339.6

10 0.6 341.6

+50 2.4 339.8

11 2.4 339.8

+50 3.6 338.6

12 4.8 337.4

+50 6.1 336.1

13 6.6 335.6

+50 7.9 334.3

14 8.9 333.3

+50 9.2 333.0

15 10.0 332.2

+50 10.6 331.6

+55 10.5 331.7

+61 8.6 333.6

+90 = ~~Dwight.~~ 9.0 333.2



Cont

73

342.21

16+00

9.5 332.7

T.P.

9.31 332.90

2.98

335.88

16+20

3.1 332.8

+24

4.8 331.1

+50

5.0 330.9

17

5.3 330.6

+50

5.4 330.5

18

5.1 330.8

+50

4.9 331.0

19

5.1 330.8

+50

4.5 331.4

20

4.0 331.9

+50

4.1 331.8

21

4.2 331.7

+50

3.8 332.1

T.P.

3.17 332.71

2.32

335.03

22+00

3.2 331.8



Cont.

74

33503

22+50 = E Myrtle 4.1 330.9

23 4.4 330.6

+50 4.9 330.1

24 5.8 329.2

+50 6.2 328.8

25 7.3 327.7

+50 8.4 326.6

+79 = Top MH Cover. 8.8 326.2

= N.L. Upds.

T.P. 8.97 326.06

5.07 331.13

Bottom M.H. 10.08 321.05

T.P. 3.45 327.68

2.63 230.31

Grade Hub. S.W. PL Herman &amp; Upds. 9.06 321.25

check OK.



Alley bet Hart & Herman.  
From 25' N of Alley So Univ to NL Upds.  
Profile of Alley.

June 23 - 1913  
West  
Evans  
Moore

75

Cor. N.E. Cor. Wightman & Hart. 352.50

3.01 355.51

0 +00 = 25' N Alley So Univ 1.1 354.4

+50 0.9 354.6

1 0.9 354.6

+50 1.2 354.3

2 0.9 354.6

+40 = NL Wightman 3.3 352.2

+70  $\notin$  " 4.6 350.9

3 +00 SL " 4.0 351.5

+50 2.6 352.9

4 3.6 351.9

+50 4.3 351.2

5 5.1 350.4

+50 5.5 350.0

6 6.0 349.5

F.P. 6.05 349.46

0.41 349.87



Cont'd

76

349.87

6 +50		0.9	349.0
7		1.8	348.1
+50		2.4	347.5
8		2.8	347.1
+50		3.2	346.7
+90		4.3	345.6
9 +100	NE Gumm.	5.5	344.4
+30	✓ "	6.8	343.1
+60	SL "	5.9	344.0
10 +100		5.4	344.5
+50		6.2	343.7
11		7.1	342.8
+50		8.2	341.7
12		9.0	340.9
+50		10.4	339.5
13 +100		12.2	337.7
T.P.		12.22	337.65

0.92 338.57



Contd.

33857

77

13+50		1.6	337.0
14		2.5	336.1
+50		3.5	335.1
15+00		4.2	334.4
+60	N.L. Dwight	4.9	333.7
+90	♀ "	5.4	333.2
16+00		5.6	333.0
+20	S.L. Dwight	5.2	333.4
+28		3.8	334.8
+50		3.9	334.7
17		4.8	333.8
+50		4.5	334.1
18		5.8	332.8
+50		6.9	331.7
19+00		8.2	330.4
T.P.		8.30	330.27
	0.87	331.14	
19+50		1.4	329.7
20+00		2.4	328.7
+50		2.8	328.3



		Cont'd.	
	331.14		
21400		3.5	327.6
+50		4.3	326.8
22400		4.8	326.3
+20 = NL Myrtle		5.2	325.9
+50 " "		6.1	325.0
+80 SL "		7.6	323.5
23400		8.7	322.4
+50		6.6	324.5
24		6.0	325.1
+50		6.5	324.6
25400		6.2	324.9
T.P.	4.17 329.14	6.17	324.97
+50		4.1	325.0
+78 = Top M.H. Cover		3.74	325.40
Bot. M.H.		10.78	318.36
Gr. Hub. S.W. P.L. Herman & Ups.		7.89	321.25
			↓ Checks OK.

June 23-1913.

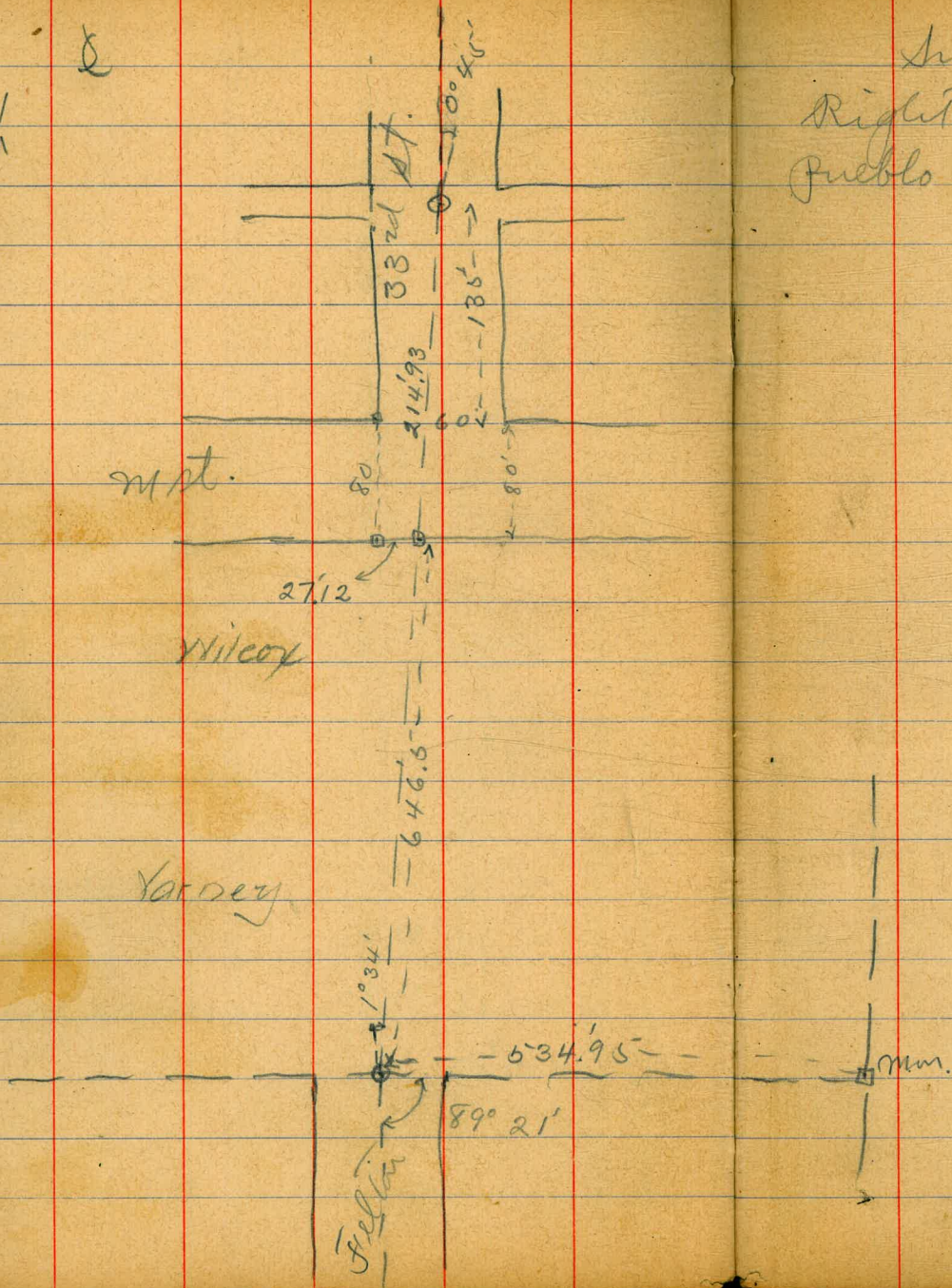
West  
Evans  
Moore

78



N  
↑  
S

2



Survey for Sewer 79  
Right of Way through  
Pueblo lot. 1152  
Hchilds  
Allen  
Bunker  
June 27/13







75 Davis  
18 Hancock  
Levels from BM 32<sup>nd</sup> Main to Foot 32<sup>nd</sup> St for Ship Yard

1.41	40.00		38.59 Mon S.W. 32 <sup>nd</sup> Main
0.20	32.20	8.00	32.00
0.41	22.38	10.23	21.97
0.21	10.56	12.03	10.35
3.92	7.12	7.26	3.20
5.47	8.30	4.29	2.83
7.24	11.07	4.47	3.83
3.97	7.03	6.01	5.06
3.66	7.27	5.46	3.63
6.12	9.05	5.36	1.93 BM 32 <sup>nd</sup> & Flay
5.45	10.87	3.63	5.42
4.21	9.54	5.54	5.03
5.04	8.87	5.71	3.83
11.61	18.93	1.55	7.32
11.25	30.00	0.18	18.75
11.09	39.92	0.17	29.83
		1.35	38.57 38.59 BM 32 <sup>nd</sup> Main

Cut-off = 8.67 above M.L.W. = -0.34 City datum.

Handwritten calculations and diagrams on the right page:

- Arithmetic problems:
  - $$\begin{array}{r} 401 \\ 342 \\ 703 \\ 357 \\ \hline 3704 \\ 49665 \\ \hline 2375 \end{array}$$
  - $$\begin{array}{r} 2928 \\ 5251 \\ \hline 38734 \end{array}$$
  - $$\begin{array}{r} 2855 \\ 3 \\ \hline 5355 \end{array}$$
  - $$\begin{array}{r} 5170 \\ 3472 \\ \hline 16562 \end{array}$$
  - $$\begin{array}{r} 23431 \\ 3336 \\ \hline 3336 \end{array}$$
  - $$\begin{array}{r} 66 \\ 66 \\ 396 \\ 396 \\ \hline 2356 \end{array}$$
  - $$\begin{array}{r} 014 \\ 70 \\ \hline 1014 \end{array}$$
  - $$\begin{array}{r} 127 \\ 180 \\ 122 \\ \hline 530 \end{array}$$
  - $$\begin{array}{r} 3335 \\ 3335 \\ \hline 16670 \\ 10005 \\ 10005 \\ \hline 1122226 \\ 4356 \\ 15468 \\ 49 \\ \hline 153568 \\ 166913722 \end{array}$$
  - $$\begin{array}{r} 0633 \\ 240 \\ \hline 25320 \\ 1266 \\ \hline 121920 \end{array}$$
  - $$\begin{array}{r} 380 \\ 38 \\ \hline 418 \end{array}$$
  - $$\begin{array}{r} 2000 \\ 1672 \\ \hline 3280 \\ 2920 \\ \hline 3540 \end{array}$$
  - $$\begin{array}{r} 00478 \\ 2390 \\ \hline 2390 \\ 1434 \\ \hline 16750 \end{array}$$
  - $$\begin{array}{r} 24000 \\ 13253 \\ \hline 1078 \end{array}$$
  - $$\begin{array}{r} 09 \\ 3964 \\ \hline 3964 \end{array}$$
  - $$\begin{array}{r} 00478 \\ 2390 \\ \hline 2390 \\ 1434 \\ \hline 16750 \end{array}$$
  - $$\begin{array}{r} 01158 \\ 579 \\ \hline 579 \end{array}$$
  - $$\begin{array}{r} 00478 \\ 2390 \\ \hline 2390 \\ 1434 \\ \hline 16750 \end{array}$$
  - $$\begin{array}{r} 00478 \\ 136 \\ \hline 1436 \\ 678 \\ \hline 14530 \\ 147 \\ \hline 812 \\ 3919 \\ \hline 2248 \end{array}$$
  - $$\begin{array}{r} 2375 \\ 2750 \\ \hline 3750 \\ 2375 \\ \hline 13750 \\ 11875 \\ \hline 18750 \end{array}$$
  - $$\begin{array}{r} 01158 \\ 54 \\ \hline 4632 \\ 1790 \\ \hline 628 \end{array}$$
  - $$\begin{array}{r} 018 \\ 1500 \\ \hline 1500 \\ 670 \\ \hline 6524 \end{array}$$
  - $$\begin{array}{r} 018 \\ 33 \\ \hline 69 \\ 594 \end{array}$$
  - $$\begin{array}{r} 753 \\ 9 \\ \hline 822 \end{array}$$
  - $$\begin{array}{r} 1500 \\ 823 \\ \hline 670 \\ 5261 \end{array}$$
  - $$\begin{array}{r} 215 \\ 9 \end{array}$$
- Diagram: A simple sketch showing a vertical line with a horizontal line intersecting it, possibly representing a cross-section or a specific measurement point.



3247 Main Sw Cor 2m 38.57

Handwritten calculations and notes on the left page, including various numbers and mathematical operations:

362  
 15 103  
 40.75  
 64.25  
 105.00  
 21:100  
 330  
 677  
 0106  
 63  
 58  
 200  
 23  
 5.0  
 167  
 367  
 600  
 693  
 693  
 436  
 5  
 750  
 100  
 175  
 775

356.23 600  
 354.43  
 356.08  
 1616.5  
 908.5  
 658.0  
 46  
 2569.0  
 2341.6  
 234  
 600  
 01364  
 68  
 01364  
 23  
 357  
 367  
 103  
 347  
 320  
 01364  
 135  
 6820  
 4092  
 1364  
 1841.40  
 28  
 28  
 1364  
 665  
 6820  
 8184  
 8184  
 907.06  
 855  
 4.38  
 39.42  
 21.90  
 258.42  
 100.1  
 107.1  
 51  
 79.6  
 330  
 700  
 660  
 400  
 390  
 700  
 660  
 500

Handwritten calculations and notes on the top right page:

320.33  
 13.2  
 317.11  
 450  
 17.73  
 326.58  
 7.7  
 35  
 3169.1  
 13.2  
 36.28  
 13.59  
 4.14  
 86  
 500  
 26.46  
 80.22  
 14.57  
 189  
 27.25  
 25.77  
 1.48

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING

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

FOR SINGLE TRACK EMBANKMENT.

	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	
0	7.0	7.2	7.3	7.5	7.6	7.8	7.9	8.1	8.2	8.4	0
1	8.5	8.7	8.8	9.0	9.1	9.3	9.4	9.6	9.7	9.9	1
2	10.0	10.2	10.3	10.5	10.6	10.8	10.9	11.1	11.2	11.4	2
3	11.5	11.7	11.8	12.0	12.1	12.3	12.4	12.6	12.7	12.9	3
4	13.0	13.2	13.3	13.5	13.6	13.8	13.9	14.1	14.2	14.4	4
5	14.5	14.7	14.8	15.0	15.1	15.3	15.4	15.6	15.7	15.9	5
6	16.0	16.2	16.3	16.5	16.6	16.8	16.9	17.1	17.2	17.4	6
7	17.5	17.7	17.8	18.0	18.1	18.3	18.4	18.6	18.7	18.9	7
8	19.0	19.2	19.3	19.5	19.6	19.8	19.9	20.1	20.2	20.4	8
9	20.5	20.7	20.8	21.0	21.1	21.3	21.4	21.6	21.7	21.9	9
10	22.0	22.2	22.3	22.5	22.6	22.8	22.9	23.1	23.2	23.4	10
11	23.5	23.7	23.8	24.0	24.1	24.3	24.4	24.6	24.7	24.9	11
12	25.0	25.2	25.3	25.5	25.6	25.8	25.9	26.1	26.2	26.4	12
13	26.5	26.7	26.8	27.0	27.1	27.3	27.4	27.6	27.7	27.9	13
14	28.0	28.2	28.3	28.5	28.6	28.8	28.9	29.1	29.2	29.4	14
15	29.5	29.7	29.8	30.0	30.1	30.3	30.4	30.6	30.7	30.9	15
16	31.0	31.2	31.3	31.5	31.6	31.8	31.9	32.1	32.2	32.4	16
17	32.5	32.7	32.8	33.0	33.1	33.3	33.4	33.6	33.7	33.9	17
18	34.0	34.2	34.3	34.5	34.6	34.8	34.9	35.1	35.2	35.4	18
19	35.5	35.7	35.8	36.0	36.1	36.3	36.4	36.6	36.7	36.9	19
20	37.0	37.2	37.3	37.5	37.6	37.8	37.9	38.1	38.2	38.4	20
21	38.5	38.7	38.8	39.0	39.1	39.3	39.4	39.6	39.7	39.9	21
22	40.0	40.2	40.3	40.5	40.6	40.8	40.9	41.1	41.2	41.4	22
23	41.5	41.7	41.8	42.0	42.1	42.3	42.4	42.6	42.7	42.9	23
24	43.0	43.2	43.3	43.5	43.6	43.8	43.9	44.1	44.2	44.4	24
25	44.5	44.7	44.8	45.0	45.1	45.3	45.4	45.6	45.7	45.9	25
26	46.0	46.2	46.3	46.5	46.6	46.8	46.9	47.1	47.2	47.4	26
27	47.5	47.7	47.8	48.0	48.1	48.3	48.4	48.6	48.7	48.9	27
28	49.0	49.2	49.3	49.5	49.6	49.8	49.9	50.1	50.2	50.4	28
29	50.5	50.7	50.8	51.0	51.1	51.3	51.4	51.6	51.7	51.9	29
30	52.0	52.2	52.3	52.5	52.6	52.8	52.9	53.1	53.2	53.4	30
31	53.5	53.7	53.8	54.0	54.1	54.3	54.4	54.6	54.7	54.9	31
32	55.0	55.2	55.3	55.5	55.6	55.8	55.9	56.1	56.2	56.4	32
33	56.5	56.7	56.8	57.0	57.1	57.3	57.4	57.6	57.7	57.9	33
34	58.0	58.2	58.3	58.5	58.6	58.8	58.9	59.1	59.2	59.4	34
35	59.5	59.7	59.8	60.0	60.1	60.3	60.4	60.6	60.7	60.9	35
36	61.0	61.2	61.3	61.5	61.6	61.8	61.9	62.1	62.2	62.4	36

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

MADE IN GERMANY.