

GRADE
159

MASTIS

LEVEL BOOK

No. 380

61
15
76
14
90

Our Leather Bound Engineers Note Books are carried in the following rulings:

- No. 380 LEVEL BOOK. Left and Right Hand Page the same as Left Hand Page of this Book.
- No. 382 FIELD BOOK. Left Hand Page as in this Book, Right Hand Page 4 x 4 to the inch, Center Line Red.
- No. 384 MINING TRANSIT BOOK. Left Hand Page as in this Book, Right Hand Page 8x8 to the inch, Center Line Red.
- No. 385 FIELD BOOK. Left Hand Page as in this Book, Right Hand Page 8 vertical and 4 horizontal lines to the inch, Center Line Red.

We also carry the Note Books listed above, bound in extra strong Fabri-Hide (otherwise the same quality of book), which can be furnished at a somewhat lower price.

In ordering Fabri-Hide covered books, add the letter "F" to catalog number.

THE FREDERICK POST CO.
ENGINEERING and DRAFTING SUPPLIES
IRVING PARK STATION
CHICAGO, ILL.

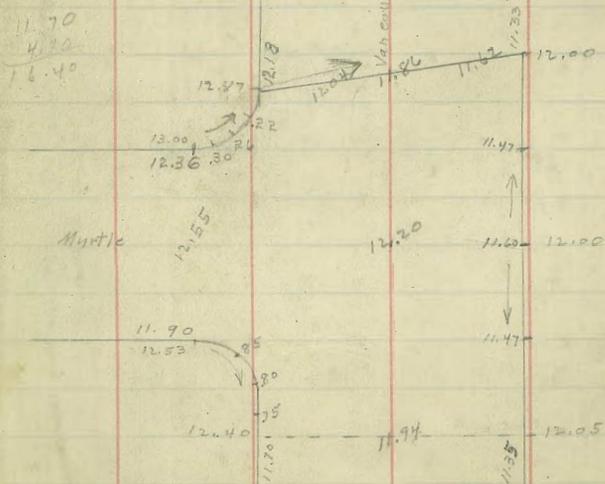
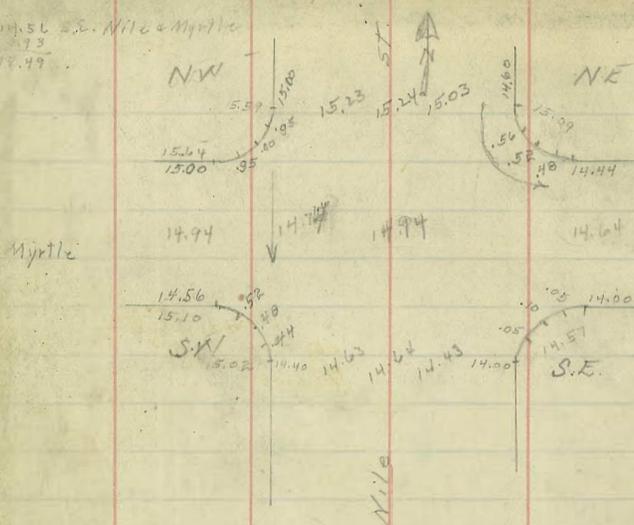
MICROFILMED

APR 9 1965

in Judson
R

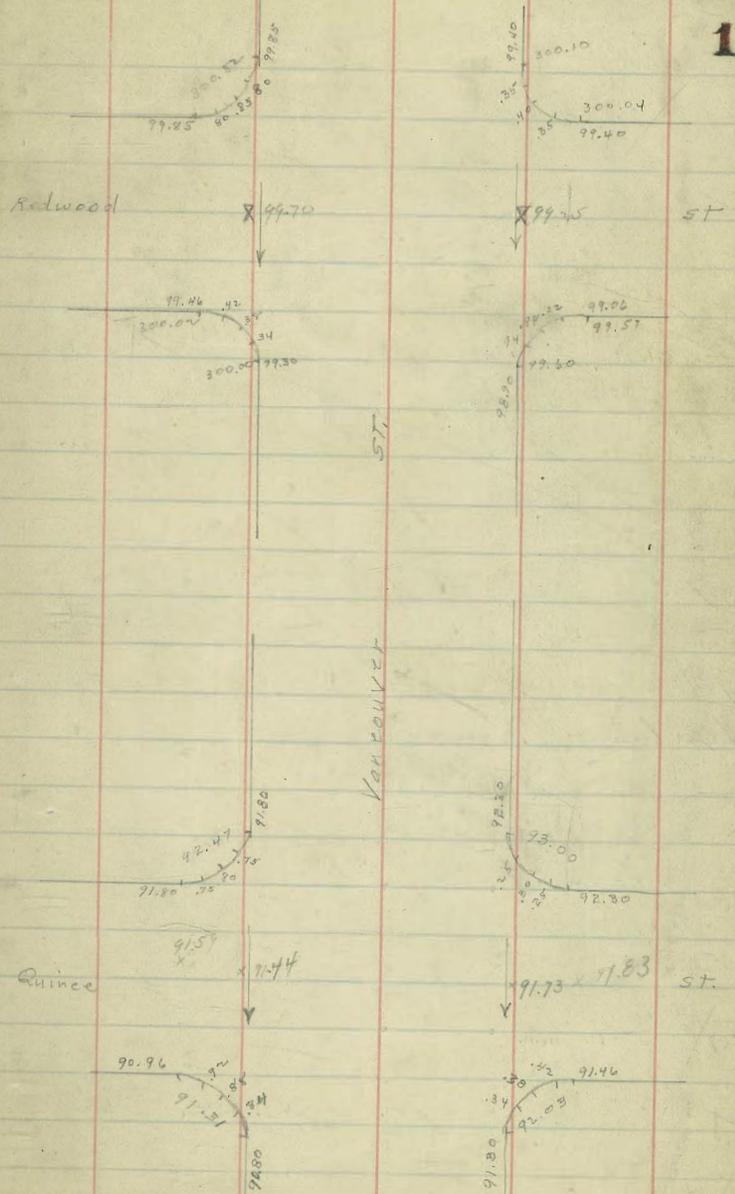
314.56 S.E. Nile & Myrtle
173
317.49

Van Couver & Myrtle Paving Grades.



Thorn & Van Couver Page 3.

Indexed c.s.k.

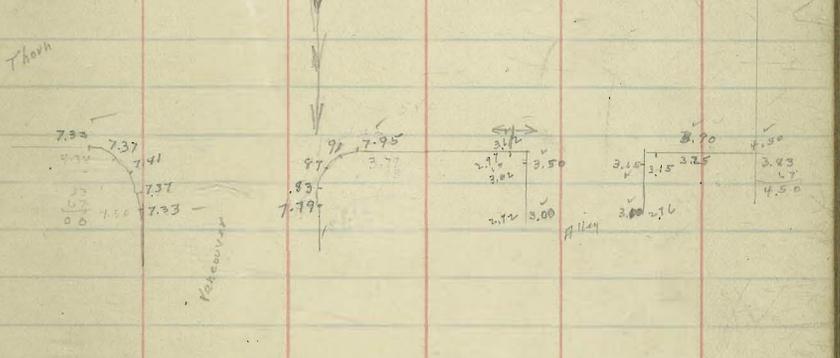


1

	Mch	E. cl
N. line Myrtle	312.80	312.00
0400 W		
0450 E		
1400		
+50		
2400		
+50		
3400		
+50		
4400		
+50		
5400		
+50		
6400 = N. line Thorn.	308.50	309.00

	N. Myrtle 5 Myr									
W	12.8	12.5	12.2	11.8	11.5	11.2	10.8	10.5	10.2	
	5.4	5.8	6.1	6.5	6.8	7.1	7.5	7.8	8.1	
	4.2	5.1	5.2	5.6	6.1	6.5	7.0	7.4	7.9	
	+1.2	+0.7	+0.9	+0.9	+0.7	+0.6	+0.5	+0.4	+0.2	
E	12.00	13.0	11.7	11.5	11.2	11.0	10.7	10.5	10.2	
	6.3	6.3	6.6	6.8	7.1	7.3	7.6	7.8	8.1	
	12.4	7.3	7.6	7.5	7.4	7.1	5.3	6.9	6.9	
	-6.5	-1.0	-1.0	-0.7	-0.3	+0.2	+2.3	+0.8	+1.2	
W	9.8	9.5	9.2	8.8	8.50					
	5.7	5.4	5.7	6.1	6.43					
	4.6	5.0	5.3	5.7	6.23					
	+0.5	+0.4	+0.4	+0.4						
E	10.0	9.7	9.5	9.2	9.00					
	4.9	5.2	5.4	5.7	5.93					
	3.9	4.4	4.7	5.0	5.43					
	+1.0	+0.8	+0.7	+0.7						

310.93	W	108.50	Raised	308.00
2.36		7.79	4.60	5.29
313.29		5.19	-0.50	5.23
310.93	E	109.00	Thorn.	308.50
		4.29		4.79
		4.79		4.77
		-0.50		



Vancouver

N. cl.

E. cl.

0000 = S. line Redwood

300.00

292.50

305.04

8.52

296.52

1.77

298.29

305.04

4.02

300.97

BM. 70' W. Tie Redwood & Vancouver

298.29

7.15

291.14

BM. 70' W. Tie Quince & Vancouver

99.4

5

+50

300.0

99.4

98.8

98.2

97.6

97.0

96.4

95.7

5.0

5.6

6.2

6.8

7.4

8.0

8.6

9.2

3.6

4.3

4.7

5.3

6.1

6.7

7.3

8.0

+1.4

+1.3

+1.5

+1.3

+1.2

+1.3

+1.5

+1.3

1+00

W

99.50

98.9

98.4

97.9

97.3

96.8

96.3

95.7

5.3

6.1

6.6

7.1

7.7

8.2

8.7

9.2

4.3

4.6

5.2

5.9

6.3

6.8

7.2

7.9

+1.2

+1.5

+1.4

+1.2

+1.4

+1.4

+1.5

+1.3

2+00

W

99.7

99.5

98.9

98.3

97.7

97.5

9.9

8.8

8.4

8.0

7.6

7.8

8.6

8.6

8.3

8.1

7.9

8.3

8.5

+1.3

+1.2

+1.1

+0.9

+0.7

+0.5

3+00

E

99.2

98.7

98.2

97.7

97.2

96.7

96.2

9.8

8.6

8.1

7.6

7.1

6.6

6.1

8.4

8.4

8.1

7.8

7.4

7.0

6.6

+1.4

+1.4

+1.4

+1.3

+1.3

+1.3

+1.3

4+00

+50

5+00

450

6+00

6+00 = N. line Quince

292.50

293.00

291.50

292.00

Sewer Laterals

295.78

#

#

R

4.78

291.00

285.00

+ 6.00

5.73

290.05

282.11

+ 7.94

Vancouver

(4.65)

6

W. cb

E. cb

298.29
6.47
291.82

6.8111 Cor Vancouver + Quince St

000 S. line Quince

291.50

292.00

W	91.5	89.9	88.2	86.6	85.6
	6.8	8.4	10.1	11.7	12.7
	6.4	7.3	8.4	9.5	10.1
	40.4	+1.1	+1.7	+2.2	+2.6

450

1400

450

1475 End Curbs

285.79

285.87

E	92.0	90.2	88.4	86.7	85.7
	6.3	8.1	9.9	11.6	12.6
	6.0	7.5	8.5	10.3	12.1
	+0.3	+0.6	+1.9	+1.3	+0.5

1480 End. Derym.

285.63

285.70

500.97
2.92
303.89
8.45
395.44
1.21
396.75

292.50
4.25
✓

293.00
3.75
✓

291.50
4.25
5.75
-1.50

293.00
3.75
✓

291.50
5.25
✓

292.00
4.75
4.25
10.50

291.50
5.25
✓

292.00
4.75
✓

N. Alley

86.71	86.71
10.04	10.04
9.04	9.34
70.50	+0.50

S. Alley

86.6	85.86
10.69	10.89

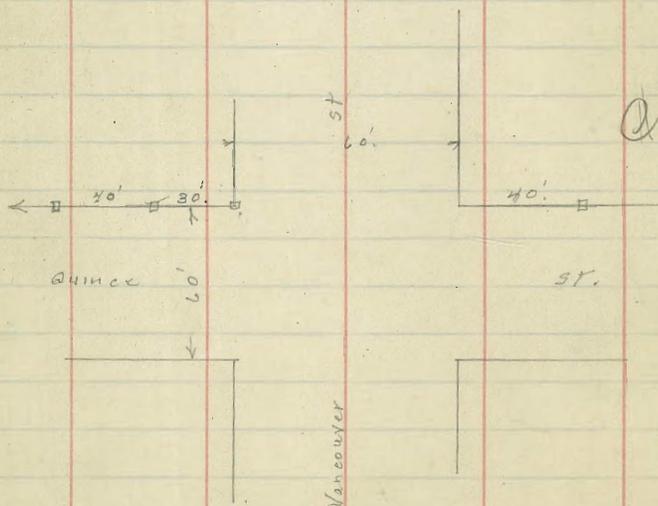
1475 S. End

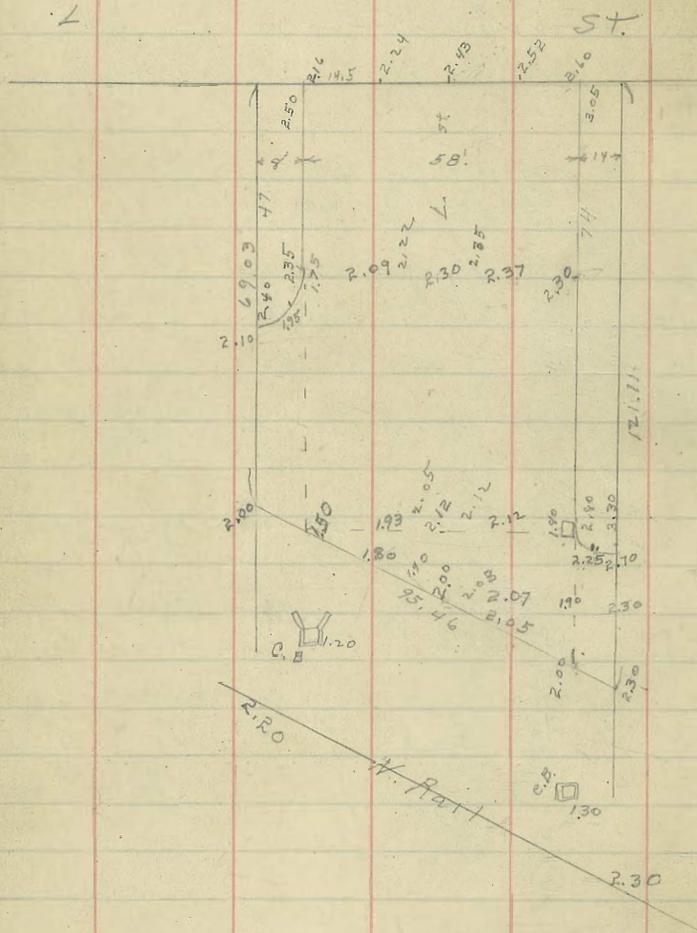
285.79
10.96
✓

285.87
10.88
✓

4.78
1.50
3.28
292.50
295.78

91.50
4.28
87.22
93.00
2.78





Paving Grades California
Prado

Figures are Rods

5.43
5.20
5.27
5.50
5.10
5.40
5.20
5.10
5.01
5.30
5.15
5.00
4.85
4.62
4.86
4.75
5.15
4.80
4.80
2.5

5.18
4.83
5.13 gutters
4.82 Parment

5.08
4.72
Curb Cuts set
4" High

5.03
4.77

4.98
4.76

4.93
4.76

4.88
4.73

4.83
4.77

4.78

4.65

4.59

4.47

4.32

7 10 11 12

Alley Grades BIK 65 U.H. Indexed - c.s.k.
 Mead to Monroe Bet Kansas + 30^{EF}

	E. line	W. line
00: H. line Meads	366.30	366.40
+50	66.50	66.57
+100	66.70	66.75
+50	66.90	66.92
2+00 Brk	367.10	367.10
2+20 Brk	367.30	367.30
2+40 Brk	367.70	367.60
2+80	68.67	68.55
3+20	69.65	69.50
3+60	70.62	70.45
4+00 Brk	371.40	371.40
4+20 Brk	371.90	371.70
4+66 ⁶⁷	72.47	72.27
5+13 ³³	73.04	72.84
5+60 Brk	373.60	373.40
5+80 Brk	374.20	374.00
6+01 = S. line Monroe	375.42	375.20

366.78 S.E. Mead Kansas

	E	W	B	B	B	B	B
	66.30	66.50	66.70	66.90	67.10	67.30	67.50
	4.74	6.85	6.65	6.45	6.25	6.05	5.85
	4.44	6.68	7.48	5.45	6.10	5.13	7.81
	✓	+0.17	-1.03	+1.00	+0.15	+0.42	+0.41
	377.92	377.92	377.92	377.92	377.92	377.92	377.92
	4.23	4.23	4.23	4.23	4.23	4.23	4.23
	373.69	373.69	373.69	373.69	373.69	373.69	373.69
	5.82	5.82	5.82	5.82	5.82	5.82	5.82
	377.91	377.91	377.91	377.91	377.91	377.91	377.91
	✓	-0.52	-0.28	-1.00	-0.82	-0.33	-0.40
	69.65	70.62	71.60	71.90	72.47	73.04	73.61
	3.70	7.30	6.32	6.02	5.45	4.84	5.41
	3.28	6.35	6.71	5.88	4.89	4.50	4.44
	+0.42	+0.95	-0.39	+0.14	+0.56	+0.38	+0.57
	69.50	70.45	71.40	71.70	72.27	72.84	73.40
	3.25	2.90	6.52	6.72	5.65	5.08	5.61
	2.85	3.14	7.40	6.22	5.50	5.15	6.16
	+1.00	-0.78	-0.84	0.0	-0.15	-0.07	-0.55
	ent. cl.						
	66.44	66.51	66.58	66.65	66.72	66.79	66.86
	4.80	4.53	4.26	4.00	3.74	3.48	3.22
	4.10	4.53	4.96	5.39	5.82	6.25	6.68
	75.70	75.28	74.86	74.44	74.02	73.60	73.18
	3.31	3.73	4.15	4.57	4.99	5.41	5.83
	3.29	3.71	4.13	4.55	4.97	5.39	5.81

10

Sewer Construction.

Indexed C.S.K.

Ocean View Blvd. - Cuyamaca to San Miguel

N.G.

s.w. 40' + Ocean View

RM. Top Hdt	0.62	88.13	87.51	
T.P.	0.81	76.07	12.87	75.26
T.P.	3.54	67.06	12.55	63.52
T.P.	0.80	56.34	11.52	55.54
RM. B.P.	10.52	52.95		42.43

Bridge E. of San Miguel

52.95

00.5x M.H. San Miguel		20.58	32.37	32.37	32.00	
0154 ²⁵		7.66	45.29	37.50	37.31	+7.79
00.50 M.H. ²		5.32	47.63	42.62		+5.01
50.7		3.36	49.59	44.50		+5.09
1+59 ²						
2+69 ⁹ T.P.	11.30	62.66	0.59	51.36	46.37	+5.00
2+60.6 D.E.			9.30	53.34	48.25	+5.11
3+11 ²			7.36	55.30	50.12	+5.18
3+62 ²			6.10	56.56	52.00	+4.56
4+122			7.50	58.16	53.87	+4.29
4+13.4 D.E.			3.42	59.24	55.75	+3.49

Laterals

62.66

#1		1.70	60.96	56.10		+4.86
#2		4.74	57.92	52.80		+5.12
#3		3.10	59.56	48.90		+10.66
#4	52.95	2.51	50.44	45.10		+5.34
#5		7.18	45.77	38.50		+7.27

10.52

10.52
10.07
20.62
55.72

20.62
32
52.62
10.52
42.10

2.66
5000

8-30-29 C. St. Paving Grading Etc Indexed csk.
30th to 32nd

199.59 BM N.E. Edgemont + C. Sta
177.78 BM. Mon SW. 32nd + c.
194.86 BM SW. 30th + C. Sta

204.25
5.45
5.34

12

RM. To	6" Water Pipe Stakes		16' 5.0" ϕ Water Pipe	
	5' rad	ϕ Grade	N. el	radius
T. 00: E. line 30 th	194.6	195.0	194.83	192.0
T. 1 0+60				196.5
T. 1 RV 1 + 20.8	204.25	204.1	204.25	201.0
RM 1+60 B		206.8		203.8
2+00 B		208.4		205.4
2+40 B		209.0		206.0
2+80 B		208.8		205.8
00:5x 3+20 B		207.6		204.6
01:5x EXC 3+40 B		206.6		203.6
02:5x 3+80 B		202.8		199.8
03:5x 4+20				194.0
2+69 4+60 B		191.5		188.5
2+60 4+20 B		183.0		180.0
3+11 5+60		178.8		175.8
3+62 6+00		176.6		173.3
4+12 6+40		177.0		173.8
4+13 6+80		179.0		176.8
7+20		184.7		181.7
7+60		196.3		187.3
8+00		193.8		190.4
8+40		196.1		193.1
8+80		197.5		194.5
9+20		198.4		195.4
9+60		198.8		195.8
10+00		198.7		195.7

Ray	8	8	8	8	8	8	8	8	8	
195.0	76.5	1.0	3.8	2+0	5.4	6.0	5.8	4.6	3.6	3180
4.8	13.6	9.1	6.3	4.7	4.7	4.3	5.5	6.5	3.7	
	11.4	6.5	3.9	2.1	1.6	1.8	3.0	4.0	0.7	
	+2.2	+2.6	+2.4	+2.6	+2.5	2.5	+2.5	+2.5	+2.5	
94.0	88.5	80.0	75.8	6+0	73.3	73.8	74.8	81.7	71.0	
9.2	14.7	10.0	14.2	16.7	16.2	13.2	8.3	13.2	9.7	
6.5	12.7	11.4	12.7	12.7	12.7	11.2	8.1	11.5	7.4	
200.47										
13.03										
187.44										
2.58										
190.02										
0.01										
190.01										
13.19										
203.20										
0.45										
202.75										
7.35										
210.10										
12.96										
197.14										
2.64										
199.78										
4.92										
194.86										

194.96 BM SW. 30th + C.

C. St Water Grades

10+40	198.1	195.1
10+80	196.9	193.9
11+20	194.6	191.6
11+60	190.6	187.6
12+00	184.8	181.8
12+40	177.4	174.4
12+60	174.1	171.0

Con from Page 15

1+90	193.73	194.40	X	195.25	194.58
2+10	191.93	192.60		193.40	192.82
2+30	189.93	190.60	X	191.00	190.15
2+50	187.33	188.00		188.20	187.55
2+70	184.33	185.00	X	185.45	184.77
2+90	180.73	181.40		181.40	180.85
3+10	176.93	177.60	X	177.60	177.03
3+26 Ret P.C. P.V.C.	175.80			175.80	175.13
3+27 ⁵⁵ P.K	174.50			174.70	174.15
3+30 W. Line 32 ⁵⁵	174.10			174.40	173.85
	173.45			173.90	173.35
	172.7			173.60	173.05
	172.3			173.60	173.05

19759 AM. N.E. Edgemont

10+40	1160	12+60
200.47	95.1	93.9
12.97	91.6	87.6
187.50	81.8	74.4
6.74	72.9	65
188.24	41	10.7
10.45	4.4	3.7
	2.4	2.1
	2.1	2.1
	2.1	2.1

177.79 = 177.74 AM. Mon. W. 32⁵⁵ C.

202.32	N	95.2	91.0	85.5	77.6	74.4
13.22		7.1				14.8
189.10		3.0				11.9
0.12		14.1				2.7
189.22						

101.16	S	94.4	90.6	85.0	77.6	74.5
13.16		7.9	11.7	4.3	11.6	15.1
188.00		4.7	10.0	5.4	9.0	23.4
60.15		3.2	1.7	1.8	2.6	4.3
188.15						
12.85						
175.80	S	75.80	74.50			
5.75		12.35				
181.55						
177.74						
8.77						
3.77						
chk for 3.77						
175.80						

11.60	N	75.80	74.60			
176.93		5.75				
		9.25				
		40.50				

94.4
3.7
3.70

13

197.0	96.0
5.5	4.5
2.1	1.5
4.4	3.2

14.8
74.8

85.00	81.40	77.60
3.15	6.75	10.55
3.65	7.25	
10.50	10.50	

N. curb	88.20	85.45	81.40	74.74
	12.96	2.70	6.75	9.41
	13.55	2.91	6.84	9.54
	0.82		0.09	0.12

C. St. Grades.

Station	Signatures	s. ch	N. ch	Signatures
00 = E. Line 30'	194.21	194.60	12.80	194.83
+ 20	195.54			195.13
+ 40		97.84	9.73	
+ 80		201.05	6.52	
1+20 P.V.C.	203.58	204.25	3.32	
1+40	205.13	205.80	1.77	
1+50 End of curb		206.40	2.54	
1+60	206.33	207.00	0.58	
1+80	207.33	208.00	4.55	
2+00	207.93	208.60	3.75	
2+20	208.33	209.00	3.55	
2+40	208.53	209.20	3.35	
2+50	208.13	209.20	3.35	B.92
2+60	208.53	209.20	3.55	
2+80	208.33	209.00	3.55	
3+00	207.73	208.40	4.15	4.10 4.77
3+20	207.13	207.80	4.75	4.70 .37
3+40 E.V.C.	206.13	206.80	X	E.V.C. 206.80 .75
3+80 B.V.C.	202.33	203.00	X	203.00 .57 .22
4+20		197.35	X	197.35 152.6
4+60 B.V.C.	191.03	191.70	X	191.70 191.83
5+10		184.60	X	184.40 183.91
5+20	182.53	183.20		
5+40	179.93	180.60	X	180.80 180.34
5+60	178.23	178.90		179.10 178.43
5+80	176.13	177.40	X	177.90 177.23
6+00	175.93	176.60		177.30 176.63
6+20	175.50	176.50	X	177.20 176.53
6+40	176.23	176.90		177.75 177.02

187.24
179.47

199.74
0.00
199.74
7.62
109.50

19.20 8.40 6.80 3.00
3.00
5.90 2.4 6.8 3.0
0.26 1.2 2.8 6.6
0.6 0.6 2.3 6.0
+0.6 10.5 +0.6

194.86
12.71
207.57
0.44
207.13
5.42
212.55
13.08
199.47
5.17
204.64
1.64
203.00
9.24
212.64

146.40 197.34 91.70
1.17 7.30 12.94
7.97

8.40 2.00 9.20
3.24 3.24 3.04
97.35
96.55
10.40

425
2606
96.64
3.10
3.23
0.13

41.00
97.35 91.7 84.4 80.8
2.40 2.55 8.0 15.3 6.4
0.16 5.5 +3.0 -2.3

97.3 91.7 84.6 80.6
2.4 8.0 7.6 6.6
0.0 4.2 2.5 12.7
+2.4 +3.8 10.1 -6.1

97.35 3.00 6.80 7.80
7.30 1.67 5.97 4.94

6.25
77.9 77.2
9.3 2.3
11.4 7.7
-2.1 -7.4
-16.0
24.4 out
77.4 76.5
2.1 3.0
12.1 22.1 out ok
-10.0 -23.6
-13.5 35.4 out
20.4 out

C St Grades

Station	5 gutter	S. ch		N. ch	N gutter
6+60	177.33	174.00	X	178.80	178.13
6+80	179.03	179.70		180.20	179.53
7+00	181.33	182.00	X	182.20	181.53
7+20	184.03	184.70			
7+30	185.43	186.10	X	186.40	185.73
7+40	186.83	187.50			
7+60	189.33	190.00	X	191.00	190.33
7+75 W. Edge		91.50		E. Alley 7+75 192.50	
7+80	191.33	192.00		193.00	192.33
7+90 C. Alley					
8+00	192.83	193.50	X	194.50	193.83
8+20	194.08	194.75		195.75	195.08
8+32 W. End Curb on S.		195.35			
8+40	195.04	195.75		196.75	196.04
8+60	195.93	196.60		197.60	196.93
8+70 W. Line Edgmont on North	23			198.02	197.35
8+80	196.53	197.20			
9+00	197.08	197.75			
9+05 W. Line Edgmont on South	197.13	197.80			
Edgmont					
00 on N				199.22	198.55
0135 E. Line Edgmont	197.83	198.50	X	199.50	197.83
+50		198.50		199.50	
+70		198.40	X	198.40	
+90		198.10		199.10	
1+10		197.75	X	198.75	
1+30	196.53	197.20		198.20	197.53
1+50	195.93	196.60	X	197.60	196.93
1+70	195.08	195.75		196.75	196.08

(con) Page 13

2M 199.59 N.E. Edgmont & C.

Station	5 gutter	S. ch		N. ch	N gutter
6+60	177.33	174.00	X	178.80	178.13
6+80	179.03	179.70		180.20	179.53
7+00	181.33	182.00	X	182.20	181.53
7+20	184.03	184.70			
7+30	185.43	186.10	X	186.40	185.73
7+40	186.83	187.50			
7+60	189.33	190.00	X	191.00	190.33
7+75 W. Edge		91.50		E. Alley 7+75 192.50	
7+80	191.33	192.00		193.00	192.33
7+90 C. Alley					
8+00	192.83	193.50	X	194.50	193.83
8+20	194.08	194.75		195.75	195.08
8+32 W. End Curb on S.		195.35			
8+40	195.04	195.75		196.75	196.04
8+60	195.93	196.60		197.60	196.93
8+70 W. Line Edgmont on North	23			198.02	197.35
8+80	196.53	197.20			
9+00	197.08	197.75			
9+05 W. Line Edgmont on South	197.13	197.80			
Edgmont					
00 on N				199.22	198.55
0135 E. Line Edgmont	197.83	198.50	X	199.50	197.83
+50		198.50		199.50	
+70		198.40	X	198.40	
+90		198.10		199.10	
1+10		197.75	X	198.75	
1+30	196.53	197.20		198.20	197.53
1+50	195.93	196.60	X	197.60	196.93
1+70	195.08	195.75		196.75	196.08



Greeley Finish stakes indexed c.s.k.
31st to 32nd

46.22 0.79 47.01 11.81 35.20 1.46 36.66	N	40.7 6.3	38.0 9.0	37.1 9.9	36.3 10.7	35.6 11.4	35.1 11.9	34.6 12.4	34.3 12.7
	N.d	42.20 5.71 8.66	40.6 6.4	37.9 9.1	37.0 10.0	36.2 10.8	35.5 11.5	35.0 12.0	34.5 12.5
	S.d	43.80 5.21 3.19	41.3 5.7	38.7 8.3	37.9 9.9	37.2 9.8	36.5 10.5	36.0 11.0	35.5 11.5
	S		41.4 5.6	38.8 8.2	38.0 9.0	37.3 7.7	36.6 10.4	36.1 10.9	35.6 11.4
	N.d	33.5 3.2 3.1	32.4 3.7 3.8	32.0 4.7 4.6	30.6 6.1 6.0	29.3 7.4 7.3	27.9 8.8 8.7		26.51 10.15
	S.d	34.5 2.2 2.1	33.8 2.9 2.8	32.7 4.0 3.9	31.0 5.7 5.6	29.2 7.4 7.3	27.5 9.2 9.1		25.79 10.87

327.42 BM. N.W. Nightman + Swift.

0.12
337.52
13.06
324.46
0.49
324.95
12.77
312.18
0.27
312.45
13.03
299.42
0.10
299.52
12.59
286.93
1.70
288.63

N. line night	N. ch. with	W. night	S. ch. with	S. line with
4.03	283.6	283.7	283.2	283.0
84.00	2.8	2.8		2.8
1	280.8	280.6		280.2
+ 2.8	7.8	8.0		4.4
	4.3	4.6		5.1
	+ 3.5	+ 3.4		+ 3.3

Water Line Grades.

2
d.e. d.d.
3.38 4.48
283.25 284.75

31st St Grading Etc.
Alleys BIK 329 Cheats

	S. line	E	N. line
720 ft of 31st St	54.00	53.80	54.10
75 W of 31st St	55.4 12.2 11.2 +1.0	55.20 12.17 12.1 +0.3	55.5 12.1 12.1 0.0
47.5 W of 31st St	57.95 7.7 3.2 +6.5	57.75 7.7 4.9 +5.0	58.1 7.5 4.9 4.6
N. line 31st	60.50 13.1 7.5 +5.6	60.30	60.70 12.9 6.7 +6.7

Alley BIK 334 Cheats

S. line 31st	60.70 12.7 6.4 +6.1	60.50	60.90 12.7 5.4 +7.3
40 E. of 31st	65.90 7.7 5.4 +2.3	65.70 7.9 5.1 +2.8	66.10 7.5 5.1 +2.4
60 E of 31st	68.00 5.6 5.1 +0.5	67.80 5.8 4.8 +1.0	68.20 5.4 4.8 +0.6
80 E. of 31st	69.20 4.4 4.1 +0.3	69.00 4.6 4.3 +0.3	69.40 4.2 4.3 -0.1

67.08 BM
0.56
67.64
1.10
66.54
7.06
73.60

Sewer Cons. Cypress Ave
Park Blvd East.

Indexed c.s.k.

00-7

306.20

00: Pipem House

295.20

0+38 A

6.55 99.65 95.46

+4.19

0+69

6.39 99.81 95.18

+4.63

1+00

6.25 99.95 94.90

+5.05

1+42

5.94 300.26 94.52

+5.74

1+84 A

5.74 300.46 94.14

+6.32

2+195

5.70 300.50 93.82

+6.68

2+55 (set M.H. & Cypress
to c.s.k. line Indiana)

5.44 300.76 293.50

+7.26

3+00

3.66 302.54 93.14

+9.36

3+50

1.72 304.48 92.83

+11.65

4+00 T.P. 0.32 305.02

1.50 304.70 92.44

+12.22

4+50 Brk Grade

5.24 99.78 8292.13

+7.65

5+00 T.P. 0.47 293.20

12.29 292.73 286.06

+6.67

5+50 Brk Grade

7.52 285.64 280.00

+5.68

5+77 (by M.H. & Cypress
15' S. of Miling Georgia)

14.10 279.10 277.10

F.L. M.H.

294.00 S.W. N.W. Cypress & Georgia

M.H. 366.5

13.74

& Cypress

27.18

M.H. & Cypress
& Indiana

9.27

6.22

7.43

272.95

14.10

10.31

295.80

292.30

307.76

295.08

4.69

11.12

302.57

204.45

3.63

67

306.20

0.0328

10.40

37

295.90

63

204.0670

612

655

325

1030

6.10

4.40

10.50

204.45

409

420

409

580

408

1720

9.55

83

10.35

4.47

9.63

14.10

20

245.30

292.10

366

3.300

3.277

24.

0.09

215

4.72

6.2

5.37

4.61

9.75

2.5

10.45

6.55

3.54

10.2

31st St Grading Paving etc
Market to Logan.

Indexed c.s.k.

	Paved	Web	E. cl
000 = S. Line Webster		69.50	70.00
+50		68.5	69.0
1400		67.6	68.0
+50		66.7	67.0
2400		65.8	66.0
+50		64.9	65.0
3400 = N. Line Clay		64.09	64.00
			Paved
000 = S. Line Clay		63.28	63.13
+50		62.4	62.4
1400		61.6	61.6
+50		60.8	60.9
2400		59.9	60.2
+50		59.1	59.5
3400 = N. Line Franklin		58.30	58.80
000 = S. Line Franklin		56.50	57.00
+50		55.1	55.4
1400		53.8	53.8
+50		52.5	52.2
2400		51.1	50.6
+50		49.8	49.0
3400 = N. Line Ocean View		48.52	47.42
			47.45
			Paved
S. Line		47.00	46.00

	W.	E.	N.	S.	W.	E.	N.	S.
61.24	68.50	68.5	67.6	66.7	65.8	64.9	64.00	
0.53	11.83	12.8	13.3	14.6	15.5	8.2	7.22	
61.77	11.78	8.3	2.2	2.6	7.3	0.0	9.04	
12.88	0.054	+4.5	+5.5	+6.0	4.2	+8.2	0.144	
48.89								
4.19								
53.08								
10.09								
48.61								
1.59								
50.020								
61.24	62.4	61.6	60.8	59.9	59.1	58.30	58.50	
0.53	9.94	10.8	6.9	7.7	8.6	9.4	10.2	
61.77	9.89	8.3	1.1	1.2	3.6	3.9	7.5	
12.88	0.054	+2.5	+5.8	+6.5	+5.0	+5.5	+2.7	
48.89								
4.19								
53.08								
10.09								
48.61								
1.59								
50.020								
61.24	62.4	61.6	60.9	60.2	59.5	58.80	58.80	
0.53	10.09	10.8	7.4	8.3	9.0	9.7	9.7	
61.77	10.09	2.5	1.7	1.2	3.4	4.2	3.2	
12.88	0.8	+8.3	+8.9	+6.4	+2.5	+4.8	+2.5	
48.89								
4.19								
53.08								
10.09								
48.61								
1.59								
50.020								
61.24	55.1	53.8	52.5	51.1	49.8	48.52	48.52	
0.53	8.8	6.7	8.0	0.6	2.0	3.3	4.8	
61.77	8.8	9.2	11.3	10.0	9.0	7.9	4.4	
12.88	-1.5	-3.1	-3.8	-9.4	-7.0	-4.6	-4.4	
48.89								
4.19								
53.08								
10.09								
48.61								
1.59								
50.020								
61.24	55.1	53.8	52.2	50.6	49.0	47.42	47.42	
0.53	4.8	6.4	8.0	0.9	2.5	4.1	5.6	
61.77	3.9	4.9	10.1	7.1	9.0	4.4	5.0	
12.88	+0.9	+1.0	-2.1	-6.2	-6.8	-0.3	-0.3	
48.89								
4.19								
53.08								
10.09								
48.61								
1.59								
50.020								
61.24	40.50	40.00	39.00	38.00	37.00	36.00	35.00	
0.53	47.84	47.50	47.50	47.50	47.50	47.50	47.50	
61.77	5.75	6.09	6.09	6.09	6.09	6.09	6.09	
12.88	2.75	6.09	6.09	6.09	6.09	6.09	6.09	
48.89	-1.00	+7.00	+7.00	+7.00	+7.00	+7.00	+7.00	
4.19								
53.08								
10.09								
48.61								
1.59								
50.020								
61.24	58.10	57.75	57.30	56.80	56.30	55.80	55.30	
0.53	3.33	3.53	3.88	4.33	4.83	5.33	5.83	
61.77	4.53	4.53	3.88	3.83	3.83	3.83	3.83	
12.88	-1.00	-1.00	+0.50	+1.00	+1.00	+1.00	+1.00	
48.89								
4.19								
53.08								
10.09								
48.61								
1.59								
50.020								
61.24	58.90	58.90	59.10	59.50	60.00	60.00	60.00	
0.53	4.31	4.27	4.07	3.27	3.17	3.17	3.17	
61.77	4.97	4.97	4.97	4.97	4.97	4.97	4.97	
12.88	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	
48.89								
4.19								
53.08								
10.09								
48.61								
1.59								
50.020								
61.24	57.00	57.25	57.60	58.00	58.50	58.50	58.50	
0.53	4.84	4.57	4.29	3.84	3.34	3.34	3.34	
61.77	4.84	4.57	4.29	3.84	3.34	3.34	3.34	
12.88								
48.89								
4.19								
53.08								
10.09								
48.61								
1.59								
50.020								
61.24	56.50	56.55	56.35	56.00	55.50	55.50	55.50	
0.53	5.34	5.24	5.49	5.77	6.34	6.34	6.34	
61.77	5.34	5.24	5.49	5.77	6.34	6.34	6.34	
12.88								
48.89								
4.19								
53.08								
10.09								
48.61								
1.59								
50.020								

21

00= S. Line Ocean View

47.00

46.00

+50

45.7

44.7

1+00

44.5

43.5

+50

43.2

42.2

2+00

42.0

41.0

+50

40.7

39.7

3+00=N. Line Valle

37.48

39.50

38.50

38.12

00=S. Line Valle

36.60

37.50

36.50

36.92

+55

36.35

35.35

1+10 Brk

35.20

34.20

1+30 Brk

34.80

33.80

1+50 Brk

34.70

33.70

1+70 Brk

34.90

33.90

1+90 Brk

35.45

34.45

2+10 Brk

36.20

35.20

2+30 Brk

37.10

36.10

3+00=N. Line Martin

42.21

41.00

40.00

S. Line 40.00

00=S. Line Martin

42.68

42.00

41.00

S. Line 40.52

0+50

42.5

41.5

1+00

43.0

42.0

1+50

43.5

42.5

2+00

44.0

43.0

2+50

44.4

43.5

3+00=N. Line Greely

45.00

44.00

48.61
+1.59
50.20
12.98
37.22
+0.62
37.84
-0.23
37.61
10.03
47.64
4.18
42.83
5.50
48.53
2.04
46.23

W

47.00

32.0
8.22

45.7
4.5
2.6
+1.9

44.5
8.7
4.2
+1.0

43.2
7.0
2.3
-0.3

42.0
8.2
7.0
+1.8

40.7
9.5
6.1
+3.0

39.5
10.7
4.7
+2.0

38.0

4.06

7.57

3.5

4.54

E

46.00

42.0
4.20

44.7
4.5
4.2
+0.9

43.5
6.7
3.8
+0.9

42.2
8.0
13.6
-5.6

41.0
9.2
12.0
-8.8

39.7
10.5
13.7
-3.2

38.5
11.7
11.6
+0.2

38.1
12.1
11.5
+0.6

42.75
12.7
3.9
+2.8

W

40.75

12.7
3.9
+2.8

38.4
13.2
1.9
+0.8

35.2
2.6
1.9
+0.8

34.7
3.1
2.3
-3.6

33.5
2.3
2.9
-5.0

32.0
4.1
4.3
-0.2

31.5
3.3
10.8
-7.3

30.1
1.7
9.2
-7.5

28.0
7.6
5.2
+2.4

42.02
13.3
13.2
-0.0

W

42.02

13.3
13.2
-0.0

42.5
5.8
7.0
+3.4

43.0
5.3
7.0
-1.2

43.0
4.7
5.3
0.0

43.60
4.73
4.69
0.04H

43.80
4.53
4.38
0.20H

44.0
4.33
4.13
0.20H

45.0
3.23
3.22
0.07H

42.83
0.40
43.63
+0.67
31.94

E

40.5

41.0
7.3
6.6
+1.2

41.5
6.8
7.4
+0.7

42.0
6.3
7.4
-2.6

42.5
5.8
7.0
-5.4

43.0
4.7
5.3
-3.4

43.5
4.5
4.3
-0.9

44.0
3.23
3.22
-4.0

44.5
2.7
2.7
-4.0

45.0
2.3
2.3
-4.0

45.5
1.7
1.7
-4.0

46.0
1.1
1.1
-4.0

46.5
0.5
0.5
-4.0

47.0
0.0
0.0
-4.0

47.5
-0.5
-0.5
-4.0

48.0
-1.0
-1.0
-4.0

48.5
-1.5
-1.5
-4.0

49.0
-2.0
-2.0
-4.0

49.5
-2.5
-2.5
-4.0

50.0
-3.0
-3.0
-4.0

50.5
-3.5
-3.5
-4.0

51.0
-4.0
-4.0
-4.0

51.5
-4.5
-4.5
-4.0

52.0
-5.0
-5.0
-4.0

52.5
-5.5
-5.5
-4.0

53.0
-6.0
-6.0
-4.0

53.5
-6.5
-6.5
-4.0

54.0
-7.0
-7.0
-4.0

48.61

45.7

44.5

43.2

42.0

40.7

39.5

38.1

38.4

35.2

34.7

33.5

32.0

31.5

30.1

28.0

27.5

26.0

25.0

24.0

23.0

22.0

21.0

20.0

19.0

18.0

17.0

16.0

15.0

14.0

13.0

12.0

11.0

10.0

9.0

8.0

7.0

6.0

5.0

4.0

3.0

2.0

1.0

0.0

-1.0

-2.0

48.61

45.7

44.5

43.2

42.0

40.7

39.5

38.1

38.4

35.2

34.7

33.5

32.0

31.5

30.1

28.0

27.5

26.0

25.0

24.0

23.0

22.0

21.0

20.0

19.0

18.0

17.0

16.0

15.0

14.0

13.0

12.0

11.0

10.0

9.0

8.0

7.0

6.0

5.0

4.0

3.0

2.0

1.0

0.0

-1.0

-2.0

48.61

45.7

44.5

43.2

42.0

40.7

39.5

38.1

38.4

35.2

34.7

33.5

32.0

31.5

30.1

28.0

27.5

26.0

25.0

24.0

23.0

22.0

21.0

20.0

19.0

18.0

17.0

16.0

15.0

14.0

13.0

12.0

11.0

10.0

9.0

8.0

7.0

6.0

5.0

4.0

3.0

31st 5th Grades

	w. d	e. d
000 S. Line Greeley	47.00	46.00
0+50	51.5	50.5
1+00	56.0	55.0
1+50	60.5	59.5
2+00	65.0	64.0
2+50	69.5	68.5
3+00 = N. Line Logan	74.00	73.00

Greeley Ave Grades

	w. d	e. d	Water Pipe
000 E. Line 31 st St	44.40	43.70	44.1
0+10 E.C. 20 th N. Returns	43.80	43.80	43.1
0+65	41.25	40.6	42.6
1+20 R.V.C.	38.70	37.90	40.6
1+40 Brk.	37.90	37.00	38.3
1+60 Brk.	37.20	36.20	35.8
1+80 Brk.	36.50	36.50	36.7
2+00 Brk.	35.95	34.95	35.7
2+20 Brk.	35.50	34.50	35.5
2+40 E.V.C.	35.20	34.20	32.5
3+00 Brk.	34.50	33.50	31.7
3+40 Brk.	33.75	32.85	31.0
3+80 Brk.	32.70	32.00	30.8
4+35	30.97	30.62	30.4
4+90	29.25	29.25	29.4
5+45	27.52	27.87	26.1
6+00 = N. Line 32 nd St	25.79	26.51	23.1

71.46 B.M. N.W. 31st & National

	W	E	N	Water	S	N	S	Water	Water
	47.0	51.5	56.0	60.5	65.0	69.5	74.0		
	2.57	10.8	6.3	15.8	9.3	4.8	0.35		
	2.88	4.3	1.4	11.4	6.7	3.3	0.56		
		+2.5	+4.7	+2.4	+2.6	+1.5	0.13		44.0
	46.0	50.5	55.0	59.5	64.0	68.5	73.0		5.6
	3.6	11.8	7.3	2.8	10.3	5.8	1.35		9.7
	7.1	14.8	7.8	5.7	12.0	8.6			-4.1
	-3.0	-2.7	-0.5	-2.7	-1.7	-2.8			
	43.70	43.3	40.6	37.9	36.2	35.0	34.2	33.5	32.8
	36.18	10.3	9.0	+7.0	0.7	1.2	2.7	8.7	7.1
	11.67	13.1	11.4	2.4	3.7	5.2	2.6	2.4	2.7
	2.5.19	-3.8	-4.1	-3.4	-3.1	-3.6	-3.9	-5.0	-1.6
	12.14								
	38.13								
	11.97								
	26.16								
	1.10								
	27.26								
	41.1	40.6	37.9	35.3	33.7	32.5	31.7	31.0	30.3
	9.0	17.7	14.3	13.9	17.7	17.9	18.6	19.3	
	7.9	11.4	13.4	13.5	16.9	16.1	12.3	8.8	
	+1.1	+0.3	+0.9	+0.4	+0.2	+1.8	+6.1	+7.0.5	
	44.4	43.8	41.2	38.7	37.2	36.0	35.2	34.5	33.7
	5.8	8.4	10.9	12.4	13.6	14.4	15.1	15.8	
	8.1	11.1	12.7	13.5	14.2	13.3	9.4	8.0	
		-2.7	-1.8	-1.1	-2.6	+1.1	+5.7	+7.9	
	8								
	32.0	30.6	29.2	27.8	26.51				
	4.8	23.3	+11.9	+0.8					
	4.5	5.0	5.0	11.2					
	+0.3	-8.3	-6.9	-12.2					
	46.22								
	0.58								
	46.80								
	41.1	40.6	37.9	35.3	33.7	32.5	31.7	31.0	30.3
	6.2	8.7	11.5	13.1	14.3	15.1	15.8	16.5	17.4
	3.8	6.6	7.5	12.3	12.8	12.9	12.4	13.0	12.1
	+2.4	+2.3	+2.0	+0.8	+1.5	+2.2	+3.4	+3.5	+5.3
	32.7	31.0	29.2	27.5	25.79				
	16.9	7.1	8.9	+0.2	1.47				
	8.2	3.2	12.0	8.8	1.43				
	8.0	+3.9	-3.1	-9.0					
		Pier 1	2	3	4	5	6	7	
	28.2	27.10	26.76	26.42	26.04	25.74	25.40	25.06	24.72
	9.7	11.03	11.87	0.84	7.18	7.52	1.86	2.20	2.54
	9.7	6.49	10.24	3.90	7.82	7.23	8.08	8.68	8.88
	+9.2	+4.54	+1.13	-3.04	-6.64	-6.11	-6.22	-6.46	-6.74
	9	10	11	12	11.324				
	24.38	24.04	23.70	23.36	23.10				
	2.84	3.22	3.56	3.70	4.16				
	10.81	10.22	12.54	4.38	1.88				
	-7.93	-7.00	-8.98	-0.48	+2.38				

Alley Grading indexed ask

Alley BK 330 Choats

	S. line	5's. 4'±	±	5'N. 4'±	N. line
50' W of 31 st St	72.20	72.20	71.90	72.20	72.20
40' " " "		72.30	72.00	72.30	
30' " " "	73.20	71.75	71.45	71.75	73.00
25' " " "					73.00
20' " " "	73.20	70.55	70.30	70.65	
10' " " "		68.65	68.45	68.85	
N. Line 31 st St	66.50	66.40	66.30	66.50	66.70

Alley BK 333 Choats

	S. line	5'±	±	5'N. 4'±	N. line
5' line 31 st St	66.70	66.60	66.50	66.70	66.90
40' E. of 31 st St		75.50	75.30	75.50	75.7
30' " " "	80.00	77.25	77.15	77.35	77.55
60' " " "		78.75	78.55	78.75	78.95
70' " " "	80.60	79.65	79.45	79.65	79.85
80' " " "	80.40	80.00	79.80	80.00	80.20

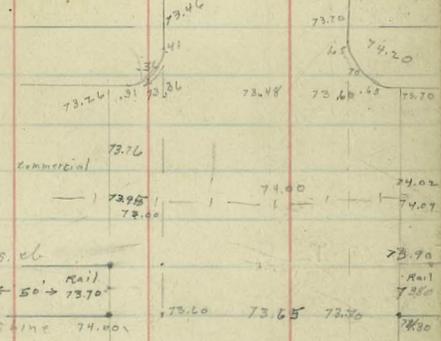
67.08 BM
11.85
78.93
0.40
78.53
6.24
84.82

	50W	40W	30W	20W	10W	N. line	E. line	40E	50E	60E	70E	80E
S. line	72.20	72.70	73.20	73.20		66.50	66.70	77.3	80.00	80.30	80.60	80.40
	6.7	6.2	5.7	5.7		12.4	78.1	7.5	4.8	4.5	4.2	4.4
	6.5	6.0	5.5	5.3		4.7	7.3	6.0	5.2	4.5	4.2	4.4
	+0.2	+0.2	+0.2	+0.4		+7.7	+10.8	+1.5	-0.4	0.0	0.0	0.0
5'N	71.20	72.30	71.75	72.55	68.65	66.40	66.60	75.50	77.35	79.75	79.65	80.00
	6.7	6.6	7.2	8.4	10.3			7.3	7.5	6.1	5.2	4.8
	6.5	6.0	5.5	5.3	4.7			6.0	5.2	4.5	4.2	4.4
	+0.2	+0.6	+1.3	+3.1	+5.6			+3.3	+2.3	+1.6	+1.2	+0.4
±	71.90	72.00	71.45	70.30	68.45	66.30	66.50	75.30	77.15	78.55	79.45	79.80
	6.5	6.9	7.5	8.6	10.5			9.5	7.7	6.3	5.4	5.0
	6.0	6.0	5.5	5.3	4.7			6.0	5.2	4.5	4.2	4.4
	+0.5	+0.9	+2.0	+3.3	+5.8			+3.5	+2.5	+1.8	+1.2	+0.6
5'S	72.20	72.30	71.75	70.65	68.85	66.50	66.70	75.50	77.35	79.75	79.65	80.00
	6.7	6.6	7.2	8.3	10.1			7.3	7.5	6.1	5.2	4.8
	6.7	6.6	5.9	5.9	5.8			5.4	4.9	4.7	4.3	4.6
	0.0	0.0	+1.3	+2.4	+4.3			+3.4	+2.6	+1.4	+0.9	+1.2
N. line	72.20	72.60	73.00	73.00		66.70	66.90	75.50	77.55	79.85	79.85	80.20
	6.7	6.3	5.9	5.9		12.2	17.9	9.1	7.3	5.9	5.0	4.6
	6.7	6.6	5.9	5.9		5.7	6.3	5.4	4.9	4.7	4.3	3.6
	0.0	-0.3	0.0	0.0		+6.5	+11.6	+3.7	+2.4	+1.2	+0.7	+1.0

74.20
10.70
75.90

cm gutter

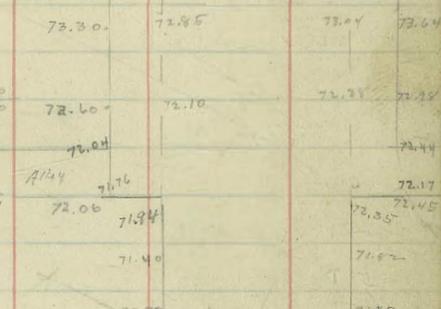
WG	73.00	72.85	72.70
	2.20	3.05	3.30
N. line	74.00	73.30	72.60
	1.90	2.40	3.30
E. line	74.30	73.64	72.98
	1.60	2.44	2.72



25

s/c

W	72.06	71.94	71.40	70.70
	3.84	3.96	4.50	6.20
E	72.45	72.35	71.82	71.20
	3.45	3.50	4.08	4.70



	70.1	19.00	70.5	70.5
	3.1	3.1	3.1	3.1
	2.3	2.3	2.3	2.3
	2.1	2.1	2.1	2.1
	4.8	4.8	4.8	4.8
	6.2	6.2	6.2	6.2
	8.0	8.0	8.0	8.0
	2.1	2.1	2.1	2.1
	4.8	4.8	4.8	4.8
	5.0	5.0	5.0	5.0
	6.4	6.4	6.4	6.4
	9.7	9.7	9.7	9.7
	4.0	4.0	4.0	4.0
	4.8	4.8	4.8	4.8
	6.2	6.2	6.2	6.2
	8.0	8.0	8.0	8.0
	2.1	2.1	2.1	2.1
	4.8	4.8	4.8	4.8
	5.0	5.0	5.0	5.0
	6.4	6.4	6.4	6.4
	9.7	9.7	9.7	9.7
	4.0	4.0	4.0	4.0
	4.8	4.8	4.8	4.8
	6.2	6.2	6.2	6.2
	8.0	8.0	8.0	8.0
	2.1	2.1	2.1	2.1
	4.8	4.8	4.8	4.8
	5.0	5.0	5.0	5.0
	6.4	6.4	6.4	6.4
	9.7	9.7	9.7	9.7
	4.0	4.0	4.0	4.0
	4.8	4.8	4.8	4.8
	6.2	6.2	6.2	6.2
	8.0	8.0	8.0	8.0
	2.1	2.1	2.1	2.1
	4.8	4.8	4.8	4.8
	5.0	5.0	5.0	5.0
	6.4	6.4	6.4	6.4
	9.7	9.7	9.7	9.7
	4.0	4.0	4.0	4.0
	4.8	4.8	4.8	4.8
	6.2	6.2	6.2	6.2
	8.0	8.0	8.0	8.0
	2.1	2.1	2.1	2.1
	4.8	4.8	4.8	4.8
	5.0	5.0	5.0	5.0
	6.4	6.4	6.4	6.4
	9.7	9.7	9.7	9.7
	4.0	4.0	4.0	4.0
	4.8	4.8	4.8	4.8
	6.2	6.2	6.2	6.2
	8.0	8.0	8.0	8.0
	2.1	2.1	2.1	2.1
	4.8	4.8	4.8	4.8
	5.0	5.0	5.0	5.0
	6.4	6.4	6.4	6.4
	9.7	9.7	9.7	9.7
	4.0	4.0	4.0	4.0
	4.8	4.8	4.8	4.8
	6.2	6.2	6.2	6.2
	8.0	8.0	8.0	8.0
	2.1	2.1	2.1	2.1
	4.8	4.8	4.8	4.8
	5.0	5.0	5.0	5.0
	6.4	6.4	6.4	6.4
	9.7	9.7	9.7	9.7
	4.0	4.0	4.0	4.0
	4.8	4.8	4.8	4.8
	6.2	6.2	6.2	6.2
	8.0	8.0	8.0	8.0
	2.1	2.1	2.1	2.1
	4.8	4.8	4.8	4.8
	5.0	5.0	5.0	5.0
	6.4	6.4	6.4	6.4
	9.7	9.7	9.7	9.7
	4.0	4.0	4.0	4.0
	4.8	4.8	4.8	4.8
	6.2	6.2	6.2	6.2
	8.0	8.0	8.0	8.0
	2.1	2.1	2.1	2.1
	4.8	4.8	4.8	4.8
	5.0	5.0	5.0	5.0
	6.4	6.4	6.4	6.4
	9.7	9.7	9.7	9.7
	4.0	4.0	4.0	4.0
	4.8	4.8	4.8	4.8
	6.2	6.2	6.2	6.2
	8.0	8.0	8.0	8.0
	2.1	2.1	2.1	2.1
	4.8	4.8	4.8	4.8
	5.0	5.0	5.0	5.0
	6.4	6.4	6.4	6.4
	9.7	9.7	9.7	9.7
	4.0	4.0	4.0	4.0
	4.8	4.8	4.8	4.8
	6.2	6.2	6.2	6.2
	8.0	8.0	8.0	8.0
	2.1	2.1	2.1	2.1
	4.8	4.8	4.8	4.8
	5.0	5.0	5.0	5.0
	6.4	6.4	6.4	6.4
	9.7	9.7	9.7	9.7
	4.0	4.0	4.0	4.0
	4.8	4.8	4.8	4.8
	6.2	6.2	6.2	6.2
	8.0	8.0	8.0	8.0
	2.1	2.1	2.1	2.1
	4.8	4.8	4.8	4.8
	5.0	5.0	5.0	5.0
	6.4	6.4	6.4	6.4
	9.7	9.7	9.7	9.7
	4.0	4.0	4.0	4.0
	4.8	4.8	4.8	4.8
	6.2	6.2	6.2	6.2
	8.0	8.0	8.0	8.0
	2.1	2.1	2.1	2.1
	4.8	4.8	4.8	4.8
	5.0	5.0	5.0	5.0
	6.4	6.4	6.4	6.4
	9.7	9.7	9.7	9.7
	4.0	4.0	4.0	4.0
	4.8	4.8	4.8	4.8
	6.2	6.2	6.2	6.2
	8.0	8.0	8.0	8.0
	2.1	2.1	2.1	2.1
	4.8	4.8	4.8	4.8
	5.0	5.0	5.0	5.0
	6.4	6.4	6.4	6.4
	9.7	9.7	9.7	9.7
	4.0	4.0	4.0	4.0
	4.8	4.8	4.8	4.8
	6.2	6.2	6.2	6.2
	8.0	8.0	8.0	8.0
	2.1	2.1	2.1	2.1
	4.8	4.8	4.8	4.8
	5.0	5.0	5.0	5.0
	6.4	6.4	6.4	6.4
	9.7	9.7	9.7	9.7
	4.0	4.0	4.0	4.0
	4.8	4.8	4.8	4.8
	6.2	6.2	6.2	6.2
	8.0	8.0	8.0	8.0
	2.1	2.1	2.1	2.1
	4.8	4.8	4.8	4.8
	5.0	5.0	5.0	5.0
	6.4	6.4	6.4	6.4
	9.7	9.7	9.7	9.7
	4.0	4.0	4.0	4.0
	4.8	4.8	4.8	4.8
	6.2	6.2	6.2	6.2
	8.0	8.0	8.0	8.0
	2.1	2.1	2.1	2.1
	4.8	4.8	4.8	4.8
	5.0	5.0	5.0	5.0

10-11-29

Water Grades
Quince, Redwood Haller Etc
Quince St

Indexed c.s.k.

26

B.M.B.P.	12.35	292.04	279.69	NE Quince + Mile		
0010 W. 8 th Mile			14.2	77.8	275.47	+2.7
0+19.31 Brk			13.8	78.2	275.33	+2.9
0+74.2			12.0	80.0	77.0	+3.0
1+30 Brk			9.6	82.4	278.68	+3.7
1+75 T			6.4	85.6	80.8	+4.8
2+30			7.0	88.0	83.6	+4.4
2+90			1.4	90.6	86.1	+4.5
3+30 W. Line Vancouver			0.7	91.3	288.63	
		298.22				
000 E. Line Vancouver			6.52	91.70	289.53	
0+60			4.3	93.9	90.0	+3.9
1+20 Brk			4.1	94.1	290.43	+3.7
1+65 T			4.7	93.5	89.0	+4.5
2+00 Brk			5.6	92.6	287.83	+4.8
2+60 Brk		286.84	8.0	90.2	283.63	+6.6
3+20 Brk Haller			0.4	86.0	277.63	+8.4
3+60 + 10 th St			5.8	81.0	75.7	+5.3
3+90 Valuc C.F. Plug E. Line Haller			11.5	75.3	274.33	+1.0

286.84
0.47
286.37
11.85
298.22
91.3
✓7.00 Brk.
7.00

Water Grades
Alleys Bet. Miles & Vancouver

292.04

Tin Quince			6.4	85.6	80.8	+4.8
00= M. line Quince			5.3	86.7	80.63	+6.1
0+40			2.7	89.8	83.6	+6.2
0+80 Brk			0.9	91.1	286.53	+4.6
" T.P.	9.27	301.25	0.06	291.88		
1+40 Brk			8.6	92.6	288.93	+3.7
50						
2+00			7.3	94.0	89.8	+4.2
2+60			6.4	94.8	90.7	+4.1
3+20			5.3	96.0	91.6	+4.4
3+80			4.7	96.5	92.5	+4.0
4+40			3.7	97.5	93.4	+4.1
5+00			3.0	98.2	94.3	+3.9
5+60 Brk			1.9	99.3	295.23	+4.1
6+20 S. line Redwood			1.5	99.7	295.23	+4.5
00= 4 th Redwood			0.7	200.5	295.93	+4.6
" T.P.	7.27	307.89	0.63	300.62		
0+50 Brk			6.6	1.3	297.73	+3.6
1+00			6.2	1.7	98.2	+3.5
1+50			5.8	2.1	98.7	+3.4
2+00			5.2	2.7	99.3	+3.4
2+50			4.8	3.1	99.4	+3.3
3+00			3.9	4.0	300.4	+3.6
3+50			3.4	4.5	301.0	+3.5
4+00			2.7	5.2	1.6	+3.6
4+50			1.8	6.1	2.2	+3.9
5+00			1.6	6.3	2.7	+3.6
5+50 Brk			1.0	6.9	303.18	+3.7

F. H. Curb Grade
2.99.00
2.75
1.10
+1.15

Water Grade
Allens Bet Nile + Vanes river

307.89

5+50. Brk 85			1.0	6.9	303.18	+3.7
5+85 25			0.8	7.1	302.7	+4.4
6+20 S. Line Thorn			2.8	5.1 pavk	302.23	
002 N. Line Thorn T.P.	8.05	315.67	2.0 0.27	5.9 307.62	303.03	
0+45			7.0	8.7	4.2	+4.5
0+90 Brk 00			6.6	9.1	305.45	+3.6
1+52			6.2	9.5	6.0	+3.5
2+14			5.8	9.9	6.5	+3.4
2+76			5.5	10.2	7.0	+3.2
3+38			5.0	10.7	7.5	+3.2
4+00 Brk 522			4.7	11.0	308.03	+3.0
4+52 ^E			3.8	11.9	8.5	+3.7
5+05			3.6	12.1	9.1	+3.0
5+57 ^E 8"			2.8	12.9	9.6	+3.3
6+10 S. Line Myrtle			2.5	13.2	310.23	
002 N. Line Myrtle T.P.	4.82	319.91	1.9 0.58	13.8 315.09	310.53	
0+35			4.6	15.3	11.5	+3.8
0+70 Brk V			4.2	15.7	312.55	+3.2
1+30 Brk 00			3.8	16.1	313.13	+3.0
1+90			3.7	16.2	12.9	+3.3
2+50			4.1	15.8	12.7	+3.1
3+10 Brk 35			4.7	15.2	312.43	+2.9
3+45			5.6	14.3	11.2	+3.1
3+80 N. End C.I. Plug			11.3	8.6	310.03	-1.7

319.91
5.36
314.55 = 314.57 Chk BM S.C. Myrtle Nile

Water Grades
 Allays Bet. Boundary & Nile

284.81

5+00			5.6	79.2	74.4	+4.8
5+40			6.4	78.4	72.6	+5.8
5+80			8.0	76.8	70.8	+6.0
6+20	N. Line Redwood	0.35	10.5	74.3	269.03	+5.3
		271.93	17.23	271.58		
20' S. of N. Line			3.7	68.2	268.5	-0.3
00=	S. Line Redwood	0.16	13.2	58.7	258.0	+0.7
		258.85	13.27	258.69		
0+60 BrK			4.0	54.9	254.0	+0.9
1+20 BrK			2.4	6.5	254.0	+2.5
1+60			5.9	53.0	50.7	+2.3
2+00 BrK			8.8	50.1	247.5	+2.6
2+40			10.3	48.6	46.2	+2.4
2+80 BrK			12.3	46.6	245.0	+1.6
3+30			10.4	48.5	43.8	+4.7
3+80			12.4	46.5	42.6	+3.9
	0.21	246.76	12.40	246.35		
4+30			5.4	41.5	41.4	+0.1
4+80			4.8	2.1	40.2	+1.9
5+30			5.9	41.0	39.0	+2.0
5+80			6.8	40.1	37.9	+2.2
6+30			8.1	8.8	36.7	+2.1
6+80	S. Line Quince	0.100	9.8	7.1	235.5	+1.6
0+35			11.3	5.6	35.0	+0.6
0+70 BrK			10.6	6.3	234.5	+1.8
1+10 BrK			7.3	29.6	237.0	+2.6
	12.19	258.78	0.7	246.84		
1+50 BrK			6.0	2.9	252.0	+0.9
T.P.	12.76	271.44	0.10	258.68		

Water Grades
Always Bet Boundary + Nile

271.44

1+50 BrK			11.1		252.0	
1+94			11.1	60.4	56.4	+ 3.6
2+38			6.8	4.7	61.7	+ 3.0
2+82	12.74	288.01	0.2	271.27	66.5	+ 4.5
3+26			6.9	77.2	71.4	+ 5.8
3+70	12.12	296.17	0.2	283.97	76.2	+ 5.0
4+14 BrK			10.8	25.5	241.0	+ 4.5
13.21 = 6'						
4+27 ³¹ Δ 22'-30'			10.5	5.8	81.3	+ 4.5
46.25 52'						
4+74 ⁴⁶ Δ 22'-30' BrK			8.2	8.1	283.2	+ 4.9
5+24 ⁴⁶			5.2	91.1	85.6	+ 5.5
5+77 ⁴⁶			2.4	3.9	98.0	+ 5.9
6+24 ⁴⁶ ⊕ N. Line Cooper			0.0	96.3	290.3	+ 6.0
J.P.	9.09	305.24	0.02	296.25		
			5.24	299.40 = 299.38		

check on B.P. N.E. Cooper + Boundary

31

Water Gauges in Alley E. Vancouver

BM. First Plug	1.58	312.51		310.93.	s.e. Vancouver +Thorn	
00 = K. line Thorne			2.8	309.7	306.73	
0+50 BrK			1.4	10.7	307.33	+3.4
1+10 BrK			3.2	9.3	305.63	+3.7
1+50 BrK			6.5	6.0	302.00	+3.0
1+90 BrK			10.7	1.4	298.00	+3.8
T.P.	0.62	300.39	12.74	299.77		
2+30 BrK			5.3	95.1	290.00	+5.1
2+70 BrK			10.8	89.6	285.00	+4.6
3+10 BrK			13.7	86.7	283.60	+3.7
3+50 BrK T.P.	0.100	287.76	12.63	287.76	283.00	+4.8
4+15 BrK			11.9	75.9	270.00	+5.9
T.P.	0.05	274.86	12.95	274.81		
4+70 BrK	T.P.	0.24	12.66	262.20		
			3.6	58.8	255.00	+3.5
5+20			12.1	50.3	46.2	+4.1
T.P.	0.31	249.68	13.07	249.37		
5+70 BrK			8.0	41.7	237.5	+4.2
6+00 End e.I. Plug s. line Myrtle			12.4	37.3	235.0	+2.3

BM. First Plug	205	312.99		310.93	s.e. Thorn +Vancouver	
00 = S. line Thorn					306.33	
0+60			3.4	309.6	5.8	+3.8
1+20			3.8	9.2	5.3	+3.9
1+80 BrK			4.6	8.4	304.74	+3.6
2+40			6.1	6.9	3.5	+3.4
3+00			7.2	5.8	2.2	+3.6
3+60 BrK			8.8	4.2	300.93	+3.3

3+60 Brk 52		312.98		200.93	
4+12			9.4	3.6	99.0
					+14.6
4+64			11.5	1.6	97.0
					+4.6
5+16 T.P.	0.11	299.47	13.0 13.22	200.0 299.76	95.0
					+5.0
5+68			1.4	2.6	93.0
					+5.5
6+100 M/line Redwood			3.5	6.4	291.03
			2.0	91.9	291.03
6+60 T					+0.9
6+65 Brk	0.08	296.98	12.9 12.90	91.9 296.90	291.03
					+0.9
7+12 E			1.0	6.0	283.0
					+3.0
7+60 Brk	0.24	274.04	12.7 12.79	79.4	275.0
					+4.1
8+25 Brk			12.0	63.0	260.0
					+2.0
8+50 Brk			11.1	2.9	260.0
					+2.9
8+70 Brk	1.246	296.87	0.3 5.4	270.9 2.6	268.5
					+0.1
9+35 Brk			6.4	80.5	278.33
					+2.2
9+90 L			3.1	3.8	80.6
					+3.2
10+25 E	1.281	298.63	0.5 0.6	286.2 6.3	82.9
					+3.4
10+70 E			10.1	8.5	85.2
					+3.3
11+15 E			6.9	91.7	87.5
					+4.2
11+60 Brk			3.2	3.4	289.83
					+3.6
12+20 Brk			3.6	95.0	290.98
					+4.0
12+60 E			4.4	4.2	90.4
					+3.8
13+00 Brk N/line Quince			4.6	4.0	289.83
					+4.2
13+40 E T			6.1	2.5	289.0
					+5.4

Water Grades Redwood St. From Alley W.
of Haller to Haller

B.M.	2.75	303.72	300.97	700 W. T. Redwood & Keneey St.		
00 = T in Alley W. of Haller			11.8	97.7	291.03	+0.9
0+55 BrK			5.6	98.1	292.8	+5.3
1+05			4.3	99.4	95.2	+4.2
1+55 BrK W. Line Haller 40			2.7	301.0	297.7	+3.3
1+95 T in Haller			2.7	301.0	297.53	+3.5

Haller St. Water Grades

310.44

00 = End 360 W. of Redwood.			5.7	4.7	304.13	+0.6
2+50			3.6	6.8	3.4	+3.4
1+00			3.8	6.6	2.6	+4.0
1+50			4.2	6.2	1.8	+4.4
2+00			5.1	305.3	1.0	+4.3
2+50			6.0	304.4	300.2	+4.2
3+00	303.72		6.6	303.8	99.4	+4.4
3+50 BrK			1.1	302.6	298.6	+4.0
4+00 T in Redwood.			2.7	301.0	97.5	+3.5
4+20 BrK S. Line Redwood. 45			3.12	300.60	296.8	+3.8
4+68			4.9	98.8	91.9	+6.9
5+16			8.8	94.9	87.0	+7.9
5+64	T.R. 0.46	290.97	13.21	290.51		
			1.3	89.7	82.1	+7.6
6+12			7.5	83.5	77.2	+6.3
	T.R. 4.02	281.92	13.07	277.90		
6+60 C.I. Plug End			8.7	73.2	272.4	+0.8

300.00

303.72

3.72

3.70

303.72

1.07

302.65

7.23

310.44

Halter St Water Grades

281.92

00-End 200 N. of Quince		10.5	71.4	266.5	+4.9
0F47.5		4.6	77.3	68.8	+8.5
0+95		0.8	81.1	71.1	+10.0
1+42.5	T.P. 5.19	0.27	281.65		
	286.84	4.8	82.0	73.4	+8.6
1+90 Brk		4.8	82.0	275.7	+6.3
2+40 T 44 Quince.		5.8	81.0	75.7	+5.3
2+60 Brk S. line Quince.		5.8	81.0	276.2	+4.8
	+8.6 - 77 in's				
3+08.2		6.8	80.0	75.8	+4.2
3+57.2		7.4	79.4	75.4	+4.0
4+05.2		7.8	79.0	75.0	+4.0
4+54.4		7.2	79.6	74.6	+5.0
5+03.2		4.7	82.1	74.2	+7.9
5+51.5		3.1	83.7	73.4	+9.9
6+00.2 Brk		3.4	83.4	273.5	+9.9
6+60 Brk		8.0	78.8	266.7	+12.1
	T.P. 1.02	12.42	274.41		
	275.48				
7+15 Brk		5.1	70.4	257.3	+13.1
7+45 Brk		8.8	66.7	252.6	+14.1
7+62 End C.I. Plug		10.3	65.2	252.3	+12.9

Water Grades 32nd St
Grape to Hawthorn

Indexed c.s.k.

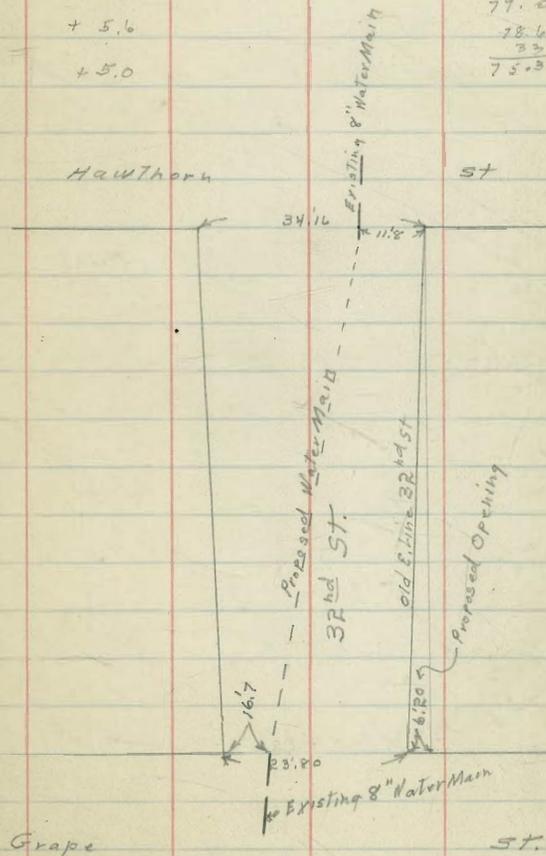
B.M.	8.40	285.36	276.96	s.w. Grade + 32 nd	Ex Pipe	73.9	75.1
00=N. Line Grape		$\frac{10.8}{0.8}$ 11.5	273.9				
0+50		3.9	81.5		74.6		75.5
1+00		3.5	81.9		75.3		75.9
1+50		3.3	82.1		76.0		76.3
2+00		3.1	82.3		76.7		74.7
2+50		3.2	82.2		77.4		77.2
3+00=S Line Hawthorn		$\frac{6.5}{0.8}$ 7.3	278.1		84 Pipe 78.1		77.6

official
grade
stakes set to official grade
4.5 offset to East.

6.2
79.2
6.4
79.0
78.6
33
75.3

Hawthorn

St



11.8

Grape

St.

sd

4+80 PVC	$\frac{91.0}{+3.9} + 4.9$	$\frac{89.5}{7.42.0+5.4}$ ✓	$\frac{88.7}{.12}$ ✓
5+00	$\frac{90.8}{+2.8} + 3.7$	$\frac{89.4}{7.43.3+4.2}$ ✓	$\frac{88.6}{.22}$ ✓
5+20	$\frac{90.0}{+2.9} + 3.4$	$\frac{89.0}{7.94.0+3.9}$ ✓	$\frac{88.2}{.62}$ ✓
5+40	$\frac{88.9}{+2.3} + 2.6$	$\frac{88.3}{8.65.7+2.9}$ ✓	$\frac{87.5}{.32}$ ✓
5+60 EVC	$\frac{87.8}{+2.3} + 2.6$	$\frac{87.4}{9.56.8+2.7}$ ✓	$\frac{86.6}{5.22}$ ✓
5+80		$\frac{85.5}{86.73}$ ✓	$\frac{85.5}{.32}$ ✓
5+90	$\frac{86.1}{+1.9} + 2.1$	$\frac{85.8}{11.18.9+2.2}$ ✓	
6+00		$\frac{84.4}{.42}$ ✓	
6+20 Nline 30	84.4	$\frac{84.16}{7.517.610.10}$	PaVMT

$\frac{84.06}{87.46
71.46
15.73}$

sd

out.

$\frac{87.7}{.12}$	$\frac{88.2}{8.74.2+6.5}$	$\frac{88.4}{+6.3}$
$\frac{87.7}{.12}$	$\frac{88.2}{8.72.9+5.8}$	$\frac{88.4}{+5.6}$
$\frac{87.4}{.42}$	$\frac{87.9}{9.03.9+5.1}$	$\frac{88.1}{+4.9}$
$\frac{86.9}{4.92}$	$\frac{87.4}{9.55.4+4.1}$	$\frac{87.6}{+3.9}$
$\frac{86.2}{5.62}$	$\frac{86.7}{10.28.8+1.4}$	$\frac{86.9}{+1.4}$
	$\frac{85.4}{11.410.1+1.3}$	$\frac{85.6}{+1.1}$
	$\frac{84.16}{7.577.620.116}$	$\frac{84.06}{84.7870.7615.58}$

$\frac{84.06}{7.76}$
91.82

$\frac{788}{66}$

$\frac{8144}{5.62}$
 $\frac{74}{2.82}$
 $\frac{5.62}{6.56}$
 $\frac{74}{7.50}$
844

	S. ch	S. gutter	N. gutter	N. ch	N. line	walk								
000 E. line 30"	82.07				82.12	82.3	N.	82.12	77.64	73.17	84.70	66.14	63.58	61.02
+ 20 Bk gutter		79.5	77.7					2.57	7.05	11.54	4.05	6.64	7.26	11.76
" 1								2.62	7.86	12.32				
" 2														
3 = 1 + 40 Bk	67.40	66.9 .41	67.9		77.64	78.5	N	59.64	55.90	54.70	53.70	53.00	52.50	
					6.5	+0.3		3.90	6.64	7.84	8.84	9.54	10.04	
					73.17	74.6	5	84.06	84.40	84.40	84.40	84.40	84.40	84.40
					11.2	+1.6		5.63	7.94	7.94	7.94	7.94	7.94	7.94
					2.0			84.67	84.67	84.67	84.67	84.67	84.67	84.67
3 + 1 + 40 Bk					48.70	70.7		12.31	12.31	12.31	12.31	12.31	12.31	12.31
					15.5	+2.3		0.40	0.40	0.40	0.40	0.40	0.40	0.40
					11.2			72.78	72.78	72.78	72.78	72.78	72.78	72.78
					4.3			11.75	11.75	11.75	11.75	11.75	11.75	11.75
1 + 80					66.14	68.0		61.03	61.03	61.03	61.03	61.03	61.03	61.03
					7.4	+4.1		1.57	1.57	1.57	1.57	1.57	1.57	1.57
					1.4			62.54	62.54	62.54	62.54	62.54	62.54	62.54
					6.0									
2 + 20					63.58	65.3								
					7.9	+4.0								
					4.2									
					5.7									
2 + 60					61.02	62.6								
					12.5	+3.7								
					7.2									
					5.3									
3 + 00					58.64	59.9								
					15.0	+4.5								
					3.2									
					5.8									
3 + 40 P.V.C.	54.60	54.1 .04	55.1 .04		55.90	57.2								
					17.6	+3.7								
					12.6									
					5.0									
3 + 60					54.70	55.8								
					12.4	+0.6								
					6.8									
					11.1									
3 + 80	52.4	51.9 .24	52.4 .24		53.7	54.7								
	0.0				7.3	+0.6								
					10.4									
4 + 00		51.7	51.2 .07		53.0	54.0								
	-0.2				10.1	-0.9								
					10.1	-1.4								
					0.0									
4 + 20		51.2	50.7 .54		52.5	53.5								
	+0.8				7.0	-0.8								
					7.0	-1.3								

76.67
23.33
70.00

S. Line

S. Ch.

S. gutter

000 E. Line 312

0110 P.C.

0140 P.V.C.

0160

0180

1+00

1+20

1+40

1+60 E.V.C.

2+00

2+40

2+80

3+20

$$\begin{array}{r} 60.00 \\ 9.60 \\ \hline 69.60 \end{array}$$

$$\begin{array}{r} 59.2 \\ 10.40 \\ \hline \end{array}$$

$$\begin{array}{r} 61.3 \\ 30 \\ \hline \end{array}$$

$$\begin{array}{r} 62.5 \\ 10 \\ \hline \end{array}$$

$$\begin{array}{r} 63.6 \\ 20 \\ \hline \end{array}$$

$$\begin{array}{r} 64.6 \\ 10 \\ \hline \end{array}$$

$$\begin{array}{r} 65.4 \\ 20 \\ \hline \end{array}$$

$$\begin{array}{r} 66.0 \\ 60 \\ \hline \end{array}$$

$$\begin{array}{r} 66.4 \\ 20 \\ \hline \end{array}$$

$$\begin{array}{r} 60.00 \\ 8.0 \\ 8.5 \\ 12.5 \\ \hline \end{array}$$

$$\begin{array}{r} 62.1 \\ 5.9 \\ 8.7 \\ 12.0 \\ \hline +2.5 \end{array}$$

$$\begin{array}{r} 63.3 \\ 4.7 \\ 1.4 \\ 13.3 \\ \hline +2.8 \end{array}$$

$$\begin{array}{r} 64.4 \\ 3.6 \\ 2.8 \\ 13.0 \\ \hline +2.5 \end{array}$$

$$\begin{array}{r} 65.4 \\ 10.4 \\ 7.7 \\ 12.7 \\ \hline +2.2 \end{array}$$

$$\begin{array}{r} 66.2 \\ 3.6 \\ 2.8 \\ 12.6 \\ \hline +2.1 \end{array}$$

$$\begin{array}{r} 66.8 \\ 9.0 \\ 6.4 \\ 12.6 \\ \hline +2.1 \end{array}$$

$$\begin{array}{r} 67.2 \\ 8.6 \\ 6.2 \\ 12.4 \\ \hline +1.9 \end{array}$$

$$\begin{array}{r} 67.83 \\ 8.0 \\ 4.9 \\ 12.1 \\ \hline +2.6 \end{array}$$

$$\begin{array}{r} 68.46 \\ 7.4 \\ 4.2 \\ 12.2 \\ \hline +2.7 \end{array}$$

$$\begin{array}{r} 69.09 \\ 6.7 \\ 4.2 \\ 13.5 \\ \hline +2.5 +2.0 \end{array}$$

$$\begin{array}{r} 69.72 \\ 6.1 \\ 5.1 \\ 11.0 \\ \hline +0.5 \end{array}$$

$$\begin{array}{r} 58.50 \\ 8.49 \\ \hline 66.99 \end{array}$$

$$\begin{array}{r} 60.00 \\ 12.60 \\ \hline 72.60 \end{array}$$

$$\begin{array}{r} 56.80 \\ 10.19 \\ \hline 66.99 \end{array}$$

$$\begin{array}{r} 61.80 \\ 67.83 \\ \hline 72.60 \end{array}$$

VU

$$\begin{array}{r} 65.90 \\ 4.78 \\ \hline \end{array}$$

$$\begin{array}{r} 63.0 \\ 4.00 \\ \hline \end{array}$$

$$\begin{array}{r} 68.46 \\ 2.22 \\ \hline \end{array}$$

$$\begin{array}{r} 66.20 \\ 6.40 \\ 7.20 \\ 7.20 \\ \hline 6.40 \\ 5.80 \\ 6.20 \end{array}$$

$$\begin{array}{r} 69.72 \\ 2.88 \\ 10 \\ \hline 3.67 \end{array}$$

$$\begin{array}{r} 66.4 \\ 2.8 \\ 1.0 \\ \hline \end{array}$$

$$\begin{array}{r} 67.4 \\ 7.7 \\ 10.7 \\ \hline \end{array}$$

$$\begin{array}{r} 68.2 \\ 3.6 \\ 2.8 \\ 10.6 \\ \hline \end{array}$$

$$\begin{array}{r} 68.8 \\ 9.0 \\ 6.4 \\ 10.6 \\ \hline \end{array}$$

$$\begin{array}{r} 69.2 \\ 8.6 \\ 6.2 \\ 10.4 \\ \hline \end{array}$$

$$\begin{array}{r} 69.7 \\ 8.1 \\ 4.2 \\ 11.2 \\ \hline \end{array}$$

$$\begin{array}{r} 70.2 \\ 8.2 \\ 1.7 \\ 11.2 \\ \hline \end{array}$$

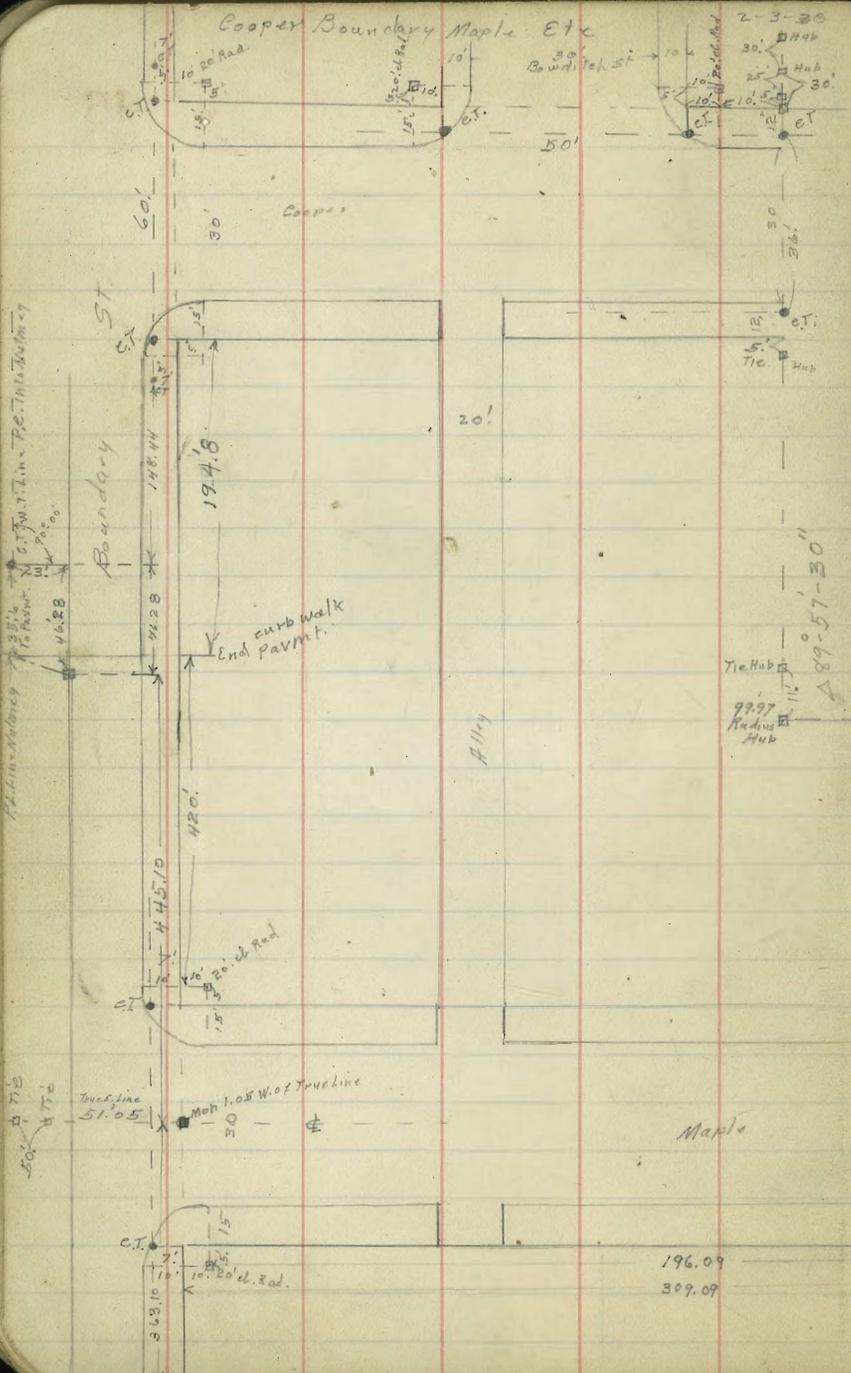
$$\begin{array}{r} 70.6 \\ 2.5 \\ 1.5 \\ 71.0 \\ \hline \end{array}$$

$$\begin{array}{r} 71.1 \\ 1.0 \\ 1.4 \\ 70.4 \\ \hline \end{array}$$

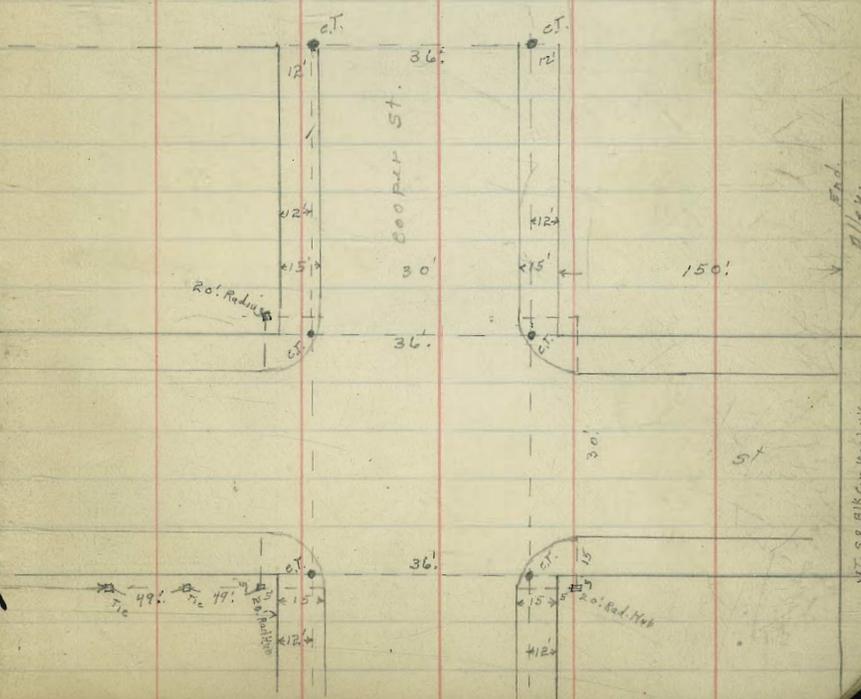
Franklin Ave

	S. line	S. d	S. gutter	±	N. gutter
3+40					
4+00					
4+40					
4+80					
5+20					
5+60					
5+80			172.2	173.0	
6+00 = N. line 32 nd				173.4	73.3

N. d.	N. line
70.35 5.5 -3.1 -2.6	71.6 ✓ -2.6 -3.8
70.97 4.9 -0.1	72.0 ✓ -0.1 -1.1
71.62 4.3 -0.1 +0.2	72.5 ✓ +0.2 -0.8
72.25 3.8 -1.2 +0.3	73.0 ✓ 5 +1.2 +0.5
72.88 3.0 -1.2 +1.8	73.4 ✓ 3.5 +1.8 +1.2
73.51 2.3 -0.7 +1.6 41.4	73.9 ✓ 2 +1.6 +1.2
74.15 1.55 -1.23 0.05	74.36



PR



Cooper Grades

P.C.
 7 Def A 5-22-17
 8 Bk Def A 10-44-34
 9 Bk 16-06-51
 10 Bk 21-29-08
 11 26-04-41
 12 Bk N.E. 30-40-11
 13 Bk 37-49-30
 14 P.C. 44-56-48
 15 40 Bk
 16 80 Bk
 17 40 Bk
 18 50 Bk

S.W. Curb	N.E. Curb
305.04 12.52 292.52 4.92 297.44 8.92 292.22 12.8 8.36 296.88 13.5 9.2 +4.3	293.65 292.22 12.8 12.5 +0.3 290.8 6.6 7.2 -0.6 289.7 7.7 2.4 +5.8 289.1 8.3 3.0 +5.3 288.56 8.8 3.5 +5.3 288.03 9.4 3.7 +5.7 287.5 9.9 4.4 +5.5 287.0 10.4 4.2 +6.2 287.2 10.2 3.7 +6.5 287.80 9.6 3.3 +6.3 288.90 8.5 2.7 +5.8 289.60 7.3 2.5 +4.8

Line of 29.25
 11.5 of S. line 27.71
 12.5 of W. line 20.97
 Line of 24.61
 12.5 of S. line 23.89
 12.5 of W. line 17.93
 Line of 29.99
 12.5 of S. line 36.87
 12.5 of W. line 27.90

87.00
6.73
93.73

± 84.40 B.M. S.W. 20' Rad Cooper's Maple

4.91

50

Station	87.00	87.20	87.40	87.60	87.80	88.00	88.20	88.40	88.60	88.80	89.00	89.20	89.40	89.60	89.80	90.00
288.20 S.W.	91.55	90.50	87.70	89.10	88.56	88.03	87.50	87.00	87.20	87.00	87.20	87.00	87.20	87.00	87.20	87.00
1.49	11.28	12.03	2.22	2.87	3.36	3.89	4.42	4.92	5.42	5.92	6.43	6.93	7.43	7.93	8.43	8.93
289.67	92.00	90.50	87.70	89.10	88.56	88.03	87.50	87.00	87.20	87.00	87.20	87.00	87.20	87.00	87.20	87.00
92.00	6.43	5.43	4.93	4.43	3.93	3.43	2.93	2.43	1.93	1.43	0.93	0.43	0.43	0.43	0.43	0.43
95.65	90.50	87.70	89.10	88.56	88.03	87.50	87.00	87.20	87.00	87.20	87.00	87.20	87.00	87.20	87.00	87.20
91.55	5.93	4.93	4.43	3.93	3.43	2.93	2.43	1.93	1.43	0.93	0.43	0.43	0.43	0.43	0.43	0.43
90.50	87.70	89.10	88.56	88.03	87.50	87.00	87.20	87.00	87.20	87.00	87.20	87.00	87.20	87.00	87.20	87.00
5.15	4.43	4.28	4.13	4.03	3.93	3.84	3.75	3.66	3.57	3.48	3.39	3.30	3.21	3.12	3.03	2.94
93.53	87.3	87.05	86.80	86.7	86.6	86.5	86.4	86.3	86.2	86.1	86.0	85.9	85.8	85.7	85.6	85.5
93.53	6.23	6.28	6.33	6.38	6.43	6.48	6.53	6.58	6.63	6.68	6.73	6.78	6.83	6.88	6.93	6.98
291.54	86.80	86.65	86.50	86.4	86.3	86.2	86.1	86.0	85.9	85.8	85.7	85.6	85.5	85.4	85.3	85.2
5.77	6.23	6.28	6.33	6.38	6.43	6.48	6.53	6.58	6.63	6.68	6.73	6.78	6.83	6.88	6.93	6.98
297.31	86.80	86.65	86.50	86.4	86.3	86.2	86.1	86.0	85.9	85.8	85.7	85.6	85.5	85.4	85.3	85.2
5.77	6.23	6.28	6.33	6.38	6.43	6.48	6.53	6.58	6.63	6.68	6.73	6.78	6.83	6.88	6.93	6.98
297.31	86.80	86.65	86.50	86.4	86.3	86.2	86.1	86.0	85.9	85.8	85.7	85.6	85.5	85.4	85.3	85.2
5.77	6.23	6.28	6.33	6.38	6.43	6.48	6.53	6.58	6.63	6.68	6.73	6.78	6.83	6.88	6.93	6.98
297.31	86.80	86.65	86.50	86.4	86.3	86.2	86.1	86.0	85.9	85.8	85.7	85.6	85.5	85.4	85.3	85.2
5.77	6.23	6.28	6.33	6.38	6.43	6.48	6.53	6.58	6.63	6.68	6.73	6.78	6.83	6.88	6.93	6.98
297.31	86.80	86.65	86.50	86.4	86.3	86.2	86.1	86.0	85.9	85.8	85.7	85.6	85.5	85.4	85.3	85.2
5.77	6.23	6.28	6.33	6.38	6.43	6.48	6.53	6.58	6.63	6.68	6.73	6.78	6.83	6.88	6.93	6.98
297.31	86.80	86.65	86.50	86.4	86.3	86.2	86.1	86.0	85.9	85.8	85.7	85.6	85.5	85.4	85.3	85.2
5.77	6.23	6.28	6.33	6.38	6.43	6.48	6.53	6.58	6.63	6.68	6.73	6.78	6.83	6.88	6.93	6.98
297.31	86.80	86.65	86.50	86.4	86.3	86.2	86.1	86.0	85.9	85.8	85.7	85.6	85.5	85.4	85.3	85.2
5.77	6.23	6.28	6.33	6.38	6.43	6.48	6.53	6.58	6.63	6.68	6.73	6.78	6.83	6.88	6.93	6.98
297.31	86.80	86.65	86.50	86.4	86.3	86.2	86.1	86.0	85.9	85.8	85.7	85.6	85.5	85.4	85.3	85.2
5.77	6.23	6.28	6.33	6.38	6.43	6.48	6.53	6.58	6.63	6.68	6.73	6.78	6.83	6.88	6.93	6.98
297.31	86.80	86.65	86.50	86.4	86.3	86.2	86.1	86.0	85.9	85.8	85.7	85.6	85.5	85.4	85.3	85.2
5.77	6.23	6.28	6.33	6.38	6.43	6.48	6.53	6.58	6.63	6.68	6.73	6.78	6.83	6.88	6.93	6.98
297.31	86.80	86.65	86.50	86.4	86.3	86.2	86.1	86.0	85.9	85.8	85.7	85.6	85.5	85.4	85.3	85.2
5.77	6.23	6.28	6.33	6.38	6.43	6.48	6.53	6.58	6.63	6.68	6.73	6.78	6.83	6.88	6.93	6.98
297.31	86.80	86.65	86.50	86.4	86.3	86.2	86.1	86.0	85.9	85.8	85.7	85.6	85.5	85.4	85.3	85.2
5.77	6.23	6.28	6.33	6.38	6.43	6.48	6.53	6.58	6.63	6.68	6.73	6.78	6.83	6.88	6.93	6.98
297.31	86.80	86.65	86.50	86.4	86.3	86.2	86.1	86.0	85.9	85.8	85.7	85.6	85.5	85.4	85.3	85.2
5.77	6.23	6.28	6.33	6.38	6.43	6.48	6.53	6.58	6.63	6.68	6.73	6.78	6.83	6.88	6.93	6.98
297.31	86.80	86.65	86.50	86.4	86.3	86.2	86.1	86.0	85.9	85.8	85.7	85.6	85.5	85.4	85.3	85.2
5.77	6.23	6.28	6.33	6.38	6.43	6.48	6.53	6.58	6.63	6.68	6.73	6.78	6.83	6.88	6.93	6.98
297.31	86.80	86.65	86.50	86.4	86.3	86.2	86.1	86.0	85.9	85.8	85.7	85.6	85.5	85.4	85.3	85.2
5.77	6.23	6.28	6.33	6.38	6.43	6.48	6.53	6.58	6.63	6.68	6.73	6.78	6.83	6.88	6.93	6.98
297.31	86.80	86.65	86.50	86.4	86.3	86.2	86.1	86.0	85.9	85.8	85.7	85.6	85.5	85.4	85.3	85.2
5.77	6.23	6.28	6.33	6.38	6.43	6.48	6.53	6.58	6.63	6.68	6.73	6.78	6.83	6.88	6.93	6.98
297.31	86.80	86.65	86.50	86.4	86.3	86.2	86.1	86.0	85.9	85.8	85.7	85.6	85.5	85.4	85.3	85.2
5.77	6.23	6.28	6.33	6.38	6.43	6.48	6.53	6.58	6.63	6.68	6.73	6.78	6.83	6.88	6.93	6.98
297.31	86.80	86.65	86.50	86.4	86.3	86.2	86.1	86.0	85.9	85.8	85.7	85.6	85.5	85.4	85.3	85.2
5.77	6.23	6.28	6.33	6.38	6.43	6.48	6.53	6.58	6.63	6.68	6.73	6.78	6.83	6.88	6.93	6.98
297.31	86.80	86.65	86.50	86.4	86.3	86.2	86.1	86.0	85.9	85.8	85.7	85.6	85.5	85.4	85.3	85.2
5.77	6.23	6.28	6.33	6.38	6.43	6.48	6.53	6.58	6.63	6.68	6.73	6.78	6.83	6.88	6.93	6.98
297.31	86.80	86.65	86.50	86.4	86.3	86.2	86.1	86.0	85.9	85.8	85.7	85.6	85.5	85.4	85.3	85.2
5.77	6.23	6.28	6.33	6.38	6.43	6.48	6.53	6.58	6.63	6.68	6.73	6.78	6.83	6.88	6.93	6.98
297.31	86.80	86.65	86.50	86.4	86.3	86.2	86.1	86.0	85.9	85.8	85.7	85.6	85.5	85.4	85.3	85.2
5.77	6.23	6.28	6.33	6.38	6.43	6.48	6.53	6.58	6.63	6.68	6.73	6.78	6.83	6.88	6.93	6.98
297.31	86.80	86.65	86.50	86.4	86.3	86.2	86.1	86.0	85.9	85.8	85.7	85.6	85.5	85.4	85.3	85.2
5.77	6.23	6.28	6.33	6.38	6.43	6.48	6.53	6.58	6.63	6.68	6.73	6.78	6.83	6.88	6.93	6.98
297.31	86.80	86.65	86.50	86.4	86.3	86.2	86.1	86.0	85.9	85.8	85.7	85.6	85.5	85.4	85.3	85.2
5.77	6.23	6.28	6.33	6.38	6.43	6.48	6.53	6.58	6.63	6.68	6.73	6.78	6.83	6.88	6.93	6.98
297.31	86.80	86.65	86.50	86.4	86.3	86.2	86.1	86.0	85.9	85.8	85.7	85.6	85.5	85.4	85.3	85.2
5.77	6.23	6.28	6.33	6.38	6.43	6.48	6.53	6.58	6.63	6.68	6.73	6.78	6.83	6.88	6.93	6.98
297.31	86.80	86.65	86.50	86.4	86.3	86.2	86.1	86.0	85.9	85.8	85.7	85.6	85.5	85.4	85.3	85.2
5.77	6.23	6.28	6.33	6.38	6.43	6.48	6.53	6.58	6.63	6.68	6.73	6.78	6.83	6.88	6.93	6.98
297.31	86.80	86.65	86.50	86.4	86.3	86.2	86.1	86.0	85.9	85.8	85.7	85.6	85.5	85.4	85.3	85.2
5.77	6.23	6.28	6.33	6.38	6.43	6.48	6.53	6.58	6.63	6.68	6.73	6.78	6.83	6.88	6.93	6.98
297.31	86.80	86.65	86.50	86.4	86.3	86.2	86.1	86.0	85.9	85.8	85.7	85.6	85.5	85.4	85.3	85.2
5.77	6.23	6.28	6.33	6.38	6.43	6.48	6.53	6.58	6.63	6.68	6.73	6.78	6.83			

Cooper Grades

	W. ch		E. ch
		287.4 297.72	
W. P.E.	286.76 11.0 8.9 +2.17		284.83 2.6 4.3 -1.7
W Line Cooper	286.70		285.20
	286.60		285.75
S. Line Maple	286.50		286.00
S. E.C. 2000	286.47 11.3 8.9 +2.4	288.82 1.41	285.97 1.4 4.3 -2.9
0+57 50	285.73 4.5 1.2 +3.3	290.23 13.20 277.03 2.89 279.92	285.23 5.0 4.1 +0.9
1+15 Brk	285.00 5.2 2.4 +2.8		284.50 5.7 4.5 +1.2
1+55 Brk	284.30 5.9 3.7 +2.2		283.80 6.4 5.1 +1.3
1+95 Brk	283.5 6.7 5.0 +1.7		283.00 7.2 5.5 +1.7
2+35 Brk	282.4 7.4 6.1 +1.7		282.0 8.2 6.6 +1.6
2+75 Brk	281.1 9.1 7.4 +1.7		280.8 9.4 7.7 +1.7
1	279.4 10.8 10.5 +0.3		79.1 11.1 9.2 +1.9
2	277.8 2.1 3.6 -1.5		77.5 12.7 10.6 +2.1

7-47.85

286.0
4.2
7.2
3.0

	P.C.	S.E. Ret	P.C.	Brk	Brk	Brk	Brk
	290.29						
	289.71						
	289.80 0.91						
	84.83 5.46	85.20 5.09	85.75 4.54	86.00 4.29	85.97 4.32	85.23 4.48	84.50 5.21
	82.76 3.53	82.70 3.59	82.60 3.69	82.50 3.79	82.47 3.82	82.73 3.98	82.50 4.71
	80.80 8.91	88.41	80.6 7.81	71.6	81.9 6.51	5.76	83.0 5.91
	81.10 8.61		84.5 3.91				84.0 4.41
	88.80 1.12 90.92		80.3 8.11	7.51	81.5 6.71	6.41	82.5 5.91
	86.47 4.45						83.8 5.11
							4.26
							4.76

52

7.3
4.3
3.0

8.6
1.7
6.9

3

276.2	290.23	75.9
3.7	13.20	14.3
4.2	277.03	11.7
-2.5	2.87	+2.6
	279.92	
	0.11	

4

274.5	279.81	74.3
5.4	10.45	15.9
8.3	290.26	12.7
-2.9	1.46	+3.2
	288.80	

5

272.8		72.6
7.1		7.3
10.2		4.1
-3.1		+3.2

6

271.1		71.0
8.8		8.9
13.0		6.3
-4.2		+2.6

5M
7 of N. line Kalmia

269.88	269.43	
	10.5	
	7.8	
	+2.7	

P.C. 20' Rad

N. line Kalmia

269.20	269.26	
10.7		
16.9		
-6.2		

269.10

269.00	E. line Cooper
10.9	
7.8	
3.1	

267.80	E. line Cooper
12.1	
8.6	
+3.5	

267.85

S. line Kalmia

267.10	267.30	
12.8	12.6	
19.1	8.6	
-6.3	+4.0	

S. line Kalmia

279.32
6.59
AM 273.33
1.24
274.57

25' N.E. Tie Cooper & Kalmia

PC	N. Kalmia						
269.23	69.26	69.10	69.00	67.80	67.55	67.30	
5.14	5.31	5.49	5.57	6.77	7.07	7.27	
			5.07	4.77			
			+0.50	+2.00			

W

69.20	68.15	67.10
5.37	6.42	7.47
		6.97
		+0.50

CURB CUTS

77.63

67.43	69.26	69.10	69.00
8.20	8.37	8.53	8.63
1.50		8	
8.70	8.87	9.03	9.13
	8.92		
W. 8.80	7.53	10.39	10.67
			10.40

288.82
9.52
6.11
5.1
8.7
2.4

S. line Kalmia

53

82nd
E.W. curb
67.30
7.27

Boundary St Grades

00 - N end 425 N of Nutmeg St	N. Pavmt 298.57	299.28 4.65 203.93	E. cb 299.03
0+12.5 Brk	(298.38) 298.49		(298.80) 298.94
0+70	98.15 5.4 5.4 +0.4		98.51 5.4 4.8 +0.6
1+20	97.81 6.1 5.3 +0.8		98.15 5.8 4.6 +1.2
1+70	97.47 6.5 4.9 +1.6		97.78 6.1 4.4 +1.7
2+20	97.14 6.8 5.0 +1.8		97.42 6.5 4.6 +1.9
2+70	96.80 7.1 5.5 +1.4		97.05 6.9 5.2 +1.7
3+20	96.47 7.5 5.8 +1.7		96.69 7.2 6.0 +1.2
3+70	96.14 7.8 6.7 +1.1		96.32 7.6 6.6 +1.0
4+20 P.C.	95.82	PC 295.96 8.0 7.3 +0.7	N. Maple 298.9 295.8 295.7 295.5 8.4 7.2 +1.2
4+25 N. Maple	295.78 8.1 7.5 +0.6		
00 S. Line Maple	295.20 8.7 8.5 +0.2		
0+05, P.C.	95.10	PC 295.2 8.7 8.5 +0.2	S. Maple 295.27 95.27 95.3 95.2 95.0 8.9 8.1 +0.8

203.93 8.13 B.M. 295.80	S.S. 20 Rad Boundary & Maple	203.93 8.80 B.M. 295.13	101.05 W. Tie Maple & Boundary
cont. cl. gutter 4.90 5.36 298.57			
B.M. 295.80 295.80 2.86 298.66			
N. Maple 95.96 2.70	Ret 95.90 2.76	s/e stakes E.C.C. 95.80 2.86	70 17.5 57.5
S. Maple 95.20 3.46 3.96 -0.50	Ret 95.27 3.36 3.84 -0.50	E.C.C. 95.70 2.96 95.50 3.16	4.20 6.5 3.33 8.19
295.80 7.84 303.64	cl 299.63 4.61	Brk 298.94 4.70	
PC 3.27		E.C.C.	95.80 5.36 98.16
295.80 3.83 299.23	95.29 3.94	95.21 4.02	95.14 4.09
			95.07 4.16
			95.00 4.23
PC 94.53 7.70	94.59 4.64	94.64 4.59	94.57 4.66
95.10 (2.00)	95.20 (2.91)	95.27 (2.91)	95.45 (2.71)
			95.50 4.73
			95.52 4.80
			95.60 4.90
			95.80 5.00
			95.80 5.10
			95.80 5.20
			95.80 5.30
			95.80 5.40
			95.80 5.50
			95.80 5.60
			95.80 5.70
			95.80 5.80
			95.80 5.90
			95.80 6.00
			95.80 6.10
			95.80 6.20
			95.80 6.30
			95.80 6.40
			95.80 6.50
			95.80 6.60
			95.80 6.70
			95.80 6.80
			95.80 6.90
			95.80 7.00
			95.80 7.10
			95.80 7.20
			95.80 7.30
			95.80 7.40
			95.80 7.50
			95.80 7.60
			95.80 7.70
			95.80 7.80
			95.80 7.90
			95.80 8.00

Boundary

Cooper

Maple

Maple St. Grading

	s. d		N. d
	284.53 13.19 <u>297.72</u>		203.93
0+00 P.C. 10' E. of Boundary	295.0 2.7 1.9 <u>+0.8</u>		295.5 8.4 7.2 <u>+1.2</u>
1	93.6 4.1 2.3 <u>+1.8</u>		94.1 3.6 0.8 <u>+2.8</u>
2	92.3 5.4 4.8 <u>+0.6</u>		92.8 7.9 2.9 <u>+2.0</u>
3	90.9 6.8 8.2 <u>-1.4</u>		91.4 6.3 6.0 <u>+0.3</u>
4	89.5 8.2 9.7 <u>-1.5</u>		90.0 7.7 8.5 <u>-0.8</u>
5	88.1 9.6 8.4 <u>+1.2</u>		88.6 9.1 14.9 <u>-5.8</u>
6-P.C. 5' W. of Cooper	286.76 11.0 8.9 <u>+2.1</u>	287.41 12.21 <u>275.13</u> 2.34 277.47 13.10 <u>264.37</u> 6.75 271.12 8.78 270.14 12.25 <u>282.89</u>	287.26 0.2 7.1 <u>-6.9</u>
0+00 P.C. 5' E. of Cooper	284.83 2.6 4.3 <u>-1.7</u>		285.23 286.2 +8.7 10.8 -19.5 292.44 E to for slope
0+65 Brk	279.60 7.8 4.9 <u>+2.9</u>		279.80 +8.7 16.3 <u>-25.0</u> -37.5' N. Top slope
1+05 Brk	276.70 10.7 7.5 <u>+3.2</u>		276.80 +5.7 19.6 <u>-25.3</u> 38' 0" N. Top slope
W. Line Alley			
1+45 E. End grading	274.30 13.1 11.1 <u>+2.0</u>		274.40 +3.5 25.9 <u>-29.2</u> 43.8' N. Top slope

	297.72 1.72 <u>295.80</u>		297.72 8.90 <u>288.82</u>	
		Rad Maple Boundary		20' Rad Maple & Cooper
		79.75 9.46	76.85 5.25	74.45 7.65 ✓
288.83 0.83 289.16 0.2 289.95 2.15 282.10	Sid 284.83 4.33	77.6 9.55	76.7 5.4	74.3 7.8 ✓
	N. Line 85.23 3.93	77.8 9.35	76.8 5.3	74.4 7.7 ✓
	N. Line	79.95 9.2	76.95 5.15	74.55 7.55 ✓
	86.64 3.6			
	N. Line	285.5 4.8		288.90 4.47 290.27 10.21 280.00 1.4 281.4
	280.0 10.3			
	277.0 4.4			
	274.6 6.8			

56

Sewer Grades

Alley BIK P. 00= D.E. N. of Maple	301.98	3.32	98.66	298.00
+50		4.28	97.70	91.15
1+00		5.02	96.96	90.30
+50		5.66	96.32	89.45
2+00 = M.H. #1		6.72	95.26	288.60
0+52.5		6.98	95.00	87.70
1+05		7.75	94.23	86.80
1+57.5	292.89	9.00	92.98	85.90
2+10 = M.H. #2 R. Maple		1.49	291.10	285.00
0+47.5		3.74	288.85	81.75
0+95		4.73	287.86	78.50
1+42.5	287.24	3.08	284.16	75.25
1+90 M.H. #3 ^{Cooper} Maple		10.98	276.49	272.00
0+47.5		8.66	278.58	70.75
0+95		7.30	279.94	69.50
0+42.5	276.97	10.08	277.16	68.25
1+90 = M.H. #4 ^{Maple} _{Maple}	251.86	6.15	270.82	267.00
0+60 B.K.		9.59	242.27	237.00
0+80 M.H. #5	271.84	3.96	247.90	235.00
0+40 B.K.		9.03	262.81	251.00
0+80		5.74	66.10	52.60
1+20		10.12	61.72	54.20
1+60		5.94	65.90	55.80
2+00		4.33	67.51	57.40
2+40	279.44	8.93	70.51	59.00
2+80		8.90	70.54	60.60
3+20 D.E.		10.61	68.83	262.20

155' of pipe
actually put in.
M.H. #1
9/15/23

276.97	
0.55	
276.42	
10.82	
287.24	
0.54	
286.40	
4.75	
291.15	
2.34	
288.81 = 245.82 B.M.	
192.59	
0.12	
292.47	
9.51	
301.98	799.23
8.93	
293.15	3.97
1.02	
294.17	4.30
13.00	
281.17	94.93
2.05	
283.22	87.70
3.04	
270.18	5.17
1.66	
271.84	94.86
2.87	
268.97	6.25
10.47	
277.44	92.98
2.25	
277.19	85.90
12.17	
289.36	8.51
	90.72
	285.00
	81.75
	7.65
	11.19
	88.04
	78.50
	7.54

8.42
84.17
75.25
189.2

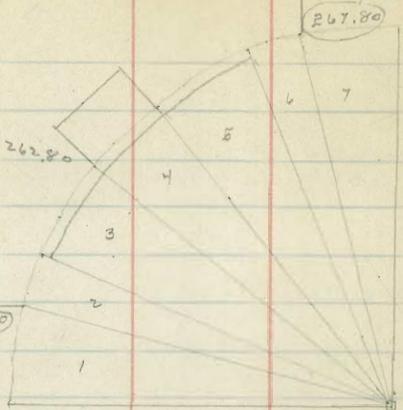
288.92
5.85
12.41
70.81

Ch. Inlet 2

s. Line Kalmia

F.L. 262.80

267.80



$\frac{1}{2} \Delta$	ARC	chd.
1 = 7-14-15 = 5.05 =		62.8
2 = 3-47-45 = 2.65 =		73.9
3 = 11-02-00 = 5.75 =		6.6
4 = 8-14-13 = 5.75 =		+7.3
5 = 19-16-13 = 4.51 =		67.5
6 = 25-43-48 = 5.75 =		9.2
7 = 8-14-12 = 5.75 =		6.6
8 = 33-58-00 = 2.65 =		+2.6
9 = 3-47-45 = 2.65 =		
10 = 37-45-45 = 5.05 =		
11 = 7-14-15 = 5.05 =		
12 = 45-00-00 = 31.41		

20' Rad 33
273.38
3.38
274.71

Ch. Inlet 3

F.L. Box

F.L. Outlet

s. end of inlet

N. Ch. Inlet

262.20	256.0	267.38	267.94
11.53	8.2	6.35	5.80
9.72	7.2	9.72	9.60
1.80	+1.00	-3.37	-3.80

25' N.E. 71°
B.M.
273.33
0.40
273.73
12.96
260.77
3.43
264.20

33rd St Sewers

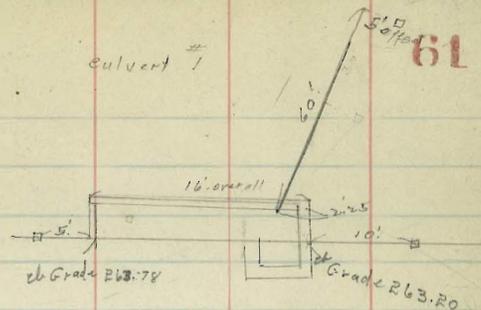
B.M.	0.77	278.89	278.12	sw 33rd + Kalmia		
connection to line 00 = Juniper			6.11	72.78	258.20	+14.58
1			7.98	70.91	57.24	+13.67
2			9.60	69.29	56.29	+13.00
3			10.76	68.13	55.33	+12.80
4 T.P.	2.81	269.14	12.56	266.33	54.37	+11.96
5			4.17	64.97	53.42	+11.55
6			5.50	63.64	52.46	+11.18
# 6 7 = M.H. 2 Kalmia S. End			5.72	63.42	251.50	+11.92
0+57 G.I. Pipe			5.24	63.90	53.85	+10.05
N. End 0+69 G.I. Pipe			4.87	64.27	54.35	+9.92
8+85 Brk			4.14	65.00	255.00	+10.00
1+25 End Ex. Pipe			1.97	67.17	60.20	+6.97
1+65 M.H. I			0.14	69.00	265.40	+3.60

33rd St - 7-1185

Kalmia St Sewers

		269.14				
M.H. 2 at 33rd St.		258.81	5.72	63.42	251.50	+11.92
0+40 Brk		249.96	3.83	54.48	250.00	+4.48
0+71 65 End.			9.98	39.98	233.00	+6.98

Culvert 1



d. G. End of inlet	d. S. End of inlet	Flow line d. inlet	K.E. outlet
264.22	264.02	264.22	251.6
13.02	0.44	250.00	234.40
251.20	10.91	14.22	17.2
0.38	-10.47	5.30	14.8
251.58		48.72	+2.4

269.14
12.00
257.14
1.17
258.31
12.71
245.60
4.36
249.96

Halmia Grades

	S. ch	N. ch
	297.62	292.90
	3.92	8.74
E. line Baneriff and 10' c - 0' 00	201.54	8.09
	12.02	
E. line Baneriff on S.	292.00	292.00
	9.54	
	287.52	9.5
	0.23	8.5
	287.55	+1.0
	12.72	
	277.13	
	0.28	
0 + 50	85.25	85.25
	4.6	4.6
	3.4	4.0
	+1.2	+0.6
	277.41	
	15.09	
	264.32	
1 + 00	78.50	78.50
	11.3	11.3
	11.2	11.5
	+0.1	-0.2
1 + 50	71.75	71.75
	5.7	5.7
	3.7	5.7
	+2.0	0.0
2 + 00 RC. 20' Rad.		270.16
N. line 33' on N	265.00	265.00
	12.4	5.2
	11.6	4.9
	+0.8	+0.3
	64.50	64.40
	64.40	63.15
	64.50	64.23
S. End.	64.70	64.41

CURVE

CURVE

N. End.

278.12 S.M. 33rd Juniper

1.03	
279.15	
12.29	
266.86	SM 40' S.M.T.C. 30'
6.14	+ Halmia
273.04	
65.00	92.94
6.03	1.32
71.03	94.74
	92.00
	2.74

5/2 stakes

M.P.C.	Curve Return	M.P.C.	chk curpinlet
265.00	64.40 64.15 64.23 64.41	64.41	63.70 63.78
8.04	6.63 6.88 6.80 6.62	6.62	9.84 9.26
			9.80 9.62
			0.04H 0.36
			Low

Curve	Cuts
5	10 15
277.70	92.89 5.23 92.00 6.32
	6.32 91.38
64.46	N
1.79	90.72.20 97.80
68.60	5.50 5.90 91.30 90.70
	6.40 7.00 6.43 6.37
	4.27 4.90 6.43 6.37
	5.13 5.13
	6.5 305
	6.50 90.80 64.33 64.00
	92.00 6.90 4.27 4.60
	6.62 6.25 63.80 63.80
	92.08 90.75 4.20 4.60
	4.20 4.60
	4.70
	470
	3.70

33 rd

N. line	ch	d	ch	RC West
532	537	5.27	530	5.04
				63.35
108	73	64	055	55
62.20	6.27	6.06	545	63.80
6.40				5.60

67.03
6.01

71.03
2.01

62

33rd St. Grades.

s.w. wall 1399 Juniper

	E. Curb	BM 278.12	W. d.	Walk	W. line	71.03	
000 N. line Juniper	271.50 8.45 8.41	278.12 1.83 279.95 13.11 266.84 0.36 267.20 2.37 264.83	273.50 6.45 6.42	274.40 5.55 3.1 +2.4	276.0 3.9 3.1 +0.8		
0+50	270.1 9.8 11.0 -1.2	5.28 270.16	72.0 7.9 2.5 +5.4	72.8 7.1 2.5 +4.6	74.1 5.8 2.5 +3.3		
1+00	268.8 11.1 11.3 -0.2		70.5 9.4 3.0 +6.4	71.2 8.7 3.0 +5.7	72.3 7.6 3.0 +4.6		
1+50	267.5 12.4 13.1 -0.7		69.0 10.9 5.1 +5.8	69.5 10.4 5.1 +5.3	70.5 9.4 5.1 +4.3		
2+00	266.1 1.1 3.7 -2.6		67.5 12.4 6.9 +5.5	67.9 12.0 6.9 +5.1	68.6 11.3 6.9 +4.4		
2+50	264.8 - 6.6 2.4 8.2 -5.8	264.32 0.33 264.65 1.04 252.41 0.42 253.10	66.1 1.1 2.3 -1.2	66.3 0.9 2.3 -1.4	66.8 0.4 2.3 -1.9		
2+65 Jagon E 2+94 P.C. on W	to South 264.4 2.8 10.1 -6.3	7.3 10.9 to toe slope	64.70 2.5 1.4 +1.1 gutter	64.80 2.4 1.4 +1.0			
3+00 S. line Kalmia	263.50 +10.4 13.2 = 23.6	63.50	63.00	64.00 4.84 68.84	265.20 2.0 1.4 +0.6		
+10	63.25				4.12 4.72		
+20	63.00	63.30 5.54	62.70				
+30	62.80						
+40	62.75	63.20 5.64	62.50				
+50	62.80						
+60	62.90						
+70 N. line Kalmia	63.20	63.20 5.64	62.20				

180
13
8

63.50
7.53
7.03

Indexed
c.s.k.

Polk Ave Georgia to
Grading Paving ETC.

3/17/30

	s. eb.	gutter		gutter	
10' W	335.25 2.85 2.79	334.40 3.45 ✓ 3.45 ✓	334.70 3.10 ✓ 3.10 ✓	334.40 3.00 3.24	335.25 2.45 2.82
5' W		334.30 3.20 3.21	334.55 3.10 3.10	334.30 3.50 3.72	
00' E Line Gc9	235.00 2.40 2.85	334.00 3.21 ✓ 3.21 ✓	334.25 3.10 3.10	334.00 3.21 ✓ 3.21 ✓	335.00 2.80 2.80
+ 5	0.65 Lev.	333.30 3.91 ✓	333.60 3.91 ✓	333.30 3.91 ✓	0 K
+ 10		332.40 4.75 ✓	332.90 4.75 ✓	332.50 4.71 ✓	
01 51.67	25.3 12.5 12.6 -0.4				25.5 12.3 9.2 +2.7
1+ 03 33	15.6 7.1 11.3 -2.1		334.97 2.24 337.21		76.0 8.7 9.8 -1.1
1+ 55	305.9 6.2 7.6 -1.4				306.5 5.6 7.1 -1.5
2+ 06 67	96.2 15.1 6.8 -1.7				97.0 15.1 14.3 +0.8
2+ 58 33	86.5 2.6 2.0 +0.6				87.5 1.6 0.0 +1.6
2+ 90	80.57	80.07 79.90 6.17	81.04	81.07 80.90 5.17	81.56
3+ 00	78.70	78.20 79.00 8.07	79.00	79.17 79.00 7.07	79.75
3+10 E Florida	276.87 12.27 12.08	276.50 76.20	277.33	277.50 77.20	277.87 11.27 11.05
2458.33	21.4		2+ 55.33	11.6	
2+ 77.73	E. End House	A 7th St	2+ 46.73	W. End House	1.4 in St.
	Fireplace	E. 8th St.			

334.77	B.M. S.E. Polk & Georgia				
2.83					
337.60					
13.12					
324.68					
0.20					
324.68					
13.08					
311.60					
0.47					
312.07					
13.27					
298.80					
2.48					
301.28					
12.58					
288.70					
0.44					
289.14					
0.44					
289.76					
11.84					
300.54					
0.15					
300.39					
12.10					
313.49					
0.22					
313.27					
12.75					
326.02					
0.15					
325.87					
7.35					
338.08					
3.10					
334.98					
334.97	E. Alley		304.49		
			8.06		
			2.06		
			1.00		
			10.39		
			4.87		
			5.2		
276.87			9.87		
9.20			76.20		
286.07					
34.40			34.10		
5.44			5.14		
34.20			34.52		
5.54			5.32		
34.55			34.55		
34.52			34.30		
5.52			5.54		
72.00			78.52		
5.68			5.68		
3.78			1.90		
34.00			34.22		
5.84			5.62		
34.25			34.25		
34.22			34.00		
5.62			5.84		
76.10			77.24		
5.68			5.68		
1.66			1.66		
33.30			33.57		
5.54			6.27		
33.60			33.30		
5.54			5.54		
32.44			32.85		
7.37			6.99		
32.90			32.87		
6.97			7.34		

s/c stakes

334.97					
2.22					
337.19					
13.14					
324.05					
0.41					
324.46					
12.60					
311.86					
0.69					
312.55					
309.33					
3.22					
3.22					
2.0					
308.72					
3.63					
7.63					
305.20					
7.35					
7.35					
2.00					
304.49					
8.06					
2.06					
1.00					
8.87			8.18		
20			87.87		
81.75			81.42		
1.78			1.78		
82.62			82.75		
4.45			4.45		
82.75			82.75		
82.70			82.70		
34.40			34.40		
77.99			77.99		
3.78			3.78		
80.60			80.60		
80.75			80.75		
3.45			3.45		
80.90			80.90		
34.52			34.30		
5.54			5.54		
72.00			78.52		
5.68			5.68		
3.78			1.90		
34.22			34.00		
5.84			5.84		
76.10			77.24		
5.68			5.68		
1.66			1.66		
33.57			33.30		
6.27			5.54		
32.85			32.50		
6.99			7.34		

335					
277					
58					
315.8					
18.7					
315.8					
270					
244					
220					
305.7					
6.66					
1.4					
8.0					
306.5					
6.0					
1.5					
7.5					
2.70					
309.35					
5.4					
9.31					
1.5					
309.46					
3.09					
2.09					
11.00					
7.52					
5.4					
6.98					
1.87					
6.83					
7.33					
-0.50					
35.00					
1.87					
33.13					
84.20					
276.87					
1.87					
78.74					
1.87					
80.61					
309.35					
5.4					
9.31					
1.5					
309.46					
3.09					
2.09					
11.00					
7.52					
5.4					
6.98					
1.87					
6.83					
7.33					
-0.50					

85

N. Alley

Indexed
C.S.K.

Rosecrans at Taylor

3/21/30

48" Culvert

25' W. of A.T.S.F.

40' Long.

S.E. Joint &
Taylor

B.M. RP. 5.67 10.39 4.72

outlet culvert under
Taylor St F.L. 12.20 -1.81

14x15 1/2" pipe under A.T.S.F. F.L. 12.25 -1.86

outlet " " " " " " 12.29 -1.90

inlet New Culvert 48" grady

Xing Rosecrans 8.96 +1.43 -1.95 +3.38

outlet New
Culvert 48" 9.33 1.06 -2.00 +3.06

7.30
4.90
12.20

7.35
4.90
12.25

7.39
4.90
12.29

2.2
2.34
24.36

2.5
2.30
22.64
8.
17.44

66

18.39
5.82
B.M. Bolt Head 4.87 w. Head wall Culvert under A.T.S.F.

17.6
3.8
11.4
22.4
42.5

Indexed
C.S.K.

Elm 57 30th to Bancraft

Water Grades	±	gatter	58.32nd + Elm.
00-5 Elm 32nd	220.72	20.0	RM 220.14 5.43 225.61 5.15 220.46 10.52 230.95 4.87 226.08 2.57 229.65 8.22 220.43 5.62 220.14
0453			220.48 7.90 228.08 2.01 226.07 5.94 231.91
1406			19.75 9.05 18.00 9.40 10.20 220.43 5.62 220.14
1759			220.48 7.90 228.08 2.01 226.07 5.94 231.91
2412			10.85 3.5 10.70 10.0 11.00 11.34 10.41 10.11 7.5 10.90
2 + 6 S.C. segment			11.34 10.41 10.11 7.5 10.90
00 W. Elm C.S.K. 1st	215.0		9.50
0472	16.2 19.9 4.6 +3.1	8.77 4.0 9.17	8.04
0495 ^B	17.4 11.0 8.3 21.9	7.74	6.57
143	18.6 10.0 7.0 +3.0	6.36 ^B	5.10
1490 ^B	19.8 8.8 5.8 +3.0	37.95 4.96 31.92	39.28 3.63 2.31
2438 ^B White S.C.	221.0 7.65 4.64 +3.0	48.02 2.99 41.82 8.06	41.91 1.00 43.46 6.42 43.17 6.71 44.84 5.04
		+3.3 skine valve	

45.69 1.12 46.82	44.87 1.24 46.81	43.66 3.18 46.84	43.75 2.63 46.88	43.57 3.24 46.82	43.57 3.24 46.82
7.86 7.5 106.0 215.0	76.85 12.44 53.97 9.38 43.30	570 75 6.45 37.7 5.6 2.6 210 37.7 35.1 8.2 10.8 7.6 3.2 +3.3 +3.2	32.5 29.9 13.4 10.4 16.2 12.8 +3.7	12.76 3.74 16.00 27.00 16.2 12.8 +3.7	68 12.8 3.25 5 30.0
57.00 57.22 57.44 57.66 57.88 58.10 58.32 58.54 58.76 58.98 59.20 59.42 59.64 59.86 60.08 60.30 60.52 60.74 60.96 61.18 61.40 61.62 61.84 62.06 62.28 62.50 62.72 62.94 63.16 63.38 63.60 63.82 64.04 64.26 64.48 64.70 64.92 65.14 65.36 65.58 65.80 66.02 66.24 66.46 66.68 66.90 67.12 67.34 67.56 67.78 68.00 68.22 68.44 68.66 68.88 69.10 69.32 69.54 69.76 69.98 70.20 70.42 70.64 70.86 71.08 71.30 71.52 71.74 71.96 72.18 72.40 72.62 72.84 73.06 73.28 73.50 73.72 73.94 74.16 74.38 74.60 74.82 75.04 75.26 75.48 75.70 75.92 76.14 76.36 76.58 76.80 77.02 77.24 77.46 77.68 77.90 78.12 78.34 78.56 78.78 79.00 79.22 79.44 79.66 79.88 80.10 80.32 80.54 80.76 80.98 81.20 81.42 81.64 81.86 82.08 82.30 82.52 82.74 82.96 83.18 83.40 83.62 83.84 84.06 84.28 84.50 84.72 84.94 85.16 85.38 85.60 85.82 86.04 86.26 86.48 86.70 86.92 87.14 87.36 87.58 87.80 88.02 88.24 88.46 88.68 88.90 89.12 89.34 89.56 89.78 90.00 90.22 90.44 90.66 90.88 91.10 91.32 91.54 91.76 91.98 92.20 92.42 92.64 92.86 93.08 93.30 93.52 93.74 93.96 94.18 94.40 94.62 94.84 95.06 95.28 95.50 95.72 95.94 96.16 96.38 96.60 96.82 97.04 97.26 97.48 97.70 97.92 98.14 98.36 98.58 98.80 99.02 99.24 99.46 99.68 99.90 100.12 100.34 100.56 100.78 101.00 101.22 101.44 101.66 101.88 102.10 102.32 102.54 102.76 102.98 103.20 103.42 103.64 103.86 104.08 104.30 104.52 104.74 104.96 105.18 105.40 105.62 105.84 106.06 106.28 106.50 106.72 106.94 107.16 107.38 107.60 107.82 108.04 108.26 108.48 108.70 108.92 109.14 109.36 109.58 109.80 110.02 110.24 110.46 110.68 110.90 111.12 111.34 111.56 111.78 112.00 112.22 112.44 112.66 112.88 113.10 113.32 113.54 113.76 113.98 114.20 114.42 114.64 114.86 115.08 115.30 115.52 115.74 115.96 116.18 116.40 116.62 116.84 117.06 117.28 117.50 117.72 117.94 118.16 118.38 118.60 118.82 119.04 119.26 119.48 119.70 119.92 120.14 120.36 120.58 120.80 121.02 121.24 121.46 121.68 121.90 122.12 122.34 122.56 122.78 123.00 123.22 123.44 123.66 123.88 124.10 124.32 124.54 124.76 124.98 125.20 125.42 125.64 125.86 126.08 126.30 126.52 126.74 126.96 127.18 127.40 127.62 127.84 128.06 128.28 128.50 128.72 128.94 129.16 129.38 129.60 129.82 130.04 130.26 130.48 130.70 130.92 131.14 131.36 131.58 131.80 132.02 132.24 132.46 132.68 132.90 133.12 133.34 133.56 133.78 134.00 134.22 134.44 134.66 134.88 135.10 135.32 135.54 135.76 135.98 136.20 136.42 136.64 136.86 137.08 137.30 137.52 137.74 137.96 138.18 138.40 138.62 138.84 139.06 139.28 139.50 139.72 139.94 140.16 140.38 140.60 140.82 141.04 141.26 141.48 141.70 141.92 142.14 142.36 142.58 142.80 143.02 143.24 143.46 143.68 143.90 144.12 144.34 144.56 144.78 145.00 145.22 145.44 145.66 145.88 146.10 146.32 146.54 146.76 146.98 147.20 147.42 147.64 147.86 148.08 148.30 148.52 148.74 148.96 149.18 149.40 149.62 149.84 150.06 150.28 150.50 150.72 150.94 151.16 151.38 151.60 151.82 152.04 152.26 152.48 152.70 152.92 153.14 153.36 153.58 153.80 154.02 154.24 154.46 154.68 154.90 155.12 155.34 155.56 155.78 156.00 156.22 156.44 156.66 156.88 157.10 157.32 157.54 157.76 157.98 158.20 158.42 158.64 158.86 159.08 159.30 159.52 159.74 159.96 160.18 160.40 160.62 160.84 161.06 161.28 161.50 161.72 161.94 162.16 162.38 162.60 162.82 163.04 163.26 163.48 163.70 163.92 164.14 164.36 164.58 164.80 165.02 165.24 165.46 165.68 165.90 166.12 166.34 166.56 166.78 167.00 167.22 167.44 167.66 167.88 168.10 168.32 168.54 168.76 168.98 169.20 169.42 169.64 169.86 170.08 170.30 170.52 170.74 170.96 171.18 171.40 171.62 171.84 172.06 172.28 172.50 172.72 172.94 173.16 173.38 173.60 173.82 174.04 174.26 174.48 174.70 174.92 175.14 175.36 175.58 175.80 176.02 176.24 176.46 176.68 176.90 177.12 177.34 177.56 177.78 178.00 178.22 178.44 178.66 178.88 179.10 179.32 179.54 179.76 179.98 180.20 180.42 180.64 180.86 181.08 181.30 181.52 181.74 181.96 182.18 182.40 182.62 182.84 183.06 183.28 183.50 183.72 183.94 184.16 184.38 184.60 184.82 185.04 185.26 185.48 185.70 185.92 186.14 186.36 186.58 186.80 187.02 187.24 187.46 187.68 187.90 188.12 188.34 188.56 188.78 189.00 189.22 189.44 189.66 189.88 190.10 190.32 190.54 190.76 190.98 191.20 191.42 191.64 191.86 192.08 192.30 192.52 192.74 192.96 193.18 193.40 193.62 193.84 194.06 194.28 194.50 194.72 194.94 195.16 195.38 195.60 195.82 196.04 196.26 196.48 196.70 196.92 197.14 197.36 197.58 197.80 198.02 198.24 198.46 198.68 198.90 199.12 199.34 199.56 199.78 200.00 200.22 200.44 200.66 200.88 201.10 201.32 201.54 201.76 201.98 202.20 202.42 202.64 202.86 203.08 203.30 203.52 203.74 203.96 204.18 204.40 204.62 204.84 205.06 205.28 205.50 205.72 205.94 206.16 206.38 206.60 206.82 207.04 207.26 207.48 207.70 207.92 208.14 208.36 208.58 208.80 209.02 209.24 209.46 209.68 209.90 210.12 210.34 210.56 210.78 211.00 211.22 211.44 211.66 211.88 212.10 212.32 212.54 212.76 212.98 213.20 213.42 213.64 213.86 214.08 214.30 214.52 214.74 214.96 215.18 215.40 215.62 215.84 216.06 216.28 216.50 216.72 216.94 217.16 217.38 217.60 217.82 218.04 218.26 218.48 218.70 218.92 219.14 219.36 219.58 219.80 220.02 220.24 220.46 220.68 220.90 221.12 221.34 221.56 221.78 222.00 222.22 222.44 222.66 222.88 223.10 223.32 223.54 223.76 223.98 224.20 224.42 224.64 224.86 225.08 225.30 225.52 225.74 225.96 226.18 226.40 226.62 226.84 227.06 227.28 227.50 227.72 227.94 228.16 228.38 228.60 228.82 229.04 229.26 229.48 229.70 229.92 230.14 230.36 230.58 230.80 231.02 231.24 231.46 231.68 231.90 232.12 232.34 232.56 232.78 233.00 233.22 233.44 233.66 233.88 234.10 234.32 234.54 234.76 234.98 235.20 235.42 235.64 235.86 236.08 236.30 236.52 236.74 236.96 237.18 237.40 237.62 237.84 238.06 238.28 238.50 238.72 238.94 239.16 239.38 239.60 239.82 240.04 240.26 240.48 240.70 240.92 241.14 241.36 241.58 241.80 242.02 242.24 242.46 242.68 242.90 243.12 243.34 243.56 243.78 244.00 244.22 244.44 244.66 244.88 245.10 245.32 245.54 245.76 245.98 246.20 246.42 246.64 246.86 247.08 247.30 247.52 247.74 247.96 248.18 248.40 248.62 248.84 249.06 249.28 249.50 249.72 249.94 250.16 250.38 250.60 250.82 251.04 251.26 251.48 251.70 251.92 252.14 252.36 252.58 252.80 253.02 253.24 253.46 253.68 253.90 254.12 254.34 254.56 254.78 255.00 255.22 255.44 255.66 255.88 256.10 256.32 256.54 256.76 256.98 257.20 257.42 257.64 257.86 258.08 258.30 258.52 258.74 258.96 259.18 259.40 259.62 259.84 260.06 260.28 260.50 260.72 260.94 261.16 261.38 261.60 261.82 262.04 262.26 262.48 262.70 262.92 263.14 263.36 263.58 263.80 264.02 264.24 264.46 264.68 264.90 265.12 265.34 265.56 265.78 266.00 266.22 266.44 266.66 266.88 267.10 267.32 267.54 267.76 267.98 268.20 268.42 268.64 268.86 269.08 269.30 269.52 269.74 269.96 270.18 270.40 270.62 270.84 271.06 271.28 271.50 271.72 271.94 272.16 272.38 272.60 272.82 273.04 273.26 273.48 273.70 273.92 274.14 274.36 274.58 274.80 275.02 275.24 275.46 275.68 275.90 276.12 276.34 276.56 276.78 277.00 277.22 277.44 277.66 277.88 278.10 278.32 278.54 278.76 278.98 279.20 279.42 279.64 279.86 280.08 280.30 280.52 280.74 280.96 281.18 281.40 281.62 281.84 282.06 282.28 282.50 282.72 282.94 283.16 283.38 283.60 283.82 284.04 284.26 284.48 284.70 284.92 285.14 285.36 285.58 285.80 286.02 286.24 286.46 286.68 286.90 287.12 287.34 287.56 287.78 288.00 288.22 288.44 288.66 288.88 289.10 289.32 289.54 289.76 289.98 290.20 290.42 290.64 290.86 291.08 291.30 291.52 291.74 291.96 292.18 292.40 292.62 292.84 293.06 293.28 293.50 293.72 293.94 294.16 294.38 294.60 294.82 295.04 295.26 295.48 295.70 295.92 296.14 296.36 296.58 296.80 297.02 297.24 297.46 297.68 297.90 298.12 298.34 298.56 298.78 299.00 299.22 299.44 299.66 299.88 300.10 300.32 300.54 300.76 300.98 301.20 301.42 301.64 301.86 302.08 302.30 302.52 302.74 302.96 303.18 303.40 303.62 303.84 304.06 304.28 304.50 304.72 304.94 305.16 305.38 305.60 305.82 306.04 306.26 306.48 306.70 306.92 307.14 307.36 307.58 307.80 308.02 308.24 308.46 308.68 308.90 309.12 309.34 309.56 309.78 310.00 310.22 310.44 310.66 310.88 311.10 311.32 311.54 311.76 311.98 312.20 312.42 312.64 312.86 313.08 313.30 313.52 313.74 313.96 314.18 314.40 314.62 314.84 315.06 315.28 315.50 315.72 315.94 316.16 316.38 316.60 316.82 317.04 317.26 317.48 317.70 317.92 318.14 318.36 318.58 318.80 319.02 319.24 319.46 319.68 319.90 320.12 320.34 320.56 320.78 321.00 321.22 321.44 321.66 321.88 322.10 322.32 322.54 322.76 322.98 323.20 323.42 323.64 323.86 324.08 324.30 324.52 324.74 324.96 325.18 325.40 325.62 325.84 326.06 326.28 326.50 326.72 326.94 327.16 327.38 327.60 327.82 328.04 328.26 328.48 328.70 328.92 329.14 329.36 329.58 329.80 330.02 330.24 330.46 330.68 330.90 331.12 331.34 331.56 331.78 332.00 332.22 332.44 332.66 332.88 333.10 333.32 333.54 333.76 333.98 334.20 334.42 334.64 334.86 335.08 335.30 335.52 335.74 335.96 336.18 336.40 336.62 336.84 337.06 337.28 337.50 337.72 337.94 338.16 338.38 338.60 338.82 339.04 339.26 339.48 339.70 339.92 340.14 340.36 340.58 340.80 341.02 341.24 341.46 341.68 341.90 342.12 342.34 342.56 342.78 343.00 343.22 343.44 343.66 343.88 344.10 344.32 344.54 344.76 344.98 345.20 345.42 345.64 345.86 346.08 346.30 346.52 346.74 346.96 347.18 347.40 347.62 347.84 348.06 348.28 348.50 348.72 348.94 349.16 349.38 349.60 349.82 350.04 350.26 350.48 350.70 350.92 351.14 351.36 351.58 351.80 352.02 352.24 352.46 352.68 352.90 353.12 353.34 353.56					

Indexed
C.S.K.

15th SF Water Grades
Pennsylvania to Brooks

5+00 B

66.0
4.1
1.3
2.8

252.87
12.00
265.90
4.90
261.00
9.13
270.13

BM.N.W. Front + Brooks

2
68.98
1.15

E.gutter
68.59 S. End Pavnt.

4+40. B B

64.7
5.4
3.6
+1.8 ✓

2.30
3.60

63.1
4.0
4.9
+2.1 ✓

61.5
8.6
8.0
+0.6 ✓

69.9
6.0
5.2
+0.8 ✓

2+80 B

58.3
7.6
5.6
2.0 ✓

2+40 B

57.0
8.9
5.8
+3.1 ✓

2+00 B

56.2
9.7
5.7
+4.0 ✓

1+60 B

56.2
7.7
5.4
+4.3

1+20 B

56.8

+80 B

58.2

+40

59.8

N. Line Brooks

61.5
4.4
1.6
2.9

Indexed
C.S.K.

Alexia Place
Sewer, Water Parking Etc.

4/1/30

SW. Collier
+ M¹ View.

63.94
11.78
75.92

70

B.M.	4/12	395.49		391.37			
00 = RE. E. of M ¹ View			5.96	89.53	384.00	+5.53	✓
0153 ²⁵			6.97	88.52	82.75	+5.77	✓
1104 ⁵⁰			8.06	87.43	81.50	+5.93	✓
1461 ²⁵			9.24	86.25	80.25	+6.00	✓
R+15 M.H. #1 T.P.	0.38	385.26	10.41	384.88	379.00	+5.88	✓
2+65			1.75	83.51	75.83	+7.68	✓
3+15			3.55	81.71	72.67	+9.04	✓
3+65			5.36	79.90	69.50	+10.40	✓
4+15			7.30	77.96	66.33	+11.63	✓
4+65			9.54	75.72	63.17	+12.55	✓
5+15 M.H. #2 54 ²⁵ T.P.	0.74	372.94	12.90	72.36	360.00	+12.36	✓
5+69 ³³			13.06	372.20		+11.97	✓
6+23 ⁶⁷			4.30	68.64	56.67	+12.04	✓
6+78 M.H. #3 52 ²⁵			7.57	65.37	53.33	+13.94	✓
7+30 ⁵ 51 ²⁵			9.00	63.94	350.00	+13.19	✓
7+83 Plug			10.50	62.44	49.25	+13.03	✓
			11.41	61.53	348.50		

New Location

M.H. #2
50+00
0+99.75
0+99.50

M.H. #3
11.92

change lateral #

66.50
11.6
78.1
4.2
86.3

75.20
9.1
82.3

67.5
14.8
13.5

61.5
71.4

12.1
36.8

21
22.2
6.2

27
27.6
5.7

59.4
11.7
6.0
+3.1

84.6
10.9
5.6
+5.3

75.20 362.40 +12.80 M.H. #2

4.47 71.45 59.30 12.15

8.19 67.73 56.20 +11.53

10.42 65.50 53.10 +12.40

64.00 350.00 +14.00 M.H. #3

change lateral #

67.5 5.2
14.8 77.0
13.5 +11.5

63.5 grade N. Prop Line

63.7 " Main

Sewer Laterals

1	2	3	4	5	6	7	8	9	10
88.2 7.2	86.4 9.1	85.0 2.3	82.5 2.8	79.7 5.8	77.6 7.7	73.6 11.7	68.7 9.2	63.5 8.4	63.5 9.4
F.L. 83.4	81.4	80.0	77.0	73.6	66.5	61.7	58.2	52.5	50.6
12.1	14.1	5.3	8.3	19.7	18.8	13.6	14.7	20.9	22.3
7.0	8.6	0.1	2.5	5.1	7.2	11.4	4.1	8.1	9.2
+5.1	+5.3	+5.2	+5.8	+9.6	+11.6	+12.2	+10.6	+2.3	+13.1
11	12	13	14	15	16	17	18	19	20
64.9	62.5	72.6	76.3	80.0	82.0	84.2	85.6	87.5	88.4
11.8	11.8	12.7	7.0	5.3	3.0	1.1	9.7	3.0	7.1
48.3	49.4	47.6	71.3	73.0	77.0	79.2	80.6	82.5	83.4
23.6	23.5	17.7	14.0	11.3	8.3	6.1	18.4	13.0	12.1
11.4	11.2	12.5	8.6	5.2	3.0	0.8	9.7	7.7	6.8
+12.2	+12.3	+5.2	+3.4	+6.1	+5.3	+5.3	+5.2	+5.3	+5.3

changed

Alexia PL Curb Cuts

	s.d	gutter	4	N.gutter	x cl
E. Line MT View Dr.	371.30 4.31 4.25	90.80 4.81 4.78	71.18	90.90 4.77 4.81	91.4 4.2 4.20
270' S.M.H. 260' S.S B:00	86.20 9.41 9.42	85.80 1.59✓	85.80	85.15 2.24✓	85.65 9.96 7.96
0+20 B	85.72 1.67 1.65	85.32 2.07✓	85.32	84.68 2.71✓	85.18 2.21 2.17
0+40 B	85.20 2.19 2.16	84.80 2.59✓ 62.96	84.80	84.15 3.24✓ 63.48	84.65 2.74 2.70
0+60 B	84.63 2.76 2.80	84.23 3.16✓ 63.52	84.23	83.57 3.92✓ 64.10	84.07 3.32 3.29
0+80 B	84.00 3.39 3.40	83.60 3.79✓ 64.18	83.60	82.95 4.44✓ 64.83	83.45 3.94 4.00
194.56 8+24.57 49.14 73.71 98.28					
B	76.50 10.89 10.90	76.00 11.39✓ 611.69	76.38	76.10 11.29✓ 611.53 74.70	76.60 10.79 10.74
B	75.30 12.09 12.01	74.80 12.59✓ 612.47	74.88	74.30 12.09✓ 12.69✓ 613.02	74.80 12.59 12.19
94.					
B	68.40 7.15 7.24	67.90 67.75 7.90✓	68.05	67.70 7.85✓	68.20 7.35 7.34
20.					
B	67.12 8.43 8.47	66.62 8.93✓		66.50 9.05✓	67.00 8.55 8.60
20.					

SW
E. View
B.M

391.37 4.24 395.61 9.71 385.90 1.49 387.39 12.69 374.70 0.85 375.55 11.15 364.40 3.85 368.25	B 13.0 B 13.0 B 7-16" 1/2	65.90 7.65 9.62 65.30 10.25 10.75✓ 10.18 64.70 10.85 4.25 10.77	65.40 10.15✓ 10.90✓ 10.40 64.25 11.30✓ 4.25	65.30 10.25✓ 10.90✓ 10.40 64.05 11.50✓ 4.20	65.80 9.75 9.69 20.1 65.10 10.45 10.40 20.1 64.50 11.05 10.97
61.00 5.88 66.88		61.50 6.75 6.78	61.00 7.25	61.20 7.05	61.70 7.55
61.47 5.42 66.89		61.70 61.98 7.91 5.19 5.69 -0.50	61.98 7.91 5.41 4.72 5.22 -0.50	62.27 4.72 5.22 -0.50	62.56 4.33 4.53

71

Cooper St Sewers,

Indexed
c.s.K.

BM	100'	289.82	284.80	20' SW. Ret Cooper Maple
00-D.E. S. of Maple	1.02		284.80	
0+55		5.59	84.23	278.70
1+40		6.44	83.38	77.05
1+65		7.90	81.92	75.40
2+20		9.42	80.40	73.75
2+20		11.00	78.82	72.10
2+75 M.H. 9" R.	0.55	77.63	12.74	77.08
0+55		2.58	75.05	68.80
1+10		4.14	73.49	67.15
1+65		6.46	71.17	65.50
2+20		8.31	69.32	63.85
2+75 M.H. 10" E. Kalmus		9.90	67.73	262.20
0+80 S. S. line Kalmus		10.76	66.87	261.00
20' E. of M.H. 10 S. line Cooper		8.49	69.14	262.80

Boundary St Sewer

BM	96.84	295.80	58.20' Rad Bldg Maple
00-D.E. 30' S. of Maple		2.94	93.90
0+54.5		3.56	92.28
1+09		4.80	92.04
1+63.5		5.64	91.20
2+18		6.53	90.31
2+72.5 M.H. 8"		7.54	89.30
31.95 S. End		7.82	89.02

273.33 BM

4.30
4.29 for hK

sewer Laterals

5	5	5	6.6	6.1	6.1	5.7	5.5	72	5
77.63	80.2	78.2	75.4	72.1	70.6	67.0	67.7	65.2	79.7
77.08	8.2	10.2	13.0	16.3	7.0	8.6	9.9	12.4	8.7
11.33	3.2	5.2	8.0	9.7	0.8	2.6	4.2	6.9	3.7
88.41	+8.0	+9.0	+8.0	+6.6	+6.2	+6.1	+5.7	+5.5	+5.0
	6	6	6	6	6				
	17	18	19	20	21				
77.8	75.4	72.1	64.7	65.7					
10.6	13.0	16.3	8.9	11.9					
4.6	7.0	10.3	2.9	6.3					
+6.0	+6.0	+6.0	+6.0	+5.6					
288.80 BM	4.6	6	5	5.3	5.2	5			
6.75	1	2	3	4	5	6	7		
275.55	86.9	86.8	82.7	82.2	87.8	86.0	84.1		
	8.6	8.7	12.8	13.3	7.0	10.7	12.8		
	3.5	4.6	6.3	8.4	3.7	5.7	7.9		
	+5.1	+4.1	+6.3	+4.9	+5.3	+5.2	+4.9		

Indexed
C.S.K.

Return at Fern & Grape

4/4/30

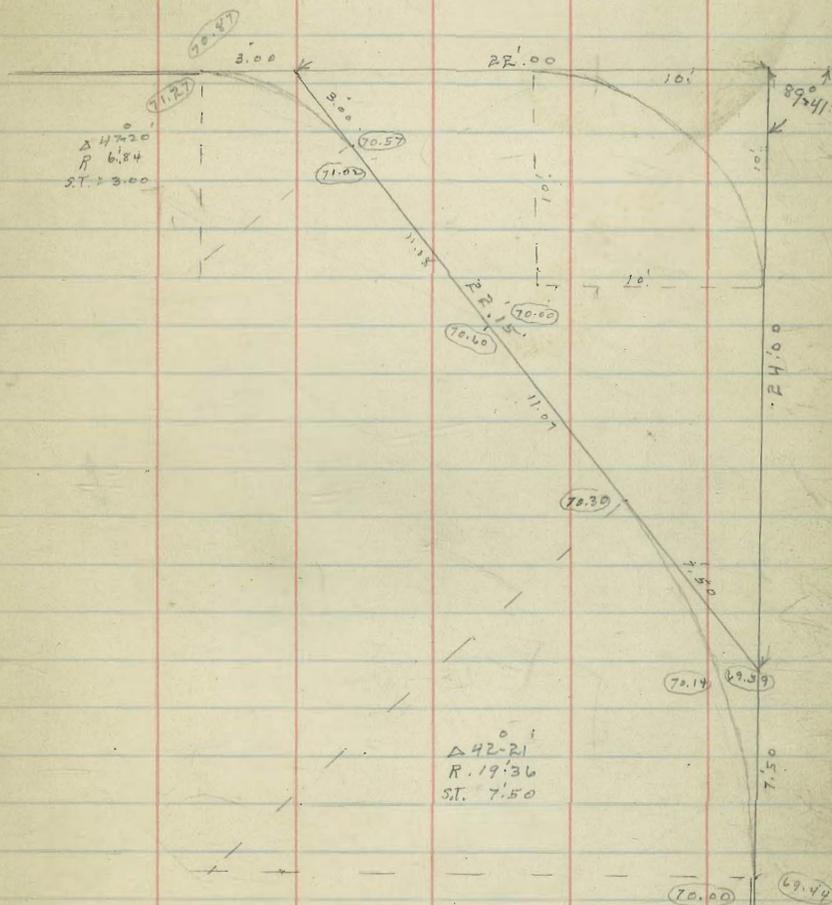
73

RM. 269.47 S.E. Fern & Grape

6.09				
275.56				
5.56	6.12	11.29	4.69	
78.00	69.44	71.27	70.87	
69.44		50.53		
1.56		1.90		

69.44	69.75	70.07	70.24	70.61	70.87
			5.22		
69.44	69.59	69.75	70.00	70.57	70.87

70.00	70.14	70.30	70.60	71.02	71.27	.40
5.56	5.42	5.26	4.96	4.54	4.29	
6.09						
-0.50						

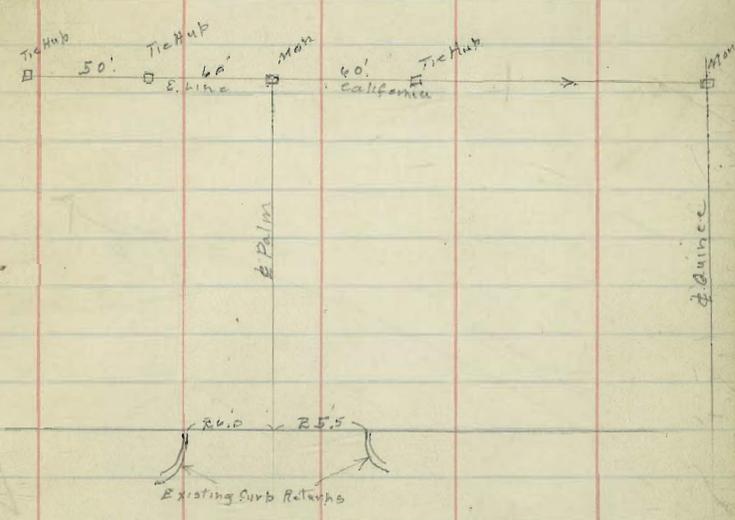


Indexed
C.E.S.K.

Palm St Grades
Ketter to California

	N. ch.	pm. se. Ketter Palm	S. ch.
0.00 N. line Ketter	56.87	57.49	56.33
	2.01	1.39	2.55
	2.07	58.88	2.62
	0.06 Low	12.58	0.07 Low
	46.30	46.30	
	3.08	3.08	
+50	49.04	49.38	48.56
	9.8	11.43	10.3
	4.5	37.75	5.2
	+5.3	3.47	+5.1
	41.42	41.42	
1+00	41.29	40.29	40.78
	17.6	41.13	18.1
	10.0	12.70	11.1
	+7.6	53.83	+7.0
	52.44	1.39	
1+50	32.50	52.44	33.00
	15.9	8.44	16.4
	5.7	61.28	7.6
	+10.2	3.78	+8.8
	57.50	57.50	
1+65 Brk	31.16		30.66
	18.2		18.7
	7.5		9.3
	+10.7		+9.4
1+75 Brk	29.93		29.43
	19.4		19.9
	3.2		10.3
	+11.2		+9.6
1+85 Brk	29.36		28.86
	12.1		20.6
	2.8		10.9
	+9.3		+9.7
2000 E. Cal	29.00		28.50
	12.4		20.9
	5.2		12.3
	+7.2		+8.3
E. Rail RT.S.F.	13.20		13.18
	28.16		12.74
	13		13.92
	48		27.50

R



Edgemont St
Water Grader C St. to Beech St

	± Grade			
N.L. C St	198.11	196.00	163	2199.59
30 ft	201.10	198.50	143	212.77
60 ft	202.70	200.20	126	213.30
100 ft	204.32	201.70	126	212.90
150 ft	206.41	203.80	126	212.22
182.5 ft		204.77	126	212.02
215.0 ft		205.75	126	212.02
247.5 ft		206.72	126	212.02
280.0 ft	210.30	207.70	126	212.02
300.0 ft S.L. B St	210.87	208.60	126	212.02
N.L. B St	212.71	212.10		212.02
30 ft	214.90	212.30		212.02
70 ft	217.45	214.85		212.02
110 ft		216.90		212.02
150 ft	221.49	218.90		212.02
200 ft		220.77		212.02
250 ft		222.64		212.02
300 ft S.L. Ash	227.15	224.50		212.02
± Ash		225.05		212.02
N.L. Ash	228.40	225.60		212.02
55 ft 15 ft 5 ft	229.60	226.80		212.02
112.45		228.14		212.02
169.45		229.52		212.02
226.45		230.58		212.02

	± Grade			
283.45 ft				232.81
340.45 ft	231.42			233.60
364.87 ft S.L. Ash from East	236.75			233.90
± Ash from East	236.80			234.00
N.L. Ash from West	236.00			232.8
15 ft S.P.	235.30			232.10
60 ft				229.57
105 ft				227.94
150 ft	227.71			224.50
185 ft	225.16			221.95
230 ft	221.19			218.00
255 ft				216.20
280 ft				215.20
310 ft = S.L. Beech St Front				216.00
475 ft = N.L. Edgemont				218.5
F.H. Edgemont & Ash				B.M. N.K. B.P. Ash 43197
P.C. Grade 237.20				B.M. N.E. P.
Miller's Grade				
S.L. #1	227.25			
S.L. #2	226.55			

6-10-30
S. B. Osborn

E.L. Edgemont
232.0

N.L. Ash
232.60

123

55.5

12.5

235.07
2.02
242.09
5.37
237.32
238.00
10.60
227.44

8.22
2.73
+5.49
9.42
4.30
+4.58

Indexed
o.s.k.

Water Grades

378.92 B.M.	S.W. El Cajon # 34 th								
7.25									
386.85									
5.73									
384.12									
6.67									
390.79									

10	11	12	1	2	3	4	5
6.3	5.9	2.73	6.0	8.1	8.7	7.8	7.6
3.1	3.2	2.77	2.9	5.7	5.4	5.1	4.8
3.2	2.7	5.50	9.1	13.0	12.8	12.7	12.8

6	7	8	9	10	11	12
7.3	7.0	6.7	6.4	6.1	5.8	2.6
4.4	4.1	3.8	3.6	3.1	2.9	2.9
2.9	2.9	2.9	2.8	3.0	2.9	5.5

B.M. 378.92

Sewer laterals

7.44									
386.76									
1.75									
385.01									
5.95									
390.96									
①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩
76.20	77.30	78.00	78.80	78.20	79.20	79.50	81.50	82.20	82.80
10.16	9.46	8.76	7.96	10.56	7.86	7.26	7.46	8.76	8.16
5.36	4.96	4.04	3.36	5.86	3.06	2.60	3.46	3.96	3.16
7.80	+4.50	+4.72	+4.60	4.70	+4.50	+4.66	+6.00	+4.80	+5.00
⑪	⑫	⑬	⑭	⑮	⑯	⑰	⑱	⑳	
83.40	84.10	84.70	83.40	82.80	82.20	81.50	80.20	79.00	78.30
7.56	6.86	6.26	7.16	8.16	8.76	8.40	6.46	7.76	8.16
9.26	1.98	1.58	3.71	4.26	5.16	5.92	2.24	3.20	4.20
+6.80	+4.73	+4.79	+3.45	+4.15	+3.20	+3.54	+4.22	+4.06	+4.26
㉑	㉒	㉓							
77.70	76.60	76.20							
9.06	4.06	10.86							
4.80	6.11	6.25							
+4.26	+4.05	+4.31							

E. line

Drains

W. line

B.M.

78

cont. with sewer

Kitchen drain

60% 1/2 - 90%

# 2	# 3	B.M.
75.6	75.6	378.92
11.0	11.0	7.68
6.2	6.2	386.60
+4.8	+4.8	4.30
21	21	382.30
77.4	77.1	7.17
9.2	9.5	389.47
6.1	6.3	
+3.1	+3.2	
77.7	77.4	
8.9	8.2	
5.8	5.8	
+3.1	+3.0	
78.0	77.7	
8.6	8.9	
2.6	5.8	
+3.1	+3.1	
78.4	78.1	
8.2	8.5	
5.1	5.5	
+3.1	+3.0	
78.7	78.4	
7.7	8.2	
4.8	5.2	
+3.1	+3.0	
79.0	78.7	
7.6	7.9	
4.5	5.0	
+3.1	+2.9	
79.4	79.1	
7.2	7.5	
4.1	4.5	
+3.1	+3.0	
79.7	79.4	
6.9	7.2	
3.6	4.2	
+3.3	+3.0	
80.0	79.7	
9.8	9.8	
6.2	6.7	
+3.3	+3.1	
80.4	80.1	
9.1	9.4	
6.0	6.4	
+3.1	+3.0	
80.7	80.4	
8.9	9.1	
5.3	6.1	
+3.1	+3.0	
81.0	80.7	
8.5	9.0	
5.2	5.7	
+3.0	+3.1	
81.4	81.1	
8.1	8.4	
4.3	5.3	
+3.3	+3.1	

34th St
Tile Drains

	East #5	West #7	
	80.0	80.0	389.47
	<u>9.5</u>	<u>9.5</u>	3.51
	<u>4.3</u>	<u>5.2</u>	385.96
		<u>74.3</u>	5.79
		<u>#8</u>	391.75
White Meade	81.6	81.6	
	<u>7.7</u>	<u>7.7</u>	
	<u>4.6</u>	<u>5.3</u>	
	<u>73.3</u>	<u>72.6</u>	
1	82.0	82.0	
	<u>7.5</u>	<u>7.5</u>	
	<u>4.4</u>	<u>5.0</u>	
	<u>75.1</u>	<u>72.5</u>	
2	82.3	82.3	
	<u>7.2</u>	<u>7.2</u>	
	<u>4.1</u>	<u>4.6</u>	
	<u>78.1</u>	<u>72.6</u>	
3	82.6	82.6	
	<u>6.9</u>	<u>6.9</u>	
	<u>3.8</u>	<u>4.4</u>	
	<u>78.1</u>	<u>72.5</u>	
4	83.0	83.0	
	<u>6.5</u>	<u>6.5</u>	
	<u>3.5</u>	<u>4.0</u>	
	<u>73.0</u>	<u>72.5</u>	
5	83.3	83.3	
	<u>8.4</u>	<u>8.4</u>	
	<u>6.5</u>	<u>6.0</u>	
	<u>72.9</u>	<u>72.4</u>	
6	83.6	83.6	
	<u>8.1</u>	<u>8.1</u>	
	<u>5.2</u>	<u>5.6</u>	
	<u>72.9</u>	<u>72.5</u>	
7	84.0	84.0	
	<u>7.7</u>	<u>7.7</u>	
	<u>5.0</u>	<u>5.2</u>	
	<u>72.7</u>	<u>72.5</u>	
8	84.3	84.3	
	<u>7.4</u>	<u>7.4</u>	
	<u>4.5</u>	<u>5.0</u>	
	<u>72.9</u>	<u>72.4</u>	
9	84.6	84.6	
	<u>7.1</u>	<u>7.1</u>	
	<u>4.1</u>	<u>4.7</u>	
	<u>73.0</u>	<u>72.4</u>	
10	85.0	85.0	
	<u>6.7</u>	<u>6.7</u>	
	<u>3.9</u>	<u>4.3</u>	
	<u>72.8</u>	<u>72.4</u>	
11	85.3	85.3	
	<u>6.4</u>	<u>6.4</u>	
	<u>3.6</u>	<u>3.4</u>	+2.5
	<u>75.3</u>	<u>72.7</u>	
12	85.6	85.6	
5th St	<u>6.1</u>	<u>6.1</u>	3.4
	<u>73.0</u>	<u>72.7</u>	

DIRECTIONS FOR USE OF TABLES

TABLE No. 1.

Distance of slope stake from side or shoulder stake for any width roadway, slope $1\frac{1}{2}$ to 1. If ground is nearly level, the cut or fill at side stake is located by the double entry method in left column and top row. The number in body of table in same row and column gives distance from side stake to slope stake. If ground is not level estimate the difference in elevation between the side stake and slope stake, lower target by this amount if cut, elevate if fill. Add this amount to cut or fill and find distance in table. Set up rod at this point, and line of sight should cut target. If it does not make the slight adjustment necessary.

TABLE No. 9.

To find Tangent and External for curve of any other degree, divide by degree of curve and add correction found in column of corrections.

Degree of curve with a given I may be found by dividing tangent, (or external), opposite I by given tangent, (or external).

The distance from a point on the tangent to the curve is very nearly the square of the tangent length divided by twice the radius.

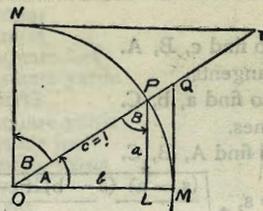


TABLE II
TRIGONOMETRIC FORMULÆ

$$\begin{aligned} \angle A &= \angle MOP & \angle B &= \angle PON = \angle OPL \\ R &= OB = c = 1 \\ \sin A &= \frac{a}{c} = \frac{a}{1} = a = \cos B = LP \\ \cos A &= \frac{b}{c} = \frac{b}{1} = b = \sin B = OL \\ \tan A &= \frac{a}{b} = \frac{MQ}{OM} = \frac{MQ}{1} = MQ = \cot B = MQ \\ \cot A &= \frac{NT}{ON} = \frac{NT}{1} = NT = \tan B = NT \\ \sec A &= \frac{OQ}{OM} = \frac{OQ}{1} = OQ = \csc B = OQ \\ \csc A &= \frac{OT}{ON} = \frac{OT}{1} = OT = \sec B = OT \\ \text{vers } A &= \frac{LM}{OP} = LM = \text{covers } B \# \end{aligned}$$

$$\text{covers } A = \frac{OP - LP}{OP} = OP - LP = \text{vers } B$$

$$\text{exsec } A = PQ = \text{coexsec } B$$

$$\text{coexsec } A = PT = \text{exsec } B$$

$$\sin \frac{1}{2} A = \sqrt{\frac{1 - \cos A}{2}} \quad \cos \frac{1}{2} A = \sqrt{\frac{1 + \cos A}{2}}$$

$$\sin 2A = 2 \sin A \cos A \quad \cos 2A = \cos^2 A - \sin^2 A$$

$$\text{Law of Sines} \quad \frac{\sin A}{a} = \frac{\sin B}{B} = \frac{\sin C}{C}$$

$$\text{Law of Cosines} \quad c^2 = a^2 + b^2 - 2ab \cos C$$

$$\text{Law of Tangents} \quad \frac{a+b}{a-b} = \frac{\tan \frac{1}{2}(A+B)}{\tan \frac{1}{2}(A-B)}$$

4.50 4.98 4.68

$$\begin{array}{r} 71.5 \\ 45.6 \\ \hline 5.9 \end{array}$$

$$\begin{array}{r} 99.50 \\ 93.5 \\ \hline 6.0 \end{array}$$

$$\begin{array}{r} 67 \\ 45.12 \\ \hline 21.88 \end{array}$$

$$\begin{array}{r} 6.5 \\ 4.0 \\ \hline 2.5 \end{array}$$

$$\begin{array}{r} 137 \\ 685 \\ \hline 26 \end{array}$$

$$\begin{array}{r} 137 \\ 685 \\ \hline 26 \end{array}$$

$$\begin{array}{r} 121 \\ 130 \\ \hline 9 \end{array}$$

$$\begin{array}{r} 62 \\ 175 \\ \hline 113 \end{array}$$

$$\begin{array}{r} 121 \\ 130 \\ \hline 9 \end{array}$$

$$\begin{array}{r} 124 \\ 60 \\ \hline 64 \end{array}$$

$$\begin{array}{r} 121 \\ 130 \\ \hline 9 \end{array}$$

$$\begin{array}{r} 124 \\ 60 \\ \hline 64 \end{array}$$

$$\begin{array}{r} 121 \\ 130 \\ \hline 9 \end{array}$$

$$\begin{array}{r} 124 \\ 60 \\ \hline 64 \end{array}$$

$$\begin{array}{r} 291.50 \\ 85.80 \\ \hline 5.7 \end{array}$$

$$\begin{array}{r} 175 \\ 5.700 \\ \hline 5.25 \end{array}$$

$$\begin{array}{r} 450 \\ 350 \\ \hline 1000 \end{array}$$

$$\begin{array}{r} 1000 \\ 1050 \\ \hline 50 \end{array}$$

$$\begin{array}{r} 0.0555 \\ 2.5 \\ \hline 25 \end{array}$$

$$\begin{array}{r} 2.0 \\ .66 \\ \hline 1.34 \end{array}$$

$$\begin{array}{r} 629.5 \\ 49.15 \\ \hline 580.35 \end{array}$$

$$\begin{array}{r} 50 \\ 1.05 \\ \hline 48.95 \end{array}$$

